NATIONAL KIDNEY Registry®

FACILITATING LIVING DONOR TRANSPLANTS

Quarterly Report

Q3 Results 2020

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Message from the Founder & CEO

Starting in June, NKR activity returned to pre-pandemic levels with October setting a record for the most KPD transplants in a single month. As our volumes continue to grow, patient wait times continue to drop. Because wait times have dropped so much over the years, we have added a new category in the Wait Time Distribution chart for patients matched and transplanted in under 45 days. In the third quarter, a remarkable 49% of patients were matched and transplanted in under 45 days.

During the third quarter, there was a dramatic improvement in the swap failure rate, dropping from 33% in the prior two quarters to 13% in the third quarter. This significant improvement was primarily driven by widespread adoption of virtual cross-matching and the increasing accuracy of this methodology. Most centers now exceed a 95% virtual cross-match accuracy rate. Our goal is to achieve a 95% accuracy rate at all NKR Member Centers by the end of 2020.

The Voucher Program continues to gain popularity with over half of Good Samaritan donor candidates choosing to become Family Voucher donors and over a third of paired donors now choosing to enter the Standard Voucher Program. In the third quarter we deployed the Voucher Education Module to better educate donor candidates about the advantages of voucher donation. Early results indicate that only 10% of donor candidates choose to opt out of the Voucher Program and about 50% indicate an interest in learning more about the Voucher Program.

This decoupling of pairs is particularly important as we see the increasing success of the Kidney for Life program. To date, we have found 11 low eplet mismatches including 5 zero mismatch matches across the 7 centers.

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

Sincerely,

Garet Hil
Founder & CEO
National Kidney Registry

NKR Leading U.S. KPD Growth

Chart legend: NKR (blue), United States (orange)

Year	NKR	United States
2005		27
2006		72
2007		114
2008	21	244
2009	62	290
2010	131	450
2011	175	473
2012	226	552
2013	308	603
2014	310	576
2015	360	597
2016	399	654
2017	462	698
2018	619	932
2019	760	1116
2020 Forecasted	781	1029
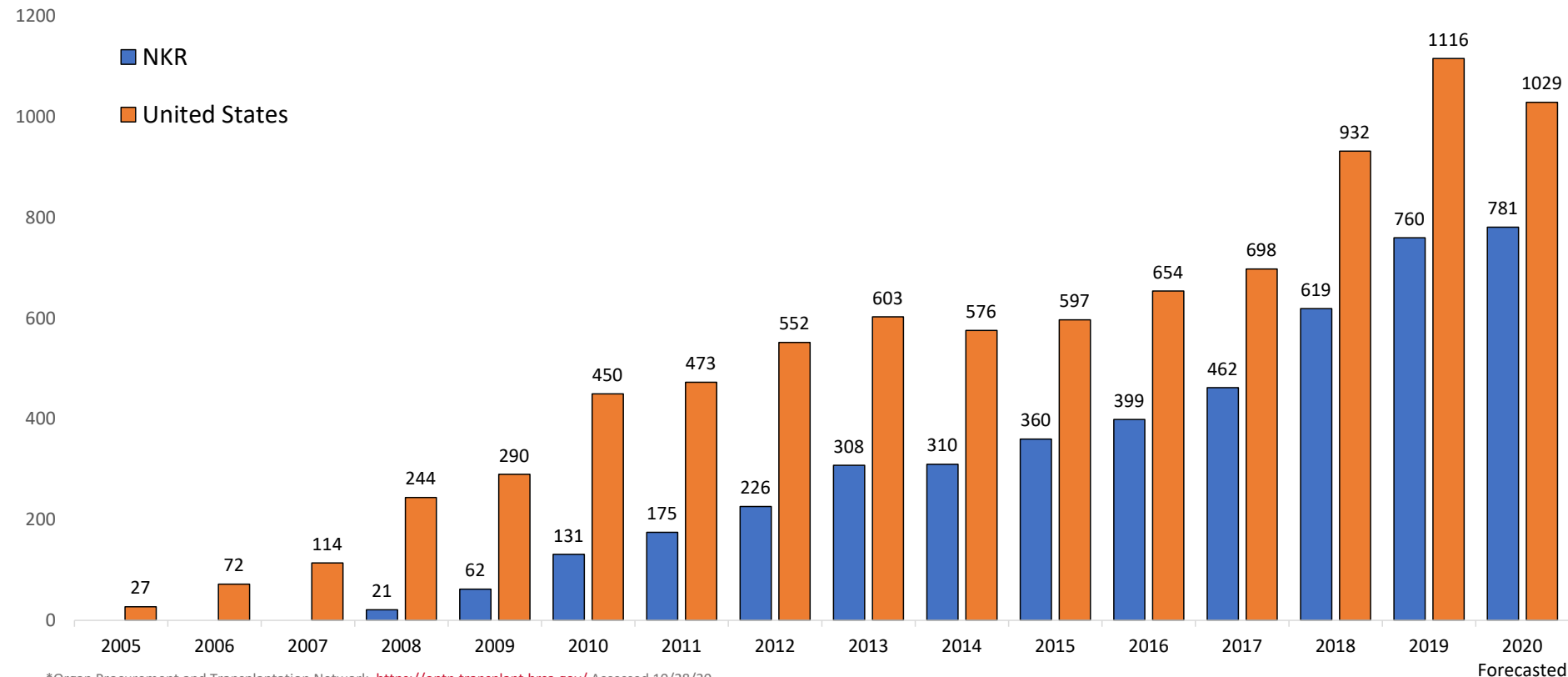
*Organ Procurement and Transplantation Network. https://optn.transplant.hrsa.gov/ Accessed 10/28/20

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Superior Outcomes
Death Censored Graft Failure Comparisons

% Graft Failure

Legend:
- NKR KPD (NKR) (n=2,229)
- Non-NKR KPD (KPD) (n = 5,149)
- US Living Donor (LD) (n=60,272)
- US Unrelated Living Donor (ULD) (n=29,015)

3 Year*
- NKR: 3.2% — **20% Lower P=0.03**
- KPD: 4.5%
- LD: 3.9%
- ULD: 4.1%

5 Year*
- NKR: 6.2% — **12% Lower p<0.01**
- KPD: 8.0%
- LD: 7.0%
- ULD: 7.2%

7 Year*
- NKR: 8.7% — **26% Lower p<0.001**
- KPD: 11.2%
- LD: 11.3%
- ULD: 10.6%

*Statistically Significant

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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 Supported and Protected
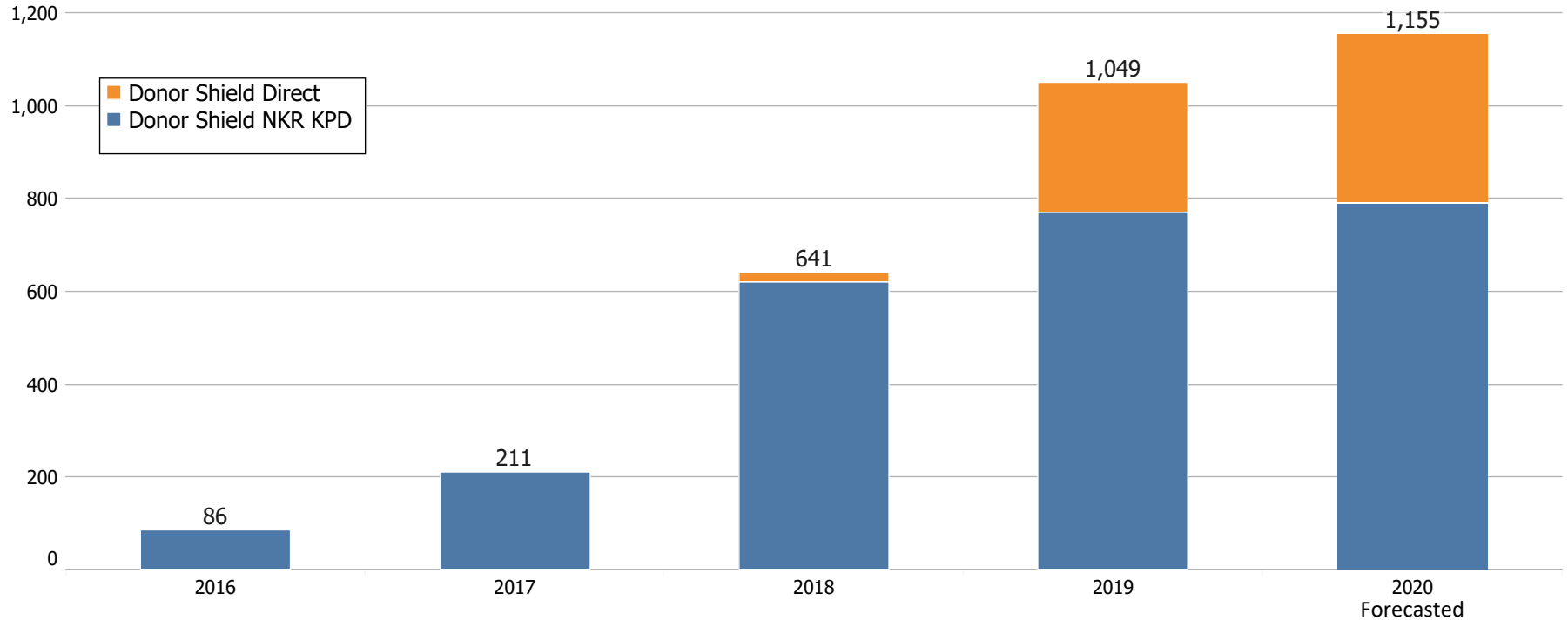
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*Restated due to database update/changes affecting calculations

Microsite Growth
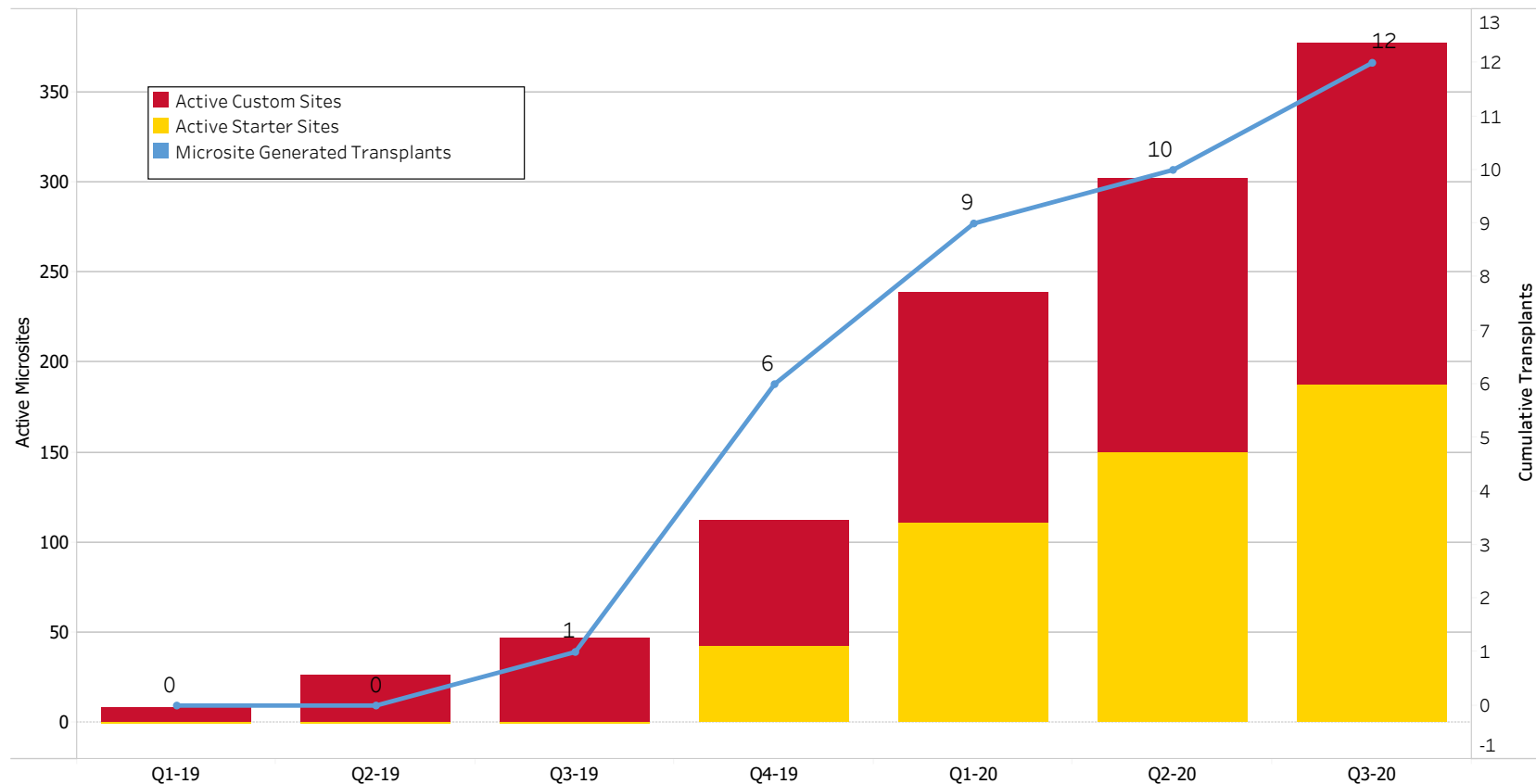
Microsite Centers
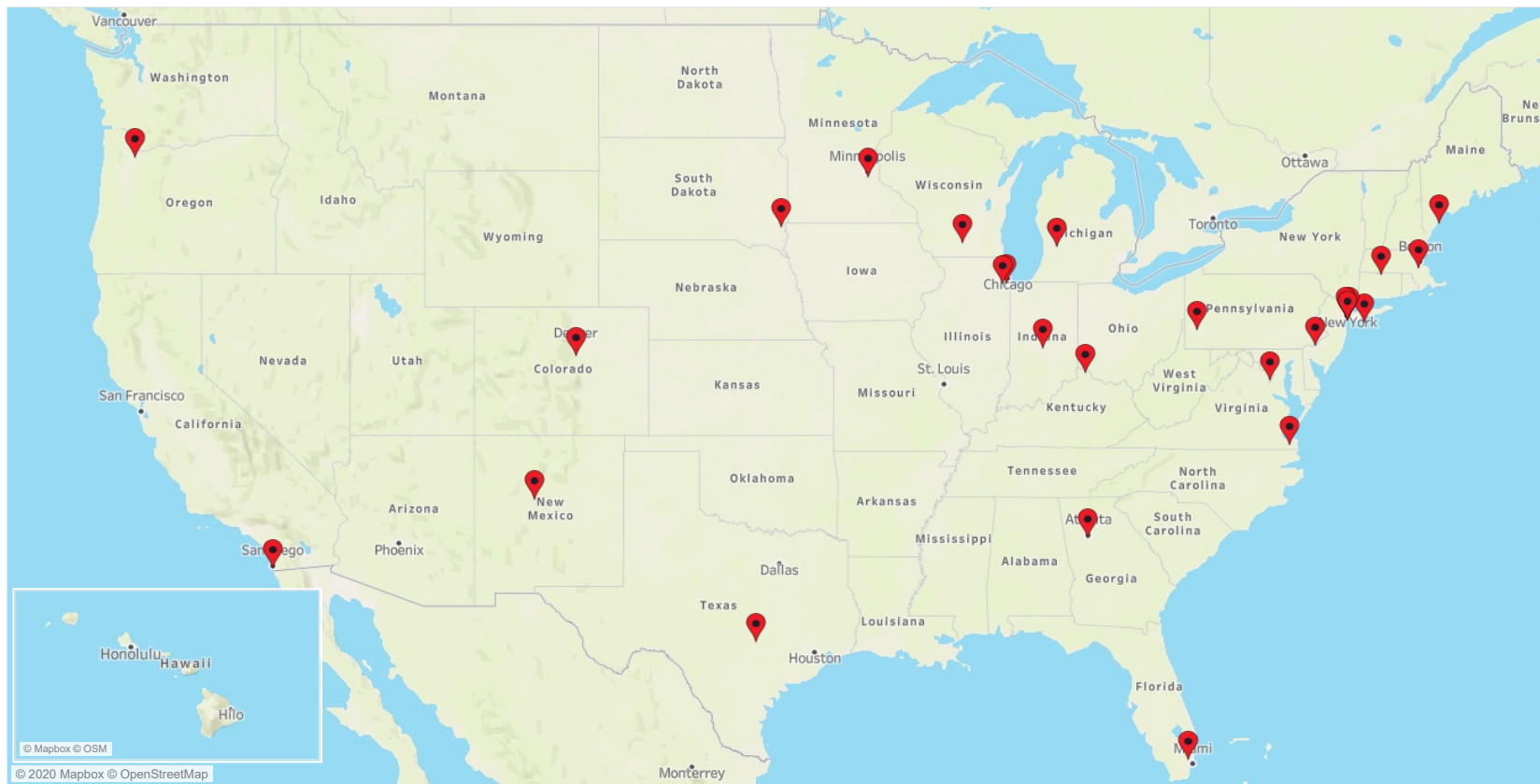
Kidney for Life Successful Matches
Patients Matched and/or Transplanted by Center

