

Transplant Hepatology Fellowship Program Overview of Rotation Schedule

Rotation Schedule

The Rotation Schedule for the Transplant Hepatology Program is comprised of the following four rotations that overlap in part:

Inpatient Liver Transplant
Ambulatory Care
Research
Observational Clinical

Inpatient Liver Transplant:

- The inpatient Adult Liver Transplant Service is located in the 9-Long Hospital nursing unit and houses an average census of 25 patients, comprised of approximately equal numbers of pre- and post-transplant patients. The service performs between 130 and 160 adult and 12-20 pediatric liver transplants per year.
- Each fellow will spend 6 non-consecutive, month-long blocks on this rotation. The inpatient transplant service is staffed by a Hepatology attending and a Surgery attending who take joint responsibility for the management of both pre- and post-transplant patients.
- In addition to the Transplant Hepatology fellow, personnel include two Internal Medicine and two General Surgery interns, and up to two Transplant Surgery fellows.
- The Transplant Hepatology fellow will attend daily rounds and, as an integral member of the transplantation team, will have direct responsibility for patient care of both pre- and post-transplant patients. Among the activities of this rotation, the fellow will participate in the primary evaluation, presentation and discussion of inpatient liver transplant candidates, and actively participate in the transplant recipients' medical care including the management of acute cellular rejection, recurrent disease, infectious diseases and biliary tract complications.
- The fellow will participate in making decisions about immunosuppression with the surgical fellow under the supervision of the attending staff.
- Since rounds include patients on the Pediatric Liver Transplant Service (located on the 6-Long Nursing Unit), fellows will be provided with bedside instruction pertinent to the principles and practice of pediatric liver transplantation on this rotation as well.
- The fellow will also participate in the supervision and teaching of Internal Medicine and General Surgery first-year residents on the service
- The fellow will also evaluate inpatient consultations under supervision of the Hepatology attending.
- During this rotation, the fellow will perform inpatient and outpatient liver biopsies, as well as diagnostic and interventional endoscopic procedures appropriate to their training goals, under attending supervision.
- The fellow will also review all inpatient and outpatient allograft biopsies on a daily basis with the Hepatology attending, Transplant Pathology fellow and Pathology attending.

- The fellow will attend continuity clinic during this rotation and also attend patient care and didactic conferences.
- During the latter 2 months of this rotation, the fellow will be given increasing supervisory responsibilities by being paired with a junior Gastroenterology fellow also on rotation on the Inpatient Liver Transplant Service. The Transplant Hepatology fellow will act as a junior attending under the proctorship and guidance of the staff attending hepatologist in order to prepare the trainee for the assumption of full responsibility as an attending transplant hepatologist after graduation from the program.

Ambulatory Care:

The Ambulatory Care Rotation is comprised of 4 sub-rotations:

Transplant Continuity Clinic

Pre-Transplant Clinic

Post-Transplant Clinic

Complex Hepatology Clinic

Transplant Continuity Clinic: Each fellow will be assigned a one half day per week continuity clinic at the outset of the training year that will be scheduled to follow the established Liver Transplant Clinic on either a Monday or Tuesday afternoon. Continuity clinic is specifically assigned time in the afternoon on either Monday or Tuesday so as to separate it from the concurrent pre- and post liver transplant clinics on the mornings of those days, and to enable fellows to participate on morning rounds during inpatient rotation months. The fellow will attend this clinic throughout the year including during the inpatient service rotations. The patient population seen by the fellow in this sub-rotation will include patients awaiting transplantation requiring regular follow-up, patients who have received liver transplantation most of whom will have survived more than a year following their transplant surgery, and new patient consultations. Fellows will be assigned patients by the attending staff and will subsequently see these patients in follow-up for the duration of the year of training. Although patients may be assigned to the fellow by more than one attending present in the clinic, one attending will have primary responsibility for the fellow in order to monitor the fellow's attendance, workload and performance.

Specific Rotation Goals: To provide training in longitudinal care of pre- and post transplant patients in the ambulatory setting, with the opportunity to participate in the follow-up of 20 or more liver transplant recipients who have survived more than 1 year after liver transplantation, in order to gain familiarity and expertise with the management of common long-term problems (e.g., cardiovascular disease, nephrotoxicity, screening for malignancies, and diagnosis and treatment of recurrent disease) and immunosuppression with a minimum of 6 months follow-up for each patient.

Pretransplant Clinic: This sub-rotation will comprise one half day per week for a total duration of 6 months. The fellow will attend this clinic concurrently with continuity clinic

and this activity will run concurrently with Observational Clinical and Research rotations. The clinic will be scheduled within the established Liver Transplant Clinics on either a Monday or Tuesday morning. The fellow will be assigned new patients with end-stage liver disease and metabolic liver diseases referred for liver transplant evaluation. Fellows will participate fully in the evaluation of patients and formulation of further assessment and management plans as well as communication with the referring physicians. Fellows will present these patients at the weekly Liver Transplant Selection Conference, and schedule patients for follow-up in their continuity clinic. Patients will be assigned to the fellow primarily by one attending present in the clinic who will have primary responsibility for the fellow in order to monitor the fellow's attendance, workload and performance.

