Transplant Rotation (Mount Sinai Medical Center)
Goals & Objectives

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1. Introduction/Background: Transplant is an integral part of your general surgical training. Since transplant surgery requires highly specialized centers and encompasses a dedicated team approach the Maimonides Medical Center general surgery residency program has partnered with The Mount Sinai School of Medicine Transplant program to provide the requisite training in multi-organ transplantation.

2. Rotation Description

Residents rotate for a two month block through the kidney/pancreas and liver transplant service of the Mount Sinai Medical Center. This rotation is either completed during the 3rd or 4th PGY year. The purpose of this rotation is for the trainee to become familiar with all aspects of transplant surgery. From evaluation of potential transplant candidates and grading of their suitability for transplant to appropriate preop workup, perioperative and post surgical management and postoperative followup and care (described in detail below). In addition to participating in transplant procedures you will also be expected to take advantage of traveling with the transplant team on procurements which can be an especially rewarding educational experience. These organ procurements will give the trainee an unparalleled view of the anatomy.

Patient Care

Goal
Provide patient care that is compassionate, appropriate, and effective for the treatment of transplant candidates, transplant recipients and donors.

Competencies
Surgical residents will:
• Demonstrate manual dexterity appropriate for their level
• Develop and execute patient care plans appropriate for the resident’s level, including management of pain

Objectives
• Conduct patient history and physical examination and determine differential diagnosis, laboratory procedures, and diagnostic studies for transplant candidates, transplant recipients and donors
• Perform surgical procedures indicated in the care of transplant candidates transplant recipients and donors under direct supervision.
• Evaluate patients for suitability and urgency of transplant
• Evaluate potential donors
• Perform preoperative tasks to prepare patients for surgery and routine postoperative care
• Manage patient issues such as fever, pain, respiratory, and wound problems
• Identify early post-operative complications in general and specifically those related to transplant recipients and donors.
• Identify complications related to anti-rejection protocols and the signs symptoms and indications of organ rejection
• Demonstrate competence in designing an antirejection regimen
• Demonstrate competence in hemodynamic monitoring, ventilator management, nutritional support, sepsis, and organ failure
• Recognize the emotional and psychological issues associated with the transplant recipient and donor and their families
• Perform transplant operations under the supervision of the fellow and attending
• Participate in procurements of organs from appropriate donors

Medical Knowledge

Goal
Demonstrate knowledge of established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to the care of transplant candidates, recipients and donors

Competencies
Surgical residents are expected to critically evaluate and demonstrate knowledge of pertinent scientific and clinical information as it pertains to the transplant candidate, recipient and donor

Objectives
• Know how to manage acute post operative problems common to transplant candidates, recipients and donors
• Demonstrate the knowledge required for independent judgment including indications, operative management.
• Demonstrate the knowledge of the appropriate level of care transplant candidates, recipients and donors require based on level of organ dysfunction.
• Recognize the compromised airway and its causes; prioritize the appropriate diagnostics and intervention.
• Demonstrate an understanding of how to responsibly manage all clinical and surgical aspects of the service.
• Demonstrate knowledge of an organized approach to the assessment, resuscitation, stabilization, and provision of definitive care for transplant candidates, recipients and donors.
• Demonstrate competence in the pathophysiology of rejection and the pharmacology of the agents used to combat it.
• Demonstrate the ability to describe and differentiate the different forms of rejection:
  a. Hyperacute
  b. Accelerated
  c. Acute and
  d. Chronic
and demonstrate competence in describing the differing pathophysiologic mechanisms and treatment of each.
• Explain the criteria to establish brain death for the purposes of organ and tissue donation.
• Describe the indications for kidney, kidney-pancreas, and liver transplantation.
• Describe the evaluation process for kidney, kidney-pancreas and liver transplantation.
• Describe the basic operative techniques for kidney, kidney-pancreas, and liver transplantation.
• Describe the actions and side effects of
  o Corticosteroids
  o Mycophenolate mofetil
  o Cyclosporine
  o Tacrolimus
  o Antibody therapy
• Describe the postoperative management of kidney, kidney-pancreas, and liver transplantation.
• Describe complications after kidney, kidney-pancreas, and liver transplantation.
• Describe the criteria used in assessing transplant candidates, recipients and donors.
Interpersonal and Communication Skills

Goal
Demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and other health professionals.

