



NATIONAL KIDNEY REGISTRY
FACILITATING LIVING DONOR TRANSPLANTS

Outcomes Report

Version 2.2

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

Overview

- The outcomes analysis was prepared by the Johns Hopkins research team using the latest SRTR data and NKR registry data.
- Variances between the SRTR data and NKR data on critical data elements such as graft failure were researched and reconciled with the appropriate transplant centers.
- P Values <0.05 are considered statistically significant.

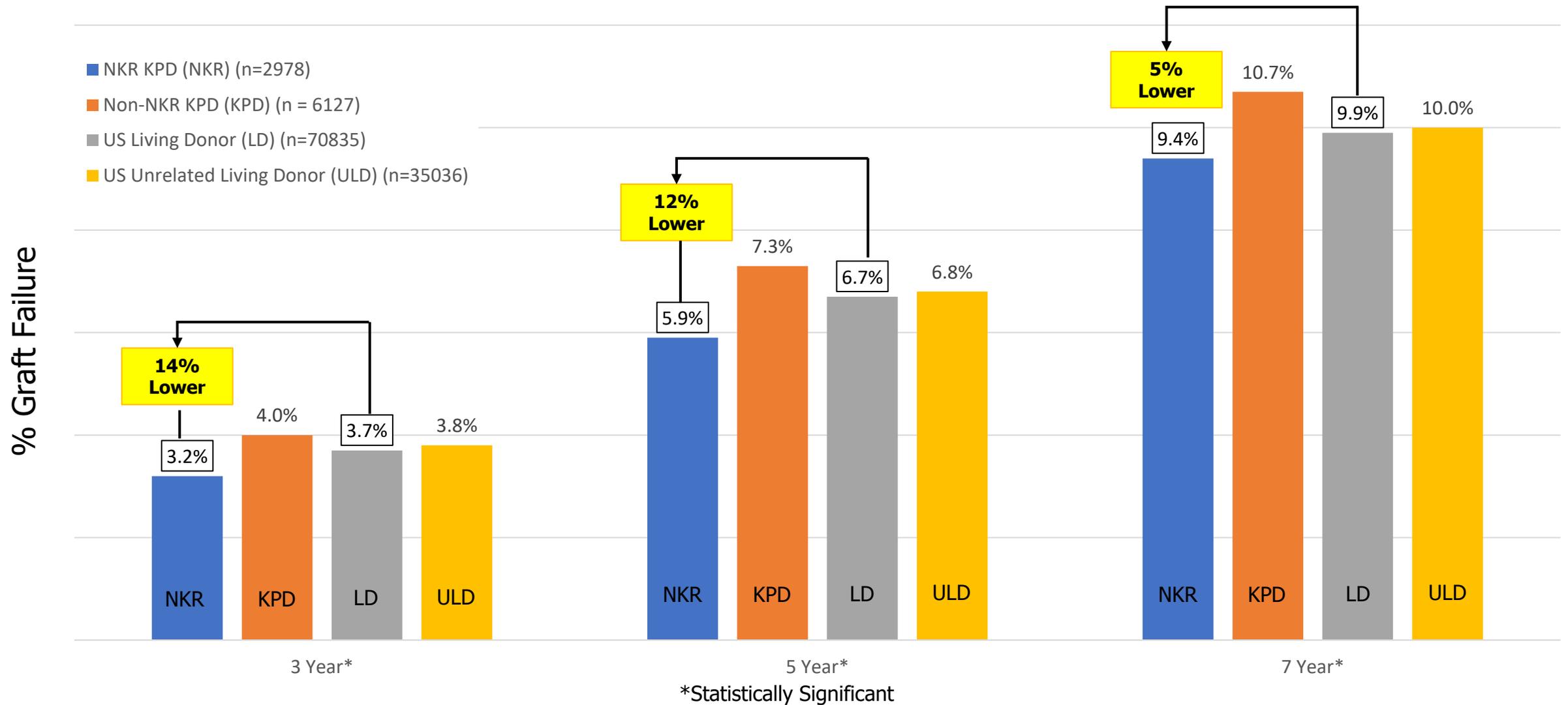


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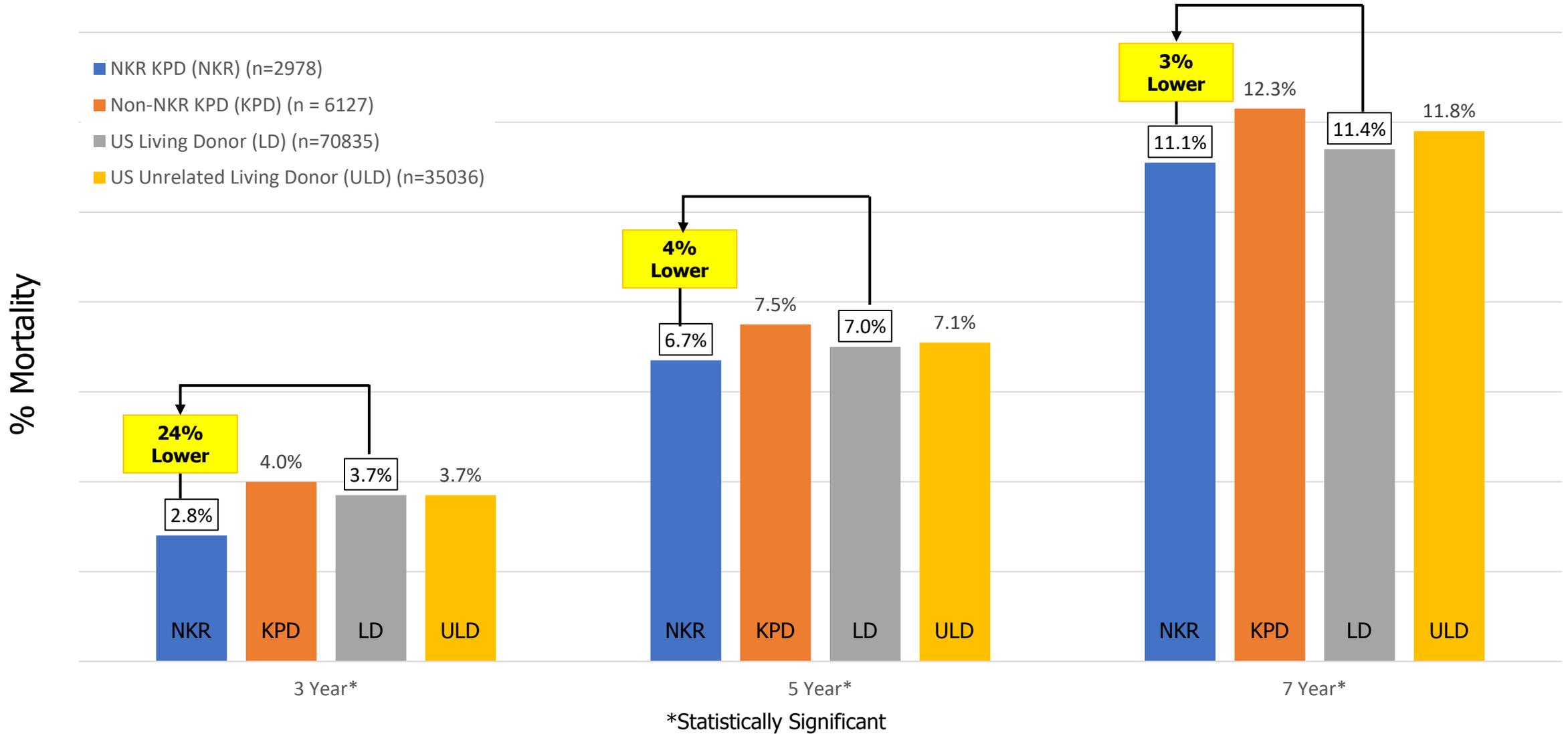
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2. Case mix
3. Comparison to other KPD
4. Sensitized patient analysis
5. HLA matching analysis
6. Compatible pair analysis



