

NICE support for commissioners using the quality standard for hypertension

March 2013

1 Introduction

Implementing the recommendations from NICE guidance and other [NICE accredited guidance](#) is the best way to support improvements in the quality of care or services, in line with the statements and measures that comprise the NICE quality standards. This report:

- considers the cost of implementing the changes needed to achieve the quality standard at a local level
- identifies where potential cost savings can be made
- highlights the areas of care in the quality standard with potential implications for commissioners
- directs commissioners and service providers to a package of support tools that can help them implement NICE guidance and redesign services.

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. The statements draw on existing guidance, which provides an underpinning, comprehensive set of recommendations, and are designed to support the measurement of improvement. For more information see [NICE quality standards](#).

The NHS Commissioning Board's [Clinical Commissioning Group \(CCG\) Outcomes Indicator Set](#) (formerly known as the Commissioning Outcomes Framework) is part of a systematic approach to promoting quality improvement. The outcomes indicator set provides clinical commissioning groups and health and wellbeing partners with comparative information on the quality of health services commissioned by clinical commissioning groups and the associated health outcomes. The set includes indicators derived from NICE quality standards. By commissioning services in line with the quality

standards, commissioners can contribute to improvements in health outcomes.

Commissioners can use the quality standards to improve services by including quality statements and measures in the service specification of the standard contract and establishing key performance indicators as part of tendering. They can also encourage improvements in provider performance by using quality standard measures in association with incentive payments such as [Commissioning for Quality and Innovation](#) (CQUIN). NICE quality standards provide a baseline against which improvements can be measured and rewarded, enabling commissioners to address gaps in service provision, support best practice and encourage evidence-based treatments and care.

This report on the hypertension quality standard should be read alongside:

- [Hypertension](#). NICE quality standard 28 (2013).
- [Patient experience in adult NHS services](#). NICE quality standard 15 (2012).
- [Hypertension: clinical management of primary hypertension in adults](#). NICE clinical guideline 127 (2011).
- [Lipid modification: cardiovascular risk assessment and the modification of blood lipids for the primary and secondary prevention of cardiovascular disease](#). NICE clinical guideline 67 (2008).
- [Integrated commissioning for the prevention of cardiovascular disease](#). NICE guide for commissioners (2012).

2 Overview of hypertension

Hypertension (high blood pressure) is one of the most important preventable causes of early morbidity and mortality in the UK and worldwide. It is a major risk factor for stroke (ischaemic and haemorrhagic), myocardial infarction (heart attack), heart failure, chronic kidney disease and cognitive decline.

Raised blood pressure is one of the three main modifiable risk factors for cardiovascular disease which account for 80% of all cases of premature coronary heart disease.

Blood pressure is measured using a sphygmomanometer, also known as a blood pressure gauge or cuff. Blood pressure readings to diagnose hypertension are most commonly undertaken in these settings:

- Clinic or GP surgery, by a nurse or doctor using a sphygmomanometer.
- Home, using one of two methods:
 - Home blood pressure monitoring (HBPM) using a sphygmomanometer, with the person seated and at rest.
 - Ambulatory blood pressure monitoring (ABPM) using a small machine attached to the arm that takes and records readings at regular intervals while people go about normal activities.

NICE guidance recommends that ABPM is used to confirm a diagnosis of hypertension and to monitor response to treatment. Home blood pressure monitoring is a good substitute if ABPM is not available, suitable or desirable for a person. Ambulatory and home blood pressure readings are often slightly lower than clinic readings because people are often more relaxed at home than in a clinic.

Accurate diagnosis is essential to ensure people with hypertension are offered the most appropriate management. A misdiagnosis of hypertension can result in antihypertensive medication being prescribed unnecessarily; conversely untreated hypertension can lead to a progressive rise in blood pressure and increased risk of further vascular and renal damage.

The clinical management of hypertension is one of the most common interventions in primary care, accounting for approximately £1 billion in drug costs alone in 2006¹.

2.1 *Epidemiology of hypertension*

Blood pressure is normally distributed in the population and there is no natural cut-off point above which 'hypertension' definitively exists and below which it does not. The risk associated with increasing blood pressure is continuous,

¹ National Institute for Health and Clinical Excellence (2012) [Hypertension: clinical management of primary hypertension in adults](#)

with each 2 mmHg rise in systolic blood pressure associated with a 7% increased risk of death from ischaemic heart disease and a 10% increased risk of death from stroke².

Hypertension is usually defined as having a sustained blood pressure of 140/90mmHg or above³. The [Health Survey for England 2009](#) estimates that the prevalence of hypertension is 32% in men and 27% in women.

