

# LAC+USC Medical Center

## Nephrology Consult Orientation

2018-2019

### **Faculty in Charge of Rotation:**

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### **First Day of Rotation:**

Report to work room on 7D at 7:30 AM.

Please make sure to watch the Orientation Video prior to starting this rotation. Videos can be accessed through MyEvaluations or on the Chief's website ([uscmedicine.blog](http://uscmedicine.blog) / Resources / Rotation Orientation & Objectives / Renal Consult).

## GOALS

The Nephrology Consult rotation is an inpatient consult experience with the purpose of gaining experience in the management of acute and chronic renal disease across a wide spectrum of patient ages and diagnoses.

It is important for Internists to become skilled at evaluating and treating problems of the renal system. Internists must be able to obtain an appropriate history, perform an appropriate physical examination, order appropriate studies, and initiate appropriate therapies for patients with signs and symptoms of renal disease. Internists must understand the unique diagnostic and treatment modalities for patients with renal disease. The Internist is expected to be aware of when it is necessary to refer a patient to a Nephrologist. The Internist must also be familiar with guidelines for pre- and post-dialysis management of patients with renal failure and be able to recognize indications for dialysis.

In addition to fostering competence in the areas of patient care and medical knowledge, the service provides critical experience in collaborating with other members of the healthcare team, including care coordinators, social workers, and pharmacists, as well as students and fellow residents, which builds skill in interpersonal communication and professionalism. Exposure to the intricacies of daily hospital care, including discharge planning and triage to higher or lower levels of care, builds competency in systems-based practice, provides opportunities to learn from mistakes, and builds patterns of practice-based learning.

## OVERALL OBJECTIVES

<b>USC/LAC+USC Internal Medicine Residency Nephrology Consult Rotation</b>			
OVERALL COMPETENCY PROGRESSION BY CORE COMPETENCY AND PGY LEVEL (Adapted from ABIM Developmental Milestones)			
<b>CORE COMPETENCY: PATIENT CARE</b>			
<b>PGY LEVEL</b>		<b>GOAL – Gathers and synthesizes essential and accurate information to define each patient’s clinical problem OBJECTIVES</b>	
1			<ul style="list-style-type: none"> <li>a. Acquires accurate histories from patient in an efficient prioritized, and hypothesis driven fashion</li> <li>b. Seeks and obtains data from secondary sources when needed</li> </ul>
	2		<ul style="list-style-type: none"> <li>a. Obtain relevant historical subtleties that inform and prioritize both differential diagnoses and diagnostic plans, including sensitive, complicated, and detailed information that may not often be volunteered by the patient</li> </ul>
		3	<ul style="list-style-type: none"> <li>a. Role model gathering subtle and reliable information from the patient for junior members of the healthcare team when applicable.</li> </ul>
<b>PGY LEVEL</b>		<b>GOAL – Develops and achieves comprehensive management plan for each patient OBJECTIVES</b>	
1			<ul style="list-style-type: none"> <li>a. Consistently develops appropriate care plan</li> <li>b. Recognizes situations requiring urgent or emergent care</li> <li>c. Seeks additional guidance and/or consultation as appropriate</li> </ul>
	2		<ul style="list-style-type: none"> <li>a. Appropriately modifies care plans based on patient’s clinical course, additional data and patient preferences</li> <li>b. Recognizes disease presentations that deviate from common patterns and require complex decision making</li> <li>c. Manages complex acute and chronic diseases</li> </ul>
		3	<ul style="list-style-type: none"> <li>a. Role models and teaches complex and patient centered care</li> <li>b. Develops customized prioritized care plans for the most complex patients, incorporating diagnostic uncertainty and cost effectiveness principles.</li> </ul>
<b>PGY LEVEL</b>		<b>GOAL – Manages patients with progressive responsibility and independence OBJECTIVES</b>	
1			<ul style="list-style-type: none"> <li>a. Requires direct supervision to ensure patient safety and quality care</li> <li>b. Seeks additional guidance and/or consultation as appropriate</li> </ul>
	2		<ul style="list-style-type: none"> <li>a. Requires indirect supervision to ensure patient safety and quality care</li> </ul>
		3	<ul style="list-style-type: none"> <li>a. Independently manages patients across clinical settings who have a broad spectrum of clinical disorders including undifferentiated syndrome</li> </ul>
<b>PGY LEVEL</b>		<b>GOAL – Skill in performing procedures OBJECTIVES</b>	
1			<ul style="list-style-type: none"> <li>a. Awareness of indications, contraindications, risks and benefits of common invasive procedures</li> </ul>
	2	3	<ul style="list-style-type: none"> <li>b. Appropriately perform invasive procedures and provide post-procedure management for common procedures when applicable.</li> </ul>
<b>PGY LEVEL</b>		<b>GOAL – Requests and provides consultative care OBJECTIVES</b>	
1			<ul style="list-style-type: none"> <li>a. Provides consultative services for patients with clinical problems requiring basic risk assessment</li> <li>b. Asks meaningful clinical questions that guide the input of consultants</li> </ul>
	2	3	<ul style="list-style-type: none"> <li>a. Provides consultative services for patients with basic and complex clinical problems requiring detailed risk assessment</li> <li>b. Appropriately weighs recommendations from consultants in order to effectively manage patient care</li> </ul>
<b>Evaluation Methods</b>			