Death Censored Graft Failure Comparisons



Patient Mortality Rate Comparisons



Outcomes

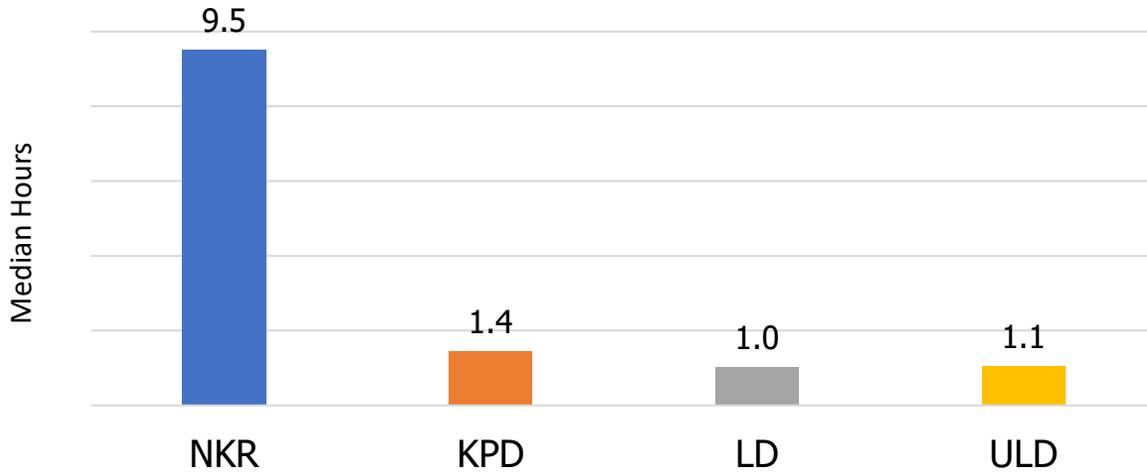
Death Censored Graft Failure	(n)	3 Year*	5 Year*	7 Year*
NKR KPD(NKR)	2,978	3.2%	5.9%	9.4%
Non-NKR KPD (KPD)	6,127	4.0%	7.3%	10.7%
US Living Donor (LD)	70,835	3.7%	6.7%	9.9%
US Unrelated Living Donor (ULD)	35,036	3.8%	6.8%	10.0%

Patient Mortality	(n)	3 Year*	5 Year*	7 Year*
NKR KPD (NKR)	2,978	2.8%	6.7%	11.1%
Non-NKR KPD (KPD)	6,127	4.0%	7.5%	12.3%
US Living Donor (LD)	70,835	3.7%	7.0%	11.4%
US Unrelated Living Donor (ULD)	35,036	3.7%	7.1%	11.8%

