

**GO PUBLIC!**



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## **Nephrology Referral Guidelines**

**Nephrology Clinic  
Locations:**

Renal Care Center  
2220 Moorpark  
San Jose, CA 95128

Valley Specialty Center  
751 S. Bascom Ave  
San Jose, CA 950128

**Nephrology Clinic  
Patient Phone:  
For New Patients:**

(408) 885-4845

(408) 885-3842

**Nephrology Clinic Fax:**

(408) 885-5828

**This information is designed to aid practitioners in making decisions about appropriate medical care. These guidelines should not be construed as dictating an exclusive course of treatment. Variations in practice may be warranted based on the needs of the individual patient, resources, and limitations unique to the institutional type of practice.**

**E-CONSULT DISCLAIMER:**

**E-consults are based on the clinical data available to the reviewing provider, and are furnished without benefit of a comprehensive evaluation or physical examination. All advice and recommendations must be interpreted in light of any clinical issues, or changes in patient status, not available to the reviewing provider. The ongoing management of clinical problems addressed by the e-consult is the responsibility of the referring provider. If you have further questions or would like clarifications regarding e-consult advice, please contact the reviewing provider. If needed, the patient will be scheduled for an in-office consultation.**

**ALL URGENT outpatient nephrology consults require direct communication with the OUTPATIENT NEPHROLOGY ATTENDING as listed on AMION during business hours.**

**After hours/holidays, contact the NEPHROLOGY CONSULT ATTENDING as listed on AMION. If your patient has a medical emergency, please direct them to the closest emergency room for expedited care.**

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## **\*\*ABBREVIATIONS/TERMINOLOGY\*\***

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ARB – Angiotensin Receptor Blockade

ACEi – Angiotensin Converting Enzyme inhibitor

CKD – Chronic kidney disease

e-GFR – Estimated Glomerular Filtration Rate in units ml/min/1.73m<sup>2</sup>

UACR – Urine Albumin to Creatinine Ratio

UPCR – Urine Protein to Creatinine Ratio

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## **\*\*SECTION 1: URGENT REFERRALS WITH OUTPATIENT PHYSICIAN CONTACT REQUIRED\*\***

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### **A. ACUTE KIDNEY INJURY**

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#### **1. Background**

- KDIGO defines AKI as an increase in serum Cr by  $\geq 0.3$  mg/dL within 48 hours, or increase in serum Cr to  $\geq 1.5$  times baseline, which is known or presumed to have occurred within the prior seven days

#### **2. Pre-referral evaluation and treatment**

- a. Check RCA nephrotic panel which includes CBC with differential, P7, Calcium, Phosphorus, Magnesium, Albumin, Cholesterol, ALT, Uric Acid, Urine protein to creatinine ratio.
- b. If a patient has a drop in eGFR after starting a new medication, follow the Cr over a few weeks. Some medications where an increase in Cr is expected are:
  - i. ACE inhibitors and ARBs - up to 30 % rise in Cr is acceptable.
  - ii. SGLT2 inhibitors - A reversible decrease in eGFR may occur but does not warrant discontinuation of therapy. Assess for dehydration and hypotension.

#### **3. Indications for referral**

- a. If patient has decreased urine output or symptoms of renal failure
  - i. Refer for inpatient evaluation and management.
- b. If patient has acute drop in eGFR with hematuria and significant proteinuria (UPCR > 500mg/g)

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## **B. PROTEINURIA WITH HEMATURIA OR HEAVY PROTEINURIA, SUSPECTED GLOMERULONEPHRITIS (IN THE ABSENCE OF DIABETES)**

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### **1. Background**

- a. Asymptomatic microscopic hematuria is defined as the presence of  $\geq 3$  RBC/HPF on a urinary microscopic examination.
- a. If patient has serum albumin  $< 3$ , UPCR  $> 3.5$ , high cholesterol and/or edema, may signify nephrotic syndrome.

