

# Nephrology Consult

## Legend for Educational Activities

FR – Faculty Rounds DSP – Directly Supervised Procedures FS – Faculty Supervision MR – Morning Report DPC – Direct Patient Care BRL --Board Review Lectures MJ – Medical Jeopardy	RR – Radiology Rounds EBM - Evidence Based Medicine M&M-Morbidity & Mortality DL- Didactic Lectures GR – Grand Rounds JC – Journal Club PC–Professionalism Curriculum
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## Legend for Evaluations

FE - Faculty Evaluations DSP – Directly Supervised Procedures ITE – In-Training Exam PDR–Program Director’s Review (twice annually) PR – Peer Review
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**Nephrology Consult is offered as a 4 week rotation for PGY1 residents, offering experience both in the inpatient and sub-specialty clinic. The residents will be supervised by a board certified Nephrologist on this rotation while providing consultative care to adult patients on General medicine wards and critical care units. One half day a week will be protected time for resident’s continuity clinic and one half day would be protected for Weekly Didactic lecture series where attendance is mandatory. The educational goals for this rotation are indicated for each of the six ACGME competencies.**

### **A. Patient Care**

	Educational Goals	Educational Activities	Evaluation Tools
1.	Ability to take a complete medical history and perform a careful and accurate physical examination with a nephrology focus.	DPC, FR, MR	FE
2.	Ability to write concise, accurate and informative histories, physical examinations and progress notes with a nephrology focus.	DPC, FR	FE, ITE
3.	Define and prioritize patients’ medical problems and generate appropriate differential diagnoses.	DPC, FR, DL	FE, ITE
4.	Develop rational, evidence-based management strategies.	DPC, FR, DL	FE, ITE
5.	Ability to make an appropriate differential diagnosis and plan of management for patients with acute renal	DPC, FR, DL	FE, ITE

	insufficiency and oliguria.		
6.	Participation and later leadership of discussions of end-of-life issues with families.	DPC, FR, DL	FE, ITE

## B. Medical Knowledge

	Educational Goals	Educational Activities	Evaluation Tools
1.	Expand clinically applicable knowledge base of the basic and clinical sciences underlying the care of medical patients.	DPC, FR, DL ,GR,	FE, ITE
2.	Access and critically evaluate current medical information and scientific evidence relevant to patient care.	DPC, FR, DL ,GR, JC	FE, ITE
3.	Understanding the basic elements of pathophysiology, diagnosis and management of important renal diseases, including those caused by hypertension, immune mechanisms, diabetes, infection, drug toxicity, nephrotic syndrome, disorders of tubular function and urinary obstruction.	DPC, FR, DL ,GR,  DPC, FR, DL, GR,	FE, ITE  FE, ITE
4.	Familiarity with evaluation and basic management of patients with chronic and acute renal failure.	DPC, FR  DPC, FR	FE,  ITE
5.	Familiarity with the cardiovascular, metabolic, infectious, skeletal, endocrine, immunologic, hematologic and gastrointestinal complications of chronic renal failure.	DPC, FR, DL	FE, ITE
6.	Familiarity with indications for performance and basic interpretation of specialized tests of renal function.	DPC, FR, GR,DL  DPC, FR	FE, ITE  FE, ITE
7.	Basic familiarity with the indications, principles and important medical complications of hemodialysis, peritoneal dialysis and renal transplantation.	DPC, FR, DL  DPC, FR	FE, ITE  FE, ITE

8.	Recognize the indications of basic interpretation of chest and abdominal X-rays, electrocardiograms, and pulmonary function tests.	DPC, DL  DPC, DL	FE, ITE  FE, ITE
9.	Learn indications for and basic interpretation of standard laboratory tests, including blood counts, coagulation studies, blood chemistry tests, urinalysis, body fluid analyses, and microbiologic tests.	DPC, FR, DL, GR  DPC, FR, DL, GR	FE, ITE  FE, ITE

### C. Interpersonal Skills and Communication

	Educational Goals	Educational Activities	Evaluation Tools
1.	Communicate effectively with patients and families.	DPC, FR, DL	FE
2.	Communicate effectively with physician colleagues at all levels.	DPC, FR, DL	FE, PR
3.	Communicate effectively with all non-physician members of the health care team to assure comprehensive and timely care of hospitalized patients.	DPC, FR, DL	FE
4.	Present information on patients concisely and clearly both verbally and in writing.	DPC, FR, DL	FE

### D. Professionalism

	Educational Goals	Educational Activities	Evaluation Tools
1.	Interact professionally with patients, families, colleagues, and all members of the health care team.	DPC, FR, DL	FE, PR
2.	Appreciation of the social context of illness.	DPC, FR, DL	FE

