Patrick Shannon, January 2025

Estimating Potential U.S. Government Cost Savings Associated with National Kidney Registry Facilitated Live Donor Kidney Transplants

Introduction and Statement of Purpose:

The purpose of this paper is to report the results of a study to determine the potential cost savings to when the costs of a transplant are compared to the cost of on-going dialysis treatments over a ten-year time horizon. Table 1 shows the estimated total cost savings for the 1,743 LDKTs facilitated by the National Kidney Registry (NKR) for the year 2024 and the total savings for the 9,959 LDKTs facilitated by the NKR since its founding in 2007.[1]

Table 1

Cost Savings for NKR Facilitated Transplants

	2024 NKR LDKTs		NKR LDKTs Since 2007
	1,743		9,959
High Estimate	$606 Million		$3.4 Billion
Medium Estimate	$490 Million		$2.8 Billion
Low Estimate	$375 Million		$2.1 Billion

Assumptions and Methodology:

Determining LDKT cost savings is a two-sided issue. On one side are the costs to the federal government for patients with ESRD who don't receive a transplant. The cost of dialysis treatments for these patients is reimbursed by Medicare each year until the patient's eventual death. Based upon data obtained through the United States Renal Data System (USRDS), in 2021 the average annual per patient Medicare payment for dialysis treatment was between $87,000 and $99,000 depending on the type of dialysis.[2] Most dialysis patients incur additional health issues that can increase the actual Medicare cost for these patients beyond $100,000 per year.

[1] Source: NKR Annual Report, Q3, Slide 4

[2] ttps://journals.lww.com/kidney360/fulltext/2021/11000/global_perspective_on_kidney_transplantation_.20.aspx

In addition, due to the health issues associated with ESRD and dialysis treatments, many patients are unable to work and are eligible for federal disability payments. Based on a National Institute of Health study, the percentage of ESRD patients receiving disability benefits in 2022 was 67%.[3] The Social Security Administration estimates that the average disability benefit is about $1,500 per month or $18,000 annually.[4] Thus, total costs to the U. S. Government associated with patients who don't receive a transplant include annual dialysis treatment cost, death related costs, and annual disability payments.

The second side of the cost savings calculation involves costs incurred by Medicare for patients who do receive aLDKT. These include the costs associated with the transplant (kidney procurement, hospital/surgical costs, donor reimbursements, etc.) and the annual post-transplant treatment costs including immunosuppression medications and other transplant related healthcare issues. Additionally, Medicare incurs costs when grafts fail requiring those patients to return to dialysis treatments.

There is considerable variability in reported costs associated with the medical services required for a kidney transplant. For instance, a 2018 article authored by Axelrod et. al. in the *American Journal of Transplantation* states that the average cost of a live donor kidney transplant (LDKT) was $94,000.[5] A 2015 study authored by Held, et. al. published in the same journal pegged the average kidney transplant cost at $145,000.[6] An 2022 article by McCormick , et.al. reports an average transplant cost of $114,000.[7] A 2024 article by Xu, et. al. reports that costs of approximately $35,000 attributable to pretransplant services and living donor evaluation, procurement and follow-up should be added to the actual transplant costs.[8] Most sources including the USRDS show that the average per patient Medicare payment for post-transplant immunosuppression treatment was between $25,000 and $30,000 per year.

A computer model has been developed to perform the LDKT cost savings calculations. The model is flexible allowing for a variety of "what if" scenarios to be considered and utilizes a 10-year time horizon adjusting costs for a medical treatment inflation over the 10-years. The cost savings calculations for several viable scenarios are presented in both current dollars and present value dollars.

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[3] www.google.com/search?client=firefox-b-1-d&q=percentage+of+dialysis+patients+on+disability+benefits#vhid=zephyr:0&vssid=atritem-https://pmc.ncbi.nlm.nih.gov/articles/PMC10090013/, Sustained employment, work disability and work functioning in CKR patients: a cross-sectional survey study

[4] https://www.ssa.gov/oact/STATS/dib-g3.html

[5] David A. Axelrod, et. al, An Economic Assessment of Contemporary Kidney Transplant Practice, February, 2018.

