

**MARCH 2015**  
**VERSION 1.0**

## DEFINITION

Adult Hepatology is that area of enhanced competence within Gastroenterology concerned with the study, investigation, diagnosis, and medical management of liver disease and its extrahepatic manifestations. Medical management includes pharmacologic monitoring of therapy and all aspects of laboratory, pathology, and imaging investigations. Adult Hepatology is also concerned with the medical aspects of liver transplantation, including pre- and post-transplant medical assessment and management.

## ELIGIBILITY REQUIREMENTS

In order to be eligible for the Royal College AFC-diploma in Adult Hepatology, the Area of Focused Competence (AFC) trainee must be:

- a) Certified (or eligible for certification) in Gastroenterology by the Royal College of Physicians and Surgeons of Canada (or equivalent jurisdiction approved training in Gastroenterology);

**OR**

- b) Certified (or eligible for certification) in Internal Medicine by the Royal College of Physicians and Surgeons of Canada. Applicants from Internal Medicine must also demonstrate a minimum of twelve (12) months of clinical rotations in hepatology within their Internal Medicine training.

All trainees must be certified in the qualifying discipline in order to be eligible to submit the Royal College certification portfolio in Adult Hepatology.

## GOALS

Upon completion of training, an AFC diplomate is expected to function as a competent specialist in Adult Hepatology, capable of an enhanced practice in this area of focused competence, within the scope of Gastroenterology. The AFC trainee must acquire a working knowledge of the theoretical basis of the discipline, including its foundations in science and research, as it applies to medical practice.

The discipline of Adult Hepatology includes responsibility for

- the identification, diagnosis, interpretation, prevention, and treatment of acute liver conditions;
- the identification, diagnosis, interpretation, prevention, and treatment of chronic

liver conditions;

- the diagnosis and management of cirrhosis, including but not limited to the clinical assessment of its severity;
- the evaluation of patients for liver transplantation and the long-term management of liver transplant recipients;
- the evaluation and approach to management of liver lesions;
- engagement in activities that identify and reduce the burden of liver disease; and
- advancement of the discipline of Adult Hepatology through scholarship.

Diplomates must demonstrate the requisite knowledge, skills, and behaviours for effective patient-centred care and service to a diverse population. In all aspects of specialist practice, the diplomate must be able to address ethical issues and issues of gender, sexual orientation, age, culture, beliefs, and ethnicity in a professional manner.

At the completion of training, the diplomate will have acquired the following competencies and will function effectively as a:

## **Medical Expert**

### ***Definition:***

As *Medical Experts*, Adult Hepatologists integrate all of the CanMEDS Roles, applying medical knowledge, clinical skills, and professional attitudes in their provision of patient-centred care. *Medical Expert* is the central physician Role in the CanMEDS framework.

### ***Key and Enabling Competencies: Adult Hepatologists are able to...***

#### **1. Function effectively as consultants, integrating all of the CanMEDS Roles to provide optimal, ethical, and patient-centred medical care**

- 1.1. Perform a consultation, including the presentation of well-documented assessments and recommendations in oral, written and/or electronic form, in response to a request from another health care professional
- 1.2. Demonstrate use of all CanMEDS competencies relevant to Adult Hepatology
- 1.3. Identify and appropriately respond to relevant ethical issues arising in patient care
- 1.4. Demonstrate the ability to prioritize professional duties when faced with multiple patients and problems
- 1.5. Demonstrate compassionate and patient-centred care
- 1.6. Recognize and respond to the ethical dimensions in medical decision-making
- 1.7. Demonstrate medical expertise in situations other than patient care, such as providing expert legal testimony or advising governments, as needed

#### **2. Establish and maintain clinical knowledge, skills, and behaviours appropriate to Adult Hepatology**

- 2.1. Apply knowledge of the clinical, socio-behavioural, and fundamental biomedical sciences relevant to Adult Hepatology

