The cost to manage Chronic Kidney Disease (CKD) is high. Medicare costs for CKD and End-Stage Renal Disease (ESRD) exceed $70 billion annually according to United States Renal Data System (USRDS) data. Now eleven Quality Improvement Organizations (QIOs) from across the country have been chosen by the Centers for Medicare & Medicaid Services (CMS) to work on a new pilot project that has the potential to both help patients and save taxpayers a substantial amount.

The QIOs are urging healthcare providers in ten pilot states and the U.S. Virgin Islands to work together to both improve patient care and reduce costly complications from the disease. QIOs work with healthcare providers, consumers and stakeholder groups to refine care delivery systems to make sure all patients - particularly patients from underserved populations - get the right care at the right time. The states are Florida, Georgia, Missouri, Montana, Nevada, New York, Rhode Island, Tennessee, Texas, and Utah.

"We are partnering with primary care physicians, nephrologists and vascular surgeons to improve care for patients with CKD to prevent or slow the progression of the disease," explained CMS's Teresa Casey who the government's leader for the pilot. According to the USRDS, the savings to Medicare for each patient who does not progress to dialysis is estimated to be $288,000.

Casey said improving the health and well-being of CKD patients could have a substantial economic impact. Medicare beneficiaries with CKD account for 16.5 percent of Medicare costs in the year the disease is diagnosed, and 11.1 percent in the next year.

"We are confident that better care for kidney patients can lead to considerable cost savings, because it can mean less reliance on drugs, dialysis, and hospitalization covered by Medicare," said Casey. The project encourages early detection of CKD by screening patients with diabetes, proper medication recommendations to slow the progression of the disease, and early renal replacement counseling.

The pilot also supports the nationwide Fistula First effort which addresses the need for patients who suffer from ESRD to have safer, higher-quality access to hemodialysis through a fistula. Casey said
a fistula is a “connection” surgically created by joining a vein and an artery in the forearm allowing blood from the artery to flow into the vein for safe and easy access for hemodialysis.

"Fistulas make a real, proven difference in the health of the patient and also save taxpayers money. By providing a method of dialysis that is safer, longer lasting, and less likely to cause infection, fistulas are seen as the gold standard for vascular access," explained Casey.

JUST THE FACTS

The CKD Project Partners

Under the direction of the Centers for Medicare & Medicaid Services (CMS), Quality Improvement Organizations (QIOs) are now partnering with providers in ten states and the U.S. Virgin Islands to slow the progression of chronic kidney disease to kidney failure and to improve clinical care for all kidney patients, and the initial response from providers has been positive. The states are Florida, Georgia, Missouri, Montana, Nevada, New York, Rhode Island, Tennessee, Texas, and Utah. Teresa Casey from CMS is leading this effort.

The QIOS are partnering with:

• Renal Physicians Association
• National Kidney Foundation
• National Kidney Disease Education Program
• American Nephrology Nurses Association
• American Association of Kidney Patients
• Fistula First Breakthrough Initiative
• Medical Education Institute

Some of the partners:

• Provide endorsement and promotion of the project to their members
• Use existing communication vehicles, - e-mails, newsletter, journal, Web site, etc. - to promote the project by running QIOSC-prepared articles
• Share educational tools and opportunities
• Allow us to link to Web site tools
• Inform the project of any events that may offer cross-promotional activities
• Promote the project at conferences
• Allow the project to exhibit at events
• Share the latest information on regular coordinating conference calls

QIOs offer practices educational resources related to improving CKD care completely free of charge. Physicians participating in the project will receive at no-cost to the practice:

• On-site technical assistance, tools and resources
• Academic detailing on CKD standards of care
• Staff education on CKD and ESRD screening and treatment
• Free patient educational materials
• Technical assistance with electronic health records (EHRs), Physician Quality Reporting Initiative measures, electronic clinical information, care management, and patient self-management

We welcome additional partners. For more information, please contact Robin Weil at rweil@vaqio.sdps.org.

Fistulas reduce serious infections and complications leading to hospitalizations and mortality often associated with other forms of vascular access for kidney patients. Vascular access complications account for 16 to 25 percent of all hemodialysis patient admissions, contributing to about $1.5 billion in Medicare costs annually. In addition, fistulas cost less to maintain than other forms of access and are associated with less rework and complications requiring hospitalization.
The Centers for Medicare & Medicaid Services (CMS) goal is 66% of prevalent hemodialysis patients using an arterio venous fistula (AVF). This goal is consistent with the National Kidney Foundation's KDOQI vascular access target. Currently the national average of prevalent AVF use is only 52%. However, two important groups are now partnering with community organizations and healthcare providers to make that goal a reality. The groups are the ESRD Networks and the Quality Improvement Organizations (QIOs).

