Hypertension Guidance for Primary Care in South East London

This guidance was developed by the Cardiovascular sub-group of the SEL Integrated Medicines Optimisation Committee with advice from the SEL Clinical Effectiveness group

Approved: April 2021 and updated Jan. & March 2022 Review date: April 2023 (or sooner if indicated)

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South East London Integrated Medicines Optimisation Committee (SEL IMOC). A partnership between NHS organisations in South East London: South East London Clinical Commissioning Group (covering the boroughs of Bexley, Bromley, Greenwich, Lambeth, Lewisham and Southwark) and GSTFT/KCH /SLAM/ Oxleas NHS Foundation Trusts and Lewisham & Greenwich NHS Trust

Contents

The purpose of these documents are to guide healthcare professionals in primary care when diagnosing HT, and considering the monitoring and treatment options for patients with normal blood pressure, hypertension and hypertensive emergencies. The aim is to ensure a consistent approach to this across SEL. Please refer to NICE guidelines for CKD, type 1 diabetes and HT in pregnancy for these co-morbidities as these conditions are excluded in this guidance.

If you suspect a secondary cause of HT or the patient is under 40 years old please refer to local specialist HT or renal (CKD) teams.
For urgent advice: Consultant Connect Cardiology
Referrals via Advice and Guidance: HT clinic (GSTT and UHL), CKD clinic (GSTT), diabetic medicine (GSTT/KCH/UHL/QEH) and pregnancy in HT clinic (GSTT).

If you suspect a hypertensive crisis and/or worrying symptoms then please refer to your local hospital acute medicine specialist (or call 999 in an emergency).

Updates-June 2021: A minor update has been made to **step 4** of the drug treatment pathway (page 4). The monitoring requirements for spironolactone in hypertension have been clarified and simplified as previous guidance was for heart failure patients. A reference link to the "Specialist Pharmacy Services" (SPS) drug monitoring document has been added- but this link has now expired (March 2022).
October 2021: Amendments to the traffic light poster to define clinic BP readings to aid management (HBPM targets are 5mmHg lower generally) and amended DBP for stage 1 to ≥94mmHg.
Jan 2022: Amended recommendation to at least annual check for BP, adherence, lifestyle decision making in line with NICE and CESEL guidance, and reformatted guidance.
March 2022: Updated in line with updated NICE HT guidance- for CVD patients consider first line treatments according to co-morbidities firstly, for T2DM consider other options if BP uncontrolled.

Traffic Light Guide to Blood Pressure (BP) Measurement in Clinical Settings

Clinic readings: Systolic Blood Pressure (SBP) *top value* and/or Diastolic Blood Pressure (DBP) *bottom value*

Assessments and Actions

SBP ≥ 180mmHg and/or DBP ≥ 120mmHg
Potential HYPERTENSIVE EMERGENCY

Urgent same day face to face GP review: Assess for target organ damage (eg. *urine dip for protein + blood; bloods: U&Es, HbA1c, lipids, FBC (for MAHA*); check fundi; ECG*) **and start drug treatment if target organ damage.** If no target organ damage and no signs of accelerated HT, life threatening symptoms or phaeochromocytoma: GP review with a repeated clinic BP in 7 days. Use clinical judgement to optimise existing anti-hypertensive therapy/check adherence and/or start anti-hypertensive therapy

Urgent same day review by HOSPITAL-refer to acute medicine specialist
Especially if **signs of accelerated hypertension** (papilloedema and/or retinal haemorrhage), **life threatening symptoms** (new onset confusion, chest pain, heart failure signs, acute kidney injury), or **suspected phaeochromocytoma** (labile or postural hypotension, headache, palpitations, pallor or diaphoresis)

SBP ≥ 150 to 179mmHg and/or DBP ≥ 95 to 119mmHg
STAGE 2 HYPERTENSION

SBP ≥ 140 to 149mmHg and/or DBP ≥ 90 to 94mmHg
STAGE 1 HYPERTENSION

1. Offer ambulatory BP monitoring (ABPM) or home BP monitoring (HBPM)
2. Investigate for target organ damage *(see red box above)*
3. Assess Cardiovascular (CV) risk: QRisk3 score