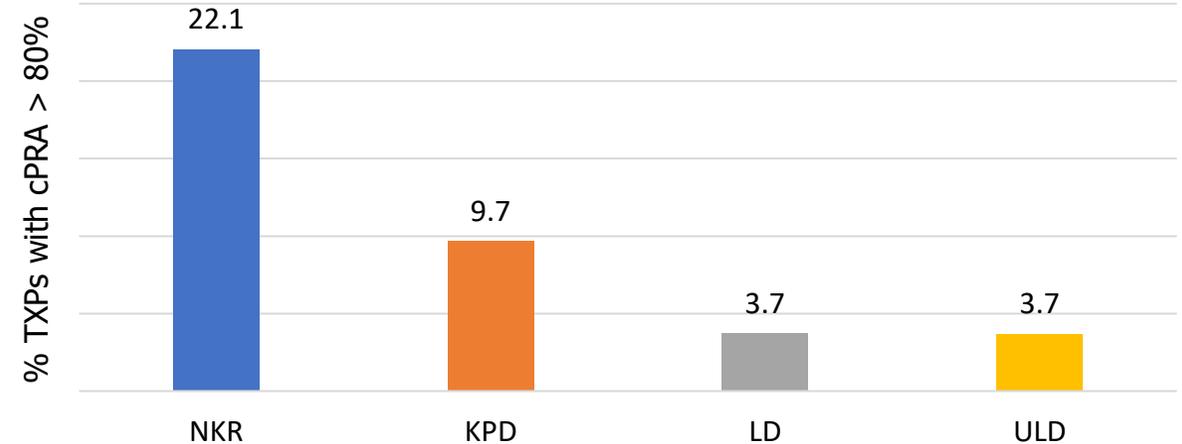
*Statistically Significant

Case Mix: Better Outcomes in Spite of Harder Cases

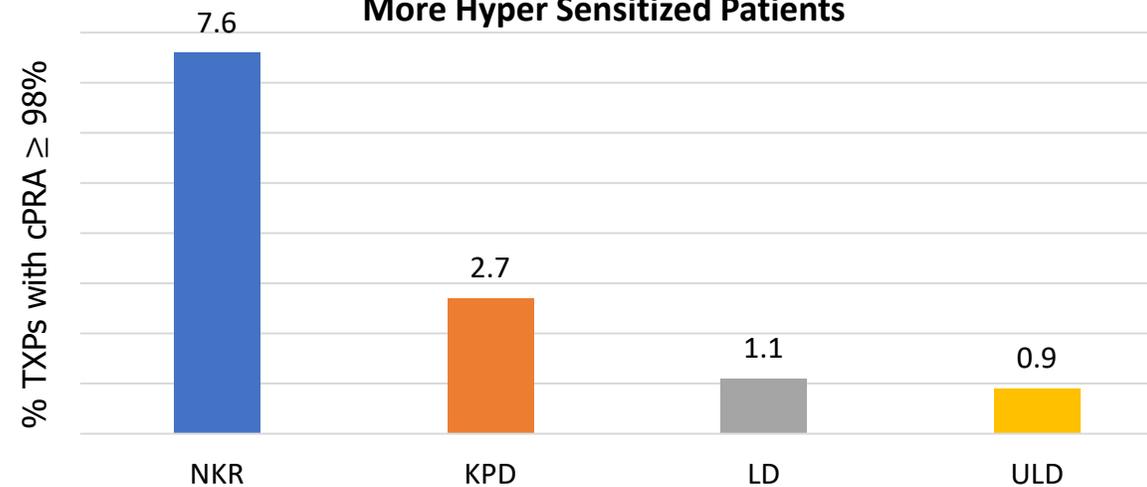
More Cold Ischemic Time



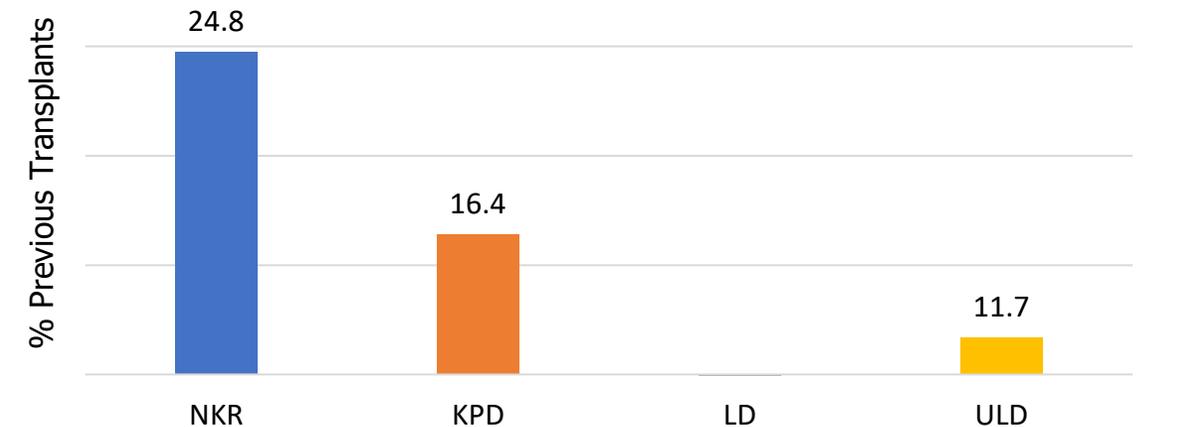
More Highly Sensitized Patients



More Hyper Sensitized Patients

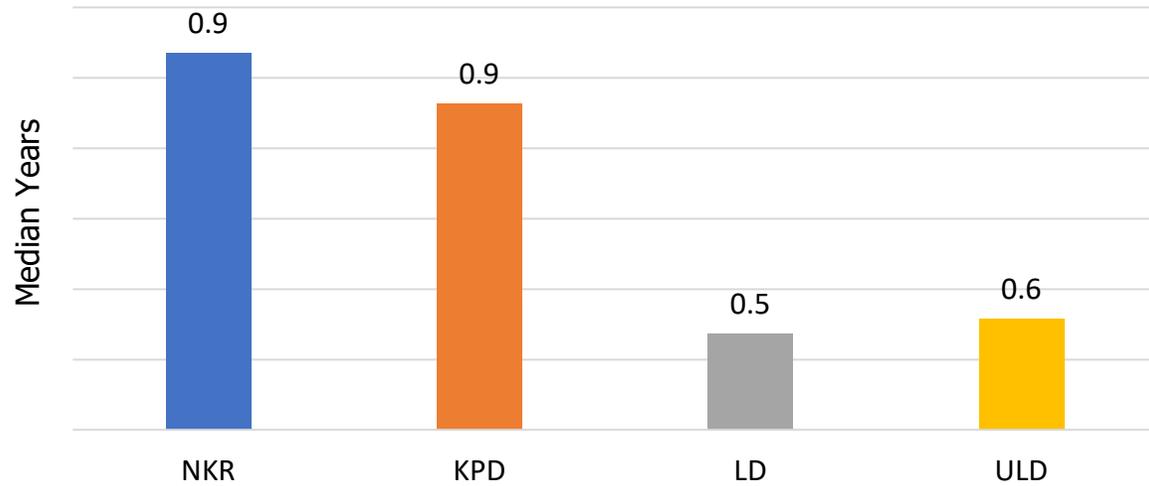


More Re-Transplants

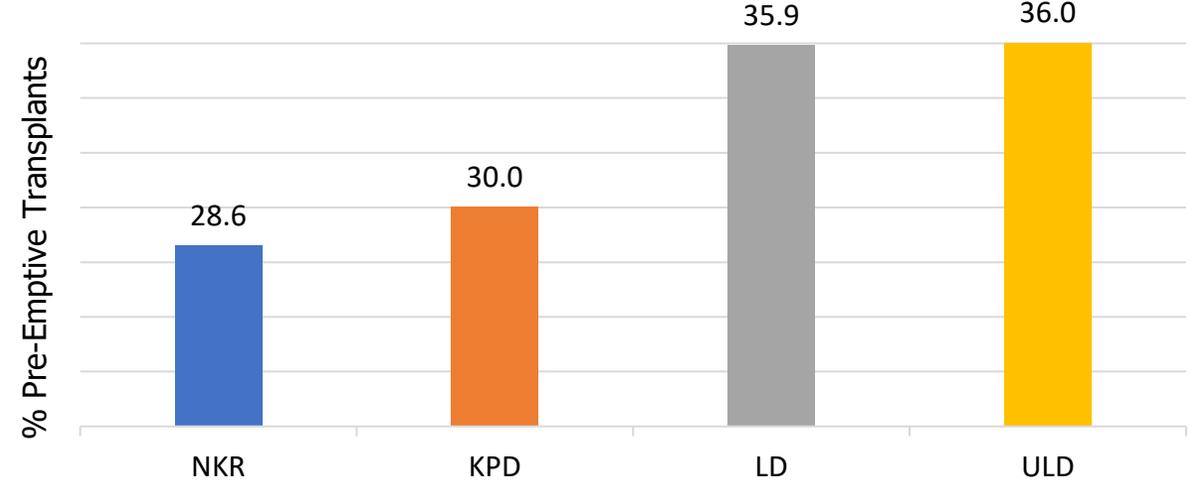


Case Mix: Better Outcomes in Spite of Harder Cases

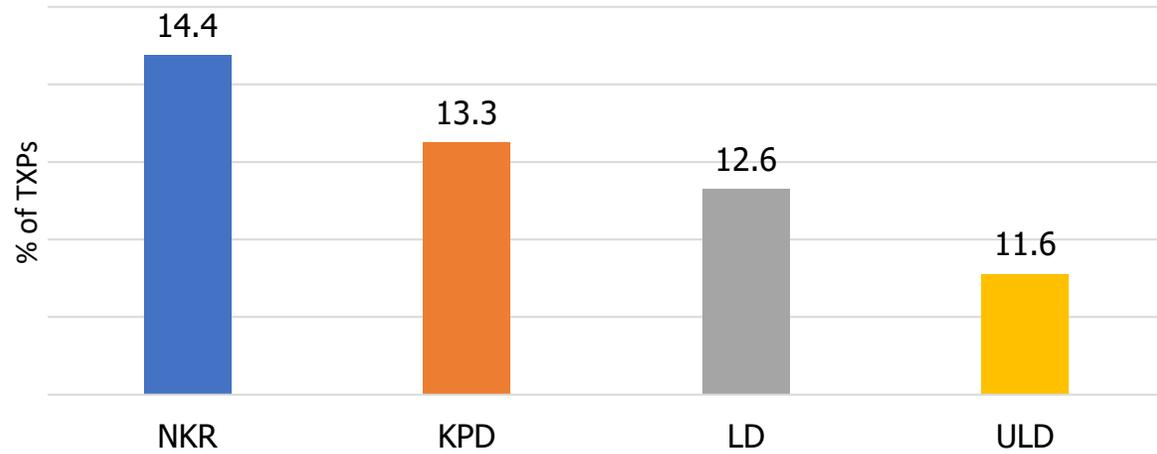
More Time on Dialysis



