

# Hypertension

(February 2017)

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## Rationale

Hypertension is a common condition that presents with elevation in either systolic or diastolic blood pressure, and represents a major risk factor for morbidity and mortality in Canada. In some cases, it can constitute a medical emergency with life-threatening consequences. Appropriate investigation and management of hypertension are expected to improve health outcomes.

## Causal Conditions

(list not exhaustive)

- Primary
- Secondary
  - a. Renal parenchymal disease (e.g., kidney injury, polycystic kidney disease)
  - b. Metabolic or endocrine (e.g., adrenal adenoma/hyperplasia, thyroid)
  - c. Vascular (e.g., unilateral renal artery stenosis, coarctation of the aorta)
  - d. Catecholamine excess (e.g., pheochromocytoma, drugs)
  - e. Obstructive sleep apnea

## Key Objectives

Given a patient with hypertension, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. Particular attention should be paid to other cardiac risk factors, existing target organ damage and the identification of patients with hypertensive urgencies and emergencies.

## Enabling Objectives

Given a patient with hypertension, the candidate will

- list and interpret key clinical findings, including
  - a. accurate measurements taken to appropriately assess blood pressure, correctly diagnose hypertension, and determine its severity;
  - b. results of an appropriate history and physical examination aimed at eliciting risk factors, evidence of acute and chronic target organ damage and secondary causes;
- list and interpret critical investigations, including
  - a. baseline investigations (e.g., creatinine, electrolytes, urinalysis);
  - b. tests for risk factors (e.g., fasting lipids and glucose);
  - c. tests for secondary causes, where indicated (e.g., urinary catecholamines, thyroid-stimulating hormone);
  - d. tests for end organ damage (microalbuminuria, electrocardiography);
- construct an effective initial management plan, including
  - a. recommending non-pharmacological management strategies (e.g., sodium reduction, weight loss, stress reduction);
  - b. selecting appropriate anti-hypertensive medication taking into consideration concomitant conditions (e.g., diabetes mellitus, asthma);
  - c. selecting appropriate anti-hypertensive medication, dose, and dosage schedule taking into consideration individual characteristics (e.g., elderly), compliance, and potential for adverse reactions;
  - d. selecting appropriate parenteral agents for hypertensive emergencies and ensure appropriate titration and monitoring;
  - e. implementing strategies for the prevention of complications;
  - f. discussing psychosocial aspects of taking lifelong medications (e.g., cost, adherence).