



NATIONAL KIDNEY REGISTRY
FACILITATING LIVING DONOR TRANSPLANTS

Paired Exchange Results Quarterly Report

Q4 Results 2019

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Message from the Founder & CEO



We are pleased to report strong growth with 760 KPD transplants facilitated in 2019, an increase of 22% or 141 KPD transplants over the prior year. NKR facilitated transplants continue to demonstrate better outcomes (statistically significant) at 3, 5 and 7 years. Living donors protected by our Donor Shield program increased by 60%, growing from 638 donors protected in 2018 to 1021 donors protected in 2019. Our DASH donor registrations grew by 75% from 25,415 in 2018 to 44,566 in 2019.

The Family Voucher Program, which allows up to five healthy family members to receive Vouchers, is getting a tremendous response from the donor community. The program experienced strong growth in 2019 with 94 successful family voucher donations. 33 Member Centers are now participating in the program. Voucher donors now represent the majority of NKR chain starts.

In November, we eliminated all income restrictions for the [Donor Shield](#) Lost Wage Reimbursement program, providing qualified donors up to \$1,500/ week for up to 4 weeks in lost wage reimbursement. The data we are collecting indicates that lost wage reimbursement and the other six Donor Shield protections are eliminating key dis-incentives to living donation, enabling more donors to give the Gift of Life.

The adoption of our Champion Microsite program, which enables patients to set up a free personalized website to help them find a living donor, is accelerating and now has over 240 patient sites live across 22 centers. We recently launched a new feature that supports mass mailings to all the patients on a center's deceased donor waitlist, inviting them to set up microsites. This feature decreases the amount of work coordinators must do to register patients and extends the microsite opportunity to all patients on a center's waitlist.

As always, we thank our Member Centers for their ongoing dedication and effort, which has enabled us to continue breaking records and achieving new milestones.

Thank you for your support and keep up the great work!

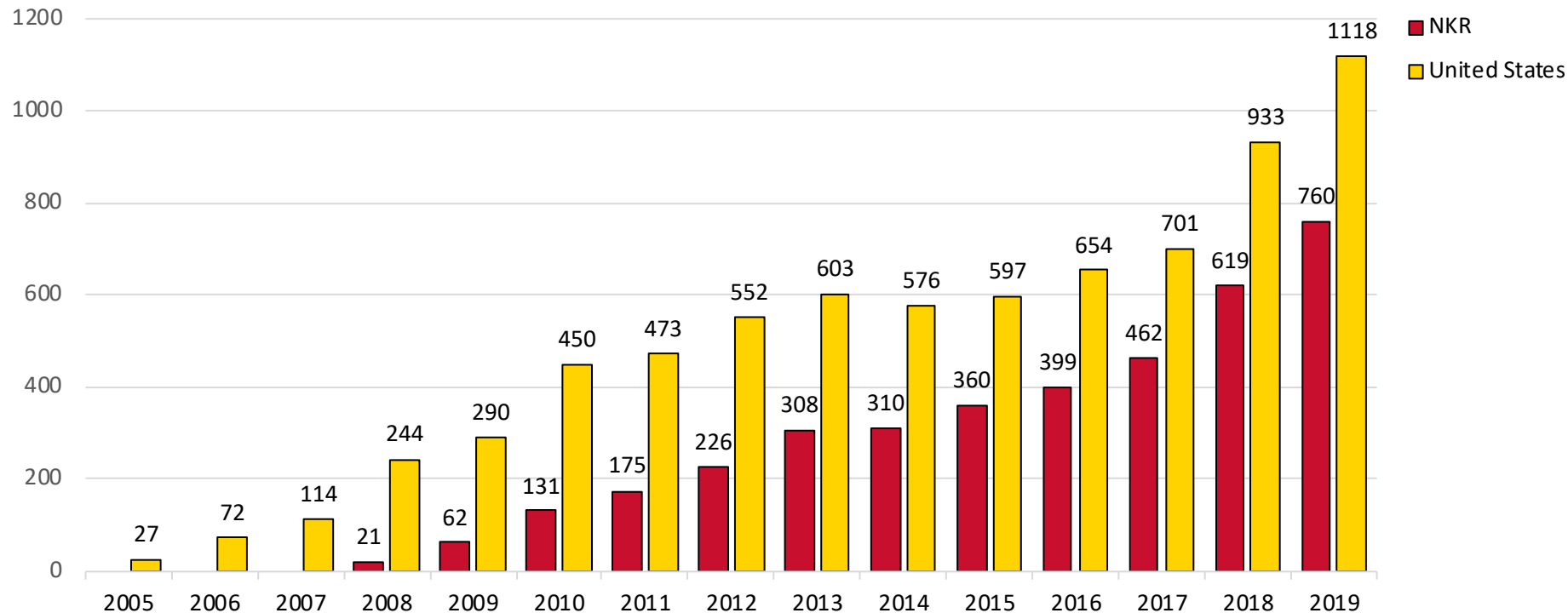
Sincerely,

A handwritten signature in blue ink, appearing to read 'G Hil'.

Garet Hil
Founder & CEO
National Kidney Registry



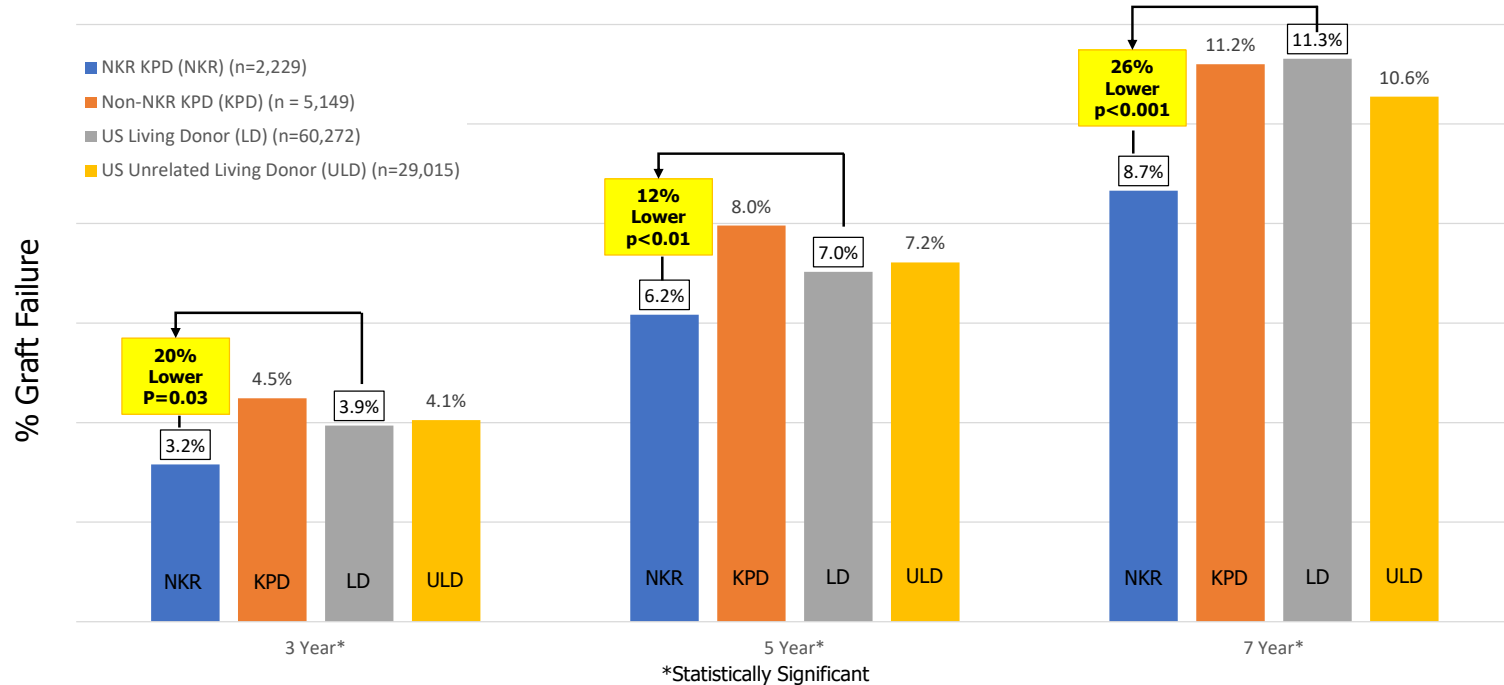
NKR Leading U.S. Paired Exchange Growth



Organ Procurement and Transplantation Network. <https://optn.transplant.hrsa.gov/> Accessed 2/28/20



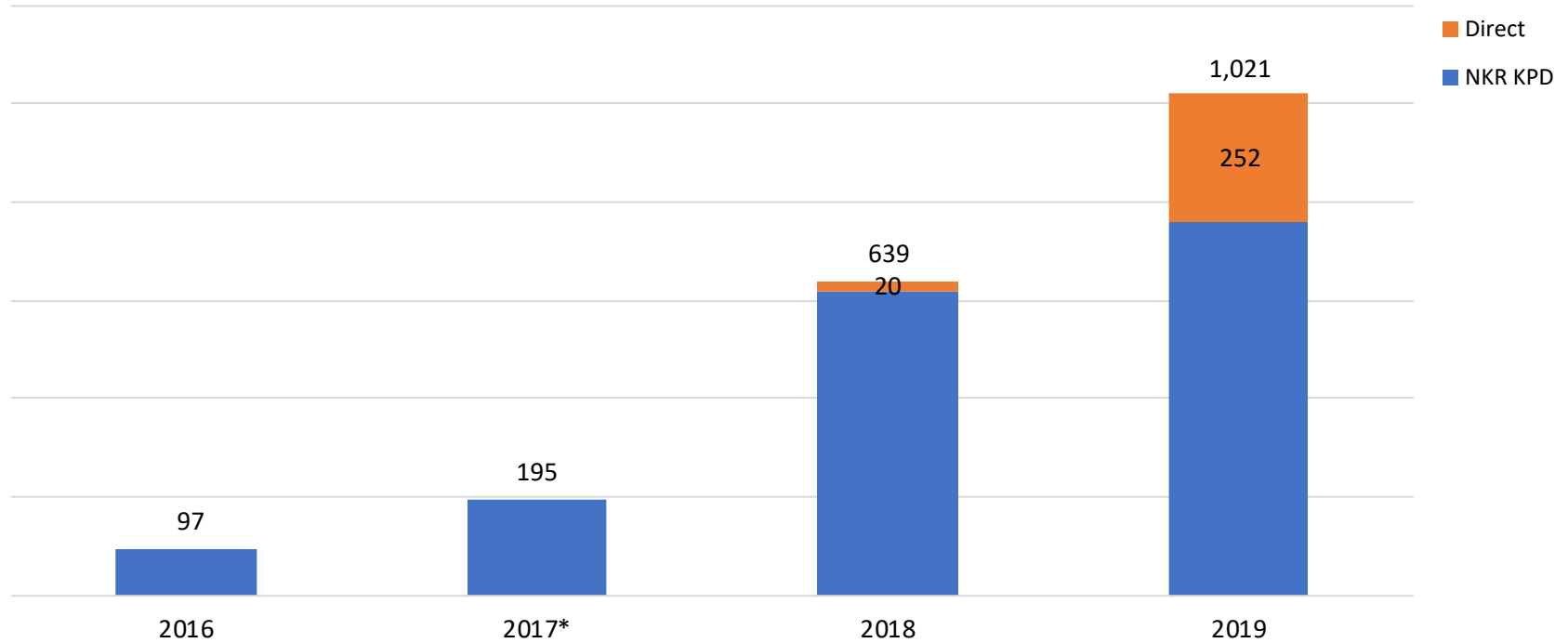
Death Censored Graft Failure Comparisons



Provided courtesy of Johns Hopkins University School of Medicine, Department of Surgery *Not including CHIP patients;
Kaplan-Meier GS Rates for Transplants Performed: 02/2008-12/2018 with follow-up through 6/30/2019
<https://www.srtr.org/> SRTR data as of September 2019



