Managing End-Stage Renal Disease

Improving clinical outcomes and reducing the cost of care for Medicare Advantage, Medicaid and Commercial Populations

Executive Summary

The end-stage renal disease (ESRD) management program delivered by Optum™ Kidney Resource Services (KRS) reduces health plan costs by facilitating clinical excellence and providing complex case management services. An impact analysis of the KRS ESRD disease management program implemented for a national Medicare Advantage plan found a 24.8 percent reduction in inpatient admissions, a 10.3 percent reduction in ER visits and an 8.5 percent reduction in specialty visits. In 2012, the program achieved over $16 million in total cost reduction and a 3.7:1 return on program investment.

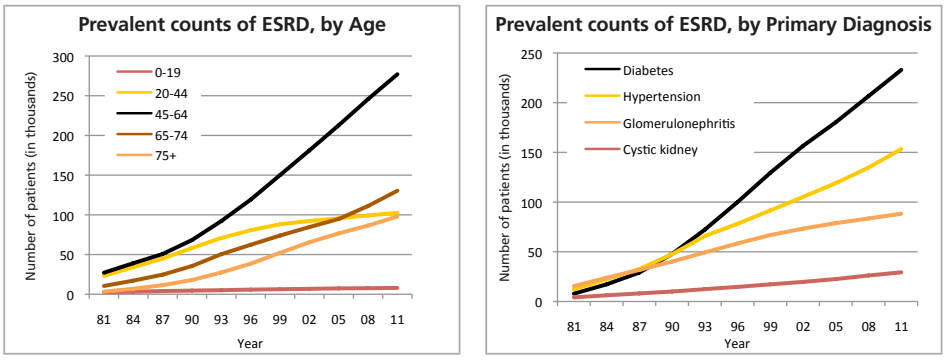
Kidney Resource Services provides disease management programs focused on mid to late stage renal disease to health plans, employer groups, reinsurers and third party administrators. This white paper describes how such programs can improve the quality of care and reduce overall costs for Medicare Advantage, Medicaid and commercial populations. Topics covered include:

- An overview of end-stage renal disease and its impacts
- Challenges and trends in patient care
- How KRS programs improve clinical outcomes and reduce costs
- A summary of ESRD program results

Background

End-stage renal disease is an irreversible decline in kidney function requiring ongoing dialysis or kidney transplantation to sustain life. The human impacts of ESRD are severe, and the aggregate costs of ongoing dialysis, recurrent hospitalizations and treatment of co-morbid conditions can overwhelm both patients and their health plans. In 2011, total Medicare costs for ESRD were $34.3 billion, fully 6.3 percent of the agency's budget.[1] Medicare costs per person per year (PPPY) for hemodialysis patients were $87,945, compared to $32,992 for post transplant kidney recipients.[1] Not considering the cost of prescription drugs, PPPY costs in the commercial dialysis population are over 2 times greater than the Medicare dialysis population.[1]

Not only is the human toll of ESRD severe, the number of individuals living with this diagnosis continues to rise (see figure 1). As of December 31, 2011, 615,899 individuals had a diagnosis of ESRD. The rate of prevalent ESRD cases reached 1,901 per million, which is 26 percent higher than the rate in 2000.[2]



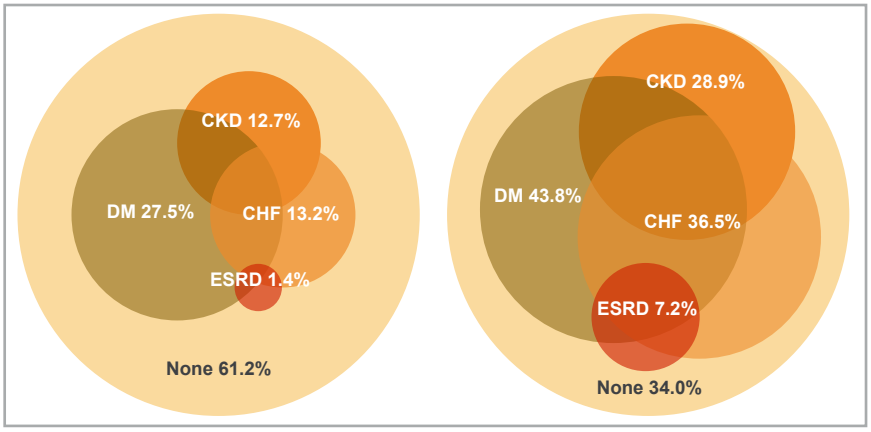
USRDS 2013 Annual Data Report, Vol. 2. Figures 1.12 & 1.15

