

What Health Care Professionals Should Know About CKD

Chronic Kidney Disease, known as CKD, is a pervasive public health threat affecting more than 500 million people worldwide.¹ Current estimates indicate that 13% or more of the U.S. population (26 million) have CKD, defined as glomerular filtration rate (GFR) <60 ml/min/1.73 m² for ≥ 3 months, with or without kidney damage, or structural damage for ≥ 3 months with or without low GFR.² Texas is reported to have the second highest prevalence of CKD and the highest incidence of End Stage Renal Disease (ESRD) nationally.³

Early detection and management of CKD can delay disease progression and reduce adverse outcomes, but CKD remains under-diagnosed and under-treated.^{4 5 6} Untreated, CKD can progress to kidney failure but more often results in premature death due to cardiovascular disease, according to officials at the Texas Department of State Health Services. The requisite knowledge and evidence-based clinical practice guidelines to prevent, delay, manage and treat CKD are available, but often are not consistently applied through physician practices and health care systems.^{7 8} Studies designed to assess variability in guideline adherence consistently identify two major barriers: lack of awareness or familiarity and difficulty in translating complex guidelines into daily practice.^{9 10 11}

Publication in 2002 of the National Kidney Foundation (NKF) Kidney Disease Outcomes Quality Initiative (K/DOQI) Clinical Practice Guidelines focused increased attention on the CKD problem. The NKF, the National Kidney Disease Education Program (NKDEP, an initiative of the National Institutes of Health), the Centers for Disease Control and Prevention, and several states are working to increase awareness and use of the K/DOQI guidelines among clinicians.

The guidelines provide evidence-based strategies to treat and manage CKD at each of its five stages, as classified by level of estimated GFR.

CKD by Stage and Recommended Action

Stage	Description	GFR	Action
	Normal kidney function	≥ 60	Prevent chronic diseases Screen for CKD risk factors
	Increased risk	≥ 60 (with CKD risk factors)	Treat/manage CKD risk factors Screen for CKD
1	Kidney damage with normal or	≥ 90	Diagnose/treat to slow

	increased GFR		progression Screen for CVD Educate patient on disease management Prevent/manage comorbid conditions
2	Kidney damage with mild decrease in GFR	60-89	Estimate progression Treat comorbid conditions
3	Moderate decrease in GFR	30-59	Evaluate/treat complications Refer to nephrologist
4	Severe decrease in GFR	15-29	Educate patient on kidney replacement options Prepare for renal replacement therapy
5	Kidney failure	<15	Kidney replacement by dialysis or transplant

Source: NKF, K/DOQI Clinical Practice Guidelines for Chronic Kidney Disease, 2002

The guidelines also offer the following recommended minimum standards of patient care:^{12 13 14 15 16}

Determine patient risk:

- ▶ Diabetes
- ▶ Hypertension
- ▶ Cardiovascular disease (CVD)
- ▶ Family history
- ▶ Age 60 and above

Screen at-risk patients:

- ▶ Spot urine albumin to creatinine ratio to detect albuminuria
- ▶ Serum creatinine to estimate GFR – use prediction equation which factors in serum creatinine, age, gender, weight, race

Look for CKD markers:

- ▶ Albuminuria -- >30mg of urinary albumin per gram of urinary creatinine
- ▶ eGFR -- <60 ml/min/1.73 m²
- ▶ Structural damage (discerned from imaging)

Diagnose

- ▶ Evaluate both for markers of kidney damage and for level of kidney function per eGFR
- ▶ Determine underlying cause, comorbid conditions, disease severity, complications, stage
- ▶ Develop clinical action plan to slow progression

Treat/manage

- ▶ Prescribe ACE inhibitor and/or angiotensin receptor blocker to protect kidney function (monitor creatinine and phosphorous levels)
- ▶ Maintain blood pressure control: <130/80 mmHg
- ▶ Maintain strict glycemic control: A1c <7% for patients with diabetes
- ▶ Manage CVD risk factors
- ▶ Refer for medical nutrition therapy
- ▶ Encourage patient self-management
- ▶ Assess progression, adjust medications to current GFR
- ▶ Manage/treat comorbidities (CVD, diabetes, hypertension)
- ▶ Manage/treat complications (hypertension, anemia, dyslipidemia, mineral and bone disease)

Manage with nephrology

- ▶ Consult at stage 1 if hematuria or significant proteinuria present
- ▶ Consult at stage 2 if GFR declines >4mL/min/year
- ▶ Refer at stage 3 or if GFR <30ml/min/1.73 m²
- ▶ Prepare for renal replacement therapy (RRT) in stage 4
 - Educate patient on RRT options
 - Prepare arteriovenous (AV) fistula at least 6 weeks to several months prior to hemodialysis
- ▶ Provide ongoing primary care

For more information about the K/DOQI Clinical Practice Guidelines for CKD, go to www.kidney.org/professionals/KDOQI/.

¹ World Health Organization, Preventing Chronic Diseases: A Vital Investment. WHO Global Report 2005, accessed from www.who.int/chp/chronic_disease_report/contents/en/index.html March 2009.

² National Kidney Foundation, Kidney Disease Outcomes Quality Initiative (K/DOQI) Clinical Practice Guidelines for Chronic Kidney Disease: Evaluation, Classification, and Stratification, February 2002.

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- ¹⁵ Provenzano R. Treating chronic kidney disease. *Managed Care/Supplement* April 2003; 12(4):3-7.
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