Hypertension in Adults: Investigation and Initial Management in GP and community pharmacy settings

Abbreviations:
ABPM – Ambulatory Blood Pressure Monitoring
BP – Blood Pressure
CVD – Cardiovascular Disease
HBPM – Home Blood Pressure Monitoring
TOD – Target Organ Damage

Offer lifestyle advice and continue to offer it periodically

Use clinical judgement for people with frailty or multimorbidity

Patient presentation (Click for more info)

Community pharmacy

Pharmacy referral: GP refers to local pharmacy regsitered for the service of patient choice OR GP practice sends text to patient to attend pharmacy of their choice (Click for more info)

The GP practice identifies patient/s that require a blood pressure clinic check or ABPM as part of the hypertension service.

General practice

BP Measurement (Click for more info)

ABPM

Normotensive <140/90

Advice on healthy behaviours and give patients a record of their results

Inform patient of next step

Encourage BP measurement at least every 5 years and more frequently if BP close to 140/90.

Result to be included in weekly summary report sent to GP practice.

(Click for more info)

≥180/120 ESCALATE

Contact GP practice by phone for same day appointment or if unable to contact GP practice refer to urgent care/ A&E for same day appointment.
Refer directly to A&E if red flag symptoms

Give patient a record of their result and inform patient of next step.

Send results immediately to GP practice.

(Click for more info)

High blood pressure 140/90 to 179/119

Advice on healthy behaviours

Offer ABPM within a few days. Send result to GP practice along with ABPM result after it is completed.

If ABPM declined advise patient to see GP practice within 3 weeks and send result immediately. Consider suggesting patient purchases home BP monitor if appropriate.

Give patient a record of results and inform of next step.

(Click for more info)

Normotensive <135/85

Advice on healthy behaviours and give patients a record of their results

Inform patient of next step

Result to be included in weekly summary report to GP practice.

(Click for more info)

135/85 to 149/94 Stage 1 Hypertension

Patients referred to GP practice to be seen within 3 weeks.

Patient to be given a record of their results and informed of next step.

Send results immediately to GP practice.

150/95 - 169/114 Stage 2 Hypertension

ESCALATE

Refer patient to see GP within 7 days, unless the patient has physical symptoms who should see a medical professional sooner.

Give patient a record of their result and Inform patient of next step.

Send results immediately to GP practice.

≥170/115: Severe Hypertension

ESCALATE

Contact GP practice by phone for same day appointment or if unable to contact GP practice, refer to urgent care/ A&E for same day appointment.
Refer directly to A&E if red flag symptoms.

Give patient a record of their result and inform patient of next step.

Send results immediately to GP practice

(Click fore more info)

History and examination (Click for more info)

BP Measurement (Click for more info)

140/90 to 179/119 mmHg (Click for more info)

ABPM or HBPM (Click for more info)

ABPM via community pharmacy

ABPM via GP

Home BP pathway

Assess CVD risk and Target Organ Damage : Investigations (Click for more info)

<140/90 mmHg normotensive

· Check BP at least every 5 years and more often if close to 140/90 mmHg or high-risk patient.
· If evidence of target organ damage, damage such as left ventricular hypertrophy, albuminuria or proteinuria, consider carrying out investigations for alternative causes.
-Consider lifestyle advice*

≥180/120 (Click for more info)

Refer same day if red flags or hypertensive crisis

Assess for target organ damage (TOD) asap.
If TOD, consider starting drug treatment* immediately without ABPM/HBPM.
If no target organ damage, confirm diagnosis by:
– repeating clinic blood pressure measurement within 7 days, or
– considering monitoring using ABPM (or HBPM) and ensuring a clinical review within 7 days

Click for more info

Send results to general practice

Review with results ABPM/HBPM

<135/85 **Normotensive**

- Check BP at least every 5 years and more often if clinic BP close to 140/90 mmHg or other risk factors.
-If evidence of target organ damage, consider alternative causes.
-Consider lifestyle advice

135/85-149/94 **Stage 1 Hypertension**

Age >80 with clinic BP >150/90 mmHg: offer lifestyle advice and consider drug treatment

Age <80 with 1 or more of TOD, CVD, renal disease, diabetes or 10-year CVD risk ≥10%: offer lifestyle advice and consider drug treatment

Age <60 with 10-year CVD risk <10%: offer lifestyle advice and consider drug treatment

Age <40: consider specialist evaluation of secondary causes and assessment of long-term benefits and risks of treatment

(Click for more info)

≥150/95 **Stage 2 Hypertension**

Offer lifestyle advice and drug treatment

Age <40: consider specialist evaluation of secondary causes and assessment of long-term benefits and risks of treatment.