- 2.1.1. Anatomy, physiology, and pathology of the liver and biliary tract
- 2.1.2. Principles of biochemistry, microbiology, molecular biology, and genetics, as they apply to the liver and biliary disease
- 2.1.3. Principles of endocrinology, intermediary metabolism and nutrition, and oncology, as they apply to liver disease
- 2.1.4. Epidemiology, pathophysiology, methods of diagnosis, management, and prognosis of diseases affecting the liver and biliary tract
- 2.1.5. Indications, interpretations, limitations, and complications of diagnostic procedures performed on the liver and biliary tract
- 2.1.6. Principles of metabolism, pharmacokinetics, pharmacodynamics, and toxicity of drugs commonly used in Adult Hepatology and drugs commonly associated with drug-induced liver injury
- 2.1.7. Advances in the management of benign and malignant liver and biliary tract diseases, including but not limited to liver transplantation and relevant endoscopic procedures
- 2.1.8. Principles of hepatobiliary surgery, including but not limited to the indications for and the complications of operations on the liver and biliary tract
- 2.2. Describe the CanMEDS framework of competencies relevant to Adult Hepatology
- 2.3. Apply lifelong learning skills of the Scholar Role to implement a personal program to keep up to date and enhance areas of professional competence
- 2.4. Integrate the available best evidence and best practices to enhance the quality of care and patient safety in Adult Hepatology

### **3. Perform a complete and appropriate assessment of a patient**

- 3.1. Identify and effectively explore issues to be addressed in a patient encounter, including the patient's context and preferences
- 3.2. Elicit a history that is relevant, concise, and accurate to context and preferences, for the purposes of diagnosis, management, health promotion, and disease prevention
- 3.3. Perform a focused physical examination that is relevant and accurate for the purposes of diagnosis, management, health promotion, and disease prevention
- 3.4. Select medically appropriate investigative methods in a resource-effective and ethical manner
  - 3.4.1. Imaging modalities of the liver and biliary tract
  - 3.4.2. Biochemistry, virologic serologies and nucleic acid tests, autoimmune serologies, and biochemical markers of metabolic disease in liver and biliary tract diseases
  - 3.4.3. Biopsies of the liver and interpretation of their results
  - 3.4.4. Endoscopic procedures of the gastrointestinal tract
  - 3.4.5. Liver fibrosis assessment

- 3.5. Demonstrate effective clinical problem solving and judgment to address patient problems, including interpreting available data and integrating information to generate differential diagnoses and management plans
  - 3.5.1. Acute liver conditions
  - 3.5.2. Chronic liver conditions
  - 3.5.3. Cirrhosis, including the clinical assessment of its severity
  - 3.5.4. Liver lesions
  - 3.5.5. Evaluation of patients for liver transplantation
  - 3.5.6. Long-term management of liver transplant recipients

**4. Use preventive and therapeutic interventions effectively**

- 4.1. Implement a management plan in collaboration with a patient and the patient's family
- 4.2. Demonstrate appropriate and timely application of preventive and therapeutic interventions relevant to Adult Hepatology
  - 4.2.1. Therapy of metabolic liver disease
  - 4.2.2. Prevention and antiviral therapy of viral hepatitis
  - 4.2.3. Screening for and an approach to management of hepatocellular carcinoma
  - 4.2.4. Referral of patients for liver transplantation
  - 4.2.5. Management of post-liver transplant patients, which may be performed in collaboration with a regional transplant centre
  - 4.2.6. Immunosuppressive therapy of autoimmune liver disease and for liver transplantation
  - 4.2.7. Therapy of cirrhosis and portal hypertension, including but not limited to endoscopy of the gastrointestinal tract
- 4.3. Obtain appropriate informed consent for therapies
- 4.4. Ensure patients receive appropriate end-of-life care