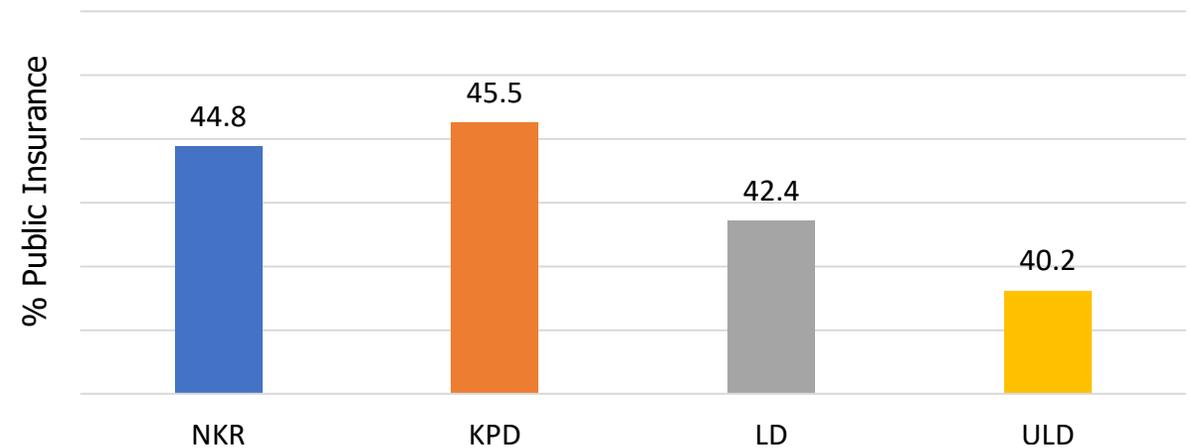
Fewer Pre-Emptive Transplants



More African American Patients



More Patients with Public Insurance

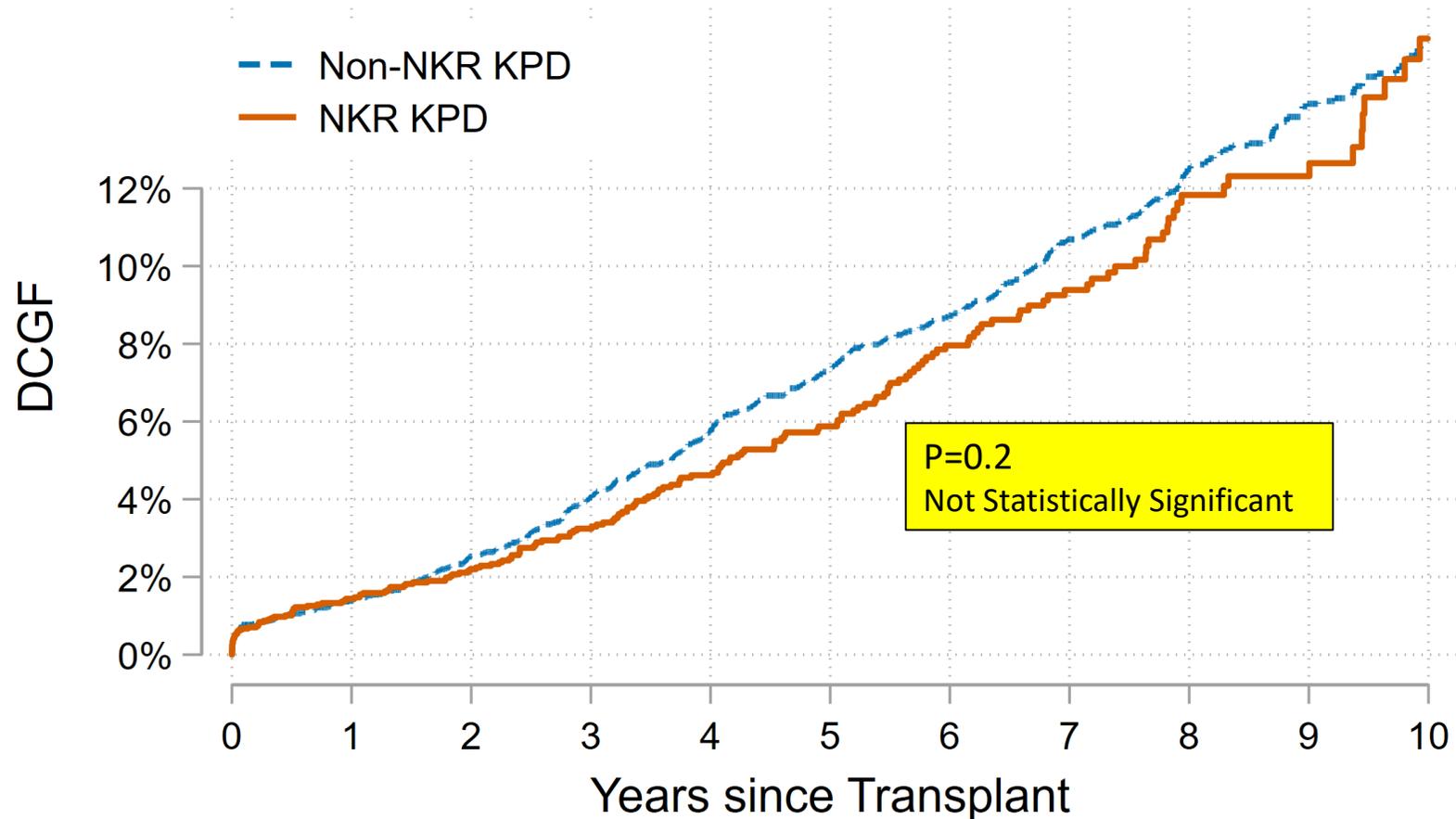


Case Mix: Better Outcomes in Spite of Harder Cases

	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



NKR Outperforms Other KPD Transplants

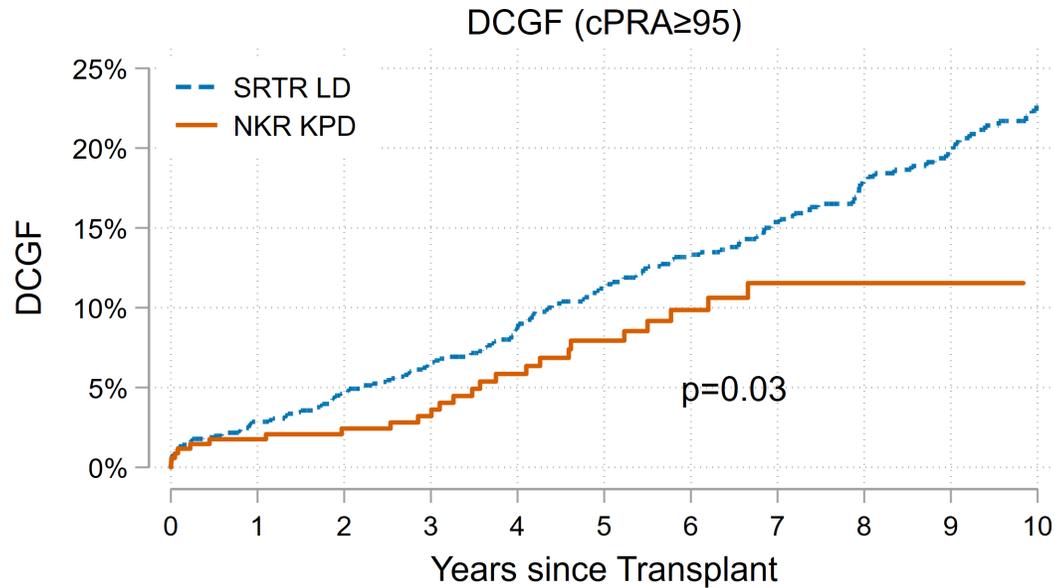


Number at risk

Non-NKR KPD	6127	5697	5039	4378	3851	3208	2700	2166	1718	1250	854
NKR KPD	2978	2676	2228	1838	1479	1173	896	663	427	262	153

