

2022 MID-ATLANTIC CONFERENCE
10th ANNUAL CURRENT CONCEPTS IN
VASCULAR THERAPIES

2022

Hilton Virginia Beach Oceanfront
Virginia Beach, Virginia

APRIL 28-30

Sentara Vascular Specialists



2022 MID-ATLANTIC CONFERENCE
10th ANNUAL CURRENT CONCEPTS IN
VASCULAR THERAPIES

2022



Living Donor Renal Transplant

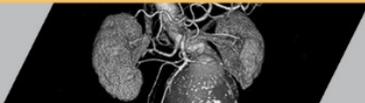
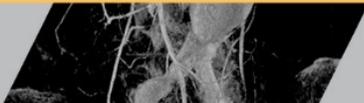
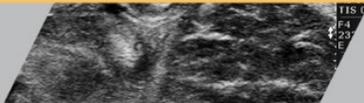
Duncan Yoder

April 2022

Disclosures: I have no financial interest
connected to any of the information
presented in this discussion

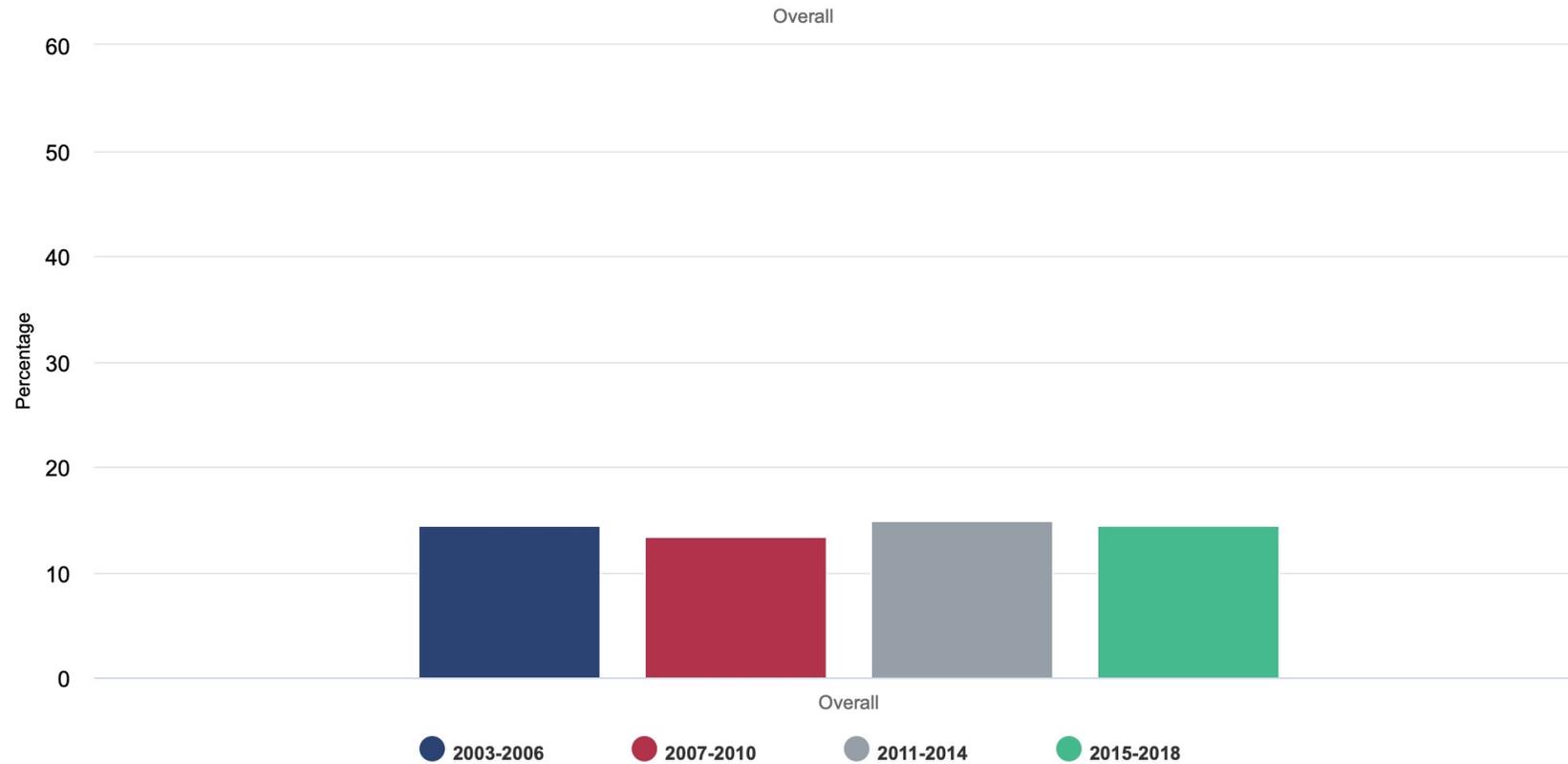
Objectives

- Why renal transplant matters
 - Prevalence, Morbidity/Mortality, Cost of Kidney Disease
- Transplant Options
- Living Donor Evaluation