If ABPM /HBPM confirms hypertension (average of BP readings is above 135/85) **give lifestyle advice** (*see green box below*) and **consider starting drug treatment** (considering co-morbidities, age and CV risk)

If medicines are started, uptitrate the dose if tolerated and review the patient at least monthly until at the agreed target BP for your patient (see *drug treatment guidance on page 5*)

SBP≥ 130 to 139mmHg and/or DBP ≥ 85 to 89mmHg
HIGH SIDE OF NORMAL

Recheck CV risk annually

BP < 130/85mmHg
NORMAL BP

Recheck in 5 years if no CV risk factors present
Recheck CV risk annually if CV risk factors are present

Give lifestyle advice: What's your heart age? - NHS (www.nhs.uk)

- **Smoking cessation**
- **Alcohol moderation (<14 units per week; drink free days)**
- **Reducing salt intake**
- **Caffeine moderation (<4 to 5 cups of tea/coffee per day)**
- **Diet: Fruit/vegetables (>5 portions per day), less saturated fats**
- **Weight management (ideal BMI range is 18.5 to 24.9)**
- **Physical activity (20-30 mins/day)**
- **Consider hypotension if BP ≤90/60mmHg with symptoms (eg. dizziness, nausea, weakness, confusion)**

*MAHA: microangiopathic haemolytic anaemia

Hypertension Diagnosis: Blood Pressure Monitoring and Management in Primary Care for Adults

(for patients with type 1 diabetes see: www.nice.org.uk/guidance/ng17 , this guidance excludes HT management in pregnancy)

If clinic BP < 140/90 mmHg (*consider home BP monitoring HBPM: average of 2 morning and 2 evening readings over 4 to 7 days*):

Assess CVD risk using QRisk (excludes >85 years, existing CVD, CKD (3-5), lipid disorders- high risk) See **CKS CVD risk assessment & management**

If QRisk <10% over 10years:

1. Lifestyle advice
2. Review any co-morbidities

https://cks.nice.org.uk/cvd-risk-assessment-and-management#!scenario:1

3. Reassess:
-every 5 years if BP <130/85
-annually if SBP ≥130and/or DBP ≥85

If QRisk ≥10% over 10 years:

1. Lifestyle advice- modify risk factors
2. Consider prescribing a statin

https://cks.nice.org.uk/cvd-risk-assessment-and-management#!scenario:2

3. Recheck annually

For type 2 Diabetes: check BP annually regardless of QRisk

If clinic systolic BP ≥140 to 179mmHg and/or diastolic BP ≥90 to119mmHg

Confirm diagnosis with Ambulatory Blood Pressure Monitoring(ABPM) or Home Blood Pressure Monitoring (HBPM): use the average of at least 14 blood pressure readings taken during usual waking hours; for ABPM this is an average of at least 2 readings per hour

(If HBPM <135/85 assess QRisk)

ABPM/HBPM average ≥135/85mmHg (stage 1)	ABPM/HBPM average ≥150/95mmHg (stage 2)

Add to Hypertension Register
Assess CVD risk using QRisk and consider age/co-morbidities

For stage 1:
If age <80years with target organ damage, CVD, renal disease, type 2 diabetes or QRisk :≥10%:
Offer lifestyle advice and discuss starting drug treatment

If age <60 years with Qrisk <10%:
Offer lifestyle advice and consider drug treatment

If age <40 years: Consider specialist evaluation of secondary causes and treatment risk:benefit

For stage 2:
BP > 150/95mmHg
Offer lifestyle advice and drug treatment

If age >80 years
Offer lifestyle advice and drug treatment but consider frailty/co-morbidities

If age <40 years
Seek specialist advice for evaluation of secondary causes and treatment options

If clinic systolic BP ≥180mmHg and/or diastolic BP ≥120 mmHg

Urgent same day review by an acute medicine hospital specialist if:

1. accelerated hypertension (retinal haemorrhage or papilloedema), **or**

2. Life-threatening symptoms (new onset confusion, chest pain, heart failure signs, acute kidney injury), **or**

3. suspected phaeochromocytoma (labile or postural hypotension, headache, palpitations, pallor or diaphoresis)

GP to assess face to face for target organ damage- NICE recommendations- check ophthalmoscopy, urine dipstick, ECG, bloods

Repeat clinic BP in 7 days if no target organ damage

Consider starting drug treatment immediately without ABPM/HBPM if target organ damage

Blood Pressure Targets
(caution/clinical judgement for frail/ multimorbidities)

Age < 80 years: Clinic BP ≤140/90 mmHg
- ABPM/HBPM ≤135/85mmHg

Age ≥ 80 years: Clinic BP ≤150/90mmHg
- ABPM/HBPM ≤145/85mmHg

If postural hypotension *(drop of ≥20mmHg SBP when standing from sitting) –review medication and aim for standing BP target.* For each 10mmHg drop in BP, CV risk reduces by 20% but consider hypotension if BP ≤ 90/60 mmHg

Home BP monitoring tools:
Patient booklet:
http://www.bloodpressureuk.org/media/bpuk/docs/MeasuringBP_webrevised.pdf
Poster: http://www.bloodpressureuk.org/media/bpuk/docs/CheckingBPathomeA4_web.pdf

Remember pulse check with BP reading (AF detection)

START TREATMENT TO LOWER BLOOD PRESSURE consider the risk:benefit of therapy and use clinical judgement for patients with frailty or multimorbidity (*see page 5 for drug treatment guidance*). **Discuss with patient:**

Lifestyle advice: smoking cessation, exercise, weight management, review alcohol intake, diet (reduce saturated fats, increase fruit/vegetables), salt reduction, moderate caffeine intake (4 to 5 cups of tea/coffee per day)- consider socialprescribing link workers

Consider offering statin therapy (atorvastatin 20mg) after addressing modifiable risk factors in patients with a QRisk >10% for primary prevention in line with lipid guidance (*see SEL IMOC lipid management guidance and pathways*)

Baseline blood tests: renal profile, U&Es, lipid profile, glycated haemoglobin (HbA1c), liver function (LFTs), full blood count (FBC) and thyroid function (TFTs). Urine albumin to creatinine ratio (ACR) sample to identify kidney disease and also check for haematuria with a reagent strip

Target organ damage assessments: within 1 month of HT diagnosis for all patients (bloods, fundi exam and arrange for 12 lead ECG)

At least annual review and support adherence to treatment (monthly reviews at up-titration of medication dosing)

Consider co-morbidities: for CVD patients consider disease-specific drug therapies first line and for T2DM consider options if BP is uncontrolled

Drug Treatment for Hypertension in Adults (excludes patients with type 1 diabetes and patients who are pregnant/breastfeeding)

Type 2 Diabetes (T2DM any age or any family origin)

Age <55 years (but not Black African/African-Caribbean family origin)

Age ≥ 55 years (no T2DM)

Black African or African- Caribbean family origin (any age and no T2DM)
NB. At all steps consider ARB over ACEI as less risk of angioedema

STEP 1 Prescribe Angiotensin-converting-enzyme inhibitor (ACEI) (eg. ramipril 2.5mg daily) **or angiotensin II receptor blocker (ARB)** (eg. losartan 50mg daily)

- Check baseline renal profile: If BP remains above target, double dose every 2 -4 weeks
- Aim for maximum doses eg. ramipril 10mg daily; losartan 100mg daily, if tolerated and if BP, creatinine and electrolytes allow
- For each dose titration check: Creatinine (increase by <20%), renal function (CrCl falls by <15%), and potassium (<5.5mmol)

STEP 1 Prescribe Calcium channel blocker (CCB) (e.g. amlodipine 5mg daily)

- **If BP remains above target**, increase dose after 2-4 weeks to 10mg daily if tolerated.
- **Side effects include** flushing and headaches at initiation; swollen ankles especially at higher doses.