Legend:
- Low Mismatch (orange)
- 0 Mismatch (blue)

Center	Value
NYU	3
Colorado	2
UMinn	2
CinciChildrens	1
Cornell	1
Georgetown	1
Intermtn	1
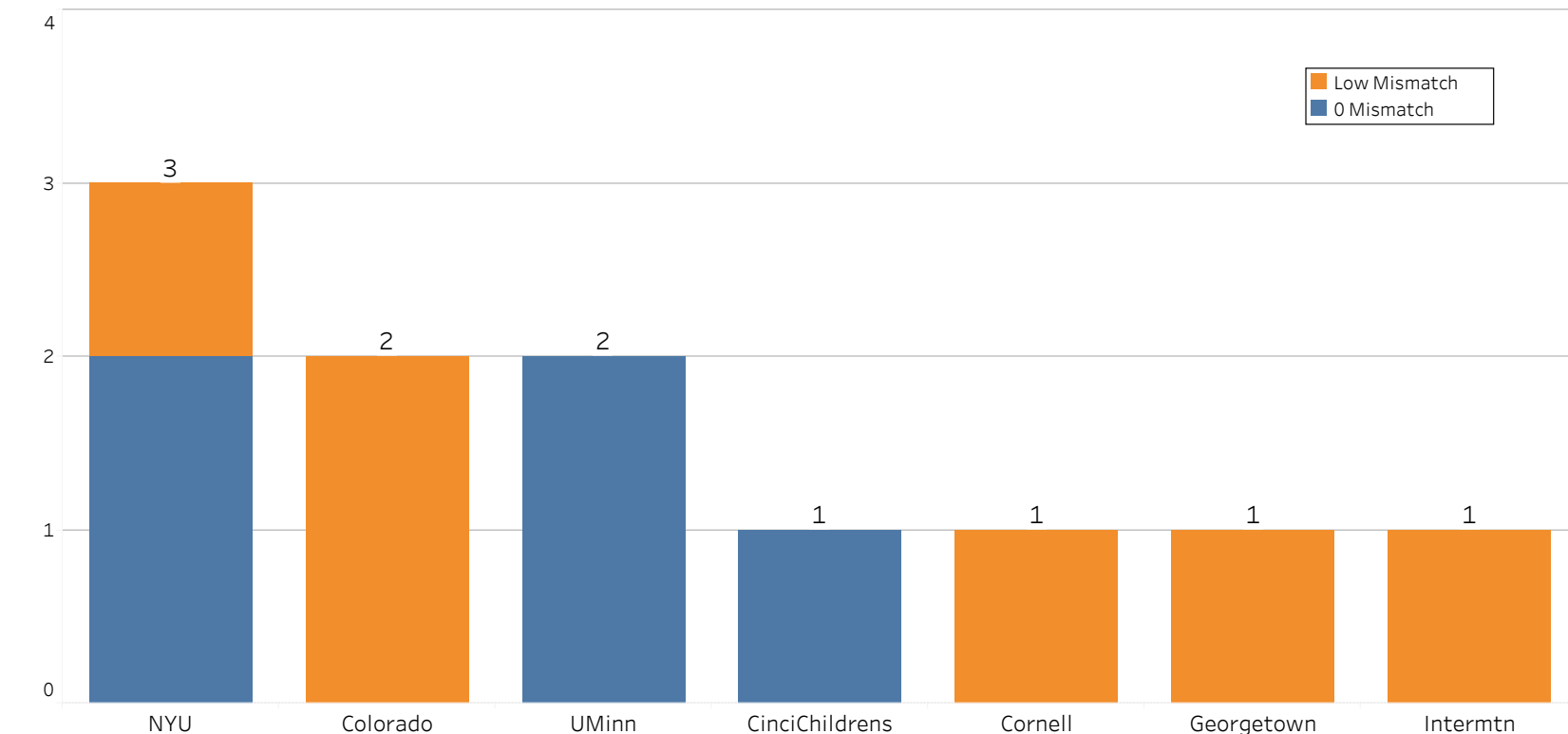
As of 11/12/2020 12:00:44

Kidney for Life Successful Matches

0 and Low Eplet Mismatches (MM)

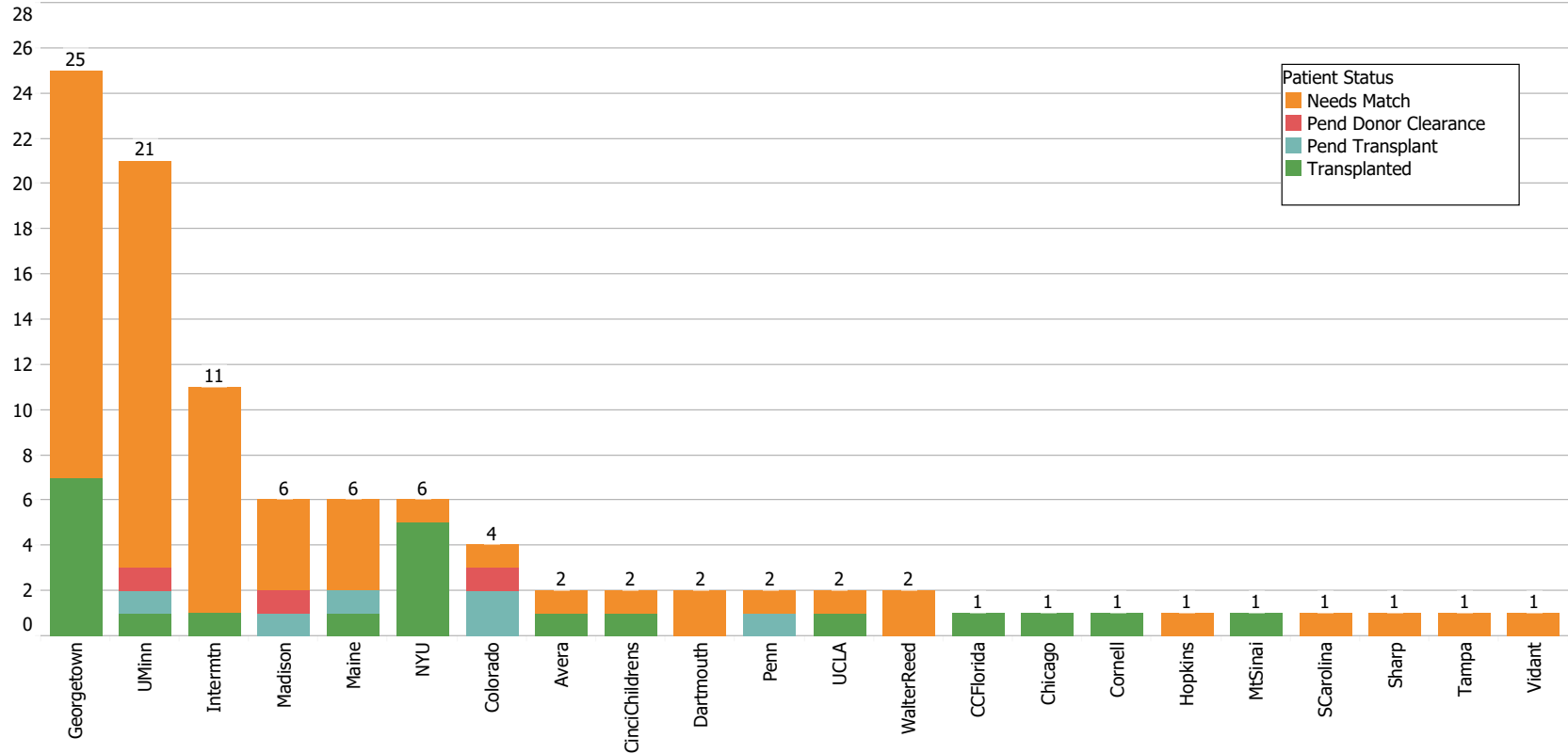| #	R Center	R Alias	cPRA	R Age TOT	R ABO	Match Offer Date	Transplant Date	Compatibility	Paired Donor Eplet MM	Matched Donor Eplet MM	Exportable To Match Offer (Days)	Match Offer To Transplant (Days)	Exportable To Transplant (Days)
1	Colorado	CF7874327	0	6	A	11/11/20	12/09/2020	Compatible	Low	Low	1	28	29
2	Colorado	JD1463793	12	34	A	11/06/20	12/02/2020	Compatible	High	Low	1	26	27
3	Cornell	PRAP86	0	33	B	07/28/20	08/26/2020	Compatible	UNK	Low	43	29	72
4	UMinn	ROJO75	79	44	O	11/03/20	11/24/2020	ABOi	Medium	0	21	21	42
5	Intermtn	SPECAMREC	100	38	O	10/07/20	10/29/2020	HLAi	High	Low	56	22	78
6	Georgetown	FS0923628R	0	60	B	09/22/20	10/28/2020	ABOi	High	Low	12	36	48
7	CinciChildrens	HM11376290	0	6	A	10/06/20	10/28/2020	ABOi	High	0	316	22	338
8	NYU	JJ14219675	0	65	O	09/24/20	10/21/2020	ABOi	UNK	Low	37	27	64
9	UMinn	NELKI77	71	42	B	09/23/20	10/13/2020	HLAi	High,High	0	1	20	21
10	NYU	MV12134082	87	63	O	09/02/20	09/30/2020	HLAi	High	0	9	28	37
11	NYU	PB12351383	0	61	O	06/05/20	08/26/2020	ABOi	High	0	15	82	97

As of 11/12/2020 12:00:44

Patients with 3G Typing by Center

Top Centers
NKR KPD Transplants 10/1/2019 - 09/30/2020

Center	Transplants
Madison	65
Georgetown	58
Colorado	35
MayoAZ	34
UCSF	32
UCLA	30
Emory	28
UMinn	24
Cornell	24
Piedmont	21