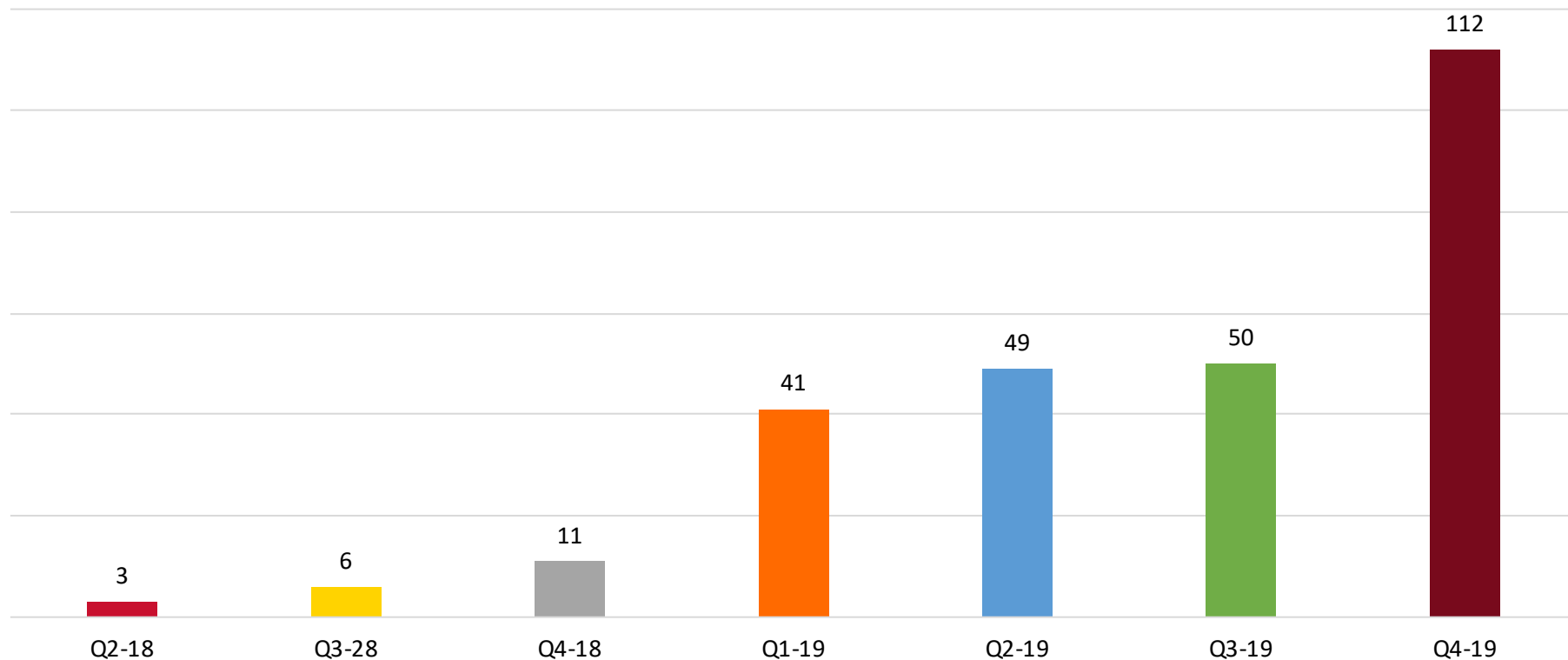
Donors Protected



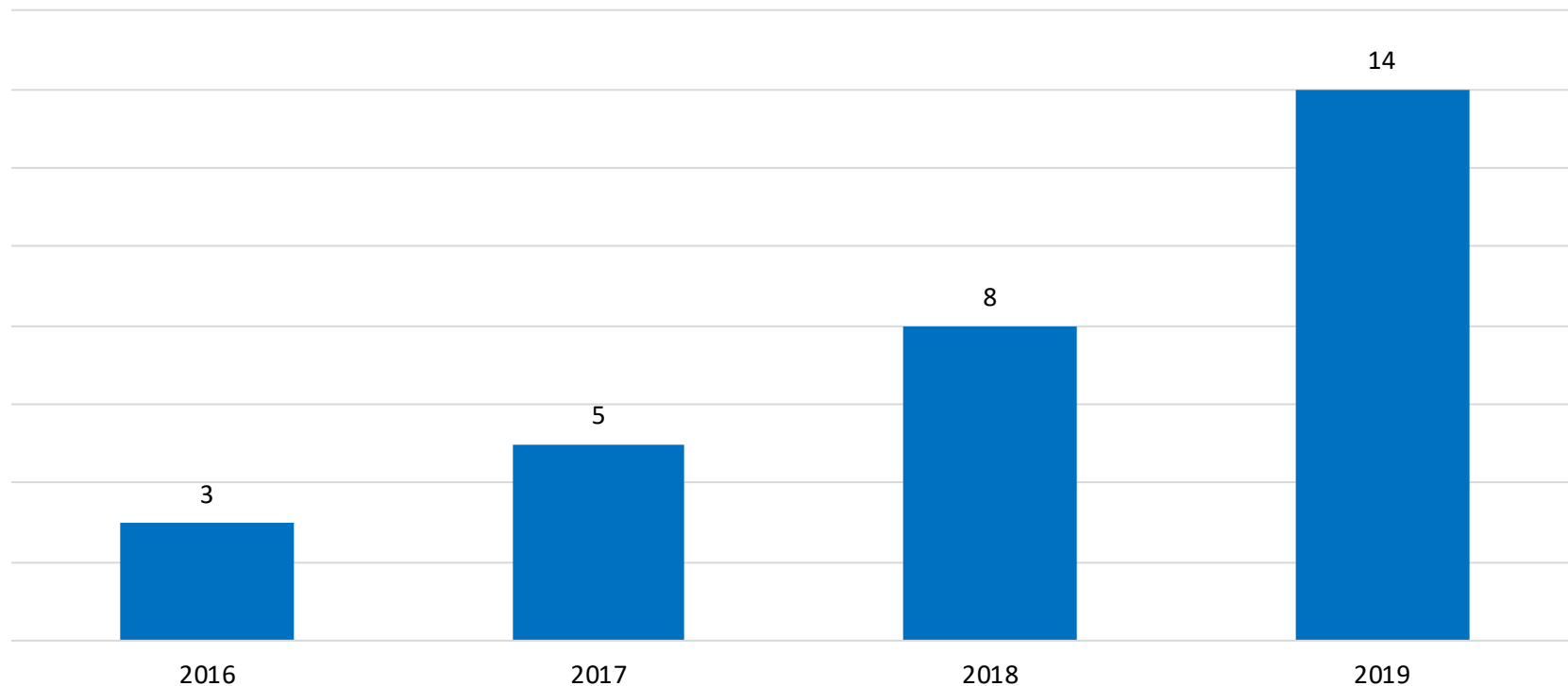
**NKR began providing insurance for all donors on 11/29/17*



Direct Donor Shield Utilization

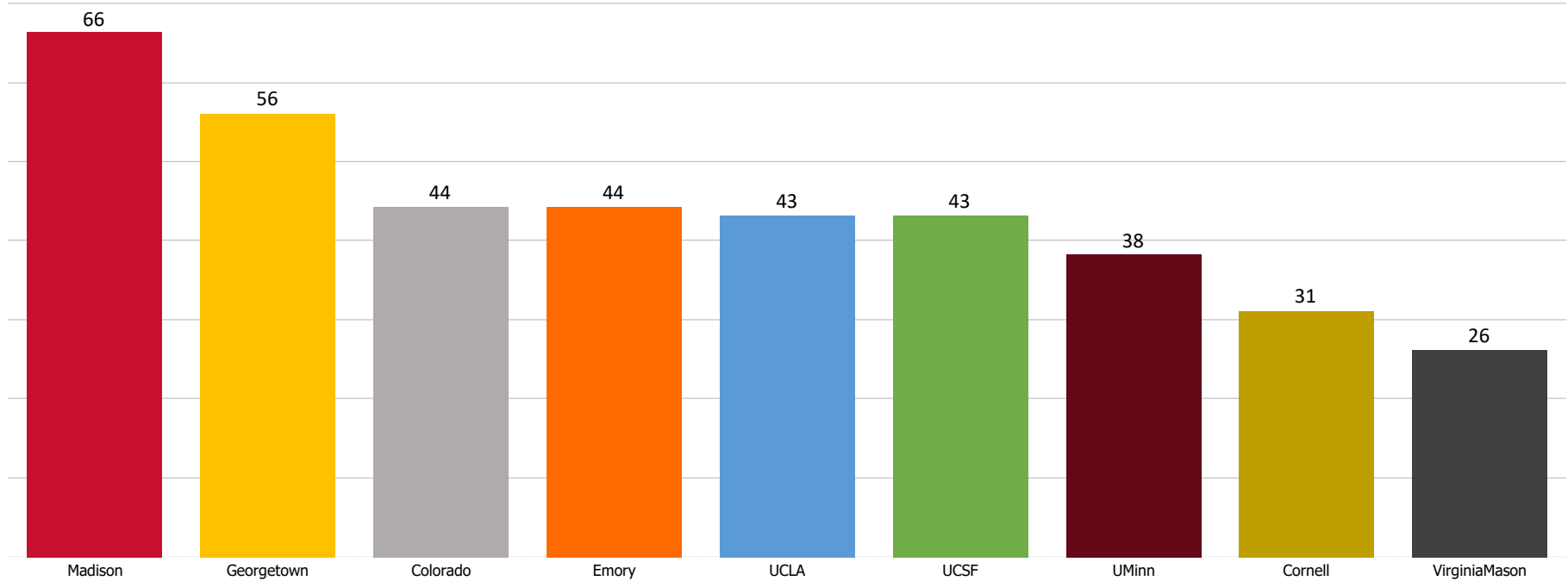


A2 to O Transplants Facilitated



Top Centers

NKR Transplants in 2019



NKR Member Centers Map

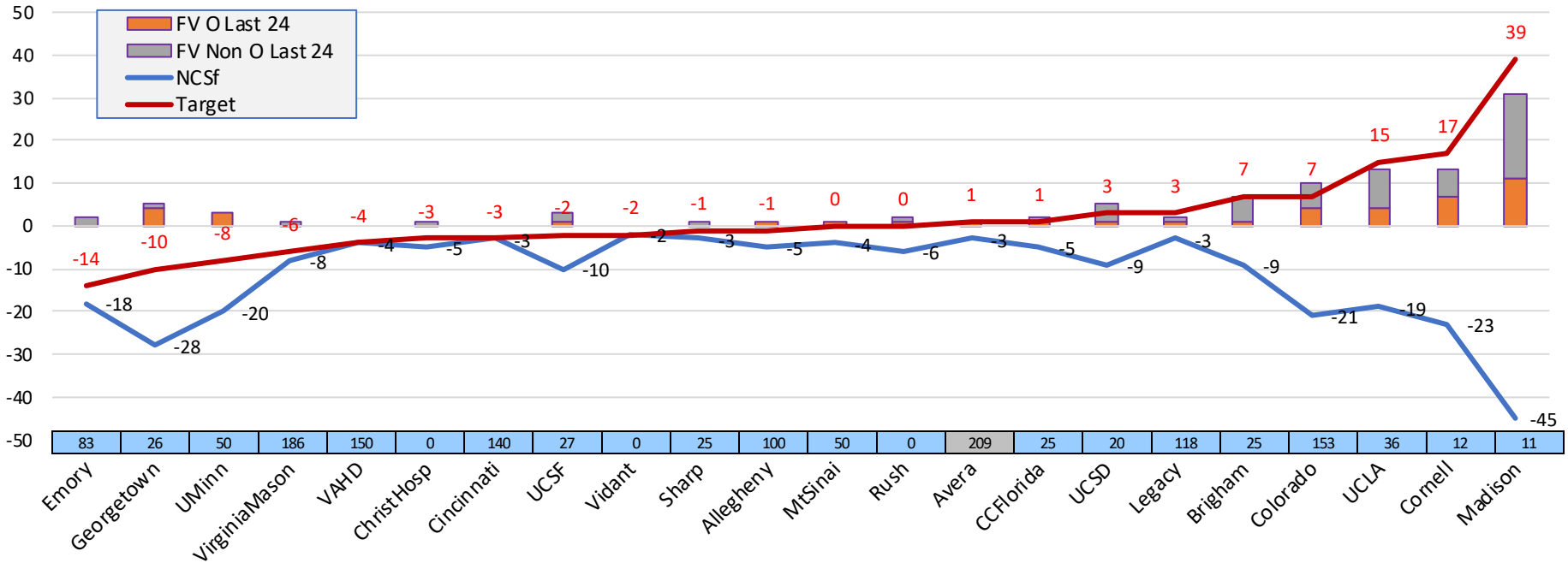


A map of the United States with 15 red location pins. The pins are located in Washington, Oregon, California (four pins), Nevada, Utah, Colorado, Minnesota, Wisconsin, Illinois, Indiana, Michigan, Ohio, Pennsylvania, New York, Vermont, New Hampshire, Massachusetts, Connecticut, Rhode Island, New Jersey, Delaware, Maryland, Virginia, West Virginia, Kentucky, Tennessee, Georgia, Alabama, Mississippi, Louisiana, Texas, New Mexico, Arizona, and Florida. The map also shows state names and the names of Mexico and The Bahamas.