### **2. Pre-referral evaluation and treatment**

- a. Check RCA nephrotic panel which includes CBC with differential, P7, Calcium, Phosphorus, Magnesium, Albumin, Cholesterol, ALT, Uric Acid, Urine protein to creatinine ratio.
- b. Consider checking serologies such as C3, C4, ANCA, ANA, HIV, HCV, HBV, SPEP, UPEP. Nephrology will guide further work-up.

### **3. Indications for referral**

- a. Hematuria with UPCR  $\geq 0.5$  or dysmorphic red cells or red cell casts
- b. UPCR  $> 3.5$  with serum albumin  $< 3$  and edema

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## **4. B. CHRONIC KIDNEY DISEASE, eGFR $< 15$ ml/min/1.73m<sup>2</sup>**

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### **1. Background**

- a. Uremic symptoms usually develop when eGFR  $< 15$  ml/min/1.73m<sup>2</sup>
- b. ESRD preparation must be expedited to minimize rise of patient starting dialysis in the hospital.

### **2. Pre-referral evaluation and treatment**

- a. Check RCA nephrotic panel which includes CBC with differential, P7, Calcium, Phosphorus, Magnesium, Albumin, Cholesterol, ALT, Uric Acid, Urine protein to creatinine ratio.

### **3. Indications for referral**

- a. eGFR  $< 15$  ml/min/1.73m<sup>2</sup>

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## C. KIDNEY DISEASE IN PREGNANCY

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### 4. Pre-referral evaluation and treatment

- a. Check RCA nephrotic panel which includes CBC with differential, P7, Calcium, Phosphorus, Magnesium, Albumin, Cholesterol, ALT, Uric Acid, Urine protein to creatinine ratio.

### 5. Indications for referral

- a. Pregnant women with UPCR >0.5 in first trimester or eGFR less than 60 ml/min/1.73m<sup>2</sup>

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## \*\*SECTION 2: INDICATIONS FOR ROUTINE REFERRALS

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### A. CHRONIC KIDNEY DISEASE WITH PROTEINURIA IN THE SETTING OF DIABETES OR HYPERTENSION

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#### 1. Background

- a. Diabetes and HTN are the two most common causes of proteinuria CKD in the United States

#### 2. Routine Management by PCP for eGFR $\geq$ 30 ml/min/1.73m<sup>2</sup>

- i. Optimize hypertension control (goal < 130/80)
- ii. Optimize diabetes control (HgbA1c goal < 7-8)
- iii. Maximize ACEI or ARB as clinically appropriate
- iv. Treat hyperlipidemia and atherosclerotic risk factors (statin, smoking cessation)
- v. Recommend SGLT2i in all patients with a UACR over 300mg/g without contraindications.

#### 3. Pre-referral evaluation and treatment

- a. Check RCA nephrotic panel which includes CBC with differential, P7, Calcium, Phosphorus, Magnesium, Albumin, Cholesterol, ALT, Uric Acid, Urine protein to creatinine ratio.

#### 4. Indications for referral

- a. Rapid decline in eGFR > 5 ml/min/1.73m<sup>2</sup>/year OR sudden increase in proteinuria over 1 year.
- b. UPCR > 3 in patient despite maximally tolerated ACEi/ARB and SGLT2i

- c. eGFR < 30 ml/min/1.73m<sup>2</sup>
  - i. Notify Outpatient Nephrology attending if eGFR < 15 to expedite consultation appointment.

