Medi-Cal Rx

Updated Guidance for the Treatment of High Blood Pressure

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Learning Objectives

- Review recommendations from the 2025 American College of Cardiology/American Heart Association (ACC/AHA) Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults.
- Describe the role of the Predicting Risk of Cardiovascular Disease Events (PREVENT) equations in the management of high blood pressure (HBP).
- Discuss strategies to improve adherence to HBP pharmacotherapy, including the use of combination therapies as a single-pill formulation.

Key Points

- Lifestyle modifications are recommended for all adults as an essential component of hypertension prevention and treatment.
- All adults with stage 2 hypertension (blood pressure [BP] ≥140/90 mm Hg) should initiate medication therapy with a recommended first-line antihypertensive therapy, including angiotensin-converting enzyme inhibitors (ACEIs) or angiotensin receptor blockers (ARBs), long-acting dihydropyridine (DHP) calcium channel blockers (CCBs), and thiazide-type diuretics.
- For stage 1 hypertension (systolic blood pressure [SBP] 130–139 mm Hg or diastolic blood pressure [DBP] 80–89 mm Hg), initiation of treatment should be based on the individual's overall cardiovascular risk, including the presence of established cardiovascular disease (CVD), comorbidities such as diabetes and chronic kidney disease (CKD), and predicted 10-year CVD risk. For adults with lower cardiovascular risk (*defined as PREVENT 10-year CVD risk < 7.5%*) and no clinical CVD, it is recommended to begin antihypertensive medication if 3 to 6 months of lifestyle modification fails to reduce BP to < 130/80 mm Hg.
- Selection of pharmacotherapy should be individualized if there are comorbidities present in which specific medication classes are indicated, such as coronary artery disease, heart failure, stroke, diabetes, and CKD.
- The goal BP is < 130/80 mm Hg for all adults, with considerations for those who require institutional care, have a limited predicted lifespan, or are pregnant.
- Prescribing two first-line antihypertensive agents from different drug classes as a single-pill, fixed-dose combination is preferred to improve adherence and reduce time to

achieve BP control. Several first-line medications, including combination therapies, are on the *Medi-Cal Rx Contract Drugs List* (CDL) and are available to Medi-Cal members with a prescription.

Background

HBP is the most prevalent and modifiable risk factor for morbidity and mortality related to CVD. It is strongly associated with the development of diabetes, CKD, and cognitive decline.[1] Data from the National Center for Health Statistics estimates that as of 2023, nearly half of individuals in the U.S. have HBP (48.1%, 119.9 million), and only a quarter of those individuals are considered to have adequately controlled hypertension.[2] Although treatment of HBP significantly reduces risk of coronary heart disease, stroke, heart failure, major cardiovascular events, and all-cause mortality,[3] appropriate prescribing of hypertension therapy and medication adherence in the U.S. is estimated to be less than 50%.[4,5]

BP is categorized into four groups based on SBP and DBP:

- Normal BP: SBP less than 120 mm Hg and DBP less than 80 mm Hg
- Elevated BP: SBP 120 to 129 mm Hg and DBP less than 80 mm Hg
- Stage 1 hypertension: SBP 130 to 139 mm Hg or DBP 80 to 89 mm Hg
- Stage 2 hypertension: SBP greater than or equal to 140 mm Hg or DBP greater than or equal to 90 mm Hg

The ACC/AHA publishes guidance on the prevention and management of HBP. Most recently, the ACC/AHA published the 2025 ACC/AHA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults. Although many notable changes were made in the 2025 ACC/AHA Guideline, this article will focus on significant updates to outpatient BP management, including recommended first-line pharmacotherapy, treatment goals, use of combination therapy for adherence, and selected considerations for pregnancy. Clinicians are encouraged to review the complete guideline from the ACC/AHA for comprehensive recommendations on the prevention and management of HBP.

