

OPTN Pancreas Transplantation Committee

Descriptive Data Request

Eliminate Use of DSA and Region from Pancreas Allocation 6 Month Post-Implementation Monitoring Report

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Contents

Executive Summary	2
Background	4
Strategic Plan Goal	4
Committee Request	4
Data and Methods	5
Data Sources	5
Cohort	6
Methods	6
Note on the COVID-19 Pandemic	6
Results	7
Kidney-Pancreas	7
Waiting List	7
Deceased Donor Transplants	29
Pancreas	52
Waiting List	52
Deceased Donor Transplants	69
Utilization and Efficiency of Allocation	88
Donors Recovered in Alaska	110
Released Organs	110
Facilitated Pancreas Allocation	111
Conclusion	113

Executive Summary

This report presents data describing the US organ transplantation system before and after the removal of Donation Service Area (DSA) and OPTN region from deceased donor kidney-pancreas (KP) and pancreas (PA) allocation. The analyses include data on waiting list registrations, transplant recipients, and deceased donors submitted to the OPTN between December 1, 2020 and June 30, 2021. Data are current as of October 15, 2021 and are subject to change based on future submission or correction.

Waiting List

Overall waiting list volume remained stable for both KP and PA (**Figure 1 and 41 and Table 1 and 41**) and active registration status slightly increased for both KP and PA (**Figure 2 and 42 and Table 2 and 42**) between December 2020 and June 2021. Registrations added to the waiting list slightly increased for KP and remained stable for PA after policy implementation (**Figure 3 and 43 and Table 3 and 43**).

The overall KP waiting list mortality rate increased after policy implementation from 6.52 to 8.32 deaths per 100 patient years (**Figure 11 and Table 11**). The overall PA waiting list mortality rate also increased after policy implementation, from 1.68 to 2.63 deaths per 100 patient years (**Figure 51 and Table 51**).

The overall KP transplant rate increased from 102 to 119 transplants per 100 active patient years after policy implementation (**Figure 17 and Table 17**). The directionality of this change aligns with the KPSAM analysis used to inform the development of this policy. Additionally, increases in rates were seen for the following subpopulations, some of which aligned with the KPSAM results:

- Registrations aged 18-34, 35-49, and 50-64 years (**Figure 18 and Table 18**)
- Female and male (**Figure 19 and Table 19**)
- All race/ethnicities (**Figure 20 and Table 20**)
- CPRA 0%, 20-79% and 80-97% (**Figure 21 and Table 21**)

The overall PA transplant rate also increased, from 64 to 74 transplants per 100 active patient years after policy implementation (**Figure 52 and Table 52**). Additionally, increases in rates were seen for the following subpopulations, some of which aligned with the KPSAM results:

- Registrations aged 35-49 and 65+ years (**Figure 53 and Table 53**)
- Female and male (**Figure 54 and Table 54**)
- White, Black, and Hispanic race/ethnicity (**Figure 55 and Table 55**)
- CPRA 0%, 20-79%, and 80-97% (**Figure 56 and Table 56**)

Deceased Donor Transplants

The total number of deceased donor KP transplants increased from 227 to 281 after policy implementation, directionality as predicted by the KPSAM (**Figure 23 and Table 23**). Increases in KP transplant volume were observed for:

- Age at transplant 18-34, 35-49, and 50-64 years (**Figure 25 and Table 25**)
- All race/ethnicities (**Figure 26 and Table 26**)
- CPRA 0%, 1-19%, 20-79%, and 80-97% (**Figure 29 and Table 29**)

The total number of deceased donor PA transplants increased from 37 to 50 after policy implementation (**Figure 58 and Table 58**).

For KP transplant recipients, median time from listing to transplant decreased from 0.44 to 0.35 years after implementation. For PA transplant recipients, median time from listing to transplant increased from 0.40 to 0.79 years, suggesting that candidates with longer waiting times are getting transplanted (**Figure 27 and 62 and Table 27 and 62**).

Median distance from the donor hospital to the transplant center increased from 72 to 98 NM for KP and decreased from 199 to 147 NM for PA after policy implementation (**Figure 35 and 70 and Table 35 and 70**). There were slight increases in the proportion of transplants occurring within 250 NM of the donor hospital for both KP and PA

(**Figure 33 and 68 and Table 33 and 68**). For both KP and PA, more transplants occurred at centers outside the recovering OPO's DSA after policy implementation, which aligns with the KPSAM analysis (**Figure 34 and 69 and Table 34 and 69**). Changes in transplant volume varied across OPTN region (**Figure 36 and 71 and Table 36 and 71**).

Utilization and Efficiency of Allocation

The number of deceased pancreas donors recovered increased from 365 to 434 after policy implementation (**Figure 73 and Table 76**). There was an increase in the number and proportion of pancreas donors age <18 years recovered (**Figure 76 and Table 79**). The pancreas discard rate decreased from 26.58% to 23.27% (**Figure 77 and Table 80**).

The overall pancreas offer rate from kidney-pancreas match runs (including both pancreas alone and kidney-pancreas offers) increased from 17 to 21 offers per active patient year after policy implementation (**Figure 78 and Table 82**). The offer acceptance rate decreased from 52 to 48 acceptances per 1000 offers after implementation (**Figure 79 and Table 82**). The offer acceptance rate decreased for offers between 0-250 NM from 81 to 65 acceptances per 1000 offers, while there was little change in the acceptance rate for offers > 250 NM (19 vs 18 acceptances per 1000 offers) (**Figure 89 and Table 88**).

Facilitated Pancreas Allocation

The number of programs qualified for facilitated pancreas allocation increased from 44 to 53 after policy implementation (**Table 92**). The overall frequency of facilitated pancreas offers increased from 57 to 63 offers after policy implementation (**Figure 93 and Table 93**). A total of 2 transplants resulted from the 57 offers pre-implementation, and 3 transplants resulted from the 63 offers post-implementation (**Table 94**).

Background

The OPTN implemented several policy changes on March 15, 2021 in order to remove DSA and region from pancreas allocation. The primary policy replaced DSA and region with a 250 nautical mile (NM) fixed circle and added proximity points to a candidate's total allocation score. As the DSA was no longer used, the policy for facilitated placement of pancreata was also changed.

Two supplemental policies went into effect the same day. The first policy change replaced the donor hospital with Seattle-Tacoma (Sea-Tac) International Airport as the center of the 250 NM circle used in the allocation of pancreas recovered in Alaska. This policy change aimed to maximize the utilization of deceased donor organs procured in the state of Alaska and avoid unnecessary delays in placement.

The second policy change sought to provide consistency with the Board-approved changes to remove DSA and region from kidney and pancreas allocation policies. These changes were intended to promote efficiency and organ utilization by providing options for the host OPO when the kidney, pancreas or kidney-pancreas is released by the originally accepting transplant program. Specific procedure is dependent on the organ in need of reallocation.

The purpose of this report is to provide an early look at high-level metrics after the policy changes, performed on behalf of the OPTN Pancreas Transplantation Committee.

Strategic Plan Goal

Increase equity in access to transplant.

Committee Request

These policies will be formally evaluated approximately 3 months, 6 months, 1 year, and 2 years post-implementation. The following metrics, and any subsequently requested by the Committee, will be evaluated as data become available. Appropriate lags will be applied, per typical UNOS conventions, to account for time delay in institutions reporting data to UNet and compared to an appropriate pre-policy cohort to assess performance before and after implementation of this policy.

Waiting List

1. Total kidney-pancreas and pancreas registrations on the waiting list (snapshot by month)
2. Kidney-pancreas and pancreas registrations added to the list, overall and by age, gender, ethnicity, cPRA, blood type, and insurance status at time of listing
3. % of candidates in active status
4. Waitlist mortality per 100 patient years, overall and by candidate age, gender, ethnicity, cPRA, blood type

Transplant

1. Donor, recipient and transplant characteristics: N and % of transplants by recipient age, ethnicity, waiting time (days on the waiting list), ABO, cPRA, HLA-ABDR mismatch level, diagnosis, DCD, inside/outside fixed circle, preservation time and cold ischemic time (CIT).
 - Distribution of kidney-pancreas and pancreas travel distance (NM), overall and by inside/outside fixed circle
2. Change in access by location: N and % of transplants by share type (local/regional/national), OPTN region, Donation Service Area (DSA), transplant center, state
3. Deceased donor transplants per 100 patient years by recipient age, ethnicity, ABO, cPRA, HLA-ABDR mismatch level, and DSA
4. Variance in deceased donor transplant rate across DSA
5. Rates of receiving kidney-pancreas and pancreas offers per 100 patient years by recipient age, ethnicity, ABO, cPRA, and HLA-ABDR mismatch level

Utilization and Efficiency of Allocation

1. Number pancreas donors recovered for transplantation
2. Number and percent of pancreas recovered but not utilized (discarded), overall
3. Number and percent of pancreas discarded by discard reason
4. Number and percent pancreas with a final acceptance
5. Offer acceptance per 100 patient years by recipient age, ethnicity, waiting time (days on the waiting list), ABO, cPRA, and inside/outside fixed circle among organs with a final acceptance.
6. Distribution of sequence number of final acceptor
7. Distribution of time between electronic offer and cross-clamp
8. Number and percent by cPRA, of kidney-pancreas and pancreas offers refused due to a positive cross-match

Outcomes

- One and two year post-transplant graft and patient survival rates, overall and stratified by recipient age, gender, ethnicity, cPRA, blood type, HLA-ABDR mismatch, CIT and preservation time.

Facilitated Pancreas Allocation

1. N and % of programs that qualify for facilitated pancreas allocation
2. Frequency of facilitated allocation use by OPOs
3. Transplant volumes that placed with facilitated pancreas allocation

Alaska

1. N and % of kidney and pancreas donors recovered in Alaska
2. N and % of kidneys and pancreata recovered in Alaska
3. N and % of kidney and pancreas transplants performed from donors recovered in Alaska
4. N and % of kidneys and pancreata transplanted inside/outside fixed circle of Sea-Tac.
5. Distribution of kidney and pancreas travel distance (NM) for transplants performed from donors recovered in Alaska

Released Organs

1. Overall and by OPTN Region (and KDPI if KP)
 - N and % of organs with a final acceptance
 - N and % of organs for which an acceptance came from an import match run
2. For accepted organs (overall and stratified by OPTN region and accepting patient cPRA)
 - Transplanted with the accepting candidate
 - Transplanted with a different candidate at the accepting center
 - Transplanted at a different center
 - Discarded

Data and Methods

Data Sources

This analysis is based on OPTN data as of October 15, 2021. Candidate information were submitted through Waitlist and on the Transplant Candidate Registration (TCR). Recipient and transplant data were submitted on the Transplant Recipient Registration (TRR). Donor data were submitted in DonorNet and on the Deceased Donor Registration (DDR). Match run data analyzed came from DonorNet. Data are subject to change based on future submission or correction.

OPTN Policy 18.1 defines the following data submission requirements for transplant centers and OPOs:

- Submission of the TCR within 30 days of listing
- Submission of the TRR within 60 days of waiting list removal
- Submission of the DDR within 30 days organ disposition submission
- Potential transplant recipient offers within 30 days of the match run date

Because some additions, transplants, and donor recoveries after policy implementation were still within this submission window at the time of this analysis, there are missing data for some of the fields submitted on the forms listed above.

Cohort

All kidney-pancreas and pancreas alone registrations listed, ever waiting, or transplanted between December 01, 2020 and June 30, 2021 were included in this analysis, as were all deceased kidney-pancreas or pancreas donors recovered during this time. These dates were chosen to ensure policy eras were of uniform length.

Policy eras were defined as:

- Pre-Policy: December 01, 2020 to March 14, 2021
- Post-Policy: March 15, 2021 to June 30, 2021

Methods

Waiting list mortality rates were defined as the number of deaths on the waiting list divided by the total amount of time on the waiting list (active or inactive) for registrations ever waiting between January 01, 2021 and May 31, 2021. These results are presented as deaths per 100 patient years. Deaths were defined as:

- Removals from the waiting list due to death
- Death within 14 days of waiting list removal as reported to the OPTN or identified via verified external sources.

Pancreas and kidney-pancreas transplant rates were defined as the number of waiting list removals due to deceased donor pancreas or kidney-pancreas transplant, respectively, divided by the total amount of time on the waiting list (active) for registrations ever waiting during the study period. These results are presented as transplants per 100 active patient years.

Discard rate was defined as the number of deceased donor pancreata recovered for the purpose of transplant, but not transplanted, divided by the total number of pancreata recovered for transplant.

Offer rates were defined as the number of pancreas offers from kidney-pancreas match runs divided by the total amount of time in active status on the waiting list for pancreas or kidney-pancreas registrations ever waiting during the study period. These results are presented as offers per active patient year. Offers include both pancreas alone and kidney-pancreas offers. This analysis only includes match runs with a final acceptance, and does not include offers after the final acceptance.

Acceptance rates were defined as the number of offers with a final acceptance divided by the total number of offers from kidney-pancreas match runs. These results are presented as acceptances per 1000 offers.

Note on the COVID-19 Pandemic

The World Health Organization (WHO) declared COVID-19 a pandemic on March 11, 2020 and a national state of emergency was declared in the U.S. on March 13, 2020. All of the data cited in this report were reported to the OPTN after the declaration of this national emergency. Given the impact that has been seen on the U.S. (see data trends at unos.org/covid), the true impact of this policy change may be challenging to determine.

Results

Kidney-Pancreas

Waiting List

Figure 1 and **Table 1** show the number of registrations waiting for a kidney-pancreas on the last day of each month from December 01, 2020 to June 30, 2021. Waiting list volume changed very little after policy implementation.

Figure 1: Kidney-Pancreas Registrations Waiting on the Last Day of Each Month, December 01, 2020-June 30, 2021

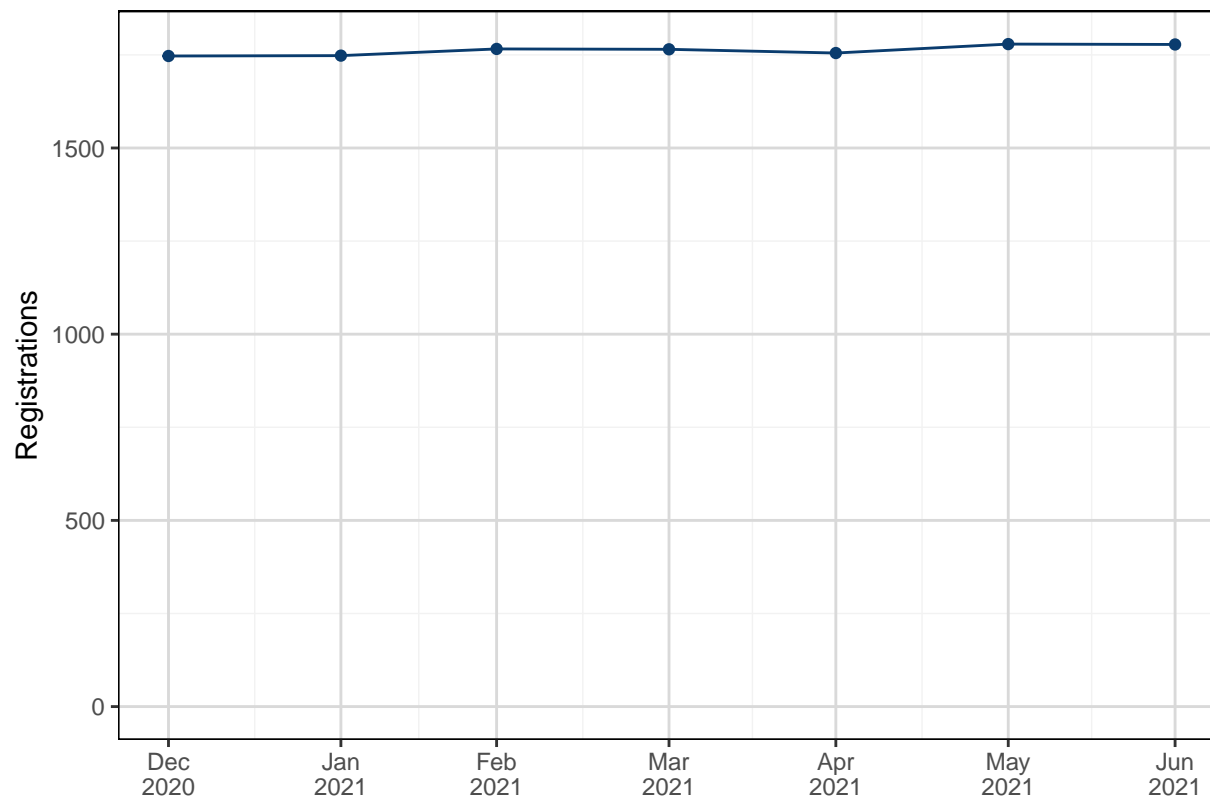


Table 1: Kidney-Pancreas Registrations Waiting on the Last Day of Each Month, December 01, 2020-June 30, 2021

Date	Registrations
December 2020	1747
January 2021	1748
February 2021	1766
March 2021	1765
April 2021	1755
May 2021	1779
June 2021	1778

Figure 2 and **Table 2** show the percentage of registrations waiting for a kidney-pancreas on the last day of each month from December 01, 2020 to June 30, 2021 by status. The proportion of registrations in active status increased slightly after policy implementation.

Figure 2: Kidney-Pancreas Registrations Waiting on the Last Day of Each Month by Status, December 01, 2020-June 30, 2021

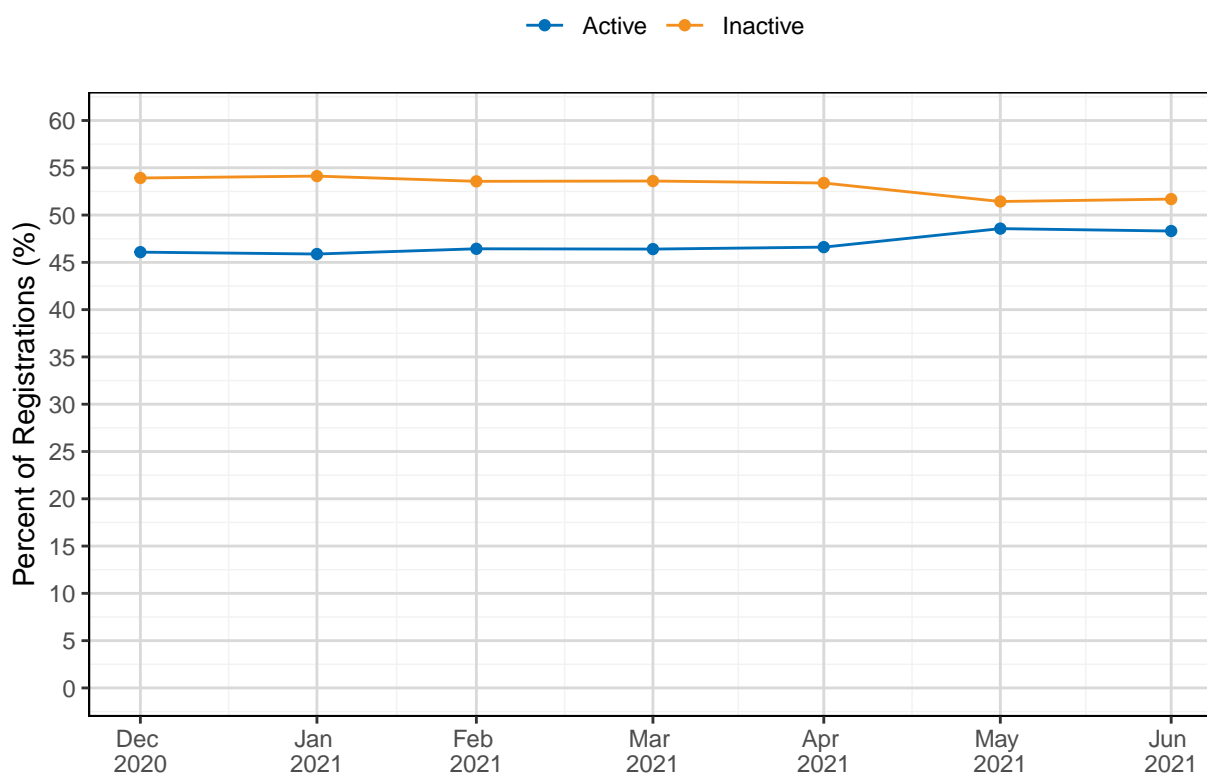


Table 2: Kidney-Pancreas Registrations Waiting on the Last Day of Each Month by Status, December 01, 2020-June 30, 2021

Date	Active		Inactive		Total	
	N	%	N	%	N	%
December 2020	805	46.08	942	53.92	1747	100.00
January 2021	802	45.88	946	54.12	1748	100.00
February 2021	820	46.43	946	53.57	1766	100.00
March 2021	819	46.40	946	53.60	1765	100.00
April 2021	818	46.61	937	53.39	1755	100.00
May 2021	864	48.57	915	51.43	1779	100.00
June 2021	859	48.31	919	51.69	1778	100.00

Figure 3 and **Table 3** show total kidney-pancreas registrations added to the waiting list from December 01, 2020 to June 30, 2021 by policy era. There were 405 registrations added to the waiting list in the pre-policy era, and 484 added in the post-policy era.

