

CKD – Common, Complicated, and Costly:

HOW HEALTHMAP SLOWS CKD PROGRESSION AND REDUCES HEALTHCARE EXPENDITURE

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Common

Chronic kidney disease (CKD) affects 1 in 7 adults, or approximately 37 million individuals in the United States (U.S.), and is one of the top 10 leading causes of death among adults in the U.S.

What's worse, because CKD is a largely "silent" disease, affected individuals experience few to no symptoms, and 90% of people with CKD do not know about their condition.¹ Because of the aging population in the U.S. and the growing number of people with diabetes, hypertension, and obesity, the number of people diagnosed with CKD continues to grow each year. In addition, the U.S. healthcare system inadequately addresses multiple health inequities, many of which affect demographic groups that are disproportionately burdened by CKD, such as racial and ethnic minorities and those of lower socioeconomic status.

Complicated

A CKD diagnosis brings with it serious health implications. CKD is associated with an increased risk of experiencing cardiovascular disease, including heart attacks and congestive heart failure, as well as risk for stroke and early death. Some individuals also progress to end-stage renal disease (ESRD), necessitating the initiation of dialysis or a kidney transplant. In fact, each day more than 360 individuals in the U.S. begin treatment for kidney failure.² Identifying those patients at risk for progression is a key part of a successful population health management strategy.

Costly

Moreover, CKD is costly. In 2019, ESRD cost Medicare just over \$37 billion per year, whereas CKD costs Medicare more than \$87 billion per year!² Many of these costs stem from unnecessary emergency care and hospital utilization that ties back to a patient's lack of awareness of their CKD and comorbidities.



In its current state, CKD is a common diagnosis, results in considerable health complications, and is a costly disease to manage. But it doesn't have to be. In order to slow the impact CKD has on individuals and the U.S. healthcare system, it is imperative to identify patients early in their disease progression and utilize a comprehensive and equitable disease management program that addresses barriers to care. Healthmap Solutions (Healthmap) is a leading kidney population health management company accredited by the National Committee for Quality Assurance (NCQA) that offers innovative solutions to manage patients with CKD and ESRD, improve clinical outcomes, and decrease healthcare utilization and total expenditures.

Implementing Healthmap's approach on a larger scale results in slowing CKD progression, staving off complications that come with worsening CKD, and increased awareness and engagement among patients and their providers.

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Healthmap's Kidney Health Management (KHM) Program

Healthmap's KHM program is a patient and provider-driven solution to slow CKD progression, decrease unnecessary healthcare utilization and expenditures, and optimize clinical outcomes in a medically complex patient population.

Healthmap's program uses a multidisciplinary approach to:

- 1. Move upstream to identify individuals early in their CKD journey with an overarching goal of slowing CKD progression.**
- 2. Improve patient awareness and understanding of CKD and its health implications.**
- 3. Partner with clinicians to enact initiatives proven to slow CKD progression and prevent adverse events.**

A Patient-first Approach

Although Healthmap emphasizes early identification of individuals with CKD, we work with patients with CKD stages 3, 4, 5, Unspecified, and ESRD. Once identified, these individuals are matched with a Healthmap Care Navigator (CN), who is a registered nurse specializing in managing the care of individuals with kidney disease.

CNs work directly with members and focus on three important aspects of care:

1. IMPROVING LIFESTYLE CHOICES

By teaching members how to set and achieve realistic health-related goals, our members have increased their physical activity levels, adopted healthier diets, and learned to cut back or quit unhealthy habits like smoking.

One of our members noted: “[*The program*] helped me lose weight and understand my dietary intake better.”

2. EDUCATING ON CKD AND MEDICAL COMORBIDITIES

Achieving control of medical conditions that contribute to CKD progression is paramount in slowing CKD and preventing adverse health outcomes. But this is easier said than done.