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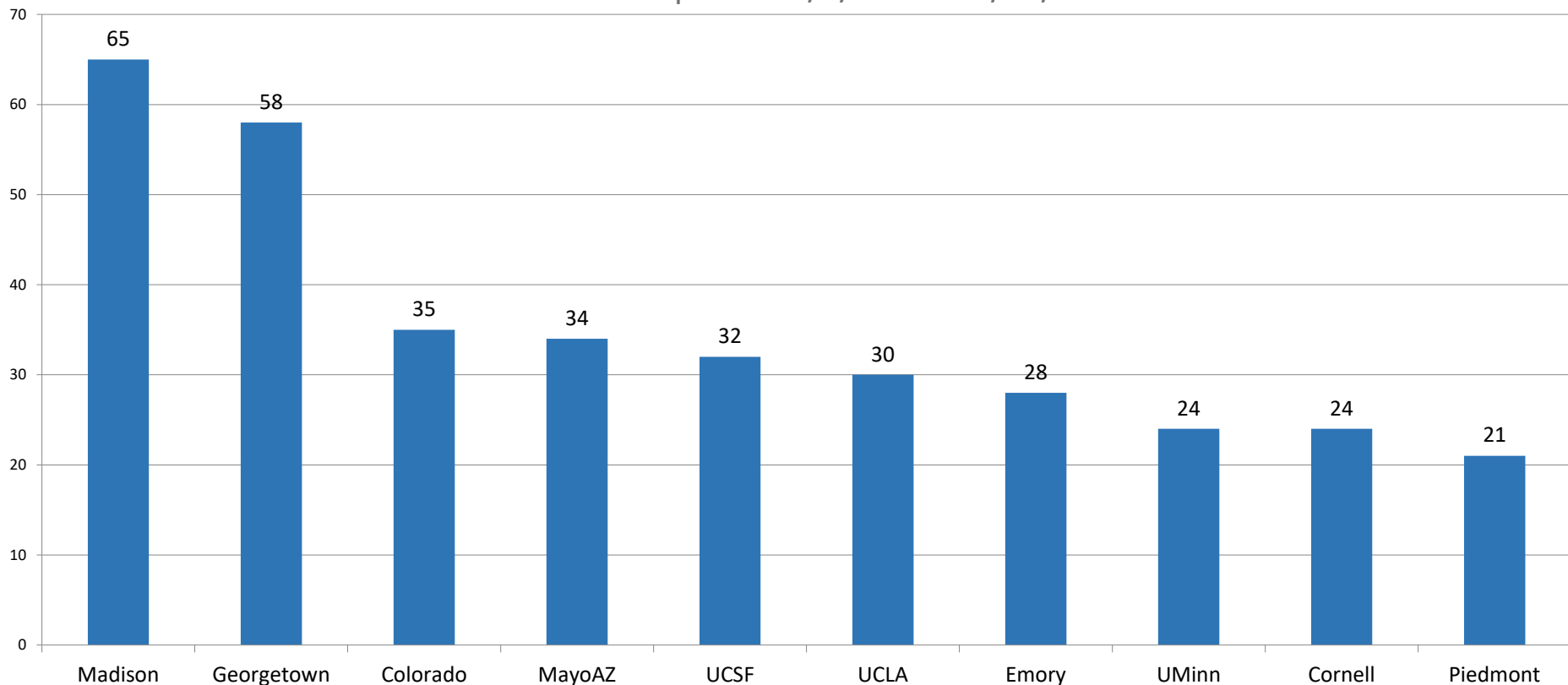
Top Center Liquidity Contributors (CLC)
CLC Driven Transplants 10/01/2019 - 09/30/2020

Legend: CLC TXPs, CLC Offers

Center	CLC TXPs	CLC Offers
Georgetown	45	100
Madison	30	81
Colorado	20	73
Cornell	15	61
UCLA	12	24
UMinn	12	30
Brigham	11	28
UCSD	11	27
VirginiaMason	10	27
Legacy	9	24
Avera	8	31

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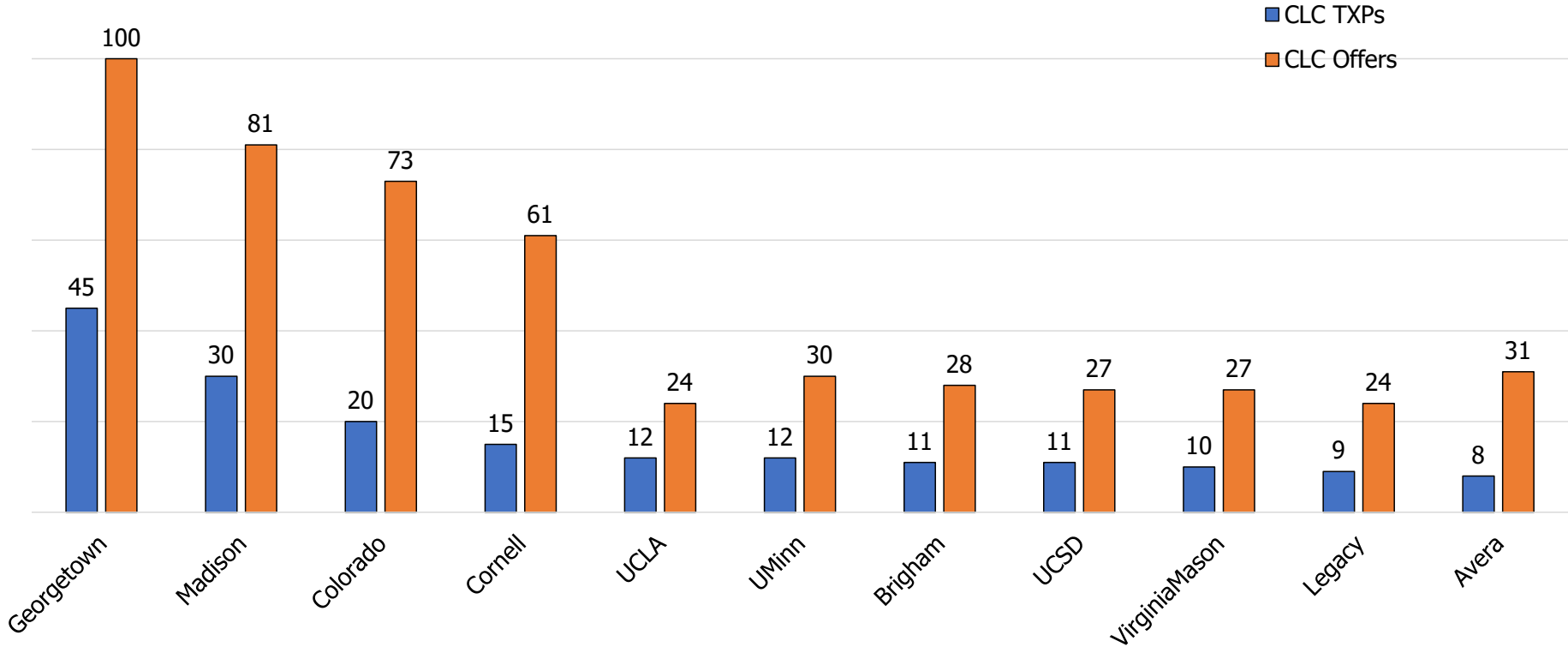
Partner Center Chain End Targets

As of 11/4/20

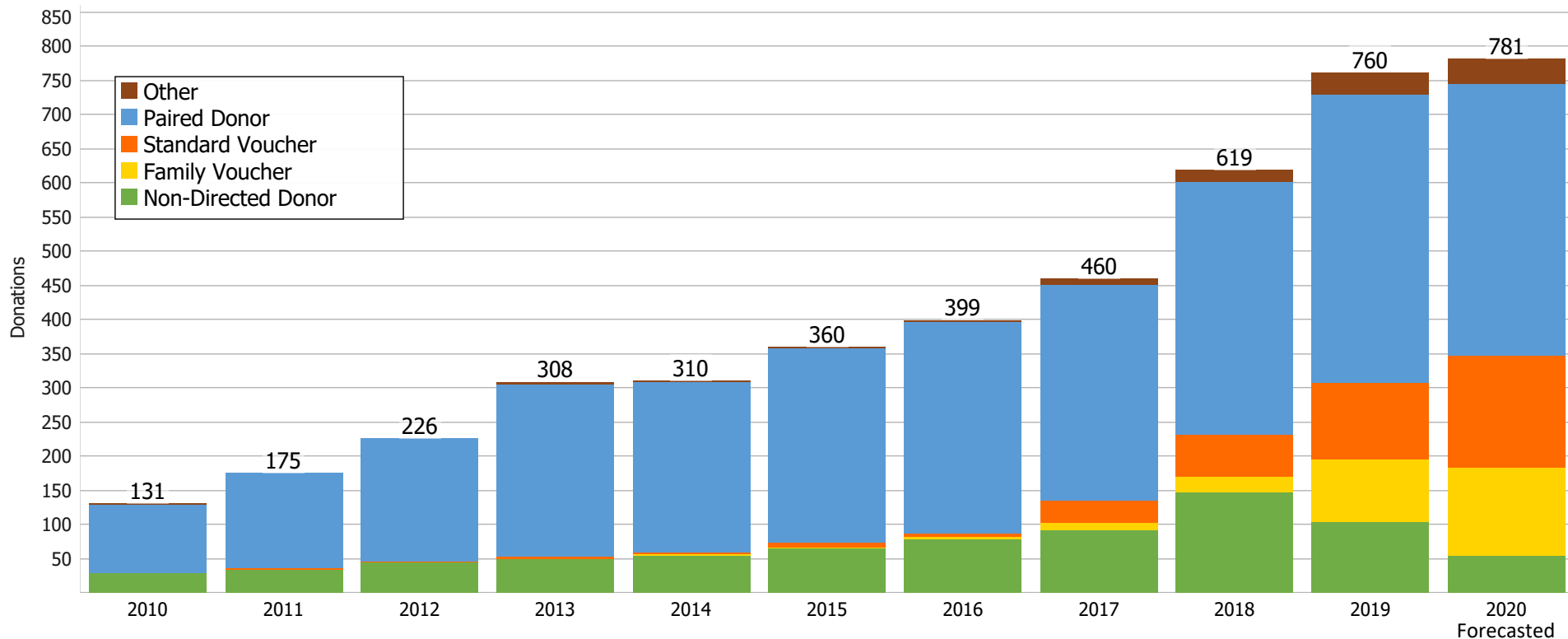| Center	Family Voucher (FV) Target	FV O Chains Last 24 Months	FV Non-O Chains Last 24 Months	Net Chains Starts	Declines Last 12 Months	Match Offer Decline Ratio	Center Liquidity Contribution
Colorado	23	8	11	-31	16	73	210
Maine	12	2	4	-4	10	83	-1440
Cornell	10	8	7	-36	12	80	2100
UCSF	10	6	4	-22	0	0	-6700
Madison	10	11	21	-76	24	73	-2850
MayoAZ	8	5	2	-16	2	15	-2900
Avera	8	2	2	-4	14	175	2600
Hartford	7	1	2	-1	4	67	540
Brigham	7	3	4	-13	7	140	-1000
NYU	6	1	1	0	4	50	200
UCSD	6	2	6	-14	1	17	9740
CCFlorida	5	2	1	-5	1	33	-3440
Rush	3	1	3	-7	1	17	-680
UCLA	2	4	7	-28	5	28	-7300
Legacy	2	1	1	-4	14	93	-1980
UHCleveland	2	0	1	0	0	0	3400
UMinn	1	5	2	-23	0	0	12880
HMHN	0	0	0	0	0	0	0
Piedmont	0	0	0	0	1	25	-9200
Cincinnati	0	0	0	0	1	11	2200
Sharp	-1	0	1	-3	1	50	-2390
Allegheny	-1	1	0	-5	1	999	-2240
Vidant	-2	0	0	-2	0	0	3000
ChristHosp	-2	0	1	-4	0	0	6620
VAHD	-3	0	1	-5	0	0	3360
Georgetown	-4	7	4	-40	4	19	6710
MtSinai	-4	0	0	-4	5	167	-14830
VirginiaMason	-7	0	0	-7	18	257	-1400
Emory	-10	0	3	-16	9	112	-4640

* https://clc.kidneyregistry.org/WebForm1.aspx?ReportKeyPass=ag5Ghnf76Tghd765GFtre&NcsSummary=1&Sort=DefaultSort&Supress=1 11/4/20

Decline ratio >100

Kidney Donations by Donor Type

Legend:
- Other
- Paired Donor
- Standard Voucher
- Family Voucher
- Non-Directed Donor

