Management of Asymptomatic elevated inpatient BP
(Previously called hypertensive urgency)
Excluding patients in ED, ICU and Obstetrics

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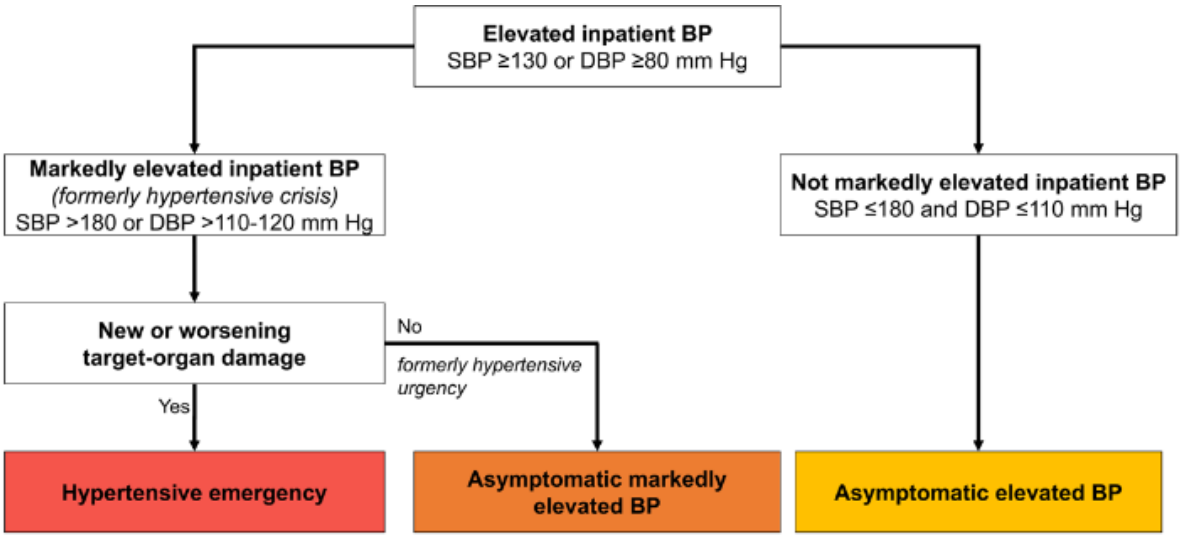
Definitions

- Asymptomatic **elevated** BP: 130 – 180 / 80 – 110
- Asymptomatic **markedly elevated** BP: SBP > 180 and/or DBP > 110
  = Severe hypertension without acute end-organ dysfunction



Why has the current approach changed in 2024?

- There is **no clear association** between asymptomatic markedly elevated inpatient BP and short-term adverse outcomes
- Recent well-designed observational studies suggest **harms** associated with acute treatment of asymptomatic elevated BP, including increased risk for myocardial and kidney injury
- Therefore, in most cases, ***acute treatment should NOT be given***

Assessment and management

Step 1 – Assess the accuracy of the BP measurement

- Use the appropriate cuff size ('large' cuff if mid upper arm circumference ≥33 cm
- If seated, ensure back supported, feet touching the ground, not talking, arm at the level of the heart.
- If supine, ensure the cuffed arm is at the level of the patient's heart
- Do at least 2 readings, 30 seconds apart

Step 2 – Rule out Hypertensive emergency

- If SBP > 180 and/or DBP > 110, assess for target organ damage
    1) **Brain** (stroke, hypertensive encephalopathy [PRES], cerebral hemorrhage)
    2) **Arteries** (acute aortic dissection)
    3) **Retina** (Papilledema and retinal hemorrhages)
    4) **Kidney** (acute kidney injury, thrombotic microangiopathy)
    5) **Heart** (pulmonary oedema, acute coronary syndrome)
- Organise investigations; EUC, FBC, urinalysis, ECG, Chest X-ray
- If hypertensive emergency is present, then switch to hypertensive emergency guideline

Step 3 – Identify and address any contributing factors

- Patient factors – Acute distress (pain, anxiety, acute illness, stress), volume overload
- BP-raising medications (NSAIDs, steroids, Erythropoietin)
- Hospital factors – Inadvertent discontinuation of home anti-hypertensives, sleep deprivation