Keep in mind that the average person with CKD has four medical comorbidities *in addition to their CKD*. The most common comorbidities include hypertension, coronary heart disease, congestive heart failure, diabetes, or a prior history of stroke.^{3,4} People with CKD are also more likely to experience behavioral health disorders such as depression and anxiety.³ In order to appropriately manage these different medical conditions, patients see approximately five different specialists and take on average between five to 14 unique medications every day, depending on their CKD severity.^{4,5}

Keeping everything straight would be difficult for anybody! With the help of Healthmap’s multidisciplinary team, which includes CNs, pharmacists, social workers, behavioral health specialists, and registered dietitians, we help our members navigate the complexity of CKD care.

How does our team do this? By taking a holistic and patient-centered approach to the member. Conversations between a CN and a member focus on what is most important to the member. Over time, they also discuss CKD, their other medical conditions and medications, which medicines to avoid to prevent kidney injury, and why keeping up with medical appointments is necessary. In addition, education is tailored to a member’s CKD stage. So, while someone with CKD Stage 3 might focus on preventing the complications of cardiovascular disease and slowing CKD progression, a member with more advanced CKD such as Stage 4 or 5 will have the opportunity to also learn about the kidney transplantation process and dialysis options. Because these conversations occur over multiple phone calls and with the member’s assigned Care Navigator, our members develop long-standing and meaningful relationships with their CNs, and our CNs become a trusted health resource our members can rely on.

Our members* have noted the following about the education they receive: “*She [my Care Navigator] explains things in a way I can understand. There is no sense of being rushed or pressured.*”

Leslie M.

"The first time I received a call from Healthmap, I received a great amount of knowledge regarding kidney disease. She [my Care Navigator] explained the important role kidneys have in keeping my body functioning properly."

Felix J.

"I see a cardiologist, a gastroenterologist, a urologist, a neurologist, a diabetic nurse practitioner, and a diabetes educator. I don't have a PCP (primary care provider) right now, so there is a 'hole' at present. My Care Navigator helped coordinate my care and find a PCP."

Jackie T.

Our CNs also help our members understand what their medications are for and how they help control their medical conditions. In doing so, we see a significant improvement in medication adherence:

- Healthmap's KHM members achieve **85% - 100% adherence to medications indicated for patients with CKD**, including angiotensin-converting enzyme inhibitors (ACEIs), angiotensin receptor blockers (ARBs), statins, and diabetes medications.

3. IDENTIFYING NON-MEDICAL BARRIERS TO CARE

Social barriers to care adversely impact a person's health. These are often termed social determinants of health (SDoH) and refer to food, housing, transportation insecurity, low health literacy, unemployment, and financial barriers, to name a few. SDoH barriers have been shown to have a cumulative effect on adverse CKD-related health outcomes such as unplanned dialysis starts, lack of pre-emptive dialysis access creation, kidney transplant, and death.^{6,7} Identifying and mitigating these barriers to healthcare access is paramount to helping individuals achieve optimal health.

As a kidney population health management company, Healthmap sees the importance of addressing health inequities and disparities that affect the CKD population. For this reason, every member engaged in Healthmap's KHM program is screened for social barriers to care. If identified, members are connected with our multidisciplinary team (see *Figure 1 on the next page*) to locate resources within Healthmap or the member's community to eliminate these barriers to care.

Figure 1. Healthmap's multidisciplinary engagement approach



Supporting Physicians, Providers, and the Healthcare Team

Healthcare providers are at the core of a capable and reliable healthcare system. Unfortunately, healthcare has become so complex and siloed that providers are often forced to expend energy on burdensome administrative tasks, which takes their focus away from the people they care most about – their patients.

Healthmap helps reintegrate care and can provide support for providers and office staff when needed by offering the following:

1. IDENTIFYING AND RISK-STRATIFYING PATIENTS WITH CKD

If someone could accurately predict when a car accident would take place, wouldn't it make sense to use those capabilities to prevent car accidents from occurring? Healthmap does something similar. Using proprietary analytics, Healthmap can identify those patients at highest risk for an adverse event or accelerated CKD progression and present this information to providers.

