Banner Plans & Networks

Renal Care Toolkit

Revised June 29, 2023

Contents

Introduction Letter

Dear Providers:

Banner Health Network continues to make strides in providing clinically relevant opportunities that impact the quality of care that our providers can act upon. The Banner Health Network Renal Clinical Strategy Committee has devised care standards and a toolkit. These guidelines are geared towards Primary Care Physicians to prevent disease progression and improve outcomes of Chronic Kidney Disease (CKD), based on existing current guidelines within KDIGO (Kidney Disease Improving Global Outcomes).

Toolkit Items:

- Renal Care Standards
- UPDATED - Renal Medication Alternatives Tool (additional medications added)
- NEW - Early CKD Diagnosis Tip Sheet
- Kidney Smart® Education Flyer
- NEW – Monogram Care Management for BMA & BUHP members

Diagnosing and coding early CKD is important. Earlier identification allows patients to adopt lifestyle changes which may slow down the progression of worsening kidney disease. Early kidney disease is typically asymptomatic. In fact, approximately 37 million US adults are estimated to have chronic kidney disease (CKD), with most being undiagnosed, according to the CDC. Early identification, followed by risk stratification and treatment, has been known to potentially reduce the morbidity and mortality from CKD and its related complications, such as cardiovascular disease, hyperlipidemia, anemia and bone-mineral disease.

CKD 4 & 5 without Nephrologist - As you are already aware, patients with advanced CKD have multiple sequelae which worsen as CKD progresses. Multiple studies have shown that early Nephrology referral improves outcomes and mortality. Patients should be scheduled for an Annual Wellness Visit, and during that visit, a referral can be made to a Nephrologist if needed. These visits also provide an opportunity to close care gaps and adjust medications as needed.

CKD members on high-risk medications – We have included a Medication Alternatives Tool which has guidelines for renal friendly pharmaceuticals. Additional medications and guidelines have been added to the July 2023 version.

We hope these resources assist you in your practice. Thank you for your ongoing work to help Banner Health Network make health care easier, so life can be better. Please consult your Care Transformation Consultant with questions.

Sincerely,

Dr. Sheena Sharma, MD
Medical Director & Renal Clinical Strategy Committee Lead
Banner Health Network

Care Standards & Best Practices

Renal Care Guidelines

Follow KDIGO Guidelines for testing frequency:

	CKD Stage 3a and 3b (eGFR 30-59mL/min/1.73m^2)	CKD Stage 4 (eGFR 15-29mL/min/1.73m^2)	CKD Stage 5 (eGFR <15mL/min/1.73m^2)
Anemia	Measure hemoglobin at least **annually** if no anemia exists Measure hemoglobin at least every **3 months** if anemic not on an ESA	Measure hemoglobin at least **twice per year** if not anemic and not on dialysis Measure hemoglobin at least every **3 months** if anemic not on an ESA	Measure hemoglobin least **twice per year** not anemic and not dialysis Measure hemoglobin least every **3 months** anemic not on an ESA
CKD-Mineral Bone Disease	Serum calcium and phosphorus every 6-12 months	Serum calcium and phosphorus every 6-12 months	Serum calcium and phosphorus every 1-3 months
	Obtain baseline PTH Frequency of further testing based upon clinical judgement	PTH every 6-12 months	PTH every 3-6 months
	Obtain a baseline level of alkaline phosphatase	Alkaline phosphatase should be monitored every 12 months	Alkaline phosphatase should be monitored every 12 months
	Measure 25-OH vitamin D		
Metabolic Acidosis	Start measuring when eGFR <40mL/min/1.73m^2	Frequency of testing based upon nephrologist's clinical judgement	Frequency of testing based upon nephrologist's clinical judgement
Hypertension	24-hour Ambulatory Blood Pressure Monitor to establish diagnosis Home blood pressure monitoring for ongoing monitoring		

Indications for Nephrology Referral:

- AKI or abrupt sustained fall in GFR
- GFR <30mL/min/1.73m2 (GFR category G4-G5)
- A consistent finding of significant albuminuria (ACR >300mg/g or AER >300mg/24 hours)
- Progression of CKD
- Urinary red cell casts, RBC >20hpf
- CKD and hypertension refractory to treatment with 4 or more antihypertensive agents
- Persistent abnormalities in serum potassium
- Recurrent or extensive nephrolithiasis
- Hereditary kidney disease

CKD with Hypertension:

