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# Abdominal distension

(March 2022)

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## Rationale

Abdominal distension may indicate the presence of serious intra-abdominal or systemic disease, but it is also a common symptom of benign disease, such as irritable bowel syndrome.

## Causal Conditions

(list not exhaustive)

- Ascites
  - a. Exudative: Low serum-ascites albumin gradient (e.g., peritoneal carcinomatosis)
  - b. Transudative: High serum-ascites albumin gradient (e.g., portal hypertension)
- Bowel dilatation
  - a. Mechanical obstruction (e.g., adhesions, volvulus)
  - b. Paralytic (e.g., toxic megacolon, neuropathy)
- Other
  - a. Abdominal mass
  - b. Irritable bowel syndrome
  - c. Organomegaly (e.g., hepatomegaly)
  - d. Pelvic mass (e.g., ovarian cancer; [see Abdominal / Pelvic Mass](#))

## Key Objectives

Given a patient with abdominal distension, the candidate will diagnose the cause, severity, and complications and will initiate an appropriate management plan. In particular, the candidate should be able to differentiate ascites from bowel obstruction.

## Enabling Objectives

Given a patient with abdominal distention, the candidate will

- list and interpret critical clinical findings, including



- a. features of the patient's history and physical examination that differentiate ascites from distended bowel or mass; and
  - b. the underlying cause of the ascites or bowel distention (e.g., cirrhosis, colon cancer);
- list and interpret critical investigations and imaging, including laboratory investigations and imaging (e.g., liver enzymes; paracentesis and interpretation of ascitic fluid results; abdominal imaging including 3 views of the abdomen; ultrasonography); and
  - construct an effective plan of management, including
    - a. initiating specific therapy in case of ascites (e.g., dietary; pharmacologic; therapeutic paracentesis);
    - b. initiating specific therapy in case of mechanical or paralytic bowel obstruction; and
    - c. determining whether the patient requires specialized care.

# Abdominal masses and pelvic masses

(March 2023)

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## Rationale

Abdominal or pelvic masses may be noted on physical examination or discovered incidentally on imaging. It is imperative for a physician to determine which masses require immediate investigation and treatment, and which can be safely monitored.

## Causal Conditions

(list not exhaustive)

- Gastrointestinal
  - a. Neoplasms (e.g., gastrointestinal tumours—colon, liver, gastrointestinal stromal tumour)
  - b. Inflammatory/infectious (e.g., hepatitis, pancreatitis)
  - c. Other (e.g., pancreatic pseudocyst)
- Genitourinary
  - a. Neoplasms (e.g., ovarian, uterine, renal, bladder, prostate)
  - b. Gynecologic (e.g., ovarian cysts, ectopic or normal pregnancy, leiomyoma)
  - c. Urologic (e.g., hydronephrosis, renal cysts, urinary retention, benign prostatic hypertrophy)
- Lymphatic
  - a. Neoplasms (e.g., splenic tumours, leukemia, lymphoma)
  - b. Inflammatory/infectious (e.g., infectious mononucleosis, malaria, sickle cell anemia)
- Endocrine
  - a. Neoplasms (e.g., adrenal, pancreatic, neuroblastoma)
- Vascular (e.g., abdominal aortic aneurysm)
- Abdominal wall masses (e.g., sarcoma, lipoma)

## Key Objectives

Given a patient with an abdominal or pelvic mass, the candidate will complete a relevant history and physical examination, and order pertinent investigations to determine the most likely diagnosis. The candidate will initiate an appropriate management plan. In particular, the candidate should recognize the features of a mass and any associated findings that indicate the need for immediate intervention.

## **Enabling Objectives**

Given a patient with an abdominal or a pelvic mass, the candidate will

- list and interpret critical clinical findings, including
  - a. systemic symptoms and signs related to the mass (e.g., weight loss, hypertension, menstrual irregularity); and
  - b. results of an appropriate physical examination aimed at determining the likely cause of the mass;
- list and interpret critical investigations, including laboratory and imaging tests (e.g., ultrasonography, computed tomography of the abdomen or pelvis, tumour markers); and
- construct an effective initial management plan, including
  - a. determining whether the patient requires immediate intervention or referral for specialized care (e.g., abdominal aortic aneurysm); and
  - b. determining whether the patient requires serial monitoring (e.g., renal cyst).

# Chronic abdominal pain

(March 2023)

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## Rationale

Chronic or recurrent abdominal pain is a common symptom with an extensive differential diagnosis and heterogeneous pathophysiology. The history and physical examination frequently differentiate amongst the causative disorders.

## Causal Conditions

(list not exhaustive)

- Upper abdominal region
  - a. Malignancy
  - b. Ulcer and nonulcer dyspepsia
  - c. Biliary disease
  - d. Pancreatic disease
  - e. Hepatic disease
  - f. Referred cardiothoracic pain
- Lower abdominal region
  - a. Bowel disease
    - Inflammatory bowel disease
    - Diverticular disease
    - Irritable bowel syndrome
    - Malignancy
  - b. Genitourinary disease
    - Dysmenorrhea
    - Benign or malignant tumors
- Other causes

- a. Food allergies and intolerances (including celiac disease)
- b. Constipation
- c. Musculoskeletal
- d. Functional

## **Key Objectives**

Given a patient with chronic abdominal pain, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan.

## **Enabling Objectives**

Given a patient with chronic abdominal pain, the candidate will

- list and interpret critical clinical findings, including those derived from a detailed history and an appropriate physical examination;
- list and interpret critical investigations, including laboratory investigations, basic and advanced imaging, and endoscopic evaluation; and
- construct an effective initial management plan, including
  - a. appropriate medical, surgical, and nonpharmacologic management;
  - b. determining whether this is a case for which long-term follow-up is required due to the risk of later complications; and
  - c. recognition of possible underlying psychosocial issues leading to abdominal pain (e.g., spousal abuse, anxiety).

# Acute abdominal pain

(March 2022)

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## Rationale

Acute abdominal pain is common in adults, leading to frequent physician visits in both Emergency Department and office settings. Acute abdominal pain may result from serious intra-abdominal, intrathoracic, or retroperitoneal processes.

## Causal Conditions

(list not exhaustive)

- Localized pain
  - a. Upper abdominal region
    - Biliary tract disease
    - Pancreatitis
    - Peptic ulcer disease, gastritis
    - Gastroesophageal reflux disease
    - Acute hepatitis, hepatic abscess
    - Splenic infarction, splenic abscess
    - Referred cardiothoracic pain
    - Musculoskeletal pain
  - b. Lower abdominal region
    - Appendicitis
    - Mesenteric lymphadenitis
    - Diverticulitis
    - Incarcerated hernia
    - Pelvic inflammatory disease
    - Ectopic pregnancy

- Ovarian (e.g., torsion or ruptured cyst)
- Urinary tract infection
- Renal colic
- Inflammatory bowel disease
- Bowel obstruction
- Diffuse pain
  - a. Generalized peritonitis
  - b. Ruptured abdominal aortic aneurysm
  - c. Ischemic bowel disease
  - d. Gastroenteritis
  - e. Initial or acute presentation of a chronic condition

## Key Objectives

Given a patient with acute abdominal pain, the candidate will diagnose the cause, severity, and complications and will initiate an appropriate management plan. In particular, the candidate will identify those patients requiring emergency medical or surgical treatment.

## Enabling Objectives

Given a patient with acute abdominal pain, the candidate will

- list and interpret critical clinical findings, including
  - a. historical features, such as
    - the onset, frequency, duration, location, radiation, quality, and severity of pain; and
    - aggravating and alleviating factors; and
  - b. features of an appropriate physical examination, such as
    - results of an abdominal examination;
    - signs of peritonitis; and
    - results of rectal and genitourinary examinations if relevant;

- list and interpret the critical investigations, including appropriate laboratory and diagnostic imaging investigations; and
- construct an effective management plan, including
  - a. determining whether the patient requires an emergency surgical procedure or emergency medical care;
  - b. outlining a management plan for nonemergency conditions; and
  - c. determining whether the patient needs specialized care and/or further investigation.



# Abdominal pain (children)

(March 2023)

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## Rationale

Abdominal pain is a common presentation in children. While the symptoms may result from serious abdominal pathology, in a large proportion of cases, an identifiable organic cause is not found. When a cause is identified, the cause is often age dependent.

## Causal Conditions

(list not exhaustive)

- Lower abdominal pain (e.g., appendicitis, constipation, gynecologic issues)
- Flank pain (e.g., pyelonephritis, kidney stones)
- Epigastric pain (e.g., gastroesophageal reflux)
- Generalized/diffuse pain (e.g., functional, infantile colic, malabsorption)

## Key Objectives

Given a pediatric patient with abdominal pain, the candidate will diagnose the cause, severity, and complications and initiate an appropriate management plan.

## Enabling Objectives

Given a pediatric patient with abdominal pain, the candidate will

- list and interpret critical findings, including those derived from
  - a. a detailed history, including characteristics of the pain;
  - b. an appropriate physical examination, including
    - general abdominal examination
    - special manoeuvres if relevant (e.g., rebound tenderness, shifting dullness)
    - rectal, genitourinary, and/or other system examinations if relevant
  - c. the identification of causes of abdominal pain requiring a surgical procedure;
  - d. the differentiation of possible psychological causes or psychosocial circumstances in case of chronic abdominal pain;

- list and interpret critical investigations, including
  - a. laboratory investigations;
  - b. diagnostic imaging;
- construct an effective initial management plan, including
  - a. determining whether emergency intervention is required;
  - b. determining appropriate medical, surgical, and nonpharmacologic management for common causes of abdominal pain based on age;
  - c. determining whether specialized care and/or further investigations are required (e.g., endoscopy);
  - d. recognizing possible underlying psychosocial issues leading to abdominal pain.

# Anorectal pain

(March 2022)

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## Rationale

Anorectal pain can be associated with potentially serious underlying pathology. However, most causes of anorectal pain are treatable. Early identification and treatment are important to reduce morbidity.

## Causal Conditions

(list not exhaustive)

- Anorectal disease
  - a. Inflammatory bowel disease
  - b. Fissures, fistulas
  - c. Hemorrhoids
- Dermatologic disease
  - a. Contact dermatitis or atopic dermatitis
- Malignancy (dermatologic or gastrointestinal)
- Infections
  - a. Sexually transmitted
  - b. Bacterial, fungal, or parasitic
- Trauma
- Coccygeal pain
- Complications of gastrointestinal disease

## Key Objectives

Given a patient with anorectal pain, the candidate will complete a relevant history and physical examination, and order pertinent investigations to determine the most likely diagnosis. The candidate will initiate an appropriate management plan. In particular, the candidate should be cognizant of risk factors or symptoms suggestive of underlying disease.

## Enabling Objectives

Given a patient with anorectal pain, the candidate will

- list and interpret critical clinical findings, including
  - a. history of rectal pain and bleeding, disturbed bowel function, and anal trauma; and
  - b. results of an appropriate examination, including digital rectal examination;
- list and interpret investigations, including
  - a. laboratory investigations; and
  - b. endoscopic examination; and
- construct an effective initial management plan, including
  - a. determining whether the patient requires urgent surgical treatment;
  - b. counselling the patient about conservative treatment options in case of hemorrhoids and anal fissures;
  - c. counselling the patient about future preventive measures (e.g., condom use for anal intercourse); and
  - d. referring the patient for specialized care if necessary.

# Abnormal heart sounds and murmurs

(March 2022)

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## Rationale

Murmurs and abnormal heart sounds may be detected on physical examination. Although systolic murmurs are often "innocent" or physiologic, diastolic murmurs are virtually always pathologic. A thorough history and physical examination almost always identify which patient cases require further investigation and management.

## Causal Conditions

(list not exhaustive)

- Abnormal heart sounds
  - a. S<sub>1</sub> (e.g., mitral stenosis, atrial fibrillation)
  - b. S<sub>2</sub> (e.g., hypertension, aortic stenosis)
  - c. S<sub>3</sub> (e.g., heart failure)
  - d. S<sub>4</sub> (e.g., hypertension)
  - e. Abnormal splitting (e.g., atrial septal defect)
- Systolic murmurs
  - a. Ejection murmurs (e.g., physiologic, aortic stenosis)
  - b. Pansystolic murmurs (e.g., mitral regurgitation)
- Diastolic murmurs
  - a. Early (e.g., aortic regurgitation)
  - b. Mid-diastolic (e.g., mitral stenosis)
- Pericardial friction rubs

## Key Objectives

Given a patient with a murmur or abnormal heart sounds, the candidate will differentiate innocent from pathologic conditions; diagnose the cause, severity, and complications; and initiate an appropriate management plan.

## Enabling Objectives

Given a patient with a murmur or abnormal heart sounds, the candidate will

- list and interpret critical clinical findings, including
  - a. the origin of the abnormal sound and/or murmur; and
  - b. results of an appropriate history and physical examination aimed at determining the underlying pathological condition, including severity and complications (e.g., heart failure, endocarditis);
- list and interpret critical investigations, including
  - a. diagnostic screening for cardiac arrhythmia by means of clinical findings and electrocardiogram; and
  - b. appropriate diagnostic imaging, including echocardiography, for further investigation of the murmur or abnormal heart sounds; and
- construct an effective initial management plan, including
  - a. initiating management for the underlying condition and its complications (e.g., heart failure, atrial fibrillation, endocarditis);
  - b. recommending endocarditis prophylaxis if indicated; and
  - c. determining whether the patient requires specialized care.

# Abnormal lipids

(March 2022)

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## Rationale

Hypercholesterolemia is a common and important modifiable risk factor for ischemic heart disease, cerebrovascular disease, and peripheral vascular disease. Determination of levels is usually based on concomitant risk factors.

## Causal Conditions

(list not exhaustive)

- Hypercholesterolemia (elevated low-density lipoprotein level, lipoprotein [a])
  - a. Primary causes
    - Familial combined hyperlipidemia
    - Polygenic
    - Familial hypercholesterolemia
  - b. Secondary causes
    - Endocrine (e.g., diabetes, hypothyroidism)
    - Cholestatic liver disease
    - Nephrotic syndrome (e.g., chronic kidney disease)
    - Other
      - a. Tobacco cigarettes
      - b. Obesity
      - c. Drugs (e.g., steroids)
- Hypertriglyceridemia
  - a. Primary causes (familial hypertriglyceridemia)
  - b. Secondary causes

- Obesity
  - Diabetes
  - Nephrotic syndrome (e.g., chronic kidney disease)
  - Drugs (e.g., estrogen)
  - Alcohol
- Low high-density lipoprotein level
    - a. Primary
    - b. Secondary
      - Obesity
      - Drugs (e.g., anabolic steroids)
      - Metabolic syndrome

## Key Objectives

Given patients with abnormal serum lipids, the candidate will diagnose the cause, severity, and complications. In particular, the candidate will identify those patients who would benefit from serum cholesterol reduction, and determine whether both primary and secondary prevention measures are needed.

## Enabling Objectives

Given patients with abnormal serum lipids, the candidate will

- list and interpret critical clinical findings, including
  - a. features of a history and physical examination aimed at identifying patients with remediable causes for their lipid abnormalities (e.g., hypothyroidism); and
  - b. identification of patients who are at highest risk for ischemic heart disease;
- list and interpret critical investigations, including further laboratory testing to identify patients with remediable causes for their lipid abnormalities; and
- construct an effective initial management plan, including
  - a. recommending lifestyle modification and pharmacologic therapy as appropriate;



- b. discussing risks and benefits of primary versus secondary prophylaxis with lipid-lowering drugs; and
- c. identifying patients in need of specialized care.

# Abnormal liver function tests

(January 2017)

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## Rationale

Abnormal liver function tests are common in clinical practice. Appropriate investigation can distinguish benign reversible liver disease from potentially life-threatening conditions.

## Causal Conditions

(list not exhaustive)

- Hepatocellular
  - a. Acute (e.g., infection, medication)
  - b. Chronic (e.g., infection, medication)
- Cholestatic
  - a. Intrahepatic (e.g., pregnancy)
  - b. Extrahepatic (e.g., gallstones)
- Congenital abnormalities (e.g., Gilbert disease)
- Other (e.g., celiac disease)

## Key Objectives

Given a patient with abnormal liver function tests, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan, in particular, assessing for any potential underlying liver disorder or systemic disease.

## Enabling Objectives

Given a patient with abnormal liver function tests, the candidate will

- list and interpret critical clinical findings, including
  - a. differentiate between abnormal liver function tests due to disease that require treatment from those that do not;
  - b. differentiate primary hepatic disease from systemic disease;
  - c. identify complications related to the presence of liver disease (e.g., bleeding, ascites);

- list and interpret critical investigations, including
  - a. laboratory tests appropriate for the identification of specific acute and chronic liver diseases (e.g., viral serology);
  - b. diagnostic imaging (e.g., ultrasound);
- construct an effective initial management plan, including
  - a. determining if the patient requires urgent referral or hospitalization;
  - b. referring the patient for specialized care (e.g., non-urgent), if necessary;
  - c. counseling and educating the patient to prevent further hepatic insult (e.g., primary and secondary prevention strategies for viral hepatitis);
  - d. communicating with the public health authorities, if applicable.

# Abnormal pubertal development

(March 2022)

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## Rationale

Puberty is the physiologic and psychosocial transition from childhood to adolescence. Questions about typical and atypical pubertal development are a common reason for presentation to primary care clinics. Abnormalities in pubertal development can be indicators of severe underlying disorders and can be a cause of significant anxiety for patients and families. They require careful investigation and follow-up.

## Causal Conditions

(list not exhaustive)

- Delayed puberty
  - a. Variant of normal (idiopathic constitutional delay of puberty)
  - b. Primary gonadal disorders
    - Congenital
      - Chromosomal (e.g., Turner syndrome, Klinefelter syndrome)
      - Congenital malformations
    - Acquired gonadal disorders (e.g., gonadal infection, trauma, neoplasm)
  - c. Secondary gonadal disorders
    - Functional (e.g., chronic illness, malnutrition)
    - Hypothalamic dysfunction (e.g., hyperprolactinemia, exogenous steroids)
    - Pituitary dysfunction (e.g., central nervous system [CNS] tumour)
- Precocious puberty
  - a. Central precocious puberty (gonadotropin-dependent)
    - Idiopathic
    - CNS (e.g., neoplasms, hydrocephalus)

b. Peripheral precocious puberty (gonadotropin-independent)

- Autonomous gonadal function (e.g., ovarian cysts, Leydig cell tumours of ovaries or testes)
  - Adrenal pathology (e.g., tumours, congenital adrenal hyperplasia)
  - Exogenous sex hormone exposure
- Variations of early pubertal development (e.g., premature thelarche, premature adrenarche)

## Key Objectives

Given a patient in whom there are concerns about pubertal development, the candidate will identify the cause, severity, and complications, and will initiate an appropriate management plan. Particular attention should be paid to distinguishing normal variation of pubertal development from symptoms of serious underlying disorders, and to supportive counselling regarding the psychosocial aspects of puberty.

## Enabling Objectives

Given a patient in whom there are concerns about pubertal development, the candidate will

- list and interpret relevant clinical findings, including those derived from
  - a. an appropriate history, with a focus on growth and development, nutrition, and symptoms of underlying systemic disease; and
  - b. an appropriate physical examination, with particular attention to Tanner staging of pubertal development and to signs of underlying disorders (e.g., CNS tumours, eating disorders);
- list and interpret relevant investigations, including differentiation of normal variants from serious or urgent underlying conditions (e.g., CNS or pelvic imaging if neoplasm is suspected); and
- construct an effective initial management plan, including
  - a. reassurance in case of normal variants of pubertal development;
  - b. referral for appropriate specialized care (e.g., pediatrics, endocrinology, genetics, neurology) in case of abnormal pubertal development; and
  - c. supportive counselling to the patient and their family regarding the psychosocial implications of abnormal pubertal development.

# Acid-base abnormalities

(March 2022)

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## Rationale

Abnormally high or low hydrogen ion concentration—acidemia and alkalemia, respectively—is encountered relatively frequently, particularly in hospital-based practice. Acidemia may be caused by an underlying life-threatening condition. Several acid-base abnormalities can coexist in a single patient.

## Causal Conditions

(list not exhaustive)

- Metabolic acidosis
  - a. High anion gap
    - Increased acid production
      - a. Exogenous (e.g., methanol)
      - b. Endogenous (e.g., ketoacidosis)
    - Decreased renal acid excretion (e.g., kidney injury)
  - b. Normal anion gap
    - Gastrointestinal bicarbonate loss (e.g., diarrhea)
    - Renal bicarbonate loss (e.g., renal tubular acidosis, interstitial nephritis)
- Metabolic alkalosis
  - a. Expanded effective arterial blood volume (e.g., mineralocorticoid excess)
  - b. Contracted effective arterial blood volume
    - Gastrointestinal loss (e.g., vomiting)
    - Renal loss (e.g., diuretics)
  - c. Exogenous ingestion
- Respiratory acidosis

- a. Neuromuscular causes (e.g., medications, illicit drugs, neuromuscular disease)
- b. Pulmonary causes of decreased alveolar ventilation (e.g., severe asthma exacerbation with impending respiratory failure)
- c. Kyphoscoliosis
- d. Hypoventilation (e.g., due to obesity)
- Respiratory alkalosis
  - a. Hypoxemia with tachypnea
  - b. Metabolic (e.g., hepatic failure)
  - c. Cardiopulmonary disorders (e.g., pneumonia, embolism)
  - d. Central nervous system disorders (e.g., subarachnoid hemorrhage)
  - e. Drugs (e.g., salicylate)
  - f. Miscellaneous (e.g., fever, pain, pregnancy)

## Key Objectives

Given a patient with an acid-base abnormality, the candidate will diagnose the cause, severity, and complications and will initiate an appropriate management plan, particularly when dealing with a high anion gap metabolic acidosis.

## Enabling Objectives

Given a patient with an acid-base abnormality, the candidate will

- through efficient and focused data gathering, diagnose the cause of acidemia or alkalemia expeditiously;
- list and interpret critical clinical and laboratory findings that are key in the processes of exclusion, differentiation, and diagnosis, including those derived from
  - a. an accurate arterial blood gas (ABG) analysis; and
  - b. complementary investigations for acidemia or alkalemia aimed at identifying the primary abnormality and the adequacy of the associated secondary compensation; and
- construct an effective initial management plan for acidemia or alkalemia, including

- a. describing general supportive measures;
- b. describing management for specific acid-base disorders; and
- c. determining whether the patient needs to be referred for consultation.



# Adults with developmental disabilities

(March 2022)

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## Rationale

The need for health care for adults with developmental disabilities is growing because of greater social integration and accessibility and longer life expectancy than in the past. These patients may have complex health issues and poor health status.

## Causal Conditions

(list not exhaustive)

- Unknown etiology
- Known etiology and associated conditions
  - a. Genetic syndromes (e.g., trisomy 21)
  - b. Autism spectrum disorder
  - c. Fetal alcohol spectrum disorder
  - d. Brain injury (e.g., cerebral palsy)
  - e. Central nervous system infection
  - f. Other

## Key Objectives

Given an adult patient with developmental disability, the candidate will identify common physical, mental, and behavioural issues and initiate an appropriate management plan. Particular attention should be paid to the known disparities in health status and health care for this group and to the interdisciplinary coordination of care. It is also important to adapt communication to the patient's level of intellectual and adaptive functioning.

## Enabling Objectives

Given an adult patient with developmental disability, the candidate will

- list and interpret critical clinical findings, including
  - a. assessed level of intellectual and adaptive functioning;

- b. atypical presentations of serious illness and/or pain (e.g., infection, trauma); and
- c. identified risk factors for abuse and neglect;
- list and interpret critical investigations depending on the disability (e.g., thyrotropin [thyroid-stimulating hormone {TSH}] in trisomy 21, hearing and vision testing); and
- construct an effective initial management plan, including
  - a. assessing the patient's ability to give voluntary and informed consent;
  - b. obtaining input and assistance from caregivers;
  - c. initiating interdisciplinary care if necessary;
  - d. performing appropriate screening and preventive measures (e.g., for infectious diseases and cancer);
  - e. ensuring appropriate use of psychotropic medication (e.g., antipsychotics), including discussion of risks and benefits;
  - f. anticipating medium-term and long-term complications (e.g., psychosocial effects, safety); and
  - g. obtaining assistance and input from caregivers/support workers.

# Allergic Reactions and Atopy

(April 2024)

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## Rationale

Allergic conditions are common and may be life-threatening. Many patients may have multiple manifestations of an atopic disorder.

## Causal Conditions

(list not exhaustive)

Allergic reactions may be present with the following clinical manifestations:

- Anaphylaxis
  - a. Drugs, food allergens, insect stings, idiopathic
- Urticaria or angioedema
  - a. Drugs, food, physical stressors (e.g., cold, exercise) or congenital causes
- Atopic dermatitis
- Respiratory allergy (e.g., pollen, dust mites)

## Key Objectives

Given a patient with an allergic reaction, the candidate will determine the cause and severity, and will initiate an appropriate management plan. Particular attention should be paid to findings suggestive of anaphylaxis and its management.

## Enabling Objectives

Given a patient with an allergic reaction, the candidate will

- list and interpret critical clinical findings, including
  - a. history of drug ingestion, food ingestion, stings, environmental and occupational exposures, exercise, or family history;
  - b. results of an appropriate physical examination;
- list and interpret critical investigations, including
  - a. appropriate use of tests designed to identify allergens;

- construct an effective management plan, including
  - a. emergency management of anaphylaxis with appropriate measures;
  - b. long-term management including patient education counseling (e.g., reassignment or removal from work, avoidance of triggers).

# Amenorrhea, oligomenorrhea

(March 2022)

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## Rationale

Amenorrhea and oligomenorrhea are common patient concerns and can be associated with potentially serious underlying pathology. Primary amenorrhea is the absence of menarche by age 15 years in the presence of normal growth and secondary sexual characteristics. Secondary amenorrhea is the absence of menstruation for more than three cycles or six months in patients who were previously menstruating. Oligomenorrhea refers to infrequent menstruation, a cycle of menstrual periods with an interval of more than 35 days. Infrequent or absent menstruation in these circumstances is a reason for investigation and management.

## Causal Conditions

(list not exhaustive)

- Primary amenorrhea
  - a. Central
    - Hypothalamus (e.g., functional)
    - Pituitary
  - b. Ovary (e.g., ovarian dysgenesis, polycystic ovarian disease)
  - c. Genital tract outflow obstruction (e.g., imperforate hymen)
- Secondary amenorrhea and/or oligomenorrhea
  - a. Pregnancy
  - b. Central
    - Hypothalamus (e.g., functional, exogenous hormones)
    - Pituitary (e.g., prolactinoma)
  - c. Other endocrine (e.g., thyroid disorders, adrenal disorders)
  - d. Ovary (e.g., oophorectomy, chemotherapy, polycystic ovarian disease)
  - e. Uterus (e.g., Asherman syndrome)

## Key Objectives

Given a patient with oligomenorrhea or amenorrhea, the candidate will complete a relevant history and physical examination, and order pertinent investigations to determine the most likely diagnosis. In particular, the candidate will first rule out pregnancy. In amenorrhea, the candidate will then differentiate between primary and secondary. The candidate will initiate an appropriate management plan.

## Enabling Objectives

Given a patient with amenorrhea or oligomenorrhea, the candidate will

- list and interpret critical clinical findings, including results of an appropriate history and physical examination, including a pelvic examination;
- list and interpret critical investigations, including appropriate laboratory and radiologic studies; and
- construct an effective initial management plan, including
  - a. on pregnancy if applicable;
  - b. on primary amenorrhea if applicable;
  - c. on secondary amenorrhea other than pregnancy if applicable;
  - d. determining whether the patient requires specialized care; and
  - e. counselling and education as appropriate.

# Anxiety

(March 2022)

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## Rationale

Anxiety is a common presentation in both primary care and hospital settings. It is often comorbid with other medical conditions and can be the presenting feature of an underlying medical condition (e.g., hyperthyroidism). When severe, it can be associated with life-threatening complications (e.g., suicidal ideation).

## Causal Conditions

(list not exhaustive)

Anxiety disorders are caused by a complex interaction of biological (e.g., genetic, substance use), social (e.g., intimate partner violence), and psychological factors (e.g., uncertainty). They frequently coexist with other psychiatric and medical conditions, but may present in isolation.

Common anxiety disorders include

- Generalized anxiety disorder
- Panic disorder
- Agoraphobia
- Social anxiety
- Separation anxiety disorder
- Selective mutism
- Substance- or medication-induced disorder
- Anxiety disorder due to another medical condition

## Key Objectives

Given a patient with anxiety, the candidate will diagnose the cause, severity, and complications and will initiate an appropriate management plan.

## Enabling Objectives

Given a patient with anxiety, the candidate will

- list and interpret critical clinical findings, including those derived from an appropriate history and physical examination aimed at

- a. differentiating situational stress from a true anxiety disorder;
  - b. ruling out an underlying medical condition as the cause of the anxiety (e.g., adrenal tumours);
  - c. identifying possible comorbid conditions (e.g., substance-related disorder); and
  - d. determining the severity of symptoms and assessing for the presence of life-threatening features (e.g., suicidal ideation);
- list and interpret critical investigations, including appropriate laboratory investigations based on clinical findings (e.g., toxicology screen); and
  - construct an effective initial management plan, including
    - a. ensuring the safety of the patient and others;
    - b. treating the anxiety disorder using appropriate pharmacologic, environmental (e.g., hospitalization), and psychological (e.g., psychotherapies) interventions;
    - c. treating any underlying medical and/or comorbid conditions if appropriate;
    - d. providing support to family and/or caregivers; and
    - e. referring the patient for specialized care if necessary.



# Ataxia (gait)

(March 2022)

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## Rationale

Neurologic abnormalities of gait can result from disorders affecting several levels of the nervous system. The type of abnormality observed clinically often indicates the site affected.

## Causal Conditions

(list not exhaustive)

- Cerebellar ataxia
  - a. Tumour
  - b. Vascular
  - c. Hereditary
  - d. Multiple sclerosis
  - e. Drugs
  - f. Alcohol
- Sensory ataxia
  - a. Vestibular
  - b. Proprioceptive
  - c. Visual
- Other movement disorders
  - a. Parkinson disease
  - b. Other central nervous system disorders (e.g., cerebral)

## Key Objectives

Given a patient with a gait disturbance, the candidate will distinguish ataxia from other irregularities. The candidate will determine localization, etiology, outcome, and complications, and will initiate an appropriate management plan.

## Enabling Objectives

Given a patient with a gait disturbance, the candidate will

- list and interpret critical findings, including those derived from an appropriate history and physical examination aimed at differentiating between ataxia and other causes of gait disturbance, and at establishing the localization and cause;
- list and interpret critical investigations, including appropriate laboratory and diagnostic imaging investigations based on clinical findings; and
- construct an effective initial management plan, including determining whether specific management or specialized care is required.

# Attention, learning, and school problems

(January 2017)

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## Rationale

School and learning problems are among the most common reasons for children to present to primary care clinicians. Difficulties at school can be caused by treatable medical and developmental conditions which, if unaddressed, can lead to long-term psychosocial dysfunction and chronic health problems.

## Causal Conditions

(list not exhaustive)

- Developmental disorders (e.g., attention deficit hyperactivity disorder [ADHD], specific learning disorder, autism spectrum disorder)
- Sensory impairment (e.g., hearing or vision impairment)
- Neurological disorders (e.g., seizure disorder, fetal alcohol spectrum disorder)
- Mental health disorders
- Psychosocial stressors (e.g., hunger, adverse childhood experience)
- Chronic medical disease (e.g., obstructive sleep apnea)
- Substance abuse-related and addictive disorders

## Key Objectives

Given a child or youth with learning or school problems, the candidate will assess for potential causal conditions, which often co-occur, and will initiate an appropriate management plan.

Particular emphasis should be placed on early involvement of interdisciplinary resources and longitudinal supportive care.

## Enabling Objectives

Given a child or youth with learning or school problems, the candidate will

- list and interpret critical clinical findings, including those derived from
  - a. a thorough medical and developmental history, with a focus on potential causal conditions;

- b. an educational history from school staff;
- c. a physical examination, with particular attention to signs of neurologic or genetic causal conditions;
- list and interpret critical investigations, including
  - a. systematic hearing and vision screening;
  - b. relevant laboratory tests (e.g., thyrotrophin-stimulating hormone, lead level);
  - c. psychological (cognitive) testing or behavioral checklists (e.g., ADHD screening tools);
- construct an effective management plan, including
  - a. supporting family advocacy for academic and/or behavioral interventions at school;
  - b. referring for interdisciplinary intervention, if necessary (e.g., behavior management);
  - c. ensuring medical management of causal conditions when required (e.g., long-acting stimulant medications);
  - d. providing counseling and longitudinal family support;
  - e. referring for specialized care, if necessary.

# Black Health

(April 2024)

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## Rationale

In Canada, Black<sup>a</sup> people continue to be overrepresented in experiencing some of the worst health outcomes throughout their lifespan. Medical professionals play a prominent role in reducing health inequities and addressing anti-Black racism<sup>b</sup>; lack of awareness can contribute to or worsen Black health outcomes. Improving Black health outcomes must be a key component of medical education and training.

The United Nations Working Group of Experts on People of African Descent noted, in its mission to Canada, that “across the country, many people of African descent continue to live in poverty and poor health, have low educational attainment and are overrepresented in the criminal justice system”<sup>1</sup> and that systemic anti-Black racism is an upstream factor contributing to these outcomes. Physicians must understand the impacts of anti-Black racism on the health of Black people to better advocate and provide better care for Black people in Canada to reach their full health potential.

## Causal Conditions

(list not exhaustive)

1. The current state of Black health is the result of the historical roots and legacies of colonialism, the afterlife of slavery,<sup>2</sup> medical racism, and anti-Black racism in Canadian society.
2. Fundamental pillars of colonization in North America include the theft of Indigenous land, the enslavement and trafficking of African people from their lands, and the dehumanization of Indigenous and African people.
3. Medical racism<sup>c</sup> is one of the by-products of scientific racism<sup>d</sup>, purporting that race is biological and that Black people are both genetically different from white people (e.g., having a higher pain threshold), inferior to white people (e.g., having lower intelligence), and could be experimented on without consent.
4. Present-day Black health inequities are not due to biological differences between races but rather social and structural factors, including historic barriers to access and continuity of health care, long-standing systemic anti-Black racism, underrepresentation of Black health professionals in the system, and other factors.<sup>1</sup>

## Key Objectives

1. Understand the complexities of Black health and well-being through Afrocentric and critical race methods, including intersectional realities (e.g., misogynoir<sup>e</sup>, anti-Black homophobia, anti-Black transphobia) and heterogeneity of experiences among Black people, and recognize the contributions of Black medical and health care professionals (both historical and contemporary).
2. Recognize that race is a sociopolitical and historical construct, acknowledging the legacy and afterlife of slavery<sup>2</sup>, historical medical atrocities, intergenerational trauma, and the pervasiveness of anti-Black racism and colonization within health care systems.
3. Describe anti-Black racism as a structural determinant of health that impacts how Black peoples and communities experience the social determinants of health.
4. Distinguish between different types of anti-Black racism (e.g., interpersonal, structural, institutionalized) and the disproportionate impacts on various groups of Black people (maternal health, environmental health of children, chronic illnesses of elderly).
5. Reflect on the manifestations of anti-Black racism in clinical, public health, and community health settings (e.g., in the delivery of care and health services, in patient-provider relationships, and in institutions and policies).
6. Advance the health and well-being of Black communities through trauma-informed and culturally affirming care, and recognize the ability of Black people and communities to advocate for their own health and well-being.
7. Reflect on one's own identity, social position, agency, biases, and stigmatizing language while recognizing one's contribution to perpetuating oppression, inequities, and anti-Black racism.
8. Advocate with Black communities for the creation of culturally affirming spaces by moving from bystander to upstander approaches, committing to critical allyship, and disrupting performative "allyship."
9. Improve access to health care services for Black people who may be excluded due to geographical, financial, cultural, or communication barriers, and commit to the ongoing work of addressing anti-Black racism.

## Enabling Objectives

1. Learn and describe the four key manifestations of racial discrimination in the United Nations report of the Working Group of Experts on People of African Descent on its Mission to

Canada.<sup>1</sup>

2. Demonstrate an understanding of the diversity of Black communities, the historical and contemporary manifestations of anti-Black racism in Canada, and its impact on the attitudes and beliefs placed on and knowledge produced about Black peoples and communities. Recognize the health and safety needs of Black people and communities, as well as their expectations and relationships with Canadian health care systems.
3. Describe how intersectional Black identities (e.g., gender, sexuality, ability, mental health status) experience multiple forms of oppression (e.g., misogynoir,<sup>e</sup> anti-Black homophobia, anti-Black transphobia).
4. Describe and confront structural white supremacy, structural and lateral violence, and colour evasiveness and their impacts on Black health and Black colleagues' and peers' well-being.
5. Define and adopt anti-oppressive and antiracist practice to clinical interventions, policies, and best practices in health care, education, and research.
  - a. Demonstrate the ability to integrate this information into the continuum of care (prevention, diagnosis, treatment, rehabilitation, and health promotion) and into your scope of practice.
6. Describe the relationship between structural factors (including social, political, cultural, and economic systems) and Black patients' and communities' experiences of illness, health, and well-being.
7. Design and implement interprofessional, interdisciplinary, and intersectoral interventions that address anti-Black racism and its manifestations across the social determinants of health (e.g., treatment plans, policies, and programs).
8. Define racial trauma (race-based traumatic stress) and list its cumulative psychological and physiological impacts on Black patients' health.
9. Recognize one's own racial identity and social location, value system, power, privileges, and existing biases. Describe how these affect one's agency, personal and professional complicity in perpetuating different forms of anti-Black racism in medicine, including the lack of Black representation.
10. Differentiate between genetic variation, genetic ancestry, and sociologically derived (race and racism) risk factors for Black patients and communities.
11. Critically evaluate the content and gaps within academic, government, and journalistic research and publications on health and health care in Black communities.

<sup>a</sup>The term *Black* people refers to people of African descent including Afro-Indigenous, Black Indigenous people, African Nova Scotian, Black Scotian people, and those with more recent diasporic experiences, who identify as Black African, Black Caribbean, Black Afri-Latinx, Black Middle-Eastern, Black North American, or multi-racial, and identify with their African ancestry, specifically including Black women (cis and trans), Black people with disabilities, and Black and Afri-Indigenous 2SLGBTQQIA+ people.

<sup>b</sup>Anti-Black racism (first applied in the Canadian context by social work scholar Dr. Akua Benjamin) is defined as policies and practices rooted in Canadian institutions—such as, education, health care, and justice—that mirror and reinforce beliefs, attitudes, prejudice, stereotyping and/or discrimination towards people of Black-African descent. Discrimination against Black people is deeply entrenched and normalized in Canadian institutions, policies, and practices, and is often invisible to those who do not feel its effects.

<sup>c</sup>The term *medical racism* refers to racism against people of color within the medical system.<sup>4</sup>

<sup>d</sup>Scientific racism is a historical pattern of ideologies that generate pseudoscientific racist beliefs and perpetually influences racial bias and discrimination in science and research. It is an organized system of misusing science to promote false scientific beliefs in which dominant racial and ethnic groups are perceived as being superior.<sup>5</sup>

<sup>e</sup>The term *misogynoir* refers to “the uniquely co-constitutive racialized and sexist violence that befalls Black women [and feminine/femme presenting Black people] as a result of their simultaneous and interlocking oppression at the intersection of racial and gender marginalization.”<sup>6</sup>

<sup>f</sup>The term *racial trauma* refers to the mental and emotional injury caused by encounters with racial bias and ethnic discrimination, racism, and hate crimes.<sup>7</sup>



# Bleeding, bruising

(March 2022)

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## Rationale

Minor localized bleeding or bruising is a common patient presentation and is often idiopathic in nature and/or self-limiting. However, excessive or prolonged bleeding or bruising can be associated with potentially serious underlying pathology, in which case urgent management may be required. Note that bleeding specifically related to major organ systems is covered under other objectives (e.g., 6-1, 6-2, 112).

## Causal Conditions

(list not exhaustive)

- Mechanical (e.g., epistaxis) or traumatic (e.g., abrasion, laceration) localized bleeding
- Idiopathic localized bleeding
- Hemostasis disorders
  - a. Platelet or blood vessel disorders (e.g., von Willebrand disease, collagen disorder, medication-induced)
  - b. Coagulation disorders (e.g., factor VIII or vitamin K deficiency, fibrinolysis)

## Key Objectives

Given a patient presenting with bleeding or bruising, the candidate will complete a relevant history and physical examination and order pertinent investigations to determine the most likely diagnosis. The candidate will initiate an appropriate management plan. In particular, the candidate should differentiate between minor self-limited causes of the bleeding versus potentially more serious hemostasis issues, which may require urgent management.

## Enabling Objectives

Given a patient with bleeding or bruising, whether localized, widespread, minor, or major, the candidate will

- list and interpret critical clinical findings, including
  - a. findings from an appropriate history and physical examination performed with particular attention to

- airway and hemodynamic status; and
  - differentiation between various disorders of hemostasis and self-limited and/or idiopathic bleeding (e.g., epistaxis);
- 
- list and interpret relevant investigations (e.g., complete blood count, coagulation studies); and
  - construct an effective initial management plan, including
    - a. initiating immediate management of bleeding (e.g., nasal packing, suturing, medication dosage adjustment, intravenous resuscitation if hemodynamically unstable);
    - b. providing counselling/education on how to prevent future episodes; and
    - c. determining whether specialized care is required.

# Upper gastrointestinal bleeding

(February 2017)

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## Rationale

Upper gastrointestinal bleeding can manifest either as hematemesis or melena. It always warrants careful and urgent evaluation, investigation, and treatment. The management depends on the amount of blood loss, the likely cause of the bleeding, and the underlying health of the patient.

## Causal Conditions

(list not exhaustive)

- Ulcerative or erosive processes
  - a. Peptic ulcer disease
  - b. Esophagitis
  - c. Gastritis
- Portal hypertension
- Trauma (e.g., Mallory-Weiss tear)
- Tumors

## Key Objectives

Given a patient with hematemesis or melena, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate will determine and manage the hemodynamic status of the patient and resuscitate if necessary.