Healthmap focuses its outreach efforts on these higher-risk individuals first, with the goal of curtailing adverse events.

2. OFFERING CLINICAL INSIGHTS TO PROVIDERS

For providers, it is often difficult to know what patients are doing outside the four walls of the clinic or office. Are patients taking their medications as prescribed? What about the patient who missed his last two visits?

Healthmap can fill in the blanks at both the individual and population health level and can deliver data on the following:

- Use of appropriate medications to slow CKD progression and mitigate cardiovascular risk, such as statin therapy for all CKD patients 50 years or older (as well as patient adherence rates to these important medications)
- Identifying patients with advanced CKD who have either not seen or have missed appointments with their nephrologist.
- Evidence-based care gap opportunities tailored to a patient's CKD stage (e.g., indicated labs for individuals with CKD, identification of nephrotoxic medication combinations, chronic condition coding opportunities)

All clinical insights are vetted by Healthmap's Scientific Advisory Board with representation from multiple specialties, including nephrology, transplant nephrology, internal medicine, family medicine, pharmacy, cardiology, endocrinology, and a quality officer, to ensure that our affiliated providers are given information they can trust.

3. ENHANCING COMMUNICATION WITHIN THE HEALTHCARE SYSTEM

In an ideal world, care would be integrated and readily available in one electronic medical record. Physicians would know why their patients were admitted to a local hospital, what procedures were performed, and what medications were prescribed upon discharge. They would know the results of blood tests performed at the specialist's office as well as the recommendations made by the specialist. Unfortunately, this is not the case. When patients seek care outside of their PCP's office, this information may not be communicated directly back to the PCP, and the same is true with how PCPs communicate with specialists. Frequently, when the information is communicated, it comes through a facsimile (or fax), a technology that peaked in the 1980s and remains a common form of communication in the modern-day healthcare system. In this outdated yet omnipresent system, polypharmacy pervades, duplicative medications may be prescribed, and inadvertent harm can occur.

Healthmap's Quality Practice Advisors (QPAs) are clinicians who work directly with providers and their staff to help bridge this potentially hazardous communication gap. In addition to presenting providers with the clinical insights mentioned above, QPAs can inform busy physicians about the activities of their patients outside of the office. They can

obtain discharge summaries from a recent hospitalization, consultation notes from a specialist visit, or ensure outside labs are available to the clinician prior to the patient's next appointment. In addition, they can keep the provider abreast of topics being discussed by their patient and Healthmap's CN. For example, once a patient is educated about renal replacement therapy options, QPAs can provide physicians with home dialysis and transplant readiness scores and communicate the preferred dialysis modality to the nephrology practice. In essence, a QPA acts as a bridge between the patient and the provider to help offload an otherwise busy administrative unit already working at maximum capacity.

4. MAKING EDUCATION AVAILABLE TO PROVIDERS (AND THEIR PATIENTS!)

Healthmap's clinical team lives and breathes CKD, so keeping up with recent updates in guidelines or nephrology publications comes naturally. We know that clinicians are busy and may not have as much time as they'd like to keep up with medical updates. For this reason, our clinical team offers continuing medical education (CME) lectures, case-based education geared at clinicians, as well as educational material for patients that takes into account both cultural competency and health literacy.

The Healthmap Difference

At the individual level, it may not be immediately evident how the financial impact of slowing CKD progression is quantified. Let's look at what happened to Javier,* a Healthmap success story, to evaluate what we term ***"The Healthmap Difference."***

Javier is a 63-year-old male. He has a history of uncontrolled diabetes and hypertension, hypercholesterolemia, CKD Stage 3, atrial fibrillation, and had a heart attack seven years ago. He has a history of intermittent adherence to prescribed medications. In the past year, he's been admitted to the hospital four times, twice for complications related to uncontrolled blood pressure, and two other times for an infection in his toe that ultimately required an amputation. Unfortunately, as a result of missing multiple days from work, Javier was fired from his job. The approximate cost of these hospitalizations totaled over \$50,000.