**5. Demonstrate proficient and appropriate use of procedural skills, both diagnostic and therapeutic**

- 5.1. Document and disseminate information related to procedures performed and their outcomes, including but not limited to liver biopsy, liver transplantation, paracentesis, and endoscopy
- 5.2. Obtain appropriate informed consent for procedures
- 5.3. Ensure adequate followup is arranged for procedures performed

**6. Seek appropriate consultation from other health professionals, recognizing the limits of their own expertise**

- 6.1. Demonstrate insight into their own limits of expertise
- 6.2. Demonstrate effective, appropriate, and timely consultation of another health professional as needed for optimal patient care
- 6.3. Arrange appropriate followup care services for patients and their families/caregivers

**Communicator**

***Definition:***

*As Communicators*, Adult Hepatologists effectively facilitate the doctor-patient relationship and the dynamic exchanges that occur before, during, and after the medical encounter related to liver disease.

***Key and Enabling Competencies: Adult Hepatologists are able to...***

**1. Develop rapport, trust, and ethical therapeutic relationships with patients and families**

- 1.1. Recognize that being a good communicator is a core clinical skill for a physician, and that effective physician-patient communication can foster patient satisfaction, physician satisfaction, adherence, and improved clinical outcomes in liver disease
- 1.2. Establish positive therapeutic relationships with patients and their families that are characterized by understanding, trust, respect, honesty, and empathy
- 1.3. Respect patient privacy, confidentiality, and autonomy
- 1.4. Listen effectively
- 1.5. Be aware of and responsive to nonverbal cues
- 1.6. Facilitate effectively a structured clinical encounter related to liver disease

**2. Accurately elicit and synthesize relevant information and perspectives of patients and families, colleagues, and other professionals**

- 2.1. Gather information about liver disease and about a patient's beliefs, concerns, expectations, and illness experience
- 2.2. Seek out and synthesize relevant information from other sources, such as a patient's family, caregivers, and other professionals, while respecting individual privacy and confidentiality
  - 2.2.1. In the event of patient incapacitation due to hepatic encephalopathy

**3. Convey relevant information and explanations accurately to patients and families, colleagues, and other professionals**

- 3.1. Deliver information about liver disease to a patient and family, colleagues, and other professionals in a humane manner and in such a way that it is understandable and encourages discussion and participation in decision-making

- 4. Develop a common understanding on issues, problems and plans with patients, families, and other professionals to develop a shared plan of care relevant to liver disease**
  - 4.1. Identify and effectively explore problems to be addressed from a patient encounter, including the patient's context, responses, concerns, and preferences
  - 4.2. Respect diversity and differences, including but not limited to the impact of gender, religion, and cultural beliefs on decision-making
  - 4.3. Encourage discussion, questions, and interaction in the encounter
  - 4.4. Engage patients, families, and relevant health professionals in shared decision-making to develop a plan of care
  - 4.5. Address challenging communication issues effectively, including but not limited to obtaining informed consent, delivering bad news, and addressing anger, confusion, and misunderstanding
- 5. Convey effective oral, written, and/or electronic information about a hepatology encounter**
  - 5.1. Maintain clear, concise, accurate, and appropriate records of clinical encounters and plans
  - 5.2. Present oral reports of clinical encounters and plans
  - 5.3. Convey medical information appropriately to ensure safe transfer of care
- 6. Present medical information to the public or media about a medical issue relevant to liver disease**

## **Collaborator**

### ***Definition:***

As *Collaborators*, Adult Hepatologists work effectively within a health care team to achieve optimal patient care.

