



## Acute and Chronic Kidney Disease

### OBJECTIVE

The objective of this Clinical Practice Guideline (CPG) is to provide evidence-based practice recommendations for the treatment of Acute and Chronic Kidney Disease. The CPG includes information on Acute Kidney Injury (AKI), formerly known as acute renal failure (ARF). The new terminology enables healthcare professionals to consider the disease as a spectrum of injury. The term ARF is now reserved for severe AKI, usually implying the need for renal replacement therapy. The CPG discusses care management for Members, including Member treatment goals and assistance with implementing lifestyle modifications. Behavioral health implications are also discussed. In addition, the CPG outlines the organizations that WellCare aligns with regarding the treatment of Kidney Disease and relevant Measureable Health Outcomes. This CPG is developed to respond to a high rate of readmission related to Chronic Kidney Disease and AKI for the WellCare population. Acute kidney injury (AKI) is common (an estimated 1 in 5 hospitalizations), associated with a more than fourfold increased likelihood of death, and there are reports of gaps in the quality of care in several clinical settings despite publication of evidence-based guidelines.<sup>1,2,3,4,5</sup>

### OVERVIEW<sup>1,2,3,4</sup>

Approximately 11% of U.S. adults have CKD, many of whom are elderly. The condition is usually asymptomatic until its advanced stages. Most cases of CKD are associated with diabetes or hypertension. CKD is defined as decreased kidney function or kidney damage that persists for at least 3 months. No studies assess the sensitivity and specificity of screening for CKD with tests for estimated GFR, microalbuminuria, or macroalbuminuria.<sup>6</sup> Factors affecting those with increased risk for CKD are noted below.<sup>7</sup>

Clinical Factors		Sociodemographic Factors
Diabetes	Neoplasia	Older age
Hypertension	Family history of CKD	US ethnic minorities ( <i>African American, Native American, Hispanic, Asian, or Pacific Islander</i> )
Autoimmune diseases	Recovery from acute kidney failure	Exposure to certain chemical and environmental conditions
Systemic infections	Reduction of kidney mass	Low income/education
Urinary tract infections or stones	Exposure to certain drugs	
Lower urinary tract obstruction	Low birth weight	

Acute kidney injury (AKI) is the rapid decline in the glomerular filtration rate (GFR) resulting in retention of nitrogenous wastes, primarily creatinine and blood urea nitrogen. AKI causes a build-up of waste products, specifically nitrogenous waste products, in the blood and challenges the kidneys to maintain fluid balance. Refer to information outlined in the "Hierarchy of Support" section below for specific clinical definitions. Causes include:<sup>1,8,9</sup>

- Decreased blood flow (e.g., low blood pressure, blood and/or fluid loss, heart attack, heart failure, burns, overuse of NSAIDs)
- Direct kidney damage - examples: sepsis, scleroderma, vasculitis
- Blockage of urinary tract – examples: enlarged prostate, kidney stones

## Hierarchy of Support

### GUIDELINE HIERARCHY

CPGs are updated annually due to updates made to the Kidney Disease: Improving Global Outcomes (KDIGO) guidelines, Acute Dialysis Quality Initiative (ADQI), and Acute Kidney Injury Network (AKIN). When there are differing opinions noted by national organizations, WellCare will default to the member's benefit structure as deemed by state contracts and Medicaid / Medicare regulations. If there is no specific language pertaining to chronic kidney disease, WellCare will default (in order) to the following:<sup>7,10,11</sup>

- National Committee for Quality Assurance (NCQA);
- United States Preventive Services Task Force (USPSTF), National Quality Strategy (NQS), Agency for Healthcare Research and Quality (AHRQ);
- Specialty associations, colleges, societies, etc. (e.g., American Academy of Family Physicians, American Congress of Obstetricians and Gynecologists, American Cancer Society, etc.).

Links to websites within the CPGs are provided for the convenience of Providers. Listings do not imply endorsement by WellCare of the information contained on these websites. NOTE: All links are current and accessible at the time of MPC approval.

WellCare aligns with the KDIGO, ADQI, and AKIN on the topic of Acute and Chronic Kidney Disease. The following are highlights from the organizations.

