



NATIONAL KIDNEY REGISTRY®
FACILITATING LIVING DONOR TRANSPLANTS

Quarterly Report

Q4 2023

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Message from the Founder & CEO



The NKR experienced continued growth in 2023, increasing transplants by 22% year-over-year. In 2023, NKR-facilitated transplants accounted for 1,429 transplants, or 23% of all U.S. living donor kidney transplants.

NKR living kidney donor referrals—individuals who complete the online screening, medical history, and labs—more than doubled this year to 5,042. Using a modest conversion rate of 12%, 2023 NKR donor referrals will result in over 600 living donor transplants.

The NKR's Donor Connect program is having a significant impact on living kidney donation. Individuals considering kidney donation who are supported by a living donor mentor throughout the intake process are five times more likely to donate than those who either declined a mentor or accepted and never connected with their mentor.

Last year, 780 patients on dialysis were transplanted in NKR swaps and were able to discontinue dialysis. In addition to improved health and quality of life for the patient, dialysis costs incurred by Medicare for these patients were eliminated. In 2023, NKR-facilitated transplants saved Medicare over \$157,000,000 in one year of dialysis costs.

Sincerely,

A handwritten signature in blue ink, appearing to read 'G. Hil', with a stylized flourish extending from the end.

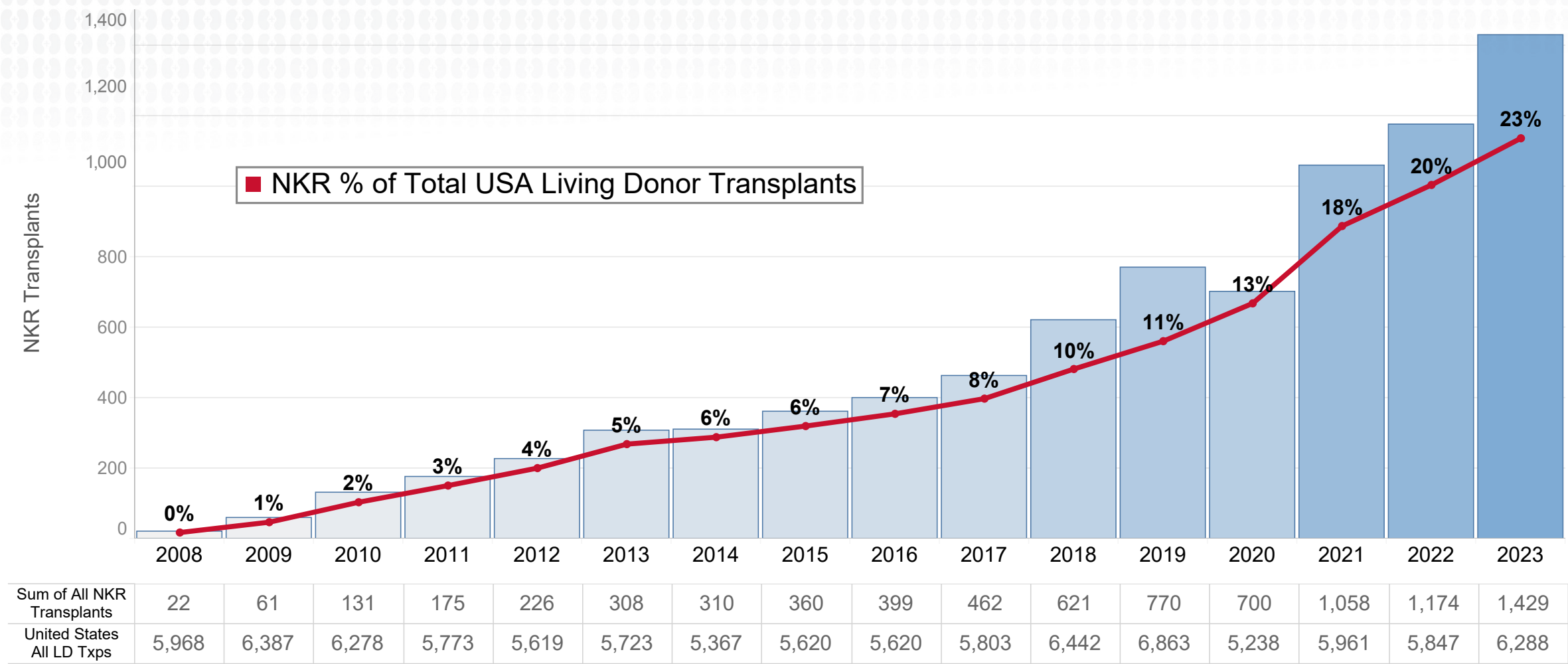
Gareth Hil

Founder & CEO

National Kidney Registry

Living Kidney Donor

NKR Facilitated Transplant Growth



*NKR facilitated transplants (TXPs) include voucher, paired, remote directs, KFL remote directs, NKR internal direct, microsite internal direct, and WLP transplants.

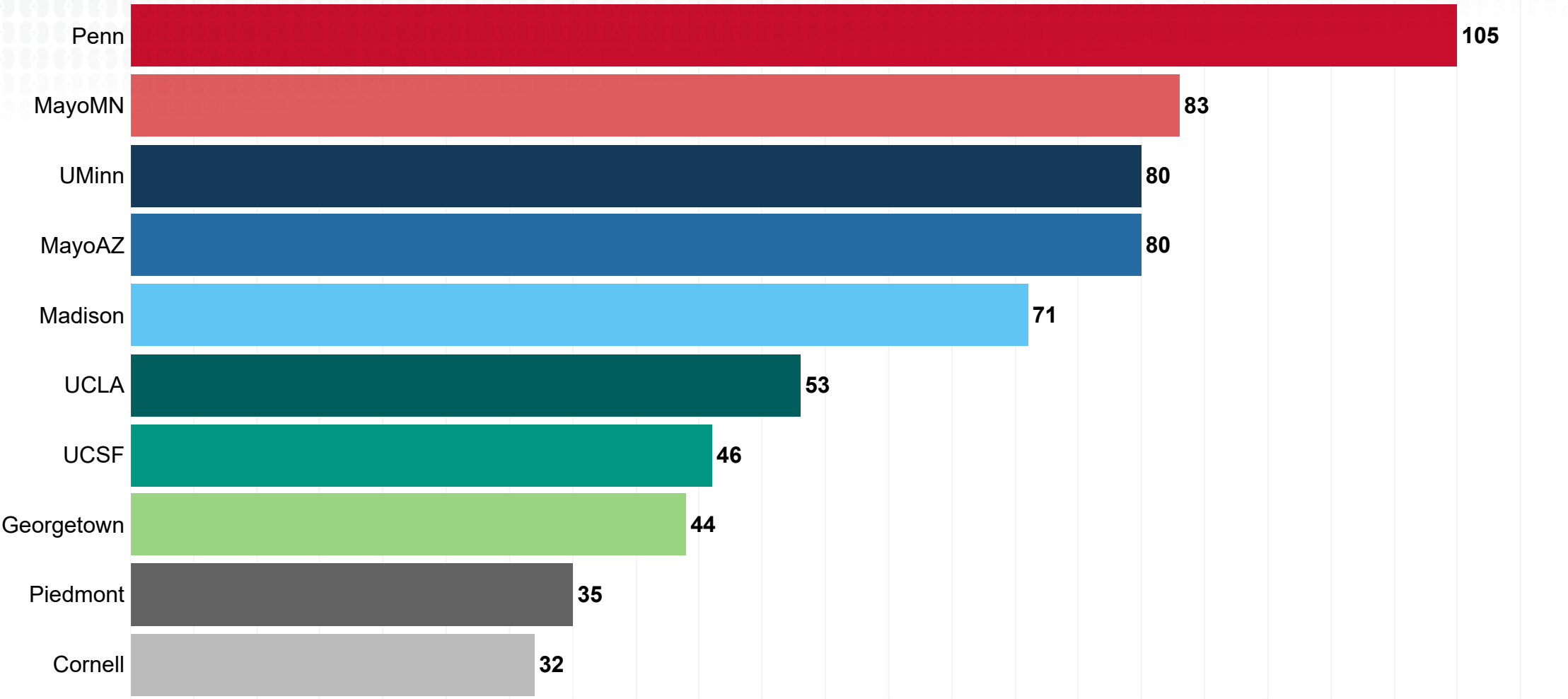
Total transplants subject to change due to delayed reporting. NKR data captured 10/2/2023.

**<https://optn.transplant.hrsa.gov/data/> U.S. Living Donor (LD) Transplants Performed: Data for OPTN 1/1/2008 – 12/31/2023.



Top 10 Centers: NKR Facilitated Transplants

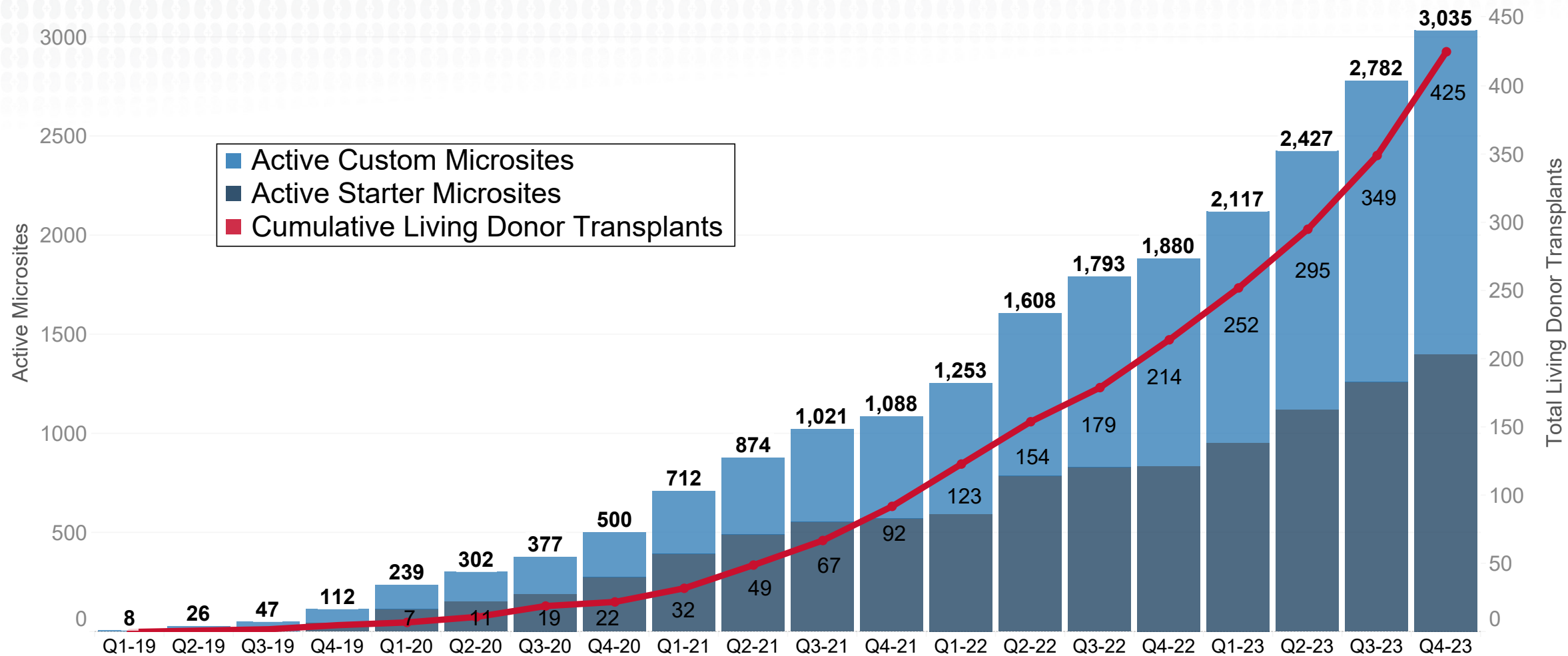
Last 12 Months



As of 12/31/2023.
NKR facilitated transplants include: voucher holders, paired recipients, waitlist recipients, remote directs, KFL remote directs, NKR internal directs, microsite internal directs.



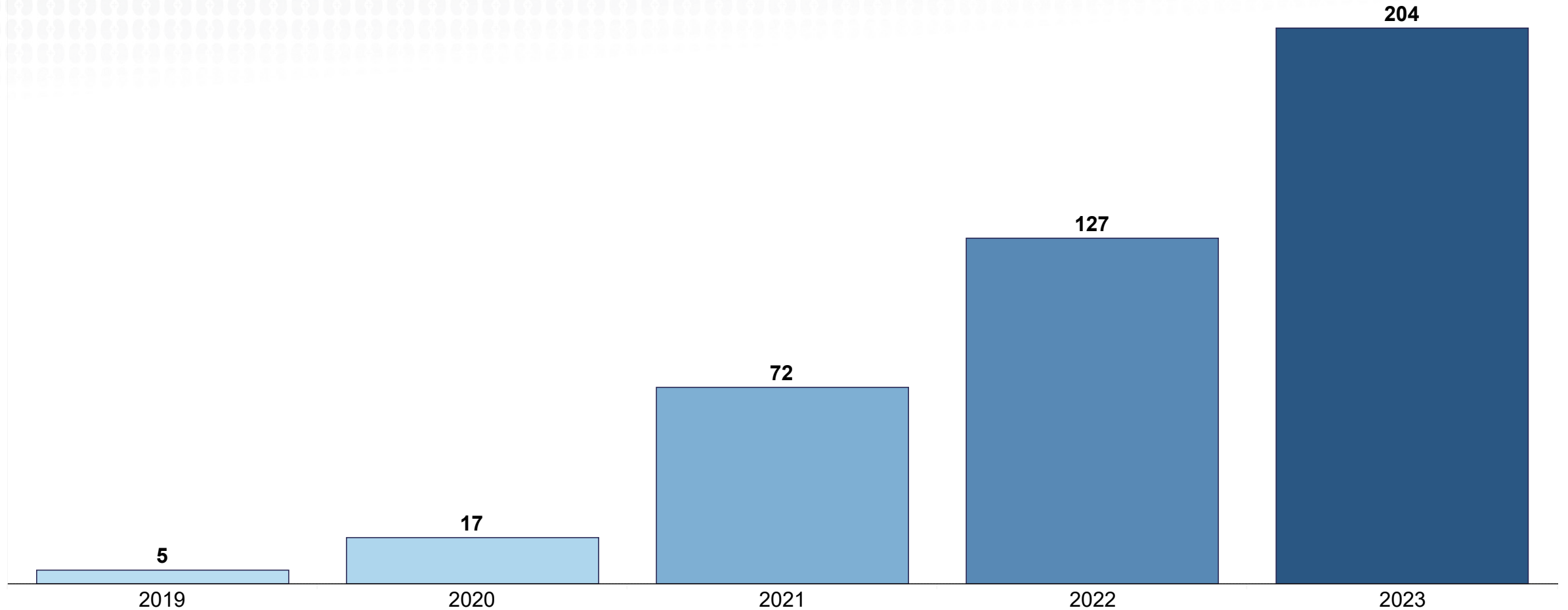
Microsites: Quarterly Growth



As of 12/31/2023.
Final cumulative living donor transplants are subject to change due to delays in transplant center reporting.



