MBGH
Midwest Business Group on Health

Chronic Kidney Disease (CKD):
Protecting Health Through Prevention & Treatment

Quick view: Employer Action Steps

1. Collect data to better understand the business impact of CKD.
2. Promote prevention, early diagnosis, and appropriate treatment of CKD.
3. To avoid the high costs of hiring and training, put strategies in place to retain employees and maximize productivity.

See page 8 for a full set of action steps.

Click here for a PDF of the action steps.

Prevalence of CKD

- More than 1 in 7 US adults (about 35.5 million people or 14%) are estimated to have CKD.
- As many as 9 in 10 adults with earlier stage (1-3) CKD and 40% of those with more severe CKD (stage 4-5 or 6) do not know they have it
- Each day, 360 people with ESRD begin very costly dialysis treatments

These sobering statistics point to a need for employers to take action to prevent the development and progression of CKD in their members – a need that is strongly validated by costs associated with the later stages of the disease.

What is CKD?

People normally have two kidneys, about the size of a computer mouse, that filter all the blood in the body every 30 minutes. The kidneys perform functions important to a healthy life and healthy body, including:

- Removing natural waste products and extra water
- Balancing important minerals
- Manufacturing vitamins that control growth
- Regulating blood pressure, red blood cells, and the amount of certain nutrients in the body, such as calcium and potassium
- Keeping bones healthy

Chronic Kidney Disease (CKD) occurs when the kidneys become damaged to the point of being unable to adequately filter blood over 3 or more months. Although frequently preventable, CKD is typically not detected until later in the disease course (stages 3-5 or 6) and when untreated or undertreated, can progress to end-stage renal disease (ESRD).

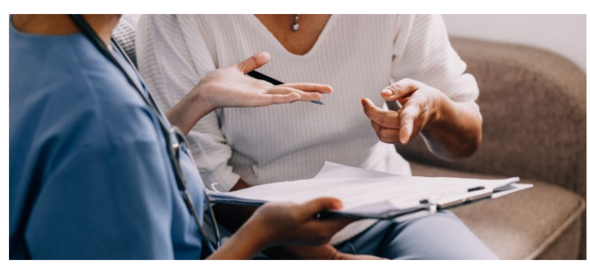
Risks for CKD

CKD usually develops because of a combination of physical, environmental, and social determinants of health.

1 in 3 American adults is at risk for CKD and risk factors include:

- Being over age 60 or having a family history
- Having diabetes, high blood pressure, heart disease, obesity, an acute kidney injury or using tobacco.

According to the National Kidney Foundation, people of African American, Hispanic, Native American, Asian or Pacific Islander descent have increased risk. African Americans are 3 times more likely than Whites, and Hispanics are nearly 1.5 times more likely than non-Hispanics for CKD to progress to kidney failure.



Causes of CKD

In the United States, diabetes and hypertension are the top two leading causes of CKD-related kidney failure, accounting for two out of three new cases.

One in three people with diabetes and one in five with hypertension also have CKD. Consistently elevated blood glucose levels and/or blood pressure cause damage and scarring to blood vessels throughout the body, including the many vessels needed to carry out the kidneys' filtering role.

Underdiagnosed CKD & Importance of Screenings

During the early stages of CKD, frothy and/or cloudy urine may occur when kidney tissue becomes damaged to the point of allowing blood proteins to leak into the urine. This early symptom and fatigue may be the first subtle signs of CKD, which are often ignored.

A preventive physical exam with blood analysis is often the health screening that identifies an abnormally low estimated glomerular filtration rate (eGFR), a measurement of how well the kidneys filter blood, which should be followed by a urine albumin-creatinine ratio (uACR) test to estimate the degree of kidney damage. Once the kidney tissues become damaged to the point of causing albumin leakage into the urine (albuminuria), the ratio of albumin (an important protein in the blood but not normally found in urine) to creatinine (a waste product normally found in urine that results from the digestion of protein in food and the normal breakdown of muscle tissue) will be elevated. uACR is often the first kidney-related laboratory test result to be abnormal in those with CKD, and a high uACR is associated with a 4- to 7- times higher risk of developing kidney failure and an independent predictor of poor cardiovascular outcomes. However, this simple urine test is largely under-tested in real world medical practice, even among those already diagnosed with CKD and type 2 diabetes, and is not routinely included as part of an annual preventive screening; resulting in underdiagnosis of early-stage CKD.