Specific Rotation Goals: To participate in the primary evaluation, presentation, and discussion at selection conference of at least 10 potential transplant candidates in the outpatient setting and to acquire a firm working knowledge of the organizational and logistic aspects of liver transplantation in the ambulatory setting, including the role of nurse coordinators and other support staff (e.g., social work). The goals of this rotation thus serve to implement the principles of systems-based practice in transplant hepatology.

Post-Transplant Clinic: This sub-rotation will comprise one half day per week for a total duration of 6 months. The fellow will attend this clinic concurrently with continuity clinic and this activity will run concurrently with Observational Clinical and Research rotations. The clinic will be scheduled within the established Liver Transplant Clinics on either a Monday or Tuesday morning. The fellow will be assigned patients who have recently undergone liver transplantation, including patients in whose perioperative care the fellow participated while on the inpatient rotation. The attending Hepatology and Surgery staff will assign patients to the fellow. One hepatologist will have primary responsibility for the fellow in order to monitor the fellow's attendance, workload and performance during this rotation.

Specific Rotation Goals: To provide follow-up for at least 20 new liver transplant recipients for a minimum of 3 months from the time of their transplantation, and to actively participate in the transplant recipients' medical care, including management of acute cellular rejection, recurrent disease, infectious diseases, and biliary tract complications. The fellow will serve as a primary member of the transplantation team and participate in making decisions about immunosuppression.

Complex Hepatology Clinic: This sub-rotation will comprise one half day per week for a total duration of 6 months. The clinic will be scheduled in the General Liver Clinic on either Wednesday afternoon or Friday morning. The fellow will attend this clinic concurrently with continuity clinic and this activity will run concurrently with Observational Clinical and Research rotations. The patient population seen by the fellow in this sub-rotation will include patients referred for consultation requesting evaluation of hepatic masses, unexplained liver function test abnormalities, management of autoimmune and chronic cholestatic liver diseases, and chronic viral hepatitis. Patients will be assigned to the fellow by the attending staff. The fellow may follow select patients as directed by the attending staff in their continuity clinic. Although patients may be assigned to the fellow by more than one attending present in the clinic, one

attending will have primary responsibility for the fellow in order to monitor the fellow's attendance, workload and performance.

Specific Rotation Goals: To acquire clinical experience, and demonstrate competence in: a) the prevention of acute and chronic endstage liver disease, b) the management of chronic viral hepatitis in the pretransplantation setting; and c) the diagnosis and management of drug hepatotoxicity and the interaction of drugs with the liver.

Observational Clinical Rotation:

The Observational Rotation is comprised of 6 months, which will run concurrently with other ambulatory and research activities, and will be devoted to accomplishing the following goals:

- Observation of, and participation in, Interventional Radiology procedures, including transjugular liver biopsies, transjugular intrahepatic portosystemic shunts (TIPS), TIPS revisions, hepatic arterial and hepatic venous angioplasty, percutaneous cholangiography and balloon dilation, and trans-arterial chemoembolization and percutaneous radiofrequency ablation of hepatocellular carcinoma.
- Observation of, and participation in, endoscopic allograft biliary interventional procedures.
- Observation of at least 3 cadaveric and one live donor liver transplant.
- Attendance at, and observation of at least one donor retrieval.
- Observation of laparoscopic liver biopsy and radiofrequency ablation of hepatocellular carcinoma.
- Working with the liver transplant nurse coordinator staff in the process of pre-transplant recipient evaluation and monitoring of patients post-transplantation.
- Working with the Live Donor Evaluation nurse coordinator in the process of live donor evaluation.
- Observation of at least 3 Doppler ultrasound examinations of the liver and 3 ultrasound localizations for liver biopsy.
- Additional liver biopsy review with the Transplant Pathology staff.

A total of 8 hours per week will be spent on the above activities during each month assigned to this rotation with the exception of the first month of training during which 16 hours per week are allocated to permit intensive orientation in transplant program activities and procedures as detailed above.

Research Rotation:

- The fellow will have six months of the year allocated to a mentored research project which will run concurrently with the other ambulatory and Observational Clinical rotations (see Table 1).
- Fellows will be assigned a mentor from the key faculty by mutual agreement at the commencement of the fellowship. Based on past experience however, it is anticipated that selection of a mentor and development of a project plan will often commence even prior to the start of the formal training year.

- The mentor will develop a research project with the fellow pertinent to Transplant Hepatology that can be reasonably accomplished within the duration of the fellowship year.
- The research project will be reviewed with the Program Director prior to final commitment of the fellow to the project.
- The faculty mentor will report evaluation of progress achieved by the trainee quarterly to the Program Director.
- During the course of the year, the fellow will prepare and present a seminar on the rationale, specific aims, research methodology and design of the project, as well as on results obtained.
- The goal of this project will be presentation of the results at a national meeting and publication as a peer-reviewed paper.

A total of 16 hours per week will be spent on mentored research activities during each month assigned to this rotation, except for the first month of training in which 8 hours of research time is planned to accommodate the greater time allocation to Observational Clinical Activities (see above).