Faculty evaluation, Direct observation			
<b>CORE COMPETENCY: MEDICAL KNOWLEDGE</b>			
<b>PGY LEVEL</b>		<b>GOAL – Clinical Knowledge</b>	
		<b>OBJECTIVES</b>	
1			a. Possesses the scientific, socioeconomic and behavioral knowledge required to provide care for common medical conditions and basic preventive care
	2	3	a. Possesses the scientific, socioeconomic and behavioral knowledge required to provide care for complex medical conditions and comprehensive preventive care
<b>PGY LEVEL</b>		<b>GOAL – Knowledge of diagnostic testing and procedures.</b>	
		<b>OBJECTIVES</b>	
1			a. Consistently interprets basic diagnostic tests accurately b. Needs assistance to understand the concepts of pre-test probability and test performance characteristics
	2		a. Interprets complex diagnostic tests accurately b. Understands the concepts of pre-test and test performance characteristics
		3	b. Interprets complex diagnostic tests accurately c. Understands the concepts of pre-test and test performance characteristics d. Teaches the rationale and risks associated with common procedures and anticipates potential complications when performing procedures
<b>Evaluation Methods</b>			
Faculty evaluation, Direct observation, Conference Attendance			
<b>CORE COMPETENCY: SYSTEMS BASED PRACTICE</b>			
<b>PGY LEVEL</b>		<b>GOAL – Works effectively within an interprofessional team</b>	
		<b>OBJECTIVES</b>	
1			a. Identifies roles of other team members but does not recognize how/when to utilize them as resources b. Frequently requires reminders from team to complete physician responsibilities.
	2		a. Understands the roles and responsibilities of all team members but uses them ineffectively b. Participates in team discussions when required but does not actively seek input from other team members
		3	a. Understands the roles and responsibilities of and effectively partners with, all members of the team. b. Actively engages in team meetings and collaborative decision making
<b>PGY LEVEL</b>		<b>GOAL – Recognizes system error and advocates for system improvement</b>	
		<b>OBJECTIVES</b>	
1			a. Does not recognize the potential for system error
	2		a. Recognizes the potential for error within the system b. Identifies obvious or critical causes of error and notifies supervisor accordingly c. Recognizes the potential risk for error in the immediate system and takes necessary steps to mitigate that risk d. Willing to receive feedback about decisions that may lead to error or otherwise cause harm
		3	a. Identifies systemic causes of medical error and navigates them to provide safe patient care b. Advocates for safe patient care and optimal patient care systems c. Activates formal system resources to investigate and mitigate real or potential medical error d. Reflects upon and learns from own critical incidents that may lead to medical error
<b>PGY LEVEL</b>		<b>GOAL – Identifies forces that impact that cost of health care, and advocates for, and practices cost-effective care</b>	
		<b>OBJECTIVES</b>	
1			a. Does not consider limited health care resources when ordering diagnostic or therapeutic interventions