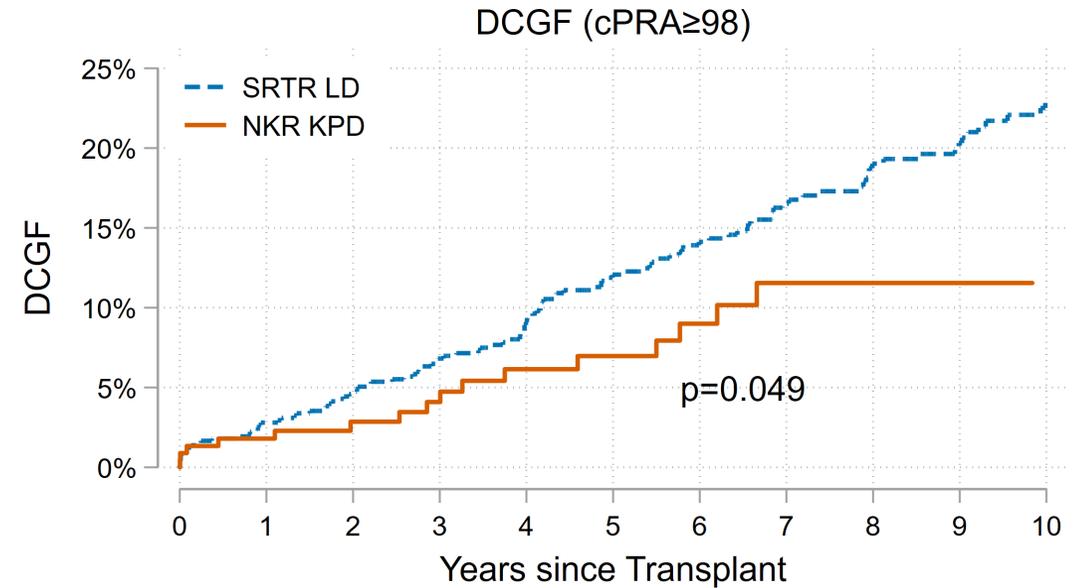


NKR Outperforms For Hyper Sensitized Transplants



Number at risk

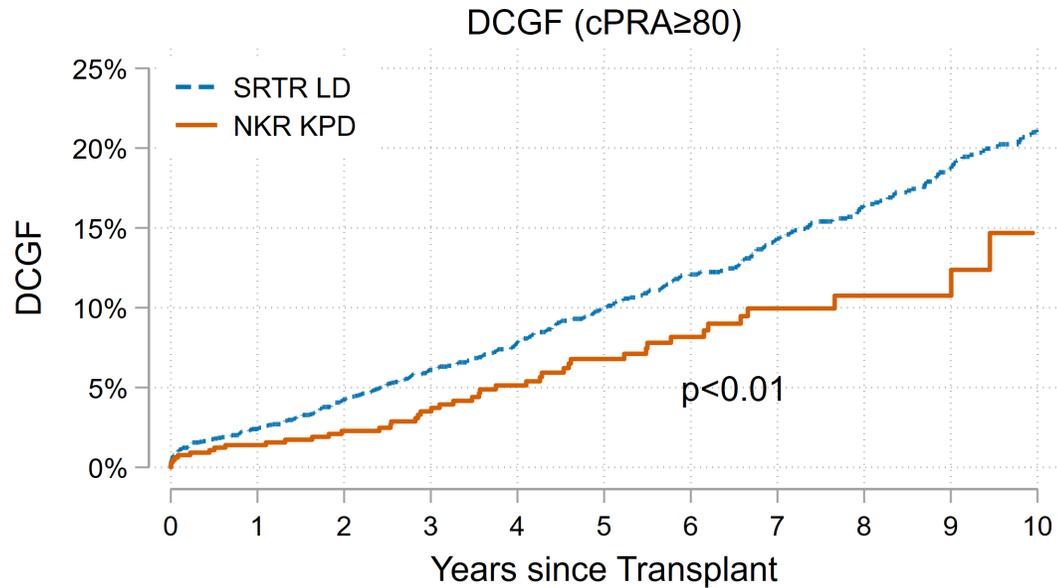
SRTR LD	1067	981	901	819	735	648	577	467	383	319	234
NKR KPD	343	316	269	236	194	159	123	89	47	31	13



Number at risk

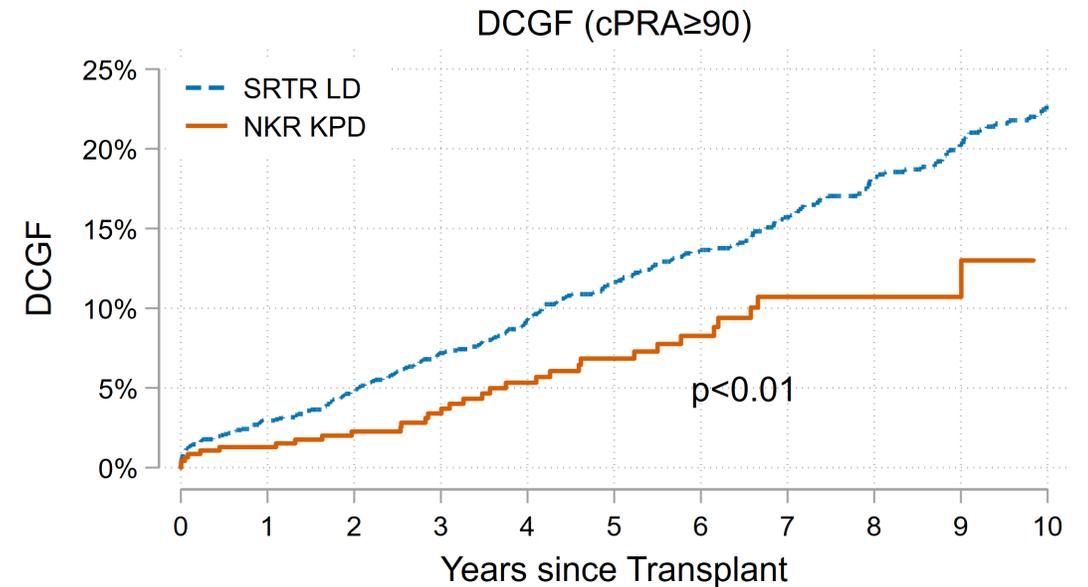
SRTR LD	724	675	622	563	505	447	400	331	279	233	175
NKR KPD	225	202	168	148	127	105	79	59	31	21	9

