Rotation Goals and Educational Purpose
The field of hepatology encompasses an understanding of the liver and biliary tree, and the management of their disorders. It also requires an understanding of the extra-hepatic manifestations of these disorders. Important elements include the structure and function of the liver; the study of viral, alcoholic, and autoimmune hepatitis, hepato-biliary malignancies, and cirrhosis. This includes the pre- and post-transplant evaluation and care of patients with liver disease. Patients with liver disease are encountered in the inpatient and outpatient settings.

Residents rotating through the liver consult service should be able to evaluate symptoms of liver disease and/or elevated liver function tests, make a diagnosis of acute or chronic viral hepatitis, and evaluate and manage complications of chronic liver disease. Residents should also get exposure to patients who have undergone a liver transplant. He/she will learn about the management of patients post-transplantation and potential complications that can arise.

This rotation is a 2-week or 4-week elective for residents at the HO2/3 levels. This rotation is intended for any senior-level resident interested in learning more about the field of hepatology, regardless of future career plans. The majority of the rotation will take place in the inpatient setting. However there is the option for participation in the outpatient liver clinics.

Rotation Competency Objectives
In supplement to the University of Michigan Longitudinal Learning Objectives, the following provide an overview of the knowledge, skills, and behaviors promoted in this rotation.

I. Patient Care and Medical Knowledge
   a. By completion of the rotation, residents will
      i. obtain a problem-focused history and physical exam for common inpatient liver diseases
      ii. independently generate a hypothesis based on signs and symptom complex
iii. develop a differential diagnosis and diagnostic plan
iv. be proficient in ordering and interpreting laboratory testing for evaluation of acute and chronic liver disease
v. understand when imaging or endoscopic testing is necessary for further evaluation of liver disease, and the risks associated with endoscopic procedures in patients with chronic liver disease
vi. integrate patient preferences, evidence-based practice, and cost-effectiveness to develop a patient-centered treatment plan
vii. implement a diagnostic and treatment plan efficiently and effectively in an inpatient setting
viii. assess acuity of problem and determine plan for continued inpatient monitoring versus future outpatient management

II. Interpersonal and Communication Skills

a. By completion of the rotation, residents will
   i. conduct interviews with patients and their families in a compassionate and patient-centered manner
   ii. create therapeutic relationships with patients and their families
   iii. communicate respectfully with allied staff and peers
   iv. create thorough and accurate documentation that is timely, and congruent with medical standards
   v. establish rapport with patients from diverse cultural backgrounds
   vi. with supervision, engage patients in shared decision making for management of chronic illness

III. Professionalism

a. Throughout the rotation, all residents will
   i. avoid judgmental behavior in patient interactions
   ii. provide empathic and compassionate patient care, weighing all decisions with patient values
   iii. complete dictations in a timely manner
   iv. follow-up on tests and lab results in a timely manner and discuss with fellow and/or attending physician
   v. respond to pages, phone calls, and emails about patient care in a timely manner
   vi. understand confidentiality with respect to chronic illness

IV. Practice-Based Learning and Improvement

a. During this rotation, residents will
   i. utilize information resources to formulate and support patient care decisions
   ii. utilize practice guidelines and published evidence to evaluate patients
   iii. independently apply knowledge of study designs and statistics to critical appraisal of relevant literature in this clinical setting
   iv. identify personal areas of knowledge and/or examination skills and weaknesses, and seek out clinical opportunities to develop/expand them

V. Systems-Based Practice
a. By completion of this rotation, residents will
   i. collaborate with other professional staff to provide comprehensive medical care
   ii. generate patient care documentation that accurately reflects consultation recommendations
   iii. strive to provide cost-effective care
   iv. learn to provide specialty-level care as a consultant and relay recommendations to primary inpatient teams

