



module 225

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WELCOME to the two hundred and twenty fifth module in the *Pharmacy Magazine* Continuing Professional Development Programme, which revisits hypertension and the new medicine service.

Continuing professional development (CPD) is a statutory requirement for pharmacists. Journal-based educational programmes are an important means of keeping up to date with clinical and professional developments and can form a significant element of your CPD. Completion of this module will contribute to the nine pieces of CPD that must be recorded a year, as stipulated by the GPhC.

Before reading this module, test your existing understanding of the topic by completing the pre-test at www.pharmacymag.co.uk. Then, after studying the module in the magazine, work through the six learning scenarios and post-test on the website.

Record your learning and how you applied it in your practice using the CPD report form available online and on pviii of this module.

Self-assess your learning needs:

- Are you familiar with the NICE pathway for antihypertensive treatment?
- What healthy lifestyle advice would you give to a patient with hypertension during a NMS consultation?

for this module

GOAL:

To provide an overview of the management of hypertension and the role of the new medicine service (NMS) for patients prescribed a new treatment for this condition.

OBJECTIVES:

After completing this module you should be able to:

- Explain the current advice from NICE on the management of hypertension
- Understand how the NMS can benefit a patient with hypertension
- Give appropriate lifestyle advice to patients newly diagnosed with hypertension.

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This module is suitable for use by pharmacists as part of their continuing professional development. After reading this module, complete the learning scenarios and post-test at www.pharmacymag.co.uk and include in your CPD portfolio. Previous modules in the Pharmacy Magazine CPD Programme are available to download from the website.

Hypertension and the new medicine service

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Introduction

Hypertension is a major modifiable risk factor for cardiovascular disease, particularly stroke and myocardial infarction, but also heart failure, chronic kidney disease, cognitive decline and premature death.

In 2010, it was estimated that hypertension causes around 10-11 per cent of all UK deaths¹. A recent study in the *Lancet*, following up on 83,098 initial cardiovascular disease (CVD) presentations for 5.2 years, found that a patient aged 30 years with hypertension has a lifetime risk of CVD of 63 per cent and develops it five years earlier than someone with normal blood pressure².

In most cases there is no identifiable cause (essential hypertension), but in a

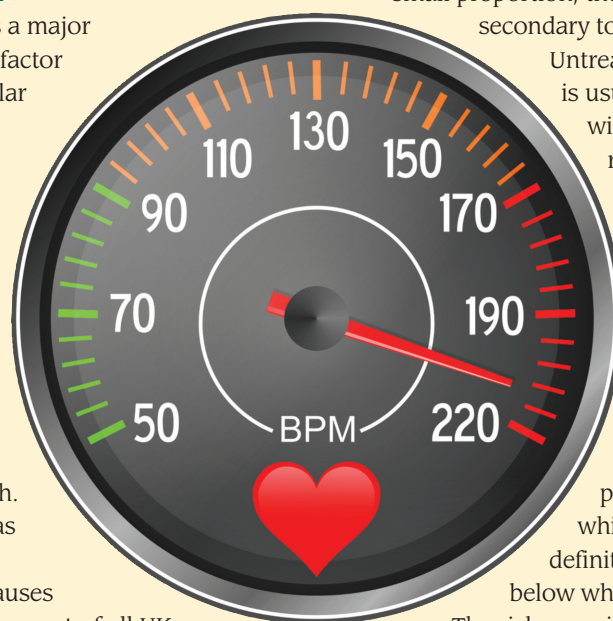
small proportion, the hypertension is secondary to other diseases.

Untreated hypertension is usually associated with a progressive rise in blood pressure. The vascular and renal damage this may cause can culminate in a treatment-resistant state.

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, with each 2mmHg rise in systolic blood pressure associated with a 7 per cent increased risk of mortality from ischaemic heart disease and a 10 per cent increased risk of mortality from stroke.

Prevalence of hypertension is strongly influenced by age – and increasing age is associated with a rise in systolic blood





Patients are now encouraged to monitor their own blood pressure

pressure (as a result of progressive stiffening and loss of compliance of larger arteries), while diastolic blood pressure increases up to about the age of 60 years, plateaus and then falls.

At least one quarter of adults (and more than half of those older than 60 years) have high blood pressure. The clinical management of hypertension is one of the commonest interventions in primary care, accounting for approximately £1 billion in drug costs in 2006³.

Blood pressure is a continuous haemodynamic variable and can be affected by many different things (e.g. time of day, posture and acute changes in temperature). Given these variables, diagnosis of hypertension on individual clinic measurements can be problematical and one of the biggest changes in the NICE hypertension guideline of 2011 was that a diagnosis of primary hypertension should be confirmed using 24-hour ambulatory blood pressure monitoring (ABPM) as gold standard. This also eliminates the phenomenon of 'white coat' hypertension.