Microsites: Patients who Received a Living Donor Transplant

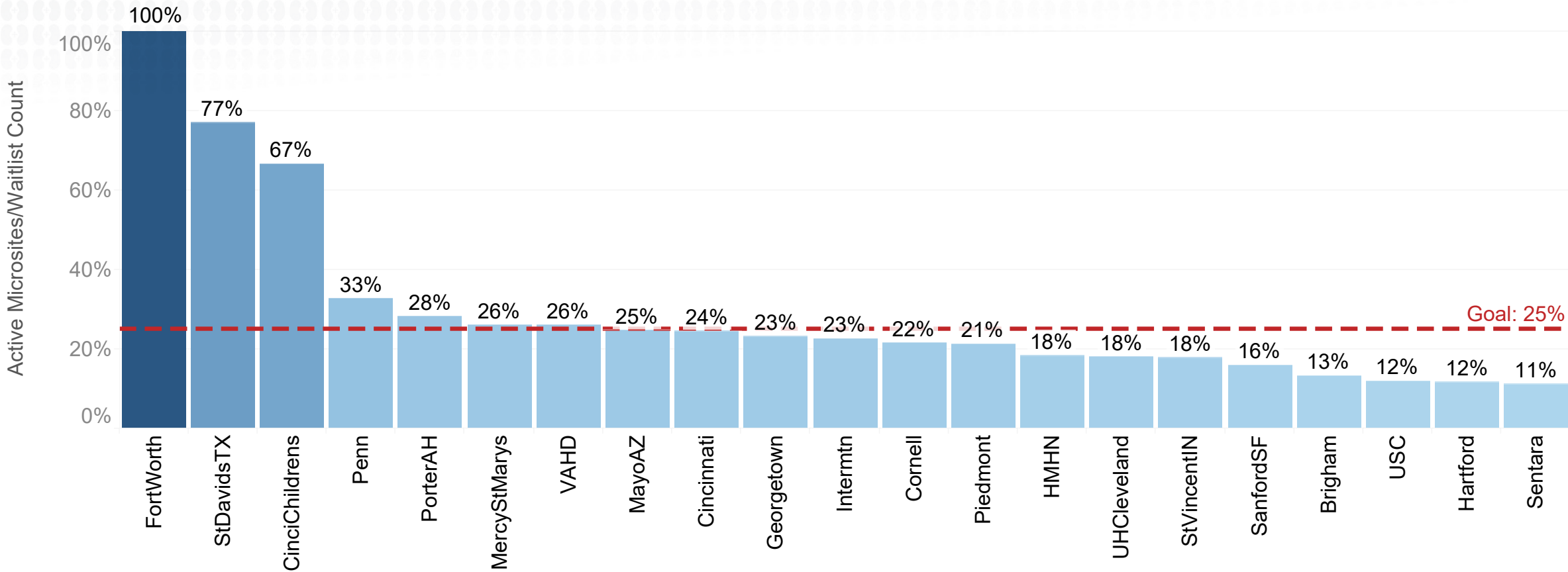


As of 12/31/2023.
Includes liver & kidney. Non-cumulative total for each year. 2023 data subject to change due to delays in transplant center reporting.



Microsite Enrollment Success

Percentage of Waitlist Patients with Microsites

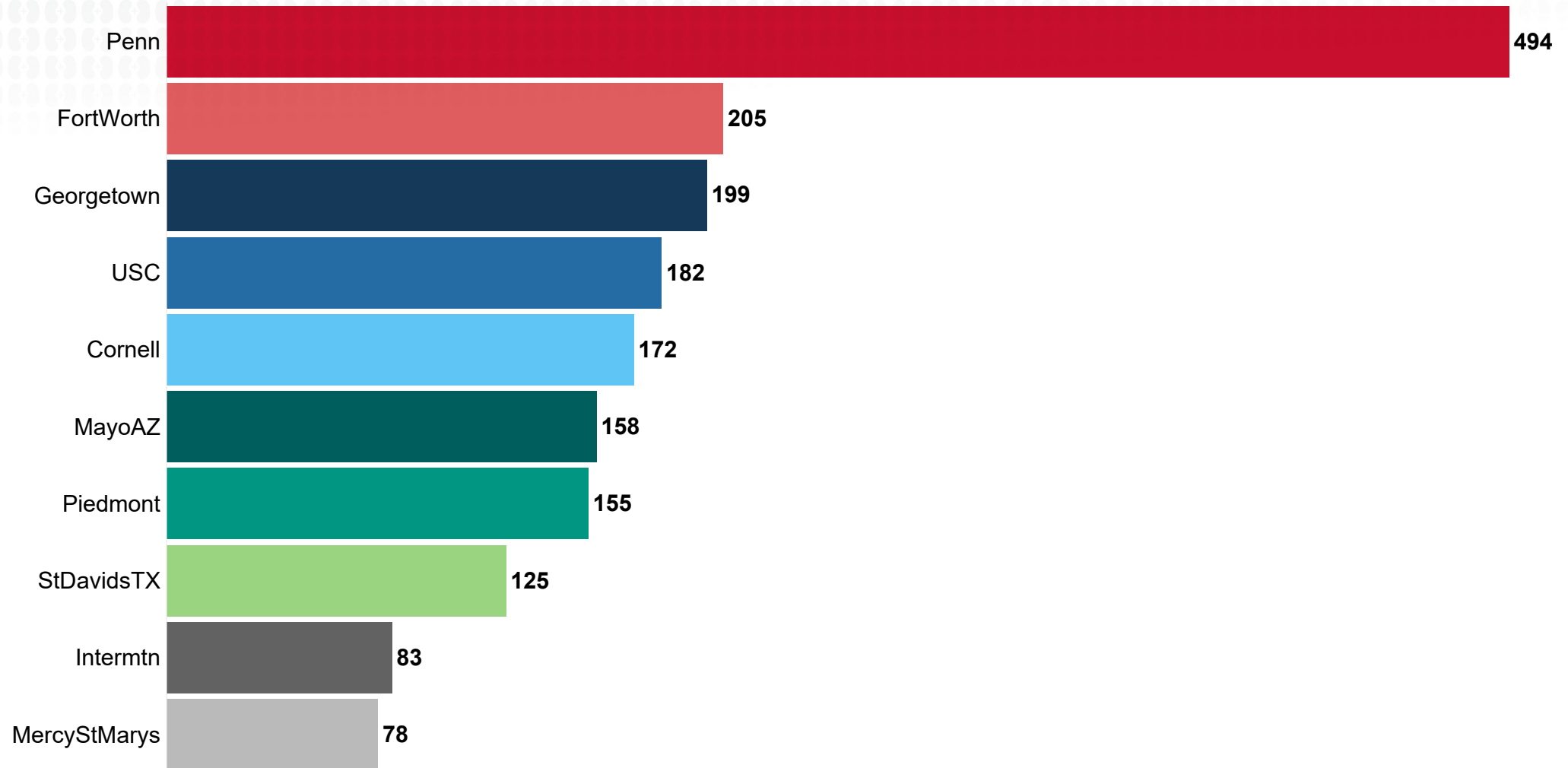


Active MS	205	125	12	494	71	78	36	158	72	199	83	172	155	69	66	58	12	67	182	43	54
Waitlist	125	162	18	1,505	252	298	138	635	295	855	366	793	730	375	365	325	75	507	1,523	365	480

NKR microsite data for 12/31/2023 compared to 11/1/2023 OPTN waitlist numbers. **Formula:** Active Microsites / Total Waitlist. Minimum 10% Success Rate.



Top 10 Centers: Active Microsites

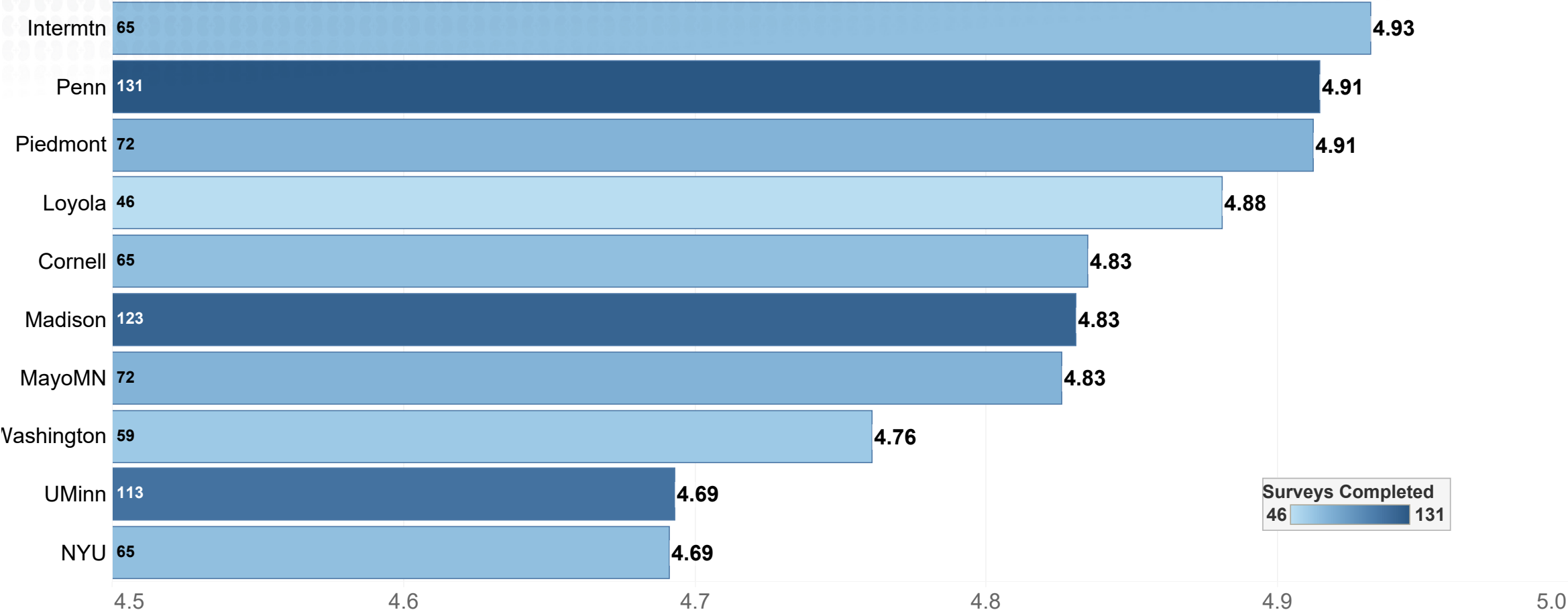


Total active kidney microsites on 12/31/2023.



Top 10 Centers: Donor Satisfaction Surveys

Completed Within Last 6 Months

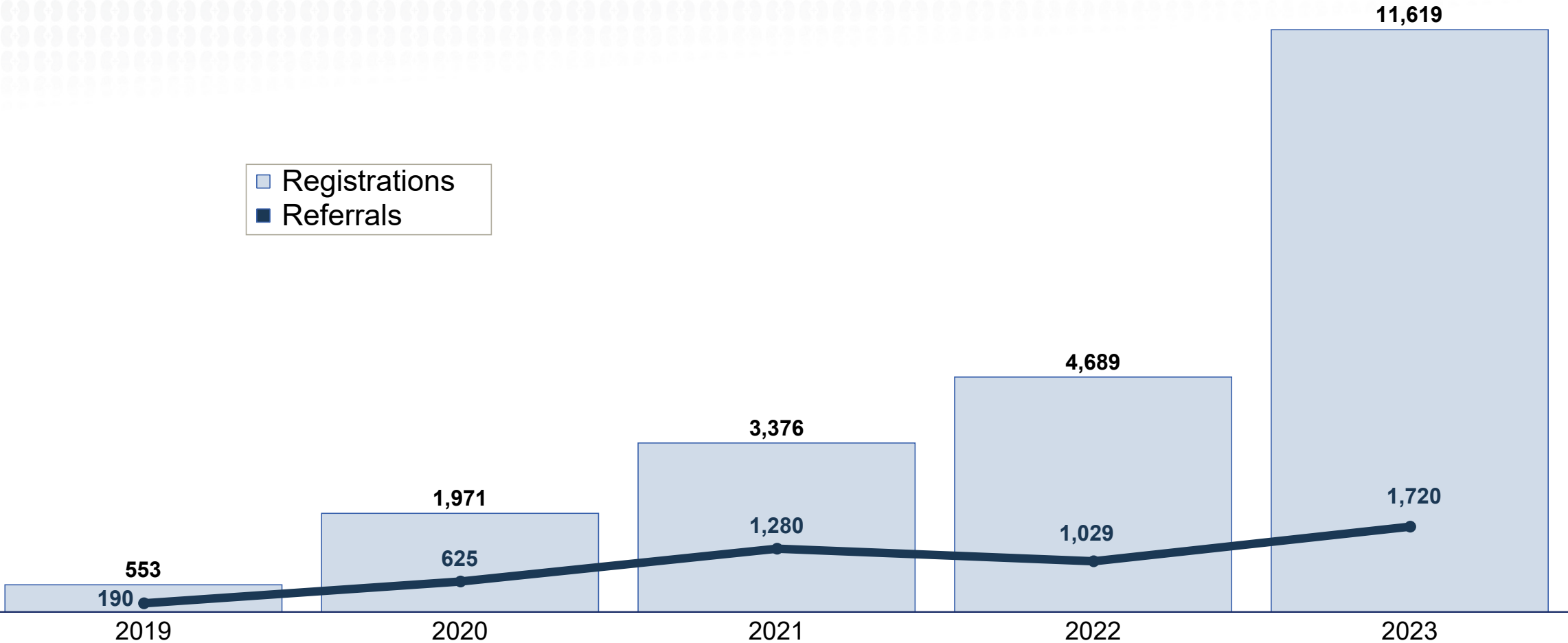


As of 12/31/2023.
PL DASH centers only. A minimum of 40 completed surveys to qualify.



Microsite Donor Registrations & Referrals

Growth in Microsite Activity



As of 12/31/2023. Kidney only.
Registration: A donor candidate who completes the first form to start the registration process (Many 2023 registrants are still in the process).
Referral: A donor candidate who completed all stages of the registration process (Initial labs have been required to complete microsite donor registration process since October 2022).

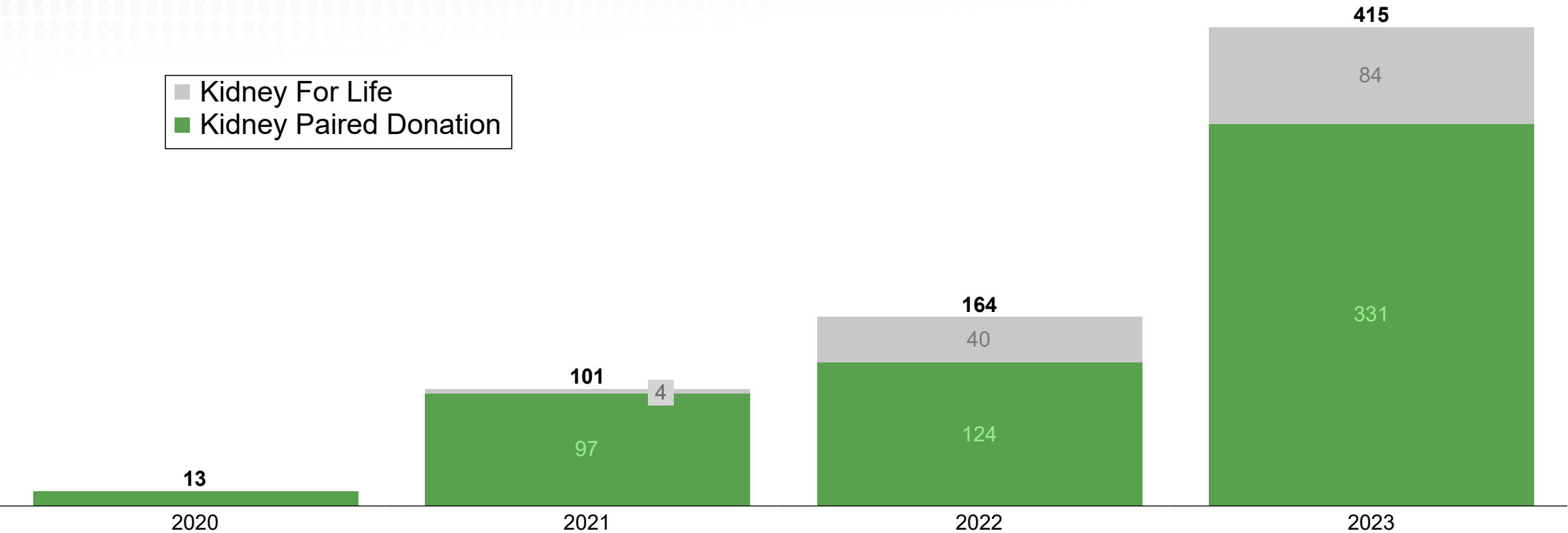


Map of the United States showing COVID-19 cases by state and city. The map uses red circles with white numbers to indicate case counts. A legend in the bottom right corner explains the color coding: red for 1-9 cases, orange for 10-99 cases, yellow for 100-999 cases, and green for 1000+ cases. The map shows a high concentration of cases in the Northeast, particularly in New York, New Jersey, and Pennsylvania, as well as in the Midwest and South. A small inset map shows the Hawaiian Islands.