[6] Held, P.J., F. McCormick, A. Ajo, and J.P. Roberts, A Cost-Benefit Analysis of Government Compensation of Kidney Donors, American Journal of Transplantation, 2015.

[7] McCormick, et. al, Projecting the Economic Impact of Compensating Living Kidney in the United States: Cost-Benefit Analysis Demonstrates Substantial Patient and Societal Gains, ScienceDirect, Volume 25, Issue 12, 2022.

[8] Xu, Kunyao, et. al., The Medical Costs of Determining Eligibility and Waiting for a Kidney Transplantation, Med Care Volume 00, Number 00, 2024 (Wolters Kluwer Health, Inc.)

Assumptions, Model Inputs and Calculation Methods:

Medical Inflation Rate: While past rates have exceeded 5%, the medical inflation rate has recently been about 3%.[9] For the purposes of this study, a 3% annual medical inflation rate is used. This same rate is used for the inflation rate for disability payments.

Present Value Discount Rate: A 2.0% discount rate is used for the present value calculations.

Graft Failure Rate: This study uses actual graft failure rates for NKR facilitated LDTKs. Graft failure rates for years 1 and 2 post-transplant are set at 1.2%. For years 3 and 4 post-transplant, the failure rate is 3.0% and for years 5-10 post-transplant, the rate is 5.8%.[10]

Dialysis Costs and Calculations: For the purposes of this study, three annual dialysis costs per patient are considered: $90,000, $100,000, and $110,000. See Appendix 1 for details showing how total dialysis costs are determined in the cost model. If the 1,743 patients had not received a NKR facilitated LDKT in 2024, the total 10-year dialysis cost estimates are $846 million, $940 million, and $1.03 billion depending on which annual per patient cost is used. Also, had the NKR not facilitated the 9,959 transplants since 2007, the total 10-year dialysis costs are estimated to be either $4.8 billion, $5.4 billion, or $5.9 billion.

Disability Costs and Calculations: This study utilizes an average annual disability cost of $18,000. See Appendix 2 for the details showing how the model calculates the total disability costs. Total 10-year disability costs for patients who would not have received the 1,743 LDKTs facilitated by the NKR are estimated to be $128.7 million. The total disability cost, assuming the 9,959 patients had not received NKR transplants since its inception, is estimated to be $735.5 million.

Deaths While on Dialysis Costs and Calculations: Based on USRDS data, Medicare costs associated with a ESRD patient increase substantially in the months and days as the patient nears death and ultimately dies. For this study, death costs are estimated to be approximately $100,000 per patient death. Appendix 3 shows how the detailed calculations are performed to arrive at total annual death costs for ESRD patients who do not receive a kidney transplant. If the 1,743 NKR facilitated LDKTs had not occurred, the projected death costs for Years 1-10 are $158 million. Likewise, assuming the 9,959 NKR facilitated transplants did not occurred, the total 10-year death costs are estimated to have been $903 million.

LDKT Surgical and Medical Costs; This paper examines three transplant cost scenarios: $120,000, $135,000, and $150,000. Appendix 4 shows the calculation details for computing total transplant costs. For the 1,743 NKR transplants, the total transplant related

[9] https://ycharts.com/indicators/us_health_care_inflation_rate, November, 2024
[10] Source: NKR Annual Report Q3, 2024, Slide 8.

costs are estimated to be $209.2 million, $235.3 million, or $261.5 million. When all 9,959 NKR facilitated transplants are considered the estimates for the total transplant costs are $1.2 billion, $1.3 billion, and $1.5 billion.

Graft Failure Costs: For a variety of medical reasons, transplanted kidneys can fail. When this occurs, the Medicare costs vary. A 2022 study by Cooper, et. al. reports the average direct graft failure Medicare cost at between $95,000 and $150,000. For the purposes of this study, a graft failure cost of $110,000 is assumed.[11] The total 10-year graft failure cost for the 1,743 NKR transplants in 2024 is estimated to be $80.6 million and for the 9,959 NKR transplants, the total graft failure cost is estimated to be $460.5 million. See Appendix 5 for the calculation procedures.

