Worcestershire Acute Hospitals NHS Trust

Measurement and Management of Arterial Hypertension before Elective Surgery in Worcestershire Acute Hospitals

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Key Documents Owner:	Dr Harsha Mistry	Clinical Lead for Pre-Op Assessment
Approved by:	Pre-op Directorate Governance Meeting	
Date of Approval:	4th January 2021	
Date of review: **This is the most current version and should be used until a revised document is in place**	12th November 2025	

Key Amendment

Date	Amendment	Approved by
21st January 2019	Inclusion of advice for edoxaban. Additional information for the management of medicines for diabetes	Medicines Safety Committee
25th June 2020	Document extended for 6 months during COVID-19 period.	QGC
4th January 2021	Pre-operative assessment Key Documents approved for 3 years	Pre-op Directorate Governance Meeting
20th December 2023	Review date extended for 6 months. Updated document owner.	Dr Harsha Mistry
12th November 2024	Document extended for 12 months whilst awaiting National Guidelines to inform if changes are required	Dr Harsha Mistry

Management of hypertension in the pre-operative period involves balancing the risks of anaesthesia and surgery against the risks of delaying surgical treatment.

This guideline is based upon national guidance published by the AAGBI and the Hypertensive Society: *The measurement of adult blood pressure and management of hypertension before elective surgery 2016.*

Guidance is given on management of hypertension in primary care, the role of GPs in measuring blood pressure before surgical referral and actions to take when hypertension is identified in the preoperative assessment clinic.

Introduction

Hypertension is common and it has been described as ‘one of the most important preventable causes of premature morbidity and mortality in the UK’. It is present in up to 20-30% of adult patients.

There has been a paucity of information on how to manage hypertension pre-operatively as well as limited evidence regarding the effect of pre-operative hypertension. In 2016 the AAGBI and British Hypertension Society published guidance which aims to clarify management of pre-operative hypertension and prevent hypertension from cancelling surgery. This guideline is based upon that document. For a more detailed explanation of the themes within the guideline please refer to that document.

The guideline aims to prevent the diagnosis of hypertension being the reason that planned surgery is cancelled or delayed.

An Overview of the Diagnosis and Management of Hypertension in Primary Care

The following is a summary of the 2011 NICE Guideline: Hypertension in adults: diagnosis and management. It is intended as a background to guidance for pre-operative assessment professionals. For further explanations please refer to the full NICE guideline.

The aetiology of hypertension is broadly classified into:

- Primary (Essential) Hypertension: the commonest subtype with a multi-factorial aetiology (genetic, environmental, insulin resistance)
- Secondary Hypertension: where there is a specific , potentially treatable cause such as renal disease, endocrine disorders (i.e. Phaeochromocytoma/Conns/Cushings) or drugs such a the steroids or the contraceptive pill.

Blood pressure readings are further classified into:

- Stage 1 Hypertension: Clinic BP is 140/90 or higher **and** subsequent ambulatory or home BP readings are 135/85 or higher
- Stage 2 Hypertension: Clinic BP is 160/100 or higher **and** subsequent ambulatory or home BP readings are 150/95 or higher
- Severe Hypertension: Clinic BP is 180 or higher or diastolic BP is 110 or higher

Patients in the community with a BP of 140/90 or higher should have ambulatory/home BP offered to confirm the diagnosis.

If Hypertension is not diagnosis the persons BP should be measured at least every 5 years, although more frequent measurements should be considered if the BP is close to 140/90.

Antihypertensive drug treatment is offered to:

1. People under 80 with stage 1 hypertension with one or more of the following:
   - Target organ damage (renal,retinal involvement or LVH)
   - Established cardiovascular disease
   - Renal disease
   - Diabetes
   - A 10 year cardiovascular risk equivalent to 20% or greater
2. People of any age with stage 2 hypertension
3. People of any age with severe hypertension

From the above it is worth noting that patients over 80 with stage 1 hypertension are not recommended for antihypertensive drug therapy.