## Enabling Objectives

Given a patient with upper gastrointestinal bleeding, the candidate will

- list and interpret critical clinical findings, including
  - a. the cause of the bleeding, as determined by clinical history;
  - b. the results of an appropriate physical examination notably aimed at assessing the patient's hemodynamic stability;

- c. indications of a high likelihood of rebleeding;
- list and interpret critical clinical investigations, including
  - a. endoscopy;
  - b. laboratory and diagnostic imaging as appropriate;
- construct an effective management plan, including
  - a. resuscitation of the hemodynamically unstable patient;
  - b. medical treatment as appropriate;
  - c. employment of endoscopic procedures as needed;
  - d. determining whether the patient needs immediate specialized care (gastroenterology, general surgery, or intensive care unit).
  - e. instituting preventive measures or treatments to avoid rebleeding (e.g. treatment of H. pylori)

# Lower gastrointestinal bleeding

(January 2017)

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## Rationale

Lower gastrointestinal bleeding is defined as blood originating distal to the ligament of Treitz. It can present as frank bleeding (hematochezia) or as occult blood loss. Although commonly seen in benign conditions, it may be the first presentation of malignancy.

## Causal Conditions

(list not exhaustive)

- Colorectal cancer or polyps
- Diverticulosis
- Angiodysplasia
- Anorectal disease
- Enterocolitis
- Brisk bleeding from the upper gastrointestinal tract
- Rectal trauma

## Key Objectives

Particular attention should be given to the hemodynamic status of the patient and the need for immediate specialized care. The candidate should also identify patients at high risk of colorectal cancer for screening colonoscopy.

## Enabling Objectives

Given a patient with lower gastrointestinal tract bleeding, the candidate will

- list and interpret critical clinical findings, including
  - a. assess through history and physical examination, including a rectal examination as part of the initial assessment;
  - b. assess the hemodynamic status;
- list and interpret critical clinical investigations, including

- a. perform colonoscopy as appropriate;
- b. select additional investigations as appropriate;
- construct an effective initial management plan, including
  - a. identify patients in need of immediate resuscitation and referral for specialized care.

# Blood in sputum (hemoptysis)

(March 2022)

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## Rationale

Expectoration of blood can range from blood streaking of sputum to massive hemoptysis (greater than 200 mL/d) that may be acutely life-threatening. Bleeding usually starts and stops unpredictably, but under certain circumstances, it may require immediate control measures and airway establishment.

## Causal Conditions

(list not exhaustive)

- Airway disease
  - a. Inflammatory (e.g., bronchiectasis, bronchitis)
  - b. Neoplasms (e.g., bronchogenic carcinoma)
  - c. Other (e.g., foreign body, trauma)
- Pulmonary parenchymal disease
  - a. Infectious (e.g., tuberculosis, necrotizing pneumonia)
  - b. Inflammatory/immune (e.g., vasculitis)
  - c. Other (e.g., coagulopathy)
- Cardiac/vascular
  - a. Pulmonary embolism (with infarction)
  - b. Elevated capillary pressure (e.g., mitral stenosis, left ventricular failure)
  - c. Arteriovenous malformation

## Key Objectives

Given a patient with hemoptysis, the candidate will diagnose the cause, severity, and complications and will initiate an appropriate management plan. In particular, the candidate must determine if the patient requires urgent intervention and stabilization or if further investigation is needed to rule out serious underlying disease.

## Enabling Objectives

Given a patient with hemoptysis, the candidate will

- list and interpret critical clinical findings, including
  - a. potential risk factors for causes of hemoptysis (e.g., smoking, asbestos exposure, anticoagulants); and
  - b. results of an appropriate history and physical examination aimed at determining the stability of the patient's condition and the underlying cause and excluding alternative diagnoses (e.g., hematemesis, epistaxis);
- list and interpret critical investigations, including
  - a. chest x-ray and other imaging, including computed chest tomography;
  - b. complete blood count and coagulation screen; and
  - c. tests for systemic disease; and
- construct an effective initial management plan, including
  - a. resuscitating and stabilizing the patient in case of massive hemoptysis;
  - b. outlining the treatment of causes that are not life-threatening and do not require immediate referral to a specialist;
  - c. determining whether the patient requires specialized care; and
  - d. determining whether there is an underlying trigger (e.g., smoking, work-related exposure) and outlining preventive measures.



# Hypertension in childhood

(January 2017)

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## Rationale

Hypertension, although uncommon in children, is usually due to an identifiable secondary cause. Essential hypertension is more common in adolescence.

## Causal Conditions

(list not exhaustive)

- Neonates and young infants
  - a. Renal artery thrombosis after umbilical artery (UA) catheter
  - b. Coarctation of the aorta
  - c. Congenital renal disease
  - d. Renal artery stenosis
- Children aged 1-10 year
  - a. Renal disease
  - b. Coarctation of the aorta
- Over 10 years of age
  - a. Essential hypertension
  - b. Renal disease
  - c. As with 1-10 years (less common)

## Key Objectives

Given a child with hypertension, the candidate will diagnose the cause, severity and associated complications, and will initiate an appropriate management plan. Particular attention should be paid to distinguishing primary from secondary hypertension.

## Enabling Objectives

Given a child with hypertension, the candidate will

- list and interpret critical clinical findings, including
  - a. accurate measurement of hypertension, and classification using blood pressure tables for children;
  - b. signs of secondary hypertension (e.g., coarctation of the aorta, renal disease)
  - c. obtain height, weight, body mass index, and relevant family history;
  - d. diagnose renal parenchymal disease;
- list and interpret critical investigations, including
  - a. primary diagnostic screen for renal disease;
  - b. diagnostic imaging to rule out renovascular disease and coarctation, if indicated;
  - c. endocrinological studies (e.g., thyroid function), if indicated;
- construct an effective initial management plan, including
  - a. lifestyle approaches for an obese patient (weight loss, exercise, salt restrictions, dietary counseling);
  - b. selection of appropriate anti-hypertensive medication;
  - c. determination as to whether the patient needs specialized care.

# Hypertensive disorders of pregnancy

(January 2017)

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## Rationale

Pregnancy may be complicated by pre-existent chronic hypertension, the onset of preeclampsia, eclampsia, or gestational hypertension. Hypertension in pregnancy may be life-threatening for both mother and baby.

## Causal Conditions

(list not exhaustive)

- Chronic hypertension with or without preeclampsia or eclampsia
- Gestational hypertension with or without preeclampsia or eclampsia

## Key Objectives

Given a pregnant patient with hypertension and/or proteinuria, the candidate will diagnose hypertensive disorders of pregnancy, as well as their causes, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate will identify and take urgent action in cases of preeclampsia or eclampsia.

## Enabling Objectives

Given a pregnant patient with a hypertensive disorder, the candidate will

- list and interpret critical clinical findings, including
  - a. diagnose the presence of preeclampsia or eclampsia;
- list and interpret critical clinical and laboratory findings, including
  - a. appropriate urine and hematologic investigations;
- construct an effective plan of management, including
  - a. urgent measures for the treatment of preeclampsia and eclampsia;
  - b. refer the patient for specialized care if necessary.

# Hypotension, shock

(January 2017)

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## Rationale

Hypotension/shock is a frequently encountered, life-threatening emergency. Regardless of the underlying cause, certain general measures are usually indicated that can be life-saving.

## Causal Conditions

(list not exhaustive)

- Cardiac output diminished
  - a. Hypovolemia
    - Hemorrhage
    - Third space loss
    - Other loss
  - b. Cardiac dysfunction
    - Intrinsic
      - a. Myopathy (e.g., ischemic)
      - b. Rhythm abnormalities
      - c. Mechanical (e.g., valvular disease)
    - Extrinsic or Obstructive
      - a. Pulmonary embolus
      - b. Pulmonary hypertension
      - c. Tension pneumothorax
      - d. Pericardial disease
      - e. Aortic dissection
      - f. Venacaval obstruction
- Distributive (diminished systemic vascular resistance)

- a. Sepsis
- b. Anaphylaxis
- c. Inadequate tissue oxygenation
  - Neurogenic, autonomic blockade
  - Drugs
  - Spinal shock
  - Addisonian crisis

## Key Objectives

Given a patient with hypotension, the candidate will diagnose the cause and urgency, paying particular attention to the presence or absence of shock. The candidate will initiate an appropriate and timely management plan.

## Enabling Objectives

Given a patient with hypotension, the candidate will

- list and interpret critical findings, including
  - a. symptoms and signs that indicate shock;
  - b. information necessary to diagnose the underlying cause of hypotension;
- list and interpret critical clinical investigations, including
  - a. tests to confirm the presence of shock as well as the underlying cause;
- construct an effective initial management plan, including
  - a. restore tissue perfusion depending on the underlying cause;
  - b. initiate specific therapeutic interventions for the underlying cause of shock.

# Breast discharge

(March 2022)

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## Rationale

Breast secretions (i.e., nipple discharge) in women of reproductive age are common and usually of benign origin. However, spontaneous and persistent breast discharge may indicate underlying disease and requires investigation.

## Causal Conditions

(list not exhaustive)

- Galactorrhea
  - a. Idiopathic
  - b. Hyperprolactinemia
    - Physiologic
    - Drugs, including herbal remedies
    - Pituitary tumours
    - Endocrine abnormalities
- Breast neoplasm

## Key Objectives

Given a patient with breast discharge, the candidate will diagnose the cause, severity, and complications and will initiate an appropriate management plan, with emphasis on differentiating between galactorrhea and other causes of breast discharge.

## Enabling Objectives

Given a patient with breast discharge, the candidate will

- list and interpret critical clinical findings, including
  - a. skin lesions on the breasts;
  - b. characteristics of discharge; and

- c. breast mass;
- list and interpret critical investigations, including
  - a. diagnostic cytology;
  - b. diagnostic imaging; and
  - c. laboratory tests; and
- construct an effective initial management plan and determine appropriate follow-up, including
  - a. counselling/educating the patient (e.g., possible fear of cancer); and
  - b. determining whether the patient requires specialized care.

# Breast masses and enlargement

(March 2022)

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## Rationale

Breast masses are common and can be either benign or malignant. Given the prevalence of breast cancer in women, screening is important for detection of the disease in its early stages. Breast enlargement may be due to physiological causes or an underlying mass effect.

## Causal Conditions

(list not exhaustive)

- Malignant breast masses
- Nonmalignant breast masses
  - a. Fibrocystic change
  - b. Breast infections
  - c. Associated with lactation
- Gynecomastia
  - a. Physiologic (newborn, adolescence, elderly)
  - b. Pathologic (e.g., testosterone deficiency or increased estrogen production, medications)

## Key Objectives

Given a patient with a breast mass or gynecomastia, the candidate will diagnose the cause, severity, and urgency, and will initiate an appropriate management plan. The candidate will also recommend appropriate screening for asymptomatic patients who meet the screening criteria.

## Enabling Objectives

Given a patient with a breast mass or gynecomastia or a patient who presents with concerns about developing a breast mass, the candidate will recognize when an asymptomatic patient meets the criteria for breast cancer screening and recommend the appropriate actions for the patient to take.



Given a patient with a breast mass or gynecomastia or a patient who presents with concerns about developing a breast mass, the candidate will

- list and interpret critical clinical findings, including
  - a. results of an appropriate history and physical examination (e.g., substance use, family history of breast cancer, carrier of genetic mutations known to be associated with breast cancer); and
  - b. identified risk factors for malignancy;
- list and interpret critical investigations (e.g., imaging, biopsy); and
- construct an effective management and prevention plan, including
  - a. screening;
  - b. treatment;
  - c. referral if necessary; and
  - d. follow-up assessment and support (e.g., genetic testing).

# Brief resolved unexplained event (BRUE) (previously known as apparent life-threatening event [ALTE])

(January 2017)

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## Rationale

Life-threatening events involving infants are devastating to parents, caregivers and health care workers alike. Brief resolved unexplained events (BRUE) are characterized by a non-specific, resolved and episodic presentation, including any of the following: cyanosis or pallor; absent, decreased or irregular breathing; marked change in tone (hypertonia or hypotonia; and/or altered responsiveness). The etiology of these events is heterogeneous for a majority of infants; a specific cause may be identified following a focused history, physical examination and targeted investigations.

## Causal Conditions

(list not exhaustive)

An underlying etiology may be found in over half of infants presenting with BRUE. For those infants where a cause cannot be identified through a focused clinical evaluation and/or initial investigations, stratification for risk/probability of an occult pathology should guide further investigations and monitoring interventions. Possible causes of BRUE include:

- Misinterpretation of normal physiology in an infant (e.g., transient choking with rapid feeding or with coughing during feeding, periodic breathing/ respiratory pauses of 5-15 seconds)
- Infectious disease (e.g., respiratory infection, sepsis, meningitis, encephalitis)
- Cardiopulmonary abnormalities (e.g., central or obstructive sleep apnea, arrhythmia)
- Neurologic disease (e.g., epilepsy)
- Child abuse (e.g., intentional suffocation, non-accidental head injury)
- Metabolic disease (e.g., inborn error of metabolism)
- Other (e.g., toxic ingestion, poisoning)

## Key Objectives

Given the presentation of an infant with a BRUE, the candidate will evaluate possible risk factors and/or causes and initiate an appropriate management plan including investigations, interventions and follow-up. If an etiology is not identified through the initial evaluation, the candidate will

determine whether the severity of the BRUE warrants more extensive investigation through the process of risk categorization.

The candidate will also counsel the infant's parents/caregivers and family.

## **Enabling Objectives**

Given an infant presenting with a BRUE, the candidate will

- list and interpret critical clinical findings, including those derived from
  - a. a detailed history of the event;
  - b. an evaluation of maternal, infant and environmental risk factors;
  - c. the physical examination and/or direct observation;
- list and interpret critical investigations based upon the clinical features (e.g., viral studies, chest radiograph)
- construct an effective initial management plan, including
  - a. admitting the patient for observation;
  - b. counselling and supporting the parents' emotional needs, clarifying the difference between BRUE and sudden infant death syndrome (SIDS);
  - c. referring the parents if further investigations or interventions are required (e.g., high-risk BRUE, cardiopulmonary resuscitation training for recurrent events);
  - d. referring the patient for specialized care/investigations, if required (e.g., metabolic testing, cardiac evaluation).

# Burns

(March 2022)

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## Rationale

Burns are a fairly common injury to skin or other tissues. Depending on severity, they may be life-threatening or fatal.

## Causal Conditions

(list not exhaustive)

- Thermal
- Electrical
- Chemical
- Radiation

## Key Objectives

Given a patient with burns, the candidate will diagnose the severity and manage any complications. In particular, the candidate will institute initial management of major thermal trauma.

## Enabling Objectives

Given a patient with burns, the candidate will

- list and interpret critical clinical findings, including
  - a. severity, depth, and extent of the burns;
  - b. risk of associated inhalation injury or other associated clinical problems; and
  - c. the patient's tetanus immunization status;
- list and interpret critical investigations, including laboratory and imaging studies; and
- construct an effective initial management plan, including
  - a. resuscitating and stabilizing the patient, including the use of appropriate intravenous fluids;
  - b. addressing wound care;

- c. providing physiologic monitoring and pain control;
- d. determining whether the patient requires specialized care; and
- e. anticipating medium-term and long-term complications (e.g., psychosocial effects).

# Calcium disorders

(March 2022)

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## Rationale

In patients with hypocalcemia, tetany and/or seizures may develop, particularly if the onset is acute. Severe or prolonged hypercalcemia may cause irreversible end-organ damage and may be life-threatening.

## Causal Conditions

(list not exhaustive)

- Hypocalcemia
  - a. Loss of calcium from the circulation
    - Hyperphosphatemia (e.g., renal insufficiency)
    - Pancreatitis
    - Osteoblastic metastases
    - Drugs (e.g., ethylenediaminetetraacetic acid [EDTA])
    - Rhabdomyolysis
  - b. Decreased vitamin D production or action
    - Kidney injury
    - Rickets
    - Malabsorption
    - Neonatal
  - c. Decreased parathyroid hormone production or action
    - Postoperative (e.g., postparathyroidectomy)
    - Autoimmune
    - Diminished response
  - d. Low magnesium

- Hypercalcemia
  - a. Increased intestinal absorption
    - Increased intake (e.g., milk-alkali syndrome)
    - Vitamin D mediated (e.g., sarcoidosis)
  - b. Increased bone resorption
    - Malignancy
    - Hyperparathyroidism
    - Hyperthyroidism
    - Immobilization
  - c. Diminished excretion (e.g., diuretics)

## Key Objectives

Given a patient with either hypocalcemia or hypercalcemia, the candidate will diagnose the cause, severity, and complications and will initiate an appropriate management plan.

## Enabling Objectives

Given a patient with hypocalcemia, the candidate will

- list and interpret critical clinical findings, including
  - a. differentiation between hypocalcemia related to renal disease and hypocalcemia due to other causes; and
  - b. signs and symptoms of tetany;
- list and interpret critical clinical investigations, including
  - a. ionized calcium and/or total calcium levels corrected for albumin to assess severity; and
  - b. phosphate, magnesium, parathyroid hormone, and vitamin D levels and renal function assessment; and
- construct an effective initial management plan, including
  - a. administering intravenous calcium if the patient has symptomatic hypocalcemia; and

- b. determining whether the patient needs specialized care.

Given a patient with hypercalcemia, the candidate will

- list and interpret critical clinical findings, including
  - a. differentiation between hypercalcemia caused by malignancy and hypercalcemia due to other causes;
  - b. volume status of the patient; and
  - c. common physical examination findings associated with hypercalcemia;
- list and interpret critical clinical investigations, including
  - a. ionized calcium and/or total calcium levels corrected for albumin to assess severity; and
  - b. laboratory and imaging investigations to determine the causal condition(s); and
- construct an effective initial management plan, including
  - a. administering fluid resuscitation with or without medications if the patient has severe hypercalcemia; and
  - b. determining whether the patient needs specialized care.



# Cardiac arrest

(March 2022)

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## Rationale

Cardiac arrest is life-threatening. Timely basic and advanced cardiac life support improves patient survival outcomes.

## Causal Conditions

(list not exhaustive)

- Coronary artery disease
- Cardiac conduction abnormalities
- Myocardial abnormalities
- Noncardiac causes (e.g., tension pneumothorax, pulmonary embolus, hypothermia)

## Key Objectives

Given a patient with cardiac arrest, the candidate will be able to initiate immediate acute cardiac life support and construct an appropriate subsequent management plan.

## Enabling Objectives

Given a patient with cardiac arrest, the candidate will

- list and interpret critical clinical findings, including
  - a. pulseless circulatory state; and
  - b. features that may help determine the cause of the arrest;
- list and interpret critical investigations; and
- construct an effective management plan, including
  - a. initiating basic life support (BLS) and advanced cardiac life support (ACLS) protocols; and
  - b. communicating with family members concerning the event, including
    - outcome,
    - organ donation, and

- autopsy request.

# Cerebrovascular accident and transient ischemic attack (stroke)

(February 2017)

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## Rationale

Transient ischemic attack (TIA) and cerebrovascular accident (CVA) consist in the acute loss of arterial blood flow to a part of the brain or brainstem, resulting in temporary or permanent loss of function.

TIA and CVA are among the most common causes of death and disability in Canada. Lifestyle and risk factor modifications are ways of preventing these disorders, which can be treated with urgent medical or surgical intervention in some cases.

## Causal Conditions

(list not exhaustive)

- Ischemia
  - a. Thrombotic
  - b. Embolic
- Hemorrhage
  - a. Intracerebral and cerebellar
  - b. Subarachnoid

## Key Objectives

Given a patient with acute neurological deficits (e.g., aphasia, amaurosis fugax), the candidate will obtain an appropriate history and perform a physical examination leading to the possible diagnosis of TIA or CVA, and take action. The candidate will recognize the need for preventive health care in order to decrease the risk of TIA or CVA.

## Enabling Objectives

Given a patient with risk factors for a TIA or CVA, the candidate will

- list and interpret critical clinical findings, including results of a history and physical examination aimed at detecting an early pathology (e.g., bruits, hypertension) that is treatable or correctable.

Given a patient with acute, intermittent or chronic neurological deficits, the candidate will

- list and interpret critical clinical findings, including results of a history and physical examination aimed at determining whether TIA or CVA is a possible cause;
- list and interpret critical investigations, including
  - a. imaging (e.g., computed tomography);
  - b. laboratory testing (e.g., lipid profile);
- construct an effective management plan, including
  - a. proceeding with acute or chronic medical and surgical interventions (e.g., blood pressure control);
  - b. referring for specialized services (e.g., rehabilitation, speech-language therapy);
  - c. anticipating medium and long-term complications (e.g., psychosocial impact, safety).

# Chest pain

(March 2022)

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## Rationale

Chest pain is a very common clinical presentation with a spectrum of underlying causes ranging from benign to life-threatening.

## Causal Conditions

(list not exhaustive)

- Cardiovascular
  - a. Ischemic
    - Acute coronary syndromes
    - Stable angina pectoris
  - b. Nonischemic
    - Aortic aneurysm
    - Pericarditis
- Pulmonary or mediastinal
  - a. Pulmonary embolus or pulmonary infarction
  - b. Pleuritis
  - c. Pneumothorax
  - d. Malignancy
- Gastrointestinal
  - a. Esophageal spasm or esophagitis
  - b. Peptic ulcer disease
  - c. Mallory-Weiss syndrome
  - d. Biliary disease or pancreatitis
- Musculoskeletal (e.g., costochondritis)

- Psychiatric (e.g., anxiety disorders)

## Key Objectives

Given a patient with chest pain, the candidate will diagnose the cause and severity, with particular attention to excluding life-threatening diagnoses.

## Enabling Objectives

Given a patient with chest pain, the candidate will

- perform an initial assessment (e.g., ABCs) to determine the urgency of the presentation and need for emergent management;
- list and interpret critical clinical findings by obtaining a history and performing a physical examination that aids in
  - a. differentiating cardiac from noncardiac pain; and
  - b. identifying cardiac risk factors;
- list and interpret critical investigations, including
  - a. electrocardiograms (ECGs), chest radiographs, and appropriate laboratory tests; and
  - b. identifying, as appropriate, patients for additional investigations (e.g., stress testing, imaging); and
- construct an effective initial management plan, including
  - a. determining urgency of clinical condition;
  - b. initiating appropriate therapies in urgent situations (e.g., acute coronary syndrome, aortic dissection, pulmonary embolism, spontaneous pneumothorax);
  - c. referring for urgent specialized care as required; and
  - d. initiating secondary preventive strategies as indicated.

# Clinical informatics

(March 2022)

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## Definition

Health informatics is the study of information design and use in health care. Clinical informatics is the application of health informatics knowledge in the clinical setting to promote quality care.

Digital health is the use of information technology and electronic communication tools, services and processes to deliver health care services and facilitate better health.

## Rationale

Rapid advancements and the broad adoption of digital technology (notably the advent of electronic health records [EHRs], virtual care, and advanced analytics [e.g., artificial intelligence and machine learning]) have fundamentally changed the practice of medicine, necessitating a new set of skills and knowledge to practise safely, efficiently and competently in the digital age.

## Causal Conditions

(list not exhaustive)

A lack of digital health literacy and gaps in foundational knowledge about the effective use of health information and digital technologies are adversely affecting both patient and provider wellness.

## Key Objectives

To use health information safely and effectively, the candidate will manage health information while recognizing and adapting to the limitations of current digital technology systems.

## Enabling Objectives

To use health information safely and effectively, the candidate will

- have sound foundational knowledge of the theory, lexicon and taxonomy of health information, including
  - a. defining and differentiating
    1. health informatics,
    2. clinical informatics,

3. digital health,
  4. virtual care,
  5. health information exchange,
  6. analytics and
  7. circle of care;
- b. describing the three functional domains of clinical informatics and the interrelationship between them, including the capacity to
    1. collect longitudinal personal health information for direct patient care,
    2. exchange health information between services and locations and
    3. aggregate health data for analysis using analytics, artificial intelligence and machine learning;
- describe the differences between digital health technologies and modalities of digital care, including
    - a. technologies, such as
      1. electronic medical record (EMR),
      2. electronic health record (EHR),
      3. picture archiving and communication system (PACS) and
      4. laboratory information system (LIS); and
    - b. modalities of digital care, such as
      - virtual care, including
        - a. telephone care,
        - b. asynchronous messaging,
        - c. video care and
        - d. remote monitoring; and
      - analytics to improve quality of care, such as
        - a. panel management,



- b. clinical decision support,
  - c. artificial intelligence and
  - d. machine learning; and
- have a practical understanding of
  - a. the relationship between health information and quality of care;
  - b. the evaluation of how the choice of communication technology and/or modality of care has a bearing on the quality of a patient outcome;
  - c. the appropriate use of communication technology or modality of digital care to optimize a patient outcome, including considering factors such as
    - 1. clinical needs,
    - 2. patient readiness,
    - 3. practice readiness and
    - 4. patient location; and
  - d. the integration of communication technology and modalities of digital care into core continuity of health service;
  - e. the collection, retention and exchange of health data to promote quality of care;
  - f. the basic concepts of data analysis and panel management and how to integrate them into care;
  - g. the assurance of privacy and security of all personal health information;
  - h. the rights of the patient to the control of their personal health information;
  - i. the obligations of the custodian to manage personal health information; and
  - j. the digital divide, and the need to actively assure equity of care in digital health.

# Coma

(March 2023)

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## Rationale

Coma is a state of prolonged and pathologic unconsciousness. It may be defined as a score of 8 or less on the Glasgow Coma Scale. Coma is a medical emergency and requires urgent evaluation to avoid permanent brain injury or death.

## Causal Conditions

(list not exhaustive)

- Focal disease
  - a. Space-occupying lesion (e.g., tumour, abscess)
  - b. Stroke (e.g., brainstem infarction)
  - c. Trauma
- Diffuse disease
  - a. Vascular (e.g., hypertensive encephalopathy, eclampsia)
  - b. Infectious (e.g., meningitis, encephalitis)
  - c. Metabolic (e.g., uremia, hypercalcemia, hypoglycemia)
  - d. Toxins (e.g., lead, carbon monoxide, alcohol, opioids)
  - e. Seizures (including postictal state)
  - f. Diffuse ischemia (e.g., shock)
  - g. Trauma

## Key Objectives

Given a patient in coma, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan.

## Enabling Objectives

Given a patient in coma, the candidate will

- list and interpret critical clinical findings, including those derived from
  - a. a complete history and corroboration of information from appropriate sources;
  - b. the identification of most likely causes of coma by means of a complete physical examination including appropriate neurologic examination; and
  - c. the determination of level of consciousness using an appropriate assessment tool (e.g., Glasgow Coma Scale);
- list and interpret critical investigations, including laboratory investigations (e.g., toxin screen, glucose), diagnostic imaging (e.g., computed tomography, magnetic resonance imaging), and others (e.g., lumbar puncture, electroencephalography); and
- construct an effective initial management plan, including
  - a. initiating immediate and emergent care (e.g., airway, breathing, circulation) and appropriate empiric treatment as indicated (e.g., narcotic/benzodiazepine reversal, glucose);
  - b. initiating other urgent treatment as indicated (e.g., antibiotics, anticonvulsants);
  - c. referring the patient for specialized care (e.g., neurosurgery) if necessary; and
  - d. seeking clarification of proxy decision-making while the patient is incapacitated.

# Congenital anomalies, dysmorphic features

(March 2023)

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## Rationale

Congenital anomalies and dysmorphic features can be associated with long-term disability, making early detection and identification vital. Although early involvement of pediatric or genetic specialists is appropriate, primary care physicians are often required to contribute immediate care and assist with long-term management.

## Causal Conditions

(list not exhaustive)

- Teratogenic disorders (e.g., fetal alcohol spectrum disorder, congenital cytomegalovirus infections)
- Genetic disorders (e.g., trisomy 21, fragile X syndrome)
- Mechanical forces (e.g., constriction band syndrome)

## Key Objectives

Given a patient with congenital anomalies or dysmorphic features, the candidate will investigate the cause, determine the severity of the immediate presentation, and initiate an appropriate management plan. Particular attention should be paid to the identification of patients requiring early referral for specialized care and to the provision of supportive counselling for parents.

## Enabling Objectives

Given a patient with congenital anomalies or dysmorphic features, the candidate will

- list and interpret critical clinical findings, including those derived from
  - a. a complete history, with particular attention to any potential teratogenic exposures, and a detailed family history; and
  - b. an appropriate physical examination, with particular attention to signs of severe anomalies (e.g., cardiovascular malformations, ambiguous genitalia) as well as to recognizable phenotypic patterns (e.g., trisomy 21 syndrome);
- list and interpret appropriate investigations (e.g., microarray; karyotyping; screening for toxoplasmosis, other agents, rubella, cytomegalovirus, herpes simplex [TORCH]); and

- construct an effective initial management plan, including
  - a. stabilization and immediate referral in case of respiratory and/or hemodynamic instability;
  - b. referral for specialized pediatric or genetic care if necessary;
  - c. referral for therapeutic services, counselling, and family support groups, if indicated; and
  - d. provision of family support and counselling regarding recurrence risk, including discussion of prenatal strategies for the prevention of recurrence, indications for antenatal screening and diagnostic prenatal testing, and referral for genetic counselling, if indicated.

# Adult constipation

(March 2022)

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## Rationale

Constipation is common in adult patients and can be attributed to several possible functional and organic causes. It may have a significant effect on quality of life and may be the presenting feature of significant pathology.

## Causal Conditions

(list not exhaustive)

- Diet and lifestyle
- Irritable bowel syndrome
- Drugs
- Neurogenic (central or peripheral)
- Myopathic
- Metabolic
- Pregnancy
- Obstructive lesions
- Anorectal disease

## Key Objectives

Given an adult patient with constipation, the candidate will diagnose the cause and severity and will initiate an appropriate management plan.

## Enabling Objectives

Given an adult patient with constipation, the candidate will

- list and interpret critical clinical findings, including the features of the patient's history and physical examination that distinguish functional from organic causes;
- list and interpret critical investigations, including investigations required to determine whether the patient needs endoscopic examination or diagnostic imaging; and
- construct an effective initial management plan, including

- a. putting in place a conservative plan of symptom management (e.g., dietary and lifestyle changes, appropriate medication use);
- b. outlining a plan for managing constipation that is secondary to medications;
- c. determining whether the patient requires specialized care; and
- d. implementing prevention strategies (e.g., dietary changes, behaviour modification).

# Pediatric constipation

(January 2017)

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## Rationale

Constipation is a common problem in children. It is important to differentiate functional from organic causes, recognizing that the vast majority of children do not have an organic cause for constipation.

## Causal Conditions

(list not exhaustive)

- Neonate and Infant
  - a. Dietary
  - b. Anatomic (e.g., Hirschsprung disease)
- Older child
  - a. Dietary
  - b. Psychologic
  - c. Anatomic (e.g., bowel obstruction)
  - d. Neurologic
  - e. Endocrine/metabolic
  - f. Other (e.g., celiac disease, cystic fibrosis)

## Key Objectives

Given a child who presents with constipation, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan.

## Enabling Objectives

Given a child who presents with constipation, the candidate will

- list and interpret critical clinical findings, including
  - a. clinical features that help to distinguish functional from organic;



- b. the social and psychological effects of chronic constipation;
- list and interpret critical clinical investigations, including:
  - a. the possibility that no investigation may be necessary;
- construct an effective initial management plan, including
  - a. initial and long-term therapy including laxatives, diet, and education;
  - b. multidisciplinary approach as needed.

# Contraception

(March 2023)

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## Rationale

Contraception can be accomplished through a variety of methods. Ideally, education about contraception should be provided to both partners.

## Causal Conditions

(list not exhaustive)

- Nonpermanent contraception
  - a. Hormonal
  - b. Nonhormonal
  - c. Other (e.g., natural method)
- Permanent contraception
  - a. Male sterilization
  - b. Female sterilization
- Emergency contraception

## Key Objectives

Given a patient who presents with a need or request for contraception, the candidate will discuss the available treatment options and initiate an appropriate management plan.

## Enabling Objectives

Given the patient requesting or requiring contraception, the candidate will

- list and interpret critical clinical findings, including those based on
  - a. a general and sexual history, including risk factors for complications; and
  - b. results of an appropriate physical examination;
- list and interpret critical clinical investigations, including sampling for cultures, a Papanicolaou test, a sexually transmitted infection (STI) screen, and a pregnancy test when appropriate; and

- construct an effective initial management and prevention plan, including
  - a. discussing the various contraception options with the patient, including
    1. risks of failure;
    2. potential complications and contraindications for each method;
    3. protection against STIs; and
    4. drug interactions associated with each method; and
  - b. discussing emergency contraceptives as backup when needed.

# Cough

(March 2023)

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## Rationale

Cough is a common problem for which patients seek medical advice. Assessment of cough is important to distinguish benign from serious causes.

## Causal Conditions

(list not exhaustive)

- Acute cough
  - a. Infectious
  - b. Irritant
  - c. Other (e.g., initial presentation of a chronic cough etiology)
- Subacute cough
  - a. Postinfectious
  - b. Cough variant asthma
- Chronic cough
  - a. Upper respiratory tract
  - b. Pulmonary
  - c. Gastrointestinal (e.g., gastroesophageal reflux)
  - d. Cardiac
  - e. Other (e.g., medications, work-related exposure)

## Key Objectives

Given a patient with a cough, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. Particular attention should be paid to differentiating benign causes from more serious causes requiring full investigation and further management.

## Enabling Objectives

Given a patient with a cough, the candidate will

- list and interpret critical clinical findings, including those derived from an appropriate history and physical examination aimed at
  - a. discriminating between acute, subacute, and chronic cough;
  - b. differentiating benign from more serious causes; and
  - c. identifying triggers and aggravating factors;
- list and interpret critical investigations, including
  - a. appropriate imaging investigations;
  - b. pulmonary function testing; and
  - c. allergy testing; and
- construct an initial management plan, including
  - a. determining if the patient requires specialized care;
  - b. prescribing appropriate medication;
  - c. counseling and educating the patient (e.g., if there is a need for antibiotics or investigations);
  - d. reassuring the patient if they do not require further investigation; and
  - e. advising the patient on work-related issues, if necessary.

# Crying or fussing child

(March 2023)

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## Rationale

Although it is common for children to cry or fuss, it is important to distinguish between benign and organic causes of crying or fussing in a child.

## Causal Conditions

(list not exhaustive)

- Functional (e.g., hunger, irritability, lack of sleep)
- Colic
- Trauma (e.g., injury, physical and/or emotional abuse/trauma)
- Illness

## Key Objectives

Given a crying or fussing child, the candidate will diagnose the cause, severity, and complications of the underlying issue and initiate an appropriate management plan. In particular, the candidate will differentiate pediatric emergencies from conditions requiring nonurgent treatment or reassurance.

## Enabling Objectives

Given a child who is crying or fussing, the candidate will

- list and interpret critical clinical findings, including those derived from
  - a. a history of the child's previous behaviour, sleep pattern, oral intake, associated symptoms (e.g., fever, pain), and the child's social circumstances; and
  - b. a full physical examination aimed at determining whether the child is sick;
- list and interpret critical investigations, including investigations for any suspected underlying disease or trauma; and
- construct an effective initial management plan, including
  - a. counselling caregivers if the fussy or crying child does not have an organic disease;

- b. determining if the child requires follow-up for additional investigation and management;
- c. determining if the child needs a referral, either immediate or elective; and
- d. ensuring the child's safety if abuse is suspected as a cause.

# Cyanosis and hypoxia

(March 2023)

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## Rationale

Cyanosis is the bluish discolouration of the tissues that results from increased concentration of reduced hemoglobin. Hypoxia is defined as insufficient levels of oxygen in tissues to maintain cell function. These findings could indicate a serious underlying condition and may require urgent management.

## Causal Conditions

(list not exhaustive)

- Central cyanosis or hypoxemia
  - a. High alveolar-arterial (A-a) gradient
    - Shunting, intrapulmonary (e.g., acute respiratory distress syndrome)
    - Ventilation perfusion mismatch (e.g., cystic fibrosis, pulmonary embolus)
    - Diffusion impairment (e.g., restrictive lung disease)
  - b. Normal A-a gradient
    - Hypoventilation (e.g., opioid overdose)
    - High altitude
- Peripheral (e.g., low cardiac output, cold exposure)

## Key Objectives

Given a patient with cyanosis, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. Particular attention should be paid to determining if hypoxemia or hypoxia is present.

## Enabling Objectives

Given a patient with cyanosis, the candidate will

- list and interpret critical clinical findings, including those derived from an appropriate history and physical examination to distinguish central from peripheral cyanosis and to determine



- possible causes, severity, and complications;
- list and interpret critical investigations (e.g., calculation of A-a gradient); and
  - construct an effective initial management plan, including
    - a. initiating resuscitation if the patient is critically ill;
    - b. initiating treatment of the underlying cause;
    - c. referring the patient to specialized care if indicated; and
    - d. counselling and educating the patient about preventive measures, if applicable.

# Delirium

(March 2023)

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## Rationale

Delirium is a disturbance of cerebral function secondary to an underlying medical condition.

Delirium is extremely common in hospitalized patients. The presenting syndrome is an altered level of consciousness, impaired cognition, and reality testing with a fluctuating course. Delirium is associated with increased risk of death, prolonged hospitalization, and institutionalization.

## Causal Conditions

(list not exhaustive)

- Medications (e.g., sedative, anticholinergic)
- Metabolic (e.g., fluid and electrolyte disturbance)
- Hypoxia (e.g., anemia, hypoperfusion)
- Infection
- Endocrine (e.g., hypothyroidism)
- Neurological (e.g., stroke, dementia, infection)
- Postsurgical
- Withdrawal (e.g., alcohol, benzodiazepines)
- Trauma

## Key Objectives

Given a patient with delirium, a candidate will recognize the syndrome, diagnose the cause(s), and will initiate an appropriate management plan. Particular attention should be paid to the urgent nature of the condition.

## Enabling Objectives

Given a patient with delirium, a candidate will

- list and interpret critical clinical findings, including those derived from
  - a. the identification of susceptibility factors for delirium (e.g., age, alcohol use disorder, dementia);

- b. the use of appropriate diagnostic clinical tools (e.g., Mini–Mental State Examination);  
and
- c. a comprehensive history—including collateral history from family and caregivers—and  
an appropriate physical examination aimed at eliciting the cause of delirium;
- list and interpret critical investigations, including appropriate laboratory investigations and  
diagnostic imaging (e.g., blood gases, blood culture, computerized tomography scan); and
- construct an effective initial management plan, including
  - a. instituting acute management of underlying conditions, as appropriate;
  - b. ensuring appropriate treatment of agitation and sleep disturbance;
  - c. managing the environment of the patient to assist in reorientation and settling; and
  - d. seeking clarification of proxy decision-making while the patient is incapacitated.

# Developmental delay

(March 2023)

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## Rationale

Developmental delay occurs when a child does not attain developmental milestones compared with peers from the same population. The etiology of developmental delay is multifactorial.

Primary care physicians are often the first clinicians to assess development in a child and to recognize delayed or atypical development. Children with developmental delay are normally identified through three major channels: (1) during routine developmental surveillance or screening; (2) following parental concerns; and (3) after third parties, such as preschool teachers or nursery care professionals, raise concerns.

Early intervention can have a significant positive effect on outcomes in children with many developmental disorders, so systematic developmental surveillance is an integral part of primary health care for children.

## Causal Conditions

(list not exhaustive)

- Global developmental delay
  - a. Neurologic disorders (e.g., fetal alcohol spectrum disorder, cerebral dysgenesis)
  - b. Genetic and metabolic disorders (e.g., trisomy 21, congenital hypothyroidism)
  - c. Toxic exposures (e.g., lead)
  - d. Severe psychosocial deprivation
- Speech and language delay
  - a. Hearing impairment
  - b. Developmental language disorder
  - c. Autism spectrum disorders (when associated with atypical social and behavioural features)
- Motor delay
  - a. Cerebral palsy

- b. Muscular dystrophies
  - c. Developmental coordination disorder
- Cognition
  - a. Inborn errors of metabolism
  - b. Neurodegenerative disorders
- Personal/social
  - a. Autism spectrum disorders

## Key Objectives

Using a validated developmental screening tool, the candidate will identify children with delayed or atypical development in one or more domains. Children for whom developmental concern has been raised will be referred to early developmental intervention services, which can become involved prior to specialized developmental assessment.

## Enabling Objectives

Given a child with developmental delay, the candidate will

- list and interpret critical clinical findings, including those derived from
  - a. the use of validated developmental screening tools to identify domains of developmental delay; and
  - b. a relevant history and physical examination, with particular attention to identification of immediately modifiable causal conditions (e.g., toxic exposures, severe neglect);
- list and interpret relevant investigations, including
  - a. audiology assessment in case of delayed language development; and
  - b. diagnostic investigations (e.g., genetic and metabolic tests, neuroimaging) if indicated; and
- construct an effective plan of management, including
  - a. immediate referral for specialized pediatric assessment in case of developmental regression;
  - b. referral for early intervention services in case of a delay in any developmental domain;

- c. determination as to whether specialized or multidisciplinary assessment and intervention are required;
- d. involvement of appropriate community services for family support; and
- e. ongoing supportive communication with the family.

# Diabetes

## (March 2023)

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### Rationale

Diabetes is an increasingly common multisystem disease associated with a relative or absolute impairment of insulin secretion together with varying degrees of peripheral resistance to the action of insulin.

### Causal Conditions

(list not exhaustive)

- Type 1
  - a. Autoimmunity
  - b. Idiopathic
- Type 2
- Insulin resistance (e.g., obesity)
- Insulin deficiency
- Gestational diabetes
- Other specific types (e.g., genetic defects, medications associated to other diseases like endocrinopathies, infections, or diseases of the pancreas)

### Key Objectives

Given a patient with diabetes, the candidate will diagnose the cause, severity, and complications and will initiate an appropriate management plan. Early detection of the disease and recognition of medical emergencies are particularly important.

### Enabling Objectives

Given a patient with diabetes, the candidate will

- list and interpret medical history, clinical findings, and results of investigations aimed at identifying
  - a. risk factors;

- b. diagnosis;
- c. secondary causes; and
- d. complications;
- construct an effective management plan, including
  - a. education and counselling (e.g., lifestyle modifications, management of risk factors, intensive glycemic control, pharmacologic treatments);
  - b. prevention and management of emergent situations (e.g., hypoglycemia, diabetic ketoacidosis, hyperosmolar nonketotic coma);
  - c. prevention and management of complications (e.g., microvascular and macrovascular); and
  - d. determining whether the patient requires specialized care and/or referral to other health care professionals.