Emphasis on Lifestyle Modifications

The 2025 ACC/AHA Guideline emphasizes the importance of lifestyle modification approaches for delaying or preventing the onset of HBP, and for incorporating them into the treatment plan for individuals with diagnosed hypertension. Healthy behaviors, such as those described in the AHA's Life's Essential 8, remain the first line of care for all adults to improve cardiovascular health, including for the prevention and management of HBP. After patients have been diagnosed with hypertension, specific lifestyle and nonpharmacological strategies can lower BP, slow progression of BP elevation, reduce the amount of medication needed to control BP, and prevent CVD morbidity and mortality.[5]

The updated guideline reviews the most effective lifestyle interventions to lower BP, starting with the DASH (Dietary Approaches to Stop Hypertension) eating plan ranked as the most effective, followed in order by aerobic exercise and isometric resistance training (≥150 minutes of moderate physical activity per week and resistance exercise ≥2 days per week),

low-sodium/high-potassium salt interventions (no more than 2,300 mg of sodium per day and dietary potassium 3,500 to 5,000 mg per day), and limiting or avoiding alcohol. Although lifestyle modifications are recommended for all patients to control BP, the authors note that BP response to any given intervention will vary from patient to patient, depending on the intensity of the intervention, patient adherence, and starting BP level.[4] Providers should also be aware of conditions that may impact these recommendations, including CKD.

For comprehensive information on recommended lifestyle modifications and condition-specific factors, providers can refer to the full 2025 ACC/AHA Guideline, with specific recommendations summarized in Section 5.1, "Lifestyle and Psychosocial Approaches".

Use of Cardiovascular Risk to Guide Treatment Decisions

The absolute cardiovascular risk associated with a given BP level varies depending on the patient's age and the presence of established CVD or CVD risk factors.[1,4] Based on BP level alone, the 2025 ACC/AHA Guideline recommends that all adults with stage 2 hypertension (SBP ≥140 mm Hg or DBP ≥90 mm Hg) should start antihypertensive therapy. For adults with stage 1 hypertension (SBP 130–139 mm Hg or DBP 80–89 mm Hg), an assessment of overall cardiovascular history and CVD risk is needed to determine if pharmacotherapy should be started or if a trial of lifestyle modifications is appropriate before starting a medication.[5]

Individuals with stage 1 hypertension and either established CVD (including coronary heart disease, stroke, or heart failure) or increased CVD risk should start BP-lowering pharmacotherapy without delay. Individuals with increased CVD risk include those with diabetes, CKD, or an estimated 10-year CVD risk ≥7.5%.[5] In contrast, the 2017 guidance from ACC/AHA did not specifically identify diabetes and CKD as criteria for having increased CVD risk and only recommended treatment for stage 1 hypertension if used for secondary prevention of CVD events or for primary prevention in those at increased 10-year CVD risk.[6]

Adults with stage 1 hypertension who do not have clinical CVD and have lower CVD risk (those without diabetes or CKD, and who have a predicted 10-year risk ≤7.5%) should be started on pharmacotherapy if average BP remains ≥130/80 mm Hg after a 3- to 6-month trial of lifestyle modifications.[5] Prior guidance from ACC/AHA recommended delaying the initiation of antihypertensive therapy until stage 2 hypertension for this population.[6]

To estimate 10-year CVD risk, the 2025 ACC/AHA Guideline recommends using the PREVENT-CVD outcome-specific equation rather than the previously recommended pooled cohort equations (PCE) because the PREVENT-CVD equation provides improved clinical features and accuracy. Unlike the PCE, the PREVENT-CVD equation can assess CVD risk starting at age 30 and includes essential factors such as current statin therapy, renal function, glucose control, and the social deprivation index. More information about the PREVENT equations, including the use of the PREVENT-CVD outcome-specific equation, is available in the complete guideline from ACC/AHA.