Post-transplant Immunosuppression Costs: As of January 1, 2023, Medicare covers all immunotherapy for kidney transplant patients. The annual treatment cost per patient varies but most references place the average cost in the mid-$20,000s. For the purposes of this study, an average annual cost of $25,000 has been used. Appendix 6 shows the specific steps required to calculate the yearly total immunotherapy costs. Over the 10-year time frame, for the 1,743 NKR facilitated LDKTs in 2024, the total post-transplant immunotherapy medication cost is estimated to be $407.3 million. For the 9,959 NKR transplants, the total immunotherapy cost is estimated to be $2.3 billion.

Dialysis Costs After Graft Failure:

If a transplant fails, the patient must go back on dialysis. This study assumes that dialysis will continue over the remaining years of the 10-year timeframe considered in this study. Recall that three annual per patient dialysis cost scenarios are considered; $90,000, $100,000, and $110,000. Appendix 7 shows the steps required to calculate the post-graft failure dialysis costs. For the 1,743 NKR facilitated transplants in 2024, the total 10-year dialysis costs after graft failure are $209 million, $319 million, and $350 million. When all 9,959 NKR transplants since its founding are considered, the graft failure costs are $1.6 billion, $1.8 billion, and $2.0 billion.

NKR Transplant Cost Savings – Summary Results:

The computer model created for this study utilizes the methodology discussed above to project the cost savings from a kidney transplant as opposed to a patient remaining on dialysis until death. The model is used to specifically estimate the cost savings from the NKR facilitated LDKTs for the 1,743 patients in 2024 and for the 9,959 transplanted patients since NKR's founding in 2007. In both cases, a 10-year timeframe is considered, and several viable scenarios are examined for per patient annual transplant and dialysis costs.

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[11] Cooper M, Schnitzler M, Nilubol C, Wang W, Wu Z and Nordyke RJ (2022) Costs in the Year Following Deceased Donor Kidney Transplantation: Relationships With Renal Function and Graft Failure. *Transpl Int* 35:10422. doi: 10.3389/ti.2022.10422

Table A8-1 in Appendix 8 shows the summary cost results for all scenarios for the 1,743 NKR transplants performed in 2024. Depending on which scenario is considered, the total 10-year savings to Medicare is somewhere between $375 million and $606 million. The present value cost savings are estimated to be between $346 million and $568 million. The per-patient transplant savings, in current dollars, is estimated to be $215,000 to $347,000. In present value terms the per patient savings are estimated to be between $199,000 and $326,000.

Table A8-2 in Appendix 8 shows the cost savings calculations for the 9,959 NKR facilitated transplants since 2007. These represent the cost savings over the 10 years following the transplant. Total cost savings are estimated to be between $2.1 billion and $3.4 billion and in present value terms, the savings are estimated at between $2.0 billion and $3.2 billion. The per-patient savings are estimated to be $215,000 to $348,000. In present value terms the per patient savings are estimated to be between $199,000 and $326,000.

Appendix – 1

Dialysis Cost Calculation Method

Assume that the annual dialysis cost to Medicare for a ESRD patient is $90,000 and the number of potential NKR facilitated LDKTs in 2024 is 1,743.

Year 1 Calculation: The Year 1 (2024) dialysis costs is computed as the number of patient transplants that NKR could have facilitated less the number of deaths during the year times the annual dialysis cost.

We begin by calculating the Year 1 deaths. This is done using data computed from USRDS for three variables; (1) The percentage of patients who receive transplants based on year on the transplant waiting list (See Table A1-1); and (2) The percentage of patients who died without a transplant by year on the waiting list (See Table A1-2). and (3) The number grafts that would have been expected to fail had the patients received a LDKT instead of remaining on dialysis.

Table A1-1

Live Donor Transplant Percent By Year on Waiting List	
1	68.15%
2	18.67%
3	7.29%
4	3.26%
5	1.41%
6	0.63%
7	0.31%
8	0.19%
9	0.06%
10	0.02%
11	0.01%
12	0.00%

Table A1-2

Proportion of Waiting List Patients Who Died by Years on Waiting List	
1	1.24%
2	4.23%
3	5.36%
4	6.08%
5	6.98%
6	7.77%
7	6.11%
8	7.08%
9	6.69%
10	7.09%
11	5.73%
12	11.76%
13	9.66%
14	0.00%