NKR Outperforms For Highly Sensitized Transplants



Number at risk

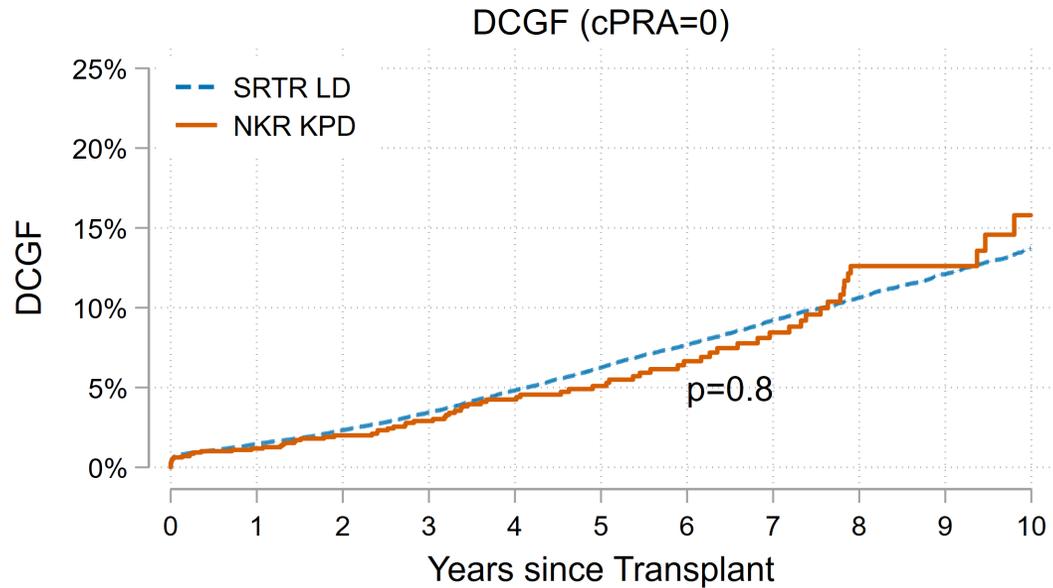
SRTR LD	2450	2264	2047	1825	1634	1410	1216	1006	831	672	496
NKR KPD	654	598	518	448	372	302	233	173	89	55	24



Number at risk

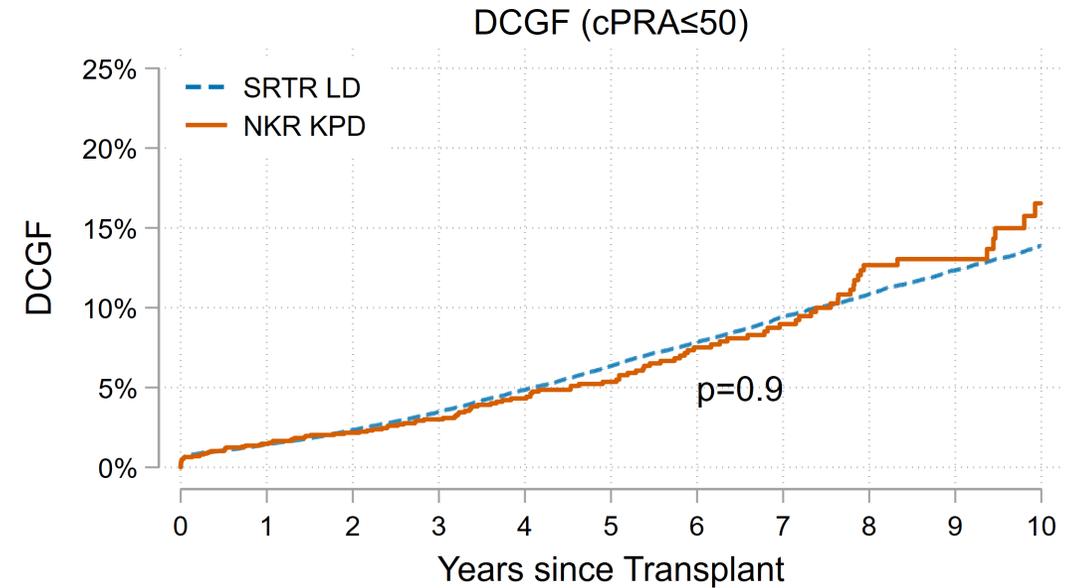
SRTR LD	1579	1447	1315	1177	1045	916	803	654	538	439	329
NKR KPD	468	434	374	323	269	223	168	123	61	39	15

Unsensitized & Lightly Sensitized Patients



Number at risk

SRTR LD	47345	43735	38831	33786	29247	24922	20756	16837	13234	9886	6835
NKR KPD	1292	1171	961	783	621	487	370	265	183	112	67



Number at risk

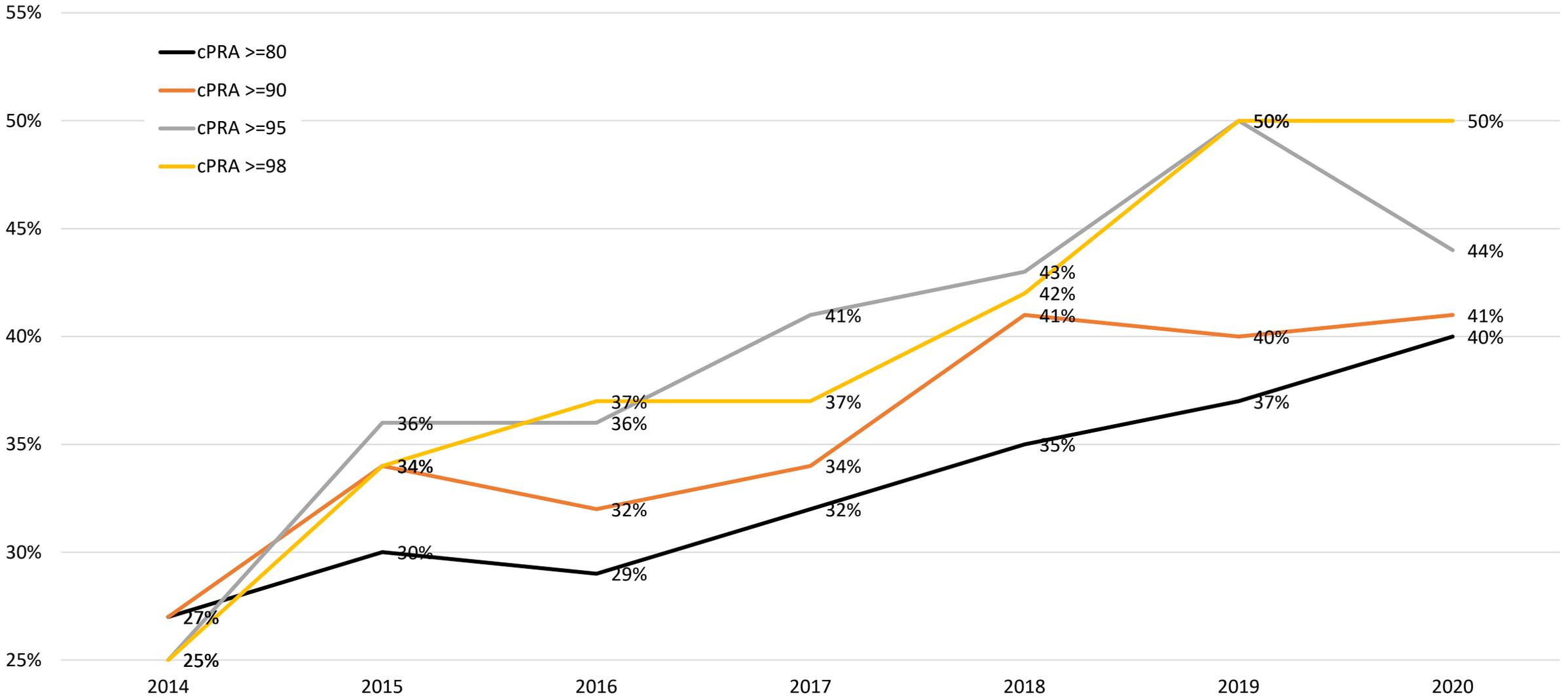
SRTR LD	59699	55233	49134	42850	37097	31630	26473	21709	17324	13264	9539
NKR KPD	1869	1681	1382	1132	896	696	532	385	268	167	104