CKD and hypertension without proteinuria	CKD and hypertension with proteinuria
Target blood pressure: <140mmHg systolic AND <90mmHg diastolic	Target blood pressure: <130mmHg systolic AND <80mmHg diastolic
	An ARB or ACE-I be used in diabetic adults with CKD and urine albumin excretion 30-300 mg/24 hours or >300mg/24 hours

Consider starting these medications for patients with CKD:

RAS antagonists (ACEi/ARB)[1] Prevent progression of CKD	**Recommended to start for CKD patients with elevated blood pressure and:**	**Discontinue for patients with:**
	Severely increased albuminuria (>300 mg/g)	Rise in serum creatinine by >30% within 4 weeks of starting/increasing dose of ACEi/ARB
	Moderately-to-severely increased albuminuria (>30 mg/g) + diabetes mellitus	GFR < 60 with serious illness that may increase risk of AKI such as infection (temporary – may resume once illness resolves)
Loop diuretics Treat fluid overload via sodium excretion	Consider using for elevated blood pressure due to fluid overload	
	Consider changing thiazide diuretics to loop diaretics when GFR < 30	

Medications to adjust or avoid in CKD:

Common medications requiring renal dose adjustments:	Avoid nephrotoxins in all CKD patients:	Consider starting for albuminuria >30mg/g:
Antimicrobials Anticoagulants Atenolol Famotidine Gabapentin/pregabalin Lithium Metformin Sitagliptin Sulfonylureas Tramadol	NSAIDs	ACE-I or ARB *(+HTN* or diabetes) SGLT2 *(+diabetes)*

See the Renal Medication Guidelines & Alternatives Tip Sheet for specific medication recommendations

These guidelines serve to assist in the management, documentation and coding of clinical diagnoses. The intent of this document is to supplement, but not replace, the provider's clinical judgement.

Renal Medication Guidelines & Alternatives

Medications play an important role in preventing the progression of chronic kidney disease (CKD) and symptom management. However, many medications can contribute to worsening renal function if known to be nephrotoxic. There may be an opportunity to choose an alternative renal-friendly medication and/or adjust a dosage of a medication based on eGFR. Please review the following medication considerations for your patients with CKD.

Consider avoiding these nephrotoxic medications that can worsen CKD:

NSAIDs[1]	Consider alternatives:
Increase sodium and fluid retention, potentially increasing blood pressure and worsen efficacy of diuretics	Acetaminophen up to 4000 mg/day
	Topical diclofenac solution or gel for joint pain (< 7% systemic absorption)
	Antiepileptics or antidepressants for neuropathy
	Opioids for severe chronic pain

Consider adjusting the dose or finding alternatives for these common medications that are renally eliminated:

Drug	Dose adjustment per drug monograph	Alternatives
Atenolol Eliminated renally, increasing risk for ADRs: bradycardia, heart block, dizziness/falls	CrCl > 30: none CrCl 10-30: maximum 50 mg daily CrCl < 10: maximum 25 mg daily	Metoprolol tartrate or succinate Carvedilol Labetalol
Ciprofloxacin and Levofloxacin Eliminated renally, increasing risk for ADRs: QT prolongation, CNS effects, tendinopathy	**Ciprofloxacin:** CrCl > 50: none CrCl 30-50: 250-500 mg q12 hrs CrCl < 30: 500 mg q24 hrs **Levofloxacin:** CrCl ≥ 50: none CrCl 20-49: maximum 750 mg q48 hrs CrCl < 20: maximum 500 mg q48 hrs	Alternative antibiotics as applicable
Famotidine Eliminated renally, increasing risk for ADRs: agitation, confusion, delirium	CrCl <50: Administer 50% of usual dose or continue usual dose but increase the dosing interval to every 36 to 48 hours	Calcium carbonate
Fenofibrate Eliminated renally, increasing risk for ADRs: increase in Cr, AKI usually in association with rhabdomyolysis	CrCl >30 to 80: Use lowest available tablet strength (if a formulation is not available in a strength that is ≤67 mg then an alternate formulation should be used); do not titrate. CrCl ≤30: Use contraindicated.	Omega-3 fatty acids
Gabapentin Eliminated renally, increasing risk for ADRs: dizziness, drowsiness	CrCl 50-79: Max 1,800mg/day in 3 divided doses CrCl 30-49: ~50% reduction; max 900mg/day in 2-3 divided doses CrCl 15-29: ~75% reduction; max 600mg/day in 1-2 divided doses CrCl <15: ~90% reduction; max 300 mg/day in 1 dose 600mg/day in 1-2 divided doses CrCl <15: ~90% reduction; max 300 mg/day in 1 dose	Amitriptyline, Lidoderm Patch, Capsaicin
Metformin Eliminated renally, increasing risk for ADRs: lactic acidosis, GI upset	GFR > 45: none GFR 30-45: maximum 500 mg BID GFR < 30: use is contraindicated	GLP-1 RAs Insulin Linagliptin