	2		<ul style="list-style-type: none"> <li>a. Recognizes that external factors influence a patient's utilization of health care and may act as barriers to cost effective care</li> <li>b. Minimizes unnecessary diagnostic and therapeutic tests</li> <li>c. Possesses an incomplete understanding of cost awareness principles for a population of patients</li> </ul>
		3	<ul style="list-style-type: none"> <li>a. Consistently works to address patient specific barriers to cost effective care</li> <li>b. Advocates for cost conscious utilization of resources</li> <li>c. Incorporates cost awareness principles into standard clinical judgments and decision making including screening tests</li> </ul>
<b>PGY LEVEL</b>		<b>GOAL – Transitions patients effectively within and across health delivery systems</b>	
		<b>OBJECTIVES</b>	
1			a. Written and verbal care plans during times of transition are incomplete or absent
	2		<ul style="list-style-type: none"> <li>b. Communication with future caregivers is present but with lapses in pertinent or timely information</li> <li>c. Recognizes the importance of communication during times of transition</li> </ul>
		3	<ul style="list-style-type: none"> <li>a. Appropriately utilizes available resources to coordinate care and ensures safe and effective patient care within and across delivery systems</li> <li>b. Proactively communicates with past and future care givers to ensure continuity of care.</li> </ul>
<b>Evaluation Methods</b>			
Faculty Evaluation			
<b>CORE COMPETENCY: PRACTICE BASED LEARNING AND IMPROVEMENT</b>			
<b>PGY LEVEL</b>		<b>GOAL – Monitors practice with a goal for improvement</b>	
		<b>OBJECTIVES</b>	
1			<ul style="list-style-type: none"> <li>a. Unable to self-reflect upon one's practice or performance</li> <li>b. Misses opportunities for learning and self-improvement</li> </ul>
	2		<ul style="list-style-type: none"> <li>a. Inconsistently acts upon opportunities for learning and self-improvement</li> <li>b. Inconsistently self reflects upon one's practice or performance and inconsistently acts upon those reflections</li> </ul>
		3	<ul style="list-style-type: none"> <li>a. Regularly self reflects upon one's practice or performance and consistently acts upon those reflections to improve practice</li> <li>b. Recognizes sub-optimal practices or performance as an opportunity for learning and self-improvement</li> </ul>
<b>PGY LEVEL</b>		<b>GOAL – Learns and improves via feedback</b>	
		<b>OBJECTIVES</b>	
1			<ul style="list-style-type: none"> <li>a. Rarely seeks feedback</li> <li>b. Responds to unsolicited feedback in a defensive fashion</li> <li>c. Temporarily or superficially adjusts performance based on feedback</li> </ul>
	2		<ul style="list-style-type: none"> <li>a. Solicits feedback only from supervisors</li> <li>b. Is open to unsolicited feedback</li> <li>c. Inconsistently incorporates feedback</li> </ul>
		3	<ul style="list-style-type: none"> <li>a. Solicits feedback from all members of team and patients</li> <li>b. Consistently incorporates feedback</li> <li>c. Welcomes unsolicited feedback</li> </ul>
<b>PGY LEVEL</b>		<b>GOAL – Learns and improves at the point of care</b>	
		<b>OBJECTIVES</b>	
1			<ul style="list-style-type: none"> <li>a. Has limited awareness of or ability to use information technology</li> <li>b. Rarely "slows down" to reconsider an approach to a problem, ask for help, or seek new information</li> <li>c. Can translate medical information needs into well-formed clinical questions with assistance</li> </ul>
	2		<ul style="list-style-type: none"> <li>a. Inconsistently "slows down" to reconsider an approach to a problem, ask for help, or seek new information</li> <li>b. Can translate medical information needs into well-formed clinical questions independently</li> </ul>

		3	<ul style="list-style-type: none"> <li>a. Routinely “slows down” to reconsider an approach to a problem, ask for help, or seek new information</li> <li>b. Routinely translates new medical information needs into well-formed clinical questions.</li> </ul>
<b>Evaluation Methods</b>			
Faculty Evaluation, Direct Observation			
<b>CORE COMPETENCY: PROFESSIONALISM</b>			
<b>PGY LEVEL</b>		<b>GOAL – Has professional and respectful interactions with patients, caregivers, and members of the interprofessional team</b>	
		<b>OBJECTIVES</b>	
1			<ul style="list-style-type: none"> <li>a. Inconsistently demonstrates empathy, compassion and respect for patients and caregivers</li> <li>b. Inconsistently considers patient privacy and autonomy</li> <li>c. Inconsistently demonstrates responsiveness to patients’ and caregivers’ needs in an appropriate fashion</li> </ul>
	2		<ul style="list-style-type: none"> <li>a. Consistently respectful in interactions with patients, caregivers and members of the interprofessional team, even in challenging situations</li> <li>b. Emphasizes patient privacy and autonomy in all interactions</li> <li>c. Is available and responsive to needs and concerns of patients, caregivers and members of the interprofessional team to ensure safe and effective care</li> </ul>
		3	<ul style="list-style-type: none"> <li>a. Demonstrates empathy, compassion and respect to patients and caregivers in all situations</li> <li>b. Demonstrates a responsiveness to patient that supersedes self-interest</li> <li>c. Anticipates, advocates for, and proactively works to meet the needs of patients and caregivers</li> <li>d. Positively acknowledges input of members of the interprofessional team and incorporates that input into plan of care as appropriate.</li> </ul>
<b>PGY LEVEL</b>		<b>GOAL – Accepts responsibility and follows through on tasks</b>	
		<b>OBJECTIVES</b>	
1			<ul style="list-style-type: none"> <li>a. Completes most assigned tasks in a timely manner but may need multiple reminders or other support</li> <li>b. Accepts professional responsibility only when assigned or mandatory</li> </ul>
	2		<ul style="list-style-type: none"> <li>a. Completes patient care tasks in a timely manner in accordance with local practice and/or policy</li> <li>b. Completes assigned professional responsibilities without questioning or the need for reminders</li> </ul>
		3	<ul style="list-style-type: none"> <li>a. Prioritizes multiple competing demands in order to complete tasks and responsibilities in a timely and effective manner</li> <li>b. Willingness to assume professional responsibility regardless of the situation</li> </ul>
<b>PGY LEVEL</b>		<b>GOAL – Responds to each patient’s unique characteristics and needs</b>	
		<b>OBJECTIVES</b>	
1			<ul style="list-style-type: none"> <li>a. Sensitive to and has basic awareness of differences related to culture, ethnicity, gender, race, age and religion in the patient/caregiver encounter</li> <li>b. Requires assistance to modify care plan to account for a patient’s unique characteristics and needs</li> </ul>
	2		<ul style="list-style-type: none"> <li>a. Seeks to fully understand each patient’s unique characteristics and needs based upon culture, ethnicity, gender, religion, and personal preference.</li> <li>b. Modifies care plan to account for a patient’s unique characteristics and needs with partial success</li> </ul>
		3	<ul style="list-style-type: none"> <li>a. Recognizes and accounts for the unique characteristics and needs of the patient/caregiver</li> <li>b. Appropriately modifies care plan to account for a patient’s unique characteristics and needs</li> </ul>
<b>PGY LEVEL</b>		<b>GOAL – Exhibits integrity and ethical behavior in professional conduct</b>	
		<b>OBJECTIVES</b>	
1			<ul style="list-style-type: none"> <li>a. Honest in clinical interactions and documentation. Requires oversight for professional actions</li> <li>b. Has a basic understanding of ethical principles, formal policies and procedures and does not intentionally disregard them</li> </ul>
	2		<ul style="list-style-type: none"> <li>a. Honest and forthright in clinical interactions and documentation</li> <li>b. Demonstrates accountability for the care of patients</li> </ul>

