

Ascension Via Christi

Chronic Kidney Disease Care Path **Assessment Patient Office Visit** Is patient at risk for CKD? **Progressive Risk Factors** Susceptibility **Direct Risk Factors** -Age > 60 years -Diabetes -Systemic infections -High levels proteinuria -Family history of CKD -High Blood Pressure -Urinary tract infection -Malignant hypertension **STOP** -Urinary stones -Poor glycemic control No -Autoimmune diseases -Lower urine tract obstruction -Drug toxicity -Smoking -Hx acute renal failure -Exposure drugs/procedures -Dvslipidemia **Change Concept 1** Yes 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 **Change Concept 2** Does patient have abnormal GFR > 3 Does patient have protein to No Yes creatinine ratio > 1.0 gm? months? Nο **Determine Stage of** CKD Yes **Follow Up CKD Monitoring** Stage 1 Stage 2 Stage 3 Stage 4 Stage 5 -Test patients at risk for CKD annually eGFR > 90 -Counsel patients at risk for CKD but found not to P:C 200-400 mg/gm GFR 60-89 GFR 30-59 GFR 15-29 GFR < 15 have CKD to reduce risk factors when possible **Begin CKD Treatment: Develop Clinical Action Plan Identify risks associated with CKD** Collaborate with nephrologist to develop action plan to include: *Evaluate type of kidney disease *Evaluate and manage comorbid conditions (Primary care, all stages) *Evaluate complications of kidney disease: diabetes, *Slow the loss of kidney function (Co-management, all stages) hypertension, anemia, malnutrition, bone disease, *Prevent & treat cardiovascular disease (Primary care, all stages) metabolic acidosis, congestive heart failure, *Prevent & treat complications of decreased kidney function (Co-management, all stages) hyperkalemia, edema determined to fluid overload, *Prepare for kidney failure and replacement therapy (Nephrology, stage 4) neuropathy *Replace kidney function (Nephrology, stage5) *Evaluate risk for loss of kidney function Consult Nephrology if action plan cannot be performed or carried out or when GFR < 60 *Evaluate comorbidity conditions *Evaluate risk for cardiovascular disease **Change Concept 3** Assess barriers to treatment adherence Review medication usage at follow-up visits *Family and social support *Evaluate for necessary dose adjustments based on level of kidney function *Depression *Evaluate for adverse effects of medications on kidney function (NSAIDs, IV contrast) *Income & unemployment concerns *Evaluate for drug interactions *Stress and coping mechanisms *Counsel patient to avoid nephrotoxic drugs and IV contrast *Perceptions of illness & treatment *Evaluate appropriateness for ACE/ARB agents with diagnosis of hypertension *Limited access to medications and/or care *Evaluate need for therapeutic drug monitoring **Change Concept 6 Change Concept 5** Consult/Refer to Nephrologist **Monitor CKD** Does patient have No Yes *Consult nephrologist at Stage 1 if hematuria or significant proteinuria present GFR < 60 for > 3 months Progression *Consult nephrologist at Stage 2 if GFR declines > 4mL/min/yr or proteinuria > gm? *Consult nephrologist at Stage 3 for all patients with CKD

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.

*Refer patient to nephrologist for evaluation when GFR < 30 mL/min/1.73²

Change Concept 7



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CKD Stage 1 GFR > 90 mL/min/1.73 m^2 P:C 200-400 mg/gm

CKD Stage 2

GFR > 60 - 89 $mL/min/1.73m^2$

Treatment

CKD Stage 3

GFR > 30 - 59mL/min/1.73m²

CKD Stage 4

GFR > 15 - 29 mL/min/1.73m²

CKD Stage 5

eGFR < 15 mL/min/1.73m²

PRIMARY CARE Assess Complications

LABS

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

RISK ASSESSMENT

- Avoidance of nephrotoxic agents & dyes
- Immunizations -Flu vaccine q 12 mo.
- -Pneumovax, as indicated
- -Hep B vaccine, as indicatedAssess cardiovascular
- -Smoking cessation
 -Physical activity

EDUCATION

- Cardiovascular risk
- Medications to avoid
- Immunizations

Stages 3-5.

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 a 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. -Pneumovax, as indicated -Hep B vaccine, as indicated
- Assess cardiovascular risk:
- -Smoking cessation -Physical activity

EDUCATION

*GFR value requires the following data variables:

**Note: Change package will incorporate primary

complications for Stages 1 and 2 and nephrology

assessment for CKD-associated complications for

care provider assessment for CKD-associated

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race, sex, age, and serum creatinine

- Cardiovascular risk
- Medications to avoid
- Immunizations

CO-MANAGEMENT Assess Complications

LABS

- BP monitoring q 3-12 mo.
- GFR q 3-12 mo.
- Urinalysis q 6-12 mo. to assess hematuria, proteinuria, microalbuminuria
- Lipids q 12 mo.
- If diabetic, Hgb A₁C and microalbuminuria a 12 mo.
- Hgb > 11 q 3-6 mo.
- Hgb < 11 q 1-3 mo.
- Lytes and glucose q 12 mo.
- Measure 25(OH)D

RISK ASSESSMENT

- Avoidance of nephrotoxic agents & dyes
 Immunizations
- -Flu vaccine q 12 mo. -Pneumovax, as indicated -Hep B vaccine, as
- indicatedAssess cardiovascular risk:
- -Smoking cessation -Physical activity

EDUCATION

- Cardiovascular risk
- Medications to avoid
- Immunizations
- Nutrition: Advise diet low in salt & potassium
- Renal bone disease

REFERRALS

- Surgeon for vascular access placement
- Transplant center for eval

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 -Hep B vaccine. as
- Assess cardiovascular
 - risk:
 -Smoking cessation
 -Physical activity

EDUCATION

- Cardiovascular risk
- Medications to avoid
- Immunizations
- Nutrition: Advise diet low in salt, phos. & potassium
- Renal bone disease
- Anemia
- Vascular access
 placement
- Modality options

REFERRALS

- Surgeon for vascular access placement
- Transplant center for eval
- Create access for dialysis

NEPHROLOGY** Assess Complications

LABS

- GFR q 1-3 mo.
- Lipids a 12 mo.
- If diabetic, Hgb A₁C and microalbuminuria a 12 mo.
- Hgb monthly
- PTH, Ca, P q 1-3 mo.
- Measure 25(OH)D
- HBV titer

RISK ASSESSMENT

- Avoidance of nephrotoxic agents & dves
- Immunizations
- -Flu vaccine q 12 mo. -Pneumovax, as indicated
- -Hep B vaccine, as indicated
- Assess cardiovascular risk
- -Smoking cessation
 -Physical activity

EDUCATION

- Cardiovascular risk
- Medications to avoidImmunizations
- Nutrition: Advise diet low in fluids, salt,
- phos. & potassium

 Renal bone disease
- AnemiaVascular access
- monitoring
- Modality optionsEvaluation for kidney

transplant REFERRALS

- Surgeon for vascular access placement
- Transplant center for eval
- Begin dialysis

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