Low Eplet Mismatch Transplants

Compatible and Incompatible Pairs by Year

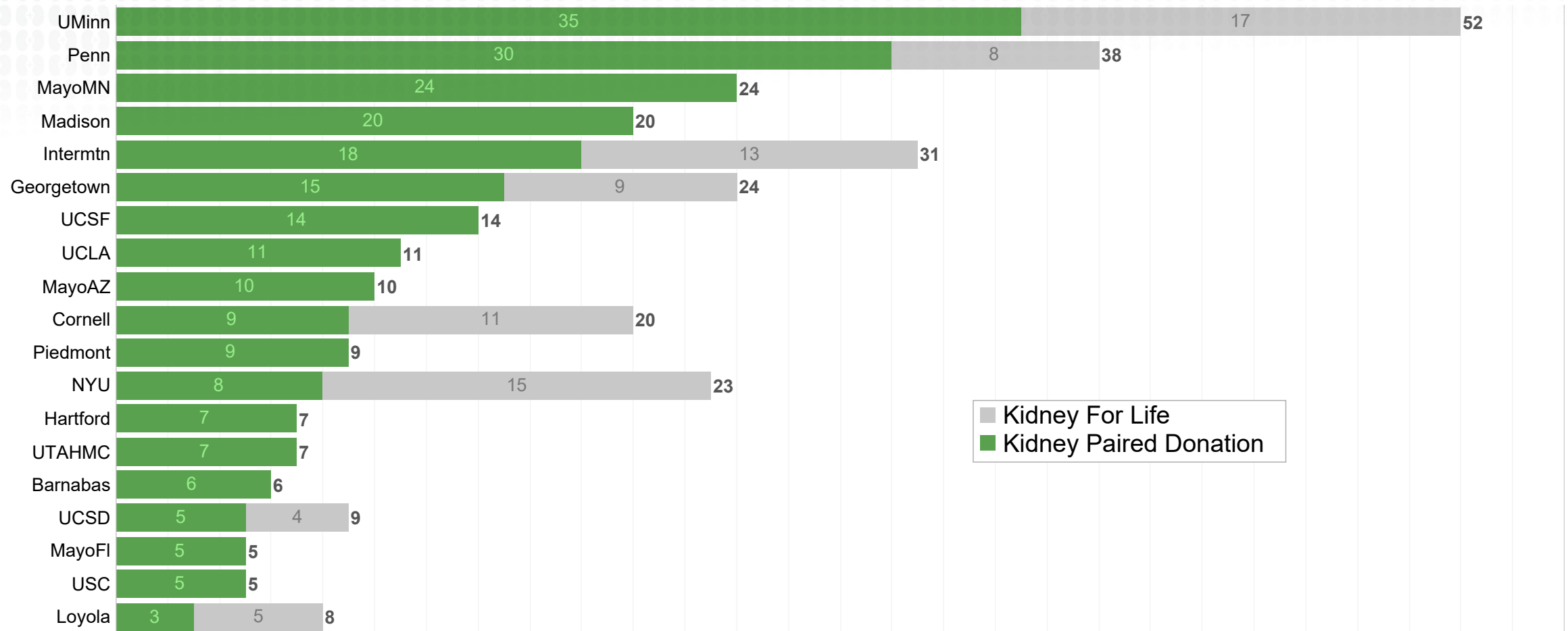


As of 12/31/2023. Excludes waitlist.
The Kidney for Life initiative of the National Kidney Registry provides an opportunity for a better donor match.
Eplet mismatch categories are based on the definition provided by Wiebe C, Kosmoliaptsis V, Pochinco D, et al. HLA-DR/DQ molecular mismatch: a prognostic biomarker for primary alloimmunity. Am J Transplant. 2019;19:1708–1719. <https://doi.org/10.1111/ajt.15177>



Top Centers: 2023 Low Eplet Mismatch Transplants

Compatible and Incompatible Pairs



As of 12/31/2023. Excludes waitlist. Minimum 5 transplants.

The Kidney for Life initiative of the National Kidney Registry provides an opportunity for a better donor match.

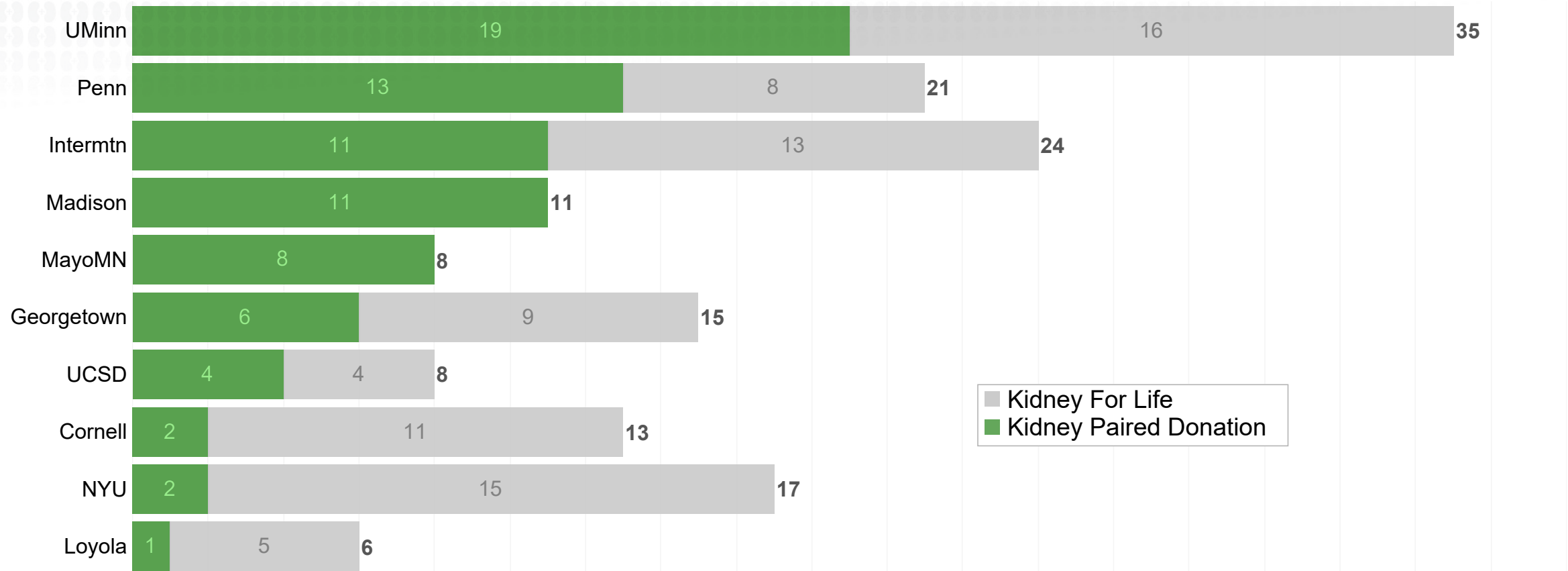
Eplet mismatch categories are based on the definition provided by Wiebe C, Kosmoliaptsis V, Pochinco D, et al. HLA-DR/DQ molecular mismatch: a prognostic biomarker for primary alloimmunity.

Am J Transplant. 2019;19:1708–1719. <https://doi.org/10.1111/ajt.15177>



Top Centers: 2023 Low Eplet Mismatch Transplants

Compatible Pairs



As of 12/31/2023. Excludes waitlist. Minimum 5 transplants.

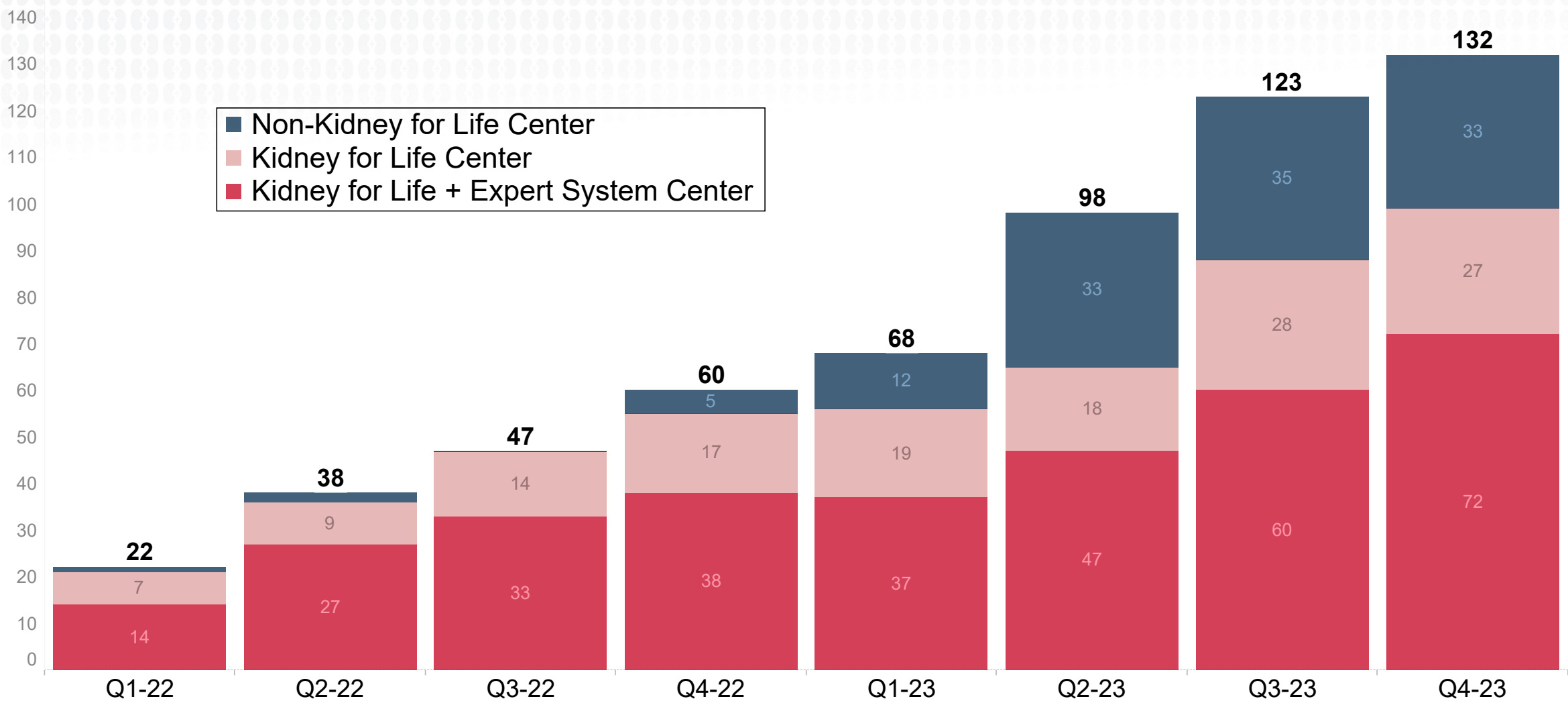
The Kidney for Life initiative of the National Kidney Registry provides an opportunity for a better donor match.

Eplet mismatch categories are based on the definition provided by Wiebe C, Kosmoliaptsis V, Pochinco D, et al. HLA-DR/DQ molecular mismatch: a prognostic biomarker for primary alloimmunity.

Am J Transplant. 2019;19:1708–1719. <https://doi.org/10.1111/ajt.15177>



Low Eplet Mismatch Transplants

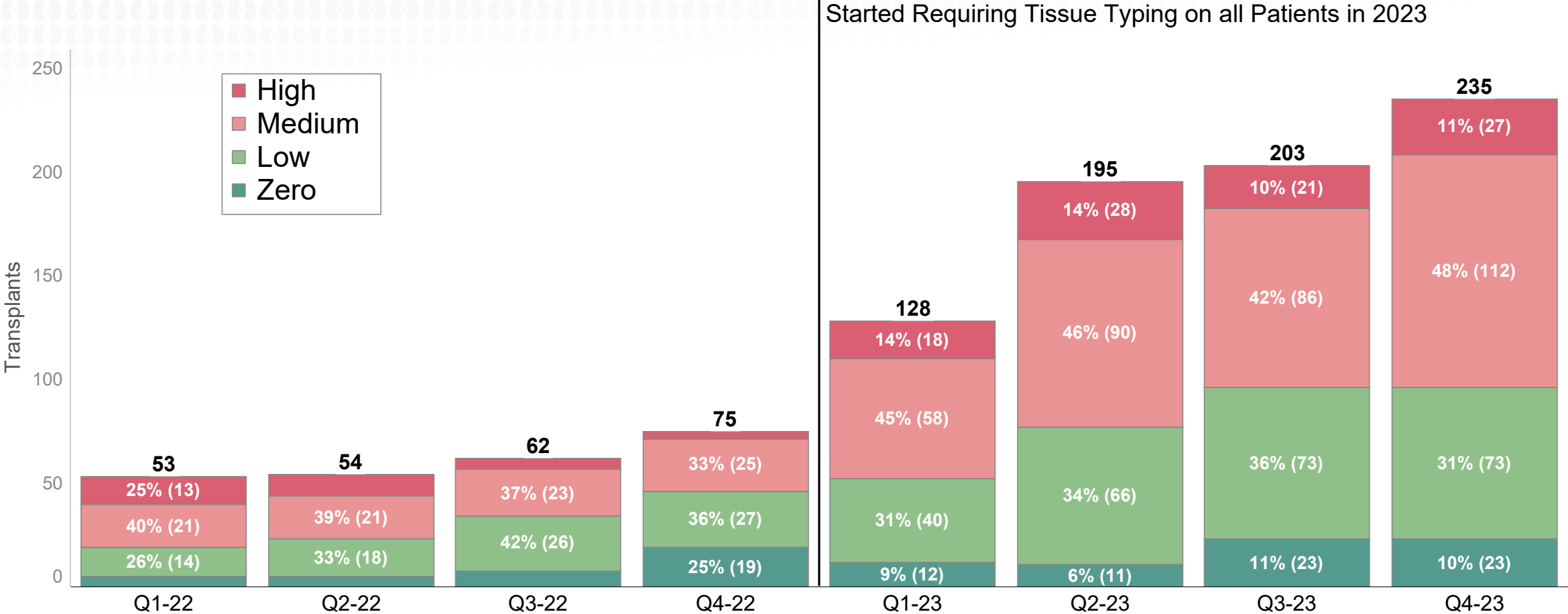


As of 12/31/2023. Low eplet mismatch transplants include Kidney for Life internal direct.
Kidney for Life is an NKR initiative to provide opportunities for better donor matches.



Eplet Mismatch Transplants by Category

Voucher & Paired Recipient Types

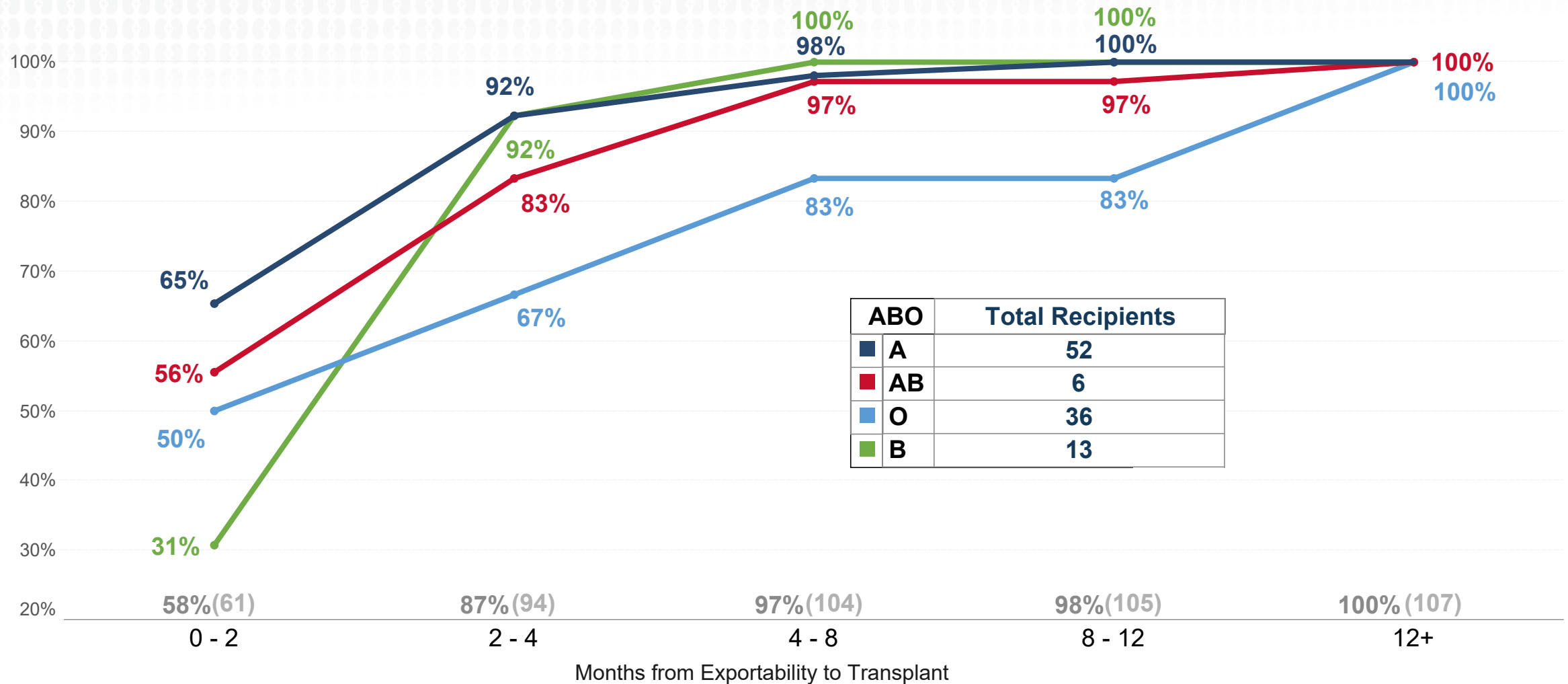


As of 12/31/2023
Eplet mismatch categories are based on the definition provided by Wiebe C, Kosmoliaptsis V, Pochinco D, et al. HLA-DR/DQ molecular mismatch: a prognostic biomarker for primary alloimmunity. Am J Transplant. 2019;19:1708–1719. <https://doi.org/10.1111/ajt.15177>



