Affecting more than one in seven U.S. adults, chronic kidney disease (CKD) poses serious risks to members’ health and causes challenges to payers.1 CKD may progress to late-stage kidney disease or, in some cases, end-stage renal disease (ESRD), which requires ongoing dialysis or a kidney transplant in order for the patient to stay alive.

Specialized kidney care management and coordination programs can help delay disease progression, improve outcomes and reduce spend through a combination of intensive nurse care management, patient education and preferred provider networks.

Assessing clinical and economic impact

To quantify the clinical and economic impact of its kidney program, Optum recently conducted a research study based on its experience. Below is a brief overview of the hurdles kidney disease poses for health plans:

- **High costs.** A health plan with 200,000 commercial lives spends an estimated $16M annually on kidney disease.2 Annual medical expense for a single ESRD patient is approximately $260,0003 for an average of nearly three years.4

- **Cost volatility.** Spending for members in late-stage CKD and in ESRD can be unpredictable — even volatile. Without careful coordination, spikes in inpatient admissions, readmissions, emergency room and specialist visits may occur, resulting in large variability in claims.

- **Clinical complexity.** Comorbidities, such as diabetes, hypertension, anemia and cardiovascular disease are common among those with late-stage CKD and ESRD. Not all health plans have the clinical capability to coordinate care for members, as their conditions typically require specialized expertise not available from a generalized disease management program.

Optum program

Optum® Kidney Solutions is an integrated, evidence-based program that closely manages and coordinates care for members with late stage (stage 4 and 5) CKD — those with severe decrease in kidney function or kidney failure — and ESRD. To address costs and improve outcomes, the program features individualized plans of care, coordinated care to address comorbid conditions, aggressive management of blood glucose and blood pressure, transplantation and end-of-life support.
The specific objectives of the CKD 4/5 and ESRD programs are to:

- Reduce inpatient admissions and total medical spend
- Delay transition to dialysis
- Smooth transition to dialysis and avoid urgent initiation
- Increase kidney transplantation

Research study methodology

The Optum study separately examined commercially insured members with either late-stage CKD (stage 4 or 5) or ESRD over a three-year period. Within each of those two populations, the following two segments were compared:

- Members with kidney disease with access to Optum Kidney Solutions through their employers
- Members with kidney disease without access to Optum Kidney Solutions

The CKD stage 4 or 5 population consisted of 7,469 individuals with access to Kidney Solutions, and 21,617 without access. The ESRD population consisted of 5,660 individuals with access to Kidney Solutions and 3,482 without access. A risk-adjusted multivariate model was used to control for differences in demographics, comorbidities and other underlying differences between the segments.

Results

CKD

Compared with members who did not have access to Kidney Solutions, those with access:

- Experienced significantly fewer inpatient admissions (0.44 vs. 0.59 or -24.7%) per member per year
- Incurred significantly lower medical expenditures ($29,160 vs. $35,002 or -16.7%) per member per year
- Participants were twice as likely to be evaluated — the initial step toward a kidney transplant — than those not participating in a program

Were 9% less likely to transition to ESRD (starting dialysis)

CKD study: Time to dialysis findings

Characteristics significantly associated with time to dialysis.

Members with access to the DM program had a 9% reduced risk of initiating dialysis after adjusting for patient risk and characteristics.
How specialized kidney care programs yield cost savings and better outcomes

**White paper**

**Were 41% less likely to initiate dialysis in an inpatient setting**

Characteristics significantly associated with dialysis IP start

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<th>Hazard ratio</th>
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**ESRD**

Compared with members who did not have access to Kidney Solutions, those with access:

- Experienced significantly lower cost, $5,549 less (-3.7%), over the first six months of ESRD (see table 1)

- Experienced significantly lower cost, $15,133 less (-5.4%), after the first six months on an annualized basis (see table 2)

**Table 1: Incident ESRD months (1–6)**

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<th>Access status</th>
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**Table 2: Prevalent ESRD months (7+)**

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How specialized kidney care programs yield cost savings and better outcomes

Participants were more than 2.5 times more likely to be evaluated — the initial step toward a kidney transplant — than those not participating in a program

Characteristics significantly associated with time to transplant evaluation (ESRD)

- Program participants were more than twice as likely as non-participants to receive a transplant evaluation

**Lower costs, better outcomes**

The study shows that access to the Optum kidney disease program is associated with significant reductions in costs among members with late-stage CKD and ESRD. Cost savings were derived from fewer inpatient admissions and postponement of dialysis. Each month of delayed dialysis saves approximately $19,000 — the difference between an average month of ESRD spend and an average month of CKD 4/5 spend for a commercial population. Improved patient outcomes — and better quality of life — are also associated with kidney programs because members are more likely to get a kidney transplant rather than transitioning to ESRD and having to start dialysis.

Sources:
3. Plosser, K. medical expense figure based on Optum Healthcare Analytics (HCA) analysis of large health plans, 2015.
4. Commercial payers are the primary payer for 33 months of dialysis treatment for hemodialysis, the most common modality of dialysis. After 33 months, Medicare becomes the primary payer.

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Optum provides health and well-being information and support as part of a patient’s health plan. It does not provide medical advice or other health services, and is not a substitute for a doctor’s care.

For more information about the Kidney Solutions from Optum, contact Kevin Plosser.

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