- Prevalence of CKD

Figure 1.1 Prevalence of CKD in U.S. adults

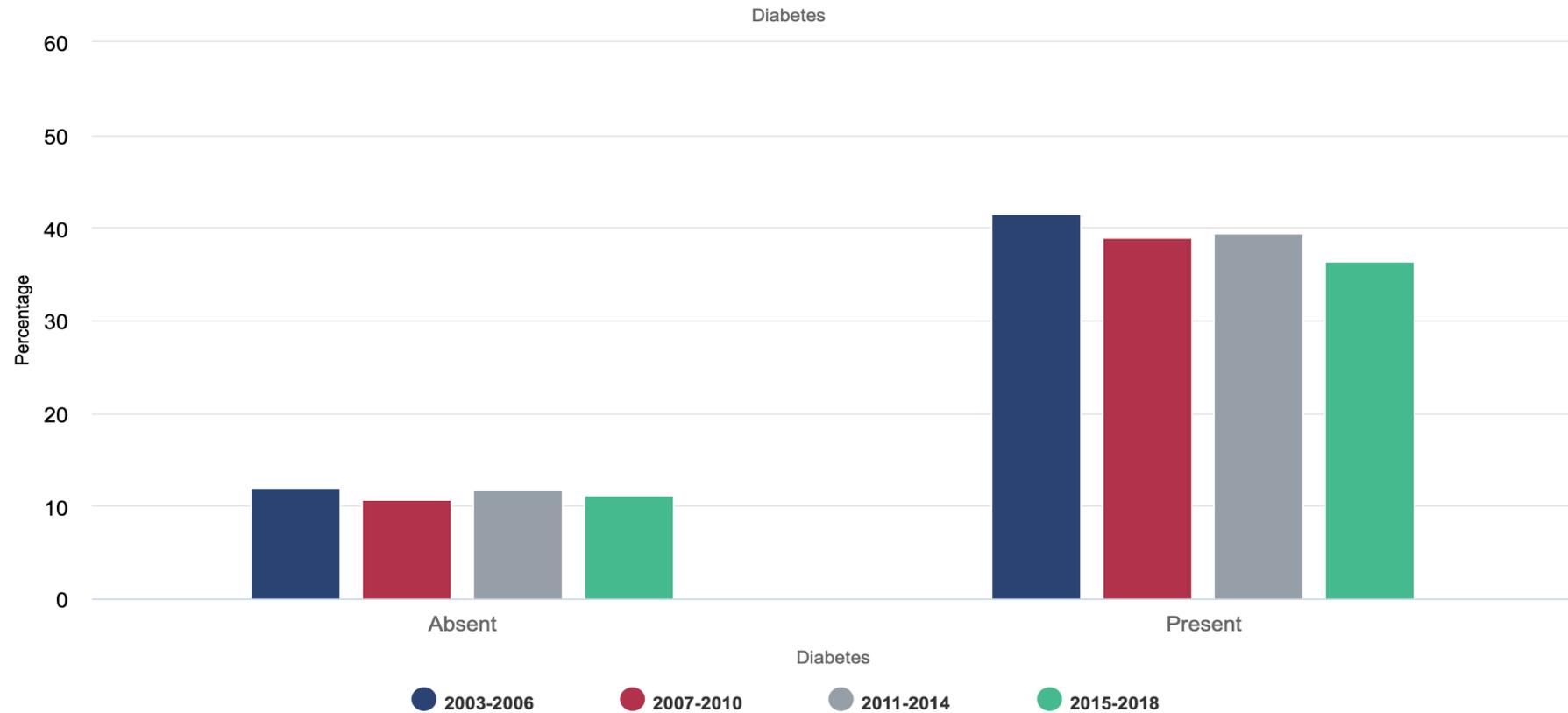


Data Source: 2021 United States Renal Data System Annual Data Report



CKD in US adults w diabetes

Figure 1.1 Prevalence of CKD in U.S. adults

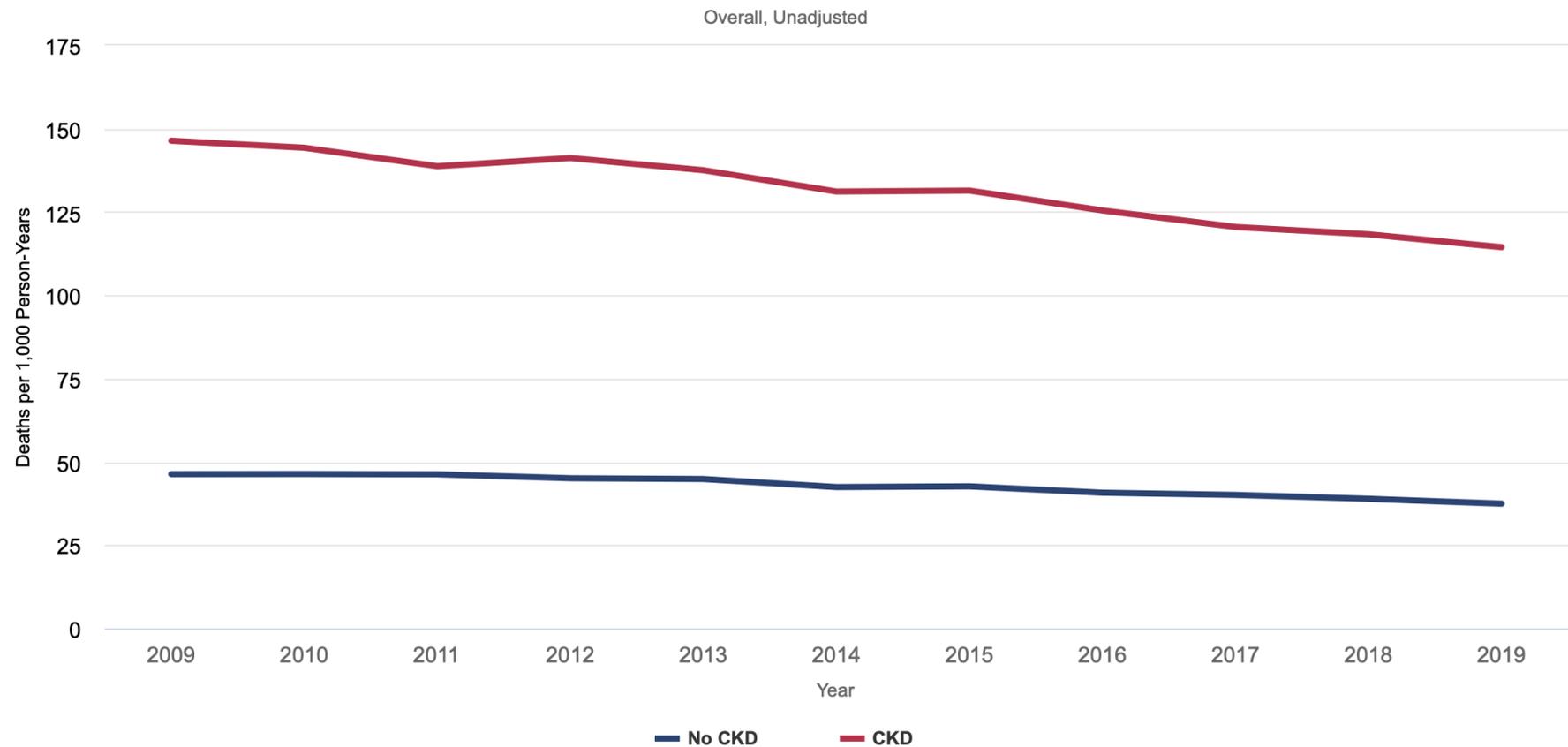


Data Source: 2021 United States Renal Data System Annual Data Report



All cause mortality rate in older adults 2009-2019 with and without CKD

Figure 3.1 All-cause mortality rate in older adults, 2009-2019



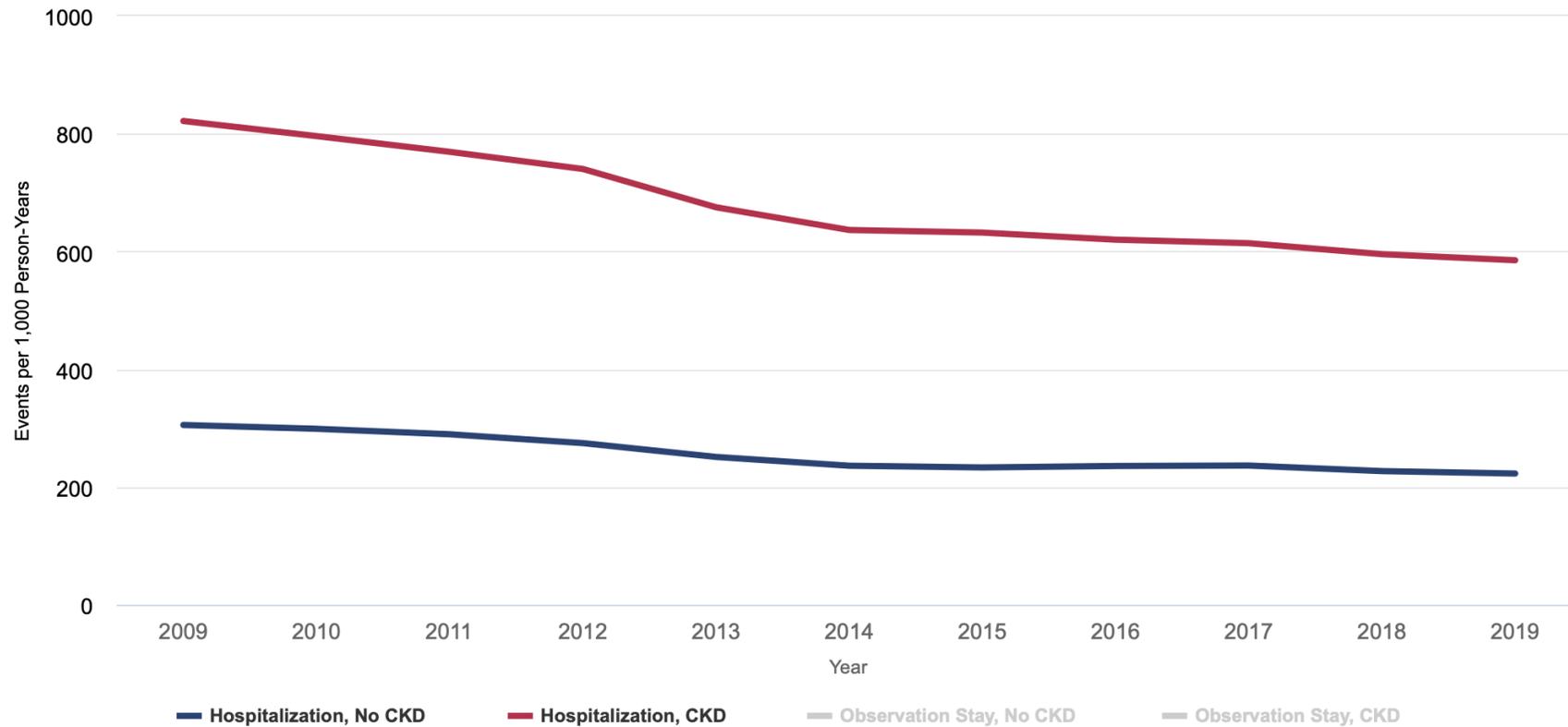
Data Source: 2021 United States Renal Data System Annual Data Report



Hospitalization rate in older adults

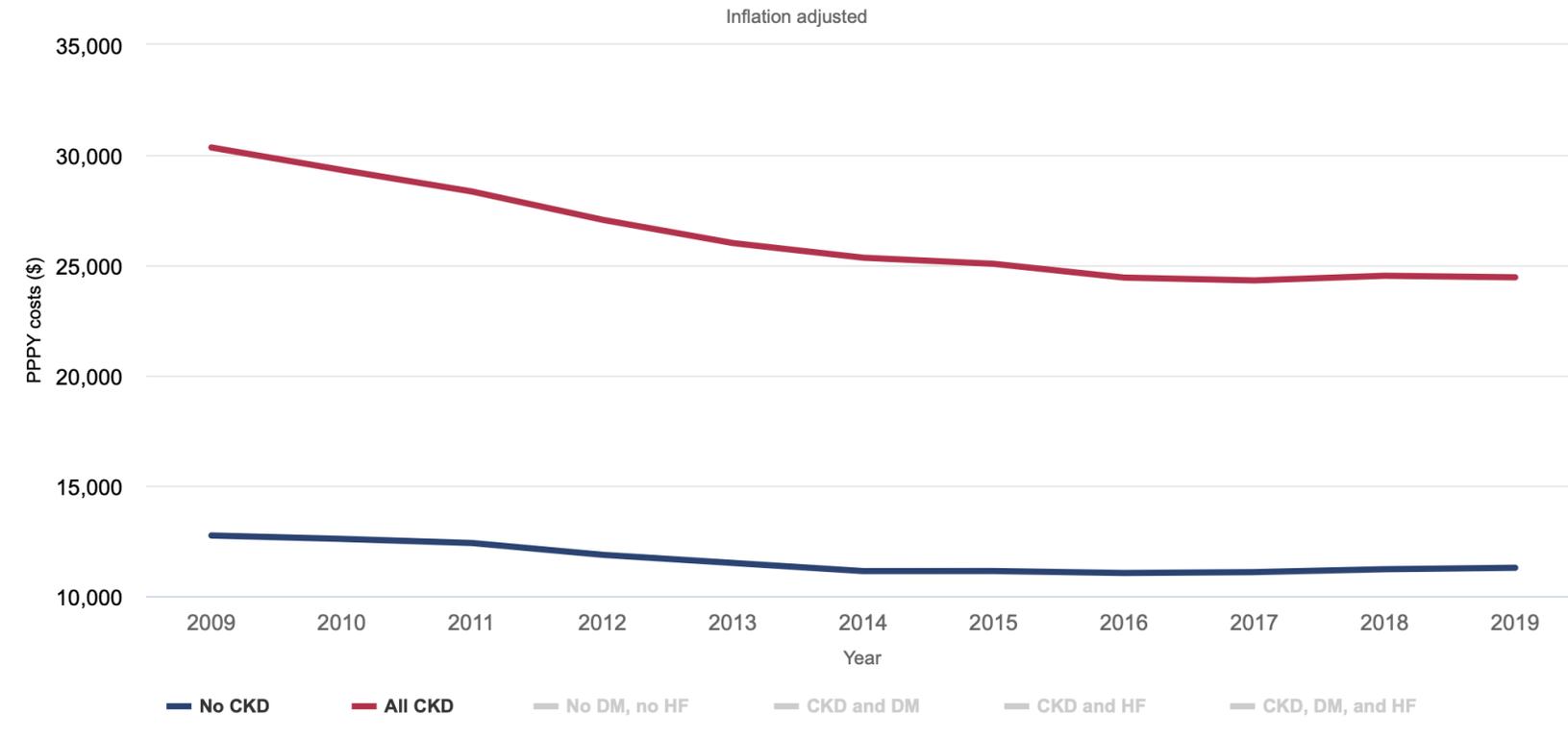
Figure 3.3 All-cause hospitalization and observation stay rates in older adults, 2009-2019

By CKD Status, Unadjusted



Medicare expenditures 2009-2019 for CKD

Figure 6.2 Inflation adjusted per person per year spending among older adults with CKD (ESRD excluded), by presence of diabetes and heart failure, 2009-2019.

