

CanCOM' s Essential Competencies for General Internal Medicine Residents

1. CanMEDS COMPETENCIES SPECIFIC TO OBSTETRIC MEDICINE

These competencies should be added to the list of CanMEDS competencies required for the practice of GIM in Canada

1.0 Medical Expert

Medical expert is the central role and refers to the application of medical knowledge, clinical and professional skills. This role will be developed for each discipline under section 2.

1.1 Communicator

1.1.1 CONCEPTS:

Establishes effective rapport, trust and ethical therapeutic relationships with:

Patient and family

Multidisciplinary team and allied health professionals

Accurately obtains, synthesizes and conveys relevant data from:

Patient, family, colleagues and other professionals

Develops a common understanding on issues, problems and plans with:

Patient, family and multidisciplinary team

Provides accurate and sensitive information:

During preconception counseling of women with chronic medical disorders

On risk:benefit profile of medication use in pregnancy and breastfeeding

On risk:benefit of various diagnostic and therapeutic options in pregnancy

1.3 Manager

1.3.1 CONCEPTS:

Organizes investigations within an acceptable time frame, taking into consideration the availability of resources

Works efficiently within a health care organization

1.5 Scholar

1.5.1 CONCEPTS:

Consults available resources for medication risk-benefit profile in pregnancy and lactation

1.6 Professional

1.6.1 CONCEPTS:

Recognizes limitation in knowledge and skills, and appropriately consults another health professional in:

Caring for patients with rare or complex medical conditions (for example: cancer, transplant, obstetric complications)

2. PHYSIOLOGY OF PREGNANCY

2.1 Cardiovascular changes

2.1.1 CONCEPTS:

Demonstrates applied knowledge of the:

Impact of pregnancy on blood volume, vascular resistance, and cardiac output

Impact of normal hemodynamic changes on symptomatology, physical findings and laboratory parameters (table I)

Hemodynamic changes associated with labor, delivery, and the postpartum period

2.2 Respiratory physiology

2.2.1 CONCEPTS:

Demonstrates applied knowledge of the:

Impact of pregnancy on respiratory rate, lung volumes and normal symptomatology

2.3 Renal physiology

2.3.1 CONCEPTS:

Demonstrates applied knowledge of the:

Impact of the increase in renal blood flow on kidney size and function

Impact of pregnancy on renal tubular function and findings on urinalysis

2.4 Metabolic changes

2.4.1 CONCEPTS:

Demonstrates applied knowledge of the:

Normal metabolic and endocrine changes associated with pregnancy

Impact of placental hormones on maternal glucose and lipid metabolism

Relative insulin resistance and hypercortisolism associated with pregnancy

3. PHARMACOLOGY OF PREGNANCY AND LACTATION

3.1 General principles

3.1.1 CONCEPTS:

Demonstrates applied knowledge of the:

Notion of critical period for anomalies specific to each organ system

Impact of pregnancy on drug pharmacodynamics

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5. ACUTE CARE AND MATERNAL RESUSCITATION

5.1 Acute respiratory failure

5.1.1 CONCEPTS:

Demonstrates understanding of:

Expected changes in blood gas parameters associated with pregnancy

Impact of pregnancy and medications on risk of pulmonary edema

5.1.2 MANAGEMENT:

Demonstrates applied knowledge of the:

Appropriate investigation and treatment of the pregnant patient with acute shortness of breath

7. RELEVANT OBSTETRIC AND GYNECOLOGIC CONDITIONS

7.2 Amniotic fluid embolism

7.2.1 CONCEPTS:

Demonstrates applied knowledge of the:

Major clinical findings in AFE

Hemodynamic alterations associated with AFE

7.2.2 MANAGEMENT:

Demonstrates applied knowledge of the:

Supportive measures taken to correct hypoxemia and hypotension

8. HYPERTENSIVE DISORDERS

8.1. Chronic hypertension

8.1.1 EVALUATION:

Demonstrates applied knowledge of the:

Baseline investigations to be done prior to or at the onset of pregnancy in a woman with hypertension

Work-up of secondary causes of hypertension as it pertains to pregnancy

Physiologic changes to BP in pregnancy

Associated conditions that may alter BP targets, and related complications

Demonstrates skills in the:

Appropriate approach to BP measurement in the pregnant woman

8.1.2 MANAGEMENT:

Demonstrates applied knowledge of the:

Current national guidelines on the management of hypertensive disorders in pregnancy

Safety profile of antihypertensive medications during pregnancy and breastfeeding

Approach to BP control and indications for drug therapy

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Appropriate antenatal and post-partum follow-up of hypertensive women
Strategies to reduce the risk of preeclampsia
Laboratory investigations for diagnosis of preeclampsia
<p>8.1.3 COMPLICATIONS:</p> <p>Demonstrates competency in:</p> <p>Counseling mothers regarding the risk of maternal complications</p> <p>Demonstrates understanding of the:</p> <p>Fetal complications associated with maternal chronic hypertension</p> <p>Accurately educates the mother on the:</p> <p>Symptoms and signs of preeclampsia</p>
<p>8.2 Gestational hypertension / Preeclampsia</p> <p>8.2.1 EVALUATION:</p> <p>Demonstrates applied knowledge of the:</p> <p>Definitions based on latest Canadian consensus guidelines</p> <p>Pathophysiology of preeclampsia</p> <p>Risk factors that place women at a higher risk of preeclampsia</p> <p>Definition of significant proteinuria in pregnancy</p> <p>Differential diagnosis of atypical preeclampsia</p>
<p>8.2.2 MANAGEMENT:</p> <p>Demonstrates applied knowledge of the:</p> <p>Appropriate investigations and follow-up of women with suspected preeclampsia</p> <p>Maternal indications for therapy and hospitalization</p> <p>Appropriate recognition and management of severe hypertension</p> <p>Adequate management of peripartum fluid balance</p>
<p>8.2.3 COMPLICATIONS:</p> <p>Demonstrates applied knowledge in the:</p> <p>Appropriate recognition and management of associated major maternal complications including HELLP syndrome, DIC, acute renal failure, hypertensive encephalopathy, pulmonary edema, eclampsia and other related medical emergencies</p> <p>Develops an understanding of the:</p> <p>Indications for MgSO₄ use in the prevention and treatment of eclampsia</p>
<p>8.2.4 POSTPARTUM MANAGEMENT:</p> <p>Demonstrates applied knowledge of the:</p> <p>Post-partum evolution of BP in preeclampsia</p> <p>Natural evolution and appropriate follow-up of laboratory abnormalities postpartum</p> <p>Provides accurate and sensitive counseling on the:</p> <p>Risk of recurrence of preeclampsia in future pregnancies</p>

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Association between placental disorders and increased risk of long-term metabolic, renal and cardiovascular disease

Strategies including lifestyle modifications and regular follow-up to reduce risk of metabolic and cardiovascular disease

9. CARDIOLOGY

9.1 Evaluation of palpitations, presyncope and syncope

9.1.1 EVALUATION:

Demonstrates skills in the:

Performance of a physical examination of the cardiovascular system of the pregnant woman

Demonstrates applied knowledge of the:

Appropriate evaluation and investigations for palpitations, presyncope and syncope

9.1.2 MANAGEMENT:

Demonstrates applied knowledge of the:

Appropriate treatment of the most prevalent arrhythmias in pregnancy (symptomatic sinus tachycardia, SVT, AF, and atrial flutter)

9.2 Acquired and Congenital Heart Disease

9.2.1 CONCEPTS:

Demonstrates an understanding of the:

Period of highest risk for warfarin teratogenicity

9.2.2. MANAGEMENT:

Demonstrates applied knowledge of the:

