

**Rotation Name: Rogers Inpatient Hepatology Service**

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**Goal:**

The purpose of this educational unit is to allow the house officer to participate in the care of inpatients assigned to the inpatient hepatology service, assisting the attending hepatologist in the care of patients with acute or chronic liver disease as well as liver transplant recipients.

The hepatology team is composed of the hepatology attending, a transplant hepatology fellow, a gastroenterology fellow, a medical resident and a medical intern. The medical house officer will be an active member of this team in making medical decisions regarding the care of patients with serious medical issues related to liver disease, both pre-transplantation and after liver transplantation as this medical service is also responsible for the care of liver transplant recipients after three months post transplantation. The house officers will be supervised by the attending hepatologist as well as the transplant hepatology or gastroenterology fellow. The senior house officer will provide supervision to the junior house officer according to typical patterns of graded responsibility.

After completion of this rotation, a house officer should understand the various clinical presentations of patients with decompensated cirrhosis and those with severe acute liver injury. Patients may require urgent consideration of liver transplantation, and the house officer should understand the means by which these patients are evaluated and the common barriers to transplant. Finally, liver transplant recipients whose transplant was performed greater than three months prior are evaluated and cared for in this inpatient setting.

**Objectives:**

By the end of this educational block, learners in this rotation will be able to:

- 1) Patient Care
  - a. Obtain, document, and present an age-appropriate medical history
  - b. Perform a physical exam to establish the diagnosis and severity of disease
  - c. Generate a prioritized differential diagnosis
  - d. Perform basic procedural skills to evaluate a patient with a suspected liver disease (ie. paracentesis, thoracentesis)
  
- 2) Medical Knowledge
  - a. Recognize initial presentation of complications of cirrhosis including but not limited to
    - i. Hepatic encephalopathy
    - ii. Ascites
    - iii. Spontaneous bacterial peritonitis
    - iv. Hepatorenal syndrome
    - v. Gastrointestinal bleeding
  - b. Recognize the initial presentation of acute liver injury including but not limited to
    - i. Alcoholic hepatitis
    - ii. Viral hepatitis
    - iii. Drug-induced liver injury

- c. Define indications for, order, and interpret results of diagnostic and laboratory tests both prior to and after initiating treatment, based on the differential diagnosis (including data obtained from paracentesis)
- d. Initiate initial therapy in and stabilize (resuscitation/appropriate antibiotics/octreotide infusion/PPI) a patient with portal-hypertension-related gastrointestinal bleeding
- e. Recognize clear factors that are contraindications to organ transplantation (such as extra-hepatic malignancy, active use of alcohol and illicit substances, and uncontrolled infection, etc)
- f. Explain the commonly used and significant complications of immunosuppressive therapy in liver transplant recipients

3) Interpersonal and Communication Skills

- a. Communicate the assessment in a caring and compassionate way, recognizing the impact that the diagnosis has on a patient's quality of life, well-being, ability to work, and family
- b. Consistently establish rapport with patients and staff
- c. Work as an effective team member
- d. Communicate with and incorporate the expertise of consultative services and inter-professionals such as attendings, fellows, nurses, nurse coordinators, surgeons, pharmacists, social workers, etc.
- e. Present cases to attending physicians in a logical, focused manner and outline impressions based on clinical data
- f. Write an appropriately thorough clinical record entry in standard form

4) Professionalism

- a. Appreciate the bioethical and psychosocial issues seen commonly in patients with chronic liver disease and liver transplantation
- b. Incorporate patient preferences in clinical decision making
- c. Respond in a caring and compassionate way to patients who do not adhere to treatment
- d. Respond in a professional and timely manner to patient care-related communications with other team members including the hepatology attending and fellows on service

5) Systems based practice

- a. Access and use literature and system resources to care for patients with liver disease
- b. Coordinate transitions to alternative levels of care for patients with chronic liver disease or liver transplant recipients
- c. Coordinate care with other health care professions, including physical therapy, home health, inpatient rehabilitation facilities in the treatment of patients with liver disease or liver transplant recipients

6) Practice-based learning and improvement

- a. Use risk-benefit, cost-benefit, and evidence-based considerations in the selection of diagnostic and therapeutic interventions
- b. Seek feedback from attending physicians and colleagues
- c. Continually identify opportunities for improvement

**Educational Strategies:**

Educational Strategy	Skills (taught and/or assessed)
Bed side rounds	Generating an appropriate differential diagnosis in the presentation of patients with acute or chronic liver disease.