When interpreting the results of ABPM it should be remembered that average daytime blood pressure values are approximately 10/5mmHg lower than clinic measurements.

The guideline also gives a framework for the use of home blood pressure monitoring (HBPM). For the first time, patients are empowered to become more involved in the monitoring and care of their hypertension, although validated blood pressure monitors as recommended by the British Hypertension Society⁴ should be used.

NICE hypertension definitions

• Stage 1 hypertension

Clinic blood pressure is 140/90mmHg or higher **and** subsequent ABPM daytime average or HBPM average blood pressure is 135/85mmHg or higher

• Stage 2 hypertension

Clinic blood pressure is 160/100mmHg or higher **and** subsequent ABPM daytime average or HBPM average blood pressure is 150/95mmHg or higher

Reflection exercise 1

- Have you had training to take blood pressure measurements?
- Do you know how to make sure your blood pressure monitor is operating accurately?
- Can you use an automated blood pressure monitor to measure the blood pressure for someone who has a pulse irregularity (e.g. atrial fibrillation)?

• Severe hypertension

Clinic systolic blood pressure is 180mmHg or higher **or** clinic diastolic blood pressure is 110mmHg or higher.

Initiating treatment

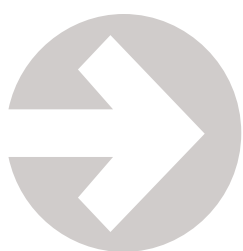
The aim of blood pressure treatment is to reduce the risk of death or disability from CVD. According to the NICE guideline, antihypertensive drug treatment should be prescribed to:

- **People under 80 years with stage 1 hypertension** who have one or more of the following:
 - Target organ damage (identified using the following tests: proteinuria and haematuria, plasma glucose, electrolytes, creatinine, estimated glomerular filtration rate, total and high density lipoprotein cholesterol, fundal examination, 12-lead electrocardiogram and CVD risk assessment)
 - Established cardiovascular disease
 - Renal disease
 - Diabetes
 - A 10-year cardiovascular risk equivalent to 20 per cent or greater (calculated using a validated risk assessment tool).
- **People of any age with stage 2 hypertension**
- **People under 40 years with stage 1 hypertension** and no evidence of target organ damage, cardiovascular disease, renal disease or diabetes, after 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 these people.

Monitoring treatment and blood pressure targets

Recommendations regarding how treatment should be monitored are as follows:

- Use clinic blood pressure measurements to monitor the response to antihypertensive treatment with lifestyle modifications or drugs
- Aim for a target clinic blood pressure below 140/90mmHg in people under 80 years of age with treated hypertension



new medicine service continues
The NMS has been extended until April 2015 pending the results of an evaluation study



Reflection exercise 2

Look at the list of approved blood pressure meters on the British Hypertension Society website (www.bhsoc.org).

Which would be most suitable:

- To use in your pharmacy?
- To recommend to patients for home blood pressure monitoring?

measurements. If the difference between arms is greater than 20mmHg, the patient should be referred to the GP as this may be a sign of arteriosclerosis

- Take three readings at one-minute intervals. The third reading should be the 'result'
- If an irregular pulse is detected, the reading will not be accurate and the patient should be referred for a manual blood pressure measurement. These patients are likely to have atrial fibrillation and therefore are at increased risk of stroke.

It is important to bear in mind that a single antihypertensive agent is unlikely to provide more than a 10/5mmHg reduction although this will lower risk of CHD by 25 per cent and stroke by 35 per cent⁵.

The new medicine service

The new medicine service (NMS)⁶ was developed to improve adherence to medicines newly prescribed to people with the following long-term conditions:

- Asthma and COPD
- Type 2 diabetes
- Antiplatelet/anticoagulant therapy
- Hypertension.

NHS England has agreed that the NMS will continue pending the outcome of the Department of Health's funded evaluation of the service. Pharmacy contractors can therefore continue to provide the service until further notice is given or until April 2015.

Pharmacists should engage with local GPs to ensure that the service is seen as complementary and supportive to the GP, rather than being repetitive or in competition, and the goals and expectations of the service should be clarified with patients.

While possessing a knowledge of the treatments for the four long-term conditions, pharmacists should also have a clear appreciation of the NICE medicines adherence guidance⁷ and use evidence-based approaches during patient interactions to improve their chances of developing a concordant relationship with patients.

Patients can be referred by the prescriber or identified opportunistically by pharmacy staff and need not be regular patients of the pharmacy.

It is hoped that successful implementation of the NMS will:

- Improve patient adherence and lead to better health outcomes
- Increase patient engagement with their condition and medicines by supporting them in making decisions about their treatment and self-management
- Reduce medicines wastage
- Reduce hospital admissions due to adverse events from medicines
- Lead to increased Yellow Card reporting of adverse reactions to medicines by pharmacists and patients, thereby supporting improved pharmacovigilance
- Receive positive assessment from patients
- Improve the evidence base on the effectiveness of the service
- Support the development of outcome and/or quality measures for community pharmacy.