Competencies

Surgical residents are expected to:
- communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds;
- communicate effectively with physicians, other health professionals, and health related agencies;
- work effectively as a member or leader of a health care team or other professional group;
- act in a consultative role to other physicians and health professionals; and,
- maintain comprehensive, timely, and legible medical records, if applicable.
- counsel and educate patients and families, and
- effectively document practice activities.

Objectives
- Demonstrate techniques for communicating effectively with the wider health care team; which includes other services in their role as consultant and their ability to communicate the need for consultations from other services
- Demonstrate understanding of the appropriate way to discuss advanced directives such as DNR and DNI with patients and the family members transplant candidates, recipients and donors
- Demonstrate respect for cultural differences and their impact on communication
- Demonstrate interview techniques that facilitate effective understanding of concerns of patients and their families

Practice Based Learning and Improvement

Goal
Demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life-long learning.
Competencies
Surgical residents are expected to:

- identify strengths, deficiencies, and limits in one’s knowledge and expertise;
- set learning and improvement goals;
- identify and perform appropriate learning activities;
- systematically analyze practice using quality improvement methods, and implement changes with the goal of practice improvement;
- incorporate formative evaluation feedback into daily practice;
- locate, appraise, and assimilate evidence from scientific studies related to their patients’ health problems;
- use information technology to optimize learning; and,
- participate in the education of patients, families, students, residents and other health professionals.
- critique personal practice outcomes; and
- demonstrate the importance of lifelong learning in surgical practice.

Objectives

- Demonstrate willingness to obtain information from scientific literature and electronic databases
- Demonstrate the ability to form treatment opinions based on a critical review of the literature
- Monitor his/her fund of knowledge and its application to clinical practice by reviewing patient records and outcomes and examining decisions made. Initiates improvements for mitigating or eliminating errors
- Demonstrate familiarity with scientific literature in the field and a working knowledge of landmark studies
- Critically evaluate scientific literature and applies data to the clinical setting
- Observe, evaluate, and inculcate best practices in the care of surgical patients

Professionalism

Goal
Demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles.

Competencies
Surgical residents are expected to demonstrate:

- compassion, integrity, and respect for others;
- responsiveness to patient needs that supersedes self-interest;
- respect for patient privacy and autonomy;
- accountability to patients, society and the profession; and,
sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation.

• high standards of ethical behavior
• a commitment to continuity of patient care

Objectives
• Apply the principles of medical ethics adopted by the American Medical Association
• Demonstrate the legal and ethical principles of confidentiality
• Demonstrate sensitivity and awareness of cultural differences including one’s own cultural perspective.
• Respond to patients in a way that transcends self interest
• Demonstrate continuity of care for patients

Systems Based Practice

Goal
Demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.

Competencies
Surgical residents are expected to:
• work effectively in various health care delivery settings and systems relevant to their clinical specialty;
• coordinate patient care within the health care system relevant to their clinical specialty;
• incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population-based care as appropriate;
• advocate for quality patient care and optimal patient care systems;
• work in professional teams to enhance patient safety and improve patient care quality;
• participate in identifying system errors and implementing potential systems solutions.
• practice high quality, cost effective patient care;
• demonstrate knowledge of risk-benefit analysis; and,
• demonstrate an understanding of the role of different specialists and other health care professionals in overall patient management.

Objectives
• Demonstrate cooperation and collaboration with other professionals in a variety of systems including the wider transplant team
• Practice advocacy that is in the best interest of the patient
• Practice cost effective care without compromising quality
• Practice advocacy that is in the best interest of the patient
• Practice cost effective care without compromising quality
• Demonstrate a working knowledge of the diverse systems involved in treating patients including social service, medical, legal, and community-based systems of care
• Know how to use the systems as part of a comprehensive system of care to provide optimum support for patients

**Teaching Methods:**
The following teaching methods are used on the Mount Sinai Medical Center Transplant Service

**Supervised Direct Patient Care**
• Provide care to in-patients and outpatients in the clinic setting (see schedule below) under supervision of an attending with feedback.

