Clinical Practice Guideline for Adult Hypertension - Prevention, Screening, Counseling and Management

Hypertension is the most common primary diagnosis in America. About 75 million (32%) US adults have high blood pressure. The higher the blood pressure, the greater is the chance of heart attack, heart failure, stroke, kidney disease and vascular disease.

Medical Associates Health Plans supports increasing awareness, prevention, treatment, and control of hypertension (high blood pressure (BP)).

Hypertension Prevention, Screening, Counseling, and Management

When identifying and managing hypertension, understand the plan of care should be individualized to meet the specific needs of the patient. Other health factors should be taken into account when managing hypertension.

Optimally, a screening blood pressure measurement should be obtained from any patient greater than or equal to 18 years of age in the health care system at every health care encounter.

Prevention of hypertension begins with increasing patient awareness of blood pressure readings, providing education to inform that high blood pressure is often asymptomatic, and alerting patients to the risks associated with unmanaged hypertension.

Hypertension should not be diagnosed on the basis of a single measurement. The classification should be based on the average of two or more properly measured, seated BP readings on each of two or more office visits. BP measurements <120/80 are considered normal. Systolic BP measurements 120 -139 with diastolic BP 80-89 are considered elevated. Systolic BP reading ≥140 or a diastolic BP reading of ≥90 are considered hypertensive.

After any hypertensive reading, a second measurement should be performed and documented during the same patient visit.

At a minimum, patients should have their blood pressure checked and documented by their primary care provider on an annual basis or every 6 months if seen more frequently.

Table 1. Classification and Management of blood pressure for adults (based on Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation and Treatment of High Blood Pressure)*

<table>
<tr><th rowspan="2">BP Classification</th><th rowspan="2">SBP* mmHg</th><th rowspan="2">DBP* mmHg</th><th rowspan="2">Lifestyle Modification</th><th colspan="2">Initial Drug Therapy</th></tr>
<tr><th>No Clinical ASCVD or est 10 year risk <10%</th><th>Clinical ASCV or est 10 year risk ≥10%</th></tr>
<tr><td>Normal</td><td><120</td><td>and <80</td><td>Encourage</td><td rowspan="2">No antihypertensive drug indicated.</td><td>No antihypertensive drug indicated.</td></tr>
<tr><td>Elevated</td><td>120-139</td><td>80-89</td><td rowspan="3">Yes</td><td>Drug(s) to treat to BP goal of <130/80 [t]</td></tr>
<tr><td>Stage 1 Hypertension</td><td>140-159</td><td>or 90-99</td><td>Thiazide-type diuretics for most. May consider ACEI, ARB, BB, CCB, or combination.</td><td rowspan="2">Drug(s) to treat to BP goal of <130/80 [t]

Other antihypertensive Drugs (diuretics, ACEI, ARB, BB, CCB) as needed.</td></tr>
<tr><td>Stage 2 Hypertension</td><td>≥160</td><td>or ≥100</td><td>Two-drug combination for most[c] (usually thiazide-type diuretic and ACEI or ARB or BB or CCB).</td></tr>
</table>

Definitions: BP: blood pressure; DBP: diastolic blood pressure; SBP: systolic blood pressure; ASCVD: arteriosclerotic cardiovascular disease.
Drug abbreviations: ACEI: angiotensin converting enzyme inhibitor; ARB: angiotensin receptor blocker; BB: beta-blocker; CCB: calcium channel blocker.

* Treatment determined by highest BP category

[t] Treat patients with co-morbidities which include ASCVD, heart failure, ischemic heart disease, recurrent stroke, chronic kidney disease or diabetes to BP goal of <130/80 mmHg. See Table 4. Recommended Drugs for Co-Morbidities

[c] Initial combined therapy should be used cautiously in those at risk for orthostatic hypotension.

Evaluation of patients with documented hypertension has three objectives:

1. To assess lifestyle and identify other cardiovascular risk factors or concomitant disorders that may affect prognosis and guide treatment
2. To assess the presence or absence of target organ damage and CVD. See Table 2.
3. To reveal identifiable causes of high BP. See Table 3.