### KIDNEY DISEASE: IMPROVING GLOBAL OUTCOMES (KDIGO)

**Chronic kidney disease** is defined as a glomerular filtration rate or GFR  $<60$  mL/min/1.73m<sup>2</sup> for  $\geq 3$  months with or without kidney damage. **Kidney damage** is defined as structural or functional abnormalities of the kidney, with or without decreased GFR, as manifested by either pathologic abnormalities or markers of kidney damage (proteinuria, hematuria, pyuria, abnormal imaging studies). GFR can be estimated (eGFR) using the serum creatinine and one of several formulas. The classification for CKD is below:<sup>7</sup>

*Stage 1:* Kidney damage with normal or increased GFR ( $>90$ ); Clinical presentations include nephrotic syndrome, nephritic syndrome, tubular syndromes, urinary tract syndromes, asymptomatic urinary or radiologic abnormalities, hypertension due to kidney disease. Diagnose and treat kidney disease and comorbid conditions to slow progression and reduce cardiovascular disease (CVD) risk.

*Stage 2:* Kidney damage with mild or decreased GFR (60-89); May present with mild complications. Estimate progression.

*Stage 3:* Moderately decreased GFR (30-59); May present with moderate complications. Evaluate and treat complications by assessing presence of anemia, nutritional status, bone metabolism and indices of functioning and well-being.

*Stage 4:* Severely decreased GFR (15-29); May present with severe complications. Refer to nephrologists and prepare for kidney replacement therapy (KRT).

*Stage 5:* Kidney failure (GFR $<15$  or dialysis); May present with uremia and cardiovascular disease. Requires KRT.

The KDIGO guidelines for AKI also propose a consensus definition utilizing the 48-hour timeframe from AKIN for a 0.3 mg/dL change in serum creatinine, while using a seven-day timeframe for the 50 percent change in serum creatinine originally applied by the RIFLE criteria, while retaining the tripartite staging of both systems.<sup>12</sup> According to KDIGO, AKI is defined by any of the following:<sup>13</sup>

- Increase in serum creatinine by  $\geq 0.3$  mg/dL ( $\geq 26.5$  micromol/L) within 48 hours; or
- Increase in serum creatinine to  $\geq 1.5$  times baseline, which is known or presumed to have occurred within the prior seven days; or
- Urine volume  $<0.5$  mL/kg/h for six hours

The KDIGO criteria only utilize changes in serum creatinine and urine output, not changes in glomerular filtration rate (GFR) for staging, with the exception of children under the age of 18 years, for whom an acute decrease in estimated GFR (eGFR) to  $<35$  mL/min per 1.73 m<sup>2</sup> is included in the criteria for stage 3 AKI. KDIGO suggested that patients be classified according to criteria that result in the highest (e.g., most severe) stage of injury. Using the KDIGO criteria, AKI is staged as follows:

- Stage 1 – Increase in serum creatinine to 1.5 to 1.9 times baseline, or increase in serum creatinine by  $\geq 0.3$

- mg/dL ( $\geq 26.5$  micromol/L), **or** reduction in urine output to  $< 0.5$  mL/kg per hour for 6 to 12 hours.
- Stage 2 – Increase in serum creatinine to 2.0 to 2.9 times baseline, **or** reduction in urine output to  $< 0.5$  mL/kg per hour for  $\geq 12$  hours.
  - Stage 3 – Increase in serum creatinine to 3.0 times baseline, **or** increase in serum creatinine to  $\geq 4.0$  mg/dL ( $\geq 353.6$  micromol/L), **or** reduction in urine output to  $< 0.3$  mL/kg per hour for  $\geq 24$  hours, **or** anuria for  $\geq 12$  hours, **or** the initiation of renal replacement therapy, **or**, in patients  $< 18$  years, decrease in eGFR to  $< 35$  mL/min per  $1.73$  m<sup>2</sup>.