Remote Donor Centers



Partner Center Chain End Target



As of 2/28/2020

"FV O Last 24" = Family Voucher 'ABO = O' chain starters in past 24 months

"FV Non O Last 24" = Family Voucher 'ABO = Non O' chain starters in past 24 months

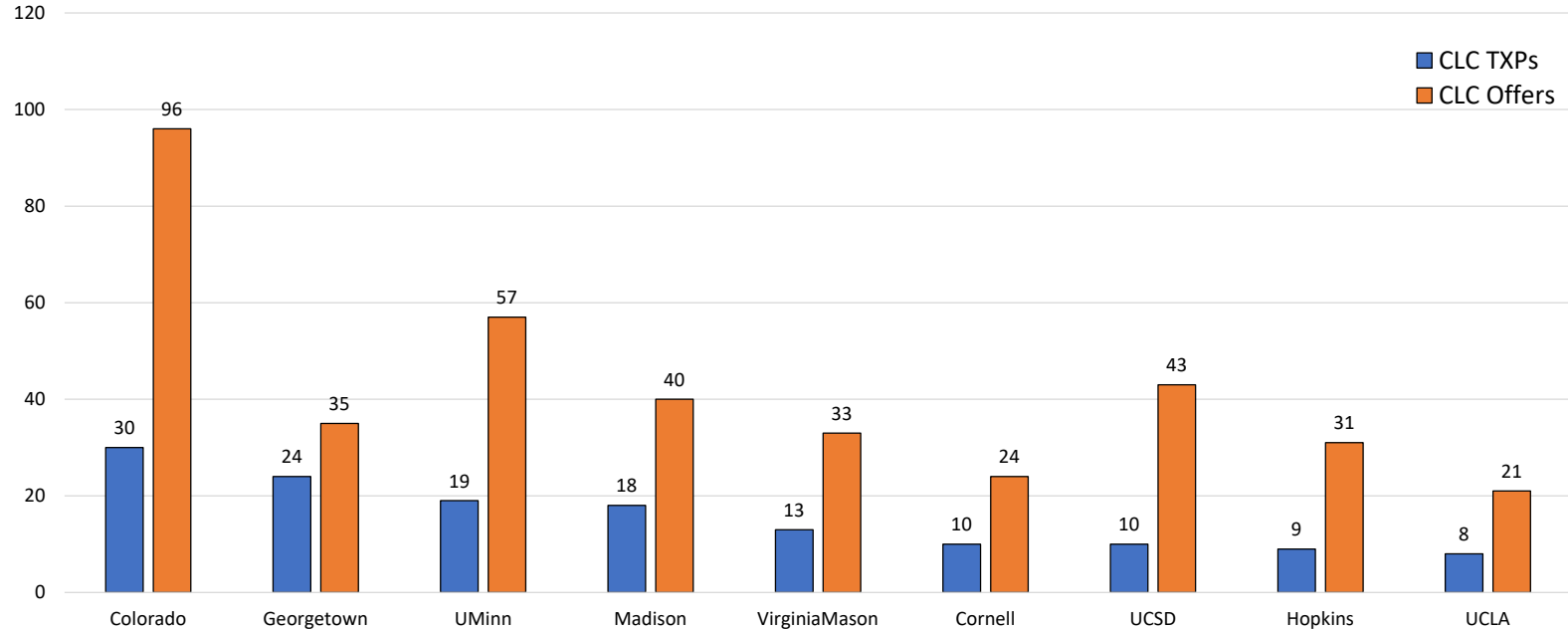
Target = Family Voucher target score

Target = ((4.0 x chains started with 'O' family voucher donors in the past 24 months) + (2.0 x chains started with 'Non-O' family voucher donors in the past 24 months) + (center's current Net Chain Started score))



Top Center Liquidity Contributors (CLC)

CLC Driven Matches 01/01/2019 – 12/31/2019



Donor Contacts

Across All Donor Intake Platforms

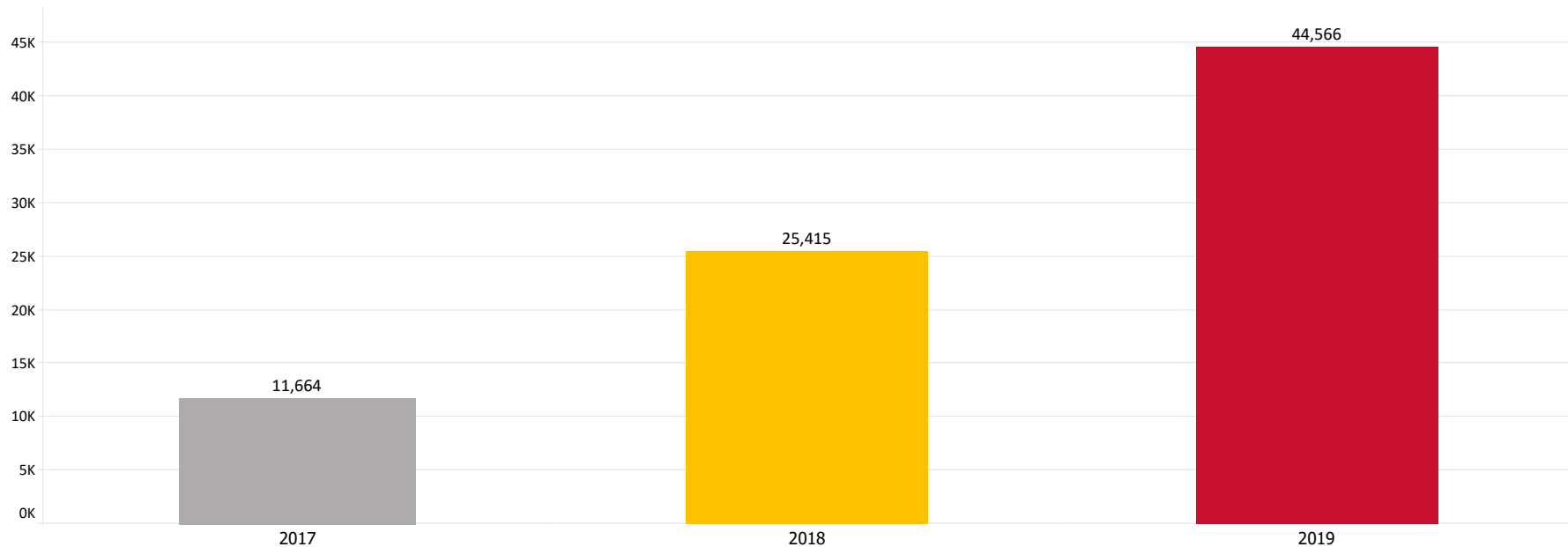


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Non-Directed Donor Contacts

Across All DASH Platforms

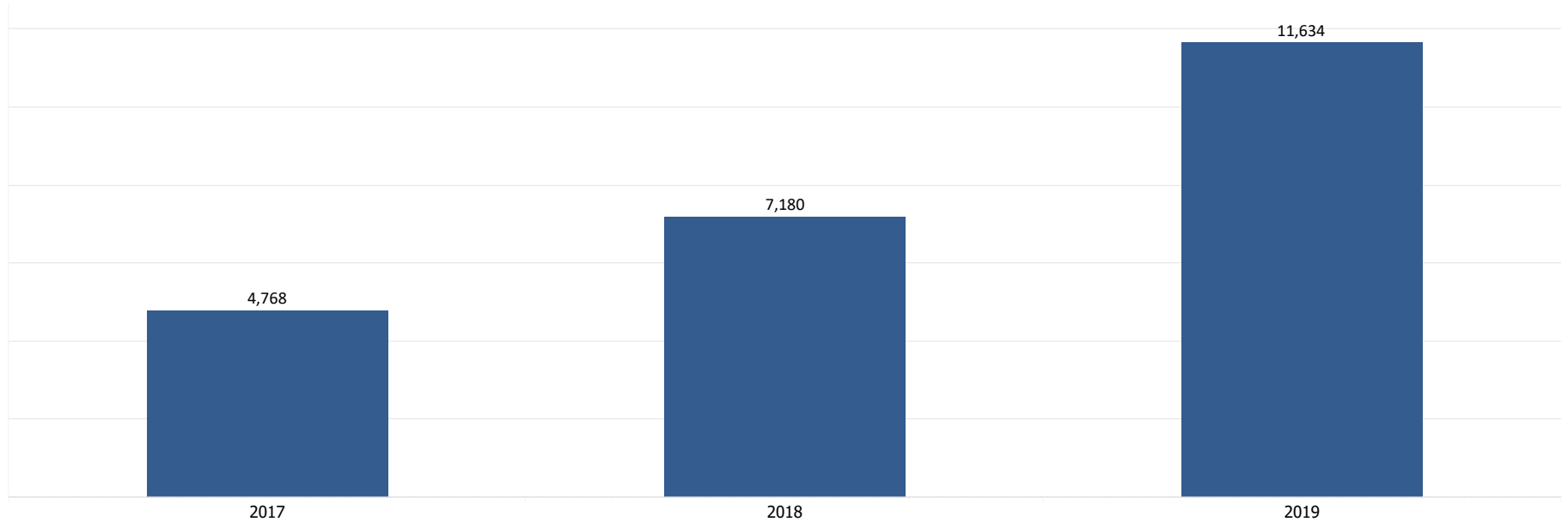
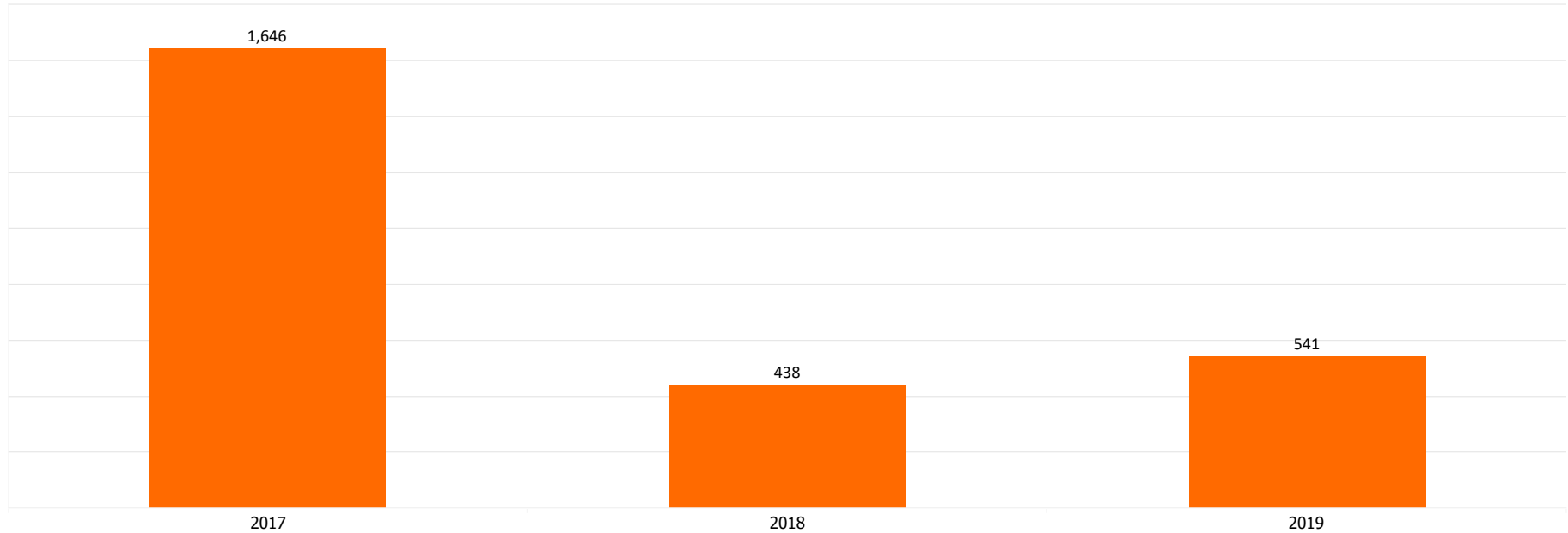


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Non-Directed Donor Referrals

Referred to NKR Member Centers



2017: Donor intake system was re-engineered and the donor certification form was removed

2018: Pre-workup labs were implemented which screened out candidates not willing to complete 24-hour urine test