(Click for more info)

(Click for more info)

· Discuss the person's CVD risk and preferences for treatment, including no treatment (NICE's patient decision aid)
· Offer annual review of care.
· Support adherence to treatment
· Offer lifestyle and occupational advice
· Monitor treatment and blood pressure targets (NICE)

(Click for more info)

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Patient Presentation

Patients may present symptomatically (see below), but healthy asymptomatic adults aged 40+ should have their BP checked at least once every five years, usually as part of the NHS health check. Clinician should consider monitoring patients BP more frequently if:

- their blood pressure is borderline (close to 140/90 mmHg)
- the patient is at higher risk of hypertension e.g.
    - age (the risk of developing high BP increases with age)
    - a family history of high BP
    - being of African or Caribbean origin
    - being overweight or obese
    - poor diet
    - smoking
    - other lifestyle factors e.g. alcohol, exercise

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Pharmacy referral

For full details of the advanced service specification for the NHS community pharmacy hypertension case-finding advanced service (NHS Community Pharmacy Blood Pressure Check Service) it is recommended to review: ***NHS England → NHS Community Pharmacy hypertension case-finding advanced service***. This includes a detailed community pharmacy flowchart.

Practices can refer to local pharmacies registered for the community pharmacy hypertension case-finding advanced service. To check if a pharmacy is registered, review the regularly updated map: ***Health checks and screening – Hertfordshire and West Essex NHS ICB.*** Clicking the top left icon on the toolbar will provide a list:

The pharmacy contacts the patient and arranges an appointment for the blood pressure check or ABPM depending upon the request from GP practice. Pharmacy needs to proactively contact the patient (three attempts should be made). Patients may present at the pharmacy before pharmacy contacts the patient –pharmacy team should be aware to check any referrals on PharmOutcomes and the shared nhs.net mailbox when getting requests from patients having been referred for a blood pressure check or ABPM.

Patient presents at pharmacy. Pharmacy staff arrange an appointment for the patient for a blood pressure check or ABPM depending upon request from GP practice. Pharmacy checks text message to confirm referral from GP practice and records as evidence for audit.

Please note the service should be operational during all your opening hours; all regular pharmacy team members should be aware of the service and know how to assess referrals and locum pharmacists must deliver the service and have a responsibility to action the service according to the specification.

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History and Examination

- **Obtain a comprehensive history:**
- history of BP, including duration and level
- age
- trials of previous antihypertensive therapy, including drug efficacy, compliance and tolerance
- find out any medication currently used by the patient (e.g. over the counter, prescription, substance misuse etc.)
- symptoms suggestive of phaeochromocytoma

NB: Some or all of the below examinations may be indicated depending on clinical suspicion

- **Measure height, weight, and waist circumference:**
  - waist circumference (standing) is significant if greater than 102cm in men or 88cm in women
  - check for increased BMI
- **Fundoscopic examination check for:**
  - arteriolar narrowing
  - focal arteriolar constrictions
  - arteriovenous crossing changes
  - hemorrhages and exudates
  - papilloedema
- **Examine neck check for:**
  - character of carotid pulse and associated bruits
  - raised jugular venous pressure (JVP)
  - goitre or thyroid nodules
- **Examine heart check for:**
  - pulse rate and character
  - displaced apex beat
  - precordial heave
  - murmurs
  - gallop rhythm
- **Examine lungs check for:**
  - pleural effusion
  - pulmonary oedema
- **Examine abdomen check for:**
  - abdominal aortic aneurysm
  - radio femoral delay in all younger patients
  - renal masses
  - renal bruits
- **Examine extremities check for:**
  - reduced or absent peripheral arterial pulses
  - bruits
  - oedema
- Neurological assessment check for deficits
- **In people with symptoms of postural hypotension (falls or postural dizziness):**
  - measure BP with the person supine or seated
  - measure BP again with the person standing for at least 1 minute before measurement
- To help identify subclinical organ damage: ankle brachial blood pressure index (APBI)- peripheral vascular disease (PVD)

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BP Measurement

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Healthcare professionals taking BP measurements need adequate initial training and should have their performance reviewed periodically. Devices for measuring BP must be properly validated, maintained and regularly recalibrated according to manufacturers' instructions.

If using an automated BP monitoring device, ensure that the device is validated and an appropriate cuff size for the person's arm is used. When measuring BP in the clinic or in the home, standardise the environment and provide a relaxed, temperate setting, with the person quiet and seated, and their arm outstretched and supported.

Palpate the radial or brachial pulse before measuring blood pressure, since automated devices may not measure BP accurately if there is pulse irregularity (for example, due to AF). If pulse irregularity is present, measure BP manually, using direct auscultation over the brachial artery.