### ***Key and Enabling Competencies: Adult Hepatologists are able to...***

- 1. Participate effectively and appropriately in an interprofessional health care team in areas related to liver disease**
  - 1.1. Describe the specialist's roles and responsibilities to other professionals
  - 1.2. Describe the roles and responsibilities of other professionals within the health care team, including but not limited to surgeons, pathologists, diagnostic and interventional radiologists, nurses, and pharmacists
  - 1.3. Recognize and respect the diversity of roles, responsibilities, and competencies of other professionals in relation to their own
  - 1.4. Work with others to assess, plan, provide, and integrate care for individuals and groups of patients
  - 1.5. Work collaboratively in other activities and tasks; examples are research, educational work, program review, and/or administrative responsibilities

- 1.6. Participate in interprofessional team meetings and video conferences, including but not limited to tumour board and transplant listing meetings
  - 1.7. Enter into interdependent relationships with other professions for the provision of quality care
  - 1.8. Describe the principles of team dynamics
  - 1.9. Respect team ethics, including confidentiality, resource allocation, and professionalism
  - 1.10. Demonstrate leadership in a health care team, as appropriate
- 2. Work with other health professionals effectively to prevent, negotiate, and resolve interprofessional conflict**
- 2.1. Demonstrate a respectful attitude towards other colleagues and members of an interprofessional team
  - 2.2. Work with other professionals to prevent conflicts
  - 2.3. Respect differences and the scopes of practice of other professions
  - 2.4. Reflect on their own differences, misunderstanding, and limitations that may contribute to interprofessional tension
  - 2.5. Reflect on interprofessional team function
  - 2.6. Employ collaborative negotiation to resolve conflicts and address misunderstandings

## **Manager**

### ***Definition:***

As *Managers*, Adult Hepatologists are integral participants in health care organizations, organizing sustainable practices, making decisions concerning the allocation of resources, and contributing to the effectiveness of the health care system in areas related to liver disease.

### ***Key and Enabling Competencies: Adult Hepatologists are able to...***

- 1. Participate in activities that contribute to the effectiveness of their health care organizations and systems**
  - 1.1. Work collaboratively with others in their organizations for issues relevant to liver disease
  - 1.2. Participate in systemic quality process evaluation and improvement, including patient safety initiatives relevant to liver disease
  - 1.3. Describe the structure and function of the health care system as it relates to Adult Hepatology, including the roles of physicians
  - 1.4. Describe principles of health care financing relevant to Adult Hepatology, including physician remuneration, budgeting, and organizational funding

**2. Manage their Adult Hepatology practice and career effectively**

- 2.1. Set priorities and manage time to balance patient care, practice requirements, outside activities, and personal life
- 2.2. Manage a practice, including finances and human resources
- 2.3. Implement processes to ensure personal practice improvement
- 2.4. Employ information technology appropriately for patient care

**3. Allocate finite health care resources appropriately on issues relevant to liver disease**

- 3.1. Demonstrate an understanding of the importance of just allocation of health care resources, balancing effectiveness, efficiency, and access with optimal patient care
- 3.2. Apply evidence and management processes for cost-appropriate care

**4. Serve in administration and leadership roles relevant to liver disease**

- 4.1. Participate effectively in committees and meetings
- 4.2. Lead or implement change in health care
- 4.3. Plan relevant elements of health care delivery, such as work schedules

**Health Advocate**

***Definition:***

As *Health Advocates*, Adult Hepatologists use their expertise and influence responsibly to advance the health and well-being of individual patients, communities, and populations in relation to liver disease.

***Key and Enabling Competencies: Adult Hepatologists are able to...***

**1. Respond to individual patient health needs and issues related to liver disease, as part of patient care**

- 1.1. Identify the health needs of an individual patient
- 1.2. Identify opportunities for advocacy, health promotion, and disease prevention with individuals to whom they provide care
  - 1.2.1. Prevention of communicable diseases relevant to Adult Hepatology, including but not limited to immunization and harm reduction strategies
  - 1.2.2. Reduction of barriers to access to appropriate treatment
  - 1.2.3. Reduction of harm from hepatotoxins including but not limited to alcohol and medications
- 1.3. Demonstrate an appreciation of the possibility of competing interests between individual advocacy issues and the community at large