		3	<ul style="list-style-type: none"> <li>a. Demonstrates integrity, honesty and accountability to patients</li> <li>b. Actively manages challenging ethical dilemmas and conflicts of interest</li> <li>c. Identifies and responds appropriately to lapses of professional conduct among peer groups</li> </ul>
<b>Evaluation Methods</b>			
Faculty Evaluation, Peer Evaluation, Direct Observation			
<b>CORE COMPETENCY: INTERPERSONAL AND COMMUNICATION SKILLS</b>			
<b>PGY LEVEL</b>		<b>GOAL – Communicates effectively with patients and caregivers</b>	
		<b>OBJECTIVES</b>	
1			<ul style="list-style-type: none"> <li>a. Engages patients in discussion of care plans and respects patient preferences when offered by the patient, but does not actively solicit preferences</li> <li>b. Defers difficult or ambiguous conversations to others</li> <li>c. Attempts to develop therapeutic relationships with patients and caregivers but is often unsuccessful</li> </ul>
	2		<ul style="list-style-type: none"> <li>a. Engages patients in shared decision making in uncomplicated conversations</li> <li>b. Requires assistance facilitating discussions in difficult or ambiguous conversations</li> <li>c. Requires guidance or assistance to engage in communication with persons of different socioeconomic and cultural backgrounds</li> </ul>
		3	<ul style="list-style-type: none"> <li>a. Incorporates patient specific preferences into plan of care</li> <li>b. Identifies and incorporates patient preference in shared decision making across a wide variety of patient care conversations</li> <li>c. Quickly establishes a therapeutic relationship with patients and caregivers, including persons of different socioeconomic and cultural backgrounds</li> </ul>
<b>PGY LEVEL</b>		<b>GOAL – Communicates effectively in interprofessional teams</b>	
		<b>OBJECTIVES</b>	
1			<ul style="list-style-type: none"> <li>a. Uses unidirectional communication that fails to utilize the wisdom of the team</li> <li>b. Resists offers of collaborative input</li> </ul>
	2		<ul style="list-style-type: none"> <li>a. Inconsistently engages in collaborative communication with appropriate members of the team</li> <li>b. Inconsistently employs verbal, non-verbal and written communication strategies that facilitate collaborative care</li> </ul>
		3	<ul style="list-style-type: none"> <li>a. Consistently and actively engages in collaborative communication with all members of the team</li> <li>b. Verbal, non-verbal and written communication consistently acts to facilitate collaboration with the team to enhance patient care.</li> </ul>
<b>PGY LEVEL</b>		<b>GOAL – Appropriate utilization and completion of health records</b>	
		<b>OBJECTIVES</b>	
1			<ul style="list-style-type: none"> <li>a. Health records are disorganized and inaccurate</li> </ul>
	2		<ul style="list-style-type: none"> <li>1. Health records are organized and accurate but are superficial and miss key data or fail to communicate clinical reasoning</li> </ul>
		3	<ul style="list-style-type: none"> <li>a. Health records are organized, accurate, comprehensive, and effectively communicate clinical reasoning</li> <li>b. Health records are succinct, relevant and patient specific</li> </ul>
<b>Evaluation Methods</b>			
Faculty Evaluation			

