

Nephrology – Goals & Objectives

- **Participating Site(s):** Inpatient nephrology consult service; inpatient medical services; outpatient nephrology clinics (as applicable)
- **Duration:** 2-4 weeks
- **Required or Elective:** Required

Rotation Overview

This rotation provides residents with structured exposure to the evaluation and management of kidney disease and disorders of fluid, electrolyte, and acid-base balance. The experience emphasizes diagnostic reasoning, interpretation of laboratory and urine studies, management of acute and chronic kidney disease, recognition of nephrotoxic exposures, and appropriate utilization of nephrology consultation.

Overall Rotation Goal

The goal of this rotation is for residents to progressively demonstrate the knowledge, clinical skills, and clinical judgment necessary to evaluate and manage common nephrologic conditions, stabilize acute kidney injury and electrolyte disturbances, and provide evidence-based, high-value care for patients with acute and chronic kidney disease.

Educational Objectives (Aligned with ACGME Competencies)

Patient Care

Residents will be able to:

- Evaluate patients with acute kidney injury, chronic kidney disease, and abnormalities of urine sediment
- Formulate differential diagnoses and management plans for glomerular, tubulointerstitial, vascular, and obstructive kidney diseases
- Diagnose and manage common fluid, electrolyte, and acid-base disturbances, including hyponatremia, hyperkalemia, and mixed acid-base disorders
- Initiate appropriate management for complications of chronic kidney disease, including hypertension, anemia, and mineral bone disease, under appropriate supervision
- Recognize indications for urgent nephrology consultation and renal replacement therapy

Medical Knowledge

Residents will be able to:

- Explain the pathophysiology and clinical presentation of acute and chronic kidney diseases
- Interpret serum chemistries, urinalysis, urine microscopy, and relevant imaging studies
- Describe the mechanisms, indications, and complications of dialysis modalities and vascular access
- Identify medications and diagnostic agents associated with nephrotoxicity and apply strategies to minimize renal injury
- Apply evidence-based guidelines to the management of hypertension and kidney disease

Practice-Based Learning and Improvement

Residents will be able to:

- Identify personal learning gaps related to nephrology and develop targeted learning goals

- Incorporate current clinical guidelines and evidence-based literature into diagnostic and therapeutic decision-making
- Reflect on patient outcomes and integrate feedback to improve future clinical practice

Interpersonal and Communication Skills

Residents will be able to:

- Communicate diagnostic assessments and management plans clearly to patients, families, and consulting teams
- Present nephrology consult cases concisely during rounds and handoffs
- Collaborate effectively with nephrology faculty, nursing, pharmacy, dialysis staff, and interdisciplinary team members

Professionalism

Residents will be able to:

- Demonstrate accountability, reliability, and respect in the care of patients with kidney disease
- Recognize personal limitations and seek appropriate supervision and consultation
- Maintain ethical standards and patient confidentiality in complex clinical situations

Systems-Based Practice

Residents will be able to:

- Utilize laboratory testing, imaging, and specialty consultation appropriately to deliver high-value nephrologic care
- Coordinate care for patients with chronic kidney disease across inpatient, outpatient, and dialysis settings
- Identify appropriate indications for referral for dialysis planning, vascular access, and transplant evaluation

PGY-Level Expectations

PGY-1:

- Identify common causes of acute kidney injury and electrolyte abnormalities and communicate findings under direct supervision
- Participate in evaluation of urine studies and basic management of fluid and electrolyte disturbances

PGY-2:

- Develop prioritized differential diagnoses and propose diagnostic and management plans with indirect supervision
- Interpret urine microscopy, acid-base data, and renal imaging studies
- Manage hypertension and chronic kidney disease complications using guideline-based therapy

PGY-3:

- Independently manage routine nephrologic problems with attending oversight
- Advise primary teams on diagnostic strategies, nephrotoxic risk reduction, and indications for nephrology consultation

Teaching and Learning Activities

- Inpatient nephrology consults and rounds
- Outpatient nephrology clinic participation (as available)

- Urine microscopy and acid-base interpretation sessions
- Case-based discussions emphasizing fluid, electrolyte, and hypertension management
- Independent reading aligned with ACP MKSAP Nephrology topics

Evaluation and Feedback

Resident performance is evaluated through:

- Direct faculty observation
- End-of-rotation faculty evaluation
- Assessment of clinical reasoning, laboratory interpretation, and communication skills
- Milestone-based assessment tools

Residents receive ongoing formative feedback and summative feedback at the conclusion of the rotation.

Supervision

Faculty supervision is provided in accordance with ACGME supervision guidelines and is based on resident demonstrated competence, PGY level, and patient acuity.