If a patient is newly prescribed one of the recommended hypertensive medicines (see Table 1), he/she will be eligible to receive the service, subject to the pharmacist being able to determine that the medicine is being used to treat hypertension in those circumstances where a medicine can be used to treat multiple conditions.

When an approved medicine for hypertension is prescribed for the first time, the pharmacist must offer the patient opportunistic advice on healthy living/public health topics in line with the promoting healthy lifestyles essential service and eligible patients can be recruited to the NMS at this time by completing the consent form.

Interventions can be carried out face-to-face in a consultation area or, if necessary, by telephone (ensuring suitable patient confidentiality can be maintained). The pharmacist can assess adherence, address problems, and provide advice and support at the first intervention meeting (one to two weeks after first dispensing) before arranging a follow-up meeting two to three weeks later.

Table 1: Hypertension medicines included in the NMS

- Thiazides and related diuretics
- Beta-adrenoceptor blocking drugs
- Vasodilator antihypertensive drugs
- Centrally acting antihypertensive drugs
- Alpha-adrenoceptor blocking drugs
- Drugs affecting the renin-angiotensin system
- Calcium channel blockers

Measuring blood pressure

A suitable procedure for pharmacy using a BHS approved automated blood pressure monitor is:

- Outline the monitoring procedure briefly. In particular warn the patient of the minor discomfort caused by inflation and deflation of the cuff and tell the patient that the measurement may need to be repeated several times
- Seat the patient for a minimum of five minutes before measuring their blood pressure
- Perform the check with the patient seated in a warm, quiet, comfortable place where you will not be disturbed. Do not let the patient cough. Talking or moving while taking the reading will increase the pressure, as will sitting with crossed legs and a full bladder
- If the patient has symptoms of postural hypotension, measure blood pressure while both standing and sitting
- When fitting a cuff you are very close to the patient and should be in view of other staff. Use a chaperone if necessary
- Ask the patient to remove tight or restrictive clothing from the arm and support the arm at heart level ensuring the hand is relaxed and arm out-stretched
- Use the correct size of cuff. The standard cuff is for an arm circumference of 22-32cm, a small cuff for an arm circumference of 18-22cm and a large cuff for an arm circumference of 32-45cm
- The centre of the bladder should be applied over the line of the brachial artery. The lower edge of the bladder should be 2-3cm above the bend of the elbow
- Blood pressure should initially be measured in both arms as patients may have large differences between arms. The arm with the higher value should be used for subsequent



'Pharmacists should only refer patients back to the GP in a minority of circumstances'



A record should be made of the intervention and follow-up interviews, and these will need to be kept for two years. Patients who participate in the NMS will not normally be eligible for a medicines use review (MUR) within six months unless there is a specific reason⁸.

Certain drugs (e.g. corticosteroids, erythropoietin, interferon-alfa, moclobemide and oestrogens) can increase blood pressure – so it is important to examine the patient's drug regimen to ensure concurrent medication is not causing a problem.

Dispersible tablet formulations of medicines and many antacids can contain significant amounts of sodium, which can increase blood pressure, as can NSAIDs. It is therefore necessary to check if the patient is purchasing any of these items OTC while taking their antihypertensive medication.