Warning signs of kidney disease:

- eGFR less than 60 mL/min/1. 73 m^2 for 3 or more months

and/or

- uACR of 30 mg/g or higher for more than 3 months

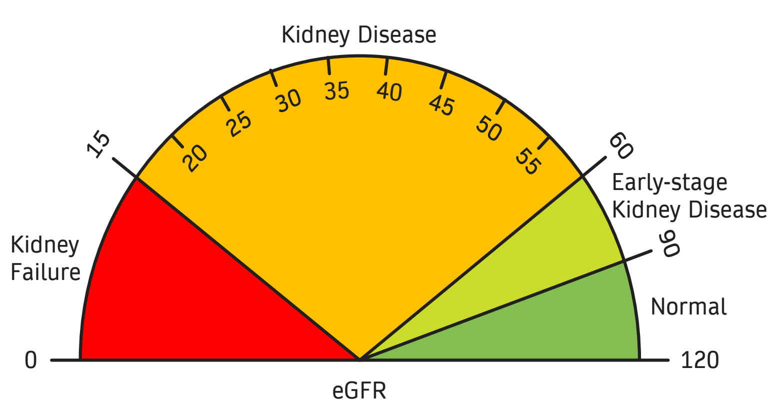
Helping Prevent Early-Stage Underdiagnosis

In 2020 the NCQA Kidney Health Evaluation HEDIS Measure was implemented that tracks the percentage of adults with diabetes (age 18-85) who received an annual kidney profile health evaluation (inclusive of eGFR and uACR). Recognizing and accepting HEDIS reporting as a healthcare quality measurement tool, has helped lessen the underdiagnosis of CKD caused by diabetes.

The American Diabetes Association (ADA) also recommends that uACR and eGFR be assessed annually in people with type 1 diabetes with a duration of ≥5 years and in all people with type 2 diabetes regardless of treatment. In those with established diabetic-related kidney disease, uACR and eGFR should be monitored 1–4 times per year depending on the CKD stage.

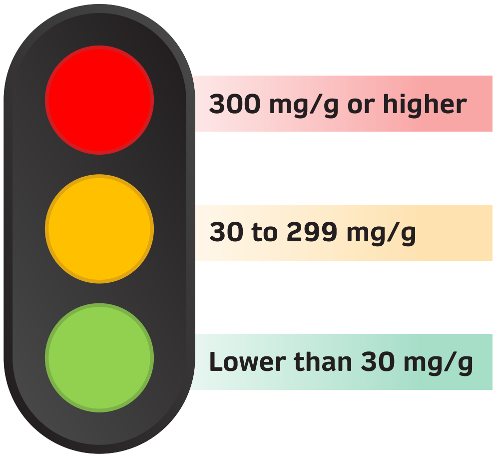
Employers can play a role in the early detection of CKD by covering and promoting uACR and eGFR testing as part of an annual preventive screening. At a minimum, this preventive test should be covered and promoted for all members with diabetes and/or hypertension. The cost of a kidney profile test (usually <$10) is minimal compared to the costs of progressive CKD.

eGFR Estimates Kidneys' Blood Filtering Capabilities



Estimated Glomerular Filtration Rate (eGFR) | National Kidney Foundation

uACR Measures Degree of Kidney Damage



https://www.kidney.org/atoz/content/uacr

CKD Impacts & Costs for Employees and Employers

Impact to Employees

As kidney function declines, the accumulation of waste products, toxins, and fluid in the blood (uremia), causes a variety of debilitating side effects including:

- Anemia characterized by extreme fatigue and trouble focusing
- Weakened immune system with increased occurrence of infections
- Loss of appetite
- Weight loss
- Shortness of breath
- Bone and muscle weakness
- Gout with joint pain
- Persistent itching
- Heart palpitations
- Vision loss
- Insomnia
- Muscle twitching or cramps
- Back pain
- Chest pain
- Swelling of hands and/or feet
- Nausea or vomiting

These and other side effects progressively reduce an individual's ability to engage in and enjoy life activities and as their frequency and severity increase, this disease can lead to financial burdens caused by the inability to work and the need for increased medical care. In addition, as CKD side effects become progressively worse, individuals often become depressed and avoid social interaction. Depression, social isolation, and financial burdens significantly worsen when CKD progresses to the point of needing multiple hours of dialysis, several times per week.