These guidelines serve to assist in the management, documentation, and coding of clinical diagnoses. The intent of this document is to supplement, but not replace, the provider's clinical judgement.

The Importance of Early Detection of Kidney Disease

Early kidney disease is typically asymptomatic. In fact, approximately 37 million US adults are estimated to have chronic kidney disease (CKD), with most being undiagnosed, according to the CDC. Early identification, followed by risk stratification and treatment, has been known to potentially reduce the morbidity and mortality from CKD and its related complications such as cardiovascular disease, hyperlipidemia, anemia, and bone-mineral disease.

Who to Screen

Approximately 75% of cases of kidney failure are due to diabetes or high blood pressure. Early identification of CKD should be implemented through **targeted** screening for kidney disease based on known risk factors which include:

- High blood pressure
- Diabetes
- Cardiovascular disease
- Family history of kidney disease
- History of acute kidney injury
- Medical conditions that impact kidney function (e.g. SLE, HIV, obesity, genetic risk factors)
- High-risk occupations and environmental exposure to nephrotoxins

How to Screen

Serum creatinine and GFR estimating equation should be used for initial assessment. KDIGO recommends using the 2009 CKD-EPI creatinine equation, if possible, for calculating eGFR. If eGFR is <60mL/min/1.73m2 for >3 months, the diagnosis of CKD is confirmed. Evaluation for albuminuria using an early morning urine sample can be accomplished in many ways. The order of preference for testing is:

- Urine albumin-to-creatinine ratio
- Urine protein-to-creatinine ratio
- Reagent strip urinalysis for total protein with automated reading, or
- Reagent strip urinalysis for total protein with manual reading

Coding the Stages of CKD

ICD-10-CM Code	Description	Category	GFR
N18.1	Chronic Kidney Disease, Stage 1	G1	≥90mL/min/1.73m2
N18.2	Chronic Kidney Disease, Stage 2	G2	60-89mL/min/1.73m2
N18.30	Chronic Kidney Disease, Stage 3 Unspecified	G3	30-59mL/min/1.73m2
N18.31	Chronic Kidney Disease, Stage 3a	G3a	45-59mL/min/1.73m2
N18.32	Chronic Kidney Disease, Stage 3b	G3b	30-44mL/min/1.73m2
N18.4	Chronic Kidney Disease, Stage 4	G4	15-29mL/min/1.73m2
N18.5	Chronic Kidney Disease, Stage 5	G5	<15mL/min/1.73m2

Guide to frequency of assessment for CKD progression

Once the diagnosis of CKD has been established, use of the **KDIGO Heat Map** (which incorporates both GFR category and persistent albuminuria) can be utilized to evaluate the risk of CKD progression, progression to kidney failure, and can help guide timely referral to Nephrology.

KDIGO Heat Map

GFR categories (ml/min per 1.73 m²) Description and range			Persistent Albuminuria categories Description and range		
	Stage		A1	A2	A3
	Kidney function		Normal to mildly increased	Moderately increased	Severely increased
	Stage	Kidney function	Test Result	<30 mg/g <3 mg/mmol	30-300 mg/g 3-30 mg/mmol	>300 mg/g >30 mg/mmol
	G1	Normal or high	≥90	MONITOR 1	MONITOR 1	REFER* 2
	G2	Mildly decreased	60-89	MONITOR 1	MONITOR 1	REFER* 2
	G3a	Mildly to moderately decreased	45-59	MONITOR 1	MONITOR 2	REFER 3
	G3b	Moderately to severely decreased	30-44	MONITOR 2	MONITOR 3	REFER 3
	G4	Severely decreased	15-29	REFER* 3	REFER* 3	REFER 4+
	G5	Kidney failure	<15	REFER 4+	REFER 4+	REFER 4+

