Nephrology Consults/Elective Rotation Description

http://nephrology.duke.edu/

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Medical Residents serve on either the Duke Acute Nephrology Service or the VA Nephrology Service and sometimes on each for part of the rotation.

Interns will serve on the Duke Acute Service, and also possibly on the Duke Transplant Service, an outpatient dialysis clinic, and Duke Nephrology Clinic.

DUKE HOSPITAL ACUTE NEPHROLOGY SERVICE
The Duke Hospital Acute Service performs, on average, more than 20 consultations per week. The service is staffed by a nephrology fellow, medicine resident, and any medical students assigned by the School of Medicine. The service evaluates all patients in Duke Hospital requiring nephrology consultation with the exceptions of patients on the 2nd and 7th floors and patients with kidney and/or pancreas transplants on any floor. Problems frequently encountered include acute renal failure in critically ill patients, the nephrotic syndrome, resistant hypertension, and complex fluid, electrolyte and acid-base disorders. In addition, the Acute Service is charged with providing dialysis for maintenance dialysis patients admitted to hospital because of medical or surgical illness. The exception to this are the patients admitted to the 7800A and B teams who will be managed by those respective services.

An attending physician conducts formal teaching rounds Mondays through Fridays. During teaching rounds, the consultations are presented, the differential diagnoses discussed, and the plans for evaluation and treatment discussed. The cases are therefore used as conduits for teaching. In addition, follow-up plans are discussed for all patients followed by the service.

Educational Objectives for the Resident on the Acute Nephrology Service

Professionalism
To accomplish the patient care activities of the rotation while observing diligently the rights of patients (including privacy rights) and the dignity of other staff members.

To obtain written informed consent before all procedures.
To document patient care activities appropriately in the medical record and complete clinic dictations within 24 hours.

To adhere to the duty hour restrictions and record duty hours as instructed by the training program director.

**Communication**
To communicate effectively with patients and their families, keeping in mind language, cultural, ethnic, and religious differences.

To exchange information with nurses, therapists, and patient resource managers so that all are apprised of the situation with each patient.

To provide timely, complete, yet concise information to peers in “handoffs.”
To arrange and document adequate outpatient follow-up for each patient discharged from the service.

To initiate and participate in discussion of end of life issues with the patient when appropriate.

**Practice-Based Learning and Improvement**
To learn which resources are most valuable for answering patient care questions in Nephrology.

To participate in discussions of issues of evidence based medicine in Nephrology Journal Club and Grand Rounds.

To actively search for quality information in the medical literature that is applicable to clinical care issues which you encounter and to share that information with others.

**Systems Based Practice**
To understand funding of the end stage renal program in the United States.

To acquire an understanding of the differences in health care systems and what resources are available to each patient.

**Medical Knowledge**
To understand:
1. The evaluation of acute renal failure. Specifically, he or she should learn to differentiate pre-renal azotemia from acute tubular necrosis.
2. Diagnostic evaluation, staging, and management of chronic kidney disease, including use of K/DOQI guidelines.
3. The evaluation of proteinuria and the nephrotic syndrome.
4. The evaluation and management of resistant hypertension.
5. The evaluation and management of electrolyte and acid-base disturbances.
6. The management of peritonitis in peritoneal dialysis patients.
7. The management of infected vascular access in maintenance hemodialysis patients.
8. The proper modification of drug dosage in CKD, with hemodialysis, CVVHD, and PD.

**Patient Care**

To become proficient in:

1. The examination of the urine sediment, especially in the evaluation of acute renal failure.
2. The evaluation of volume status by physical examination.
3. The insertion of temporary hemodialysis catheters into femoral veins (Residents only)
4. The provision of conventional hemodialysis in acute renal failure and in end-stage renal disease. (Residents only)
5. The provision of peritoneal dialysis. (Residents only)

**Responsibilities on the Acute Service include:**

1. Provide consultation for all patients in Duke Hospital except for those who have received kidney or kidney/pancreas transplants and for those located on the 2nd and 7th floors. Prompt service, in conjunction with the fellow, should be given to consultation requests from the intensive care units and from the Emergency Department. In general, patients in the intensive care units and in the Emergency Department should be evaluated within one hour and presented to the attending physician within four hours of the consultation request. Patients located elsewhere should be evaluated on the day of the consultation request and presented to the attending within 24 hours.

Interns serving on the Acute Service will see consults as assigned by the fellow and present them to the fellow and attending.

2. Provide timely hemodialysis therapy. Patients who require hemodialysis should be identified as early in the day as possible (after consultation with the nephrology attending or fellow) and their names and locations given to the charge nurse. Hemodialysis orders should be written so that hemodialysis may commence by 8 AM. Hemodialysis may not be initiated unless hemodialysis orders have been written. Interns and residents may place temporary hemodialysis catheters in the femoral and internal jugular veins under the supervision of the fellow and /or attending.

3. Provision of adequate follow-up for patients following discharge from hospital. Patients may be seen in Duke Clinic by an attending physician or by a fellow.

4. After hours and weekend “on call” duty for Duke Hospital and the VA as scheduled.

Interns will not take call, however they may have rounding responsibilities on Saturday morning.

5. Examination of the urine sediment in all cases of acute renal failure.
Examination of the urine sediment may or may not be indicated in cases
of chronic kidney disease.

