

TRANSPLANT/MEDICAL INTENSIVE CARE UNIT ROTATION

Location:

University of Washington Medical Center
5 East

FACULTY CONTACT:

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OVERALL EDUCATIONAL PURPOSE

- A. To master the management of a broad range of acute, severe medical problems in critically ill adults and acute post-surgical care of critically ill solid organ transplant patients
- B. To learn to identify problems, determine diagnostic possibilities, and evaluate and treat patients in the intensive care unit.
- C. To gain experience with issues pertaining to resource management in the intensive care unit.
- D. To learn the principles of biomedical ethics and gain experience in medical ethical issues involving critically ill patients, including withdrawing and withholding life support.
- E. To learn to work together with nurses, pharmacists, respiratory therapists and a variety of specialty and subspecialty physician, all contributing to patient care, in an interdisciplinary critical care setting.
- F. To learn the indications, contraindications, limitation and complications of parenteral nutrition, the utilization, zeroing and calibration of transducers, the use of amplifiers and recorders.
- G. To gain experience in the analysis of data pertaining to cardiac output measurements, the evaluation of oliguria, the management of massive transfusions of blood products, the management of hemodynamic instability, pharmacokinetics and the interpretation of antibiotic levels, the monitoring and assessment of metabolism and nutrition and the understanding and calculation of oxygen content, right-to-left shunts, and alveolar-arterial differences.

TEAM STRUCTURE

1 Pulmonary/CCM Attending
1 Pulmonary/CCM Fellow
4 Internal Medicine R1s
Night float coverage by IM R3

PRINCIPAL TEACHING METHODS

Case discussion and review

Direct supervision of patient care: Attending physicians, who are board-certified in Critical Care Medicine as well as Pulmonary Diseases directly supervise all members of the team: interns (4), senior residents who provide in-house night-time coverage only, and the Pulmonary and Critical Care Medicine fellow. The fellow provides supervision of residents. Registered pharmacists, respiratory therapists and critical care nurses participate in morning work rounds. All cases are reviewed at least once daily by the attending physician with the fellow and appropriate housestaff.

Rounds

Bedside teaching occurs daily on rounds. In addition, formal Attending rounds, consisting of a interactive didactic session, are provided to the fellow and housestaff three times a week.

Daily work rounds on post-liver transplant and post-kidney / pancreas transplant patients also include the Transplant Surgery team consisting of Attending, Fellow, and one or more surgery residents.

Didactics

In addition to the didactic sessions provided by the MICU attending, the fellow is encouraged to attend Department of Medicine teaching conferences, including Medicine Grand Rounds, Chairman's Rounds and Noon Conference when possible. In addition, the fellow will attend the monthly Med-Surg-Rad-Path Conference and monthly Journal Club. Attendance at the Harborview conferences is not expected during this rotation.

EDUCATIONAL CONTENT

Mix of Diseases

In the UW-MICU, fellows can expect to encounter patients with:

Respiratory failure due to obstructive lung diseases, interstitial lung diseases, acute lung injury/ARDS, occupational lung disease, iatrogenic lung disease, and pulmonary complications of systemic diseases, particularly collagen vascular disease.

End-organ failure, particularly end-stage and fulminant hepatic failure and acute renal failure.

Complications of solid organ transplant and complications of immunodeficiency, both congenital and acquired.

Severe abnormalities of electrolytes and acid-base disorders, such as diabetic ketoacidosis.

Septic shock and other manifestations of overwhelming infection.

Advanced neuromuscular disease, such as muscular dystrophy and ALS, with chronic respiratory failure.

Severe primary and secondary pulmonary hypertension.

Life-threatening gastrointestinal bleeding.

Critical obstetric and gynecological disorders.

Endocrine, hematologic and rheumatologic emergencies.

Patient Characteristics

Wide-age distribution, though on average young.

Large percentage with chronic medical conditions, often unusual and complex.

Gender and ethnic distribution reflective of the community.

Types of Clinical Encounters

All patients encountered by the fellow are inpatients. The fellow may first evaluate the patient in the ER or on the floor prior to transfer to the MICU. In addition, a large percentage of patient are transferred in from community hospitals and the fellow will triage, approve and facilitate these transfers. The fellow will be expected to evaluate each patient in the ICU at least daily, to supervise and assist the R1 with all aspects of the patient management and to consult with the attending and other services as required for optimal patient management. There are no outpatient responsibilities during this rotation.