The number of people who have hypertension increases with age. For reasons that are not entirely understood, people of African-Caribbean or South Asian (Indian, Pakistani and Bangladeshi) origin are more likely to develop high blood pressure than other ethnic groups⁴.

In 95% of cases, there is no single identifiable reason for a raise in blood pressure. However, all available evidence shows that lifestyle plays a significant role in regulating blood pressure. Modifiable risk factors for hypertension include:

- excessive alcohol consumption
- poor diet
- lack of exercise
- obesity⁵.

3 Commissioning and resource implications

The cost of meeting the quality standard for hypertension depends on current local practice and the progress organisations have made in implementing NICE clinical guidance on [hypertension](#) and on [lipid modification](#).

The effective detection and management of hypertension is a key issue for commissioners because of its potential to prevent adverse events such as

² National Institute for Health and Clinical Excellence (2012) [Hypertension: clinical management of primary hypertension in adults](#)

³ National Institute for Health and Clinical Excellence (2012) Hypertension: Introduction. Available from: <http://www.evidence.nhs.uk/topic/hypertension>

⁴ National Institute for Health and Clinical Excellence (2012) Hypertension: Introduction. Available from: <http://www.evidence.nhs.uk/topic/hypertension>

⁵ National Institute for Health and Clinical Excellence (2012) Hypertension: Introduction. Available from: <http://www.evidence.nhs.uk/topic/hypertension>

stroke and heart disease, which are a major cause of disability and chronic ill health and result in high costs to the health and social care system. Improving the commissioning of hypertension services will contribute to [NHS Outcomes Framework 2013/14](#) improvement area 1.1: reducing premature mortality from the major causes of death, measured by under 75 mortality rate from cardiovascular disease.

Table 1 summarises the commissioning and resource implications for commissioners working towards achieving this quality standard. See section 4 for more detail on commissioning and resource implications.

Table 1 Potential commissioning and resource implications of achieving the quality standard for hypertension

Area of care	Commissioning implications	Estimated resource impact
Diagnosis – ambulatory blood pressure monitoring (quality statement 1)	Ensure services are commissioned to provide ABPM in primary or community settings.	It is estimated that the initial costs associated with implementing ABPM will be around £5000 per 100,000 population. Initially the increased costs of implementing ABPM will outweigh the savings from more accurate diagnosis. After 5 years, a potential saving of £20,000 is estimated per 100,000 population. There are also potential savings from a possible reduction in adverse events, such as strokes and myocardial infarction, which will result from more accurate diagnosis and therefore more appropriate treatment.
Investigations for target organ damage (quality statement 2)	Ensure there are pathways in place for people with newly diagnosed hypertension to be referred for the investigation of target organ damage or other specialist investigations according to their clinical need.	No significant cost impact.

Statin therapy (quality statement 3)	Integrate the commissioning of services for people with hypertension within a wider programme of cardiovascular disease prevention ⁶ .	No significant cost impact.
Treatment monitoring (quality statements 4–5)	Ensure that all people with hypertension are recorded on general practice registers for hypertension and that this data is used to monitor and address variation in practice ^{7,8} .	No significant cost impact.
Referral to a specialist for people with resistant hypertension (quality statement 6)	Ensure there are pathways in place to refer people with resistant hypertension for a specialist assessment.	No significant cost impact.

4 Commissioning implications and cost impact

This section considers the commissioning implications and potential resource impact of implementing the recommendations in NICE guidance, to achieve the NICE quality standard for hypertension.

4.1 *Diagnosis – ambulatory blood pressure monitoring*

Quality statement 1: Diagnosis – ambulatory blood pressure monitoring

People with suspected hypertension are offered ambulatory blood pressure monitoring (ABPM) to confirm a diagnosis of hypertension.

Ambulatory blood pressure monitoring is more accurate at identifying hypertension than clinical blood pressure monitoring (CBPM) and HBPM. This means that:

- Fewer people who do not have hypertension will be incorrectly diagnosed as having hypertension (false positives). As a consequence, fewer people

⁶ National Institute for Health and Clinical Excellence (2012) [Integrated commissioning for the prevention of cardiovascular disease](#).

⁷ National Institute for Health and Clinical Excellence (2012) [Integrated commissioning for the prevention of cardiovascular disease](#).

⁸ National Institute for Health and Clinical Excellence (2011) [Quality and outcomes framework](#).

will be inappropriately offered antihypertensive drugs, resulting in cost savings to the NHS through lower expenditure on drugs and annual monitoring appointments with GPs.

- More people with hypertension will be correctly diagnosed (true positives), eliminating some of the false negative results that can occur with CBPM. This means more people will be correctly offered the drugs they need for hypertension, helping to reduce the number of cardiovascular disease events.