**Didactic Sessions**

**RMTI Calendar of Meetings**

<table>
<thead>
<tr>
<th>Day</th>
<th>Event</th>
<th>Location</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>Liver M and M</td>
<td>East Bldg 4-82</td>
<td>4:15pm</td>
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<tr>
<td></td>
<td>Grand Rounds</td>
<td>East Bldg 4-82</td>
<td>5:15pm</td>
</tr>
<tr>
<td>Tuesday</td>
<td>Liver Path Conf</td>
<td>Annenberg 15-255</td>
<td>5pm</td>
</tr>
<tr>
<td>Wednesday</td>
<td>General Surgery M and M</td>
<td>Hatch Auditorium</td>
<td>7 am</td>
</tr>
<tr>
<td></td>
<td>General Surgery Grand Rds</td>
<td>Hatch Auditorium</td>
<td>8 am</td>
</tr>
<tr>
<td>Thursday</td>
<td>Kidney Recipient Review</td>
<td>East Bldg 4-68</td>
<td>3:00pm</td>
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<tr>
<td></td>
<td>Liver Recipient Review</td>
<td>East Bldg 4-82</td>
<td>4pm</td>
</tr>
<tr>
<td>Friday</td>
<td>Liver Journal Club</td>
<td>East Bldg 4-82</td>
<td>7:30 am</td>
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<tr>
<td></td>
<td>Kidney M and M / JC</td>
<td>East Bldg 4-82</td>
<td>8 am</td>
</tr>
<tr>
<td></td>
<td>Kidney Path Conference</td>
<td>Annenberg 15-255</td>
<td>1:30 pm</td>
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**Independent Study**
The main source of material is the SAbiston Textbook of Surgery chapter on transplant (available on-line see below). In addition residents are expected to prepare for all didactic conferences by reading the assigned journal articles or other materials assigned by the RMTI faculty.
Credentialing Activities
Procedures (e.g., inserting central lines) conducted through directly supervised procedures by attendings or residents credentialed in the particular procedure.

Outpatient clinic responsibilities
RMTI Clinic Hours 5 East 98th Street, 12th floor
Kidney Clinic --- Pre and Post --- Monday thru Thursday --- 9-12
Liver Clinic --- Post --- Monday and Thursday --- 9-12

Assessment Methods:
The following resident assessment methods are used on the Mount Sinai Medical Center Transplant service:

Resident Performance
- Faculty complete and submit electronic resident global evaluations, which assess all six competencies
- Residents complete and submit electronic peer to peer evaluations.
- Healthcare professionals complete multi-source resident evaluations.

Program and Faculty Performance
- Residents complete and submit confidential and anonymous faculty evaluations.
- Residents complete and submit confidential and anonymous rotation evaluations.

Level of Supervision:
Residents work with and are supervised by transplant surgeons and fellows who are part of the Mount Sinai Medical Center Transplant service’s core faculty. Under supervision of this qualified faculty, residents begin to develop sound clinical decision-making skills. As they move through the program, residents are provided with increasing levels of progressive responsibility to develop patient management plans and to perform more complex operative procedures.

Lines of responsibilities:
A. Along with the attending and fellow the resident is directly responsible for the care of all patients on the transplant service. This does not mean, however, that he/she is the direct care provider. The resident also supervises junior residents and students on the service.
B. Specifically:
• has full knowledge of surgical problems and progress of all patients on the service.
• sees all consults to the service
• knows the progress of every patient every day and examines patients experiencing issues
• keeps attending aware of the progress and any new problems of all patients
• knows each patient who is to undergo a surgical procedure on his/her service
• writes a legible preoperative assessment and on all patients for which he/she serves as the surgeon of record
• makes daily rounds on every active transplant patient
• insure accurate assessment and plans are made for each patient
• discusses each case with the assigned attending
• insure that all notes are accurate and reflect a proper plan

Educational Resources

1. Online Journal Access through the Degenshein Library
2. WebSurg.com
3. Schwartz's Textbook of Surgery
4. Current Surgical Diagnosis and Treatment
5. Sabiston Textbook of Surgery
6. Shackelford's Surgery of the Alimentary Tract
7. Khatri's operative manual
8. Cameron's Current Surgical Therapy
9. Fazio's Colon/Rectal Surgery
10. Maingot's Abdominal operations
11. Surgery Review illustrated