The KDIGO guideline covers recommendations for risk assessment, evaluation, prevention, and treatment. In addition, chapters related to treatment cover pharmacological approaches to prevent or treat AKI as well as avoiding nephrotoxicity, and management of renal replacement for kidney failure from AKI. To review the full guideline, visit: [http://www.kdigo.org/clinical\\_practice\\_guidelines/pdf/KDIGO%20AKI%20Guideline.pdf](http://www.kdigo.org/clinical_practice_guidelines/pdf/KDIGO%20AKI%20Guideline.pdf).<sup>13</sup>

### ACUTE DIALYSIS QUALITY INITIATIVE (ADQI)

The Acute Dialysis Quality Initiative (ADQI) proposed a graded definition of AKI called the RIFLE criteria. The RIFLE criteria consists of three graded levels of kidney dysfunction (Risk, Injury, and Failure), based upon either the magnitude of increase in serum creatinine or urine output, and two outcome measures (Loss and End-stage renal disease [ESRD]). Conceptually, the first three of these criteria were considered to be graded definitions of AKI, providing increasing specificity at the expense of sensitivity, rather than "staging" criteria for patients meeting a minimal definition of AKI. To review the RIFLE criteria, visit: [http://www.adqi.org/Upload/Reports/ADQI\\_2/ADQI2g1.pdf](http://www.adqi.org/Upload/Reports/ADQI_2/ADQI2g1.pdf).<sup>10</sup>

### ACUTE KIDNEY INJURY NETWORK (AKIN)

A modification of the RIFLE criteria was developed by the Acute Kidney Injury Network (AKIN), providing both diagnostic criteria and a staging system for acute kidney injury. AKIN modified the RIFLE criteria in order to include less severe AKI, to impose a time constraint of 48 hours, and to allow for correction of volume status and obstructive causes of AKI prior to classification. For more information on the AKIN criteria, visit: <http://www.akinet.org/akinstudies.php>.<sup>11</sup>

## Evidence Based Practice

### MEASUREMENT OF COMPLIANCE

WellCare is committed to adhering to the measures and standards published by the Centers for Medicare and Medicaid Services (CMS) and the National Committee for Quality Assurance (NCQA). Please reference WellCare's Clinical Policy Guiding Document titled *Quality Improvement*.

NOTE: To access Clinical Policy Guiding Documents visit [www.wellcare.com](http://www.wellcare.com) – select the Provider tab, then "Tools" and "Clinical Guidelines".

## Care Management

The goals for Care Management is to support the member's ability to self-manage the underlying condition of Acute and Chronic Kidney Disease, minimize symptoms and complications of AKI, and remove barriers preventing the member from achieving those goals.

### Primary Symptoms of AKI to Educate Members

*Call provider right away to report urgent symptoms:*

- Urinating less, or not urinating at all
- Blood in the urine, or urine that is red or brown
- Swelling, especially in the legs or feet
- Vomiting, or not feeling hungry
- Feeling weak, or getting tired easily

*Seek emergency care for:*

- Shortness of breath
- Acting confused, or not acting like themselves
- Chest pain or pressure
- Seizures

To address the underlying cause of AKI (decreased blood flow, direct kidney damage, or blockage of urinary tract) the following CPGs may be referenced: *Cardiovascular Disease (HS-1002)*, *Congestive Heart Failure (HS-1003)*, and *Managing Infections (HS-1037)*.

#### Primary Symptoms of CKD to Educate Members<sup>14</sup>

*Call provider right away to report urgent symptoms:*

- Change In energy level or strength
- Increased swelling especially in legs, around the eyes or other parts of the body
- Change from normal breathing
- Nausea or vomiting
- Lightheadedness
- Bone or joint pain
- Itching
- Easy bruising

*Seek emergency care for:*

- Severe fatigue
- Chest pain
- Difficulty breathing
- Severe nausea and vomiting
- Severe bleeding (from any source)
- Muscle weakness

Integrated care management of Acute and Chronic Kidney Disease involves:

- Guiding the Member with management of the underlying cause of AKI per physician treatment plan;
- Supporting the Member's lifestyle changes needed to maintain or improve kidney function;
- Assisting the Member with renal replacement therapy regime adherence, if appropriate;
- Ensuring efficacy of and adherence to medications and identify any potential nephrotoxicity;
- Vaccinating against influenza and pneumonia; and
- Assess for risk of depression and poor coping skills and share with appropriate provider(s) if risks identified.