First-Line Therapies for Hypertension

Recommended first-line therapies for treating hypertension include ACEIs, ARBs, long-acting DHP CCBs, and thiazide-type diuretics. These classes were selected based on their favorable profiles for lowering BP, preventing CVD, and tolerability in randomized controlled trials. All other antihypertensive agents are considered secondary or add-on therapies but may be indicated depending on the patient's unique medical history.[5] For example, beta-blockers are considered a secondary antihypertensive treatment option but are commonly indicated in patients with heart failure, coronary artery disease, and atrial fibrillation.

Because treatment for hypertension should be individualized based on comorbidities, the 2025 ACC/AHA Guideline summarizes recommendations for treating hypertension in patients with comorbidities which have specific medication classes that are indicated for BP-lowering. Still, it does not provide new recommendations on these conditions.[5]

Improving Adherence with Single-Pill Combination Therapy

The 2025 ACC/AHA Guideline offers recommendations to promote medication adherence among patients undergoing treatment for HBP, ultimately improving BP control. For patients with stage 2 hypertension, it is recommended to start combination therapy with two first-line medications from different drug classes, prescribed as a single-pill combination tablet for ease of administration and improved adherence. In addition to improving adherence and clinical outcomes, single-pill combination therapy may reduce dose-related adverse effects and enhance tolerability.[5] Although most patients with stage 2 hypertension should be prescribed two medications as a combination tablet for initial therapy, ACC/AHA notes that a stepped-care approach, defined as the initiation of a single agent followed by sequential dose titration and addition of other agents if needed, is a reasonable treatment strategy for initial therapy for stage 1 hypertension or in individuals who cannot tolerate multiple agents due to hypotension or advanced age.[5]

A new scientific statement from AHA, Single-Pill Combination Therapy for the Management of Hypertension, outlines steps for initiating single-pill combination medications in clinical practice, including recommendations for dose titration and follow-up management.[7] Starting patients on a single-pill combination medication is a more efficient and expeditious way to achieve BP control, with studies showing improved adherence and cardiovascular outcomes when compared to free-pill equivalent combinations.[5,7]

Several single-pill combination medications for hypertension are available on the *Medi-Cal Rx Contract Drugs List* (CDL). Selected products on the CDL are listed in **Table 1**.

Table 1. Selected Single-Pill Combination Medications for Hypertension on the CDL*

Drug Class Combination	Drug Names
ACEI+ thiazide-type diuretic	• Benazepril/hydrochlorothiazide • Enalapril/hydrochlorothiazide • Fosinopril/hydrochlorothiazide • Lisinopril/hydrochlorothiazide • Quinapril/hydrochlorothiazide
ARB + thiazide-type diuretic	• Irbesartan/hydrochlorothiazide • Losartan/hydrochlorothiazide • Olmesartan/hydrochlorothiazide • Telmisartan/hydrochlorothiazide • Valsartan/hydrochlorothiazide
ACEI or ARB + long-acting DHP CCB	• Valsartan/amlodipine • Olmesartan/amlodipine • Benazepril HCl/amlodipine
ARB + long-acting DHP CCB + thiazide-type diuretic	• Valsartan/amlodipine/hydrochlorothiazide

* For current information on covered products, refer to the Contract Drugs & Covered Products Lists page on the Medi-Cal Rx Web Portal.

In addition to single-pill combination therapy, the 2025 ACC/AHA Guideline encourages the use of home blood pressure monitoring (HBPM) as part of an evidence-based strategy to improve antihypertensive adherence and overall BP control. Because HBPM more accurately detects a patient's true BP level than in-office readings alone, it can be a helpful tool for supporting safe and effective BP medication titration. Research has shown that HBPM provides clinically meaningful improvements in BP when combined with interventions such as patient education, telehealth monitoring, and use of prespecified treatment algorithms. Notably, patients should be counseled to select a validated BP measurement device with an appropriately sized arm cuff to ensure accurate HBPM readings.[5]

Select HBPM devices covered under Medi-Cal Rx can be found on the Contracted Blood Pressure Monitors and Cuffs list on the Contract Drugs & Covered Products Lists page on the Medi-Cal Rx Web Portal.