	Establishing rapport with patients and families. Performing appropriate and accurate physical examinations in patients with liver disease. Presentation skills
Didactic lecture	The indications for and interpretation of diagnostic and laboratory tests.
Attending eliciting learning goals at the start of rounds each day	Residents drive self-learning by identifying one learning goal for each day.
Attending/fellow observations with house staff	Conduct patient centered bedside rounds. Observe physical exam and communication skills with patients.
Attending review of documentation when attesting	Complete documentation in a timely and efficient manner. Clinical reasoning and plan clearly communicated in note.

### **Required Reading:**

- Surviving Hepatology Rounds (Concise 4-page document distributed by the chief residents to the house staff before starting the rotation)
- The House staff Handbook/Hepatology Chapter
- AASLD 2021 Practice Guidance for Diagnosis, evaluation, and management of ascites and hepatorenal syndrome (<https://aasldpubs.onlinelibrary.wiley.com/doi/abs/10.1002/hep.31884>)

### **Suggested Reading and/or Resources:**

- AASLD 2017 Practice Guidance for Portal Hypertensive Bleeding in Cirrhosis ([https://www.aasld.org/sites/default/files/2019-06/Garcia-Tsao\\_et\\_al-2017-Hepatology.pdf](https://www.aasld.org/sites/default/files/2019-06/Garcia-Tsao_et_al-2017-Hepatology.pdf))
- AASLD 2019 Practice Guidance for Diagnosis and Treatment of Alcohol-Associated Liver Disease (<https://aasldpubs.onlinelibrary.wiley.com/doi/full/10.1002/hep.30866>)
- AASLD/EASL 2014 guidelines for management of hepatic encephalopathy. ([https://www.aasld.org/sites/default/files/2019-06/141022\\_AASLD\\_Guideline\\_Encephalopathy\\_4UFd\\_2015.pdf](https://www.aasld.org/sites/default/files/2019-06/141022_AASLD_Guideline_Encephalopathy_4UFd_2015.pdf))
- AASLD Guidelines Collection (<https://www.aasld.org/publications/practice-guidelines>)
- AST/AASLD Guidelines for liver transplant evaluation ([https://www.aasld.org/sites/default/files/2019-06/141020\\_Guideline\\_Evaluation\\_Adult\\_LT\\_4UFb\\_2015.pdf](https://www.aasld.org/sites/default/files/2019-06/141020_Guideline_Evaluation_Adult_LT_4UFb_2015.pdf))
- AST/AASLD Guidelines for post-transplant care ([https://www.aasld.org/sites/default/files/2019-06/141022\\_Guideline\\_Adult-LT\\_Management\\_4UFb.pdf](https://www.aasld.org/sites/default/files/2019-06/141022_Guideline_Adult-LT_Management_4UFb.pdf))

**Evaluation:**

Assessment Form:

1. Please identify 3 skills you observed the resident do well.
2. Please identify 3 skills the resident needs to improve or should do differently. How should they do it differently?

For the remaining items, please rate 1-5 (or did not observe):

- 1 = cannot do this skill
- 2 = can do this skill only with direct supervision (some needs to be there to supervise)
- 3 = can do this skill with indirect supervision (an attending or fellow is close by or available by phone)
- 4 = can do this skill unsupervised (they are ready to graduate for this skill)
- 5 = has achieved mastery of this skill (They can teach others how to do this skill well)

**Vanderbilt -Hepatology Inpatient service – EPAs**

Reporting  
Milestones

	PC	MK	PBLI	ICS	PROF	SPB
Assesses patients with acute or chronic liver disease, incorporating pertinent information from the medical record, patient, family and physical exam.	1,2	1		1		
Applies a knowledge of evidence-based recommendations and patient preference considerations in the selection of diagnostic evaluations and therapeutic interventions.	4	2,3	1	1		
Recognizes the initial presentation and complications of both acute liver injury and cirrhosis.	1,2,3	1,3				
Recognizes the ethical and psychosocial issues commonly seen in patients with chronic liver disease and considers these issues regarding liver transplantation.	4	2			2	3
Communicates with and incorporates the expertise of consultative services and other inter-professionals.				1,2,3	3	
Documents clearly, timely and effectively.	6			3	3	
Demonstrates efficient and effective diagnostic decision making when creating a prioritized differential diagnosis.	3	3				
Initiates therapy and stabilizes a patient with gastrointestinal bleeding.	4	2				
Performs a paracentesis, interprets the data, and subsequently initiates and monitors therapy of a patient with spontaneous bacterial peritonitis.	4	2,3				
Explains contraindications to organ transplantation.		1,2,3				
Explains the commonly used and significant complications of immunosuppressive therapy in liver transplant recipients.		1,2				