Y-axis: Donations

Values by year:
- 2010: 131
- 2011: 175
- 2012: 226
- 2013: 308
- 2014: 310
- 2015: 360
- 2016: 399
- 2017: 460
- 2018: 619
- 2019: 760
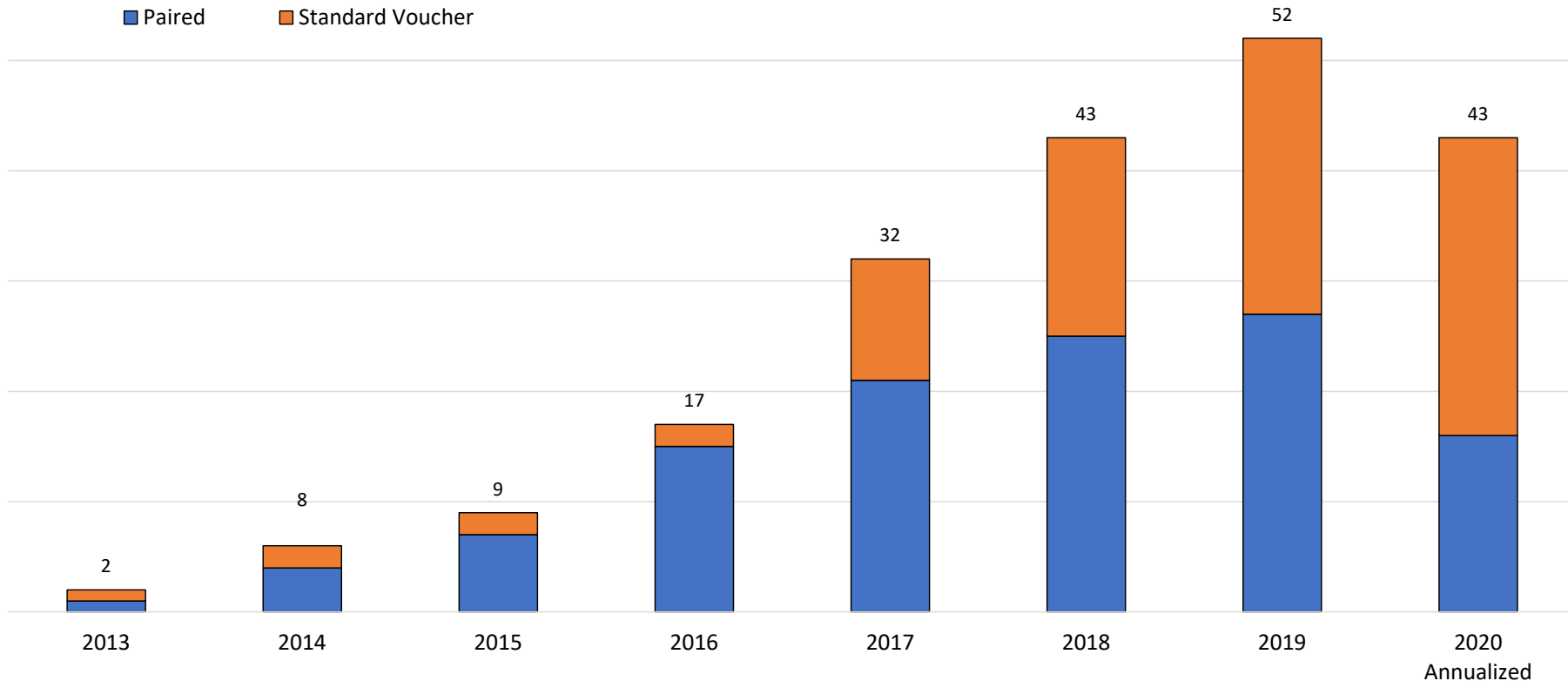- 2020 Forecasted: 781

* Restated due to database update/changes affecting calculations

Favorable Blood Type Compatible Donations
Through 9/30/20

Paired   Standard Voucher

2013: 2
2014: 8
2015: 9
2016: 17
2017: 32
2018: 43
2019: 52
2020 Annualized: 43

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Vouchers Outstanding

Legend: Vouchers (blue), Voucher Liabilities (red)

Quarter	Vouchers	Voucher Liabilities
Q3-19	293	156
Q4-19	450	217
Q1-20	543	237
Q2-20	628	256
Q3-20	749	295
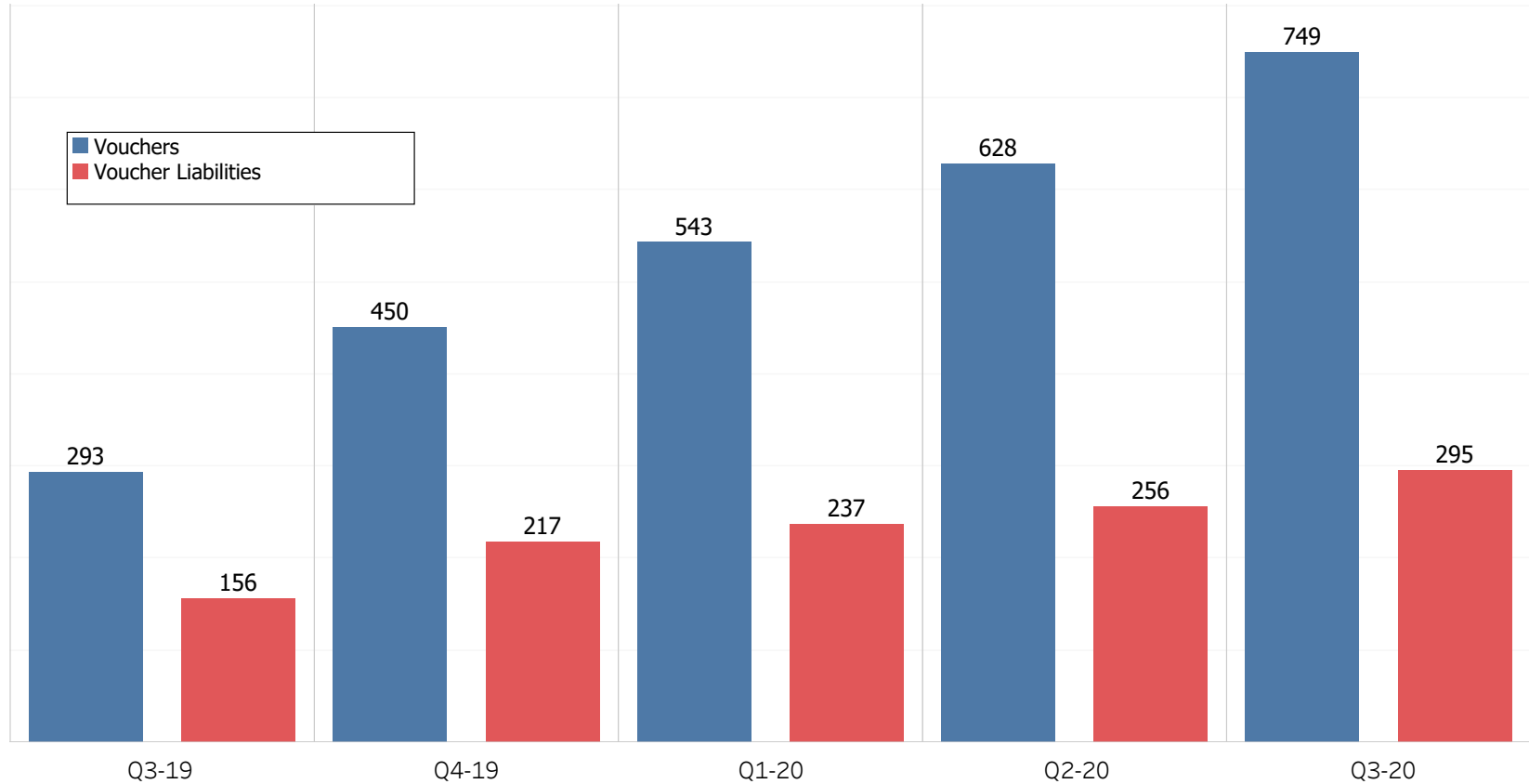
New Exportable KPD Patients
Paired Recipients and Standard Voucher Recipient

Year	Value
2010	159
2011	300
2012	444
2013	466
2014	509
2015	553
2016	577
2017	531
2018	642
2019	710
2020 Annualized	635
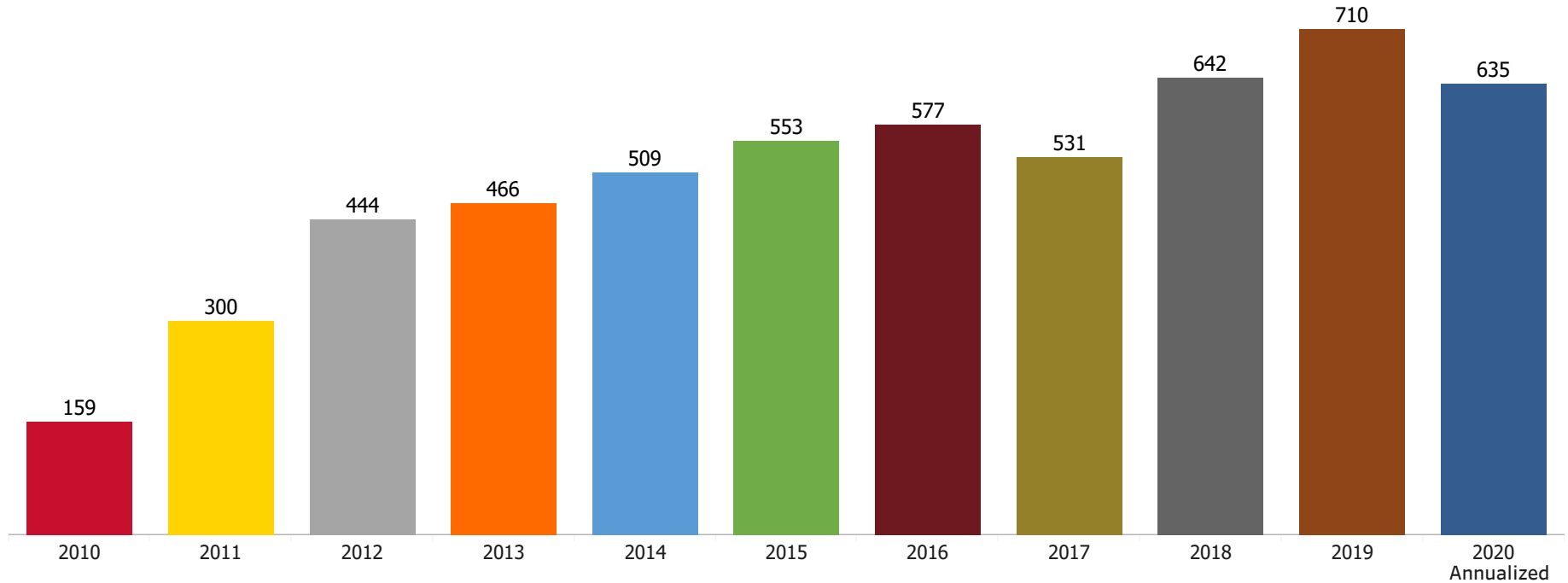
Pool Size

Unmatched Patients

Legend: Active Voucher Recipients (orange), Paired Recipients (blue)

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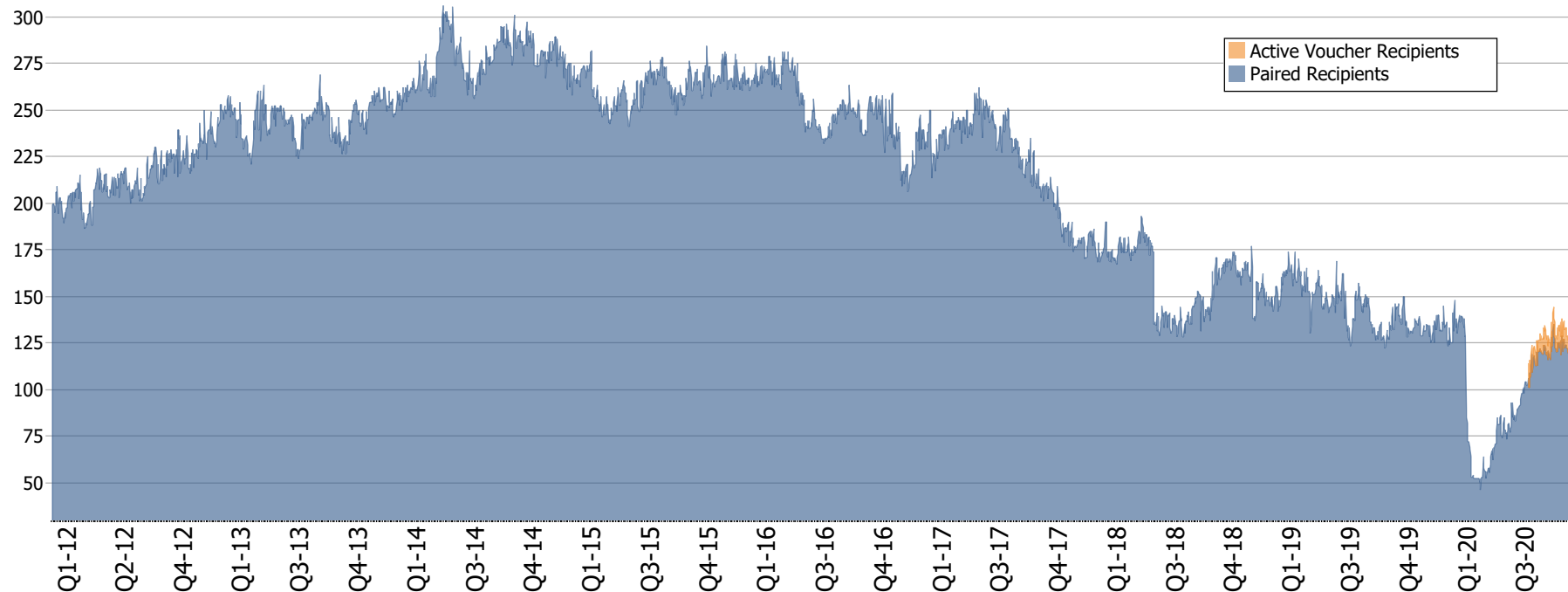
Pool Composition by cPRA