For patients with heart failure: consider a thiazide-like diuretic (eg indapamide 2.5mg daily) at step 1 (*consult SEL or NICE heart failure management guidance*)

For contra-indications to each drug treatment: see BNF and summary of product characteristics SPC

Review after dose titration to maximum tolerated dose: Is BP at target? *(Individualised targets may apply eg. frailty, co-morbidities- hypotension if BP ≤90/60mmHg)*

Age <80 years clinic BP ≤140/90mmHg or home BP ≤135/85mmHg; **Age ≥80 years** clinic BP ≤150/90mmHg or home BP ≤145/85mmHg

Yes

No

STEP 2 Address adherence issues and, if BP above target, **add in CCB** (eg.amlodipine 5mg daily) or **thiazide-like diuretic** (indapamide 2.5mg daily).

Check baseline renal profile and 2 weeks following diuretic initiation.

STEP 2 Address adherence issues and, if BP above target, **add in ACEI** or **ARB** (eg.ramipril 2.5mg daily or losartan 50mg daily) or **thiazide-like diuretic** (indapamide2.5mg daily).

Check baseline renal profile and recheck after 2 weeks.

Review after dose titration to maximum tolerated dose: Is clinic or home BP at target?

Yes

No

STEP 3 Check adherence issues and, if BP is still above target, add in a third agent: **ACEI or ARB plus CCB plus thiazide-like diuretic** and titrate the dose according to BP, creatinine and electrolytes (for indapamide if serum potassium <3.5mmol/L or CrCl <25ml/min seek specialist advice)

Review after one month/dose titration to maximum tolerated dose: Is clinic or home BP at target?

Yes

No

Reinforce adherence, reassess lifestyle and review BP at least annually (encourage HBPM but record results in patient record)
Postural hypotension risk: Review medication if drop of ≥20mmHg SBP when standing from sitting
Annual checks: weight, BMI, home BP technique and/or check meter if >5 years old; pulse check, CV risk
Bloods: renal & lipid profile, HbA1c (LFTs and TFTs as indicated)
Target organ damage investigations: ECG within 1 month of HT diagnosis; NICE guidance. Urine dip for protein and blood, ACR.

STEP 4 Check adherence issues and, if BP is still above target, and postural hypotension is not a complication, add in a fourth agent (with a referral to hypertension/renal specialist if BP still uncontrolled). **Check potassium level (K+):**

- **If K+ ≤4.5mmol/L** and good renal function: prescribe **low-dose spironolactone 25mg** each morning (monitor blood sodium, potassium and renal function within 1 month of starting treatment and repeat 6 monthly thereafter (SPS advice)- ensure K+≤4.5mmol/L and stop therapy if hyperkalaemia- *unlicensed indication and caution in eGFR <30ml/min*
- -**if K+>5mmol/L** *and/or reduced renal function: prescribe* ***alpha-blocker*** *(e.g. doxazosin 1mg daily starting dose)- avoid in elderly as orthostatic hypotension risk* **or beta-blocker** (eg atenolol 25mg or bisoprolol 5mg daily starting doses)

Shared decision making: medicines and lifestyle

How do I control my blood pressure? Lifestyle options and choice of medicines patient decision aid (nice.org.uk)

Action	Recommendation	Approximate Systolic BP reduction
Reduced weight	Maintain a healthy body weight	5-20mmHg/10kg loss
DASH diet	Consume a diet rich in fruits, vegetables, low fat dairy with reduced saturated and total fat	8-14 mmHg
Reduced salt intake	Reduced dietary sodium intake (<1 teaspoon/day)	2-8mmHg
Increased exercise	Regular aerobic physical activity (at least 30mins per day, most days of the week)	4-9mmHg
Reduced alcohol intake	≤ 14 units/week	2-4mmHg
Single antihypertensive medicine	Up-titrated to maximum tolerated dose	Estimated range is from 5 to 12mmHg

- Consider that for every 5mmHg reduction in SBP, the patient's risk of a major CV event reduces by 10%
- Also use Qrisk to support discussions with patients concerning:
  - risk of having a myocardial infarction or stroke over the next 10 years
  - their healthy heart age
- Recalculate QRisk and update the patient record at least every year to show the benefits of interventions made and to review management plans
- For elderly/frail patients discuss the risk:benefit of interventions and the patient's tolerability for each non/drug treatment, considering the patient's circumstances and wishes, and their physical and mental state. Document any agreements/management plans.