As shown in Table A1-1, virtually all LDKTs occur for patients who have been on the waiting list for 7 or fewer years. Therefore, the Year 1 (2024) deaths are calculated as follows:

(1,743 x .6815 x .0124) + (1,743 x .1867 x .0423) + . . . + (1,743 x .0031 x .0611) = 282

Assuming that the deaths are evenly spread throughout the year, Year 1 (2024) dialysis costs assuming the 1,743 NKR facilitated transplants did not take place that year, the total dialysis costs is calculated as

(1,743 – (.50 x 282)) x $90,000 = $144.2 million

Year 2 Calculation: Year 2 (2025) dialysis cost calculation is only slightly more involved. The calculation requires that we first back out the number of potential dialysis patient deaths that would have occurred by the end of Year 1 and half of the Year 2 deaths. The Year 2 deaths are calculated as

((1,743-282) x .6815 x .0124) + (1,743 x .1867 x .0423) + . . . + (1,743 x .0031 x .0611) = 237

Now, accounting for the 3% medical inflation rate, the Year 2 dialysis cost estimation is

1,743 – 282 – (.5 x 237) * $90,000 * (1.03) = $124.4 million

Dialysis costs for Year 3 through Year 10 are calculated using the same methodology.

Appendix – 2

Disability Cost Calculations

Using a disability percentage of 67% and an annual average disability benefit of $18,000, the total disability costs to the federal government had the 1,743 NKR facilitated transplants not occurred is calculated in two steps: (1) Calculate the estimated number of patients who are on disability each year, and (2) Calculate the yearly total benefits for those patients.

Year 1 Disability Cost Calculations: The first step is to calculate the number of patients out of the 1,743 who would be expected to go on disability in Year 1 (2024). The assumption is that the patients going on disability are evenly spread throughout the year.

1,743 x .67 = 1,168

The next step is to calculate the disability benefits for these 1,168 patients

1,168 x .5 x $18,000 = $10.5 million

Year 2 Cost Calculations:

For Year 2 (2025), we need to back out the deaths for the 1,168 patients who were previously receiving disability benefits. The first step is to calculate the number of deaths in Year2 (2025). Refer to Appendix 1 to see that in Year 2 we expect 237 deaths for patients while on dialysis. Then the number of patients who are estimated to remain on disability in Year 2 is

1,168 - (.67 x 237) = 1,010

Taking into account the medical inflation rate of 3%, the Year 2 disability costs for the 1,010 patients who remain on disability is

1,010 x $18,000 x 1.03 = $18.7 million

Disability calculations are made in the same way for Years 3-10.

Appendix – 3

Death Cost Calculations

Based on calculations from the USRDS data, the per patient cost for treatment at near death and actual death while on dialysis is approximately $100,000.

Year 1 Cost Calculation:

The first step is to estimate the number of patients who are expected to die in Year 1 (2024). These calculations are described in Appendix 1. Using the 2024 NKR facilitated LDKT number of 1,743, had these patients not been transplanted, the expected number of deaths is 282.

The estimated death cost is then calculated as the product of the number of deaths by the annual cost per death

282 x $100,000 = $28.2 million

Year 2 Cost Calculation:

The Year 2 (2025) death cost calculation is the product of the number of Year 2 deaths multiplied by the annual death cost per patient. Appendix 1 showed the calculation for expected Year 2 deaths to be 237. Considering the assumed 3% medical inflation rate, the Year 1 death costs assuming the 1,743 LDKTs facilitated by the NKR in 2024 had not occurred is

237 x $100,000 x (1.03) = $24.4 million

Death cost calculations for Years 3-10 are performed using this same methodology.

Appendix – 4

Kidney Transplant Cost Calculations

Three transplant scenarios are examined regarding individual transplant cost: (1) $120,000, (2) $135,000, and (3) $150,000.