Legend:
- 100%
- 95% - 99%
- 80% - 95%
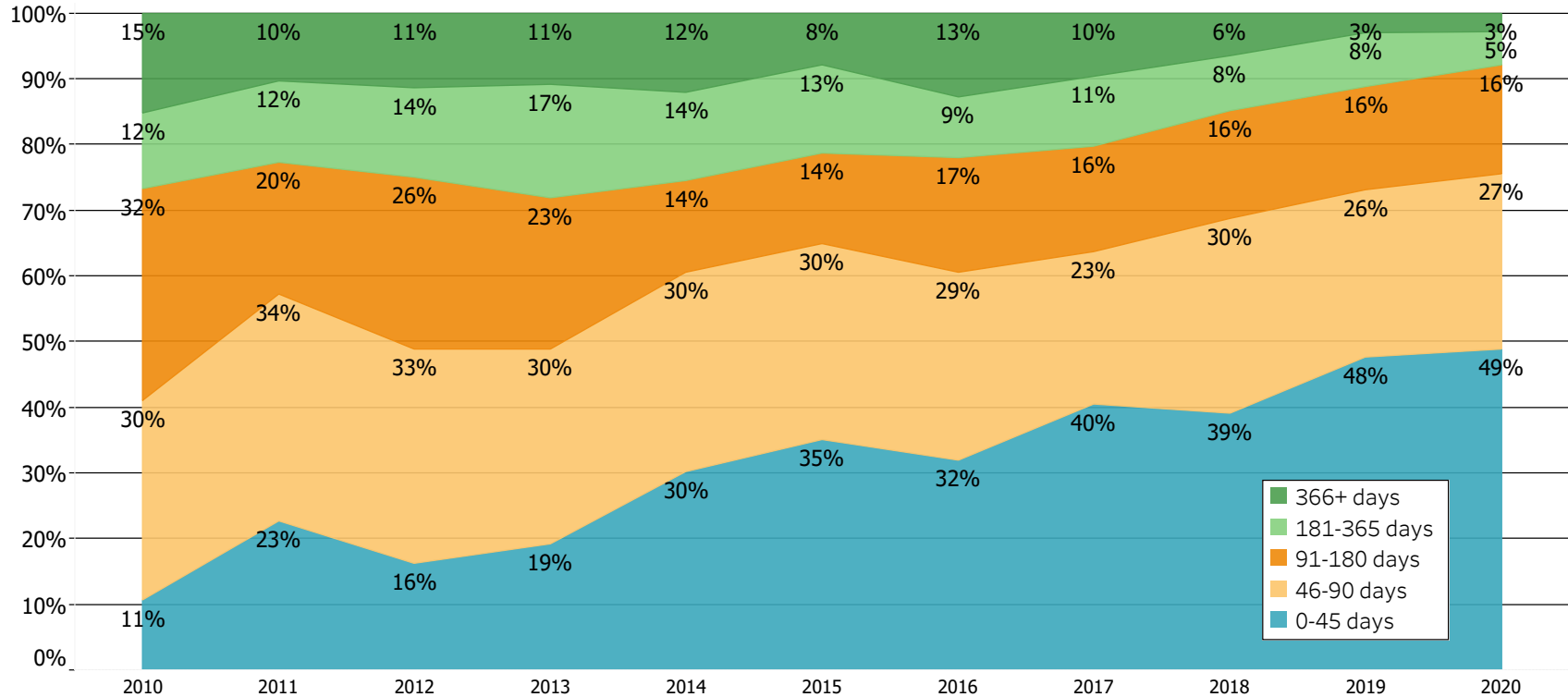- 50% - 80%
- 0% - 50%
- 0%

12%
29%
9%
11%
15%
26%
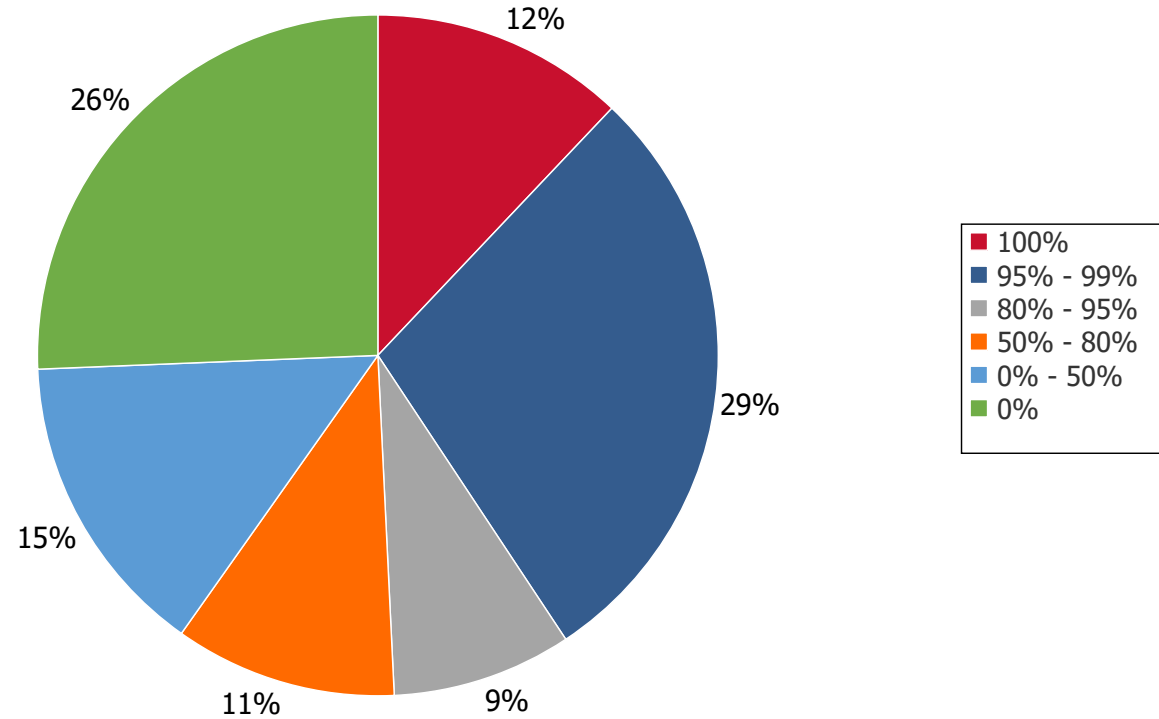
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Wait Time Distribution

From Exportability to Transplant

Updated on 1/22/2021 to exclude waitlist patient
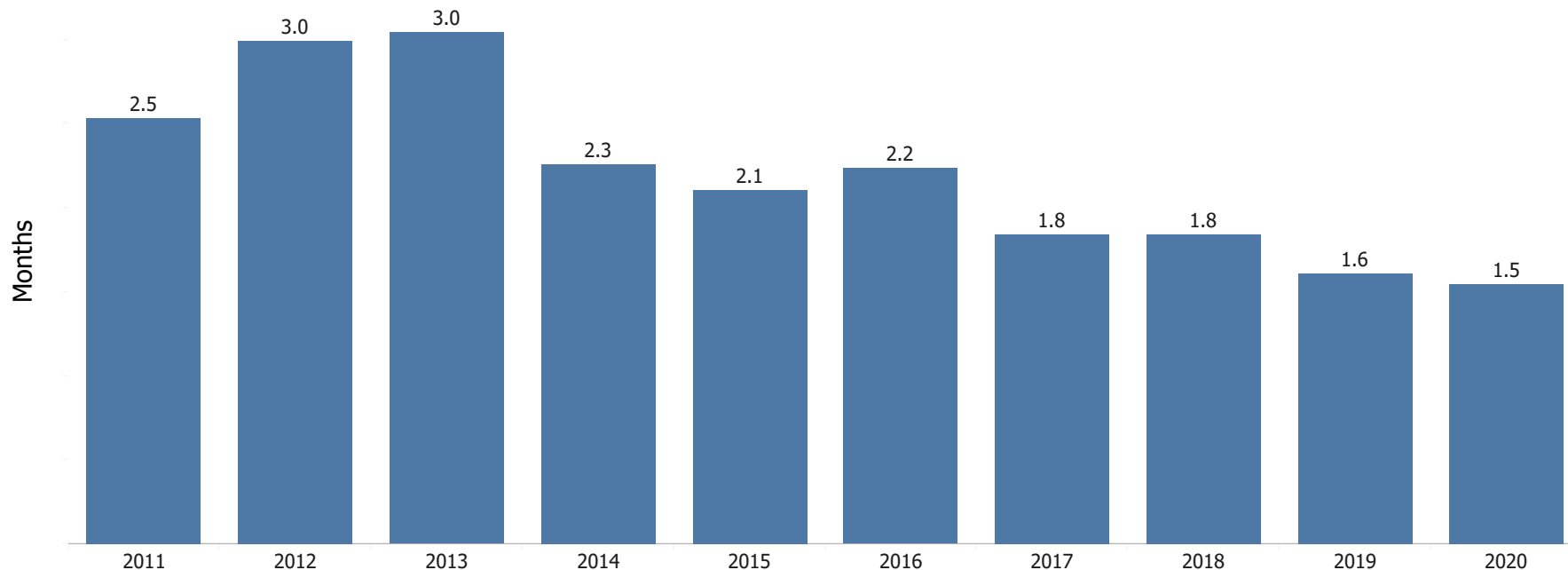
Recipients Waiting > 1 Year

Due to High cPRA

#	Recipient Alias	R-ABO	cPRA	Months Wait	Recipient Type
1	MAB1402991	AB	100.00	72	Voucher
2	GM8784	B	100.00	59	Paired
3	UC06142609	O	99.95	50	Paired
4	J36760809G	O	100.00	39	Paired
5	BOCKJRE	A	99.88	37	Voucher
6	R324744	O	99.98	37	Voucher
7	LANDBRE	O	99.98	36	Paired
8	CR02221971	O	99.93	34	Paired
9	H903961717	O	99.98	34	Paired
10	AH6321	O	100.00	28	Paired
11	SMHFOR	O	100.00	24	Voucher
12	R475238	O	100.00	22	Paired
13	BRBA52375	O	99.95	21	Paired
14	EMIBRK	O	99.98	20	Paired
15	M000464196	O	99.98	18	Paired
16	REYKRI750	B	100.00	17	Paired
17	JS7574655R	AB	100.00	15	Voucher
18	AZSM1992	O	99.31	14	Paired
19	RFLCC30	O	100.00	14	Voucher
20	C903849873	O	100.00	13	Paired
21	MWASH1983	O	99.95	13	Paired
22	PAC3140047	O	100.00	13	Paired

As of 11/10/2020 10:46:20

Transplanted Recipients Median Wait Time
Wait times of Patients Transplanted During prior 12 months

Months

Year	Value
2011	2.5
2012	3.0
2013	3.0
2014	2.3
2015	2.1
2016	2.2
2017	1.8
2018	1.8
2019	1.6
2020	1.5

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* Restated due to database update/changes affecting calculation

Median Wait in Days by ABO
From Exportability to Transplant
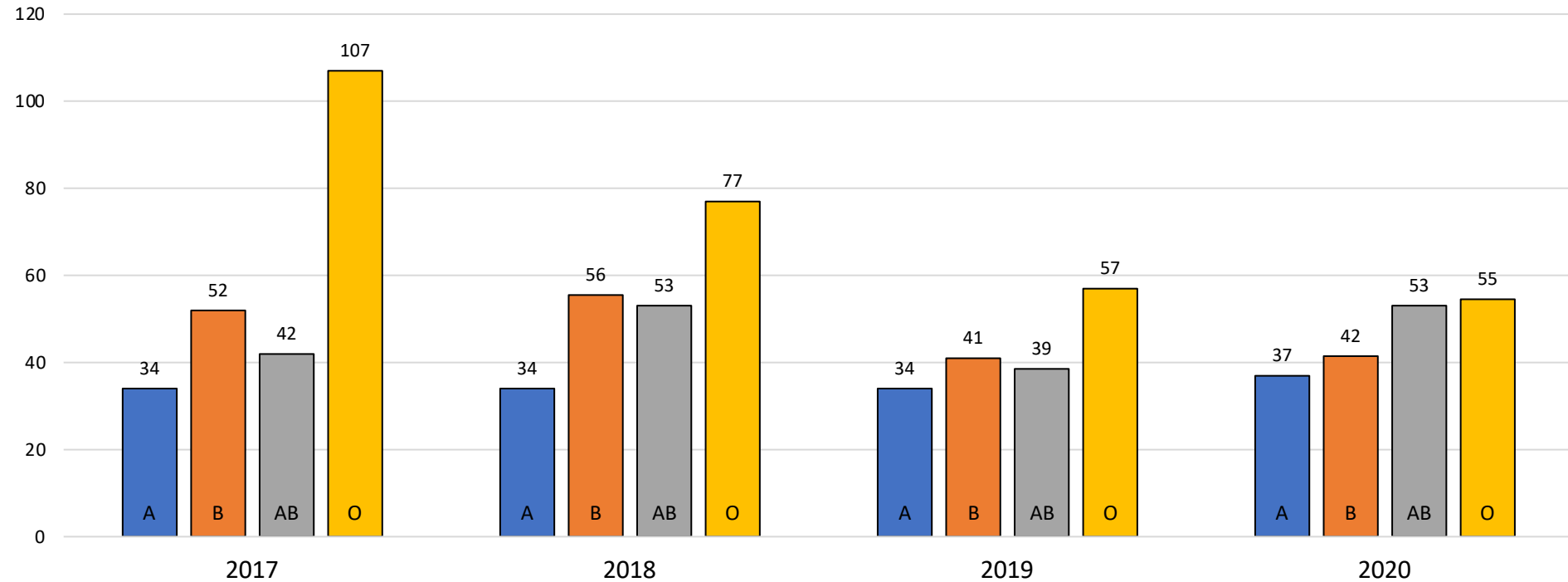
Transplanted Recipients by cPRA