# Acute diarrhea

(March 2022)

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## Rationale

Acute diarrhea (lasting less than 1 week) is defined as a disturbance of stool frequency and/or consistency. Diarrheal diseases are extremely common worldwide, including in North America, where morbidity and mortality are significant.

## Causal Conditions

(list not exhaustive)

- Infection
  - a. Viruses
  - b. Bacteria
  - c. Parasites
- Drugs or toxins
- Ischemic
- Inflammatory bowel disease
- Metabolic disease (e.g., hyperthyroidism)

## Key Objectives

Given a patient with acute diarrhea (lasting less than 1 week), the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. Particular attention should be paid to the history of risk factors associated with specific causes and the assessment for complications, such as volume loss or electrolyte abnormalities.

## Enabling Objectives

Given a patient with acute diarrhea, the candidate will

- list and interpret critical clinical findings, including those based on
  - a. differentiation between small-bowel diarrhea and large-bowel diarrhea;
  - b. identification of potential risk factors for specific infections (e.g., travel); and

- c. results of an appropriate history and physical examination aimed at determining severity and complications (e.g., volume depletion, comorbidities);
- list and interpret critical investigations, including appropriate laboratory investigations and other tests (e.g., stool cultures, electrolytes); and
- construct an effective initial management plan, including
  - a. initiating dietary interventions if appropriate;
  - b. initiating rehydration if appropriate;
  - c. initiating specific therapy if indicated;
  - d. referring to specialized care if indicated by the possible diagnosis or by the case severity; and
  - e. alerting the public health authorities if required.

# Chronic diarrhea

(March 2023)

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## Rationale

Chronic diarrhea is defined as a disturbance of stool frequency and/or consistency for greater than four weeks' duration.

## Causal Conditions

(list not exhaustive)

- Steatorrhea
  - a. Luminal
    - Pancreatic insufficiency
    - Cholestasis
    - Ileal disease or resection
    - Bacterial overgrowth
  - b. Mucosal
    - Lactase deficiency
    - Celiac disease
- Large bowel
  - a. Secretory diarrhea (e.g., villous adenoma)
  - b. Inflammatory diarrhea
    - Inflammatory bowel disease
    - Infection
    - Other (e.g., radiation, ischemic colitis)
  - c. Motility disorders (e.g., irritable bowel syndrome)
- Small bowel

- a. Osmotic diarrhea
- b. Secretory diarrhea
  - Tumours
    - a. Neuroendocrine (e.g., carcinoid)
    - b. Neoplasia (e.g., lymphoma)
  - Mucosal
- c. Motility disorders (e.g., diabetic neuropathy)

## Key Objectives

Given a patient with chronic diarrhea, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the history should focus on contrasting small and large bowel diarrhea.

## Enabling Objectives

Given a patient with chronic diarrhea, the candidate will

- list and interpret clinical findings, including those derived from an appropriate history and physical examination aimed at
  - a. differentiating pancreatic and biliary causes from small bowel and large bowel causes of diarrhea;
  - b. differentiating osmotic from secretory diarrhea;
  - c. differentiating maldigestion from malabsorption; and
  - d. diagnosing irritable bowel syndrome based on history and the appropriate exclusion of other causes;
- list and interpret critical investigations, including
  - a. investigations for malabsorption and specific underlying causes; and
  - b. investigations for other causes of chronic diarrhea; and
- construct an effective initial management plan, including
  - a. prevent, recognize, and treat related complications (e.g., other manifestations of inflammatory bowel disease, celiac disease, or other chronic conditions);

- b. determine whether the patient requires specialized care or consultation; and
- c. conduct education and counseling in case of malabsorption, inflammatory bowel disease, and other chronic conditions.

# Pediatric diarrhea

(January 2017)

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## Rationale

Diarrhea is defined as a disturbance of stool frequency and/or consistency. It is considered acute if the duration is less than fourteen days. Diarrhea is a common problem in infants and children. In most cases, it is mild and self-limited, but the potential exists for significant morbidity and mortality from hypovolemia, dehydration, and electrolyte abnormalities.

## Causal Conditions

(list not exhaustive)

- Infections
- Diet-related (e.g., milk protein intolerance)
- Ischemic intestinal damage (e.g., intussusception)
- Infections
- Malabsorption
  - a. Lactase deficiency
  - b. Cystic fibrosis
  - c. Celiac disease
- Other causes
  - a. Drugs
  - b. Laxative abuse
  - c. Inflammatory bowel disease

## Key Objectives

Given a child with diarrhea, the candidate will obtain a detailed history of the nature of the diarrhea and associated symptoms. The candidate will diagnose the cause, severity, and complications, paying particular attention to signs and symptoms of dehydration or hypovolemia, and will initiate an appropriate management plan.

## Enabling Objectives

- list and interpret critical clinical findings, including
  - a. given a patient with acute diarrhea, elicit a history for risk factors of infectious causes;
  - b. given a patient with chronic diarrhea, elicit a history of infectious, dietary, or systemic symptoms and/or complications;
  - c. conduct a physical examination to assess the etiology, severity, or complications of diarrhea (e.g., growth delay);
- list and interpret critical investigations in view of the common etiologies, including
  - a. select and interpret the basic investigations for malabsorption;
  - b. select and interpret the basic investigations for chronic infections and other causes;
- construct an effective management plan, including
  - a. provide resuscitation for acutely ill patients;
  - b. select patients who require referral to a specialist;
  - c. refer to public health authorities if required.

# Diplopia

(March 2023)

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## Rationale

Diplopia, or double vision, refers to seeing two images of the same object at the same time.

Diplopia can be caused by conditions affecting one eye (monocular) or both eyes (binocular).

Diplopia may be of relatively benign etiology and easily correctable but may also be a symptom of more serious health issues.

## Causal Conditions

(list not exhaustive)

- Monocular diplopia (e.g., refractive error, cataract)
- Binocular diplopia
  - a. Oculomotor nerve dysfunction
    - Ischemia
    - Diabetes-associated
    - Multiple sclerosis
    - Intracranial mass (e.g., aneurysm)
  - b. Myasthenia gravis
  - c. Graves orbitopathy
  - d. Orbital inflammation, infection, or tumour
  - e. Fracture of orbital floor or "blow out"
  - f. Decompensation of childhood phoria (e.g., squint)

## Key Objectives

Given a patient with diplopia, the candidate will diagnose the cause and severity of diplopia and will initiate an appropriate management plan. Of particular importance is the clinical determination of whether true binocular diplopia is present, which resolves with occlusion of vision to either eye.

## Enabling Objectives



Given a patient with diplopia, the candidate will

- list and interpret critical clinical findings, including
  - a. indications of the underlying disease process (e.g., pain, features of hyperthyroidism);
  - b. symptom onset and progression; and
  - c. results of an appropriate physical examination (e.g., eyes, neurologic, thyroid);
- list and interpret critical investigations, including identifying underlying medical conditions; and
- construct an effective initial management plan, including determining whether the patient requires specialized care.

# Dizziness and vertigo

(March 2023)

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## Rationale

Dizziness is a common, but imprecise complaint. Physicians need to determine whether it refers to vertigo, which may be a symptom of significant intracranial disease, or a non-specific symptom that could be related to non-vestibular causes.

## Causal Conditions

(list not exhaustive)

- Vertigo
  - a. Peripheral vestibular dysfunction
    - Benign positional vertigo
    - Peripheral vestibulopathy
    - Ménière's disease
    - Drugs (e.g., aminoglycosides)
    - Acoustic neuroma
- Central vestibular dysfunction
  - a. Cerebrovascular
  - b. Multiple sclerosis
  - c. Drugs (e.g., anticonvulsants, hypnotics, alcohol)
- Other dizziness
  - a. Hyperventilation
  - b. Disequilibrium (e.g., poor mobility, peripheral neuropathy)
  - c. Presyncope
  - d. Anxiety or panic disorder

## Key Objectives

Given a patient complaining of dizziness, the candidate will discriminate between vertigo and other causes.

## **Enabling Objectives**

Given a patient with dizziness or vertigo, the candidate will

- list and interpret critical clinical findings, including
  - a. distinguish clinically between amongst vertigo, gait disturbances, orthostatic light-headedness, and other disorders;
  - b. differentiate patients with central versus peripheral causes of vertigo on the basis of history and physical examination;
- list and interpret critical investigations, including
  - a. selection of patients requiring specialized testing;
- construct an effective initial management plan, including
  - a. determine which patients with central vertigo require more urgent management;
  - b. describe the symptomatic management of patients with benign causes of vertigo;
  - c. counsel and educate patients with benign causes of dizziness or vertigo;
  - d. select patients in need of specialized care.

# Dying patients

(March 2023)

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## Rationale

Physicians frequently care for patients dying from incurable or untreatable diseases, many of which cause significant physical and psychological pain. The physician's role is to address and treat symptoms as well as provide support to patients and their families.

## Key Objectives

Given a dying patient, the candidate will develop an appropriate palliative care plan that optimally controls pain and other symptoms, maintains human dignity, and recognizes the importance of family and social supports and the health care team's different roles. The candidate must know the provisions in Canada's law on medical assistance in dying (MAID), be prepared to discuss these provisions with patients, and act on such a request as appropriate.

## Enabling Objectives

Given a patient who is approaching the end of life, the candidate will

- determine patient mental capacity to discuss and provide informed consent regarding end-of-life care. If the patient does not have the capacity to make such decisions, the candidate will determine whether the patient has made provisions for their goals of care, including designating a substitute decision-maker; and
- develop an appropriate management plan, including
  - a. discussing with the patient or substitute decision-maker the patient's wishes for their care (e.g., resuscitation) at the appropriate time;
  - b. using pharmacologic and nonpharmacologic measures for symptom control (e.g., pain, respiratory distress, delirium, or agitation) while recognizing appropriate indications, adverse effects, and possible complications;
  - c. providing a compassionate response to any potential request for MAID and taking appropriate next steps without discrimination (referring the patient or ensuring their access to this intervention, provided that they meet the eligibility criteria);
  - d. ensuring a culturally sensitive approach to emotional, physical, and spiritual support for the patient and their family;

- e. treating the patient, their family, and significant others with dignity and respect throughout end-of-life care; and
- f. referring the patient to other professionals as needed.

# Dysmenorrhea

(March 2023)

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## Rationale

Painful menstruation is a very common symptom, and this pain can be incapacitating for some patients. Dysmenorrhea is a significant cause of absence from work, school, or other responsibilities.

## Causal Conditions

(list not exhaustive)

- Primary/idiopathic (no demonstrable pelvic abnormality recognized on available investigations or examination)
- Secondary to identified acquired or congenital conditions (e.g., infections, endometriosis, adnexal abnormalities)

## Key Objectives

Given a patient with dysmenorrhea, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. Specifically, the candidate will differentiate primary from secondary dysmenorrhea.

## Enabling Objectives

Given a patient with dysmenorrhea, the candidate will

- list and interpret critical clinical findings, including those based on
  - a. a focused history of the quality and timing of pain, as related to bleeding;
  - b. the differentiation between primary and secondary dysmenorrhea; and
  - c. the results of a pelvic examination aimed at excluding possible causes of secondary dysmenorrhea;
- list and interpret critical investigations, including
  - a. Papanicolaou test, if indicated;
  - b. screening test for infection (e.g., vaginal and cervical cultures); and

- c. determination of indications for imaging studies (e.g., ultrasonography); and
- construct an effective initial management plan, including
  - a. outlining treatment options including symptomatic control;
  - b. determining whether the patient needs to be referred for investigation (examination under anesthesia, laparoscopy); and
  - c. determining whether the patient requires specialized care.

# Dysphagia

(March 2023)

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## Rationale

Dysphagia, defined as difficulty swallowing, should be regarded as a clear signal of potentially serious organic pathology, which therefore warrants careful and complete evaluation.

## Causal Conditions

(list not exhaustive)

- Oropharyngeal dysphagia
  - a. Structural
    - Peritonsillar abscess
    - Pharyngitis
    - Tumour
    - Zenker diverticulum
  - b. Neuromuscular
    - Central (e.g., cerebrovascular accident)
    - Cranial nerves (e.g., amyotrophic lateral sclerosis)
    - Systemic myopathies (e.g., dermatomyositis)
  - c. Xerostomia
- Esophageal dysphagia
  - a. Mechanical obstruction
    - Intrinsic
      - a. Intermittent (e.g., lower esophageal ring, web)
      - b. Progressive (e.g., carcinoma, peptic stricture)
      - c. Foreign object



- d. Eosinophilic esophagitis
  - Extrinsic (e.g., mediastinal mass)
- b. Neuromuscular disorder
  - a. Intermittent (e.g., diffuse esophageal spasm)
  - b. Progressive (e.g., scleroderma, achalasia)

## Key Objectives

Given a patient with dysphagia, the candidate will differentiate oropharyngeal from esophageal causes and initiate a management plan based on the underlying cause and severity.

## Enabling Objectives

Given a patient with dysphagia, the candidate will

- list and interpret critical clinical findings, including
  - a. determining from the history whether the problem is most likely oropharyngeal or upper or lower esophageal;
  - b. identifying the characteristics of the esophageal dysphagia that suggest specific underlying disorders; and
  - c. determining complication risk;
- list and interpret critical investigations, including determining whether specific investigations are required (e.g., barium swallow, endoscopy); and
- construct an effective initial management plan, including
  - a. determining whether the patient needs specialized care and
  - b. anticipating short-, medium-, and long-term complications (e.g., aspiration).

# Dyspnea

## (March 2023)

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### Rationale

Dyspnea is a subjective sensation of shortness of breath or difficulty breathing. It is a common and distressful symptom. Acutely, dyspnea may indicate serious life-threatening illness, and it is an important cause of disability when present chronically.

### Causal Conditions

(list not exhaustive)

- Cardiac causes
  - a. Myocardial dysfunction (e.g., ischemic cardiomyopathy, heart failure)
  - b. Valvular heart disease
  - c. Pericardial disease (e.g., tamponade, pericarditis)
  - d. Arrhythmia
- Pulmonary causes
  - a. Airway (e.g., asthma, chronic obstructive pulmonary disease)
  - b. Parenchymal/interstitial (e.g., pneumonia, atelectasis, pneumonitis, acute respiratory distress syndrome)
  - c. Pulmonary vascular (e.g., embolism)
- Pleural disorders (e.g., pleural effusion, pneumothorax)
- Other causes (e.g., acidosis, anxiety, anemia, shock, deconditioning, carbon monoxide poisoning, neuromuscular disorder)

### Key Objectives

Given a patient with dyspnea, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. It is essential to identify patients with life-threatening causes of dyspnea.

### Enabling Objectives

Given a patient with acute dyspnea, the candidate will

- list and interpret critical clinical findings, including those derived from
  - a. a relevant history and physical examination, including current airway, breathing, and circulation status;
  - b. the determination as to whether the dyspnea is due to cardiac, pulmonary, or other causes; and
  - c. a history of occupational and environmental exposures;
- list and interpret critical investigations (e.g., electrocardiography, arterial blood gases, chest radiography); and
- construct an effective management plan, including
  - a. initiating immediate and emergent management if the patient presents with life-threatening dyspnea;
  - b. referring the patient for specialized care if necessary;
  - c. planning long-term management in case of chronic dyspnea, including secondary prevention strategies; and
  - d. anticipating medium- and long-term complications (e.g., psychosocial effects, safety) in case of chronic dyspnea.

# Dysuria, urinary frequency and urgency, and/or pyuria (March 2023)

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## Rationale

Cystitis describes a common clinical syndrome of dysuria and urinary frequency and urgency. It is sometimes associated with suprapubic discomfort and may also present with pyuria. These symptoms, although generally indicative of bacterial cystitis, may also be associated with other infections or conditions of the urethra or vagina.

## Causal Conditions

(list not exhaustive)

- Infectious causes
  - a. Urinary tract infection (e.g., cystitis, pyelonephritis)
  - b. Sexually transmitted infections
  - c. Prostatitis
- Noninfectious urinary tract inflammation
  - a. Trauma
  - b. Interstitial cystitis
  - c. Hemorrhagic cystitis (e.g., due to chemotherapy or radiation therapy)
  - d. Bladder carcinoma
  - e. Other (e.g., urinary stones, urethral stricture)
- External to lower urinary tract (e.g., vulvovaginitis)
  - a. Yeast infections
  - b. Bacterial infections
  - c. Chemical irritation
  - d. Postmenopausal symptoms

## Key Objectives

Given a patient who presents with dysuria, urinary frequency and urgency, urethral discharge, and/or pyuria, the candidate will diagnose the cause, predisposing conditions, severity, and complications, and will initiate an appropriate management plan.

## **Enabling Objectives**

Given the patient with dysuria, urinary frequency and urgency, urethral discharge, and/or pyuria, the candidate will

- list and interpret critical clinical findings, including
  - a. results of a relevant history and physical examination, including examination of the abdomen, prostate, vagina, and urethra, as indicated;
  - b. differentiation of urinary tract infections from noninfectious causes of cystitis and conditions outside the urinary tract with similar presentation;
  - c. in case of recurring urinary tract infections, determination as to whether a predisposing condition may be present (e.g., urine stasis, presence of stone or foreign body); and
  - d. a differential diagnosis based on age, biological sex, and lifestyle;
- list and interpret critical investigations, including
  - a. urinalysis;
  - b. urine culture and sensitivity; and
  - c. other investigations (e.g., urethral and/or vaginal swab if indicated); and
- construct an effective initial management plan, including
  - a. selection of the most appropriate treatment for the underlying condition, including selection of appropriate antibiotics if indicated;
  - b. assessment of the illness severity and the need for hospitalization;
  - c. a determination as to whether additional investigation and/or referral are required; and
  - d. a brief outline of strategies for the prevention of recurrent urinary tract infections.

# Ear pain

(March 2023)

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## Rationale

Ear pain or earache can originate from any of the three parts of the ear and may be referred.

The cause of ear pain is usually otologic. In young children who are most frequently affected by ear infections, a good otologic examination is crucial.

## Causal Conditions

(list not exhaustive)

- External ear pain
  - a. Infections
    - Otitis externa (e.g., fungal, bacterial)
    - Auricular cellulitis
    - Perichondritis
    - External canal abscess
  - b. Trauma (e.g., frostbite, sunburn, piercings)
  - c. Other (e.g., atopic dermatitis, foreign body, cerumen impaction)
- Middle ear pain
  - a. Infections or inflammation
    - Acute otitis media
    - Serous otitis media
    - Mastoiditis
    - Myringitis
  - b. Trauma (e.g., perforation, barotrauma)
  - c. Neoplasms
- Inner ear pain

- a. Association with vertigo
- b. Neoplasms
- Referred pain
  - a. Infections (e.g., sinusitis, pharyngitis, peritonsillar abscess, dental disease)
  - b. Trigeminal neuralgia
  - c. Other (e.g., temporomandibular joint dysfunction, thyroiditis)

## **Key Objectives**

Given a patient with ear pain, the candidate will diagnose the cause, severity, and complications and initiate an appropriate management plan. In particular, a careful and complete head and neck examination is required, especially with a normal-appearing ear canal, tympanic membrane, and middle ear.

## **Enabling Objectives**

Given a patient with ear pain, the candidate will

- list and interpret critical clinical findings, including
  - a. features on history and physical examination suggestive of infection; and
  - b. results of an examination of the ear, head, and neck area, looking for other causes of pain;
- list and interpret critical investigations, including imaging (e.g., to rule out mastoiditis/neoplasm) and other investigations relevant to the suspected cause; and
- construct an effective initial management plan, including
  - a. deciding whether supportive measures are all that is required; and
  - b. determining if the cause of the ear pain requires additional investigations, referral, or both.

# Early pregnancy loss / spontaneous abortion

(March 2023)

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## Rationale

Early pregnancy loss or spontaneous abortion (miscarriage) is common. Patient presentation is commonly with a threatened abortion. Spontaneous abortion occurs most frequently in the first trimester. When recurrent, spontaneous abortion can be associated with infertility. Spontaneous abortion can result in grief.

## Causal Conditions

(list not exhaustive)

The cause is usually not determined but may include the following:

- Genetic factors (e.g., chromosomal abnormalities)
- Reproductive tract abnormalities (e.g., uterine anomalies)
- Prothrombotic factors (e.g., thrombophilia)
- Endocrinologic factors (e.g., polycystic ovary syndrome)
- Immunologic factors (e.g., antiphospholipid syndrome)

## Key Objectives

Given a patient with a threatened abortion, the candidate will clarify the status of the pregnancy, identify any complications, and initiate an appropriate management plan. Particular attention should be paid to supportive counselling of parents and to appropriate investigation in cases of recurrent spontaneous abortion.

## Enabling Objectives

Given a patient with threatened abortion, the candidate will

- list and interpret critical clinical findings, including
  - a. the results of a thorough obstetric history;
  - b. the results of a physical examination, with an emphasis on the status of the pregnancy (e.g., speculum examination, evidence of an ectopic pregnancy); and
  - c. signs of urgent complications (e.g., hemodynamic instability);



- list and interpret critical investigations, including
  - a. transvaginal ultrasonography;
  - b. laboratory investigations when appropriate (e.g., maternal antibody screen, complete blood count,  $\beta$ -human chorionic gonadotropin); and
  - c. proper investigation regarding recurrent abortion (e.g., antiphospholipid antibody screen, karyotype, hysterosalpingography); and
- construct an effective initial management plan, including
  - a. emergent management in case of hemodynamic instability (e.g., ruptured ectopic pregnancy);
  - b. referral for surgical evacuation or medical management (e.g., incomplete or missed abortion) if necessary;
  - c. counselling (e.g., grief, fertility implications, contraception); and
  - d. referral for specialized care if indicated (e.g., serious hemorrhage, recurrent abortion).

# Generalized edema

(January 2017)

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## Rationale

Generalized edema is systemic soft tissue swelling produced by expansion of the interstitial fluid volume. This condition may be caused by serious underlying disease.

## Causal Conditions

(list not exhaustive)

- Increased capillary hydrostatic pressure
  - a. Increased plasma volume due to renal sodium retention
    - Heart failure
    - Reduced systemic vascular resistance (e.g., cirrhosis)
    - Primary renal sodium retention (e.g., renal disease, drugs)
    - Pregnancy
    - Premenstrual edema
  - b. Decreased arteriolar resistance (e.g., calcium channel blockers, idiopathic)
- Decreased oncotic pressure (hypoalbuminemia)
  - a. Protein loss (e.g., nephrotic syndrome)
  - b. Reduced albumin synthesis (e.g., liver disease, malnutrition)
- Increased capillary permeability (e.g., burns, inflammation)
- Increased interstitial oncotic pressure (e.g., myxedema)

## Key Objectives

Given a patient with generalized edema, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, it is important to differentiate systemic edema from local edema, and categorize the general mechanism of edema, since management may be affected.

## Enabling Objectives

Given a patient with generalized edema, the candidate will

- list and interpret critical clinical findings, including
  - a. an appropriate history and physical examination;
- list and interpret critical investigations (e.g., creatinine, urinalysis, chest X-ray)
- construct an effective initial management plan, including
  - a. non-pharmacological measures (e.g., dietary salt restriction);
  - b. pharmacological measures;
  - c. determination as to whether the patient requires specialized care and/or consultation (e.g., patient with advanced renal, cardiac, or hepatic disease).

# Localized edema

(January 2017)

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## Rationale

Localized expansion of interstitial fluid volume can be caused by serious diseases, and is a common cause of patient concern.

## Causal Conditions

(list not exhaustive)

- Venous insufficiency (including postphlebotic syndrome)
- Deep venous thrombosis (DVT)
- Trauma
- Lymphedema (e.g., malignancy, primary)
- Infection (cellulitis/soft tissue/bone)
- Inflammation (e.g., ruptured Baker cyst, chronic dermatitis)

## Key Objectives

Given a patient with localized edema, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, diagnosis of proximal deep venous thrombosis must be considered.

## Enabling Objectives

Given a patient with localized edema, the candidate will

- list and interpret critical clinical findings, including
  - a. elicit history of risk factors for DVT;
  - b. examine extremity for signs associated with specific causes (e.g., palpable clot, tenderness);
  - c. in the case of suspected DVT, classify the patient into a pretest probability category (e.g., Wells criteria);
- list and interpret critical investigations (e.g., d-Dimer, duplex ultrasonography)
- construct an effective initial management plan, including

- a. outline the management of DVT including under circumstances where same-day diagnostic testing may be unavailable;
- b. list indications and complications, and explain management and monitoring of anti-coagulant therapy;
- c. counsel the patient about anticoagulant therapy (prevention of postphlebitic syndrome);
- d. investigation of causes of DVT, if indicated (e.g., thrombophilic states, underlying cancer);
- e. outline the management of cellulitis;
- f. determine if the patient requires specialized care.

# Eye redness

(March 2023)

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## Rationale

Eye redness (red eye) is a very common issue. Many of the common causes are relatively benign, but some can lead to significant vision loss and require urgent referral.

## Causal Conditions

(list not exhaustive)

- Lids, lashes, orbits, lacrimal system
  - a. Congenital
  - b. Acquired
- Conjunctiva, sclera
- Cornea
- Anterior chamber, iris
- Trauma

## Key Objectives

Given a patient with eye redness, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, urgent referral is required for some conditions that could lead to significant vision loss.

## Enabling Objectives

Given a patient with eye redness, the candidate will

- list and interpret critical clinical findings, including those based on
  - a. information gathered on history and physical examination to differentiate causal conditions that are benign from those that require urgent referral; and
  - b. the determination as to whether vision or visual acuity is affected;
- list and interpret critical investigations, including a slit-lamp examination with fluorescein administration and intraocular pressure measurement, as appropriate; and

- construct an effective initial management plan, including determining if the patient requires urgent referral.

# Failure to thrive (infant, child)

(January 2017)

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## Rationale

"Failure to thrive" is a term that describes the occurrence of growth failure in either height or weight during childhood. It is essential to be able to identify different growth patterns and the potential associated causes.

## Causal Conditions

(list not exhaustive)

- Prenatal
  - a. Placental insufficiency
  - b. Intrauterine infections
  - c. Genetic
  - d. Maternal
    - Pre-existing conditions (e.g., diabetes, renal disease)
    - Use of medications, drugs, tobacco, or alcohol
- Postnatal
  - a. Inadequate calorie intake
    - Caregiver
      - a. Inadequate feeding skills
      - b. Inappropriate food for age
      - c. Neglect
      - d. Insufficient lactation
      - e. Disturbed mother and child relationship
    - Infant



- a. Sucking or swallowing dysfunction (e.g., cleft palate)
- b. Chronic disease (e.g., infection, metabolic disorders)
  
- b. Inadequate caloric absorption (e.g., gastroesophageal reflux)
- c. Increased caloric requirements (e.g., hyperthyroid, congenital heart disease)
- d. Social determinants (e.g., poverty, societal disorder)
- e. Adverse childhood experience

## Key Objectives

Given an infant or child who is failing to thrive, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. Special attention should be given to psychosocial and environmental factors as well as disease entities giving rise to poor infant and child maturation.

## Enabling Objectives

Given an infant or child with failure to thrive, the candidate will

- list and interpret critical clinical findings, including
  - a. plot growth parameters on a regular basis and recognize when a child or infant has failure to thrive;
  - b. perform a history and physical examination to determine the cause of the failure to thrive;
  - c. identify possible social risk factors that may be responsible for failure to thrive;
- perform necessary investigations as appropriate
- construct an effective initial management plan, including
  - a. construct an ongoing program to monitor the progress of such infants or children;
  - b. if appropriate, construct a counseling and education program for caregivers of infants or children with poor growth;
  - c. appropriately consult with other health professionals and/or community resources.

# Falls

(March 2023)

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## Rationale

Falls are common and have many possible contributing factors. They can be associated with serious injury. Multifactorial interventions can prevent falls and their sequelae.

## Causal Conditions

(list not exhaustive)

- Medical conditions (e.g., vertigo, gait disturbances, syncope)
- Psychiatric conditions (e.g., cognitive impairment, substance use disorder)
- Medications
- Environmental or behavioural risk factors (e.g., walking surface, choice of footwear)
- Other contributors (e.g., decreased vision, urinary urgency)

## Key Objectives

Given a patient who is at risk of falls, the candidate will identify contributing factors and initiate an appropriate management and prevention plan.

## Enabling Objectives

Given a patient at risk of falling, the candidate will

- list and interpret critical clinical findings, including those based on
  - a. a description of recent and previous falls;
  - b. a medical history for risk factors (e.g., medical conditions, medication history, substance use disorder);
  - c. environmental hazards; and
  - d. a complete physical and functional evaluation;
- list and interpret relevant investigations, and
- construct an effective initial management plan, including
  - a. managing acute and chronic illness with particular attention to a review of medications;

- b. suggesting specific interventions for preventing further falls (e.g., balance and gait training, muscle strengthening exercises);
- c. suggesting appropriate home safety interventions (e.g., removing environmental hazards, grab bars, emergency response systems);
- d. appropriate consultation, including with medical specialists and other health professionals (e.g., physiotherapist and occupational therapist, social worker, pharmacist); and
- e. referral to an addiction rehabilitation service if appropriate (e.g., addictions counsellor, addictions rehabilitation program).

# Fatigue

(March 2023)

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## Rationale

Fatigue is a common presenting symptom, particularly in primary care. However, the cause may not be immediately apparent because fatigue is a nonspecific symptom. Therefore, the key to making a diagnosis is taking a careful and detailed history, followed by an appropriate physical examination and limited laboratory testing.

Although fatigue can be a symptom of almost any illness, the disorders listed here are those characterized almost exclusively by fatigue as a predominant symptom.

## Causal Conditions

(list not exhaustive)

- Iatrogenic/pharmacologic
  - a. Hypnotics
  - b. Antihypertensives
  - c. Antidepressants
  - d. Substance use disorder
- Idiopathic
  - a. Idiopathic chronic fatigue
  - b. Chronic fatigue syndrome
  - c. Fibromyalgia
- Other disease categories associated with fatigue
  - a. Psychiatric
  - b. Endocrine and metabolic
  - c. Cardiopulmonary
  - d. Infectious and postinfectious (e.g., long COVID)
  - e. Connective tissue disorders

- f. Sleep disturbances (e.g., shift work)
- g. Neoplastic
- h. Hematologic

## **Key Objectives**

Given a patient with fatigue, the candidate will perform a thorough and complete history and physical examination to establish an underlying cause.

## **Enabling Objectives**

Given a patient with fatigue, the candidate will

- list and interpret critical clinical findings, including
  - a. features that are more likely associated with either a psychological or iatrogenic cause of fatigue; and
  - b. results of a complete physical examination;
- critically select and interpret clinical investigations, recognizing that in the absence of localizing features, tests may be of limited value; and
- construct an effective initial management plan, including
  - a. treating any underlying causes; and
  - b. outlining a plan of management that will help minimize the effect of fatigue on function and quality of life if no underlying cause can be identified.

# Frailty in the Elderly

(April 2024)

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## Rationale

Frailty applies to some older adults who have varying degrees of weight loss and/or malnutrition, cognitive impairment, multiple medical comorbidities, decreased mobility, and/or psychosocial stressors, leading to decreased function (e.g., activities of daily living). A multidisciplinary approach in the form of a comprehensive geriatric assessment has been shown to decrease morbidity and maintain or improve function.

## Causal Conditions

(list not exhaustive)

Often multifactorial, including

- Environmental/social (e.g., isolation, poverty, elder abuse, neglect)
- Medical disease (including hazards of hospitalization, atypical presentations)
- Medications
- Malnutrition (e.g., decreased intake, malabsorption, dysphagia)
- Psychiatric (e.g., cognitive impairment secondary to acute or chronic medical conditions, mental health issues such as depression or psychosis)
- Changes in visual acuity
- Changes in auditory acuity
- Decreased mobility (e.g., falls)

## Key Objectives

Given a frail elderly patient, the candidate will diagnose the cause, severity, and complications, will conduct an assessment of function and cognition, and will initiate an appropriate management plan that demonstrates an awareness of the importance of a multidisciplinary approach.

## Enabling Objectives

Given a frail elderly patient, the candidate will

- obtain and interpret critical clinical findings, including those derived from

- a. a complete psychosocial history (e.g., social supports, financial status);
  - b. diagnosing symptoms of medical disease, weight loss, and malnutrition;
  - c. a comprehensive medication history;
  - d. screening for elder abuse and neglect;
  - e. assessing the effect of symptoms on activities of daily living;
  - f. assessing physical examination findings (e.g., malnutrition, stasis ulcers);
  - g. assessing mental status examination and cognitive function test results using a validated scale; and
  - h. validating their frailty index score;
- construct an appropriate plan for further investigation that is supported by the history and physical examination findings; and
  - construct an effective initial multifactorial management plan, including but not limited to
    - a. consultations (with medical specialists and other health professionals) or referral to rehabilitation;
    - b. nonpharmacological approaches to nutrition;
    - c. pharmacological/medical management, including
      - i. recommend interventions to target causes of morbidity;
      - ii. outlining changes to medications to improve symptoms and minimize adverse effects (appropriate deprescribing, and avoiding prescribing cascades);
      - iii. referral where indicated to rehabilitation and/or geriatric medicine;
    - d. community support services, including
      - i. listing services available to support elders in the community (e.g., home care services);
      - ii. referring the patient for counseling about financial concerns or abuse, if required;
    - e. advanced care planning;
    - f. recognition of psychosocial and spiritual needs; and
    - g. providing support for family members.

# Gender and sexuality

(April 2019)

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## Rationale

Gender-and/or sexuality related issues may include sexual function, navigating sexual relationships, sexual orientation, gender identity, gender expression, access to care, and other issues. Physicians should be sensitive to gender and/or sexuality as part of any patient encounter, whether patients explicitly express concerns in this regard. Physicians should put patients at ease to facilitate discussion.

## Various Populations

(List not exhaustive)

- Children and adolescents
- Adults
- Elderly patients
- Patients living with disabilities
- Heterosexual
- Lesbian, gay, bisexual, and/or queer
- Cisgender
- Transgender, two-spirit, and/or nonbinary

## Key Objectives

Given a patient with gender- and/or sexuality related issues, the candidate will provide respectful care and offer appropriate support and management measures, regardless of patient sexual orientation and gender identity. Physicians should strive to approach discussions about gender and/or sexuality in an unbiased and nonjudgmental way, with respect for patients' wishes and values.

## Enabling Objectives

Given a patient with gender- and/or sexuality related issues, the candidate will

- list and interpret critical clinical findings, including those derived from an appropriate history, including cultural factors, and a physical examination to



- a. determine social and physical sexual development and behaviour, as well as sexual orientation and gender identity;
- b. identify risk factors for related physical or mental health issues;
- c. differentiate between diversity within sexual practices and expression and experiences of sexually-related illnesses or disorders;
- d. detect individuals who have experienced sexual abuse or assault;
- construct an effective initial management plan, including
  - a. ensuring the management plan aligns with the patient's goals and desires;
  - b. recognition and reassurance that no intervention may be required;
  - c. pharmacotherapy where appropriate (e.g., oral contraceptives, hormonal therapy, immunization);
  - d. counselling and educating of patients;
  - e. determining whether the patient requires specialized care (e.g., psychologist, sexual therapist);
  - f. engaging community and family support, where appropriate.

# Genetic concerns

(January 2017)

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## Rationale

An individual's genetic make-up has an impact on their development, as well as their predisposition to disease. Genetic variation and mutation may cause disease directly, or interact with various experiential and environmental factors to influence development and medical conditions.

## Causal Conditions

(list not exhaustive)

- Chromosomal (e.g., aneuploidy, rearrangements)
- Single-gene
  - a. Mendelian (e.g., autosomal dominant)
  - b. Non-Mendelian (e.g., mitochondrial, epigenetic)
- Prenatal Exposure
  - a. Drugs or toxins (e.g., fetal alcohol spectrum disorder)
  - b. Infectious (e.g., congenital rubella)
  - c. Maternal disease (e.g., maternal diabetes)
- Multifactorial (e.g., neural tube defects)

## Key Objectives

The candidate will recognize situations where a person or a population is at risk of a genetic or epigenetic condition. Given a patient with evidence of, or a family history consistent with, a genetic or congenital condition, the candidate will diagnose the cause, severity and complications, and will initiate an appropriate management plan.

## Enabling Objectives

Recognize where disease in an individual might reflect the existence of risk factors inherent to a given population (e.g., Tay-Sachs disease).

Given a patient presenting with clinical findings suggestive of a genetic etiology, the candidate will

- list and interpret relevant clinical findings, including
  - a. obstetrical, medical and family history, as well as ethnic or geographic origin and social determinants of health;
  - b. results of a physical examination of the patient and of selected family members, if need be;
- list and interpret relevant laboratory and diagnostic imaging;
- construct an effective initial management plan, including, if required:
  - a. genetic counselling;
  - b. examination of reproductive options;
  - c. a referral for specialized evaluation, genetic testing, community resources, social and psychological support services.

# Glucose abnormalities

(January 2017)

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## Rationale

Maintenance of the blood sugar within normal limits is essential for health. In the short-term, hypoglycemia is much more dangerous than hyperglycemia. Fortunately, both are uncommon clinical problems outside of diabetes mellitus.

## Causal Conditions

(list not exhaustive)

- Hypoglycemia
  - a. Postprandial
  - b. Fasting
    - Secondary to overutilization of glucose (e.g., sulfonylureas)
    - Secondary to impaired glucose production (e.g., adrenal insufficiency)
- Hyperglycemia
  - a. Diabetes mellitus
  - b. Endocrine
  - c. Drugs

## Key Objectives

Given a patient with a glucose abnormality, the candidate will diagnose the cause, severity and complications, and will initiate an appropriate management plan. Particular attention should be paid to management of emergent situations, to prevention of progression of pre-diabetes, and to prevention of complications.

## Enabling Objectives

Given a patient with a glucose abnormality, the candidate will

- list and interpret critical clinical findings, including

- a. results of an appropriate history and physical examination aimed at determining cause and complications;
- b. differentiation of true hypoglycemia from pseudohypoglycemia;
- list and interpret critical investigations, including
  - a. laboratory and radiological examinations (e.g., glucose tolerance test);
- construct an effective management plan for hyper- or hypoglycemia, including
  - a. counselling and educating the patient on preventive measures;
  - b. providing emergent treatment;
  - c. determining whether the patient requires specialized care;
  - d. referring the patient to appropriate support services, including lifestyle and psychosocial support.

# Headache

(January 2017)

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## Rationale

Headache is a common clinical presentation. Patients with headaches due to serious or life-threatening conditions must be differentiated from those with benign primary headache disorders.

## Causal Conditions

(list not exhaustive)

- Primary headache (e.g., migraine, chronic daily headache with medication overuse)
- Secondary headache
  - a. Associated with vascular disorders (e.g., severe arterial hypertension)
  - b. Associated with non-vascular disorders (e.g., intracranial infection)
  - c. Other (e.g., systemic viral infection, carbon monoxide exposure)

## Key Objectives

Given a patient with headaches, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. Particular attention should be paid to differentiating benign causes of headaches from potentially serious causes.

## Enabling Objectives

Given a patient with headaches, the candidate will:

- list and interpret critical clinical findings, including
  - a. symptoms and signs that indicate a need for urgent brain imaging and/or referral for specialized care;
  - b. symptoms and signs to differentiate amongst the various causes of headaches;
- list and interpret critical investigations, including
  - a. appropriate and cost-effective laboratory and diagnostic imaging tests;
  - b. indications and contraindications for lumbar puncture;
- construct an effective management plan, including

- a. describing and contrasting symptomatic and prophylactic treatments;
- b. avoiding medication overuse;
- c. determining if the patient needs urgent and/or specialized care;
- d. educating and counseling the patient regarding the causes and management of headaches;
- e. determining if the patient is at risk for narcotic addiction or overuse.

# Hearing loss

(January 2017)

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## Rationale

Hearing loss is common and may often be prevented. The underlying causes may often be treated.

## Causal Conditions

(list not exhaustive)

- Conductive hearing loss
  - a. External ear pathology
    - Congenital (e.g., atresia)
    - Inflammation or infection (e.g., otitis externa)
    - Obstruction of canal (e.g., wax, foreign body)
  - b. Middle ear pathology
    - Congenital (e.g., atresia)
    - Infection (e.g., otitis media)
    - Ossicular pathology (e.g., otosclerosis)
    - Trauma (e.g., tympanic membrane perforation)
    - Tumours (e.g., glomus, adenoma)
- Sensory-neural hearing loss
  - a. Acquired (e.g., presbycusis, noise-induced hearing loss)
  - b. Congenital (e.g., Alport syndrome)

## Key Objectives

Given patients with hearing loss or deafness, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. Particular attention should be paid to differentiating between conductive and sensory-neural hearing loss. Patients should be



educated and counselled regarding prevention of further hearing loss. Hearing loss in infants must be identified as early as possible to prevent delayed development.

## **Enabling Objectives**

Given patients with hearing loss or deafness, the candidate will

- list and interpret critical clinical findings, including those based on
  - a. an evaluation of potential risks for further hearing loss;
  - b. an early identification of hearing loss or deafness in infants and children;
- list and interpret critical investigations, including
  - a. screening in all neonates;
  - b. tests required to differentiate between conductive and sensorineural hearing loss, where appropriate;
- construct an effective initial management plan, including
  - a. referring the patient for specialized care, if necessary;
  - b. counselling and educating the patient regarding prevention of further hearing loss;
  - c. following-up on a patient with otitis media, selecting antibiotics if appropriate;
  - d. anticipating psychosocial effects of chronic hearing loss.

# Hematuria

(March 2023)

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## Rationale

Hematuria can be gross or microscopic. Although gross hematuria is often caused by a significant underlying pathology, both microscopic and gross hematuria require investigation.

## Causal Conditions

(list not exhaustive)

- Renal
  - a. Glomerular disease (e.g., systemic lupus erythematosus, hemolytic uremic syndrome, vasculitis)
  - b. Nonglomerular (e.g., acute interstitial nephritis, renal tumour, exercise)
- Postrenal (e.g., stones, bladder tumour, benign prostatic hyperplasia, cystitis)
- Hematologic (e.g., coagulopathy, sickle hemoglobinopathy)
- Heme-negative red urine (e.g., medications, food)

## Key Objectives

Given a patient with hematuria, the candidate will interpret a urinalysis, paying attention to differentiating glomerular from nonglomerular causes, and construct an initial management plan.

## Enabling Objectives

Given a patient with hematuria, the candidate will

- list and interpret clinical findings, including results of a detailed history and an appropriate physical examination;
- list and interpret investigations, including a urinalysis and urine microscopy, as well as further laboratory and imaging studies as appropriate; and
- construct an appropriate initial management plan, including appropriate follow-up and referral for specialized procedures as required (e.g., renal biopsy, cystoscopy).