Impact to Employers

The total cost of care for CKD, including lost worker productivity and increased healthcare costs can be quite costly to employers as the disease is typically not diagnosed until kidney function decreases to the point of causing physical symptoms that require medical intervention. Medical management of CKD poses a substantial economic burdens to patients and employers as healthcare resource utilization and medical costs increase exponentially as the disease progresses. Depending upon insurance coverage and the type of dialysis being received, costs for the typical three dialysis treatments per week can be up to or over $90,000 annually. CKD becomes progressively debilitating with reduced worker productivity and eventual disability. However, when diagnosis and treatment of CKD occur during earlier stages (stages 1-3), the total cost of care can be dramatically reduced and workers tend to be able to remain at work and productive. Prevention of disease progression is critical as those who progress to the higher levels of CKD have more all-cause inpatient, ER, and outpatient visits as well as longer inpatient stays per year compared to those who do not.

The 5 Stages of Chronic Kidney Disease

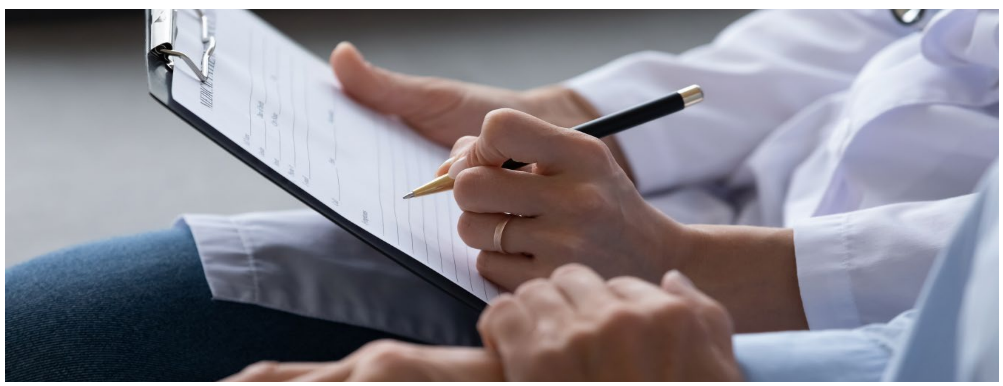
Stage of CKD	STAGE 1	STAGE 2	STAGE 3A	STAGE 3B	STAGE 4	STAGE 5
eGFR	90 or greater	Between 60 and 89	Between 45 and 59	Between 30 and 44	Between 15 and 29	Less than 15
Level of kidney damage	Mild kidney damage	Mild kidney damage	Mild to moderate kidney damage	Mild to moderate kidney damage	Moderate to severe kidney damage	End-stage kidney disease. Kidneys are close to failure or have completely failed. You will need to start dialysis or have a kidney transplant.

(An additional stage 6 may be identified with stage 5 being pre-dialysis and stage 6 being dialysis and/or kidney transplant.)

[Managing Chronic Kidney Disease in Type 2 Diabetes (ckdandt2d.com)](https://ckdandt2d.com)

CKD & Employers as Fiduciary

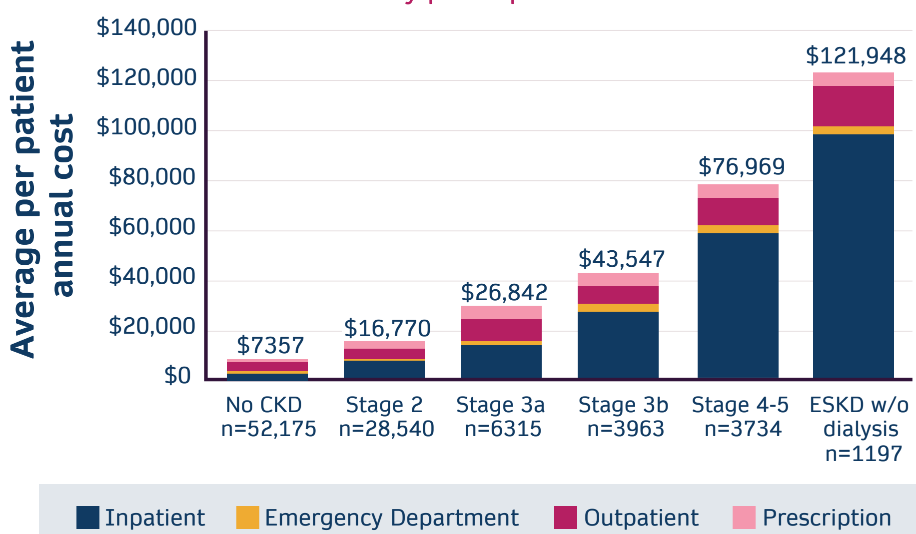
Early diagnosis and treatment of CKD can significantly reduce healthcare costs for employer-sponsored health plans. As plan fiduciaries, employers are legally responsible for assuring prudent use of plan assets and demonstrating good faith efforts to promote early diagnosis and treatment for members at risk (especially those with type 2 diabetes and/or hypertension).