Legend:
- 0 cPRA
- 1 - 50 cPRA
- 51 - 80 cPRA
- 81 - 95 cPRA
- 96 - 100 cPRA

Category	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
0 cPRA	59%	51%	39%	44%	35%	41%	42%	46%	47%	53%	53%	52%
1 - 50 cPRA	15%	11%	18%	13%	14%	13%	15%	14%	19%	14%	16%	18%
51 - 80 cPRA	11%	13%	15%	16%	14%	16%	13%	15%	12%	13%	11%	11%
81 - 95 cPRA	7%	15%	16%	11%	12%	16%	16%	16%	12%	9%	11%	9%
96 - 100 cPRA	8%	11%	11%	15%	25%	14%	14%	9%	10%	11%	9%	10%

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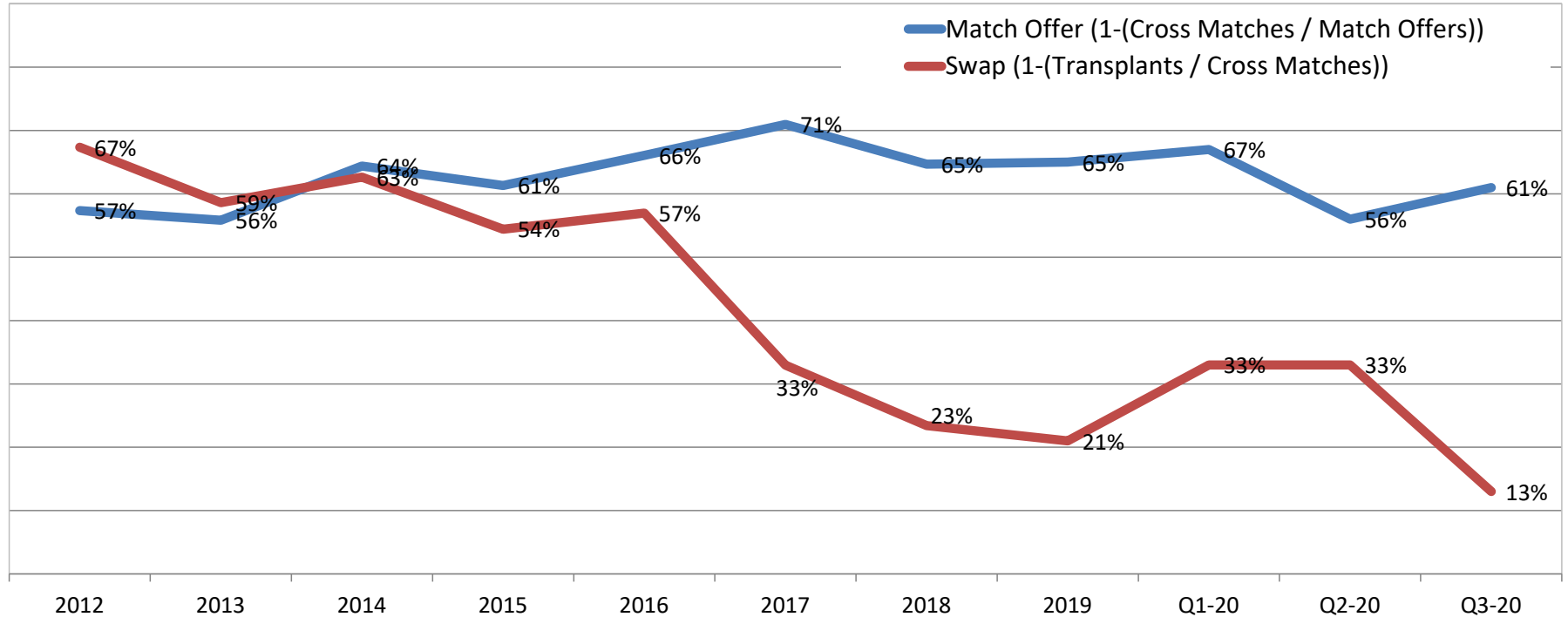
Streamlined Cross Matches Requested
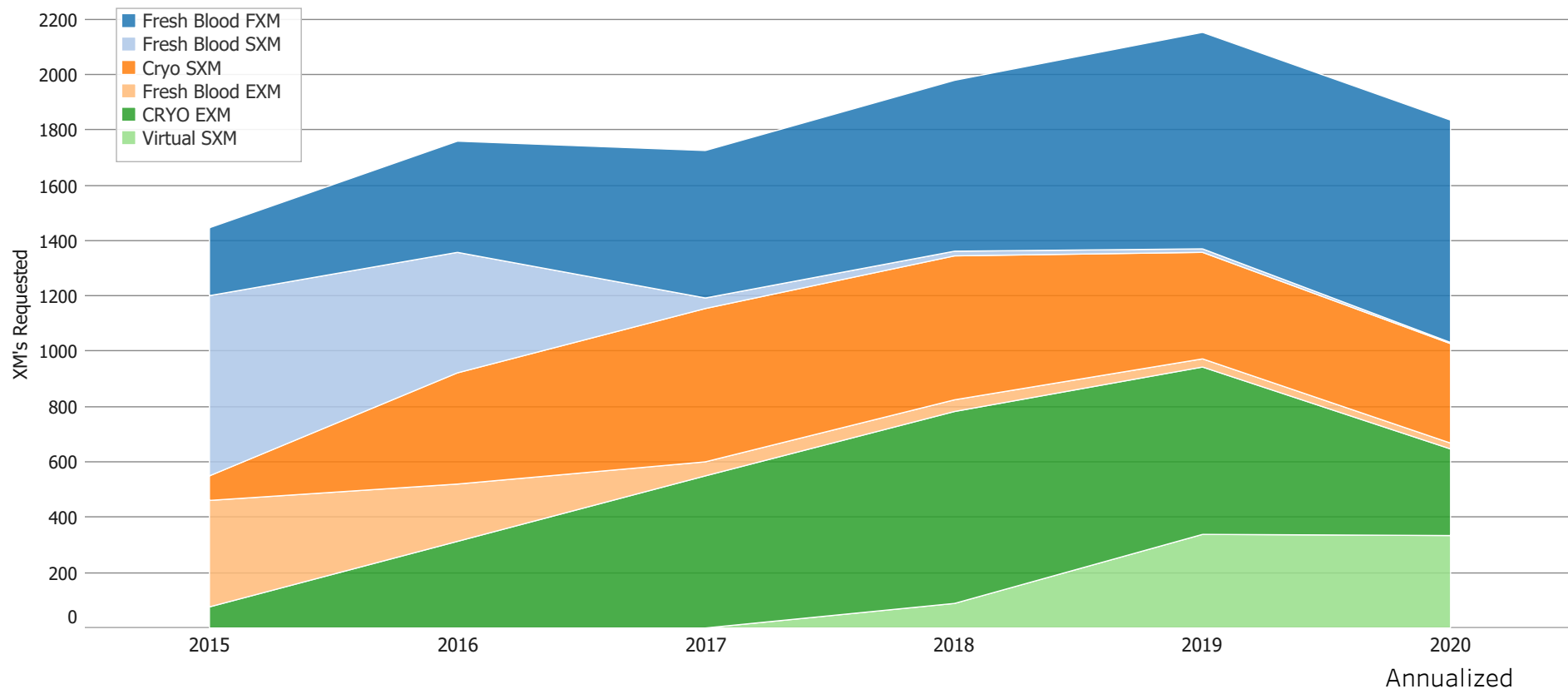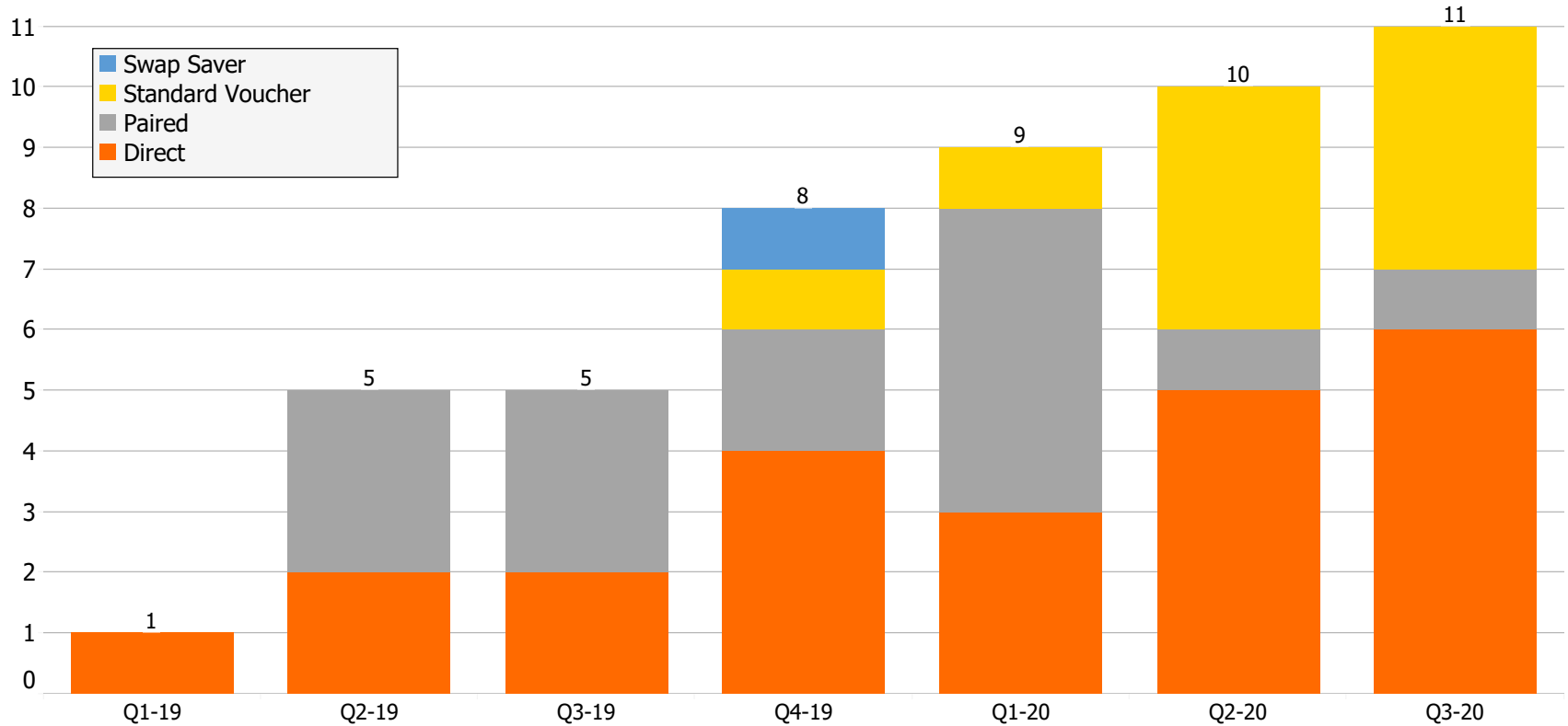
Real Time Swap Failures

#	D-Center	R-Center	Orphaned R-Alias	Paired Donor Alias	Swap #	Paired Donor Donation Date	R- TXP Date	Date Variance	R-ABO	R-cPRA	Reason	Decline Type
1	UTMC	Monte	HDACOS	VIOLKAM	5	01/20/2010	03/25/2010	64	O	87.6%	D Medical Issue	N/A
2	CPMC	UCSF	RM7345B	DK8YT7W	246	06/27/2013	08/21/2013	55	A	22.7%	D Surgery aborted	N/A
3	Penn	RWJ	GREPOS	LAUPOS	254	07/23/2013	10/16/2013	85	B	0.0%	R Surgical decline	Kidney shipped backed
4	Loyola	PorterAH	SMITNI	COOLST	688	10/16/2013	08/14/2014	302	O	44.5%	R Medical issue	N/A
5	OSU	ChristHosp	TC03142797	TC10135173	258	03/11/2014	07/21/2016	863	O	97.0%	R Medical issue	N/A
6	Tampa	Hopkins	BEHIP	ARBRO	797	07/07/2015	08/06/2015	30	A	75.4%	R Surgical decline	Kidney shipped backed
7	PorterAH	ASL	EP1929	EP5866	475	03/17/2016	05/10/2016	54	O	27.8%	R Surgical decline	Kidney never shipped to R Center
8	UNC	Indiana	RBAKE	SBAKE	1059	09/27/2017	03/13/2018	167	O	0.0%	R Surgical decline	Kidney shipped backed
9	Sentara	Loyola	AD2745257	UZ3007394	1379	06/19/2018	07/26/2018	37	B	0.0%	R Medical issue	N/A
10	OSU	Colorado	PC2941652A	CC2793862	1390	07/18/2018	12/20/2018	155	O	0.0%	R Surgical decline	Kidney went to Waitlist
11	Georgetown	UCSF	R118DE	D118DE	1414	08/16/2018	12/06/2018	112	O	0.1%	R Surgical decline	Kidney never shipped to R Center
12	Cornell	Avera	MK00772251	MK01023903	1473	10/17/2018	01/30/2019	105	O	36.5%	R Surgical decline	Kidney shipped backed
13	UCLA	Emory	TW2135304	JH1264559	1547	01/23/2019	04/04/2019	71	O	47.6%	R Surgical decline	Kidney shipped backed
14	Maine	Emory	OF2331513	WF1284159	1887	10/23/2019	12/17/2019	55	A	31.8%	R Surgical decline	Kidney never shipped to R Center
15	UNC	CinciChildrens	HM11376290	KB11817752	2182	08/26/2020	10/28/2020	63	A	0.00%	D Medical Issue	N/A