Figure 3: Kidney-Pancreas Registrations Added December 01, 2020-June 30, 2021 by Policy Era

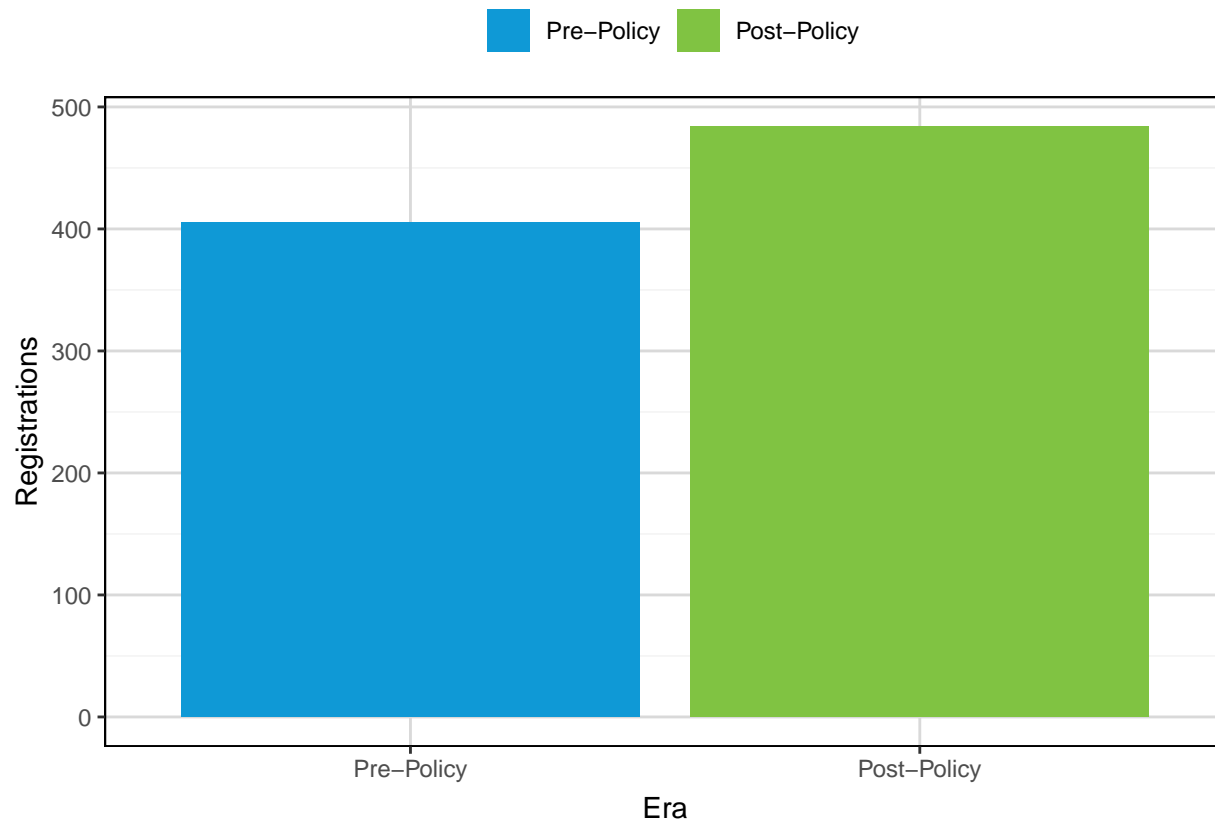


Table 3: Kidney-Pancreas Registrations Added December 01, 2020-June 30, 2021 by Policy Era

Era	Registrations
Pre-Policy	405
Post-Policy	484

Figure 4 and **Table 4** show kidney-pancreas registrations added to the waiting list from December 01, 2020 to June 30, 2021 by policy era and age at listing. There were no pediatric registrations added pre-policy and only four pediatric registrations added post-policy. Candidates aged 35-49 years accounted for the majority of waiting list additions overall both pre- and post-policy, and increased from 48.64% to 53.31%.

Figure 4: Kidney-Pancreas Registrations Added December 01, 2020-June 30, 2021 by Policy Era and Age at Listing

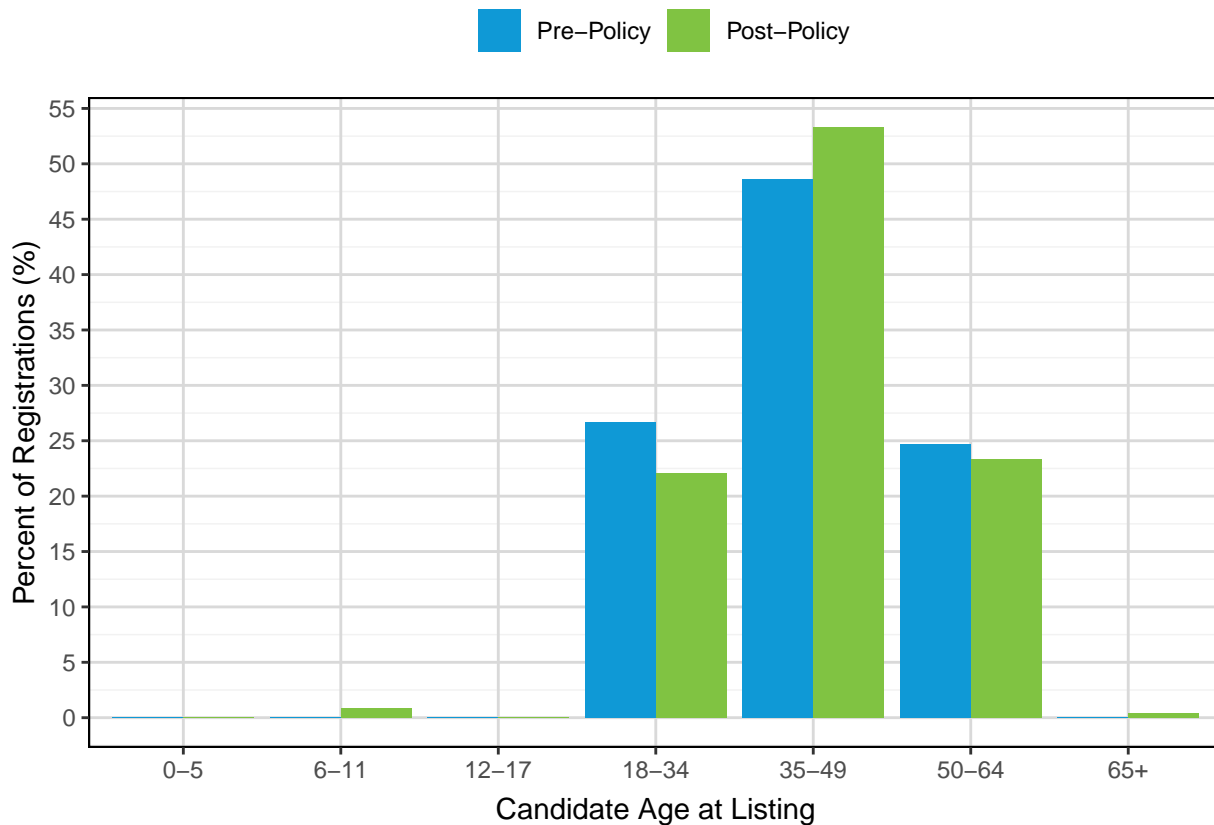


Table 4: Kidney-Pancreas Registrations Added December 01, 2020-June 30, 2021 by Policy Era and Age at Listing

Age at Listing	Pre-Policy		Post-Policy	
	N	%	N	%
0-5	0	0.00	0	0.00
6-11	0	0.00	4	0.83
12-17	0	0.00	0	0.00
18-34	108	26.67	107	22.11
35-49	197	48.64	258	53.31
50-64	100	24.69	113	23.35
65+	0	0.00	2	0.41
Total	405	100.00	484	100.00

Figure 5 and **Table 5** show kidney-pancreas registrations added to the waiting list from December 01, 2020 to June 30, 2021 by policy era and gender. The number of waiting list additions increased for both male and female candidates after implementation. The proportion of registrations added for female candidates decreased slightly post-policy from 43.46% to 41.12%.

Figure 5: Kidney-Pancreas Registrations Added December 01, 2020-June 30, 2021 by Policy Era and Gender

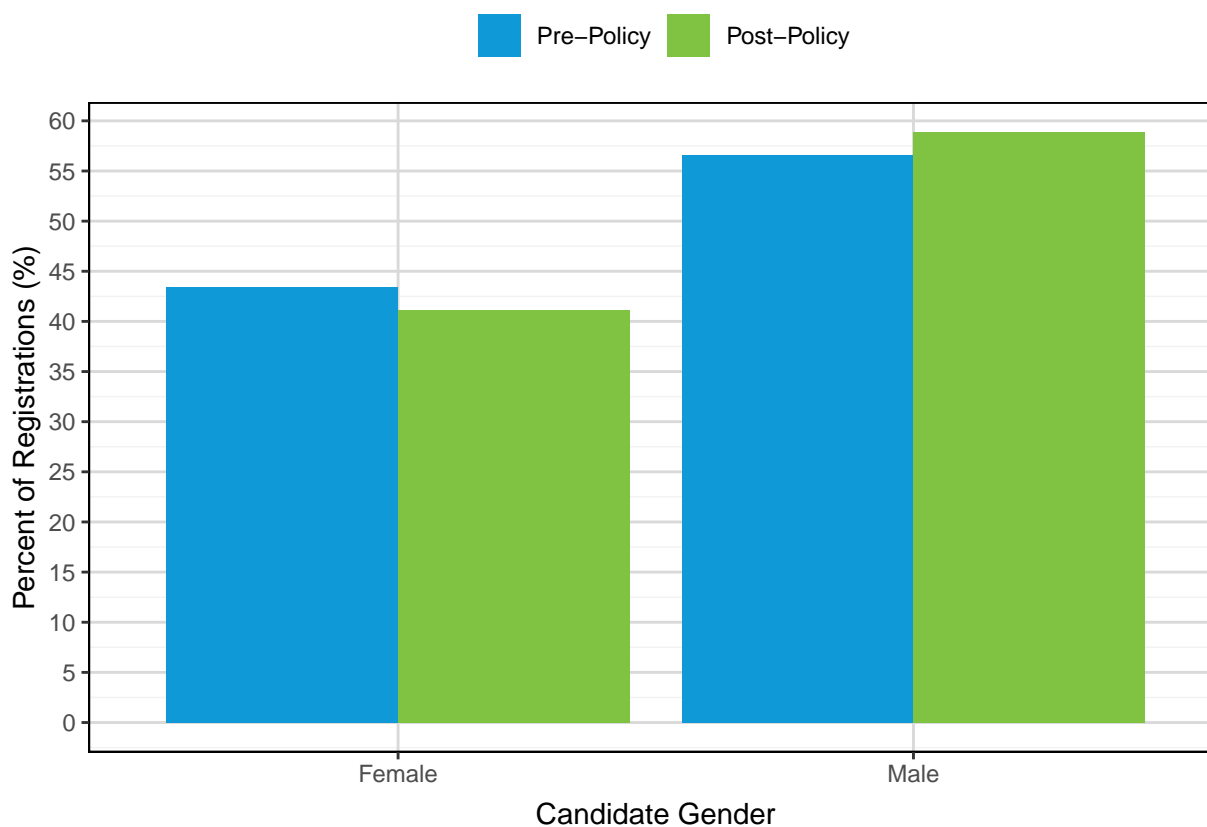


Table 5: Kidney-Pancreas Registrations Added December 01, 2020-June 30, 2021 by Policy Era and Gender

Gender	Pre-Policy		Post-Policy	
	N	%	N	%
Female	176	43.46	199	41.12
Male	229	56.54	285	58.88
Total	405	100.00	484	100.00

Figure 6 and **Table 6** show kidney-pancreas registrations added to the waiting list from December 01, 2020 to June 30, 2021 by policy era and ethnicity. The proportion of waiting list additions for Hispanic candidates increased post-policy from 13.33% to 17.77%. The proportion of waiting list additions for Asian candidates decreased from 6.42% to 3.93%. There was little change in the proportion of waiting list additions for White and Black candidates post-policy.

Figure 6: Kidney-Pancreas Registrations Added December 01, 2020-June 30, 2021 by Policy Era and Ethnicity

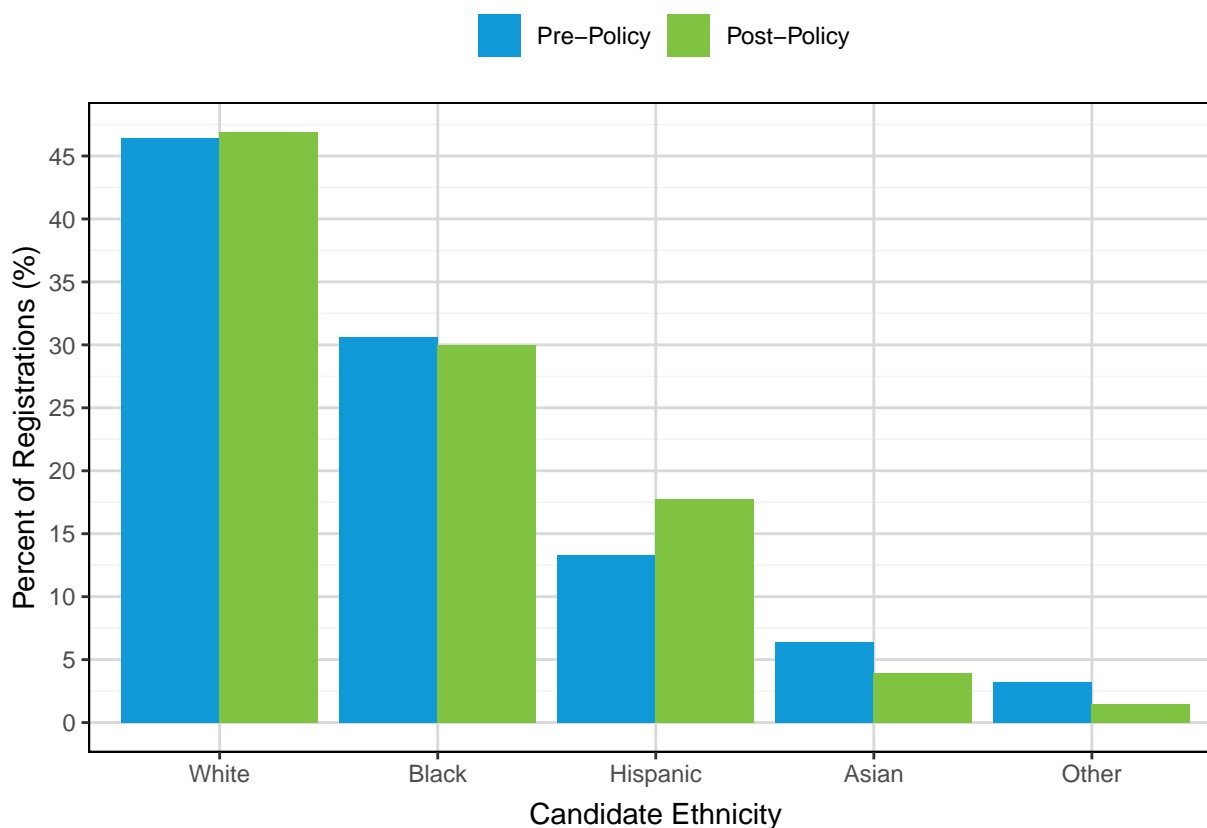


Table 6: Kidney-Pancreas Registrations Added December 01, 2020-June 30, 2021 by Policy Era and Ethnicity

Ethnicity	Pre-Policy		Post-Policy	
	N	%	N	%
White	188	46.42	227	46.90
Black	124	30.62	145	29.96
Hispanic	54	13.33	86	17.77
Asian	26	6.42	19	3.93
Other	13	3.21	7	1.45
Total	405	100.00	484	100.00

Figure 7 and **Table 7** show kidney-pancreas registrations added to the waiting list from December 01, 2020 to June 30, 2021 by policy era and blood type. The proportion of blood type A and AB additions increased slightly post-policy, while the proportion of type B and type O additions decreased slightly.

Figure 7: Kidney-Pancreas Registrations Added December 01, 2020-June 30, 2021 by Policy Era and Blood Type

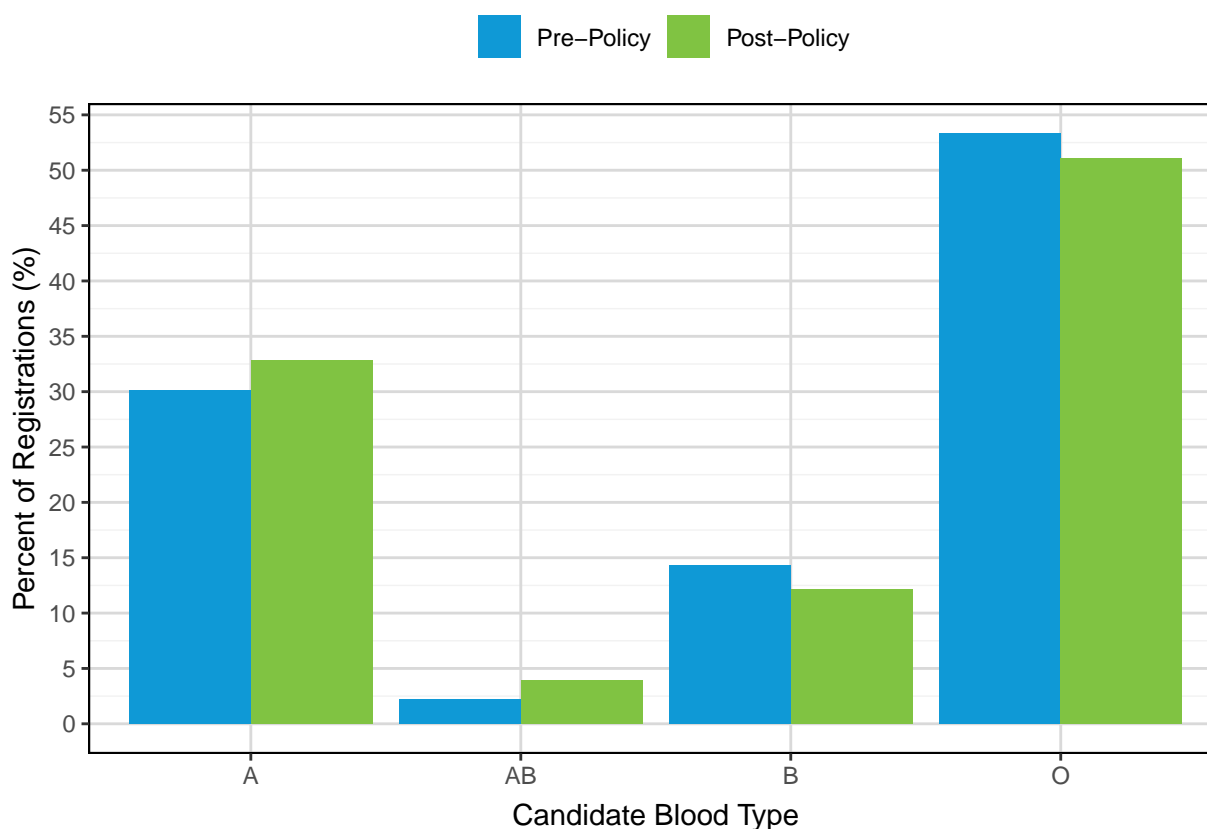


Table 7: Kidney-Pancreas Registrations Added December 01, 2020-June 30, 2021 by Policy Era and Blood Type

Blood Type	Pre-Policy		Post-Policy	
	N	%	N	%
A	122	30.12	159	32.85
AB	9	2.22	19	3.93
B	58	14.32	59	12.19
O	216	53.33	247	51.03
Total	405	100.00	484	100.00

Figure 8 and **Table 8** show kidney-pancreas registrations added to the waiting list from December 01, 2020 to June 30, 2021 by policy era and CPRA at listing. There was little change in the distribution of CPRA at listing after policy implementation, with approximately 68% of additions having CPRA 0%.

Figure 8: Kidney-Pancreas Registrations Added December 01, 2020-June 30, 2021 by Policy Era and CPRA

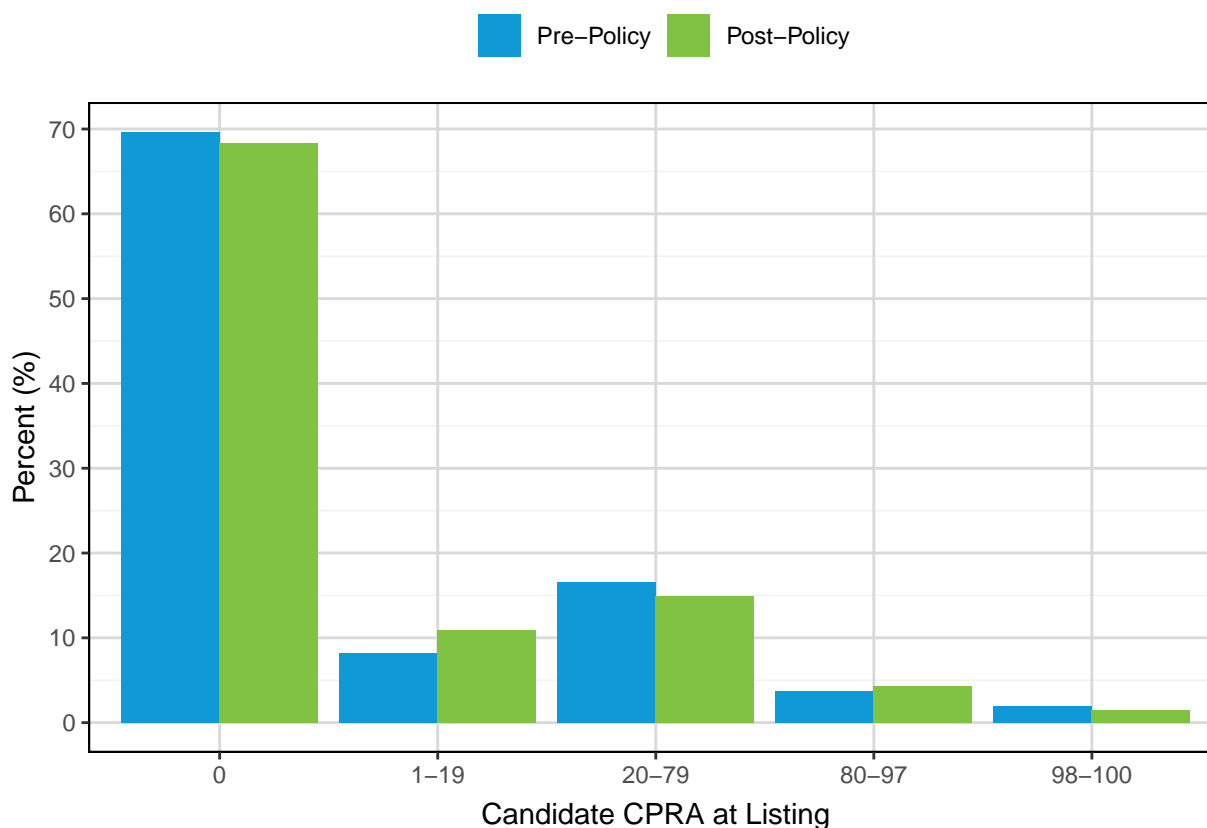


Table 8: Kidney-Pancreas Registrations Added December 01, 2020-June 30, 2021 by Policy Era and CPRA

CPRA (%)	Pre-Policy		Post-Policy	
	N	%	N	%
0	282	69.63	331	68.39
1-19	33	8.15	53	10.95
20-79	67	16.54	72	14.88
80-97	15	3.70	21	4.34
98-100	8	1.98	7	1.45
Total	405	100.00	484	100.00

Figure 9 and **Table 9** show kidney-pancreas registrations added to the waiting list from December 01, 2020 to June 30, 2021 by policy era and primary diagnosis at listing. The majority of waiting list additions in both policy eras were candidates diagnosed with type 1 diabetes at listing. The proportion of waiting list registrations for candidates with type 2 diabetes decreased post-policy from 31.36% to 28.72%, while the proportion of registrations for candidates with a diagnosis other than type 1 or type 2 diabetes increased from 4.20% to 5.37%.