Figure 1. Prevalent Counts of ESRD by Age and Primary Cause

The importance of managing chronic kidney disease (CKD) prior to end-stage kidney failure, as well as managing ESRD are illustrated by figure 2. The chronic diseases of diabetes, congestive heart failure (CHF) and CKD are associated with the highest population-level expenditures in fee for service (FFS) Medicare. Patients with recognized CKD, who represent 12.7 percent of the point prevalent population, account for 28.9 percent of total expenditures. ESRD patients account for another 7.2 percent of Medicare FFS expenditures. The combined CKD and ESRD populations are associated with 36.1 percent of the Medical FFS costs, comparable to that associated with CHF.

General Medicare: population, 2011 (n = 31,699,027; mean age 69.1)

General Medicare: costs, 2011 ($355 billion)



USRDS 2013 Annual Data Report, Vol. 2. Figure P.I.

Figure 2. "Distribution of general (fee-for-service) Medicare patients & costs for CKD, CHF, diabetes, & ESRD, 2011.

Challenges and Trends in ESRD Care

Although substantial strides have been made in dialysis therapy, individuals with ESRD face significant challenges. The first months of dialysis are characterized by a combination of high mortality rates and high costs associated with the initiation of dialysis, which often occurs in an inpatient setting.[3,4] The survival rate of hemodialysis patients three years after the start of therapy is only 52 percent. In contrast, the three year survival rate for individuals that receive a kidney transplant is 92 percent.[4]

As individuals continue on dialysis, they are likely to experience ongoing complications resulting in hospitalizations. Risk factors associated with increased morbidity include cardiovascular disease, hypertension, diabetes, infection, bone disease, anemia, and malnutrition. On average, hemodialysis patients experience 1.84 admissions per year, 11.7 inpatient days and a 36 percent readmission rate.[5] End-stage renal disease patients typically experience multiple comorbidities and take between 11 and 13 medications. As a result, these individuals require specific management plans and complex care coordination across multiple clinical specialties.

Kidney Resource Services Disease Management Program

Within Optum Kidney Resources Services, disease management is conceived as a system of coordinated health care interventions and communications to both members and providers to ensure that kidney disease patients receive proper care, and to support them through the challenges of self care. Our disease management program:

- Supports the provider-patient relationship and plan of care;
- Consistently applies evidence-based care standards and patient empowerment strategies to reduce or prevent complications and exacerbations
- Continually evaluates clinical, human, and economic outcomes to improve overall health.

The KRS disease management program identifies at-risk plan members using proprietary technologies to risk-stratify program-eligible individuals through claims and laboratory information. The program engages members directly to encourage enrollment, then provides each enrolled member with ongoing disease management services and plan managers with comprehensive reporting on interventions and management activities. Member interactions are conducted by registered nurse advocates with specialized training in renal disease treatment, whose experience and knowledge delivers a success rate of more than 80 percent in enrolling at-risk members. Peer to peer case reviews are also provided by the program medical director for a subset of cases.

Targeted Program Interventions

Kidney Resource Services disease management program interventions are focused on the specific issues facing mid to late stage kidney disease patients and address the major drivers of hospitalization and dialysis costs. More than 100 interventions have been developed under the direction of the program's medical director—an ABIM certified nephrologist—using evidence based guidelines from the National Kidney Foundation Disease Outcomes Quality Initiative. Kidney Resource Services nurse advocates provide disease stage specific, complex condition management that combines patient education, dialysis monitoring, and management of comorbidities related to renal failure. This integrated approach to disease management is a critical factor in the program's unique effectiveness.

The following examples of KRS ESRD program interventions illustrate the breadth and depth of this integrated methodology.

Patient and Caretaker Education and Empowerment

- Dialysis patients must adhere to a complex regimen of diet and fluid restrictions, medication, and dialysis therapy. The KRS training and quality review program focuses our nurse advocates on helping patients make positive choices and achieve self-management behavior, which has been shown to be important in achieving positive health outcomes.[6] Patients and caregivers are provided with education to develop the necessary knowledge and skills – and KRS nurses encourage the inclusion of valued peers to provide reinforcement and support.