Pre-Workup Labs

Results Uploaded

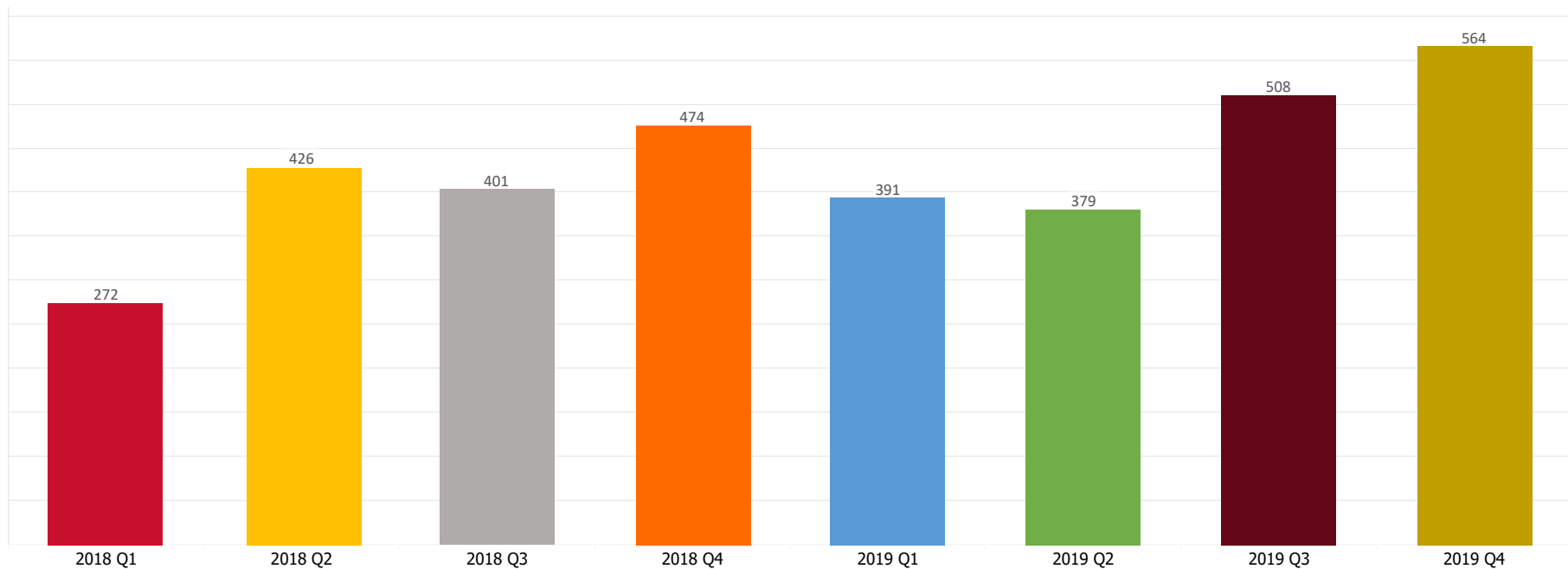
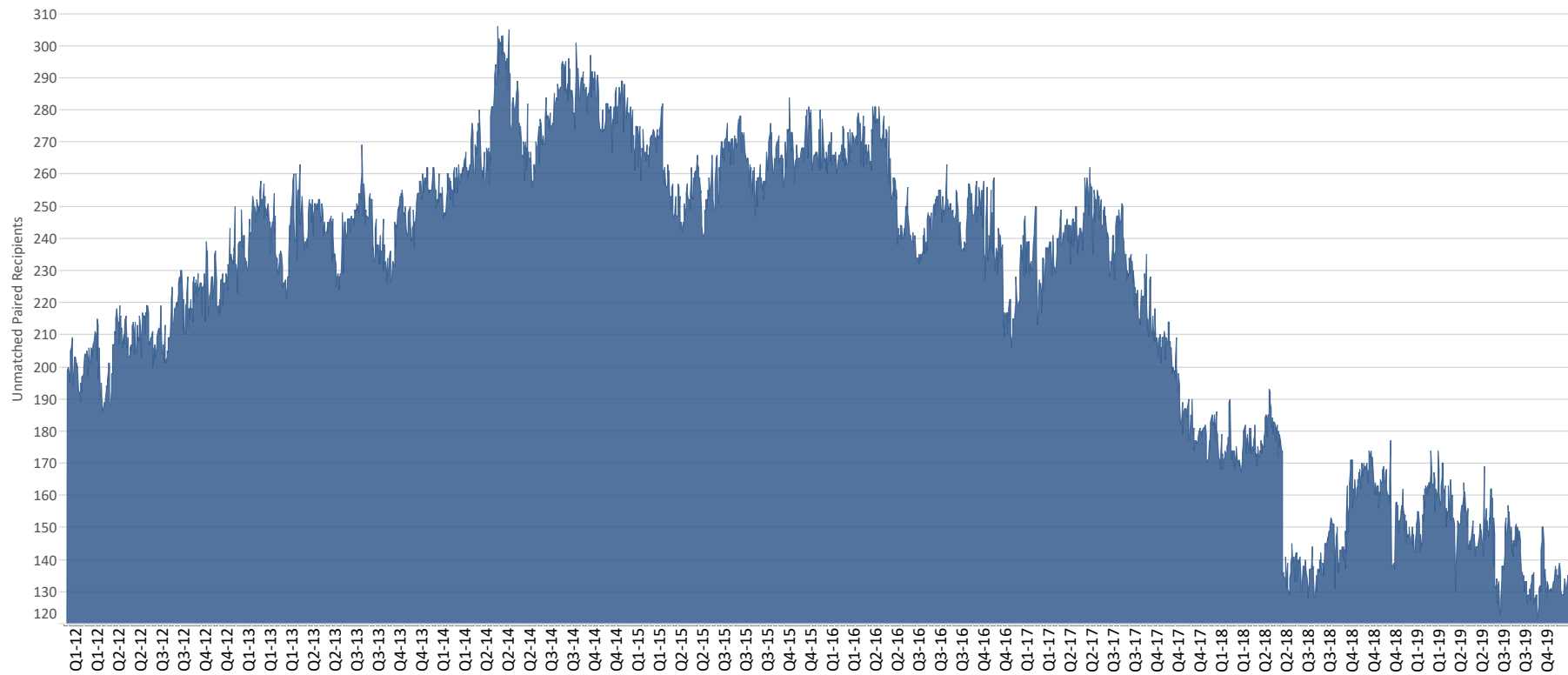


Chart restated due to data updates

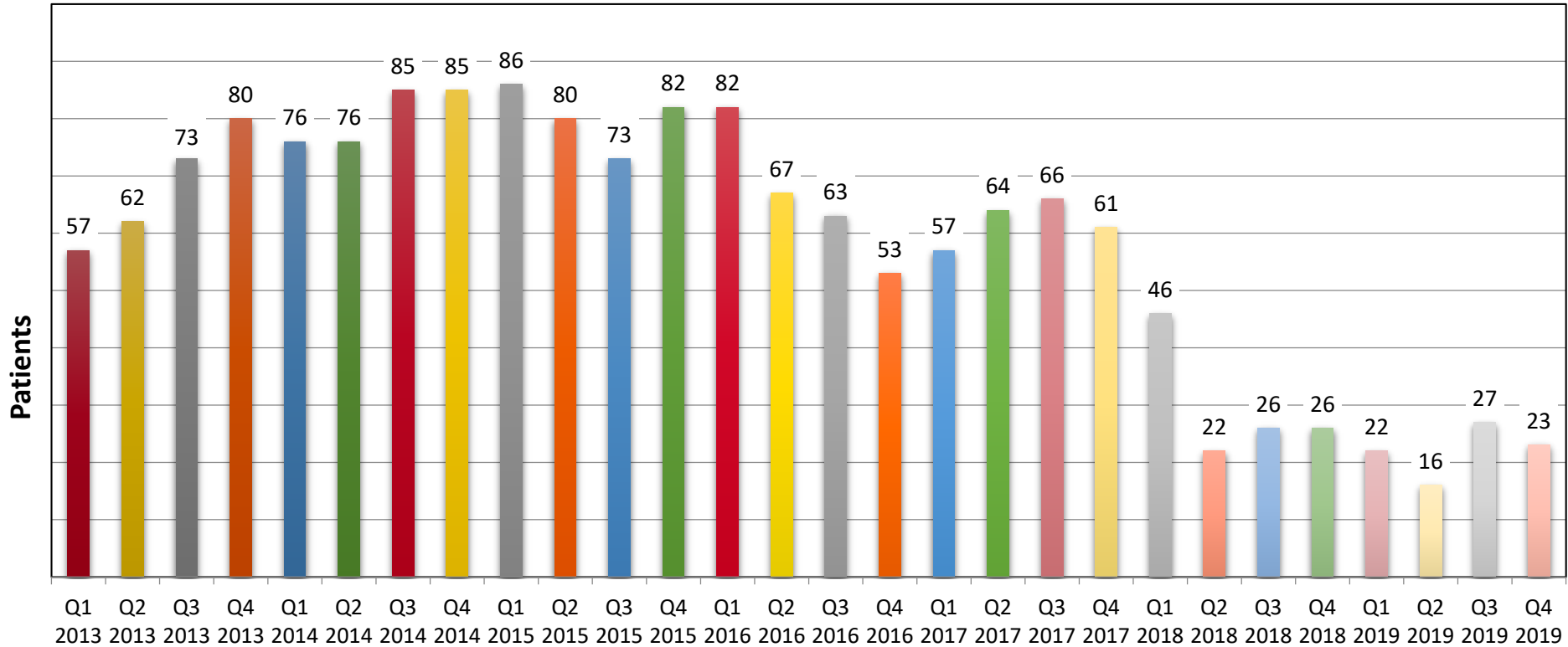


Pool Size

Unmatched Patients



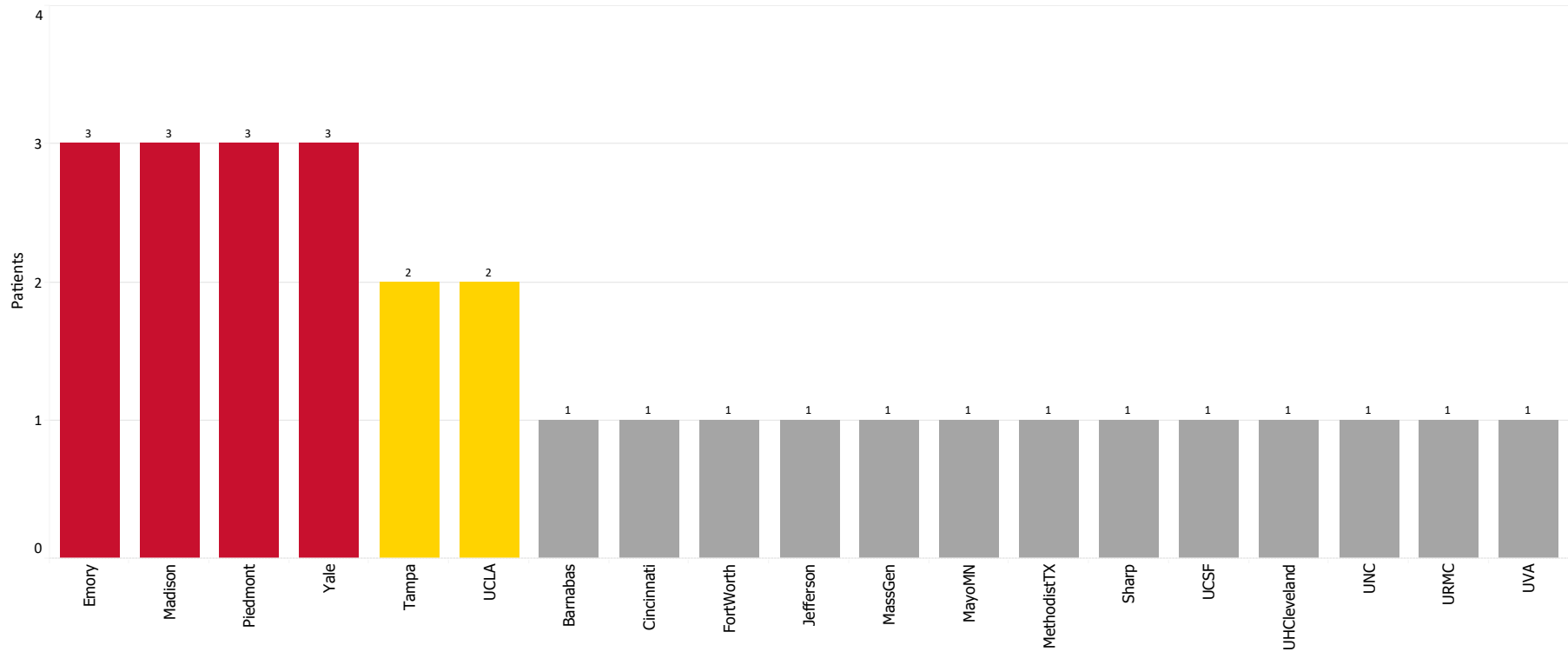
Patients Waiting > 1 Year by Quarter



As of 12/31/19



Patients Waiting > 1 Year by Center

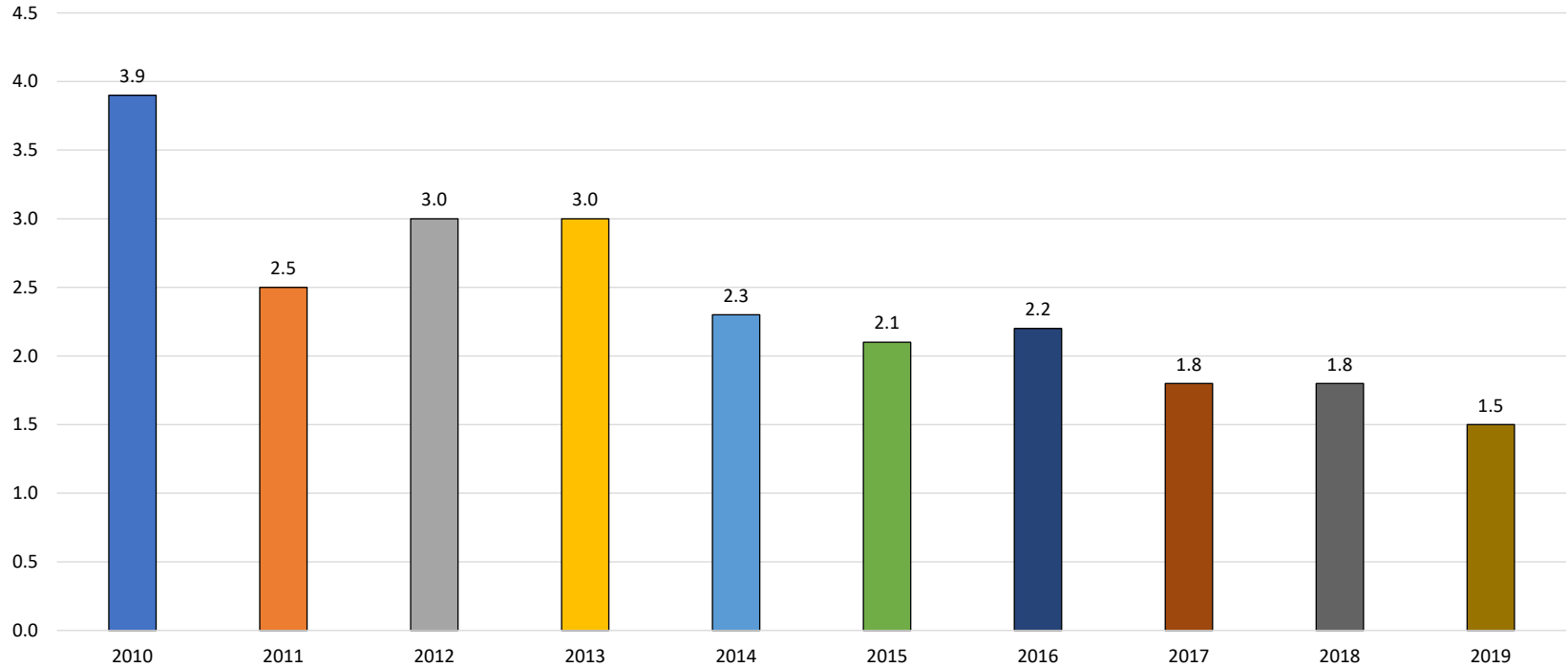


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Transplanted Patient Median Wait Time