Failure Rates

Chart legend:
- **Match Offer (1-(Cross Matches / Match Offers))** — blue line
- **Swap (1-(Transplants / Cross Matches))** — red line

Year	Match Offer	Swap
2012	57%	67%
2013	56%	59%
2014	64%	63%
2015	61%	54%
2016	66%	57%
2017	71%	33%
2018	65%	23%
2019	65%	21%
Q1-20	67%	33%
Q2-20	56%	33%
Q3-20	61%	13%

Remote Donations by Donor Type

As of 11/2/2020 14:15:30

Home Blood Draw Requests

Legend:
- Direct Donor Serologies
- Custom Blood Draw
- Recipient 3G Typing
- COVID Antibody Tests
- CRYO, Serologies, or FXM

Quarter	Total
Q4-19	133
Q1-20	151
Q2-20	428
Q3-20	391

Donor Contacts

Across All DASH Platforms

Year	Donor Contacts
2017	11,664
2018	25,362
2019	44,495
2020 Annualized	40,788
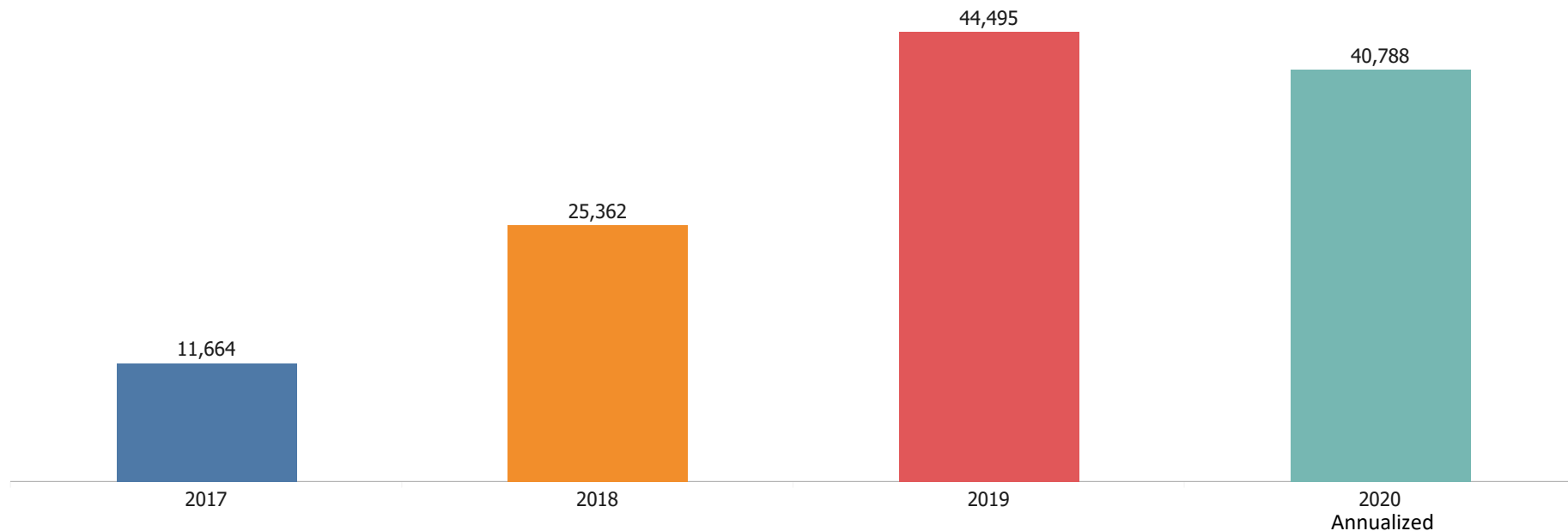
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*Restated due to database update/changes affecting calculations

Good Samaritan Donor Contacts

Across All DASH Platforms
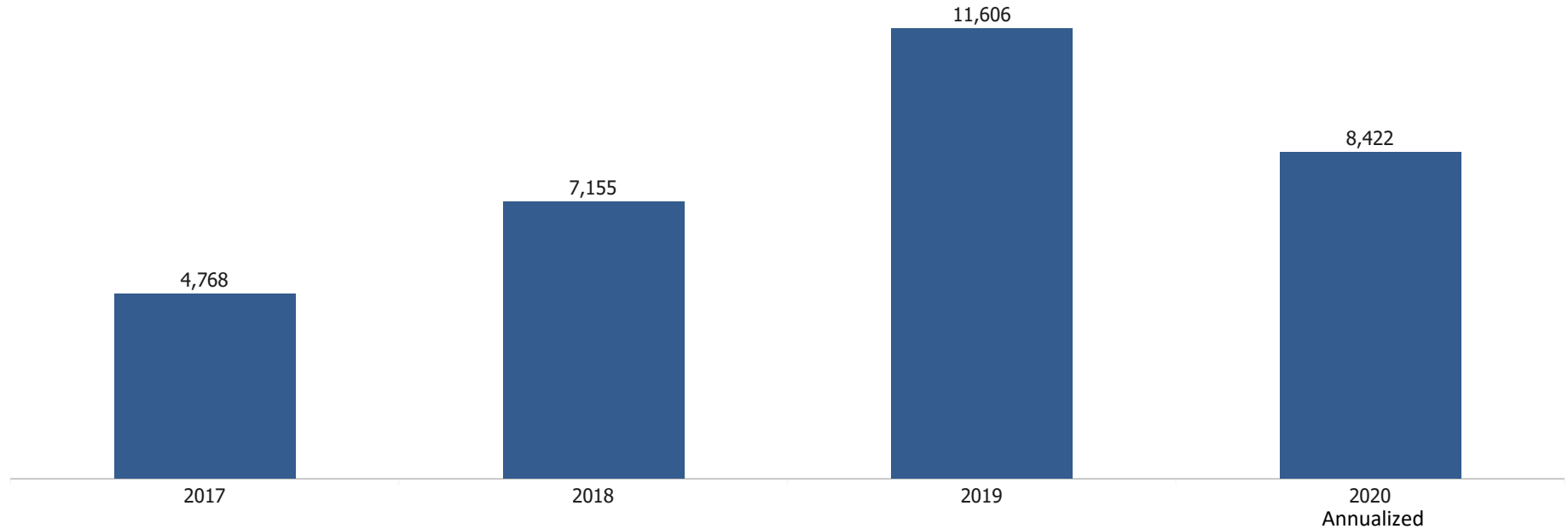
As of 11/10/2020 10:46:20
Good Samaritan donors include NDD's and Family Voucher Donors
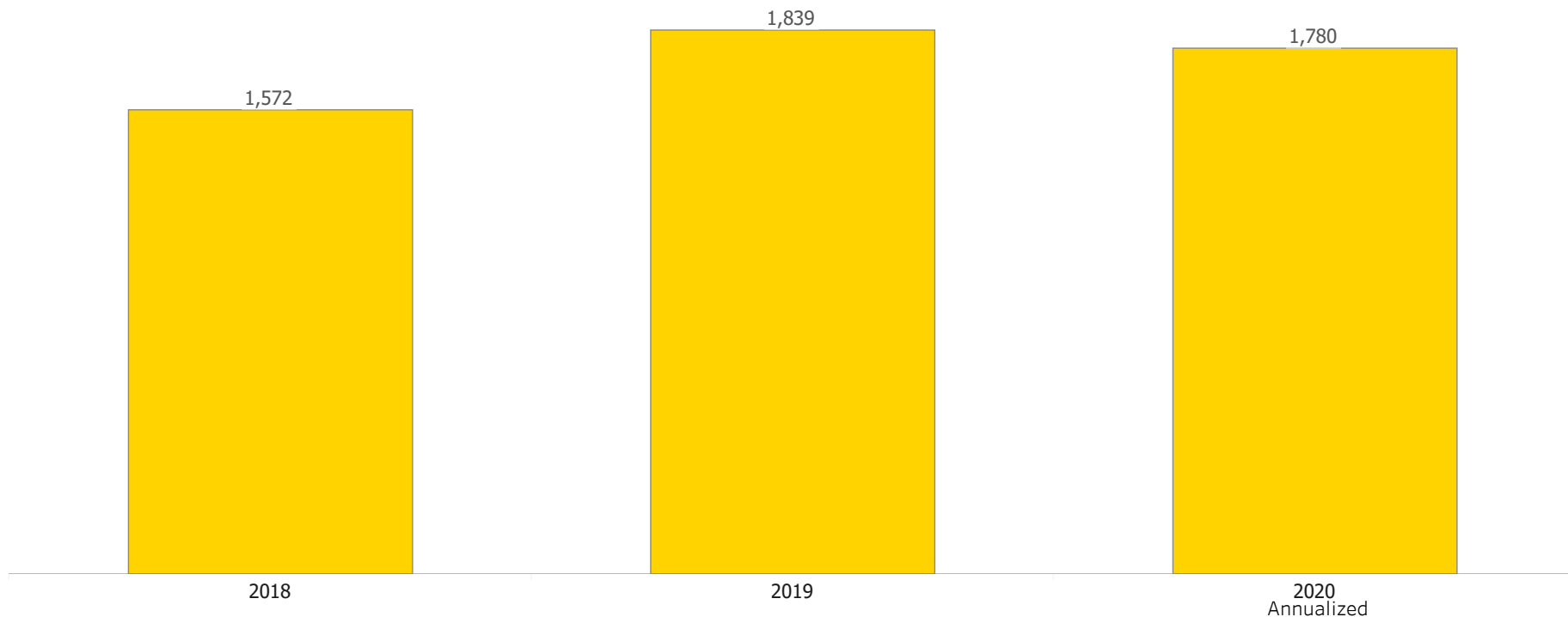
NKR & DCN Donor Referrals
Referred to NKR Member Centers

Donor Type
- Other
- Standard Voucher
- Paired Donor
- Family Voucher
- Non-Directed Donor

2018: 591
2019: 830
2020 Annualized: 1,026
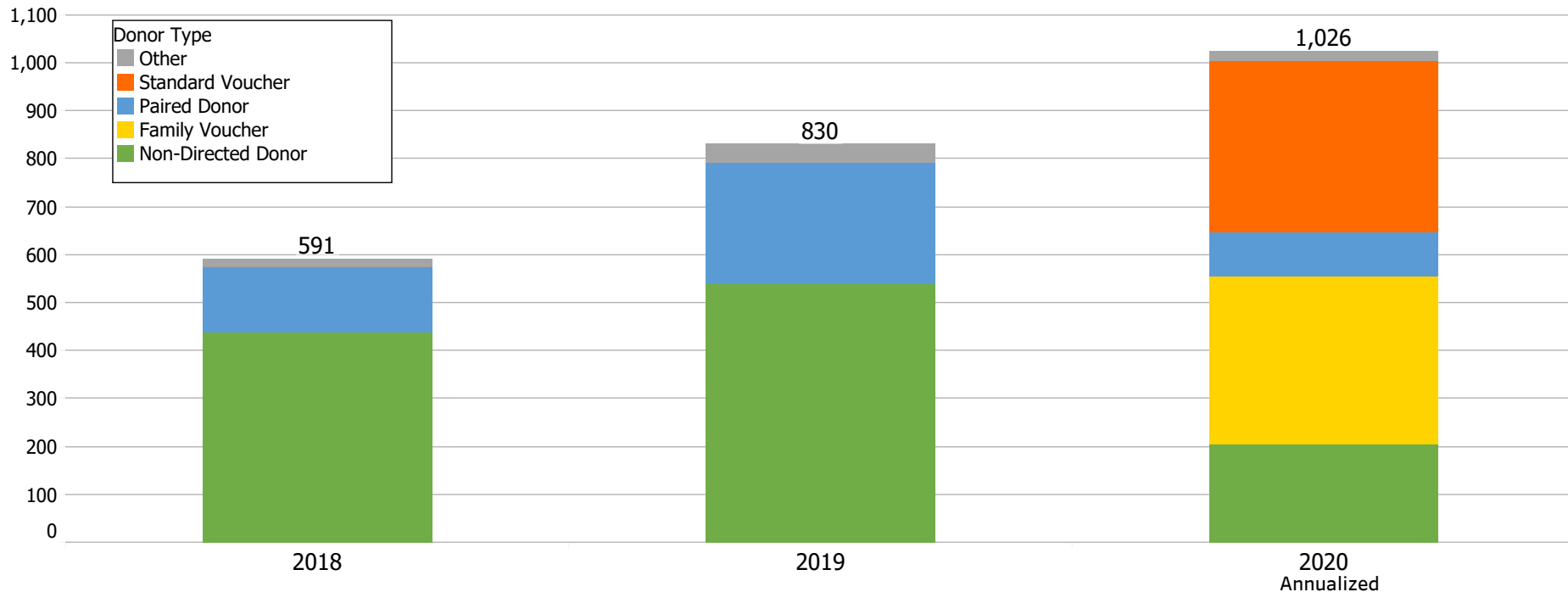
As of 11/15/2020 14:28:58

Pre-Workup Lab Results Uploaded
Across All DASH Platforms

1,572 — 2018

1,839 — 2019

1,780 — 2020 Annualized

As of 11/10/2020 10:46:20

Uncoupling Trend

Line chart titled "Uncoupling Trend" showing % of Donations over quarters Q2-18 through Q3-20.