## ROTATION STRUCTURE

### STARTING THE ROTATION

Before the first day on service, sign-out should occur from the outgoing member to the appropriate oncoming team member (resident to resident, intern to intern). Please make sure to watch the Orientation Video prior to starting this rotation. Videos can be accessed through MyEvaluations or on the Chief's website ([uscmmedicine.blog](http://uscmmedicine.blog) / Resources / Rotation Orientation & Objectives / Renal Consult).

### WEEKLY SCHEDULE

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8AM - 9AM					Campese Rounds
12PM - 1PM	Nephrology Core Curriculum		Renal Grand Rounds		Clinical Case Conference
1PM - 5PM		Renal Clinic		Renal Clinic	

### DAILY SCHEDULE

7:30 AM - 10:00 AM	Work Rounds
10:00 AM - 12:00 PM	Attending Bedside Rounds
12:00 PM - 1:00 PM	Lunch/Conference (Grand Rounds, M&M, CPC)
1:00 PM - 5:30 PM	Patient Care and Management / Afternoon Didactics

### Attending Bedside Rounds

Attending Bedside Rounds are performed from 10:00 AM - 12:00 PM every Monday through Friday. The attending should review all of the team's new consults from the previous twenty-four hours and discuss all of the team's established patients with new, significant developments. Any new patient must be seen by and discussed with the attending with the team at the bedside. Faculty are expected to perform bedside teaching, discussion of pathophysiology, and should use current available studies to aid in diagnostic and therapeutic decisions.

Faculty must evaluate all of their team's patients each day and must co-sign all necessary notes. All documentation, including the initial history and physical must be signed within 24 hours. Each faculty attending is available for their team at all times when they are on service.

### Renal Clinic

Residents on the Nephrology Consult Service are not expected to attend Renal Clinic unless otherwise indicated by the Chief Residents.

### TEAM STRUCTURE

There are 2 teams that make up the Renal Consult service. Each team is comprised of one faculty attending, one fellow, 2-3 housestaff. Consults are called into the fellow VOIPS and will be divided evenly between both teams. An attending will be available to the house officers at all times of the day. Each attending will perform teaching rounds five days per week with their individual teams. The housestaff are expected to use this attending as the primary resource for issues regarding patient care.

**CALL**

There is no overnight call for residents. The 4 residents on service will alternate service coverage with one resident and one intern from each team covering each weekend of the rotation. Coverage should be discussed amongst the team collectively and the call schedule should be turned into the Chief Residents on the 1<sup>st</sup> day a new resident joins the team so that it may be accurately reflected on AMION.

**DAYS OFF**

All house officers on Nephrology Consult will get an average of one day off per week across the duration of the rotation. Days off will be determined by the team collectively and the schedule should be turned into the Chief Residents on the 1<sup>st</sup> day a new resident joins the team so that it may be accurately reflected on AMION.



## CURRICULUM

### EDUCATIONAL GOALS

The purpose of this rotation is to train residents to competently care for patients with acute and chronic kidney diseases who present to the hospital.

The curriculum is organized into two components:

1. inpatient renal consultative services
2. didactic lectures and conferences

### LEARNING OBJECTIVES

The resident will be able to:

1. interpret abnormalities on routine urine analyses such as proteinuria, hematuria, bacteriuria, and pyuria and to discuss their significance.
2. recognize the symptoms of urinary retention and bladder outlet obstruction.
3. create a differential diagnosis for dysuria.
4. create a differential diagnosis for edema.
5. understand the significance of symptoms suggestive of possible urinary tract infection.
6. be aware of the unique management strategies for patients with hypertension and coexistent renal disease.
7. obtain the necessary history, perform the appropriate physical exam, perform the appropriate
8. diagnostic testing, and manage patients with AKI.
9. recognize the symptoms and signs of uremia.
10. recognize the significance of renal colic and initiate appropriate diagnostic testing
11. detect the presence of and understand the significance of renal mass and renal bruit
12. obtain the relevant family history regarding renal disease and how it is relevant to the patient with abnormal kidney function
13. use and understand important calculations in Nephrology such as creatinine clearance and fractional excretion of sodium.
14. understand the utility of 24 hour urine collections for calcium, oxalate, citrate, uric acid, creatinine and protein, and their role in management of kidney stones, calculating creatinine clearance, and assessment of proteinuria
15. understand the relevance and utility of renal ultrasound.
16. understand the utility of appropriate urologic testing in patients with renal disease such as the use of cystoscopy, intravenous pyelography, radionuclide renal scan, renal angiography, and retrograde pyelography
17. perform relevant serologic testing in patients with glomerulonephritis.
18. understand in what clinical scenarios it is appropriate to order urine electrolytes and osmolality.
19. Determine the cause and manage electrolytes disturbances