Year 1 Cost Calculations:

In Year 1 (2024), the NKR facilitated 1,743 LDKTs. The three estimates for the total Medicare cost of these transplants are

1,743 x $120,000 = $209 million

1,743 x $135,000 = $235 million

1,743 x $150,000 = $261 million

Since its founding in 2007, the NKR has facilitated a total of 9,959 LDKTs. Due to the challenge of determining individual patient transplant costs for the years 2007 – 2023, this study assumes that all 9,959 transplants occurred in 2024 (Year 1). The three cost estimates for Year 1 transplant costs are

9,959 x $120,000 = $1.2 billion

9,959 x $135,000 = $1.3 billion

9,959 x $150,000 = $1.5 billion

Year 2-10 Cost Calculations:

Because all 1,743 (and 9,959) NKR facilitated transplants occurred in Year 1, there are no further direct transplant costs in Years 2-10.

Appendix – 5

Graft Failure Cost Calculations

This analysis assumed a graft failure cost of $110,000 in Year1 (2024) and the annual medical inflation rate is 3%. Table A5-1 shows the graft failure rates based on actual NKR facilitated LDFKTs.

Table A-1

Graft Failure Rates[12]

Years Post-Transplant	Graft Failure Rate
1-2 Years	1.20%
3-4 Years	3.00%
5 - 10 Years	5.80%

Year 1 Cost Calculation:

The first step is to estimate the expected number of graft failures associated with the 1,743 LDKTs facilitated by the NKR in Year 1 (2024). This is

1,743 x .012 = 21

Thus, in Year 1, there are 21 expected graft failures. The total graft failure cost for year 1 is

21 x $110,000 = $2.3 million

Year 2 Cost Calculation:

The first step is to calculate the estimated number of graft failures in Year 2 (2025). In Year 1, 21 grafts were expected to fail. The number of remaining active grafts in Year 2 is

1,743 – 21 = 1,722.

Of the 1,722 remaining active grafts, the number of expected graft failures in Year 2 is

1,722 x .012 = 21

In Year 2, the total graft failure cost is

21 x $110,000 x 1.03 = $2.3 million

[12] NKR Quarterly Report, Q3, Slide 8

Year 3 Cost Calculations:

The projected number of active grafts in Year 3 is

1,743 – 21 -21 = 1,701

Using the graft failure rates in table A5-1, the estimated graft failures in Year 3 is

1,701 x .03 = 51

The total graft failure costs estimated in Year 3 is

51 x $110,000 x $(1.03)^2$ = $5.9 million

The calculations for Years 4-10 are performed using in the same manner shown for Year 3.

Appendix – 6

Post-Transplant Immunotherapy Cost Calculations

A per patient annual costs of immunosuppression treatment is set at $25,000 in Year 1 (2024) and the medical inflation rate is assumed to be 3%. All transplants are assumed to have occurred in Year 1 and were evenly spread throughout the year.

Year 1 Cost Calculations:

Transplanted patients begin immunotherapy as soon as they receive the transplant, and it continues for as long as the patient lives. For this study, It is assumed that all LDKT patients live at least 10 years post-transplant. The immunotherapy treatment costs for the 1,743 NKR facilitated patients transplanted in Year 1 (2024) is

1,743 x .5 x $25,000 = $21.8 million

Year 2 Cost Calculations:

All transplanted patients except for those whose grafts have failed will continue with immunotherapy medications in Year 2. Appendix 5 showed the graft failure calculations yielding an estimated 21 failures in Year 1. Therefore, the total Year 2 cost is

(1,743 – 21) x $25,000 x 1.03 = $44.3 million

Year 3-10 calculations are done in the same manner as Year 2. In each year, the number of active patients receiving immunotherapy medications is reduced based on the number of graft failures in the previous year and the annual immunotherapy costs is inflated by 3%.

Appendix – 7

Dialysis after Graft Failure Cost Calculations

When a transplant recipient's graft fails, the patient returns to dialysis treatment the cost of which is incurred by Medicare. Three annual dialysis cost values are evaluated: $90,000, $100,000, and $110,000. The medical cost inflation rate is 3%.