Commercial Costs for Patients with CKD (aged <65years)

Mean annualized costs by CKD stage (2007-2012)

Diabetes was present in 38% of commercially insured study participants with CKD



Adapted from: https://www.ckd-t2d-for-pop-health.com/health-plan-pbm

Employer Case Studies

MBGH employer members participated in the development of this action brief and obtained paid medical claims data for a common set of diagnostic codes. Analyses of their data revealed several common themes:

Medical Claims Analyses Uncover Harsh Financial Realities of CKD

1. CKD was present in 30-35% of members diagnosed with T2D, which validated the cause and prevalence data cited earlier.
2. Total and average costs per member per year (PMPY) became progressively higher for each stage of disease progression with stark jumps in costs for ESRD requiring dialysis and/or transplant (identified as Stage 6 in the chart below). These cost progressions reinforced the employers' understanding of the importance of early vs. late-stage diagnosis and treatment and increased their desire to take action to promote early diagnosis and treatment.
3. Total and average dollar-paid claims for Stage 6 (requiring dialysis or having a kidney transplant) prompted questions concerning whether claimants received early Medicare coverage for individuals with ESRD.
4. Total and average cost of kidney function profile testing were fractions of the costs of treating later stages. This encouraged employers to take action to promote complete kidney function profile testing for individuals at risk for or already having CKD.

Employer Case Study: Annual Medical Costs of CKD by Stage

	Employer 1 2600 employees/4000 members			Employer 2 100K employees/63,000 members			Employer 3 30,299 employees/39,528 members		
CKD Stage	Number of Members	Total Cost	Average Cost	Number of Members	Total Cost	Average Cost	Number of Members	Total Cost	Average Cost
1	0	–	–	36	$4,063	$113	5	$132	$26
2	0	–	–	157	$31,293	$199	53	$4,916	$93
3	13	$1,205	$93	15	$4,303	$287	42	$14,183	$338
4	2	$91	$46	77	$70,002	$909	32	$17,826	$557
5	1	$806	$806	26	$22,530	$867	7	$15,268	$2,181
6	2	$202,902	$101,451	108	$6,706,100	$62,094	27	$2,221,924	$82,293

Costs of Kidney Function Profile Testing: uACR (urine) + eGFR (blood)

Employer 1 4K members – 18 members with known CKD			Employer 2 63K members – 419 members with known CKD			Employer 3 39,528 members – 166 members with known CKD		
Number of Members Tested	Total Cost	Average Cost	Number of Members Tested	Total Cost	Average Cost	Number of Members Tested	Total Cost	Average Cost
291	$2,382	$8.19	4,036	$21,650	$5.36	1223	$4,986	$4.08