Actual Wait Times to Transplant

Compatible Pairs who Received a Low Eplet Mismatch Transplant

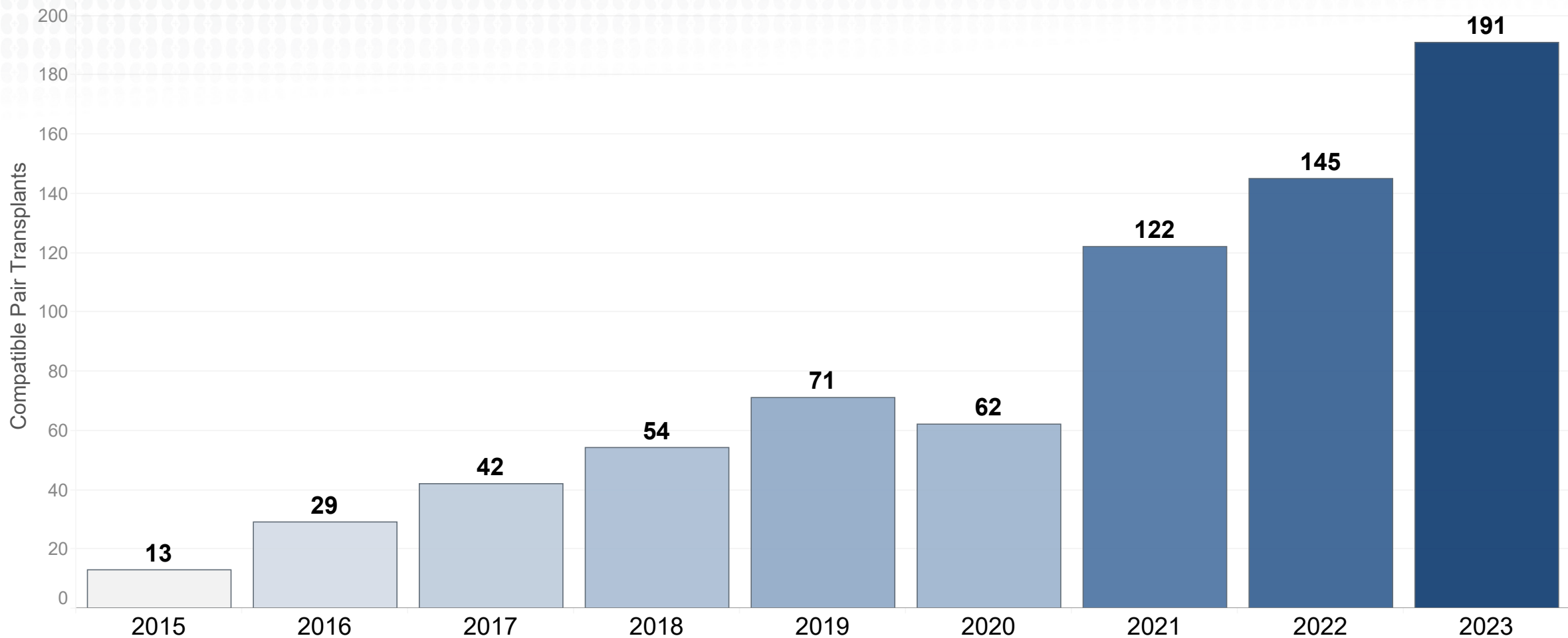


Last 12 months to date — as of 12/31/2023. cPRA ≤ 99



Compatible Pair Transplants

The Kidney for Life Initiative Leads to More Compatible Pairs & Shorter Wait Times

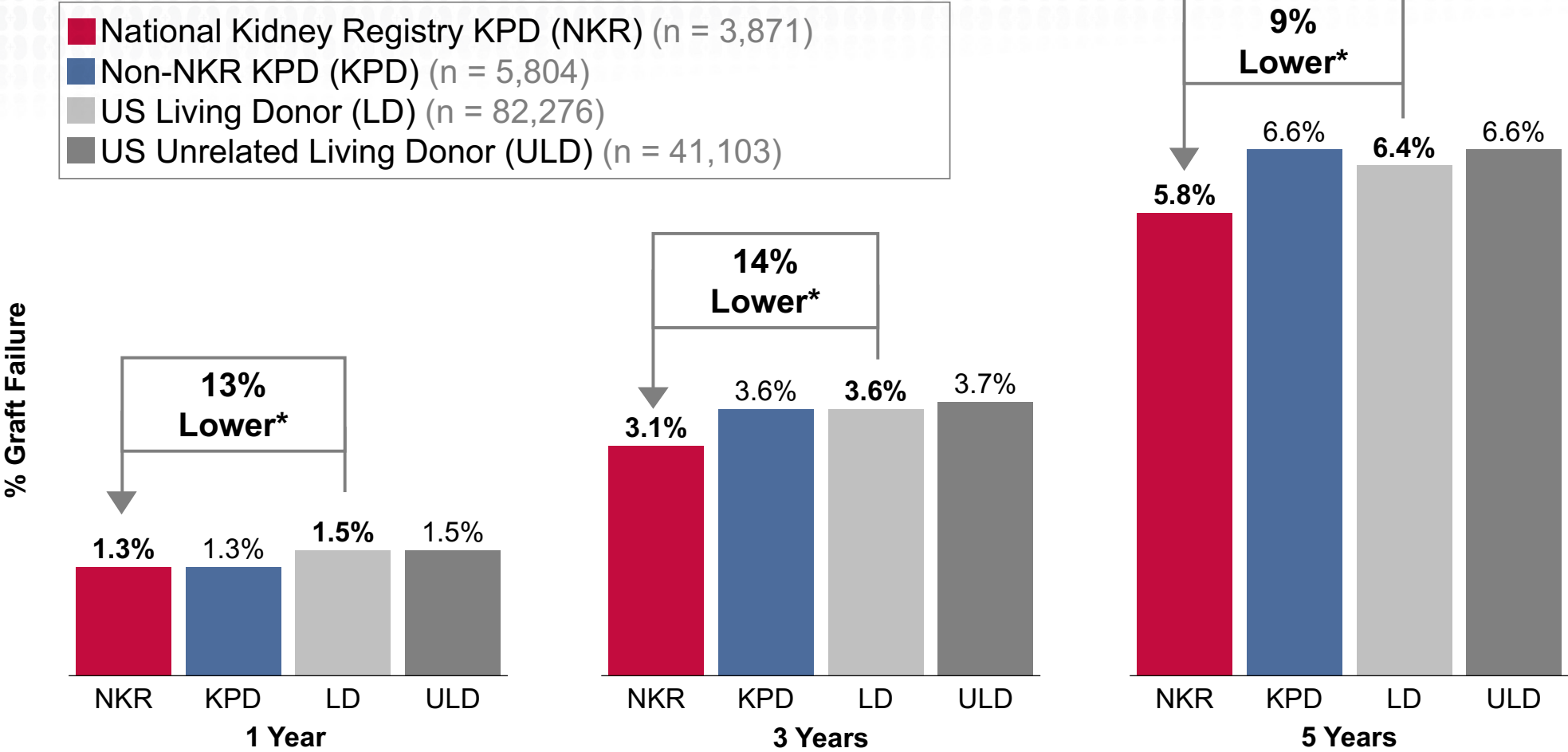


As of 12/31/2023. Paired recipients across the network.
A compatible pair is defined as a donor and recipient who are biologically compatible via blood type and antibody compatibility.



Death Censored Graft Failure Comparisons

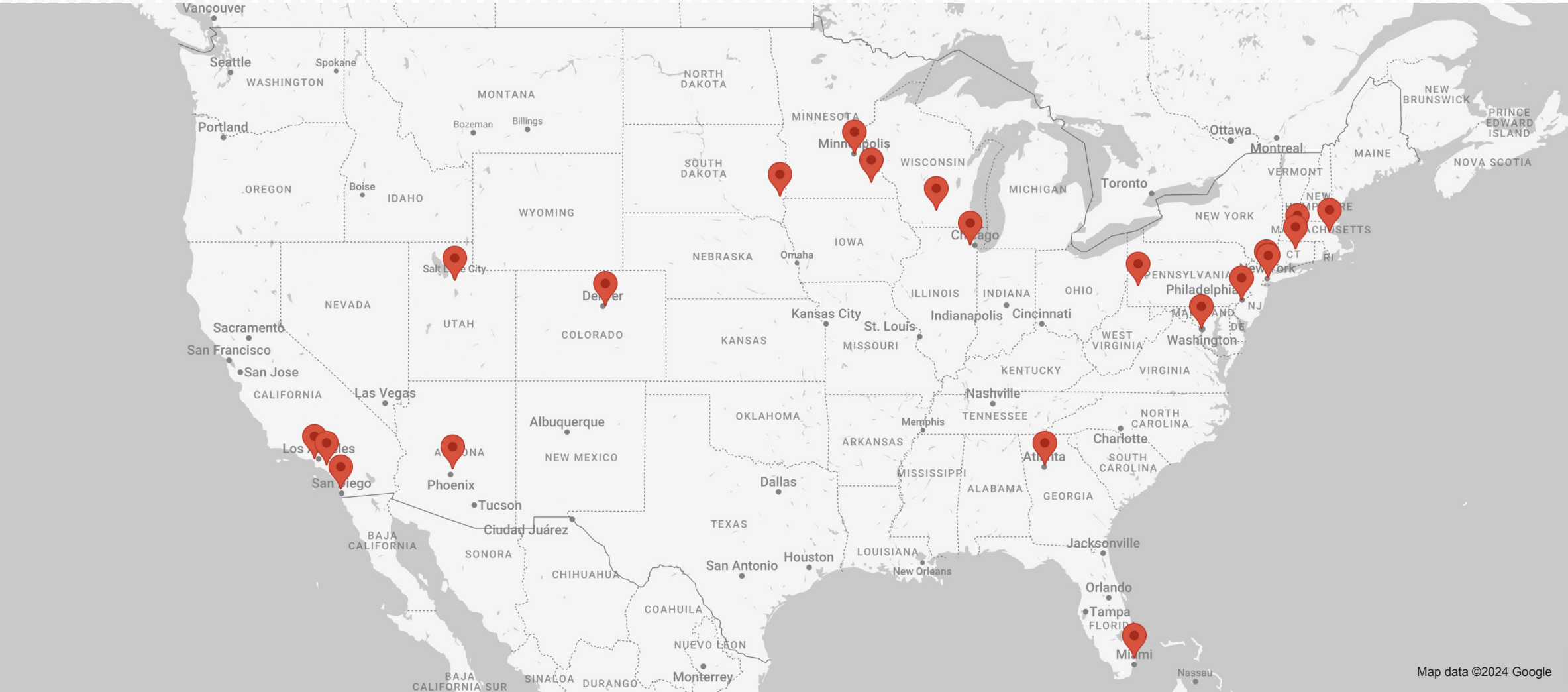
Latest Data Shows that NKR Outcomes Continue to Improve



***Statistically Significant**
Provided courtesy of NYU Grossman School of Medicine, Department of Surgery *Not including waitlist patients; Kaplan-Meier GS Rates for Transplants Performed: 02/2008-5/2023 with follow-up through 6/30/2023. <https://www.str.org/SRTR> data as of August 2023



Kidney for Life Centers

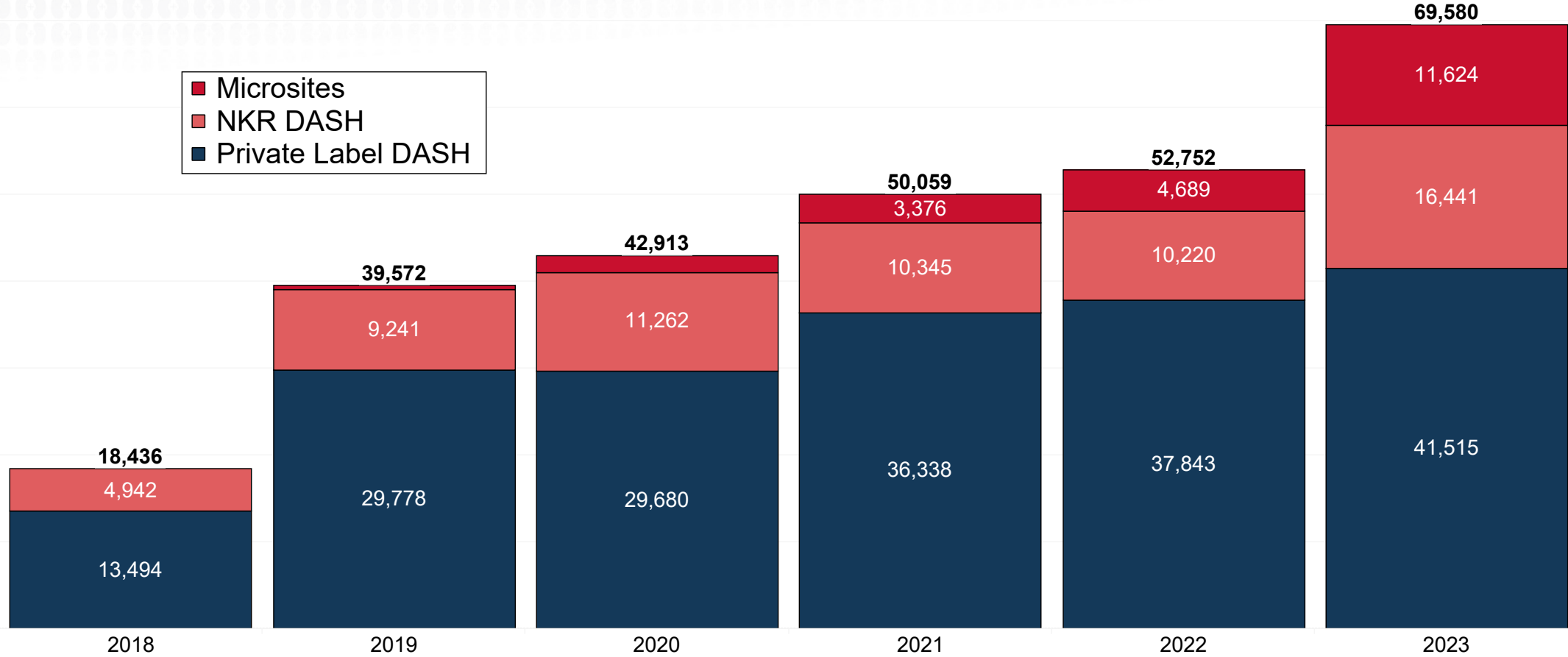


As of 2/9/2024.
To see the latest Kidney for Life participating centers [click here](#).