Antihypertensive drugs

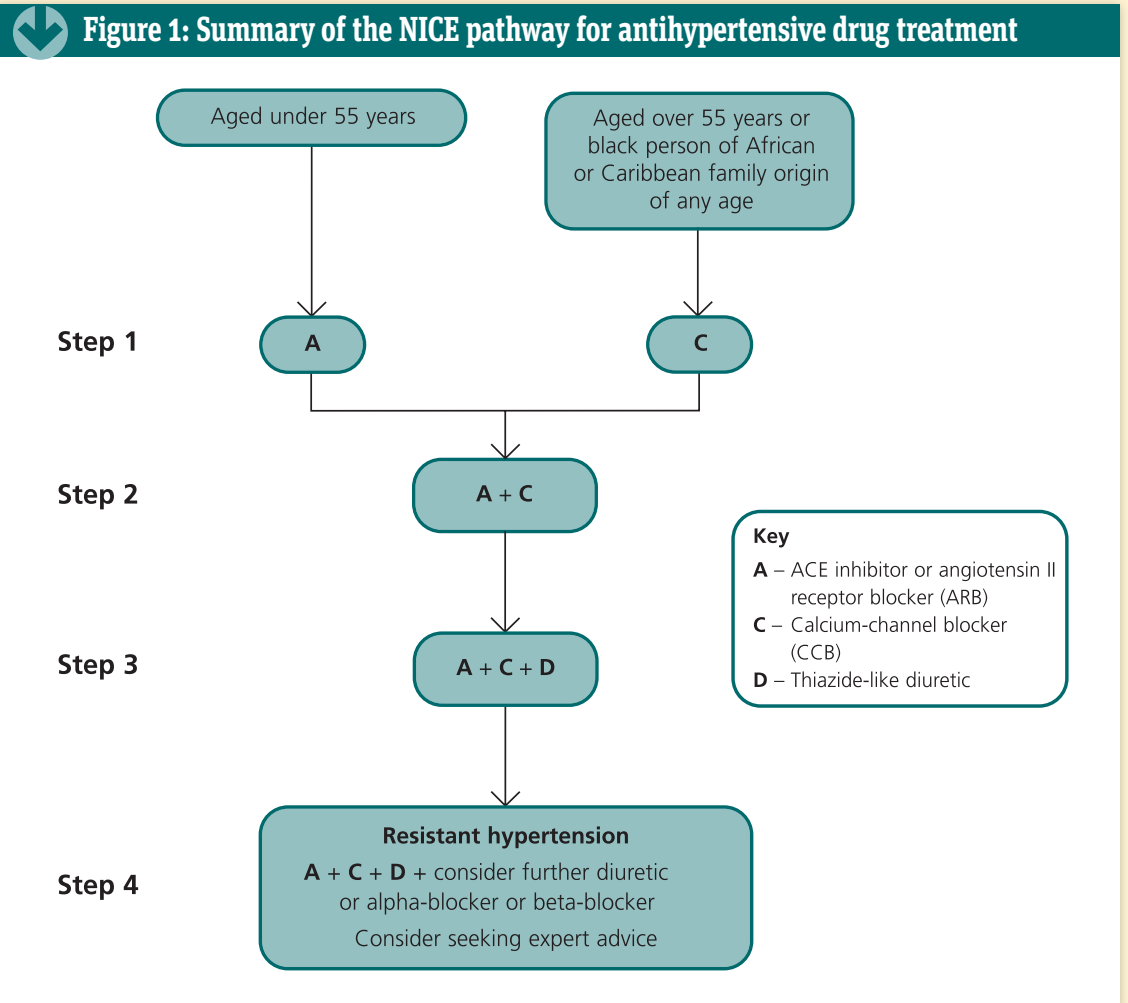
The stepped approach to antihypertensive drug treatment should be used for prescribing³ (see Figure 1). In a change from the previous version, NICE CG127 says the focus should be on **calcium channel blockers** when treating hypertension in people over 55 years of age. This is based on evidence of event reduction and, importantly, cost-effectiveness.

Thiazide-like diuretics represent an alternative for those with heart failure or the very elderly who are intolerant of calcium channel blockers. In addition, the evidence around the choice of thiazide-like diuretics suggests that chlortalidone or indapamide may be more effective than bendroflumethiazide. The guideline offers advice on treating hypertension in the very elderly (over 80 years of age) and a cost-effectiveness analysis shows that the cost of treating hypertension is now cheaper than doing nothing.

Unless it is necessary to lower the blood pressure urgently, there should be an interval of at least four weeks to determine response. Before moving to the next step in treatment, there should also be a review to ensure there is adherence to the currently prescribed antihypertensive.

Step 1

• Offer step 1 treatment to people aged under 80 years with stage 1 hypertension and one or more of the following:



- Target organ damage
- Established CVD
- Renal disease
- Diabetes
- 10-year CVD risk equivalent to 20 per cent or more
- Offer step 1 treatment to people of any age with stage 2 hypertension
- People under 55 years should be offered an angiotensin converting enzyme (ACE) inhibitor or a low-cost angiotensin receptor blocker. If an ACE inhibitor is prescribed but not tolerated (e.g. because of cough), offer a low-cost angiotensin receptor blocker. These drugs are contraindicated in pregnancy. Patients in whom hypertension is caused by the renin factor are likely to be younger; hence this recommendation
- People aged over 55 years and black people of African or Caribbean family origin of any age should be offered a calcium channel blocker.

- If a calcium channel blocker is not suitable (e.g. because of oedema or intolerance), or if there is evidence of heart failure or a high risk of heart failure, offer a thiazide-like diuretic
- If diuretic treatment is to be initiated or changed, offer a thiazide-like diuretic, such as chlortalidone (12.5–25mg once daily) or indapamide (1.5mg modified-release once daily or 2.5mg once daily) in preference to a conventional thiazide diuretic such as bendroflumethiazide or hydrochlorothiazide. Differences in diuretic effectiveness relate largely to differences in dose
- Treatment for people who are already on bendroflumethiazide or hydrochlorothiazide and whose blood pressure is stable and well controlled should be continued
- Beta-blockers are not a preferred initial therapy for step 1. However they may be considered in younger people, particularly:



Reflection exercise 3

- Do you know the different stages of hypertension?
- Have you read NICE clinical guideline 127?