Sensitized Patient Outcome Data

cPRA	Type	1 Year	3 Year	5 Year	7 Year	7 Year Differential	NKR 7 Year Advantage
0	NKR KPD	1.20%	2.90%	5.10%	8.40%		
	US Living Donor	1.50%	3.40%	6.20%	9.20%	0.80%	9%
	US Unrelated Living Donor	1.60%	3.50%	6.40%	9.30%	0.90%	10%
	Non-NKR KPD	1.40%	3.60%	6.50%	9.80%	1.40%	14%
< 50	NKR KPD	1.50%	3.00%	5.40%	9.00%		
	US Living Donor	1.40%	3.50%	6.30%	9.40%	0.40%	4%
	US Unrelated Living Donor	1.50%	3.50%	6.50%	9.50%	0.50%	5%
	Non-NKR KPD	1.30%	3.70%	6.80%	10.10%	1.10%	11%
≥80	NKR KPD	1.40%	3.60%	6.80%	10.20%		
	US Living Donor	2.40%	6.20%	10.10%	14.30%	4.10%	29%
	US Unrelated Living Donor	2.70%	6.30%	11.40%	16.20%	6.00%	37%
	Non-NKR KPD	2.20%	6.70%	11.60%	14.80%	4.60%	31%
≥90	NKR KPD	1.30%	3.40%	6.80%	10.70%		
	US Living Donor	3.00%	7.20%	11.60%	15.70%	5.00%	32%
	US Unrelated Living Donor	3.40%	7.40%	13.20%	18.50%	7.80%	42%
	Non-NKR KPD	3.00%	7.80%	15.00%	18.10%	7.40%	41%
≥95	NKR KPD	1.80%	3.20%	7.90%	11.50%		
	US Living Donor	2.90%	6.60%	11.30%	15.40%	3.90%	25%
	US Unrelated Living Donor	3.00%	6.90%	13.70%	18.20%	6.70%	37%
	Non-NKR KPD	3.20%	7.60%	14.60%	17.10%	5.60%	33%
≥98	NKR KPD	1.80%	4.10%	7.00%	11.50%		
	US Living Donor	2.80%	6.80%	12.10%	16.50%	5.00%	30%
	US Unrelated Living Donor	2.70%	6.80%	15.00%	20.20%	8.70%	43%
	Non-NKR KPD	2.60%	6.80%	16.40%	19.50%	8.00%	41%



NKR's Share Of Highly Sensitized Living Donor Transplants



NKR's Share Of Highly Sensitized Living Donor Transplants

cPRA	Type	2016	2017	2018	2019	2020	All
>=80	US Living Donor	241	245	268	272	238	3339
	NKR KPD	70	78	94	101	95	802
	As %	29%	32%	35%	37%	40%	24%
>=90	US Living Donor	132	152	164	163	143	2125
	NKR KPD	42	52	67	65	58	546
	As %	32%	34%	41%	40%	41%	26%
>=95	US Living Donor	83	105	99	107	98	1468
	NKR KPD	30	43	43	53	43	401
	As %	36%	41%	43%	50%	44%	27%
>=98	US Living Donor	54	63	67	74	60	984
	NKR KPD	20	23	28	37	30	260
	As %	37%	37%	42%	50%	50%	26%



NKR Transplanted Patients with cPRA >99%

6/25/20 – 6/28/21

#	R Center	D Center	Xplant Date	R ABO	NKR cPRA	Wait (Mo)	R Age ATOT	HLA pts	HLA mm	Graft OK?
1	MayoMN	Penn	07/08/20	A	100.0	12	44	50	4	Yes
2	MayoMN	Monte	09/30/20	O	100.0	6	32	100	0	Yes
3	MayoMN	MassGen	10/21/20	A	100.0	23	43	85	1	Yes
4	Georgetown	USC	04/22/21	AB	100.0	17	52	65	2	Yes
5	Ulowa	MayoAZ	08/26/20	B	99.9	2	54	40	4	Yes
6	Cleveland	UCSF	10/08/20	A	99.9	11	39	75	2	Yes
7	Intermtn	Georgetown	10/29/20	O	99.9	2	38	90	1	Yes
8	Madison	Chicago	11/11/20	A	99.9	37	46	35	4	Yes
9	Hawaii	UCLA	03/10/21	A	99.9	0	56	50	4	Yes
10	MtSinai	Penn	04/15/21	A	99.9	11	30	75	2	Yes
11	MayoMN	Colorado	10/26/20	A	99.8	2	8	90	1	Yes
12	UCLA	Georgetown	10/27/20	A	99.8	5	40	70	2	Yes
13	Legacy	Piedmont	03/18/21	O	99.8	9	29	50	3	Yes
14	Hopkins	Colorado	04/21/21	A	99.7	5	27	65	3	Yes
15	Barnabas	Georgetown	06/16/21	A	99.7	1	57	0	6	Yes
16	Barnabas	MayoAZ	09/02/20	A	99.6	1	65	25	4	Yes
17	HMHN	MassGen	01/28/21	O	99.5	3	63	50	4	Yes
18	ASL	Cornell	04/20/21	B	99.5	1	32	15	5	Yes
19	UCLA	CCFlorida	09/23/20	B	99.4	2	61	65	3	Yes
20	Georgetown	ASL	04/14/21	A	99.4	7	54	75	2	Yes
21	Emory	URMC	03/24/21	B	99.2	4	70	45	3	Yes
22	UCSF	Cornell	04/13/21	O	99.2	2	26	20	4	Yes
23	Yale	Cincinnati	06/09/21	O	99.1	1	50	75	2	Yes
24	USC	Intermtn	06/10/21	O	99.1	7	55	25	5	Yes
25	MayoMN	Georgetown	09/22/20	AB	99.0	2	51	35	4	Yes
26	UCSF	Georgetown	11/05/20	A	99.0	3	72	10	5	Yes



