

2006 Canadian Hypertension Education Program Guidelines for the management of hypertension by pharmacists

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Contemporary pharmacy practice mandates that pharmacists take responsibility for medication management and patient outcomes. Hypertension is a prevalent and deadly condition; pharmacists, alone or in collaboration with other health professionals, should play a major role in its management. To enable best practices in the management of hypertension by pharmacists, we have adapted guidelines directly from the Canadian Hypertension Education Program (CHEP) 2006 recommendations. These represent the first nationally recognized, peer-reviewed practice guidelines developed specifically for Canadian pharmacists. It is hoped that these guidelines will be used to help pharmacists further contribute to the improved care of patients with hypertension and ultimately enhance patient outcomes.

For more background on any of the CHEP guidelines outlined here, please see the full recommendations, available at www.hypertension.ca.

I. Pharmacist identification of patients with elevated blood pressure and/or elevated cardiovascular risk

1. Pharmacists are in a unique position to actively screen individuals for elevated blood pressure. As accessible community-based practitioners, pharmacists should screen patients for hypertension, particularly those at high risk for cardiovascular events (people with diabetes, the elderly, those with multiple cardiovascular risk factors, established cardiovascular disease, including coronary artery disease, cerebrovascular disease, and peripheral arterial disease).

2. This screening should include an assessment of cardiovascular risk, using established tools such as the Framingham Risk Prediction Model.

II. Accurate measurement of blood pressure

1. The use of standardized measurement techniques by pharmacists is recommended when assessing blood pressure.

2. Devices certified by the Association for the Advancement of Medical Instrumentation, the British Hypertension Society, or the International Protocol for the Validation of Automated Blood Pressure Measuring Devices should be the only devices used by pharmacists, as well as the only devices for sale in pharmacies.

III. Criteria for assessment of elevated blood pressure

1. If the systolic blood pressure is >140 mmHg and/or the diastolic blood pressure is >90 mmHg, refer the patient to their primary care physician for further assessment. Patients with diabetes or chronic kidney disease and BP $>130/80$ mmHg must also be referred.

2. Follow patients on antihypertensive drug treatment monthly if their BP readings are not at target, or every two months if their BP readings are at target.

3. Determine if the patient is taking any drugs or other substances known to elevate blood pressure.

Technique for blood pressure assessment



The patient should:

- Be calmly seated for at least five minutes prior to measurement. His or her back should be well supported and the arm should be at the level of the heart. Feet should touch the floor and legs should not be crossed
- Be wearing comfortable clothing, with no restriction on arm or forearm
- Be free of acute anxiety, stress, or pain
- Be in a comfortable room temperature
- Be bladder and bowel comfortable

The patient should not:

- Have ingested caffeine in the hour preceding the measurement
- Have smoked for 15 to 30 minutes prior to measurement
- Have used substances containing adrenergic stimulants, e.g., phenylephrine or pseudoephedrine

Web links:

HSFC Risk Assessment:

www.heartandstroke.ca/bp

Clinically validated BP monitors:

www.hypertension.ca/appareilsBP_va.html

or www.dableducational.org

DASH diet:

www.nhlbi.nih.gov/health/public/heart/hbp/dash/new_dash.pdf

New York Heart Association Classification for Heart Failure:

www.bcbst.com/MPManual/New_York_Association_NYHA_Classification.htm

Blood pressure measurement:

www.hypertension.ca/CHEP2006/CHEP_2006_BP_Measurement.ppt

Framingham Risk Prediction Model:

www.pharmalearn.ualberta.ca/Tools/home.cfm

IV. Pharmacist recommendations on lifestyle modifications to control hypertension

1. Healthy diet: Recommend that patients consume a diet that emphasizes fruits, vegetables, and low-fat dairy products and that is reduced in saturated fat and salt, e.g., the DASH diet.

2. Regular physical activity: Suggest 30–60 minutes of moderate intensity dynamic exercise (such as walking, jogging, cycling, or swimming), on 4–7 days of the week. Higher intensities of exercise are no more effective.

3. Low-risk alcohol consumption: Recommend that patients limit alcohol consumption to 2 drinks or fewer per day (not more than 14 standard drinks per week for men or 9 per week for women).

4. Encourage maintenance of ideal body weight (BMI 18.5–24.9), and weight loss (≥ 5 kg) in those who are overweight (BMI >25).

5. Reinforce the importance of patients measuring their waist circumference (>102 cm for men and >88 cm for women is associated with increased risk of developing cardiovascular disease).

6. Recommend the restriction of salt intake to less than 100 mmol/day in individuals considered salt-sensitive, such as Canadians of African

descent, age over 45, individuals with impaired renal function or with diabetes. These patients should also ensure an adequate intake of potassium, calcium, and magnesium.

7. Encourage patients to maintain a smoke-free environment.

8. Encourage stress management for patients in whom stress appears to be an important issue.

V. Pharmacist recommendations for selection of drug therapy for adults with hypertension

1. Recommend antihypertensive therapy for anyone with average systolic pressures of >160 mmHg or average diastolic blood pressures of ≥ 100 mmHg in patients without target organ damage or other cardiovascular risk factors.