# Anemia

(February 2017)

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## Rationale

Anemia is a common problem; however, making the diagnosis may be complex. Anemia may be the sole manifestation of serious medical disease.

## Causal Conditions

(list not exhaustive)

- Normocytic
  - a. Red blood cell loss
    - Obvious (e.g., trauma, metro/menorrhagia)
    - Occult
  - b. Decreased red blood cell production
    - Marrow production (e.g., stem cell disorder, bone marrow replacement)
  - c. Increased destruction (e.g., sickle cell anemia, immune-mediated, mechanical)
  - d. Multi-factorial (e.g., anemia of chronic disease)
- Microcytic (e.g., iron deficiency, hemoglobinopathies)
- Macrocytic (e.g., vitamin B12 or folate deficiency, alcohol use)

## Key Objectives

Given a patient with anemia, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. Particular attention should be paid to red cell morphology, identification of common causes in specific patient populations, and risk factors for serious underlying conditions.

## Enabling Objectives

Given a patient with anemia, the candidate will

- list and interpret critical clinical findings, including

- a. common causes in specific patient populations;
- b. risk factors for or features suggestive of serious underlying conditions;
- list and interpret critical investigations, including
  - a. red cell morphology;
  - b. specific investigations according to red cell morphology and history and physical findings;
- construct an effective initial management plan, including
  - a. counselling and educating the patient for prevention of recurrence or further complications;
  - b. referral for specialized care (e.g., suspicion of colon cancer), if necessary.

# Elevated hemoglobin

(February 2017)

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## Rationale

Elevated hemoglobin levels may be a manifestation of polycythemia vera or secondary erythrocytosis. Elevated hemoglobin levels may be due to many treatable causes. Unrecognized polycythemia may cause end-organ damage.

## Causal Conditions

(list not exhaustive)

- Red cell mass increased
  - a. Polycythemia vera - low or normal erythropoetin (EPO)
  - b. Secondary erythrocytosis - elevated EPO
    - Appropriate EPO elevation (e.g., hypoxemia)
    - Inappropriate EPO elevation (e.g., EPO secreting tumour)
  - c. Relative polycythemia (decreased plasma volume)

## Key Objectives

Given a patient with elevated hemoglobin levels, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan.

## Enabling Objectives

Given a patient with elevated hemoglobin level, the candidate will

- list and interpret critical clinical findings, including
  - a. differentiating between primary and secondary erythrocytosis;
  - b. assessing the presence of complications;
- list and interpret critical investigations, including
  - a. appropriate laboratory and diagnostic imaging;
- construct an effective initial management plan, including

- a. referring the patient for specialized care, if necessary;
- b. counselling and education (e.g., smoking cessation, work environment).

# Hernia (abdominal wall and groin)

(January 2017)

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## Rationale

A hernia is an abnormal protrusion of part of a viscus through its containing wall. Hernias, in particular inguinal hernias, are very common, and thus, herniorrhaphy is a common surgical intervention.

## Causal Conditions

(list not exhaustive)

- Congenital hernia
  - a. Infantile inguinal hernia
  - b. Umbilical
- Acquired hernia
  - a. Inguinal hernia
    - Indirect
    - Direct
  - b. Femoral hernia
  - c. Umbilical hernia
  - d. Ventral (incisional) hernia

## Key Objectives

Particular attention should be paid to the physical examination and identification of the type of hernia. Non-reducible (incarcerated) hernias are at increased risk for strangulation and require emergent, rather than elective, repair.

## Enabling Objectives

Given a patient with a hernia, the candidate will

- list and interpret critical clinical findings, including

- a. differentiate the various types of hernias on the basis of physical exam;
  - b. differentiate hernias from other causes of a groin masses;
  - c. identify hernias needing emergent surgical repair;
- list and interpret critical investigations of a patient who may have strangulation, ischemia, or bowel obstruction;
  - construct an effective management plan, including
    - a. select patients in need of surgical consultation;
    - b. counsel and educate patients on the risks associated with uncorrected hernias as well as strategies to reduce post-operative recurrence (especially with ventral hernias).



# 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).

# Hypotonic infant

(February 2017)

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## Rationale

Hypotonia in an infant can be an indication of severe systemic disease requiring urgent intervention, or neurological disease potentially requiring long-term multidisciplinary care.

## Causal Conditions

(list not exhaustive)

- Neurologic (e.g., perinatal asphyxia, spinal muscular atrophy, myasthenia gravis)
- Disorders of skeletal muscle (e.g., muscular dystrophy)
- Genetic/metabolic (e.g., Prader-Willi, hypothyroidism)
- Systemic illness (e.g., sepsis, dehydration)

## Key Objectives

The candidate will recognize hypotonia in an infant as a finding requiring urgent attention. Considering the presence or absence of other clinical findings, the candidate will formulate an appropriate differential diagnosis, assess the severity of the condition, and will initiate an appropriate management plan.

## Enabling Objectives

Given a hypotonic infant, the candidate will

- list and interpret critical clinical findings, including
  - a. assessment of physiologic stability (e.g., oxygenation, cardiovascular function);
  - b. a thorough history including a perinatal history;
  - c. a complete physical examination, including a detailed neurological and musculoskeletal examination;
- list and interpret critical investigations appropriate to the clinical condition, which may include
  - a. urgent investigations relevant to an acutely ill infant (e.g., electrolytes, blood glucose, arterial blood gas);

- b. diagnostic investigations (e.g., computerized tomography scan, creatine kinase, electromyogram, genetic studies);
- construct an effective initial management plan, including:
  - a. immediate supportive care (when required);
  - b. supportive communication with family;
  - c. referral for specialized care, if necessary.

# Fecal incontinence

(February 2017)

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## Rationale

Fecal incontinence varies from inadvertent soiling with liquid stool to the involuntary excretion of feces. This disability has a profoundly negative impact on patient quality of life by virtue of diminished patient self-assuredness and social isolation.

## Causal Conditions

(list not exhaustive)

- Pelvic floor intact
  - a. Neurologic conditions
  - b. Overflow (e.g., impaction)
- Pelvic floor affected
  - a. Acquired (e.g., traumatic birth)
  - b. Congenital

## Key Objectives

Given a patient with fecal incontinence, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate will recognize that incontinence can be multifactorial (for instance patients with significant diarrhea/fecal urgency of any cause with subsequent incontinence due to a disease affecting cognition or mobility, or due to a relative defect in pelvic floor that is overwhelmed by the diarrhea).

## Enabling Objectives

Given a patient with fecal incontinence, the candidate will

- list and interpret critical clinical findings, including
  - a. an appropriate history and physical examination, including an obstetrical history;
- list and interpret critical investigations, including

- a. further investigations of the diarrhea, if indicated;
- b. further studies, such as stool analysis, endorectal ultrasound, colonoscopy, sigmoidoscopy, anoscopy, anorectal manometry, and functional testing, if indicated;
- construct an effective management plan, including anticipation of psychosocial impact.

# Incontinence, urine, adult

(February 2017)

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## Rationale

Incontinence has increased in frequency as our population ages. Incontinence has a detrimental effect on quality of life and an impact on physical and psychological health.

## Causal Conditions

(list not exhaustive)

- Transient
  - a. Polyuria
  - b. Impaired ability/willingness to reach toilet
  - c. Medications, alcohol
- Neurologic (e.g., cauda equina syndrome)
- Anatomic
  - a. Stress incontinence
  - b. Urgency incontinence (e.g., cystitis)
  - c. Overflow incontinence (e.g., prostate enlargement, multiple sclerosis)

## Key Objectives

Given a patient with urinary incontinence, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan, in particular addressing the two most common causes (stress and urgency).

## Enabling Objectives

Given a patient with urinary incontinence, the candidate will

- list and interpret critical clinical findings, including
  - a. an appropriate history and physical examination including pelvic, rectal, and neurological examination;
- list and interpret critical laboratory investigations, including

- a. urinalysis and culture;
- construct an effective initial management plan, including
  - a. a plan for cystitis and urethritis;
  - b. counselling of patients regarding therapeutic and surgical options (e.g., anticholinergic medication for urgency incontinence), and psychosocial impact;
  - c. making an appropriate referral (e.g., for an incontinence program), if need be.



# Incontinence, urine, pediatric / enuresis

(February 2017)

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## Rationale

Enuresis is the involuntary passage of urine in a child. The majority of children with enuresis have primary nocturnal enuresis. Daytime and secondary enuresis are much less common, but require differentiating between underlying diseases and stress-related conditions.

## Causal Conditions

(list not exhaustive)

- Primary enuresis (e.g., family history)
- Secondary enuresis (e.g., urinary tract infection, vesicoureteral reflux)

## Key Objective

In a child five years of age or older, determine whether a physical abnormality is causing the involuntary passage of urine.

## Enabling Objectives

Given a patient with enuresis, the candidate will

- list and interpret critical clinical findings, including
  - a. an appropriate history and physical examination to
    - determine whether medical reasons underlie the enuresis;
    - determine whether a stressful event preceded the occurrence of enuresis (e.g., birth of a sibling);
- list and interpret critical clinical and laboratory findings, including
  - a. urinalysis and urine culture;
- construct an effective management plan, including
  - a. counselling, education, and reassurance of the parents of a child with primary nocturnal enuresis, including treatment options;
  - b. counselling and reassurance of the child to improve self-esteem;

- c. in the case of secondary enuresis, treatment of the underlying cause;
- d. determining if the patient needs to be referred to a specialist.

# Infertility

(January 2017)

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## Rationale

Infertility is a common condition that is defined as the inability of a couple to conceive after one year of intercourse without contraception. Both partners must be investigated.

## Causal Conditions

(list not exhaustive)

- Female
  - a. Ovulatory dysfunction (e.g., hypogonadotropic hypogonadism, polycystic ovarian syndrome)
  - b. Tubal and peritoneal abnormalities (e.g., pelvic inflammatory disease [PID])
  - c. Uterine and cervical factors (e.g., fibroids)
- Male
  - a. Testicular dysfunction (e.g., hypogonadotropic hypogonadism, viral orchitis)
  - b. Post-testicular dysfunction (e.g., abnormal sperm transport)

## Key Objectives

Given a couple with infertility, the candidate will diagnose the cause and complications, and will explain the therapeutic options.

## Enabling Objectives

Given a couple with infertility, the candidate will

- list and interpret critical clinical findings, including those derived from an appropriate history and physical examination of both partners;
- list and interpret critical investigations, including
  - a. semen analysis;
  - b. tests confirming ovulation;

- c. other laboratory tests (e.g., prolactin, thyroid-stimulating hormone);
- construct an effective initial management plan, including
  - a. counselling the couple regarding preconceptual use of folic acid;
  - b. counselling and educating the couple regarding diagnostic and therapeutic options;
  - c. determining whether either patient requires specialized care;
  - d. recommending changes to the workplace environment, if indicated;
  - e. providing counselling regarding psychosocial stresses, if indicated.

# Intrapartum and postpartum care

(January 2017)

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## Rationale

Intrapartum and postpartum care includes the care of the mother and fetus during labour and the six-week period following birth. The care provided during this period has the potential to impact the mother's physical and emotional health in both the short and longer term.

## Key Objectives

The candidate will be able to provide intrapartum and postpartum care that integrates the best available evidence into a model of shared decision-making that enables women to make informed decisions based on their personal needs.

## Enabling Objectives

Given a pregnant patient requiring intrapartum and postpartum care, the candidate will

- list and interpret relevant clinical findings, including
  - a. those derived from an appropriate history and physical examination;
  - b. ongoing emotional and physical needs of a woman in labour;
  - c. pre-labour rupture of membranes;
  - d. onset, stage, and progression of labour;
  - e. indications and contraindications for induction of labour;
  - f. features suggestive of a complicated labour (e.g., prolonged stage of labour, fever, meconium-stained fluid);
  - g. possible causes of a complicated labour (e.g., insufficient contractions, cephalopelvic disproportion, infection);
  - h. risk factors for and features of postpartum fever, hemorrhage, and pain;
  - i. socio-economic determinants of pregnancy outcome.
- list and interpret relevant investigations, including
  - a. appropriate initial investigations for a woman presenting in labour;

- b. indications and options for fetal and maternal monitoring in labour (e.g., electronic fetal monitoring, fetal blood sampling);
- c. appropriate maternal and fetal investigations to determine the need for Rh immunoglobulin;
- construct an effective initial management plan, including
  - a. reviewing maternal birth plans within a model of shared decision-making, including culturally sensitive care;
  - b. encouraging the involvement of birth partner(s) and of extended social supports, if appropriate;
  - c. informing the patient about the need for maternal examination and fetal health surveillance, ensuring consent, privacy, dignity and comfort;
  - d. assessing maternal knowledge of strategies for coping with pain and discuss options for pain management;
  - e. ensuring appropriate management of each stage of labour, including (list not exhaustive)
    - determination as to when clinical intervention should not be offered or advised (e.g., normal labour);
    - indications and options for augmentation and active management of labour;
    - use of prophylactic antibiotics to reduce the risk of Group B Streptococcal disease in the neonate;
    - appropriate counselling and support when complications are anticipated or encountered (e.g., prolonged stage of labour, non-reassuring fetal status);
    - initial immediate management if there are signs of fetal distress;
    - determination as to when surgical intervention (e.g., cesarean section, episiotomy) or instrumental birth (e.g., forceps) is indicated;
    - initial management of postpartum complications (e.g., hemorrhage, fever, depression);
  - f. ensuring management of preterm labour and pre-labour rupture of membranes;
  - g. determining whether the patient requires specialized care.

# Jaundice

(February 2017)

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## Rationale

Jaundice, which has both a biochemical (elevated bilirubin) and clinical (evidence of scleral icterus) definition, is a common condition with many causes. In some cases, early diagnosis and treatment is important for eventual desirable outcome. In certain cases, public health issues may need to be addressed.

## Causal Conditions

(list not exhaustive)

- Unconjugated hyperbilirubinemia (pre-hepatic)
  - a. Overproduction (e.g., hemolysis)
  - b. Decreased hepatic uptake (e.g., congestive heart failure)
  - c. Decreased bilirubin conjugation (e.g., Gilbert syndrome, neonatal jaundice)
- Conjugated hyperbilirubinemia (hepatic)
  - a. Intrahepatic cholestasis (e.g., drugs, cirrhosis)
  - b. Extrahepatic cholestasis (e.g., cholelithiasis)
  - c. Hepatocellular injury (e.g., sepsis, hypoperfusion)
  - d. Other (e.g., infiltrative states, fatty liver)

## Key Objectives

Given a patient with jaundice, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, it is important to identify life-threatening conditions.

## Enabling Objectives

Given a patient with jaundice, the candidate will

- list and interpret critical clinical findings, including

- a. results of an appropriate history and physical examination aimed at determining the underlying cause, with special attention to the presence of risk factors for infectious disease and the use of or the exposure to toxic substances;
- list and interpret critical investigations, including
  - a. radiologic and laboratory tests needed to make the diagnosis;
- construct an effective initial management plan, including
  - a. determining whether the patient requires specialized care or an urgent referral;
  - b. notifying public health authorities, if necessary.



# Oligoarthralgia (pain in one to four joints)

(February 2017)

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## Rationale

Acute joint pain may reflect an urgent process that needs immediate evaluation and treatment to prevent permanent damage and loss of function. Chronic pain in a small number of joints is very common, and a very frequent cause of disability.

## Causal Conditions

(list not exhaustive)

- Acute joint pain
  - a. Injury (e.g., meniscal tear)
  - b. Infection
  - c. Crystal
  - d. Hemarthrosis (e.g., clotting disorder)
  - e. Acute reactive arthritis
- Chronic joint pain
  - a. Osteoarthrosis
  - b. Periarticular disease (e.g., bursitis, tendonosis)
  - c. Pediatric disorders (e.g., slipped epiphysis, Osgood-Schlatter)
- Non-articular disease (e.g., bone malignancy, leukemia)

## Key Objectives

Given a patient with musculoskeletal pain that is localized, the candidate will be able to differentiate joint disease from other anatomic causes, and through history and physical examination determine the acuity and severity of the problem. In particular, the candidate will determine if the patient requires immediate, definitive management, or referral.

## Enabling Objectives

Given a patient with joint pain, the candidate will

- list and interpret critical clinical findings, including
  - a. whether the joint, or other tissues, is the source of the pain;
  - b. whether the underlying cause is traumatic, inflammatory or mechanical;
  - c. whether urgent investigation is required;
  - d. impact on function;
  - e. an occupational and recreational history;
- list and interpret critical investigations, including
  - a. appropriate laboratory investigations and other tests;
  - b. determination as to when joint aspiration is required, and prescription of the appropriate investigations (e.g., culture, cell count, crystals);
  - c. determination as to when appropriate radiologic investigations are required;
  - d. determination as to when other investigations are indicated (other cultures, magnetic resonance imaging);
- construct an effective management plan, including
  - a. initial management of common inflammatory conditions (e.g., gout, infection);
  - b. initial management of common injuries (e.g., sprains);
  - c. referral for specialized care, if indicated (e.g., orthopedic surgery);
  - d. counselling regarding appropriate return to activities and recognition of the potential for long-term impact on function.

# Neck pain

(February 2017)

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## Rationale

Neck pain is extremely common, and, in most cases, does not require investigation. However, there are patients presenting with pain, or signs of nerve compression, who require specific diagnosis and management to ensure good outcome. Neck pain may also be due to non-musculoskeletal causes.

## Causal Conditions

(list not exhaustive)

- Mechanical problems
  - a. Neck strain
  - b. Spondylosis
  - c. Acute, discogenic nerve root entrapment
  - d. Spinal stenosis and/or cord compression
- Inflammatory arthritis (e.g., ankylosing spondylitis)
- Infections
- Fracture
- Neoplasm
- Pain from soft tissue structures (e.g., thyroid, pharynx)

## Key Objectives

Given a patient with neck pain, the candidate will be able to determine whether the patient must undergo further tests and specific management. In particular, the candidate will determine if the patient requires urgent intervention.

## Enabling Objectives

Given a patient with neck pain, the candidate will

- list and interpret critical clinical findings, including

- a. features on history and physical examination that suggest the need for urgent investigation or management (e.g., in case of neurologic abnormalities or fever);
  - b. data from a patient-centered pain history, including the impact on function;
  - c. occupational and recreational history;
  - d. determination as to whether any further investigation is required or not;
- list and interpret critical investigations, including
    - a. appropriate laboratory investigations and other tests (e.g., computed tomography or magnetic resonance imaging, if indicated)
  - construct an effective management plan, including
    - a. ensuring initial management of urgent problems, including appropriate referral for specialized care;
    - b. counselling and educating the patient about appropriate exercise and return to work;
    - c. recognizing the potential for long-term impact on function;
    - d. prescribing medications in a safe and effective manner, if necessary (e.g., nonsteroidal anti-inflammatory drugs, opiates).

# Non-articular musculoskeletal pain

(January 2017)

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## Rationale

Non-articular musculoskeletal pain, though common, is rarely due to life-threatening or damaging conditions. Often referred to as "soft tissue" pain, it is a common cause for concern, which frequently prompts those affected to seek medical advice.

## Causal Conditions

(list not exhaustive)

- Generalized Pain
  - a. Acute pain (e.g., viral infections)
  - b. Chronic pain (e.g., fibromyalgia, polymyalgia rheumatica)
- Localized Pain
  - a. Acute
    - Trauma (see also Fractures and Dislocations)
    - Infection (e.g., osteomyelitis, necrotizing fasciitis)
    - Vascular (e.g., compartment syndrome, sickle cell disease)
  - b. Chronic
    - Mechanical (e.g., tendinopathy, bursitis)
    - Vascular (e.g., intermittent claudication)
    - Neoplastic
    - Neuropathic
    - Complex regional pain syndrome

## Key Objectives

Given a patient with musculoskeletal pain, the candidate will be able to differentiate symptoms arising from bone, joint, muscle, nerve or vascular causes. The candidate will be able to further

classify the likely underlying pathology and determine if urgent action is required.

## Enabling Objectives

Given a patient with musculoskeletal pain, the candidate will

- list and interpret critical clinical findings, including
  - a. likely anatomic and pathogenic pain mechanisms;
  - b. determining whether the pain represents a problem requiring urgent or immediate investigation;
  - c. trigger, if any;
  - d. impact on function;
  - e. occupational and recreational history;
- list and interpret critical investigations, including appropriate laboratory investigations and other tests
  - a. initial investigations (e.g., radiographs);
  - b. further or specialized investigations (e.g., Doppler ultrasound, magnetic resonance imaging, nerve conduction studies), if indicated;
- construct an effective management plan, including
  - a. beginning urgent or acute management of serious problems;
  - b. providing patient education and counselling regarding self-limited or benign conditions;
  - c. providing counselling regarding appropriate return to activities;
  - d. referring for specialized care, if necessary.

# Polyarthralgia (pain in more than four joints)

(February 2017)

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## Rationale

Chronic pain in or around multiple joints is often the presenting symptom of common, disabling diseases, responsible for a great burden of suffering, loss of function and morbidity. Many of these patients may benefit from early diagnosis and treatment.

## Causal Conditions

(list not exhaustive)

- Inflammatory joint pain (e.g., rheumatoid arthritis, juvenile polyarthritis)
- Mechanical joint pain (e.g., osteoarthritis)
- Non-articular disease (e.g., fibromyalgia, polymyalgia rheumatica)

## Key Objectives

Given a patient with widespread musculoskeletal pain, the candidate will be able to differentiate true joint disease from other causes, and through history and physical exam determine the acuity and severity of the problem. In particular, the candidate will determine if the disease is inflammatory or not, and initiate appropriate treatment or referral.

## Enabling Objectives

Given a patient with joint pain, the candidate will

- list and interpret critical clinical findings, including
  - a. determining, based on the history and physical examination, whether it is an articular problem and, if so, if it is inflammatory or mechanical;
  - b. determining, based on the history and physical examination, whether there are other features that help make a more definitive diagnosis (e.g., rheumatoid nodules);
  - c. impact on function;
- list and interpret critical investigations, including
  - a. appropriate laboratory investigations and other tests (e.g., radiology, erythrocyte sedimentation rate, anti-CCP [anti-cyclic citrullinated peptide]);

- construct an effective management plan, including
  - a. immediate treatment of urgent conditions (e.g., polymyalgia rheumatica);
  - b. immediate symptomatic and supportive treatment (e.g., anti-inflammatories);
  - c. appropriate referral for more specialized care (e.g., rheumatology, physiotherapy), if indicated;
  - d. counselling regarding appropriate return to activities.



# Back pain and related symptoms (e.g., sciatica)

(February 2017)

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## Rationale

Lower back pain is extremely common, and, in most cases, does not require investigation. However, there are patients presenting with back pain, or signs of nerve compression due to back pathology, who require specific diagnosis and management to ensure good outcome.

## Causal Conditions

(list not exhaustive)

- Mechanical back problems
  - a. Common back pain
  - b. Acute, discogenic nerve root entrapment
  - c. Spinal Stenosis and/or cauda equina syndrome
- Inflammatory arthritis (e.g., ankylosing spondylitis)
- Infections
- Fracture
- Neoplasm
- Others (e.g., referred pain)

## Key Objectives

Given a patient with back pain, the candidate will be able to determine whether the patient must undergo further tests and specific management. In particular, the candidate will determine if the patient requires urgent intervention.

## Enabling Objectives

Given a patient with back pain, the candidate will

- list and interpret critical clinical findings, including
  - a. features from the history and the physical examination that suggest the need for urgent investigation or management (e.g., urinary incontinence, fever);

- b. impact on function;
- c. an occupational and recreational history;
- d. determination as to whether the patient requires further investigation or not;
- list and interpret critical investigations, including
  - a. appropriate laboratory investigations and other tests (e.g., computerized tomography or magnetic resonance imaging, if indicated);
- construct an effective management plan, including
  - a. ensuring initial management of urgent problems, including appropriate referral for specialized care;
  - b. counselling and educating the patient about appropriate exercise and return to work;
  - c. recognizing the potential for long-term impact on function;
  - d. prescribing medications in a safe and effective manner, if necessary (e.g., nonsteroidal anti-inflammatory drugs, opiates).

# Language and speech disorders

(February 2017)

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## Rationale

It is important to differentiate speech from language abnormalities. Patients with impairment in comprehension and/or use of the form, content, or function of language are said to have a language disorder. Patients with impaired articulation, fluency and voice are said to have a speech disorder.

## Causal Conditions

(list not exhaustive)

- Language disorder
  - a. Delayed and developmental language impairment (e.g., deafness, autism spectrum disorder, neglect, abuse)
  - b. Degenerative, vascular, or other central nervous system disorders (e.g., stroke)
  - c. Head injury
- Speech disorder
  - a. Articulation disorder (e.g., dysarthria)
  - b. Fluency (e.g., stuttering, Parkinson disease)
  - c. Speech apparatus lesions (e.g., cleft palate, head and neck neoplasm)

## Key Objectives

Given a patient with a language or speech disorder, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. Particular attention should be paid to differentiating language from speech disorders.

## Enabling Objectives

Given a patient with a language or speech disorder, the candidate will

- list and interpret critical clinical findings, including
  - a. assessment of hearing in a child;

- b. evidence of malignancy;
- c. results of an appropriate neurological examination;
- list and interpret critical investigations (e.g., hearing tests)
- construct an effective initial management plan, including
  - a. referring the patient for specialized care with appropriate health care professionals (e.g., speech therapist, ear, nose, and throat surgeon), if necessary;
  - b. counselling and educating the patient and/or family, particularly regarding the psychosocial impact on function.

# Consent

(April 2024)

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## Rationale

Consent is an essential requirement for the initiation, continuation, and termination of medical treatment or medical research. In some circumstances, verbal consent is sufficient whereas in others (e.g., certain investigations, surgical procedures) written consent is necessary.

## Key Objectives

Given the necessity for patient consent, the candidate will be able to take the necessary steps to obtain valid legal and ethical consent for the proposed action, taking into account issues related to decision-making capacity, information sharing, the form of consent, limitations, and exceptions to the requirement of consent.

## Enabling Objectives

Given the need to obtain consent, the candidate will

1. determine a patient's capacity to consent (e.g., cognitive impairment, coercion);
2. know the process of obtaining consent where there is a lack of capacity (e.g., substitute decision-maker, court order);
3. identify the information that must be gathered to ensure informed consent has been obtained;
4. differentiate the circumstances in which implied consent is acceptable;
5. identify issues related to written and verbal consent including appropriate documentation;
6. identify exceptions to the requirement for consent (e.g., mandatory reporting, risk of harm to others); and
7. describe the limitations and scope of the consent obtained in the situation (e.g., procedural limitation, duration of consent).

# Truth telling

(February 2017)

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## Rationale

Truth telling is an essential component to every patient or professional encounter and a basic ethical behavior in a physician's daily practice.

## Key Objectives

Given a patient or professional encounter, the candidate must honestly and accurately convey relevant information and explanations to patients, their families and other members of the health care team.

## Enabling Objectives

Given a patient or professional encounter, the candidate will

- adhere to the legal and ethical basis for truth telling;
- ascertain the personal and cultural context of the patient or professional situation;
- communicate effectively (e.g., using language adapted to the situation, checking for understanding);
- identify challenging situations and communicate accurately and effectively in such circumstances (e.g., delivering bad news, addressing medical error);
- recognize when it is necessary to disclose personal beliefs or values that could be in conflict with patient choices.

# Negligence

## (February 2017)

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### Rationale

Negligence in providing care may result in legal liability.

### Key Objective

Given a situation where a patient complains of negligent medical care, or the candidate is aware of negligence, the candidate will consider the standard of care, the possibility of injury resulting from the care, and know what action to take in the circumstances.

### Enabling Objectives

Given a situation where there may have been negligence, the candidate will

- know the elements required to prove negligence (e.g., a duty of care, a breach of the standard of care, a resultant harm and a connection between the harm suffered and the breach of the standard of care);
- recognize differences in standards of care required based on the level of responsibility of the health care provider;
- initiate appropriate communications with the patient, the health facility and the health care team regarding the issue of possible negligence (e.g., relevant legislation, vicarious liability and ethical duties of disclosure);
- initiate communications with the liability insurance carrier, such as the Canadian Medical Protective Association (CMPA).

# Confidentiality

(February 2017)

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## Rationale

Confidentiality is a key component of the patient-physician relationship. The need for confidentiality is present in every encounter.

## Key Objective

The candidate will recognize the need for confidentiality and the circumstances where confidentiality must or may be breached.

## Enabling Objectives

Given that confidentiality is a key component of the practice of medicine, the candidate will

- implement in all professional encounters, the ethical and legal aspects of confidentiality;
- know the exceptions to confidentiality and when it must or may be breached (e.g., duty to report, prevention of harm);
- know the limitations in the consent to release information (e.g., extent of information released to third parties, time restrictions);
- recognize the duty to inform patients about mandatory disclosure (e.g., communicable diseases);
- recognize the challenges to confidentiality posed by electronic medical records.



# Legal system

(January 2017)

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## Rationale

Knowledge of the Legal System in Canada allows the physician to provide care to patients in the context of federal, provincial and local laws and regulations.

## Key Objectives

Given a situation that may result in the involvement of the legal system, the candidate will be able to identify the appropriate laws which apply to the particular situation and access and engage with the appropriate body.

## Enabling Objectives

The candidate will

- recognize the various sources of laws in Canada (e.g., federal and provincial statutes, the common law, the Civil Code of Québec, licensing and regulatory bodies) as they apply to the practice of medicine;
- be familiar with the principles underlying the important court, tribunal and other legal decisions that affect the practice of medicine;
- identify situations in which consultation or referral are appropriate (e.g., legal advice, child protection services).

# Limp in children

(February 2017)

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## Rationale

Limp is a laboured, jerky or strenuous way of walking, usually caused by weakness, pain, or deformity. Although usually caused by benign conditions, at times it may be life or limb threatening.

## Causal Conditions

(list not exhaustive)

- Congenital (lower limb, spine)
- Acquired (lower limb, spine)
  - a. Infection
  - b. Inflammation
  - c. Tumours
    - Benign
    - Malignant
- Other
  - a. Growing pains
  - b. Pain amplification syndromes

## Key Objectives

Given a child with a limp, the candidate will identify the most likely cause, in particular ruling out the most serious possible diagnoses. Note, in particular, that the most serious diseases causing a limp or leg pain in children are usually unilateral.

## Enabling Objectives

Given a child with a limp, the candidate will

- acquire and interpret critical clinical findings, including

- a. determining whether the pain originates in bone, joint, or soft tissue.
  - b. localizing the site of pain (e.g., unilateral or bilateral) and the site of pathology (e.g., referred pain).
  - c. recognizing signs and symptoms suggestive of serious disease;
  - d. calculating leg length discrepancies;
  - e. describing stance and gait;
- list and interpret critical investigations, including
    - a. appropriate diagnostic imaging modalities (e.g., X-ray, nuclear scan);
  - constructing an effective initial management plan, including
    - a. determining if the patient requires specialized care, including referral to other health care professionals;
    - b. in the case of a child persistent pain or limp, determining if further assessment is needed.

# Lower urinary tract symptoms

(May 2017)

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## Rationale

Lower urinary tract symptoms (LUTS), which can include urinary incontinence or urinary retention with or without obstruction, are common in men and women of all ages. The prevalence and severity of LUTS increase with age and they are a major burden for the aging population in particular. Although LUTS do not usually cause severe illness, they are a common reason for seeking medical care, can considerably reduce quality of life, and may point to serious pathology of the urogenital tract.

## Causal Conditions

(list not exhaustive)

- Infections and inflammation (e.g., cystitis, prostatitis)
- Structural (e.g., stones, prolapse, benign prostatic hypertrophy, post-pregnancy pelvic floor changes)
- Medical conditions (e.g., diabetes mellitus, multiple sclerosis)
- Drugs (e.g., anticholinergics, opioids)

## Key Objectives

Given a patient with LUTS, the candidate will diagnose the cause, severity, predisposing conditions, and complications, and will construct an appropriate initial management plan.

## Enabling Objectives

Given a patient with LUTS, the candidate will

- list and interpret critical clinical findings, including those based on
  - a. the determination as to which LUTS are present (e.g., storage, voiding, and post-micturition symptoms), including their time course, severity, and impact on quality of life;
  - b. the identification of possible causes and associated co-morbidities through a proper assessment of the patient's general medical history;

- c. the use of medication, including herbal and over-the-counter medicines;
- d. the presence or absence of systemic and uremic symptoms;
- e. a physical examination that is appropriately guided by the urological symptoms and other medical conditions (e.g., abdomen, pelvic exam, digital rectal exam);
- recognize that appropriate initial investigations vary depending on the individual presentation, and list and interpret possible critical clinical investigations, including
  - a. laboratory (e.g., renal function, urinalysis, culture);
  - b. imaging (e.g., ultrasound, computed tomography);
- construct an effective initial management plan, including
  - a. determining whether conservative management is appropriate in this case;
  - b. appropriate pharmacotherapy;
  - c. immediate bladder catheterization, if indicated;
  - d. appropriate counselling and use of screening measures (e.g., prostate specific antigen [PSA]);
  - e. assessing the psychosocial impact (e.g., urinary incontinence);
  - f. determination as to whether urgent and/or specialized care is required.

# Lump / mass (musculoskeletal)

(February 2017)

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## Rationale

Lumps or masses are a common cause for consultation with a physician. Musculoskeletal lumps or masses represent an important cause of morbidity and mortality.

## Causal Conditions

(list not exhaustive)

- Neoplastic
  - a. Soft tissue
    - Benign (e.g., lipoma)
    - Malignant (e.g., leiomyosarcoma)
  - b. Bone (e.g., cyst)
    - Benign (e.g., cyst)
    - Malignant (e.g., Ewing sarcoma)
- Non-neoplastic
  - a. Infectious (e.g., osteomyelitis)
  - b. Traumatic (e.g., hematoma)
  - c. Inflammatory (e.g., rheumatoid nodules, tendonitis)

## Key Objectives

Given a patient with a musculoskeletal lump or mass, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan, in particular to distinguish benign from malignant.

## Enabling Objectives

Given a patient with a musculoskeletal lump or mass, the candidate will

- list and interpret clinical findings, including

- a. an appropriate history and physical examination with particular attention to features suggestive of sarcoma;
- list and interpret key investigations, including
  - a. laboratory and radiological studies, if indicated, and in particular determining if the patient requires a biopsy;
- construct an effective initial management plan, including
  - a. determination as to whether the patient requires specialized or urgent diagnosis and treatment.

# Lymphadenopathy

(February 2017)

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## Rationale

Lymphadenopathy can be localized or diffuse, and benign or malignant. Patients frequently present when they find a palpable lymph node.

## Causal Conditions

(list not exhaustive)

- Localized
  - a. Reactive (e.g., tonsillitis)
  - b. Neoplastic (e.g., metastatic cancer)
- Diffuse
  - a. Infectious (e.g., viral)
  - b. Inflammatory (e.g., sarcoidosis)
  - c. Neoplastic (e.g., lymphoma)

## Key Objectives

Given a patient with lymphadenopathy, the candidate will diagnose the cause, severity, and complications, will initiate an appropriate management plan, and in particular, determine the need for a biopsy.

## Enabling Objectives

Given a patient with lymphadenopathy, the candidate will

- list and interpret relevant clinical findings, including
  - a. an appropriate history and physical examination;
- list and interpret relevant investigations, including
  - a. laboratory and radiological studies;
  - b. indications for a biopsy;



- construct an effective management plan, including:
  - a. determining whether basic observation and/or treatment is indicated, or if the patient requires urgent referral;
  - b. determining if the patient requires non-urgent referral (e.g., serum sickness);
  - c. counselling and education of the patient regarding the nature and scope of needed investigations.

# Major/mild neurocognitive disorders (dementia)

(February 2017)

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## Rationale

Neurocognitive disorder (dementia) is a diminution in cognition in the setting of a stable level of consciousness. It is a major issue for families and caregivers, and is increasing in prevalence with the aging population. Alzheimer's disease is by far the most common form of neurocognitive disorder (dementia) in the elderly. Preventive screening of the elderly for risk factors and possible reversible disorders should be routinely done.

See also Objective 31-1, , and Objective 74, .

## Causal Conditions

(list not exhaustive)

- Alzheimer's disease
- Vascular dementia (e.g., multi-infarct, lacunar infarcts)
- Brain trauma (e.g., postconcussive, anoxia)
- Drugs (e.g., alcohol, substance abuse)
- Toxins (e.g., heavy metals, organic toxins)
- Neurodegenerative disorders (e.g., Parkinson disease, Lewy Body, Huntington disease)
- Normal pressure hydrocephalus
- Intracranial masses (e.g., tumours, subdural masses, brain abscesses)
- Infections (e.g., human immunodeficiency virus, neurosyphilis)
- Endocrine, metabolic, and nutritional disorders (e.g., hypothyroid, vitamin B12 deficiency)

## Key Objectives

Given a patient with neurocognitive disorder (dementia), the candidate will identify potential causes, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate will identify a deterioration in cognitive function and look for reversible risk factors. The candidate will differentiate early Alzheimer disease from other causes.

## Enabling Objectives

Given a patient with neurocognitive disorder (dementia), the candidate will

- list and interpret critical clinical findings, including those based on
  - a. a history from the patient and on other collateral information to determine whether cognitive decline has occurred, the time course, and possible risk factors (e.g., drugs, toxins);
  - b. a differentiation of true neurocognitive disorder (dementia) from psychiatric disorders (e.g., depression);
  - c. the determination of the patient's mental status as well as the results of the mini-mental state examination;
- list and interpret critical investigations (e.g., thyroid-stimulating hormone, vitamin B12, venereal disease research laboratory);
- construct an effective initial management plan, including
  - a. treatment of reversible underlying conditions;
  - b. initiation of appropriate pharmacotherapy (e.g., cholinesterase inhibitors);
  - c. patient and family counseling (e.g., prognosis, alternate decision-making and support services);
  - d. determination as to whether a referral to specialized services (e.g., occupational therapy, addictions treatment) is required.

# Mediastinal mass

(February 2017)

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## Rationale

Mediastinal masses that are found on X-ray are classified according to location. Location within the mediastinum is important for identifying the cause.

## Causal Conditions

(list not exhaustive)

- Anterior
  - a. Tumours (e.g., thymoma, lymphoma)
  - b. Other (e.g., aneurysm)
- Middle
  - a. Tumours (e.g., bronchogenic cancer)
  - b. Other (e.g., sarcoidosis)
- Posterior
  - a. Tumours (e.g., esophageal cancer)
  - b. Other (e.g., hiatal hernia)

## Key Objectives

Given a patient with a mediastinal mass, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan, in particular, differentiate between causes based on compartment location.

## Enabling Objectives

Given a patient with mediastinal mass, the candidate will

1. list and interpret critical clinical findings, including
  - a. an appropriate history and physical examination to help determine the most likely cause;

2. list and interpret relevant investigations, including
  - a. laboratory and radiological investigations;
3. construct an effective initial management plan, including:
  - a. determining if the patient requires further investigation;
  - b. referral of the patient for specialized diagnostic tests and treatment, if necessary;
  - c. counselling and education of the patient regarding the nature and scope of needed investigations.

# Menopause

## (February 2017)

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### Rationale

Menopause is defined as 12 months of amenorrhea after the final menstrual period, reflecting complete, or near complete, cessation of ovarian function. Promotion of health maintenance in this group of women will enhance physical, emotional, and sexual quality of life.

### Causal Conditions

This Objective relates solely to physiological menopause.

### Key Objectives

Given a patient with physiological menopause, the candidate will be able to explain and prevent the undesirable effects of menopause.

### Enabling Objectives

Given a patient with physiological menopause, the candidate will

- list and interpret relevant clinical findings, including
  - a. an appropriate history and physical examination, in particular, looking for atypical findings or risk factors for complications of menopause;
- list and interpret investigations, including
  - a. those required for well-woman examination;
- construct an effective initial management plan, including:
  - a. counselling and education of the patient on the normal changes during menopause;
  - b. exploration of and reassurance about psychosocial concerns regarding aging and sexuality;
  - c. counselling and education of the patient regarding prevention of osteoporosis and cardiovascular disease;
  - d. discussing risks, benefits, and guidelines for hormone replacement therapy, including topical estrogen therapy;
  - e. discussing alternatives to estrogen therapy for some of the symptoms of menopause.

# Depressed mood

(February 2017)

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## Rationale

Symptoms of depression and/or mood dysregulation are common. Depressed mood can lead to significant social, functional and physical impairment or death.

## Causal conditions

(list not exhaustive)

- Major depressive disorder
- Bipolar disorder (type I, type II)
- Persistent depressive disorder (dysthymia)
- Cyclothymic disorder
- Normal grief
- Substance-induced mood disorder
- Mood disorder secondary to a general medical condition
- Adjustment disorder

## Key Objectives

Given a patient with depressed mood, the candidate will diagnose the cause, severity and complications, and will initiate an appropriate management plan. The candidate should pay particular attention to assessment of suicide risk and the potential need for urgent care.

## Enabling Objectives

Given a patient suspected of depressed mood, the candidate will

- list and interpret critical clinical findings, including
  - a. results of an appropriate history, physical examination and assessment of the patient's mental state;
  - b. a differential diagnosis based upon differentiation of clinical syndromes presenting with mood dysregulation;
  - c. specific risk factors that warrant immediate intervention (e.g., suicide ideation);

- list and interpret appropriate investigations, including appropriate laboratory investigations (e.g., toxicology screen, thyroid stimulating hormone);
- construct an initial management plan including
  - a. an assessment of safety (e.g., suicide risk, risk of harm to others);
  - b. counselling of patient and family regarding psychosocial issues and prevention of further impairment;
  - c. initiation of appropriate pharmacotherapy, if indicated;
  - d. appropriate involvement of family and supportive resources;
  - e. determination as to whether a referral for specialized care or support services is required.



# Mania / hypomania

(February 2017)

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## Rationale

Mania/Hypomania is an extremely disabling and potentially harmful behavioral syndrome that indicates an underlying central nervous system disorder. Mania can lead to harm to self or others, and may be accompanied by features of psychosis.

## Causal conditions

(list not exhaustive)

- Bipolar disorder (type I, type II)
- Substance-induced mood disorder
- Mood disorder due to a medical condition
- Cyclothymic disorder

## Key Objectives

Given a patient presenting with mania/hypomania, the candidate will diagnose the cause, severity and complications, and will initiate an appropriate management plan. The candidate should pay particular attention to assessment of risk and the potential need for urgent care.