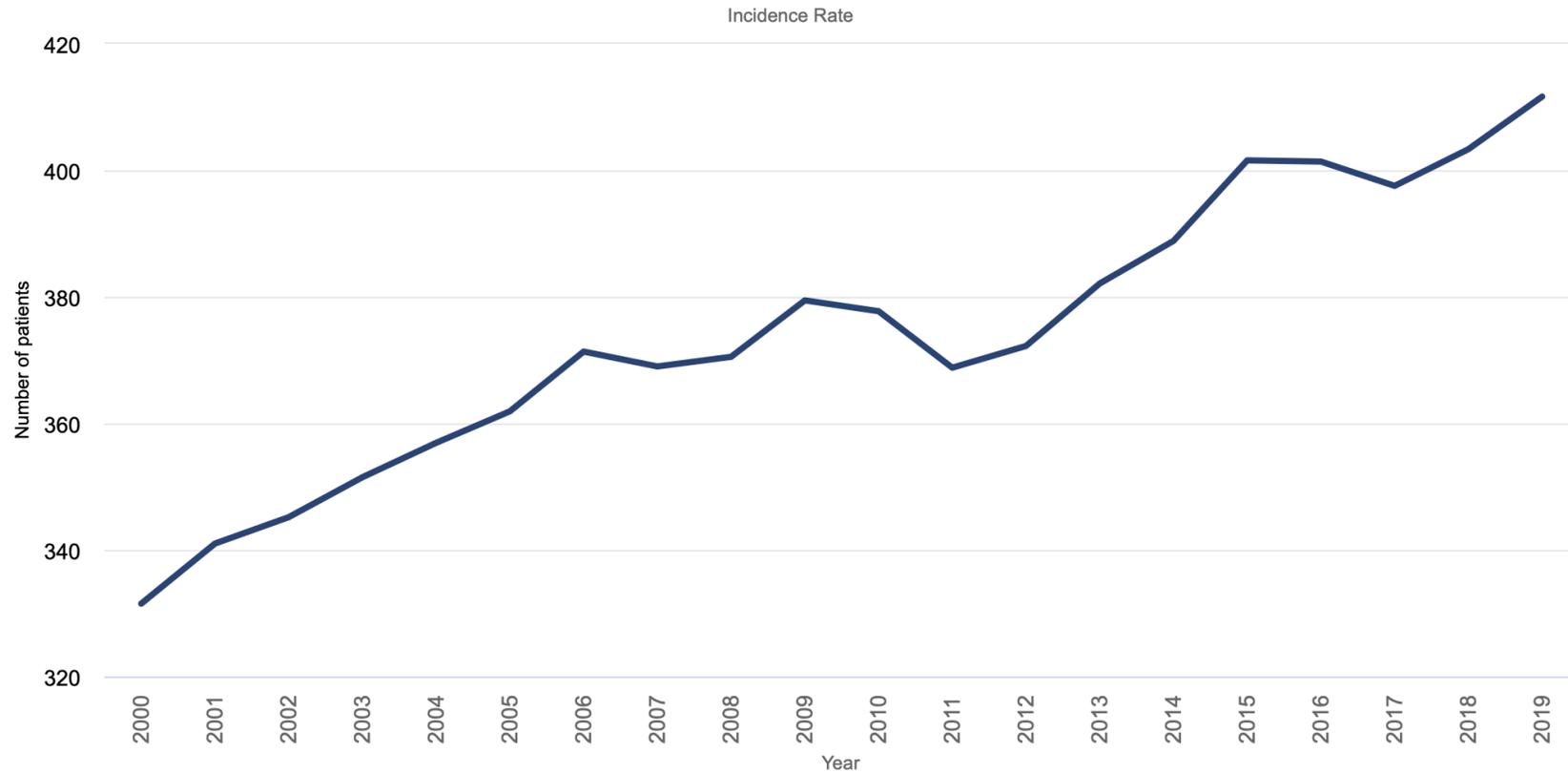


Data Source: 2021 United States Renal Data System Annual Data Report



Incidence of ESRD 2000-2019

Figure 1.1 Incidence of ESRD

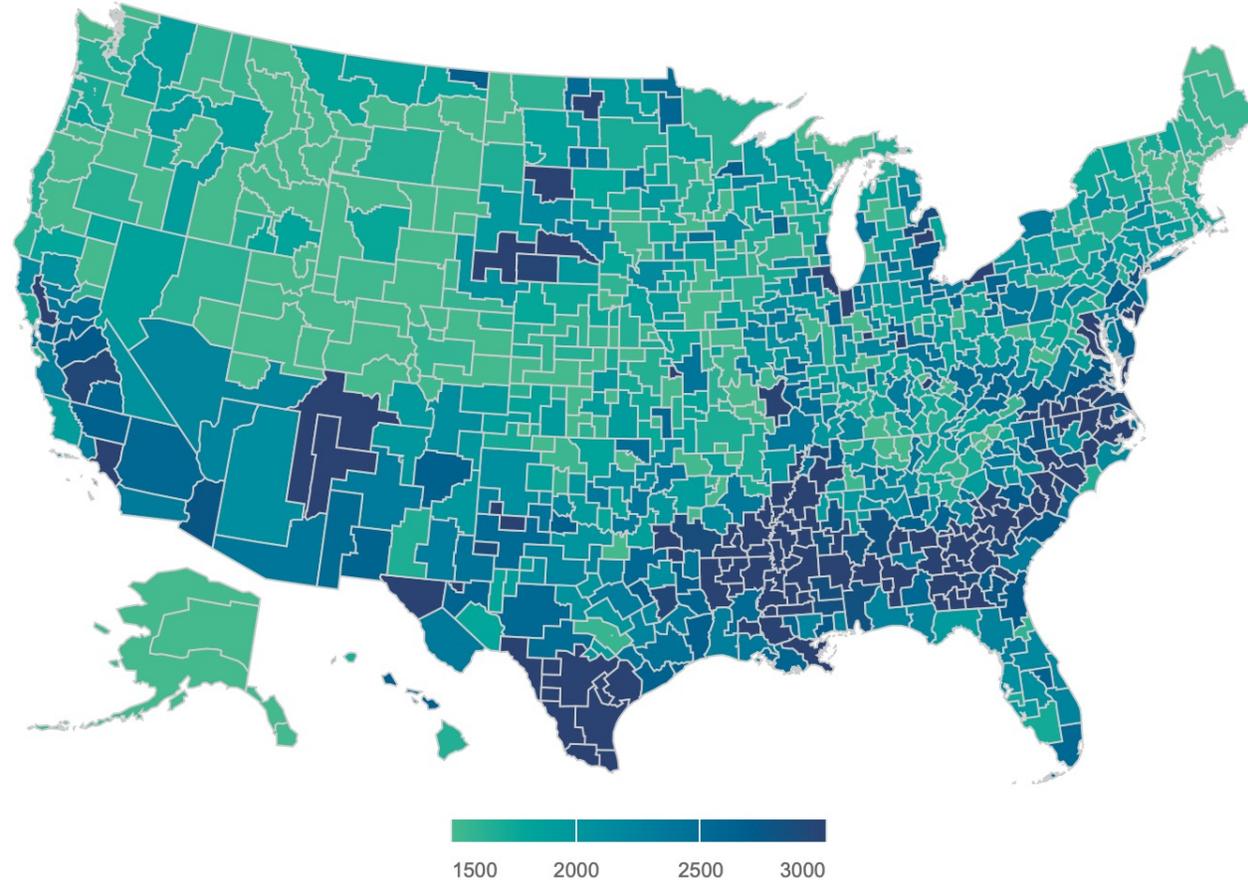


Data Source: 2021 United States Renal Data System Annual Data Report



Prevalence of ESRD by HSA

Figure 1.7 Prevalence of ESRD by Health Service Area

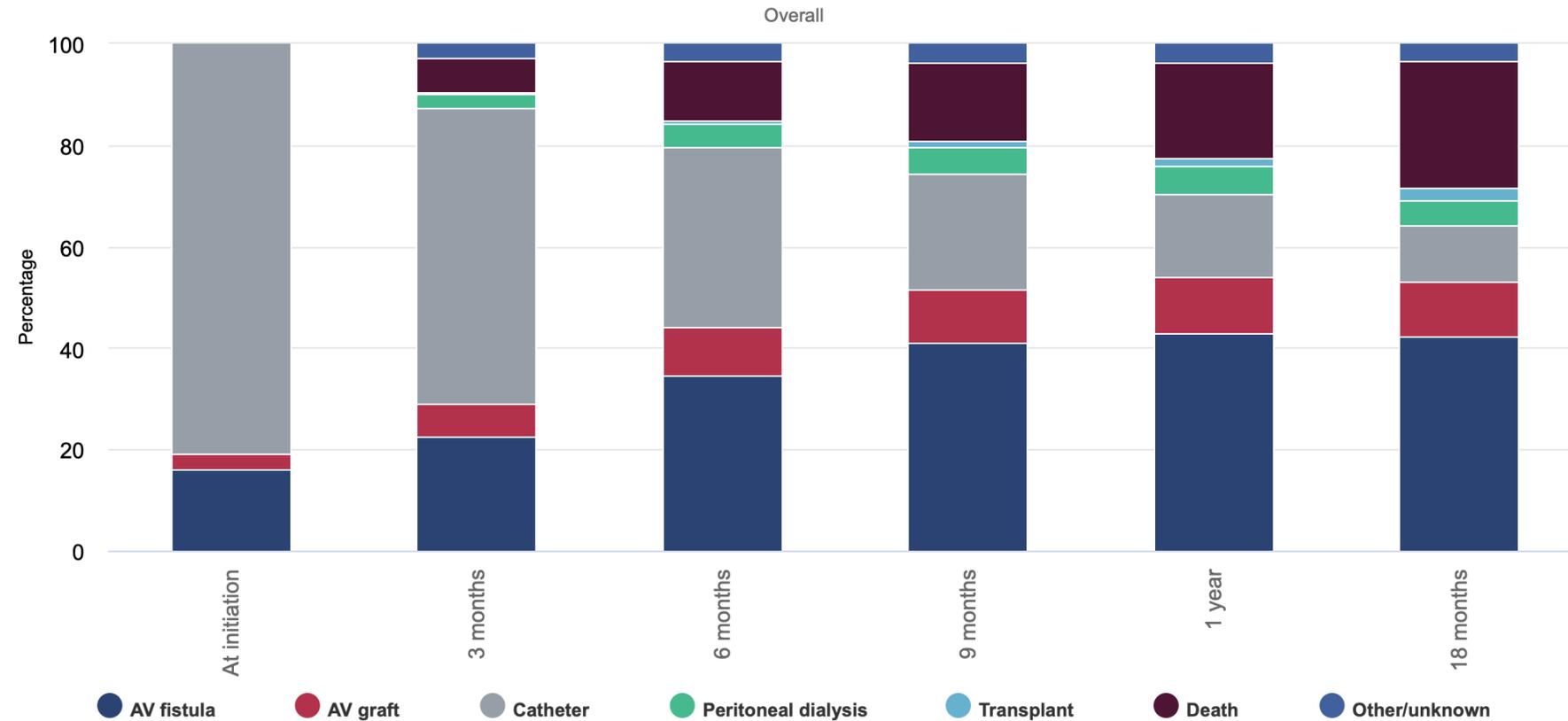


Data Source: 2021 United States Renal Data System Annual Data Report



Hemodialysis initiation and 18mo outcomes

Figure 4.9a Change in vascular access type and other outcomes over the 18 months following HD initiation in 2018