6. Attendance at Journal Club on Thursday mornings 8:30 AM - 9:30 AM.

7. Attendance at Clinical Conference on Friday mornings 9:00 AM - 10:00 AM.

8. Presentation of a case at Clinical Conference if asked. The case should be selected in consultation with the nephrology attending or fellow. The presentation of the case should be followed by a brief review of the relevant literature. Relevant radiographs or slides of renal biopsy specimens should be included in the presentation.

9. Review of all renal biopsy specimens obtained by the fellow with the pathologist and attending nephrologist.

10. Attendance at teaching rounds Mondays through Fridays.

11. Attendance at attending rounds on Saturday or Sunday per schedule.

THE VA NEPHROLOGY SERVICE

The VA Nephrology Service provides consultative support to all of the clinical services in the medical center, including the intensive care units. Thus, within the rotation, fellows will be exposed to all facets of consultative nephrology including fluid and electrolyte problems, acute and chronic dialysis, nephrologic diagnosis including renal biopsy, and transplant medicine. The Durham VA has a free-standing dialysis unit which delivers inpatient and outpatient hemodialysis where the fellows gain significant experience in the management of outpatient hemodialysis under the supervision of the VA Dialysis Director and the attending assigned to that shift. There are also opportunities to observe and participate in the active home dialysis program and the Chronic Kidney Disease (CKD) clinic at the VA. The Durham VAMC is one of a few VA medical centers with an active peritoneal dialysis program.

The Durham VA no longer has an onsite transplant program, however VA continues to support both kidney and combined kidney/pancreas transplant at one of its national transplant centers. Fellows are actively involved in the initial patient evaluation for transplant listing, donor evaluations, as well as management of the transplant recipient following the acute transplant episode. In both an inpatient and outpatient setting on the consulting service, rounds are made each day with the Consult Attending, fellow, resident, and rotating students. Every Thursday morning, a multi-disciplinary Dialysis Conference is held to discuss patient conditions and dispositions, and to coordinate follow-up plans for hospitalized patients and outpatients. This conference is attended by the fellow, the consult and clinic attendings, dialysis staff, and the renal social workers. While rotating at the VA, the fellow attends the VA Renal Clinic, which is held on Tuesday morning, as well
Educational Objectives for the Resident on the VA Nephrology Service:
(First four competencies as above for the Duke Acute Service)

**Medical Knowledge**
To understand:
1. The evaluation of acute renal failure.
2. The evaluation and conservative management of advanced stage chronic kidney disease including nutrition.
3. The evaluation of proteinuria and the nephrotic syndrome.
4. The evaluation and management of resistant hypertension.
5. The evaluation and management of electrolyte and acid-base disturbances.
6. The indications for and potential complications of percutaneous renal biopsy.
7. The indications for initiation of acute and chronic hemodialysis.
8. The appropriate workup and management PD associated exit site infection, tunnel infection, and peritonitis.
10. The management of infected vascular access in maintenance hemodialysis patients.
11. Complications of hemodialysis vascular access placement and noninfection related complications of vascular access devices.
12. The diagnosis and treatment of acute cellular rejection, humoral rejection, calcineurin inhibitor toxicity, and chronic allograft nephropathy.
13. The diagnosis and treatment of mechanical complications of renal transplantation such as urinary tract obstruction and lymphocele formation.
14. The proper modification of drug dosage in CKD, with hemodialysis, CVVHD, and PD.

**Patient Care**
To become proficient in:
1. The examination of the urine sediment, especially in the evaluation of acute renal failure.
2. The evaluation of volume status by physical examination.
3. The insertion of temporary hemodialysis catheters into femoral veins. (Residents only)
4. The provision of conventional hemodialysis in acute renal failure and in end-stage renal disease. (Residents only)
5. The provision of peritoneal dialysis. (Residents only)

**Responsibilities of the Resident on the VA Nephrology Service:**
1. Provide nephrology consultation for all patients at the Durham VA Medical Center.
2. Supervision and teaching of the medical students.
3. Provide timely hemodialysis therapy for hospitalized patients. Patients who require hemodialysis should be identified as early in the day as possible and scheduling should be coordinated with the charge nurse in the Dialysis Unit. Hemodialysis may not be initiated unless hemodialysis orders have been written.
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4. Provision of adequate follow-up for patients following discharge from hospital. Patients may be seen in follow-up in the VA Nephrology Clinic which meets every Tuesday morning. Appointments can be scheduled through Ms. Marcia Laing (x6949).

5. After hours and weekend “on call” duty for the VA and Duke Hospital as scheduled. Interns will not take call.

6. Examination of the urine sediment in all cases of acute renal failure. Examination of the urine sediment may or may not be indicated in cases of chronic renal failure.

7. Attendance at the Interdisciplinary VA Dialysis Conference on Thursday Mornings from 10:00 AM - 10:30 AM.

8. Attendance at Journal Club on Thursday mornings 8:30 AM - 9:30 AM.

9. Attendance at Nephrology Grand Rounds on Friday mornings 9:00AM - 10:00 AM.

10. Review of all renal biopsy specimens with the pathologist and attending nephrologist.

11. Attendance at teaching rounds Mondays through Fridays.

12. Attendance at VA Nephrology Clinic on Tuesday mornings from 8:30 AM - 12:00 noon, in the VA Outpatient Clinic-Area 8B.