

# **ADVANCED HEPATOLOGY AND LIVER TRANSPLANT**

## **I. ASSOCIATION MEMBERSHIPS**

- CASL
- AASLD
- ATS
- EASL

## **II. GOALS OF THE WESTERN UNIVERSITY ADVANCED HEPATOLOGY AND LIVER TRANSPLANT SUBSPECIALTY TRAINING PROGRAM 2014 - 2015**

### **A. PREAMBLE**

The training program in Advanced Hepatology and Liver Transplant at Western University is 1 – 2 years in duration. The program provides the trainee with opportunities to develop all of the skills requisite to the practice of Hepatology. Opportunities are available for advanced training in clinical or basic science research.

### **B. SPECIFIC OBJECTIVES**

In keeping with their backgrounds in Internal Medicine and Gastroenterology, residents will emphasize the acquisition of knowledge, clinical and technical skills, and attitudes to the practice of Advanced Hepatology and Liver Transplant. On successful completion of the training program candidates will demonstrate competence with respect to:

#### **1. Knowledge**

- a) The anatomy, embryology, physiology and pathology of the Hepatobiliary system
- b) Principles of biochemistry and genetics as they apply to the Hepatobiliary system
- c) Pharmacology including the principles of metabolism, action and toxicity of drugs that are commonly used in Hepatology
- d) The principles of endocrinology, metabolism and nutrition, oncology, microbiology, and psychiatry as they apply to the Hepatobiliary system
- e) A sound grounding in the principles of Hepatobiliary surgery including the indications for and the complications of operations on the Hepatobiliary system
- f) A thorough knowledge of diseases affecting the liver, Bile ducts, and Hepatobiliary vasculature including the epidemiology, pathophysiology, methods of diagnosis, management and prognosis of such diseases
- g) Knowledge of the indications, interpretations, limitations, and complications of diagnostic procedures performed on the Hepatobiliary system
- h) Knowledge of new advances in the management of Hepatobiliary disorders (e.g. organ transplantation, therapeutic procedures)

## **2. Clinical and Technical Skills**

- a) Ability to perform a complete history and physical with particular emphasis on areas specific to the Hepatobiliary system and its disorders
- b) The appropriate use of the clinical database to formulate problems and to correctly develop investigation and management plans
- c) The evaluations and management of Hepatobiliary emergencies including acute liver failure, acute liver rejection, and acute hepatobiliary vascular complications
- d) Communicate and interact with patients, families and allied health-care personnel
- e) The selection and interpretation of x-rays and other imaging techniques of the Hepatobiliary system
- f) The selection, performance, and interpretation of tests commonly employed in Hepatobiliary function laboratories
- g) Selection, performance and interpretation of:
  - i) Tissue biopsies of the Hepatobiliary system
  - ii) Endoscopic procedures for Gastric varices, Liver Biopsy and TIPS
- h) Appraisal and evaluation of scientific publications in the field of Hepatobiliary

## **3. Attitudes**

Candidates should demonstrate:

- a) Empathy and compassion for patients and their families
- b) Concern for the need of the patient and their families to understand the nature of their illness and the goals and possible complications of investigations and treatment
- c) Concern for the psychosocial aspects of the patient's illness
- d) Respect for the ability to work harmoniously with allied health-care personnel
- e) Recognition of the importance of self-assessment and of continuing medical education in Hepatobiliary and a willingness to teach others including students, trainees from other disciplines and allied health-care personnel
- f) An understanding and application of the role and significance of research in the advancement of knowledge
- g) An understanding of ethical and medico-legal requirements and responsibilities

