CHRONIC KIDNEY DISEASE (CKD)

Provider's guide to coding and documenting diagnosis

CKD is a heterogeneous group of disorders characterized by alterations in kidney structure or function for three or more months.[1]

Patients with abnormal eGFRs are at significantly increased risk for all-cause and cardiovascular mortality, ESRD, acute kidney injury and CKD progression in comparison to patients with normal eGFRs.[2] **It's recommended that PCPs proactively identify and manage early stage CKD to reduce the risk of disease progression and associated complications.**

Clinical criteria for diagnosing CKD

The clinician should consider linking CKD to other medical conditions such as hypertension (ICD-10: I12.0, I12.9, I13.0, I13.10, I13.11, I13.2), diabetes (E10.22 - type 1 DM, E11.22 - type 2 DM) and anemia (D63.1). CKD diagnostic criteria include duration of abnormal glomerular filtration rate (GFR) and/or indicators of kidney damage (e.g., albuminuria, urine sediment abnormalities, or structural abnormalities detected by imaging).[1]

When evaluating lab findings (e.g., creatinine, BUN, electrolytes, etc.), clinicians should consider context (e.g., patient's age, acute kidney injury/acute renal failure, malnutrition, major limb amputation and cirrhosis) and transient causes (e.g., volume depletion, exposure to nephrotoxic substances, etc.).

Staging CKD assists in clinical management, including risk stratification for disease progression and development of complications. The staging criteria include disease cause, Albuminuria category and GFR category.

Currently, the most common indirect measure of glomerular filtration is based upon serum creatinine. Serum creatinine is used to calculate GFR in individuals with stable kidney function (e.g., normal kidney function or CKD). GFR estimation (eGFR) equations incorporate known demographic and clinical variables that address unmeasured physiologic factors affecting serum creatinine concentration thereby GFR estimates. Cockcroft-Gault equation, MDRD study equation and CKD-EPI equation are used with recognized limitations.

The National Kidney Foundation[3] recommends using the **2009 CKD-EPI equation to calculate eGFR** for the general population and individuals with GFR near or above 60mL/min per 1.73m. A calculator for the CKD-EPI equation is found at **www.kidney.org/professionals/kdoqi/gfr_calculator.cfm**.

CKD may be documented by evaluating past measures of GFR. If the GFR is found to be abnormal for at least a three month period of time, then a functional assessment of the kidney should be performed in the event that the GFR resides CKD stages 1 or 2. The additional CKD stage 1 or stage 2 functional assessment should be in the form of a: urine albumin and sediment assessment, or through renal imaging study to document reduced kidney volume, reduction in cortical thickness, and cysts. If the GFR is classified as beyond stage 3, then the clinician is not required to document a functional renal assessment, i.e urine albumin, sediment and/or renal imaging study.

Clinical diagnosis and staging summary[1]

- **Screen annually for CKD** – early identification reduces risk of disease progression.
- **CKD stages 1 and 2** require markers of abnormal kidney function for greater than three months. A common clinical indicator of abnormal kidney function is proteinuria. eGFR may be normal.
- **CDK stages 3 and 4** – require abnormal eGFR for greater than three months.

The table on the back of this document describes CKD stage given eGFRs and proteinuria as a marker for kidney damage when applicable.

Clinical recommendations overview[4]

(Refer to the table on the back of this document for specific recommendations.)

Avoid nephrotoxic substances – e.g., NSAIDs, aminoglycosides and iodinated radiographic contrast.

Consider starting ACE Inhibitors or ARBs for BP control and proteinuria reduction for renal protection. ACEIs and ARBs contribute to decrease in GFR. Consider dose adjustment and/or consult with nephrologist if GFR has a consistent reduction of greater than 25-30%.

Consider consulting with nephrologist at any point in the disease progression.

Cigna HealthSpring®

Together, all the way.®

INT_16_47945 11042016

Plan of care for CKD stages I-5

Adapted from Henry Ford Health System Chronic Kidney Disease Clinical Practice Recommendations[4]