Residents will be able to evaluate and treat the below clinical problems:

1. Clinical Conditions:
  - metabolic acidosis
  - metabolic alkalosis
  - respiratory acidosis
  - respiratory alkalosis

- mixed acid-base disorders
- 2. Acute renal failure:
  - Hypovolemia
  - Acute (ischemic) tubular necrosis
  - Drug-induced (radiocontrast, analgesics, etc.)
  - Interstitial
  - Atheroembolic
  - Obstructive
- 3. Chronic renal failure:
  - Conservative management (before dialysis)
  - Hemodialysis
  - Peritoneal dialysis
  - Transplantation
- 4. Fluid and electrolyte disorders:
  - Hypernatremia
  - Hyponatremia
  - Hyperkalemia
  - Hypokalemia
  - Hypervolemia
  - Hypovolemia
- 5. Glomerular diseases:
  - Acute glomerulonephritis
  - Chronic glomerulonephritis
  - Nephrotic syndrome
- 6. Hypertension:
  - Hypertensive crisis
  - Secondary hypertension
- 7. Inherited diseases:
  - Polycystic kidneys
- 8. Kidney disease in systemic illness:
  - Diabetes mellitus
  - Hypertension
  - Other systemic diseases
- 9. Neoplasia:
  - Bladder carcinoma
  - Renal cell carcinoma
  - Tumor lysis syndrome
- 10. Nephrolithiasis:
  - Diagnosis of renal stone disease
  - Management of acute renal colic
- 11. Obstructive uropathy
- 12. Urinary tract infection:
  - Cystitis
  - Pyelonephritis
- 13. Urologic disorders:
  - Cancer of the prostate (detection)
  - Prostate disease
  - Bladder outlet obstruction

## INPATIENT CONSULTS

Consults are called to the Renal Fellow VOIPs and will be distributed to each Renal team. Each Renal team will alternate consults. Consults should be followed until the problem is resolved and appropriate follow-up notes by the consult team should be made in the chart. When the consulting group discontinues follow-up, this should be indicated by a note in the chart. All notes by medical students must be co-signed by a resident or fellow.

Consults should be viewed with the following priorities:

- **Emergent:** Emergent consults must be reviewed and co-signed by fellow and/or faculty within two hours. Review by faculty must occur within 24 hours or sooner if appropriate. Cases should initially be evaluated by residents at the PGY-2 or PGY-3 level. Medical students or PGY-1 housestaff may not see emergency consults unaccompanied by PGY-2 or PGY-3 residents, fellow or faculty.
- **Urgent:** Urgent consults must be reviewed and co-signed by fellow and/or faculty within 8 hours. Review by faculty must occur within 24 hours. Consults may be initially evaluated by fourth-year medical students or housestaff of any post-graduate year. Fellows may review and co-sign consultations prior to review by faculty.
- **Routine:** Routine consults must be seen, reviewed and co-signed by fellow and/or faculty within 24 hours. Consults may be initially evaluated by fourth-year medical students or housestaff of any post-graduate year. Fellows may review and co-sign consultations prior to review by faculty.

## CONFERENCES

### Nephrology Core Curriculum

A concentrated series of didactic lectures delivered weekly in MMR 608 on the essential topics covering the breadth of Nephrology. These lectures emphasize the fundamentals of nephrology. Attendance is mandatory unless there is a conflicting Internal Medicine Residency activity/lecture.

### Renal Grand Rounds

A weekly clinically-based conference, held in MMR 608, given by a faculty expert. Attendance is mandatory unless there is a conflicting Internal Medicine Residency activity/lecture.

### Clinical Case Conference

A weekly case-based series on important topics in Nephrology, held in MMR 608, often involving the critical elements for diagnosis. Attendance is mandatory unless there is a conflicting Internal Medicine Residency activity/lecture.

### Campese Rounds

A weekly case-based session held with Dr. Campese. Residents will meet Dr. Campese at the lobby of Inpatient Tower on Fridays at 7:55 AM and present a case to him.

## TEACHING METHODS

Direct observation of patient care and bedside teaching occur in the setting of daily inpatient rounds with the attending. Residents evaluate and treat patients both in the capacity of follow-up as well as initial evaluation. The supervising attending reviews and critiques the resident's interpretation of diagnostic studies and formulation of assessments and plans. Residents additionally attend didactic conferences as indicated above.