Figure 9: Kidney-Pancreas Registrations Added December 01, 2020 - June 30, 2021 by Policy Era and Diagnosis at Listing

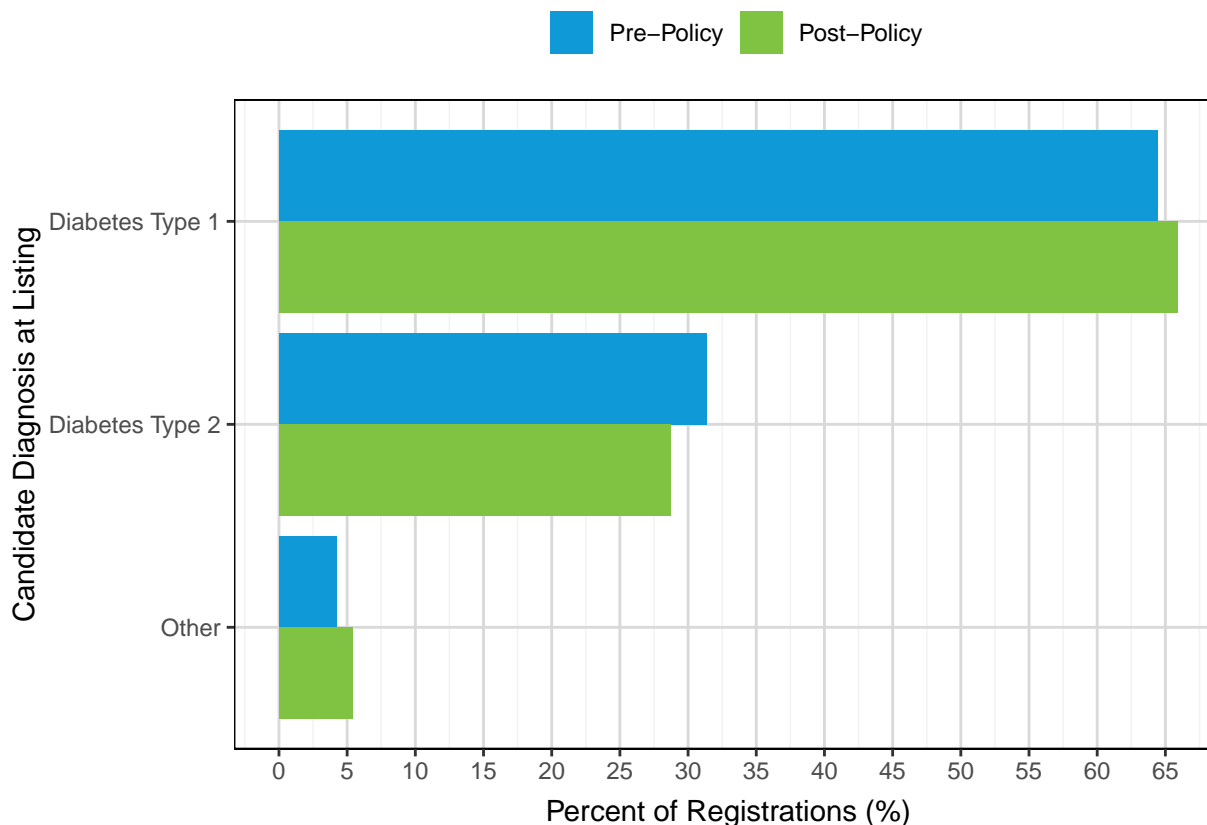


Table 9: Kidney-Pancreas Registrations Added December 01, 2020 - June 30, 2021 by Policy Era and Diagnosis at Listing

Diagnosis	Pre-Policy		Post-Policy	
	N	%	N	%
Diabetes Type 1	261	64.44	319	65.91
Diabetes Type 2	127	31.36	139	28.72
Other	17	4.20	26	5.37
Total	405	100.00	484	100.00

Figure 10 and **Table 10** show kidney-pancreas registrations added to the waiting list from December 01, 2020 to June 30, 2021 by policy era and insurance status at listing. The proportion of waiting list additions for candidates using public insurance decreased from 54.07% to 50.83% after policy implementation. The proportion of additions for candidates with unknown insurance increased from 0.25% to 2.48% after policy implementation, though this is likely due to outstanding TCR forms at the time this analysis was completed.

Figure 10: Kidney-Pancreas Registrations Added December 01, 2020-June 30, 2021 by Policy Era and Insurance Status at Listing

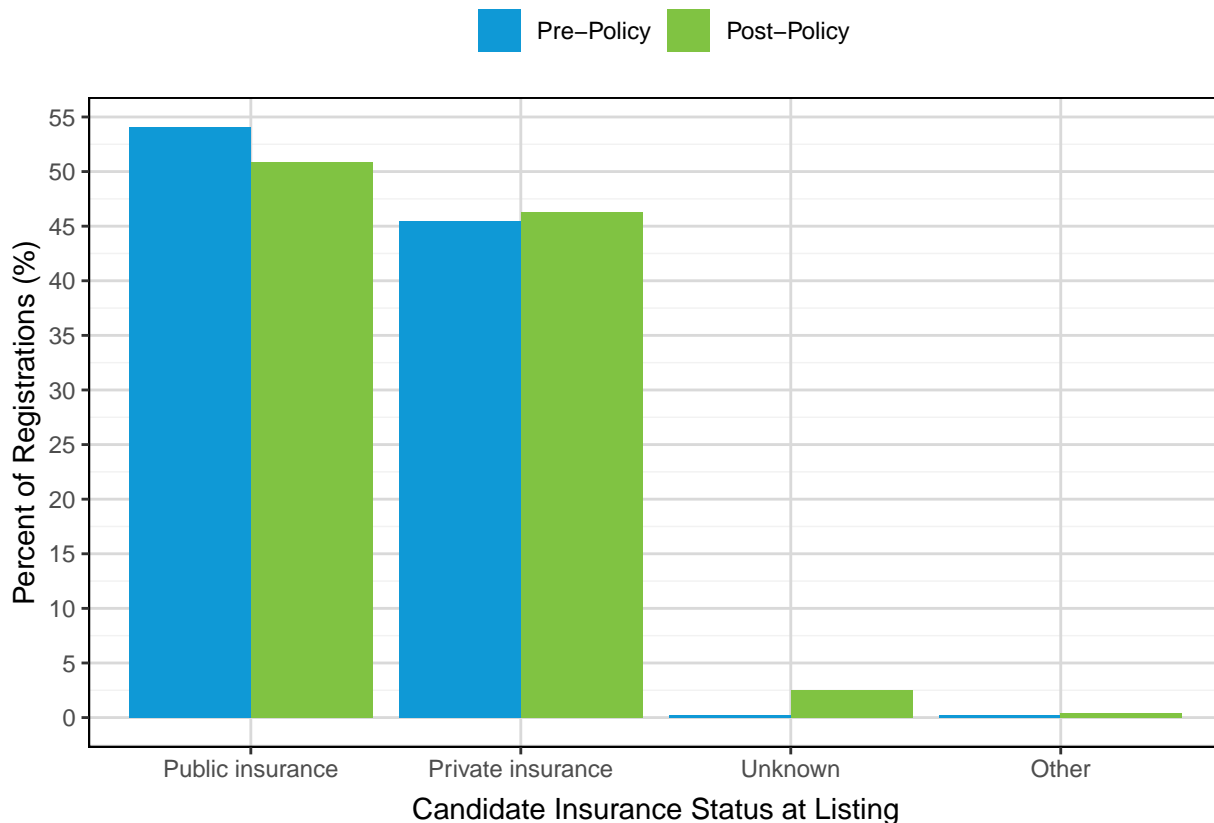


Table 10: Kidney-Pancreas Registrations Added December 01, 2020-June 30, 2021 by Policy Era and Insurance Status at Listing

Insurance at Listing	Pre-Policy		Post-Policy	
	N	%	N	%
Public insurance	219	54.07	246	50.83
Private insurance	184	45.43	224	46.28
Unknown	1	0.25	12	2.48
Other	1	0.25	2	0.41
Total	405	100.00	484	100.00

Figure 11 and **Table 11** show waiting list mortality rates for kidney-pancreas registrations ever waiting between January 01, 2021 and May 31, 2021 by policy era. There were 22 deaths on the waiting list pre-policy and 30 deaths post-policy. The overall kidney-pancreas waiting list mortality rate increased post-policy from 6.52 to 8.32 deaths per 100 patient years; this increase was not statistically significant.

Figure 11: Waiting List Mortality Rates for Kidney-Pancreas Registrations Ever Waiting January 01, 2021 - May 31, 2021 by Policy Era

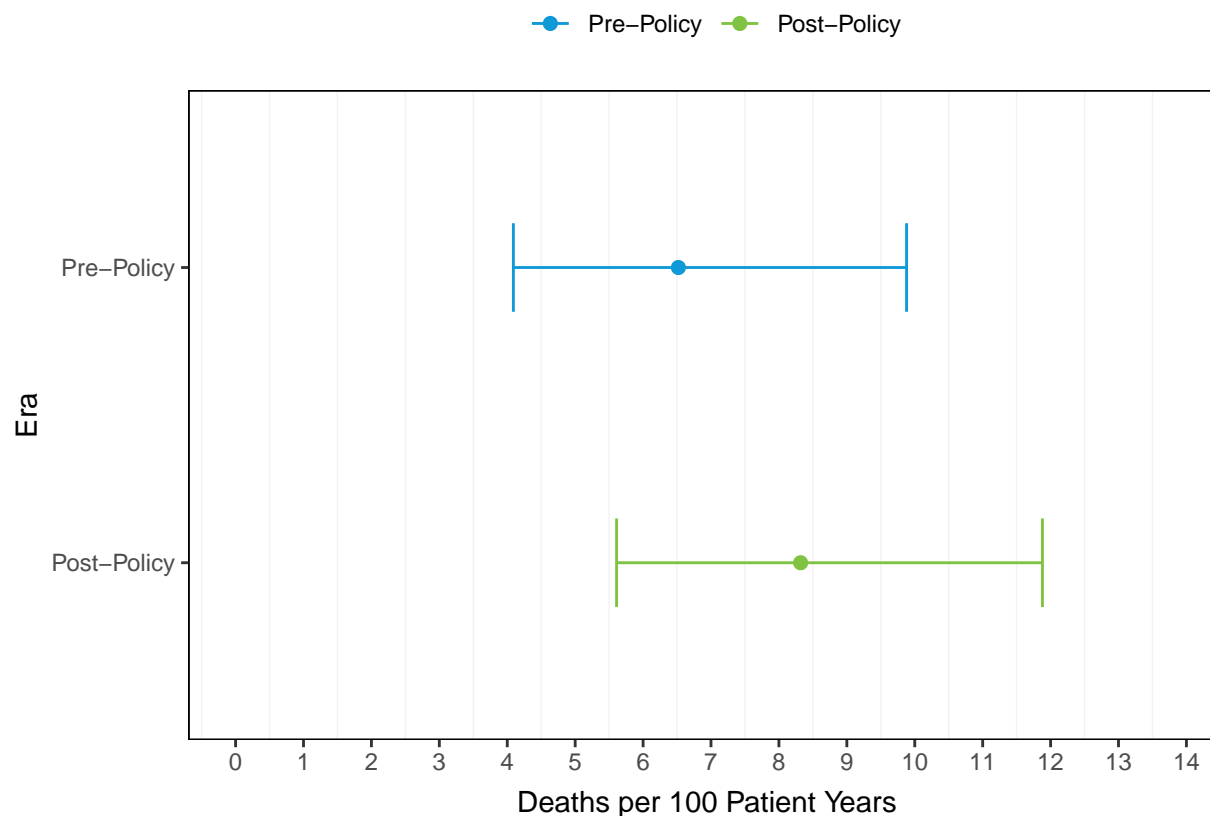


Table 11: Waiting List Mortality Rates for Kidney-Pancreas Registrations Ever Waiting January 01, 2021 - May 31, 2021 by Policy Era

Era	Registrations	Deaths	Deaths per 100 Patient Years	95% CI
Pre-Policy	1943	22	6.52	(4.09, 9.88)
Post-Policy	2011	30	8.32	(5.61, 11.88)

Figure 12 and **Table 12** show waiting list mortality rates for kidney-pancreas registrations ever waiting between January 01, 2021 and May 31, 2021 by policy era and age at listing. Waiting list mortality rates increased post-policy for the 18-34, 35-49, and 50-64 age groups; these changes were not statistically significant. There were no deaths on the waiting list for registrations aged 0-17 or 65+ at listing in the pre- or post-policy eras. There were no registrations for candidates aged 65+ ever waiting in the pre-policy era, and one registration in the post-policy era.

Figure 12: Waiting List Mortality Rates for Kidney-Pancreas Registrations Ever Waiting January 01, 2021 - May 31, 2021 by Policy Era and Age at Listing

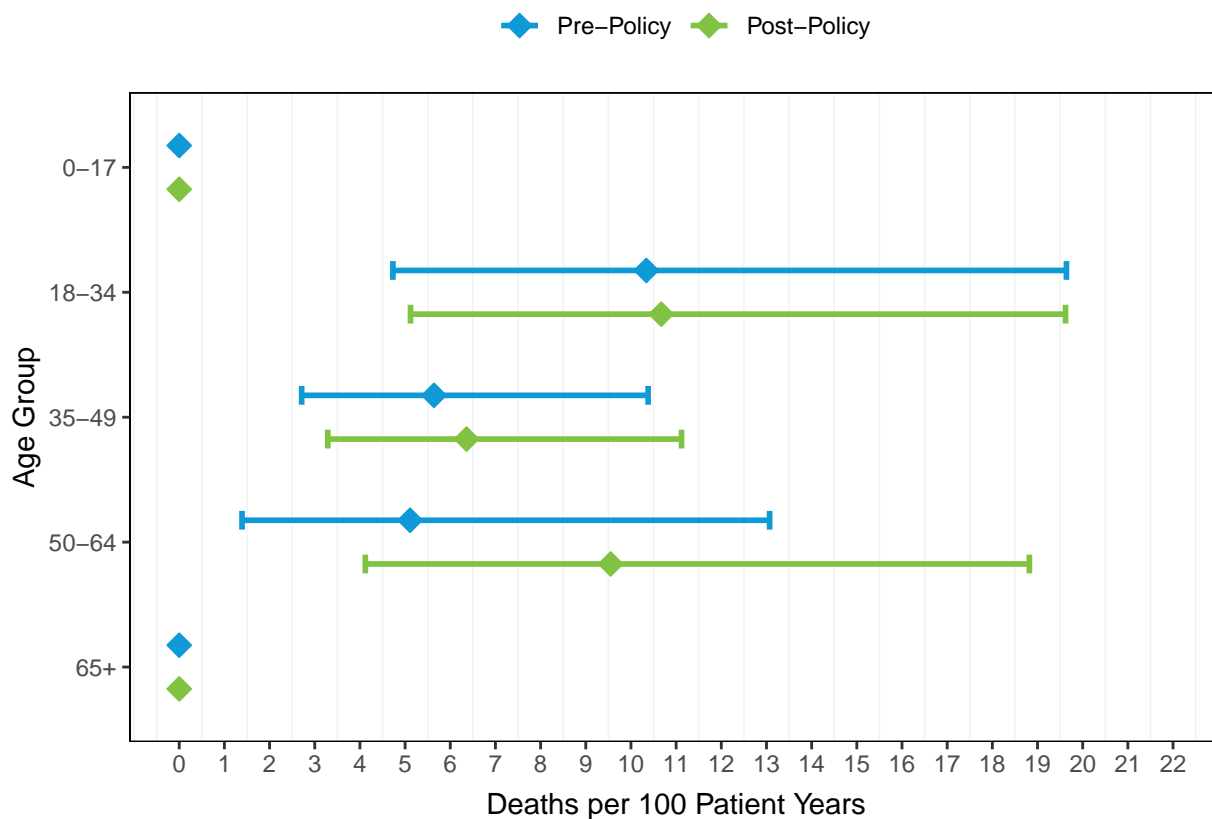


Table 12: Waiting List Mortality Rates for Kidney-Pancreas Registrations Ever Waiting January 01, 2021 - May 31, 2021 by Policy Era and Age at Listing

Age at Listing	Era	Registrations	Deaths	Deaths per 100 Patient Years	95% CI
0-17	Pre-Policy	3	0	0.00	-
	Post-Policy	4	0	0.00	-
18-34	Pre-Policy	506	9	10.34	(4.73, 19.64)
	Post-Policy	518	10	10.67	(5.12, 19.62)
35-49	Pre-Policy	1012	10	5.64	(2.71, 10.38)
	Post-Policy	1060	12	6.36	(3.29, 11.12)
50-64	Pre-Policy	460	4	5.11	(1.39, 13.07)
	Post-Policy	472	8	9.55	(4.12, 18.82)
65+	Pre-Policy	0	0	0.00	-
	Post-Policy	1	0	0.00	-

Figure 13 and **Table 13** show waiting list mortality rates for kidney-pancreas registrations ever waiting between January 01, 2021 and May 31, 2021 by policy era and gender. Waiting list mortality rates increased post-policy for female registrations from 8.48 to 9.19 deaths per 100 patient years, and for male registrations from 4.89 to 7.60 deaths per 100 patient years. These changes were not statistically significant.

Figure 13: Waiting List Mortality Rates for Kidney-Pancreas Registrations Ever Waiting January 01, 2021 - May 31, 2021 by Policy Era and Gender

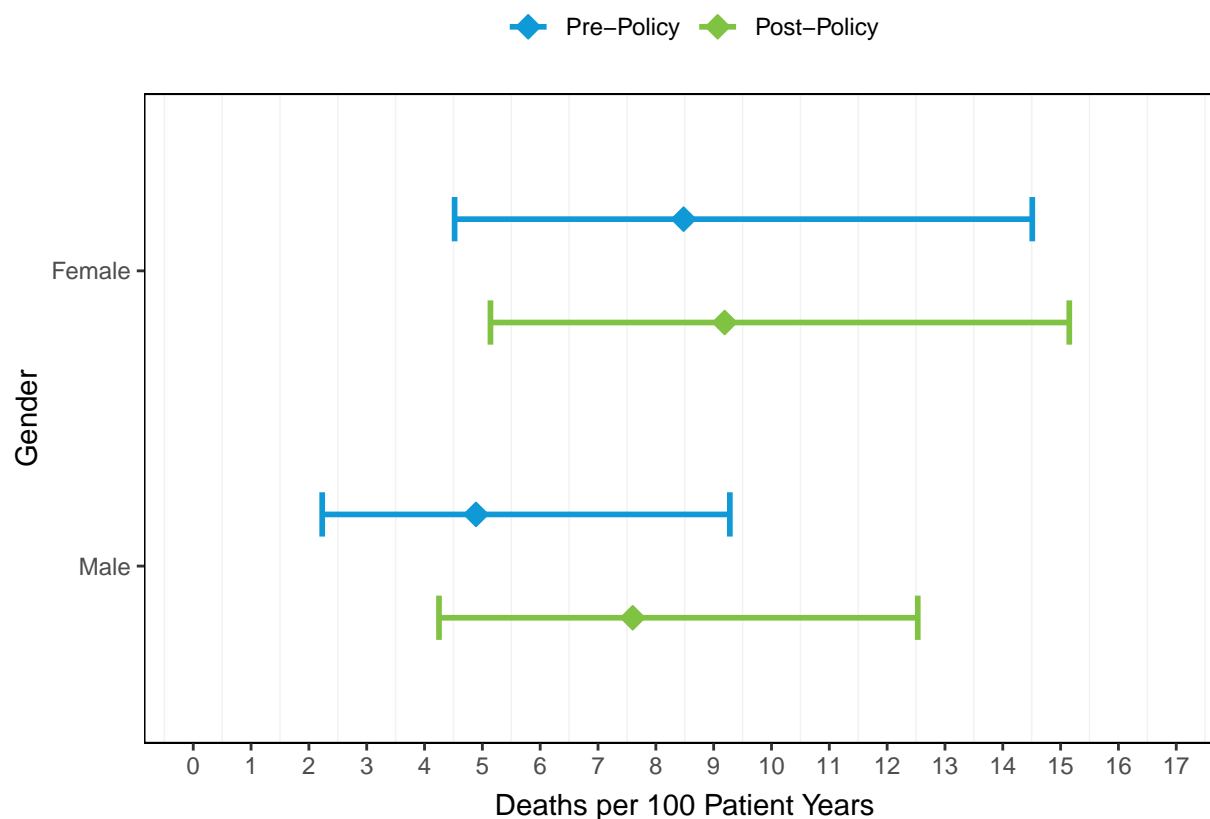


Table 13: Waiting List Mortality Rates for Kidney-Pancreas Registrations Ever Waiting January 01, 2021 - May 31, 2021 by Policy Era and Gender

Gender	Era	Registrations	Deaths	Deaths per 100 Patient Years	95% CI
Female	Pre-Policy	875	13	8.48	(4.52, 14.51)
	Post-Policy	891	15	9.19	(5.14, 15.15)
Male	Pre-Policy	1069	9	4.89	(2.23, 9.28)
	Post-Policy	1121	15	7.60	(4.25, 12.53)

Figure 14 and **Table 14** show waiting list mortality rates for kidney-pancreas registrations ever waiting between January 01, 2021 and May 31, 2021 by policy era and race/ethnicity. Waiting list mortality rates increased post-policy for White candidates from 6.57 to 9.75 deaths per 100 patient years and for Black candidates from 6.27 to 9.65 deaths per 100 patient years. Waiting list mortality rates decreased for Hispanic candidates from 9.98 to 1.79 deaths per 100 patient years. None of these changes were statistically significant.