Role of folic acid for woman with a personal or family history of congenital cardiac anomaly

History, physical examination, and investigations to detect deterioration in cardiac function

Indications for endocarditis prophylaxis

9.3 Cardiomyopathies

9.3.1 EVALUATION

Demonstrates understanding of the:

Diagnostic features of peripartum cardiomyopathy

Demonstrates applied knowledge of the:

Differential diagnosis of pulmonary edema in pregnancy

Risk of maternal and fetal complications of acute and chronic heart failure

9.3.2 MANAGEMENT:

Demonstrates applied knowledge of the:

Investigations for the evaluation of heart failure

Cardiac medications acceptable for use in pregnancy

Treatment of congestive heart failure in pregnancy

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10. ENDOCRINOLOGY

10.1 Pregestational diabetes

10.1.1 EVALUATION:

Demonstrates applied knowledge of the:

Preconception and baseline evaluation of glycemic control, medication use, and history of severe complications

Adjustment of medications in preparation for pregnancy

Preconception target in HbA1C and impact on risk of miscarriages and fetal malformations

Evaluation of target organ damage at baseline and during the course of pregnancy

Evaluation of comorbidities associated with type 1 and 2 diabetes

Importance of preconceptional folic acid use at an appropriate dose

Provides accurate and sensitive counseling on the:

Risk of maternal complications such as hypoglycemic and hyperglycemic episodes, DKA, progressive retinopathy and nephropathy, preeclampsia

10.1.2 MANAGEMENT:

Demonstrates applied knowledge of the:

Treatment modalities in pregnancy and targets for glycemic control

Expected changes in insulin requirements during the course of pregnancy, following steroid administration and the early post-partum period

Management of diabetes during labor and the postpartum period

10.1.3 COMPLICATIONS:

Demonstrates applied knowledge of the:

Management of maternal complications

Demonstrates understanding of the:

Impact of poor glycemic control on fetus, neonate and longer term risk of metabolic disease

10.2 Gestational diabetes

10.2.1 CONCEPTS:

Demonstrates applied knowledge of the:

Pathophysiology of insulin resistance in pregnancy

Risk factors for gestational diabetes

10.2.2 SCREENING:

Demonstrates applied knowledge of the:

Canadian Diabetes Association guidelines for impaired glucose tolerance and gestational diabetes

Demonstrates understanding of the:

Optimal timing for screening for high risk populations

10.2.3 MANAGEMENT:

Demonstrates applied knowledge of the:

Baseline assessment at time of diagnosis of GDM

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Contribution of a consultation with dietitian and exercise therapist
Nature of follow-up and targets for glycemic control
Non-pharmacological approach to glycemic control
Indications to start pharmacological therapy
Risks and benefits of selected medications
Recommendations for postpartum follow-up
<p>10.2.4 COMPLICATIONS:</p> <p>Demonstrates applied knowledge of the:</p> <p>Associated risk of gestational hypertension</p> <p>Long-term risk of type 2 DM</p> <p>Risk of occurrence in subsequent pregnancies</p> <p>Demonstrates understanding of the:</p> <p>Obstetric and delivery complications associated with untreated gestational diabetes</p> <p>Counsels on the:</p> <p>Lifelong risk of obesity, diabetes and other adverse maternal outcomes</p> <p>Promotes health by explaining:</p> <p>Required lifestyle changes and optimal follow-up of other cardiovascular risk markers</p>
<p>10.3 Obesity and metabolic syndrome</p> <p>10.3.1 CONCEPTS:</p> <p>Demonstrates applied knowledge of the:</p> <p>Impact of obesity on insulin resistance, oxygen demand, and cardiac work</p> <p>Appropriate pre-conception counseling</p> <p>10.3.2 EVALUATION:</p> <p>Demonstrates applied knowledge of the:</p> <p>Importance of early screening for GDM</p>
<p>10.4 Thyroid disorders</p> <p>10.4.1 CONCEPTS:</p> <p>Demonstrates applied knowledge of the:</p> <p>Normal variations of TSH and T4 levels in pregnancy</p> <p>Differential diagnosis of hypothyroidism in pregnancy</p> <p>Differential diagnosis of hyperthyroidism in pregnancy</p> <p>Impact of pregnancy on Grave's disease</p> <p>Link between abnormal thyroid results, hyperemesis gravidarum, and molar pregnancy</p> <p>Interaction between iron, calcium and levo-thyroxine absorption</p> <p>Provides accurate and sensitive counseling on the:</p> <p>Possible association between inadequately treated hypothyroidism and cognitive deficits in the newborn</p>

