



SURGICAL RESIDENT CURRICULUM FOR THE DIVISION OF ABDOMINAL TRANSPLANTATION

Residency Years Included:

PGY1 PGY2 PGY3 PGY4 PGY5 Fellow

I. The Clinical Mission of the Division of Abdominal Transplantation

The clinical mission of the Division of Abdominal Transplantation at the University of North Carolina at Chapel Hill is to provide the highest level of care for patients with end-stage diseases who require organ transplantation or other surgical procedures related to their illness. Our goals therefore follow:

- To apply the most up-to-date procedures in an appropriate context using solid medical and scientific information;
- To care for complex patients in a multidisciplinary fashion using the skills and knowledge of our medical and nursing colleagues;
- To expand the sphere of care to include the nephrologists and hepatologists within our medical network;
- To expand the multidisciplinary care to provide the highest standard of care for the patients, their families and the local physicians with efforts that include education and communication;
- To promote an educational environment where decisions are informed, questions are answered, and patients are treated with respect and dignity.

Surgery residents and medical students, as members of the Division of Abdominal Transplantation, will support the clinical mission and all goals of the Division.

II. Overview of the Division

The UNC transplant service is a comprehensive abdominal transplant service that performs all abdominal transplant procedures. There are four surgeons on the service a Nurse Practitioner and resident support at the PGY –3 and intern level. All potential transplant recipients are evaluated by the surgical service in the clinic environment. This includes two days of clinic/week. On average 5-8 new patients with end stage liver disease and 5-7 new patients with end stage renal disease are seen each week for their initial evaluation prior to listing for transplantation. At the present time the clinical make-up of our renal service is 50% cadaveric kidney transplants and 50% living donors. The donor nephrectomies for transplantation are performed by our service (both laparoscopic and open procedures are utilized). Our liver transplant program includes an adult living donor program (first one performed in 1997) and an adult-to-pediatric living donor program (first one performed in 1996). All of the procedures related to the transplant and donor operations are performed by our service.

ICU management of our patients is done in a comprehensive fashion with the critical care services at UNC. Ventilatory changes are initiated by the CCM service, but the primary transplant team (fellow, resident, attending) render all clinical decision-making. The clinical ward involves a spectrum of patients from the time

of their listing for transplant throughout their post-transplant follow-up. On the hepatology side of our program, we have an integrated, multi-disciplinary approach where the teams round together on a daily basis.

Immunosuppressive decisions are initiated by the surgical service in cooperation with our medical colleagues. The fellow will be a principal decision-maker with respect to patient management decision (including post-op care, immunosuppression, etc.). The attending staff plays a supportive role in educating the fellow with respect to issues that are specific to the various transplant recipients. On the nephrology side of our program, the fellows will be exposed to pre-transplant patients that require nephrectomies for disease as our service typically manages these patients. Peri-operative care is delivered by our service to all kidney transplant recipients and donors. This involves primary management in the ICU or on the ward and includes immunosuppressive management. The nephrology service assists with managing ongoing medical issues, patients in need of dialysis and they also perform the kidney biopsies on these patients. Those patients undergoing pancreas transplantation are solely managed by the surgical service. After the first-year, post-transplant, our kidney and pancreas recipients are jointly managed by the surgical and nephrology service.

Educational opportunities are critical in our program. Every week there are transplant pathology review of cases with hepatology and nephrology pathologists interpreting allograft biopsies. The HLA lab attends our weekly kidney meeting to review histocompatibility issues. In addition, we have a weekly kidney conference to discuss patient related issues and a similar liver conference to discuss patient issues pertinent to the respective patient populations. Other medical specialties, social work, dietary specialists, and psychologists, attend as well. Twice a month we have a multidisciplinary hepato-biliary transplant conference with the hepatologists, radiologists and transplant surgeons to review complex cases and management decisions. Transplant immunology is taught in small group sessions with the transplant surgery attendings.

Medical students are oriented to the service by the Chief Resident. The Chief Resident will assign their on-call duty depending on the number of medical students on service. If there is only one student, they can choose between donor-harvest runs or surgery. If there are two students on service, the Chief Resident will assign one to donor-harvest and one to surgery and then rotate them weekly. Medical students have either a Saturday or a Sunday off each week and have one complete weekend off per month.

The faculty includes David Gerber, Tomasz Kozlowski, Rob Watson and Alex Toledo. Tricia Thompson ANP, Leoni Vachon ANP are non-physician clinicians and Jen Deyo is the transplant pharmacist who are integral to patient care and education provided by the Division.

III. The Educational Mission

A primary mission of the Division is to train general surgeons to provide a high level of surgical care for this unique population, and to prepare selected trainees for additional specialty training in abdominal transplantation at a certified transplant surgical fellowship.

Learning objectives are based upon post-graduate level and the six clinical core competencies. Each objective is graduated; i.e., each builds upon skills and attitudes learned in earlier years. Objectives reflect teamwork; i.e., the skills and responsibilities blend so that they complement contributions from other members of the physician team and recognize the input from nursing and other allied health professionals. Learning objectives for the first year on service (PGY 1) are longer and have more detail because of the many requirements for inculcation into a functioning surgical team. Many are not specific to the Division of Abdominal Transplantation Surgery, however, and are reinforced in all PGY I-level rotations.