Low Risk: Do not have CKD or at lowest risk for progression. **Monitor 1 time per year.**
Moderately increased risk: Increased risk for CKD getting worse. **Monitor 1 time per year.**
High risk: Hight risk for CKD getting worse. **Monitor 2 times per year.**
Very high risk: Highest risk for CKD getting worse. **Monitor at least 3 to 4 or more times per year.**

Numbers: Represent a recommendation for the number of times per year the patient should be monitored.
Refer: Indicates that a Nephrology referral and services are recommended.
**Consultation with Nephrology service should take place as needed depending on local arrangements regarding frequency of monitoring and timing of referral.*

It should be noted that even at the relatively normal-mildly decreased categories of GFR (that is, G1 or G2), persistent albuminuria can accelerate a patient's progression towards worsening CKD or kidney failure; highlighting the need to monitor albuminuria closely. This also underscores the importance of early identification and accurate coding of CKD, even at relatively early stages including G1-G3, to monitor these patients closely over time.

If your patient has CKD, we recommend these important steps:

- Follow KDIGO Guidelines as above
- Complete a wellness visit yearly
- Recommend lifestyle changes and provide CKD Education
- Treat underlying health conditions:
  - Keep blood pressure within target range
  - Keep blood sugar or diabetes under control
  - Take medications as prescribed by doctor

  Note: Consult with doctor or pharmacist before taking any over-the-counter medications or supplements to avoid agents that may worsen kidney function, hypertension or diabetes

These guidelines serve to assist in the management, documentation, and coding of clinical diagnoses. The intent of this document is to supplement, but not replace, the provider's clinical judgement.

Renal Education & Care Management Support

Kidney Smart®

Online, no cost kidney education available to all.

Kidney Smart® Patient Flyer

If you can't make it to an in-person class, attend from the comfort of home and take control of your kidney health.

Instructor-led online classes are taught by kidney care experts. You can easily ask questions similar to if you were in an in-person class setting.

More than 175,000 people have taken the next step in kidney education by attending a Kidney Smart class.

Are you ready to take the next step? Register today at **KidneySmart.org** or call 623-203-4751

Classes are available to anyone at no cost. You will learn:

- What causes kidney disease
- What kidney diet resources are available
- What can be done to manage a healthy lifestyle
- How medication management can help lead to better kidney health
- Why employment and insurance coverage are important
- What treatment options are available
- How the transplant process works

Kidney Smart® Provider Recommendation Sheet

Recommendation to Kidney Smart

Patient needs:

- ☐ CKD Basics (overview of Managing CKD and all modalities)
- ☐ Managing CKD – Diet & Lifestyle Only
- ☐ Modality Education (overview of all modalities)
- ☐ Home Specific Education – PD
- ☐ Home Specific Education – HHD

To recommend your patient to Kidney Smart, follow these 4 simple steps:

1. Complete this form or print the patient's demographics from your EMR
2. Fax this form along with necessary documents to the number listed below
3. Let your patient know they will receive a call to get scheduled for their class
4. You will receive updates via email on the patient's class completion status via the Physician Status Update Tool (PSUT)

Remind patients that a Kidney Smart Class can include:

- General kidney education
- Kidney diet considerations
- Insurance education
- Resources for working patients
- Treatment options
- How the transplant process works

Patient information

First Name: _____ Last Name: _____

Patient Phone: ___ - ___ - ____ Alternate Phone: ___ - ___ - ____

Date of Birth: _____ Recommending Physician Name: _____

Language Preference: ☐ English ☐ Spanish ☐ Other: _____

Patient GFR: _____

Notes

_____

_____

_____

Please fax this form with patient demographics to: 888-810-2902

Text or call 623-203-4751 for more info.

Kidney Smart

Monogram Health

Provided at no cost to Banner Medicare Advantage HMO, PPO, Dual and Banner – University Family Care ACC and ALTCS* members with a diagnosis of CKD 3b through ESRD.

Monogram Health Services Include:

- In-home visits from nurses and social workers
- Personalized education for patients and their loved ones
- Help with understanding and keeping up with medications
- Dedicated care team available 24/7 to answer questions
- Wireless blood pressure monitor and scale for tracking key vitals
- Access to pharmacists and nutritionists for personalized advice
- Working with a patient's existing physicians

For more information:

Banner Medicare Advantage (BMA)

Call 8 a.m. to 8 p.m., 7 days a week

- BMA HMO 844-549-1857, TTY 711
- BMA PPO 844-549-1859, TTY 711
- BMA Dual 844-549-1859, TTY 711

Banner – University Family Care (B-UFC)

Call 7:30 a.m. to 5 p.m., Monday – Friday (except holidays)

- B-UFC ACC 800-582-8686, TTY 711
- B-UFC ALTCS 833-318-4146, TTY 711

**Note: Must have a primary plan through Banner*

Care Management Referral Form

Connect high risk members to Complex Care Management or Monogram Health.