BP Treatment Goals

The 2025 ACC/AHA Guideline recommends an overarching BP goal of less than 130/80 mm Hg for all adults, with encouragement to achieve SBP less than 120 mm Hg when feasible to maximize CVD risk reduction. The recommendation for a lower SBP is primarily based on evidence that shows for every 10 mm Hg reduction in SBP, patients experience a reduced risk

of coronary heart disease (17%), stroke (27%), heart failure (28%), all major cardiovascular events (20%), and all-cause mortality (13%).[1,4,5]

In addition to reduced risk of CVD-related morbidity and mortality, emerging research continues to confirm that elevated BP increases the risk for cognitive decline and dementia, likely from chronic hypertension-related damage to the small blood vessels in the brain.[5] A 2020 systematic review and meta-analysis of 209 prospective studies found that midlife SBP greater than 130 mm Hg was associated with an increased risk of cognitive disorders, and encouragingly, the use of antihypertensive medications resulted in a 21% reduction in dementia risk.[8] In light of the growing body of evidence that controlled BPs reduce the risk of cognitive decline, the ACC/AHA has included an additional recommendation in support of a treatment BP goal of less than 130/80 mm Hg to reduce the risk of cognitive decline.[5]

It is important to note that the BP goal of less than 130/80 mm Hg applies to most adults, regardless of age. The guideline does not define age-specific treatment goals, indicating that older adults also benefit from lower BP targets. Specific patient populations who may need an individualized and relaxed BP goal include those who cannot tolerate antihypertensive therapy, have limited life expectancy, or are pregnant.[5]

Hypertension in Pregnancy

The 2025 ACC/AHA Guideline emphasizes hypertension management in pregnant individuals to prevent maternal and perinatal morbidity and mortality. A BP treatment goal of less than 140/90 mm Hg is recommended for pregnant individuals with chronic hypertension, defined as pre-pregnancy hypertension or SBP 140-159 mm Hg or DBP 90-109 mm Hg before 20 weeks of gestation.[5] The guideline also includes a new recommendation for health care providers to counsel individuals who are currently pregnant or planning to become pregnant on the benefits of low-dose aspirin to reduce the risk of preeclampsia and related complications.[5]

The 2025 ACC/AHA Guideline provides additional guidance on selecting pharmacotherapy for hypertension during pregnancy, including essential safety considerations for commonly prescribed antihypertensive medications. Previous guidance from ACC/AHA highlighted that ACEIs and direct renin inhibitors should be avoided in pregnancy to prevent fetal harm. This guidance has been expanded to include additional drugs that carry safety risks during pregnancy, including atenolol, ACEI or ARB, direct renin inhibitors, nitroprusside, and mineralocorticoid receptor agonists, for those currently pregnant and for those planning to become pregnant.[5]

Treatment of HBP in the Medi-Cal Population

A retrospective administrative claims analysis was conducted to evaluate the recent use of recommended first-line therapies for the treatment of HBP among Medi-Cal members, including ACEIs, ARBs, long-acting DHP CCBs, and thiazide-type diuretics (single ingredient and combination therapy). All paid medical and pharmacy claims were reviewed for eligible Medi-Cal members with a date of service (DOS) between January 1, 2025, and December 31, 2025. A 90-day lookback period was included to account for any days' supply

