



Abdominal Transplant Fellowship

Requirements for application:

The objective of our transplant surgery fellowship training program is to develop proficiency in the surgical and medical management of patients with end-stage organ diseases amenable to transplantation. We require that candidates for this training must have satisfactorily completed a surgical residency that satisfies the educational requirements for certification by the American Board of Surgery, the American Board of Urology, or foreign equivalency. Foreign candidates must have completed steps 1-3 of USMLE exams, obtained their ECFMG certificate, and have a J-1 or H1B visa that is valid for 2 years from the starting date of the fellowship.

Organization of the transplant fellowship rotations:

The abdominal transplant fellowship at Penn is a 2 year fellowship that involves clinical rotations at the Hospital of the University of Pennsylvania (HUP) and the Children's Hospital of Philadelphia (CHOP). Currently, there are 2-3 fellows at one time. The clinical fellows rotate every month between the liver, kidney/pancreas, and pediatric CHOP services. While on the pediatric rotation, they also cover donor organ procurements. During these rotations, the fellows cover all transplant procedures, manage patients in the intensive care units and the floor, see consults, and attend the pre-transplant and post-transplant clinics. The fellows gain experience in both recipient and living donor evaluations and patient selection. They acquire extensive knowledge in donor procurements, kidney, liver and pancreas transplantation, pediatric transplantation, and gain experience in living donor laparoscopic nephrectomy techniques, living donor and split liver transplantation, and exposure to clinical islet cell transplantation. There is also a significant amount of non-transplant surgery that involves both the fellow and senior resident, such as vascular access, hepatobiliary procedures, and general surgery on transplant patients. The transplant fellow participates in, and eventually independently performs, procurements of liver, kidney and pancreas grafts. They are fully trained in donor management and the policies of the local organ procurement organization (Gift of Life) and UNOS, and obtain experience and exposure to the Penn HLA lab.

Liver rotation - covers all liver transplants, all hepatobiliary cases, perform all recipient operations when on first call or second call on weekends. The liver fellow will cover all liver pre-transplant evaluation and post-transplant clinics and hepatobiliary patients.

Kidney/Pancreas rotation - covers all kidney and pancreas transplants, all access cases, performs all recipient (kidney and pancreas) operations when on first call on weekends. Covers kidney evaluation and post op clinics and access clinics. There is devoted time to rotation in the HLA lab.

Donor/CHOP rotation - covers all pediatric kidney and liver transplants, access and hepatobiliary cases at CHOP. Performs all procurements during the week and when on second call on weekends. Split liver, pediatric, and DCD procurements will be covered by the second year fellow with an attending. Assists with kidney and liver evaluation and post clinics.

Weekend and Primary Call - the primary fellow covering for the weekend will be responsible to round on both liver and kidney/pancreas patients, as well as the CHOP patients and the pre-tx

patients on the hepatology service. They will assist with all transplants, as feasible, with second call fellow and senior resident available for backup and donors.

Service call and coverage: The fellows rotate on a monthly basis. The call schedule is established in 3 month blocks and distributed to the attending surgeons for approval prior to disbursement. The second year fellows will begin the year on donor rotations to ensure the timely certification of the first year fellow for procurements. Adequate cross-coverage must be arranged between fellows at least one month prior to attending meetings, and before making travel arrangements.

The call schedule follows the recommendations of the ASTS for fellow work hours. There is a monthly schedule with rotating weekend coverage with a primary and secondary call fellow. Each fellow will have at least 1 weekend (Friday evening to Monday morning) free from call every third weekend, and 2 additional 24-hour periods off call in the month. Fellows have 14 days off for vacation during the academic year. These 14 days can be taken consecutively or broken up over the year so long as there is adequate coverage. Each fellow will also have an additional 14 days for recruitment interviews or travel to academic meetings. All fellows are allowed to attend national conferences, particularly if work is accepted for presentation. All second year fellows are expected to attend the ASTS Fellows Symposium in the Fall if they are a "Fellow in Good Standing" and have completed all their operative logs.