### **C. SPECIALTY TRAINING REQUIREMENTS**

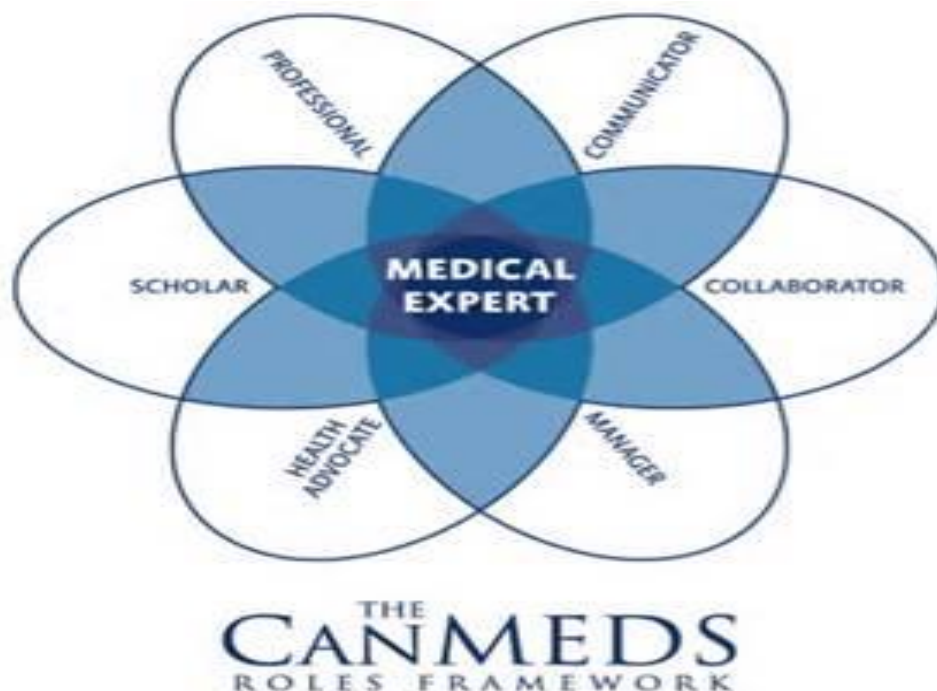
1. Three years of Internal Medicine training with Royal College Certification in Internal Medicine or any other equivalent certification
2. Two years of Gastroenterology with Royal College Certification in Gastroenterology or any other equivalent certification
3. Advanced Hepatology and Liver Transplant Training:
  - a) Twelve months of combined inpatient and outpatient rotations
  - b) Six to Twelve months (optional) combined clinical and research

### **D. CANMEDS ROLES**

The goal of the residency program in Advanced Hepatology and Liver Transplant is to train physicians to fulfill the roles of a specialist in Hepatology as delineated by the Royal College of Physicians and Surgeons of Canada in the CanMEDS document.

Training will be based on encounter with patients presenting with a variety of medical illnesses to various clinical teaching units under the supervision of faculty and more senior trainees. Faculty and senior trainees will provide teaching by role modeling, bedside teaching and provision of constructive feedback. Patient encounters will be supplemented by didactic teaching rounds and clinical conferences.

Over the training period, it is expected that residents will demonstrate ongoing development in each of the CanMEDS roles such that the depth, sophistication, efficiency and proficiency of their performance increases with increasing seniority. Residents completing the program will have achieved the following objectives within each domain of the CanMEDS roles.



## **Medical Expert**

The resident will demonstrate proficiency in:

- i) Assessment of patients presenting with undifferentiated medical complaints/problems including eliciting a relevant history, performance of the appropriate physical examination and evidence-based use of diagnostic testing.
- ii) Evidence-based management of common medical illnesses as well as less common but remediable conditions. (For specific illnesses, refer to rotation-specific goals and objectives)
- iii) Effective, integrated management of multiple medical problems in patients with complex illnesses
- iv) Performance of common procedures

## **Communicator**

The resident will demonstrate proficiency in:

- i) Obtaining a thorough and relevant Hepatobiliary history
- ii) Bedside presentation of patient problems
- iii) Discussion of diagnoses, investigations and management options with patients and their families
- iv) Obtaining informed consent for medical procedures and treatments
- v) Communication with members of the health care team
- vi) Communication with referring and family physicians

## **Collaborator**

The resident will:

- i) Demonstrate proficiency in working effectively within the health care team
- ii) Demonstrate appropriate use of consultative services
- iii) Recognize and respect the roles of other physicians, nursing staff, physiotherapists, occupational therapists, nutritionists, pharmacists, social workers, secretarial and support staff, and community care agencies in provision of optimal patient care

## **Manager**

The resident will:

- i) Oversee provision of care and implementation of decisions regarding patient care, including effective delegation of care roles

- ii) Understand the principles and practical application of health care economics and ethics of resource allocation
- iii) Utilize health care resources in a scientifically, ethically and economically defensible manner
- iv) Demonstrate effective time management to achieve balance between career and personal responsibilities

### **Health Advocate**

The resident will:

- i) Understand important determinants of health including psychosocial, economic and biologic
- ii) Demonstrate the ability to adapt patient assessment and management based on health determinants
- iii) Recognize situations where advocacy for patients, the profession or society are appropriate and be aware of strategies for effective advocacy at local, regional and national levels

### **Scholar**

The resident will:

- i) Develop and document an effective, long-term personal learning strategy
- ii) Demonstrate the ability to generate clinical questions related to patient care and utilize and analyze available resources to develop and implement evidence-based solutions to such questions
- iii) Demonstrate adequate knowledge of the basic sciences relevant to patient care including pathology, physiology and pathophysiology, biochemistry, and pharmacology
- iv) Demonstrate effective teaching skills adapted to learners' needs
- v) Demonstrate the ability to identify areas in basic and/or clinical science requiring research and be aware of principles involved in designing and conducting experiments to advance knowledge in these areas

### **Professional**

The resident will:

- i) Demonstrate integrity, honesty and compassion in delivery of the highest quality of care
- ii) Demonstrate appropriate personal and interpersonal professional behaviours
- iii) Demonstrate awareness of the role and responsibilities of the profession within society
- iv) Develop and demonstrate use of a framework for recognizing the dealing with ethical issues in clinical and/or research practice including truth-telling, consent, conflict of interest, resource allocation and end-of-life care

## **E. ENABLING OBJECTIVES**

To achieve the objectives of the Advanced Hepatology and Liver Transplant program the following education experiences will be available:

### **1. Program Organization**

- a) 22 weeks inpatient rotation
- b) 22 weeks outpatient rotation
- c) 4 weeks research
- d) 4 weeks vacation

### **2. Organized Teaching**

- a) Weekly Pathology Rounds
- b) Weekly Hepatobiliary Grand Rounds
- c) Monthly Journal Club or Guideline reviews
- d) Weekly Transplant Board Meeting
- e) Biweekly Hepatocellular Tumour Board Meeting
- f) London – Hamilton joined Journal club every three months
- g) Weekly GI citywide Grand Round

### **3. Template for Outpatient Rotation**

See outpatient rotation objectives

### **4. Template for Inpatient Rotation**

See inpatient rotation objectives

### **5. Research Rotation**

See research rotation objectives

### **6. Oncall Responsibility**

Usually the call schedule made by the surgical and the medical transplant fellow, and it is distributed equally between the medical and surgical fellows. The coverage usually one week block, and the admission criteria for Hepatology service includes any patients on the transplant list, post liver transplant or accepted by hepatologist for liver transplant assessment. During the oncall also the hepatology fellow will cover for inpatient consult and elective admission such as admission for TACE, RFA, and TIPS.

## **F. PERSONAL DEVELOPMENT**

The Division of Hepatology recognizes the need for their residents to grow and develop within the program. We recognize that there are times of stress (both work and personal) during postgraduate training.

If at any time you have concerns about your workload, life stress or career development, any and all members of the Division are more than willing to listen, counsel and assist you. Please see the Program Director with any ongoing problems.

## **G. COUNSELING FOR STRESS OR PERSONAL PROBLEMS**

Trainees that do not wish to pursue help through the divisions can seek help through one or more of the following:

1. Dr. Francis Chan, Associate Dean of Admission and Student Affairs. He is available for personal counseling and discussion of problems of any nature (e.g. work pressures, study schedules, relationship difficulties, family troubles, stress, drug or alcohol abuse, grief, depression and financial problems, etc.). Dr. Chan can also help with referral to another professional if one is required. Dr. Chan will assist in the arrangements. Dr. Chan can be reached at 519-661-3744 (Western University) or email at [francis.chan@schulich.uwo.ca](mailto:francis.chan@schulich.uwo.ca)
2. Dr. Barbara Lent, Associate Dean, Gender/Equity and Faculty Health at Schulich School of Medicine. Dr. Lent is available for personal counseling of issues related to equity, gender and health. Dr. Lent can be reached at 519-661-3744 (Western University) or email at [blent@uwo.ca](mailto:blent@uwo.ca)
3. The PAIRO help line is staffed 24 hours a day and it is available to any resident for assistance with any issue(s). It is separately administered by the Distress Centre of Toronto and is totally confidential. The number is 1-866-HELP-DOC (1-866-435-7362).

### **Counseling & Enquiry Process Flow Chart**

- Postgraduate Medical Education Office can also be contacted to assist fellows and can be reached at 519-661-2019
- The hospital Employee Assistance Program (EAP). The contact number is 1-800-268-5211.
- The Western University Ombudsperson is Adrienne Clarke. The contact number is 519-661-3573, email at [ombuds@uwo.ca](mailto:ombuds@uwo.ca), University Community Centre, Room 251, Western University Campus.

### III. PROFESSIONAL RESPONSIBILITIES

See attached CPSO Professional Responsibilities in Postgraduate Medical Education

### IV. ADDITIONAL RESPONSIBILITIES

1. **Longitudinal Clinic:** one half day per week, Monday afternoon. The patients usually seen by the fellow and then discuss the cases with any of the consultants next day. The cases usually have different variety including viral hepatitis, HCC, PSC, PBC, and Autoimmune hepatitis.
2. **Endoscopic Procedures:** See details below
3. **Evaluations:** every three months evaluation with the program director unless there is a major concern then urgent meeting will be organized the program committee. The fellow will meet with program director every three months for feedback about the program, and consultants evaluations, and major concerns.
4. **Exams:** there is MCQs exam will be held every four months (three times per year). The exam will have variety of questions related to basic science, physiology, pathology, and management of Hepatobiliary disease.
5. **Presentation at Rounds:** every fellow is expected to present at hepatology grand round at least 1 per month, minimum 6 presentation per year. Topic choice up to the resident to choose. Preferable transplant related hot topics, new treatment modality for any sort of liver disease, or new medication that will change our practice in managing chronic liver disease.