The Fistula First Breakthrough Initiative (FFBI) began in 2003 as a collaborative effort between CMS, the ESRD Networks and the renal community. In late 2008, CMS contracted with QIOs in ten states and the US Virgin Islands to begin efforts to slow the progression of chronic kidney disease (CKD) to kidney failure and to improve clinical care for all kidney patients.

In February 2009, CMS awarded the national FFBI support contract to the Mid Atlantic Renal Coalition (MARC) - Network 5. One of the group's first actions was to conduct a root cause analysis of the current process for vascular access placement. In June 2009 an expert panel met to develop a strategic plan and tactics to address the root causes identified by the analysis.

"CKD QIO's are an important partner. We have the same vision and goals and an opportunity to do some great things" said Val Riley, RN, BS, Project Manager for the Fistula First Breakthrough Initiative. Both groups are raising awareness that AVF is the "gold standard" of surgical connection of an artery to a vein, usually in the forearm or arm, created in patients requiring maintenance hemodialysis. AVFs should be considered first for every patient needing hemodialysis because they last longer, need less rework or repairs, and are associated with lower rates of infection, hospitalization and death.

QIOs and the ESRD Networks encourage providers to:
- Provide timely renal replacement therapy counseling
- Collaborate with hospital case managers to identify CKD Stage III - IV patients
- Preserve vessels for patients with CKD diagnosis
- Ensure vessel mapping is completed prior to surgical referral
- Place AVF at CKD Stage IV (GFR<30ml/min)
- Use AVF for first dialysis

This new partnership strives to deliver consistent messages to providers, patients and stakeholders as well as coordinate efforts with existing efforts.

Riley said the QIOs' and Networks' endeavors will coincide as the new partnership grows, and data and best practices are shared. Ideal roles are being defined. CMS, which funds the programs, is overseeing the effort and helping the groups to maximize the impact on CKD.

QIOs are primarily focusing patients who have Stage III or IV CKD for AVF placement, while ESRD Networks have traditionally targeted patients at Stage V.

Because QIOs have worked in the hospital setting for

continued on next page
many years, the FFBI sees the QIOs as a logical partner to help discharge planners/case managers identify and engage CKD patients (who are at Stage III or higher) early so those patients are not discharged from the hospital without any plan or without being brought into the system. QIOs also have expertise and experience in reducing healthcare disparities and are eager to partner with the Network.

“In the hospital setting, we have been devoid of any impact or strategies to catch the CKD patients before they slip through the cracks [but] then show up in the ER some months later,” said Lawrence Spergel, MD, FACS, Clinical Consultant for the FFBI.

He said statistics show that 70 -80 % of patients who eventually require dialysis have had 1 - 2 acute hospital admission(s) for acute renal failure during the year prior to going on dialysis. Those patients usually have at least two dialysis runs while they are in the hospital during a typical 72-hour stay.

Spergel urged QIOs to ask hospital staff to have a “trigger” to immediately contact the nephrologists to call the surgeon to see the CKD patient as soon as possible after the patient is admitted.

“There should be standing orders to have the surgeon of record see the patient to discuss permanent access with the patient - at the same time as they are putting in a catheter,” suggested Spergel.

Ideally on the second day of the hospital stay, the patient should have vessel mapping, cardiac consults, etc. according to Spergel - "whatever they need that would normally take a month and a half to two months on the outside could all be done in 24 hours." The goal is to have all eligible patients discharged with an appointment date for surgery for their AVF.

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Quality Improvement Organizations (QIOs) have recruited healthcare provider partners and now are implementing system changes to improve care for people with chronic kidney disease (CKD). The narrative below summarizes a few of the interesting early approaches documented in reports to the Centers for Medicare & Medicaid Services.

**Provide Patient Education Materials** - Seven of the 11 QIOs are promoting awareness of the link between diabetes, high blood pressure, and kidney disease among at-risk Medicare beneficiaries and their families through patient education. Several QIOs are distributing materials through Certified Diabetic Educators at Diabetes Support Group meetings or one-on-one consultation with patients. The GA QIO has implemented individualized and group medical nutrition therapy to control glucose level and blood pressure. The NY QIO is developing a psychological assessment tool to address patient readiness for potential life altering change. NY and TN are both promoting a “Save Your Vein” campaign for patients that are newly diagnosed with CKD. The goal is to preserve the veins for a future fistula placement and maturation, if applicable and appropriate for the patient.