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## **B. CHRONIC KIDNEY DISEASE WITHOUT PROTEINURIA OR HEMATURIA**

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### **1. Pre-referral evaluation and treatment**

- b. Check RCA nephrotic panel which includes CBC with differential, P7, Calcium, Phosphorus, Magnesium, Albumin, Cholesterol, ALT, Uric Acid, Urine protein to creatinine ratio.
- a. Order renal ultrasound

### **2. Indications for referral**

- a. Acute, sustained drop in eGFR
- b. Rapid decline in eGFR > 5 units ml/min/1.73m<sup>2</sup>/year
- c. eGFR < 30 units ml/min/1.73m<sup>2</sup>
  - i. Notify Outpatient Nephrology attending if eGFR < 15 to expedite consultation appointment.
- c. Nephrotic syndrome - Proteinuria UPCR > 3.5, serum albumin < 3. Notify outpatient attending for expedited appointment
- d. Concern for acute glomerulonephritis. Notify outpatient attending for expedited appointment

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## **C. CHRONIC KIDNEY DISEASE OF UNKNOWN ETIOLOGY**

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### **1. Pre-referral evaluation and treatment**

- a. Check RCA nephrotic panel which includes CBC with differential, P7, Calcium, Phosphorus, Magnesium, Albumin, Cholesterol, ALT, Uric Acid, Urine protein to creatinine ratio.
- b. Order renal ultrasound

### **2. Indications for referral**

- a. eGFR < 45ml ml/min/1.73m<sup>2</sup> or UPCR > 0.5

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## D. HYPERKALEMIA

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### 1. Background

Hyperkalemia is a common problem, more often seen in the elderly patients, diabetics, and individuals with CKD.

### 2. Pre-referral evaluation and treatment

- a. Check RCA nephrotic panel which includes CBC with differential, P7, Calcium, Phosphorus, Magnesium, Albumin, Cholesterol, ALT, Uric Acid, Urine protein to creatinine ratio
- b. Initial management should be prescribed by PCP as follows:
  - i. Hyperkalemia
    1. Assess for pseudohyperkalemia
    2. Assess for dehydration
    3. Consider stopping K sparing medications including
      - a. ACE inhibitors or ARBs
      - b. Spironolactone, eplerenone, finerenone
      - c. Triamterene, trimethoprim (Bactrim)
      - d. NSAIDs
      - e. Entresto
    4. Consider adding diuretic such as HCTZ, chlorthalidone or furosemide, regardless of presence of edema unless contraindication.
    5. Consider starting sodium bicarbonate (typical dose 650 mg po bid) unless serum  $\text{HCO}_3^- > 27$  or contraindication.
    6. Consider starting Kayexalate, Veltassa or Lokelma, if clinically appropriate
    7. Encourage patient to eat a low potassium diet
    8. Recheck K

### 3. Indications for referral

- a. Sustained hypokalemia or hyperkalemia after management above

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## HYPONATREMIA

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### 1. Background

- a. Hyponatremia is a problem more often seen in the elderly, patients with advanced heart, liver and kidney disease.
- b. Should be corrected for hyperglycemia.

## **2. Pre-referral evaluation and treatment**

- a. Check P7, serum osmolality, spot urine sodium and spot urine osmolality
- b. Assess volume status
- c. If patient is on a thiazide diuretic considering discontinuation
- d. If SIADH is suspected, review for potential causes including medications.

## **3. Indications for referral**

- a. Sustained hyponatremia ( $\text{Na} < 130$ ) after management above

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## **E. HYPERTENSION**

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### **1. Background**

- a. Resistant hypertension is defined as uncontrolled blood pressure despite the use of  $\geq 3$  antihypertensive agents of different classes including a diuretic at maximal or maximally tolerated doses.
- b. Refractory hypertension is defined as uncontrolled blood pressure despite the use of  $\geq 5$  antihypertensive medications of different classes including a diuretic and a mineralocorticoid receptor antagonist at maximal or maximally tolerated doses.
- c. Secondary hypertension – high blood pressure caused by another condition or disease.