Paired Donor: Q2-18: 80%, Q3-18: 81%, Q4-18: 77%, Q1-19: 76%, Q2-19: 72%, Q3-19: 73%, Q4-19: 69%, Q1-20: 67%, Q2-20: 55%, Q3-20: 66%

Standard Voucher: Q2-18: 20%, Q3-18: 19%, Q4-18: 23%, Q1-19: 24%, Q2-19: 28%, Q3-19: 27%, Q4-19: 31%, Q1-20: 33%, Q2-20: 45%, Q3-20: 34%
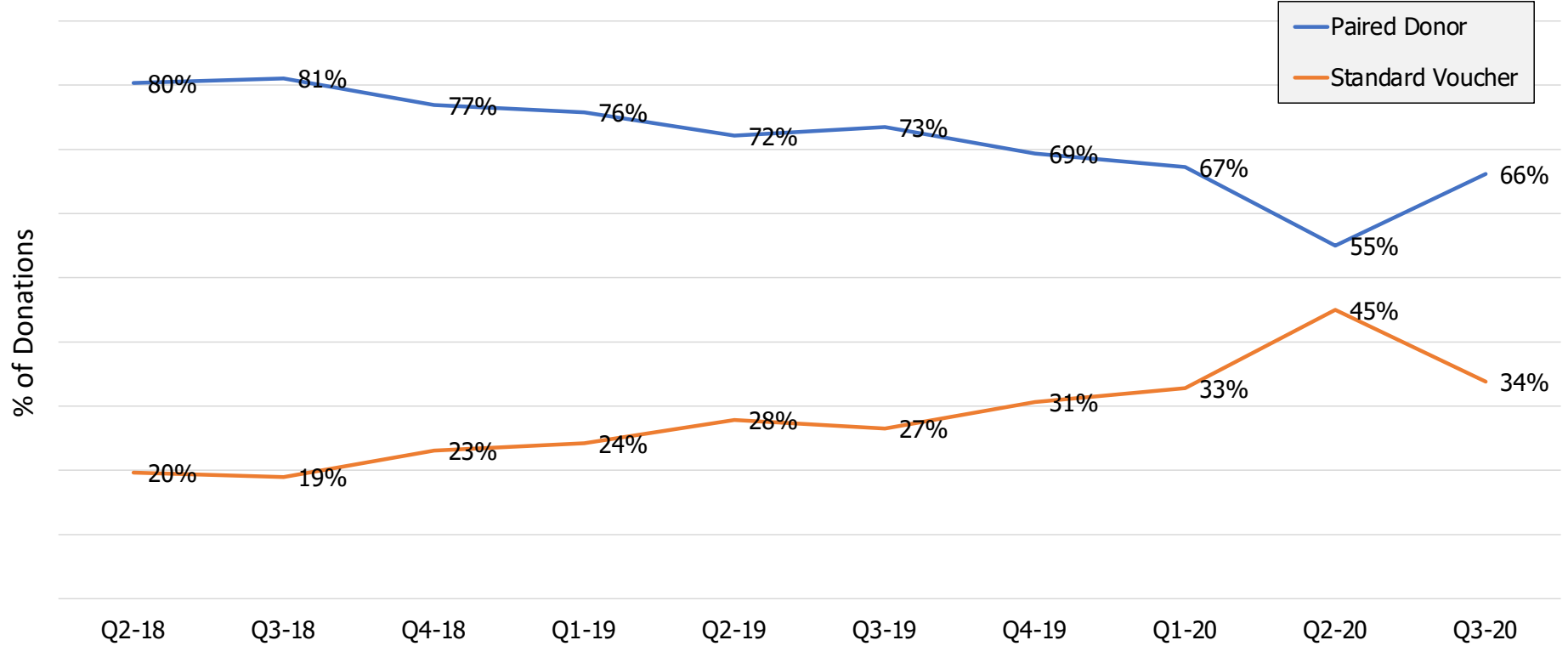
Voucher Education Module (VEM)

9/16 - 10/31
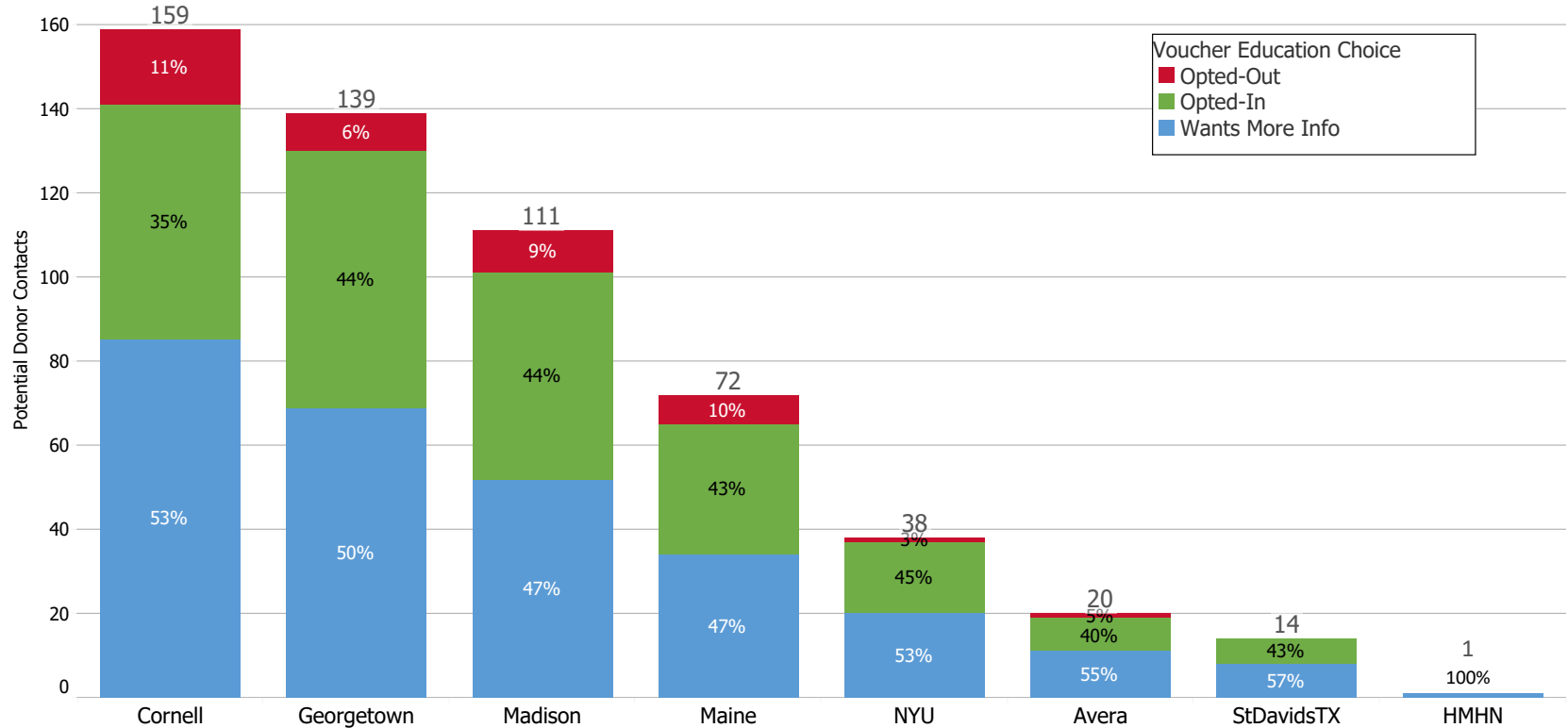
VEM Donor Candidates Who Know The Recipient
Across NKR, DCN, Microsite, and PL DASH
9/16 - 10/31

Voucher Education Choice
- Opted-Out (Directed Donor)
- Opted-In (Standard Voucher)
- Wants More Info about Voucher Program

Sep-20: 216 — 7%, 38%, 56%

Oct-20: 731 — 6%, 42%, 52%

Potential Donor Contacts
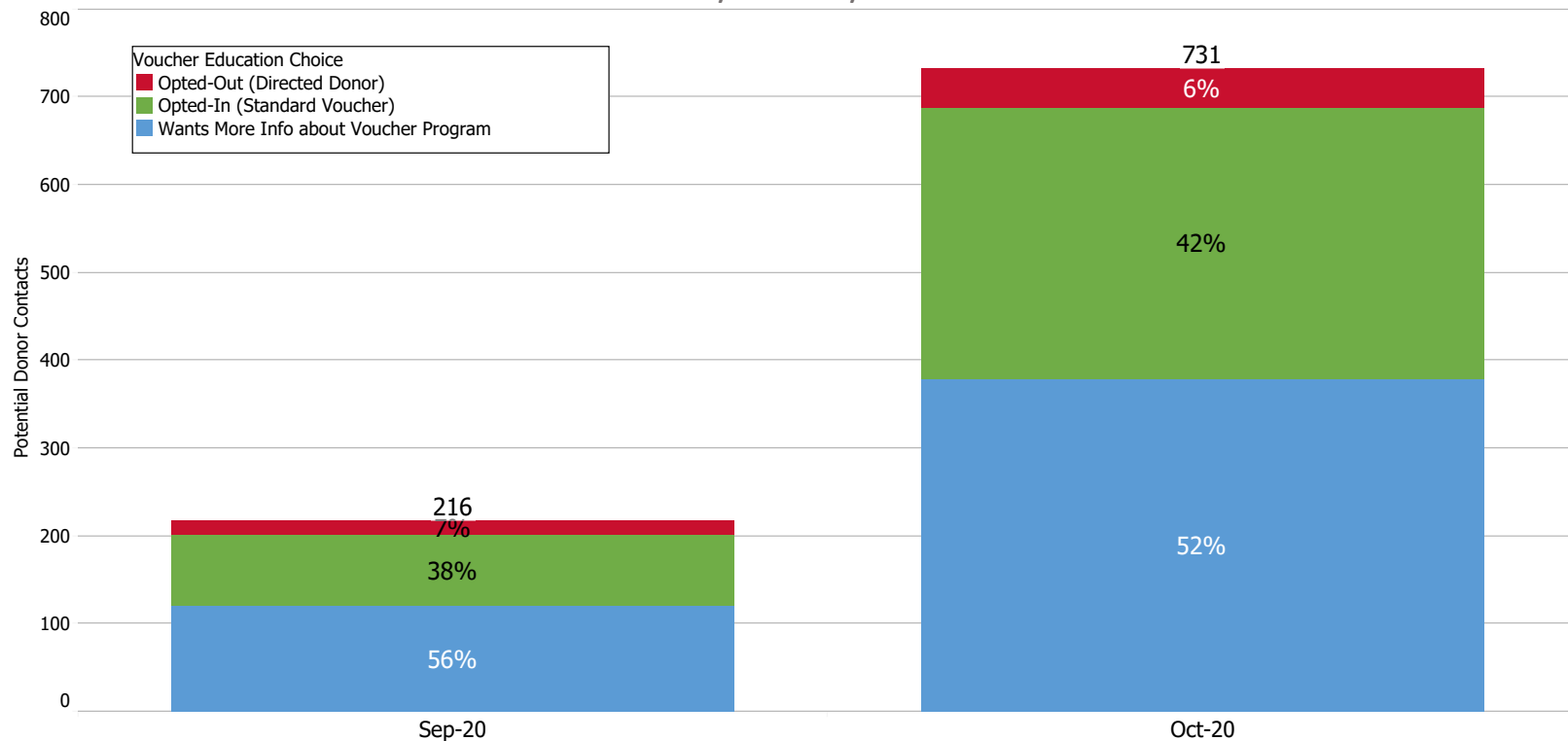
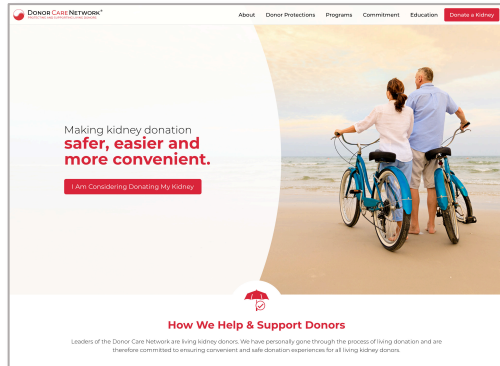# Educational Resources

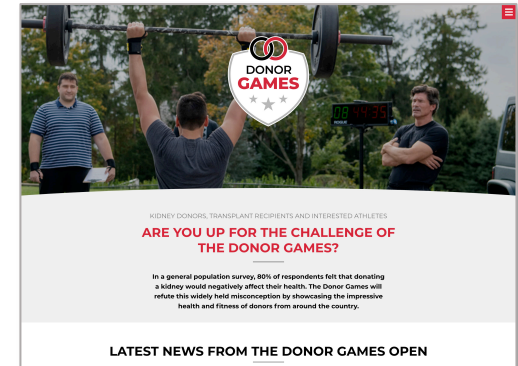kidneyregistry.org

donor-shield.org
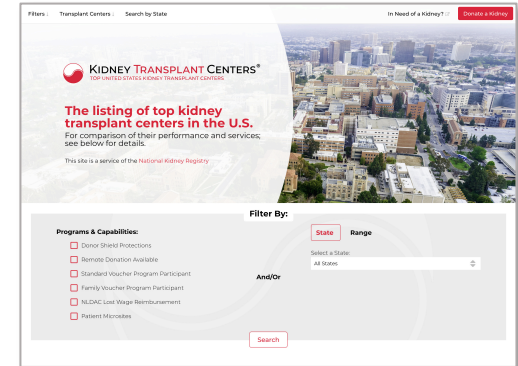
kidneytransplantcenters.org

donorcarenet.org

kidneyforlife.org

livingdonorgames.org