Procedures

The fellow will develop competency in the most frequently encountered procedures in critically ill patients, including: placement of arterial, central venous and Swan-Ganz catheters; paracentesis; thoracentesis; insertion of Minnesota esophageal tubes, and endotracheal intubation. The fellow will also perform fiberoptic bronchoscopy. Competency in the use of multiple ventilator modes, approaches to weaning and the use of non-invasive ventilation will be developed. Competency in both basic and advanced cardiopulmonary resuscitation is a prerequisite for this rotation.

Services

The University of Washington Medical Center offers all the services necessary for comprehensive tertiary critical care, including access to all surgical and medical sub-specialties, diagnostic and intervention radiology, full pulmonary function testing capabilities and full ventilatory support capabilities, including multiple forms of invasive and non-invasive ventilation, cardiopulmonary bypass and nitric oxide.

Rotation Specific Schedule

Monday

8:00 Rounds
11:30 Attending teaching rounds
12:30 Lunch Conference
4:00 Pulmonary Research Conference
5:00 Med-Surg-Rad-Path Conference (monthly)

Tuesday

8:00 Rounds
12:00 Chairman's Rounds

Wednesday

8:00 Rounds
11:30 Attending teaching rounds
12:30 Lunch Conference

Thursday

8:00 Medicine Grand Rounds
9:00 Rounds
1:30 Multidisciplinary Rounds

Friday

8:00 Rounds
11:30 Attending teaching rounds
12:30 Lunch Conference

Call and Weekend Responsibilities

There is no in-house call on this rotation. The fellow may sign out to the covering IM R3 after 5:00PM. The fellow remains on-call from home during the night and would be expected to return to the hospital for patient care issues that are beyond the R3s ability or comfort level. The fellow will have every other weekend completely free of patient care responsibilities, from 5:00PM on Friday night to 8:00Am on Monday morning.

Principle Educational Materials Used

The MICU/Transplant team have a small library maintained by the Pulmonary and Critical Care Medicine Section located in the MICU. In addition, a continuously amended notebook (syllabus) contains pertinent, recent articles from the literature organized by subject. A computer providing direct access to literature searches is located between every two beds in the MICU. Attending physicians will provide additional teaching materials, primarily in the form of journal articles, when relevant.

Recommended Readings

See Division Syllabus.

Pathologic materials

The fellow and attending will review all pathologic materials, including transbronchial and open lung biopsies, with the pulmonary pathologist.

METHODS USED IN EVALUATING RESIDENT AND PROGRAM PERFORMANCE

At the end of the rotation, the fellow is evaluated in writing and their performance reviewed with them verbally by every attending he or she has interacted with for a significant amount (more than 5 days) of time. The evaluator rates the resident on a nine-point scale in each component of clinical competence (i.e. patient care, medical knowledge, practice based learning improvement, interpersonal and communication skills, professionalism, system based learning, educational attitudes, leadership, overall clinical competence).

The resident is given the opportunity to evaluate in writing the quality of the curriculum and the extent to which the educational goals and objectives of the rotation have been met. The resident also evaluates the teaching competence of each attending with whom s/he has interacted for a significant amount of time.

EXPLICIT LINES OF RESPONSIBILITY FOR CARE OF PATIENTS ON THIS SERVICE

If new admissions are sufficiently stable, R1's are responsible for the initial history, physical examination, and diagnostic approach. These are reviewed with the Pulmonary and Critical Care fellow (or with the covering R3 if the admission occurs at night). If patient acuity warrants more rapid attention, the initial evaluation and approach is done by the R1 and fellow (or R3) jointly. Each new admission is also evaluated by a Pulmonary and Critical Care Medicine Attending within 12-14 hours of admission. The attending physician of record for all patients on the MICU/Transplant Service is the Pulmonary and Critical Care Medicine Attending. Attendings examine and review the care of each patient at least once daily and write daily progress notes.

Patients admitted pre- or post-liver transplant are seen in conjunction with the liver transplant surgeons at least once daily. Major decisions or changes in patient status are reviewed with the surgeons on daily rounds or as the condition demands.

Patients admitted with upper gastrointestinal bleeding in association with liver disease or those admitted with acute hepatic failure are seen in conjunction with the Hepatology Fellow and Attending.

Procedures (i.e., central or arterial catheter placement, lumbar punctures, thoracenteses, paracenteses) are done by the R1, if appropriate to their training and experience, with direct supervision by either the Pulmonary and Critical Care Medicine Fellow or Attending. If the R1 does not have sufficient expertise, the fellow will perform the procedure. All bronchoscopies and endotracheal intubations will be performed by the fellow with attending supervision.

The fellow, with attending supervision, remains primarily responsible for the continued care of all patients in the MICU and will coordinate all diagnostic evaluations, therapeutic procedures, consultations and disposition planning. R1's are responsible for writing daily orders and progress notes.