Living Kidney Donor Registrations

Across All DASH Intake Platforms

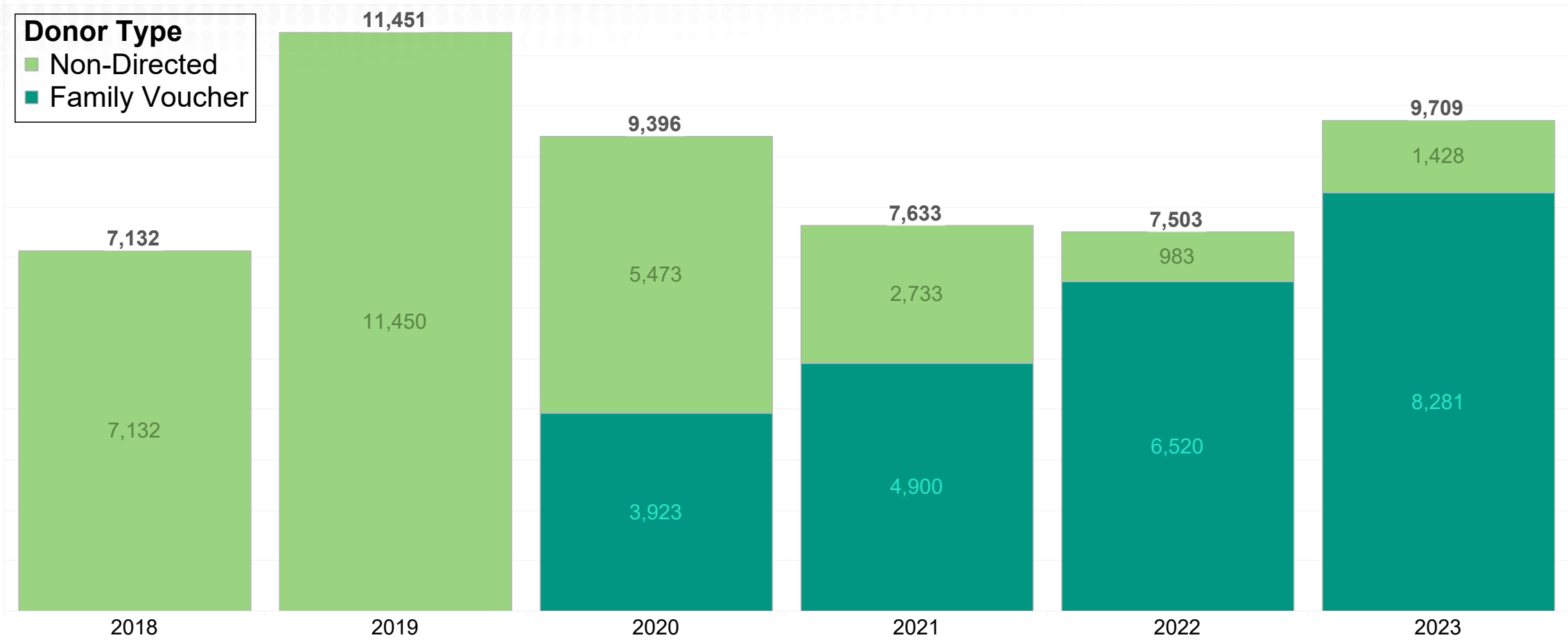


As of 12/31/2023.



Good Samaritan Kidney Donor Candidate Registrations

Across All DASH Intake Platforms

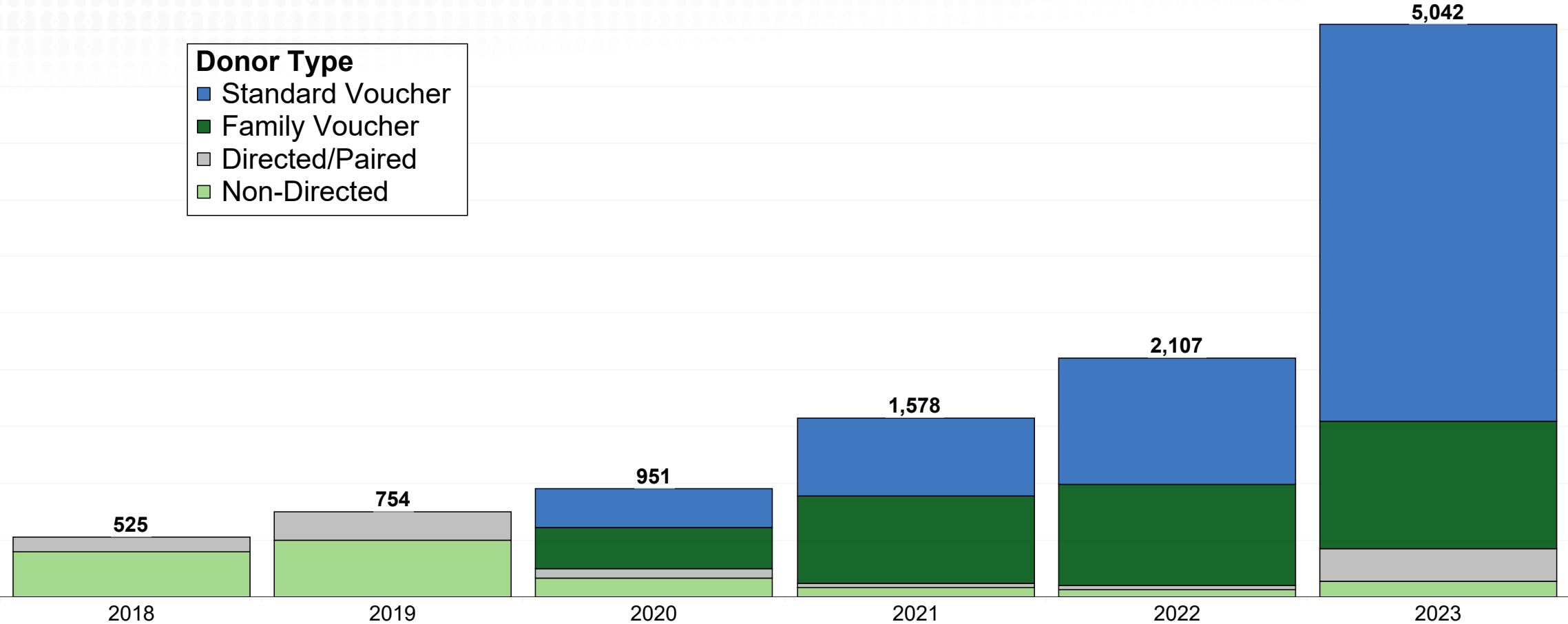


As of 12/31/2023.



NKR Living Kidney Donor Referrals

Completed Online Screening, Medical History, and Labs

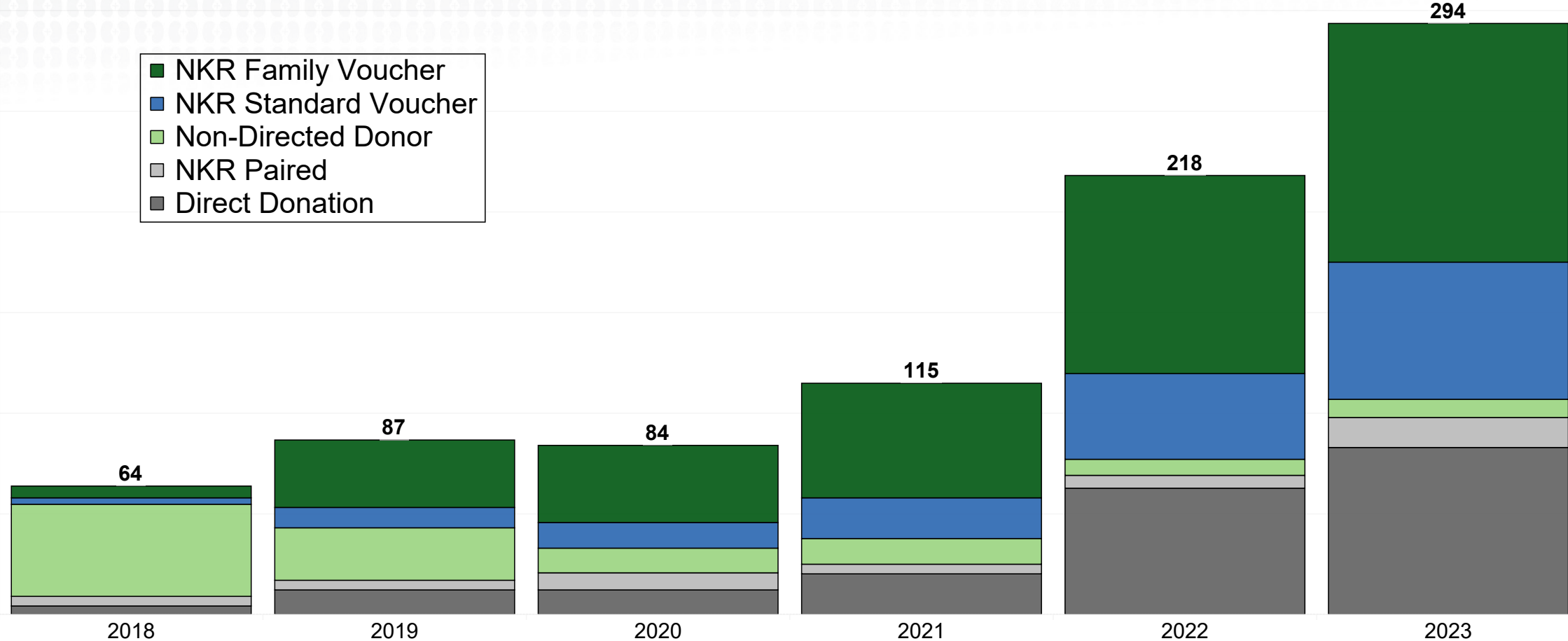


As of 12/31/2023.
Includes living kidney donor registrants from all NKR websites.



NKR Living Kidney Donations

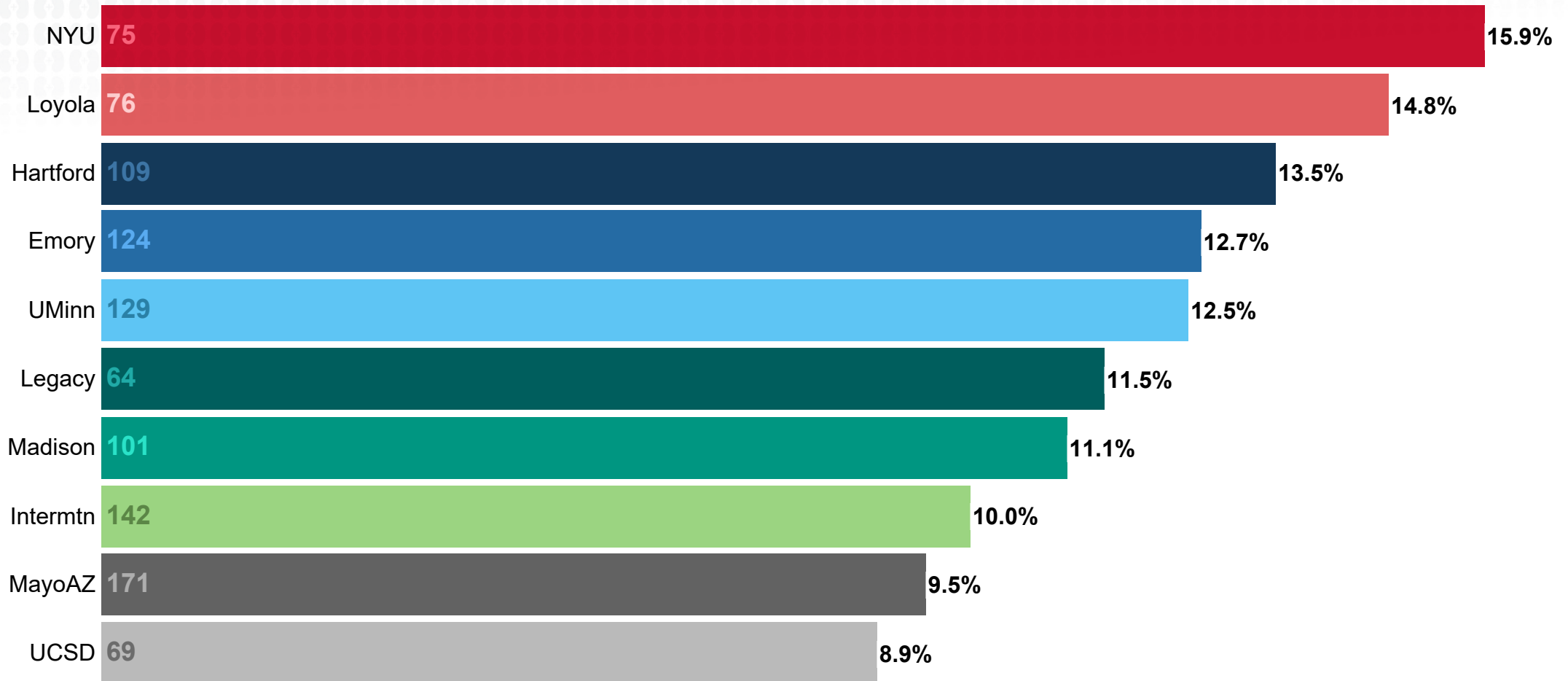
Resulting from NKR Donor Referrals



As of 12/31/2023.



Top 10 DCN Centers: 2023 Referral Conversion Rates



As of 12/31/2023.

Excludes centers with less than 20 referrals in 2023. Total 2023 Referrals listed in the bar.

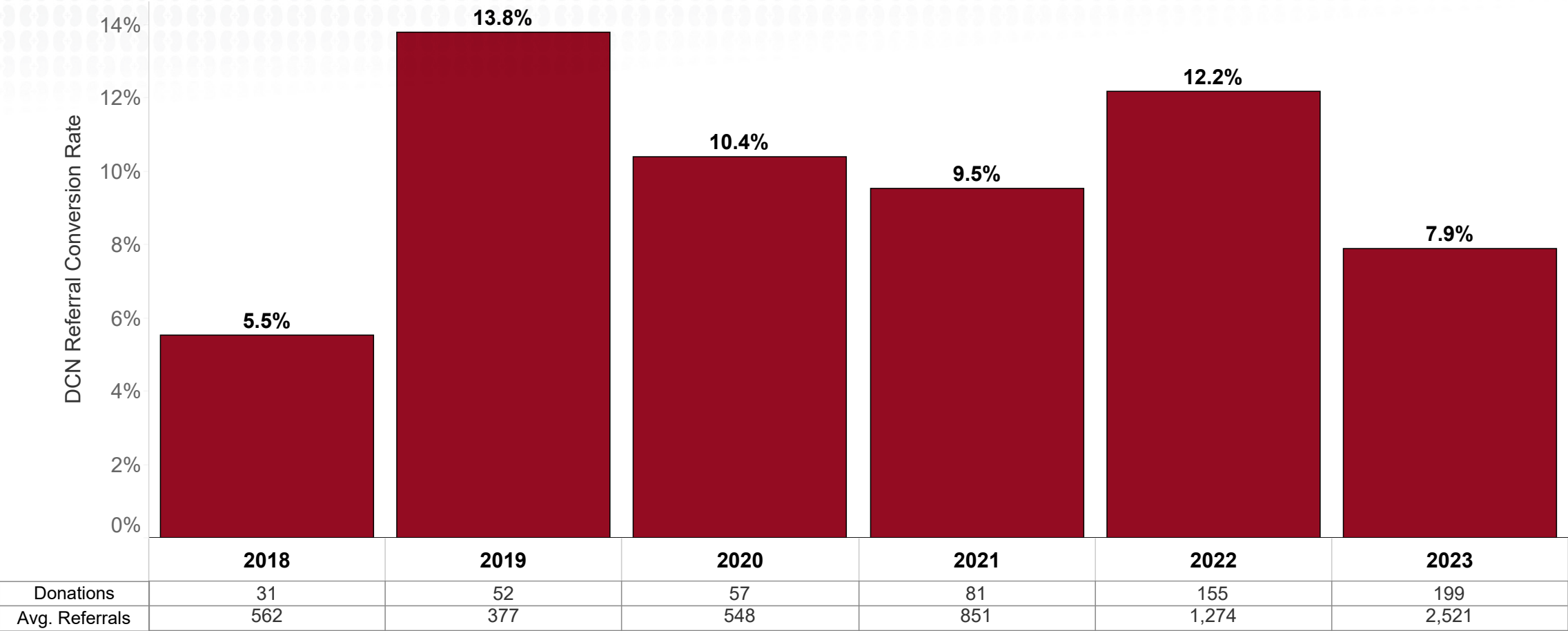
Formula: Donations / Average Referrals

Average Referrals: (Annualized Current Year Referrals + Prior Year Referrals) /2



Donor Care Network: Donor Referral Conversion Rate

Donations / Average Referrals

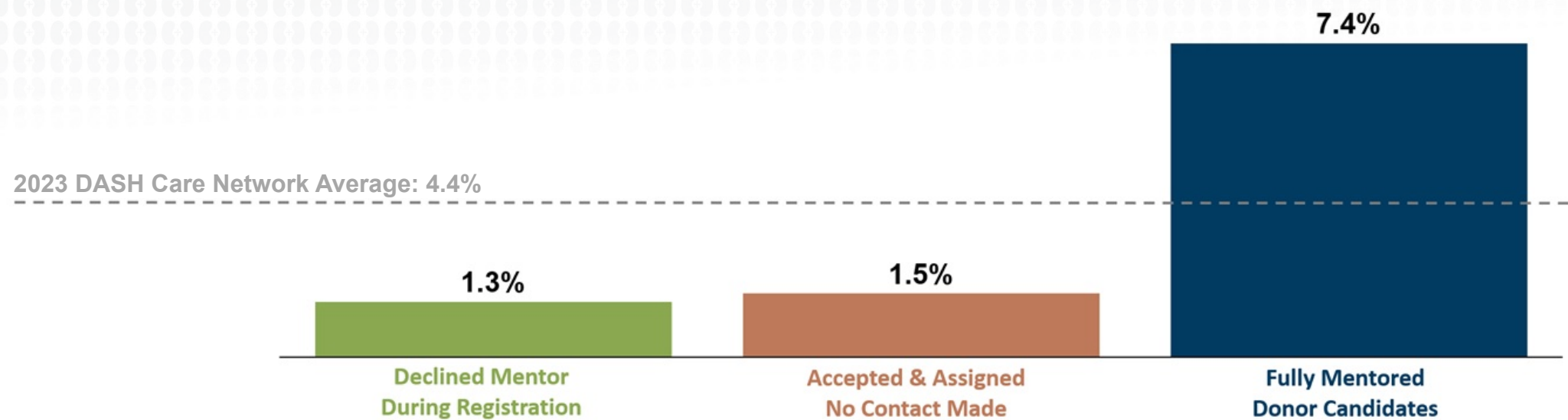


As of 12/31/2023.
Average Referrals: (Annualized Current Year Referrals + Prior Year Referrals) /2
Donor Care Network Center of Excellence (DCN). An elite group of transplant centers offering the highest level care and support to living kidney donors.



