# 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.

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<th>Eligible Population</th>
<th>Key Components</th>
<th>Recommendation and Level of Evidence</th>
<th>Frequency</th>
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| 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 GFR¹ (serum creatinine levels should not 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 |
| Adults with CKD | 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 > 25, exercise and physical activity, moderation of alcohol intake, smoking cessation | At each routine health exam |
| | Core Principles of Treatment | • **Stage 1 (GFR > 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).

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### 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 guidelines.

Approved by MQIC Medical Directors 11/06

www.mqic.org