Step 4 – Pharmacological management

- The goal should be gradual, sustained reduction in blood pressure over weeks
- Management to be stratified according to the reason for admission

    - **Admission for cardiovascular causes** (e.g. Acute Ischaemic stroke)
      Management: Start long-acting antihypertensives or intensify doses of existing medications and organise comprehensive work-up for secondary causes

    - **Admission for non-cardiovascular reasons**
        - **Category 1:** Persistent markedly elevated BP with history of;
            - High outpatient BPs, or
            - High cardiovascular risk, or
            - Established cardiovascular disease, or
            - High-risk features – Untreated aortic or intracranial aneurysm, previous history of hypertensive emergency

          Management: Start treatment with long-acting anti-hypertensive or intensify doses of existing medications

        - **Category 2:** Do not fit in Category 1 and frail elderly patients
          Management: Acute blood pressure treatment not recommended
          A review by registrar or consultant with alteration to calling criteria should follow, and if after hours, communicate clearly to treating team

Medication	Dosing	Pharmacokinetics	Comments
Long acting			
Amlodipine	5mg	Peak onset 6-8 hours	If patient is already on another dihydropyridine calcium channel blocker (lercanidipine, nifedipine) then use agent from another class
Lercanidipine	10mg daily	Peak onset after 3 hours	If patient is already on another dihydropyridine calcium channel blocker (amlodipine, nifedipine) then use agent from another class
Perindopril	2.5 mg	Peak onset after 4-6 hours	Caution in those with/ at risk for hyperkalaemia
Telmisartan	40mg	Peak onset after 3 hours	Caution in those with/ at risk for hyperkalaemia
Hydrochlorothiazide	12.5mg daily	Peak onset after 4 hours.	A good consideration if patient on CCB and ACEI/ARB to allow combination pill therapy. Avoid in those with hyponatraemia
Short acting			
Prazosin ***– No longer recommended***	0.5mg	Peak onset after 1-2 hours	Very high risk of adverse effects – First dose hypotension, falls **Should NOT be used as first line**
Hydralazine	12.5mg	Peak onset after 1-2 hours	Can result in tachycardia and headaches **Not recommended as first line**