**Teaching Methods**

I. Supervised Patient Care

   a. The emphasis of the rotation is on experiential learning through inpatient consultations. Approximately 3 to 5 new consults are seen on a daily basis by the liver consult service. Subsequent day consults are provided on the majority of these patients and provide a valuable educational experience. Residents may also, on occasion, see patients in the outpatient liver clinic. We suggest that residents take this opportunity to attend 1 general hepatology clinic, 1 liver transplant clinic, and/or 1 liver tumor clinic. Residents are under the full supervision of a liver specialist. Each patient case is reviewed in discussion with a fellow and faculty. Joint daily rounds occur with the fellow and faculty. The resident has the opportunity to attend multi-disciplinary transplant rounds.

   b. Patients present from a broad geographic range and socioeconomic background, with a spectrum of local to quarternary care needs.

   c. Residents interact with patients with diagnoses of viral hepatitis, alcoholic hepatitis, autoimmune liver diseases, drug-induced liver disease, acute liver failure, cirrhosis, and/or liver cancer.

   d. Clinical encounters range from acute, subacute, or chronic liver disease.

   e. All endoscopic procedures are referred to the Medical Procedures Unit (MPU).

   f. Residents should consider all supervised patient care interactions as educational opportunities.

   g. Residents continue to attend their weekly internal medicine continuity clinic.

II. Structured Didactics and Small Group Learning

   a. Liver conference weekly (Thurs AM) – Case Conference and Board Review; Journal Club and Pathology are optional

   b. Liver transplant evaluation conference (Thurs PM)

III. Independent study (including reading lists and other educational resources)

   a. Textbooks:

      i. Sherlock’s Diseases of the Liver and Biliary System, 12th edition (2011), Wiley-Blackwell; available online or you may see Dr. Lok or Dr. Fontana to borrow a copy
b. Professional Society guidelines:
   
i. AASLD (American Association for the Study of Liver Disease) – Practice guidelines -
   http://www.aasld.org/practiceguidelines/Pages/default.aspx

c. Online learning
   
i. eMedicine -
   http://emedicine.com

   ii. CDC guidelines on viral hepatitis –
   http://www.cdc.gov/hepatitis/index.htm

   iii. Up-to-date website

d. Key Journals (Hepatology, Gastroenterology)

**Evaluation Methods**

Formative face-to-face feedback to residents by the attending and fellow occurs at the end of the rotation. Feedback is also available at more frequent intervals. Attendings complete online competency-based evaluations of each resident. The evaluation is shared with the resident, is available for on-line review by the resident at his/her convenience, and is sent to the residency office for internal review. The evaluation is part of the resident file and is incorporated into semiannual performance reviews for directed resident feedback. Residents also complete a service evaluation of the rotation faculty at the end of the elective.
**Rotation Schedule**

**First day protocol:**

1. Contact the GI fellow rotating on the Liver 1 service prior to the first day of your rotation to find out where/when to meet on the first day. Contact Dawn Russell at 615-8468 or email her at dawnruss@med.umich.edu to find out which fellow will be rotating on this service at that time.

2. Inpatient consultation assignments and rounds are coordinated by the rotating fellow(s). All consultations take place at the University Hospital.

3. There are no weekend or call duties.

**Clinics:**

1. Your continuity clinic will continue as per regular schedule. Please notify the fellow of your continuity clinic day.

2. Residents are encouraged to discuss available clinics to attend if the consult service is unusually light. **

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**Liver Consult Service**

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<th>Monday</th>
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<td>AM</td>
<td>Consults and/or rounds</td>
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<td>7:30-8:30 Liver Conference</td>
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<td>10:30-11:30 Morning report</td>
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<td><strong>Transplant clinic</strong></td>
<td><strong>Liver tumor clinic</strong></td>
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<td><strong>Transplant clinic</strong></td>
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<td>Conference</td>
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<td>2pm – transplant evaluation mtg</td>
<td>**Liver tumor clinic or Wilsons clinic</td>
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<td>12-1 IM Grand Rounds</td>
<td>2pm – transplant evaluation mtg</td>
<td><strong>Transplant clinic</strong></td>
<td>**Liver tumor clinic or Wilsons clinic</td>
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