CKD stage (ICD-10-CM)	Description (GFR – mL/min/1.73m2)	Clinical presentation/ clinician action	Monitoring/testing	Treatment considerations
None/normal	GFR > 90	**Often risk factors present** **SCREEN** for CKD with GFR **ADDRESS** – co-morbidities **START** – CKD risk reduction	**Every 12 months** • BP, Fasting lipids, electrolytes, glucose, BUN, Cr, eGFR • UA for hematuria or proteinuria & microscopic exam	Tobacco cessation; Weight reduction; Aspirin approximately 75mg q day **TARGETS** • BP: 140/90 mmHg (if proteinuria > 3g/24hrs target 130/80) • LDL-C < 70-100 mg/dL; Triglycerides < 150 mg/dL • FBS <130 mg/dL, HbA1C < 7%
1 (N18.1)	Kidney damage and GFR > 90 AER > 30 mg/ 24 hours; ACR > 30 mg/g [> 3 mg/mol]	**Often asymptomatic** **IDENTIFY** etiology of CKD **DIAGNOSE & TREAT** CKD risk factors and comorbid conditions	**Every 12 months** • BP, Fasting lipids, Electrolytes, glucose, BUN, SCr, eGFR • UA for hematuria/ proteinuria & microscopic exam • UPC if non-DM • UACR if DM	Consult nephrology consult if eGFR declines by > 4mL/min/yr **TARGETS** • BP: 130/80 mmHg • LDL-C < 70-100; Triglycerides < 150; Non HDL-C<130 mg/dL • Proteinuria (UPC<0.2 or UACR < 30 mg/g) – consider ACEI/ARB
2 (N18.2)	Kidney damage and GFR 60-89 AER > 30 mg/24 hours; ACR > 30 mg/g [> 3 mg/mol] Most lower GFRs are age related. If no proteinuria no further evaluation.	**Mild complications** **ESTIMATE** CKD progression rate **DIAGNOSE & TREAT** CVD risk factors and co-morbid conditions	**Every 3-12 months** • BP, UACR or UPC **Every 6-12 months** • Electrolytes, glucose, BUN, SCr, eGFR **Every 12 months** • If hemoglobin < 10-12 - CBC, reticulocyte count, TSAT, ferritin **CONSIDER** – Ca/P/PTH/25(OH) D evaluation	Avoid nephrotoxins; rule out AKI/ARF (e.g., obstruction) **TARGETS** • BP: 130/80 mmHg • LDL-C < 70-100; Triglycerides < 150; Non HDL-C<130 mg/dL • Hb 10-12 g/dL, TSAT > 20%, ferritin > 100 ng/mL • UACR < 30 mg/g or UPC < 0.2 with ACEI/ARB
3 (N18.3)	IIIA – GFR 45-59 IIIB – GFR 30-44 Complications more frequent Proteinuria is a serious CV risk factor and prognostic importance for progression of CKD	**Moderate complications** **ESTIMATE** CKD progression rate **DIAGNOSE & TREAT** • CVD risk factors and co-morbid conditions • Kidney image study (e.g., US or CT) **CONSIDER** nephrology consult	**Baseline** • Ca/P/PTH/Alk phos/25(OH)D, repeat depending upon baseline, progression, response to treatment • eGFR **Every 3-6 months** • CBC: If Hb < 10 g/dL then q 1-3 months until Hb 10-12 g/dL then q 3 months; if Hb <13 g/dL in male or 12 g/dL in female, collect TSAT and ferritin. Collect again after treatment. **Every 3-12 months** • BP, Electrolytes, glucose, BUN, SCr, eGFR **Every 6 -12 months** • UPC or UACR **EVALUATE** for extraskeletal calcification	Avoid of nephrotoxic meds (e.g., NSAIDs) and adjust dosing based on renal function; rule out ARF (e.g., obstruction) Nutritional assessment – anytime once Stage III-V **TARGETS** • Hb: 10-12 g/dL, TSAT > 20%, ferritin >100 ng/mL with iron and/or erythropoiesis stimulating agent • Ca & P: normal range with P binders (no Ca based P hinder if vascular/ valvular calcification) • iPTH: 300-600pg/mL with calcitriol or vitamin D analogs if iPTH progressively increases. • UACR < 30 mg/g or UPC < 0.2 with ACEI/ARB
4 (N18.4)	GFR 15-29 Major increase in CVD risk – equivalent to a major CVD event	**Severe complications** **CONSULT** nephrology **START** discussions kidney replacement therapy **DIAGNOSE & TREAT** CVD risk factors and co-morbid conditions **ADJUST** drug dosages	**Baseline** • Ca/P/PTH/Alk phos/25(OH)D, repeat q 6-12 months **Every 3-6 months** • BP monitoring **Every 3-12 months** • Electrolytes, Glucose, BUN, SCr, eGFR, PC or UACR **EVALUATE** for extraskeletal calcification	Specific patient/family education: kidney replacement therapy modality Immunizations: TIV, PPV-23, HBV (consider Tdap, VZ) Reinforce dietary prescription, Renal-formulated multivitamin Vascular access surgery evaluation, protect dominant arm
5 (N18.5)	GFR <15 w/o dialysis treatment	Managed by nephrologist		
ESRD (N18.6)	Requires dialysis treatment - use additional code to identify dialysis status (Z99.2)	Managed by nephrologist		
(N18.9) CKD, unspecified				

References

[1]Kidney Disease Improving Global Outcomes (2014). CKD evaluation and management. Retrieved from http://kdigo.org/home/guidelines/ckd-evaluation-management. [2]Levey A & Inker L (2013). Definition and staging of chronic kidney disease in adults. UpToDate. www.uptodate.com Retrieved 1/30/2014. [3]National Kidney Foundation. (2016). Professionals web page. Retrieved from https://www.kidney.org/professionals/. [4]Henry Ford Health System (2011). Chronic kidney disease (CKD): Clinical practice recommendations or primary care physicians and healthcare providers. Retrieved from https://www.asn-online.org/education/training/fellows/HFHS_CKD_V6.pdf.

Abbreviations

ACEI	angiotensin-converting enzyme inhibitor	**FBS**	fasting blood sugar
AKI	acute kidney injury	**GFR/eGFR**	glomerular filtration rate/estimated glomerular filtration rate
anti-RAAS	anti-renin-angiotensin-aldosterone system	**Hb**	hemoglobin
ARB	angiotensin II receptor blocker	**HBV ab**	hepatitis B virus antibody
ARF	acute renal failure	**P**	phosphate
BP	blood pressure	**PTH/iPTH**	parathyroid hormone/intact parathyroid hormone
BUN	blood urea nitrogen	**TSAT**	transferrin saturation
Ca	calcium	**UA**	urine analysis
CKD	chronic kidney disease	**UACR**	urine albumin to creatinine ratio
Cr	serum creatinine	**UPC**	urine protein creatinine ratio
CVD	cardiovascular disease	**US**	ultrasound
DM	diabetes mellitus	**25(OH)D**	25- hydroxyvitamin D