Data Source: 2021 United States Renal Data System Annual Data Report



Mortality Rate for older Medicare

Unadjusted

Adjusted

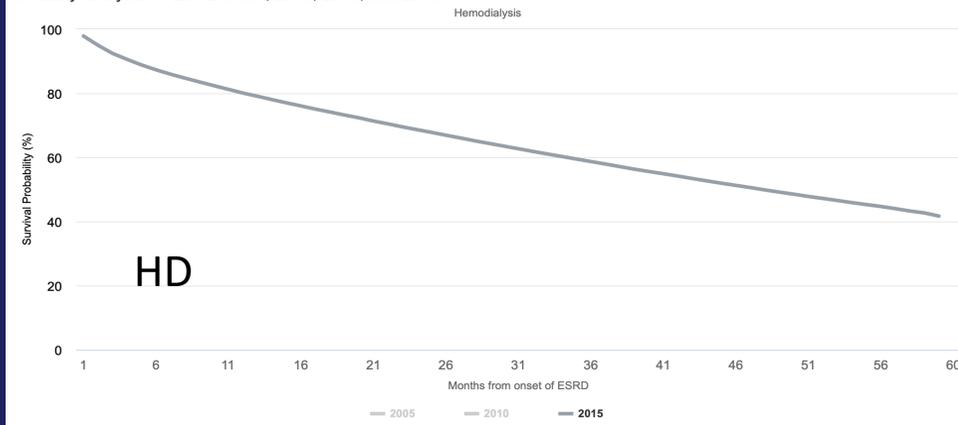
Age	Sex	ESRD		Medicare					
		Dialysis	Transplant	All Non-ESRD	Cancer	Diabetes	CHF	CVA/TIA	AMI
66-74	Female	217.1	59.2	16.1	60.9	28.3	91.1	52.7	83.8
	Male	224.6	66.5	23.6	65.8	36.6	97.2	64.6	77.6
75+	Female	316.4	117.7	76.0	121.6	94.9	206.3	144.1	186.4
	Male	329.4	138.8	83.3	130.5	103.0	215.3	147.7	183.0

Data source: USRDS ESRD database and Medicare 5% database. 2019 January 1 point prevalent ESRD patients and Medicare fee-for-service (FFS) beneficiaries without ESRD, all were aged ≥66 years, at least 1 year of Medicare coverage before January 1. Age, race/ethnicity, and sex were used for adjustment.



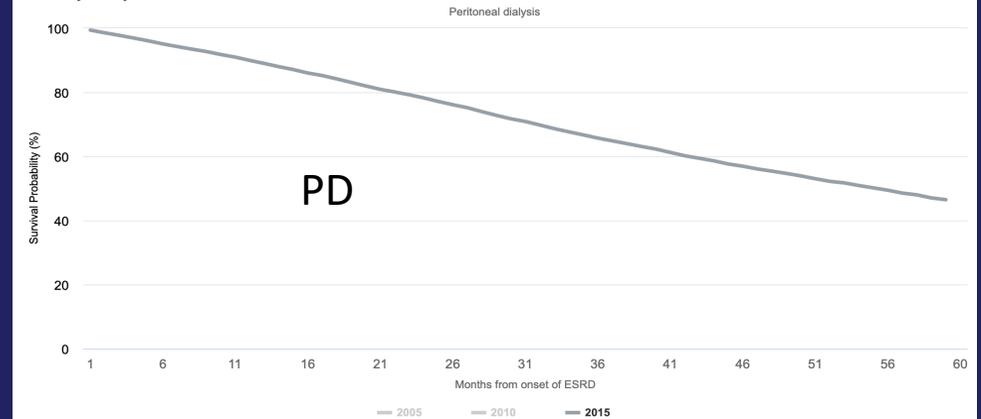
5 year Survival Probability from ESRD onset

Figure 6.7 Adjusted survival of incident ESRD patients over the first 5 years after onset of ESRD, by treatment modality and year of ESRD onset, 2005, 2010, and 2015



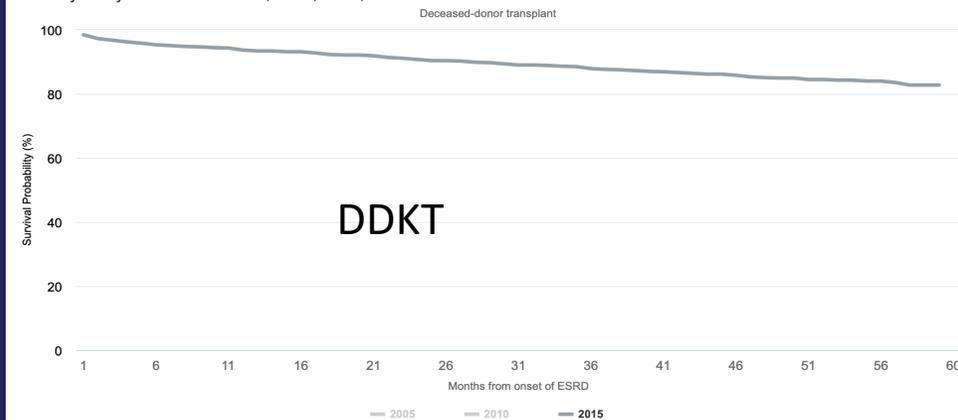
Data Source: 2021 United States Renal Data System Annual Data Report

Figure 6.7 Adjusted survival of incident ESRD patients over the first 5 years after onset of ESRD, by treatment modality and year of ESRD onset, 2005, 2010, and 2015



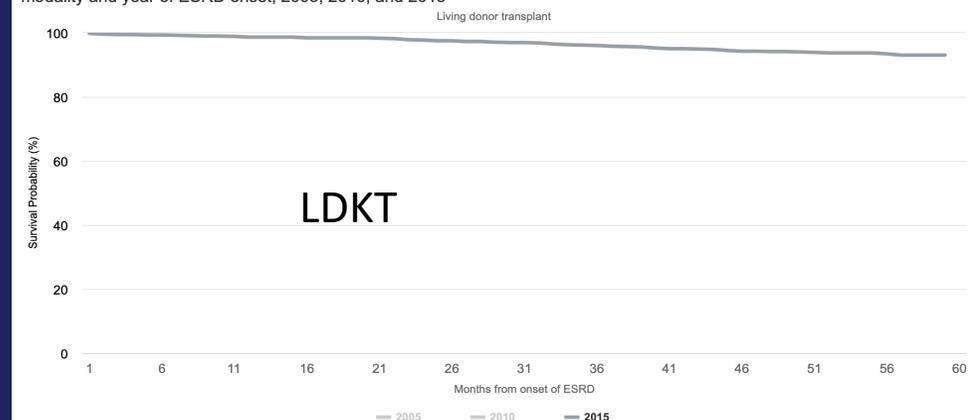
Data Source: 2021 United States Renal Data System Annual Data Report

Figure 6.7 Adjusted survival of incident ESRD patients over the first 5 years after onset of ESRD, by treatment modality and year of ESRD onset, 2005, 2010, and 2015



Data Source: 2021 United States Renal Data System Annual Data Report

Figure 6.7 Adjusted survival of incident ESRD patients over the first 5 years after onset of ESRD, by treatment modality and year of ESRD onset, 2005, 2010, and 2015

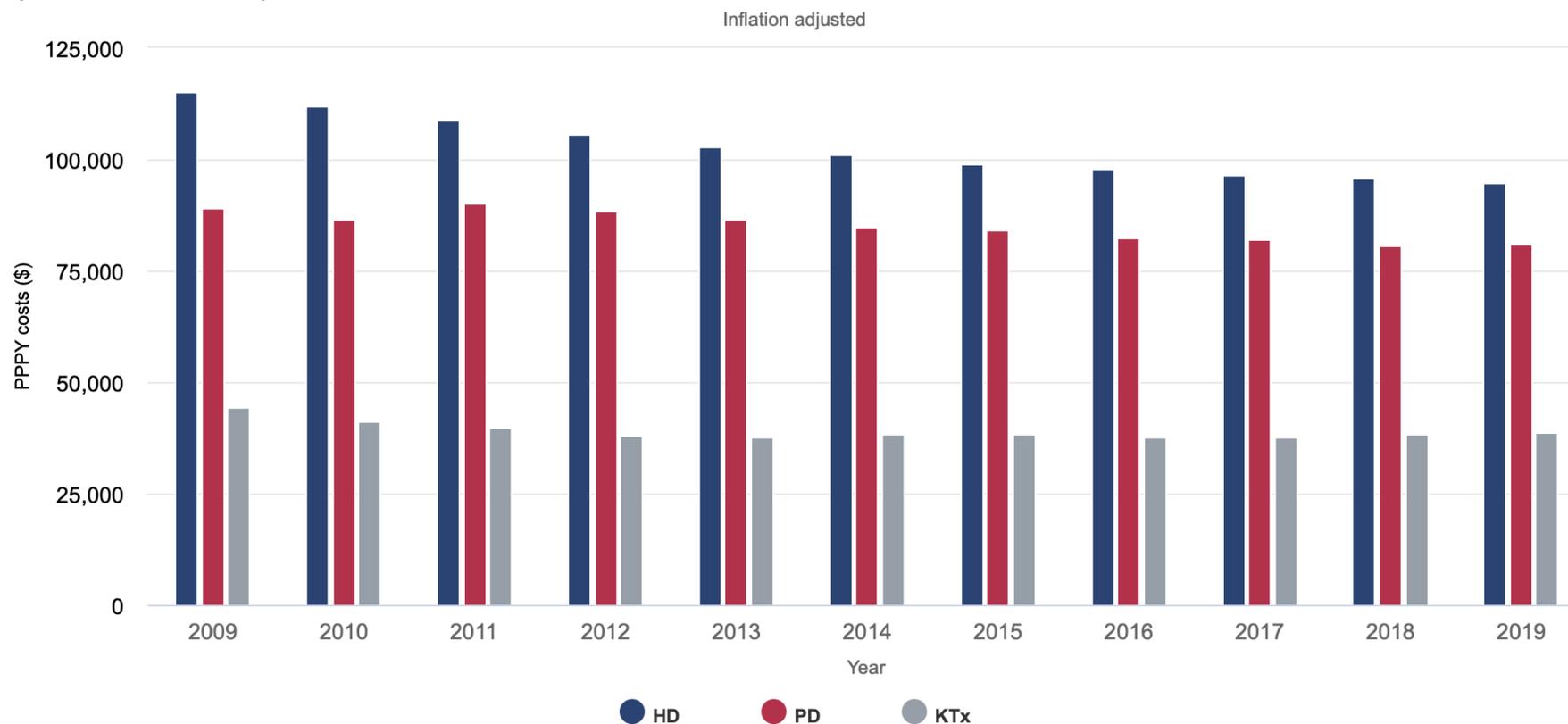


Data Source: 2021 United States Renal Data System Annual Data Report



Medicare spending PPPY for ESRD by treatment modality

Figure 9.10 Inflation adjusted per person per year Medicare fee-for-service spending for beneficiaries with ESRD, by treatment modality, 2009-2019