Wait Times of Patients Transplanted During prior 12 Months



Wait Time Distribution

Transplanted Pairs

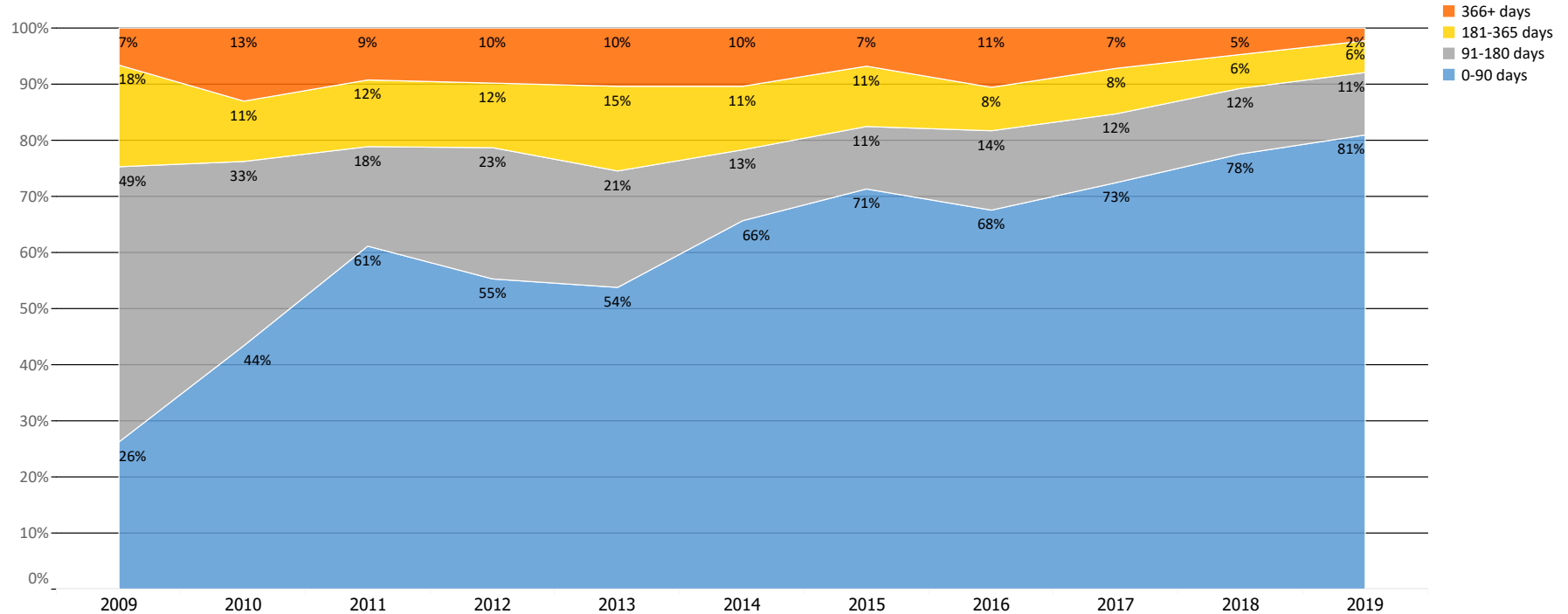
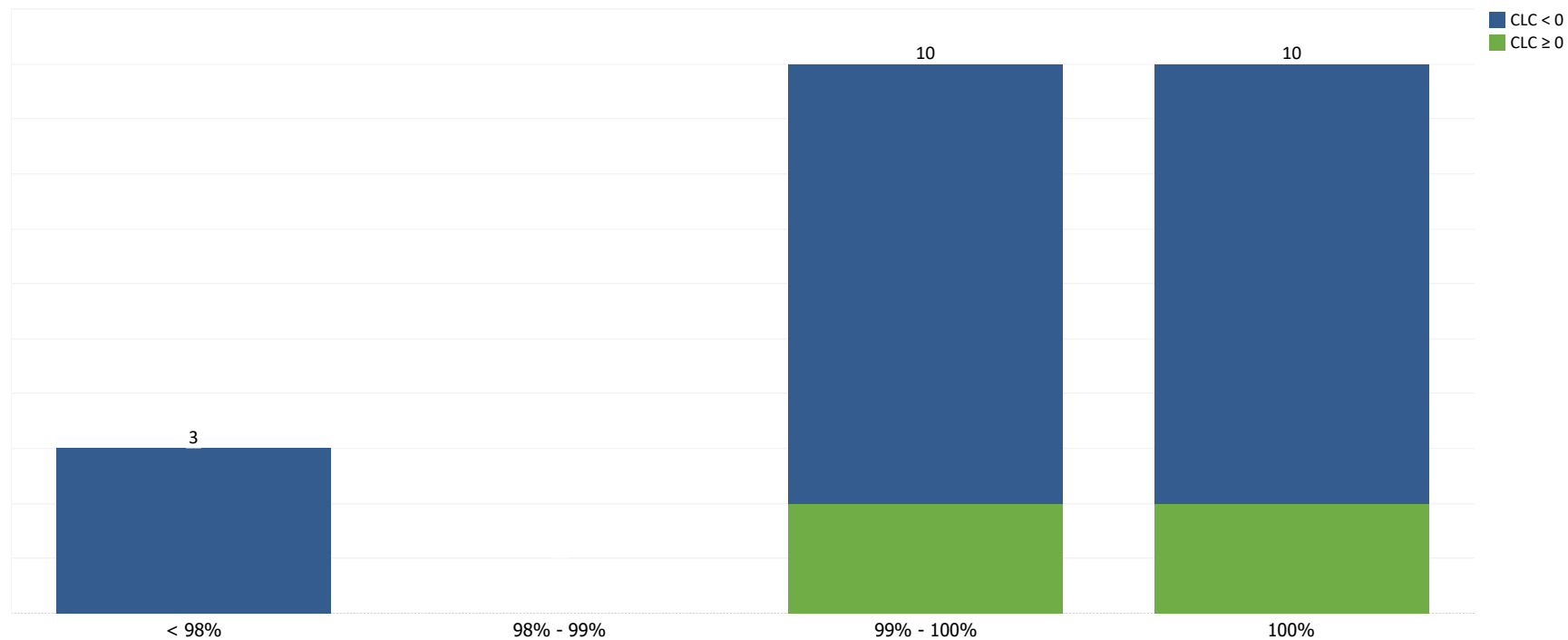


Chart restated due to data updates



Unmatched Target Pairs

Waiting more than 12 Months



As of 2/27/2020 13:49:09



Pairs Waiting > 1 Year

Due to unfavorable blood type combination

#	Recipient Alias	D-ABO	R-ABO	cPRA	D-Ages	Months Wait	CenterClc
1	JJ12051951	B	O	43.07	45	18	-2,170
2	UVA2723541	A	O	81.71	62	17	-2,340

As of 3/3/2020 15:14:32



Pairs Waiting > 1 Year

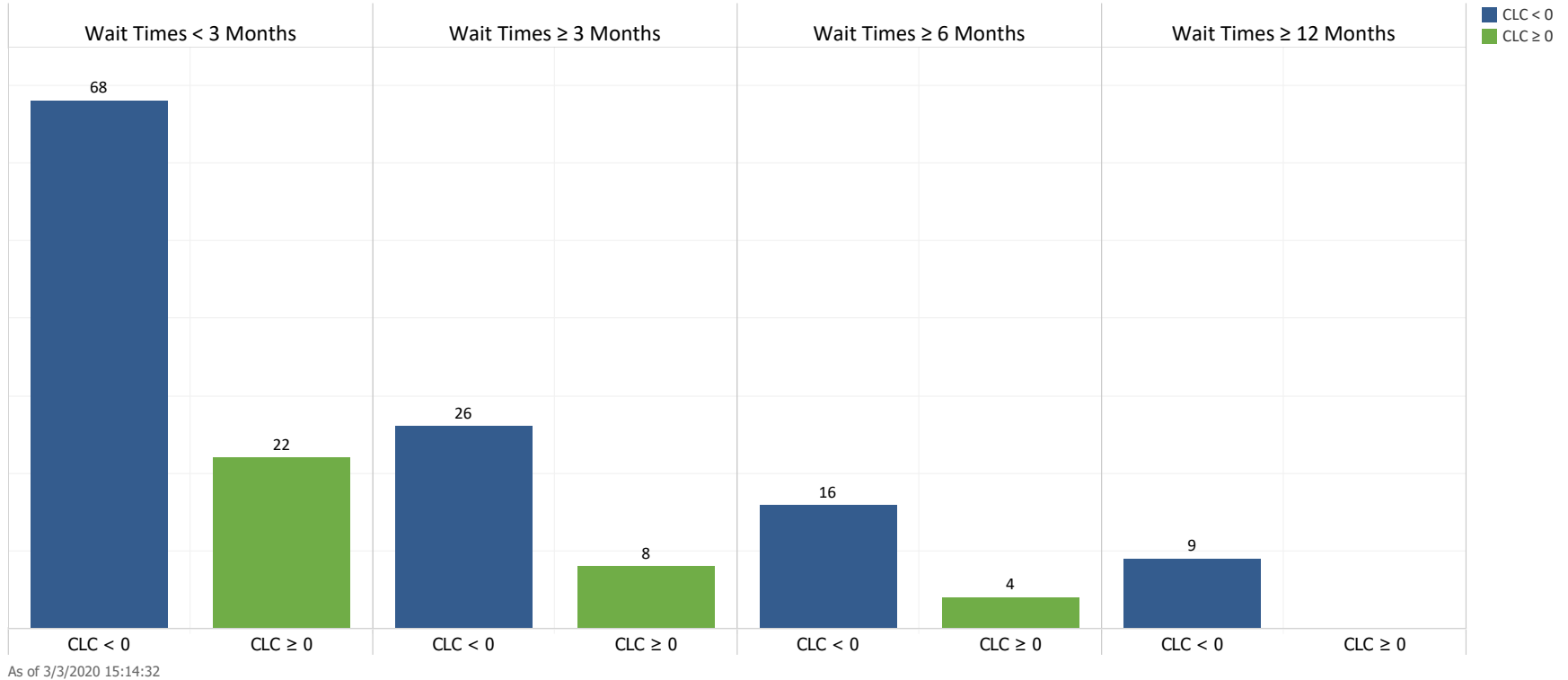
Due to high cPRA

#	Recipient Alias	R-ABO	cPRA	D-ABO	D-Ages	Months Wait
1	ADGO111180	O	100.00	O,O,O	40,40,56	23
2	AH2160223	A	100.00	O	52	17
3	AH6321	O	100.00	O	40	20
4	BRBA52375	O	100.00	O,A	65,61	15
5	F900092902	A	100.00	A,AB	37,30	21
6	H903961717	O	100.00	A,O	54,25	26
7	J36760809G	O	100.00	O	30	31
8	POPOJRE2	A	100.00	O	28	19
9	R203DV	O	100.00	O,O	50,23	25
10	R475238	O	100.00	O	57	15
11	EMIBRK	O	99.98	A	37	16
12	GM8784	B	99.98	O	33	50
13	LANDBRE	O	99.98	O	56	27
14	ROAI1976	A	99.98	O	43	19
15	UC06142609	O	99.94	O,A	51,43	41
16	CR02221971	O	99.93	A	47	29
17	JAJO7378	B	99.93	A,B,O,A,O,A..	38,35,49,39,39,3..	78
18	KATPAR	B	99.89	B	45	21
19	WG2276674	O	99.85	O	40	21
20	H904586708	O	99.78	O	28	15