2. Strongly consider antihypertensive therapy in those with target organ damage or other cardiovascular risk factors if the average systolic blood pressure is >140 mmHg or the diastolic blood pressure is ≥ 90 mmHg.

3. Recommend dyslipidemia treatment with statins in all patients with hypertension and three or more cardiovascular risk factors, or in all patients with established atherosclerotic disease (coronary artery disease, cerebrovascular disease, or peripheral arterial disease).

4. Recommend the addition of low-dose ASA therapy in all patients with controlled hypertension and without contraindications.

5. Where appropriate, recommend the initial choice of antihypertensive therapy. The initial choice in adults without compelling indications is as follows:

Examples of validated BP monitors



- a) Thiazide diuretic
 - b) Beta-blocker (in those younger than 60 years of age)
 - c) Angiotensin-converting enzyme (ACE) inhibitor (in non-Blacks)
 - d) Long-acting calcium channel blocker
 - e) Angiotensin receptor blocker
6. Recommend combination therapy if there is only a partial response to standard dose monotherapy. Useful combinations include a thiazide diuretic or calcium channel blocker with an ACE inhibitor, angiotensin receptor blocker, or beta-blocker.
7. Recommend the treatment of isolated systolic hypertension in those patients with systolic blood pressure >160 mmHg. Initial therapy should be with a thiazide diuretic. Other appropriate first-line agents include a long-acting dihydropyridine calcium channel blocker or an angiotensin receptor blocker.
8. Screen all hypertensive patients for clinically significant drug interactions (with drugs, nutrients, and natural health products).

VI. Pharmacist recommendations for antihypertensive therapy in patients with compelling indications

1. Patients with coronary artery disease should receive a beta blocker and/or an ACE inhibitor.
2. Patients with a previous myocardial infarction should receive both a beta-blocker and an ACE inhibitor.
3. Patients with heart failure should receive both ACE inhibitors and beta-blockers (angiotensin receptor blocker if ACE inhibitor not tolerated).
4. Patients with advanced heart failure (New York Heart Association Functional Class III or IV symptoms) should also receive spironolactone.
5. In patients with cerebrovascular disease, the combination of an ACE inhibitor and a thiazide diuretic is preferred.
6. In patients with non-diabetic chronic kidney disease, initial therapy should be with an ACE inhibitor. An angiotensin receptor blocker may be used if there is intolerance to ACE inhibitors, and thiazide diuretics may be added for additional blood pressure control.
7. Patients with diabetes should receive an ACE inhibitor or angiotensin receptor blocker as initial therapy. In patients with diabetes and without nephropathy, thiazide diuretics and long-acting dihydropyridine calcium channel blockers are alternative first-line therapies.
8. Patients with renal impairment should be screened, as their doses of antihypertensive medications may need adjustment.

VII. Blood pressure goals

1. Take responsibility to work with the patient and the physician to help patients achieve their target blood pressure.
2. In patients without compelling indications, the blood pressure treatment target is <140 mmHg systolic and <90 mmHg diastolic.
3. In patients with diabetes or chronic kidney disease, the target blood pressure is <130/80 mmHg.
4. In patients with isolated systolic hypertension, the target is <140 mmHg.
5. In patients with proteinuria >1 g per day, the target is <130/80 mmHg.

VIII. Adherence strategies for patients

Pharmacists have a major role and responsibility in helping patients to take their antihypertensive medications to achieve the full benefit of cardiovascular protection. They can:

1. Educate the patient about the benefits of drug therapy, the relative safety of the agent selected, and indicate that the most common outcome for a patient is blood pressure control without side effects.
2. Work with patients and their physicians to simplify medication regimens to once-daily dosing and/or combination products to improve adherence.
3. Participate in education of patients and their families about their disease and treatment regimens.
4. Assess adherence to both pharmacologic and non-pharmacologic antihypertensive therapy at each visit.
5. Encourage patients' medication-taking to fit their daily habits. ■

Glossary

Compelling indications:

Ischemic heart disease, recent ST segment elevation-MI or non-ST segment elevation-MI, left ventricular systolic dysfunction, cerebrovascular disease, left ventricular hypertrophy, non-diabetic chronic kidney disease, renovascular disease, smoking

Target organ damage:

Cerebrovascular disease — transient ischemic attacks, ischemic or hemorrhagic stroke, vascular dementia
 Hypertensive retinopathy
 Left ventricular dysfunction
 Coronary artery disease — myocardial infarction, angina pectoris, congestive heart failure
 Chronic kidney disease — hypertensive nephropathy, albuminuria
 Peripheral artery disease — intermittent claudication

BMI = body mass index (in kg/m²)



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This document has been endorsed by the Canadian Pharmacists Association and the Canadian Hypertension Education Program (CHEP) in accordance with the 2006 CHEP Recommendations for the Management of Hypertension. The CHEP mission is to improve the treatment and control of hypertension in Canada. CHEP does not endorse any specific commercial products.

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