Table 2. Components of Cardiovascular Risk Calculator in Patients With Hypertension	
Components Factored into Score	Age Gender Ethnicity Blood Pressure Cholesterol (Total, HDL, LDL) History of Diabetes History of Smoking Hypertension treatment Statin therapy Aspirin therapy
Major Risk Factors	Hypertension Tobacco use Overweight/Obesity (BMI $\geq$25 kg/m^2) Physical inactivity Elevated total cholesterol or low HDL cholesterol Diabetes mellitus Men older than 55 and women older than 60 years of age African American ethnicity
Target Organ Damage/Clinical Cardiovascular Disease	Heart • Left ventricular hypertrophy • Angina or prior myocardial infarction • Prior coronary revascularization • Heart failure Brain • Stroke or transient ischemic attack Chronic kidney disease Peripheral arterial disease Retinopathy GFR, glomerular filtration rate

Table 3. Identifiable (not necessarily common) causes of hypertension	
Genetic Predisposition Environmental Factors: • Overweight/Obesity • Sodium intake • Potassium • Physical fitness • Alcohol	Causes of secondary hypertension: • Obstructive sleep apnea • Renal parenchymal disease • Renovascular disease • Primary aldosteronism • Drug induced • Thyroid or parathyroid disease • Coarctation of the aorta • Chronic steroid therapy or Cushing's syndrome • Pheochromocytoma