## **EDUCATIONAL RESOURCES**

- Kidney Disease: Improving Global Outcomes (KDIGO) Acute Kidney Injury Work Group. KDIGO Clinical Practice Guideline for Acute Kidney Injury. *Kidney inter., Suppl.* 2012; 2: 1–138.
- Kidney Disease: Improving Global Outcomes (KDIGO) CKD Work Group. KDIGO 2012 Clinical Practice Guideline for the Evaluation and Management of Chronic Kidney Disease. *Kidney inter., Suppl.* 2013; 3: 1-150
- Kidney Disease: Improving Global Outcomes (KDIGO) Anemia Work Group. KDIGO Clinical Practice Guideline for Anemia in Chronic Kidney Disease. *Kidney inter., Suppl.* 2012; 2: 279–335.
- Levey A et al. A New Equation to Estimate Glomerular Filtration Rate. *Annals of Internal Medicine* 2009; 150: 604-612
- Adroge HJ and NE Madias. The Challenge of Hyponatremia. *JASN* 2012; 23: 1140-1148

## **FEEDBACK & EVALUATIONS**

The attending physician is responsible for providing verbal feedback and must submit evaluations of the resident physicians in MyEvaluations. The attending must meet face-to-face to provide mid-point and end-of-rotation feedback with all of the house officers they evaluate and indicate that discussion on the evaluation form. Evaluations must be completed within one week of completing a rotation. Peer evaluations for other trainees on the team should be completed in a timely manner.

## **PATIENT CARE**

### **LOCATION & PATIENT CHARACTERISTICS**

The Nephrology Consult service is exclusively at LAC+USC hospital. Consults may be called in by the Emergency Department, OB/Gyn triage, or any primary inpatient service, including, but not limited to general inpatient medicine, MICU, ACS, SICU.

The patient population at LAC+USC Medical Center is very diverse, with multiple ethnic and socioeconomic groups represented. The spectrum of these encounters will be from primary presentation of new disease processes to the tertiary care for the patient who is referred for subspecialty care.

### **PROCEDURES**

Residents will have the opportunity to observe Nephrology procedures such as percutaneous renal biopsies and insertion of non-tunneled hemodialysis catheters.

### **DOCUMENTATION**

All documentation must be completed electronically in ORCHID. Each note needs to end with "Discussed with Attending Dr. [Name]" and be forwarded to the attending on service for the day for review. In ORCHID, the note type, "Nephrology Consultation" should be used.

## ROTATION-SPECIFIC DETAILS

### 1. Definitions:

ARF (Acute Renal Failure): rising serum creatinine with or without oliguria (<400 ml/day)

CKD: No reversible causes found and serum creatinine and/or proteinuria remains elevated for >3 months

Nephrotic syndrome: Protein to creatinine ratio >3 g/g, edema and low serum albumin

### 2. Diet in renal failure patients with and without dialysis

- CKD Stages 4 or 5 pre dialysis: Usually 2 g Na, 2 g K, protein 0.8 g/kg plus daily urine losses, HD: 2 g Na, 2 g K, protein 1.2 g/kg per day plus daily urine losses
- PD: 2 g Na, 2 g K, protein 1.2 g/kg per plus daily urine losses (As per Dr. Kopple).
- DO **NOT** WRITE "RENAL DIET" since this is only 60 g of protein per day!!!
- For Nephrotic syndrome: 2 gm Na, protein 0.8 g/kg per day plus losses in urine.

*Calculate the total daily protein requirements for the orders*

e.g. Patient weighs 70 kg and has 3 grams of proteinuria, daily protein intake=73g

**ORDER: Diet: 2 gm Na, \_\_\_ gm K, \_\_\_ gm protein per day, ?ADA, \_\_\_ calories per day**

### 3. Vitamin replacement with ALL dialysis – replace the water soluble vitamins.

**ORDER: all B complex vitamins with 500 mg of C plus 1 mg of folic acid every evening**

AVOID Vitamin A in MVI's – can cause toxicity

### 4. Use of diuretics – HCTZ can be used if eGFR is >30 ml/min or to accentuate effects of lasix with eGFR <30 mg/min. Increase lasix dose with CKD to maximum of 80 mg bid with Metolazone if needed. Use IV if patients have anasarca, probable GI edema and decreased absorption.

### 5. Drug dose adjustment and estimation of GFR in steady state and non-steady state

- In steady-state Serum creatinine is constant day by day, can use CKD-EPI or Cockcroft Gault – usually overestimation of GFR in cachectic patients, bed ridden patients, amputees, hospitalized patients.
- If serum creatinine is changing, do **NOT** use CKD-EPI or Cockcroft Gault.
- IF ARF with rising serum creatinine with oliguria- estimated GFR <10 ml/min, if non-oliguric estimated-GFR 10-20. If on CRRT- GFR ~30 ml/min.
- Can use Jelliffe formula from the internet if serum creatinine is changing.

