

CKD ASSESSMENT ALGORITHM

Identification, Treatment and Referral

Patient Office Visit

Is patient at risk for CKD?

- Susceptibility**
- Age > 60 years
 - Family history of CKD
 - Racial/ethnic minority

- Direct Risk Factors**
- Diabetes
 - High blood pressure
 - Autoimmune diseases
 - Lower urine tract obstruction
 - Hx acute renal failure

- Herbal remedies
- Metabolic syndrome
- Systemic infections
- Urinary tract infection
- Urinary stones
- Drug toxicity
- Exposure drugs/procedures

- Progressive Risk Factors**
- High levels proteinuria
 - Malignant hypertension
 - Poor glycemic control
 - Smoking
 - Hyperlipidemia
 - Drug use

No

STOP

Yes

Perform routine screening for CKD patients at increased risk

- Serum creatinine to determine estimated GFR
- Microalbumin test
- Urinalysis for presence of white and red blood cells

Does patient have abnormal GFR > 3 months?

Yes

No

Does patient have elevated albumin to creatinine ratio?

- Diabetes: >30mg albumin/1g creatinine
- Non-diabetes: >300mg albumin/1g creatinine

No

Determine Stage of CKD

- Stage 1**
GFR > 90
Kidney damage
- Stage 2**
GFR 60-89
- Stage 3**
GFR 30-59
- Stage 4**
GFR 15-29
- Stage 5**
GFR <15

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 type of kidney disease
 - Evaluate and manage comorbid conditions (Primary care, all stages)
 - Slow the loss of kidney function (Co-management, all stages)
 - Prevent and treat cardiovascular disease (Primary care, all stages)
 - Prevent and treat complications of decreased kidney function (Co-management, 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 when GFR < 60.*

Identify risks associated with CKD

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

Assess barriers to treatment adherence

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

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 functions (NSAIDs, IV contrast)
- Evaluate for drug interactions
- Counsel patient to avoid nephrotoxic drugs and IV contrast
- Evaluate appropriateness for ARB/ACE inhibitor 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/1.73²
- Consult nephrologist at Stage 3 for all patients with CKD
- Refer patient to nephrologist for evaluation when GFR < 30 mL/min/1.73²

Monitor CKD Progression

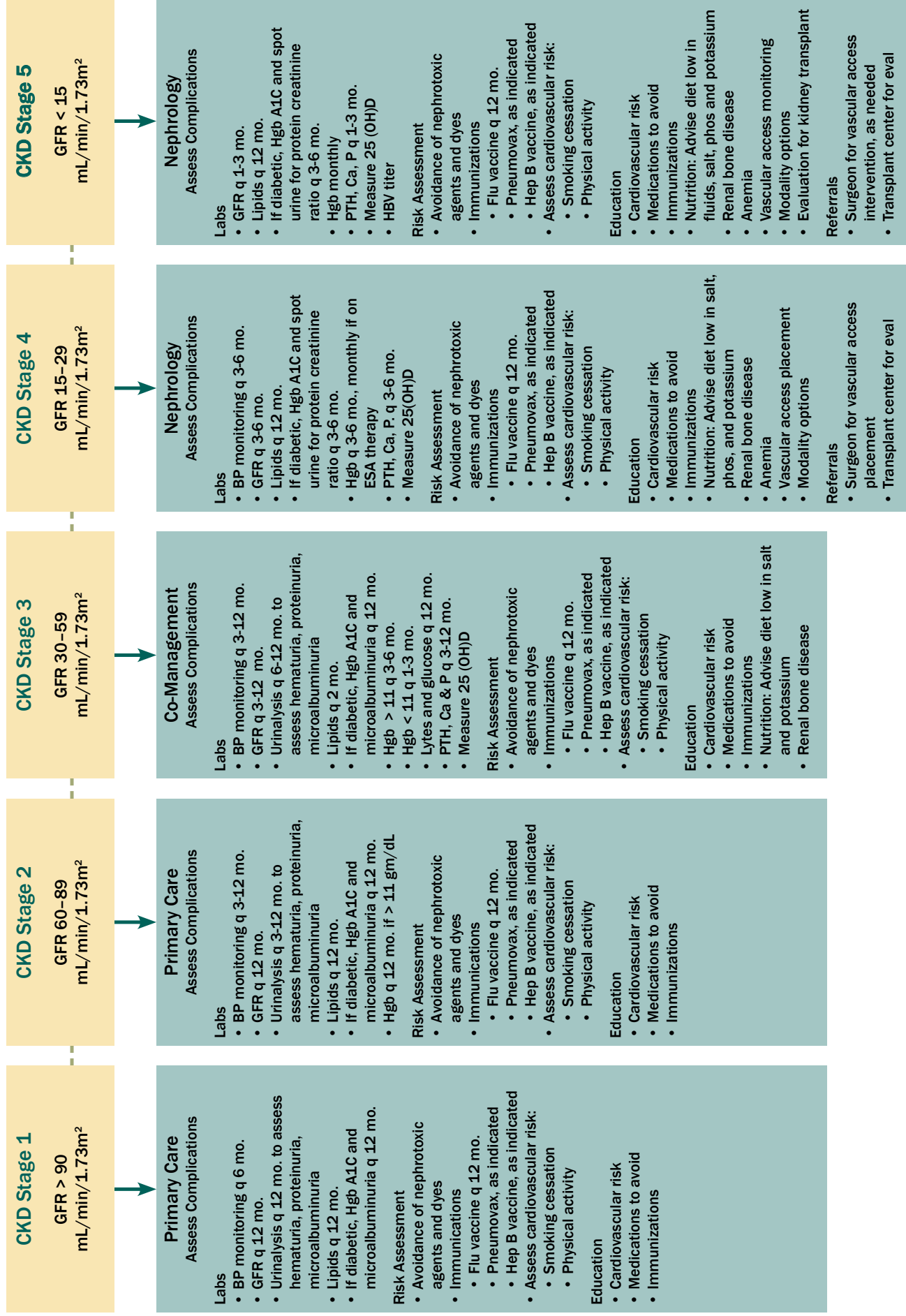
- Annual microalbumin test
- Track decline in GFR

Does patient have abnormal GFR > 3 months?

No

Yes

CKD TREATMENT ALGORITHM



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