Commissioners should audit the local availability of ABPM. Nationally, there is variation in access to ABPM for the diagnosis of hypertension. When the NICE clinical guideline on [hypertension](#) was published in August 2011, it was estimated that around 90% of diagnoses were confirmed using CBPM and that the remaining 10% were split equally between HBPM and ABPM. Some, but not all, primary care practices have access to ABPM devices. At present, few practices have sufficient numbers of devices to fully meet NICE recommendations on the diagnosis of hypertension.

Commissioners may wish to consider incentives to improve the uptake of ABPM and to consider innovative methods to improve access to ABPM in primary care where the need is identified. If possible, commissioners should commission ABPM services in primary or community settings, close to people's homes. They may consider a range of service models including:

- asking individual GP practices to purchase ABPM devices for their practice population
- asking groups of GP practices to collectively purchase ABPM devices, and for one nominated lead practice to fit ABPM devices on behalf of its partners
- delivering ABPM from pharmacy settings
- commissioning an external or independent provider⁹
- outpatient-led services, for example provided by a hypertension nurse specialist.

⁹ National Institute for Health and Clinical Excellence (2011) [Hypertension: implementation advice, Implementing the ambulatory blood pressure monitoring recommendations](#).

When commissioning ABPM, commissioners should:

- specify that equipment is properly validated, maintained and regularly recalibrated according to manufacturers instructions
- ensure staff are appropriately trained to offer and fit ambulatory blood pressure monitors.

The costing tools for NICE clinical guideline 127 assume that ABPM would be attempted to confirm the diagnosis in 98.6% of people with suspected hypertension. Commissioners should be aware that some people may not tolerate ABPM (for example, people with a learning disability) and that some people may choose not to use ABPM to confirm a suspected diagnosis of hypertension. Therefore commissioners should ensure that there is also access to HBPM, which is a suitable alternative. It was estimated that ABPM will be attempted but not tolerated in 5% of people. These people should be diagnosed using HBPM.

Commissioners should also be aware that ABPM will be unsuitable for measuring blood pressure in around 1.4% of the population, for example people with a pulse irregularity. In this group, CPBM should be used.

It is estimated that the initial costs associated with implementing ABPM will be around £5000 per 100,000 population. Initially the increased costs of implementing ABPM will outweigh the savings derived from more accurate diagnosis. As more people benefit from accurate diagnoses using ABPM, the cumulative effect of preventing unnecessary use of antihypertensive drugs will start to be seen. Savings from these reduced treatment costs will eventually outweigh the additional costs of diagnoses. After 5 years, a potential saving of £20,000 is estimated per 100,000 population. There are also potential savings from an anticipated reduction in adverse events, such as strokes and myocardial infarction, which will result from more accurate diagnosis and therefore more appropriate treatment.

The [costing report](#) for NICE clinical guideline 127 estimates that ABPM costs more per test than both HBPM and CBPM because of the higher cost of the devices and the additional time needed to download results. The [costing template](#) estimates that the cost of CBPM is £38.00, the cost of HBPM is £39.13 and the cost of ABPM is £53.40 per person per year as set out in Table 2 below:

Table 2 Costs of diagnostic testing

Cost element	Unit cost £	Type of monitoring		
		CBPM £	HBPM £	ABPM £
Monitor equipment (costs per use)		0	1.13	5.40
GP appointment	28	1	1	1
Practice nurse appointment	10	1	1	2
Total cost		38.00	39.13	53.40

For ABPM we have assumed that two healthcare consultations would be needed: an initial appointment with a practice nurse to fit the monitor, and a second with a GP to review the results and provide treatment advice if necessary. Time for a nurse to download the monitoring data was also factored in.

The average annual treatment cost for a person diagnosed with hypertension is estimated to be £60.47 (annual GP check-up costing £28.00 plus an average drug cost of £32.47 per year). See the [costing template](#) for NICE clinical guideline 127 for further details.

Commissioners using the NICE quality standard for hypertension may wish to refer to the [costing report](#) and [costing template](#) for more information on the costs and savings associated with implementing ABPM.

Commissioners using the NICE quality standard for hypertension may wish to refer to the [baseline assessment tool](#) and [clinical audit tools](#) for NICE clinical guideline 127 on hypertension to determine the extent to which the NICE

guidance on diagnosis has been implemented and to assess local compliance with the recommendations.

Commissioners who are implementing NICE recommendations on ABPM may find the NICE [implementation advice](#), [clinical case scenarios](#) and [podcast](#) useful.