- Those with an intolerance or contraindication to ACE inhibitors and angiotensin receptor blockers
- Women of child-bearing potential
- People with increased sympathetic drive.

Avoid using beta-blockers with thiazides as, in combination, they increase diabetes risk.

Step 2

- Offer treatment with a calcium channel blocker in combination with either an ACE inhibitor or angiotensin receptor blocker (low cost)
- If a calcium channel blocker is not suitable for step 2 treatment (e.g. because of oedema or intolerance), or if there is evidence of heart failure or a high risk of heart failure, offer a thiazide-like diuretic
- For black people of African or Caribbean family origin, consider an angiotensin receptor blocker in preference to an ACE inhibitor, in combination with a calcium channel blocker
- If a beta-blocker was used at step 1, add a calcium channel blocker rather than a thiazide-type diuretic to reduce the person's risk of developing diabetes
- Review drug treatment to ensure at optimal doses before considering step 3.

Step 3

- If treatment with three drugs is required, the combination of ACE inhibitor or angiotensin receptor blocker, calcium channel blocker and thiazide-like diuretic should be used
- Clinic blood pressure that remains higher than 140/90mmHg after treatment with the optimal or best tolerated doses of an ACE inhibitor or angiotensin receptor blocker plus a calcium channel blocker plus a diuretic is regarded as resistant hypertension. Adding a fourth antihypertensive drug should be considered and/or expert advice sought.

Step 4

- Further diuretic therapy should be considered with low-dose spironolactone (25mg once daily) if the blood potassium level is 4.5mmol/L or lower. Use with particular caution in people with a reduced estimated glomerular filtration rate because they have an increased risk of hyperkalaemia.

Spironolactone does not have UK marketing authorisation for this indication so informed consent should be obtained and documented.

Amiloride is a well-tolerated alternative to spironolactone and is licensed for "potassium conservation when used as an adjunct to thiazide or loop diuretics for hypertension", although not recommended by NICE. It is important to ensure serum potassium is regularly monitored if potassium-sparing diuretics are prescribed

- Higher-dose thiazide-like diuretic treatment should be considered if the blood potassium level is higher than 4.5mmol/L. Patients with impaired renal function need higher-dose diuretics (e.g. bendroflumethiazide 20mg).
- When using further diuretic therapy, monitor blood sodium and potassium and renal function within one month and repeat as required thereafter
- If further diuretic therapy is not tolerated, or is contraindicated or ineffective, consider an alpha- or beta-blocker
- If BP remains uncontrolled with the optimal or maximum tolerated doses of four drugs, seek expert advice if it has not yet been obtained.

Choosing an antihypertensive

The NICE guideline recommends that prescribers adhere to the following guidelines when choosing an antihypertensive treatment:

- Where possible, recommend treatment with drugs taken only once a day

- Prescribe non-proprietary drugs where these are appropriate and minimise cost
- Offer people with isolated systolic hypertension (systolic blood pressure 160mmHg or more) the same treatment as people with both raised systolic and diastolic blood pressure
- Offer people aged 80 years and over the same antihypertensive drug treatment as people aged 55-80 years, taking into account any co-morbidities
- Offer women of child-bearing potential antihypertensive drug treatment in line with the recommendations on hypertension in pregnancy made in NICE clinical guideline 107⁹.

Discussing antihypertensives during a NMS consultation

Antihypertensives differ little in efficacy, so acceptability in terms of adverse effects often becomes the key driver in deciding what drugs to use, together with patient co-morbidities. The number of tablets the patient has to take, together with prescription charges (if the patient pays these), may affect adherence to treatment.

The key principles of the NICE guideline on medicines adherence⁷ state that healthcare professionals should:

- Adapt their consultation style to the needs of individual patients so that all patients have the opportunity to be involved in decisions about their medicines at the level they wish
- Establish the most effective way of communicating with each patient and, if necessary, consider ways of making information accessible and understandable (e.g. using pictures, symbols, large print, different languages, an interpreter or a patient advocate)
- Offer all patients the opportunity to be involved in making decisions about prescribed medicines. Establish what level of involvement in decision-making the patient would like
- Be aware that increasing patient involvement may mean that the patient decides not to take, or to stop taking, a medicine. If it is the healthcare professional's view that this could have an adverse effect, then the