#### **EVALUATION AND TREATMENT**

Highlight components of the KDIGO guidelines for evaluation and treatment of CKD include:<sup>7</sup>

- Evaluate members' specific type of kidney disease, co-morbid conditions, disease severity (assessed by kidney function - GFR), complications (related to the level of kidney function), risk for loss of kidney function, and risk for the development of cardiovascular disease.
- Therapy is based on the specific kidney diagnosis, prevention, diagnosis, evaluation and treatment of co-morbid conditions; measures to slow the progression of kidney damage.
- Review of member medications should be performed at each office visit. Careful consideration should be rendered to dosages based on the level of kidney function. Assessment of potential drug interactions that can also lead to adverse effects of kidney function. If possible, therapeutic drug monitoring should be performed.
- Members with chronic kidney disease should be referred to a nephrologist for consultation and/or comanagement if there is question about preparing a clinical action plan. Members presenting with a GFR below 30mL per minute per 1.73m<sup>2</sup> should also be referred to a nephrologist.

The KDIGO guidelines also highlighted components of follow-up:<sup>7</sup>

- Member should have an action plan based on the stage of kidney disease and the presence of other risk factors and/or co-morbidities.
- Track member's GFR regularly to determine the stage of disease, in accordance with the NKF Classification for Chronic Kidney Disease. Measurements of serum creatinine and GFR should be rendered at least yearly and more frequently in those members with GFR <60mL/min/1.73m<sup>2</sup>.
- Ascertain risk factors for faster versus slow GFR decline including type (diagnosis) of kidney disease, non-modifiable and modifiable factors.
- Intervene accordingly to slow progression of kidney disease in all members with chronic kidney disease.
- Interventions that have been proven effective include:
  - Strict glucose control in diabetics
  - Strict blood pressure control
  - Angiotensin-converting enzyme inhibitor or angiotensin-2 receptor blockade with close monitoring of serum potassium and creatinine levels
- Dietary assessment and evaluation; limitation dietary protein.
- Consider lipid lowering therapy as indicated.
- Correction of anemia (target hemoglobin level is 11-12 g/dL; target hematocrit level is between 33-36%).
- Consider all members with chronic kidney disease to be at high risk for cardiovascular disease including coronary artery disease and cerebrovascular, peripheral vascular disease and heart failure and should be

assessed routinely for cardiovascular risk factors.

In addition, members with CKD are at increased risk of CVD including coronary heart disease, cerebrovascular disease, peripheral vascular disease and heart failure. They should be considered in the highest risk group for CVD and undergo assessment and reduction in risk factors accordingly.<sup>7</sup>

### MEASURABLE HEALTH OUTCOMES

Targeted Health Outcomes (Extended Program Goals) result from successful member self-management (see Case Management Objectives).

1. The Member experiences no symptoms requiring acute medical care and intervention. The case manager compares the recent utilization frequency for AKI (and/or ARF) to the frequency prior to CM engagement. CM monitors for ED and inpatient authorization/utilization related to the primary diagnosis of AKI (and/or ARF). In absence of ED and inpatient utilization, authorizations and claims data, or to otherwise demonstrate less frequent need for acute medical intervention, CM may use Provider and/or Member narrative.
2. The Member reports fewer or lessening symptoms over a specific period of time after the start of Case Management engagement. Member-specific goals should reference member's individual symptoms. Compare member's responses to urological symptom assessment questions on initial and subsequent assessments.
3. The Member's serum creatinine improves to  $\leq 1.2$  mg/dL, or is reduced to within .1mg/dL of baseline, and is maintained within normal ranges (0.6 to 1.2 mg/dL). CM compares creatinine documented in provider records, assessments and care plan, and monitoring data sources pre- and post-engagement at 6-12 months. In absence of these data sources, CM may use Provider and/or Member narrative and/or HRA data may be used.