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<p>10.4.2 MANAGEMENT:</p> <p>Demonstrates applied knowledge of the:</p> <p>Possible need for increased thyroid replacement therapy at onset and during pregnancy</p> <p>Appropriate follow-up of TSH, T4 and goals of therapy</p> <p>Treatment choices for hyperthyroidism in pregnancy and breastfeeding</p> <p>Options for follow-up and adjustment of thyroid replacement therapy after delivery</p>
<p>10.4.3 COMPLICATIONS:</p> <p>Demonstrates understanding of the:</p> <p>Link between thyroid disorders and obstetrical complications</p> <p>Benefits of treating subclinical and frank hypothyroidism on maternal and fetal outcomes</p> <p>Demonstrates applied knowledge of the:</p> <p>Recognition and management of post-partum thyroiditis</p> <p>Recognition and management of thyroid storm in pregnancy and the peripartum period</p>
<p>11. HEMATOLOGY</p> <p>11.1 Anemia</p> <p>11.1.1 CONCEPTS:</p> <p>Demonstrates applied knowledge of the:</p> <p>Differential diagnosis of anemia in pregnancy</p> <p>11.1.2 EVALUATION:</p> <p>Demonstrates applied knowledge of the:</p> <p>Diagnostic value of serum ferritin</p> <p>11.1.3 MANAGEMENT:</p> <p>Demonstrates applied knowledge of the:</p> <p>Treatment of iron-deficiency in pregnancy and indications for parenteral iron therapy</p>
<p>11.2 Thromboembolic disorders</p> <p>11.2.1 CONCEPTS:</p> <p>Demonstrates applied knowledge of the:</p> <p>Thromboembolic predisposition associated with pregnancy and the early post-partum period</p> <p>Additional factors which increase risk of venous thromboembolism</p> <p>Mortality associated with thromboembolic disorders</p> <p>Interpretation of d-dimers in pregnancy</p> <p>11.2.2 MANAGEMENT:</p> <p>Demonstrates applied knowledge of the:</p> <p>Appropriate investigations for VTE</p> <p>Management of VTE in pregnancy, labour, and the post-partum period</p>

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Approaches for monitoring laboratory markers of anticoagulation
Demonstrates understanding of the:
Indications for thromboprophylaxis in pregnancy and the post-partum period
Impact of anticoagulation on anaesthetic and obstetric management at the time of delivery
11.2.3 COMPLICATIONS
Demonstrates applied knowledge of the:
Maternal and fetal complications associated with anticoagulation therapy
11.3 Thrombophilias
11.3.1 CONCEPTS:
Demonstrates understanding of the:
Additional hypercoagulable states and their respective thrombotic risk
Impact of pregnancy on laboratory results of components of the coagulation cascade
11.4 Thrombocytopenia
11.4.1 CONCEPTS:
Demonstrates applied knowledge of the:
Differential diagnosis of thrombocytopenia in pregnancy
11.4.2 MANAGEMENT:
Demonstrates applied knowledge of the:
Risk of bleeding associated with various levels of thrombocytopenia
Treatment of ITP in pregnancy
Demonstrates understanding of the:
Risk of fetal thrombocytopenia associated with maternal ITP
11.5 Bleeding disorders
11.5.2 MANAGEMENT:
Accurate counsels on the:
Risks associated with various blood products
12. RESPIROLOGY
12.1 General principles
12.2.1 CONCEPTS:
Demonstrates applied knowledge of the:
Differential diagnosis of acute shortness of breath in pregnancy, labour and the post-partum period
Appropriate evaluation of respiratory symptoms in pregnancy
Demonstrates appreciation of the:
Impact of physiological changes on exercise tolerance