As of 3/3/2020 15:14:32

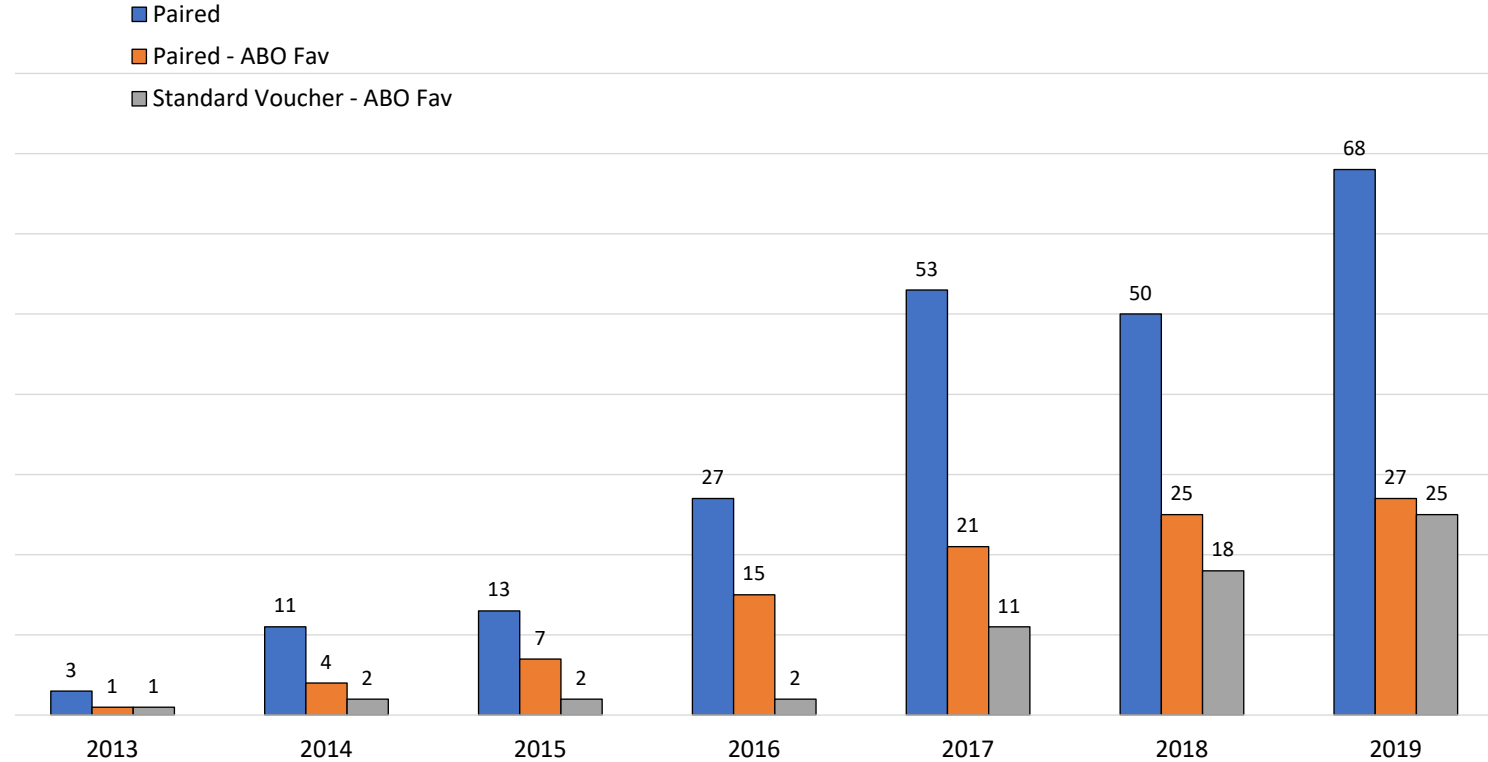


Pair Wait Time Analysis



Compatible Donors Donated

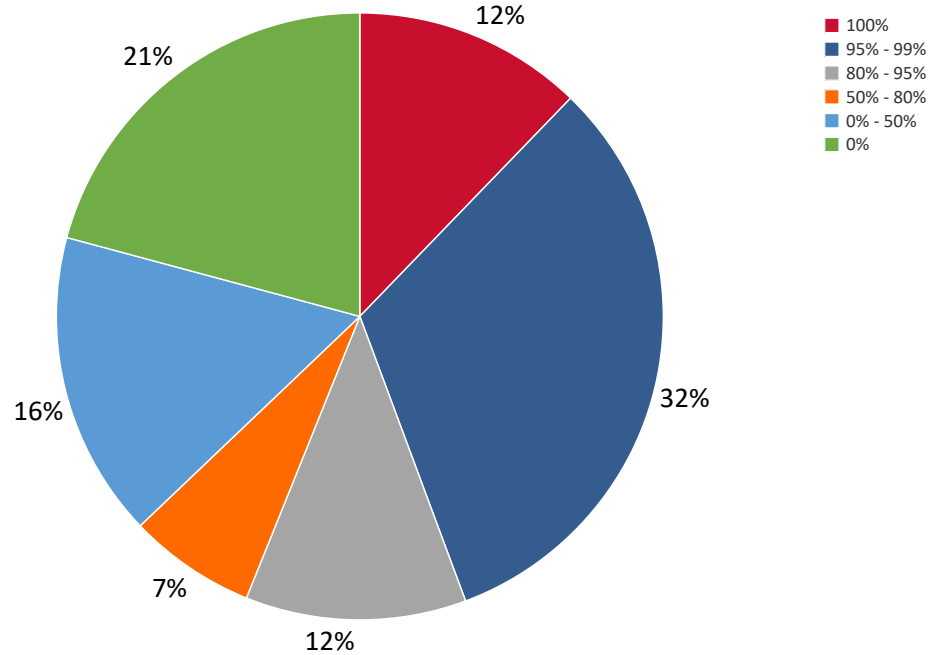
Through 12/31/19



'ABO Fav' = 'O blood type donor with non-O blood type recipient'