Table 2: Common side-effects of antihypertensives

Drug class	Side-effects
ACE inhibitors	Irritating cough (this can happen several months after initiation of therapy and stops within a few weeks of ceasing treatment). Hypotension, renal impairment, rash with associated rhinitis, pancreatitis, sore throat, angioedema (onset may be delayed; commoner in Afro-Caribbean patients)
Alpha-blockers	Nasal stuffiness Postural hypotension
Angiotensin receptor blockers	Hypotension, hyperkalaemia, angioedema, rhinitis, pharyngitis
Beta-blockers	Tiredness (due to reduced sympathetic outflow), heavy legs (due to blockade of beta-receptors in skeletal muscle), bradycardia, peripheral vasoconstriction causing cold hands and feet, bronchospasm due to beta-blockade in the bronchi, erectile dysfunction, masking of hypoglycaemia
CCBs: vasodilating	Ankle (and sometimes hand) swelling; lower doses may be tolerated Headaches, flushing, reflex tachycardia
CCBs: diltiazem, verapamil	Bradycardia, constipation (less with diltiazem), gum hyperplasia
Centrally acting drugs	Somnolence
Thiazide-like diuretics	Rarely hypokalaemia, erectile dysfunction. Diuretics may cause cramp as a result of electrolyte imbalances but this would have to be severe. Potentially thiazides may cause continence problems as a result of their mode of action but this is probably unlikely as they are mild diuretics and the hypotensive effect is probably not due to fluid loss. High dose: postural hypotension



information provided to the patient on risks and benefits and the patient's decision should be recorded

- Accept that the patient has the right to decide not to take a medicine, even if you do not agree with the decision, as long as the patient has the capacity to make an informed decision and provided with the information needed to make such a decision
- Be aware that patients' concerns about medicines, and whether they believe they need them, affect how and whether they take their prescribed medicines
- Offer patients information that is relevant to their condition, possible treatments and personal circumstances, and that is easy to understand and free from jargon
- Recognise that non-adherence is common and that most patients are non-adherent sometimes. Adherence should be routinely assessed in a non-judgemental way whenever prescribing, dispensing and reviewing medicines.

If monitoring blood pressure in the pharmacy, be encouraging when blood pressure reductions are achieved (even if ideal pressures are not reached) and ask patients to bring their medicines with them when they return for the NMS to check if they have been taking them. Be on the look-out for pristine packs and full blisters.

Side-effects often determine whether or not to continue taking an antihypertensive. Common problems to look out for can be found in Table 2.

Generally most antihypertensives are well tolerated. However patients intolerant of all agents, without exhibiting typical side-effects, may actually not want to take the tablets.

It should also be remembered that the beneficial effects of many antihypertensives, particularly ACE inhibitors, angiotensin receptor blockers, beta-blockers and diuretics, can be antagonised by the fluid-retaining effects of corticosteroids and NSAIDs.

Healthy lifestyle advice

Lifestyle advice should be included in any NMS consultation as a healthy diet and regular exercise may reduce or remove the need for

Healthy lifestyle advice for people with hypertension

Activity

- People should aim to be active every day, doing at least 150 minutes of moderate intensity activity a week in bouts of at least 10 minutes (i.e. activity that makes a person feel out of breath, such as heavy housework, brisk walking, dancing or swimming)
- People should do activities to increase muscle strength (e.g. carrying shopping) twice a week
- For older adults (over 65 years), any physical activity will be beneficial, gradually built up
- 30-60 minutes aerobic exercise three to five times a week can produce a 2-3mmHg reduction in blood pressure

Alcohol

- 33,000 deaths a year are related to alcohol (including accidents)
- Men: maximum three to four units a day; women: maximum two to three units a day
- Pregnancy: alcohol should be avoided, especially in first trimester
- One unit: 10ml or 8mg of pure alcohol i.e. 25ml whisky, a third of a pint of beer or half a glass of wine (approx. 85ml). This does vary depending on alcohol percentage
- Establish someone's alcohol consumption and encourage a reduced intake if they drink excessively because this can reduce blood pressure. A structured alcohol reduction programme can reduce blood pressure by 3-4mmHg
- If monitoring blood pressure, remember that anyone who has been on an alcoholic binge in the previous 24 hours can have 'false hypertension' due to portal vein congestion, tachycardia and an effect on the renal angiotensin aldosterone system (RAAS)

Healthy diet

- Starchy foods should form one-third of the diet
- 15 per cent of calories a day should come from protein. Include two portions of fish a week
- Reduce sugar and saturated fat intake
- Five portions fruit/vegetables is recommended a day. Add fruit to cereal; canned and frozen fruit and vegetables are all beneficial; use carrots, cucumber and peppers as snacks
- Reduce salt intake as salt is specifically implicated in hypertension – no more than 6g a day (2.4g sodium) or use a salt substitute, but beware potassium-containing substitutes in patients taking ACE inhibitors and angiotensin receptor blockers. Reducing intake to less than 6g a day can reduce blood pressure by 2-3mmHg, although effects diminish with time over two to three years
- Ensure adequate fluid intake – approximately six to eight glasses of water a day
- Discourage excessive consumption of coffee and other caffeine-rich products as more than five cups of coffee a day can increase blood pressure by 2/1mmHg
- A healthy low calorie diet can produce a 5-6mmHg reduction in blood pressure