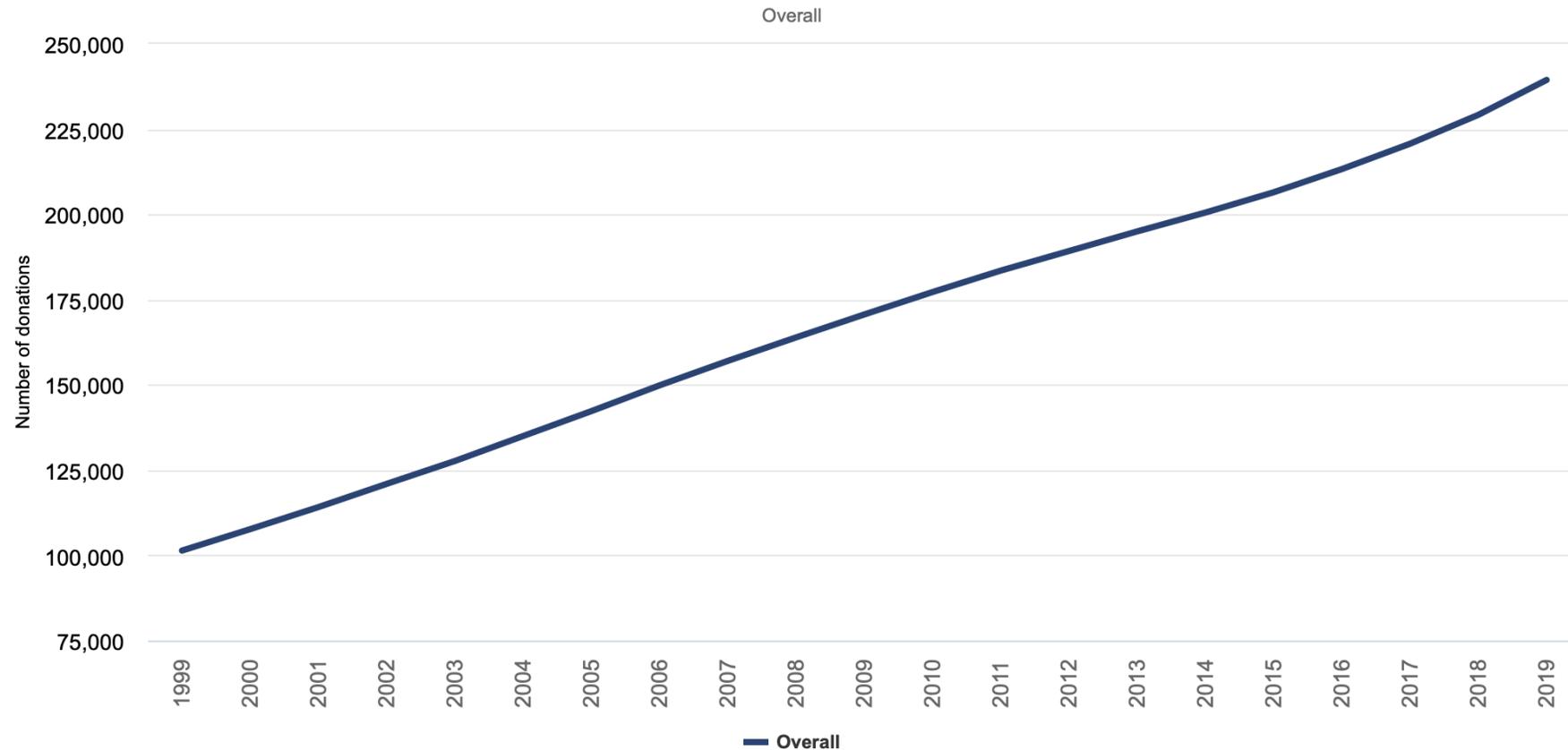


Data Source: 2021 United States Renal Data System Annual Data Report



Transplant volume 1999-2019

Figure 7.18 Number of patients and percentage of prevalent ESRD patients with a functioning transplant

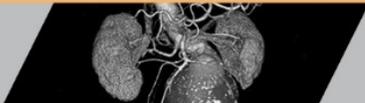
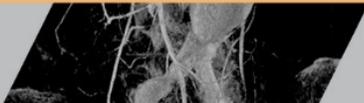
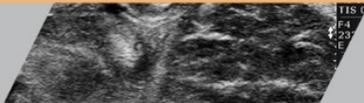
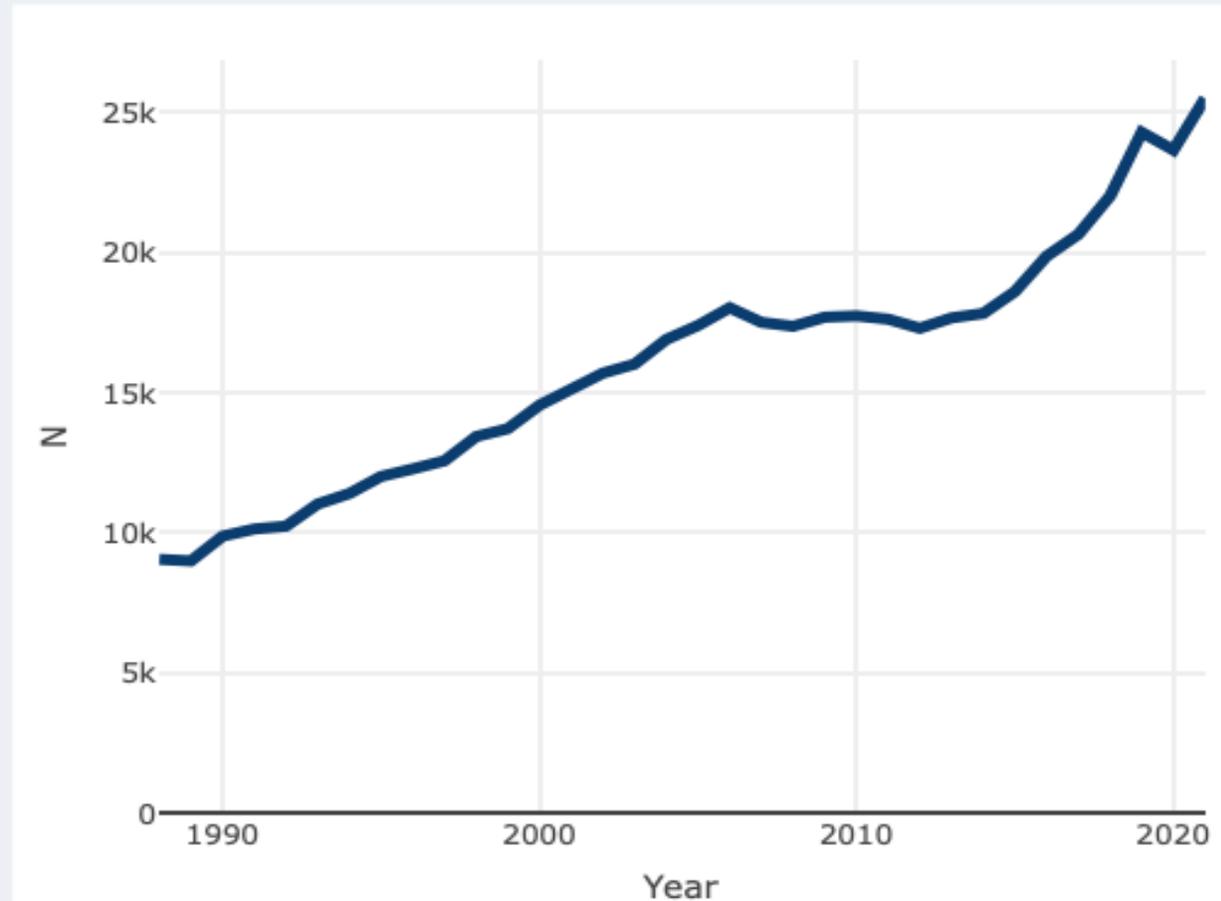


