Determine Stage of Susceptibility

- Age > 60 years
- Family history of CKD

Choose Direct Risk Factors

- Diabetes
- High Blood Pressure
- Autoimmune diseases
- Lower urine tract obstruction
- Hx acute renal failure

Choose Progressive Risk Factors

- High levels proteinuria
- Malignant hypertension
- Poor glycemic control
- Smoking
- Dyslipidemia

Does patient at risk for CKD?

Is patient at risk for CKD?

Perform routine screening for CKD for patients at increased risk

* Serum creatinine to determine estimated GFR
* Assessment of proteinuria
* Urinalysis for presence of white & red blood cells

Consult Nephrology if action plan cannot be performed or carried out or when GFR < 60

Does patient have abnormal GFR > 3 months?

Follow Up CKD Monitoring

- Test patients at risk for CKD annually
- Counsel patients at risk for CKD but found not to have CKD to reduce risk factors when possible

Begin CKD Treatment: Develop Clinical Action Plan

Collaborate with nephrologist to develop action plan to include:
- Evaluate and manage comorbid conditions (Primary care, all stages)
- Prevent & treat cardiovascular disease (Primary care, all stages)
- Prepare for kidney failure and replacement therapy (Nephrology, stage 4)
- Replace kidney function (Nephrology, stage 5)

Consult Nephrology if action plan cannot be performed or carried out or when GFR < 60

Does patient have protein to creatinine ratio > 1.0 gm?

Identify risks associated with CKD

* Evaluate type of kidney disease
* Evaluate complications of kidney disease: diabetes, hypertension, anemia, malnutrition, bone disease, metabolic acidosis, congestive heart failure, hyperkalemia, edema determined to fluid overload, neuropathy
* Evaluate risk for loss of kidney function
* Evaluate comorbidity conditions
* Evaluate risk for cardiovascular disease

Review medication usage at follow-up visits

* Evaluate for necessary dose adjustments based on level of kidney function
* Evaluate for adverse effects of medications on kidney function (NSAIDs, IV contrast)
* Evaluate for drug interactions
* Counsel patient to avoid nephrotoxic drugs and IV contrast
* Evaluate appropriateness for ACE/ARB agents with diagnosis of hypertension
* Evaluate need for therapeutic drug monitoring

Consult/Refer to Nephrologist

* Consult nephrologist at Stage 1 if hematuria or significant proteinuria present
* Consult nephrologist at Stage 2 if GFR declines > 4mL/min/yr
* Consult nephrologist at Stage 3 for all patients with CKD
* Refer patient to nephrologist for evaluation when GFR < 30 mL/min/1.73²

Assess barriers to treatment adherence

* Family and social support
* Depression
* Income & unemployment concerns
* Stress and coping mechanisms
* Perceptions of illness & treatment
* Limited access to medications and/or care

Monitor Progression

Does patient have GFR < 60 for > 3 months or proteinuria > gm?

Please note: The Via Christi Health Alliance in Accountable Care, Inc. (the “ACO”) in consultation with its affiliated ACO providers developed these care pathways and guidelines based on the most recent evidenced based medicine data. The ACO is continually researching and updating its care pathways and guidelines to reflect the most recent evidence-based standards. This information is intended to provide health professionals with information to improve the quality of care and ultimately lower the cost of such care to the patients they serve. By providing this evidence-based information, it is not the intention of the ACO to provide specific medical advice for particular patients. Rather we urge each provider to review this material when consulting and evaluating the treatment options suitable for their patients. The ACO affiliated providers are solely responsible for confirming the accuracy, timeliness, completeness, appropriateness and helpfulness of this material and making all medical, diagnostic or prescription decisions.
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Primary Care

Assess Complications

LABS
- BP monitoring q 6 mo.
- GFR q 6 mo.
- Urinalysis q 12 mo. to assess hematuria, proteinuria, microalbuminuria
- Lipids q 12 mo.
- If diabetic, Hgb A1C and microalbuminuria q 12 mo.

RISK ASSESSMENT
- Avoidance of nephrotoxic agents & dyes
- Immunizations
  - Flu vaccine q 12 mo.
  - Pneumovax, as indicated
  - HbB vaccine, as indicated
  - Assess cardiovascular risk:
    - Smoking cessation
    - Physical activity

Education
- Cardiovascular risk
- Medications to avoid
- Immunizations

Primary Care

Assess Complications

LABS
- BP monitoring q 3-12 mo.
- GFR q 12 mo.
- Urinalysis q 3-12 mo. to assess hematuria, proteinuria, microalbuminuria
- Lipids q 12 mo.
- If diabetic, Hgb A1C and microalbuminuria q 12 mo.

RISK ASSESSMENT
- Avoidance of nephrotoxic agents & dyes
- Immunizations
  - Flu vaccine q 12 mo.
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  - HbB vaccine, as indicated
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    - Smoking cessation
    - Physical activity

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Primary Care

Assess Complications

LABS
- BP monitoring q 3-12 mo.
- GFR q 12 mo.
- Urinalysis q 6-12 mo. to assess hematuria, proteinuria, microalbuminuria
- Lipids q 12 mo.
- If diabetic, Hgb A1C and microalbuminuria q 12 mo.
- Hgb q 12 mo. if > 11 gm/dL

RISK ASSESSMENT
- Avoidance of nephrotoxic agents & dyes
- Immunizations
  - Flu vaccine q 12 mo.
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    - Physical activity

Education
- Cardiovascular risk
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Nephrology

Assess Complications

LABS
- BP monitoring q 3-6 mo.
- GFR q 3-6 mo.
- Lipids q 12 mo.
- If diabetic, Hgb A1C and microalbuminuria q 12 mo.
- Hgb q 3-6 mo.
  - Monthly if on ESA therapy
  - PTH, Ca, P q 3-6 mo.
  - Measure 25(OH)D

RISK ASSESSMENT
- Avoidance of nephrotoxic agents & dyes
- Immunizations
  - Flu vaccine q 12 mo.
  - Pneumovax, as indicated
  - HbB vaccine, as indicated
  - Assess cardiovascular risk:
    - Smoking cessation
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Education
- Cardiovascular risk
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Co-management

Assess Complications

LABS
- BP monitoring q 3-12 mo.
- GFR q 12 mo.
- Urinalysis q 6-12 mo. to assess hematuria, proteinuria, microalbuminuria
- Lipids q 12 mo.
- If diabetic, Hgb A1C and microalbuminuria q 12 mo.
- Hgb q 12 mo. if > 11 gm/dL

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Nephrology

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- GFR q 3-6 mo.
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- If diabetic, Hgb A1C and microalbuminuria q 12 mo.
- Hgb q 3-6 mo.
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Education
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- Medications to avoid
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Referals
- Surgeon for vascular access placement
- Transplant center for eval
- Create access for dialysis

CKD Stage 1

GFR > 90 mL/min/1.73m²
P.C 200-400 mg/gm

CKD Stage 2

GFR > 60 - 89 mL/min/1.73m²

CKD Stage 3

GFR > 30 - 59 mL/min/1.73m²

CKD Stage 4

GFR > 15 - 29 mL/min/1.73m²

eGFR < 15 mL/min/1.73m²

CKD Stage 5

*GFR value requires the following data variables:
- race, sex, age, and serum creatinine

**Note: Change package will incorporate primary care provider assessment for CKD-associated complications for Stages 1 and 2 and nephrology assessment for CKD-associated complications for Stages 3-5.

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