Hypertension: who to refer and where to?

- Community Hypertension Service: gst.tr.KHPcommunityCVD@nhs.net
- Resistant hypertension
- Multiple adverse reactions to antihypertensive therapies
- Complex patients with co-morbidities that complicate prescribing decisions
- Persistent non-adherence to drug therapies despite best efforts in primary care
- Supporting follow up of specific patients discharged from secondary care specialist HT services with a primary care management plan

- Secondary Care Specialist Services:

- Emergency referral (Emergency Department)
  - Accelerated or malignant HT (BP ≥180/120mmHg) especially if evidence of grade III-IV retinopathy (papilloedema/retinal haemorrhages) and/or neurological features
  - Suspected TIA
  - Suspected aortic dissection
- Hypertension clinic: DXS forms (GSTT and UHL); for urgent advice *consultant connect cardiology*
  - Suspected secondary hypertension: phaeochromocytoma, Conn's syndrome, Cushing syndrome, diagnosed obstructive sleep apnoea syndrome
  - Rapidly worsening HT
  - HT in young individuals (<40 years) especially if no family history of HT and if a secondary cause is suspected
  - Labile HT
  - Pseudo-hypertension in the elderly
- Other relevant services: Consultant connect or advice and guidance
  - Renal: renal disease, renal artery stenosis (GSTT)
  - Obstetrics and gynaecology: hypertension in pregnancy (GSTT)
  - Falls clinic: postural hypotension after exclusion of common causes (GSTT/KCH/UHL/QEH)
  - Diabetes: diabetic medicine (GSTT/KCH/UHL/QEH)

Glossary

- U&Es: urea and electrolytes
- HbA1c: glycated haemoglobin
- FBC: full blood count
- MAHA: microangiopathic hemolytic anaemia
- ECG: electrocardiogram
- BMI: body mass index
- AF: atrial fibrillation
- T2DM: type 2 diabetes mellitus
- HT: hypertension
- ARB: angiotensin II receptor blocker
- ACEI: angiotensin-converting-enzyme inhibitor
- CCB: calcium channel blocker
- CrCl: Creatinine clearance
- SEL: South East London
- NICE: National Institute for Health and Care Excellence
- BNF: British National Formulary
- BP: blood pressure
- TIA: transient ischaemic attack
- HBPM: home blood pressure monitoring
- ABPM: ambulatory blood pressure monitoring
- LFTs: liver function test
- TFTs: thyroid function tests
- CKD: chronic kidney disease

References

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- ESC/ESH guidelines for the management of arterial hypertension 2018; *European Heart Journal*, Volume 39, Issue 33, 01 September 2018, Pages 3021–3104: https://academic.oup.com/eurheartj/article/39/33/3021/5079119
- NICE patient decision aid: How do I control my blood pressure (lifestyle options and medicine choice): https://www.nice.org.uk/guidance/ng136/resources/how-do-i-control-my-blood-pressure-lifestyle-options-and-choice-of-medicines-patient-decision-aid-pdf-6899918221
- Home blood pressure monitoring patient booklet: http://www.bloodpressureuk.org/media/bpuk/docs/MeasuringBP_webrevised.pdf
- How healthy is your heart? NHS healthchecks: https://www.nhs.uk/conditions/nhs-health-check/check-your-heart-age-tool/
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- CESEL: Hypertension- a guide for general practice, Oct 2021: https://selondonccg.nhs.uk/wp-content/uploads/2021/11/BEXLEY-CESEL-HYPERTENSION-FINAL-19Nov.pdf