**Improve Workflow/Systems Changes** - According to their monthly reports, improving workflow is key to the pilot QIOs’ efforts. For example, the MO QIO developed a fax form that home health agencies can use for all their patients with diabetes. The agency faxes the form to the primary care physician and requests annual microalbumin screening and assessment for ACE/ARB therapy with a request for results to be sent back to the home health agency. They also standardize use of system change tools for patients with diabetes who visit the Missouri Federally Qualified Health Centers (FQHCs). The FL and TN QIOs are working with select hospitals to implement automatic eGFR calculation on all patients with orders for metabolic panels and creatinines.

**Use Evidence-Based Guidelines/Tools** - The CKD QIOs have found the Renal Physicians Association (RPA) toolkits to be most helpful. In their monthly reports QIOs listed other tools used frequently by providers including: GFR calculators, Four Key Concepts and Talking Points, National Kidney Disease Education Program (NKDEP) materials, laminated CKD Assessment and Treatment Algorithms, CKD information tool, template for nephrology referral or consult, reminder system, and flow sheets. The TX QIO has also used NKDEP Urinary Albumin-to-Creatinine Ratio (UACR) quick reference and the NKF materials in their provider educational efforts.

**Leverage EHR and/or e-prescribing** - Seven of the eleven QIOs reported working to ensure offices/practices with an implemented EHR are utilizing the CKD management component for all patients with a diagnosis of DM or HTN. The RI QIO is promoting prescribing of ACE-I/ARB agents for patients with diabetes as well as e-prescribing to facilitate early patient treatment and reduction in error rates.

**Use Provider Profiling** - Along with the ESRD Network, the UT QIO is profiling surgeons in their state (AV Fistula, Grafts, and Catheter rates) as well as nephrologists. MT is also using profiling as part of their work. It is likely that more QIOs will use profiling now that those data reports will be made available to them in June 2009.

**Facilitate Regulatory Policy Changes** - Missouri Department of Health and Senior Services Health Care Regulatory Division will initiate a policy that eGFR will be included with all chemistry profiles performed in Missouri by July 1, 2009. The NY QIO facilitated inclusion of eGFR on all lab results in their state; they are also working to standardize the renal panel for laboratories. The RI QIO is collaborating with the Department of Health to incorporate CKD measures into the HCQP public reporting program.

**Facilitate Payment Incentives** - The RI QIO is collaborating with payers to identify and implement any opportunities for payment incentives. UT is participating with the pay-for-performance Medicare Care Management Performance Demonstration (MCMP) by providing technical assistance to over 100 clinics in the project over three years of project.
As the Chief Medical Officer for the National Kidney Foundation (NKF), Joseph Vassalotti, MD, FASN, is on a mission to "demystify" chronic kidney disease (CKD), and he believes the Quality Improvement Organizations (QIOs) can be a valued partner in this cause.

Vassalotti, an Associate Clinical Professor of Medicine at Mount Sinai School of Medicine, has expanded NKF's efforts to assist practitioner and patient decisions about appropriate health care for CKD. These tools, known as the Kidney Disease Outcomes Quality Initiative (KDOQI) guidelines, have improved the lives of thousands of kidney patients since their creation in 1997. However, even more healthcare professionals need to know about the guidelines; and, that is where QIOs' assistance is most needed.

"I believe the QIOs have a great opportunity." said Vassalotti. "QIOs can help educate primary care physicians (and their staff) about the guidelines and provide technical support for primary care practices' utilization of the KDOQI guidelines."

**Guidelines Help Providers Improve Care**

The KDOQI guidelines, which were initially developed because of the high mortality of patients on dialysis, expanded in scope because of confusion about the earlier stages of the disease and its progression. For example, there were 23 different terms used to describe decreased kidney function in abstracts submitted in 1998 and 1999 to the American Society of Nephrology (ASN) described in an editorial by Chertow and colleagues.

"Obviously this was very confusing - even to someone who knew the field" said Vassalotti. "If nephrologists could not achieve consensus on a definition of CKD, what could we do in terms of a public health approach or a patient awareness approach?"

The KDOQI clinical practice guidelines for CKD published in the American Journal of Kidney Diseases in 2002 address evaluation, classification, and stratification. He said, since then this "nomenclature mess" has been clarified. There is general agreement regarding the definition of CKD and the stratification of the disease into stages 1-5 using two tests 1) urinary albumin-creatinine ratio and 2) estimated glomerular filtration rate (eGFR) based on serum creatinine, age, race and gender. Early CKD detection and treatment of risk factors like hypertension and diabetes can delay or prevent complications and progression of CKD to kidney failure. CKD patients carry a high cardiovascular risk.