Figure 14: Waiting List Mortality Rates for Kidney-Pancreas Registrations Ever Waiting January 01, 2021 - May 31, 2021 by Policy Era and Ethnicity

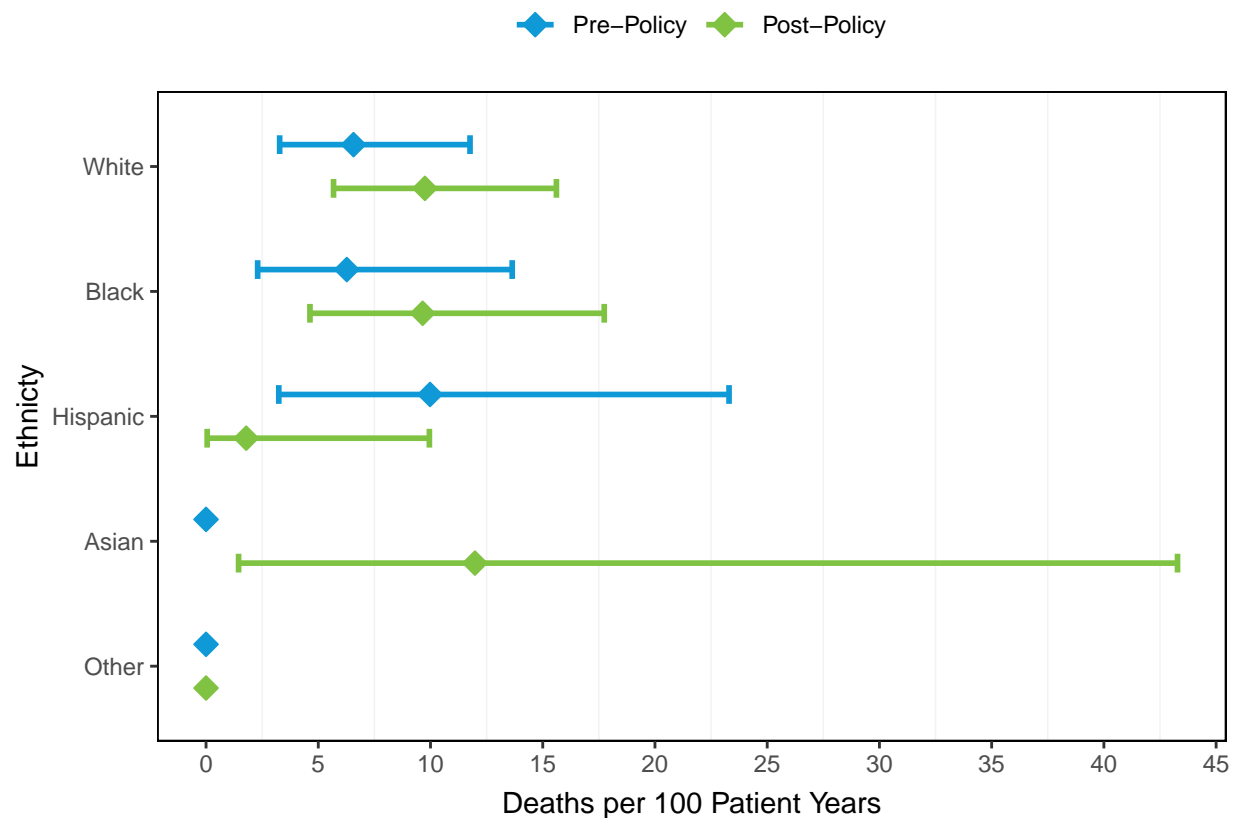


Table 14: Waiting List Mortality Rates for Kidney-Pancreas Registrations Ever Waiting January 01, 2021 - May 31, 2021 by Policy Era and Ethnicity

Ethnicity	Era	Registrations	Deaths	Deaths per 100 Patient Years	95% CI
White	Pre-Policy	955	11	6.57	(3.28, 11.76)
	Post-Policy	959	17	9.75	(5.68, 15.61)
Black	Pre-Policy	558	6	6.27	(2.3, 13.64)
	Post-Policy	585	10	9.65	(4.63, 17.74)
Hispanic	Pre-Policy	292	5	9.98	(3.24, 23.3)
	Post-Policy	323	1	1.79	(0.05, 9.95)
Asian	Pre-Policy	88	0	0.00	-
	Post-Policy	93	2	11.98	(1.45, 43.28)
Other	Pre-Policy	54	0	0.00	-
	Post-Policy	56	0	0.00	-

Figure 15 and **Table 15** show waiting list mortality rates for kidney-pancreas registrations ever waiting between January 01, 2021 and May 31, 2021 by policy era and CPRA at listing. Waiting list mortality rates increased post-policy for candidates with CPRA 0%, 20-79%, and 98-100%, and decreased for candidates with CPRA 80-97%. There was little change in the waiting list mortality rate for candidates with CPRA 1-19% after implementation. None of these changes were statistically significant.

Figure 15: Waiting List Mortality Rates for Kidney-Pancreas Registrations Ever Waiting January 01, 2021 - May 31, 2021 by Policy Era and CPRA at Listing

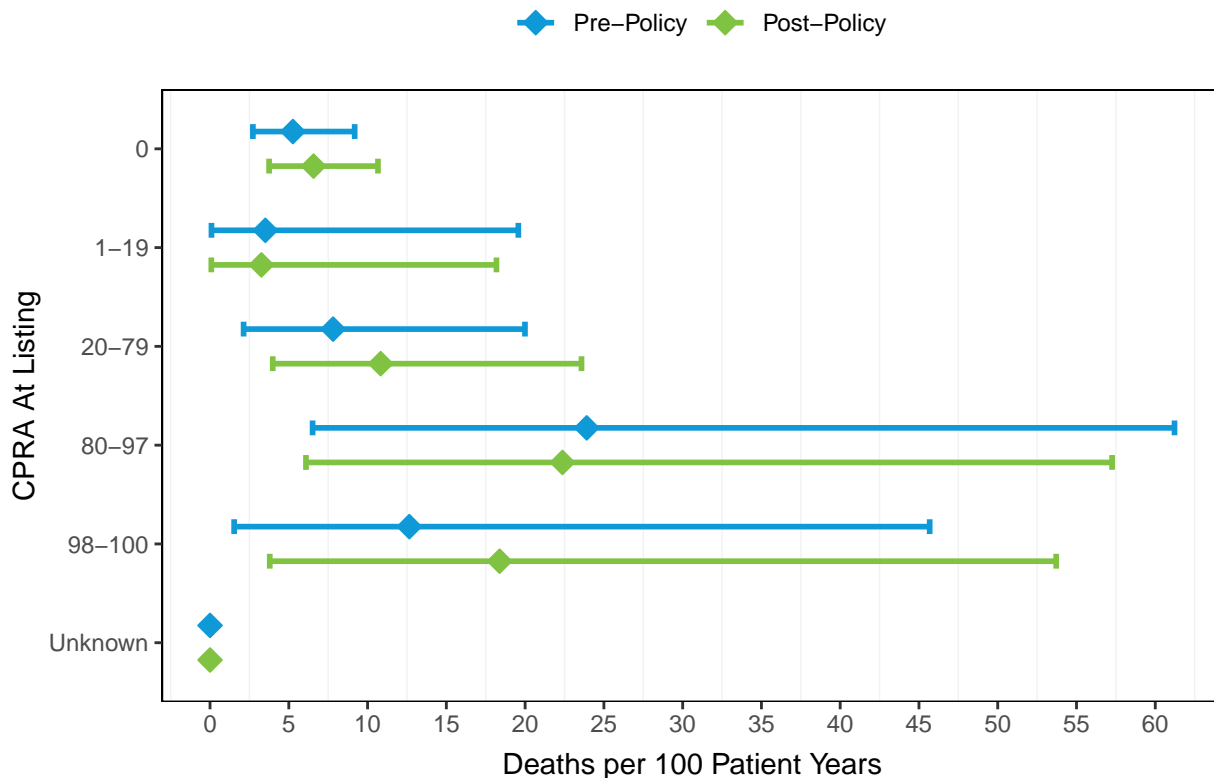


Table 15: Waiting List Mortality Rates for Kidney-Pancreas Registrations Ever Waiting January 01, 2021 - May 31, 2021 by Policy Era and CPRA at Listing

CPRA (%)	Era	Registrations	Deaths	Deaths per 100 Patient Years	95% CI
0	Pre-Policy	1321	12	5.26	(2.72, 9.18)
	Post-Policy	1366	16	6.57	(3.75, 10.66)
1-19	Pre-Policy	167	1	3.51	(0.09, 19.57)
	Post-Policy	173	1	3.26	(0.08, 18.18)
20-79	Pre-Policy	296	4	7.81	(2.13, 19.99)
	Post-Policy	313	6	10.83	(3.98, 23.58)
80-97	Pre-Policy	95	4	23.91	(6.51, 61.22)
	Post-Policy	99	4	22.37	(6.09, 57.26)
98-100	Pre-Policy	86	2	12.65	(1.53, 45.68)
	Post-Policy	85	3	18.38	(3.79, 53.71)
Unknown	Pre-Policy	10	0	0.00	-
	Post-Policy	10	0	0.00	-

Figure 16 and **Table 16** show waiting list mortality rates for kidney-pancreas registrations ever waiting between January 01, 2021 and May 31, 2021 by policy era and blood type. Waiting list mortality rates increased post-policy for blood type A and type B candidates. These changes were not statistically significant.

Figure 16: Waiting List Mortality Rates for Kidney-Pancreas Registrations Ever Waiting January 01, 2021 - May 31, 2021 by Policy Era and Blood Type

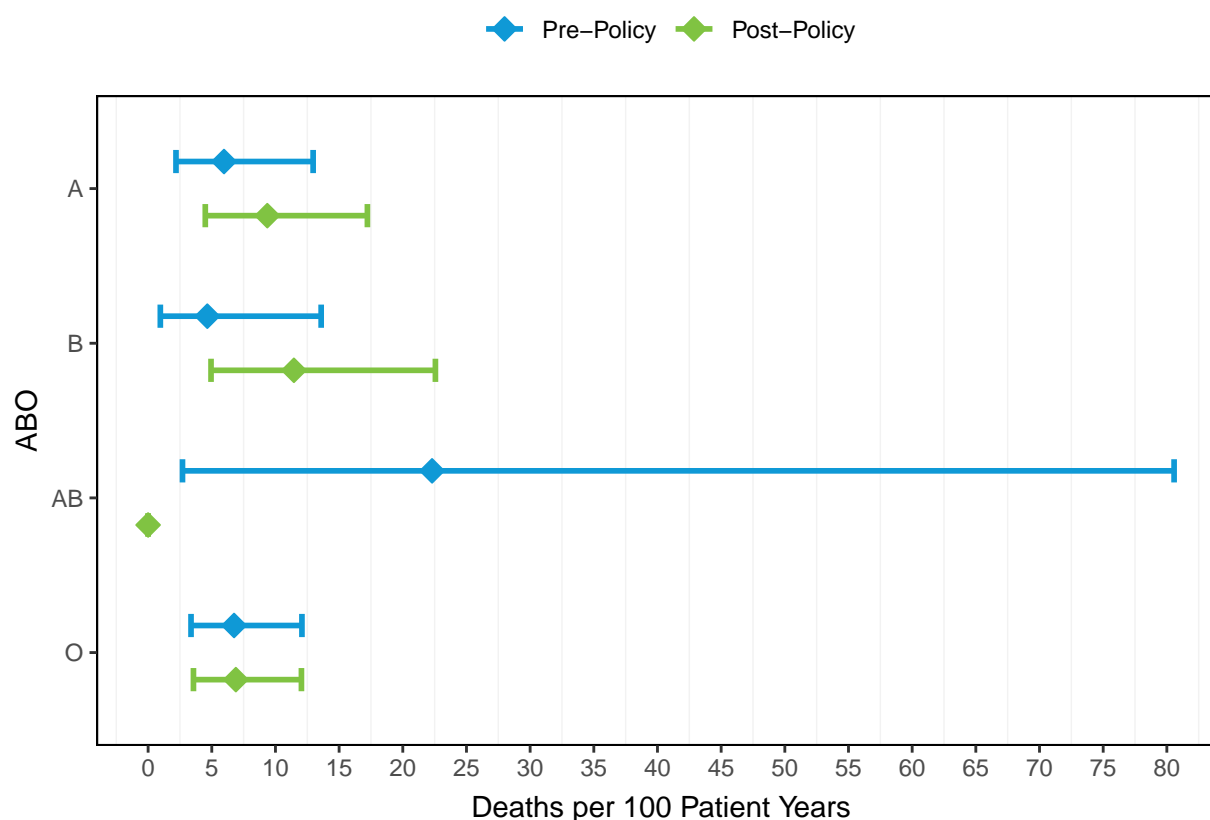


Table 16: Waiting List Mortality Rates for Kidney-Pancreas Registrations Ever Waiting January 01, 2021 - May 31, 2021 by Policy Era and Blood Type

ABO	Era	Registrations	Deaths	Deaths per 100 Patient Years	95% CI
A	Pre-Policy	583	6	5.96	(2.19, 12.96)
	Post-Policy	598	10	9.36	(4.49, 17.22)
B	Pre-Policy	366	3	4.65	(0.96, 13.59)
	Post-Policy	371	8	11.45	(4.94, 22.56)
AB	Pre-Policy	50	2	22.30	(2.7, 80.57)
	Post-Policy	56	0	0.00	-
O	Pre-Policy	944	11	6.75	(3.37, 12.08)
	Post-Policy	986	12	6.89	(3.56, 12.04)

Figure 17 and **Table 17** show deceased donor transplants per 100 active patient years for kidney-pancreas registrations ever waiting between December 01, 2020 and June 30, 2021 by policy era. The overall deceased donor kidney-pancreas transplant rate increased post-policy from 102.45 to 119.37 transplants per 100 active patient years. This increase was not statistically significant.

Figure 17: Transplants per 100 Active Patient Years for Kidney-Pancreas Registrations Ever Waiting December 01, 2020-June 30, 2021 by Policy Era

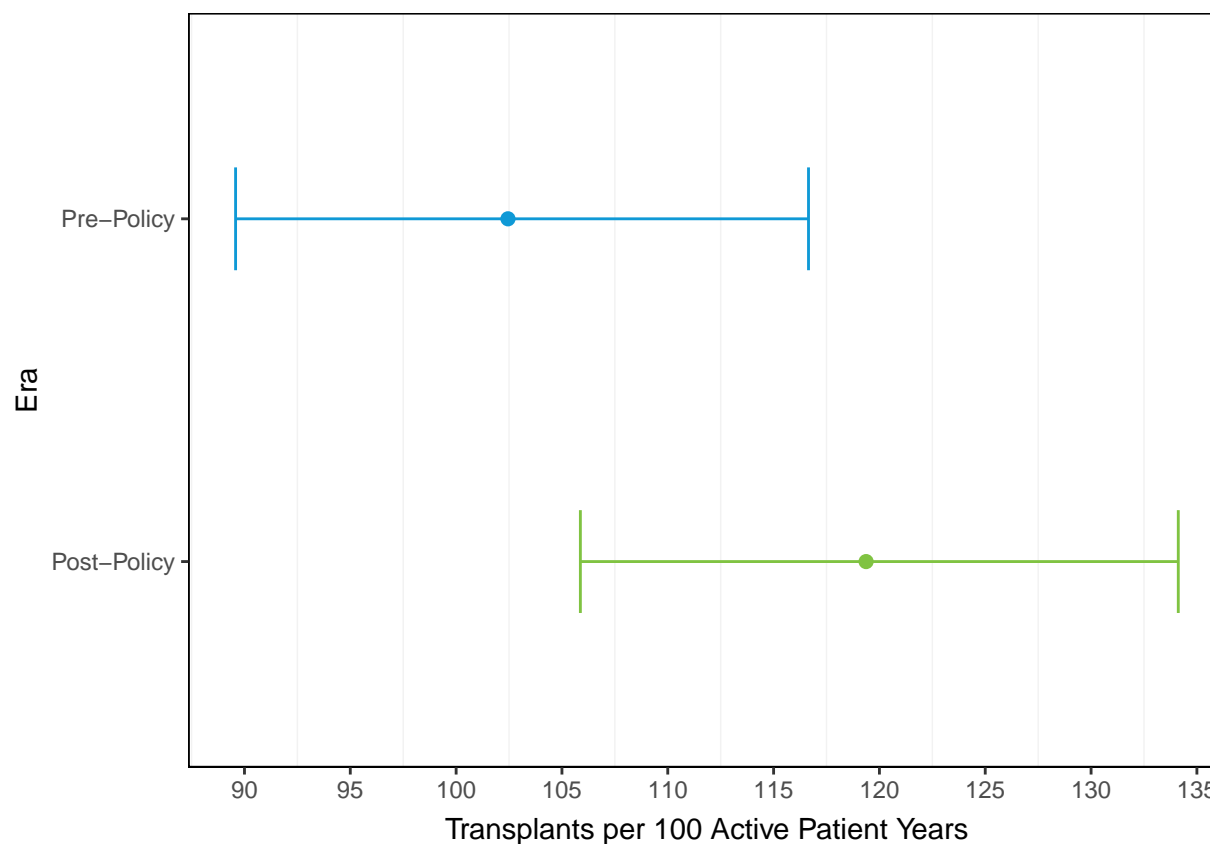


Table 17: Transplants per 100 Active Patient Years for Kidney-Pancreas Registrations Ever Waiting December 01, 2020-June 30, 2021 by Policy Era

Era	Registrations	Transplants	Transplants per 100 Patient Years	95% CI
Pre-Policy	1186	228	102.45	(89.58, 116.65)
Post-Policy	1273	283	119.37	(105.87, 134.12)

Figure 18 and **Table 18** show deceased donor transplants per 100 active patient years for kidney-pancreas registrations ever waiting between December 01, 2020 and June 30, 2021 by policy era and age at listing. The deceased donor kidney-pancreas transplant rate increased for the 18-34 age group from 109.69 to 112.48 transplants per 100 active patient years, for the 35-49 age group from 91.49 to 110.08 transplants per 100 active patient years, and for the 50-64 age group from 108.94 to 143.66 transplants per 100 active patient years. These increases were not statistically significant.

Figure 18: Transplants per 100 Active Patient Years for Kidney-Pancreas Registrations Ever Waiting December 01, 2020 - June 30, 2021 by Policy Era and Age at Listing

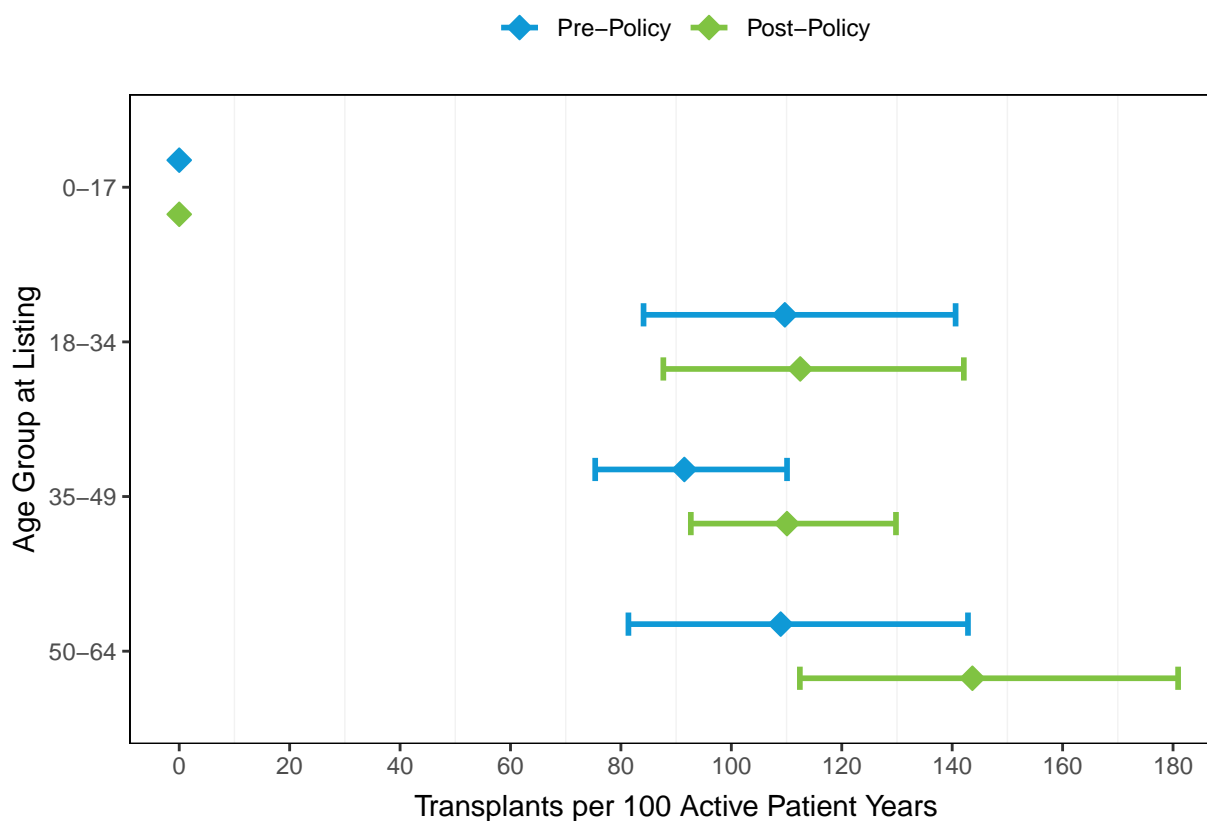


Table 18: Transplants per 100 Active Patient Years for Kidney-Pancreas Registrations Ever Waiting December 01, 2020 - June 30, 2021 by Policy Era and Age at Listing

Age at Listing	Era	Registrations	Transplants	Transplants per 100 Patient Years	95% CI
0-17	Pre-Policy	3	0	0.00	-
	Post-Policy	4	0	0.00	-
18-34	Pre-Policy	321	62	109.69	(84.1, 140.62)
	Post-Policy	333	70	112.48	(87.68, 142.11)
35-49	Pre-Policy	633	112	91.49	(75.34, 110.09)
	Post-Policy	684	141	110.08	(92.66, 129.82)
50-64	Pre-Policy	252	52	108.94	(81.36, 142.86)
	Post-Policy	277	72	143.66	(112.41, 180.92)
65+	Pre-Policy	2	2	3650.00	(442.03, 13185.05)
	Post-Policy	2	0	0.00	-

Figure 19 and **Table 19** show deceased donor transplants per 100 active patient years for kidney-pancreas registrations ever waiting between December 01, 2020 and June 30, 2021 by policy era and gender. The transplant rate for female registrations increased post-policy from 95.02 to 103.32 transplants per 100 active patient years, and the rate for male registrations increased from 108.85 to 132.82 transplants per 100 active patient years. These increases were not statistically significant.