## Enabling Objectives

Given a patient with symptoms of mania/hypomania, the candidate will

- list and interpret critical clinical findings, including
  - a. results of an appropriate history, physical examination and assessment of the patient's mental state;
  - b. collateral information, as appropriate (e.g., information from family, friends, previous assessments);
  - c. a differential diagnosis based upon differentiation of clinical syndromes presenting with mania/hypomania;
  - d. specific risk factors that warrant immediate intervention;

- list and interpret appropriate investigations, including appropriate laboratory investigations (e.g., toxicology screen, thyroid stimulating hormone);
- construct an initial management plan including
  - a. an assessment of safety (e.g., suicide risk, risk to others);
  - b. initiation of appropriate pharmacotherapy if indicated;
  - c. appropriate involvement of family and supportive resources;
  - d. determination as to whether a referral for specialized care is required (e.g., involuntary admission).

# Movement disorders, involuntary / tic disorders

(February 2017)

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## Rationale

Movement disorders are classified as excessive (hyperkinetic) or reduced (bradykinetic) activity. Diagnosis depends primarily on careful observation of the clinical features.

## Causal Conditions

(list not exhaustive)

- Hyperkinetic
  - a. Tics
    - Primary (sporadic and inherited)
      - a. Tourette syndrome
      - b. Huntington disease
    - Secondary
      - a. Infections (e.g., encephalitis, Creutzfeldt-Jakob)
      - b. Drugs (e.g., stimulants, levodopa)
  - b. Dystonia
    - Primary (sporadic and inherited)
    - Dystonia plus syndromes (e.g., medication)
  - c. Stereotypies (typically with mental retardation or autism)
  - d. Chorea/Athetosis/Ballism
  - e. Essential tremor
  - f. Myoclonus
- Bradykinetic
  - a. Parkinson disease

- b. Wilson disease
- c. Huntington disease
- Tremor
  - a. Resting (e.g., Parkinson, severe essential)
  - b. Intention (e.g., cerebellar disease, multiple sclerosis)
  - c. Postural/Action (e.g., enhanced physiologic, essential)

## Key Objectives

Given a patient with a movement disorder, the candidate will diagnose the cause, severity and complications, and will initiate an appropriate management plan.

## Enabling Objectives

Given a patient with a movement disorder, the candidate will

- list and interpret critical clinical findings, including
  - a. describing the abnormal movement accurately after careful observation (at rest and in action) to differentiate between various types and causes of movement disorders;
  - b. performing a history and physical examination to look for reversible causes (e.g., medications, Wilson disease);
  - c. identifying key physical findings characteristic of Parkinson disease (e.g., rigidity, akinesia);
- list and interpret critical investigations including
  - a. testing for Wilson disease, if indicated;
  - b. imaging studies or other tests, as appropriate;
- construct an effective initial management plan, including
  - a. initiating medications for common conditions (e.g., essential tremor);
  - b. recognizing side effects of medication and modifying as necessary (e.g., dystonia, "on/off" phenomenon);
  - c. determining if the patient requires specialized care for diagnosis or management (e.g., genetic testing);

d. counselling about the psychosocial impact of the disorder.

# Neck mass, goiter, thyroid disease

(February 2017)

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## Rationale

The majority of neck masses are benign, but it is important to distinguish those rare ones which are malignant.

## Causal Conditions

(list not exhaustive)

- Benign
  - a. Congenital (e.g., thyroglossal duct cyst)
  - b. Inflammatory (e.g., reactive lymph nodes)
  - c. Neoplasms (e.g., lipomas)
- Malignant
  - a. Thyroid
  - b. Non-thyroid head and neck cancers
  - c. Lymphoma

## Key Objectives

Given a patient with a neck mass, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. Particular attention should be paid to excluding malignancy.

## Enabling Objectives

Given a patient with a neck mass, the candidate will

- list and interpret critical clinical findings, including
  - a. an appropriate history and physical examination, paying particular attention to;
    - risk factors predisposing to malignancy (e.g., smoking);
    - time course;

- presence of pain, swallowing or systemic symptoms;
- signs or symptoms of thyroid dysfunction;
- list and interpret critical investigations, including
  - a. recognition that no investigation may be necessary;
  - b. investigation of thyroid function;
  - c. diagnostic imaging;
- construct an effective initial management plan, including
  - a. reassurance and appropriate follow-up for a suspected benign lesion;
  - b. appropriate medical management (e.g., thyroid supplementation, antibiotics);
  - c. referral for specialized care (e.g., fine needle aspiration), if necessary.

# Neonatal distress

(February 2017)

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## Rationale

Neonatal distress is a relatively common occurrence. Failure to identify and appropriately manage an infant in distress in a timely manner can potentially lead to significant morbidity and mortality.

## Causal Conditions

(list not exhaustive)

- Prematurity
- Pulmonary (e.g., meconium aspiration, pneumothorax)
- Decreased respiratory drive (e.g., maternal medications, asphyxia)
- Cardiovascular (e.g., anemia, congenital heart disease)
- Infection

## Key Objectives

In cases of a neonatal distress, the candidate will be able to assess the need for and initiate resuscitation, identify causal and ongoing pathologies, and determine ongoing needs, including whether the infant requires level 2 or level 3 neonatal intensive care.

## Enabling Objectives

In cases of neonatal distress, the candidate will

- list and interpret critical clinical findings, including
  - a. physical signs and symptoms that necessitate immediate resuscitation;
  - b. maternal and perinatal history;
  - c. physical examination findings relevant to formulating a differential diagnosis;
- list and interpret critical initial investigations targeted towards identifying an underlying cause (e.g., cord blood gas, blood glucose);
- construct an effective initial management plan, including
  - a. neonatal resuscitation;



- b. elements of ongoing supportive care, including;
- thermoregulation;
  - fluid and electrolyte balance;
  - sepsis management;
  - cardiorespiratory support;
- c. appropriate communication with caregiver(s);
- d. appropriate consultation or referral.

# Neonatal jaundice

(February 2017)

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## Rationale

Jaundice, usually mild unconjugated bilirubinemia, affects many newborns. Although most cases are physiological, some are indicative of serious underlying disorders.

## Causal Conditions

(list not exhaustive)

- Unconjugated hyperbilirubinemia
  - a. Increased bilirubin production
    - 1. Hemolytic causes (e.g., Coombs positive, Coombs negative)
  - b. Decreased bilirubin conjugation
    - Metabolic or genetic (e.g., Gilbert syndrome, hypothyroidism)
    - Physiologic (e.g., breast milk jaundice)
  - c. Gastrointestinal (e.g., sequestered blood)
- Conjugated hyperbilirubinemia
  - a. Decreased bilirubin uptake
    - Infections (e.g., sepsis, neonatal hepatitis)
    - Cholestasis (e.g., total parenteral nutrition)
    - Metabolic
    - Genetic
  - b. Obstructive (e.g., biliary atresia)

## Key Objectives

Given a patient with neonatal jaundice, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. Particular attention should be paid to jaundice which presents within the first three days after birth or with a rapid onset.

## Enabling Objectives

Given a patient with neonatal jaundice, the candidate will

- list and interpret critical clinical findings, including
  - a. determining whether the neonate meets the criteria for treatment of physiologic jaundice;
  - b. identifying features of serious underlying disorders;
- list and interpret critical investigations, including
  - a. those investigations which differentiate disorders associated with conjugated or unconjugated hyperbilirubinemia;
- construct an effective initial management plan, including
  - a. monitoring and managing physiologic jaundice;
  - b. referring the patient to appropriate specialists in the case of non-physiologic jaundice;
  - c. counselling and reassuring parents, as appropriate.

# Numbness / tingling / altered sensation

(February 2017)

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## Rationale

Patients will often present complaining only of altered sensation. There are varying underlying causes, some of which are serious.

## Causal Conditions

(list not exhaustive)

- Peripheral neuropathy (e.g., diabetic neuropathy, carpal tunnel syndrome, radiculopathy)
- Central nervous system (e.g., multiple sclerosis)
- Dermatological (e.g., herpes zoster, angioedema)
- Mental disorders (e.g., panic attacks)

## Key Objectives

Given a patient presenting with isolated numbness/tingling/altered sensation, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan.

## Enabling Objectives

Given a patient with numbness/tingling/altered sensation, the candidate will

- list and interpret critical clinical findings, including
  - a. history data relevant to potential underlying causes (e.g., diabetic risk factors, workplace risk factors, distribution of symptoms);
  - b. results of a physical examination including a thorough neurological examination;
- list and interpret appropriate investigations (e.g., fasting glucose, nerve conduction studies)
  - a. recognize the fact that in many such cases investigations may not be required;
- construct an effective initial management plan based on the working diagnosis, including
  - a. providing appropriate continuing assessment and ongoing care;
  - b. determining if the patient requires specialized care;

c. advising the patient, if necessary, on work-related issues.

# Obsessive-compulsive (OCD) and related disorders

(February 2017)

---

## Rationale

OCD is characterized by the presence of obsessions and/or compulsions. OCD and other disorders with similar manifestations (body dysmorphic disorder, hoarding, trichotillomania, etc.) are a significant source of morbidity and impaired quality of life. OCD is frequently comorbid with other disorders (see causal conditions).

## Causal Conditions

(list not exhaustive)

- Adverse childhood experiences (e.g., abuse, behavioural inhibition)
- Genetic neurological dysfunction
- Other psychiatric disorders (e.g., tic disorder, anxiety disorders, depression, substance use disorder)
- Other medical conditions (e.g., infections)

## Key Objectives

Given a patient with obsessions and/or compulsive behaviour, the candidate will diagnose the condition, along with its severity and possible complications. Particular attention should be paid to possible etiology and coexisting conditions.

## Enabling Objectives

Given an individual with an obsessive and/or compulsive behaviour

- List and interpret critical clinical findings, including those derived from
  - a. a thorough history aimed at estimating the severity of the disorder and other comorbid or etiologic factors;
  - b. a physical examination aimed at ruling out physical complications (e.g., dermatologic);
- List and interpret critical investigations, including where appropriate
  - a. drug screening;
  - b. neurological imaging;

- c. infectious agents;
- Construct an effective management plan, including
  - a. determining whether pharmacological intervention (e.g., SSRI medication) is indicated in this case;
  - b. referring for specialized care (e.g., psychological services, family counselling), if required;
  - c. anticipating potential psychosocial impact.

# Oral conditions

(February 2017)

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## Rationale

Although many diseases can affect the oral cavity, odontogenic infection (dental caries and periodontal infections) is the most common one. Apart from discomfort, infections may result in serious complications. Ruling out oral carcinoma is important.

## Causal Conditions

(list not exhaustive)

- Congenital (e.g., cleft palate)
- Acquired
  - a. Infection (e.g., candidiasis, gonococcal infection)
  - b. Malignancy (e.g., adenocarcinoma, leukoplakia)
  - c. Poor oral hygiene (e.g., caries, periodontal disease)
  - d. Trauma (e.g., abuse)
  - e. Toxic ingestion
  - f. Xerostomia (e.g., age, medications)
  - g. Systemic diseases (e.g., lichen planus, Behçet's disease)

## Key Objectives

Given a patient with an oral condition, the candidate will diagnose the likely cause, severity and complications, and will initiate an appropriate management plan. In particular, the candidate will determine whether the patient requires specialized care.

## Enabling Objectives

Given a patient with an oral condition, the candidate will

- list and interpret critical clinical findings, including
  - a. signs of potential malignancy;



- b. signs of infection;
- list and interpret critical investigations, including those required to exclude suspected systemic disease;
- construct an effective initial management plan, including
  - a. counselling and educating the patient and/or the caregivers regarding oral hygiene and/or diet (e.g., sugar-containing drinks for children);
  - b. counselling on smoking cessation and alcohol abuse;
  - c. referring for specialized care, if necessary.

# Generalized pain disorders

(February 2017)

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## Rationale

Complaints of non-articular generalized pain are common, often chronic and can be difficult to manage.

## Causal Conditions

(list not exhaustive)

- Fibromyalgia / Chronic fatigue syndrome
- Polymyalgia rheumatica (PMR)
- Mental health disorders (e.g., depression, somatic symptom disorders)

## Key Objectives

Given a patient with a generalized pain disorder, the candidate will differentiate articular from non-articular pain, diagnose the cause, severity, and complications, and will initiate an appropriate management plan.

## Enabling Objectives

Given a patient with generalized pain disorder, the candidate will

- list and interpret critical clinical findings, including
  - a. findings on history and physical examination which
    1. differentiate fibromyalgia from other generalized pain syndromes and specific articular disease;
    2. suggest other pain syndromes which may be associated with serious complications;
      - a. PMR and temporal arteritis;
      - b. Depression and suicide;
- list and interpret appropriate investigations (e.g., erythrocyte sedimentation rate, temporal artery biopsy), including

- a. recognizing that many generalized pain disorders are associated with normal investigations;
- construct an effective initial management plan appropriate for the working diagnosis, including
  - a. when appropriate, take a multidisciplinary approach (e.g., physiotherapy, psychosocial support);
  - b. determine if the patient requires specialized care.

# Central / peripheral neuropathic pain

(March 2022)

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## Rationale

Neuropathic pain is a common and often disabling symptom with many underlying causes. It may be the initial presentation of a potentially serious underlying medical condition. Various treatment options exist. If not diagnosed and treated early, it may result in greater disability.

## Causal Conditions

(list not exhaustive)

- Metabolic (e.g., diabetic neuropathy)
- Nerve entrapment (e.g., carpal tunnel syndrome, lymphoma, trigeminal neuralgia)
- Infectious (e.g., postherpetic neuralgia)
- Central (e.g., phantom limb pain, spinal cord injuries)
- Sympathetic (e.g., reflex sympathetic dystrophy)

## Key Objectives

Given a patient with neuropathic pain, the candidate will diagnose the cause, severity, and complications and will initiate an appropriate management plan.

## Enabling Objectives

Given a patient with neuropathic pain, the candidate will

- list and interpret critical clinical findings derived from a thorough history and physical examination, including
  - a. a thorough review of the pain history (including past treatments) and psychosocial and functional impairment; and
  - b. the identification of signs of neurologic impairment and other causes of pain or numbness (e.g., vascular insufficiency);
- list and interpret possible appropriate investigations, including
  - a. screening investigations for underlying medical conditions (e.g., fasting glucose level, chest radiography);

- b. nerve conduction studies; and
- c. vascular studies; and
- construct an effective initial management plan, including
  - a. discussing possible pharmacotherapeutic options;
  - b. counselling, including prevention of progression (e.g., chronicity of symptoms, exercise, activity modification);
  - c. providing optimal treatment of any underlying medical conditions (e.g., diabetes management); and
  - d. determining whether the patient needs a referral to a pain clinic or pain specialist.

# Palpitations

(February 2017)

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## Rationale

Palpitations are sensations of a rapid or irregular heartbeat. Palpitations are a common symptom and although the cause is often benign, it may indicate the presence of a serious underlying problem.

## Causal Conditions

(list not exhaustive)

- Supraventricular
  - a. Sinus tachycardia
    - Increased demand (e.g., pregnancy, anemia)
    - Metabolic (e.g., thyrotoxicosis, pheochromocytoma)
    - Anxiety
    - Pharmacologic (e.g., cocaine, caffeine)
  - b. Atrial fibrillation/flutter
  - c. Supraventricular tachycardia (atrioventricular nodal reentrant tachycardia), Wolff-Parkinson-White syndrome
  - d. Junctional tachycardia
  - e. Premature junctional complexes and premature atrial contractions
- Ventricular
  - a. Ventricular tachycardia
  - b. Premature ventricular contractions
  - c. Ventricular fibrillation

## Key Objectives

Given a patient with palpitations, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate will

select patients in need of urgent treatment and differentiate palpitations due to intrinsic heart disease from those that are a manifestation of anxiety, physical exertion, or of another systemic disease.

## Enabling Objectives

Given a patient with palpitations, the candidate will

- list and interpret critical clinical findings, including
  - a. perform a history and physical examination to determine the cardiac rate and rhythm and the hemodynamic stability of the patient;
  - b. identify underlying precipitants of the cardiac arrhythmia;
- list and interpret critical investigations, including
  - a. electrocardiogram and Holter monitoring;
  - b. appropriate investigations for underlying causes of the cardiac arrhythmia (e.g., echocardiogram, thyroid stimulating hormone);
- construct an effective initial management plan, including
  - a. immediate medical management in case of hemodynamic instability;
  - b. anticoagulation for stroke prevention, if indicated;
  - c. determination as to whether the patient requires hospitalization and specialized care;
  - d. reassuring the patient with a benign condition.

# Pediatric respiratory distress

(January 2017)

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## Rationale

After fever, respiratory distress is one of the most common pediatric emergency complaints, the causes of which can be life-threatening.

## Causal Conditions

(list not exhaustive)

- Upper airway problems
  - a. Croup
  - b. Foreign body aspiration
  - c. Laryngeal disorders
  - d. Epiglottitis
  - e. Retropharyngeal abscess
  - f. Choanal atresia
- Lower airway, pulmonary disorders
  - a. Tracheitis, bronchiolitis
  - b. Pneumonia, atelectasis
  - c. Asthma, bronchospasm
  - d. Respiratory distress syndrome of the neonate
  - e. Tracheo-esophageal fistula
  - f. Pulmonary embolus
- Pleural disorders
  - a. Pleural effusion, empyema
  - b. Pneumothorax
- Neurologic disorders (e.g., drugs)



- Other (e.g., extrapulmonary restriction)
- Cardiac disorders
  - a. Congestive heart failure (left-to-right shunt, left ventricular failure)
  - b. Cardiac tamponade

## Key Objectives

Given a patient with pediatric dyspnea or respiratory distress, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, for correct assessment, it is important to consider the respiratory rate in the context of age of the child.

## Enabling Objectives

Given a patient with pediatric respiratory distress, the candidate will

- list and interpret critical clinical findings, including
  - a. differentiate a child who appears well from a child in distress or in critical condition;
  - b. for the child in distress or critical condition, first evaluate the airway, breathing, and circulation status, then perform a thorough history and physical examination;
  - c. differentiate cardiac from pulmonary, neuromuscular, or other causes;
- list and interpret critical investigations, including
  - a. selection and interpretation of appropriate cardiac and pulmonary investigations (e.g., arterial blood gases, complete blood count (CBC));
- construct an effective plan of management, including
  - a. manage patients with life-threatening respiratory distress, including selection of patients requiring hospitalization and specialized care;
  - b. plan long-term management of patients with chronic disease, including secondary prevention strategies.

# Pelvic pain

## (February 2017)

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### Rationale

Acute pelvic pain may be secondary to a life-threatening condition. Chronic pelvic pain is one of the most common problems in gynecology.

### Causal Conditions

(list not exhaustive)

- Pregnancy related (e.g., ectopic, molar, abruption)
- Gynecological
  - a. Ovary (e.g., ruptured cyst, torsion)
  - b. Tube (e.g., pelvic inflammatory disease, endometriosis)
  - c. Uterus (e.g., leiomyoma, endometriosis)
- Other (dysmenorrhea, ovulation pain, dyspareunia)
- Systemic conditions
  - a. Urologic (interstitial cystitis, renal colic)
  - b. Musculoskeletal (fibromyalgia)
  - c. Gastrointestinal (irritable bowel, diverticulitis, inflammatory bowel disease, hernias)
- Mental health issues
  - a. Depression, somatization
  - b. Sexual, physical, and psychological abuse/domestic violence

### Key Objectives

Given a female patient with pelvic pain, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate will identify patients with acute pain caused by a life-threatening condition, will determine whether pregnancy is likely, and will provide stabilization for those patients who are hemodynamically unstable.

## Enabling Objectives

Given a female patient who presents with pelvic pain, the candidate will

- list and interpret critical clinical findings, including
  - a. determining if urgent stabilization is required;
  - b. performing a history and physical exam to determine the underlying cause (e.g., menstrual history, pelvic and speculum exam);
- list and interpret relevant investigations, including
  - a. a pregnancy test, if indicated;
  - b. appropriate diagnostic imaging testing (e.g., pelvic ultrasound);
- construct an effective initial management plan, including
  - a. stabilization of the patient and consideration of need for emergency surgery;
  - b. appropriate treatment of the underlying condition (e.g., dysmenorrhea, pelvic inflammatory disease);
  - c. recommending appropriate non-pharmacologic and pharmacologic treatment for chronic pelvic pain;
  - d. counseling the patient regarding the prevention of sexually transmitted infections;
  - e. determining whether the patient requires specialized or urgent gynecologic care.

# Newborn assessment

(February 2017)

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## Rationale

Primary care physicians play a vital role in identifying children at risk for disorders that are threatening to life or long-term health before they become symptomatic. In most cases, caregivers require reassurance and anticipatory guidance regarding the health of their newborn infant.

## Key Objectives

Given a newborn presenting for routine assessment the candidate will conduct a skilled and comprehensive assessment to identify any significant abnormalities or risk factors and counsel caregiver(s) on newborn care.

## Enabling Objectives

Given a newborn for routine assessment, the candidate will

- list and interpret critical clinical findings, including
  - a. maternal and perinatal history (e.g., intrapartum fever, medications);
  - b. neonatal history (e.g., Apgar scores, feeding and elimination);
  - c. psychosocial history (e.g., maternal mental health, home environment, family supports);
  - d. systematic newborn physical examination, with particular attention to indications of an acute illness (e.g., jaundice, hydration status);
  - e. screening for important congenital malformations (e.g., red reflex, heart murmur);
  - f. caregiver(s)' concerns;
- list and interpret critical investigations, including
  - a. screening tests for acute illness (e.g., serum glucose);
  - b. screening tests for clinical abnormalities (e.g., echocardiogram, genetic testing);
  - c. bilirubin measurement;
- construct an effective initial management plan, including

- a. managing any acute illness appropriately, including referral for specialized care if needed;
- b. counselling caregiver(s) regarding breastfeeding and infant nutrition;
- c. counselling caregiver(s) about routine infant care (e.g., umbilical cord care) and safety (e.g., car seat, prevention of sudden infant death syndrome);
- d. discussing with caregiver(s) newborn metabolic screening;
- e. addressing any parental concerns.

# Immunization

(February 2017)

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## Rationale

Immunization has the potential to either reduce or eradicate many infectious diseases, reduce the risk of complications from certain diseases, and improve overall health the world over. However, a rise in vaccine hesitancy has led to decreased immunization rates in developed countries.

## Key Objectives

The candidate must be able to assess the immunization status of patients and recommend an appropriate schedule of vaccinations, discuss with patients and parents/guardians the risks and benefits of vaccination, and identify patients in need of vaccination who do not come in for routine visits (e.g., when presenting for assessment of a new illness).

## Enabling Objectives

Identify patients needing vaccination, and for such patients the candidate will

- list and interpret clinical findings, including
  - a. an immunization history as well as any contraindication to vaccination (e.g., anaphylaxis, immunosuppression);
- construct an effective initial management plan, including
  - a. obtaining informed consent;
  - b. giving patients/parents the information they need to manage possible vaccine reactions;
  - c. outlining an appropriate vaccination schedule, including modifications to the usual schedule for special circumstances (e.g., catch-up schedules, immunocompromised patients);
  - d. advocating for vaccination based on currently accepted scientific data;
  - e. counselling patients/parents who refuse vaccinations;
  - f. reporting adverse immunization reactions, as required;
  - g. reaching out to population segments specifically at risk (e.g., elderly people, people with chronic illness, people who have received transplants, people with asplenia);

- h. recognizing the importance of temperature regulation in the storage of vaccines to maintain efficacy.

# Pre-operative medical evaluation

(February 2017)

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## Rationale

Evaluation of patients prior to surgery is an important element of comprehensive medical care. The objectives of such an evaluation include the detection of an unidentified disease that may increase the risk of surgery and how to minimize such risk.

## Causal Conditions

(list not exhaustive)

- Optimal care of chronic diseases (e.g., coronary artery disease, diabetes mellitus)
- Identification of perioperative risk
  - a. Cardiopulmonary
    - Myocardial (e.g., ischemia, heart failure, arrhythmia)
    - Pulmonary (e.g., chronic obstructive pulmonary disease, infection)
  - b. Anaesthetic
    - Systemic (e.g., malignant hyperthermia, sleep apnea)
    - Intubation/airway (e.g., C-spine stability)
  - c. Thromboembolic (prior deep vein thrombosis, thrombophilia)
  - d. Medication-related (e.g., prednisone use, immunosuppressants)

## Key Objectives

Given a patient who requires surgery, the candidate will assess the perioperative issues based on the history and physical examination. In particular, the candidate will recommend strategies to minimize perioperative morbidity and mortality.

## Enabling Objectives

Given a patient who requires surgery, the candidate will

- list and interpret key clinical findings, including



- a. determine current functional capacity of the patient and prior anesthetic history;
  - b. perform a history and physical examination to allow classification of perioperative risk and to optimize the patient's care (e.g., full medication list, cardiovascular examination);
- list and interpret appropriate clinical investigations, including
    - a. required investigations based upon risks identified from the history and physical examination (e.g., C-spine X-ray in rheumatoid arthritis, hemoglobin A1c [HbA1c], diabetes);
    - b. investigations for further risk stratification (cardiac stress testing, sleep study), if necessary;
- construct an effective management plan, including
    - a. optimization of the care of pre-existing medical conditions (e.g., diabetes);
    - b. communicating the perioperative risks to the patient and other health professionals;
    - c. communicating to the patient and other health professionals required medication changes around the time of surgery (e.g., stopping anticoagulants, deep vein thrombosis prophylaxis).

# The well child and adolescent

(May 2017)

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## Rationale

Primary care physicians assess the dynamic stages of growth, development and behaviours of infants, children and adolescents. Physicians must be able to distinguish age-appropriate normal patterns, which require no intervention, from pathological deviations, which require further evaluation. A comprehensive awareness of the difference between normal and abnormal growth, development and/or behaviours minimizes the risks of inaccurate diagnoses and inappropriate investigations while allowing for early diagnosis and intervention in case of abnormal trajectory.

## Milestones

(list not exhaustive)

- Somatic growth (head circumference, length/height, weight)
- Pubertal development
- Development
  - a. Motor skills
    - Gross motor (e.g., walking, riding a bicycle)
    - Fine motor (e.g., ability to transfer objects from one hand to another)
  - b. Communication and language
    - 1. Expressive
    - 2. Receptive
    - 3. Mixed
  - c. Cognitive
    - 1. Problem-solving skills
    - 2. Rate of learning, memory, executive functioning
  - d. Self-care skills
  - e. Behaviour (e.g., head banging)

- f. Social/emotional health (e.g., stranger anxiety, relationship building)
- g. Pre-academic/academic skills

## Key Objectives

Given an infant, child or adolescent, the candidate will identify normal milestones of chronological and developmental age, with regards to growth, development and behaviours. Concerns from parents or guardians will be addressed and reassurance given if the individual is growing and developing within the expected limits. Abnormal findings should be addressed through proper investigations and referrals, when indicated.

## Enabling Objectives

Given an infant, child or adolescent, the candidate will

- List and interpret relevant clinical findings, including those based on
  - a. a proper history of growth and developmental milestones appropriate for the age group of the individual;
  - b. an appropriate physical examination with particular attention to the milestones of the chronological/developmental age;
  - c. proper documentation of growth and development;
- List and interpret relevant preliminary investigations if the individual is found to have abnormal growth and/or development milestones;
- Conduct an effective initial management plan, including
  - a. reassurance in case of normal growth/development or variants of these;
  - b. referral to appropriate specialized care (e.g., pediatrics, speech and language therapy, psychology) in case of abnormal findings.

# Periodic health encounter/preventive health advice

(January 2017)

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## Rationale

A periodic health encounter/preventive health advice session represents an opportunity for the prevention or early detection of health-related problems. The nature of the examination will vary in timing and frequency, depending on the age, sex, occupation and psychosocial background of the patient. The encounter may take the form of an in-person visit, electronic or phone encounters, or delegated acts by other health care team members.

## Causal conditions

(list not exhaustive)

- All ages
  - a. Injury prevention (e.g., noise control, seat belts, bicycle helmets)
  - b. Lifestyle modification (e.g., physical activity, smoking prevention/cessation, sun exposure)
  - c. Immunization 74-2 - Immunization
- Infant and child
  - a. Nutrition
  - b. Growth
  - c. Development
  - d. Behaviours
  - e. Other (e.g., hearing, amblyopia)
- Adolescence
  - a. Sexual activity (e.g., contraception, sexually transmitted infections [STI])
- Young adult
  - a. Female reproductive health (e.g., Papanicolaou test, STI screening, folic acid)
- Middle-aged adult

- a. Cardiovascular health risks (e.g., blood glucose, blood pressure, lipid profile)
  - b. Cancer screening (e.g., breast, colon, prostate, skin)
  - c. Osteoporosis
- Older adult
    - a. Fracture and fall prevention (e.g., osteoporosis screening)
    - b. Nutrition
    - c. Dementia screening

## Key Objectives

Given a patient presenting for a preventive health encounter/health advice session, the candidate will determine the patient's risks for age and sex-specific conditions in order to guide history, physical examination, screening investigations and counselling.

## Enabling Objectives

Given a patient presenting for a preventive health encounter/preventive health advice session, the candidate will

- perform an appropriate history and physical examination based on the patient's age, sex, and background;
- list and interpret appropriate investigations, including
  - a. results of evidence-based screening investigations specific to age and sex (e.g., fasting glucose, mammography);
- construct an effective initial management plan, including
  - a. communicating effectively with the patient to reach a common ground regarding goals related to disease prevention and risk reduction;
  - b. recommending proven prevention strategies (e.g., smoking cessation, regular exercise);
  - c. incorporating the preventive health principles into the care of the patient in case of a chronic disease.

# Personality disorders

(January 2017)

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## Rationale

Personality disorders are pervasive and maladaptive patterns of behavior exhibited over a wide variety of social, cultural, occupational, and relationship contexts and leading to distress and impairment. They represent important risk factors for a variety of medical, interpersonal, and psychiatric difficulties.

## Causal Conditions

The emergence of a personality disorder is a complex interaction of biological (e.g., genetic), social (e.g., poverty), and psychological factors (e.g., stress).

## Key Objectives

Given a patient with a personality disorder, the candidate will differentiate between a personality disorder and other mental illness, recognizing the high prevalence of co-morbidities. The candidate will formulate an appropriate management plan.

## Enabling Objectives

Given a patient with a personality disorder, the candidate will

- list and interpret critical clinical findings, including
  - a. sufficient clinical information (e.g., mental status examination) to diagnose the type of personality disorder;
  - b. risk factors associated with personality disorders (e.g., suicidal ideation, substance use);
  - c. any co-existing psychiatric conditions (e.g., mood disorder);
- construct an effective initial management plan, including
  - a. proper management in the case of a patient requiring immediate intervention (e.g., suicide risk, risk to others);
  - b. judicious use of pharmacotherapy, with consideration of the risk for abuse or overdose;
  - c. referral for mutli-disciplinary and/or specialized care, if necessary.

# Pleural effusion

(February 2017)

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## Rationale

Pleural effusions are common and may represent local or systemic disease. An organized approach including assessment of pleural fluid usually leads to a correct diagnosis.

## Causal Conditions

(list not exhaustive)

- Transudative (e.g., congestive heart failure, nephrotic syndrome, cirrhosis)
- Exudative
  - a. Infectious/inflammatory causes (e.g., parapneumonic, empyema, rheumatoid arthritis)
  - b. Neoplastic causes (e.g., primary, metastatic, mesothelioma)
  - c. Pulmonary embolus
  - d. Gastrointestinal causes (e.g., ruptured esophagus, pancreatitis, chylothorax)

## Key Objectives

Given a patient with pleural disease, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate should be able to differentiate between causes of pleural effusion on the basis of pleural fluid analysis.

## Enabling Objectives

Given a patient with pleural disease, the candidate will

- list and interpret critical clinical findings, including results of a history and physical examination aimed at:
  - a. determining whether the patient has one of the edema states such as heart failure,
  - b. has evidence of an infectious or neoplastic disease,
  - c. or relevant workplace exposure;
- list and interpret critical clinical investigations, including

- a. findings of a chest X-ray and identification of indications for thoracentesis;
  - b. findings of a thoracentesis;
  - c. computed tomography scanning, if indicated;
- construct an effective initial management plan, including
    - a. initiating medical management for underlying conditions (e.g., congestive heart failure, pneumonia);
    - b. considering other treatment options (e.g., therapeutic thoracentesis, chest tube insertion) if the patient is refractory to conventional treatments;
    - c. determining whether the patient requires specialized care (e.g., thoracic surgery for empyema).



# Poisoning

(February 2017)

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## Rationale

Poisoning is common and potentially fatal. It can be accidental or intentional. Accidental poisoning is particularly common in children.

## Causal Conditions

(list not exhaustive)

- Common
  - a. Household or work items (e.g., cleaning substances, or other chemical products, cosmetics, plants)
  - b. Anticholinergics (e.g., antihistamines, tricyclics)
  - c. Sympathomimetic (e.g., cold remedies, amphetamines, cocaine)
- Depressants (e.g., alcohol, opiate, sedatives, hypnotics)
  - a. Cholinergics (e.g., insecticides, nicotine)
- Serotonergics (e.g., selective serotonin reuptake inhibitors )
- Analgesics (e.g., acetylsalicylic acid [ASA], acetaminophen)
- Cardiovascular drugs (e.g., digoxin, B-blockers, calcium channel blockers)
- Others (e.g., hallucinogens)

## Key Objectives

Given a patient with poisoning, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. Particular attention should be paid to determining the nature of the toxicity and exposure and provide specific and supportive care based on the identified cause.

## Enabling Objectives

Given a patient with poisoning, the candidate will

- list and interpret critical clinical findings, including

- a. collateral history aimed at determining the substance involved and the potential severity of the poisoning;
- b. results of a physical examination aimed at determining the stability of the patient and the nature of the toxidrome (e.g., cholinergic crisis, serotonergic syndrome);
- list and interpret critical investigations, including
  - a. laboratory diagnosis of the substance ingested (e.g., acetaminophen, ASA levels);
  - b. assessment of the toxic effects on the patient (e.g., arterial blood gases, anion and osmolar gaps);
- construct an effective initial management plan, including
  - a. supportive care before or at the same time as data gathering and investigation, (e.g., ensuring airway adequacy, hemodynamic stability);
  - b. appropriate decontamination or prevention of further absorption (e.g., activated charcoal);
  - c. administration of specific antidotes, if indicated (e.g., naloxone, N-acetylcysteine);
  - d. further elimination of the poison (e.g., alkalization, dialysis);
  - e. contacting Poison Control;
  - f. referral for psychiatric assessment, if indicated.

# Polyuria and/or polydipsia

(January 2017)

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## Rationale

Although not common, polyuria and/or polydipsia may be the presenting symptom(s) of a potentially serious underlying condition. It may be confused with urinary frequency, a common complaint.

## Causal Conditions

(list not exhaustive)

- Water diuresis
  - a. Excessive intake
  - b. Excessive loss - diabetes insipidus
- Osmotic diuresis
  - a. Sugar - diabetes mellitus
  - b. Urea - chronic renal disease
  - c. Salts - organic anions

## Key Objectives

Given a patient who presents with polyuria and/or polydipsia, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan.

## Enabling objectives

Given a patient with polyuria and/or polydipsia, the candidate will

- list and interpret critical clinical findings, including
  - a. diagnose polyuria/polydipsia, causal factors, and severity, differentiating urinary frequency from polyuria;
  - b. inquire about any personal or family history of diabetes;
  - c. identify neurological features that may suggest intracranial pathology as a cause of central diabetes insipidus;

- list and interpret critical investigations, including
  - a. tests which distinguish between water and osmotic diuresis;
  - b. screening for diabetes;
  - c. use of a voiding diary, when appropriate;
- construct an effective initial management plan, including
  - a. management of the underlying cause;
  - b. determination as to whether the patient requires specialized care.

# Concepts of health and its determinants

(March 2023)

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## Rationale

Concepts of health, illness, disease, and the socially defined sick role are fundamental to understanding the health of a community and to applying that knowledge to the patients that a physician serves. With advances in care, the aspirations of patients for good health have expanded, and this has placed new demands on physicians to address issues that are not strictly biomedical in nature. These concepts are also important if the physician is to understand health and illness behavior.

## Key Objectives

- Define and discuss the concepts of health, wellness, illness, disease, and sickness
- Describe the determinants of health and how they affect the health of a population and the individuals it comprises

## Enabling Objectives

As defined by Health Canada and the World Health Organization, the candidate will

- discuss alternative definitions of health;
- describe the determinants of health, including
  - a. income and social status;
  - b. social supports and coping skills;
  - c. education and literacy;
  - d. employment and working conditions;
  - e. social and work environments;
  - f. physical environments;
  - g. healthy behaviours;
  - h. childhood experiences;
  - i. biology and genetic endowment;

- j. access to health services;
  - k. gender;
  - l. culture; and
  - m. race/racism; and
- explain how the differential distribution of health determinants influences health status;
  - explain the possible mechanisms by which determinants influence health status;
  - discuss the concept of life course, natural history of disease, particularly with respect to possible public health and clinical interventions;
  - describe the concept of illness behavior and the way this affects access to health care and adherence to therapeutic recommendations; and
  - discuss how race, culture, and spirituality influence health and health practices, and how they are related to other determinants of health.

# Assessing and measuring health status at the population level

(March 2022)

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## Rationale

Knowing the health status of a population allows for better planning and evaluation of health programs and tailoring of interventions to meet patient and community needs. Physicians are also active participants in disease surveillance programs, encouraging them to address health needs in the population and not merely health demands.

## Key Objectives

Given a defined population, the candidate will describe its health status and measure and record the factors that affect its health status with respect to the principles of causation.

## Enabling Objectives

Given a defined population, the candidate will

- know how to access and collect health information to describe the health of a population, including
  - a. describing the types of data and common components (both qualitative and quantitative) used in creating a community health needs assessment;
  - b. being aware of important sources of clinical- and population-level health data and recognizing the advantages and disadvantages of each;
  - c. critically evaluating possible sources of data to describe the health of a population, including the importance of accurate coding and recording of health information;
  - d. describing the uncertainty associated with capturing data related to events and at-risk populations; and
  - e. discussing surveillance systems and the role of physicians and public health in reporting and responding to disease;
- analyze population health data using appropriate measures, including
  - a. applying the principles of epidemiology in analyzing common office and community health situations;

- b. describing the concepts of incidence, prevalence, attack rates, and case fatality rates, calculating them, and discussing the principles of standardization; and
- c. discussing different measures of association, including relative risk, odds ratios, attributable risk, and correlations; and
- interpret and present the analysis of health status indicators, including
  - a. demonstrating an ability to use practice-based health information systems to monitor the health of patients and to identify unmet health needs;
  - b. discussing the appropriate use of different graphical presentations of data;
  - c. describing criteria for assessing causation;
  - d. demonstrating an ability to critically appraise and incorporate research findings with particular reference to the following elements:
    - characteristics of study designs (randomized controlled trial, cohort, case-control, cross-sectional);
    - measurement issues (validity, sensitivity, specificity, positive predictive value, negative predictive value, bias, confounding, error, reliability);
    - measures of health, disease (incidence and prevalence rates, distributions, measures of central tendency), and sampling; and
  - e. applying the principles of epidemiology by accurately discussing the implications of the measures.



# Interventions at the population level

(January 2017)

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## Rationale

Many interventions at the individual level must be supported by actions at the community level. Physicians will be expected to advocate for community wide interventions and to address issues that occur to many patients across their practice.

## Key Objectives

1. Understand the three levels of prevention (primary, secondary and tertiary).
2. Describe strategies for community needs assessments, health education, community engagement and health promotion.
3. Appreciate the role that physicians can play in promoting health and preventing diseases at the individual and community level (e.g. prevention of low birth weight, immunization, obesity prevention, smoking cessation, cancer screening, etc.).
4. Understand how public policy can influence population-wide patterns of behaviour and affect the health of a population.

## Enabling Objectives

1. Be able to both define the concept of levels of prevention at the individual (clinical) and population levels, as well as formulate preventive measures into their clinical management strategies.
2. Name and describe the common methods of health protection (such as agent-host-environment approach for communicable diseases, and source-path-receiver approach for occupational/environmental health).
3. Describe the importance and impact of good, culturally-appropriate communication with the patient, the patient's family and, if necessary, the community as a whole with regard to risk factors and their modification.
4. Apply the principles of screening and be able to evaluate the utility of a proposed screening intervention, including being able to discuss the potential for lead-time bias and length-prevalence bias.
5. Understand the importance of disease surveillance in maintaining population health and be aware of approaches to surveillance.

6. Identify ethical issues with the restricting of individual freedoms and rights for the benefit of the population as a whole (e.g., issues in designating non-smoking areas or restricting movements of person with active tuberculosis).
7. Describe the advantages and disadvantages of identifying and treating individuals versus implementing population-level approaches to prevention.
8. Describe the five strategies of health promotion as defined in the Ottawa Charter and apply them to relevant situations.
9. Describe one or more models of behavior change, including predisposing, enabling and re-enforcing factors.
10. Identify the potential community, social, physical, environmental factors and work practices that might promote healthy behaviors, as well as ways to assist communities and others to address these factors.
11. Be aware of the role of, and work collaboratively with, community and social service agencies (e.g., schools, occupational therapists, municipalities, non-governmental and other agencies).
12. Demonstrate awareness of the contribution of allied professionals such as social workers in addressing population health issues.
13. Be able to describe the health impact of community-level interventions to promote health and prevent disease.
14. Describe examples of public policies which have had an effect on population health.

# Administration of effective health programs at the population level

(January 2017)

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## Rationale

Knowing the organization of the health care and public health systems in Canada as well as how to determine the most cost-effective interventions are becoming key elements of clinical practice. Physicians also must work well in multidisciplinary teams within the current system in order to achieve the maximum health benefit for all patients and residents.

## Key Objectives

1. Know and understand the pertinent history, structure and operations of the Canadian health care system.
2. Be familiar with economic evaluations such as cost-benefit / cost effectiveness analyses as well as issues involved with resource allocation.
3. Describe the approaches to assessing quality of care and methods of quality improvement.