**Challenges Still Exist**

However, there are still significant challenges with the implementation of the guidelines. On a recent teleconference, Vassalotti outlined some of the barriers QIOs may be able to help clinician partners overcome. He shared research that illustrated poor utilization of CKD testing.

"There were higher rates of glucose and lipid testing than serum creatinine to assess kidney function in patients at risk for CKD with diabetes and hypertension in a study by Stevens and colleagues. These low rates suggest the importance of physician education," he explained. Vassalotti acknowledged some primary care physicians are not implementing CKD testing targeted to risk groups. However, refinement of laboratory measure-
ments for the clinical assessment of kidney disease is occurring now.

"A national program is being undertaken by the National Institutes of Health to standardize serum creatinine and urinary albumin creatinine ratio testing," he said. "In addition, the group is working to recommend unified reporting formats for these tests to help guide interpretation by practitioners.

While the QIO’s specific goal is to increase the adoption of evidence-based standards to identify CKD in Medicare patients through an annual urinary microalbumin measurement for individuals with diabetes, Vassalotti’s recommendations are clear. He stressed that CKD is poorly diagnosed from serum creatinine alone. He strongly encourages clinical laboratories to routinely estimate and report eGFR when serum creatinine is measured. Routinely reporting eGFR with all serum creatinine determinations helps identify reduced kidney function for providers, and thus facilitates the detection of CKD.

"Lastly, it is very important that the urinary albumin-creatinine ratio and eGFR tests are used together. These are complementary tests - not alternative tests - you can’t substitute one for the other . . . eGFR is not the only test," said Vassalotti.

Converting the comprehensive KDOQI guidelines into more user friendly formats remains a primary challenge. The guidelines in their entirety are located on the web site www.kdoqi.org.
Alan Kliger, MD, the immediate past president of the Renal Physicians Association (RPA), had some good advice for the QIOs engaged in the CKD care improvement pilot project. He urged the QIOs to educate primary care physicians (PCPs) about caring for patients at Stages I & II and how to best refer patients at Stages III-IV to or co-manage with nephrologists when appropriate.

PCP or Nephrologists? Who Should Care for Which Patients

"There aren't enough nephrologists to go around," said Kliger who estimates there are only 7,750 practicing nephrologists in the entire U.S. He shared this statistic on a recent conference call with the QIOs where he stressed the importance of having patients in early stages treated by the PCP so nephrologists can concentrate on patients that need more specialized care.

He believes QIOs can have a great impact by helping the PCP recognize early stages of CKD and "getting them comfortable to doing something about it while waiting for a nephrology consult."

Kliger noted the number of patients with CKD Stage I & II is great. For example, many people over the age of 70 are often defined as Stage II due to loss of some kidney function. However, the vast majority of these patients never progress to Stage IV.

"QIOs need to make sure PCPs have a way to communicate with nephrologists and vice versa," said Kliger.

One way of doing that is to promote the use of the tool kit developed by the RPA. The national medical specialty association for nephrologists has endorsed the project. This comprehensive tool kit contains sample referral letters and excellent care management tools for use by both PCPs and nephrologists. RPA generously supplied these toolkits to QIOs for use in physician education.

Ten years ago clinicians talked about causes and rate of progression of CKD, not about stages," explained Kliger. He said many of his peers have defined CKD as Stage III or higher; however, there are always exceptions. "You can't tell who is going to advance with their CKD and who is not."

However QIOs are concentrating their efforts on improving care for patients with diabetes and more patients in this population are likely to advance.

"We pay attention to patients at Stage III and higher. We surely pay attention to individuals with a family history of kidney disease," said Kliger. "A patient with Stage II CKD, proteinuria and diabetes has about a 50-50 chance to advance to Stage IV or V of the disease. If you have Stage IV disease and diabetes you have a very high likelihood of progressing to Stage V."

Robust Patient Education Can Calm Fears

Kliger said both PCPs and nephrologists should address patients' fears. Proper patient education goes a long way to addressing fear. He shared best practices of the effective and robust educational program in New Haven, CT. The program features doctors, nurses, dietitians, social workers and patient teachers.

Kliger believes patient advocates and volunteers can be good teachers because patients can ask those non-clinical individuals questions patients may not ask their doctors.

"Fear often has to do with a lack of knowledge," he said. "We want (patients) to know what choices will be down the line if the disease does progress. . . . You CAN be armed and wise and make the best decision for yourself."

He believes encouragement is vital to the patient's well being. "We have therapies we didn't have 30 years ago," he said "(CKD) is not a death sentence."