Hypertension Care Pathway

ECU HEALTH

Introduction

This care pathway aims to establish a region-specific way of approaching hypertension using current evidence and national guidelines to achieve our mission: improve the health and well-being of eastern North Carolina. This pathway is revised after a review of the 2017 ACC/AHA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults. It adopts the best practices described in the Adult Blood Pressure Clinician Guide from Kaiser Permanente National (2018) and the AHA/AMA MAP Framework (Measure Accurately, Act Rapidly, Partner with Patients). This care pathway should be used to facilitate conversations with the patient and family to make optimal care decisions with respect to available resources, special circumstances, preferences, and needs of each patient. This care pathway is not intended to replace sound clinical judgment. This care pathway does not apply to the pregnant patient.

The Case for Intensifying Treatment

- Considering our local population's overall poor control of hypertension and higher cardiovascular risk profile, we aim to improve our overall control of hypertension significantly by adopting the ACC/AHA BP targets.
- Lower BP targets bring additional challenges.
    - More patients might require additional medications or higher doses, which increases the risk of side effects and can affect patient adherence.
    - Intensifying treatment involves more healthcare resources for follow-up visits and monitoring.
    - It is essential to consider individual patient factors such as age, frailty, and comorbid conditions. Lower targets may not be suitable for all patients. Blood pressure management should be personalized, aiming for the lowest well-tolerated blood pressure that balances efficacy and safety.

Thresholds for Hypertension

	Systolic Blood Pressure mmHg	Diastolic Blood Pressure mmHg
Diagnosis	≥ 120	≥ 80
Therapeutic Target	< 130	< 80

Prevention

- Lifestyle management is essential to preventing and treating hypertension. Counsel patients on the importance of healthy eating, weight control, physical activity, smoking cessation, adequate sleep, and good mental health.

Screening and Measurement

- Given the high-risk nature of ENC populations, screen adults ≥ over 18 years old at least annually, preferably with each medical appointment. Address potential barriers to effective self-care, including Social Determinants of Health needs, implement interventions, and make referrals as needed.
- Blood pressure measurement competency should be trained at onboarding and checked annually.
- Incorrect technique can lead to inaccurate BP measurements (10-50 mmHg). If BP is elevated, recheck at the end of the visit or after 5-10m of rest. Assess the white coat HTN with nurse visits or home monitoring.
- **Check standing BP in elderly or frail patients to assess for postural hypotension.**
- Clinical staff, health coaches, or care managers may reassess BP and lifestyle adherence through nurse visits, telephone visits, or MyChart encounters in place of an MD or APP visit.

Diagnosis and Management

- Confirm BP with ≥ 2 blood pressure measurements on ≥ 2 occasions.
- At the point of diagnosis, assess fasting blood glucose or A1c; serum electrolytes including sodium, potassium, and calcium; creatinine and eGFR; lipid profile; TSH; CBC; urinalysis and urine microalbumin; and ECG.

- Educate patients on the importance of obtaining home blood pressure routinely and correctly. Ensure home blood pressures are accurately documented in the EHR and the home device is validated annually.
- Continually assess poor adherence to prescribed lifestyle and medication therapy, white coat HTN, incorrect technique, brachial artery calcification, and clinical inertia (inadequate dosing or ineffective combinations). Discontinue or minimize offending agents (e.g., NSAIDs and sympathomimetics).
- Schedule follow-up visits before the patient leaves the office:
    - Within 1-4 weeks of new medications or dose changes. Short-term (e.g., one week) follow-up can increase BP control by 50%, whereas therapeutic intensification can increase BP control by 100%.
    - Once BP is at goal and stable, follow-up can occur at 3-6 month intervals.
- Lifestyle management is an appropriate initial therapy for hypertension. For patients with HTN and a 10y ASCVD risk >10%, ASCVD, CKD, or DM, ensure pharmacotherapy is added to lifestyle management at the point of diagnosis as part of the initial treatment.

Pharmacotherapy

- Utilize shared decision-making throughout the care trajectory to facilitate patient engagement.
- If BP is close to or sporadically at the goal, treat until the ***mean*** is at the goal.
- Titrate medications every 1-4 weeks. Titrate all medications to maximal dose or maximally tolerated dose.
- Use ***combination (2-agent)*** therapy from the start using ½ tablets of a combination tablet.
    - Most patients with hypertension will need two agents.
    - Adding a BP medication has ***three times*** the effect of doubling the dose of an existing medication.
    - Begin with a combination of an ACE-I/ARB and a thiazide/thiazide-like agent.
    - Prioritize simplicity, cost, and availability (e.g., lisinopril/HCTZ 20/25, ½ tab).
    - Chlorthalidone or indapamide in combination with an ACE-I/ARB:
        - Trade-off: Very effective and appropriate. Fewer combination forms. More expensive.
- Titrate until the maximum (or maximally tolerated) dose is reached. While combo therapy is optimal, you may split the thiazide and ACE-I/ARB combo to optimize HCTZ dosing or swap HCTZ for chlorthalidone.
- If the BP remains uncontrolled with maximal (or maximally tolerated) dosing, or if a thiazide or an ACE-I/ARB is contraindicated, add a dihydropyridine calcium channel blocker (commonly amlodipine) as the next agent.
- If the BP remains uncontrolled, evaluate for spironolactone eligibility (eGFR > 60 mL/min/1.73 m2 AND potassium < 4.5 mmol/L) and add spironolactone 12.5 mg and titrate to 25mg. Otherwise, add a beta-blocker (ideally the least expensive) and titrate while maintaining an HR > 55.
- Begin the resistant/secondary hypertension workup with a PRA and aldosterone. Treat any findings.
- If the BP remains uncontrolled, expand resistant/secondary hypertension workup. Consider alternative agents (e.g., hydralazine, clonidine, or alpha-blockers). These options are more nuanced; consider a nephrology e-consult for immediate next steps. Refer to a hypertension specialist, particularly if the patient's hypertension remains uncontrolled or is difficult to control for more than 12 months.
- In CKD, consider beginning with an ACE-I or ARB alone to assess the impact on renal function before adding a thiazide diuretic. In adults with eGFR < 30-40 mL/min, change thiazide diuretic to furosemide twice daily or torsemide daily and use bisoprolol cautiously. In African American adults without heart failure or CKD, initial treatment should include a thiazide or CCB.

Urgent and Emergent Treatment

- If SBP is ≥180 or if DBP ≥120 after two readings, ***and*** the patient is symptomatic (chest pain, severe headache, blurred vision, shortness of breath, mental status changes, new motor/sensory deficits, or gross motor weakness) or shows signs of organ damage (papilledema, renal dysfunction, S3 heart sounds, rales, JVD or pulsating abdominal bruit), they should receive emergent treatment with F/U with primary care in 7 days.
- Severe asymptomatic hypertension (HTN without signs of end-organ damage) may be treated in the clinic and does not require automatic referral to the emergency department. Aggressive blood pressure lowering, including using parenteral agents, should be avoided, and urgent diagnostic testing rarely changes immediate management. Blood pressure should be lowered slowly over days to weeks.