Figure 19: Transplants per 100 Active Patient Years for Kidney-Pancreas Registrations Ever Waiting December 01, 2020-June 30, 2021 by Policy Era and Gender

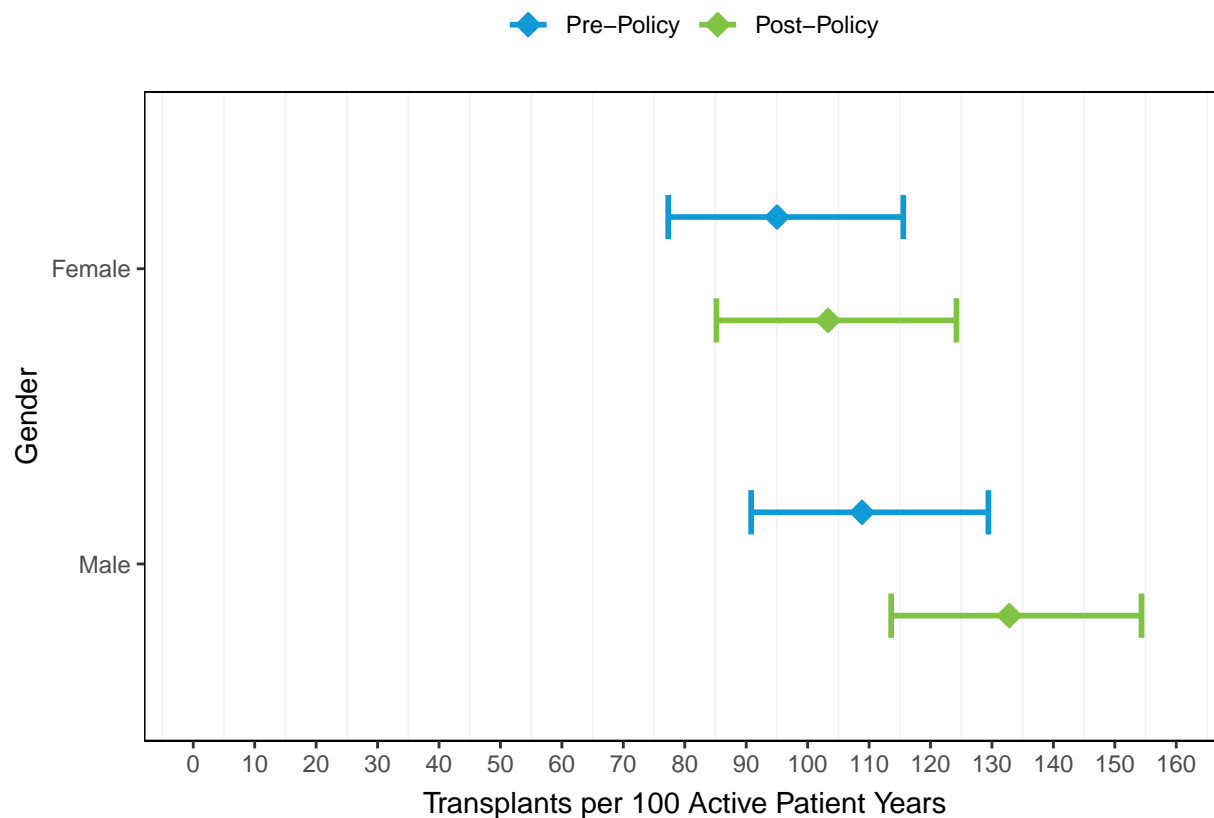


Table 19: Transplants per 100 Active Patient Years for Kidney-Pancreas Registrations Ever Waiting December 01, 2020-June 30, 2021 by Policy Era and Gender

Gender	Era	Registrations	Transplants	Transplants per 100 Patient Years	95% CI
Female	Pre-Policy	540	100	95.02	(77.31, 115.57)
	Post-Policy	562	113	103.32	(85.15, 124.22)
Male	Pre-Policy	647	128	108.85	(90.81, 129.42)
	Post-Policy	712	170	132.82	(113.6, 154.35)

Figure 20 and **Table 20** show deceased donor transplants per 100 active patient years for kidney-pancreas registrations ever waiting between December 01, 2020 and June 30, 2021 by policy era and candidate race/ethnicity. Transplant rates increased for all racial/ethnic groups; these increases were not statistically significant.

Figure 20: Transplants per 100 Active Patient Years for Kidney-Pancreas Registrations Ever Waiting December 01, 2020 - June 30, 2021 by Policy Era and Ethnicity

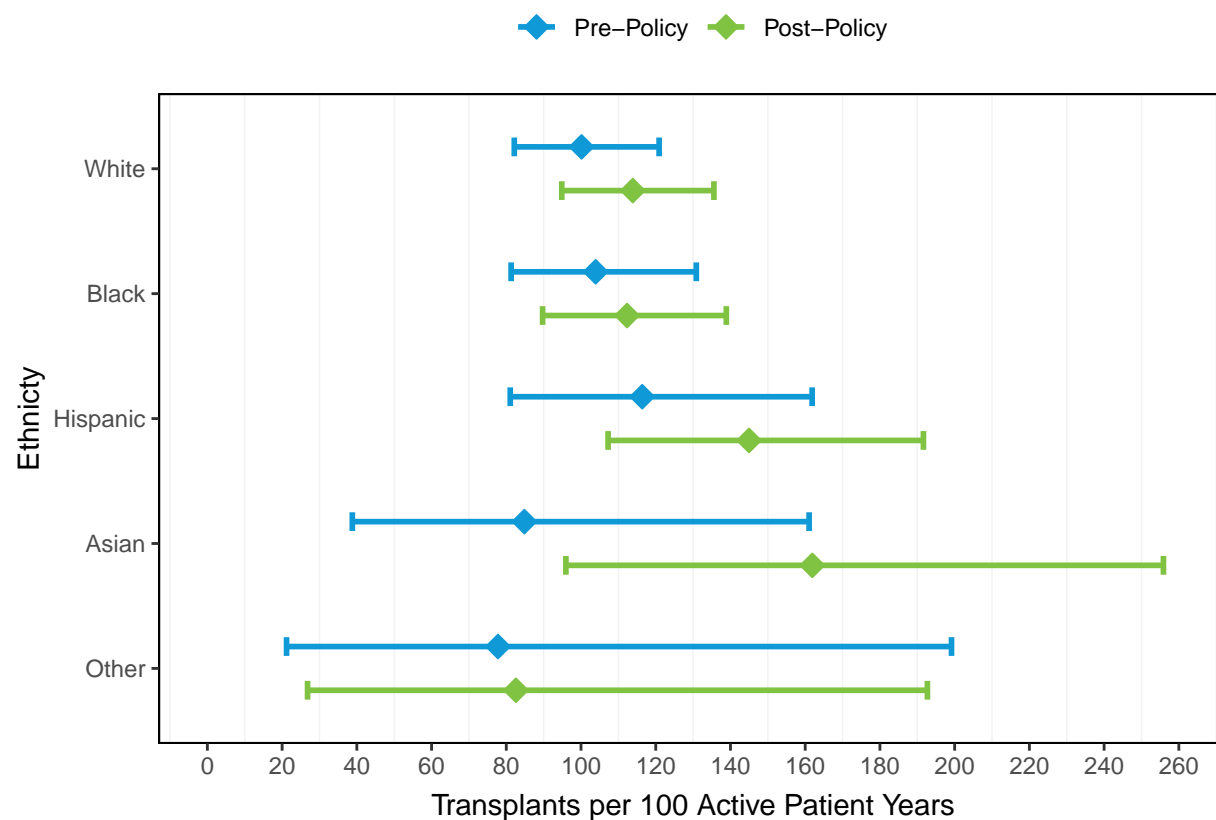


Table 20: Transplants per 100 Active Patient Years for Kidney-Pancreas Registrations Ever Waiting December 01, 2020 - June 30, 2021 by Policy Era and Ethnicity

Ethnicity	Era	Registrations	Transplants	Transplants per 100 Patient Years	95% CI
White	Pre-Policy	557	108	100.14	(82.14, 120.9)
	Post-Policy	589	126	113.86	(94.85, 135.57)
Black	Pre-Policy	374	72	103.91	(81.3, 130.85)
	Post-Policy	402	85	112.32	(89.72, 138.89)
Hispanic	Pre-Policy	172	35	116.38	(81.06, 161.86)
	Post-Policy	194	49	144.96	(107.24, 191.64)
Asian	Pre-Policy	56	9	84.84	(38.79, 161.05)
	Post-Policy	56	18	161.90	(95.95, 255.88)
Other	Pre-Policy	30	4	77.78	(21.19, 199.16)
	Post-Policy	34	5	82.58	(26.81, 192.71)

Figure 21 and **Table 21** show deceased donor transplants per 100 active patient years for kidney-pancreas registrations ever waiting between December 01, 2020 and June 30, 2021 by policy era and CPRA at listing. Transplant rates increased post-policy for registrations in the CPRA 0%, 20-79%, and 80-97% groups. The transplant rate decreased for registrations in the CPRA 1-19% group. The rate was unchanged for the CPRA 98-100% group. None of these changes were statistically significant.

Figure 21: Transplants per 100 Active Patient Years for Kidney-Pancreas Registrations Ever Waiting December 01, 2020 - June 30, 2021 by Policy Era and CPRA at Listing

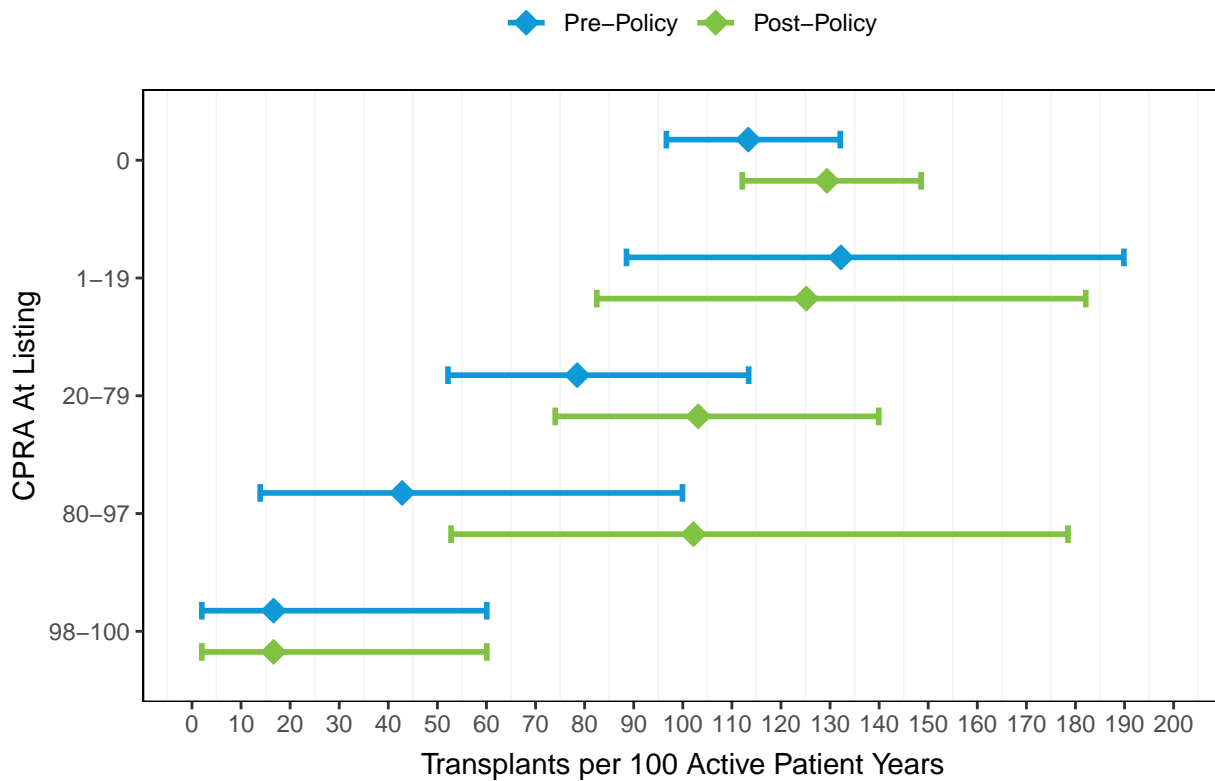


Table 21: Transplants per 100 Active Patient Years for Kidney-Pancreas Registrations Ever Waiting December 01, 2020 - June 30, 2021 by Policy Era and CPRA at Listing

CPRA (%)	Era	Registrations	Transplants	Transplants per 100 Patient Years	95% CI
0	Pre-Policy	794	164	113.34	(96.66, 132.08)
	Post-Policy	858	201	129.37	(112.11, 148.55)
1-19	Pre-Policy	112	29	132.20	(88.53, 189.86)
	Post-Policy	119	27	125.16	(82.48, 182.1)
20-79	Pre-Policy	183	28	78.48	(52.15, 113.42)
	Post-Policy	204	41	103.14	(74.01, 139.92)
80-97	Pre-Policy	64	5	42.82	(13.9, 99.93)
	Post-Policy	59	12	102.17	(52.79, 178.47)
98-100	Pre-Policy	52	2	16.63	(2.01, 60.07)
	Post-Policy	50	2	16.63	(2.01, 60.08)
Unknown	Pre-Policy	4	0	0.00	-
	Post-Policy	4	0	0.00	-

Figure 22 and **Table 22** show deceased donor transplants per 100 active patient years for kidney-pancreas registrations ever waiting between December 01, 2020 and June 30, 2021 by policy era and candidate blood type. Transplant rates increased for all blood types. None of these changes were statistically significant.

Figure 22: Transplants per 100 Active Patient Years for Kidney-Pancreas Registrations Ever Waiting December 01, 2020 - June 30, 2021 by Policy Era and Blood Type

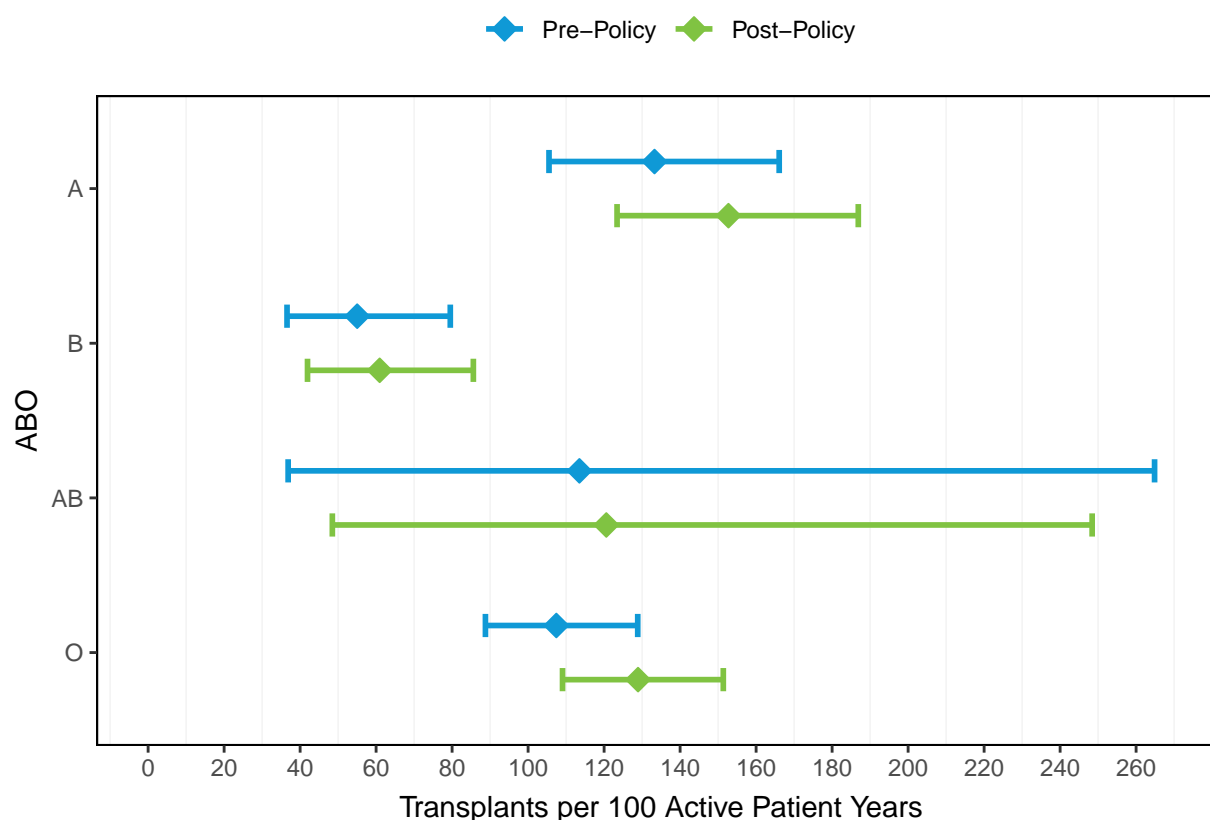


Table 22: Transplants per 100 Active Patient Years for Kidney-Pancreas Registrations Ever Waiting December 01, 2020 - June 30, 2021 by Policy Era and Blood Type

ABO	Era	Registrations	Transplants	Transplants per 100 Patient Years	95% CI
A	Pre-Policy	339	79	133.26	(105.5, 166.08)
	Post-Policy	363	94	152.72	(123.41, 186.89)
B	Pre-Policy	235	28	55.02	(36.56, 79.52)
	Post-Policy	246	33	60.94	(41.95, 85.59)
AB	Pre-Policy	25	5	113.50	(36.85, 264.86)
	Post-Policy	38	7	120.58	(48.48, 248.43)
O	Pre-Policy	587	116	107.43	(88.77, 128.85)
	Post-Policy	626	149	128.93	(109.06, 151.37)

Deceased Donor Transplants

Figure 23 and **Table 23** show deceased donor kidney-pancreas transplants from December 01, 2020 to June 30, 2021 by policy era. There were 227 transplants performed in the pre-policy era, and 281 in the post-policy era.