Smoking

- 100,000 deaths a year are linked to smoking
- Offer people who smoke advice and help to stop smoking because, although it will have no effect on blood pressure, it will reduce CVD risk
- Signpost smokers to NHS stop smoking services if you do not offer a smoking cessation service¹¹

Stress

- Relaxation therapies (e.g. yoga, meditation, mindfulness) can reduce blood pressure and people may wish to pursue these as part of their treatment. Signpost to NHS Choices for Ten Stress Busters¹²
- Structured relaxation therapy can give a 3-4mmHg reduction in blood pressure but availability of services may vary

Weight

- Normal: BMI 20-25; overweight: BMI 25-29.9; obese: BMI over 30 (may be ethnic variations)
- Over 60 per cent of adults are classed as overweight or obese. Obese patients can have increased blood pressure as a result of their weight
- Each 1kg weight loss can reduce systolic blood pressure by 2.5mmHg and diastolic blood pressure by 1.5mmHg

antihypertensive therapy in some patients. Advice can be provided on diet and nutrition, alcohol consumption, smoking status, physical activity

and weight management (see panel)¹⁰. In all cases pharmacists should offer appropriate guidance and written or audiovisual materials to promote

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lifestyle changes and signpost to appropriate healthcare professionals and services if necessary.

Giving feedback to GPs

It is important that doctors understand why pharmacists should be actively involved in providing the new medicine service¹³.

Explain that the NMS involves an intervention in which the pharmacist will provide advice, information and reassurance to address patients' concerns during the first month of a new treatment. This intervention has been shown to improve adherence to medication.

Patients should be made aware of the intervention and follow-up stages and when these conversations will take place.

Research shows that non-adherence to medications for a long-term condition develops rapidly, with 30 per cent of patients being non-adherent at 10 days. Studies have also shown that patients receiving support from a pharmacist when starting a new medicine, to complement advice given by the prescriber, are more likely to still be taking it as prescribed at 28 days¹³.

The research also demonstrates that the number of patients with medicine-related problems reduced significantly. Better adherence to medication is associated with better clinical outcomes¹³.

This would be particularly beneficial for patients prescribed a new medicine for hypertension to ensure that they are in control of how they wish to take the medicine and what they wish to know about that medicine. It would enable the patient to be well informed and responsible for his/her own health and thereby be more likely to continue taking the medication. This would prevent:

- The need to add on another medicine or to increase the dose of a current medicine unless absolutely necessary
- Wastage due to unused medicines and also

Reflection exercise 3

- What factors would encourage you to take an antihypertensive medicine regularly?
 - Which adverse effects would be most important to you?
 - What would you hope to gain from the treatment?
- Translate your answers into approaches you can use to encourage patients to take their antihypertensive medicines.

unnecessary increases in dosage, which could lead to potentially dangerous hypotensive episodes, maybe resulting in falls (especially in the elderly).

Pharmacists should only refer patients back to their GP in a minority of circumstances as the NMS is designed to use their clinical and practical knowledge of medicines to assist patients to improve adherence. However possible reasons for referral could be:

- Lack of efficacy of the medication
- Adverse drug reaction
- Difficulties with the formulation
- Difficulties with the dose regimen.

These are all situations pharmacists are unlikely to resolve without the prescription being changed.

Practical points

- Brief your staff. The pharmacy team is often in a much better position than pharmacists when it comes to 'selling' services, so use your team to the greatest advantage
- Make sure that local GPs and nurses know about the service so that they can encourage patients to enquire about it. You may wish to inform local healthcare teams about specific drugs or conditions you are targeting and give them information leaflets to pass on to patients. This gives you an opportunity to attract more NMS patients
- Have leaflets available so that if patients are not interested when first approached, they can read about the service and return for a consultation when they are comfortable to do so.

By becoming actively involved in providing the NMS, particularly for newly prescribed medicines for hypertension, community pharmacists will help the NHS reduce the cost of prescribing antihypertensives by promoting cost-effective prescribing and maximising adherence.

Future developments

The NMS and MUR services do not currently fit within local and national care pathways for patients with long-term conditions. In order to develop medicines optimisation services PSNC believes that the two services could be focused on one or more patient cohorts (such as respiratory disease), with both services being integrated for individual patients. This would allow community pharmacy support to be embedded within disease management pathways and NICE quality standards.

For instance, the NICE quality standard for asthma requires patients to be offered an annual review including an assessment of their medicines. With the addition of suitable monitoring equipment, this review could be carried out in a community pharmacy. With the patient cohort being registered, outcome measures for the community pharmacy service could be measured and also rewarded where specific outcomes are achieved.

In addition to hypertension, other conditions suitable for community pharmacy monitoring include COPD, Parkinson's disease, type 2 diabetes and pain management. The potential for pharmacists to play a greater role in long-term condition management is therefore enormous.