Reducing Complications through Co-morbidity Management

- Cardiovascular disease is a predominant cause of death in dialysis patients.[7] KRS nurse advocates identify opportunities to apply evidence-based therapies including cardiovascular screening, control of blood pressure and medication management. The program nurse advocate works proactively with patients and providers to implement interventions that effectively reduce this risk.
- Diabetes puts ESRD patients at heightened risk for stroke, vision loss, abnormal lipid profiles, cardiovascular disease and complications that may lead to infection. Proper foot care is required due to nerve and blood vessel damage, where infection may lead to amputation. Vision and mobility loss are significant negative impacts to quality of life. Between 2010-2011, only 14.4 percent of all diabetic ESRD patients received comprehensive care that included glycemic control monitoring, lipid monitoring and eye examinations.[5] Opportunities to improve care of diabetic ESRD patients are a key focus of the KRS disease management.

Comprehensive Dialysis Access Management

- Dialysis access management includes optimal access placement and preservation for each patient. For hemodialysis patients, the ateriovenous fistula (AVF) offers the lowest complication rate and associated costs, followed by the ateriovenous graft (AVG) and lastly the catheter.[8] Upon enrollment in the KRS disease management program, patients are provided with access maintenance education. In particular, patients with existing catheter access are prioritized for alternative access education and referred for assessment for AVF or AVG placement.

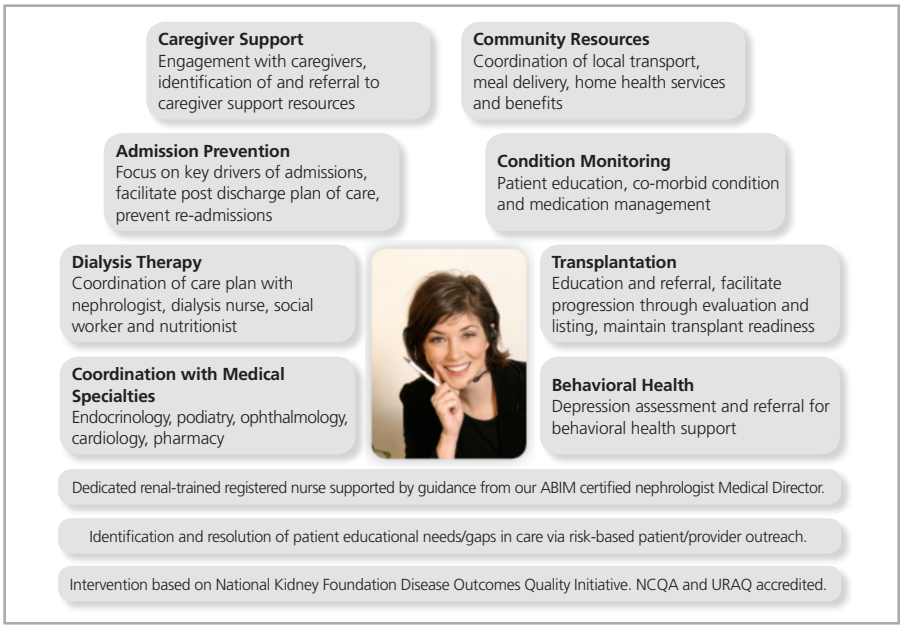
Kidney Transplantation Evaluation

- Time spent on dialysis is significant predictor of transplant outcomes, as graft and patient survival declines with each year of therapy.[9] In 2010, only 16.9 percent of dialysis patients under age 70 were either wait-listed for transplantation or received a donor kidney within one year of beginning therapy. For patients aged 45-64 the rate was 15.8 percent, and just 11 percent for those aged 65-70.[10] However, with growth of the aging population and improvements in medicine and transplantation, the demand for and feasibility of transplantation for individuals age 65+ is increasing. Mortality rates and treatment costs are significantly lower for ESRD patients who receive timely transplants than for those who remain on long-term hemodialysis. Transplantation education, early referral for evaluation, and assistance in maintaining transplant readiness are primary objectives of the KRS ESRD program.

Additional Considerations for Medicare Populations

Medicare populations typically present higher risks than commercial plan memberships due to their relatively advanced age, increased co-morbidities, changes in cognition and memory, reduced resources (personal and financial), and limitations in transportation access and self-care capabilities. The KRS disease management program has implemented additional strategies to reduce these risks, including:

- Focusing on the most important 1-2 issues for each patient
- Encouraging and proactively seeking caretaker involvement
- Screening for and addressing depression
- Adjusting medication regimes for dialysis and identifying lower-tier alternatives
- Facilitating timely transplant referral and expediting the evaluation process
- Encouraging end-of-life health care planning to ensure that patients consider and articulate their treatment preferences



Demonstrating Kidney Disease Management Value

Program review and reporting is an essential capability for providing health plans with detailed information on disease management activities and their impacts on member health, clinical outcomes and treatment costs. Key reporting metrics for the KRS program include:

- Member referral and program enrollment rates
- Initiation and resolution of key interventions
- Clinical parameter review, including trending key laboratory values monitored for kidney patients as well as assessments of therapy adequacy
- Utilization of contracted dialysis providers, where appropriate
- Key utilization metrics, including inpatient admissions, readmissions and emergency room treatments, and
- Cost savings reports, including pre-post program implementation analysis

Analyzing the value delivered by the Optum kidney disease management program for Medicare Advantage populations illustrate the opportunities that are available to health plans to improve member health and reduce treatment costs in a population that typically:

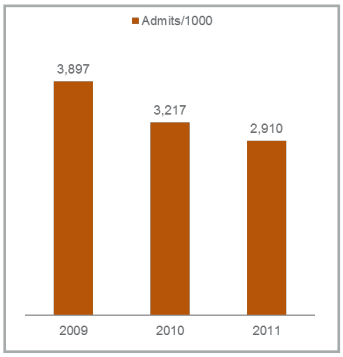
- Carries a greater burden of co-morbidities, related risks, and higher utilizations
- Is less open to, or less suitable for, cost reduction through transplantation
- Is eligible for dialysis reimbursement at Medicare levels, which may preclude use of the KRS network of contracted facilities to drive cost savings.

In 2012 and 2013, Optum, in conjunction with external healthcare economics resources, completed a multi-year analysis of ESRD program savings for a Medicare Advantage population of approximately 1.1 million members not previously covered by a specialized ESRD disease management program. The analysis was population-based and not exclusive to members participating in the program.

Among the notable program achievements were a 24.8 percent reduction in inpatient admissions, a 10.3 percent reduction in ER visits and an 8.5 percent reduction in specialty visits. In 2012, the program achieved over $16 million in total cost reduction and a 3.7:1 return on program investment. The greatest component of the savings was attributable to reductions in inpatient costs.[11]

Optum also reviewed program performance in a subset of the Medicare Advantage population, the dually eligible special needs plan (D-SNP) membership. About 9 million of Medicare's over 48 million beneficiaries are also eligible for Medicaid because they meet income and other criteria.[12] These dual-eligible beneficiaries have greater health care challenges than other Medicare beneficiaries, increasing their need for care coordination across the two programs. In reviewing program performance for ESRD member's enrolled in Medicare Advantage D-SNP plans, results showed a 25% reduction in inpatient admissions from the program implementation year of 2009 as compared to the second full year of implementation in 2011.[13]

Dual SNP- ESRD



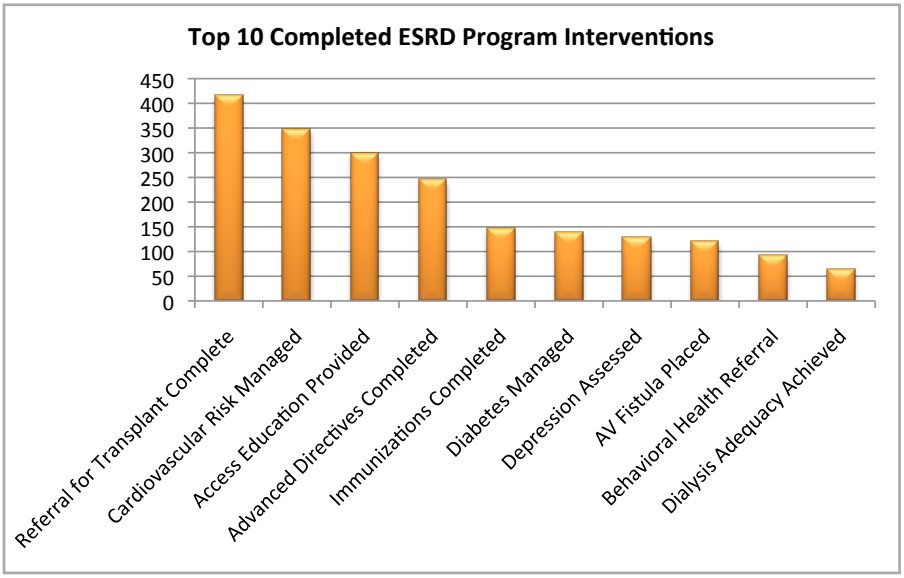
Two factors were critical in each of these accomplishments: strong member enrollment in the program, and closing significant gaps in patient care.