Impact of Care Navigation

A Healthmap CN first reached out to Javier in August 2022. Javier discussed concerns over his financial hardships with his CN, specifically wondering how he would pay his bills given his recent job termination, not to mention while trying to recover from a toe amputation. Javier also expressed confusion around what he should be eating and why he needed to take so many medications. In order to address Javier's concerns, our CN helped do the following:

Spent time discussing diabetes and hypertension and what these diseases were and how they affected his body. She helped him understand that both his diabetes and high blood pressure contributed to his hospitalizations and ultimately his amputation. He also learned that his CKD was due to these

two diagnoses. Over time, Javier began checking his blood sugar and blood pressure regularly and keeping a log of these values. He now understands why each of his medications are prescribed and what purpose they serve in controlling his medical conditions, and he is more willing to take them.

Provide a referral to a Healthmap social worker. After encouraging Javier to contact his former place of work and explain his situation, he was able to get his job back and even got some back pay for days missed during his most recent hospitalization. She also identified a local durable medical equipment company that designed a custom diabetic shoe, allowing him to return to work safely while also allowing his foot to heal. Best of all, this shoe was covered by his health insurance company. Lastly, she helped arrange transportation to and from his medical visits until his toe healed and he could drive himself.

Provide a referral to a Healthmap registered dietitian (RD). Javier and his wife, who is Spanish-speaking, met with one of Healthmap's Spanish-speaking RDs, and after one session they had a better understanding of the nutrition he needed to keep his blood pressure, blood sugar levels, and kidneys in better health. The RD was able to provide Javier's wife with multiple recipes in Spanish. After two more sessions, Javier and his wife felt much more confident in their ability to shop and cook in a healthy way.

Provide a referral to a Healthmap pharmacist. Our pharmacist found an app for Javier's phone that helped him adhere to his medication regimen, reviewed his medications to ensure no nephrotoxic agents were present, and helped him obtain mail-order delivery service through his insurance so that his prescriptions would be delivered directly to his home.

By using a team-based, multidisciplinary approach, Healthmap was able to help lower out-of-pocket costs for Javier and empower him to get back on track with his health.

Impact of a Quality Practice Advisor (QPA)

A Healthmap QPA contacted Javier's primary care physician (PCP), and after learning more about Healthmap's program, the PCP agreed to sit down and review his patient panel data. He learned that Javier had missed multiple visits due to his hospitalizations, was at high risk for re-hospitalization and CKD progression, and had largely been lost to follow-up. He also learned that Javier was non-adherent to multiple medications. The office contacted him to set up a visit. At that visit, his PCP re-started him on both a statin and an ACEI in light of his medical comorbidities. He also referred Javier to an endocrinologist and nephrologist considering his uncontrolled diabetes and high risk of CKD progression.

A year later, Javier's CKD remains stable, and he is now considered "low risk" for experiencing an adverse event in the next year. His diabetes and hypertension are optimally controlled, he has started an exercise program with a goal of losing 10% of his body weight, he remains adherent to his medications, and he has not been re-hospitalized since that difficult year. Javier has even become a CKD peer advocate through a national kidney disease organization. His total cost of care per year is now below average compared to other patients with similar comorbidities and remains far below his monthly cost of care when he was considered "high risk."

Impact at a Population Level

Javier is one of Healthmap's many success stories. At Healthmap, we engage with thousands of individuals with CKD from all around the country. With each interaction, we aim to empower and educate individuals about their CKD, while at the same time working with their providers to optimize CKD care.