Data Source: 2021 United States Renal Data System Annual Data Report



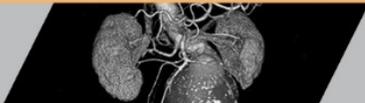
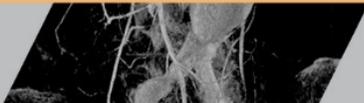
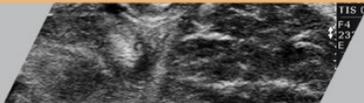
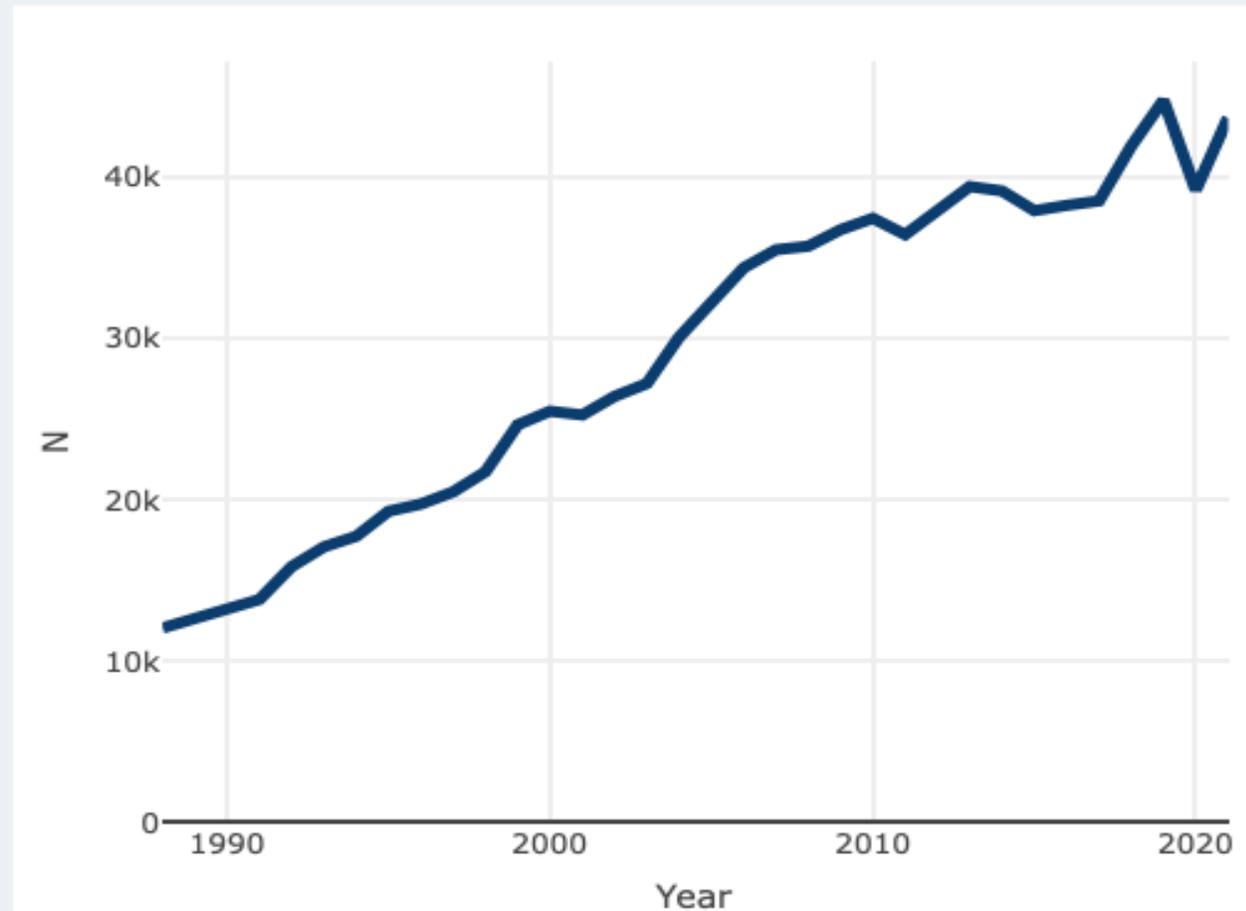
Annual kidney transplant volume

National Kidney Transplants by Year (All Donors)



Annual kidney waitlist volume

National Kidney Waitlist Additions by Year

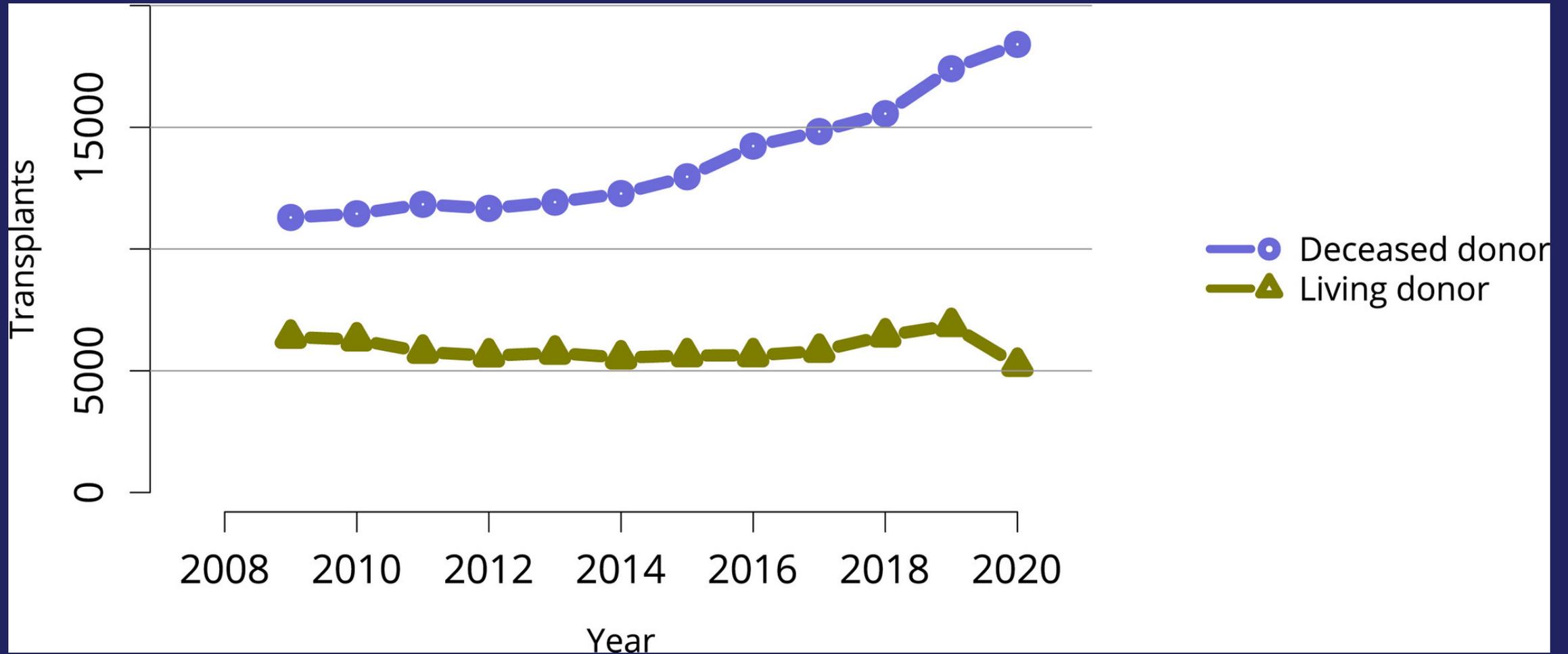


Advancing Kidney Health Initiative

- 2019 Executive Order directing HHS to increase deceased donation and support living donors
 - Remove financial barriers
 - Revise Outcome Measures