Figure 23: Deceased Donor Kidney-Pancreas Transplants December 01, 2020-June 30, 2021 by Policy Era

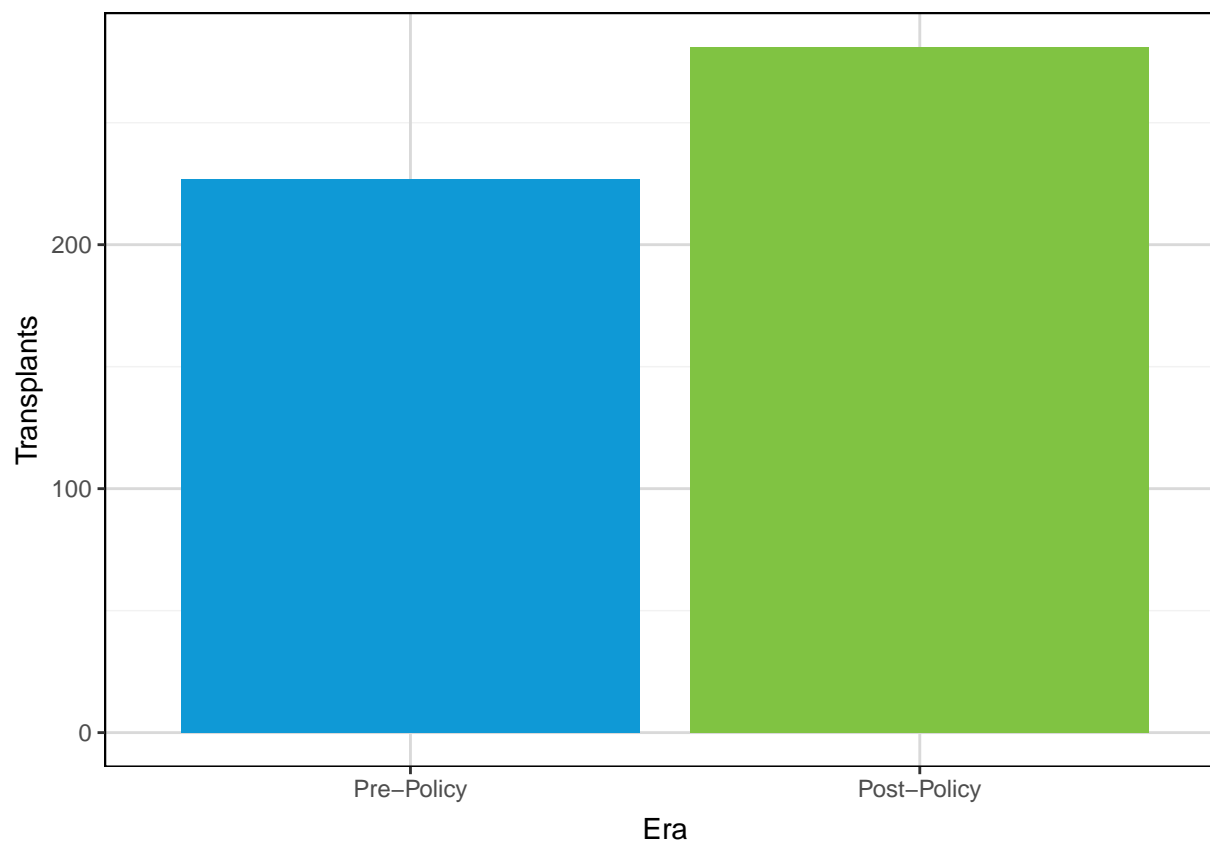
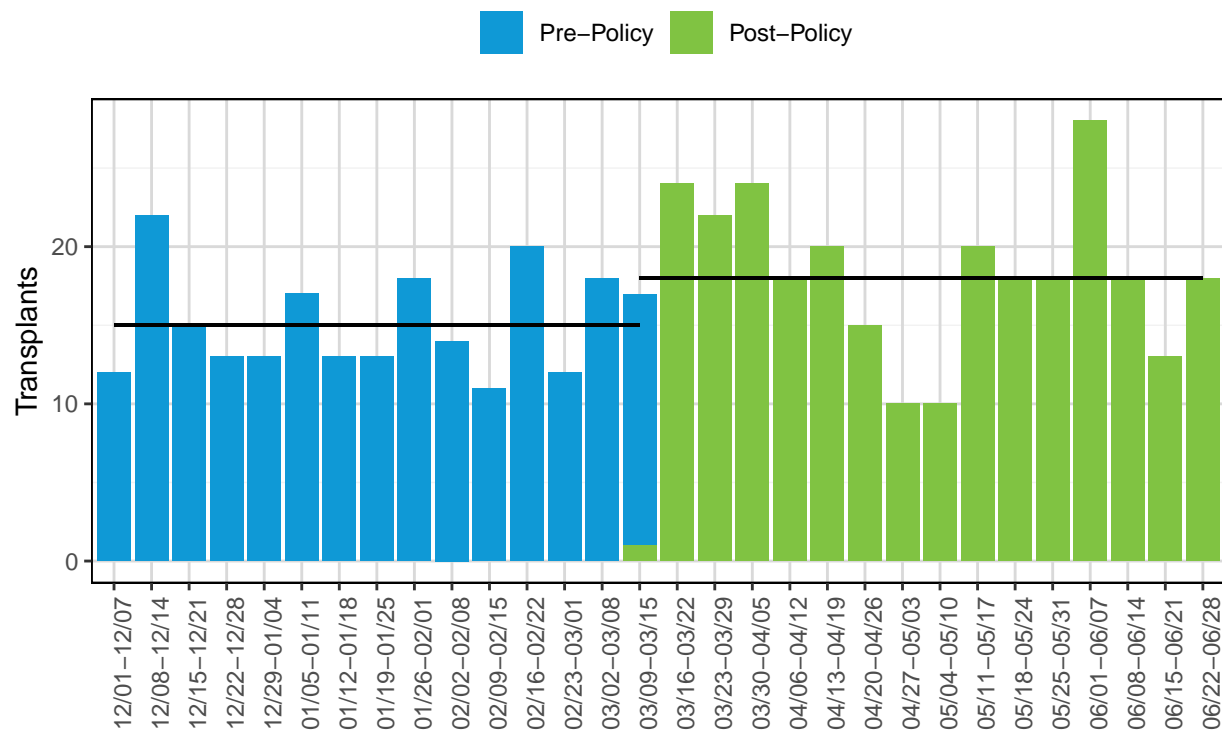


Table 23: Deceased Donor Kidney-Pancreas Transplants December 01, 2020-June 30, 2021 by Policy Era

Era	Transplants
Pre-Policy	227
Post-Policy	281

Figure 24 and **Table 24** show weekly deceased donor kidney-pancreas transplants from December 01, 2020 to June 30, 2021. The average number of transplants per week was 15 pre-policy and 18 post-policy.

Figure 24: Weekly Deceased Donor Kidney-Pancreas Transplants December 01, 2020-June 30, 2021 by Policy Era



Lines represent the average number of transplants per week.
Some weeks shown in the figure include federal holidays.

Table 24: Weekly Deceased Donor Kidney-Pancreas Transplants December 01, 2020-June 30, 2021

Week	Transplants
12/01-12/07	12
12/08-12/14	22
12/15-12/21	15
12/22-12/28	13
12/29-01/04	13
01/05-01/11	17
01/12-01/18	13
01/19-01/25	13
01/26-02/01	18
02/02-02/08	14
02/09-02/15	11
02/16-02/22	20
02/23-03/01	12
03/02-03/08	18
03/09-03/15	17
03/16-03/22	24
03/23-03/29	22
03/30-04/05	24
04/06-04/12	18
04/13-04/19	20
04/20-04/26	15
04/27-05/03	10
05/04-05/10	10
05/11-05/17	20
05/18-05/24	18
05/25-05/31	18
06/01-06/07	28
06/08-06/14	18
06/15-06/21	13
06/22-06/28	18

Figure 25 and **Table 25** show deceased donor kidney-pancreas transplants from December 01, 2020 to June 30, 2021 by policy era and recipient age at transplant. The number of transplants increased post-implementation for the 18-34, 35-49, and 50-64 age groups, and decreased for the 65+ age group. The proportion of transplants to recipients aged 18-34 decreased from 23.79% to 21.71%; the proportion of transplants to recipients aged 50-64 increased from 24.67% to 27.40%.

Figure 25: Deceased Donor Kidney-Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and Recipient Age at Transplant

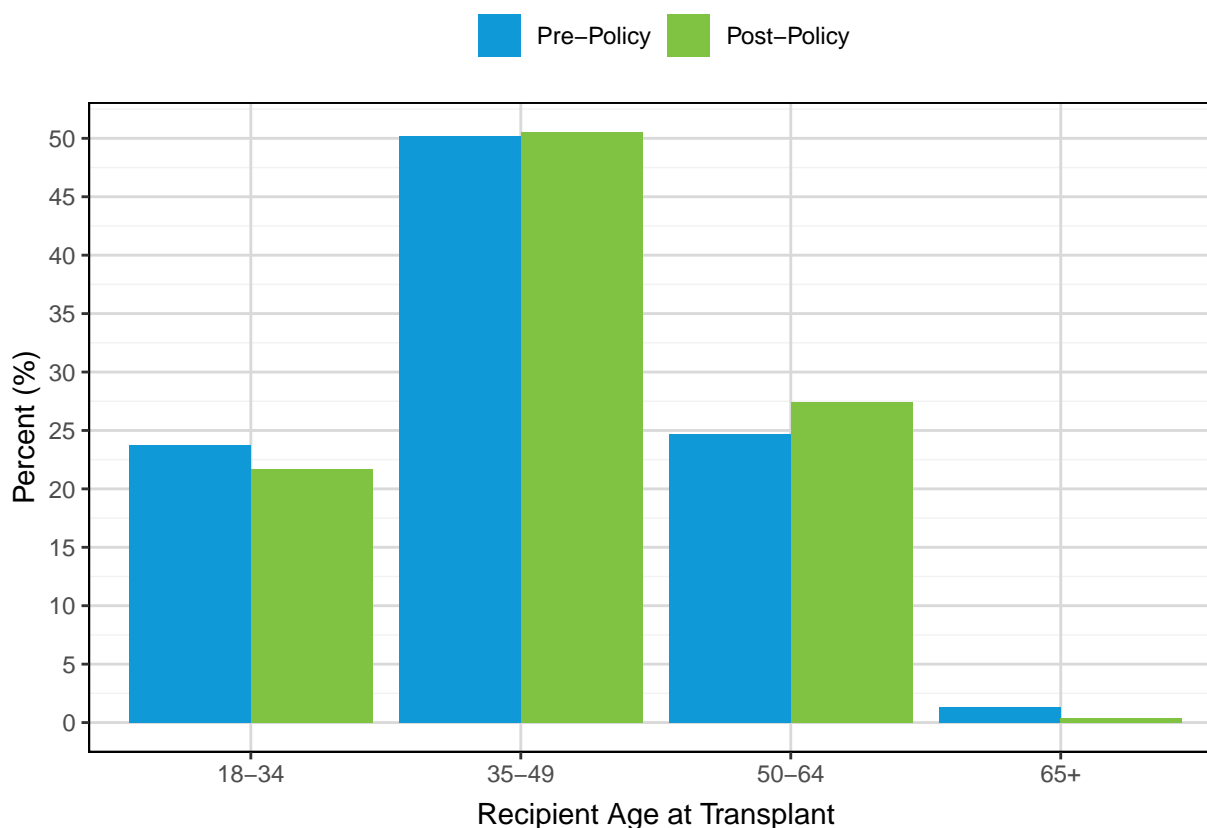


Table 25: Deceased Donor Kidney-Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and Recipient Age at Transplant

Age at Transplant	Pre-Policy		Post-Policy	
	N	%	N	%
18-34	54	23.79	61	21.71
35-49	114	50.22	142	50.53
50-64	56	24.67	77	27.40
65+	3	1.32	1	0.36
Total	227	100.00	281	100.00

Figure 26 and **Table 26** show deceased donor kidney-pancreas transplants from December 01, 2020 to June 30, 2021 by policy era and recipient race/ethnicity. The number of transplants increased for all racial/ethnic groups post-implementation. The proportion of transplants to Hispanic and Asian recipients increased from 15.42% to 17.44% and from 3.96% to 6.41%, respectively. The proportion of transplants to Black recipients decreased from 31.72% to 30.25%. The proportion of transplants to White recipients decreased from 47.14% to 44.13%.

Figure 26: Deceased Donor Kidney-Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and Recipient Ethnicity

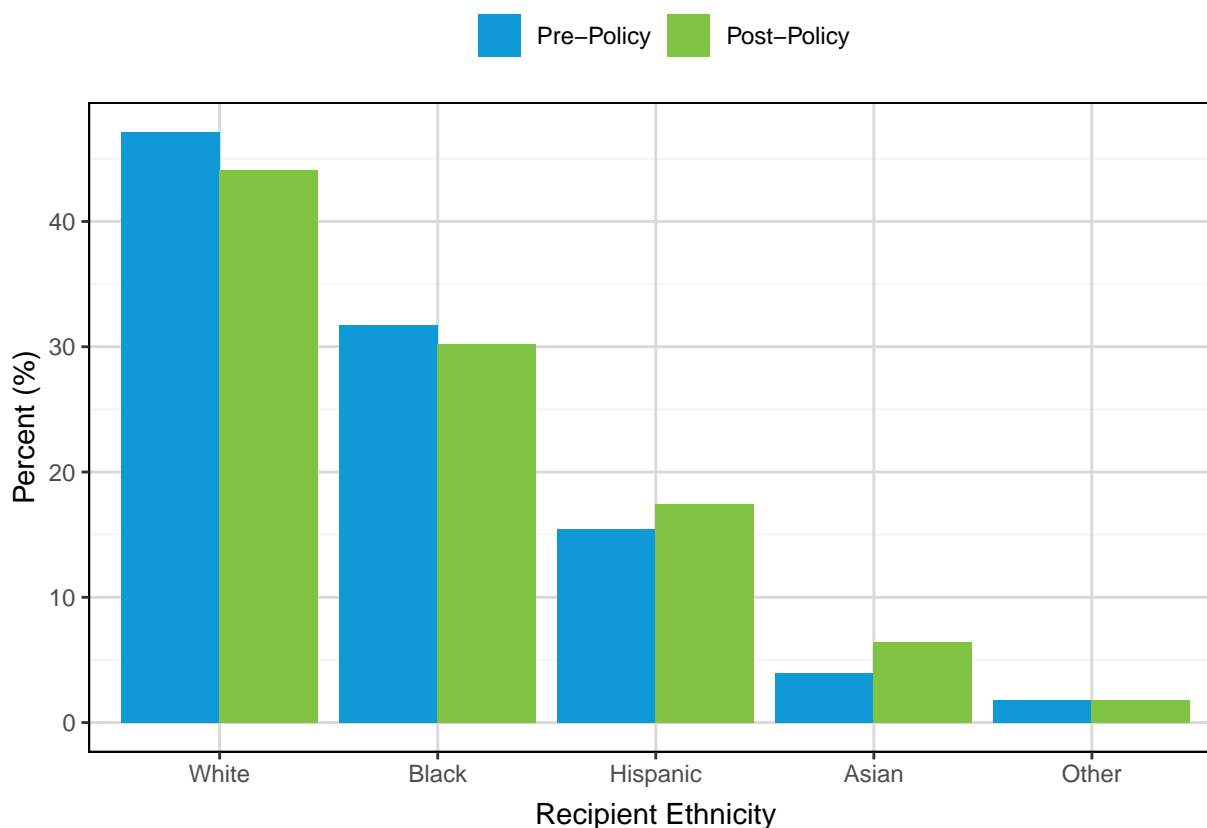


Table 26: Deceased Donor Kidney-Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and Recipient Ethnicity

Ethnicity	Pre-Policy		Post-Policy	
	N	%	N	%
White	107	47.14	124	44.13
Black	72	31.72	85	30.25
Hispanic	35	15.42	49	17.44
Asian	9	3.96	18	6.41
Other	4	1.76	5	1.78
Total	227	100.00	281	100.00

Figure 27 and **Table 27** show the distribution of time on the waiting list in years for deceased donor kidney-pancreas transplants from December 01, 2020 to June 30, 2021 by policy era. Median time from listing to transplant decreased from 0.44 years to 0.35 years after policy implementation.

Figure 27: Distribution of Waiting Time for Deceased Donor Kidney-Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era

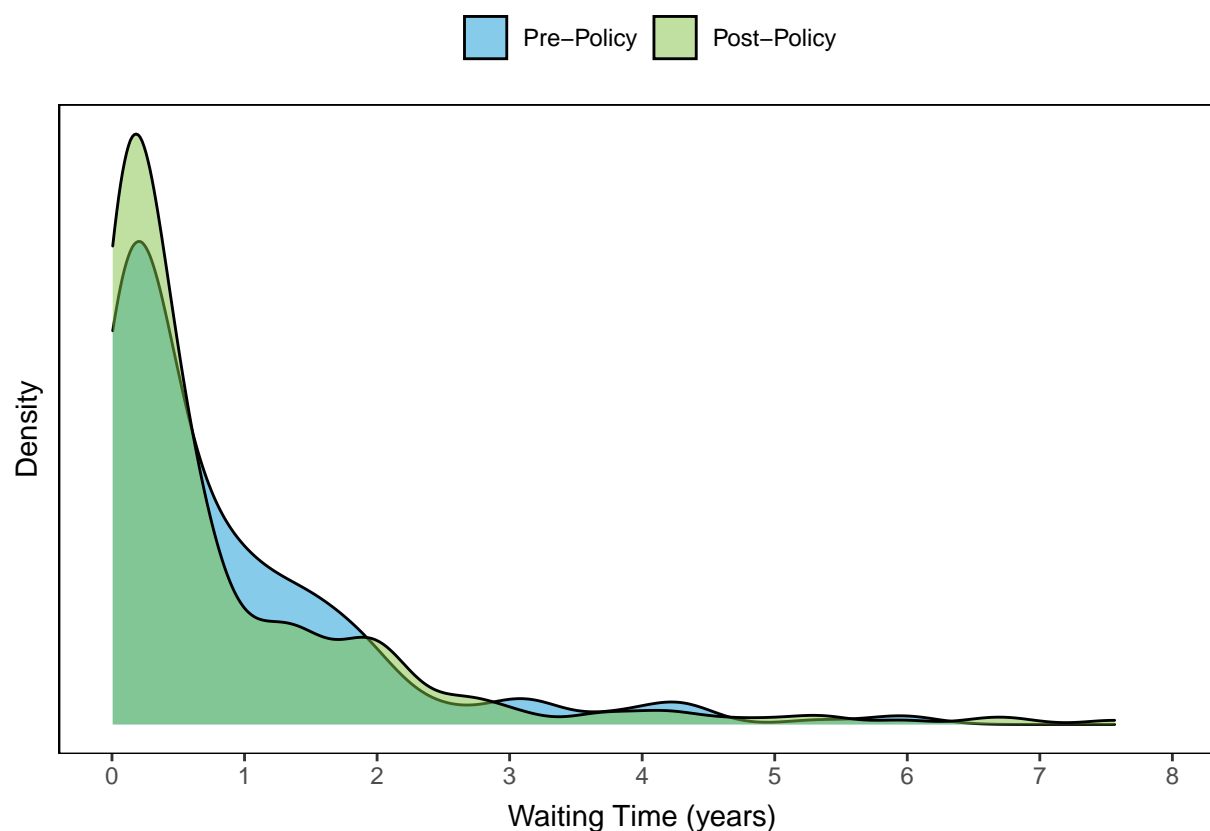


Table 27: Distribution of Waiting Time for Deceased Donor Kidney-Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era

Era	Total	Missing	Min	25th %-tile	Median	Mean	75th %-tile	Max
Pre-Policy	227	0	0.01	0.14	0.44	0.88	1.26	6.03
Post-Policy	281	0	0.01	0.12	0.35	0.84	1.12	7.56

Figure 28 and **Table 28** show deceased donor kidney-pancreas transplants from December 01, 2020 to June 30, 2021 by policy era and recipient blood type. The majority of recipients were type O both before and after the policy change. The number of transplants increased for all blood types post-implementation, with the largest increase for type O recipients (116 vs 149 transplants). The proportion of transplants increased slightly post-implementation for type O recipients (51.10% vs 53.02%), and decreased for type A recipients (34.36% vs 32.74%) and type B recipients (12.33% vs 11.74%). There was little change in the proportion of transplants for type AB recipients (2.20% vs 2.49%).

Figure 28: Deceased Donor Kidney-Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and Recipient Blood Type

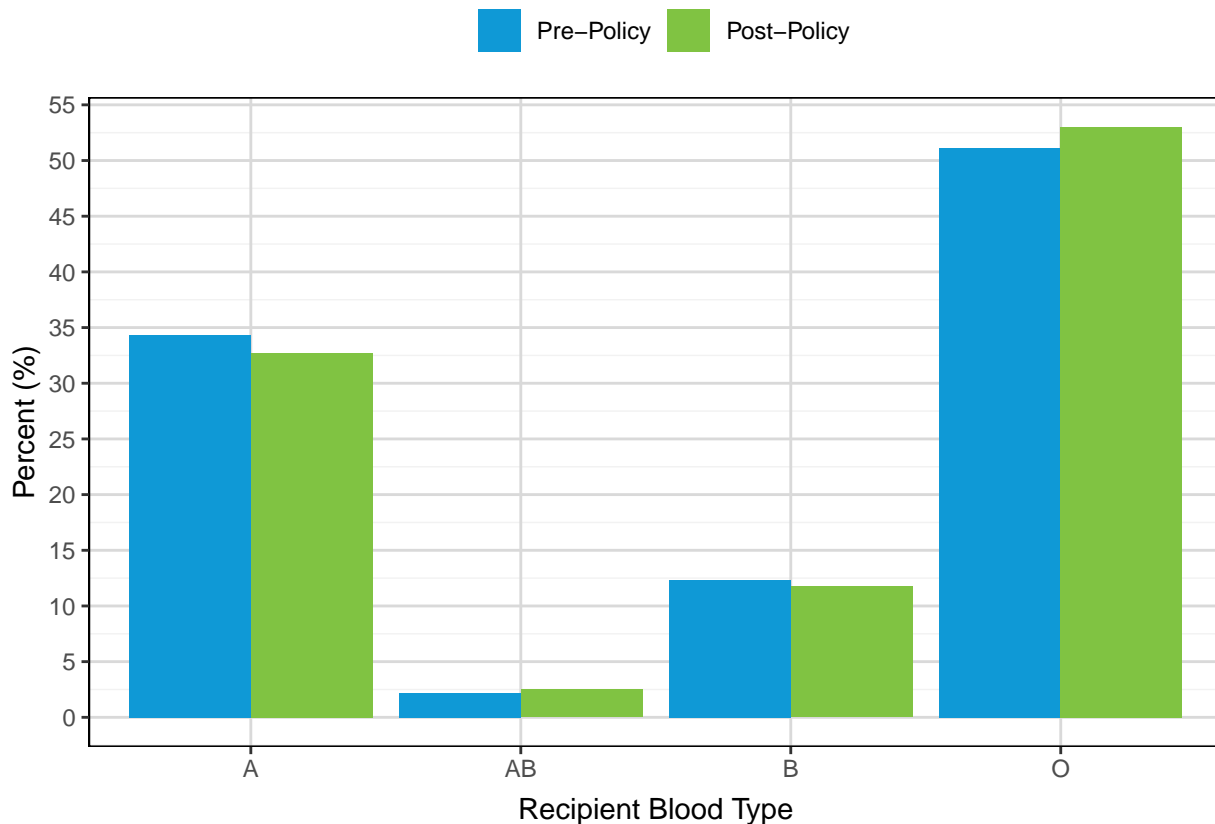


Table 28: Deceased Donor Kidney-Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and Recipient Blood Type

Blood Type	Pre-Policy		Post-Policy	
	N	%	N	%
A	78	34.36	92	32.74
AB	5	2.20	7	2.49
B	28	12.33	33	11.74
O	116	51.10	149	53.02
Total	227	100.00	281	100.00

Figure 29 and **Table 29** show deceased donor kidney-pancreas transplants from December 01, 2020 to June 30, 2021 by policy era and CPRA at transplant. There was little change in the distribution of recipient CPRA after implementation.

