Overall Competencies for the Pediatric Residency Training Program

KIDNEY DISEASES

Goals and Competencies

PC: Patient Care; MK: Medical Knowledge; PBLI: Practice-Based Learning & Improvement
IC: Interpersonal & Communication Skills; P: Professionalism; SBP: Systems-Based Practice

GOAL 1: Normal Versus Abnormal (Genitourinary): Understand how to differentiate between normal and pathological states related to the genitourinary system.

COMPETENCIES: (PC, MK)	**<25%**	**25-50%**	**50-75%**	**75-100%**
1. Demonstrate knowledge about the normal physiological development of the kidneys and bladder (e.g., renal concentrating ability, glomerular filtration and sodium handling, normal voiding pattern, urine output, and attainment of bladder control) including normal ranges for laboratory values relating to these functions.			1	2,3
2. Recognize normal anatomy of genitalia from birth through puberty and differentiate between normal, early, and delayed pubertal development.				1,2,3
3. Differentiate orthostatic proteinuria from clinically significant persistent proteinuria.		1		2,3
4. Differentiate benign causes of hematuria from clinically significant gross or microscopic hematuria.		1	2	3
5. Be aware of the dosage adjustment required for certain drugs in children with impaired renal function.			1,2	3
6. Demonstrate an understanding of kidney pharmacotherapy, including use of:				
a. Anti-hypertensive medications.		1	2	3
b. Immunosuppressive medications.			1	2,3
c. Synthetic vitamin D preparations.			1	2,3
d. Erythropoietin therapy.			1	2,3
e. Antimicrobial agents.				1,2,3
7. Demonstrate an understanding of:				
a. Structural elements of the kidney.			1	2,3
b. Glomerular functions.			1	2,3
c. Tubular functions.			1	2,3
d. Elements of the normal urinalysis.				1,2,3
e. Principles of extracorporeal fluid management.	1	2	3	

GOAL 2: Common Conditions Not Referred (Genitourinary): Understand how to diagnose and manage common conditions which generally do not require referral.

COMPETENCIES: (PC, MK)	**<25%**	**25-50%**	**50-75%**	**75-100%**
1. Recognize, describe the pathophysiology of, and manage these conditions:				
a. Urinary tract infection (pyelonephritis & cystitis)		1		2,3
b. Electrolyte disturbances of sodium or potassium.		1	2	3
c. Volume depletion.			1	2,3
d. Orthostatic proteinuria.		1	2	3
e. Microscopic hematuria – Benign hematuria.		1	2	3
f. Post-infectious GN.		1	2	3
g. Childhood nephrosis.		1	2,3	
h. Syndromes of excess ADH		1	2,3	
i. Primary (essential) hypertension.		1		2,3

GOAL 3: Conditions Generally Referred (Genitourinary): Understand how to recognize, initiate management of, and refer conditions which generally require referral.

COMPETENCIES: (PC, MK)	**<25%**	**25-50%**	**50-75%**	**75-100%**
Identify, provide initial management of, and refer appropriately these conditions.				
1, Acute and chronic kidney failure.	1,2	3		
2. Hemolytic uremic syndrome.		1	2,3	
3. Secondary causes of hypertension.	1	2	3	

4. Renal mass or cyst.	2,31			
5. Obstructive uropathy (e.g., posterior urethral valve).		1	2	3
6. Diabetes insipidus.	1		2	3
7. Urolithiasis.		1	2,3	
8. Tubular defects (e.g., renal tubular acidosis, Fanconi's, Bartter).	1	2	3	
9. Severe electrolyte imbalances indicative of a mixed acid base disturbance.	1	2,3		
10. Derangements of renal function in the acutely ill child (acute tubular necrosis).		1	2,3	
11. Hypocalcemic conditions.	1	2	3	
12. Hypercalcemic conditions.	1	2	3	
13. Peritonitis			1	2,3
14. Kidney transplant rejection	1	2	3	

GOAL 4: Systemic Conditions with Renal Involvement: Understand the pathophysiology and management of common systemic conditions presenting with renal involvement which may require referral.

COMPETENCIES: (PC, MK)	**<25%**	**25-50%**	**50-75%**	**75-100%**
Recognize, treat routine cases of, and refer as indicated these systemic conditions presenting with renal involvement:				
1. Henoch-Schonlein Purpura.		1	2,3	
2. Systemic lupus erythematosus.		1		2,3
3. Sickle cell anemia.	1	2	3	
4. Goodpasture sydrome.	1	2	3	
5. Rapidly progressive GN.	1	2	3	

GOAL 5: Urinary Tract Infection: Understand the appropriate methods of diagnosis and management of a child with a urinary tract infection.

COMPETENCIES: (PC, MK, IC)	**<25%**	**25-50%**	**50-75%**	**75-100%**
1. Recognize and manage the child with an UTI including appropriate imaging studies and follow-up.			1	2,3
2. List the appropriate antibiotics for a UTI based on upper or lower tract disease and local antibiotic resistance patterns.			1	2,3
3. Discuss the usual pathophysiology and prognosis of recurrent UTI.		1	2	3
4. Identify the general approach to diagnostic evaluation and treatment of recurrent UTI's and criteria for referral.			1	2,3

GOAL 6: Fluids and Electrolytes: Understand the physiology of body fluids and electrolytes, derangements which may occur, and therapy.

COMPETENCIES: (PC, MK, IC)	**<25%**	**25-50%**	**50-75%**	**75-100%**
1. Demonstrate knowledge about the normal physiology of body fluids (water) and salts including the intracellular versus extracellular component, composition of salt in each (Na, K), intake and output, sensible and insensible losses, and normal daily requirements.			1	2,3
2. List the signs and symptoms of dehydration and calculate fluid deficits.			1	2,3
3. Define the different types of dehydration and the etiologies of each.			1	2,3
4. Considering maintenance, deficits, and anticipated on-going losses, calculate fluid therapy including water and salt content for patients presenting with the various types of dehydration.			1	2,3
5. Demonstrate the ability to monitor IV fluid therapy in patients and make appropriate changes.			1	2,3
6. Identify the differences in composition of the commonly used fluids (intravenous and oral rehydration solutions).			1	2,3
7. Interpret correctly acid base laboratory values, list the differential diagnosis of metabolic acidosis and alkalosis, develop a step-wise approach to the diagnosis, and institute appropriate therapy.			1	2,3
8. Demonstrate an understanding of the pathogenesis, diagnosis, and therapy of common disturbances in water, sodium, potassium, and acid-based homeostases.			1	2,3