Commissioners who are implementing NICE recommendations on ABPM may find the [British Hypertension Society resources](#) to assist in setting up and managing ABPM services useful.

4.2 *Investigations for target organ damage*

Quality statement 2: Investigations for target organ damage

People with newly diagnosed hypertension receive investigations for target organ damage within 1 month of diagnosis.

The [full guideline](#) for clinical guideline 127 notes that a person's risk of clinical events associated with hypertension is not only determined by their blood pressure but also by other factors including the presence of target organ damage (for example, ventricular hypertrophy, chronic kidney disease and hypertensive retinopathy). Therefore, assessment of simple markers of target organ damage should form part of the routine assessment of a person with newly diagnosed hypertension.

Commissioners should ensure that the care pathway enables people with newly diagnosed hypertension to have investigations for target organ damage as soon as possible after the diagnosis of hypertension is confirmed and within 1 month of their diagnosis.

[NICE clinical guideline 127](#) recommendation 1.3.3 states that healthcare professionals should offer the following investigations for target organ damage:

- test for the presence of protein in the urine by sending a urine sample for estimation of the albumin:creatinine ratio and test for haematuria using a reagent strip

- take a blood sample to measure plasma glucose, electrolytes, creatinine, estimated glomerular filtration rate, serum total cholesterol and high-density lipoprotein (HDL) cholesterol
- examine the fundi for the presence of hypertensive retinopathy
- arrange for a 12-lead electrocardiograph to be performed.

It is anticipated that testing for target organ damage, such as kidney and cardiac damage, may not be current practice in the majority of places. Therefore there may be a cost impact associated with an increase in testing for target organ damage. Blood and urine tests are anticipated to be inexpensive. The outpatient procedure tariff for electrocardiogram monitoring and stress testing (HRG code EA47Z) is £145¹⁰. Increased costs may be offset by earlier diagnosis of organ damage, resulting in prevention of serious damage and related events.

4.3 *Statin therapy*

Quality statement 3: Statin therapy

People with newly diagnosed hypertension and a 10-year cardiovascular disease risk of 20% or higher are offered statin therapy.

Commissioners should ensure that all people with newly diagnosed hypertension are offered access to a 10-year cardiovascular disease risk assessment as soon as possible after diagnosis. They should also assess local practice to check that people with newly diagnosed hypertension and a 10-year cardiovascular disease risk of 20% or higher are offered statin therapy, in line with recommendation 1.4.3 in the [NICE clinical guideline on lipid modification](#):

Statin therapy is recommended as part of the management strategy for the primary prevention of cardiovascular disease for adults who have a 20% or greater 10-year risk of developing cardiovascular disease. This level of risk should be estimated using an appropriate risk calculator, or by clinical assessment for people

¹⁰ Payment by Results 2012–13.

for whom an appropriate risk calculator is not available or appropriate (for example, older people, people with diabetes or people in high-risk ethnic groups).

Commissioners may wish to review local availability and provision of 10-year cardiovascular disease risk assessments as part of their commissioning of the [NHS Health Check Programme](#). NHS Health Check is a systematic programme for everyone between the ages of 40 and 74 (excluding those who already have vascular disease) that assesses a person's risk of heart disease, stroke, diabetes and kidney disease. Everyone assessed by the programme receives lifestyle advice and some are offered lifestyle and behavioural change or medical interventions to reduce their risk of cardiovascular disease.

It is anticipated that potential savings from preventing cardiovascular disease-related events will outweigh any additional costs of risk assessment and subsequent statin therapy. Initial treatment of a myocardial infarction is estimated to cost £3,436¹¹ with subsequent cardiac rehabilitation potentially costing in the region of £500¹² per person. Management of Stroke is estimated to cost between £15,000 and £30,000 over the 5 years following a stroke¹³.

Commissioners can find detailed information on commissioning services to assess cardiovascular disease risk, including advice on appropriate risk calculators, in chapter 4.2 on 'assessing an individual's risk of cardiovascular disease' in the [NICE guide for commissioners on integrated commissioning for the prevention of cardiovascular disease](#).

Chapter 4.4 of the guide for commissioners has further information about commissioning medical interventions, including statins.

¹¹ Payment by Results 2012-13: admitted patient care & outpatient procedures, non-elective spell tariff. HRG code EB10Z: Actual or Suspected Myocardial Infarction.

¹² [Cardiac rehabilitation services](#). NICE commissioning and benchmarking tool (2011).

¹³ [NICE cost impact and commissioning assessment](#): quality standard for stroke (2010). The financial burden of a stroke was estimated in 2003 at between £15,000 and £30,000 over the 5 years following a stroke.