12.2 Asthma

12.2.1 CONCEPTS:

Demonstrates applied knowledge of the:

Factors which increase risk of asthmatic exacerbation

Impact of asthmatic exacerbation on pregnancy outcome

12.2.2 MANAGEMENT:

Demonstrates applied knowledge of the:

Adequate control of asthma in pregnancy and breastfeeding

Promotes health by educating on the:

Importance of compliance and of early self-referral for persistent asthmatic symptoms

13. NEPHROLOGY

13.1 Physiological changes

13.1.1 CONCEPTS:

Demonstrates applied knowledge of the:

Impact of physiologic changes in morphology

Normal proteinuria, albuminuria and serum creatinine in pregnancy (Table I)

Risk factors for nephrolithiasis and pyelonephritis

13.2 Acute renal failure

13.2.1 CONCEPTS:

Demonstrates applied knowledge of the:

Differential diagnosis of acute renal failure (ARF) in pregnancy

13.2.2 MANAGEMENT:

Demonstrates applied knowledge of the:

Evaluation and management of ARF in pregnancy

Importance of avoiding nephrotoxic medications and considering drug adjustments

13.3 Chronic renal failure

13.3.1 CONCEPTS:

Demonstrates applied knowledge of the:

Impact of renal dysfunction on maternal and fetal outcomes

Impact of pregnancy on renal dysfunction

Role of prenatal creatinine clearance in preconception counseling

Risks associated with ACE inhibitors and ARBs in pregnancy

Demonstrates appreciation of the:

Importance of prenatal counseling for women with chronic renal failure (CRF)

13.3.2 MANAGEMENT:

Demonstrates applied knowledge of the:

Impact of renal disease on target for BP control

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Adequate follow-up of renal function in pregnancy

15. GASTROENTOROLOGY

15.1 Hyperemesis gravidarum

15.1.1 EVALUATION:

Demonstrates applied knowledge of the:

Differential diagnosis of nausea in pregnancy

Biochemical anomalies associated with HG

Risk factors for severe HG

15.1.2 MANAGEMENT:

Demonstrates understanding of the:

Indications for hospitalization

15.2 Dyspepsia

15.2.1 CONCEPTS:

Demonstrates applied knowledge of the:

Effects of pregnancy on gastrointestinal physiology

15.3 Hepatitis and liver dysfunction in pregnancy

15.3.1 CONCEPTS:

Demonstrates applied knowledge of the:

Differential diagnosis of abnormal liver enzymes and liver function tests in pregnancy

Impact of pregnancy on prevalence of cholestasis, cholelithiasis, and cholecystitis

Demonstrates understanding of the:

Impact of obstetric cholestasis on maternal and fetal pregnancy outcomes

Morbidity and mortality of acute fatty liver of pregnancy (AFLP)

15.3.2 EVALUATION:

Demonstrates applied knowledge of the:

Evaluation of abnormal liver enzymes and liver function tests in pregnancy

Demonstrates understanding of the:

Characteristic presentation of AFLP

15.3.4 COMPLICATIONS:

Demonstrates understanding of the:

Maternal and fetal complications associated with maternal hepatitis, cholestasis or hepatic dysfunction

15.5 Inflammatory bowel disease

15.5.1 CONCEPTS:

Demonstrates applied knowledge of the:

Importance of stabilizing disease prior to conception

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Demonstrates appreciation of:

Importance of prenatal counseling of patients with IBD

16. NEUROLOGY

16.1 Headaches

16.1.1 CONCEPTS:

Demonstrates applied knowledge of the:

Differential diagnosis of headache in pregnancy

16.1.2 EVALUATION:

Demonstrates applied knowledge of the:

Evaluation of headache in pregnancy

Indications for imaging

16.1.3 MANAGEMENT:

Demonstrates applied knowledge of the:

Safety profile of analgesics and other pharmacologic agents in pregnancy

16.2 Seizures

16.2.1 CONCEPTS:

Demonstrates applied knowledge of the:

Differential diagnosis of seizures in pregnancy

Factors which modify the risk of seizures in women with epilepsy

Importance of preconception counseling

Impact of antiepileptic drugs on folic acid metabolism

Accurately counsels patients on the:

Impact of seizures and medications on maternal and fetal pregnancy outcomes

16.2.2 MANAGEMENT:

Demonstrates applied knowledge in:

Pharmacological and non pharmacological approaches to decrease risk of seizures

Management of acute seizures in pregnancy

17. INFECTIOUS DISEASES

17.1 Infections in general

17.1.1 CONCEPTS:

Demonstrates understanding of the:

Pathogens associated with an increased risk of maternal morbidity and mortality

Most common causes of sepsis in pregnancy

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<p>17.2.1 MANAGEMENT: Demonstrates applied knowledge of the: Evaluation and management of the febrile pregnant woman</p>
<p>17.2 Urinary tract infections</p> <p>17.2.1 CONCEPTS: Demonstrates applied knowledge of the: Factors which increase the risk of urinary tract infections in pregnancy</p> <p>Predominant causative organisms</p>
<p>17.2.2 MANAGEMENT: Demonstrates applied knowledge of the: Most commonly used antibiotic regimens for lower and upper urinary tract infections</p>
<p>17.2.3 COMPLICATIONS: Demonstrates applied knowledge of the: Complication associated with untreated asymptomatic bacteriuria</p> <p>Maternal complications associated with pyelonephritis</p>
<p>17.3 Respiratory infections</p> <p>17.3.1 CONCEPTS: Demonstrates applied knowledge of the: Differential diagnosis of cough in pregnancy</p> <p>Importance of measuring oxygen saturation in woman with suspected pneumonia</p> <p>Morbidity and mortality associated with viral pneumonias in pregnancy</p>
<p>17.3.2 MANAGEMENT: Demonstrates applied knowledge of the: Evaluation and management of respiratory infections in pregnancy</p>
<p>18. IMMUNOLOGIC DISORDERS</p> <p>18.1 Systemic lupus erythematosus</p> <p>18.1.1 CONCEPTS: Demonstrates applied knowledge of the: Impact of SLE on adverse maternal and fetal outcomes</p>
<p>18.1.2 EVALUATION: Demonstrates applied knowledge of the: Baseline assessment of function and disease markers</p> <p>Importance of regular clinical and laboratory follow-up</p>

Evaluation of proteinuria and renal dysfunction in these women
18.1.4 COMPLICATIONS: Demonstrates applied knowledge of the: Manifestations of other complications of SLE in pregnancy
18.2 Antiphospholipid syndrome 18.2.1 CONCEPTS: Demonstrates applied knowledge of the: Diagnostic criteria for APLS Impact of APLS on adverse maternal and fetal outcomes Association with other autoimmune disorders
18.3 Rheumatoid arthritis 18.3.1 CONCEPTS: Demonstrates applied knowledge of the: Differential diagnosis of symmetrical and asymmetrical arthritis in pregnancy and the postpartum period Impact of pregnancy on RA disease activity Provides accurate counseling on the: Risk of post-partum exacerbation
21. Psychiatric illness 21.3 Substance abuse disorders 21.3.1 CONCEPTS: Demonstrates understanding of the: Importance of addressing the possibility of substance abuse objectively and openly with patients Impact of smoking on the pregnancy and fetus