Year 1 Cost Calculation:

The Year 1 (2024) cost calculation utilizes the number of graft failures in Year 1 using the 1,743 NKR facilitated transplants. Appendix 5 showed the calculations required to determine the number of graft failures that is equal to 21 in Year 1. These graft failures are assumed to be evenly spread throughout the year. For each of the three annual per patient dialysis values, the total Year 1 dialysis costs after graft failures is

21 x .5 x $90,000 = $941,000

21 x .5 x $100,000 = $1.05 million

21 x.5 x $110,000 = $1.15 million

Year 2 Cost Calculations:

Appendix 5 showed that the number of graft failures in Year 1 is projected to be 21 and 21 in Year 2. Year 2 failures are projected to have occurred evenly throughout the year. The total Year 2 costs for each dialysis cost option is

(21 + (21 x .5)) x $90,000 x 1.03 = $2.6 million

(21 + (21 x .5)) x $100,000 x 1.03 = $3.2 million

(21 + (21 x .5)) X $110,000 x 1.03 = $3.5 million

Cost calculations for Years 3-10 are performed using the same method as for Year 2.

Appendix 8

Cost Summary by Scenario

Table A8-1

	2024 NKR Facilitated Transplants								
	Immunotherapy Cost = $25,000 Graft Failure Cost = $110,000								
Transplant Cost =	$120,000			$135,000			$150,000		
Dialysis Coist =	$90,000	$100,000	$110,000	$90,000	$100,000	$110,000	$90,000	$100,000	$110,000
LDKT's Facilitated by NKR	1743	1743	1743	1743	1743	1743	1743	1743	1743
Total 10 Year Dialysis Cost - No LDKT	$845,792,745	$939,769,717	$1,033,746,689	$845,792,745	$939,769,717	$1,033,746,689	$845,792,745	$939,769,717	$1,033,746,689
Total 10 Year Disability Cost - No LDKT	$128,714,650	$128,714,650	$128,714,650	$128,714,650	$128,714,650	$128,714,650	$128,714,650	$128,714,650	$128,714,650
Total 10 Year Dialysis Cost After Graft Failure	$286,610,599	$318,456,221	$350,301,843	$286,610,599	$318,456,221	$350,301,843	$286,610,599	$318,456,221	$350,301,843
Total 10 Year Deaths While on Dialysis - No LDKT	1,437	1,437	1,437	1,437	1,437	1,437	1,437	1,437	1,437
Total 10 Year Death Costs - No LDKT	$158,033,999	$158,033,999	$158,033,999	$158,033,999	$158,033,999	$158,033,999	$158,033,999	$158,033,999	$158,033,999
Total 10 Year Costs - No LDKT	**$1,418,210,773**	**$1,543,928,787**	**$1,669,646,801**	**$1,418,210,773**	**$1,543,928,787**	**$1,669,646,801**	**$1,418,210,773**	**$1,543,928,787**	**$1,669,646,801**
Total 10 Year LDKT Surgical and Medical Costs	$209,160,000	$209,160,000	$209,160,000	$235,305,000	$235,305,000	$235,305,000	$261,450,000	$261,450,000	$261,450,000
Total 10 Year Immunospressant Costs After LDKT	$407,295,302	$407,295,302	$407,295,302	$407,295,302	$407,295,302	$407,295,302	$407,295,302	$407,295,302	$407,295,302
Total 10 Year Graft Failures	624	624	624	624	624	624	624	624	624
Total 10 Year Graft Failure Cost	$80,593,179	$80,593,179	$80,593,179	$80,593,179	$80,593,179	$80,593,179	$80,593,179	$80,593,179	$80,593,179
Total 10 Year Dialysis Cost - After Graft Failure	$286,610,599	$318,456,221	$350,301,843	$286,610,599	$318,456,221	$350,301,843	$286,610,599	$318,456,221	$350,301,843
Total 10 Year LDKT Costs	**$983,659,079**	**$1,015,504,701**	**$1,047,350,323**	**$1,009,804,079**	**$1,041,649,701**	**$1,073,495,323**	**$1,035,949,079**	**$1,067,794,701**	**$1,099,640,323**
Total 10 Year Net Savings from LDKT	$426,867,764	$516,360,238	$605,852,713	$400,722,764	$490,215,238	$579,707,713	$374,577,764	$464,070,238	$553,562,713
Net Savings Per LDKT	$244,904	$296,248	$347,592	$229,904	$281,248	$332,592	$214,904	$266,248	$317,592
PV - Total 10 Year Net Savings from LDKT	$399,169,274	$483,536,893	$567,904,513	$373,024,274	$457,391,893	$541,759,513	$346,879,274	$431,246,893	$515,614,513
PV - Net Savings Per LDKT	$229,013	$277,416	$325,820	$214,013	$262,416	$310,820	$199,013	$247,416	$295,820