### **2. Pre-referral evaluation and treatment**

- a. Check RCA nephrotic panel which includes CBC with differential, P7, Calcium, Phosphorus, Magnesium, Albumin, Cholesterol, ALT, Uric Acid, Urine protein/creatinine ratio
- b. Provide low sodium dietary education. Maximum dietary sodium allowance is 2g/day
- c. Ensure right size blood pressure cuff and blood pressure machine is functional.
- d. Advise patient to check blood pressure at home after sitting and relaxing for 3-5 minutes with both feet flat on the ground.
- e. Add diuretic whether edema present or not (if no contraindication)
- f. Perform in person medication review and a pill count to evaluate if patient is taking medications as prescribed and confirm adherence to medications.
- g. Patients who discontinue multiple medications due to varying side effects or medication non-compliance do not have refractory hypertension and should not be referred.

### **3. Indications for referral**

- a. If unable to control blood pressure despite above, proceed with routine referral.
- b. Do NOT refer for medication non-compliance
- c. Instruct patient to bring ambulatory blood pressure readings and all medication bottles (not medication list) to nephrology consultation appointment.

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## **F. KIDNEY TRANSPLANT PATIENTS**

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### **1. Background**

- a. For the first year posttransplant, patients are primarily followed by the kidney transplant center. Care is transitioned to general nephrology 3 months to 1 year posttransplant.
- b. These patients should receive routine general healthcare maintenance with special attention to cardiovascular risk reduction, hyperlipidemia management, glucose control and blood pressure management.
- c. Patients should receive routine vaccines. Note: live vaccinations are contraindicated.

### **2. Pre-referral evaluation and treatment**

- a. Check RCA nephrotic panel which includes CBC with differential, P7, Calcium, Phosphorus, Magnesium, Albumin, Cholesterol, ALT, Uric Acid, Urine protein to creatinine ratio

### **3. Indications for referral**

- a. If patient was followed by a VMC nephrologist immediately prior to transplant, then VMC nephrology will resume care posttransplant once transplant center releases them.

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## **G. CONGENITAL, MEDULLARY OR CYSTIC KIDNEY DISEASE**

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### **1. Background**

- a. Identified in childhood or routine labs/imaging. Most common reason for referral is polycystic kidney disease.
- b. Simple cysts do not require intervention. Complex kidney cysts should be referred to Urology

### **2. Pre-referral evaluation and treatment**

- a. Check RCA nephrotic panel which includes CBC with differential, P7, Calcium, Phosphorus, Magnesium, Albumin, Cholesterol, ALT, Uric Acid, Urine protein to creatinine ratio
- b. Evaluate anatomy with renal ultrasound or CT. If completed by external provider, please attach copy of report.

### **3. Indications for referral**

- a. Place routine referral.

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## **\*\*SECTION 3: INAPPROPRIATE REFERRALS TO NEPHROLOGY CLINIC\*\***

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### **A. DIALYSIS PATIENT WITH OUTSIDE NEPHROLOGIST OR WANTING TO SWITCH NEPHROLOGISTS**

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4. If patient requests to change nephrologists, they can work with their dialysis center social worker to transfer to another community nephrologist.
5. Patients are not permitted to switch between VMC nephrologists.

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### **B. UNCONTROLLED HYPERTENSION IN NONADHERENT PATIENT**

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1. Management by PCP

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## **\*\*SECTION 4: REFERRALS TO BE DIRECTED TO ANOTHER CLINIC\*\***

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### **A. HEMATURIA WITHOUT URINE PROTEINURIA**

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1. Consult Urology. Review Urology referral guidelines.

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### **B. KIDNEY/BLADDER STONES**

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1. Consult Urology. Review Urology referral guidelines

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### **C. ANATOMIC ABNORMALITIES OF BLADDER/KIDNEY/URETERS, CALIECTASIS, COMPLEX RENAL CYST, HYDRONEPHROSIS, RENAL MASS**

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1. Consult Urology. Review Urology referral guidelines

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### **D. RECURRENT URINARY TRACT INFECTIONS**

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1. Consult Infectious Disease or Urology. Review specialty specific referral guidelines.

#### Revisions:

- June 2024, content
- May 2017, formatting, content
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