**2. Respond to the health needs related to liver disease of the communities that they serve**

- 2.1. Describe the practice communities that they serve
- 2.2. Identify opportunities for advocacy, health promotion, and disease prevention in the communities that they serve and respond appropriately, including but not limited to
  - 2.2.1. Communities at risk of chronic viral hepatitis and metabolic liver diseases
- 2.3. Demonstrate an appreciation of the possibility of competing interests between the communities served and other populations, including but not limited to issues related to liver transplantation

**3. Identify the determinants of liver health for the populations that they serve**

- 3.1. Identify the determinants of health of the population, including barriers to access to care and resources related to non-alcoholic fatty liver disease and alcoholic liver disease; appropriate pharmacologic therapies; and liver transplantation
- 3.2. Identify vulnerable or marginalized populations within those served and respond appropriately, including but not limited to
  - 3.2.1. Those at risk of horizontal transmission of viral hepatitis B, hepatitis C, or other pathogens

**4. Promote liver health in individual patients, communities, and populations**

- 4.1. Describe an approach to implementing a change in a determinant of health of the populations they serve
- 4.2. Describe how public policy impacts on the health of the populations served
- 4.3. Identify points of influence in the health care system and its structure
- 4.4. Describe the ethical and professional issues inherent in health advocacy, including altruism, social justice, autonomy, integrity, and idealism
  - 4.4.1. Demonstrate an understanding of the ethical principles of appropriate allocation of scarce resources, including but not limited to donor organs for liver transplantation
- 4.5. Demonstrate an appreciation of the possibility of conflict inherent in their role as a health advocate for a patient or community with that of manager or gatekeeper
- 4.6. Describe the role of the medical profession in advocating collectively for health and patient safety

## Scholar

### **Definition:**

As *Scholars*, Adult Hepatologists demonstrate a lifelong commitment to reflective learning, and the creation, dissemination, application, and translation of medical knowledge in areas relevant to liver disease.

### **Key and Enabling Competencies: Adult Hepatologists are able to...**

#### **1. Maintain and enhance professional activities through ongoing learning relevant to liver disease**

- 1.1. Describe the principles of maintenance of competence
- 1.2. Describe the principles and strategies for implementing a personal knowledge management system
- 1.3. Recognize and reflect on learning issues in practice
- 1.4. Conduct personal practice audits
- 1.5. Pose an appropriate learning question
- 1.6. Access and interpret the relevant evidence
- 1.7. Integrate new learning into practice
- 1.8. Evaluate the impact of any change in practice
- 1.9. Document the learning process

#### **2. Critically evaluate medical information and its sources, and apply this appropriately to practice decisions related to liver disease**

- 2.1. Describe the principles of critical appraisal
- 2.2. Critically appraise retrieved evidence in order to address a clinical question
- 2.3. Integrate critical appraisal conclusions into clinical care

#### **3. Facilitate the learning of patients, families, students, residents, other health professionals, the public, and others in areas relevant to Adult Hepatology**

- 3.1. Describe principles of learning relevant to medical education
- 3.2. Identify collaboratively the learning needs and desired learning outcomes of others
- 3.3. Select effective teaching strategies and content to facilitate others' learning
- 3.4. Deliver effective lectures or presentations
- 3.5. Assess and reflect on teaching encounters
- 3.6. Provide effective feedback
- 3.7. Describe the principles of ethics with respect to teaching

**4. Contribute to the development, dissemination, and translation of new knowledge and practices in Adult Hepatology**

- 4.1. Describe the principles of research and scholarly inquiry
- 4.2. Describe the principles of research ethics
- 4.3. Complete a scholarly research, quality assurance, or educational project relevant to Adult Hepatology

**Professional**

***Definition:***

As *Professionals*, Adult Hepatologists are committed to the health and well-being of individuals and society through ethical practice, profession-led regulation, and high personal standards of behaviour.