### 6. Standing orders – avoid peptobismol (ASA), alka-seltzer (ASA), MOM (if Serum Mg >2.5mEq/L), Fleet PHOSPA SODA enemas (if serum Phosphorus is >4 mg/dL). Avoid PPIs if they are not necessary – they can cause interstitial nephritis as well as increasing the risk of c. diff and ICU acquired pneumonia.

### 7. Treatment of constipation – colace 100 mg bid, sorbitol 15 to 30 cc orally q4 to q6 h and titrate as needed. Mineral oil enemas prn. Magnesium only if serum Mg is not elevated > 2.5 mEq/l, Golytely 8 oz orally every 4 to 8 hours until patient has a bowel movement

### 8. Anemia treatment with renal failure (avoid transfusions)

GOAL is Hg 10 to 11 g/dL. Write hold ESA for Hg >11 g/dL

- a. Caution using ESAs with malignancy, hypercoagulable states, or severe HTN
- b. No IV iron with septicemia
- c. Oral iron in all on ESAs unless iron overloaded

- d. Aranesp 0.5 ug/kg weekly or every 1-2 weeks but may need more if resistant due to infection for example
  - e. Always check iron sat and give iron as ESAs will NOT work with iron deficiency  
**ORDER: Aranesp 30, 60, 90, or 120 mcg subcutaneously q 1-2 weeks** (contraindicated with uncontrolled HTN)
9. Transfusions: Avoid if possible If anemia is chronic and asymptomatic
    - a. Young patient who is asymptomatic can tolerate Hg of 6 g/dL
    - b. Older patient with probable CAD should be around 8 to 9 g/dL
    - c. Patients with ischemic heart disease should be 9 to 10 g/dL
 If transfusion is indicated for a dialysis patient, give blood ONLY during dialysis. If CKD or ARF patient, give blood with lasix unless the patient has intravascular volume depletion.
  10. Drugs to avoid with CKD – metformin, nephrotoxic agents e.g. NSAIDs, Also HOLD metformin for 48 hours before contrast (Can be restarted 24 hours after contrast).
  11. Phosphate binders – amphogel 30 to 90 ml tid or high dose Renagel for serum phosphorus >6 mg/dL. Be cautious with calcium binders since many patients have vascular calcification which may contribute to morbidity and mortality and many have HIGH serum phosphorus which may precipitate calcium and phosphorus in tissues.
  12. Most patients have **CAD risks** which include proteinuria, CKD, high CRP, elevated homocysteine, high PTH, high calcium-phosphate product, and high phosphorus, and vascular calcifications as well as the usual risk factors. Work up should be H&P, Routine labs, EKG, CXR, and stress/echo as indicated by PMD.
  13. Write **HOLD parameters** on BP meds for systolic BP less than 140 mm Hg with active diuresis or dialysis. No BP meds for 2 hours before hemodialysis.
  14. Avoid ACEIs, aRBs and NSAIDs in patients that are pre-renal for any reason since they may get ARF and some will have hyperkalemia
  15. Hyperkalemia >5.0 mEq/L – give kayexylate with sorbitol, diet and lasix. Avoid NSAIDs, ACEIs, ARBs, and aldactone, salt substitutes.
  16. Do PPD in everyone at risk and check CXR – all dialysis and all kidney biopsy patients
  17. POSTVOID RESIDUALS: Should be done by ultrasound whenever possible. Order with the renal ultrasound. Do PVRs in all males, and in females with diabetes or prolapse
  18. Insulin orders in renal failure – decrease the dose because the breakdown of insulin is decreased. Decrease the insulin dose on admission since most patients eat less in the hospital, and are frequently NPO – avoid hypoglycemia
  19. Save the arm veins for FUTURE ACCESSES in ALL CKD patients:
    - a. All blood draws with hemodialysis when possible to avoid venous sticks
    - b. No venous sticks or IVs above the wrist on the NON-DOMINANT arm unless absolutely needed. Save those veins for fistulas. If the patient has a vascular access, use the opposite side with caution.

- c. No PICC lines unless ABSOLUTELY NECESSARY and only after Nephrology Faculty approval
    - PICC lines destroy peripheral and central veins needed for future hemodialysis accesses.
20. Foley catheters increase the risk for hospital acquired UTIs so use **only for obstruction**, not for assessing urine output. If the patient is in ICU and oliguric, the urine volume in the bladder can be assessed using ultrasound and a catheter inserted only if the volume is significant. The foley should be removed whenever possible in renal patients since they are immunocompromised. Many of our dialysis patients are anuric or oliguric and do not need foleys.