## Enabling Objectives

1. Describe at a basic level:
  - a. methods of regulation of the health professions and health care institutions;
  - b. supply, distribution and projections of health human resources;
  - c. health resource allocation;
  - d. organization of the Public Health system; and
  - e. the role of complementary delivery systems such as voluntary organizations and community health centres.
2. Describe the role of regulated and non-regulated health care providers and demonstrate how to work effectively with them.
3. Outline the principles of and approaches to cost containment and economic evaluation.
4. Describe the main functions of public health related to population health assessment, health surveillance, disease and injury prevention, health promotion and health protection.

5. Demonstrate an understanding of ethical issues involved in resource allocation.
6. Define the concepts of efficacy, effectiveness, efficiency, coverage and compliance and discuss their relationship to the overall effectiveness of a population health program.
7. Be able to recognize the need to adjust programs in order to meet the needs of special populations such as new immigrants or persons at increased risk.
8. Participate effectively in and with health organizations, ranging from individual clinical practices to provincial organizations, exerting a positive influence on clinical practice and policy-making.
9. Define quality improvement and related terms: quality assurance, quality control, continuous quality improvement, quality management, total quality management; audit.
10. Describe and understand the multiple dimensions of quality in health care, i.e. what can and should be improved.

# Outbreak management

(January 2017)

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## Rationale

Physicians are crucial participants in the control of outbreaks of disease. They must be able to diagnose cases, recognize outbreaks, report these to public health authorities and work with authorities to limit the spread of the outbreak. A common example includes physicians working in nursing homes and being asked to assist in the control of an outbreak of influenza or diarrhea.

## Key Objectives

1. Know the defining characteristics of an outbreak and how to recognize one when it occurs.
2. Demonstrate essential skills involved in controlling an outbreak and its impact on the public, in collaboration with public health authorities as appropriate.

## Enabling Objectives

1. Define an outbreak in terms of an excessive number of cases beyond that usually expected.
2. Describe and understand the main steps in outbreak management and prevention.
3. Demonstrate skills in effective outbreak management including infection control when the outbreak is due to an infectious agent.
4. Describe the different types of infection control practices and justify which type is most appropriately implemented for different outbreak conditions.
5. Demonstrate effective communication skills with patients and the community as a whole.
6. Describe appropriate approaches to prevent or reduce the risk of the outbreak recurring.

# Environment

(March 2023)

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## Rationale

Environmental issues are important in medical practice because exposures may be causally linked to a patient's clinical presentation and the health of the exposed population. A physician is expected to work with regulatory agencies and allied health professionals (e.g., occupational hygienists), where appropriate, to help implement the necessary interventions to prevent future illness. Physician involvement is important in the promotion of global environmental health.

## Key Objectives

- Recognize the implications of environmental hazards at both the individual and population level
- Respond to patient concerns through appropriate information gathering and treatment
- Work collaboratively with local, provincial, and national agencies/governments as appropriate to address the concerns at a population level
- Communicate with patients, communities, and employers, where appropriate, concerning environmental risk assessment

## Enabling Objectives

- Identify common environmental hazards and be able to classify them into the appropriate category of chemical, biological, physical, and radiation
- Identify the common hazards that are found in air, water, soil, and food
- Describe the steps in an environmental risk assessment and be able to critically review a simple risk assessment for a community
- Conduct a focused clinical assessment of exposed persons to determine the causal linkage between exposure and the clinical condition
- Be aware of local, regional, provincial, and national regulatory agencies that can assist in the investigation of environmental concerns
- Describe simple interventions that will be effective in reducing environmental exposures and risk of disease (e.g., sunscreen for sunburns, bug spray for prevention of West Nile virus infection)

- Communicate simple environmental risk assessment information to both patients and the community

# Work-related health issues

(January 2017)

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## Rationale

Workplace health and safety hazards can contribute to many different health problems. Physicians play an important role in the prevention and management of occupational injury, illness and disability.

## Causal Conditions

(list not exhaustive)

- Ergonomic hazards (e.g. awkward postures and movements, poor lighting)
- Chemical hazards (e.g. organic solvents, metals, asbestos, toxic gases)
- Physical hazards (e.g. noise, vibration, radiation)
- Biological hazards (e.g. blood or other body fluids, animal and bird droppings)
- Psychological and work organization hazards (e.g. workplace stressors, workplace bullying)

## Key Objectives

Given a patient with a health problem, the candidate will evaluate the possible workplace etiological factors, to assess the contribution of occupational exposures for the most common pathologies, to assess the impact of the condition on the ability to work, and develop an appropriate management plan. Particular attention should be paid to the identification of occupational risks for the patient and his/her co-workers.

## Enabling Objectives

Given a worker with a health problem, the candidate will

- list and interpret critical clinical findings, including:
  - a. perform a history and focused physical examination to identify the illness and determine the possible relationship of symptoms to work;
  - b. identify hazards in the workplace that could have had an impact on the health problem (work and exposure history);
  - c. identify protective equipment being used and environmental controls that are in place;



- d. identify non occupational factors that could influence the condition.
- list and interpret critical investigations, including:
  - a. appropriate laboratory or radiologic investigations depending on the presenting health problem (e.g. chest radiography, ultrasound);
  - b. physiologic and/or functional assessments (e.g. PFTs , audiograms, occupational therapy assessment).
- construct an effective initial management plan, including:
  - a. initiate specific therapy as required for the health problem;
  - b. determine whether the patient should be assigned to a different work, or stop work and advise the patient on this topic;
  - c. determine follow up care and whether further consultation, counselling and/or a multi-disciplinary approach to care is needed;
  - d. advise the patient on workers compensation;
  - e. advise the relevant authorities if necessary (notifiable disease, reporting a dangerous situation).

# Indigenous health

(April 2021)

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## Rationale

Indigenous Peoples experience persistent and widening health gaps, as well as gaps in health care access, utilization, and quality. Physicians have a responsibility to respond to the Calls to Action of the Truth and Reconciliation Commission, the Calls for Justice of the National Inquiry into Missing and Murdered Indigenous Women and Girls, and other relevant commissions and inquiries. Physicians have an important role in contributing to Indigenous Peoples' equal right to the highest attainable standard of health and in providing health care that is free of racism.

## Causal Conditions

(list not exhaustive)

- The current state of Indigenous health is the result of the history and legacy of ongoing colonialism and multi-level racism (i.e., structural, institutional, interpersonal, internalized).
- These structural drivers, namely the social determinants of health, underlie the conditions of daily life for Indigenous Peoples (e.g., food insecurity, inadequate housing, lower income, environmental conditions, differential access to education).

## Key Objectives

Given an Indigenous patient, the candidate will demonstrate an awareness of the root causes of the inequitable health care and health outcomes experienced by Indigenous Peoples; understand the importance of and demonstrate anti-racist, culturally safe, trauma- and violence-informed care; articulate the inherent Indigenous and Treaty Rights (e.g., Medicine Chest Clause) relevant to the health of Indigenous Peoples; apply population health principles in understanding and advocating for Indigenous Peoples' health at the individual, community, institutional (e.g., hospitals), and societal levels.

## Enabling Objectives

Given an Indigenous patient, the candidate will

- describe the connection between historical and current government policies and actions toward Indigenous Peoples (including but not limited to colonization, residential schools, treaties, and land claims) and the resulting intergenerational health outcomes;

- describe the relationship between the ongoing disruption of social, cultural and spiritual determinants of health due to colonization and the current state of Indigenous health (e.g., historical banning of traditional healing practices, loss of languages in the residential schools, loss of access to Traditional Territories);
- describe the various health services that are delivered to Indigenous Peoples and describe how multi-jurisdictional health care (federal, provincial, regional) can increase the risk of critical incidents, adverse events, medication errors, administrative barriers and/or interruptions in continuity of care;
- assess the role of racism in differential access to health care (e.g., access to primary and specialty care, medications, procedures and surgeries);
- define and demonstrate the following
  - a. anti-racist health care,
  - b. culturally safe health care,
  - c. cultural humility,
  - d. trauma- and violence-informed care;
- describe the four key themes of the United Nations Declaration on the Rights of Indigenous Peoples and how they link to health outcomes (right to self-determination; right to cultural identity; right to free, prior and informed consent; and the right to be free from discrimination);
- describe specifically the equal right to the highest attainable standard of health and the right to traditional medicines and health practices, as well as the right to access all social and health services without discrimination;
- demonstrate respectful discussion and collaboration regarding the use of traditional health practices;
- recognize and facilitate the involvement of cultural resources that may be used to improve patients' health (e.g., traditional activities, eating traditional foods, using medicines if they choose to do so, spiritual/cultural practices such as ceremonies);
- learn about Indigenous cultures to appreciate their traditions, worldviews, norms, values and beliefs;
- demonstrate awareness of the diversity of access to federal non-insured health services and benefits (NIHB) for First Nations (status and non-status), Métis, and Inuit;
- identify barriers to equitable health and health care for Indigenous Peoples and advocate for change at the systems level (e.g., organizational policy, healthy public policy);

- participate in the creation of safe clinical and learning environments through ensuring peer accountability;
- demonstrate an understanding of intersectionality as it relates to diverse Indigenous identities (e.g., 2SLGBTQQIA+, people who have disabilities, women).

# Disaster preparedness, emergency response, and recovery

## (April 2021)

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### Rationale

A disaster is a serious disruption of the functioning of a society, causing widespread human, material, or environmental losses that exceed the ability of the affected society to cope using only its own resources. The frequency of disasters affecting human health is increasing due to a combination of climate change–related natural disasters, acts of terrorism, epidemics and pandemics, and the unintended release of toxic (including radiological) compounds. Physicians are key participants in the emergency response to disasters, particularly in the health concerns that ensue. As such, physicians may be required to help design an emergency response plan, to ensure the application of the plan, and to reorient their practice to the needs of the population. Physicians must be equipped to properly respond to the health implications that arise from disasters.

### Causal Conditions

(list not exhaustive)

- Disaster preparedness, emergency response, and recovery measures may relate to the following:
  - a. Disaster origin: natural (e.g., climate-related forest fires) or human-induced (e.g., terrorism)
  - b. Type of hazard: biological (e.g., epidemic), chemical (e.g., toxic chemical spill), radio-nuclear (e.g., breach in nuclear facility), flood, fire, earthquake or extreme temperatures
  - c. Location: local (e.g., train derailment with large-scale release of toxins), national (e.g., epidemic) or international (e.g., pandemic)

### Key Objectives

- Discuss the defining characteristics of a disaster affecting human health
- Describe approaches to disaster prevention and mitigation
- In preparation for a disaster, develop an emergency response plan for their practice based on the perceived threats that are most likely to occur

- Participate in implementing an emergency response plan
- Assist with the recovery operation after a disaster

## Enabling Objectives

(clinical findings, critical investigations, management plan)

- Communicate a foundational knowledge of disasters, including:
  - a. discussing the conditions that would lead to the declaration of an emergency of disaster proportions (that overwhelms the ability of local health services to respond effectively);
  - b. recognizing the possible causes of a disaster and factors that would amplify or minimize its effects on health;
  - c. identifying specific vulnerable populations during a disaster (these could be determined by age, disability, health conditions, or health behaviours);
  - d. discussing the phases of disaster management (e.g., disaster prevention and mitigation, disaster preparedness, emergency response, and recovery); and
  - e. demonstrating knowledge of safety measures (e.g., personal protective equipment use, appropriate evacuation procedures) used to protect health-care professionals during disasters.
- Demonstrate disaster prevention and mitigation, including:
  - a. describing the importance of disasters and emerging threats based on sociopolitical context and geographical region;
  - b. interpreting hazard identification and risk assessment relative to their patient population and practice situation;
  - c. demonstrating skills in collaboration and advocacy with relevant stakeholders to prevent disasters; and
  - d. describing situation-appropriate disaster mitigation techniques (e.g., isolation rooms, physical-distancing measures).
- Develop disaster preparedness, including:
  - a. developing a continuity of operations plan (COOP) for the physician's office or clinic situation;

- b. evaluating available health resources, both internally (e.g., staffing, personal protective equipment, ventilators, beds) and externally (e.g., outside assistance), and surge capacity based on the vulnerabilities identified in the COOP;
  - c. describing the importance of effective emergency response training for health-care professionals (e.g., drills, awareness of emergency response resources); and
  - d. discussing the role of Incident Management Systems, where organizations may adapt their organizational structure to better respond to a disaster.
- Participate in emergency response, including:
    - a. appropriately identifying situations requiring activation of emergency response systems;
    - b. demonstrating effective communication skills with colleagues, patients, and the community specifically regarding emergency response to disasters affecting human health;
    - c. demonstrating skills in effective patient triage in response to a disaster and resource allocation in a crisis; and
    - d. demonstrating skills to rapidly identify sources of credible information and prevent the spread of harmful misinformation.
- Assist with emergency recovery, including:
    - a. describing the importance of planning for a return to normal operations after disaster response;
    - b. describing health implications (e.g., mental health, absence of elective procedures, displacement of people, socioeconomic consequences) of the disaster and planning how to address these in one's own practice; and
    - c. describing the importance of postdisaster evaluation for improving future disaster mitigation, preparedness, and response.

# Health and the climate crisis

(March 2022)

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## Rationale

Physicians must be able to recognize the effects of the climate crisis (climate change) on human health and take action to mitigate both climate change itself and its health effects on the population, recognizing that many populations are disproportionately affected.

## Causal Conditions

(list not exhaustive)

- Climate change has the following effects on health:
  - a. Heat-related illnesses and deaths due to extreme heat
  - b. Malnutrition and dehydration due to the impact on food and water supplies
  - c. Changing burden and nature of infectious diseases due to changes in the vector ecology (e.g., Lyme disease) or changes in water quality (e.g., enteric pathogens)
  - d. Physical, psychological and social consequences
  - e. Health issues for refugees and immigrants due to increased human migration

## Key Objectives

- Discuss the effect of climate change on the health of the population in Canada and globally
- Describe how physicians can address climate issues in small-scale settings (e.g., individual practice activities, in a clinic) and large-scale settings (e.g., organization-wide or nation-wide advocacy)
- Appropriately address the physical, psychological and social effects of climate change on the health of the population

## Enabling Objectives

- Using Canadian examples, describe the mechanisms by which climate change can affect health (e.g., water scarcity and changing food systems, urbanization, extreme heat events, natural disasters, biodiversity shifts, global pollution, and changing land use and land cover)



- Construct a management plan for individual patients experiencing health-related effects of climate change and other planetary health issues (e.g., mental health concerns, impacts of emerging infectious disease vectors)
- Outline and implement strategies to mitigate adverse health effects of climate change in the local community
- Discuss the contribution of the health care sector to climate change and provide examples of techniques for reducing the impact of health care institutions (e.g., clinics, hospitals) on climate change
- Recognize and address appropriately the unique health problems that a population negatively affected by climate change may encounter

# Quality improvement and patient safety

(March 2023)

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## Rationale

Health care providers are one component of a complex adaptive system whose goal is to maintain, enhance, and continuously improve systems of care that support the well-being of the population. Some patients will experience harm from the health care they receive or fail to receive. Health care providers who unwittingly contribute to patient harm may themselves experience psychological harm. Therefore, it is important that health care providers are able to respond effectively to such situations to help patients and their family members, themselves, and other health care providers heal and to contribute to the continuous evaluation and improvement of our health systems.

## Key Objectives

Understand that quality and safety are important concepts that are founded upon the following:

- health care is a complex, adaptive system whose primary goal is to keep patients safe by avoiding harm;
- health care systems need to continuously improve to provide optimal outcomes for patients;
- health care providers need to respond effectively if harm occurs.

## Enabling Objectives

Given the need to understand health care systems and their role within it, physicians will

- describe approaches to quality management (e.g., identify issues to improve, prioritize issues, test and implement solutions and measure outcomes);
- recognize the central role of patients as members of their health care team and in the design of their health care to most effectively respond to their needs;
- discuss their role as physician relative to other personnel;
- identify other components that influence the delivery of care (e.g., environments, equipment, organizations, regulators);
- understand the common domains of quality (e.g., safety, timeliness, effectiveness, efficiency, equitability, patient centredness);
- understand the role of cognitive bias in diagnostic errors;

- discuss error mitigation strategies (e.g., effective teamwork, identifying best evidence-based practices);
- describe the immediate management following an incident in which harm has occurred (e.g., resuscitation, ensuring a safe environment, securing equipment, protecting others, supporting those impacted, notification and disclosure);
- conduct an effective disclosure conversation with a patient and their family when appropriate;
- offer an appropriate apology (e.g., express remorse for what happened to the patient, accept responsibility when appropriate);
- have the ability to support another health care provider who has contributed to an event where a patient has been harmed;
- describe an effective system analysis that can answer what, why, and how harm happened.

# Hyperkalemia

(January 2017)

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## Rationale

Elevated serum potassium levels may be life-threatening and may also be indicative of the presence of other serious associated medical conditions.

## Causal Conditions

(list not exhaustive)

- Increased intake (usually associated with low excretion)
- Redistribution
  - a. Decreased entry into cells (e.g., insulin deficiency, beta 2 blockade)
  - b. Increased exit from cells (e.g., metabolic acidosis, rhabdomyolysis)
- Reduced urinary excretion
  - a. Decreased glomerular filtration rate (e.g., acute or chronic kidney injury)
  - b. Decreased secretion (e.g., aldosterone deficiency, drugs)

## Key Objectives

Given a patient with hyperkalemia, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan, including indications for specialized care. In particular, the candidate will recognize the urgency of hyperkalemia associated with electrocardiogram (ECG) abnormalities.

## Enabling Objectives

Given a patient with hyperkalemia, the candidate will

- list and interpret critical clinical findings, including
  - a. perform a history and physical examination to determine the underlying cause (e.g., potassium sparing medications, signs of kidney injury);
- list and interpret critical investigations, including

- a. those that can help in distinguishing between life-threatening hyperkalemia and pseudohyperkalemia;
  - b. an ECG to determine the severity of the case;
  - c. tests to distinguish between causes of hyperkalemia (e.g., serum creatinine, urine electrolytes);
- construct an effective initial management plan, including
    - a. initiate emergency measures (e.g., intravenous calcium, glucose/insulin, potassium binders, dialysis) in the case of hyperkalemia with ECG changes;
    - b. refer the patient for specialized care (e.g., nephrology), if necessary.

# Hypokalemia

(January 2017)

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## Rationale

Reduced serum potassium, a common clinical problem, is most often discovered on routine analysis of serum electrolytes or suspected by electrocardiogram (ECG) results. Symptoms, such as muscle weakness, develop when depletion is quite severe.

## Causal Conditions

(list not exhaustive)

- Decreased intake (e.g., anorexia nervosa)
- Redistribution (e.g., alkalemia, insulin, beta 2-adrenergic stimulating drugs)
- Increased losses
  - a. Renal losses
  - b. Gastrointestinal (GI) losses (e.g., vomiting, diarrhea)

## Key Objectives

Given a patient with hypokalemia, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate will recognize the urgency of hypokalemia associated with severe muscle weakness and/or ECG abnormalities.

## Enabling Objectives

Given a patient with hypokalemia, the candidate will

- list and interpret critical clinical findings, including
  - a. performing a history and a physical examination to determine the cause and complications (e.g., medications, blood pressure);
- list and interpret critical investigations, including
  - a. an ECG to identify life-threatening conduction abnormalities;

- b. tests to distinguish between causes of hypokalemia (e.g., serum and urine electrolytes);
- construct an effective initial management plan, including
  - a. ensuring appropriate potassium replacement with monitoring in a severe case;
  - b. reducing renal excretion of potassium and/or GI losses;
  - c. referring the patient for specialized care, if necessary.

# Premenstrual dysphoric disorder (premenstrual syndrome, PMS)

(February 2017)

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## Rationale

Premenstrual dysphoric disorder (premenstrual syndrome or PMS) is a combination of physical, emotional, or behavioral symptoms that occur prior to the menstrual cycle and are absent during the rest of the cycle. The symptoms, on occasion, are severe enough to interfere significantly with work and/or home activities.

## Causal Conditions

(list not exhaustive)

- While the cause of premenstrual dysphoric disorder (PMS) is unknown, there are many theories as to the pathogenesis of this condition.

## Key Objectives

Given a patient with premenstrual dysphoric disorder (PMS), the candidate will assess the severity and complications, and will initiate an appropriate management plan. Specifically, the candidate will differentiate PMS from normal premenstrual symptoms or from other causes of physical and mood changes, and will explore the psychosocial impact of the condition.

## Enabling Objectives

Given a patient with premenstrual dysphoric disorder (PMS), the candidate will

- list and interpret critical clinical findings, including
  - a. determining if the symptoms are cyclical (e.g., by use of a symptom diary);
  - b. ensuring that symptoms are not related to another chronic condition (e.g., major depressive disorder);
  - c. evaluating the severity of mood and physical symptoms, as well as their psychosocial impact;
- list and interpret critical investigations, including



- a. consideration and exclusion of conditions with similar symptomatology (e.g., hypothyroidism, anemia);
- b. recognition of the fact that, in the majority of cases, there is no need for further investigation;
- construct an effective initial management plan, including
  - a. outlining initial management including supportive therapy and counselling on life-style issues (e.g., diet, exercise, stress reduction);
  - b. considering the use of hormonal therapy for ovulation suppression (e.g., oral contraceptive);
  - c. outlining indications for selective serotonin reuptake inhibitors in the management of premenstrual dysphoric disorder (PMS).

# Prenatal care

(January 2017)

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## Rationale

Optimal prenatal care has the potential to reduce perinatal morbidity and mortality by identifying and reducing potential risks, treating medical conditions, providing psychosocial support, and promoting healthier lifestyles.

## Key Objectives

Provide prenatal care that integrates the best available evidence into a model of shared decision-making that enables patients to make informed decisions based on their needs in all aspects of preconception, pregnancy and fetal health.

## Enabling Objectives

Given a patient who requires antepartum care, the candidate will

- understand and apply the principles of informed decision-making and patient-centred care, including culturally sensitive issues;
- provide care for preconception counselling (e.g., folic acid supplementation, weight management, smoking cessation);
- establish the desirability of the pregnancy in a patient with suspected or confirmed pregnancy and construct an appropriate initial management plan;
- provide initial and subsequent prenatal visits that include an appropriate history, physical examination, exploration of socioeconomic determinants of pregnancy outcome, counselling, and laboratory investigations;
- identify risk factors and common antenatal complications (e.g., hypertension, maternal age, intrauterine growth restriction) and construct a plan for both the screening and initial management of these conditions.

The candidate will also

- list and interpret relevant clinical findings, including
  - a. factors that contribute to the estimation of the date of confinement (e.g., last menstrual period, date of positive pregnancy test);

- b. results of a thorough history that includes family, social, maternal health, and obstetrical histories;
- c. results of systematic screening for tobacco, alcohol, and substance use or exposure;
- d. need for referral for a therapeutic abortion and for counselling on the matter;
- e. use of medications and supplements and the need for appropriate counselling;
- f. need for timely counselling regarding prenatal genetic screening, including options, risks, benefits, and possible outcomes;
- g. risk factors and signs of antenatal and postpartum depression;
- h. signs of intimate partner violence;
- i. physiological changes characteristic of pregnancy and determination as to whether pregnancy is progressing satisfactorily (e.g., normal pregnancy symptoms), or if complications are present (e.g., hyperemesis, pain, bleeding);
- j. in the second and third trimesters
  - fetal and maternal progress (e.g., weight gain, blood pressure, fetal heart rate and movement);
  - signs and symptoms of preterm labour,
- k. determination of fetal lie and presentation in the third trimester;
- l. signs and symptoms consistent with the onset of labour;
- list and interpret relevant investigations, including
  - a. appropriate initial diagnostic and screening tests (e.g. complete blood count, blood type, rubella status);
  - b. prenatal genetic screening options (e.g., serum integrated prenatal screen, nuchal translucency);
  - c. current recommendations for ultrasonography in a normal pregnancy;
  - d. indications and options for additional prenatal fetal surveillance (e.g., fetal movement counting, nonstress test, biophysical profile);
  - e. current recommendations regarding screening for prenatal complications and risk factors, including (list not exhaustive):

- hemolytic disease of the newborn (e.g. from Rh isoimmunization);
  - gestational diabetes;
  - sexually transmitted infections;
  - group B Streptococcus;
- construct an effective initial management plan, including
    - a. discussing the patient's adjustment to pregnancy (e.g., mood, work, stress, family);
    - b. counselling and referral to community resources for
      - prenatal and parenting classes;
      - nutrition;
      - substance use or substance use disorder;
      - medication;
      - lifestyle (e.g., physical and sexual activity, travel);
      - breastfeeding;
    - c. management of common prenatal presentations and complications (e.g., nausea and vomiting, bleeding, intrauterine growth restriction);
    - d. discussing an appropriate follow-up plan for patients with a positive genetic screening result (e.g., amniocentesis, specialist referral);
    - e. management of post-term pregnancy;
    - f. referral for additional or specialized care (e.g., pre-eclampsia, psychiatric disorders, substance use disorder) if necessary.

# Prescribing practices

(April 2021)

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## Rationale

Prescribing medications safely is a central component of most physicians' activities and requires appropriate medical knowledge, skill, professional judgment, and an understanding of the applicable legislation related to prescribing.

## Key Objectives

To safely and effectively manage a patient presenting with a condition that requires prescription medication, the candidate will first undertake a thorough clinical assessment and then apply principles of evidence-based medicine and cost effectiveness in prescribing.

## Enabling Objectives

Given a patient that requires a medication to be prescribed safely and effectively, the candidate will

- undertake a thorough clinical assessment, including:
  - a. a complete medication history, including allergies and intolerances;
  - b. a review for adherence and effectiveness of the patient's current medications;
  - c. address polypharmacy and the options for deprescribing; and
- apply principles of clinical pharmacology in prescribing medication to
  - a. address the effect of comorbidities, current medications, liver and renal function, genetics, age, and pregnancy on the risks and benefits of prescribing the medication;
  - b. apply an evidence-based approach to clinical and cost effectiveness, including prescribing generic medications when appropriate;
  - c. anticipate the potential for adverse effects and take steps to mitigate them (e.g., prescribing appropriate routes, strengths, and quantities of medication);
  - d. recognize potential medical interactions when prescribing new medications;
  - e. recognize barriers to patients access to the medication (e.g., affordability, accessibility, supply) and advocate to resolve these where possible; and

- document the prescription appropriately, including:
  - a. generating a clear and legible prescription that meets legal requirements;
  - b. recognizing common cases of medication errors and how they can be prevented;
  - c. creating contemporaneous clinical notes of prescribing decisions;
  - d. documenting appropriate follow-up plans for review of the effectiveness of the prescribed medication and any adverse effects encountered; and
- communicate with the patient or, if appropriate, their family or caregivers to
  - a. build a therapeutic relationship that encourages adherence but respects the patient's values, beliefs, and expectations about medications and their right to refuse treatment;
  - b. ensure they understand the rationale for the prescription;
  - c. provide them with information about any adverse effects, how to report them, and what they should do if adverse effects occur;
  - d. ensure that those involved in sharing care or transfer of prescribing responsibilities are adequately informed about the prescription.

# Preterm labour

(January 2017)

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## Rationale

Preterm birth (prior to 37 weeks gestation) is the leading cause of perinatal morbidity and mortality in developed countries. Rates of preterm birth are rising with increasing maternal age and growing use of assisted reproductive technologies. Medical management of preterm labour can significantly impact maternal and neonatal outcomes.

## Causal Conditions

(list not exhaustive)

- Fetal (e.g., multiple gestation, congenital anomalies)
- Placental (e.g., abruption, placental insufficiency)
- Uterine (e.g., cervical anomalies)
- Maternal (e.g., substance abuse, chronic illness, infection)
- Iatrogenic (indicated induction of labour e.g., eclampsia, intrauterine growth restriction, premature rupture of membranes)

## Key Objectives

Given a patient with preterm labour, the candidate will investigate the cause, determine the level of maternal and fetal risk, and initiate an appropriate initial management plan. Particular attention should be paid to the identification of patients requiring immediate transfer to a centre with appropriate neonatal intensive care facilities.

## Enabling Objectives

Given a patient with preterm labour, the candidate will

- list and interpret critical clinical findings, including those based on
  - a. risk factors (e.g., maternal age, smoking, prior preterm deliveries);
  - b. status of current pregnancy (e.g., gestational age, contractions, spontaneous rupture of membranes);

- c. results of an appropriate physical examination (e.g., maternal blood pressure, speculum examination with swabs for culture and sensitivity (C and S) and fetal fibronectin);
- list and interpret critical investigations, including
  - a. assessment of fetal well-being (e.g., ultrasound, fetal monitoring);
  - b. identification of contributing factors requiring treatment (e.g., urine C and S, Group B Streptococcus status);
- construct an effective initial management plan, including
  - a. initiating appropriate medical therapy (e.g., antenatal steroids, group B streptococcal prophylaxis, tocolysis);
  - b. referring the patient for specialized care and/or transfer to an appropriate facility, if necessary;
  - c. counselling the parents about relevant immediate and long-term health problems encountered by premature infants;
  - d. referring the patient for assistance with social and economic issues related to preterm labour, if necessary.



# Prevention of venous thrombosis

(January 2017)

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## Rationale

Venous thrombosis is a major cause of morbidity and mortality. Physicians should use best evidence to lower the risk of this disease.

## Causal Conditions

(list not exhaustive)

- Stasis (e.g., hospitalization, travel)
- Endothelial injury (e.g., previous thrombosis)
- Hypercoagulability (e.g., drugs, cancer, inherited or acquired conditions)

## Key Objectives

Given a patient who may be at risk of venous thrombosis, the candidate will recognize the risk, take further measures to assess the likelihood of occurrence and use best evidence to intervene.

## Enabling Objectives

Given a patient at possible risk of thrombosis, the candidate will

- take an appropriate history and perform a physical examination to confirm the need for concern;
- list and interpret the appropriate investigations indicated for that patient including
  - a. hematologic or coagulation tests;
  - b. investigations for other underlying conditions;
- construct an effective initial management plan, including
  - a. non-pharmacologic measures (e.g., anti-embolic stockings);
  - b. anti-coagulation;
- promote systemic measures for consistent prevention of thrombosis in a clinical setting.

# Proteinuria

## (February 2017)

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### Rationale

Proteinuria is often the first indicator of potentially serious underlying renal disease.

### Causal Conditions

(list not exhaustive)

- Orthostatic proteinuria
- Tubulointerstitial (interstitial nephritis)
- Glomerular
  - a. Active urine sediment
    - Primary (e.g., IgA nephropathy, membranoproliferative glomerulonephritis)
    - Secondary (e.g., systemic lupus erythematosus (SLE), post-infectious)
  - b. Non-active urine sediment
    - Primary (e.g. minimal change, focal segmental glomerulosclerosis)
    - Secondary (e.g., diabetes, amyloid)

### Key Objectives

Given a patient with proteinuria, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate should recognize the importance of proteinuria as a predictor of chronic kidney disease.

### Enabling Objectives

Given a patient with proteinuria, the candidate will

- list and interpret critical clinical findings, including
  - a. perform a history and physical exam to elicit symptoms and signs of underlying diseases associated with kidney disease (e.g., diabetes mellitus, connective tissue diseases);

- list and interpret critical investigations, including
  - a. quantitative measures of proteinuria (e.g., albumin/creatinine ratio, 24 hour protein collection) to guide further diagnostic work-up;
  - b. tests to determine the underlying cause of the proteinuria (e.g., blood glucose, serum protein electrophoresis);
- construct an effective initial management plan, including
  - a. initiate measures to delay progression of chronic kidney disease associated with proteinuria (e.g., angiotensin-converting enzyme inhibition, treatment of hypertension and diabetes);
  - b. refer the patient for specialized diagnostic tests and care (e.g., renal biopsy), if necessary.

# Providing anti-oppressive health care

(March 2023)

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## Rationale

Anti-oppressive health care recognizes health inequities and historical, generational, and current trauma. It is also committed to social justice, including responding to the calls to action from the Truth and Reconciliation Commission of Canada.

Anti-oppressive health care recognizes and addresses colonialism, racism, sexism, heterosexism, cissexism, classism, ableism, sizeism, and ageism, and other forms of oppression that have resulted in health and social inequities in Canada. Anti-oppressive health care recognizes that most people live in one or more intersecting dimensions of diversity, and it attempts to disrupt the effects of social inequities and power imbalances in our communities.

## Key Objectives

- Provide inclusive health care and recognize the effects of stigmatization, discrimination, and other forms of oppression on people who have historically experienced and continue to experience health inequities based on race or ethnicity, country from which they emigrated or citizenship status, education or income, religion, disability, gender identity or expression, sexual orientation, weight, substance use, or other factors
- Reflect on one's own intersectional identities, privileges, oppressions, assumptions, and biases (conscious and unconscious) and demonstrate an understanding of how they influence clinical practice
- Provide gender-affirming health care to people of diverse sexual orientations and gender identities
- Provide inclusive health care to people with disabilities (e.g., mobility, sensory, intellectual, developmental, psychiatric)
- Provide culturally safe and culturally responsive care
- Provide antiracist care, recognizing the impacts of anti-immigrant, anti-Black, anti-Indigenous, and anti-Asian racism; Islamophobia; antisemitism; and other forms of racism
- Apply a structural and intersectional approach to assessing and addressing the social determinants of health in clinical practice, recognizing that an individual can experience multiple interlocking forms of oppression

## Enabling Objectives

- Gain Understanding
  - a. Analyze and describe how some dimensions of identity confer power and privilege (e.g., white privilege, cisgender privilege, Christian privilege), whereas others may result in oppression
  - b. Adopt a race-conscious approach and recognize how racism impacts access to health care, health processes, and health outcomes
  - c. Recognize the effects of stigma on people with various identities and health conditions (e.g., mental health issues, substance use disorders) and contribute towards reducing this stigma (e.g., using nonstigmatizing language, taking a structural approach to the determinants of health)
  - d. Recognize examples of weight bias and weight stigma in health care settings and society in general; describe the adverse consequences of weight stigma on the accessibility and quality of health services for patients
  - e. Recognize that some people who experience social inequities are often criminalized through their circumstances and activities (e.g., homelessness, sex work, substance use, sexual practices) and criminalization can occur through disproportionate police attention (e.g., Indigenous status, race, sexual orientation)
  - f. Demonstrate an understanding of the barriers to health care by people who have experienced or are experiencing incarceration and work towards reducing those barriers
  - g. Understand the different forms of housing insecurity and follow clinical guidelines for individuals experiencing homelessness
- Provide Support
  - a. Acknowledge and appreciate that individuals have different concepts of health and well-being and support diverse cultural practices related to health
  - b. Support diverse cultural practices around medical treatments (e.g., cancer treatments, blood transfusions) and important life events (e.g., birth, death) and acknowledge the limitations of biomedical models of medicine
  - c. Recognize and respect diverse family structures (e.g., blended families, polyamorous families, extended families, chosen families, children in foster care) and community

supports when providing health care

- Practice

- a. Provide trauma-informed and violence-informed care to everyone, recognizing the pervasiveness of historical, intergenerational, and current trauma, including harms caused by or perpetuated by health care providers
- b. Assess and address the social and structural determinants of health with appropriate tools (e.g., the Poverty Tool, social prescribing), recognizing that an individual's ability to engage in their health care may be limited due to their social and health inequities and their resources
- c. Recognize the shortcomings in clinical algorithms, including those that are based on race, ethnicity, sex, and gender identity
- d. Demonstrate respect and responsiveness by adapting one's history taking, counselling, physical examination, investigations, and management and demonstrate sensitivity and respect to the patient's narrative, abilities, and body while being mindful of power dynamics and one's own privilege
- e. Assess and address biases in clinical reasoning resulting in underdiagnosing, overdiagnosing, and misdiagnosing (e.g., premature closure, diagnostic overshadowing)
- f. Follow available clinical guidelines for refugee and migrant health

- Communicate

- a. Recognize diverse languages and ways of communicating and adapt as required (e.g., drawing on communication aids [e.g., social stories, communication books, interpreters, American Sign Language])
- b. Recognize when there are other communication barriers and adapt as required (e.g., including health care navigators, including patient advocates)

- Collaborate

- a. Engage the patient as an equal partner of the collaborative health care team to better address social inequities; include members of the interprofessional team and individuals that patients identify as members of their health care team
- b. Understand and describe principles of community engagement (e.g., remuneration, equal partnership, addressing community priorities)

- c. Recognize incidents of discrimination and microaggressions by faculty members, colleagues, patients, or their family members and know what options would be available to address these (e.g., speaking directly with the perpetrator, reporting the incident to appropriate authorities)
- Advocate
    - a. Identify policies, protocols, procedures, processes, and structures in one's own practice environment that reinforce privilege and advocate for change
    - b. Create and maintain a welcoming and affirming environment for 2SLGBTQQIA+ people, including using respectful and appropriate language with all 2SLGBTQQIA+ patients (e.g., using the name and/or pronouns that the patient shares, using gender-inclusive language on forms and during history taking) and advocating for structural changes that support 2SLGBTQQIA+ patients

# Pruritus

(January 2017)

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## Rationale

Itching is common symptom. In the absence of primary skin lesions, generalized pruritus can be indicative of an underlying systemic disease, but itching in most cases is due to a cutaneous disorder.

## Causal Conditions

(list not exhaustive)

- Skin lesions
  - a. Primary skin disease
    - Blisters (e.g., dermatitis herpetiformis)
    - Rash (e.g., psoriasis, lichen planus)
  - b. Parasitosis (e.g., scabies, pediculosis)
  - c. Allergy (e.g., eczema, allergic dermatitis, urticaria)
  - d. Arthropod bites
  - e. Factitious dermatitis
- No skin lesions
  - a. Dry skin
  - b. Drugs/Foods
  - c. Obstructive biliary disease
  - d. Uremia/kidney injury
  - e. Haematological
    - Polycythemia vera/Microcytic anemia
    - Leukemia
    - Lymphoma



- f. Carcinoma/Carcinoid syndrome
- g. Endocrine (diabetes, thyroid disease)
- Psychiatric/Emotional disorders

## Key Objectives

Given a patient with pruritus, the candidate will differentiate excoriations due to scratching from primary skin lesions. The candidate will identify skin lesions if present. In their absence, the candidate will identify the underlying cause of pruritus.

## Enabling Objectives

Given a patient with pruritus, the candidate will

- list and interpret critical clinical findings, including
  - a. results of an appropriate history, including an occupational history, and of a physical examination aimed at determining the cause of pruritus;
  - b. differentiation of pruritus associated with skin lesions from that without primary skin disease;
  - c. any primary skin lesions associated with the pruritus;
- list and interpret critical investigations, including investigations to diagnose systemic disorders in the absence of skin lesions;
- construct an effective plan of management, including
  - a. providing local and other therapy for pruritus due to skin disease;
  - b. initiating a therapy for pruritus due to an underlying systemic disease;
  - c. initiating a referral for consideration of social issues related to infectious or parasitic causes;
  - d. referring the patient for specialized care, if necessary.

# Psychosis

(February 2017)

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## Rationale

Psychosis is a severe and disabling psychiatric symptom present in several disorders, the most common of which is schizophrenia. It can be associated with severe psychosocial dysfunction and can be life threatening.

## Causal Conditions

(list not exhaustive)

- Psychotic disorders (e.g., schizophrenia , schizoaffective disorder)
- Psychotic disorder due to a medical condition (e.g., seizure disorder, central nervous system tumors)
- Substance induced psychotic disorder (e.g., corticosteroids, cocaine)

## Key Objectives

Given a patient with psychosis, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In acute psychosis, particular attention should be paid to differentiating a primary psychotic disorder from delirium and from psychosis secondary to a medical condition or substance induced psychosis.

## Enabling Objectives

Given a patient with psychosis, the candidate will

- list and interpret critical clinical findings, including
  - a. mental status examination, with attention to risk factors for harm to self or others and assessment of capacity;
  - b. collateral history (if available);
  - c. physical examination (when safe to do so), with particular attention to findings suggesting an underlying or coexisting medical condition or substance use;
- list and interpret critical investigations, including
  - a. appropriate laboratory investigations and other tests (e.g., neuroimaging);

- construct an effective management plan, including
  - a. ensuring safety of patient and others (e.g., certification);
  - b. ensuring ongoing assessment of capacity and the need for a substitute decision-maker;
  - c. pharmacotherapy (both acute and maintenance);
  - d. attending to the patient's psychosocial needs (e.g., community and family resources, housing);
  - e. treating underlying disorders or comorbidities;
  - f. counselling and supporting patient/caregiver/family about psychosis;
  - g. referring the patient for specialized care, if necessary.

# Acute kidney injury (anuria or oliguria)

(March 2022)

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## Rationale

Acute kidney injury is an abrupt reduction in kidney function and is defined as an increasing serum creatinine level from baseline over a short period. It is associated with morbidity and mortality.

## Causal Conditions

(list not exhaustive)

- Prerenal (functional) causes
  - a. Renal hypoperfusion (e.g., hepatorenal syndrome, angiotensin-converting enzyme inhibitor with bilateral renal artery stenosis)
  - b. Systemic hypoperfusion (e.g., shock, hypovolemia)
- Renal (intrinsic) causes
  - a. Tubulointerstitial (e.g., acute tubular necrosis, interstitial nephritis)
  - b. Glomerular (e.g., glomerulonephritis, thrombotic thrombocytopenic purpura/hemolytic uremic syndrome)
  - c. Vascular (e.g., cholesterol emboli)
- Postrenal (obstructive) causes (e.g., prostatic hypertrophy, extrinsic tumors, calculi)

## Key Objectives

Given a patient with acute kidney injury, the candidate will diagnose the cause, severity, and complications and will initiate an appropriate management plan. The candidate must recognize situations in which urgent intervention is required.

## Enabling Objectives

Given a patient with acute kidney injury, the candidate will

- list and interpret critical clinical findings, including findings from history and physical examination that are aimed at determining the most likely cause of the acute kidney injury (e.g., medications, volume status);

- list and interpret critical investigations, including
  - a. laboratory investigations to determine the underlying cause and severity (e.g., urine specific gravity, urinalysis, serum and urine electrolytes, serum creatinine and potassium); and
  - b. renal ultrasonography if indicated; and
- construct an effective initial management plan, including
  - a. assessing the need for urgent intervention (e.g., dialysis, fluid resuscitation, urinary catheterization);
  - b. managing the patient's fluid and dietary intake; and
  - c. determining whether the patient requires specialized care (indications for dialysis).