Donor Mentors Result in Higher Conversion Rates

2023 DASH Donations / Average Registrations

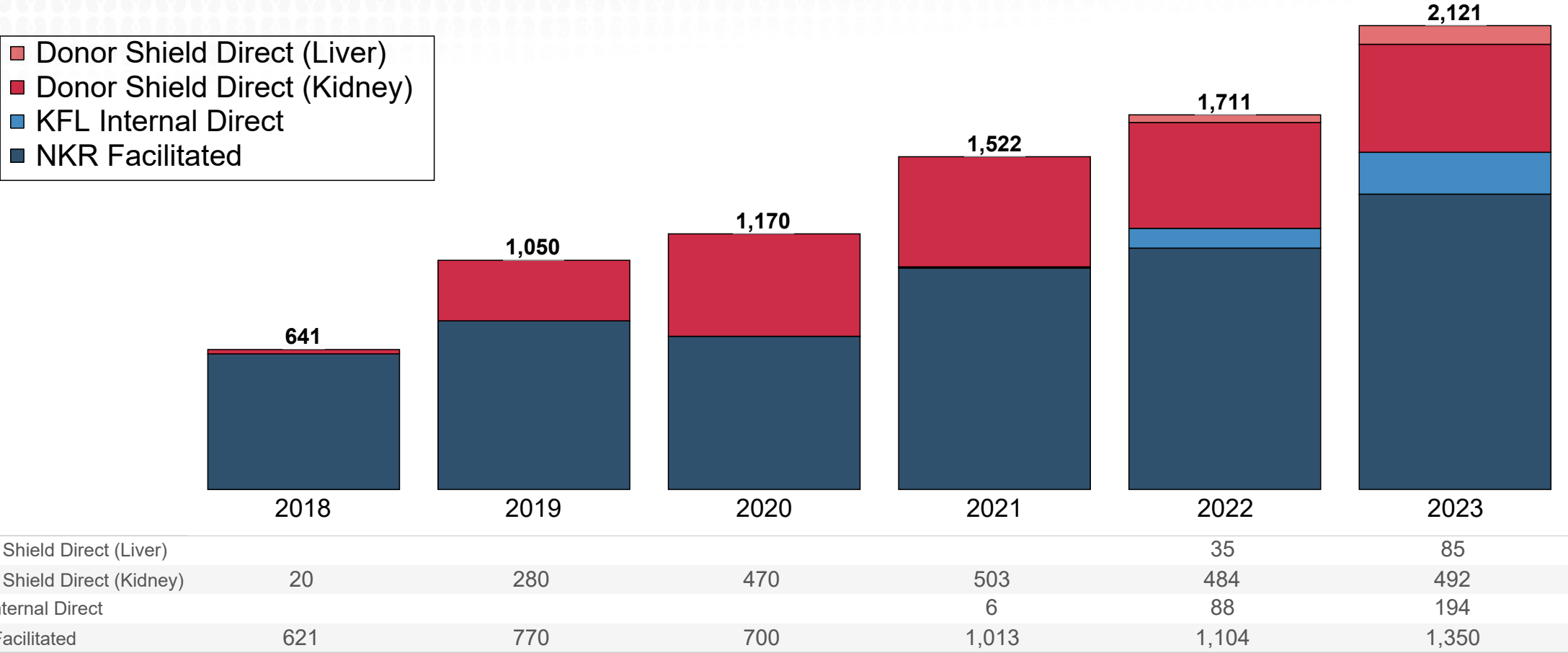


2023 Donations	182	147	715
2023 Registrations	18,065	11,077	12,536
2022 Registrations	10,677	7,957	6,663
Average Registrations	14,371	9,517	9,598
Conversion Rate	1.3%	1.5%	7.4%

As of 12/31/2023.
Data for all DASH registrants (NKR & private label) who were offered a mentor during registration.



Donor Shield: Living Donors Supported and Protected

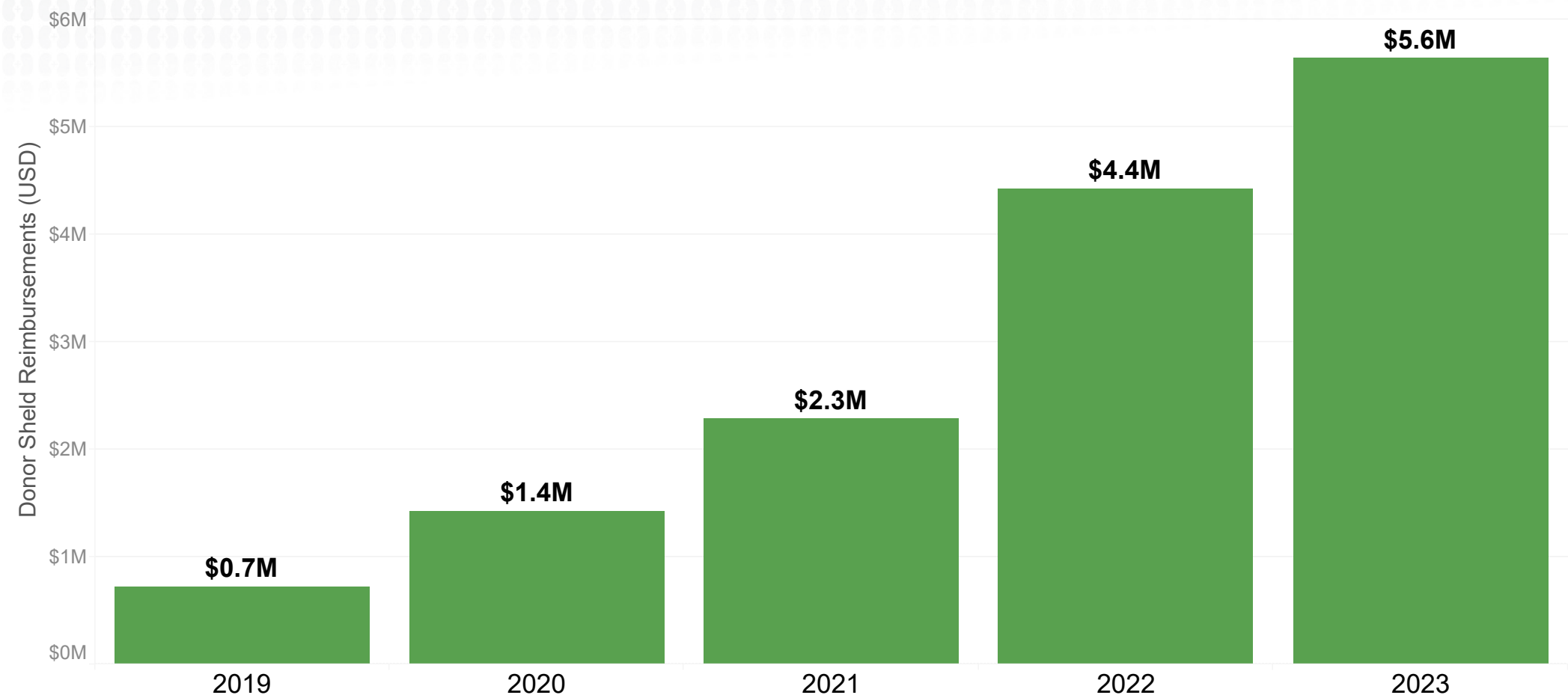


As of 12/31/2023
Donor Shield offered for liver starting 2022. Living donor prioritization excluded for Donor Shield direct kidney and liver cases.



Donor Shield: Donor Reimbursements Paid

Eliminating Donation Disincentives

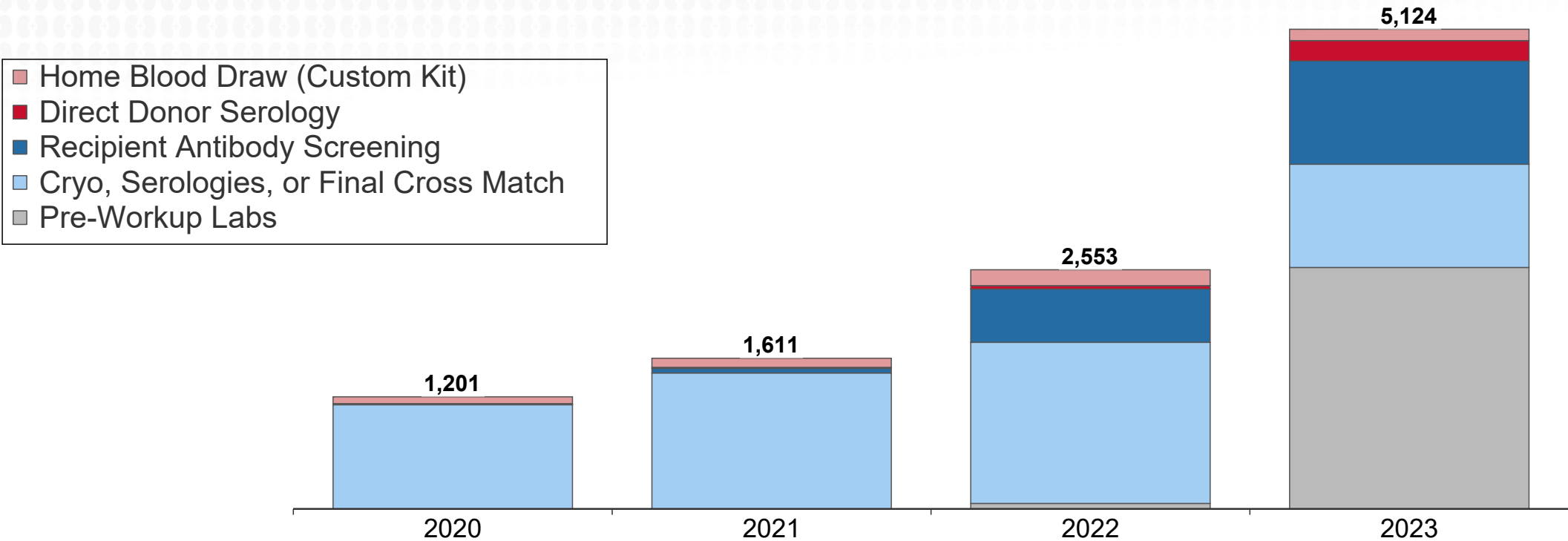


As of 12/31/2023.
Primary reimbursement costs related to lost wages, travel and lodging.



Donor Shield: Removing Barriers to Donation

Home Blood Draw Requests

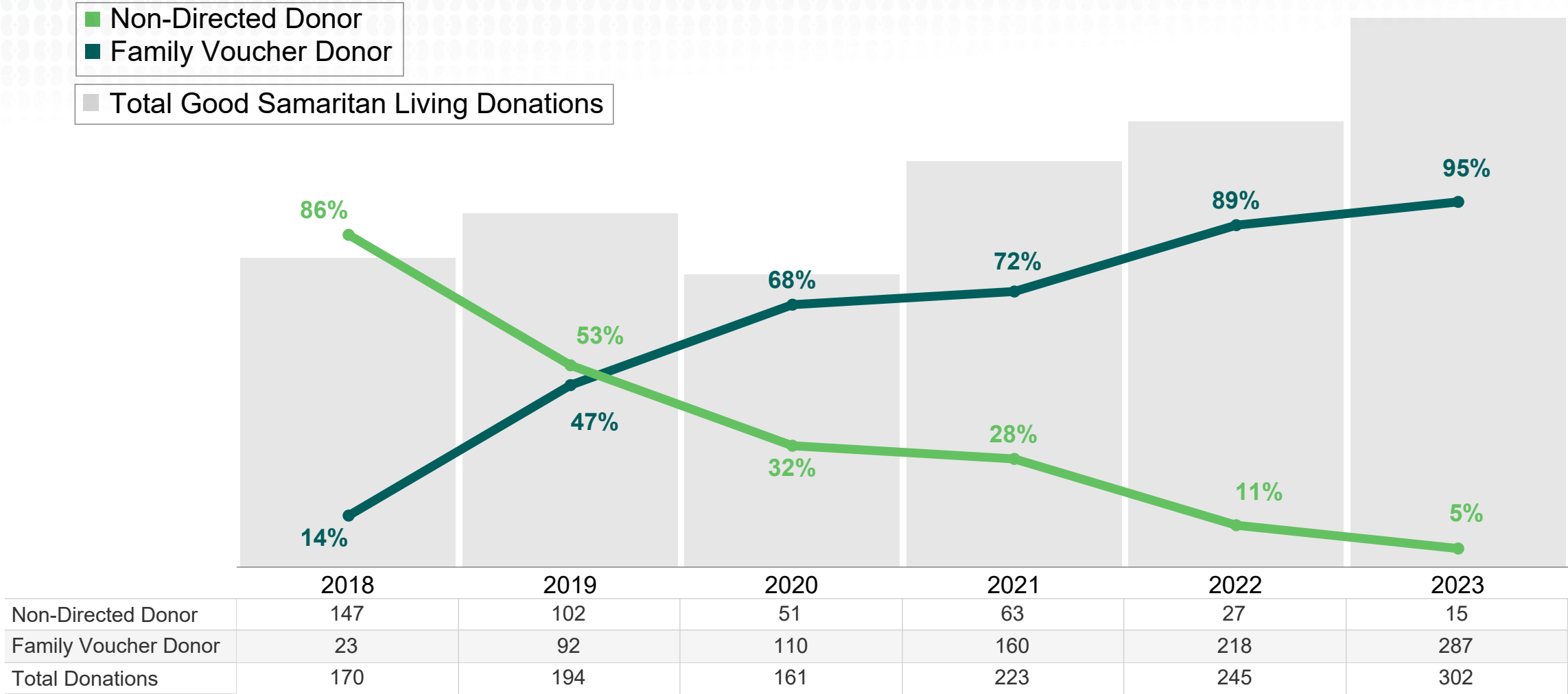


Home Blood Draw (Custom Kit)	79	92	162	118
Direct Donor Serology	2	17	37	218
Recipient Antibody Screening		51	569	1,110
Cryo, Serologies, or Final Cross Match	1,120	1,451	1,726	1,095
Pre-Workup Labs			59	2,583

As of 12/31/2023.