Assess BP:

Postural hypotension (falls or postural dizziness):

- measure BP with the person either supine or seated
- measure BP again with the person standing for at least 1 minute prior to measurement

If the systolic BP falls by 20 mmHg or more when the person is standing:

- review medication
- measure subsequent BP s with the person standing
- consider referral to specialist care if symptoms of postural hypotension persist

Measuring the clinic BP

Measure BP in both arms.

- If the difference in readings between arms is more than 15 mmHg, repeat the measurements
- If the difference in readings between arms remains more than 15 mmHg on the second measurement, measure subsequent BPs in the arm with the higher reading

If BP measured in the clinic is 140/90 mmHg or higher:

- Take a second measurement during the consultation
- If the second measurement is substantially different from the first, take a third measurement
- Record the lower of the last two measurements as the clinic BP

In community pharmacy, if a low clinic blood pressure (≤90/60) or an irregular pulse is picked up on BP measurement, ***refer to table 1 (pages 9-10) of the national service specification NHS England » NHS community pharmacy hypertension case-finding advanced service)***

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≥180/120

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If the clinic blood pressure is ≥180/120mmHg:

- Take a second measurement during the consultation
- If the second measurement is substantially different from the first, take a third measurement
- Record the lower of the last two/three measurements as the clinic blood pressure to confirm present measurement.

Consider need for urgent management if blood pressure confirmed to be ≥180/120

Refer patients immediately for same day specialist assessment if the following are present:

- Accelerated hypertension (signs of papilloedema or retinal hemorrhage)
- Hypertensive encephalopathy: BP 220/120mmHg or more with associated symptoms, including:
  - severe headaches
  - epistaxis
  - breathlessness
- malignant/ accelerated hypertension (BP 180/120mmHg or more) with retinal hemorrhage and/or papilloedema
- life-threatening symptoms such as new onset confusion, chest pain, signs of heart failure, or acute kidney injury.
- suspected phaeochromocytoma with associated symptoms:
  - labile or postural hypotension
  - headache
  - palpitations
  - pallor
  - diaphoresis
  - abdominal pain

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140/90 to 179/119 mmHg

- Take a second measurement during the consultation
- If the second measurement is substantially different from the first, take a third measurement
- Record the lower of the last two measurements as the clinic BP

If the clinical BP is still 140/90 to 179/119 mmHg offer ABPM to confirm the diagnosis of hypertension. If ABPM is unsuitable or the person is unable to tolerate it, offer HBPM to confirm the diagnosis of hypertension.

While waiting to confirm the diagnosis, carry out investigations for target organ damage (TOD) and a **formal assessment of cardiovascular risk** using a cardiovascular risk assessment tool.

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ABPM or HBPM

See NICE Quality Standard 28: ***Quality statement 1: Diagnosis – ambulatory blood pressure monitoring | Hypertension in adults | Quality standards | NICE***

Practices should have their own ABPM monitor. It is not appropriate to refer patients for ABPM for investigation of suspected hypertension –this should be performed in practice.

When using ABPM to confirm a diagnosis of hypertension, ensure that at least 2 measurements per hour are taken during the person's usual waking hours (for example, between 08:00 and 22:00). Use the average value of at least 14 measurements taken during the person's usual waking hours to confirm a diagnosis of hypertension.

When using HBPM, ensure that:

- for each blood pressure recording, 2 consecutive measurements are taken, at least 1 minute apart and with the person seated *and*
- blood pressure is recorded twice daily, ideally in the morning and evening *and*
- blood pressure recording continues for at least 4 days, ideally for 7 days.
- discard the measurements taken on the first day and use the average value of all the remaining measurements

Confirm diagnosis of hypertension in people with a clinic blood pressure of 140/90 mmHg or higher *and* ABPM daytime average or HBPM average of 135/85 mmHg or higher.

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Assess Cardiovascular Disease Risk and Target Organ Damage

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Use a formal estimation of cardiovascular risk (**QRisk3**) to discuss prognosis and healthcare options with people with hypertension, both for raised BP and other modifiable risk factors.
Until electronic clinical systems in which QRISK2 is embedded are updated with QRISK3, it may be necessary to use QRISK2, as per section 1.1.8 of NICE's guideline on cardiovascular disease.

Clinic BP measurements must be used in the calculation of cardiovascular risk. Estimate cardiovascular risk in line with the recommendations on identifying and assessing cardiovascular disease risk in **NICE's guideline on cardiovascular disease**. Use clinic blood pressure measurements to calculate cardiovascular risk.

Target organ damage (TOD) includes damage to organs such as the heart, brain, kidneys and eyes. Examples are left ventricular hypertrophy, chronic kidney disease, hypertensive retinopathy or increased urine albumin:creatinine ratio.

If hypertension is not diagnosed but there is evidence of target organ damage, consider carrying out investigations for alternative causes of the target organ damage.