***Key and Enabling Competencies: Adult Hepatologists are able to...***

**1. Demonstrate a commitment to their patients, profession, and society through ethical practice in Adult Hepatology**

- 1.1. Exhibit appropriate professional behaviours in practice, including honesty, integrity, commitment, compassion, respect, and altruism
- 1.2. Demonstrate a commitment to delivering the highest quality care and maintenance of competence
- 1.3. Recognize and appropriately respond to ethical issues encountered in practice
- 1.4. Recognize and manage real or perceived conflicts of interest
- 1.5. Recognize the principles and limits of patient privacy and confidentiality, as defined by professional practice standards and the law
- 1.6. Maintain appropriate boundaries with patients

**2. Demonstrate a commitment to their patients, profession, and society through participation in profession-led regulation related to liver disease**

- 2.1. Demonstrate knowledge and understanding of professional, legal, and ethical codes of practice
- 2.2. Fulfil the regulatory and legal obligations required of current practice
- 2.3. Demonstrate accountability to professional regulatory bodies
- 2.4. Recognize and respond appropriately to others' unprofessional behaviours in practice
- 2.5. Participate in peer review

**3. Demonstrate a commitment to physician health and sustainable Adult Hepatology practice**

- 3.1. Balance personal and professional priorities to ensure personal health and a

sustainable practice

- 3.2. Strive to heighten personal and professional awareness and insight
- 3.3. Recognize other professionals in need and respond appropriately

## REQUIRED TRAINING EXPERIENCES

All programs will incorporate the following mandatory curriculum elements:

1. Assess and manage patients with the following conditions:
  - chronic viral hepatitis, specifically hepatitis B and C;
  - chronic metabolic liver diseases, including but not limited to Wilson disease, hemochromatosis, alpha 1 antitrypsin deficiency, non-alcoholic fatty liver disease, and alcoholic liver disease;
  - chronic autoimmune liver diseases, specifically autoimmune hepatitis, primary biliary cirrhosis, and primary sclerosing cholangitis; and
  - end-stage cirrhosis and complications of portal hypertension.

This assessment will include the natural history of the illness and use of appropriate diagnostic tests. Management will include initiation and maintenance of therapies, including the monitoring of therapies for safety and efficacy. Assessment and management will occur in both inpatient and outpatient settings, including longitudinal care in the ambulatory clinic setting.

2. Act as a consultant to assess and screen for hepatocellular carcinoma, including the appropriate use of diagnostic imaging and specific laboratory tumour markers. The training must require the clinician to distinguish between hepatocellular carcinoma and other benign or malignant liver masses. The clinical experience must include collaboration with multidisciplinary professionals in this area (specifically hepatobiliary surgeons, interventional radiologists, and medical oncologists) and participation in therapeutic decisions and the initiation of therapy when appropriate.
3. Interpret results of liver biopsies.
4. Perform the pre-transplant assessment of liver transplant candidates and manage post-transplant liver transplant recipients. This experience may be extensive or limited, depending on the trainee's professional and academic interests.
5. Diagnose and manage acute liver failure from all causes, including acute viral, acute hepatotoxic, and acute vascular etiologies.
6. Complete at least one scholarly project in Adult Hepatology.

## RECOMMENDED TRAINING EXPERIENCES

1. Perform diagnostic and therapeutic endoscopy of esophageal and gastric varices, and perform diagnostic and therapeutic paracentesis.
2. Observe and perform liver biopsies. In centres where the routine standard of care is to have liver biopsies performed by interventional radiology, training in liver biopsies may not be possible and may not be necessary to the practice of Adult Hepatology.
3. Interpret liver biopsies.
4. Interpret Health Canada approved non-invasive modalities of determining liver fibrosis, including transient elastography.
5. Experience and active participation in research, either basic science or clinical, is strongly recommended. This includes the planning and conduct of a research project and its end points, specifically the dissemination of the outcomes of the research project via scientific conference presentation and publication in peer-reviewed medical science journals.

*This document is to be reviewed by the AFC Subcommittee in Adult Hepatology by March 2017.*

*Drafted – AFC Working Group in Adult Hepatology – June 2014*

*Approved – Specialty Standards Review Committee – October 2014*