UPDATE: August 2009

ROTATION: SURGICAL CRITICAL CARE AND TRANSPLANTATION SURGERY

ROTATION DIRECTOR: Gerald Lipshutz, M.D.

SITE: UCLA Medical Center

LEVEL OF TRAINEE: R2

GOALS:

R2: To provide trainees an opportunity to participate in the critical care management of adult patients with end stage liver disease (chronic), acute liver failure, benign and malignant hepatobiliary disease, and organ transplantation (liver, pancreas, and small bowel; kidney in combination with other organs).

DESCRIPTION OF ROTATION:

The UCLA Abdominal Transplant Programs are one of the largest in the world. The services perform roughly 200 liver, 300 kidney, 8-12 small intestine, and 15-20 pancreas transplants per year. In addition, the liver division also has a high volume hepatobiliary-pancreatic surgery component. The Transplantation Surgery Service consists of 1 month in the R1, 1 month in the R2, and 2 months in the R4 year. The R1 will have additional exposure to kidney transplantation on the Urology rotation.

LEVEL OF TRAINEE: R2

R2s on this service will be primarily responsible for managing the ICU patients.

Responsibility:

1. Transplant residents are responsible for overseeing the care of pre- and post-transplant patients and those patients admitted for or after other surgical procedures admitted to the Liver and Pancreas Transplant Service and ICU.
2. The resident on the service will work up all patients admitted to the ICU and will discuss the patient with the ICU fellow.
3. Residents are to oversee medical students.
4. Residents must co-sign all orders/notes by students.
5. Daily notes are to be written on every patient by the House staff.
6. A history and physical examination is required on every patient that is admitted.
7. The operative consent is discussed with the patient by the Attending and/or transplant fellow. The patient’s signature is obtained by the house staff at the time of transplant.
8. Requisition slips for lab tests, x-rays, cholangiograms etc. must be completed by the house staff indicating the reason for the study.
9. Morning rounds are conducted by the transplant fellow. House staff, including residents, is expected to be present for a prompt start at 6:30 am.
10. When time allows, residents should participate in the operating room but their primary responsibility is the management of the ICU patients.
11. The resident is expected to attend the educational conferences of the division including morbidity and mortality conference and grand rounds of the service (dates vary) if available.
12. All patients going to the OR require a preoperative note.
13. Central lines may be started by residents overseen by the transplant fellow.
14. A stat chest radiograph must follow all central line attempts.
15. Other procedures including arterial lines and paracentesis must be overseen by the transplant fellow. A written note must follow these.
16. Residents are expected to not stay beyond 80 hours per week and are expected to follow the work hours regulations established by the RRC.

Major Objectives:

1. Demonstrate the ability to appropriately diagnose and treat patients with interrelated system disorders in the intensive care unit.
2. Demonstrate knowledge of the principles associated with the diagnosis and management of critically ill patients, including knowledge of simple and complex multiple organ system interactions and abnormalities.
3. Demonstrate knowledge of the principles associated with managing patients with acute and chronic liver disease.
4. Improve basic knowledge of pharmacologic immunosuppression used with organ transplantation.
1. Demonstrate knowledge in the management of patients having undergone abdominal organ transplantation and complex hepatobiliary surgery.
2. Demonstrate the ability to perform critical care procedures.
3. Understand ventilatory management, hemodynamic monitoring, use of vasopressors, use of different forms of hemodialysis, and treatment of infectious disease in the peritransplant patient.

Typical Week*:

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*On occasion, there may be two R2 residents. In this circumstance, 1 resident will cover approximately 2 weeks of day shift followed by night shift and visa versa for the second resident.
Competency-based Goals and Objectives:

**Educational Methodology:** The resident will achieve the stated objectives using the following methods:

1. Direct involvement in patient care and management, under the supervision of faculty (transplant, pulmonary-critical care, and anesthesia).
2. Personal performance of procedures.
3. Attendance of lectures and conferences.

Monitoring of the accomplishment of these objectives will be performed using the following methods:

1. Assessment by the faculty-attending surgeons during resident/attending interaction in the course of the delivery of patient care.
2. End of rotation evaluation of resident performance to assess the resident’s demonstrated fund of knowledge with respect to the stated objectives.
3. Performance on the annual ABSITE examination, Clinical Management and Basic Science sections.

**Patient care:**

1. Participate in the pre- and post-operative surgical management of patients after organ transplantation.
2. Participate in the perioperative management of immunosuppressive drug therapy, including monitoring drug levels and treating potential toxicity.
3. Diagnose acute and chronic organ rejection using clinical signs and symptoms as well as serum chemistries and radiologic studies.
4. Recognize and manage postoperative surgical complications, including wound infection, anastomotic stenoses and leaks, and lymphocele formation in immunosuppressed patients.
5. Participate in the evaluation of potential candidates for living-related and cadaveric organ transplantation, including
   a. clinical suitability
   b. strength of social support
   c. expected graft and patient survival
6. Participate in the evaluation of patients suspected of organ rejection to include:
   a. laboratory and radiologic testing
   b. administration of immunosuppressive agents
   c. following patients for potential acute and chronic side effects

**Medical Knowledge:** R2

**Standard Practices in Critical Care**
1. Understand basic concepts of vascular access
2. Understand techniques for placement, maintenance, and removal of indwelling vascular catheters, including related complications
3. Place and maintain the following vascular catheters:
   a) Central venous (femoral, subclavian, internal jugular)
   b) Peripheral and femoral arterial
   c) Pulmonary artery
4. Understand risk factors for venous thromboembolism and principles of prophylaxis.
5. Treat patients requiring thromboembolism prophylaxis.
6. Understand principles of analgesia and sedation in the ICU
7. Manage patients requiring analgesia and sedation.
8. Understand and interpret electrocardiograms
9. Understand and interpret major radiologic tests including chest radiography and abdominal sonography, cholangiography and computed tomography

**Hemodynamic Monitoring**
1. Understand indications for and principles of arterial, central venous and pulmonary artery monitoring.
2. Understand principles for assessment and measurement of tissue oxygenation.
3. Manage patients using arterial, central venous and pulmonary artery catheters, including interpretation of hemodynamic and oximetric data from these devices.