Program Engagement Results

Because ESRD members are an inherently high-cost, low-prevalence population, a high rate of at-risk member enrollment is a precondition of program effectiveness. In a Medicare Advantage population Optum experiences an ESRD program engagement rate of 80 percent.[13] While high, this rate is also consistent with reported enrollment rates for commercial populations.

Gaps in Care Addressed

A KRS program intervention is initiated when a nurse advocate identifies a gap in care. An intervention is considered complete when a change in treatment or behavior, facilitated through communication with the patient and/or provider, has closed that gap. Completion of interventions represents the success of the KRS program in addressing issues facing individuals with ESRD and is the method by which the program improves outcomes, prevents complications and reduces costs.



Over a twelve month period, the Medicare Advantage population reviewed recorded nearly 2000 gaps in care that were identified and resolved by KRS nurse advocates, representing the top ten gaps identified. During this period, nearly 3,900 unique individuals were enrolled in this plan's ESRD management program.[13]

The number of opportunities confirmed by the KRS program indicates to health plan managers that gaps in care do exist. The gaps identified and resolved were closely aligned with high-level KRS program goals and with issues important to Medicare Advantage populations. Gaps included completion of advanced directives, immunizations, timely referrals for transplant, and depression assessment and treatment.

Conclusion

ESRD is a complex condition that confronts patients with formidable medical issues and challenges the financial performance of their health plans. Substantial coordination of care is required to achieve the best possible outcomes for these individuals, and many gaps in care exist. End-stage renal disease management programs provide condition-specific interventions and clinical support through a staff of patient advocates who are specifically trained in this complex condition. By identifying and resolving gaps in patient care, ESRD disease management programs reduce risks and costs while improving individual health outcomes.

Optum Kidney Resource Services has provided renal disease management services since 2006. We support health plans, employer groups, reinsurers and third party administrators with more than 20 million insured lives and provide disease management service to over 10,000 members with Mid-to-Late Stage CKD or ESRD. Our program delivers documented value for Medicare Advantage and commercial populations, including significant reductions in inpatient utilization and a return on program investment of 3:1 or better.

About the Author

Tracy Sanders, M.Ed. Tracy Sanders is a director of product for Optum Care Solutions, Complex Medical Conditions. She is responsible for managing the Kidney Resources Services programs offered to organizations supporting Medicare and Medicaid members. Prior to joining Optum, she has held positions such as senior research and development project manager, director of infrastructure and operations and renal therapy services global information systems manager for Baxter International Inc. as well as serving as an instructor for the Rush University Medical Center masters program in health administration.

About Optum

Optum is an information and technology company with a single mission: To help make the health system work better for everyone. We're a global team of 35,000 people, working together to modernize, strengthen and improve the health system by serving those who need care, provide care, innovate for care and pay for care. For more information about Optum and its products and services, please visit www.optum.com.

Contact Us

Optum
11000 Optum Circle
Eden Prairie, MN 55344
T +1 (866) 427-6845
Contact Optum email
www.optum.com

References

1. U.S. Renal Data System, USRDS 2013 Annual Report: Atlas of Chronic Kidney Disease and End-Stage Renal Disease in the United States. National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD, 2011, Volume 2, pages 326-328.
2. USRDS 2013 Annual Report. Volume 2, pages 216 & 222.
3. USRDS 2013 Annual Report. Volume 1, page 116-117.
4. USRDS 2013 Annual Report. Volume 2, pages 264-267.
5. USRDS 2013 Annual Report. Volume 2, pages 234, 238 & 246.
6. Schatell, Dori and Paula Stec Alt. How understanding motivation can improve dialysis practices. Nephrology News & Issues, September 2008, pp. 32-36.
7. American Journal of Kidney Diseases, Vol 45, No 4, Suppl 3 (April), 2005: pp S8-S9.
8. Overview of Hemodialysis Complications accessed January 2, 2012 from http://www.advancedrenaleducation.com/Hemodialysis/AccessComplications/OverviewofHemodialysisComplications/tabid/606/Default.aspx
9. Meier-Kriesche HU, Kaplan B. Waiting time on dialysis as the strongest modifiable risk factor for renal transplant outcomes: a paired donor kidney analysis. Transplantation. 2002 Nov 27; 74(10):1377-81.
10. USRDS 2013 Annual Report. Volume 2, page 206.
11. External Healthcare Economics Analysis, 2012.
12. http://www.gao.gov/products/GAO-12-864 accessed January 15, 2014.
13. Optum Analysis, 2011-2012.

T 866.427.6845 | **www.optum.com**

11000 Optum Circle, Eden Prairie, MN 55344