Hypertension is remarkably common in the UK, affecting at least a quarter of the adult population, and is one of the most important preventable causes of premature morbidity and mortality. The National Institute for Health and Clinical Excellence issued updated guidance for managing hypertension last month. The clinical guideline, produced in conjunction with the British Hypertension Society, updates the recommendations published in 2006 for the diagnosis of hypertension and the initiation and monitoring of treatment.

Why is the guideline needed?
Hypertension is a major risk factor for ischaemic and haemorrhagic stroke, myocardial infarction, heart failure, chronic kidney disease, cognitive decline and premature death. Untreated hypertension is usually associated with a progressive rise in blood pressure (BP), which can cause vascular and renal damage and culminate in hypertension that is treatment-resistant.

Definitions
The guideline uses the following definitions of hypertension:
- Stage 1 — clinic BP is ≥140/90mmHg and subsequent daytime average BP (measured by ambulatory BP monitoring [ABPM — see Box, p255] or home BP monitoring [HBPM]) is ≥135/85mmHg
- Stage 2 — clinic BP is ≥160/100mmHg and subsequent ABPM daytime average or HBPM average is ≥150/95mmHg
- Severe — clinic systolic BP is ≥180mmHg or clinic diastolic BP is ≥110mmHg

Diagnostic recommendations
A key aspect of the guideline is the diagnosis of hypertension, which, traditionally, has been based on taking several BP measurements in the clinic. However, studies have shown that ABPM correlates better with cardiovascular outcome. Moreover, recent analyses suggest that ABPM is more accurate than both clinic and HBPM in determining the presence of hypertension.
ABPM is typically used if there is uncertainty about diagnosis, resistance to treatment, irregular BP or diurnal BP variation, or concerns about variability and “white-coat effect”.
The new clinical guideline recommends the use of ABPM to confirm a diagnosis of hypertension,
Antihypertensive drug treatment should be offered to people of any age with stage 2 or severe hypertension.

**Treatment targets**
The goal of antihypertensive treatment for patients under 80 years of age is a BP <140/90mmHg, since there is insufficient evidence to support lower BP targets. If ABPM or HBPM is used to monitor the response to treatment, the aim is to achieve an average daytime BP <135/85mmHg.

The BP target for patients aged 80 years and over who require antihypertensive treatment is 150/90mmHg or less. In this age group, more aggressive treatment can be associated with poorer outcomes. If ABPM or HBPM is used to assess treatment response, the target is an average daytime BP <145/85mmHg.

For people aged under 40 years with stage 1 hypertension (and no evidence of target organ damage, cardiovascular disease, renal disease or diabetes) clinicians should consider seeking specialist evaluation of secondary causes of hypertension and a more detailed assessment of potential target organ damage. This is because 10-year cardiovascular risk assessments can underestimate the lifetime risk of cardiovascular events in this younger group.

**Drug choice**
The NICE guideline recommends that, where possible, treatment should be with drugs taken once daily and that non-proprietary drugs should be prescribed if they are appropriate and minimise cost.

**Step 1** People aged under 55 years with hypertension should be offered step 1 treatment with an angiotensin-converting enzyme inhibitor (ACEI) or a low-cost angiotensin-II receptor blocker (ARB). If an ACEI is prescribed and not tolerated, a low-cost ARB should be offered.

People aged over 55 years, and black people of African or Caribbean family origin of any age, should be offered step 1 treatment with a calcium-channel blocker (CCB). CCBs are now favoured over thiazide-type diuretics because they demonstrate greater cost-effectiveness in most scenarios modelled (except for patients 280 years of age). In addition, the combination of an ACEI plus CCB is more effective at step 2 than ACEI plus thiazide-type diuretic. Therefore, CCBs need to be positioned strongly at step 1 to deliver optimal outcomes at step 2. Where a CCB is unsuitable (eg, because of intolerance, or if there is evidence or high risk of heart failure) a thiazide-like diuretic should be offered as an alternative.

Thiazide-like diuretics, such as chlorothalidone (12.5–25mg once daily) or indapamide (2.5mg once daily) should be offered in preference to conventional thiazide diuretics such as bendroflumethiazide or hydrochlorothiazide. However, the guideline states clearly that people who are already being treated with bendroflumethiazide or hydrochlorothiazide, and whose BP is stable and well controlled, should continue treatment with these drugs.

**Step 2** If BP is not controlled by step 1 treatment, patients should be offered combination treatment with a CCB plus an ACEI or a low-cost ARB. For black people of African or Caribbean family origin of any age, low-cost ARBs are preferred over ACEIs, due to an increased risk of angioedema in this group.

If a CCB is not suitable, a thiazide-like diuretic should be offered.

**Step 3** If, after ensuring optimal step 2 therapy, further treatment is required, a triple combination of an ACEI (or ARB), CCB and thiazide-like diuretic should be used.
Step 4  For patients with resistant hypertension, further diuretic therapy should be considered.

For patients with a serum potassium ≤4.5mmol/L, low-dose spironolactone (25mg once daily) is recommended — particular caution should be exercised for patients with an estimated glomerular filtration rate <60ml/min/1.73m² due to an increased risk of hyperkalaemia.

For people whose serum potassium is higher than 4.5mmol/L, a higher-dose thiazide-like diuretic can be considered. If BP remains uncontrolled despite optimal or maximal tolerated doses of four drugs, expert advice should be obtained.

The four treatment steps are summarised in the Figure below. This guidance has also been incorporated into NICE Pathways, accessible at http://pathways.nice.org.uk/pathways/hypertension.

Putting guidance into practice
Will NICE’s advice work for the NHS?

By A Hodgkinson, DipClinPharm, MRPharmS

The update of the National Institute for Health and Clinical Excellence’s guideline for managing hypertension poses challenges for primary care.

One challenge is capacity, specifically, the use of ambulatory blood pressure (BP) monitoring for diagnosing hypertension. Current capacity will not meet the demand this guideline will create and commissioners will need to address this issue.

Regarding treatment, the guideline introduces several considerable changes, including the use of a calcium-channel blocker, rather than a thiazide, for step 1 treatment for certain patients. Those patients who require a thiazide diuretic will now be offered either chlortalidone (12.5–25mg) or indapamide (2.5mg), rather than bendroflumethiazide. Given that chlortalidone is currently only available in the UK as a 50mg tablet, this could steer prescribers towards the use of standard-release indapamide unless generics manufacturers start to produce 12.5mg and 25mg chlortalidone tablets. Halving and quartering tablets is not practical for patients, even if they do not suffer from dexterity problems, and would not guarantee a consistent daily dose.

On a practical note, I am pleased that NICE recognises that patients who are currently treated with bendroflumethiazide or hydrochlorothiazide, and whose BP is stable and well controlled, do not need to change therapy.

Compared with previous guidance, this update recognises a wider role for ACE inhibitors (ACEIs) and angiotensin-II receptor blockers (ARBs). Also, this is the first guideline that highlights particular situations where an ARB is more appropriate than an ACEI. In some areas, this could pose problems for local and national “Quality, innovation, productivity and prevention” (QIPP) indicators. However, NICE does highlight that a low-cost ARB should be used if an ARB is indicated.

Although the changes highlighted in the treatment algorithms will result in cost pressures on the medicines budget, this should be offset by patient outcomes overall. Primary care and acute trusts will need to work together to ensure prescribing protocols are updated to reflect this new clinical guideline.

Anna Hodgkinson is a senior prescribing adviser for Lambeth Business Support Unit, NHS South East London.