Table A8-2

	NKR Facilitated Transplants Since 2007								
	Immunotherapy Cost = $25,000 Graft Failure Cost = $110,000								
Transplant Cost =	$120,000			$135,000			$150,000		
Dialysis Coist =	$90,000	$100,000	$110,000	$90,000	$100,000	$110,000	$90,000	$100,000	$110,000
LDKT's Facilitated by NKR	9959	9959	9959	9959	9959	9959	9959	9959	9959
Total 10 Year Dialysis Cost - No LDKT	$4,832,768,176	$5,369,742,418	$5,906,716,659	$4,832,768,176	$5,369,742,418	$5,906,716,659	$4,832,768,176	$5,369,742,418	$5,906,716,659
Total 10 Year Disability Cost - No LDKT	$735,454,766	$735,454,766	$735,454,766	$735,454,766	$735,454,766	$735,454,766	$735,454,766	$735,454,766	$735,454,766
Total 10 Year Dialysis Cost After Graft Failure	$1,637,610,414	$1,819,567,127	$2,001,523,839	$1,637,610,414	$1,819,567,127	$2,001,523,839	$1,637,610,414	$1,819,567,127	$2,001,523,839
Total 10 Year Deaths While on Dialysis - No LDKT	8,208	8,208	8,208	8,208	8,208	8,208	8,208	8,208	8,208
Total 10 Year Death Costs - No LDKT	$902,935,527	$902,935,527	$902,935,527	$902,935,527	$902,935,527	$902,935,527	$902,935,527	$902,935,527	$902,935,527
Total 10 Year Costs - No LDKT	**$8,103,391,022**	**$8,821,724,436**	**$9,540,057,851**	**$8,103,391,022**	**$8,821,724,436**	**$9,540,057,851**	**$8,103,391,022**	**$8,821,724,436**	**$9,540,057,851**
Total 10 Year LDKT Surgical and Medical Costs	$1,195,080,000	$1,195,080,000	$1,195,080,000	$1,344,465,000	$1,344,465,000	$1,344,465,000	$1,493,850,000	$1,493,850,000	$1,493,850,000
Total 10 Year Immunospressant Costs After LDKT	$2,327,168,049	$2,327,168,049	$2,327,168,049	$2,327,168,049	$2,327,168,049	$2,327,168,049	$2,327,168,049	$2,327,168,049	$2,327,168,049
Total 10 Year Graft Failures	3,568	3,568	3,568	3,568	3,568	3,568	3,568	3,568	3,568
Total 10 Year Graft Failure Cost	$460,486,213	$460,486,213	$460,486,213	$460,486,213	$460,486,213	$460,486,213	$460,486,213	$460,486,213	$460,486,213
Total 10 Year Dialysis Cost - After Graft Failure	$1,637,610,414	$1,819,567,127	$2,001,523,839	$1,637,610,414	$1,819,567,127	$2,001,523,839	$1,637,610,414	$1,819,567,127	$2,001,523,839
Total 10 Year LDKT Costs	**$5,620,344,676**	**$5,802,301,389**	**$5,984,258,101**	**$5,769,729,676**	**$5,951,686,389**	**$6,133,643,101**	**$5,919,114,676**	**$6,101,071,389**	**$6,283,028,101**
Total 10 Year Net Savings from LDKT	$2,439,114,479	$2,950,462,663	$3,461,810,847	$2,289,729,479	$2,801,077,663	$3,312,425,847	$2,140,344,479	$2,651,692,663	$3,163,040,847
Net Savings Per LDKT	$244,916	$296,261	$347,606	$229,916	$281,261	$332,606	$214,916	$266,261	$317,606
PV - Total 10 Year Net Savings from LDKT	$2,280,840,661	$2,762,905,496	$3,244,970,330	$2,131,455,661	$2,613,520,496	$3,095,585,330	$1,982,070,661	$2,464,135,496	$2,946,200,330
PV - Net Savings Per LDKT	$229,023	$277,428	$325,833	$214,023	$262,428	$310,833	$199,023	$247,428	$295,833