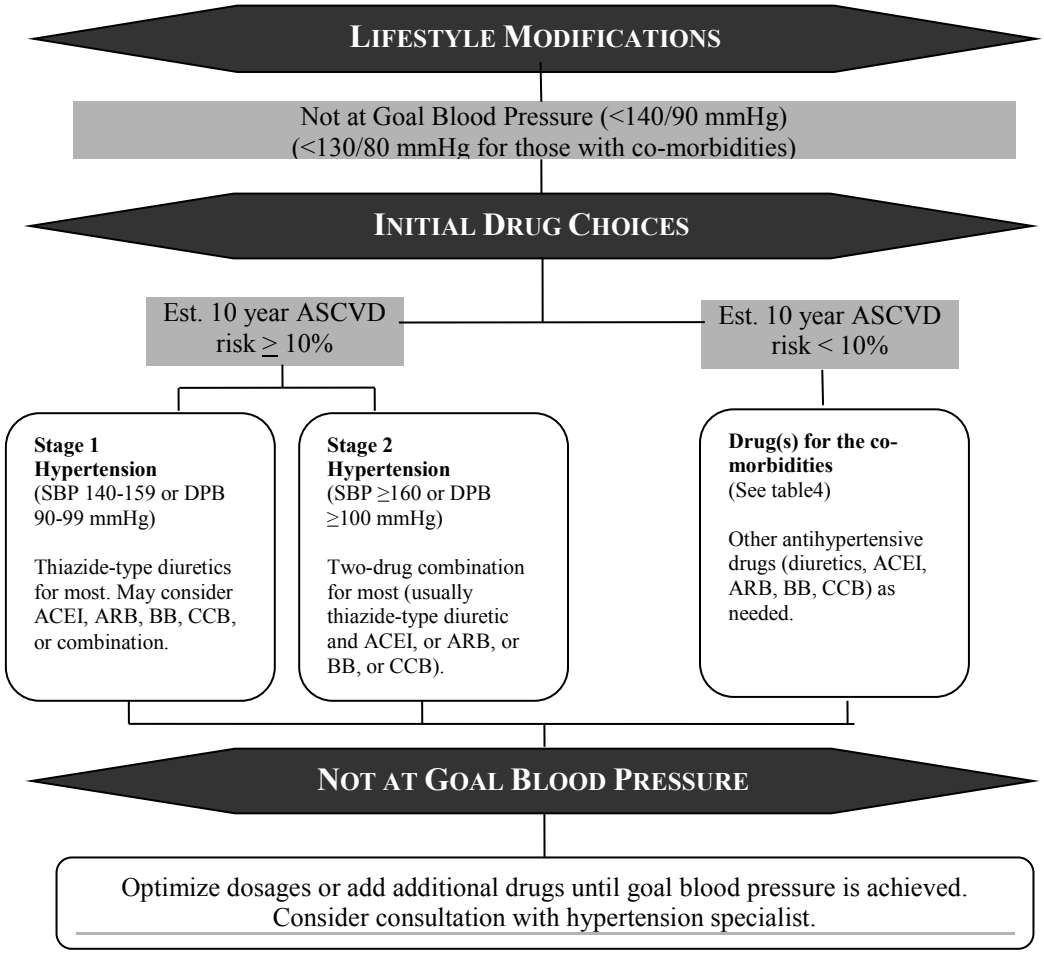
Evaluation/Treatment/Management

1. History and physical exam including family history of hypertension
2. Auscultation of heart; vascular exam
3. Weight and height
4. Lifestyle Modifications
   A. Dietary instruction including weight reduction, no added salt, low fat and low cholesterol diets
   B. Counseling regarding:
      1. Smoking cessation
      2. Alcohol use in moderation
      3. Regular exercise
5. Baseline electrocardiogram, UA, blood glucose, hematocrit, potassium, creatinine (or the corresponding estimated glomerular filtration rate – eGFR), lipid profile and calcium.
6. Annual urine dipstick for protein.
7. Once antihypertensive drug therapy is initiated, most patients should return for follow up and adjustment of medications at approximately monthly intervals until the BP goal is reached.
8. More frequent visits will be necessary for patients with stage 2 hypertension, or with complicating co-morbid conditions.
9. After BP is at goal and stable, follow up visits can usually be at 3-to 6-month intervals. Co-morbidities, such as heart failure, associated diseases such as diabetes, and the need for laboratory tests influence the frequency of visits.

Table 4. Recommended Drugs for Co-Morbidities		**Medications**					
		DIURETIC	**BB**	**ACEI**	**ARB** (If ACEI not tolerated)	**CCB**	**ALDOANT**
Co-Morbidities	Heart failure	X	X	X	X		X
	Clinical ASCVD		X	X	X	X	X
	Est. 10 year risk of ASCVD > 10%	X	X	X	X	X	
	Diabetes	X	X	X	X	X	
	Chronic kidney disease			X	X		
	Recurrent stroke prevention	X		X	X		

Drug abbreviations: ACEI, angiotensin converting enzyme inhibitor; ARB, angiotensin receptor blocker; Aldo ANT, aldosterone antagonist; BB, beta-blocker; CCB, calcium channel blocker.

Algorithm for Treatment of Hypertension



DBP, diastolic blood pressure; SBP, systolic blood pressure.
Drug abbreviations: ACEI, angiotension converting enzyme inhibitor; ARB, angiotension receptor blocker; BB, beta-blocker; CCB, calcium channel blocker.

The most effective therapy prescribed can control hypertension only if patients are motivated to take the prescribed medication and to establish and maintain a health-promoting lifestyle. Motivation improves when patients establish a trusting rapport, have positive experiences with their practitioner. Empathy builds trust and is a potent motivator.

References:

Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (2003). The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. NIH Publication no. 03-5233. Bethesda, MD: U.S. Department of Health and Human Services.

National Guideline Clearinghouse @ www.guideline.gov

CDC High Blood Pressure Fact Sheet at www.cdc.gov

2014 evidence-based guideline for the management of high blood pressure in adults: report from the panel members appointed to the Eighth Joint National Committee (JNC 8). www.ncbi.nlm.nih.gove/pubmed/

American Heart Association-www.Heart.org

Chief Medical Officer
Medical Associates Clinic & Health Plans — Date: 12/20/18

President, Board of Directors
Medical Associates Clinic — Date: 12/19/18

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