IV. Learning Objectives

A. PGY I

I. Core Competency - Patient Care

1. To know up-to-present details of all assigned patients.
2. To gather and interpret essential and accurate information about the patient's health status, including
 - a. Learning to obtain clinical information from patients
 - b. Obtaining relevant information from nurses and hospital departments (e.g., radiology, laboratory, and hospital information systems),
 - c. Obtaining information from referring physicians, hospitals.
3. To learn the principles of pre and postoperative management, including:
 - a. Fluid and electrolyte management,
 - b. Pharmacological management, including pain and sedation, antibiotic dosing and pharmacology,
 - c. Recognition and management of respiratory distress and shock,
 - d. Wound care, and
 - e. Follow-up and outpatient management, including referrals and resources for social work, rehabilitation and physical medicine.
4. To perform basic clinical procedures, including:
 - a. Primary closure of incisions,
 - b. Management of open and infected wounds,
 - c. Venipuncture,
 - d. Intravenous line placement, and
 - e. Placement of urinary catheters.
5. To learn the principles of preoperative and postoperative management including fluid and electrolyte management, pain control, wound care, drain management, aftercare;

II. Core Competency - Medical Knowledge

1. To expand the fund of knowledge from textbooks, journals, and electronic media.
2. To critically evaluate the literature based upon methodology and statistical techniques, a survey of related articles, and resident- initiated discussions with attending staff and other experts.
3. To participate in scheduled conferences.
4. To teach medical students.

III. Core Competency - Practice-based learning and improvement

1. To evaluate patients critically with the goal of developing a working diagnosis and treatment plan.
2. To understand the medical, surgical, and scientific bases of a patient's condition and his or her treatment plan.
3. To obtain consultations and other opinions regarding a patient's status, work-up, or hospital course when necessary.

IV. Core Competency – Interpersonal and Communication Skills

1. To present clinical information on work rounds clearly and concisely.
2. To write orders legibly.

3. To write progress notes legibly with sufficient detail so that patients' condition, status and care plans are clear.
4. To work effectively with attending staff, house staff colleagues in surgery and medical services, medical students, nurses, ancillary personnel, pre-hospital personnel.
5. To keep senior residents and attending staff informed, particularly with "problem" cases, unstable patients, and changes in-patient condition and care plan.
6. To foster teamwork and a work environment based upon communication, respect, trust, and honesty.
7. To foster a social environment based upon tolerance for other opinions, backgrounds, and cultures.

V. Core Competency - Professionalism

1. To demonstrate compassion and integrity through respectful patient care, family interactions, and communication with other health care providers.
2. To understand when expert medical advice is necessary.
3. To obtain expert medical, nursing, or other opinions when limits of knowledge, experience, and training are reached.

VI. Core Competency - Systems-based practice

1. To effectively transfer care when duty hours are completed.
2. To responsibly accept the on-call care responsibilities of patients who are not on the primary service.
3. To apply standardized care plans, and the rationale behind them, including:
 - a. Bowel preparation procedures,
 - b. Preoperative antibiotic regimens,
 - c. DVT prophylaxis,
 - d. Universal precautions,
 - e. Aseptic technique,
 - f. Care of central lines,
 - g. Postoperative feeding regimens
4. To write notes with sufficient detail to satisfy the requirements of governmental agencies, health care payer organizations, including:
 - a. Admission histories, physical examinations, and care plans,
 - b. Daily progress notes, and
 - c. Discharge summaries.

B. PGY III

I. Core Competency - Patient Care

1. To be available to PGY I residents and medical students so that evaluations and treatments are completed in an appropriate and timely manner.
2. To coordinate team efforts with multiple patients and multiple problems of varying urgency
3. To evaluate new patients and consultations, with goal of identifying the major surgical problem, developing a plan for diagnosis/treatment and assigning team resources to address them in an appropriate and timely manner.
4. To identify patients who are unstable, critically ill, and are developing new complications.
5. To be able to initiate treatment in the emergency room and intensive care setting.

6. To assist in the management of critically ill patients in the ICU and step-down units.
7. To perform basic surgical procedures under supervision, including:
 - a. Placement of chest tubes,
 - b. Placement of central venous catheters,
 - c. Laparoscopic procedures.

To assist in performing advanced surgical procedures under supervision, including:

- a. Renal Transplantation,
- b. Liver transplantation,
- c. Resection of solid tumors,
- d. Advanced laparoscopy

II. Core Competency - Medical Knowledge

1. To contribute substantively in scheduled conferences.
2. To teach PGY I residents and medical students.

III. Core Competency - Practice-based learning and improvement

1. To lead work rounds so that diagnostic and treatment issues are identified and care tasks are initiated and completed in an appropriate and timely manner
2. To provide information and resources so that the team understands the medical, surgical, and scientific bases of a patient's condition and his or her treatment plan.

