1. Training Objectives

The 12 month fellowship program in hepatology and liver transplantation is designed to offer specialized training in all aspects of transplant and non-transplant hepatology with a view to preparing candidates for a career in Academic Hepatology.

The focus is clinical, but all candidates are expected to complete at least one research project during the course of their fellowship year. Furthermore, candidates will be expected to take on an increasing role in the education of peers with regards to the field of hepatology and liver transplantation, in preparation for a career in Academic medicine.

The following clinical components are included (all durations approximate and subject to change)

a) Hepatology / Liver Transplant Consultation Service (3 periods)
b) Hepatology Outpatient clinics (3 periods)
c) Liver Transplant In-patient Service (1 period)
d) Viral Hepatitis (1 period)
e) Liver Pathology (1 period)
f) Liver Radiology (1 period)
g) Endoscopy/ Elective (1 period)
h) Research (2 periods)

During the course of the 12 month fellowship, candidates will attend at least one international liver meeting (generally AASLD).

2. Training Objectives

The advanced fellowship in Hepatology and Liver Transplantation is intended to provide training over and above that received in a core Gastroenterology fellowship, with the specific goal of preparing the candidate for the care of liver disease and liver transplant patients in a Tertiary (or above) care setting. The expectation is that the candidate will meet the requirements of the United Network for Organ Sharing, and those of the American Board of Internal
1. MEDICAL EXPERT/CLINICAL DECISION MAKER
The Hepatology trainee should demonstrate:

1.1 Diagnostic and therapeutic skills for effective care of patients with hepatobiliary disorders

1.2 Knowledge of:
- Physiology of the liver and biliary system.
- Detailed pathophysiology of the liver and biliary systems.
- Liver pathology, including histological interpretation and specific pathological techniques.
- Epidemiology and natural history of common and uncommon liver diseases and complications.

1.3 The following clinical skills:
- Participation in the peri-operative and post-operative care of at least 30 transplant recipients. The trainee should be involved in all aspects of the recipients’ care from the time of liver transplantation and should continue to follow them longitudinally during his/her training.
- Performance of diagnostic and therapeutic procedures, in particular, a minimum of 30 percutaneous liver biopsies and 20 abdominal paracenteses. The candidates should observe a minimum of three liver transplantations and three organ procurements.
- Diagnosis and management skills for effective care of patients with the following conditions of the liver and biliary tract:
  i) Acute hepatitis: Viral, drug, toxic.
  ii) Fulminant hepatic failure.
  iii) Chronic hepatitis and cirrhosis.
  iv) Complications of liver disease: ascites, hepatic encephalopathy, spontaneous bacterial peritonitis, hepatorenal syndrome.
  v) Prevention and treatment of bleeding varices and gastropathy.
  vi) Diagnosis and treatment of hepatocellular carcinoma.
  vii) Diagnosis and management of tumours of the biliary system including cholangiocarcinoma.
  viii) Chronic liver diseases such as; alcohol, Wilson’s disease, primary biliary cirrhosis, autoimmune hepatitis, hemochromatosis, \( \alpha \)-1-antitrypsin deficiency.
  ix) Gallstone disease, including the appropriate use of medical and surgical therapies.
x) Hepatobiliary disorders associated with pregnancy.

xi) Preoperative evaluation and postoperative management of patients with known disease of the liver or with evidence of hepatobiliary dysfunction.

xii) Pediatric and congenital hepatobiliary disorders.

xiii) Pre-, peri-, and post-operative care of the liver transplant recipient, including management of ensuing complications.

xiv) Assessment and selection of individuals for liver transplantation.

 xv) Appropriate selection of individuals for partial liver resection.

- Use and side effects of antiviral and immunosuppressive agents in the treatment of liver disease.

- Management of the nutritional problems associated with chronic liver disease.

- The ability to select the following diagnostic and therapeutic techniques based on indications, contraindications, limitations, interpretations and complications.
  
  i) Percutaneous liver biopsies and cytological aspiration of the liver.
  
  ii) Vascular radiologic procedures including hepatic angiography, and hepatic hemodynamic measurements.
  
  iii) Nuclear medicine procedures including biliary scanning.
  
  iv) Imaging procedures of the liver and biliary tract including ultrasound, MRI/MRA/MRCP and CT and PET scan.
  
  v) Diagnostic and therapeutic upper gastrointestinal endoscopic procedures, including sclerotherapy and variceal banding.
  
  vi) ERCP, including papillotomy, biliary stent placement, and other interventional biliary modalities (e.g. specialized biliary dilation procedures).
  
  vii) Transvenous liver biopsy.
  
  viii) Laparoscopy and laproscopic cholecystectomy.

2. COMMUNICATOR

The Hepatology trainee should be able to:

- Recognize the need for patients and their families to understand the nature of their disease, goals and possible hepatobiliary investigations and treatment.

- Educate the patient in the relevant area of disease prevention, transmission, detection, progression, and therapy to promote liver health.

- Communicate and cooperate with allied health care personnel involved in the care of individual patients afflicted with hepatobiliary diseases.
3. COLLABORATOR
The Hepatology trainee should be able to:
- Identify the role and expertise of all members of interdisciplinary teams involved in the management of hepatobiliary disease and liver transplantation.
- Actively contribute to the plan of management proposed by the interdisciplinary team.

4.- MANAGER
The Hepatology trainee should be able to:
- Work effectively and efficiently in the daily care of hospitalized and ambulatory patients with liver disease.
- Utilize time and resources effectively to provide optimum care to patients.