Figure 29: Deceased Donor Kidney-Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and CPRA

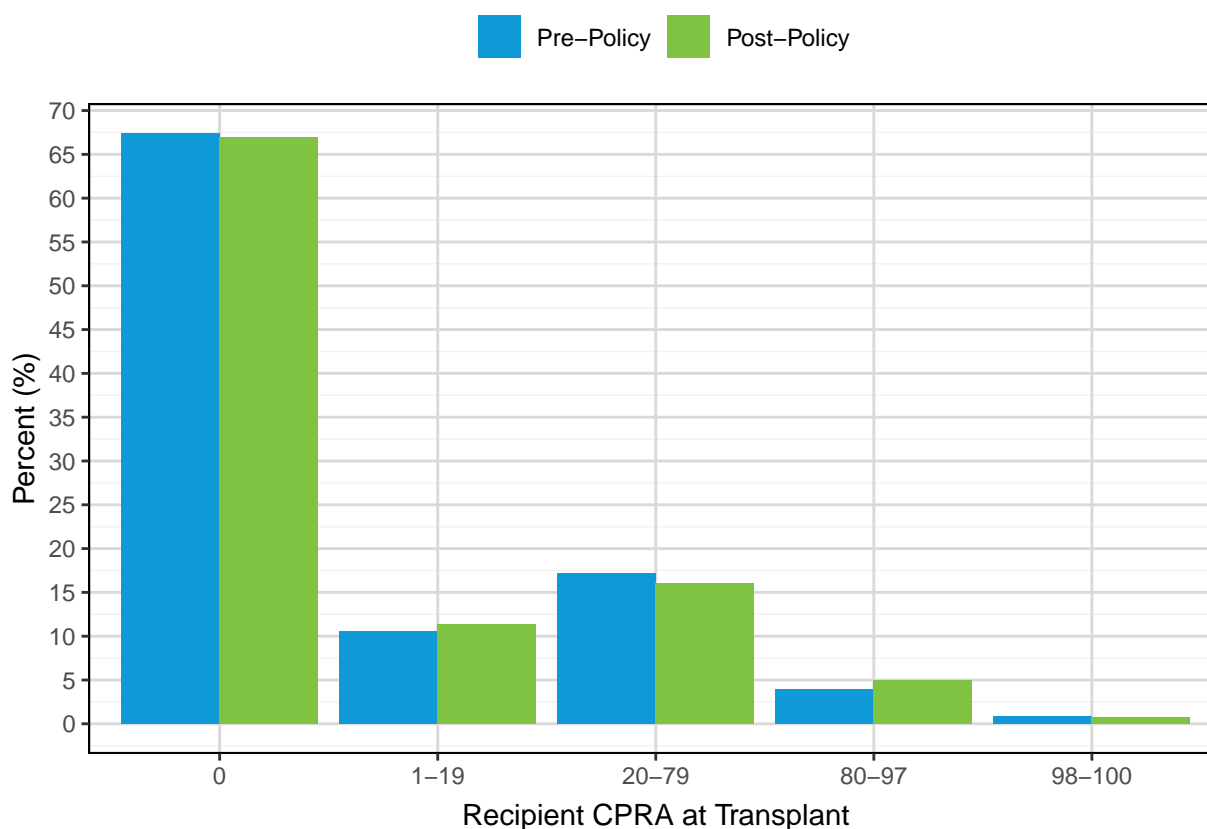


Table 29: Deceased Donor Kidney-Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and CPRA

CPRA (%)	Pre-Policy		Post-Policy	
	N	%	N	%
0	153	67.40	188	66.90
1-19	24	10.57	32	11.39
20-79	39	17.18	45	16.01
80-97	9	3.96	14	4.98
98-100	2	0.88	2	0.71
Total	227	100.00	281	100.00

Figure 30 and **Table 30** show deceased donor kidney-pancreas transplants from December 01, 2020 to June 30, 2021 by policy era and level of HLA mismatch. Multi-organ transplants including a kidney-pancreas were excluded. The proportion of transplants increased post-implementation for ABDR levels 5-6 (35.84% vs 41.43% and 20.80% vs 24.29%, respectively), and decreased for ABDR levels 2-4 (level 2: 4.87% vs 1.79%; level 3: 11.50% vs 10.36%; level 4: 26.55% vs 21.43%).

Figure 30: Deceased Donor Kidney-Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and HLA Mismatch

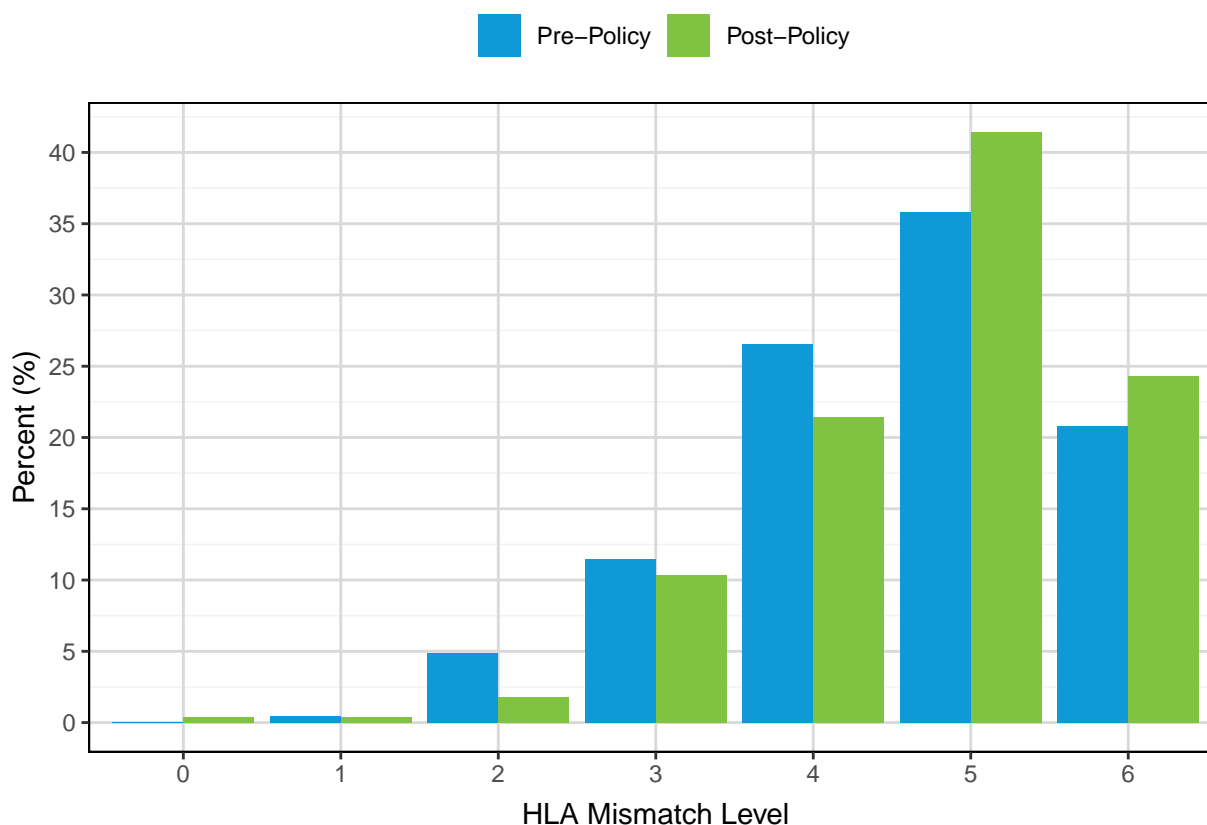


Table 30: Deceased Donor Kidney-Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and HLA Mismatch

HLA Mismatch Level	Pre-Policy		Post-Policy	
	N	%	N	%
0	0	0.00	1	0.36
1	1	0.44	1	0.36
2	11	4.87	5	1.79
3	26	11.50	29	10.36
4	60	26.55	60	21.43
5	81	35.84	116	41.43
6	47	20.80	68	24.29
Total	226	100.00	280	100.00

Figure 31 and **Table 31** show deceased donor kidney-pancreas transplants from December 01, 2020 to June 30, 2021 by policy era and primary diagnosis. The majority of recipients were diagnosed with type 1 diabetes both pre- and post-implementation. The proportion of recipients with type 1 diabetes decreased post-implementation from 70.93% to 67.26%, while the proportion of recipients with type 2 diabetes increased from 28.19% to 31.32%.

Figure 31: Deceased Donor Kidney-Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and Diagnosis

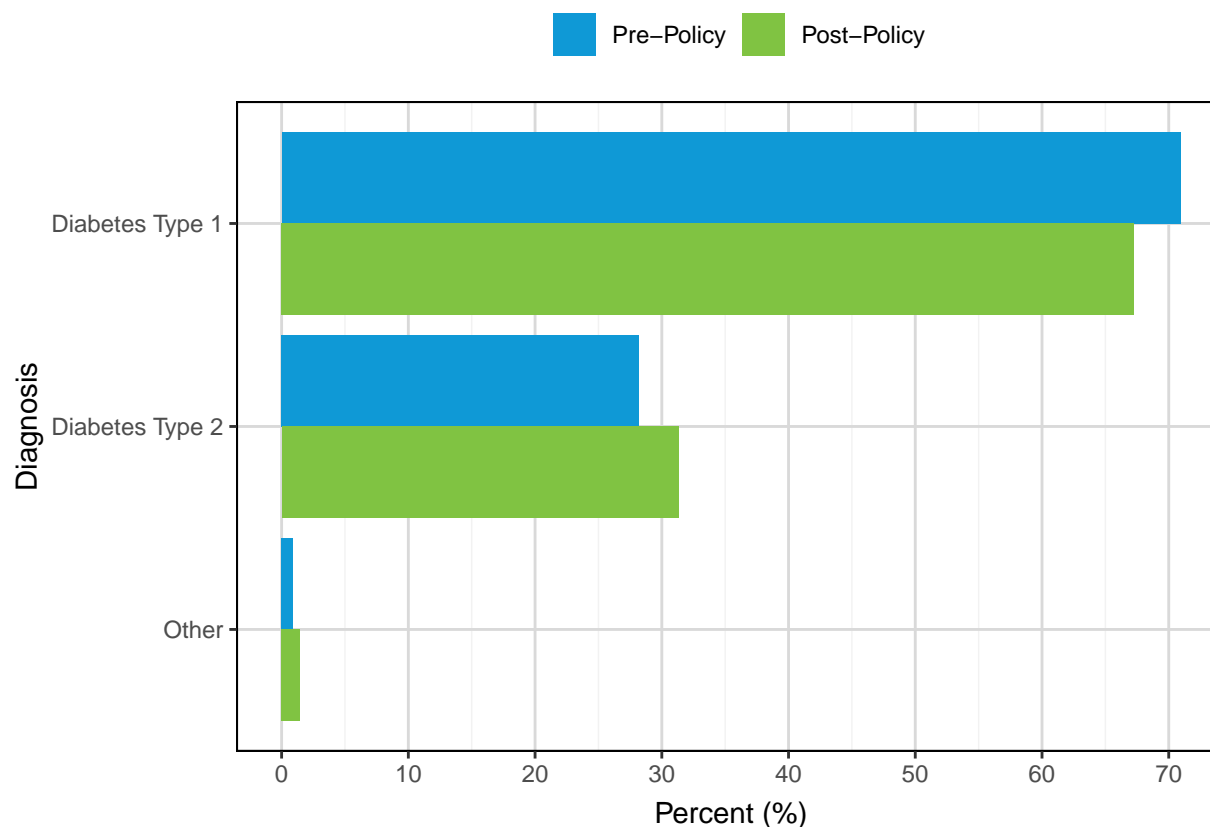


Table 31: Deceased Donor Kidney-Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and Diagnosis

Diagnosis	Pre-Policy		Post-Policy	
	N	%	N	%
Diabetes Type 1	161	70.93	189	67.26
Diabetes Type 2	64	28.19	88	31.32
Other	2	0.88	4	1.42
Total	227	100.00	281	100.00

Figure 32 and **Table 32** show deceased donor kidney-pancreas transplants from December 01, 2020 to June 30, 2021 by policy era and donor DCD status. The number of transplants from DCD donors increased from 6 to 10 after implementation, while the proportion of transplants from DCD donors increased from 2.64% to 3.56%.

Figure 32: Deceased Donor Kidney-Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and DCD Status

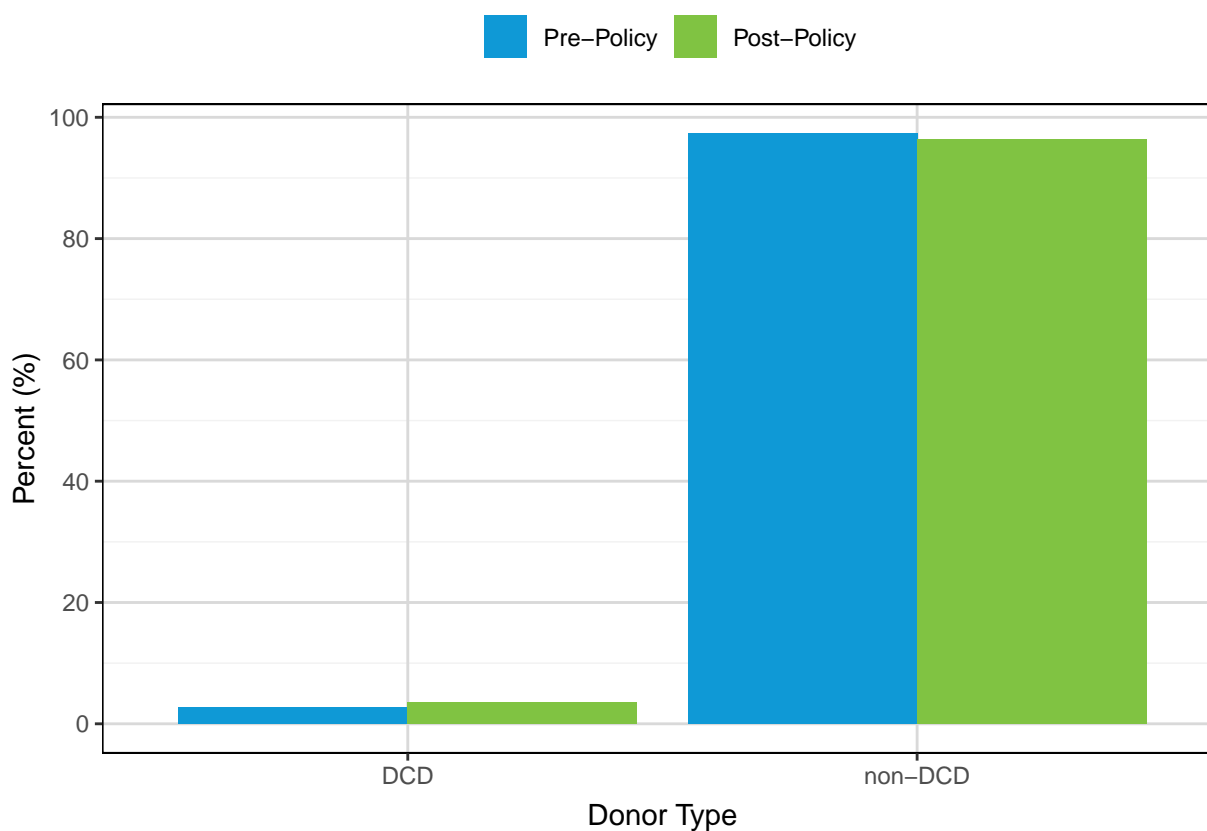


Table 32: Deceased Donor Kidney-Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and DCD Status

DCD Donor	Pre-Policy		Post-Policy	
	N	%	N	%
DCD	6	2.64	10	3.56
non-DCD	221	97.36	271	96.44
Total	227	100.00	281	100.00

Figure 33 and **Table 33** show the number of deceased donor kidney-pancreas transplants from December 01, 2020 to June 30, 2021 by policy era and distance from donor hospital. The proportion of transplants within 250 NM of the donor hospital increased from 81.94% to 85.77% after policy implementation.

Figure 33: Deceased Donor Kidney-Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and Distance from Donor Hospital

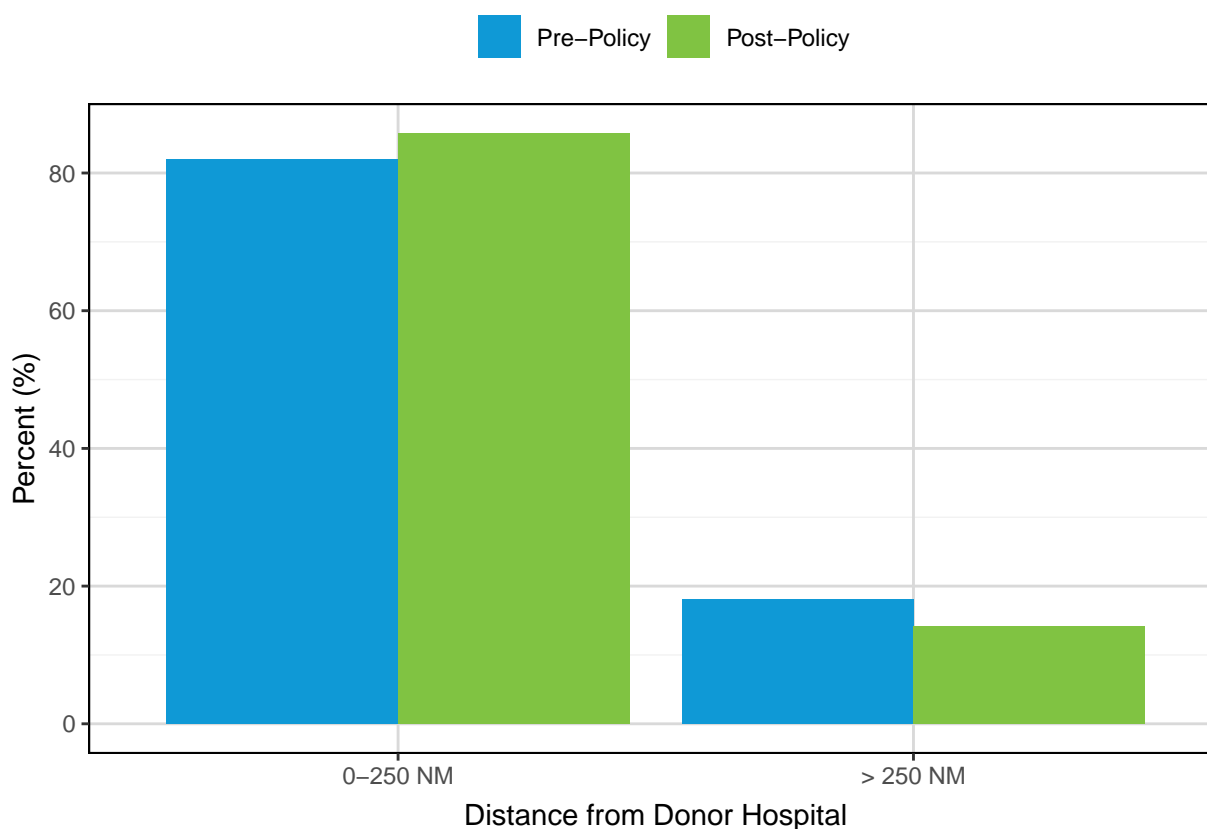


Table 33: Deceased Donor Kidney-Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and Distance from Donor Hospital

DCD Donor	Pre-Policy		Post-Policy	
	N	%	N	%
0-250 NM	186	81.94	241	85.77
> 250 NM	41	18.06	40	14.23
Total	227	100.00	281	100.00

Figure 34 and **Table 34** show deceased donor kidney-pancreas transplants from December 01, 2020 to June 30, 2021 by policy era and share type. The proportion of transplants using organs procured in the same DSA as the transplant hospital decreased from 67.84% to 41.99% after the policy change. The proportion of regional and national shares increased from 15.86% to 28.47% and from 16.30% to 29.54%, respectively.

Figure 34: Deceased Donor Kidney-Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and Share Type

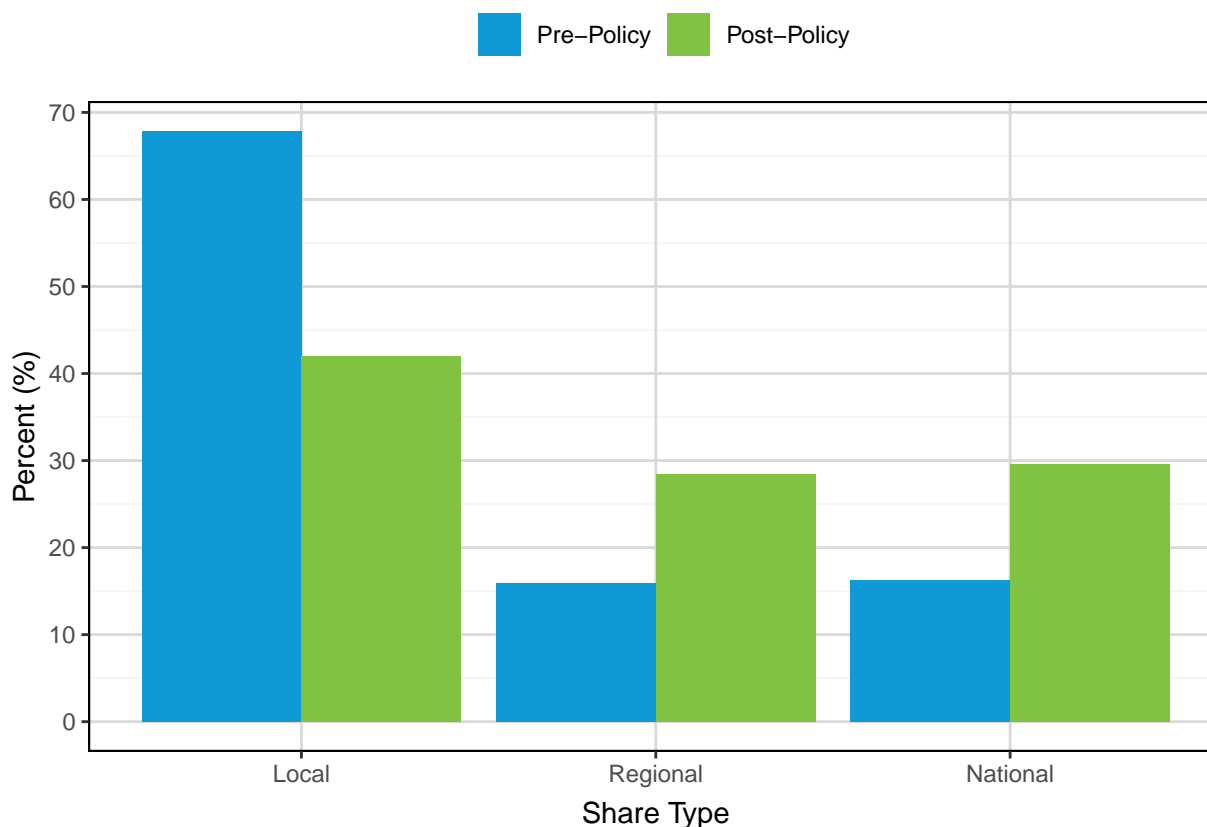


Table 34: Deceased Donor Kidney-Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and Share Type

Share Type	Pre-Policy		Post-Policy	
	N	%	N	%
Local	154	67.84	118	41.99
Regional	36	15.86	80	28.47
National	37	16.30	83	29.54
Total	227	100.00	281	100.00

Figure 35 and **Table 35** show the distribution of distance in NM from donor hospital for deceased donor kidney-pancreas transplants from December 01, 2020 to June 30, 2021 by policy era. Median distance from donor hospital increased from 72 NM to 98 NM after policy implementation.

