

Kidney Solutions: Preemptive transplants rates and cost savings



Kidney disease is the ninth leading cause of death in the United States. It is estimated that roughly 37 million people have kidney disease, and most of these cases are undiagnosed.¹

Chronic kidney disease (CKD) and end-stage renal disease (ESRD) can be treated, but damage to the kidney cannot be repaired or reversed. Because CKD and ESRD are irreversible, once a patient begins dialysis, they will remain on dialysis until they receive a transplant or they die.

Compared to dialysis, kidney transplantation leads to higher patient survival, improved quality of life and lower costs.² Avoiding dialysis includes avoiding risks that come with it, such as other health complications, lifestyle burdens and dietary restrictions. Dialysis is also extremely expensive — often as much as \$23,000 per month³ — and over time is much more costly than transplantation.

For patients living with CKD, receiving a kidney transplant before they need to start dialysis allows them to stay healthier and live longer than if they were to receive a transplant after their kidneys fail. Preemptive transplants also reduce the risk that the body will reject the new kidney. The benefits of preemptive transplants are widely recognized, as a Healthy People 2020 objective is to “increase the proportion of patients who receive a preemptive transplant at the start of end stage kidney disease.”⁴ Even though preemptive transplants are the preferred method of transplants, data from the United States Renal Data System estimates that only 2.9% of ESRD patients received a preemptive kidney transplant in 2017.⁴

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Kidney Solutions

Optum® Kidney Solutions is a comprehensive kidney disease management solution that uses a proactive approach to manage the different stages of patients' kidney disease and their unique challenges. Kidney Solutions aims to significantly improve clinical outcomes and member experience for those with kidney disease, while reducing medical costs to the individual, employer and health plan. The program is able to identify and engage patients early, before their kidneys fail and dialysis becomes necessary, to steer them down the appropriate path of care. In addition to delaying disease progression, reducing unplanned dialysis starts, reducing inpatient admissions, and increasing home dialysis and permanent access placements, a major goal of Kidney Solutions is to increase transplantation rates, particularly preemptive transplant rates.

Analysis of transplant referral rates and preemptive transplant rates

To assess the impact of the Kidney Solutions program on transplant referral rates and preemptive kidney transplant rates, Optum conducted a study for the purpose of:

- Comparing transplant referral rates and time of transplant
- Assessing the cost savings associated with a kidney transplant instead of initiating dialysis

The study population consisted of patients drawn from a national health plan claims database who were identified as having stage 4–5 CKD. The treatment group consisted of commercial health plan members who were enrolled in the program, while the control group consisted of commercial health plan members not enrolled in the program.

Analysis of kidney transplant referral rates for CKD and ESRD health plan members shows that members enrolled in Kidney Solutions consistently have higher referral rates than health plan members who are not enrolled in the program.

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Kidney transplant referral rates		2018	2019	2020
Chronic kidney disease	Enrolled in Kidney Solutions	20.6% (n=3,151)	19.6% (n=3,424)	19.4% (n=4,618)
	Not enrolled in Kidney Solutions	8.6% (n=39,520)	8.9% (n=38,264)	8.6% (n=35,533)
End-stage renal disease	Enrolled in Kidney Solutions	59.8% (n=5,382)	58.5% (n=3,972)	59.0% (n=4,253)
	Not enrolled in Kidney Solutions	46.8% (n=8,198)	45.7% (n=9,206)	45.2% (n=8,409)

Analysis of preemptive transplant rates show that health plan members who are enrolled in the Kidney Solutions program have a higher rate of preemptive kidney transplants compared to those who are not enrolled in the program. Preemptive transplants are defined as any transplant that occurs before an ESRD start date. It is calculated as the number of kidney transplants that occur before an ESRD start date divided by those kidney transplants plus the number of members that started dialysis during that time period.

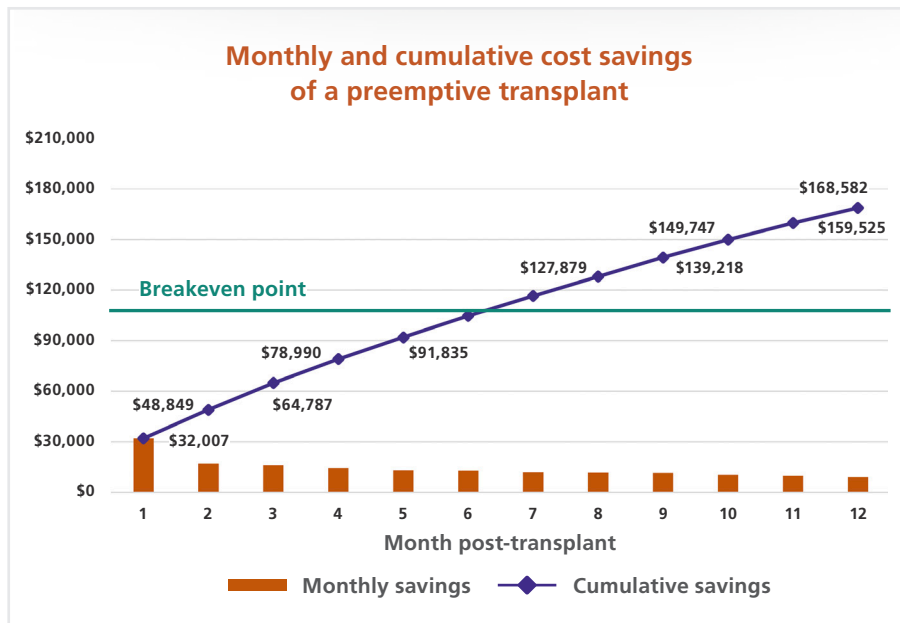
Preemptive kidney transplants by year	2018	2019	2020
Enrolled in Kidney Solutions	11.3%	13.2%	13.9%
Not enrolled in Kidney Solutions	10.1%	11.1%	11.2%

USRDS National Benchmark = 2.9%

Cost savings

Providing patients with a preemptive transplant has a high upfront cost, however, the cost savings are quickly realized as dialysis and associated complications are avoided altogether. To measure the total costs avoided by preemptively transplanting a kidney, the difference between an ESRD per member per month and a post-transplant per member per month was analyzed while adjusting for member retention. Using the mean cost of a kidney transplant of \$109,513, the costs of the transplant are offset within the first seven months.

If the member is retained on the health plan for at least one year, the transplant results in **\$211,000 in avoided medical expenditures.**



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Conclusion

Preemptive kidney transplants for patients with CKD have numerous benefits, including higher patient survival, improved quality of life and significant cost savings. Transitioning a patient to dialysis costs as much as \$211,000 per year. While the cost of transplantation is around \$110,000, those costs are offset after less than seven months due to avoidance of dialysis and other health complications. Preemptive transplants therefore greatly benefit the patient and the payer.

Contact Optum to learn more about how the Kidney Solutions program can help members living with chronic kidney disease.

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Sources

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