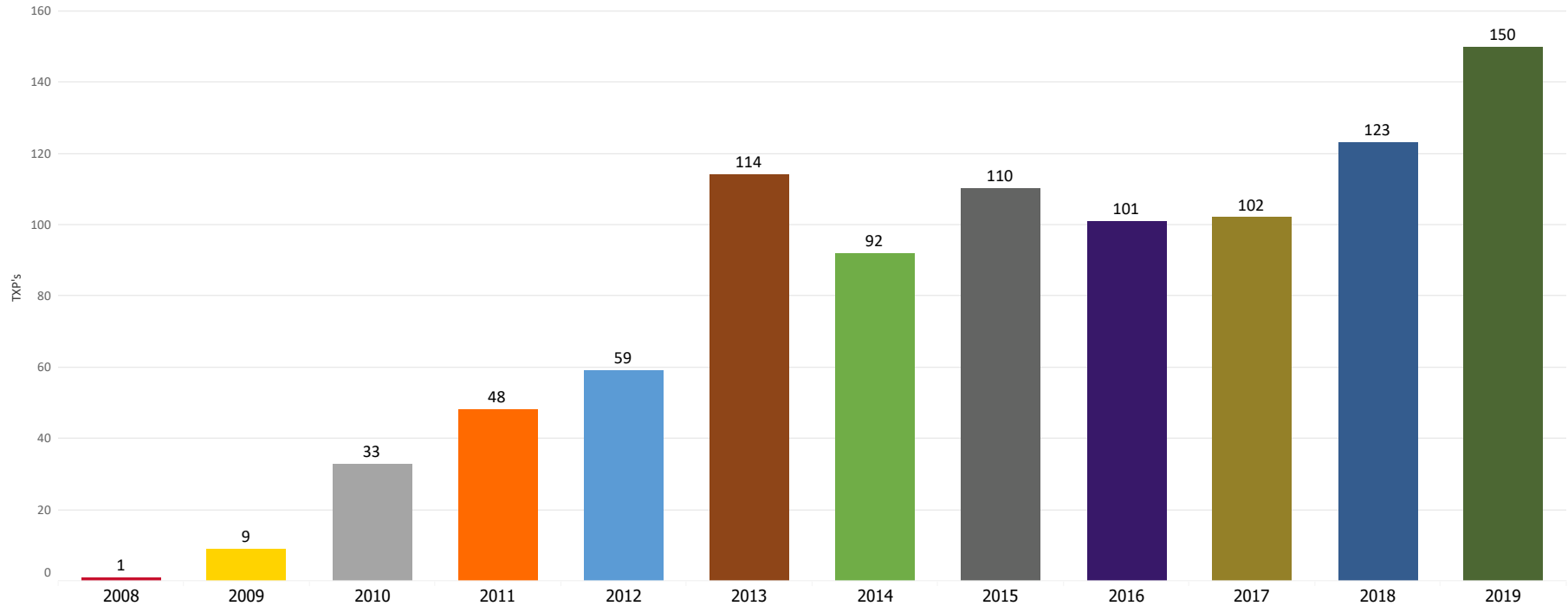
Pool Compositions by cPRA



As of 2/27/2020 13:49:09



Transplanted Patients with cPRA >80%



Transplanted Patients by cPRA

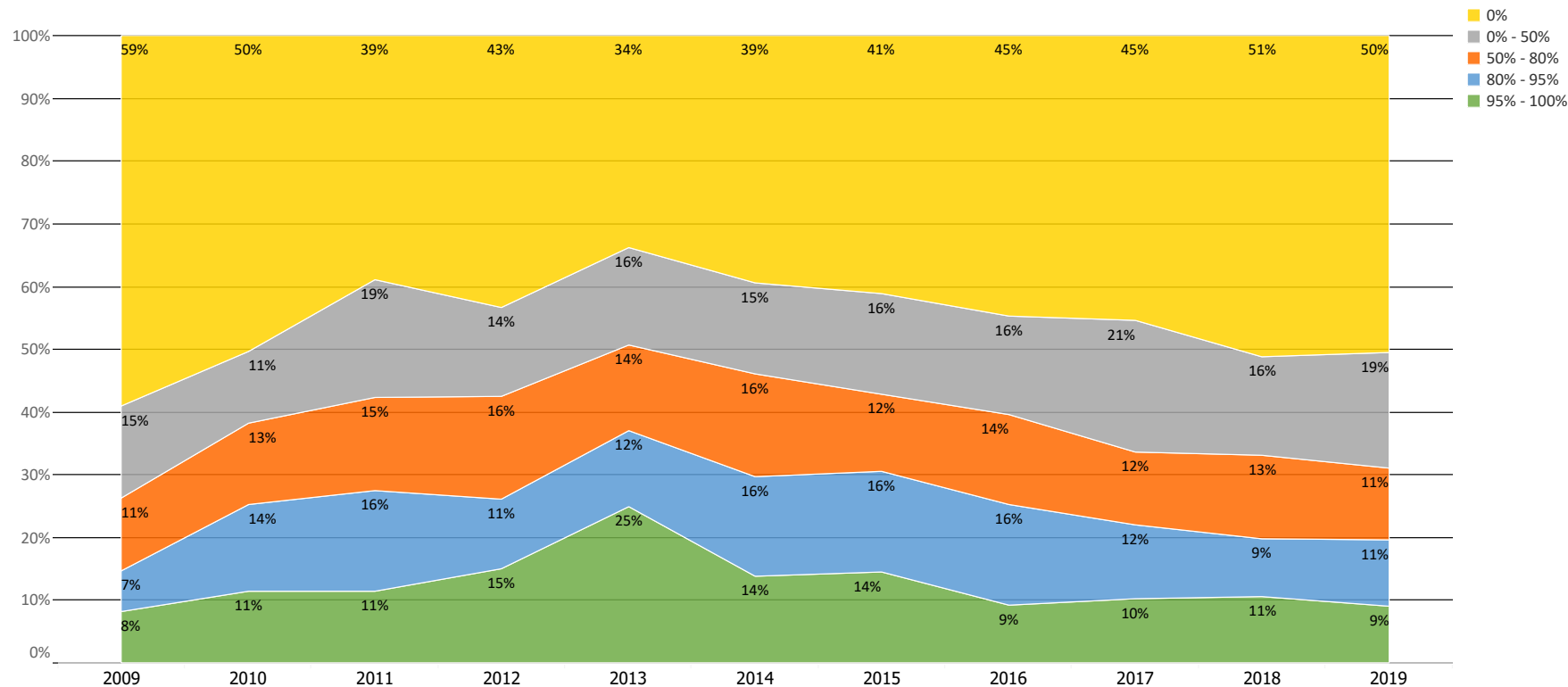


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Great HLA Matches

Zero Mismatch

#	TXP Date	Recipient Center	Swap #	D-ABO	R-ABO	Recipient cPRA	Wait	HLA Match Pts
1	12/12/2019	CCFlorida	1922	A2	A	99.93	15.4	100
2	07/31/2019	Emory	1747	A1	A	0.00	0.1	100
3	07/31/2019	UMinn	1723	A1	A	0.00	0.2	100
4	07/17/2019	Ulowa	1739	A1	A	99.50	1.7	100
5	06/11/2019	Sharp	1704	A1	A	0.00	0.5	100
6	03/01/2019	Washington	1491	A1	A	0.00	1.0	100
7	11/01/2018	UMinn	1468	A1	AB	99.61	11.9	100
8	09/21/2018	Madison	1445	A1	A	0.00	0.0	100
9	06/12/2018	Piedmont	1295	O	O	100.00	2.2	100
10	04/04/2018	Cornell	1266	B	AB	0.00	1.1	100
11	02/14/2018	Penn	1227	O	O	7.92	3.5	100
12	02/08/2018	WalterReed	1203	A1	AB	99.58	5.0	100
13	01/03/2018	Hartford	1191	O	O	0.00	9.5	100
14	01/03/2018	Maine	1157	A1	A	99.85	8.6	100
15	12/05/2017	UCLA	1160	O	B	99.10	1.4	100
16	06/01/2017	Hopkins	1019	A1	AB	0.00	1.6	100
17	05/24/2017	Brigham	1026	A1	A	92.61	2.4	100
18	01/18/2017	ChristHosp	952	A1	A	99.14	0.6	100
19	11/08/2016	UMinn	928	A?	A	99.25	4.2	100
20	09/07/2016	Sharp	882	A1	A	0.00	0.0	100
21	08/31/2016	Cincinnati	884	A1	A	74.33	1.0	100
22	08/30/2016	OSU	509	A1	A	88.03	1.2	100
23	02/11/2016	SCarolina	459	A2	A	99.21	2.6	100
24	12/22/2015	Madison	442	A1	A	97.98	5.8	100
25	11/19/2015	UMinn	440	O	O	99.91	5.4	100
26	02/17/2015	UCLA	357	A1	A	99.98	33.8	100
27	12/11/2014	Emory	351	A1	A	99.83	5.0	100
28	11/13/2014	Hopkins	330	A1	O	97.85	1.2	100
29	08/05/2014	Loyola	324	A1	A	99.52	1.1	100
30	01/09/2014	Madison	674	O	A	98.64	5.4	100
31	10/03/2012	Barnabas	182	A?	A	93.95	3.6	100
32	04/19/2012	Cornell	152	A1	A	0.00	0.6	100
33	03/31/2011	Barnes	105	A1	A	99.94	6.9	100
34	06/15/2010	UCSF	58	A?	A	99.43	6.1	100

As of 2/27/2020 13:49:09



New Exportable Pairs

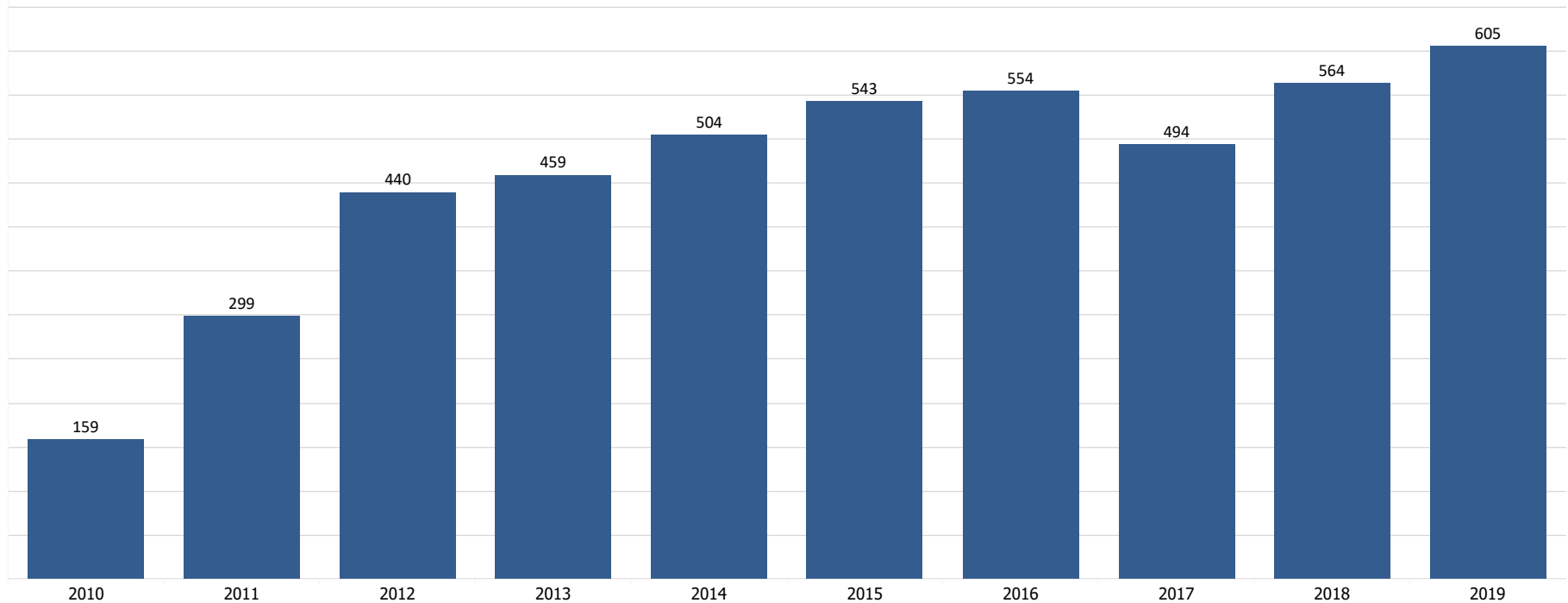


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Chains Started

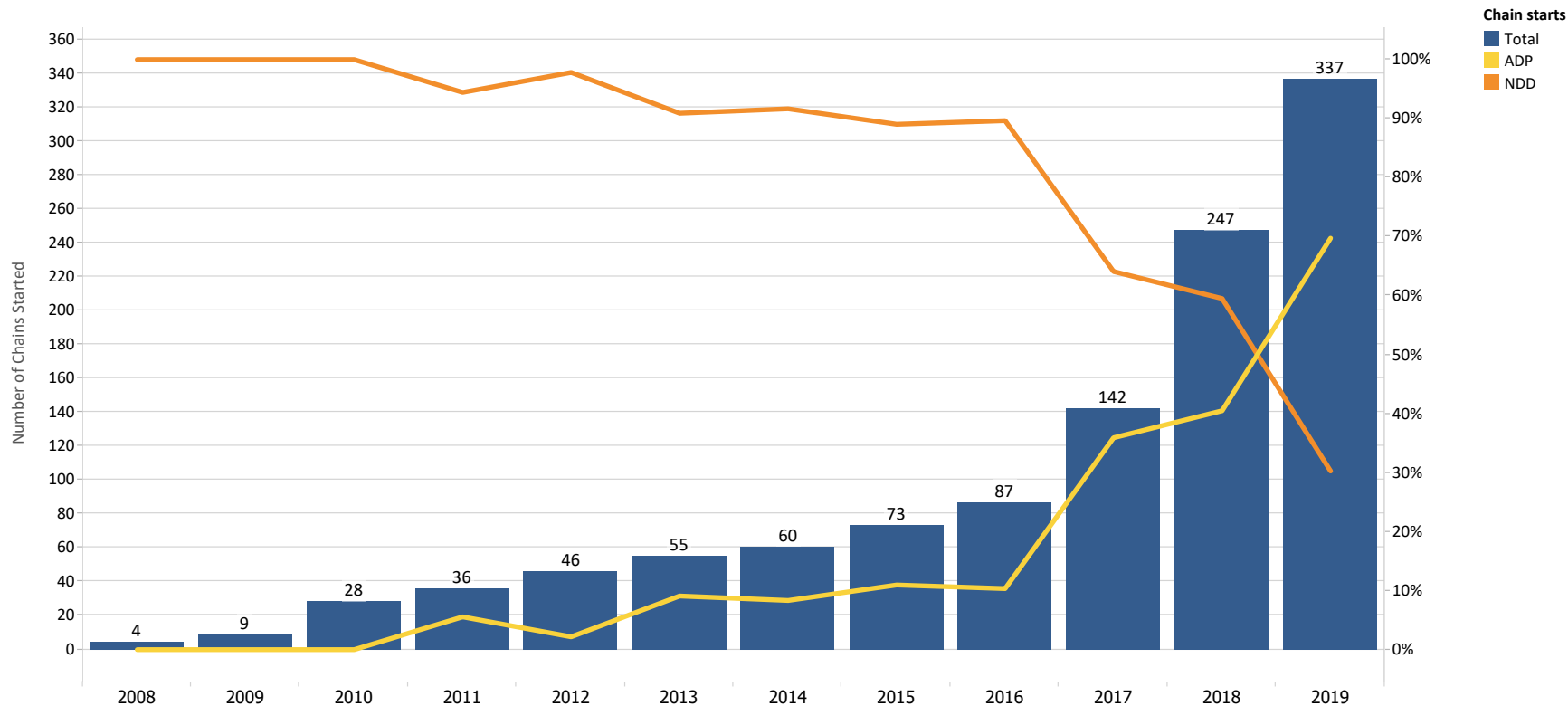


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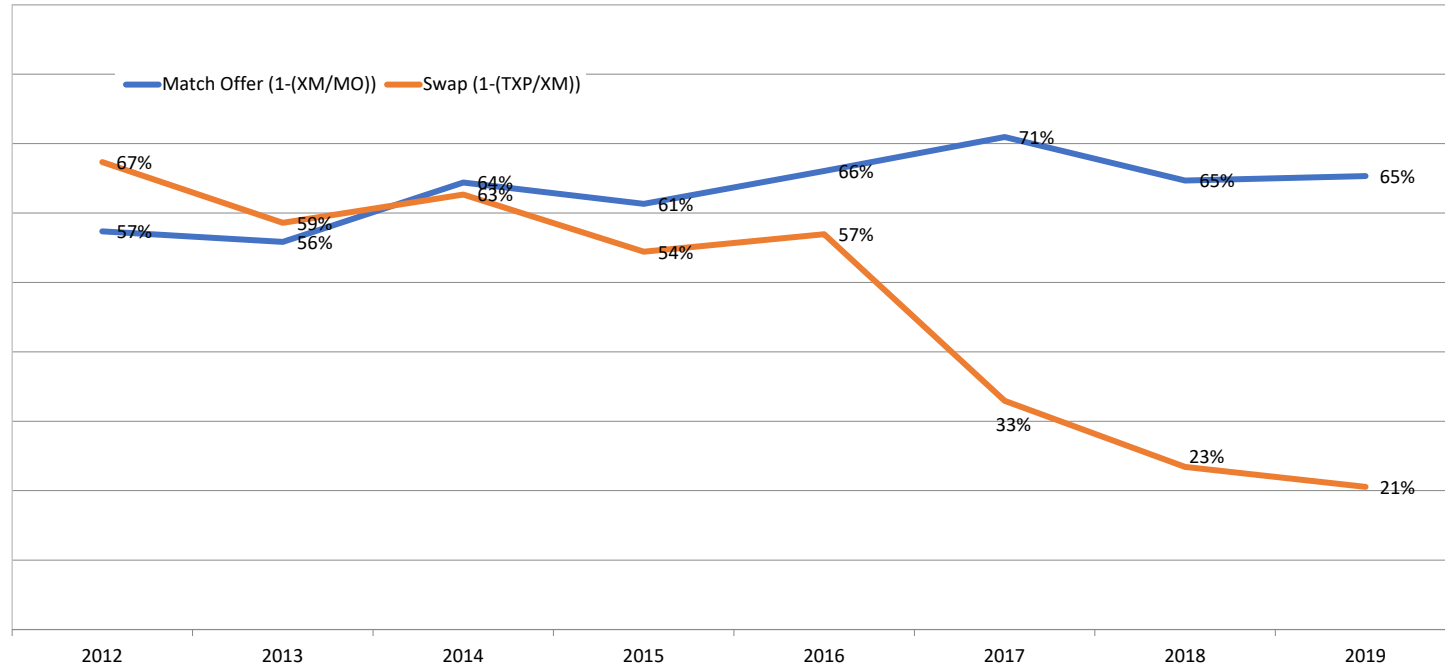
Chain and Loop Statistics

Swap Type	Swap Status	Count	Mean Length	Transplants
Chain	Ended	1,168	3.05	3,565
	Broken	27	3.85	104
	Active	3	1.00	3
	Total	1,198	3.07	3,672
Loop	Ended	132	2.32	306
	Active			
	Total	132	2.32	306
Total		1,330	2.99	3,978