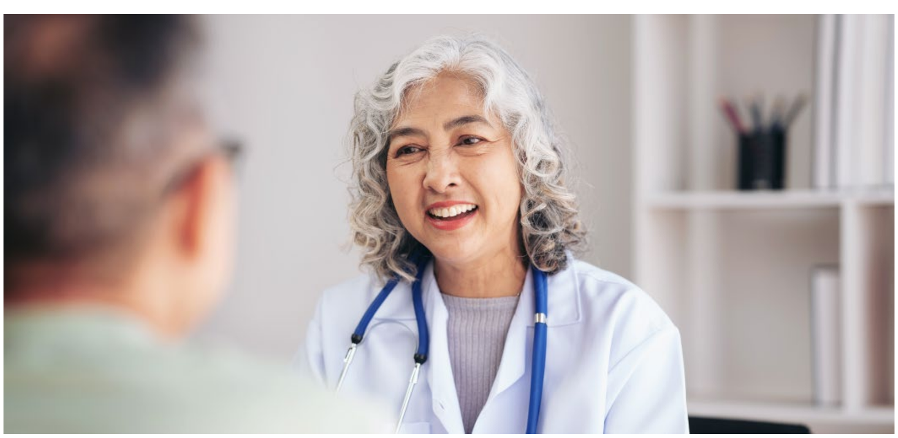
Summary

While CKD is not a top-10 debilitating or high-cost disease state for these employers, the annual recurring costs associated with stages 5 or 6 are significant and will continue to escalate if those with earlier stages experience typical disease progression. This insight prompted these employers to take action to promote CKD prevention and progression while regularly analyzing claims data to assess the need for further action. They recognized the need to analyze CKD-related prescription drug claims for a more holistic view of the impact of this disease.

The following codes may be used by employers wishing to conduct medical claims analyses to understand the prevalence and costs of CKD. Click here for a downloadable list of codes.

ICD-10 CODE	DESCRIPTION
E11.7	Type 2 Diabetes Mellitus with Multiple Complications
E11.9	Type 2 Diabetes Mellitus without Complications
E11.22	Type 2 Diabetes Mellitus with Diabetic CKD
E11.29	Type 2 Diabetes Mellitus with Other Diabetic Kidney Complications
N18.1	CKD Stage 1 (Kidney Damage eGFR<90)
N18.2	CKD Stage 2 (Kidney Damage Mild eGFR 60-89)
N18.3 unspecified	CKD Stage 3 (Moderate CKD)
N18.3a	CKD Stage 3a (Moderate eGFR 45-59)
N18.3b	CKD Stage 3b (Moderate eGFR 30-44)
N18.4	CKD Stage 4 (Severe eGFR 15-29)
N18.5	CKD Stage 5 (Severe eGFR <15)
N18.6	CKD Stage 6 or End-Stage Renal Disease (ESRD) (Severe eGFR<15 requiring dialysis)
N18.9	CKD, Unspecified Stage (Stage Not Indicated)

TESTING SITE	UACR TESTING CODES	COMMENTS
LabCorp	Kidney Profile Test Code: 140301 CPT Codes: 82043, 82565, 82570	Note: Kidney Profile Test Code includes UACR (urine specimens) and eGFR (plasma/serum specimens)
Quest Diagnostics	Kidney Profile Test Code: 39165 CPT Codes: 82043, 82565, 82570	Note: Kidney Profile Test Code includes UACR (urine specimens) and eGFR (plasma/serum specimens)



Significant Cost Break for Employers – Early Medicare Coverage Available for Individuals with ESRD

End Stage Renal Disease (ESRD) poses substantial financial and legal risks for employers who are health plan fiduciaries. These risks can be significantly reduced by ensuring timely primary Medicare coverage of claims for individuals with ESRD. Many employers are not aware Medicare coverage is available and significant cost savings can be realized.

Medicare will cover claims payments for medical and some prescription drug treatments for individuals of any age with permanent end-stage renal disease (ESRD), provided they are eligible for and enrolled in Medicare. To be eligible for early Medicare coverage, certain requirements must be met, including:

- A physician certifies the individual has ESRD requiring regular dialysis treatments or a kidney transplant to survive
- At least **ONE** of the following criteria apply:
  - They have worked the required amount of time under Social Security, the Railroad Retirement Board (RRB), or as a government employee
  - They are receiving or are eligible to receive Social Security or Railroad Retirement benefits
  - They are the spouse or dependent child of a person who meets either of the first two criteria listed above

Medicare is initially a secondary claims payer for enrolled individuals with ESRD. After 30 months of secondary coverage, Medicare becomes the primary payer of medical and some prescription drug claims while the employer group plan becomes secondary.

There is no automatic Medicare enrollment for individuals with ESRD. Although individuals receive significant financial benefits from having primary and secondary coverage, they are not required to enroll and might not if they are unaware of their early eligibility. Employers can help their members

Plan Design Tip

The following plan exclusion language may be used to protect employers from paying for claims that should be paid by Medicare, auto insurance, worker's comp, etc.:

"Services that can be covered by another plan or 3rd party if an eligible person enrolled in and/or sought coverage."

and meet fiduciary responsibilities by working with their health plan partners to ensure timely secondary and later primary claims coverage from Medicare.