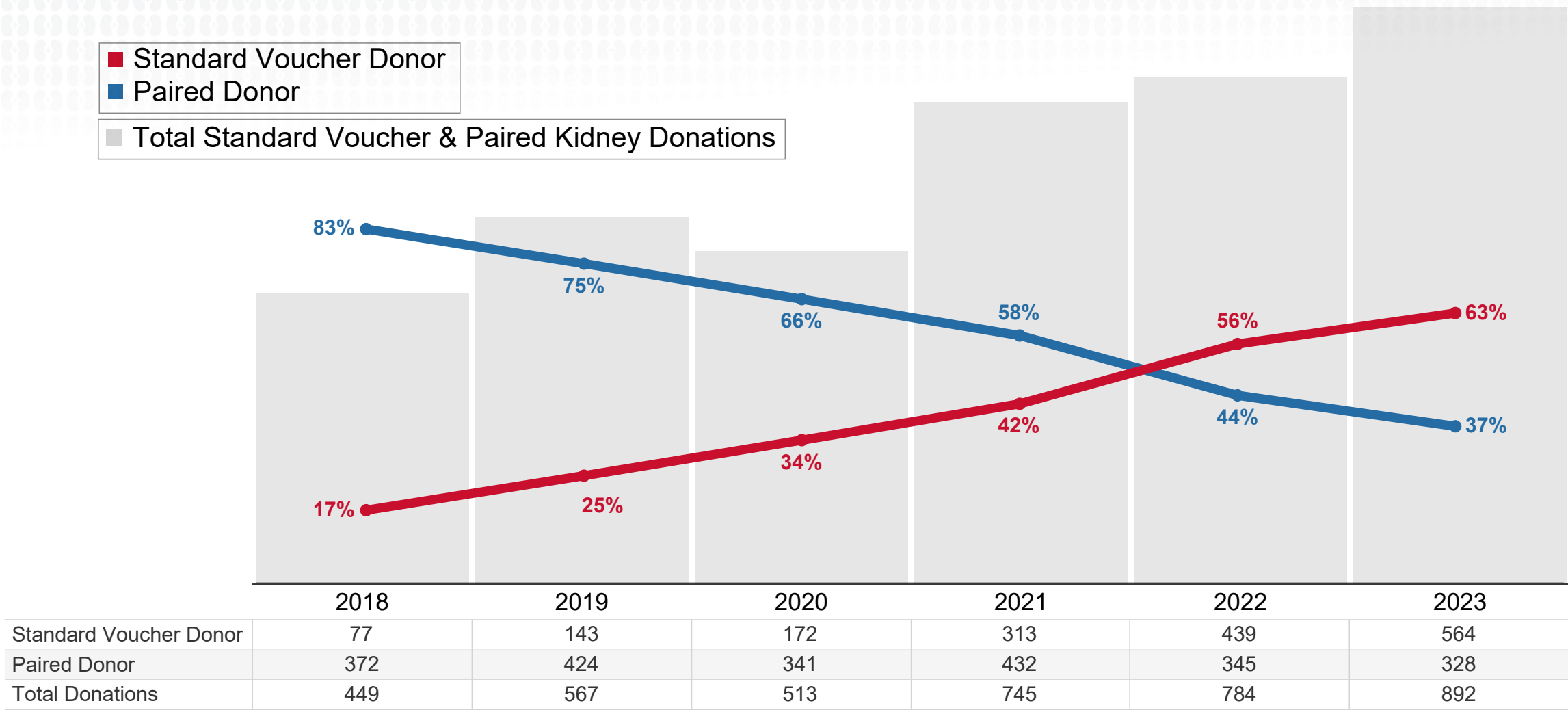
Decoupling Trend: Transition to Family Voucher Donation



As of 12/31/2023.



Decoupling Trend: Transition to Standard Voucher Donation

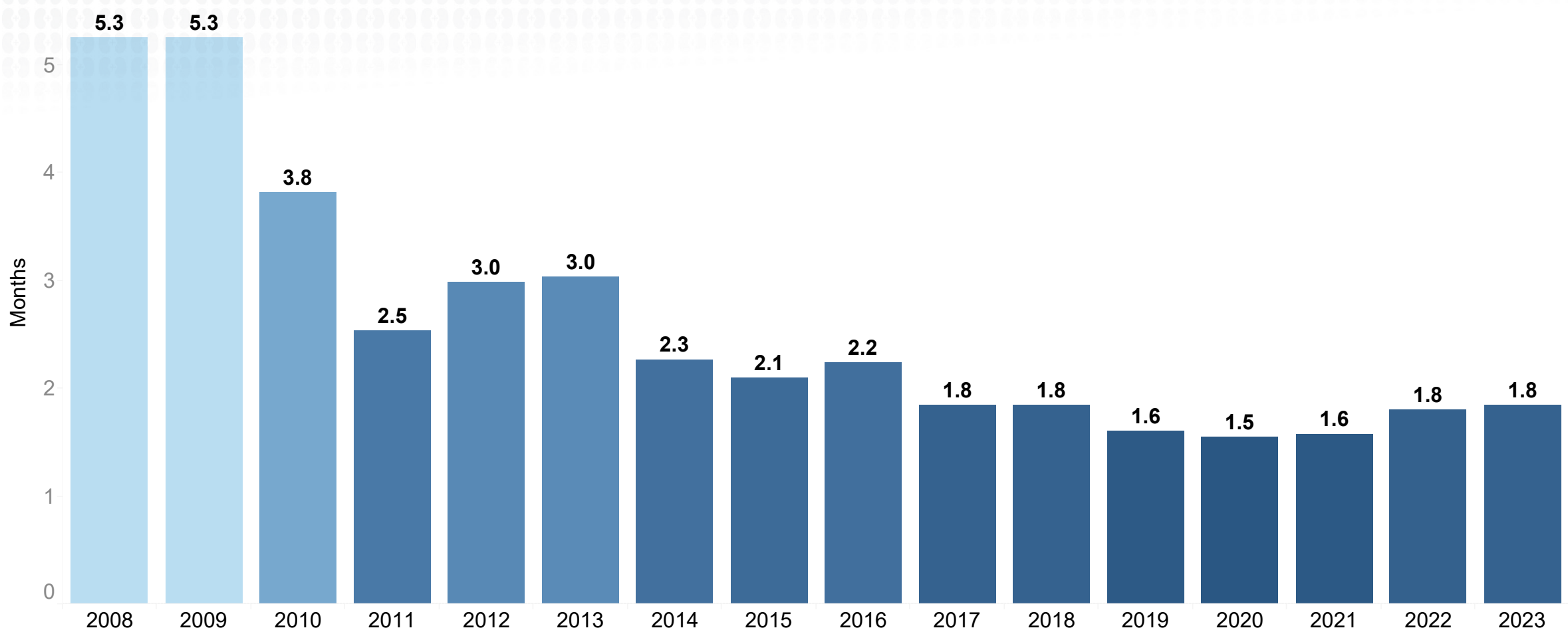


As of 12/31/2023.



Wait Time: Median Time to Transplant

From Exportability to Transplant

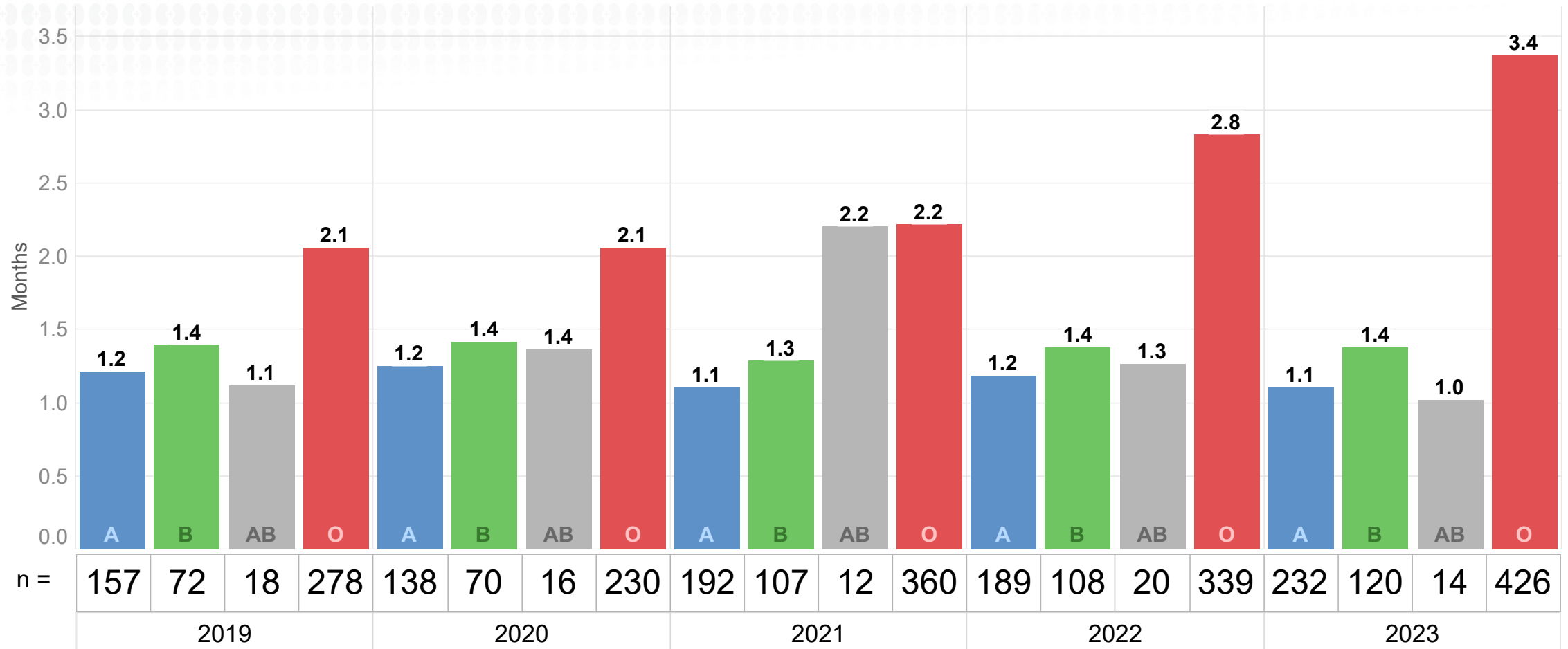


As of 12/31/2023
Total wait time including paired and voucher. Excludes non-KPD and waitlist patient transplants.



Wait Time: Median by Blood Type

From Exportability to Transplant



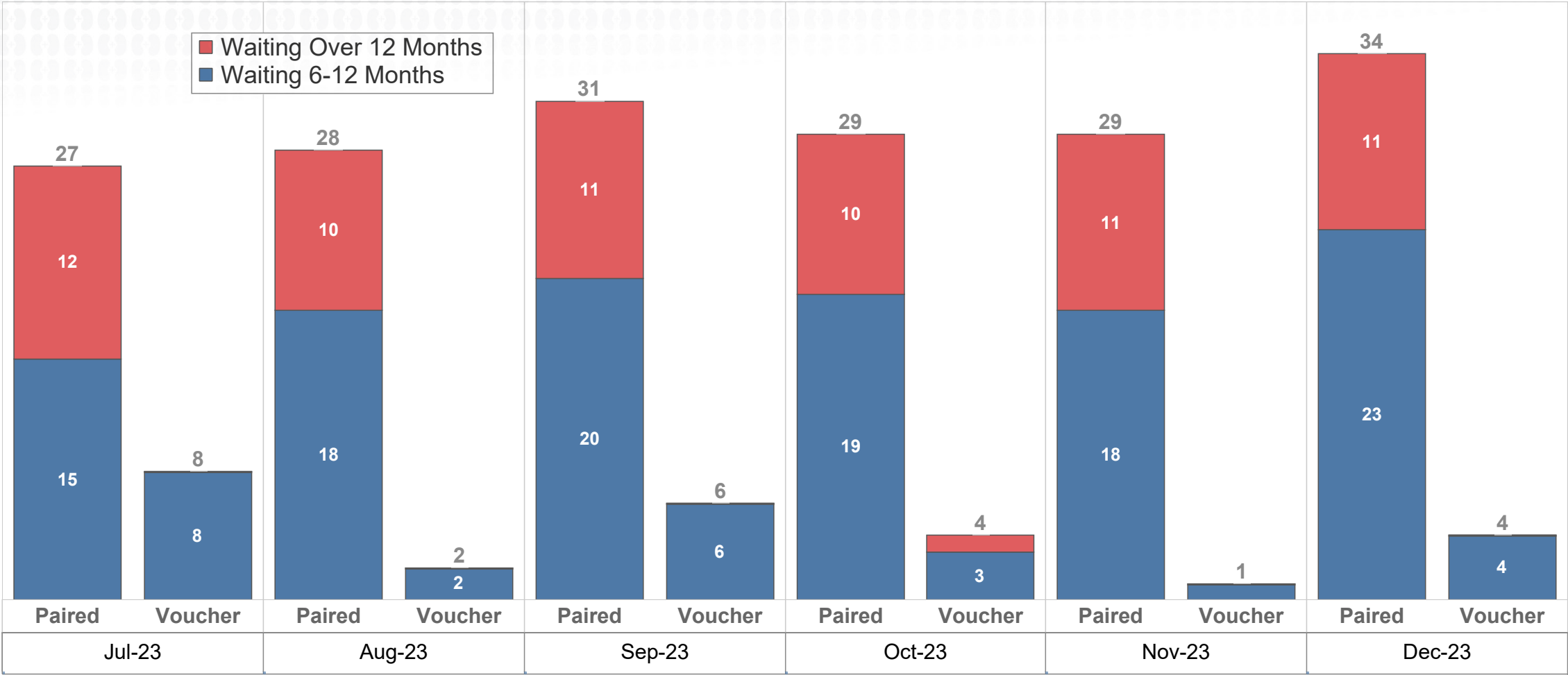
As of 12/31/2023.

Total wait time including paired and voucher. Excludes non-KPD and waitlist patient transplants.



Wait Time: Voucher Patients have Shorter Wait Times

Currently Matchable Patients (At least one matchable donor currently in the donor pool)

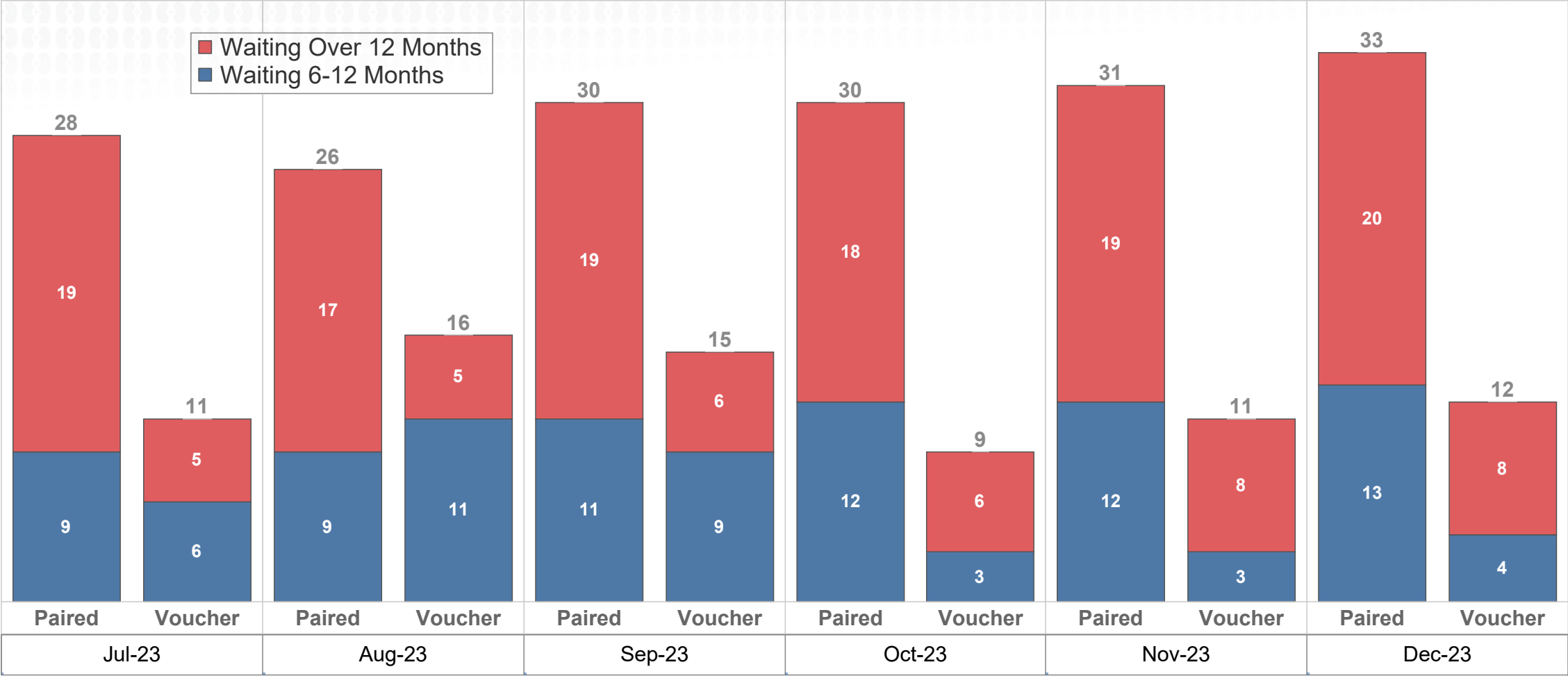


As of 12/31/2023. Excludes patients waiting less than 6 months. Snapshot of the last day of each month.



Wait Time: Voucher Patients have Shorter Wait Times

Currently Unmatchable Patients (No matchable donors currently in the donor pool)



As of 12/31/2023. Excludes patients waiting less than 6 months. Snapshot of the last day of each month.



