A. Diagnosis or Symptom: Hematuria

Definition:
1. Microscopic hematuria defined as > 5 RBC/hpf on urine microscopy
2. Gross hematuria – red, pink, brown, tea-colored or coca-cola colored urine

Information needed for referral:
1. At least 3 urinalyses over a 2-3 week period to confirm diagnosis. Significant hematuria is >5 RBC/hpf on urine microscopy.
2. BP measurements to check for hypertension
3. Urine culture
4. Urine calcium-creatinine ratio. (Normal ratio is less than 0.2 for children above 6 years of age).
5. Urine dipstick on family members (parents and siblings) to check for hematuria
6. Renal function panel (electrolytes, BUN, creatinine, albumin)
7. Renal and bladder US with gross hematuria (provide copies of the written report and saved images on CDs for those studies not performed at Inland Imaging or Rockwood Clinic)
8. Growth chart

Indications for Immediate Evaluation of Hematuria and Referral to a Pediatric Nephrologist:
1. Hypertension
2. Edema
3. Decreased urine output
4. Elevated creatinine
5. Hematuria associated with proteinuria
6. Presence of RBC casts in the urine
7. Renal mass or abnormalities in US

B. Diagnosis or Symptom: Proteinuria

Definition:
1. ≥ 1+ in urine dipstick with specific gravity ≤ 1.015
2. ≥ 2+ in urine dipstick with specific gravity > 1.015
3. Urine protein-creatinine ratio > 0.2
Information needed for referral:
1. At least 3 urinalyses over 2-3 week period to confirm diagnosis.
2. BP measurements to check for hypertension
3. Random or spot urine protein-creatinine ratio in first morning urine
4. Renal function panel (electrolytes, BUN, creatinine, albumin)
5. Growth chart
6. If urine protein-creatinine ratio is greater than 2.0, consider obtaining complement levels (C3 and C4 levels), ANA screen, ANCA and serologies for hepatitis B, hepatitis C and HIV.

Indications for Immediate Evaluation of Proteinuria and Referral to a Pediatric Nephrologist:
1. Proteinuria > +3 or +4 on urine dipstick or urine protein-creatinine ratio greater than 2.0
2. Edema
3. Decreased urine output
4. Elevated creatinine
5. Proteinuria associated with hematuria or RBC casts
6. Abnormal complement levels

C. Diagnosis or Symptom: Nephrotic syndrome

Definition:
1. Significant proteinuria (Urine protein-creatinine ratio > 2.0 or 24-hour urine collection with total protein > 40 mg/m2/hr)
2. Low serum albumin < 2.5 g/dl
3. Edema
4. Elevated cholesterol level

Information needed for referral:
1. Renal function panel (electrolytes, BUN, creatinine and albumin)
2. CBC with differential count
3. Urinalysis
4. Urine protein-creatinine ratio
5. BP measurements to check for hypertension
6. Complement levels (C3 and C4) and ANA screen if with associated significant hematuria
7. For patients >10 years of age, get complement levels (C3 and C4), ANA screen, serologies for hepatitis B, hepatitis C and HIV.
Indications for Immediate Evaluation of Nephrotic Syndrome and Referral to a Pediatric Nephrologist:

1. Urgent referral is indicated for all patients with nephrotic syndrome.
2. Evaluate for severe edema, difficulty of breathing, peritonitis, elevated creatinine and decreased urine output. Patient will need to be seen in the clinic as soon as possible to determine if patient needs admission to the hospital.

D. Diagnosis or Symptom: Hypertension

Definition:

1. Blood pressure greater than 95\textsuperscript{th} \% percentile for age, gender and height.
2. Check Cardiology Section of Harriet Lane Handbook for the BP tables and normative values in children.
3. BP tables can also be found in The Fourth Report on the Diagnosis, Evaluation, and Treatment of High Blood Pressure in Children and Adolescents published in PEDIATRICS Vol. 114 No. 2 August 2004

Information needed for referral:

1. Renal function panel (electrolytes, BUN, crea, Ca, Mg, Phos)
2. Urinalysis
3. CBC with differential count
4. Blood pressure measurements
5. Growth chart
6. Echocardiogram
7. Renal and bladder US with doppler
8. Fasting lipid panel, glucose and insulin level for overweight patients.

Indications for Immediate Evaluation of Hypertension and Referral to a Pediatric Nephrologist:

1. Symptomatic hypertension associated with headache, nausea, vomiting, abdominal pain, neurologic changes or visual disturbances.
2. Hypertension associated with hematuria and proteinuria
3. BP greater than 99\textsuperscript{th} percentile for age, gender and height
4. Hypertension with extra-renal and systemic symptoms such as joint pain, weight loss or weight gain, edema, rashes, chronic cough, hemoptysis

REFERRAL CONTACT INFORMATION

Joel D. Hernandez, MD
Pediatric Nephrology
Sacred Heart Medical Center Children’s Hospital
Suite 100-L1
Phone: 509-474-5445
Fax: 509-474-2241