OUR RESULTS:

Compared to baseline, after one year of engagement in the KHM program, we see:

- ✓ **CKD STABILIZATION**, that is, a decline in the number of people progressing from Stage 3 to 4 CKD, Stage 4 to 5, and Stage 5 to ESRD. Depending on various factors, **this decline in CKD progression ranges from 15% to 50%.**
- ✓ An **AVERAGE 20% TO 30% DECLINE** in CKD progression overall
- ✓ **SIGNIFICANT IMPROVEMENTS IN MEDICATION ADHERENCE TO STATINS, DIABETES MEDICATIONS, AND ANTI-HYPERTENSIVES** (*specifically renin-angiotensin-system antagonists*) resulting in Medicare Star ratings of 4 or 5 across measures (compared to baseline ratings of 1 or 2)

Compared to baseline, this degree of CKD stabilization and improvement in health-related behaviors translates to:

- ✓ A **20% TO 30% REDUCTION IN INPATIENT UTILIZATION** among our membership
- ✓ **10% TO 15% FEWER EMERGENCY ROOM VISITS**
- ✓ A **DECREASE IN TOTAL HEALTHCARE EXPENDITURE** ranging from 12% to 18%
- ✓ **A DESIRABLE INCREASE IN OUTPATIENT PHYSICIAN VISITS**

SUMMARY

CKD does not always have to be complicated or costly. Healthmap has successful experience in slowing CKD progression, improving clinical outcomes, decreasing healthcare utilization and adverse health events, and eliminating unnecessary healthcare expenditure, while also doing so in a way that identifies and mitigates existing health inequities among our KHM members. When health plans, health systems, accountable care organizations, or at-risk provider groups partner with Healthmap, they can expect their kidney population to be healthier, less costly, and more informed of what is needed to change the paradigm of kidney management. A collaborative approach to include the health plan, provider, patient, and Healthmap is what has shown to be a plan of success for all constituents.

We invite you to work with us in our mission for early CKD identification, slowing disease progression, preventing complications, and helping individuals with CKD and ESRD lead healthier and happier lives.



Stephanie Toth-Manikowski, MD, MHS

Stephanie Toth-Manikowski, MD, MHS is a double board-certified physician in internal medicine and nephrology. Dr. Toth-Manikowski serves as National Medical Director at Healthmap and practices nephrology in Chicago. She earned her bachelor's degree in Biology with honors from Harvard College, her Doctor of Medicine from University of Illinois Chicago College of Medicine, her Master of Health Science from the Johns Hopkins Bloomberg School of Public Health, and her nephrology fellowship at Johns Hopkins. She is a member of the American Society of Nephrology and the National Kidney Foundation.



John Danziger, MD

John Danziger, MD currently serves as Healthmap's National Medical Director. He received his undergraduate degree at the University of Pennsylvania, his medical degree from the Southwestern Medical School of the University of Texas, and a Master of Philosophy from Cambridge University in England, before completing his nephrology fellowship at Beth Israel Deaconess Medical Center in Boston. He is an assistant professor at Harvard Medical School, and is active in patient care, medical education, and clinical research.



Howard Shaps, MD, MBA

Howard Shaps, MD, MBA is a board-certified emergency medicine physician with more than 15 years of healthcare management experience and currently serves as Healthmap's Chief Medical Officer. Additionally, he has extensive experience leading Quality, Care Management, and Utilization Management teams. He previously served as Deputy Chief Medical Officer at Centene Corporation, where he had direct oversight of medical management and supported the policy, vendor management, and clinical strategy teams. Prior to joining Centene, he was Deputy Chief Medical Officer for WellCare Health Plans, responsible for medical management, policy, and value-based care programs. Howard earned his bachelor's degree in Psychology from the University of Michigan, his Doctor of Medicine from the Boston University School of Medicine, and his MBA, with distinction, from the University of Louisville College of Business. He is also a diplomat of the American Board of Emergency Medicine.

To learn more about how Healthmap Solutions can help your patients with kidney disease achieve better health outcomes, please visit www.healthmapsolutions.com



The road to better kidney health starts with Healthmap Solutions.

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*The names and details have been changed to protect the privacy of our members.