Employers are encouraged to review the numerous and intricate details concerning Medicare eligibility and coverage for individuals with ESRD. End-Stage Renal Disease (ESRD) | Medicare and Medicare Rights & Protections

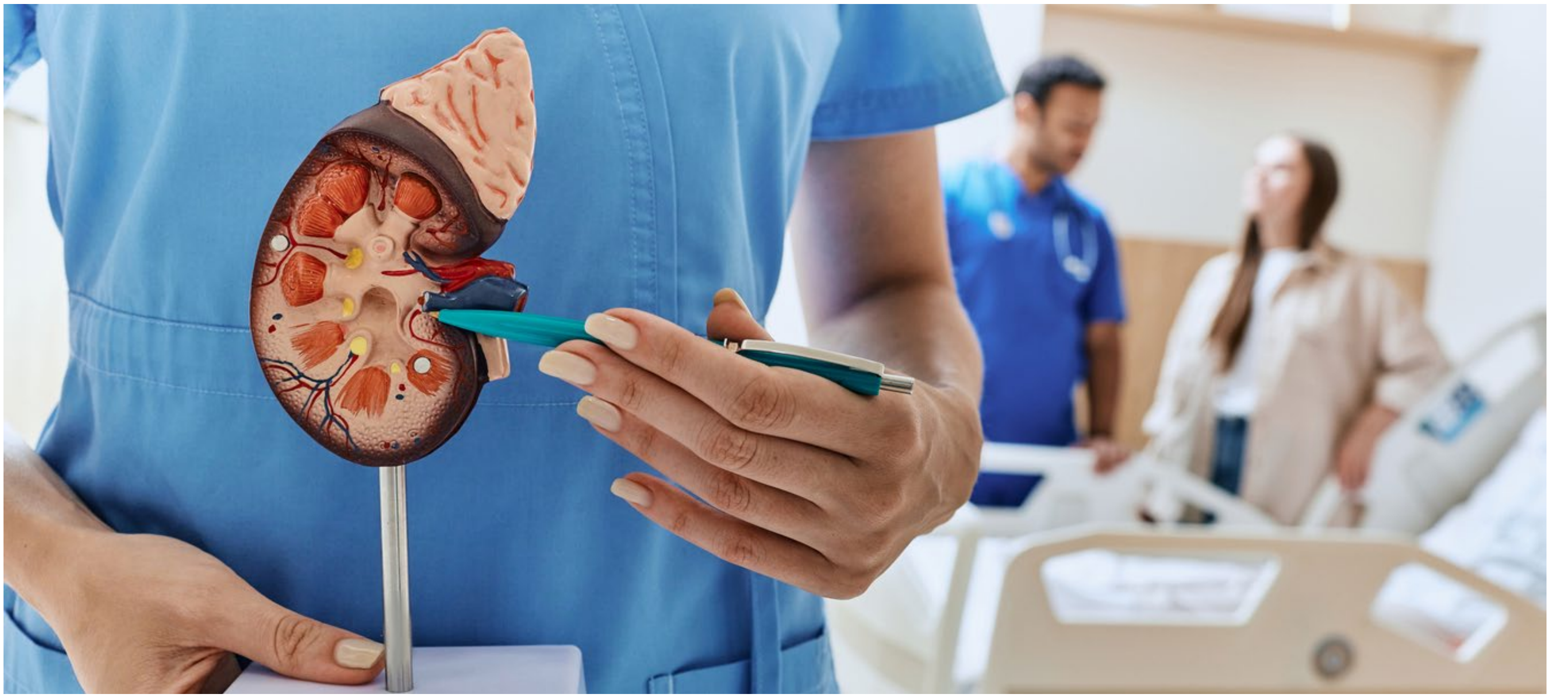
Prescription Medications – Cornerstones for the Preventing Development & Progression of CKD Associated with Diabetes and/or Hypertension

Appropriate and ongoing use of anti-diabetic and anti-hypertensive prescription medications is critical for preventing the development and progression of CKD. Each stage of progression is characterized by additional needs for costly medications. As a result, there is a strong focus on treating CKD through medications that specifically protect the kidneys from progressive damage. For example, in those with hypertensive and/or albuninuric CKD, agiotensin-converting enzyme inhibitors (ACEi), angiotensin receptor blockers (ARBs), and sometimes direct renin inhibitors have long been standards of care for protecting the kidneys and preventing progression of CKD compared to other anti-hypertensive medications.