For information on investigations for chronic kidney disease see **NICE guidance on the early identification and management of chronic kidney disease.**

For all people with hypertension offer to:

- 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, urea and electrolytes, creatinine, eGFR, serum total cholesterol and HDL cholesterol (lipid profile- non fasting).
- Examine the fundi for the presence of hypertensive retinopathy.
- Arrange for a 12-lead electrocardiograph to be performed.

Some or all of the below investigations may be indicated depending on clinical suspicion:

- fasting blood glucose/ HbA1c
- ECHO-LV hypertrophy
- quantitative proteinuria (if protein dipstick test is positive)

Consider the need for specialist investigations in people with signs and symptoms suggesting a secondary cause of hypertension.

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Lifestyle Advise and Drug Treatment

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Offer lifestyle advice and drug treatment; see **NICE Visual summary of drug treatment options. (nice.org.uk)**

See **Recommendations | Hypertension in adults: diagnosis and management | Guidance | NICE**

General principles of drug treatment:

- Discuss with the person their individual cardiovascular disease risk and their preferences for treatment, including no treatment, and explain the risks and benefits before starting antihypertensive drug treatment. Continue to offer lifestyle advice and support them to make lifestyle changes whether or not they choose to start antihypertensive drug treatment.
- If possible, offer drugs taken only once a day.
- Prescribe non-proprietary drugs if these are clinically appropriate and cost-effective.
- Offer people with isolated systolic hypertension (systolic blood pressure 160 mmHg or higher) the same treatment as people with both raised systolic and diastolic BP.
- Do not combine an ACE inhibitor with an ARB.
- *People aged >80 years***:** Offer people aged >80 years the same antihypertensive drug treatment as people aged 55–80 years, taking into account any comorbidities.
- Use clinical judgement for people of any age with frailty or multimorbidity.
- *Women of child-bearing potential***:** offer antihypertensive drug treatment to women of child-bearing potential in line with the **NICE clinical guideline on Hypertension in pregnancy**

For people with chronic kidney disease, see NICE's guideline on **chronic kidney disease.**

- For people with heart failure, see NICE's guideline on **chronic heart failure.**
- Consider an ARB, in preference to an ACE inhibitor in adults of African and Caribbean family origin.

Lifestyle advice:

Ask about people's diet and exercise patterns because a healthy diet and regular exercise can reduce blood pressure. Offer lifestyle advice to people with suspected or diagnosed hypertension and continue to offer it periodically. See **Recommendations | Hypertension in adults: diagnosis and management | Guidance | NICE**

Advise patient on:

- losing weight if needed
- aerobic exercise for 30-60 minutes 3-5 times a week
- reducing alcohol consumption and caffeine intake
- healthy eating: reducing salt intake, increasing fruit and vegetable intake
- stopping smoking
- avoiding NSAIDs if possible

Driving:

- if BP is consistently 180mmHg systolic and 100mmHg diastolic, the person is disqualified from group 2 entitlement (lorries, buses)
- relicensing may be permitted when BP is controlled provided that treatment does not cause side effects that interfere with driving

Offer appropriate guidance and written or audio-visual materials to promote lifestyle changes.

Online referral form for Drugs and Alcohol Service: **https://www.changegrowlive.org/**

Offer details of organisations where people with hypertension can share views and obtain information: Blood Pressure Association at **http://www.bpassoc.org.uk**

For normotensive patients, consider offering lifestyle advice on healthy eating, alcohol, caffeine, smoking, physical activity and losing weight if needed as above. Patients can be signposted to information on preventing hypertension including:

· **High blood pressure (hypertension) - Prevention - NHS (www.nhs.uk)**

· **https://www.cdc.gov/bloodpressure/prevent.htm**

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Consider Specialist Referral if aged < 40 years

For people aged <40 years with hypertension, consider seeking specialist evaluation of secondary causes of hypertension and a more detailed assessment of the long-term balance of treatment benefit and risks.

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Sending results to General Practice from Community Pharmacy

Results must be sent by a secure digital process to patient's general practice. This can be done either via EMIS to PharmOutcomes or Ardens/SystmOne to nhs.net email or by nhs. net email to nhs.net email. All Pharmacies are recommended to record information on PharmOutcomes as this is available at no cost presently. By using PharmOutcomes the GP practice receives notification of the relevant information for this patient following service delivery by email. For full details of the information to send and timings, review ***Annex E of the national service specification.***

A weekly summary email/report should be sent with all test results that do not otherwise fit in to categories requiring immediate notification or do not need a referral.

Pharmacies should arrange ABPM review appointments with patients during standard working hours so that GPs can be easily contacted in-hours for readings above 150/95, avoiding unnecessary referrals to A&E.