July 2011

**ROTATION: SURGICAL CRITICAL CARE AND TRANSPLANTATION SURGERY**

**ROTATION DIRECTOR:** Fadi Kaldas, MD

**SITE:** RRUMC

**GOALS AND OBJECTIVES:**

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).

PGY2 resident on this service will be primarily responsible for managing the ICU patients.

**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.

**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.

**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.

**ASSESSMENT:**

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

1. Global Rating: end of rotation evaluation of resident performance to assess the resident’s
demonstration of Core Competencies with respect to the stated objectives by faculty, other team resident members, students, and nursing staff.

2. Case Logs: auditing of operative cases pertinent to the specialty in the Surgical Operative Log.

3. Written Examination: performance on the annual ABSITE examination, Gastrointestinal and Body as a whole (clinical management) systems section.

4. Patient Survey: performance will be assessed by patient surveys administered through the rotation.

5. For additional information please refer to the Resident Milestones document on the UCLA Surgical Education website:
<table>
<thead>
<tr>
<th>ACGME Competency</th>
<th>Developmental Milestones Informing ACGME Competencies</th>
<th>Time Frame</th>
<th>Assessment Methods/Tools</th>
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| 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 | 4 weeks | Global Rating  
Case Logs  
Written Examinations  
Patient Survey  
Feedback from faculty/attending physicians at rounds and OR |
| Medical Knowledge| **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 | 4 weeks | Global Rating  
Written Examinations  
Completion of rotation specific SCORE assignments  
Feedback from faculty/attending physicians at rounds and OR |
<table>
<thead>
<tr>
<th><strong>Organ Failure Syndromes</strong></th>
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<tbody>
<tr>
<td>1. Define and understand the following syndromes: systemic inflammatory response (SIRS), multiple organ dysfunction MODS, sepsis, severe sepsis.</td>
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<td>2. Define, understand, and utilize severity-scoring systems in critical care.</td>
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<td>3. Manage patients with multiple organ failure syndromes.</td>
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<td>4. Understand and utilize hemodynamic drugs, including inotropes and pressors.</td>
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<tr>
<th><strong>Hemorrhage and Circulation</strong></th>
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<tbody>
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<td>1. Understand and utilize principles of large volume resuscitation.</td>
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<tr>
<td>2. Understand and manage patients with hemorrhagic shock.</td>
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<tr>
<td>3. Understand and manage patients with coagulation disorders, including disseminated intravascular coagulation.</td>
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<td>4. Understand and utilize colloid and crystalloid resuscitation.</td>
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<tr>
<td>5. Understand and utilize component therapies in resuscitation, including blood, plasma products, and platelets.</td>
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<td>6. Understand and utilize antifibrinolytic agents.</td>
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<td>1. Understand indications for use and major types of mechanical ventilation.</td>
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<td>2. Understand and utilize principles of weaning from acute and chronic ventilatory support.</td>
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<td>3. Demonstrate ability to interpret arterial and venous blood gases.</td>
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<td>5. Understand and utilize respiratory pharmacotherapy, including bronchodilators, nebulizers, steroids, and mucolytics.</td>
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<td>6. Understand and utilize principles for diagnosis and treatment of pulmonary thromboembolism.</td>
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<td>7. Understand and perform diagnostic and therapeutic thoracentesis.</td>
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<td>1. Understand concepts and manage patients with acute coronary syndromes and myocardial infarction.</td>
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<tr>
<td>2. Understand and manage atrial and ventricular tachy- and bradyarrhythmias, including use of antiarrhythmic drugs.</td>
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<tr>
<td>3. Understand concepts and manage patients with acute and chronic heart failure.</td>
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<td>4. Understand principles of mechanical cardiac support.</td>
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<td>5. Understand and utilize the major cardioactive drugs.</td>
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| **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.
| **Practice Based Learning** | 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. | 4 weeks | Global Rating  
Written Examinations  
Patient Survey  
Feedback from faculty/attending physicians at rounds and OR |
| **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. | 4 weeks | Global Rating  
Written Examinations  
Patient Survey  
Feedback from faculty/attending physicians/hospital staff/patients |
| **Interpersonal Relationships And Communication** | 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 | 4 weeks | Global Rating  
Written Examinations  
Patient Survey  
Feedback from faculty/attending physicians/hospital staff/patients |
| **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. | 4 weeks | Global Rating  
Case Logs  
Hour logs  
Completion of required evaluations  
Completion of medical records  
Written Examinations  
Feedback from faculty/attending physicians at rounds and OR |