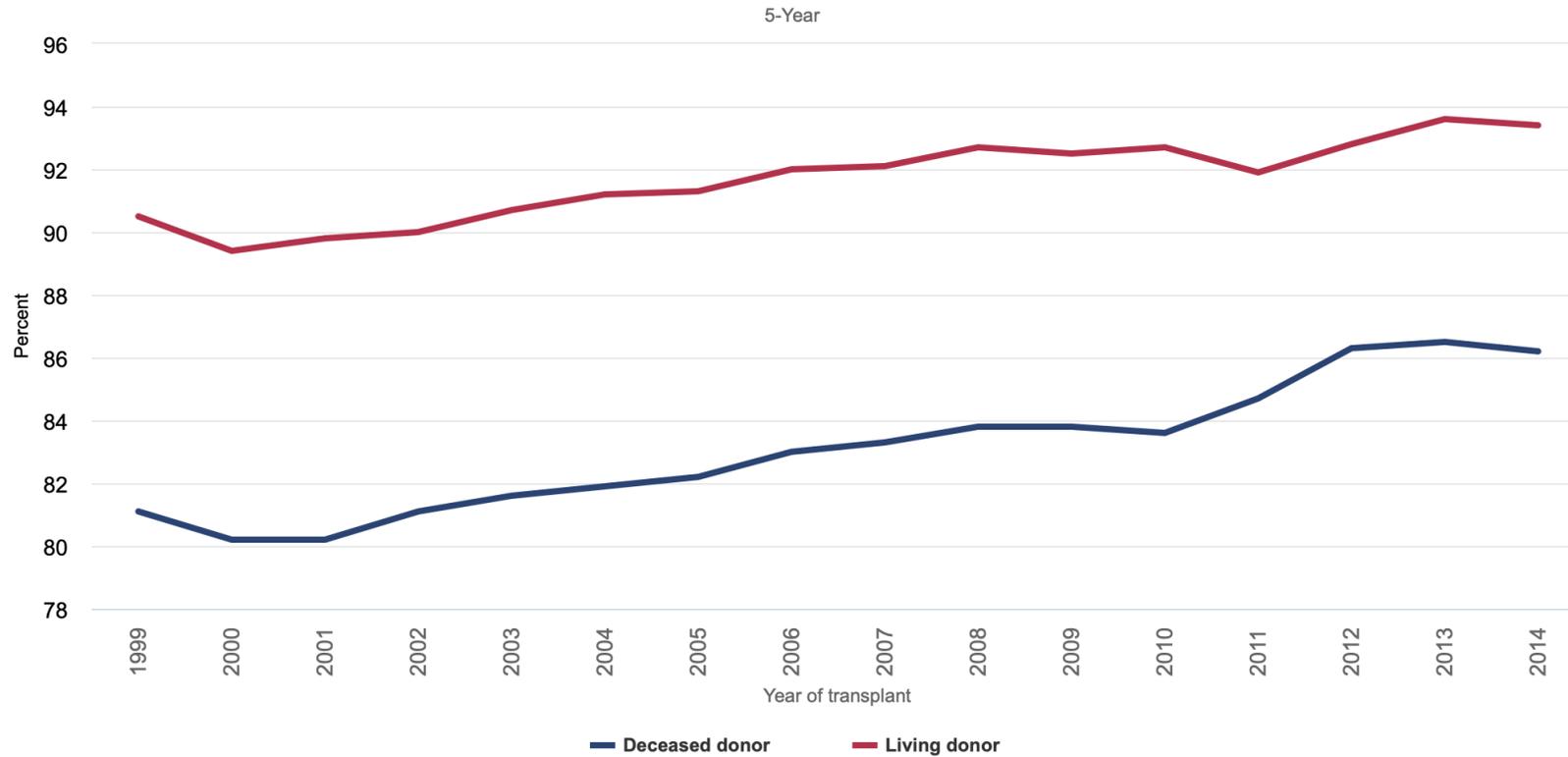


Deceased Donor vs Living Donor



Patient survival for LDKT and DDKT

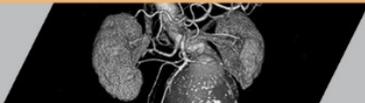
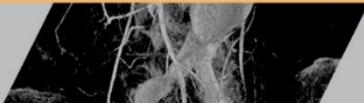
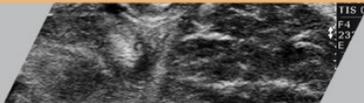
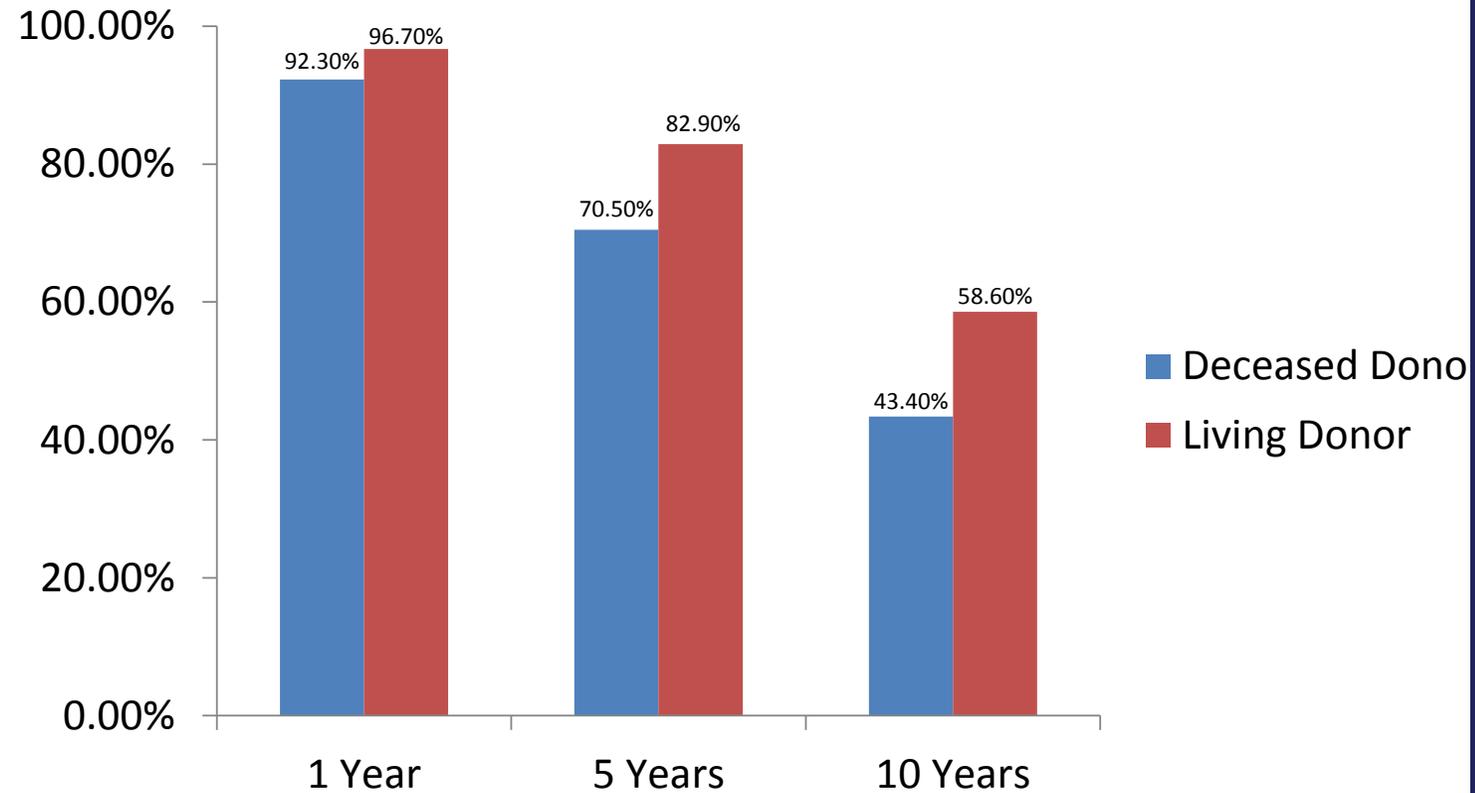
Figure 7.23 Patient survival at 1, 5, and 10 years after transplant, 1999-2018



Data Source: 2021 United States Renal Data System Annual Data Report



1-, 5- and 10-Year Graft Survival Rates



Living Donor Targets

Education and outreach

Target audiences

- Patients with kidney or liver failure
- Potential living donors
- Social networks
- General public

Research needed to optimize

- Frequency
- Content
- Delivery modalities

Removal of disincentives

Uncompensated costs for donors

- Travel
- Medications
- Lost time from work
- Dependent care

Research needs

- Develop and assess mechanisms for achieving cost neutrality

Evaluation efficiency

Complex donor evaluation process

- Delays may discourage donors
- Delays may lead to recipient starting dialysis before transplant

Research needs

- Define efficiency in the donor evaluation
- Develop standards to address modifiable process delays

Improving safety and defensibility of donor selection

Transparency

- Incomplete risk assessment and disclosure may reduce public trust in the donation process

Research needed to optimize

- Scope and precision of long-term risk prediction
- Methods for risk communication



Programs

House Calls

- Health educator 60-90mins.
- Increased inquires, evaluations & transplants. 30→52%

TALK program

- Identify barriers, problem solve
- Increased discussion w family, evaluations, LD identification 30→58%

Seminars on Saturdays

- every 2 mo to all pre-dialysis pts and families and waitlisted.
- Increased pre-emptive unrelated LDKT 25→58%
- Minority donors increased 39→52%

Live Donor Champion

- Removing barriers (discussion of sensitive subject, fear of asking, limited knowledge)

Social Media/Facebook

- 7x more likely to have potential donor.



Living Kidney Donation

Patient guide to the Donor Evaluation Process

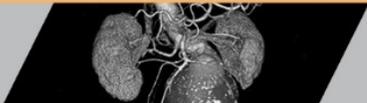
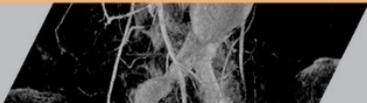
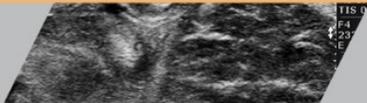
Sentara Norfolk General Hospital
August 2021

Staff Contact

- Independent Living Donor Advocate (ILDA) 757-354-5774
- Roland French, LD Coordinator 757-388-3977
- Megan Coleman, Senior LD Coordinator 757-388-1866
- Brandy Bluitt, Social Worker 757-388-9104
- Georgianna Robertson, Social Worker 757-388-9105
- Scheduler 757-388-4055
- Financial Coordinator (Last name A-F) 757-388-5573
- Financial Coordinator (Last name G-N) 757-388-6341
- Financial Coordinator (Last name O-Z) 757-388-4144
- Registered Dietitian 757-388-2217

Evaluation Process

- Interview with Living Donor Coordinator, Social Worker (SW) and Independent Living Donor Advocate (ILDA)
- Evaluation consents
- Medical and Surgical assessment by Nephrologist and Donor Surgeon
- Blood typing and compatibility testing
- Blood, Urine tests, Chest X-ray, EKG and CT scan
- Psychological clearance by clinical psychologist or psychiatrist if recommended by living donor team



Candidates Not Suitable For Donation

- Age
 - Less than 18 years of age for directed donation
 - Less than 21 for non-directed donation
 - Greater than 65 years of age
- Hypertension/Diabetes
- Body Mass Index (BMI) greater than 35
- Psychologically unstable
- Current illegal drug use x Marijuana
- **Suspected donor coercion or illegal financial exchange**
- HIV positive
- Incurable Malignancy
- Anomalies of contralateral kidney



Types of Donation

- **Directed Donor-** Donor has intended recipient and donates directly to them
- **Kidney Paired Donation-** Voluntary program where donor/recipient pairs that are not a match may enter as a pair
- **Non-Directed Donor-** Donor wants to help someone but does not know someone who is in imminent need of a transplant