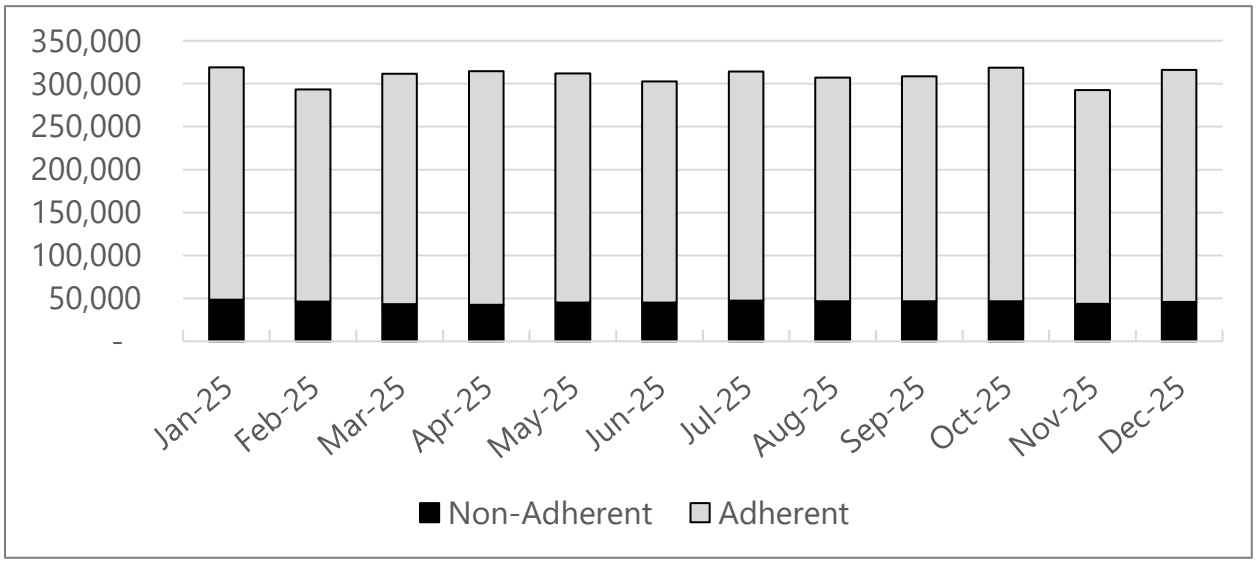
that overlapped with the measurement year, covering pharmacy claims paid before January 1, 2025. Eligible members included both Medi-Cal fee-for-service (FFS) and managed care plan (MCP) members, who were also not dually eligible for Medicare.

Monthly rates of adherence to ACEIs and ARBs (both single and combination therapies) over time were also calculated for eligible Medi-Cal members during the measurement year. Non-adherence was defined as a gap of 10 or more days during the previous 90 days.

Results

During the measurement year, a total of 549,209 Medi-Cal members received at least one paid claim for a first-line hypertension medication. As shown in **Figure 1**, the use of recommended first-line medications for treating HPB was consistent throughout 2025, with adherence during the previous 90 days fluctuating between 84.2% (February 2025) and 86.8% (April 2025).

Figure 1. Total Medi-Cal Members with > 1 Paid Claims for First-line Antihypertensive Medication during 2025, Stratified by Adherent or Non-Adherent



Despite recent guidelines increasingly recommending that patients start combination therapy to achieve BP control as quickly as possible, almost half of Medi-Cal members (42.4%; n = 232,614) had paid claims for only one non-combination medication during the measurement year. This result is consistent with findings from other studies that found approximately 40% of U.S. adults with uncontrolled BP continue to receive monotherapy.[9] By far, the most frequently used medication as monotherapy was amlodipine, with 228,370 members having at least one paid claim during 2025.

Among Medi-Cal members with claims for more than one medication during 2025, the majority had paid claims for either an ACEI and a long-acting DHP CCB (n = 123,446) or an ARB and a long-acting DHP CCB (n = 168,123). An additional analysis was conducted to determine whether these members had paid claims for single-pill combination medications or if they were taking multiple free-pill medications. As shown in **Table 2**, almost all Medi-Cal members are taking multiple free-pill medications rather than a single-pill combination medication.