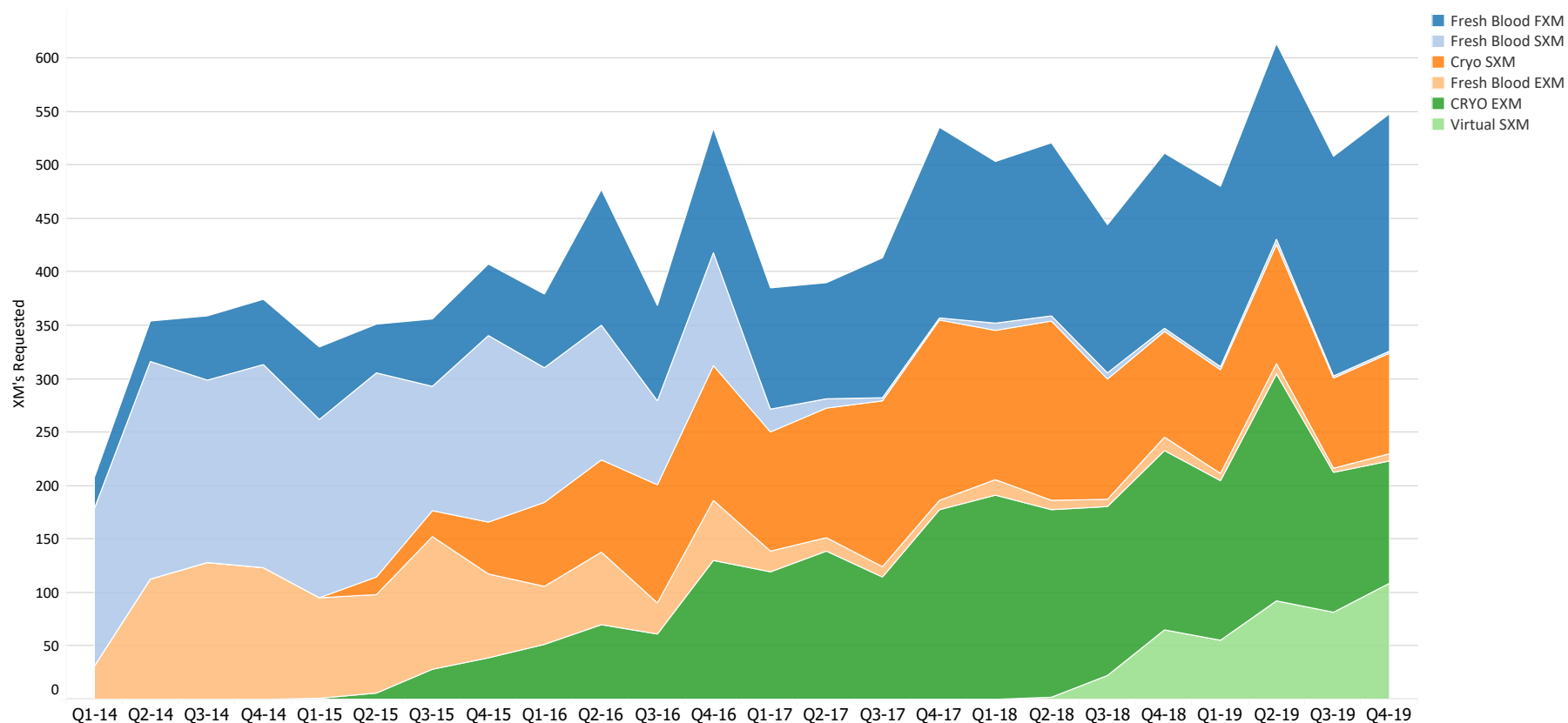
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Failure Rates



Streamlined Cross Matches Requested



Virtual Screening Crossmatches

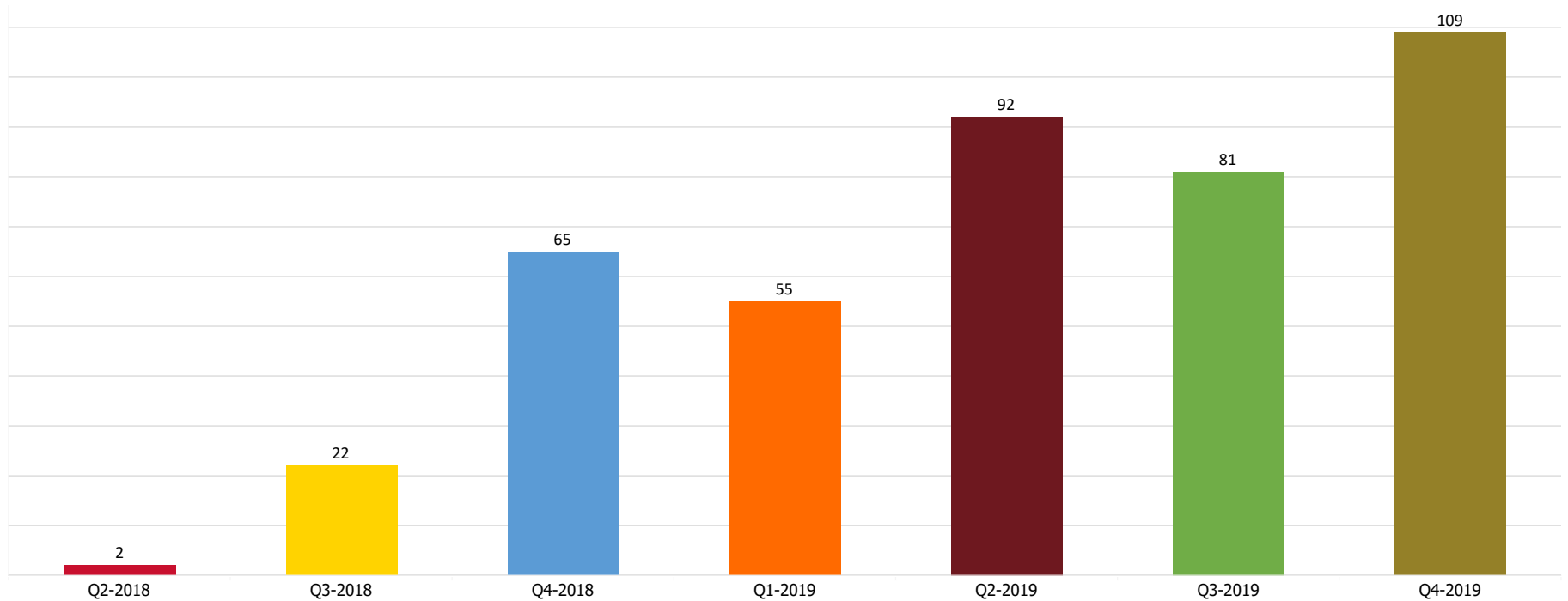


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Advanced Donation Program (ADP)

Summary

Type	Cases	Additional TXPs	80%+ cPRA TXPs Facilitated	95%+ cPRA TXP Facilitated
Standard Voucher	244	549	119	59
Family Voucher	154	365	77	36
Swap Saver	55	123	36	14
Real-Time Swap Failure	13	58	16	8
Total	466	1095	248	117

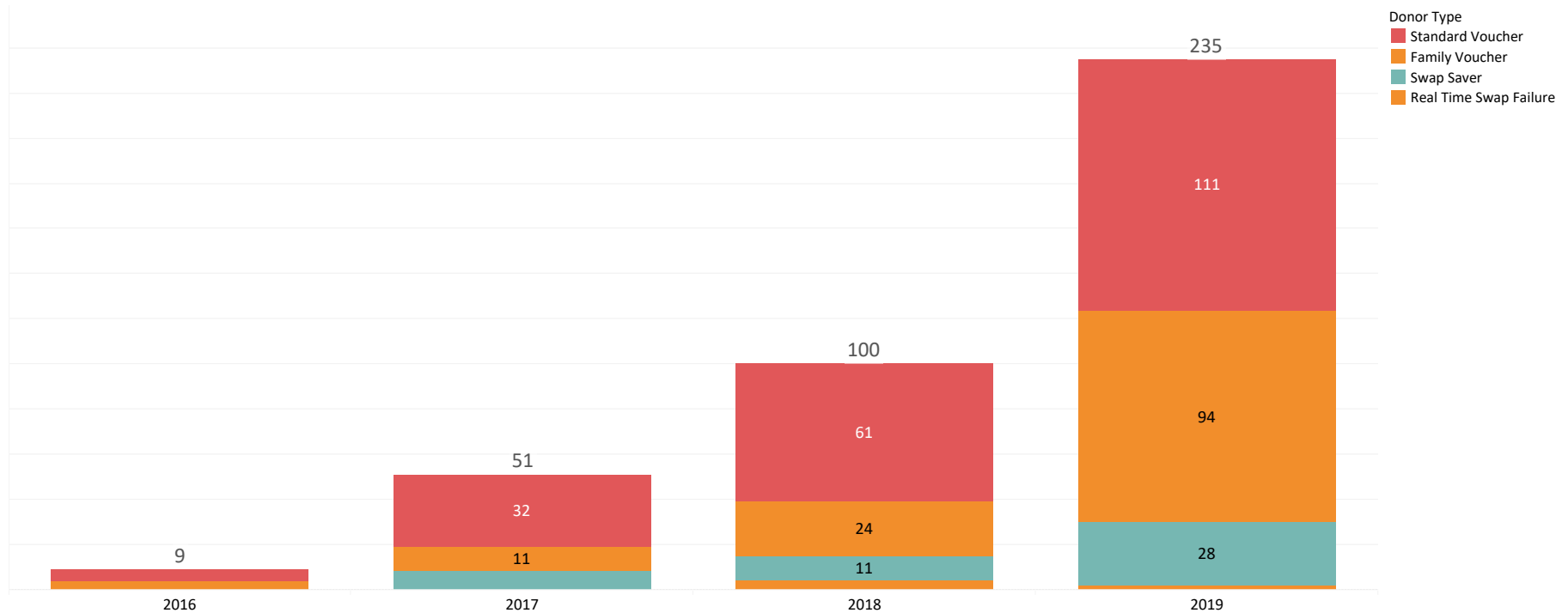
As of 2/27/2020 13:49:09

(This includes donors that have been flagged as ADP going back to 2011)

Cases, Additional TXPs Facilitated, 80%+ cPRA TXPs Facilitated and 95%+ cPRA TXP Facilitated broken down by Voucher Type.



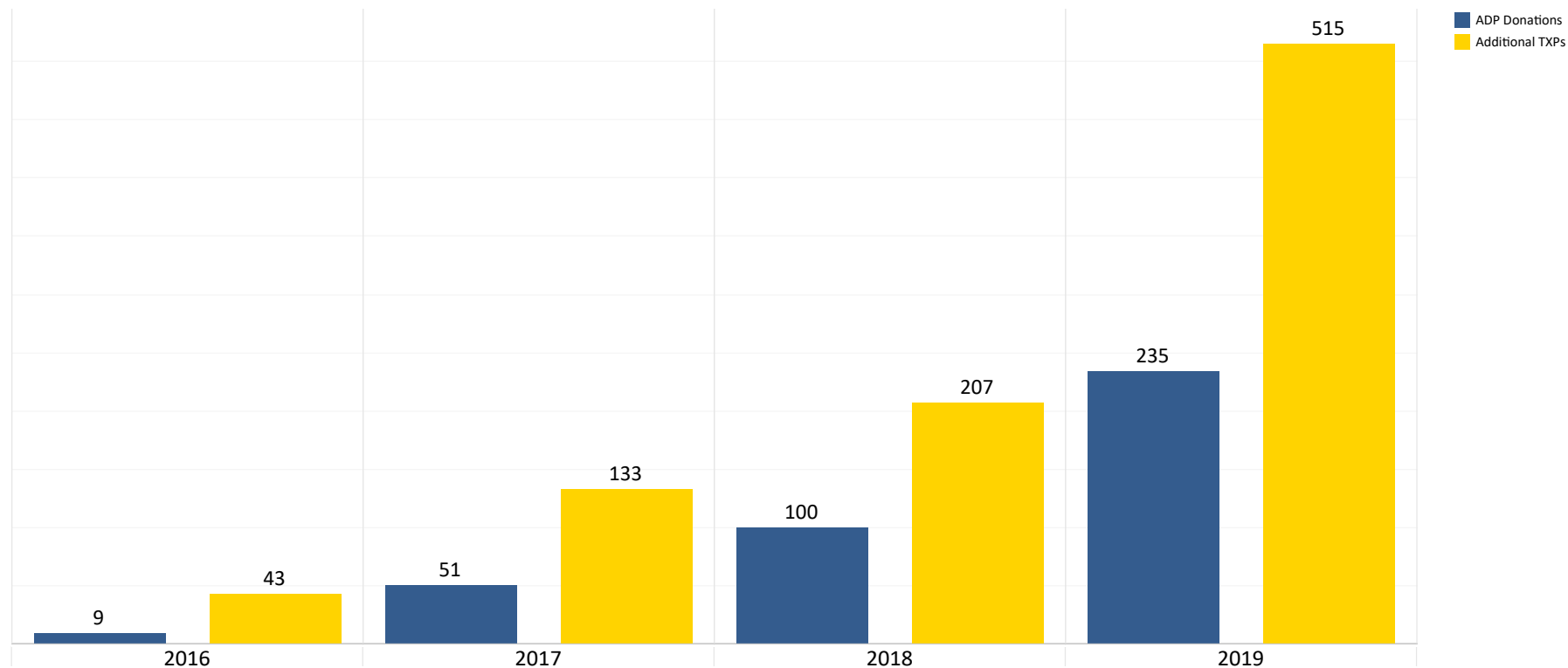
Advanced Donation Program Donors by Type



As of 3/7/2020 20:00:54



ADP Donations & Additional TXPs Facilitated



As of 3/7/2020 20:00:54
Chart restated due to data updates



ADP Recipients Outstanding vs. Overall Chains Started