### V. INPATIENT ROTATION OBJECTIVES

#### A. NON TRANSPLANT EXPERIENCE

1. Demonstrate the ability to treat complications related to advanced liver disease including refractory ascites, hepatorenal syndrome, hepatopulmonary syndrome, SBP, hepatic encephalopathy and hepatocellular carcinoma
2. Efficiently investigate and treat patients with acute liver failure and fulminant hepatic failure
3. Start staging and management of liver-related malignancy (HCC, cholangiocarcinoma)
4. Evaluate and efficiently work up patients with acute vascular liver disease including Budd-Chiari syndrome, veno-occlusive syndrome and portal vein thrombosis

#### B. TRANSPLANT EXPERIENCE

1. Evaluate and manage patients referred for liver transplant assessment
2. Plan management for patients post liver transplant
3. Illustrate clinical skills in managing complications after liver transplants
4. Predict inpatients requiring liver biopsy, ERCP or endoscopy
5. Outline the principles of immunosuppressive medications post liver transplant
6. Treat patients post liver transplant with acute cellular rejection



## **VI. OUTPATIENT ROTATION OBJECTIVES**

### **A. NON-TRANSPLANT CLINICS**

1. Demonstrate skills in treating acute and chronic viral hepatitis
2. Evaluate and treat patients with genetic liver disease such as hemochromatosis, Wilson's disease and alpha-one antitrypsin
3. Distinguish different patterns of hepatitis including hepatocellular and cholestatic
4. Perform complete work up and design management plan for patients with abnormal liver enzymes
5. Illustrate the ability to use fibroscan and interpret the result
6. Evaluate and treat patients with decompensated liver disease
7. List indications and contraindications for TIPS and identify patients who would benefit from TIPS
8. Evaluate and treat patients with immune mediated liver disease including PSC, AIH and PBC
9. Develop diagnostic and therapeutic approaches for patients with liver lesion

### **B. TRANSPLANT CLINICS**

1. Manage post transplant patient immunosuppressive therapy
2. Name and manage side-effects related to immunosuppressive medication
3. Evaluate and treat long term complications post liver transplant
4. Assess patient referred for liver transplant assessment
5. List indications, contraindications, risks and benefits of liver transplantation

### **C. PROCEDURES**

1. Perform liver biopsy
2. List indications, contraindications, risks and benefits of liver biopsy
3. Illustrate the ability to perform paracentesis
4. Perform therapeutic endoscopic procedures including esophageal varices band ligation, gastric varices glueing
5. Demonstrate the principles of using the Minnesota tube and associated risks and benefits

### **D. CONFERENCES**

MOTP provides educational funding for fellows who have been selected to make a research presentation (oral or poster). Funding for travel without a presentation will be decided on a case by case basis.

## **VII. RESEARCH ROTATION OBJECTIVES**

The Western University Hepatobiliary Program is known for strong clinical training in advanced hepatology and liver transplant. It is anticipated that most of our trainees are headed for a career in clinical practice and thus the objectives of the four weeks of research are not necessarily to train them for a research career. If we did find a resident that is dedicated to an academic research career we would try to customize their training program to use some of their elective time to continue their research project. We would also advise the trainee about applying for a second year of research with external funding (CAG/CASL/CIHR).

### **1. Medical Expert**

- 1.1 Review the background knowledge on a clinical or basic science topic related to Hepatobiliary system
- 1.2 Develop a plan for a focused project which could expand on the pre-existing knowledge base
- 1.3 Interact with the research supervisor to learn new skills in research planning, scientific investigation, statistics, scientific writing

### **2. Communicator**

- 2.1 Present the research project at Hepatology Rounds, Resident Research Day and ideally nationally (CDDW, CASL) or international conferences (DDW, AASLD, and ATS)
- 2.2 Develop the skills to create an abstract, manuscript, poster, or oral presentation

### **3. Collaborator**

- 3.1 The ideal project may involve a research supervisor outside the Division of Hepatology and there may be collaborations with other departments (Clinical pharmacology, Radiology, Transplant Surgery)
- 3.2 Role defining of multiple authors of a manuscript and congenial arrangements for authorship order are an important skill

### **4. Manager**

- 4.1 Development of the skills to get approval of the Ethics Committee for a research project
- 4.2 Time management to allow for the timely production of results

## **5. Health Advocate**

- 5.1 The goal of many research projects is to publish the findings to improve other physicians approach to a medical problem and ultimately improve the health of the population

## **6. Scholar**

- 6.1 Apply the methods of reviewing existing medical literature
- 6.2 Develop skills at writing manuscript and presenting scientific findings

## **7. Professional**

- 7.1 To use a successful research project to enhance your curriculum vitae for future appointments and job interviews