### CASE GOALS

Case Goals should target specific care gaps and/or adherence issues, and measure the member's progress towards self-management and adherence which will lead to the targeted health outcomes above. Examples include:

1. The Member's prescription refills demonstrate at least an 80% adherence rate (verified by claims or member/provider narrative) over last 30 days.
2. The Member is adherent to routine labs (such as serum testing and urinalysis), and other diagnostics prescribed by the physician (verified by claims or member/provider narrative) over last 30 days.
3. Specific for Members requiring renal replacement therapy: The Member describes daily/weekly routine that demonstrates adherence to physician-prescribed renal replacement therapy regimen, including diet and fluid intake management, vascular / peritoneal access care, and frequency of renal replacement therapy.
4. Specific for Members requiring hospitalization: The Member participates in provider follow-up visit within 7 days of hospital discharge.

Other measurable health outcomes may apply based on the underlying condition causing AKI in the individual. Refer to those other CPGs for additional options for health outcomes, frequently cardiovascular disease and heart attack, congestive heart failure or systemic infection (including sepsis).

### CASE MANAGEMENT OBJECTIVES

Case Management Objectives should focus on improving the member's self-management skills including:<sup>15,16,17</sup>

- Following physician-recommended diet that addresses protein, sodium, potassium, phosphorus, and calcium intake
- Managing daily fluid intake to match what the physician recommends
- Taking medications as prescribed. Avoid NSAIDs and other nephrotoxic drugs, and always check with the physician before taking any drugs not prescribed by the physician
- Check weight daily and watch for swelling in ankles, feet and abdomen to catch fluid imbalances early
- Understanding characteristics of urine to report it to the physician (dark, foamy/fizzy, pick/reddish)
- Adhering to provider visit(s) as scheduled
- Early identification of oncoming symptoms (listed above) to report timely to physician
- Seeking immediate care for emergent symptoms (listed above)

The care team should also conduct risk screening and treat anxiety and depression, if applicable.

Members should receive written management plans based on the staging of their kidney damage. The plans should

include the following facets of care:

- Assessment and management of cardiovascular and cerebrovascular risk factors.
- Monitoring of dietary protein and/or nutrition therapy with referral to registered dietician as indicated.
- Pharmacology education regarding medications contraindicated with kidney damage.
- Instruct members and their caregivers as appropriate on signs and symptoms for central and peripheral neurological involvement.

### **MEMBER EDUCATIONAL RESOURCES**

WellCare contracts with Krames/StayWell for Member educational materials utilized by Case Managers. Items are available to review with Members to address knowledge gaps. Case Managers verbally educate Members on the topics below related to Acute and Chronic Kidney Disease.

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• Healthy Kidneys</li> <li>• Kidney Problems</li> <li>• Kidney Failure: Your Health Care Team</li> <li>• Coping with Kidney Failure</li> <li>• Caring for Yourself When You Have Kidney Failure</li> <li>• Monitoring Kidney Health</li> <li>• Treatment Options for Kidney Failure</li> <li>• Understanding Fluids</li> <li>• Limiting Fluids</li> <li>• Getting the Right Amount of Protein</li> </ul> | <ul style="list-style-type: none"> <li>• Choosing the Right Protein for Your Body</li> <li>• Eating a Safe Amount of Potassium</li> <li>• Reducing Potassium in Foods</li> <li>• Balancing Calcium and Phosphorus</li> <li>• Eating Less Sodium</li> <li>• Avoiding High-Sodium Foods</li> <li>• Taking Iron for Anemia</li> <li>• Finding Support for Kidney Disease</li> <li>• Exercise to Help Your Kidneys</li> <li>• Living with High Blood Pressure and Kidney Disease</li> </ul> |
|---|---|

These materials are in the approval process and will be available for member educational mailing in the future. Providers may wish to research the titles above related to Acute and Chronic Kidney Disease that Case Managers utilize with Members.

### **PHARMACOLOGY**

Pharmacological management of AKI includes the following:<sup>18</sup>

- Do not routinely offer loop diuretics to treat AKI.
- Consider loop diuretics for treating fluid overload or edema while:
  - An adult, child or young person is awaiting renal replacement therapy, or
  - Renal function is recovering in an adult, child or young person not receiving renal replacement therapy.
- Do not offer low-dose dopamine to treat acute kidney injury.