GPs have the following blood pressure targets:

- Patients under 80 have a target BP of below 140/90.
- Patients over 80 have a target BP of below 150/90.

Blood Pressure information from Primary Care at Surgical Referral

Blood pressure should be measured in primary care before non-urgent surgical referral.
Surgical outpatients should arrange for primary care to supply blood pressure readings if these have not been documented in the referral letter.

Blood Pressure should be measured in the POA Clinic for patients who do not have a documented BP reading below 160/100 from their GP within the last 12 months.

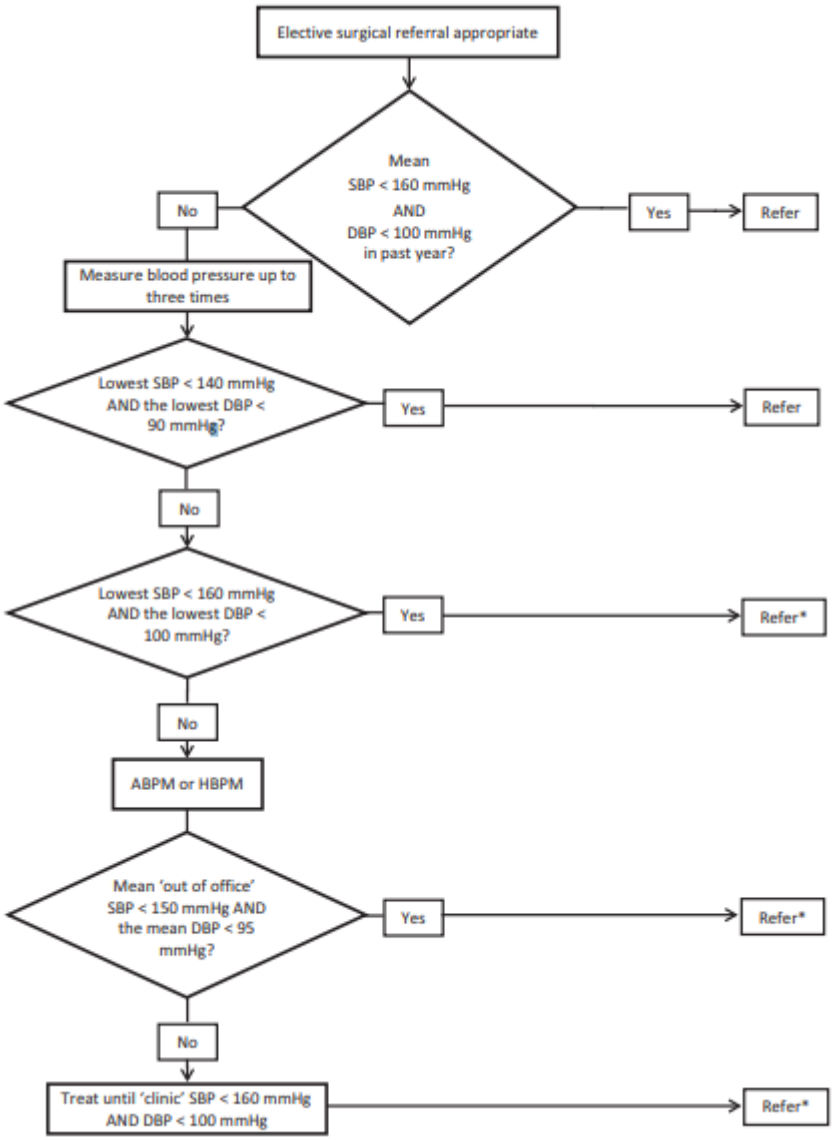
Hypertensive patients in the community should have their blood pressure controlled prior to referral for surgery.

For non-urgent surgery the GP should check the BP prior to referral. Where the BP is 160 / 100, or above, the GP should perform home or ambulatory BP readings. If home/ambulatory BP is raised (above 150/95 or 135/85 with target organ damage) then the patient should be treated and a reduction in BP to a level below 160/100 should precede surgical referral.