Attending and consultant coverage and interaction: The 7 transplant surgery attendings rotate on-service, usually 5-10 days in a row, with one covering kidney/pancreas at HUP, one covering kidney tpx at CHOP, and one covering liver transplant at HUP and CHOP at any given time. Daily attending rounds are each afternoon for both kidney/pancreas and liver patients. The attendings and fellows for both Nephrology and Hepatology are very involved in both the pre and post clinics of our transplant patients, and the inpatient care, but it is the surgeons and transplant fellows who "run" the service, with the nephrologists, diabetologists, and hepatologists serving as consultants. There is frequent communication between the nephrologists and hepatologists and our transplant fellows to formulate a plan for those awaiting transplantation, and the management of the post-transplant patients. Immunosuppression management is done on inpatient rounds with the transplant surgery attendings, and via the transplant database as an outpatient, the day after post-transplant clinic.

Interaction with transplant coordinators, nurse practitioners, physician assistants: There are 4 inpatient transplant CRNPs that cover the service 7 days a week, 4 pre-transplant and 5 post-transplant liver coordinators, 5 pre-transplant and 4 post-transplant kidney coordinators, 3 living donor coordinators (1 liver, 2 kidney), 1 pancreas coordinator, 1 liver cancer coordinator and 4 pediatric coordinators (2 liver, 2 kidney). In addition, there are 2 surgical physician assistants who first assist on donor procurements, assist in the OR and see patients in the clinic. These coordinators/NPs/PAs are involved in a significant amount of the care and planning of our transplant patients and work side-by-side with our transplant fellows in the clinics, on the clinical transplant floor, in the ICU, and on call, to deal with day to day issues, transfers, emergency room visits, immunosuppression management, and follow-up with referring physicians.

Surgical experience:

The transplant fellow's surgical responsibilities grow as they accrue experience. The degree of responsibility depends on the fellow's prior experience and the difficulty of the specific transplant. The goal of the fellowship is to train technically adept surgeons who are independently facile in the operative management of liver and kidney recipients. Fellows have extensive exposure to living donor kidney and liver transplantation.

Procurements are first performed with the assistance of the transplant attending or the senior fellow. Once the fellow has demonstrated significant expertise, and fulfilled the requirements of our local OPO, they perform the procurements independently with the assistance of our experienced Transplant Physician Assistant or the transplant surgical resident.

All procedures must be recorded on the ASTS case log which is reviewed regularly by the Program Director. We utilize the ASTS milestone evaluation forms to assess the fellow's progress in the operating room and on the ward.

Transplant conferences:

The fellowship begins with several days of orientation to the Department of Surgery, HUP, CHOP and the transplant service. Throughout the year, the Penn Transplant Institute has several weekly conferences, including The Penn Transplant Integrated Conference (PITC), kidney and liver patient selection committee meetings, a multidisciplinary hepatobiliary tumor conference, a transplant nephrology conference, GI/liver conference, weekly research conference, and a monthly vascular access conference. In addition, there are monthly patient review conferences at CHOP for both liver and kidney. There are bi-monthly transplant immunology conferences at CHOP, where nationally recognized investigators in transplant immunology present their research. There are also monthly CHOP Transplant Center conferences addressing all issues in pediatric solid organ transplant. There are regular pathology review sessions for both kidney and liver pathology. While there is no formal tissue typing conference, the HLA lab personnel participate in the regular transplant conferences and tissue typing is learned during the kidney transplant rotations.

The PITC includes invited speakers from inside Penn as well as outside invited experts, a monthly transplant morbidity and mortality conference, and quality metric review, and informal fellows educational meetings where administrative issues/concerns are discussed and topics covered using the ASTS Academic Universe as a guide.

Research experience:

The Penn Transplant Institute prides itself on being a program that is known for both excellence in clinical care and world-class research. We have extensive well-funded research programs in basic, translational, and clinical areas and have one of the highest funded transplant divisions in the country. We encourage our fellows to become involved in transplant-focused research while they are here. While there is no "protected" time for bench research during the 2 year clinical fellowship, there is ample opportunity to participate in clinical and translational research. The month of CHOP and donor coverage particularly can offer periods of time to perform clinical database focused research. There is significant infrastructure support for data collection, statistical analysis, IRB issues and manuscript review. Any research that is submitted and accepted for presentation is supported with travel funds to national meetings