### **MEDICAL AND BEHAVIORAL INTEGRATION**

Significant mental illness or substance abuse can impact the member's ability to comprehend and actively participate in the treatments for AKI, especially when symptoms require treatment by dialysis. These unique may include diminished self-care, increased incidence of risky behaviors, and exposure to potentially nephrotoxic drugs to treat the BH condition. Engagement, education, and support may be needed continuously while the member is undergoing treatment for AKI when a BH condition is co-occurring to support recovery and minimize risk of recurrent episodes.

Examples of diminished self-care that can cause dehydration and lead to or exacerbate AKI include:

- Lack of drive or motivation to care for themselves such as in severe depressive illness
- Lack of ability to care for themselves, such as in dementia
- Lack of adequate nutritional intake, such as in anorexia nervosa
- Promotion of a dehydrated state through inappropriate use of diuretics or laxatives, such as in bulimia nervosa.

Examples of drugs that must be monitored closely because of potential nephrotoxicity include phenytoin, benzodiazepines, haloperidol, and atypical antipsychotics. Lithium is relatively contraindicated in AKI due to its high propensity for nephrotoxicity. Examples of risky behaviors that can lead to AKI include use of recreational drugs, such as ketamine, synthetic cannabinoids and 'legal highs'. Self-harm by way of poisoning can also cause AKI through overdose of medications or use of substances such as antifreeze.<sup>19</sup> AKI may contribute to behavioral health issues. Depression, anxiety, suicide and delirium are common complications observed in patients with renal failure.<sup>20</sup>

## Related WellCare Guidelines

In addition to the information contained in this document, please reference the following CPGs to address Acute and Chronic Kidney Disease: *Cardiovascular Disease (HS-1002)*, *Congestive Heart Failure (HS-1003)*, and *Managing Infections (HS-1037)*. NOTE: Clinical Policies can be accessed by going to [www.wellcare.com](http://www.wellcare.com) – select the Provider tab, then “Tools” and “Clinical Guidelines”.

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## Disclaimer

Clinical Practice Guidelines (CPGs) made available by WellCare are informational in nature and are not a substitute for the professional medical judgment of treating physicians or other health care practitioners. CPGs are based on information available at the time and may not be updated with the most current information available at subsequent times. Individuals should consult with their physician(s) regarding the appropriateness of care or treatment options to meet their specific needs or medical condition. Disclosure of a CPG is not a guarantee of coverage and is not intended to be used for Utilization Management Decisions or for claims. Members of WellCare Health Plans should consult their individual coverage documents for information regarding covered benefits. WellCare does not offer medical advice or provide medical care, and therefore cannot guarantee any results or outcomes. WellCare does not warrant or guarantee, and shall not be liable for any deficiencies in the information contained herein or for any inaccuracies or recommendations made by independent third parties from whom any of the information contained herein was obtained. Links are current at time of approval by the Medical Policy Committee (MPC) and are subject to change. Lines of business are also subject to change without notice and are noted on [www.wellcare.com](http://www.wellcare.com). Guidelines are also available on the site by selecting the Provider tab, then “Tools” and “Clinical Guidelines”.

Easy Choice Health Plan ~ Harmony Health Plan of Illinois ~ Missouri Care ~ Ohana Health Plan, a plan offered by WellCare Health Insurance of Arizona  
OneCare (Care 1st Health Plan Arizona, Inc.) ~ Staywell of Florida ~ ~ WellCare Prescription Insurance ~ WellCare Texan Plus (Medicare – Dallas and Houston markets)  
WellCare (Arizona, Arkansas, Connecticut, Florida, Georgia, Illinois, Kentucky, Louisiana, Mississippi, Nebraska, New Jersey, New York, South Carolina, Tennessee, Texas)

## Medical Policy Committee Approval History

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6/24/2017	<ul style="list-style-type: none"> <li>• Approved by MPC. Merged Acute Kidney Injury: HS-1069. Included Care Management section.</li> </ul>
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3/6/2014, 2/2/2012	<ul style="list-style-type: none"> <li>• Approved by MPC. No changes.</li> </ul>
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2/2010	<ul style="list-style-type: none"> <li>• Approved by MPC. New.</li> </ul>