4.4 Treatment monitoring

Quality statement 4: Blood pressure targets

People with treated hypertension have a clinic blood pressure target set to below 140/90 mmHg if aged under 80 years, or below 150/90 mmHg if aged 80 years and over.

Quality statement 5: Review of cardiovascular disease risk factors

People with hypertension are offered a review of risk factors for cardiovascular disease annually.

Commissioners will want to ensure that people with newly diagnosed hypertension have their blood pressure monitored on a regular basis until they are achieving target blood pressure and to optimise treatment. They should also ensure that people with established hypertension continue to have their blood pressure monitored regularly.

Commissioners should ensure that people with hypertension are offered a review of risk factors for cardiovascular disease annually, ideally as part of their annual review of care. Commissioners may wish to commission cardiovascular risk assessment as part of their cardiovascular disease prevention programme (see section 4.3).

There may be incremental costs if more frequent monitoring is required to ensure that patients are meeting their target blood pressure level. Reviewing risk factors for cardiovascular disease at each annual review may result in savings from a decrease in the number of cardiovascular disease-related events.

The Topic Expert Group noted that poor adherence to treatment for hypertension is a problem nationally. Commissioners should note that between one third and one half of all medicines prescribed for long-term conditions are not taken as recommended, which can affect patient outcomes and is a loss to the healthcare system in terms of wasted medicines and increased demands on the system. Given the cost of wasted prescriptions, commissioners should ask providers to give people with hypertension

information about the disease, the treatment and the importance of adherence, and provide details of patient support organisations.

Commissioners using the NICE quality standard for hypertension may wish to refer to the [baseline assessment tool](#) for NICE clinical guideline 127 on hypertension to determine the extent to which NICE guidance on treatment monitoring has been implemented and to assess local compliance with the recommendations.

Commissioners can find detailed information on commissioning medical interventions, including treatment adherence, in chapter 4.4 of the [NICE guide for commissioners on integrated commissioning for the prevention of cardiovascular disease](#).

Commissioners may find [Medicines adherence: guide to resources](#) useful to help people put NICE clinical guideline 76 on Medicines adherence into practice.

4.5 Referral to a specialist for people with resistant hypertension

Quality statement 6: Referral to a specialist for people with resistant hypertension

People with resistant hypertension who are receiving 4 antihypertensive drugs and whose blood pressure remains uncontrolled are referred for specialist assessment.

Based on Health Survey for England data, the [full guideline](#) for clinical guideline 67 on lipid modification estimates that resistant hypertension affects approximately 500,000 people with treated hypertension in the UK and is therefore an important clinical problem. People with resistant hypertension tend to be older and often have established cardiovascular disease, diabetes or chronic kidney disease and so have a high risk of further cardiovascular events. Controlling blood pressure in this population may significantly improve health outcomes.

Commissioners should ensure that pathways exist for people who have received 4 antihypertensive drugs and whose blood pressure remains uncontrolled to be referred for specialist assessment and treatment.

Commissioners using the NICE quality standard for hypertension may wish to refer to the [baseline assessment tool](#) for NICE clinical guideline 127 on hypertension to determine the extent to which NICE guidance on referral to a specialist in hypertension has been implemented and to assess local compliance with the recommendations.

5 Links to national drivers and other useful resources

5.1 Policy documents

- Department of Health (2009) [NHS Health Check: vascular risk assessment and management best practice guidance](#).
- Department of Health (2009) [Putting prevention first – vascular checks: risk assessment and management – next steps guidance for primary care trusts](#).

5.2 NICE implementation support

- [Integrated commissioning for the prevention of cardiovascular disease](#). NICE guide for commissioners (2012).
- [Hypertension](#). NICE baseline assessment (2011).
- [Hypertension](#). NICE audit support (2011).
- [Hypertension](#). NICE electronic audit tool (2011).
- [Hypertension](#). NICE costing report (2011).
- [Hypertension](#). NICE costing template (2011).
- [Hypertension](#). NICE implementation advice (2011).
- [Hypertension](#). NICE clinical case scenarios (2011).
- [Hypertension](#). NICE slide set (2011).

5.3 NICE pathways

- [Hypertension](#) (2011).

Copyright

© National Institute for Health and Clinical Excellence 2013. All rights reserved. NICE copyright material can be downloaded for private research and study, and may be reproduced for educational and not-for-profit purposes. No reproduction by or for commercial organisations, or for commercial purposes, is allowed without the written permission of NICE.

Contact NICE

National Institute for Health and Clinical Excellence
Level 1A, City Tower, Piccadilly Plaza, Manchester M1 4BT

www.nice.org.uk

nice@nice.org.uk

0845 033 7780