For surgery deemed to be urgent the GP should check the BP prior to referral. Where the BP is 160/100 or above the GP should perform home or ambulatory BP readings. If home/ambulatory BP is raised (above 150/95 or 135/85 with target organ damage) then the patient should be treated and BP reduced to a level below 160/100. This process can take place at the same time as the urgent surgical referral so that it does not delay surgery.

When hypertension is resistant to optimal treatment or an informed patient declines antihypertensive treatment this should be detailed in the GP referral letter.

Flow chart 1. Primary Care BP assessment of patients before referral for elective surgery. ABPM and HBPM Ambulatory and Home Blood Pressure Measurement. DBP and SBP Diastolic and Systolic Blood Pressure. *Taken from The measurement of blood pressure and management of hypertension before elective surgery AAGBI 2016.*



Measurement of Hypertension in Pre-Operative Assessment Clinic

Blood Pressure should be measured in the POA Clinic for patients who do not have a documented BP reading below 160/100 from their GP within the last 12 months. This means that if there is no BP reading or the previous BP reading is above 160/100 then the patients BP should be measured.

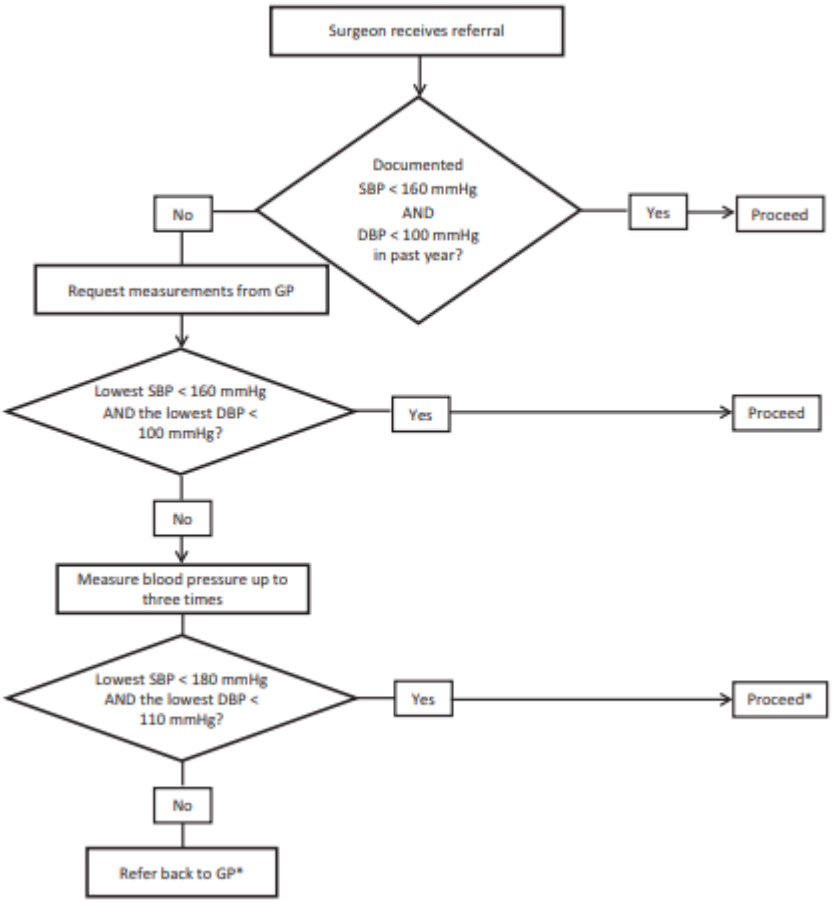
If the BP reading in POA clinic is above 140 systolic or 90 diastolic, but below 180 systolic and below 110 diastolic then the GP should be informed but elective surgery should not be postponed.

For elective (non-essential) surgery, if the BP reading in POA clinic is 180/110 or above the patient should be referred to the GP for investigation and treatment prior to elective surgery. Please use the template letter (Appendix A) which is available on BlueSpier, the shared drive and the pre-op intranet site.