Table 2. Total Medi-Cal Members with Paid Claims for > 1 Antihypertensive Medication during 2025, Stratified by Free Pill or Single-Pill Combination Medication

Drugs	ACEI (n; %)	ARB (n; %)
Long-Acting DHP CCB • Free Pill • Single Pill Combination	 • 122,628; 99.3% • 818; 0.7%	 • 166,190; 98.9% • 1,933; 1.1%
Thiazide-Type Diuretic • Free Pill • Single Pill Combination	 • 29,959; 96.2% • 1,182; 3.8%	 • 37,506; 92.8% • 2,897; 7.2%

Conclusion/Discussion

Current guidelines encourage lifestyle modifications for all adults to prevent and treat hypertension, the use of a CVD risk-based approach to initiate pharmacotherapy, and treatment selection based on the patient's comorbidities. When pharmacotherapy for BP lowering with two agents is indicated, prescribing a single-pill combination formulation that includes two medications from different first-line drug classes is recommended for improved adherence and BP control. Once a selected treatment is established and well-tolerated, providers should initiate maintenance fills for either a 90- or 100-day supply.

Clinical Recommendations

Prevention and Treatment of HBP

- Lifestyle modifications are recommended for all adults as an important component of hypertension prevention and treatment, including but not limited to following a heart-healthy eating pattern (such as the DASH diet), reducing sodium intake, increasing dietary potassium intake, adopting a moderate physical activity program, managing stress, maintaining or achieving a healthy weight, and reducing or eliminating alcohol intake.
- In adults who are taking antihypertensive therapy, combined use of HBPM with cointerventions, such as patient education and telehealth counseling, is recommended to support medication titration, treatment monitoring, and improved medication adherence.

Initiation of Hypertension Treatment

- Initial BP-lowering therapy should be prescribed for all adults with stage 2 hypertension (BP ≥140/90 mm Hg). Most adults with stage 2 hypertension should be initiated on combination therapy with two medications from different first-line drug classes.
- Initiation of treatment for stage 1 hypertension should be based on the individual's comorbidities and estimated cardiovascular risk.
- Pharmacotherapy should be started in adults with stage 1 hypertension who have established CVD, diabetes, or CKD.

- The PREVENT-CVD equation should be used to calculate the predicted 10-year CVD risk for patients with stage 1 hypertension who do not have established CVD, diabetes, or CKD:
  - If the predicted 10-year CVD risk is < 7.5% using the PREVENT-CVD equation, pharmacotherapy should be initiated if BP remains elevated after a 3- to 6-month trial of lifestyle modifications to lower BP.
  - If the predicted 10-year CVD risk is ≥7.5% using the PREVENT-CVD equation, pharmacotherapy should be initiated without delay.

Selection of Pharmacotherapy and Treatment Goals

- First-line antihypertensive therapies include ACEIs or ARBs, long-acting DHP CCBs, and thiazide-type diuretics.
- Selection of pharmacotherapy should be individualized based on the presence of comorbidities in which specific medication classes are indicated, such as coronary artery disease, heart failure, stroke, diabetes, and CKD.
- For patients who require more than one antihypertensive drug class, initiation of antihypertensive drug therapy with two first-line agents from different drug classes as a single-pill, fixed-dose combination is preferred over prescribing two drug classes as separate pills to improve adherence and reduce time to BP control.
- For most adult patients, the recommended treatment goal is BP < 130/80 mm Hg, except for pregnant individuals, who have a treatment goal of BP < 140/90 mm Hg. BP goals may need to be individualized based on the tolerability of BP regimens or limited life expectancy.
- Once pharmacotherapy is established and well-tolerated, maintenance refills should be prescribed for either a 90- or 100-day supply.

Patient Resources

- Providers may find the following patient resources helpful:
  - Top 10 Things to Know About the New AHA/ACC High Blood Pressure Guideline and Simple Steps to Improve Your High Blood Pressure (Hypertension), available on the AHA website
  - How to Take Your Blood Pressure at Home, Overview of Blood Pressure – What Do the Numbers Mean?, Controlling High Blood Pressure, and Understanding High Blood Pressure, available on the CardioSmart website

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