NATIONAL **KIDNEY** REGISTRY

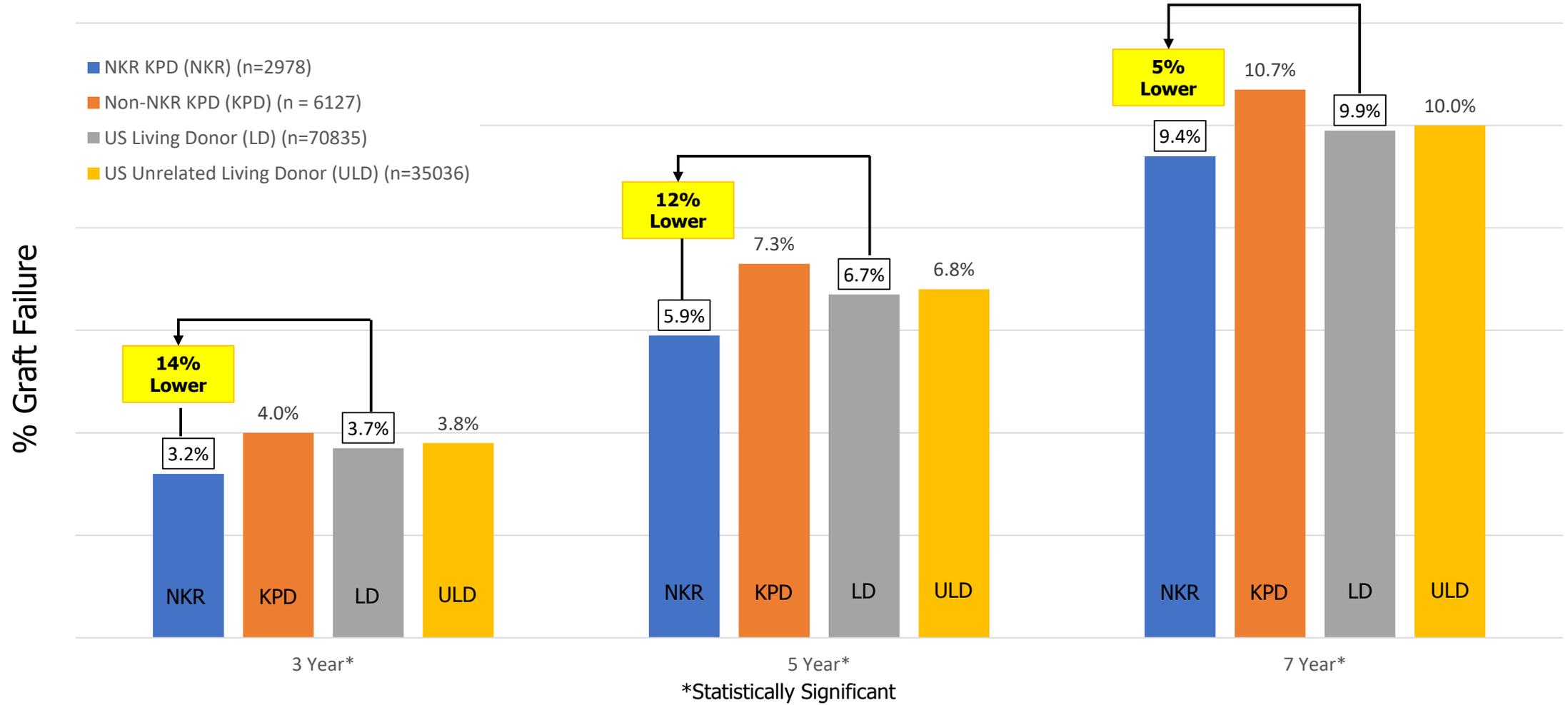
FACILITATING LIVING DONOR TRANSPLANTS

Outcomes Report

Version 2.2

Published on 6/22/21 • Data Cutoff of 12/31/20

Death Censored Graft Failure Comparisons



Case Mix: Better Outcomes in Spite of Harder Cases

	NKR KPD	Non NKR KPD	US Living Donor	US Unrelated Living Donor
Median (IQR) Cold Ischemia Time	9.5	1.4	1.0	1.1
% cPRA 80+	22.1	9.7	3.7	3.7
% cPRA 98+	7.6	2.7	1.1	0.9
% Previous Transplant	24.8	16.4	11.1	11.7
Median (IQR) Years on Dialysis	0.9	0.9	0.5	0.6
% Pre-emptive Transplant	28.6	30.0	35.9	36.0
% African-American	14.4	13.3	12.6	11.6
% Public Insurance	44.8	45.5	42.4	40.2

Donor Shield

- Voucher Program
- Remote Donation
- Donor Protection Program
 - Supplemental Insurance for complications
 - Reimbursement for Lost wages, travel and lodging



Financial and Insurance Considerations

- Expenses should be billed to the recipient's insurance
- Donating a kidney could impact your ability to find employment, health insurance, disability and life insurance.



Risks

- Perioperative

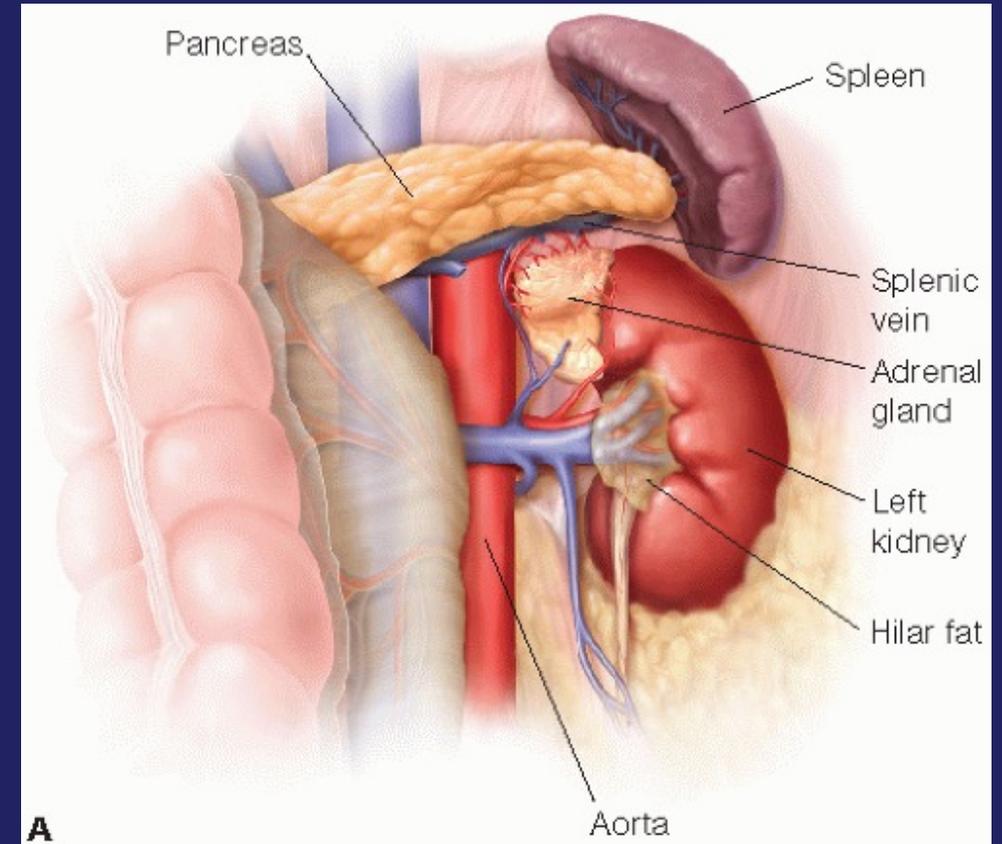
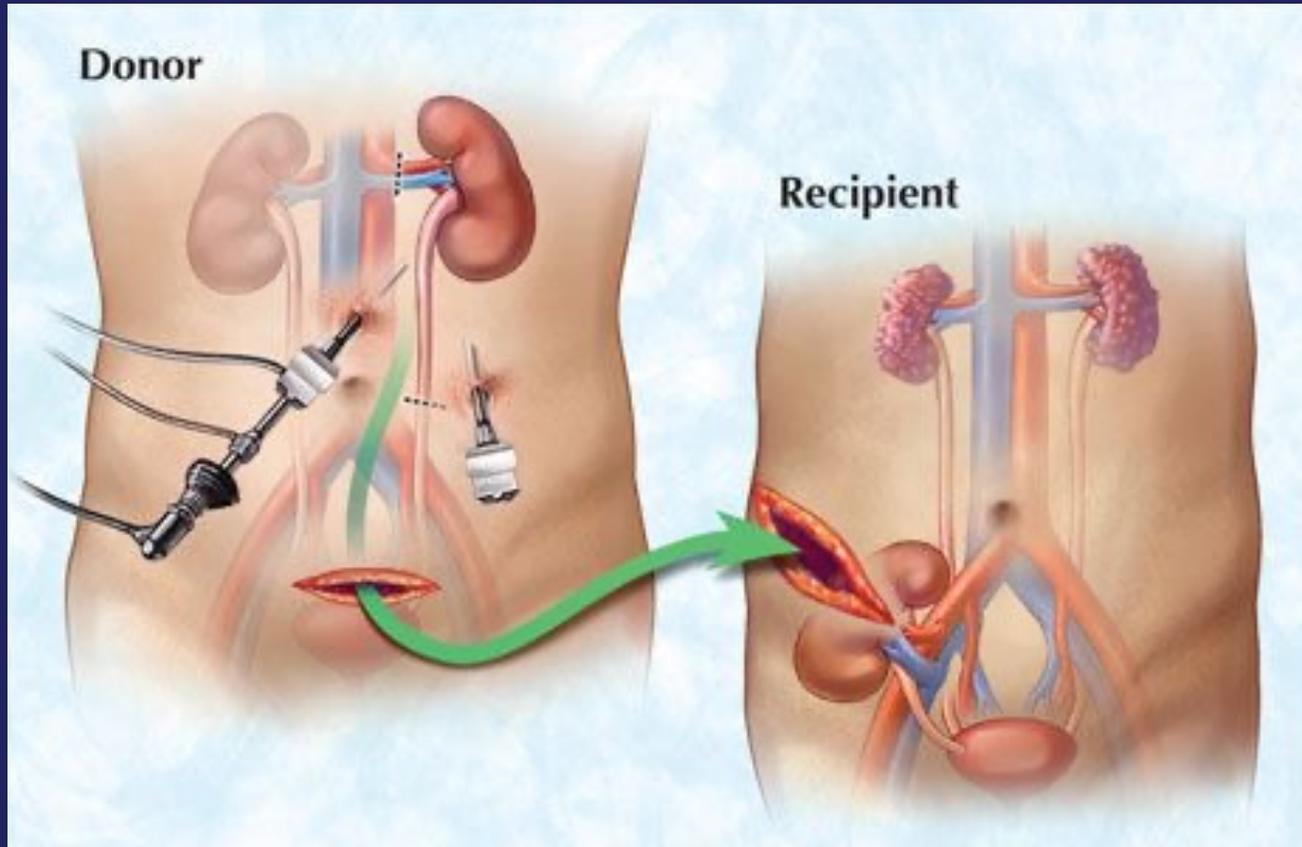
- Pain, fatigue, bleeding, infection including the surgical incision, damage to bowel, spleen, liver, stomach, kidney or blood vessels in the abdomen, kidney failure, bowel obstruction/blockage, bloating, nausea/vomiting, hernia, testicular pain, inflammation of the pancreas (pancreatitis), blood clots in the leg or lung, pneumonia, nerve injury, heart attack or stroke.

- Long Term

- 25-35% permanent loss of renal function
- High risk pregnancy. Increased risk of Preeclampsia or gestational hypertension
- CKD/ESRD



Living Kidney Donor Nephrectomy



Required Post Donation Follow-Up

- 1 mo, 6 mo, 12 mo, 24 mo.
 - Follow-up includes a creatinine level, urinalysis and documentation of weight and blood pressure



Xenotransplantation & Regenerative medicine

American Journal of
TRANSPLANTATION



ORIGINAL ARTICLE

First clinical-grade porcine kidney xenotransplant using a human decedent model

Paige M. Porrett, Babak J. Orandi, Vineeta Kumar, Julie Houp, Douglas Anderson, A. Cozette Killian, Vera Hauptfeld-Dolejsek, Dominique E. Martin, Sara Macedon, Natalie Budd ... [See all authors](#) ✓

First published: 20 January 2022 | <https://doi.org/10.1111/ajt.16930> | Citations: 2