5. HEALTH ADVOCATE
The Hepatology trainee should be able to:
- Identify important determinants of health in liver diseases that affect patients. These include socio-economic status, education, social support systems, lifestyle, psychosocial and biologic factors.
- Understand and identify the current public policies of liver disease that effect health.
- Identify in hepatology practice the population at risk and provide the available knowledge about prevention. This involves knowing practice guidelines put forth by various provincial, national and international societies.
- Understand and identify subjects for prevention of hepatitis, screening for liver cancer, and genetic testing for hemochromatosis.

6. SCHOLAR
The Hepatology trainee should be able to:
- Recognize the importance of self-assessment in medical education in hepatology.
- Appraise and evaluate the medical literature in the field of hepatology as it applies to clinical practice.
- Recognize his/her gaps in clinical knowledge around a particular clinical question and be able to fill this gap.
- Participate in the education of peers with regards to liver disease and developments in liver transplantation.
7. PROFESSIONAL
The Hepatology trainee should be able to:
- Offer the highest quality of care with integrity, honesty and compassion.
- Practice medicine ethically consistent with obligations of a physician.
- Exhibit appropriate personal and interpersonal professional behaviours.

Weekly Schedules (as of June 2006)

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
<th>Activity</th>
<th>Location</th>
</tr>
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<tbody>
<tr>
<td>Tues</td>
<td>12:00 – 13:00</td>
<td>Medical Grand Rounds</td>
<td>M3</td>
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<tr>
<td>Wed</td>
<td>12:00 - 13:00</td>
<td>Transplant Grand Rounds</td>
<td>R2</td>
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<tr>
<td></td>
<td>16:00 - 17:00</td>
<td>GI Trainee Rounds</td>
<td>M3</td>
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<tr>
<td></td>
<td>17:00 - 18:00</td>
<td>*GI/Hepatology Grand Rounds</td>
<td>M3</td>
</tr>
<tr>
<td>Thurs</td>
<td>8:45 - 10:00</td>
<td>*Liver Pathology Rounds</td>
<td>LD</td>
</tr>
<tr>
<td>Friday</td>
<td>12:00-13:00</td>
<td>*Hepatology Rounds</td>
<td>R2</td>
</tr>
<tr>
<td></td>
<td>12:00-13:00</td>
<td>Hepatopancreaticobiliary Tumour Board</td>
<td>S10</td>
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</tbody>
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*The Hepatology Trainee is expected to attend all liver related Rounds.

b) Clinical (confirm with individual staff members)

Dr M. Deschenes
- Monday pm: Hepatitis E2
- Tues am+pm: Liver Transplant R2

Dr P. Ghali
- Tuesday am/pm: Liver Transplant R2
- Wednesday pm: GI/ hepatology
- Thursday am+ pm: General Hepatology R2

Dr. P. Wong
- Mon pm - Transplant
- Tues am - Hep
- Tues pm – viral
- Thurs am/pm - Hep

Dr N. Hilzenrat
- Mon am: Liver Transplant R2
- Thurs am: Hepatology JGH

Dr. P. Cleland
- Tues pm: Hepatology MGH
- Thurs pm: Hepatology
Useful Contacts / Information:

Hospital address:
Ross 2.28
687 av des Pins
Montreal, QC H3A 1A1
Canada

Main Hospital # (RVH and MGH): 514-934-1934
Main Hospital # (JGH): 514-340-8222

Locating
RVH 33333
MGH 43333
JGH 8232

GI Secretaries
RVH 31616
MGH 43906

In-patient Wards (RVH):
R3 35003
ICU 35886/35887 (spectralink phone)
10 Med 35372
6 Med 35135
Path 88-00502# / 398-2440
Radiology 31545
CT 31514

Reading Lists:

Main Reference books: Zakim and Boyer - Hepatology
Schiff – Diseases of the Liver
or Oxford Textbook of Hepatology
Sherlock and Dooley: Diseases of the Liver
and biliary System
Primer on Transplantation

Core Articles
Alcoholic Liver Disease

Autoimmune Hepatitis
- Czaja AJ, Freese DK. Diagnosis and Treatment of Autoimmune Hepatitis. AASLD Practice Guidelines

Cholestatic Liver Disease
- Healthcote EJ. Management of Primary Biliary Cirrhosis. AASLD Practice Guidelines.
- Angulo A., Lindor KD. Primary Sclerosing Cholangitis. Clinical Challenge.

Hepatobiliary Malignancy

Liver Transplantation
- Kamath PS, Wiesner RH. A Model to Predict Survival in Patients With End-Stage Liver Disease.

Metabolic Liver Disease
- Tavill AS. Diagnosis and Management of Hemochromatosis. AASLD Practice Guidelines.
- Schilsky ML. Diagnosis and Treatment of Wilson’s Disease. Pediatric Transplantation.
Nonalcoholic Fatty Liver
- Angulo P. Nonalcoholic Fatty Liver Disease. Medical Progress.

Portal Hypertension
- Runyon B. Management of Adult Patients with Ascites caused by Cirrhosis. AASLD Practice Guidelines.

Viral Hepatitis
- Perrillo R., Schiff E. Adefovir Dipivoxil for the Treatment of Lamivudine-Resistant Hepatitis B Mutants.
- Lok AS., McMahon BJ. Chronic Hepatitis B. AASLD Practice Guidelines.
- Perrillo RP. Acute Flares in Chronic Hepatitis B; The Natural and Unnatural History of an Immunologically Mediated Liver Disease.
- Fried MW., Shiffman ML. Peginterferon Alfa-2a Plus Ribavirin for Chronic Hepatitis C Virus Infection.

Miscellaneous