Banner Health Network **Population Health Management 602-747-7799**

Completed Forms can be sent to:
FAX: 480-655-2537 or EMAIL: BHNPopHealthManagement@BannerHealth.com

- ☐ AARP MEDICARE ADVANTAGE/UNITED HEALTHCARE
- ☐ MEDICARE-MSSP
- ☐ BUFC-ACC
- ☐ BANNER AETNA
- ☐ HUMANA MA

BANNER MEDICARE ADVANTAGE
☐ Prime ☐ Plus ☐ Dual

PATIENT INFORMATION	
DATE:	
PATIENT'S NAME:	DOB:
ADDRESS:	
PHONE #:	
INSURANCE ID #:	
PATIENT'S PCP:	PHONE #:
REFERRAL SOURCE	
PERSON SUBMITTING REFERRAL:	PHONE #:

REASON(s) FOR REFERRAL:

- ☐ Multiple ED visits OR inpatient admissions
- ☐ Post Discharge Assistance for continued care management support
- ☐ Medication Assistance (education, cost barriers, adherence, and polypharmacy)
- ☐ Non-adherence to PCP treatment plan/missed appointments & annual screening
- ☐ Chronic condition/Newly diagnosed condition(s)/Disease education (specify below)
- ☐ Other:
- ☐ Dial Into Diabetes Program: Diabetic Care Management
- ☐ Mental Health needs (i.e., dementia, Alzheimer's, depression, substance abuse)
- ☐ Home safety concerns
- ☐ Advance Directives/End of Life planning
- ☐ Community resources (i.e., financial needs, transportation, caregiver support, support groups)

DIAGNOSIS:

PLEASE DESCRIBE PATIENT'S NEEDS:

Rev: 1/9/2023 (ECT)

References

References

Renal Care Guidelines and Renal Medication Alternative Guidelines

- de Brito-Ashurst, I., Varagunam, M., Raftery, M. and Yaqoob, M., 2009. Bicarbonate Supplementation Slows Progression of CKD and Improves Nutritional Status. *Journal of the American Society of Nephrology*, 20(9), pp.2075-2084.
- *Kidney International Supplements*, 2013. Kidney Disease: Improving Global Outcomes (KDIGO) Clinical Practice Guideline for the Evaluation and Management of Chronic Kidney Disease. Kidney Int Suppl. 2013;3,1:1–163. 3(1), pp.1-163.
- National Kidney Foundation. 2022. *What is the Criteria for CKD*. [online] Available at: <https://www.kidney.org/professionals/explore-your-knowledge/what-is-the-criteria-for-ckd> [Accessed 11 January 2022].
- Munar, M., Singh, H. 2007. *Drug Dosing Adjustments in Patients with Chronic Kidney Disease*. Am Fam Physician. 2007 May 15;75(10):1487-1496.

The Importance of Early Detection of Kidney Disease Tip Sheet

- Heat map adapted from Kidney Disease: Improving Global Outcomes (KDIGO) CKD Work Group. Kidney Int Suppl. 2013;3:1-150 and National Kidney Foundation (https://www.kidney.org/).
- Lifestyle recommendations adapted from NIDDK: Managing Chronic Kidney Disease - NIDDK (nih.gov), National Kidney Foundation (https://www.kidney.org/).

Acronyms:

BHN:	Banner Health Network
KDIGO:	Kidney Disease Improving Global Outcomes
CKD:	Chronic Kidney Disease
eGFR/GFR:	Estimated glomerular filtration rate/Glomerular filtration rate
ESA:	Erythropoietin stimulating agent
PTH:	Parathyroid hormone
AKI:	Acute kidney injury
ACR:	Albumin/creatinine ratio
AER:	Albumin excretion rate
RBC:	Red blood cells
ARB:	Angiotensin II receptor blocker
ACE-I:	Angiotensin-converting enzyme inhibitor
NSAIDs:	Non-steroidal anti-inflammatory drugs
SGLT2:	Sodium-glucose cotransporter-2 inhibitors
RAS:	Renin-angiotensin-system
SLE:	Systemic Lupus Erythematosus