Michigan Quality Improvement Consortium Guideline

Diagnosis and Management of Adults with Chronic Kidney Disease

The following guideline recommends diagnosis and aggressive management of chronic kidney disease by clinical stage.

Eligible Population	Key Components	Recommendation and Level of Evidence	Frequency
All adults at increased risk for CKD	Screening & Diagnosis	For patients at increased risk for CKD (e.g., diabetes, hypertension, family history of kidney failure, kidney stones, etc.) assess for markers of kidney damage: ◆ Measure blood pressure **[A]** ◆ Obtain estimated GFR[1] **(serum creatinine levels should <u>not</u> be used as sole means to assess renal function)** ◆ Protein-to-creatinine ratio **or** albumin-to-creatinine ratio (first morning or random spot urine specimen) ◆ Urinalysis, fasting lipid profile, electrolytes, BUN	◆ Semi-annual blood pressure monitoring; more frequent monitoring if indicated ◆ Monitor GFR every 1-2 years
	Risk Factor Management & Patient Education	◆ Evaluation and management of comorbid conditions (e.g. diabetes, hypertension, urinary tract obstruction, cardiovascular disease)[2] ◆ Review medications for dose adjustment, drug interactions, adverse effects, therapeutic levels ◆ Educate on therapeutic lifestyle changes: dietary sodium intake < 2.4 g/d recommended for patients with CKD and hypertension **[A]**, weight maintenance if BMI < 25, weight loss if BMI <u>≥</u> 25, exercise and physical activity, moderation of alcohol intake, smoking cessation	At each routine health exam
Adults with CKD		**<u>All of the above plus</u>:** ◆ Develop clinical action plan for each patient, based on disease stage as defined by the National Kidney Foundation, Kidney Disease Outcomes Quality Initiative (K/DOQI) **[B]** ◆ Incorporate self-management behaviors into treatment plan at all stages of CKD **[B]**	
	Core Principles of Treatment	◆ **Stage 1 (GFR <u>≥</u> 90):** Monitor GFR annually, smoking cessation, consider ASA, consider ACE and/or ARB therapy, BP goal <130/80, LDL-C goal < 100 ◆ **Stage 2 (GFR 60-89):** Nephrology referral if GFR decline > 4ml/min/yr, maintain BP and lipid goals as above ◆ **Stage 3 (GFR 30-59):** Consult Nephrologist and Renal Dietician; Suppress PTH with Vit D to level appropriate for CKD stage; Phosphorus lowering treatment if > 4.6 mg/dl; Correct iron deficiency before start of epoetin therapy; Epoetin if Hgb (Hct) < 11 (33%); Renal-specific vitamins; Update vaccines: HBV, influenza, Tdap and Pneumovax ◆ **Stage 4 (GFR 15-29):** Nephrology and vascular access surgery referrals, Epoetin if Hct < 33%, Optimize Ca x P product to < 55 with specific agents, update vaccines as indicated, CKD education classes ◆ **Stage 5 (GFR < 15):** Renal replacement therapy	As indicated

[1] If not calculated by lab, refer to the National Kidney Foundation website for GFR calculator **(http://www.kidney.org/professionals/tools/)**

[2] Reference MQIC guidelines on diabetes, hypertension, hyperlipidemia and obesity (www.mqic.org).

Levels of Evidence for the most significant recommendations: A = randomized controlled trials; B = controlled trials, no randomization; C = observational studies; D = opinion of expert panel

This guideline lists core management steps. It is based on several sources including the 2002 National Kidney Foundation/Kidney Disease Outcomes Quality Initiative Clinical Practice Guidelines for Chronic Kidney Disease: Evaluation, Classification and Stratification (www.kidney.org). Individual patient considerations and advances in medical science may supersede or modify these