**Organ Failure Syndromes**
1. Define and understand the following syndromes: systemic inflammatory response (SIRS), multiple organ dysfunction MODS, sepsis, severe sepsis.
2. Define, understand, and utilize severity-scoring systems in critical care.
3. Manage patients with multiple organ failure syndromes.
4. Understand and utilize hemodynamic drugs, including inotropes and pressors.

**Hemorrhage and Circulation**
1. Understand and utilize principles of large volume resuscitation.
2. Understand and manage patients with hemorrhagic shock.
3. Understand and manage patients with coagulation disorders, including disseminated intravascular coagulation.
4. Understand and utilize colloid and crystalloid resuscitation.
5. Understand and utilize component therapies in resuscitation, including blood, plasma products, and platelets.
6. Understand and utilize antifibrinolytic agents.

**Pulmonary**
1. Understand indications for use and major types of mechanical ventilation.
2. Understand and utilize principles of weaning from acute and chronic ventilatory support.
3. Demonstrate ability to interpret arterial and venous blood gases.
5. Understand and utilize respiratory pharmacotherapy, including bronchodilators, nebulizers, steroids, and mucolytics.

6. Understand and utilize principles for diagnosis and treatment of pulmonary thromboembolism.

7. Understand and perform diagnostic and therapeutic thoracentesis.

**Cardiac**
1. Understand concepts and manage patients with acute coronary syndromes and myocardial infarction.
2. Understand and manage atrial and ventricular tachy- and bradyarrhythmias, including use of antiarrhythmic drugs.
3. Understand concepts and manage patients with acute and chronic heart failure.
4. Understand principles of mechanical cardiac support.
5. Understand and utilize the major cardioactive drugs.

**Gastrointestinal**
1. Understand causes and management concepts for acute and chronic liver failure.
2. Understand and utilize treatment principles for patients before and following liver transplantation.
3. Understand and treat sequelae of portal hypertension, including ascites, encephalopathy, and gastrointestinal bleeding.
4. Understand and utilize management principles for patients following liver resection and major biliary procedures.
5. Understand and perform diagnostic and therapeutic paracentesis.

**Renal**
1. Understand and manage major acid base disorders.
2. Understand and manage major electrolyte abnormalities.
3. Understand features of acute and chronic renal failure and manage patients with these disorders.
4. Understand indications for use of renal replacement therapies, including hemodialysis and venous hemofiltration, and manage patients receiving these therapies.

**Nutrition and Metabolism**
1. Understand and apply elements of nutritional assessment.
2. Understand and utilize indications for enteral and parenteral nutritional support.
3. Understand and manage complications of nutritional support.
4. Understand and manage diabetic problems in ICU patients.
5. Understand and manage other endocrine problems including thyroid and adrenal diseases.

**Infection**
1. Understand causes, prophylaxis and treatments of bacterial, viral, fungal, and protozoal infections in the ICU.
2. Understand causes, prophylaxis and treatment of nosocomial respiratory and urinary infections.
3. Understand principles of diagnosis and treatment of resistant organisms (MRSA, VRE).
4. Understand the workup of fever in postoperative patients with and without immunosuppression.
5. Understand the special problems of the immunocompromised patient.
6. Understand and utilize the major antimicrobial agents.

Neurologic
1. Understand and utilize principles of diagnosis and management of coma and other disorders of mentation, including central pontine myelinolysis.
2. Understand and utilize principles of diagnosis and management of seizures.
3. Understand and utilize principles of diagnosis and management of movement disorders, including critical illness polyneuropathy.
4. Understand and utilize principles of radiologic diagnosis of neurologic conditions.

Professionalism:
1. Work within a multidisciplinary critical care team.
2. Participate in weekly multidisciplinary rounds.
3. Demonstrate respect, compassion, integrity, and kindness in relationships with patients, families, and colleagues.
4. Demonstrate sensitivity and responsiveness to gender, age, culture, religion, sexual preference, socioeconomic status, beliefs, behaviors and disabilities.
5. Understand concepts of patient confidentiality and informed consent.
6. Develop the ability to formulate constructive feedback in response to problems encountered in the workplace.

Systems-based Practice:
1. Understand and utilize indications for ward and ICU admission.
2. Understand and utilize criteria for transfer into and out of the ICU and hospital discharge.
3. Understand concepts related to transfer of patients from outside institutions.
4. Understand concepts of cost-efficiency in the ICU and ward.
5. Understand limitations of care and concepts of futility.

Practice-based Learning and Improvement:
1. Utilize the medical literature to hone practice indications and guidelines and critically evaluate current management.
2. Understand modern concepts of evidence grading and outcome assessment.

Interpersonal and Communication Skills:
UCLA General Surgery Residency Program
Rotation Educational Policy
Goals and Objectives

1. Interact effectively and professionally with patients, families, physicians, nurses, and other members of the health-care team.
2. Practice compassionate end-of-life care
3. Provide effective consultation to other physicians and health care professionals
4. Maintain comprehensive, timely, and legible medical records

GSL 8/2006