### E. Practice-Based Learning and Improvement

	Educational Goals	Educational Activities	Evaluation Tools
1.	Identify and acknowledge gaps in personal knowledge and skills in the care of hospitalized patients.	FR, DL	FE, ITE
2.	Develop and implement strategies for filling gaps in knowledge and skills.	JC, DL	FE, ITE
3.	Commitment to professional scholarship, including systematic and critical perusal of relevant print and electronic literature, with emphases on integration of basic science with clinical medicine, and evaluation of information in light of the principles of evidence-based medicine.	DPC, FR, DL, JC	FE, ITE

**F. Systems-Based Practice**

	Educational Goals	Educational Activities	Evaluation Tools
1.	Understand and utilize the multidisciplinary resources necessary to care optimally for hospitalized patients.	DPC, FR, DL	FE
2.	Collaborate with other members of the health care team to assure comprehensive patient care.	DPC, FR, DL	FE
3.	Understanding when to ask for help and advice from senior residents and attending physicians.	DPC, FR	FE, PR
4.	Effective collaboration with other members of the health care team, including residents at all levels, medical students, nurses, clinical pharmacists, occupational therapists, physical therapists, nutrition specialists, patient educators, speech pathologists, respiratory therapists, social workers, case managers, discharge planners, clinical pharmacists and providers of home health services.	DPC, FR, DL	FE, PR
5.	Knowing when and how to request medical consultation, and how best to utilize the advice provided.	DPC, AR	FE
6.	Knowing when and how to request ethics consultation, and how best to utilize the advice provided.	DPC, FR, DL	FE
7.	Consideration of the cost-effectiveness of diagnostic and treatment strategies.	DPC, FR, DL	FE
8.	Learning by participation in ward rounds, teaching conferences and other educational activities.	DPC, FR, DL	FE
9.	Leadership of team, including students, nurses, clinical pharmacist, case manager, and social worker.	DPC, FR, DL	FE, PR
10.	Willingness and ability to teach medical students	DPC, DL	FE, PR

<b>PG1 Detailed Objectives:</b>		
<b>Common Clinical Presentations – it is expected that the resident learns the differential diagnosis and the ability to perform a cost-effective work-up of these conditions.</b>		
		Extensive understanding of full differential. Knowledge of the full w/u and ability to carry out a prioritized, cost effective w/u.
	Oliguria/azotemia	
	Proteinuria	
	Hematuria	
	Edema	
	Hypertension	
	Uremia	
	Dysuria	
<b>Physical Diagnosis – it is expected that the resident develops competency in these specific physical exam skills.</b>		

	Assessment of volume status		
	Prostate exam - digital		
	Renal mass/bruit		
<b>Procedural Skills – it is expected that the resident develops competency in these specific procedures.</b>			
		ABG	
		Bladder catheterization	
<b>Primary Interpretation of Tests – it is expected that the resident understands the indications for ordering these tests and is able to interpret the results without the need for consultation.</b>			
		Recognize electrolyte abnormalities	
	Urine electrolytes and osmolality		
	Anion gap		
	FeNa		
	24° urine collection for creatinine, protein		
	Routine RUA		
	ABG		
<b>Ordering and Understanding of Tests – it is expected that the resident learns the indications and a basic understanding of these tests; however, specific test interpretation would generally require the assistance of a sub-specialist.</b>			
	IVP		
	CT urogram		
	Captopril scintigraphy scan		
	Renal angiogram		
	Renal stone analysis		

<b>Clinical Conditions – it is expected that the resident be familiar with all of the conditions listed. These conditions are divided into 3 categories:</b>			
<b>A</b> – these are conditions that the resident is expected to develop competence in the diagnosis and management of without the need for consultation.			
<b>B</b> – these are conditions that the resident is expected to develop a basic understanding of the diagnosis and management to enable him/her to co-manage with a subspecialty consultant.			
<b>C</b> – these are conditions that the resident is expected to recognize and formulate a differential diagnosis, but management would almost always be carried out by a sub-specialist.			
	Electrolyte		
		Hyponatremia	B
		Hypernatremia	
		Hyper and hypokalemia	B
		Hyper and hypocalcemia	B
		Hyper and hypomagnesemia	B
		Hyper and hypophosphatemia	C
	Glomerular disease		B
	Primary glomerular		B
		Anti-basement membrane	C
		IgA nephropathy	
		Immune complex disease	A
	Associated with infectious		A
		Post-strep gn	A