Type 2 Diabetes (T2D) can cause overactivation of proteins called mineralocorticoid receptors (MRs) which results in inflammation and scarring of the kidneys, heart, and blood vessels. This can lead to the worsening of CKD and cardiovascular disease and mineralocorticoid receptor antagonists are the protrective medications. The newer non-steroidal strategy is now favored due to the potent anti-inflammatory and anti-fibrotic kidney and heart-protective effects with a significantly lower risk of developing low blood levels of potassium.

Sodium-glucose contransporter 2 (SGLT2) inhibitors are effective at slowing the progression of kidney disease, reducing heart failure, and lowering the risk of kidney failure in people with CKD and T2D.

The rapid evolution of prescription drug treatment for CKD from population health to a more individualized precision medicine strategy creates a need for employers to engage with their medical carriers and PBMs to assure their members at risk for CKD have adequate and unencumbered access to kidney protective medications.



Employer Action Steps

Quick view

1. Collect data to better understand the business impact of CKD.
   - Health plan demographics data to estimate levels of risk for CKD.
   - Medical claims to identify levels of risk for CKD development due to underlying diabetes and hypertension, prevalence and financial impacts of existing CKD among covered members, and gaps in compliance with national standards of care for diabetes, hypertension, and CKD.
   - Disability rates and lost workdays attributed to CKD.
2. Promote prevention, early diagnosis, and appropriate treatment of CKD:
   - Work with health plan partners (i.e., medical carriers, PBMs, TPAs, navigators, and point solutions) to:
     - √ Identify members with diabetes and/or hypertension and communicate about the risks of developing CKD; the progressive nature and the physical, emotional, social and financial outcomes of untreated CKD and how early, ongoing treatments can mitigate these issues; as well as the importance of medication adherence and regular CKD screening.
     - √ Work with members who are not appropriately using medical services/ treatments to assist them in overcoming barriers to appropriate use.
     - √ Notify treating physicians about insurance coverage and the need for kidney profile testing according to national standards of care.
     - √ Verify if those receiving kidney dialysis and/or transplants are enrolled in and appropriately receiving claims coverage through Medicare, and if not, assist them to become enrolled. Consider engaging with navigation assistance programs to assist members with this process.
   - Design benefit plans to support members.
     - √ Give access to testing and appropriate treatments without barriers caused by prior authorization, step-therapy, and utilization protocols and include current nationally recognized recommendations and standards of care; assuring specialty drug designations are not primarily based on drug costs.
     - √ Provide 100% coverage of kidney profile testing (uACR + eGFR) for all members with diabetes, hypertension and/or CKD.
     - √ Use routine urine albumin, glucose and blood dipstick testing in employee wellness screenings to promote early identification and treatment of kidney disease.
     - √ Promote control of diabetes and hypertension through plan coverage of self-management education and nutritional counseling programs.
3. To avoid the high costs of hiring and training, put strategies in place to retain employees and maximize productivity.
   - Consider modified work hours and/or work environment (to accommodate dialysis schedule, carry out peritoneal dialysis) and provide flex time or time off work to attend medical appointments.
   - Allow telecommuting when medically necessary as well as light duty work modifications – for example, avoidance of heavy lifting after dialysis, post-transplant, etc.

Conclusion

Employers can and should take steps to avoid the losses associated with CKD, even if it is currently not one of the top 10 high-cost disease states. CKD can be prevented in those with hypertension and diabetes through adequate and on-going treatment of these destructive diseases. When CKD develops, without appropriate and on-going kidney protection, it can progress into a physically, emotionally and financially debilitating and co-morbid disease. Working-age Americans who are diagnosed with CKD can have far greater independence to pursue their aspirations, achieve better health outcomes and contribute more fully to their families and society if they are able to slow the progression of their disease and stay employed. The important recommendations in this action brief can serve as a starting point for employers to develop and launch impactful initiatives to decrease the impact of CKD on their workforce.

Midwest Business Group on Health

About MBGH

Midwest Business Group on Health (MBGH) is a 501c3 non-profit supporting employers seeking solutions to better manage the high cost of health care and the health and productivity of their covered populations. Founded in 1980, MBGH offers members leading educational programs, employer-directed research projects, purchasing opportunities and community-based activities that increase the value of health care services and the health benefits they offer to members. MBGH serves over 150 companies who provide benefits to over 4 million lives, with employer members spending more than $15 billion on health care each year.

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