For urgent surgery (i.e. cancer surgery or life saving surgery), if the BP reading in POA clinic is 180/110 or above the patient should be referred to the GP for investigation and treatment. It may still be appropriate

to continue with urgent surgery and each case will be a balance of risks and benefits. Please refer these cases to the consultant anaesthetist (i.e. using the worklist) for further consideration.

Flow chart 2. Secondary Care BP assessment of patients after referral for elective surgery. The GP should be informed of BP readings in excess of 140 / 90 so that the diagnosis of hypertension can be refuted or confirmed and investigated/treated as necessary. *Taken from The measurement of blood pressure and management of hypertension before elective surgery AAGBI 2016.*



Blood Pressure, Anaesthesia and Surgery

Inducing anaesthesia and performing surgery is associated with exaggerated BP swings in hypertensive patients. There is evidence that hypertension with target organ damage is associated with a small increased incidence of perioperative major cardiovascular events.

However there is no clear evidence that patients with stage 1 or 2 hypertension, without target organ damage, have increased perioperative cardiovascular risk. Patient with severe hypertension have not been subject to rigorous randomised trials of perioperative intervention. It is unclear whether treating these patients hypertension would reduce the incidence of adverse events.

Any decision to postpone surgery should also take into account factors other than the BP reading i.e. cardiovascular risk should be addressed rather than simply blood pressure readings. These factors might include:

- Age

- Co-morbidity
- Functional capacity
- Urgency and indication for surgery

Measurement of Blood Pressure in Pre-Operative Assessment Clinic

- The patient should be measured in a relaxed setting in a standardised environment with calibrated equipment. The seated patient should have their supported arm out stretched for at least one minute before the initial reading.
- If the heart rate is irregular then BP should be taken by manual auscultation because automated sphygmomanometers are inaccurate when there is an irregular pulse.
- If the BP is higher than, or equal to 140/90 then the BP should be measured twice more, with each reading at least 1 minute apart. The lower of the last 2 readings is recorded as the blood pressure.

Communication

- Pre-operative assessment clinics should inform general practitioners when they measure raised blood pressures in patients who have not had readings taken in primary care in the preceding 12 months.
- The letter should state whether surgery will or will not proceed until the diagnosis of hypertension has been excluded or confirmed. As above, generally speaking elective surgery can proceed where the BP in POAC is 180/110 or below.
- The patient should be given a copy of the letter and instructed to make an appointment at their GP surgery.
- The GP will first need to establish that blood pressure is high and that this is not white coat effect. Therefore the letter should not demand treatment and should be sent in a co-operative manner.
- Contact details must be included so that the GP can re-establish the procedural pathway when the BP has been shown to be satisfactory, whether this requires treatment or not.

Appendix A

NHS Worcestershire Acute Hospitals NHS Trust

Pre-Operative Assessment Clinic
Alexandra Hospital
Woodrow Drive
Redditch
Worcs B98 7UB
Direct dial 01527 507991 Fax No 01527 507918

CONFIDENTIAL

SAFE HAVEN FAX

To: <GP: Name> **Fax No: <GP: Fax>**

From: The Pre Assessment Clinic **Date:**

Re: <Patient: Name> **Pages: (include cover sheet)**

Date of Birth:<Patient: Date of Birth> **NHS number: <Patient: NHS Number>**

Hospital Casenote number: <Patient: Hospital Number>

Urgent *For Information* *Please Action* *Response required*

This above patient attended Pre-operative Assessment Clinic (POAC) today.

Operation planned: Proposed date of surgery:

The BP in Pre-operative Assessment Clinic was recorded as (lowest reading used):

1st check: 2nd check: 3rd check:

We would be grateful if you would check the blood pressure in the community, and if you feel necessary commence/review treatment.

<Because the POAC BP is below 180/110 the patient will proceed for elective surgery but we would be grateful for your review.>

<Because the POAC BP is above 180 / 110 elective surgery will be postponed. If you record the BP as 160/100 or below (with/without antihypertensive treatment) we would be pleased to accept the patient for surgery. Please contact <
_____>when you are satisfied with the BP readings.>

Many thanks for your help in this matter.