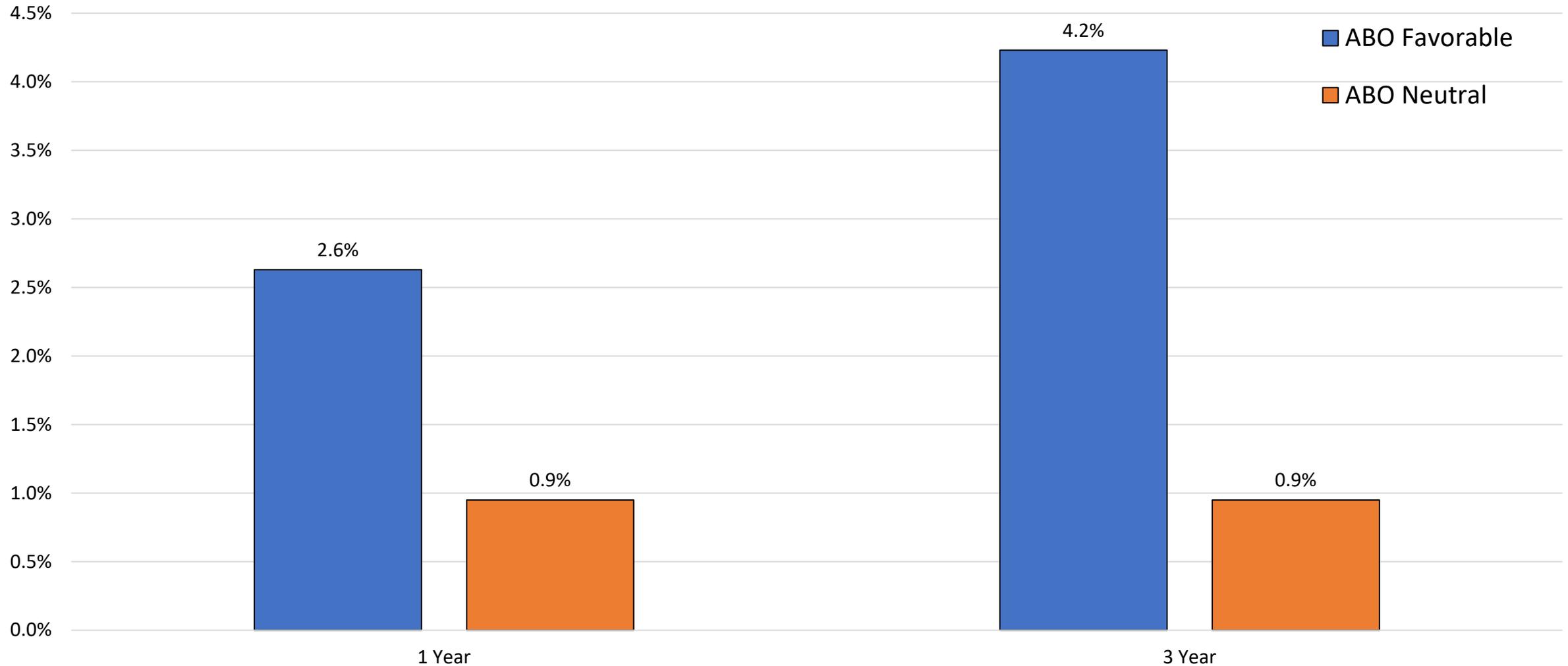
NKR Patients Waiting > 1 year

As of 6/29/21

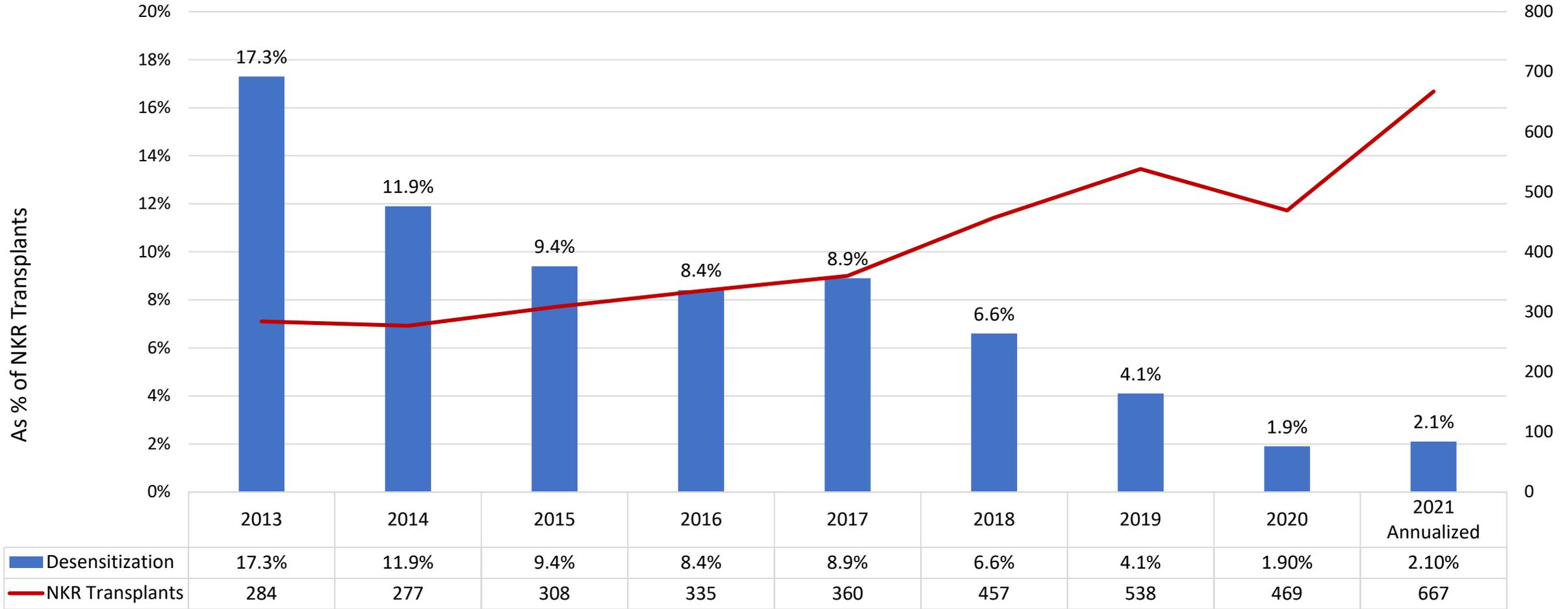
#	Recip Ctr	P ABO	cPRA4	Months Wait	Patient Type
1	SCarolina	AB	100.00	80	Voucher
2	Tampa	B	100.00	66	Paired
3	Cincinnati	O	99.96	57	Paired
4	UCLA	O	100.00	30	Paired
5	UCSD	B	100.00	25	Paired
6	FortWorth	O	99.99	25	Paired
7	Madison	O	98.36	23	Voucher
8	Emory	A	100.00	21	Voucher
9	CCFlorida	O	100.00	21	Voucher
10	Chicago	O	100.00	21	Paired
11	Piedmont	O	99.99	20	Paired
12	Indiana	O	99.96	20	Paired
13	MayoAZ	O	97.04	19	Paired
14	Intermtn	B	99.97	18	Voucher
15	Intermtn	A	100.00	17	Voucher
16	ChristHosp	O	100.00	16	Paired
17	Georgetown	A	99.99	16	Voucher
18	UHCleveland	O	99.70	16	Voucher
19	Rush	O	84.25	15	Paired
20	Cedars	A	100.00	14	Paired
21	FortWorth	O	100.00	14	Paired
22	Hopkins	B	99.93	14	Paired
23	UCSD	O	98.63	13	Paired



Compatible Pairs Death Censored Graft Failure



NKR Desensitization Rates



■ Desensitization — NKR Transplants
www.kidneyregistry.org administrative database; transplants through 06/29/21

Better HLA Matches = Better Outcomes

NKR vs Unrelated LD TXPs