Wait Time: Dialysis Patients Waiting 12+ Months

Due to High cPRA

Paired Patients

#	Patient ID	Patient ABO	cPRA	Pair Wait Time
1	5501	B	100.00	96
2	12411	A	100.00	39
3	10569	A	100.00	30
4	14941	O	100.00	25
5	15355	O	100.00	23
6	15347	A	100.00	23
7	15582	O	100.00	20
8	16411	O	100.00	17
9	16821	A	100.00	12
10	10986	O	99.99	47
11	11785	A	99.99	30
12	16200	O	99.99	19
13	15282	O	99.96	23
14	13846	A	99.91	26
15	16604	O	99.91	14
16	12565	O	99.86	32
17	12531	O	99.85	32
18	17689	O	99.80	12
19	14460	O	99.70	23

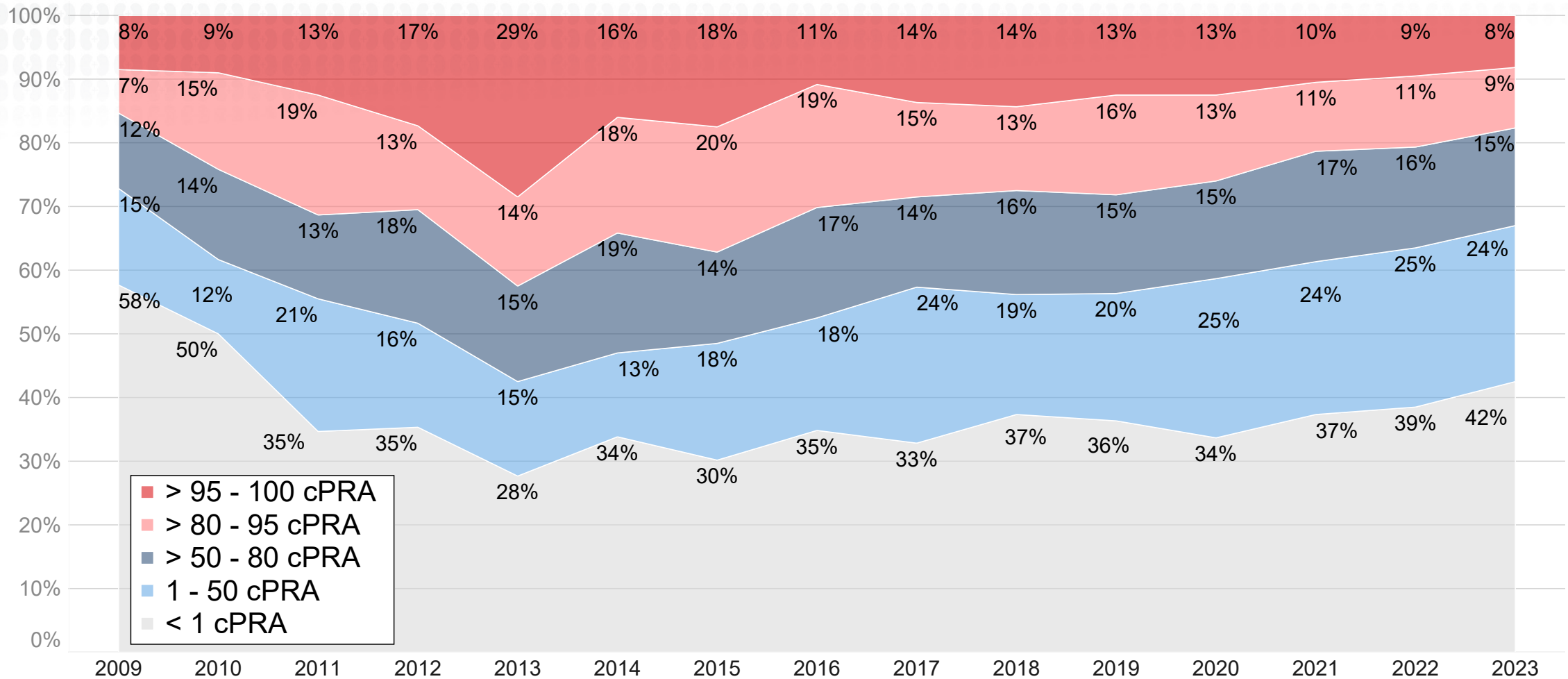
Voucher Patients

#	Patient ID	Patient ABO	cPRA	Voucher Wait Time
1	13055	O	100.00	36
2	13023	A	100.00	21
3	16866	O	100.00	15
4	12707	O	100.00	14
5	10069	A	99.99	50
6	12712	B	99.97	30
7	14955	B	99.93	15
8	16538	O	99.92	15

As of 12/31/2023. Includes all patients on dialysis and exportable in the NKR pool with a cPRA >99.00



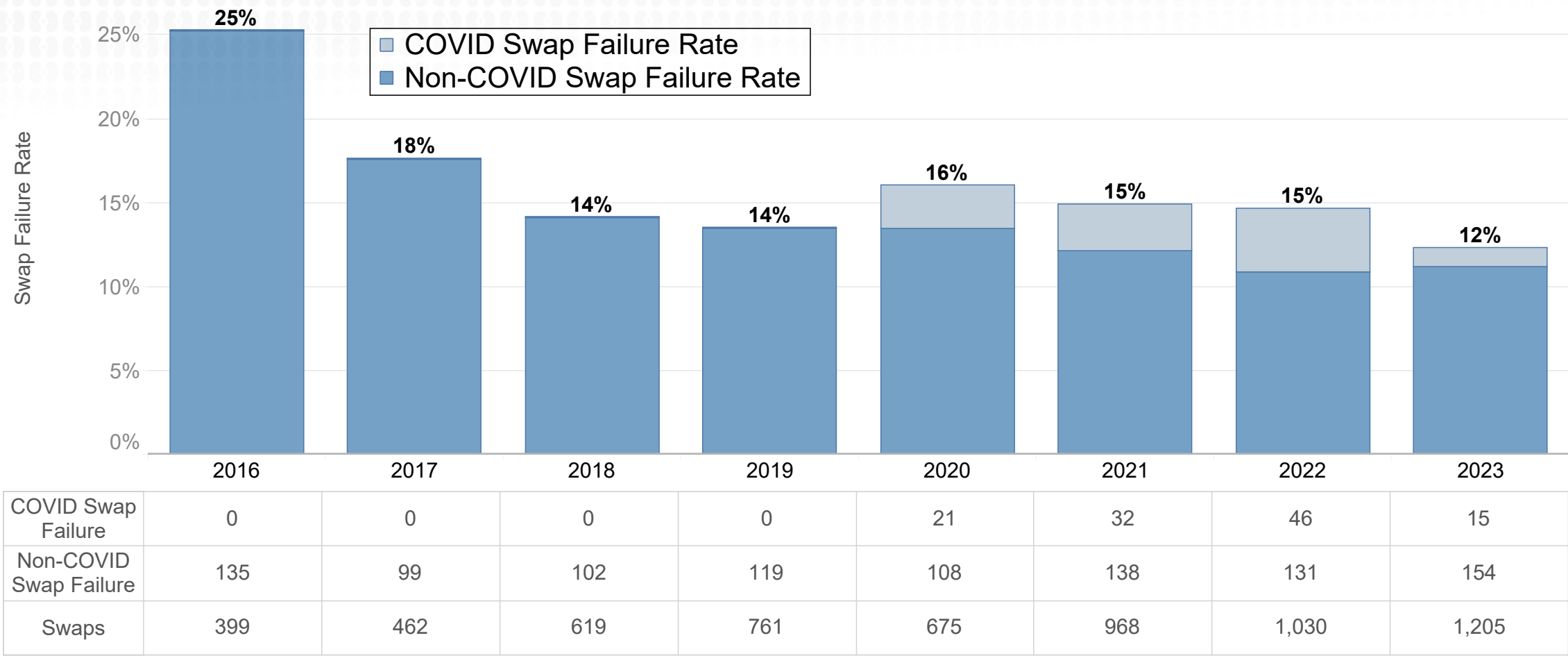
Transplanted Recipients by cPRA



As of 12/31/2023.
Excludes all non-KPD and waitlist patient transplants.



Swap Failure Rates

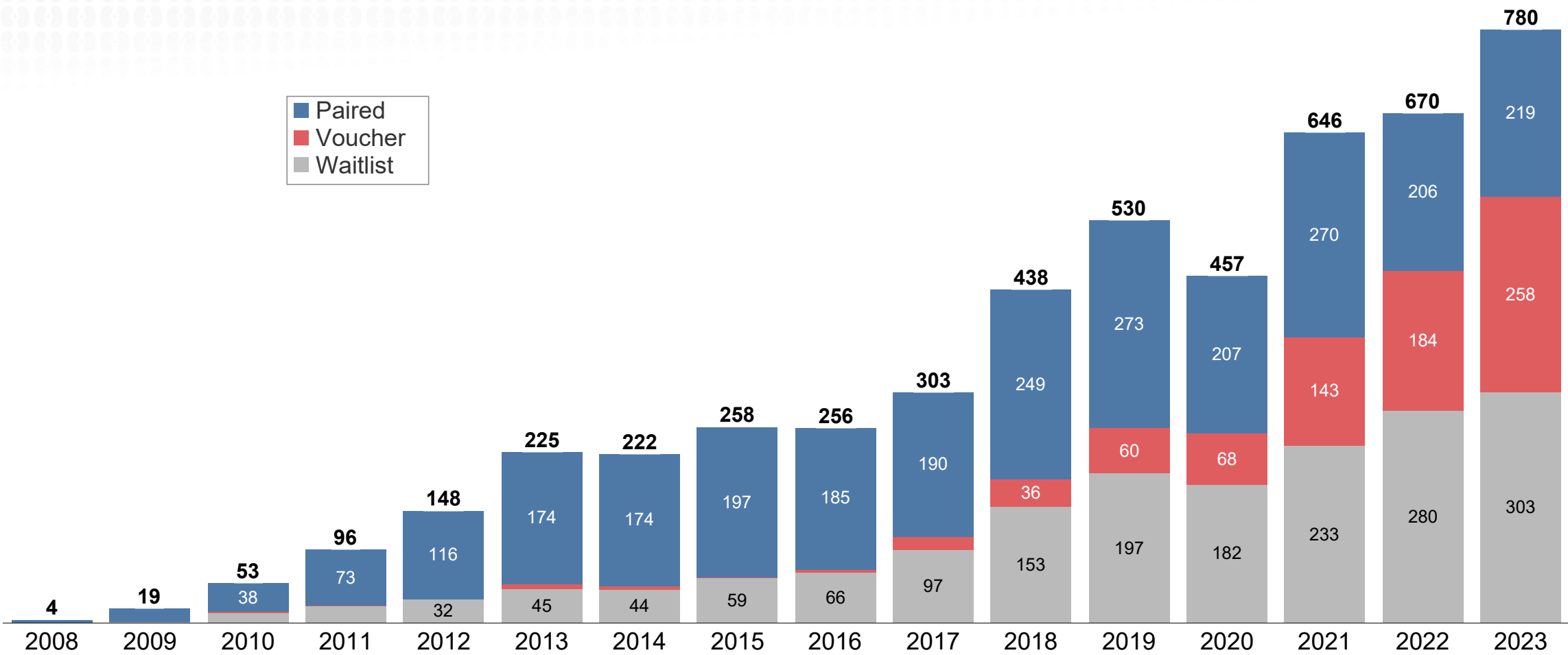


As of 12/31/2023.
Formula: Swap Failures / Total Swaps (Successful Swaps + Failed Swaps)
Swaps exclude NKR internal direct, Kidney for Life internal direct, Kidney for Life remote direct, microsite internal direct and remote direct transplant.



Medicare Cost Analysis: Dialysis Patients Transplanted

The National Kidney Registry is saving Medicare over \$120 million dollars a year in dialysis cost



As of 12/31/2023. Paired, voucher, and waitlist recipients on dialysis.



Medicare Cost Analysis: Single-Year Dialysis Savings

The National Kidney Registry is saving Medicare over \$120 million dollars a year in dialysis cost

RESULTS In 1335 hospital-years from 2012 through 2017, Medicare's share of OACC costs increased from \$0.95 billion in 2012 to \$1.32 billion in 2017 (3.7% of total Medicare End-Stage Renal Disease program expenditure). Median (IQR) OACC costs per transplantation increased from \$81 000 (\$66 000 to \$103 000) in 2012 to \$100 000 (\$82 000 to **\$125 000**) in 2017.

\$157,986

Inflation-Adjusted Median
(IQR) OACC Costs*

X

780

2023 NKR LD Transplants
for Patients on Dialysis

=

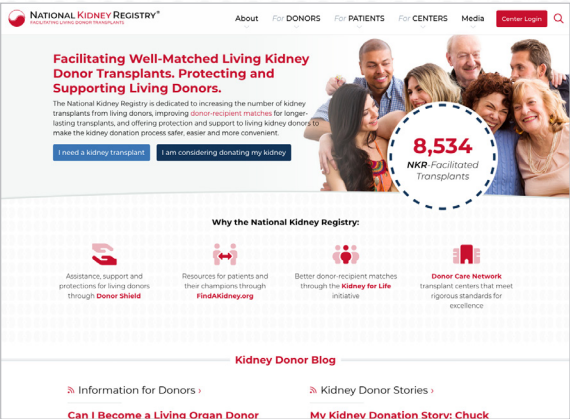
\$123M

One Year Medicare
Dialysis Savings

As of 12/31/2023.
Paired, Voucher, and Waitlist Recipients on Dialysis.
*Inflation Calculated from U.S. Consumer Price Index (CPI).
Trends in Cost Attributable to Kidney Transplantation Evaluation and Waiting List Management in the United States, 2012-2017.
Xingxing S. Cheng, MD, MS; Avi Dor, PhD Et al.
JAMA NetworkOpen. 2022;5(3):e221847.doi:10.1001/jamanetworkopen.2022.1847 March10, 2022



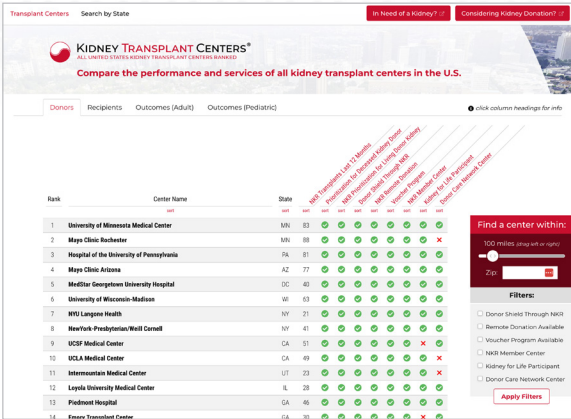
Resources



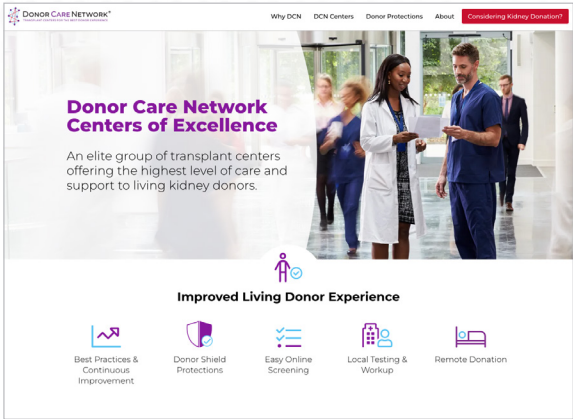
kidneyregistry.org



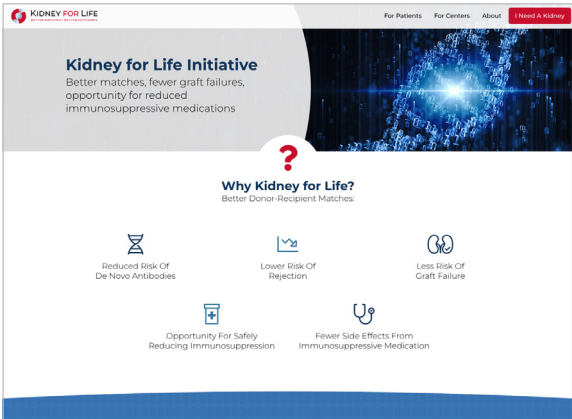
donor-shield.org



kidneytransplantcenters.org



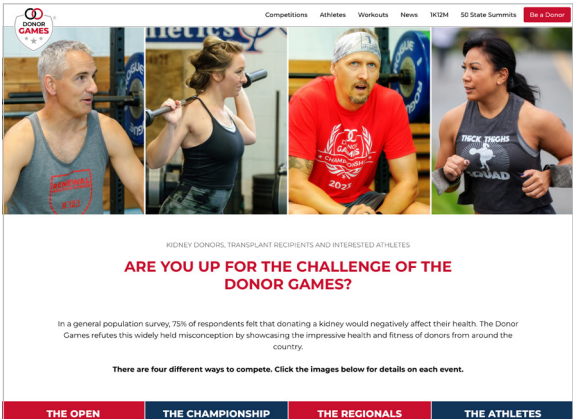
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