IV. Core Competency - Interpersonal and communication skills

1. To instruct PGY I residents and medical students on presentation skills so that clinical information is clear and concise.
2. To review team orders and progress notes legibility, detail, and accuracy.
3. To provide informed opinions during consultations with other services in a thoughtful, respectful manner.
4. To advise patients in the decision-making process.

V. Core Competency - Professionalism

1. By way of example and direct instructions to PGY I residents and medical students, to demonstrate compassion and integrity through respectful patient care, family interactions, and communication with other health care providers.
2. To present death and complications in Morbidity and Mortality Conferences on assigned patients.

VI. Core Competency - Systems-based practice

1. To assure that priorities of care and service duties are transferred completely and responsibly on changes in duty hours.
2. To supervise the application of patient care plans, and that junior residents understand the rationale behind them.
3. To identify problems and inefficiencies in the provision of patient care, and devise means of assessing and addressing them.

C. PGY V+ (Fellow)

I. Core Competency - Patient Care

1. To be available to residents and medical students so that evaluations, treatments, and consultations are completed in an appropriate and timely manner.

2. To evaluate new patients and consultations, with goal of assigning team resources to address them in an appropriate and timely manner.
3. To coordinate team efforts with multiple patients and multiple problems of varying urgency.
4. To coordinate hospital and physician resources for the transfer and care of critically ill patients from other institutions.
6. To perform advanced surgical procedures under supervision, leading to independence including:
 - a. Renal Transplantation,
 - b. Liver transplantation,
 - c. Advanced laparoscopy
 - d. Living Donor Procedures

II. Core Competency - Medical knowledge

1. To contribute substantively in scheduled conferences.
2. To teach residents and medical students during work rounds and under “ad hoc” situations.

III. Core Competency - Practice-based learning and improvement

1. To lead work rounds so that diagnostic and treatment issues are identified and care tasks are initiated and completed in an appropriate and timely manner.
2. To provide information and resources so that the team understands the medical, surgical, and scientific bases of a patient’s condition and his or her treatment plan.

IV. Core Competency - Interpersonal and communication skills

1. To conduct work rounds so that clinical information is clear and concise.
2. To assure that team orders and progress notes are legible, detailed, and accurate.
3. To provide informed opinions during consultations with other services in a thoughtful, respectful manner.
4. To advise patients in the decision-making process.

V. Core Competency - Professionalism

1. To obtain informed consent from patients.
2. By way of example and direct instruction to residents and medical students, to demonstrate compassion and integrity through respectful patient care, family interactions, and communication with other health care providers.
3. To present death and complications in Morbidity and Mortality Conferences on assigned patients.

VI. Core Competency - Systems-based practice

1. To assure that priorities of care and service duties are transferred completely and responsibly on changes in duty hours.
2. To responsibly accept the on-call care responsibilities of patients who are not on the primary service.
3. To assure the standardized care plans are applied, and that junior residents understand the rationale behind them.
4. To identify problems and inefficiencies in the provision of patient and devise means of assessing and addressing them.

V. Didactic Curriculum

Weekly

Kidney Transplant Conf. 3:30pm on Mondays in the Transplant Conference Room
Liver Transplant Conf. 2.00pm on Wednesdays in the Transplant Conference Room
Surgery Grand Rounds 7:15am Wednesday in the 4th Floor Old Clinic Auditorium
Surgery M & M Conf. 5:00pm on Wednesdays in the OR Classroom
Transplant Educational Conference Series (TECS) 12: 00 every other Wednesday in 4050 Burnett-Womack.
Divisional Rounds and Review (M&M) 10 a.m. Wednesday 4th floor Burnett-Womack
Renal Pathology Conference 1:00pm on Friday, 3rd Floor Childrens Hospital -pathology

Bi-Weekly

1st and 3rd Wednesday of each month
Hepatobiliary XRay Conference 12:30 in the Cancer Hospital.
1st and 3rd Wednesday
Hepatic Pathology Conference 2:00pm on Wednesdays, 3rd Floor Childrens Hospital -pathology

VI. Apprenticeship Curriculum

- A. Preoperative and postoperative clinics.
- B. Operating room instruction.
- C. Tutorial session for residents presenting in conferences.
- D. Ward work rounds.
- E. Day-to-day interactions with attending staff.
- F. Optional research, including chart reviews, database outcome studies, laboratory investigation.

VII. Evaluation

Residents are evaluated by the faculty and allied health professionals. The senior resident participates in the evaluation of the junior residents. End-of-the-rotation faculty meetings assess the strengths and weaknesses of the residents. Evaluation forms are completed and the residents are encouraged to meet with the faculty at the conclusion of the rotation. Feedback is distributed during the rotation such that resident can address deficiencies. The faculty takes into account patient care, operative techniques, attitude and communication with others. The opinions of paramedical personnel, patients, families, and others are considered during the evaluation process. The residents are encouraged to provide feedback to the faculty regarding the strengths and weakness of the surgical experience on the Transplant Surgery service. In addition, a pre-rotation objective examination will be administered to residents coming on the service and a post-examination when they are finishing their rotation. Performance on this examination will be incorporated into the evaluation of the resident.