Resources

- Blood Pressure Association: www.bloodpressureuk.org
- British Hypertension Society: www.bhsoc.org
- British Heart Foundation: www.bhf.org.uk



Pharmacy Magazine's CPD modules are available on Cegedim Rx's PMR systems, Pharmacy Manager and Nexphase. Just click on the 'Professional Information & Articles' button within Pharmacy KnowledgeBase and search by therapy area. Please call the Cegedim Rx helpdesk on 0844 630 2002 for further information.



Use this form to record your learning and action points from this module on Hypertension and the new medicine service and include it in your CPD portfolio and record online at www.uptodate.org.uk

HYPERTENSION AND THE NMS

assessment questions

1. Which statement is FALSE regarding the NMS?

- a. You need the patient's consent
- b. Interviews can be conducted face-to-face or by telephone at both the intervention and follow-up stages
- c. A NMS can be carried out for all newly prescribed medicines for any of the eligible long-term conditions/therapies at any time
- d. You need a copy of the patient's clinical test results

- b. Spironolactone is licensed for use in hypertension
- c. Hypokalaemia can occur with ARBs
- d. A common side-effect of amlodipine is bradycardia

2. A 50-year-old Caucasian man is diagnosed with hypertension. What should be the first drug of choice?

- a. An ACE inhibitor
- b. An ARB
- c. A calcium channel blocker
- d. A beta-blocker

5. A diuretic is normally added at step 3 of hypertension therapy. What is the recommended diuretic and why?

- a. Indapamide or chlortalidone because they are more cost-effective
- b. Bendroflumethiazide because it is more cost-effective
- c. Indapamide or chlortalidone because there is evidence of benefit on clinical outcomes
- d. Bendroflumethiazide because there is evidence of benefit on clinical outcomes

3. Which statement about hypertension is TRUE?

- a. The target clinic blood pressure for patients under 80 years is less than 140/80mmHg
- b. Diagnosis of primary hypertension should be confirmed using 24-hour ABPM as gold standard
- c. The first-line antihypertensive in people of Afro-Caribbean origin should be an ACE inhibitor
- d. A patient prescribed a beta-blocker for migraine is eligible for the NMS

6. Which is a compelling reason to stop taking ACE inhibitors?

- a. Angioedema
- b. Dry irritating cough
- c. Postural hypotension
- d. Rhinitis

7. Which has NOT been shown to increase blood pressure?

- a. NSAIDs
- b. Oestrogens
- c. Calcium and vitamin D
- d. Corticosteroids

4. Which is the TRUE statement about antihypertensives?

- a. Thiazide-like diuretics can cause hyperglycaemia

8. How often should patients on a new antihypertensive have a face-to-face review?

- a. Every 12 months
- b. Every three months
- c. Every six months
- d. Every month

Activity completed. (Describe what you did to increase your learning. Be specific) *(ACT)*

Date:

Time taken to complete activity:

What did I learn that was new in terms of developing my skills, knowledge and behaviours? Have my learning objectives been met? * *(EVALUATE)*

How have I put this into practice? (Give an example of how you applied your learning) Why did it benefit my practice? (How did your learning affect outcomes?) *(EVALUATE)*

Do I need to learn anything else in this area? (List your learning action points. How do you intend to meet these action points?) *(REFLECT & PLAN)*

* If as a result of completing your evaluation you have identified another new learning objective, start a new cycle. This will enable you to start at Reflect and then go on to Plan, Act and Evaluate. This form can be photocopied to avoid having to cut this page out of the module. Complete the learning scenarios at www.pharmacymag.co.uk

ENTER YOUR ANSWERS HERE Please mark your answers on the sheet below by placing a cross in the box next to the correct answer. Only mark one box for each question. Once you have completed the answer sheet in ink, return it to the address below together with your payment of £3.75. Clear photocopies are acceptable. **You may need to consult other information sources to answer the questions.**

- | | | | | | | | | | | | | | | | |
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| 1. | a. <input type="checkbox"/> | 2. | a. <input type="checkbox"/> | 3. | a. <input type="checkbox"/> | 4. | a. <input type="checkbox"/> | 5. | a. <input type="checkbox"/> | 6. | a. <input type="checkbox"/> | 7. | a. <input type="checkbox"/> | 8. | a. <input type="checkbox"/> |
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Processing of answers
Completed answer sheets should be sent to Precision Marketing Group, Precision House, Bury Road, Beyton, Bury St Edmunds IP30 9PP (tel: 01284 718912; fax: 01284 718920; email: cpd@precisionmarketinggroup.co.uk), together with credit/debit card/cheque details to cover administration costs. This assessment will be marked and you will be notified of your result and sent a copy of the correct answers. The assessors' decision is final and **no correspondence** will be entered into. **225**