# Chronic kidney disease

(March 2023)

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## Rationale

Chronic kidney disease is defined by the presence of kidney damage or decreased kidney function for three or more months, irrespective of the cause. Kidney damage refers to pathologic abnormalities (established by imaging, histology, or from markers such as urinary sediment abnormalities or increased rates of urinary protein excretion). Decreased kidney function refers to a decreased glomerular filtration rate (GFR), which is usually estimated based on serum creatinine (estimated GFR [eGFR]).

Chronic kidney disease is associated with increased morbidity (including complications such as renal bone disease, endocrine abnormalities, anemia, and increased risk of cardiovascular disease), mortality, and health care costs.

## Causal Conditions

(list not exhaustive)

- Prerenal causes (e.g., blood pressure)
- Renal causes
  - a. Glomerular (e.g., IgA nephropathy, diabetic nephropathy)
  - b. Tubulointerstitial (e.g., drug toxicity)
  - c. Ischemic
  - d. Congenital (e.g., dysplasia, polycystic kidney disease)
- Postrenal (e.g., obstructive uropathy)

## Key Objectives

Given a patient with chronic kidney disease, the candidate will diagnose the cause, stage, and complications, and will initiate an appropriate management plan.

## Enabling Objectives

Given a patient with chronic kidney disease, the candidate will

- list and interpret critical clinical findings, including those derived from an appropriate history and physical examination aimed at determining causal conditions and manifestations of chronic kidney disease;
- list and interpret the appropriate investigations and laboratory tests, including
  - a. diagnostic imaging needed to make the diagnosis and determine potential complications;
  - b. relevant serum chemistry and urinalysis results; and
  - c. tests for potential complications of chronic kidney disease; and
- construct an effective initial management plan, including
  - a. instituting immediate measures to correct metabolic abnormalities (e.g., administration of intravenous fluids, treatment of acidosis and electrolyte abnormalities);
  - b. instituting immediate measures to prevent further loss of renal function (e.g., blood pressure control, steroids for autoimmune disorders);
  - c. determining whether the patient requires urgent or specialized care (e.g., dialysis);
  - d. determining whether the patient requires more specialized management (e.g., intensive long-term integrated care, dialysis and/or transplantation); and
  - e. counselling regarding lifestyle changes in anticipation of long-term consequences and prevention of further complications.

# Scrotal mass

(January 2017)

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## Rationale

In children and adolescents, scrotal masses do not always require treatment; other times, urgent treatment is required. Although a scrotal mass in adults is likely to be benign, it is important to recognize when it is a malignant tumor.

## Causal Conditions

(list not exhaustive)

- Cystic (e.g., hydrocele)
- Solid
  - a. Benign (e.g., hematoma)
  - b. Malignant (e.g., seminoma)
  - c. Inflammatory or infectious (e.g., orchitis, scrotal abscess)

## Key Objectives

Given a patient with a scrotal mass, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management, in particular, differentiate malignant testicular tumors from other types of scrotal masses.

## Enabling Objectives

Given a patient with a scrotal mass, the candidate will

- list and interpret critical clinical findings, including
  - a. history and physical examination results, in particular to diagnose an urgent case (i.e., right-sided varicocele, malignant testicular tumor, and torsion);
- list and interpret critical investigations, including
  - a. laboratory and radiological studies, in particular, tumor markers, Doppler ultrasound, or computed tomography (CT) scan, as appropriate;
- construct an effective initial management plan, including



- a. in the case of a young patient, counsel and educate him about regular testicular self-examination;
- b. determine whether the patient requires an urgent or a non-urgent referral;
- c. counsel, educate, and reassure the patient with a benign scrotal mass.

# Scrotal pain

(January 2017)

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## Rationale

Scrotal pain is a common presentation to both primary care and Emergency Department settings. Of the potential underlying causes, certain conditions require urgent diagnosis and management to avoid serious and long-standing complications. Pain may also precede the development of an obvious mass in the scrotum.

## Causal Conditions

(list not exhaustive)

- Testicular torsion
- Inflammation (e.g., acute epididymitis, orchitis, trauma)
- Incarcerated/Strangulated hernia
- Hemorrhage into testicular tumour

## Key Objectives

Given a patient with scrotal pain, the candidate will diagnosis the cause, severity and complications, and will initiate an appropriate management plan. Particular attention should be paid to the sudden onset of pain, which requires emergent investigation for testicular torsion.

## Enabling Objectives

Given a patient with scrotal pain, the candidate will

- list and interpret critical clinical findings, including
  - a. a thorough history of the presentation, including a sexual history;
  - b. an appropriate abdominal and genital examination;
  - c. identifying the urgency of the presentation;
- list and interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis (e.g., ultrasound, screening for sexually transmitted infections, complete blood count)
- construct an effective initial plan of management, including

- a. referral for specialized care (e.g., operative intervention), if necessary;
- b. appropriate pharmacologic management (e.g., antibiotics, analgesics);
- c. counselling regarding safe sexual practices when appropriate.

# Seizures / epilepsy

(January 2017)

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## Rationale

Seizures are common and present in a variety of settings. They have many underlying causes and can be both disabling and life-threatening.

## Causal Conditions

(list not exhaustive)

- Primary neurological disorders (e.g., idiopathic epilepsy, head trauma, encephalitis)
- Systemic disorders (e.g., hypoglycemia, electrolyte disorders)
- Other (e.g., febrile seizures, withdrawal)

## Key Objectives

Given a patient presenting with (a) seizure(s), the candidate will diagnose the cause, severity, and complications, and will initiate appropriate management. The candidate will differentiate a seizure from other transient but non-seizure conditions (e.g., syncope, conversion disorder). As well, the candidate will consider the presence of seizures in patients presenting with episodic neurological symptoms (e.g., inattention, psychosis). The candidate will outline a plan for the emergent treatment of a patient presenting with a seizure.

## Enabling Objectives

Given a patient presenting with (a) seizure(s), the candidate will

- list and interpret critical clinical symptoms and findings, including those uncovered during an appropriate history and physical examination conducted in order to
  - a. differentiate between a true seizure and non-seizure conditions;
  - b. categorize the type(s) of seizure(s);
  - c. determine if seizures are secondary to co-existing medical conditions;
  - d. identify pre-morbid conditions, triggers, and circumstances leading to the seizure (e.g., medication non-adherence);

- e. monitor for complications resulting from seizure prophylaxis medications (e.g., weight gain);
- list and interpret critical investigations, including those conducted in order to
  - a. exclude underlying medical conditions (e.g., serum glucose);
  - b. investigate for possible intracranial pathology (e.g., computed tomography scan, magnetic resonance imaging);
  - c. investigate seizure type (e.g., electroencephalography);
  - d. monitor for complications related to seizure prophylaxis medications (e.g., lipid profile);
- construct an effective initial management plan, including
  - a. providing emergent management of an ongoing seizure;
  - b. ensuring appropriate management if the patient presents with a history of seizures, including counselling (e.g., personal safety, psychosocial impact), pharmacotherapy and appropriate follow-up;
  - c. referring the patient for specialized care, if necessary;
  - d. notifying the patient and/or the appropriate authorities in case of inability to drive.

# Sexual Dysfunctions and Disorders

(April 2024)

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## Rationale

Sexual dysfunction includes clinically significant disturbances in the ability to respond sexually or to experience sexual pleasure. Some sexual behaviours may cause harm.

## Causal Conditions

(list not exhaustive)

- Erectile, arousal, or orgasmic dysfunctions
  - a. Psychological or emotional (e.g., depression, abuse, performance anxiety)
  - b. Neurologic dysfunction (e.g., spinal cord injury)
  - c. Vascular insufficiency (e.g., diabetes)
  - d. Substance- or medication-induced sexual dysfunction (e.g., alcohol, sedatives, drug adverse effects)
  - e. Hormonal (e.g., testosterone deficiency)
  - f. Hypoactive sexual desire/interest
  - g. Premature or delayed ejaculation
- Genitopelvic pain or penetration issues (dyspareunia)
  - a. Trauma (e.g., episiotomy)
  - b. Hormonal (e.g., vulvovaginal atrophy postmenopause)
  - c. Other pelvic pathology (e.g., endometriosis, pelvic inflammatory disease)
  - d. Psychological or emotional (e.g., anxiety, abuse)
- Sexual disorders
  - a. Paraphilic disorders (e.g., sexual sadism, pedophilia, fetishes causing harm)
  - b. Sexual addiction

## Key Objectives

Given a patient with sexual dysfunction or disorder, the candidate will address the issues and offer appropriate support and management measures. Because these issues can be emotional, physicians should strive to approach them in an unbiased and nonjudgmental way, with respect for the patient's wishes and values.

## **Enabling Objectives**

Given a patient with sexual dysfunction or disorder, the candidate will

- list and interpret critical clinical findings derived from an appropriate history, including the patient's physical and sexual development and comfort with their sexuality, and an appropriate physical examination to
  - a. determine if there is an organic or psychological cause;
  - b. identify treatable causes (e.g., atrophic vaginitis, diabetes, antidepressant medications); and
  - c. identify the risk of sexual activity causing harm;
- list and interpret investigations as required to identify underlying causes (e.g., testosterone level, blood glucose level, thyroid hormone levels); and
- construct an effective initial management plan for underlying issues, including
  - a. constructing a relevant safety plan where appropriate;
  - b. prescribing medications where appropriate (e.g., sildenafil, estrogen);
  - c. treating associated medical conditions if indicated (e.g., referral to a psychologist and/or sexologist); and
  - d. providing sexual education and counselling to the patient and their partner (e.g., use of lubricant, proper communication between partners).

# Skin and integument conditions

(January 2017)

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## Rationale

Skin disorders (including rashes, tumours and ulcers) are among the most common reasons for seeking medical attention from primary care physicians and specialists such as dermatologists. Integument conditions (including hair and nails) are also common. These disorders can be due to local diseases or may indicate an underlying systemic condition. Patients who are affected can present with psychological distress.

## Causal Conditions

(list not exhaustive)

- Rashes
  - a. Macular
  - b. Papular
  - c. Vesiculobullous
  - d. Pustular
- Tumours
  - a. Benign
  - b. Premalignant
  - c. Malignant (e.g., melanoma)
- Ulcers
  - a. Vascular
  - b. Infectious
  - c. Autoimmune
  - d. Pressure ulceration
  - e. Tumours
  - f. Toxic



- Nail presentations
  - a. Local nail problems
  - b. Associated with an underlying condition
- Hair presentations
  - a. Alopecia
    - Scarring
    - Non-scarring
  - b. Hirsutism
  - c. Hypertrichosis

## Key Objectives

Given a patient with a skin or an integument condition, the candidate will diagnose the cause, severity and complications, and will initiate an appropriate management plan. In particular, it is important to determine whether a condition is benign, malignant or associated with an underlying systemic condition.

## Enabling Objectives

Given a patient with a skin or an integument condition, the candidate will

- list and interpret critical clinical findings, including those derived from
  - a. an appropriate history (e.g., drug and medical history);
  - b. a general physical examination and an assessment of the skin characteristics (e.g., morphology and distribution);
- list and interpret critical investigations, including
  - a. those which differentiate benign from more serious disorders (e.g., biopsy, fungal scraping);
  - b. further investigations, as required (e.g., diagnostic imaging or laboratory tests);
- construct an effective management plan, including
  - a. prescribe an appropriate topical and/or systemic therapy;
  - b. refer if appropriate;

- c. offer counselling and education, including prevention of future skin conditions (e.g., sun exposure).

# Sleep-wake disorders

(January 2017)

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## Rationale

Sleep-Wake Disorders are commonly encountered in medical practice and various medical specialties. They may be episodic or persistent but the result is inadequate quantity or quality of sleep and impaired daytime functioning.

## Causal Conditions

(list not exhaustive)

- External Factors contributing to sleep disruption (e.g. Poor sleep environment)
- Intrinsic sleep disorders (e.g. Circadian rhythm disorders, insomnia, sleep-disordered breathing)
- Co-morbid conditions (e.g. Psychiatric disorders, neurologic disorders, substance abuse, dyspnea)

## Key Objectives

Given a patient with a sleep disorder, the candidate will diagnose the cause, severity and complications, and will initiate an appropriate plan for management.

## Enabling Objectives

Given a patient with a sleep disorder, the candidate will

- conduct a thorough sleep history, including collateral history and sleep log, if necessary;
- conduct a physical examination, if appropriate;
- determine if a patient requires specialized investigations (e.g. polysomnography);
- counsel the patient on the management of the sleep disorder, depending on the underlying cause;
- screen for safety concerns (e.g. excessive daytime somnolence).

# Hypernatremia

(January 2017)

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## Rationale

Increased serum sodium concentration is encountered more frequently in the elderly and in infants. Both hypernatremia and treatment of hypernatremia may be associated with neurological complications.

## Causal Conditions

(list not exhaustive)

- Water depletion (dehydration)
  - a. Decreased intake of water (e.g., impaired thirst)
  - b. Increased loss
    - Renal loss (e.g., osmotic diuresis)
    - Gastrointestinal loss (e.g., diarrhea)
    - Increased insensible loss (e.g., prolonged exercise)
- Sodium gain (e.g., hypertonic fluid replacement)

## Key Objectives

Given a patient with hypernatremia, the candidate will diagnose the cause, severity and complications, and initiate an appropriate management plan. In particular, the candidate will recognize that most cases occur in the frail elderly population due to conditions associated with water depletion.

## Enabling Objectives

Given a patient with hypernatremia, the candidate will

- list and interpret critical clinical findings, including
  - a. history aimed at identifying the common triggers and the clinical consequences of hypernatremia;

- b. physical examination with careful assessment of volume status and the neurological effects of hypernatremia;
- list and interpret critical investigations, including
  - a. estimation of water deficit;
  - b. specific laboratory and other investigations for underlying medical conditions (e.g., blood glucose, brain imaging);
- construct an effective initial management plan, including
  - a. establishing a short-term and long-term plan for correcting the sodium concentration, with recognition of the neurological consequences of overly rapid correction;
  - b. correcting causes of hypernatremia.

# Hyponatremia

(January 2017)

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## Rationale

Decreased serum sodium concentration is common with a multitude of underlying etiologies. Both hyponatremia and treatment of hyponatremia may be associated with neurological complications.

## Causal Conditions

(list not exhaustive)

- Hyponatremia with normal serum osmolality (e.g., hyperlipidemia)
- Hyponatremia with high serum osmolality (e.g., hyperglycemia)
- Hyponatremia with low serum osmolality
  - a. Total body water low, elevated antidiuretic hormone (ADH) level (e.g., gastrointestinal loss, diuretic use)
  - b. Total body water volume normal (e.g., syndrome of inappropriate ADH secretion, hypothyroidism, adrenal insufficiency)
  - c. Total body water high, elevated ADH level (e.g., congestive heart failure, nephrotic syndrome, cirrhosis)

## Key Objectives

Given a patient with hyponatremia, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan, recognizing that severe hyponatremia can be life-threatening.

## Enabling Objectives

Given a patient with hyponatremia, the candidate will

- list and interpret critical clinical findings, including
  - a. appropriate history and physical examination, with particular attention to assessment of volume status;
- list and interpret key investigations directed towards establishing the underlying etiology, including plasma and urine osmolality and urine electrolytes;

- construct an effective initial management plan, including
  - a. a therapeutic approach based on the underlying etiology;
  - b. understanding the risk factors for, and how to avoid central pontine myelinolysis;
  - c. correcting serum sodium at an appropriate rate and understanding the risks and indications for more rapid correction of sodium concentration.

# Somatic symptoms and related disorders

(April 2021)

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## Rationale

Prominent or vague somatic symptoms are common presentations in primary care and other medical settings. These symptoms are often accompanied by significant patient distress and disability but do not have consistent pathophysiologic findings.

## Causal Conditions

(list not exhaustive)

- Psychological factors affecting other medical conditions
- Malingering or factitious disorder
- Substance use disorder
- Other psychiatric disorders (e.g., somatic symptom disorder, illness anxiety disorder, conversion disorder, posttraumatic stress disorder)
- Adverse life events (e.g., adverse childhood events, intimate partner violence, other traumas, adult physical abuse)

## Key Objectives

Given a patient with prominent or vague somatic symptoms and significant distress causing disability, without consistent pathophysiologic findings, the candidate will consider a somatic symptom–type disorder.

## Enabling Objectives

Given a patient with symptoms consistent with somatic symptoms or a related disorder, the candidate will

- list and interpret critical clinical findings, including:
  - a. potential contributing conditions identified through appropriate history and physical examination;
  - b. integrating current history and findings with information from available medical records; and
- list and interpret critical investigations, including:



- a. an alcohol and recreational drug screen, where appropriate;
  - b. investigation of new symptoms, where appropriate;
  - c. no further investigations, where appropriate; and
- construct an effective initial management plan, including:
    - a. educating the patient about the connection between physical symptoms and psychological distress;
    - b. appropriate pharmacotherapy, as indicated;
    - c. referring the patient for specialized care, if necessary.

# Sore throat and/or rhinorrhea

(January 2017)

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## Rationale

Sore throat and rhinorrhea are very common clinical presentations. Inappropriate use of antibiotics for viral pharyngitis is a significant contributing factor to antibiotic resistance.

## Causal Conditions

(list not exhaustive)

- Infections (e.g., viral, bacterial, candidial)
- Allergic (e.g., chronic allergic rhinosinusitis)
- Other (e.g., trauma, neoplasm, foreign body)

## Key Objectives

Given a patient with a sore throat and/or rhinorrhea, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan.

## Enabling Objectives

Given a patient with a sore throat and/or rhinorrhea, the candidate will

- list and interpret critical clinical findings, including
  - a. presence or absence of fever, cough, cervical lymphadenopathy, tonsillar exudates;
  - b. relationship to environmental exposure;
  - c. visual inspection of the nose and oropharynx;
- list and interpret critical clinical investigations, including
  - a. determining whether further testing for group A streptococci is indicated;
  - b. determining if an allergy or more unusual cause for rhinorrhea is present;
  - c. determining the need for blood testing (e.g., monospot);
- construct an effective initial management plan, including
  - a. appropriate use of antibiotics;

- b. recognition of the role of antibiotics (e.g., prevention of acute rheumatic fever);
- c. determination as to whether the patient requires specialized care.

# Stature abnormal (tall stature / short stature)

(January 2017)

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## Rationale

Normal growth is a reflection of a child's general health. Deviations may be due to illness, genetics or other environmental factors.

## Causal Conditions

- Tall Stature
  - a. Genetic (e.g., Marfan's syndrome)
  - b. Endocrine (e.g., excess growth hormone)
- Short Stature
  - a. Genetic (e.g., Down syndrome)
  - b. Systemic disorders (e.g., chronic disease and treatment complications)
  - c. Environmental
    - Malnutrition
    - Psychosocial deprivation
    - Toxins/drugs
  - d. Intrauterine growth restriction [WEIGHT (LOW) AT BIRTH/INTRAUTERINE GROWTH RESTRICTION]

## Key Objectives

Given a patient with abnormal stature, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate will determine whether the growth pattern is pathological or normal and determine whether the child has dysmorphic features.

## Enabling Objectives

Given a patient with abnormal stature, the candidate will

- list and interpret critical findings, including
  - a. determine if the child is following normal growth pattern (e.g., accurate growth chart, family history);
  - b. take a history to identify factors resulting in abnormal growth:
    - maternal or intra-uterine environmental factors;
    - phases of growth;
    - underlying medical conditions or other environmental factors;
  - c. identify dysmorphic features on physical examination;
- list and interpret critical investigations, if needed (e.g., X-ray of wrist for bone age);
- construct an effective initial management plan, including
  - a. counsel the family and the child with questions about stature;
  - b. refer the patient for specialized care, if necessary.

# Strabismus and/or amblyopia

(January 2017)

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## Rationale

Screening programs for strabismus, as well as parental concern about children with a wandering eye, crossing eye, or poor vision in one eye, require physicians to be able to detect this condition and be familiar with initial management steps. Failure to identify and treat this condition in a timely manner may result in visual defects and psychosocial and vocational consequences.

## Causal Conditions

(list not exhaustive)

- Esotropia (convergent, internal, cross-eye) -- congenital and acquired
- Transient (e.g., presents at less than 4 months of age)
- Idiopathic (esotropia and exotropia)
- Neurogenic strabismus (e.g., cranial nerve paresis)
- Myogenic strabismus (e.g., mechanical restriction, neuromuscular junction defect, muscle disease/inflammation)
- Sensory strabismus (loss of vision due to organic ocular anomalies causing strabismus)
- Amblyopia without strabismus

## Key Objectives

Given a patient with strabismus and/or amblyopia, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriately timed management plan. In particular, he will determine the type of strabismus and the necessary urgency of intervention, in order to prevent the development of severe amblyopia.

## Enabling Objectives

Given a patient with strabismus and/or amblyopia, or a history of risk factors for same, the candidate will

- identify the risk factors for the development of strabismus or amblyopia in a child (e.g., prematurity, family history);

- list and interpret key components of the history and physical exam with particular attention to
  - a. differentiating pseudo strabismus (e.g., lid configuration) from true strabismus;
  - b. conducting a thorough ocular exam including visual acuity if appropriate;
- construct an effective initial management plan, including
  - a. determine if the patient requires further investigation or a referral based on the risk factors or the clinical findings;
  - b. counsel parents about the need for timely referral to manage strabismus in order to prevent the development of amblyopia.

# Substance use or addictive disorders

(April 2019)

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## Rationale

Substance use disorders include addiction to substances such as stimulants (e.g., cocaine, amphetamines), depressants (e.g., opioids, benzodiazepines) and other substances (e.g., nicotine, alcohol). Addictive disorders include process (behavioural) addictions such as gambling. The neurobiological basis of addiction is similar for substance use disorders and addictive disorders. Both disorders can cause direct or indirect harm to patients and families. Harm can occur during intoxication and withdrawal and may adversely affect the individual's social functioning. There is frequently overlap between addictions, and comorbidities are the rule rather than the exception. Physicians should be aware of the risk of addiction and adhere to best practices when prescribing potentially habit-forming medications.

## Causal conditions

(list not exhaustive)

- Adverse childhood or traumatic experiences
- Epigenetic factors
- Comorbid illnesses (e.g., mental illness, chronic disease, trauma, including acute and chronic pain)
- Psychosocial stressors (e.g., unemployment, social isolation, and systemic racism and other social determinants)

## Key Objectives

Given a patient with substance use or addictive disorders, the candidate will identify the issue, potential consequences, and the need for immediate intervention and ongoing support. Given a patient with chronic pain or other condition who is at risk for substance use and/or addictive disorder, the candidate will prescribe medications with due care. Because these issues can be emotional, physicians should strive to approach them in an unbiased and nonjudgmental way, with respect for patient wishes and values.

## Enabling Objectives

Given a patient with chronic pain or other condition who is at risk for substance use and/or addictive disorder, the candidate will



- list and interpret clinical findings, including the potential for habituation, and indicate the most appropriate medication for the diagnosis;
- construct a management plan, including
  - a. prescribing according to evidence-based guidelines (e.g., dosage, prescription interval, monitoring of drug use) to minimize addiction;
  - b. initiating alternative therapy or taper/stop therapy where there is evidence of ineffectiveness or habituation (e.g., physiotherapy, psychotherapy).

Given a patient with a substance use disorder, the candidate will

- list and interpret critical findings, including those derived from
  - a. an appropriate history, including a collateral history, relevant to the presenting problem and previous, possibly addictive behaviour and patient insight into the condition, to determine the duration and severity of any substance overuse or addiction;
  - b. an appropriate physical examination aimed at determining potential withdrawal symptoms and comorbidities, if necessary;
- list and interpret critical investigations, including laboratory or diagnostic imaging (e.g., drug screening, liver function studies); and recognition of when explicit consent (e.g., drug testing) may be required;
- in collaboration with the patient, construct an initial management plan, including
  - a. explaining behavioural modification options and appropriate pharmacological intervention (e.g., nicotine or opioid replacement therapy);
  - b. determining whether the patient or their family members require specialized psychological or other support services (e.g., addiction treatment) delivered at the individual, family, and/or community level;
  - c. anticipating medium- and long-term complications (e.g., psychosocial effect, safety);
  - d. advocating for harm reduction strategies (e.g., safe injection sites, naloxone administration education).

Given a patient with a behavioural addictive disorder, the candidate will

- list and interpret critical clinical findings including, those derived from

- a. an appropriate history, including a collateral history, relevant to the presenting problem and previous, possibly addictive behaviour and patient insight into the condition, to determine the duration and severity;
  - b. an appropriate physical examination aimed at determining potential symptoms and comorbidities (e.g., lack of sleep, social neglect, physical deconditioning, depression), if necessary;
- in collaboration with the patient, construct an initial management plan, including
    - a. explaining behavioural modification options and appropriate pharmacological intervention (e.g., SSRIs, SNRIs);
    - b. determining whether the patient or their family members require specialized psychological or other support services delivered at the individual, family, or community level (e.g., addiction treatment);
    - c. anticipating medium- and long-term complications (e.g., psychosocial effect, safety).

# Substance withdrawal

(January 2017)

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## Rationale

Substance withdrawal has been shown to cause significant morbidity and mortality worldwide and enormous impacts on public health. Depending on the type of substance, there are withdrawal syndromes, which are important to identify and treat.

## Causal Conditions

(list not exhaustive)

- Chemical dependency (e.g., alcohol, illicit drugs, tobacco, prescription drugs)

## Key Objectives

Given a patient with suspected substance withdrawal, the candidate will be able to identify the issue, potential consequences and the need to provide immediate and continuing support and intervention.

## Enabling Objectives

Given a patient with suspected substance withdrawal, the candidate will

- list and interpret critical clinical findings, including those derived from:
  - a. a thorough medical, family and social history (see also Substance-Related and Addictive Disorders);
  - b. collateral history, if indicated;
  - c. a physical examination with particular attention to mental status examination and autonomic instability;
- list and interpret critical investigations, including
  - a. drug screening;
  - b. use of appropriate screening tools (e.g., MMSE, CAGE, withdrawal assessment tools);
  - c. laboratory or other investigative tests to screen for organ damage and other complications as appropriate (e.g., liver function tests, chest radiography);
- construct an effective management plan, including

- a. supportive measures if required acutely (e.g., airway, fluid resuscitation, pain management);
- b. a safe environment (e.g.: hospitalization, recovery centers);
- c. appropriate pharmacological intervention (e.g., thiamine, long-acting benzodiazepines, sedation);
- d. referral for specialized care (e.g., addiction programs, family counselling, mental health services), if necessary.

# Sudden infant death syndrome (SIDS)

(January 2017)

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## Rationale

Sudden Infant Death Syndrome (SIDS) is a leading cause of death in infants between one month and one year of life. SIDS is defined as the sudden death of an infant, which remains unexplained after a complete clinical evaluation, including a complete autopsy and an examination of the death scene. Providing appropriate support to grieving parents is an important management step. Awareness of known risk factors for SIDS and proven preventive strategies is imperative.

## Causal Conditions

(list not exhaustive)

By definition, the precise etiology of SIDS is currently unknown. Affected infants appear to have:

- underlying genetic or anatomic (e.g., brainstem abnormality) predisposition
- a trigger event (e.g., maternal smoking, airflow obstruction)
- timing of a. and b. at a vulnerable stage of development.

Risk factors for SIDS and effective protective factors are known.

- Risk factors:
  - a. Maternal factors
    - young maternal age (less than 20 years)
    - maternal smoking during pregnancy
    - maternal alcohol and drug abuse during pregnancy
    - late or no prenatal care
  - b. Infant factors
    - preterm birth and/or low birth weight
    - prone sleeping position

- sleeping on a soft surface and/or with bedding accessories such as blankets and pillows
  - sibling of a SIDS victim
- c. Environmental factors
- exposure to second hand smoking
  - bed sharing
  - overheating
  - swaddling
- d. Protective factors:
- Room sharing
  - Pacifier use
  - Breastfeeding
  - Fan use
  - Immunizations

## **Key Objectives**

Given the arrival of a new infant in a family, the candidate will provide preventive counselling to every parent and caregiver about the known risk factors and preventive factors for SIDS.

Given the presentation of an infant with sudden infant death (SID), the candidate will evaluate fully the possible risk factors and/or causes and initiate an appropriate management plan including a detailed clinical evaluation, a request for a complete autopsy and involvement of the medical examiner (coroner).

The candidate will also counsel the infant's parents/caregivers and family.

## **Enabling Objectives**

Given the arrival of a new infant in a family, the candidate will

- Counsel parents/caregivers about preventative measures (e.g., smoking cessation during pregnancy and during infancy, proper sleep attire/position of newborn);

Given an infant presenting with sudden unexpected infant death, the candidate will

- list and interpret critical clinical findings, including those derived from
  - a. a detailed history of the event;
  - b. an evaluation of maternal, infant and environmental risk factors;
- include in the acute management a request for a complete autopsy and communication with the medical examiner;
- effectively communicate the death of the infant to parents and families;
- initiate bereavement support.

# Suicidal behaviour

(February 2017)

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## Rationale

Suicidal behaviour is a common psychiatric emergency and a major cause of death across age groups. It causes major distress to surviving relatives and others.

## Causal Conditions

(list not exhaustive)

- Psychiatric disorder (e.g., depression, schizophrenia)
- Psychosocial stressors (e.g., divorce, adverse childhood experience)
- Substance use
- Other (e.g., serious chronic disease)

## Key Objectives

Given a patient with suicidal behaviour, the candidate will determine the degree of risk and institute appropriate management.

## Enabling Objectives

Given a patient with suicidal behaviour, the candidate will

- list and interpret critical clinical findings, including
  - a. potential contributing conditions identified through an appropriate history and physical examination;
  - b. assessed and quantified risk for suicide, including imminent risk, recent stresses and life events;
- list and interpret critical investigations, including
  - a. illicit drug and alcohol screen, where appropriate;
- construct an effective initial management plan, including
  - a. ensuring the safety of patient at imminent risk for self harm (e.g., urgent hospitalization), including continuous observation while arrangements are being made;



- b. assessing capacity to make decisions if patient demands to leave;
- c. initiating management of underlying problems if the risk for suicide is not imminent (e.g., depression, psycho-social stressor);
- d. maintaining confidentiality while recognizing the benefits of support networks (e.g. family, culturally specific interventions);
- e. referring the patient for specialized care, if necessary.

# Syncope and pre-syncope

(February 2017)

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## Rationale

Syncopal episodes, an abrupt and transient loss of consciousness followed by a rapid and usually complete recovery, are common. Pre-syncope refers to the prodromal state of syncope. Syncope can easily be confused with other symptoms (e.g. seizures) and is associated with a wide range of underlying conditions, both benign and serious. In a subset of patients, a diagnosis will not be found.

## Causal Conditions

(list not exhaustive)

- Cardiovascular
  - a. Cardiac arrhythmia
  - b. Reduced cardiac output (e.g., aortic stenosis, myocardial infarction)
  - c. Reflex or underfilling (e.g., vasovagal, orthostatic)
- Cerebrovascular causes (e.g., carotid artery disease, transient ischemic attack)
- Other
  - a. Metabolic (e.g., hypoglycemia)
  - b. Drugs (e.g., anti-hypertensive medications)
  - c. Psychiatric (e.g., panic disorders)

## Key Objectives

Given a patient with syncope or pre-syncope, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, it is important to differentiate syncope from seizure and identify patients with syncope due to serious underlying disorders.

## Enabling Objectives

Given a patient with syncope or pre-syncope, the candidate will

- list and interpret key clinical findings, including
  - a. a targeted history and physical examination directed towards establishing an underlying etiology;
- list and interpret key investigations supported by the history and physical examination, with particular attention to diagnosing disturbances of cardiac rhythm and function (e.g., electrocardiogram, echocardiogram)
- construct an effective initial management plan, including
  - a. medication management, if indicated;
  - b. evaluating the patient for fitness to drive or work;
  - c. counselling the patient who has had a syncope;
  - d. determining whether the patient requires specialized care and/or consultation.

# Fever and hyperthermia

(January 2017)

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## Rationale

Fever is an elevation of body temperature above the normal variation, which is induced by cytokine activation. Fever is often due to infection but can be associated with malignancy, inflammatory disease or other causes. In contrast, hyperthermia is an elevation in core body temperature due to thermoregulation failure.

Elevated body temperature is a common presentation which can be due to a mild, self-limited illness or to a life-threatening medical emergency.

## Causal Conditions

(list not exhaustive)

- Infectious causes
  - a. Bacteria (e.g., group A Streptococcus, Escherichia coli)
  - b. Viruses (e.g., influenza, measles)
  - c. Parasites (e.g., malaria)
  - d. Fungi (e.g., cryptococcus)
- Inflammatory and malignant conditions (e.g., systemic lupus erythematosus, lymphoma)
- Drugs (e.g., bleomycin, interferon)
- Increased heat load (e.g., heat stroke)
- Diminished heat dissipation (e.g., medications and illicit drugs)
- Factitious

## Key Objectives

Given a patient with elevated body temperature, the candidate will diagnose the cause, severity and complications, and will initiate appropriate management. In particular, the candidate will rule out life-threatening conditions (e.g., meningococcal meningitis).

## Enabling Objectives

Given a patient with fever, the candidate will

- list and interpret critical clinical findings, including those derived from
  - a. a relevant history;
    - infectious symptoms (e.g., productive cough, dysuria, diarrhea);
    - travel history (e.g., geographic location and timing of trip, use of chemoprophylaxis);
    - host factors (e.g., immunocompromised state due to HIV, previous splenectomy);
    - non-infectious symptoms (e.g., weight loss, night sweats, arthralgias);
    - environmental factors (e.g., heat exposure, exertion);
    - drug therapy (e.g., corticosteroids);
  - b. a relevant physical examination aiming at determining the cause;
- list and interpret critical investigations, including
  - a. targeted initial investigations, if required, to determine the cause (e.g., chest radiograph, urinalysis, blood cultures);
  - b. additional investigations for fever of unknown origin (e.g., bone marrow biopsy, echocardiogram);
- construct an effective initial management plan, including
  - a. initiating measures to reduce body temperature (e.g., acetaminophen, evaporative cooling);
  - b. treating the underlying cause (e.g., antimicrobials);
  - c. determining whether specialized care is required;
  - d. determining whether further preventative measures such as immunizations are necessary.

# Fever in the immune compromised host / recurrent fever

## (February 2017)

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### Rationale

Patients with immunodeficiencies are at high risk for infections. The infective organism and site depend on the type and severity of immunosuppression. Many of these infections are life-threatening.

### Causal Conditions of Impaired Immune System

(list not exhaustive)

- Host defense defects
  - a. Cellular (e.g., human immunodeficiency virus (HIV), steroids)
  - b. Humoral (e.g., congenital)
  - c. Neutropenia (e.g., medication induced)
- Anatomic barrier defects (e.g., surgery, burns)
- Others (e.g., splenectomy, diabetes)

### Key Objectives

Given a patient with fever and immunodeficiency, the candidate will diagnose the cause, severity, and complications, and will initiate appropriate management. In particular, the candidate will determine whether the patient with fever is immunocompromised and the likely nature of the immune defect, perform appropriate investigations to diagnose the source of infection, and will initiate appropriate management based on the type and severity of the immunosuppression.

### Enabling Objectives

Given a patient with fever and immunodeficiency, the candidate will

- list and interpret critical clinical findings, including
  - a. conduct a focused history and physical examination to determine the site and type of infection;
  - b. determine the chief underlying immunologic defect and class of organisms likely to be involved;

- list and interpret critical investigations, including
  - a. appropriate tests and investigations relevant to the suspected underlying immunologic defect (e.g., complete blood count, bronchoscopy);
- construct an effective initial management plan, including
  - a. outline strategies for prevention of infection (e.g., prophylactic immunization);
  - b. outline the initial and urgent management for fever;
  - c. determine if the patient requires specialized care.

# Hypothermia and cold-related injury

(January 2017)

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## Rationale

Hypothermia is defined as a core temperature below 35°C, and it can represent a medical emergency. Severe hypothermia is defined as a core temperature below 28°C. Frostbite is a common and potentially serious injury.

## Causal Conditions

(list not exhaustive)

- Decreased heat production (e.g., hypothyroidism)
- Increased heat loss (e.g., exposure)
- Impaired thermoregulation (e.g., neurologic, metabolic, alcohol)

## Key Objectives

Given a patient with hypothermia or a cold-related injury, the candidate will diagnose the cause, severity, and complications and will initiate an appropriate management plan. In particular, the candidate will recognize the severity of hypothermia and provide urgent therapy.

## Enabling Objectives

Given a patient with hypothermia or a cold-related injury, the candidate will

- list and interpret critical clinical findings, including
  - a. determine the severity by using appropriate methods;
  - b. determine whether concomitant illnesses or the use of alcohol or substances may have precipitated the condition;
- list and interpret critical investigations, including
  - a. investigations for underlying causes (e.g., thyrotropin [thyroid-stimulating hormone]);
- construct an effective initial management plan, including
  - a. initiating life-saving treatment in case of severe hypothermia;



- b. understanding the advantages and disadvantages of active and passive external rewarming and active core rewarming as well as appropriate rewarming of frostbitten areas;
- c. conducting ongoing monitoring of patient during rewarming to identify complications (e.g., arrhythmia, infection);
- d. determine if the patient requires further specialized care;
- e. determine if the hypothermic patient is in cardiac arrest, recognizing the need for rewarming prior to ceasing resuscitation (particularly in the case of a child).

# Tinnitus

(January 2017)

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## Rationale

Tinnitus is an awareness of sound without an obvious external source. Although not usually related to serious medical problems, it may interfere with daily activities, affect quality of life, and occasionally be indicative of serious organic disease.

## Causal Conditions

(list not exhaustive)

- Auditory
  - a. External/Middle ear (e.g., otitis, wax)
  - b. Cochlear-vestibular end organ (e.g., medications, otosclerosis, environmental exposure)
  - c. Cochlear nerve (e.g., acoustic neuroma)
  - d. Brainstem/Cortex (e.g., ischemia, infection)
- Para-auditory (e.g., venous hum, arterial bruits)

## Key Objectives

Given a patient with tinnitus, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate should understand the distress that is caused by this usually benign condition.

## Enabling Objectives

Given a patient with tinnitus, the candidate will

- list and interpret critical clinical findings, including
  - a. conduct an appropriate history and physical examination to classify and diagnose the cause (e.g., disease-related, noise-related);
- list and interpret critical clinical and laboratory findings which were key in the processes of exclusion, differentiation, and diagnosis, including

- a. determination as to whether the patient requires further investigation based on clinical findings;
- construct an effective plan of management, including
  - a. refer the patient for specialized care, if necessary;
  - b. counsel the patient if causes of tinnitus are deemed to be relatively benign (e.g., stop medication, remove wax or foreign body).

# Abdominal injuries

(March 2022)

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## Rationale

Abdominal injuries are common and may be life-threatening. Assessment of patients with an abdominal injury may be difficult because it may produce few clinical signs. Interpretation of abdominal physical examination findings may also be difficult in unconscious patients with multiple injuries.

## Causal Conditions

(list not exhaustive)

- Blunt trauma (e.g., blast injuries, deceleration injuries)
- Penetrating trauma (e.g., stabbing, shooting)

## Key Objectives

Given a patient with an abdominal injury, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan.

## Enabling Objectives

Given a patient with an abdominal injury, the candidate will

- list and interpret critical clinical findings, including
  - a. the mechanism of injury;
  - b. the symptoms and signs of injury; and
  - c. the identification of an abdominal injury that commonly occurs in association with other serious injuries;
- construct an effective initial management plan, including
  - a. initiating resuscitation and assessing the patient's response to resuscitation; and
  - b. determining whether the patient requires specialized care; and
- list and interpret critical investigations, including

- a. appropriate laboratory investigations (e.g., urinalysis, serial complete blood count);  
and
- b. appropriate diagnostic testing (e.g., imaging, peritoneal lavage).

# Bone or joint injury

(March 2022)

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## Rationale

Bone and joint injuries are a frequent cause of musculoskeletal pain and may contribute to permanent disability or premature death. Major fractures and dislocations may be associated with other injuries, which may take priority. Unexplained fractures or injuries should alert physicians to the possibility that the patient is being abused.

## Causal Conditions

(list not exhaustive)

- High-energy trauma
- Nonaccidental injuries (e.g., intimate partner violence)
- Falls
- Pathologic conditions predisposing to injury (e.g., osteoporosis, ligamentous laxity)

## Key Objectives

Given a patient with acute onset of musculoskeletal pain or deformity, the candidate will determine whether the condition is due to a bone or a joint injury, assess the severity of the injury, identify possible complications, and construct an appropriate management plan. The candidate will also recognize circumstances in which the patient may have an increased risk for fracture.

## Enabling Objectives

Given a patient with acute onset of musculoskeletal pain or deformity, the candidate will

- list and interpret critical clinical findings, including
  - a. mechanism of injury and, when required, exclusion of other immediately life-threatening injuries through targeted examination;
  - b. specific site of injury;
  - c. neurologic and vascular status;
  - d. symptoms and signs suggestive of abuse;
  - e. history of recurrent falls;

- f. risks for bone abnormalities and/or increased risk for falls or injury; and
- g. signs of pathologic fractures;
- list and interpret critical investigations, including
  - a. appropriate imaging modalities; and
  - b. bone density testing and investigations for causes of osteoporosis if relevant;
- construct an effective initial management plan, including
  - a. applying an appropriate splint, sling, or brace;
  - b. restricting weight bearing if indicated;
  - c. prescribing analgesics and anti-inflammatory medications as required;
  - d. referring to specialized care if necessary; and
  - e. choosing the correct treatment for prevention of fractures, including among pharmacologic and nonpharmacologic treatments; and
- provide follow-up care and address the following:
  - a. duration of immobilization;
  - b. return to work and/or normal activity;
  - c. appropriate use of other health care professionals (e.g., physiotherapist, occupational therapist);
  - d. complications requiring further treatment or referral (e.g., complex regional pain syndrome, compartment syndrome); and
  - e. factors that will affect recovery from the injury (e.g., living situation, employment, nutrition, substance use disorder, general health).

# Chest injuries

(January 2017)

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## Rationale

Chest injuries are potentially life threatening. Injury to the chest may be blunt or penetrating.

## Causal Conditions

(list not exhaustive)

- Blunt trauma (e.g., blast injuries, deceleration injuries)
- Penetrating trauma (e.g., stabbing, shooting)

## Key Objectives

Given a patient with a chest injury, the candidate will diagnose the cause, severity and complications, and initiate an appropriate management plan. Since such patients frequently present in shock and/or respiratory distress, particular attention should be paid to prompt resuscitation and stabilization of the patient.