		Infective endocarditis		A
		Hepatitis B		A
		HIV		
	In association with			
		SLE nephritis		A
		Goodpasture's syndrome		A
		Henoch-Schonlein purpura		
		Disseminated vasculitis		
			Wegener's granulomatosis	C
			Polyarteritis	C
			Other variants	C
		Cryoglobulinemia		C
	Dysproteinemias			C
		Multiple myeloma		C
		Waldenstrom's macroglobulinemia		
		Light chain nephropathy		C
		Amyloidosis		C
		Cryoproteinemia		C
	Acute tubulointerstitial nephritis			B
		Acute bacterial pyelonephritis		B
		Drug induced		C
		Associated with systemic infection		B
		Idiopathic		
	Nephrotic syndrome			C
		Minimal change disease		B
		Membranous nephropathy		B
		Membranoproliferative glomerulonephritis		
		Focal segmental glomerulosclerosis		A
			Congenital heart diseases	C
			Morbid obesity	B
			Sickle cell disease	B
			Reflux nephropathy	B
			IVDA	
			HIV infection	B
			Glycogen storage disease	C
		Complications of nephrotic syndrome		B
			Hypoalbuminemia	
			Edema	A
			Hyperlipidemia	A
			Thromboembolic events	B
			Relative immunocompromise	C
	Acute renal failure			C
	Pre-renal causes			B
		Decreased renal blood flow		B
		Decreased SVR		A
	Renal causes			
		Rapidly progressive gn		B
			Goodpasture's	C

			Non-Goodpasture's anti-gbm	C
			Idiopathic RPGN	C
			Henoch-Schonlein purpura	B
			IgG/IgM cryoglobulinemia	C
			Poststreptococcal glomerulonephritis	B
		Systemic vasculitis		B
			Microscopic PAN	
			Wegener's	A
			Allergic granulomatosis	B
			SLE nephritis	A
			Malignant HTN	A
			Postpartum ARF	
			Scleroderma (with malignant HTN)	A
		Intravascular coagulation		A
			Hemolytic/uremic syndrome	A
			Cortical necrosis	
			TTP	C
		Tubulointerstitial disease		C
			Acute tubulointerstitial nephritis	C
			Hypercalcemic nephropathy	A
			Oxalate nephropathy	A
			Toxins and drugs	B
			Cholesterol embolism	
	Post-renal causes			C
		Urethral obstruction/BPH, tumors		C
		B/L ureter obstruction		B
		Functional disorders		B
	CRF			C
		DM		B
		HTN		A
		Glomerulonephritides		B
		ADPKD		B
		Alport's		C
		Obstructive uropathy		B
		Osteodystrophy		C
		Anemia		A
	Vascular disease of kidney			
		Renal artery thromboembolism		C
		Renal artery atheroemboli		C
		Renal vein thrombosis		C
		Hemolytic uremia syndrome		B
		TTP		B
		Scleroderma		B
		Arteriolar nephrosclerosis		B
		Sickle cell nephropathy		B
	Hypertension			
		Renal complications of HTN		B
		Secondary HTN (etiologies)		A



		Hypertensive crisis		A
		Essential HTN		A
	Diabetic nephropathy			
		Natural hx diabetic nephropathy		A
		Microalbuminuria		A
	Nephrolithiasis			
	Malignancy			
		Renal cell carcinoma		C
		Bladder cancer		C
		Prostate cancer		C
	Benign prostate hypertrophy			B
	Urinary tract infection			A
	Erectile dysfunction			A
	Renal disease in pregnancy			B
		Pregnancy induced HTN		B
		Preeclampsia		C
		Pyelonephritis		A
		Bacteruria in pregnancy		A
		Acute renal failure		B
	Testicular pain			B
	Hematospermia			B

<b>Additional Objectives:</b>		
Diagnose a mixed acid-base disorder.		
Diagnose acute interstitial nephritis.		
Diagnose acute tubular necrosis.		
Diagnose D-lactic acidosis.		
Diagnose membranoproliferative glomerulonephritis in hepatitis C.		
Diagnose nephrogenic diabetes insipidus.		
Diagnose NSAID-induced interstitial nephritis.		
Diagnose posthypercapnic metabolic alkalosis.		
Diagnose the cause of a mixed metabolic acidosis and respiratory alkalosis.		
Diagnose the cause of hypocalcemia.		
Diagnose the cause of nephrolithiasis after bariatric surgery.		
Recognize indications for ACE inhibitors in patients with type 2 diabetes mellitus.**		
Treat hypernatremia.		
Treat hypertensive urgency.		
Treat obstructive uropathy.		
Treat stage 2 hypertension.		