Table: A guide to commonly used ORAL anti-hypertensive medications

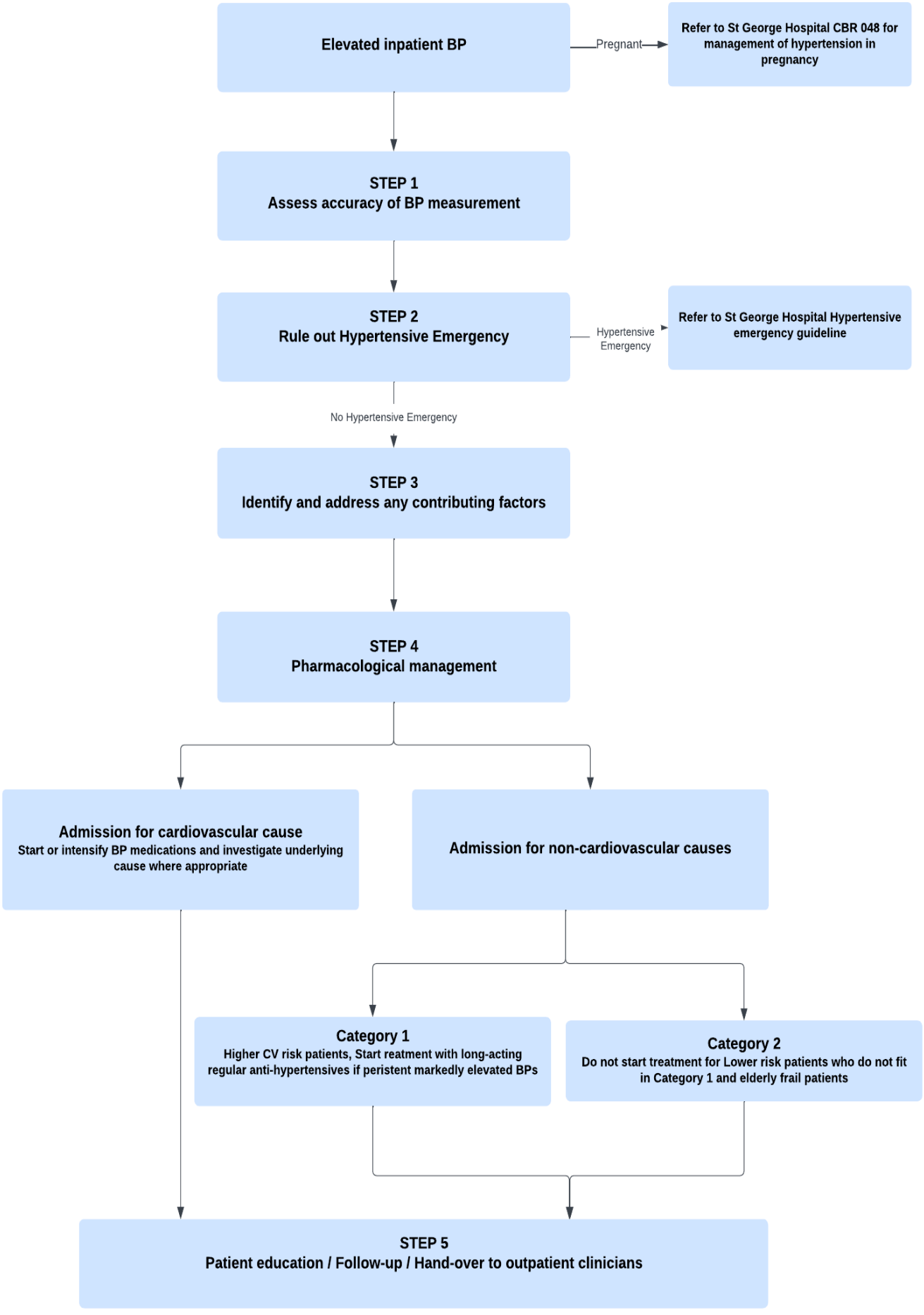
Step 5 – Patient education/Handover to outpatient clinician/Organise Follow-up

- Organise a timely follow-up appointment for review of blood pressure control
- Provide written instructions on medication changes and follow-up
- Provide clear communication to outpatient clinicians regarding inpatient BP issues, requirements for further assessment and monitoring

References

1. Bress, A. P., Anderson, T. S., Flack, J. M., Ghazi, L., Hall, M. E., Laffer, C. L., Still, C. H., Taler, S. J., Zachrison, K. S., & Chang, T. I. (2024). The Management of Elevated Blood Pressure in the Acute Care Setting: A Scientific Statement From the American Heart Association. *Hypertension*. https://doi.org/10.1161/hyp.0000000000000238

2. Kotwal, S. (2024). Assessment and management of hypertension in ADULTS in the inpatient ward setting. *SESLHD GUIDELINE* (Guideline SESLHDGL/068). South Eastern Sydney Local Health District. https://www.seslhd.health.nsw.gov.au/sites/default/files/documents/SESLHDGL%20068%20-%20Assessment%20and%20management%20of%20hypertension%20in%20ADULTS%20in%20the%20inpatient%20ward%20setting.pdf


Elevated inpatient BP
Pregnant
Refer to St George Hospital CBR 048 for management of hypertension in pregnancy
STEP 1
Assess accuracy of BP measurement
STEP 2
Rule out Hypertensive Emergency
Hypertensive Emergency
Refer to St George Hospital Hypertensive emergency guideline
No Hypertensive Emergency
STEP 3
Identify and address any contributing factors
STEP 4
Pharmacological management
Admission for cardiovascular cause
Start or intensify BP medications and investigate underlying cause where appropriate
Admission for non-cardiovascular causes
Category 1
Higher CV risk patients, Start reatment with long-acting regular anti-hypertensives if peristent markedly elevated BPs
Category 2
Do not start treatment for Lower risk patients who do not fit in Category 1 and elderly frail patients
STEP 5
Patient education / Follow-up / Hand-over to outpatient clinicians