## Enabling Objectives

Given a patient with chest injury, the candidate will

- list and interpret critical clinical findings, including
  - a. the mechanism of injury;
  - b. the signs of injury;
  - c. the identification of signs and symptoms of common life-threatening chest injuries (e.g., aortic rupture, pericardial tamponade, tension pneumothorax, massive hemothorax);
- construct an effective initial management plan, including
  - a. initiate resuscitation of the injured patient and assess the patient's response to resuscitation;
  - b. recognize the indications for urgent intervention;
- list and interpret critical investigations (e.g., imaging, electrocardiography), while keeping in mind that such tests should be deferred until the patient is stabilized.



# Drowning/Submersion Injuries

(April 2024)

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## Rationale

Drowning is defined as the process of experiencing a respiratory impairment resulting from being in or submerged in liquid. The term *drowning* includes both death and nonfatal submersion injury. Drowning is a common cause of death, especially in children younger than 10 years. Men and members of some racial or ethnic groups are at increased risk of drowning.

## Causal Conditions

(list not exhaustive)

- Inability to swim effectively
- Missing or inadequate fencing of pools and bodies of water
- Improper or absent use of approved personal flotation devices
- Risk-taking behavior
- Alcohol and substance use
- Use of prescription medication (e.g., those that cause drowsiness)
- Inadequate supervision
- Acute medical issues (e.g., seizures)
- Occupational and recreational water-related activities

## Key Objectives

Given a patient with a history of recent submersion, the candidate will make the appropriate diagnosis of submersion injury, assess the severity and complications, initiate an appropriate management plan, and provide education about preventive strategies.

## Enabling Objectives

Given circumstances where there is risk of a drowning/submersion injury, the candidate will recommend effective risk reduction measures.

Given a patient who has experienced a submersion or drowning the candidate will

- conduct an effective initial management plan, including

- a. evaluate airway, breathing, and circulation while initiating cardiopulmonary resuscitation using basic or advanced life support measures as appropriate;
  - b. activate emergency medical and/or critical care services; and
  - c. continue cardiopulmonary resuscitation and other treatment to support organ perfusion while concomitantly treating hypothermia;
- concurrently list and interpret critical clinical findings, including
    - a. a history of the event and relevant medical history; and
    - b. coexisting trauma, including spinal cord injury;
  - list and interpret critical investigations (e.g., electrocardiography, chest radiography, complete blood count, renal function, toxicology screening, arterial blood gases, electrolyte levels, lactate level, ethanol level); and
  - recognize potential complications of submersion injury, including cerebral edema, hypoxic-ischemic encephalopathy, acute respiratory distress syndrome, multiple organ systems failure.

# Facial injuries

(March 2023)

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## Rationale

Facial injuries have the potential to affect both function and cosmetic appearance with resultant psychological effects. Additionally, life-threatening complications due to damage to the airway and central nervous system are possible.

## Causal Conditions

(List not exhaustive)

- Trauma (e.g., blunt, penetrating, crush injury)
- Burns

## Key Objectives

Given a patient with a facial injury, the candidate will diagnose the cause, severity, and complications and initiate an appropriate management plan. In particular, the candidate will assess and control vital functions and give management priority to life-threatening injuries.

## Enabling Objectives

Given a patient with a facial injury, the candidate will

- list and interpret critical clinical findings, including those derived from
  - a. a history of the nature and mechanism of injury; and
  - b. an assessment of the individual's airway, cardiopulmonary, and neurologic status;
- list and interpret critical investigations, including those used to determine the nature and severity of facial injuries; and
- construct an effective initial management plan, including
  - a. recognizing immediate threats to survival requiring emergent specialist referral;
  - b. outlining the priorities in the treatment of the facial injury;
  - c. addressing patient concerns regarding long-term complications (e.g., cosmetic appearance, effect on function);

- d. outlining and providing the initial treatment of the facial injury; and
- e. referring for specialized ongoing care as indicated.

# Hand and/or wrist injuries

(January 2017)

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## Rationale

Hand and/or wrist injuries are common problems. The impact of the injury on function depends upon the severity of the original injury, the initial care, and rehabilitation.

## Causal Conditions

(list not exhaustive)

- Damage to tendons (e.g., laceration, tendonitis)
- Damage to nerves (e.g., carpal tunnel syndrome)
- Damage to bones and/or joints (e.g., fracture, dislocation)

## Key Objectives

Given a patient with a hand and/or wrist injury, the candidate will diagnose the cause, severity, and complications, and initiate an appropriate management plan.

## Enabling Objectives

Given a patient with a hand and/or wrist injury, the candidate will

- list and interpret critical clinical findings, including
  - a. if a history of trauma is present, a thorough exploration of the mechanism and timing of injury;
  - b. appropriate physical examination, including neurovascular assessment;
  - c. if appropriate screen for risk factors for repetitive strain injury;
  - d. an occupational and recreational history;
- list and interpret critical investigations, including
  - a. radiograph(s) of the affected bone(s) and joint(s), if indicated;
- construct an effective and relevant initial management plan, with particular attention to
  - a. referral for specialist care, if appropriate;

- b. involvement of other health professionals as indicated;
- c. if splinting is required, demonstration of proper "position of safety";
- d. appropriate analgesia;
- e. counselling regarding appropriate return to work or play;
- f. recognition of the potential for long-term impact on function.

# Head trauma / brain death / transplant donations

(January 2017)

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## Rationale

While most head trauma is mild and not associated with long-term sequelae, clinical examination may fail to detect serious intracranial injuries that are evident on radiological imaging. Therefore, it is imperative to recognize head injured patients that require additional diagnostic imaging. When brain death has occurred, organ transplantation should be considered.

## Causal Conditions

(list not exhaustive)

- Skull fracture, penetrating injury
- Hemorrhage, hematoma (subdural, epidural, subarachnoid, shaken baby syndrome)
- Cerebral contusion
- Edema (midline shift)

## Key Objectives

Given a patient with a head/brain injury, the candidate will diagnose the cause, severity and complications. In particular, the candidate will, based on the mechanism of injury and the clinical findings, determine the appropriate management plan and select appropriate imaging and ongoing surveillance. In case where brain death has occurred, ensure that appropriate organ donation protocol be activated.

## Enabling Objectives

Given a patient with a head/brain injury, the candidate will

- list and interpret critical clinical findings, including those derived from
  - a. a history aimed at determining if the head injury was severe, or associated with complication (e.g., mechanism of injury, loss of consciousness);
  - b. a physical examination aimed at determining if the head injury was severe, or associated with complication (e.g., ecchymosis behind ear);
  - c. a repeat history or examination aimed at detecting evolving pathology;

- d. clinical signs of brain death;
- list and interpret critical investigations, including
  - a. determination as to whether the patient requires urgent brain imaging;
  - b. confirmation of brain death with appropriate investigations;
- conduct an effective initial management plan, including
  - a. determine if the patient requires specialized or urgent care;
  - b. in a patient whose head injury has caused brain death, but whose heart is still beating, communicate this information to the transplantation team (or equivalent) if the deceased patient or the family have indicated a desire to donate organ(s);
  - c. if there is no indication that organ donation has been considered, counsel the family about the possibility.



# Nerve injury

(January 2017)

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## Rationale

Peripheral nerve injuries often occur as part of more extensive trauma and often go unrecognized. Evaluation of these injuries is based on an accurate knowledge of the anatomy and function of the nerve(s) involved.

## Causal Conditions

(list not exhaustive)

- Compression, stretch
- Contusion
- Laceration

## Key Objectives

Given a patient with a potential nerve injury, the candidate will diagnose the cause, severity and complications, and initiate an appropriate management plan. In particular, the candidate will identify the peripheral nerve involved, as well as the level and type of involvement.

## Enabling Objectives

Given a patient with a potential nerve injury, the candidate will

- list and interpret critical clinical findings, including:
  - a. features on occupational history and physical examination that can help determine whether a peripheral nerve injury has occurred in the setting of other trauma;
  - b. the specific nerve involvement;
  - c. a differential diagnosis based on differentiation of a nerve injury from other neurologic disorders (e.g., non-traumatic neuropathies, central lesions);
- list and interpret critical investigations, including
  - a. tests used to diagnose the presence of a traumatic peripheral neuropathy;
- construct an effective initial management plan, including

a. listing indications for specialized care.

# Skin wounds

(January 2017)

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## Rationale

Physicians must be able to deal with skin and subcutaneous wounds which occur commonly.

## Causal Conditions

(list not exhaustive)

- Lacerations
- Puncture wounds (e.g., bites, needle sticks)
- Crush injuries
- Other (e.g., avulsions, abrasions)

## Key Objectives

Given a patient with a skin wound, the candidate will diagnose the cause, severity and complications, and initiate an appropriate management plan. In particular, prior to wound closure, the candidate will look for evidence of injuries involving important underlying structures and search for foreign bodies within the wound and evidence of contamination, as well as consider tetanus immunization.

## Enabling Objectives

Given a patient with a skin wound, the candidate will

- list and interpret critical clinical findings, including
  - a. determination of the mechanism of injury, the nature and severity of the skin wound, the time elapsed since injury, and symptoms suggesting wound infection based on the history and the physical examination;
  - b. signs and symptoms suggestive of underlying injury to tendon, nerve or blood vessel;
  - c. risk of transmissible infection (e.g., HIV, rabies) from a bite;
  - d. tetanus immunization status;
- list and interpret critical investigations, including

- a. wound culture, if required;
- b. appropriate diagnostic imaging of underlying structures, if necessary (e.g., foreign material, bones);
- construct an effective initial management plan, including
  - a. determine the need for primary versus delayed closure;
  - b. determine whether the patient requires specialized care;
  - c. provide appropriate medical and surgical care of superficial wounds;
  - d. determine the need for antibiotic or immunization prophylaxis;
  - e. provide appropriate management in case of a puncture wound (e.g., needlestick, animal bite), including mandatory reporting.

# Spinal trauma

(January 2017)

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## Rationale

Traumatic spinal cord injuries may have life-altering effects on patient, family, and community. Initial immobilization and maintenance of airway and ventilation can limit further injuries.

## Causal Conditions

(list not exhaustive)

- Traumatic (e.g., fracture/dislocation of vertebral column, penetrating injury)
- Acute disc rupture

## Key Objectives

Given a patient with spinal trauma, the candidate will diagnose the cause, severity and complications, and will initiate an appropriate management plan. Particular attention should be paid to initial immobilization and maintenance of airway and ventilation.

## Enabling Objectives

Given a patient with spinal trauma, the candidate will

- list and interpret critical clinical findings, including
  - a. status of airway and respiratory function before ensuring protection;
  - b. information from history and examination performed as the patient is being immobilized;
  - c. history about the mechanism of injury and the presence of symptoms and physical signs of spinal injury;
  - d. results of a complete neurological examination aimed at determining the function of major cranial and peripheral nerves;
  - e. consideration of the fact that spinal injuries commonly occur in association with other serious injuries;
- list and interpret critical investigations, including

- a. diagnostic imaging for assessment of spinal stability, while keeping in mind that such tests should be deferred until the patient has been stabilized and immobilized;
- construct an effective initial management plan, including
  - a. initiate and maintain spinal immobilization;
  - b. perform catheterization of the bladder if indicated;
  - c. initiate proper medical therapy;
  - d. counsel and support patient and family;
  - e. refer the patient for specialized care (e.g., surgical care, rehabilitation), if necessary.

# Trauma

(July 2017)

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## Rationale

Trauma is common. Physicians must be capable of assessing and treating patients with life-threatening traumatic injuries.

## Causal Conditions

(list not exhaustive)

- Blunt trauma (e.g., blast injuries, deceleration injuries)
- Penetrating trauma (e.g., stabbing, shooting)

## Key Objectives

Given a patient who has sustained trauma, the candidate will diagnose the cause, severity, and complications of the injury, and will initiate an appropriate management plan.

## Enabling Objectives

Given a patient with trauma, the candidate will

- list and interpret critical clinical findings, including those derived from:
  - a. an appropriate history taken from patient or collateral;
  - b. an appropriate examination performed according to Advanced Trauma Life Support (ATLS) guidelines, completing primary and secondary surveys in order to ensure that all external evidence of injury is assessed;
- construct an effective initial management plan:
  - a. initiate resuscitation of the injured patient and assess the patient's response to resuscitation;
  - b. prevent secondary injury of the injured patient (e.g., hypoxia, hypovolemia, spinal injury);
  - c. determine whether the patient needs to be referred for specialized care;
- list and interpret investigations useful in the management of the injury (e.g., imaging, electrocardiogram), keeping in mind that such tests should be deferred if the patient is

unstable.



# Urinary tract injuries

(February 2017)

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## Rationale

Urinary tract injuries are usually blunt rather than penetrating. They may affect the kidneys and/or the collecting system and may lead to life-threatening bleeding.

## Causal Conditions

(list not exhaustive)

- Kidney (BLOOD IN URINE/HEMATURIA)
- Bladder and urethra
  - a. Distal urethra (e.g., straddle injuries bicycle riding, monkey bars)
  - b. Proximal urethra/bladder (e.g., pelvic fracture, abdominal injury)

## Key Objectives

Given a patient with a urinary tract injury, the candidate will diagnose the cause, severity and complications, and initiate an appropriate management plan. In particular, the candidate will consider trauma to bladder or posterior urethra in patients with pelvic fracture.

## Enabling Objectives

Given a patient with a potential urinary tract injury, the candidate will:

- list and interpret the critical clinical findings, including
  - a. history data regarding the mechanism of the injury and symptoms (e.g., abdominal pain, difficulty voiding, blood in urine or at meatus);
  - b. perineal swelling/bruising;
  - c. prostate gland injury detected by digital rectal examination;
- list and interpret critical investigations, including
  - a. appropriate imaging, if required (e.g., retrograde urethrogram for urethral injury, cystogram for bladder injury, computed tomography scan for renal injury);
- construct an effective initial management plan, including

- a. initiate resuscitation of the injured patient and assess the patient's response to resuscitation;
- b. avoid repeated attempts at bladder catheterization when unsuccessful;
- c. initiate management of anterior urethral injury;
- d. refer the patient for specialized care, if necessary.

# Vascular injury

(January 2017)

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## Rationale

Vascular injuries are relatively common and may be limb, organ or life threatening.

## Causal Conditions

(list not exhaustive)

- Penetrating trauma (e.g., laceration)
- Blunt trauma (e.g., contusion, spasm, compression)

## Key Objectives

Given a patient with vascular injury, the candidate will diagnose the cause, severity and complications, and will initiate an appropriate management plan. In particular, the candidate will act quickly to ensure revascularization.

## Enabling Objectives

Given a patient with potential vascular injury, the candidate will

- list and interpret critical clinical findings, including
  - a. history and physical examination data focused on vascular injury (e.g., acute limb ischemia, compartment syndrome);
  - b. consider blood loss that is not apparent on clinical examination (e.g., retroperitoneal hemorrhage);
- list and interpret critical investigations, including
  - a. assessment of pulses using Doppler probe, if appropriate;
  - b. imaging studies to assess vessel integrity, if appropriate;
  - c. assessment of compartment pressure, if required;
- construct an effective initial management plan, including
  - a. initiate resuscitation assess the patient's response to resuscitation;
  - b. control external bleeding, if required;

c. ensure timely referral of the patient for specialized care, if required.

# Urticaria, angioedema

(January 2017)

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## Rationale

Urticaria is a common disorder, and if chronic, may result in significant disability. Angioedema, which may coexist with urticaria, may be life threatening if airway obstruction occurs from laryngeal edema or tongue swelling. Both may occur with anaphylaxis.

## Causal Conditions

(list not exhaustive)

- Idiopathic
- Associated with identifiable causes
  - a. Allergic (e.g., drugs, insects, food)
  - b. Direct mast cell release (e.g., opiates, radio-contrast agents)
  - c. Complement-mediated (e.g., serum sickness, infections)
  - d. Physical (e.g., dermatographism, cold)
  - e. Other (e.g., mastocytosis, hereditary angioedema)

## Key Objectives

Given a patient with urticaria/angioedema, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate will determine whether the condition is acute and/or life threatening and requires immediate treatment.

## Enabling Objectives

Given a patient with urticaria/angioedema, the candidate will

- list and interpret critical clinical findings, including
  - a. elicit a history and physical examination including timing of symptom onset, duration of lesions, and identification of precipitants;
  - b. detect the presence of or the risk for serious cardio-respiratory distress or anaphylaxis;

- c. determine chronicity, and possible association with systemic disease;
- list and interpret critical investigations, including
  - a. recognizing that laboratory investigation in both acute and chronic disease is often normal and therefore unnecessary;
- construct an effective initial management plan, including
  - a. determination of the need for emergent/urgent intervention;
  - b. identification and discontinuation of offending trigger or pharmacologic agents;
  - c. initiation of appropriate medication (e.g., antihistamine, steroids);
  - d. prescription of and counselling in use of injectable epinephrine.

# Uterine prolapse, pelvic relaxation

(January 2017)

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## Rationale

Pelvic relaxation is a common disorder which may impact physical well-being and social functioning. The symptoms associated with pelvic relaxation may be embarrassing, and may not be raised spontaneously. The physician should be familiar with, and screen for, the manifestations of pelvic relaxation.

## Causal Conditions

(list not exhaustive)

This condition is usually multifactorial. Potential causal conditions include:

- Damage to vagina and pelvic support system
  - a. Vaginal birth
  - b. Prior pelvic surgery
  - c. Chronic increase in intra-abdominal pressure (e.g., chronic cough)
- Neurogenic dysfunction of pelvic floor
- Connective tissue disease
- Genetic predisposition

## Key Objectives

Given a patient with prolapse/pelvic floor relaxation, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan.

## Enabling Objectives

Given a patient with prolapse/pelvic floor relaxation, the candidate will

- list and interpret critical findings, including
  - a. the severity of symptoms, effect on activity, predisposing factors;
  - b. the results of a physical examination aimed at determining the anatomical abnormality;
- list and interpret critical investigations, including

- a. investigation for urinary tract infection;
- conduct an effective initial management plan, including
  - a. discussing benefits and limitations of treatment options (e.g., pelvic floor exercises, pessary, surgery) and strategies to slow progression;
  - b. determining whether the patient needs to be referred for specialized care.



# Vaginal bleeding, excessive/irregular/abnormal

(February 2017)

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## Rationale

Vaginal bleeding is considered abnormal when it occurs at an unexpected time (before menarche or after menopause) or when it varies from the normal expected amount or pattern. It may be associated with significant morbidity, and mortality, depending upon the underlying cause.

## Causal Conditions

(list not exhaustive)

- Pre-menarchal (e.g., trauma, sexual abuse)
- Pre-menopausal
  - a. Ovulatory
    - Inter-menstrual (e.g., oral contraceptive, benign growths)
    - Menorrhagia
    - Neoplasms-coagulation disorders
    - Other (e.g., endometritis, hypothyroidism)
  - b. Anovulatory
    - Age related-endocrine/metabolic (e.g., thyroid)
    - Neoplasms (e.g., prolactinoma, ovarian tumor)
    - Other (e.g., polycystic ovary, weight loss/exercise/stress, structural disease)
  - c. Pregnancy-related
- Post-menopausal-structural/systemic
  - a. Genital tract disease (exclude trauma)
  - b. Neoplastic systemic disease
  - c. Drugs (e.g., hormone replacement therapy, anticoagulants)

## Key Objectives

Given a patient who presents with abnormal, irregular or excessive vaginal bleeding, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan.

## Enabling Objectives

Given the patient who presents with abnormal, irregular, or excessive vaginal bleeding, the candidate will

- list and interpret critical clinical findings, including those based on
  - a. first and foremost, determining whether the patient is hemodynamically stable;
  - b. differentiating between bleeding related to or unrelated to pregnancy;
  - c. information gathered to determine the underlying cause (e.g., other bleeding, medications) if pregnancy has been ruled out;
  - d. results of an appropriate physical examination, including a pelvic examination unless contraindicated (e.g., placenta previa);
- list and interpret critical clinical investigations, including
  - a. complete blood count, pregnancy test and, in women with recent pregnancy, qualitative and quantitative beta HCG;
  - b. determining ovulatory status and order clinically-indicated diagnostic tests;
  - c. determining whether a referral for investigation is required;
- construct an effective initial management plan, including
  - a. determining if the patient requires urgent or specialized care;
  - b. resuscitating patient if hemodynamically unstable;
  - c. initiating first-line medical therapy, as appropriate, for control of abnormal vaginal bleeding and referring the patient for specialized surgical care;
  - d. outlining legal responsibilities (e.g., mandatory reporting obligations) if sexual abuse is suspected;
  - e. recognizing the potential need for counselling and support in case of sexual abuse.

# Vaginal discharge / vulvar pruritus

(January 2017)

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## Rationale

Vaginal discharge, with or without pruritus, is a common problem

## Causal Conditions

(list not exhaustive)

- Physiologic discharge and cervical mucus production
- Non-physiologic
- Genital tract infections
- Genital tract inflammations (e.g., irritants)

## Key Objectives

Given a patient who presents with vaginal discharge or vulvar pruritus, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate will distinguish sexually transmitted infection (STI) from other causes of vaginal discharge or vulvar pruritus.

## Enabling Objectives

Given a patient who presents with vaginal discharge or vulvar pruritus, the candidate will

- list and interpret critical clinical investigations, including
  - a. the precipitating or aggravating factors;
  - b. the diagnosis of the likely cause of vaginal discharge and/or vulvar pruritus;
  - c. the results of an appropriate abdominal and pelvic examination, including a speculum examination;
- list and interpret critical investigations, including
  - a. pH and wet or KOH smear;
  - b. appropriate tests if the patient presents with purulent discharge;
- construct an effective initial management plan, including

- a. recognize vulvovaginitis associated with sexual activity and counsel on risk reduction;
- b. initiate appropriate management plan (e.g., STI, non-STI causes);
- c. recognize the obligation to report to appropriate authority;
- d. refer the patient for specialized care, if indicated.

# Child Abuse

(April 2024)

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## Rationale

Child abuse and trafficking are significant issues around the world that are often poorly recognized. Timely awareness, evaluation, and reporting of suspected child abuse or trafficking is critical, allowing for early intervention to optimize outcomes for children and their families.

## Causal Conditions

(list not exhaustive)

The following are components of child abuse and human trafficking:

- a. Physical abuse
- b. Sexual abuse/exploitation (sex trafficking)
- c. Emotional/mental abuse
- d. Neglect
- e. Child marriage
- f. Forced/exploitative labour (human trafficking)
- g. Criminal activities (e.g., drug trade, theft)

## Key Objectives

The candidate should recognize the signs, symptoms, and situations in which a potential for abuse exists.

## Enabling Objectives

Given a child in whom abuse or trafficking is suspected or disclosed, the candidate will

- list and interpret critical clinical findings of possible abuse or trafficking, including
  - a. suspicious injuries (e.g., fractures, bruises), especially with consideration of the nature of the injury, the caregiver's explanation for the injury, and whether that explanation is consistent with the characteristics of the injury itself within the context of the child's developmental status;

- b. suspicious circumstances (e.g., not being registered with a school, being unsure of which country or city they are in, being orphaned or living apart from their family, giving a prepared story that is very similar to stories given by other children);
  - c. key manifestations (e.g., sexually transmitted infections, pregnancies, developmental delay, emotional/behavioural issues, failure to thrive);
  - d. family dynamics, parental characteristics, or a social situation that may be contributing factors;
  - e. other potential signs (e.g., refusal by a parent or guardian to have the child interviewed alone); and
  - f. potential mimics of child abuse (e.g., accidental injury, medical conditions);
- list and interpret critical investigations, including
    - a. radiologic studies directed at treating the current injury and investigating evidence of previous trauma; and
    - b. other investigations as indicated (e.g., coagulation studies, toxicology, psychological assessment); and
  - construct an effective initial management plan, including
    - a. diligent documentation;
    - b. outlining strategies for ensuring the child's safety, including specifically,
      - i. reporting to appropriate child protection services;
      - ii. reporting to police services, when appropriate;
      - iii. determining whether other children are at risk and should be examined;
      - iv. admitting the child to hospital until their safety can be definitively established; and
    - c. referring the patient for further evaluation and/or treatment (e.g., pediatrician, counsellor, social worker).

# Elder abuse

(March 2023)

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## Rationale

Elder abuse is action or neglect causing harm or distress to an older person where there is an expectation of trust.

## Causal Conditions

(list not exhaustive)

- Physical abuse
- Sexual abuse
- Emotional or psychological abuse
- Financial or material exploitation
- Neglect (e.g., physical, social, emotional)

## Key Objectives

Given an older person in a state of distress or presenting with unexplained findings, the candidate will inquire about potential elder abuse. In particular, the candidate will determine the level of immediate risk, identify potential contributing factors, and outline an appropriate management plan.

## Enabling Objectives

Given a case of possible elder abuse, the candidate will

- list and interpret critical clinical findings, including
  - a. potential signs of abuse (e.g., fear, malnutrition);
  - b. the need to interview the patient alone;
  - c. risk factors for abuse, including the patient's support structure and social circumstances; and
  - d. the capacity of the patient to make personal care decisions; and
- construct an effective initial management plan, including

- a. ensuring the patient is in a safe environment;
- b. involving other team members or agencies, if indicated (e.g., social worker); and
- c. providing support and education to the caregiver, if necessary.



# Adult Abuse

(April 2024)

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## Rationale

Adult abuse or intimate partner violence is very common and can occur in many different circumstances or interactions. Human trafficking is a complex and largely hidden crime. Abuse and trafficking are often kept hidden by the victim and may be difficult to diagnose, yet they cause significant physical and emotional morbidity. They can also lead to the death of the abused or trafficked person.

## Causal Conditions

(list not exhaustive)

The following are components of adult abuse and human trafficking:

1. Physical abuse
2. Psychological abuse
3. Emotional abuse
4. Social isolation
5. Sexual abuse/exploitation (sex trafficking)
6. Economic abuse
7. Forced/exploitive labour (human trafficking)
8. Forced criminal activity (e.g., drug trade, theft)
9. Forced marriage

## Key Objectives

Given a patient experiencing possible adult abuse, the candidate will diagnose the cause, severity, and complications and will initiate an appropriate management plan. In particular, the candidate will assess immediate and short-term risk to the patient, and devise a safe and effective plan for this patient.

## Enabling Objectives

Given a patient experiencing possible adult abuse, the candidate will

- list and interpret critical clinical findings, including those based on

- a. the identification of possible factors putting the patient at increased risk of abuse (e.g., pregnancy, threat to leave);
  - b. whether the partner/companion has risk factors for being violent;
  - c. the varied nature of symptoms and signs that may indicate potential abuse or trafficking (e.g., repeated presentations that demonstrate inconsistencies between history and clinical findings);
  - d. the nature of the interaction between patient and partner/companion (e.g., large age difference, power imbalance) as well as the importance of interviewing and examining the patient alone; and
  - e. the level of immediate and short-term danger for the patient as determined through an assessment of risk factors for lethality or serious injury;
- list and interpret critical investigations, including the careful documentation of the location and nature of injuries and appropriate investigation of physical injuries via physical examination and other tests, as needed; and
  - construct an effective initial management plan, including
    - a. maintaining an empathic therapeutic relationship;
    - b. ensuring confidentiality, apart from legal reporting requirements;
    - c. assisting the patient in devising a safety plan;
    - d. giving information regarding access to transition housing and support services;
    - e. arranging supportive follow-up; and
    - f. ensuring safe care of dependents.

# Acute visual disturbance / loss

(March 2022)

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## Rationale

Sudden decreases in visual acuity or visual field are symptoms that require urgent evaluation. The outcome may depend on early, accurate diagnosis and timely treatment. Many patients require an urgent ophthalmologic opinion.

## Causal Conditions

(list not exhaustive)

- Painless
  - a. Vascular (e.g., retinal artery occlusion, giant cell arteritis)
  - b. Neurologic (e.g., optic neuritis, stroke)
  - c. Retinal (e.g., retinal detachment)
  - d. Other (e.g., conversion disorders)
- Painful
  - a. Glaucoma
  - b. Inflammatory (e.g., uveitis, corneal ulcer)
  - c. Other (e.g., traumatic)

## Key Objectives

Given a patient with an acute decrease in visual acuity or visual field, the candidate will complete a focused history and physical examination, and order relevant investigations to determine the most likely diagnosis. The candidate will initiate an appropriate management plan. In particular, the candidate will recognize features that indicate the need for immediate intervention, including the need for urgent referral to an ophthalmologist.

## Enabling Objectives

Given a case of sudden decrease in visual acuity or visual field the candidate will

- list and interpret critical clinical findings, including

- a. the characteristics of the visual loss and other relevant medical history;
  - b. results of an appropriate eye examination; and
  - c. the presence of a vision-threatening condition;
- list and interpret critical investigations (e.g., imaging, erythrocyte sedimentation rate or C-reactive protein, temporal artery biopsy); and
  - construct an effective initial management plan, including
    - a. initiating urgent medical therapy when appropriate; and
    - b. referring the patient for specialized care if necessary.

# Chronic visual disturbance / loss

(March 2023)

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## Rationale

Chronic, slowly progressive visual loss is a significant health issue in the elderly population and groups at risk (e.g., people with diabetes).

## Causal Conditions

(list not exhaustive)

- Glaucoma
- Cataracts
- Macular degeneration
- Retinopathy due to chronic illness

## Key Objectives

Given a patient with chronic visual disturbance or loss, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate will recognize the populations at risk of chronic visual loss and will institute screening and preventive measures.

## Enabling Objectives

Given a patient with chronic visual disturbance or loss, the candidate will

- list and interpret clinical findings, including
  - a. the characteristics of the visual loss and other relevant medical history;
  - b. results of an appropriate eye examination; and
  - c. the presence of a vision-threatening condition;
- list and interpret critical investigations (e.g., fundoscopy, visual fields, ocular pressure); and
- construct an effective initial management plan, including
  - a. determining whether the patient's vision is at risk for deterioration and referring for appropriate screening, if indicated;

- b. instituting medical therapy, as appropriate; and
- c. if indicated, referring the patient for specialized care in an appropriately timely manner.

# Vomiting and/or nausea

(January 2017)

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## Rationale

Nausea may occur alone, or along with vomiting, dyspepsia, and other gastrointestinal complaints. When prolonged or severe, vomiting may be associated with disturbances of water and electrolyte balance that may require correction prior to other specific treatment.

## Causal Conditions

(list not exhaustive)

- Gastrointestinal system
  - a. Esophagus/Stomach/Duodenum (e.g., obstruction, gastroenteritis, reflux, gastroparesis, peptic ulcer disease)
  - b. Small bowel/Colon (e.g., acute infectious enteritis, obstruction, inflammatory bowel disease, neoplasm)
  - c. Hepato-biliary disease or pancreatic disease (e.g., acute hepatitis / pancreatitis / cholecystitis)
  - d. Peritoneal irritation (e.g., appendicitis)
- Central nervous system
  - a. Increased intracranial pressure (e.g., infection, trauma, tumour)
  - b. Vestibular nerve lesions
  - c. Brain stem lesions
  - d. Psychiatric/Psychological conditions
- Other
  - a. Endocrine and/or metabolic (e.g., diabetes, hypercalcemia, pregnancy)
  - b. Cancer
  - c. Sepsis (e.g., pyelonephritis, pneumonia)
  - d. Drugs and toxins (e.g., chemotherapy, food poisoning)

- e. Miscellaneous (e.g., acute myocardial infarction, uremia)

## Key Objectives

Given a patient with vomiting and/or nausea, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, candidates should recognize that important causes of nausea and vomiting (e.g., raised intracranial pressure, metabolic conditions, myocardial infarction) arise outside of the gastrointestinal system.

## Enabling Objectives

Given a patient with nausea and/or vomiting, the candidate will

- list and interpret critical clinical findings, including
  - a. obtain a history for non-gastrointestinal causes (e.g., medication history, neurological disease, cardiac ischemia, metabolic conditions);
  - b. obtain a complete review of gastrointestinal symptoms;
  - c. physical examination targeting the gastrointestinal system, and salient findings in other systems suggesting need for urgent intervention (e.g., papilledema, volume status);
- list and interpret critical investigations to delineate both causes and effects
  - a. serum electrolytes, creatinine, calcium, glucose, cortisol;
  - b. more targeted investigations (e.g., head imaging, cosyntropin stimulation test), if indicated;
  - c. more specialized gastrointestinal testing, if indicated;
- construct an effective initial management plan, including
  - a. outline management plan targeting condition identified as causative, understanding that in some patients no cause will be found;
  - b. recommend the appropriate use of commonly used anti-nausea/anti-emetic medications.



# Weakness (not caused by cerebrovascular accident)

(January 2017)

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## Rationale

True weakness is abnormally decreased power of a muscle group, limb or in a more widespread distribution. It can be acute, subacute or chronic, and has a wide differential diagnosis. In young children, this may present as hypotonia. In its most severe form, it may present as paresis or paralysis and be accompanied by other neurologic or systemic symptoms. Since the causal condition may be life-threatening or severely disabling in many cases, skill is required to approach the problem effectively.

## Causal Conditions

(list not exhaustive)

- Muscular causes
  - a. Primary muscle disease
    - Congenital (e.g., muscular dystrophy)
    - Acquired (e.g., myositis, myasthenia)
  - b. Central nervous system
    - Malignant
    - Infectious (e.g., encephalitis)
    - Degenerative
    - Autoimmune or Inflammatory (e.g., multiple sclerosis)
    - Traumatic
    - Vascular (41 Weakness (not caused by Cerebrovascular Accident))
    - Other (e.g., genetic, cataplexy)

## Key Objectives

Given a patient exhibiting weakness not caused by a cerebrovascular accident, the candidate will differentiate fatigue from inhibition and pain. In particular, the candidate will determine whether

the condition is due to muscle, nerve or upper neurological disorder, characterize the distribution and/or localize the lesion, and determine the underlying cause.

## Enabling Objectives

Given a patient with weakness not caused by a cerebrovascular accident, the candidate will

- list and interpret clinical findings, including results of an appropriate history and physical examination aimed at determining
  - a. the source of the weakness (e.g., muscle, peripheral nerve);
  - b. the distribution of the weakness;
  - c. the most likely pathology or cause of the weakness (e.g., vascular, inflammatory, malignant);
- list and interpret critical investigations, including
  - a. laboratory data (e.g., creatine kinase, genetic testing);
  - b. nerve conduction studies and electromyography;
  - c. imaging, including computed tomography or magnetic resonance;
- construct an effective management plan, including
  - a. perform acute medical or surgical intervention (e.g., correction of electrolytes abnormalities);
  - b. treat underlying disease or correct causative factors (e.g., control of diabetes, cessation of steroids or statins);
  - c. take measures to support the patient and to retain function (e.g., physiotherapy, occupational therapy);
  - d. anticipate medium- and long-term complications of the disorder (e.g., psychosocial impact, safety).

# Weight gain, obesity

(February 2017)

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## Rationale

Obesity is a complex multifactorial chronic disease that develops from social, behavioural, physiological, and metabolic interactions. It is a risk factor for a wide range of serious illnesses.

## Causal Conditions

(list not exhaustive, generally multifactorial)

- Increased energy intake
  - a. Dietary (e.g., progressive hyperphagic, frequent eating, high fat diet, overeating)
  - b. Social and behavioural (e.g., socioeconomic, psychological)
  - c. Iatrogenic (e.g., drugs, hormones, hypothalamic surgery)
- Decreased energy expenditure (e.g., sedentary lifestyle, smoking cessation)
- Neuroendocrine (e.g., hypothyroidism, Cushing syndrome, polycystic ovarian syndrome)
  - a. Genetic (e.g., Prader-Willi)
  - b. Epigenetic

## Key Objectives

Given a patient with weight gain or obesity, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, he will determine the degree and pattern of obesity, exclude primary treatable causes, and assess the risk of associated morbidity and mortality.

## Enabling Objectives

Given a patient with weight gain or obesity, the candidate will

- list and interpret critical clinical findings, including those based on
  - a. a determination of the presence of obesity using defined criteria in adult and pediatric populations;

- b. an assessment of the risk of morbidity and mortality by determining age at the onset of obesity, its duration, the weight gained after 18 years of age, and the amount of central adiposity and gender;
- c. a measurement of waist circumference or waist-to-hip ratio and a calculation of body mass index;
- d. a screening for co-morbid conditions (e.g., hypertension, diabetes mellitus, dyslipidemia, sleep apnea, hirsutism, amenorrhea);
- list and interpret critical investigations, including
  - a. investigation for a neuroendocrine cause of obesity, if required;
  - b. appropriate laboratory investigations to screen for co-morbid conditions and complications;
- construct an effective initial management plan, including
  - a. formulating an intervention strategy with an emphasis on long-term treatment and a multidisciplinary approach, if indicated;
  - b. list the modalities of treatment for obesity including increased energy expenditure through exercise, decreased energy intake through healthy diets and behaviour modification;
  - c. discussing indications, risks and benefits of anti-obesity drugs and bariatric surgery;
  - d. demonstrating sensitivity to social and psychosocial consequences of obesity;
  - e. identifying opportunities to address socio-economic factors leading to obesity.

# Weight loss / eating disorders / anorexia

(January 2017)

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## Rationale

Weight loss may be a symptom of a serious underlying condition.

## Causal Conditions

(list not exhaustive)

- Decreased nutritional intake
  - a. Psychiatric disease (e.g., anorexia nervosa, bulimia)
  - b. Medical disease (e.g., chronic illness, esophageal cancer)
  - c. Illicit drugs or medications (e.g., alcohol, opiates, cocaine, amphetamines, anticancer)
- Increased energy expenditure
  - a. Hormonal (e.g., hyperthyroidism)
  - b. Chronic illness (e.g., chronic obstructive pulmonary disease, congestive heart failure)
  - c. Malignancy
  - d. Infection
  - e. Excessive physical activity (e.g., runners)
- Caloric loss
  - a. Malabsorption (e.g., diarrhea)
  - b. Diabetes

## Key Objectives

Given a patient with weight loss, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, the candidate will investigate for underlying medical conditions where appropriate.

## Enabling Objectives

Given a patient with weight loss, the candidate will

- list and interpret critical findings, including
  - a. identify the primary mechanism of the weight loss (e.g., decreased nutritional intake, increased expenditure);
  - b. recognize the features of anorexia nervosa where present;
  - c. identify the medical consequences of the weight loss;
- list and interpret critical investigations, including
  - a. assessment of the nutritional status of the patient, including appropriate laboratory investigations;
  - b. investigation of potential underlying medical condition (e.g., blood glucose, thyroid-stimulating hormone);
  - c. investigation of social and family history (psychosocial stressors);
- construct an effective initial management plan, including
  - a. initiate nutritional support or counselling, where needed;
  - b. initiate treatment of underlying medical condition, if appropriate;
  - c. refer the patient for specialized care, if necessary.

# Intrauterine growth restriction

(January 2017)

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## Rationale

Intrauterine growth restriction is a pathological limitation of fetal growth. Intrauterine growth restriction (IUGR) is an important risk factor for pre- and post-natal morbidity and mortality. It is also a risk factor for atypical child development and adult health problems such as hypertension and diabetes. Infants with IUGR must be distinguished from infants who are constitutionally small for gestational age (SGA) but otherwise well.

## Causal Conditions

(list not exhaustive)

- Maternal (e.g., nutritional status)
- Fetal (e.g., genetic syndrome, intra-uterine infection)
- Placental (e.g., maternal smoking)

## Key Objectives

Given a pregnant patient with abnormal fetal growth, or a newborn with low birth weight, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. Particular attention should be paid to identification of modifiable risk factors for IUGR early in pregnancy, routine monitoring of fetal growth throughout pregnancy to identify the need for specialized obstetrical management, and careful evaluation of a neonate who is small for his gestational age to detect a possible case of IUGR and assess potential causal conditions.

## Enabling Objectives

Given a pregnant patient with abnormal fetal growth, or a newborn with low birth weight, the candidate will

- list and interpret critical clinical findings, including
  - a. recognition of risk factors for IUGR;
  - b. routine monitoring of fetal growth through physical examination;
  - c. evaluation of a low birth weight infant to determine whether the case is one of IUGR or of a neonate who is constitutionally small for his gestational age, paying particular

attention to features on history and physical examination that are indicators of potential causal conditions;

- list and interpret critical investigations, including
  - a. indications for pregnancy investigations to assess fetal growth and well-being (e.g., biophysical profile, Doppler);
  - b. indications for neonatal investigations for causal conditions of IUGR (e.g., karyotype);
- construct an effective initial management plan, including
  - a. referral of the patient for specialized obstetrical investigation and management, if indicated;
  - b. initiation of resuscitation of a distressed neonate, as required;
  - c. referral for specialized pediatric care and developmental surveillance in the case of IUGR;
  - d. counselling and education of the patient regarding risk factors, management, and sequelae of IUGR, as appropriate.



# White blood cells, abnormalities of

## (February 2017)

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### Rationale

White blood cell (neutrophil and lymphocyte) abnormalities include abnormalities of number (leukocytosis or leukopenia) and of function. Leukocytosis and leukopenia may occasionally indicate serious and potentially urgent medical problems. Congenital white cell dysfunction is rare, but acquired dysfunction is associated with common medical problems.

### Causal Conditions

(list not exhaustive)

- Leukocytosis
  - a. Reactive (e.g., bacterial infection, infectious mononucleosis)
  - b. Neoplastic (e.g., leukemias)
- Leukopenia
  - a. Increased destruction (e.g., bacterial infection, human immunodeficiency virus)
  - b. Decreased/ineffective production (e.g., marrow suppression)
- Leukocyte dysfunction (e.g., HIV, chronic granulomatous disease)

### Key Objectives

Given a patient with a white blood cell abnormality, the candidate will diagnose the cause, severity and complications, and will initiate an appropriate management plan. In particular, attention should be paid to distinguishing those conditions which are life threatening (overwhelming sepsis, acute leukemia, febrile neutropenia) and require immediate treatment from those that are non-urgent.

### Enabling Objectives

Given a patient with abnormalities of white blood cells, the candidate will

- list and interpret the critical clinical findings, including those derived from
  - a. a relevant history and an appropriate physical examination;

- b. an assessment of urgent, life-threatening situations requiring immediate intervention;
- list and interpret the critical investigations, including
  - a. the context of the clinical presentation (e.g., monospot, bacterial cultures);
- construct an effective initial management plan, including
  - a. referring the patient for further specific investigation or specialized care (e.g., bone marrow biopsy, neutrophil function test), if necessary;
  - b. initiating treatment of underlying conditions.