Figure 35: Distribution of Distance from Donor Hospital for Deceased Donor Kidney-Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era

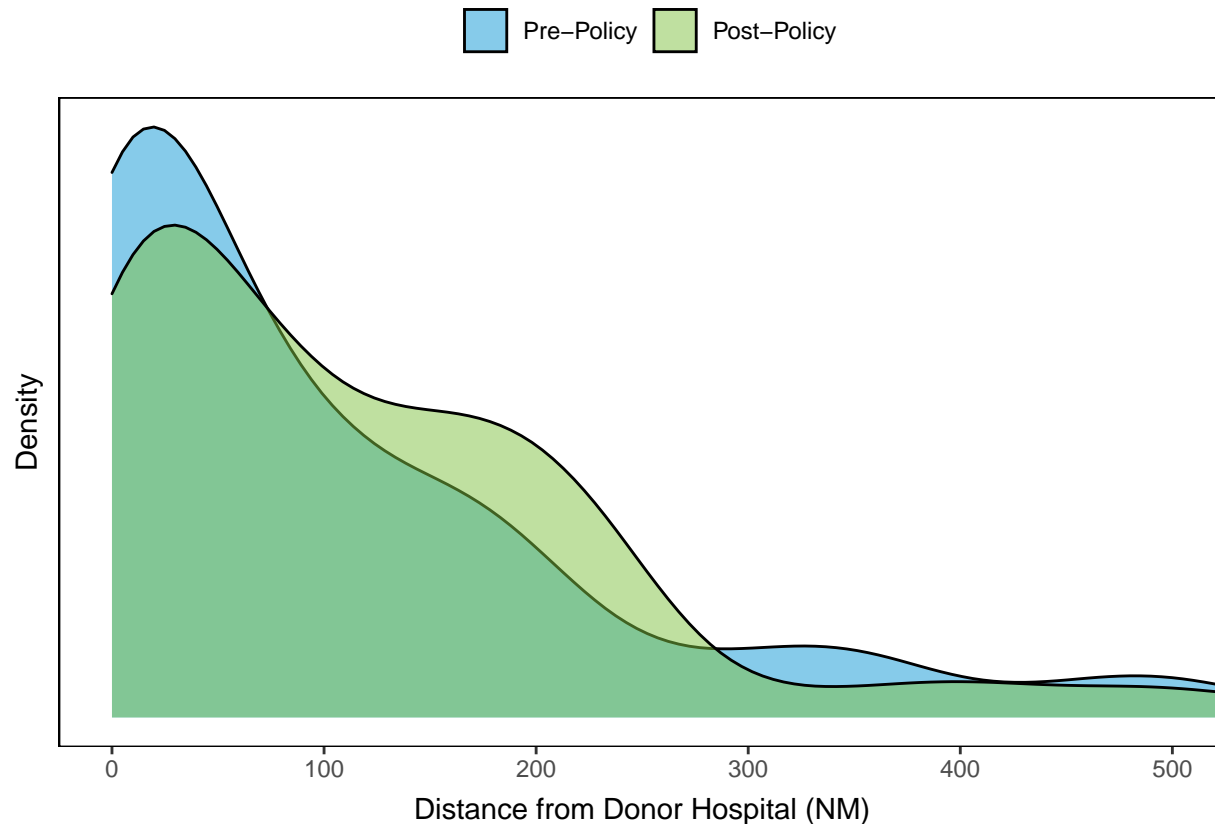


Table 35: Distribution of Distance from Donor Hospital for Deceased Donor Kidney-Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era

Era	Total	Missing	Min	25th %-tile	Median	Mean	75th %-tile	Max
Pre-Policy	227	0	0	8.5	72	163.9339	181.5	2529
Post-Policy	281	0	0	24.0	98	171.2278	206.0	1843

Figure 36 and **Table 36** show deceased donor kidney-pancreas transplants from December 01, 2020 to June 30, 2021 by policy era and OPTN region. The majority of OPTN regions saw an increase in transplants.

Figure 36: Deceased Donor Kidney-Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and Region

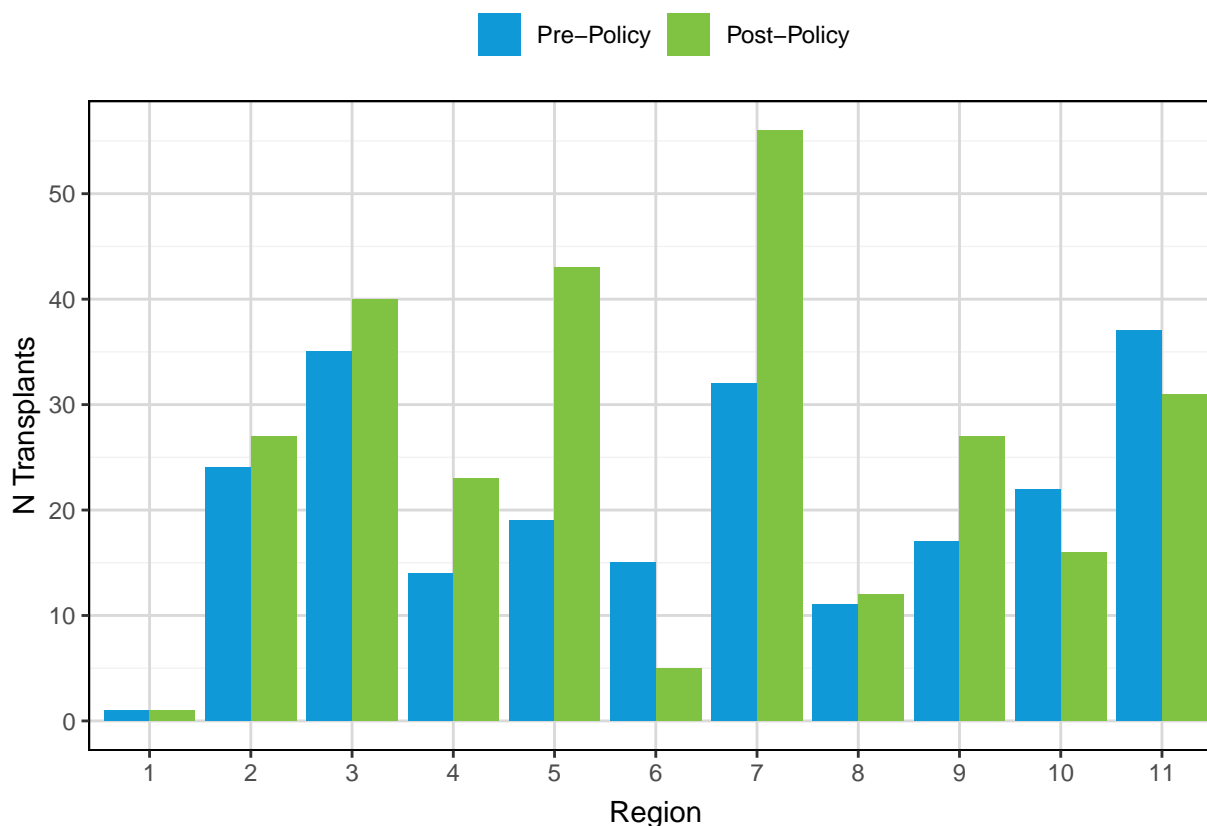


Table 36: Deceased Donor Kidney-Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and Region

Region	Pre-Policy		Post-Policy	
	N	%	N	%
1	1	0.44	1	0.36
2	24	10.57	27	9.61
3	35	15.42	40	14.23
4	14	6.17	23	8.19
5	19	8.37	43	15.30
6	15	6.61	5	1.78
7	32	14.10	56	19.93
8	11	4.85	12	4.27
9	17	7.49	27	9.61
10	22	9.69	16	5.69
11	37	16.30	31	11.03
Total	227	100.00	281	100.00

Figure 37 and **Table 37** show deceased donor kidney-pancreas transplants from December 01, 2020 to June 30, 2021 by policy era and DSA. Of 48 DSAs with at least one kidney-pancreas transplant during the cohort, transplant volume increased in 25 DSAs and decreased in 18 DSAs. Five DSAs saw no change in transplant volume.

Figure 37: Deceased Donor Kidney-Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and DSA

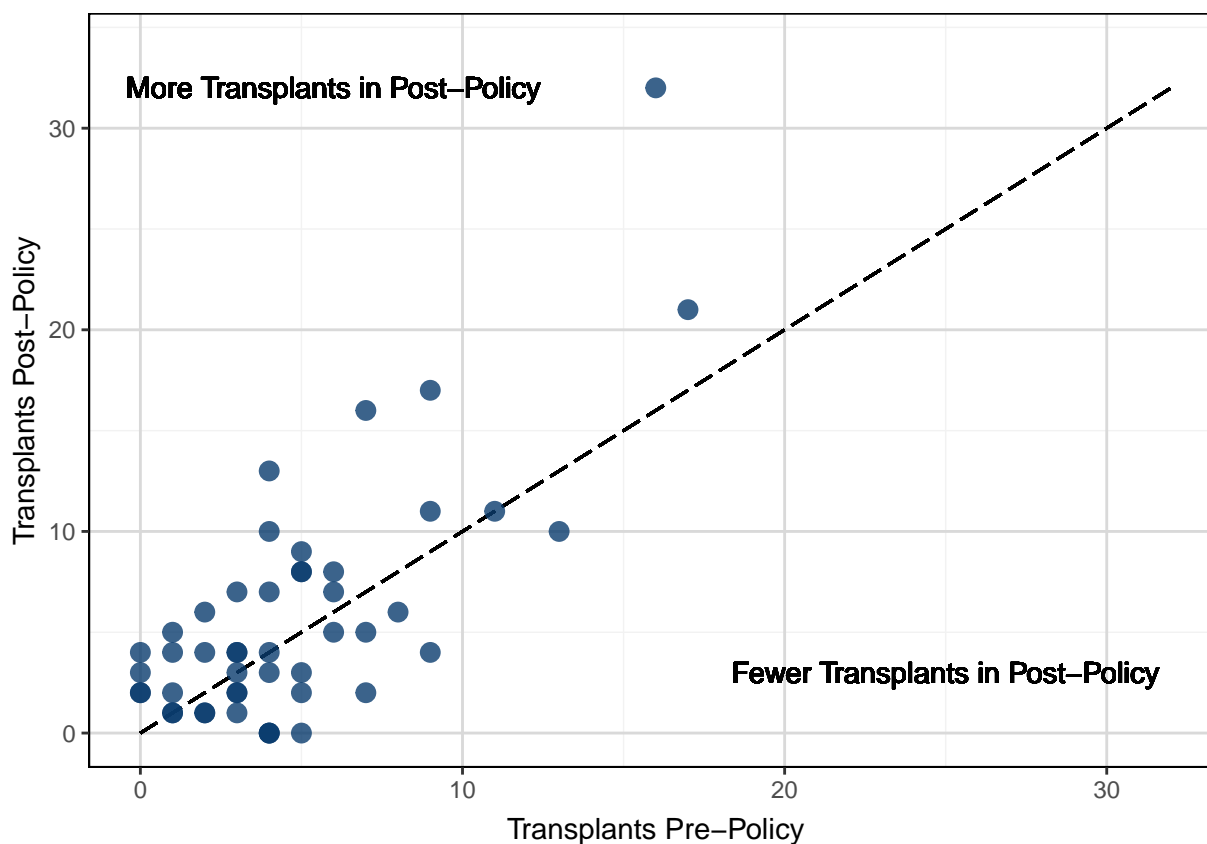


Table 37: Deceased Donor Kidney-Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and DSA

DSA	Pre-Policy	Post-Policy	% Change
ALOB	2	1	-50.00
AZOB	4	13	225.00
CADN	7	16	128.57
CAOP	4	10	150.00
CASD	1	2	100.00
CORS	2	1	-50.00
DCTC	7	2	-71.43
FLFH	5	3	-40.00
FLMP	2	6	200.00
FLUF	3	4	33.33
FLWC	1	4	300.00
GALL	4	7	75.00
HIOP	1	1	0.00
IAOP	2	4	100.00
ILIP	16	32	100.00
INOP	5	8	60.00
KYDA	3	2	-33.33
LAOP	11	11	0.00
MAOB	1	1	0.00
MDPC	6	7	16.67
MIOP	4	0	-100.00
MNOP	9	17	88.89
MOMA	3	3	0.00
MSOP	3	1	-66.67
MWOB	4	4	0.00
NCCM	4	0	-100.00
NCNC	13	10	-23.08
NJTO	5	8	60.00
NYFL	0	2	*
NYRT	17	21	23.53
NYWN	0	4	*
OHLB	8	6	-25.00
OHLP	5	2	-60.00
OKOP	0	3	*
ORUO	5	0	-100.00
PADV	6	8	33.33
PATF	0	2	*
PRLL	4	3	-25.00
SCOP	6	5	-16.67
TNDS	1	5	400.00
TNMS	3	4	33.33
TXGC	5	9	80.00
TXSB	9	11	22.22
UTOP	3	2	-33.33
VATB	7	5	-28.57
WALC	9	4	-55.56
WIDN	4	0	-100.00
WIUW	3	7	133.33
Total	227	281	23.79

Figure 38 and **Table 38** show deceased donor kidney-pancreas transplants from December 01, 2020 to June 30, 2021 by policy era and transplant center. Of 95 centers with at least one kidney-pancreas transplant during the cohort, the number of transplants increased at 47 centers after policy implementation, and decreased at 35 centers. Thirteen centers saw no change in transplant volume.

Figure 38: Deceased Donor Kidney-Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and Transplant Center

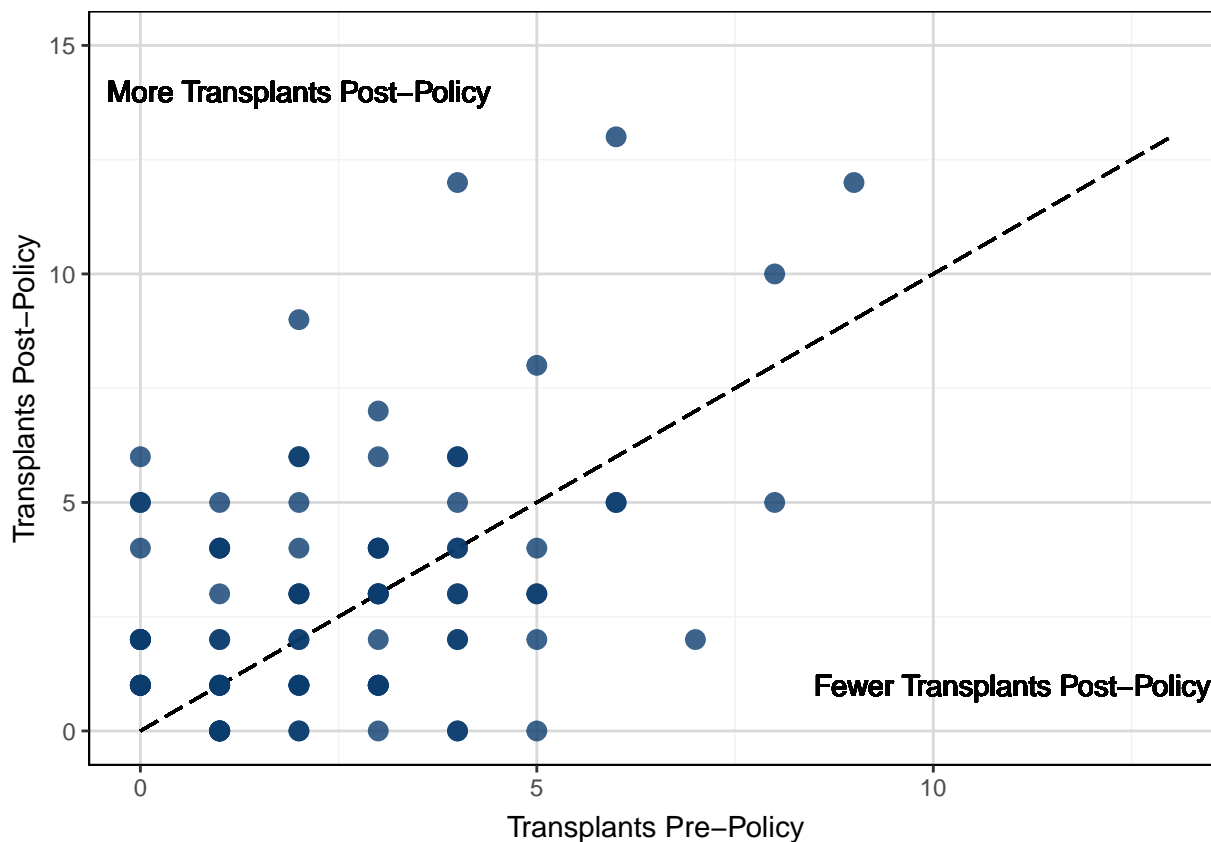


Table 38: Deceased Donor Kidney-Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and Transplant Center

Center	Pre-Policy	Post-Policy	% Change
ALUA-TX1	2	1	-50.00
AZMC-TX1	4	12	200.00
AZUA-TX1	0	1	*
CACS-TX1	0	5	*
CAGH-TX1	0	1	*
CAIM-TX1	2	1	-50.00
CALL-TX1	1	4	300.00
CAPM-TX1	4	5	25.00
CASF-TX1	2	9	350.00
CASH-TX1	1	1	0.00
CASU-TX1	1	2	100.00
CAUC-TX1	1	0	-100.00
COUC-TX1	2	1	-50.00
DCGU-TX1	7	2	-71.43
FLFH-TX1	5	3	-40.00
FLJM-TX1	2	6	200.00
FLSL-TX1	3	4	33.33
FLTG-TX1	1	4	300.00
GAEM-TX1	3	1	-66.67
GAMC-TX1	1	0	-100.00
GAPH-TX1	0	6	*
HIQM-TX1	1	1	0.00
IAIV-TX1	2	4	100.00
ILLU-TX1	2	6	200.00
ILNM-TX1	4	6	50.00
ILPL-TX1	1	4	300.00
ILSF-TX1	0	2	*
ILUC-TX1	3	1	-66.67
ILUI-TX1	6	13	116.67
INIM-TX1	5	8	60.00
KSUK-TX1	4	3	-25.00
KYJH-TX1	2	1	-50.00
KYUK-TX1	1	1	0.00
LAOF-TX1	4	6	50.00
LATU-TX1	3	3	0.00
LAWK-TX1	4	2	-50.00
MAMG-TX1	0	1	*
MAPB-TX1	1	0	-100.00
MDJH-TX1	0	2	*
MDUM-TX1	6	5	-16.67
MIUM-TX1	4	0	-100.00
MNMC-TX1	0	5	*
MNUM-TX1	9	12	33.33
MOBH-TX1	3	3	0.00
MORH-TX1	0	1	*
MSUM-TX1	3	1	-66.67
NCBG-TX1	8	5	-37.50
NCCM-TX1	4	0	-100.00
NCDU-TX1	2	3	50.00
NCEC-TX1	3	1	-66.67

(continued)

Center	Pre-Policy	Post-Policy	% Change
NCMH-TX1	0	1	*
NJLL-TX1	2	3	50.00
NJRW-TX1	2	5	150.00
NJSB-TX1	1	0	-100.00
NYCP-TX1	0	2	*
NYEC-TX1	0	4	*
NYMA-TX1	8	10	25.00
NYMS-TX1	1	1	0.00
NYNY-TX1	4	4	0.00
NYUC-TX1	4	4	0.00
NYUM-TX1	0	2	*
OHCC-TX1	5	4	-20.00
OHOU-TX1	5	2	-60.00
OHUH-TX1	3	2	-33.33
OKBC-TX1	0	1	*
OKMD-TX1	0	2	*
ORUO-TX1	5	0	-100.00
PAAE-TX1	0	1	*
PALV-TX1	0	2	*
PAPT-TX1	0	2	*
PATJ-TX1	2	2	0.00
PATU-TX1	1	0	-100.00
PAUP-TX1	3	3	0.00
PRSJ-TX1	4	3	-25.00
SCMU-TX1	6	5	-16.67
TNMH-TX1	3	4	33.33
TNVU-TX1	1	5	400.00
TXAS-TX1	2	3	50.00
TXHD-TX1	1	2	100.00
TXMC-TX1	1	3	200.00
TXMH-TX1	3	6	100.00
TXSW-TX1	4	2	-50.00
TXTX-TX1	3	4	33.33
UTLD-TX1	3	1	-66.67
UTMC-TX1	0	1	*
VAMC-TX1	3	3	0.00
VANG-TX1	2	0	-100.00
VAUV-TX1	2	2	0.00
WASH-TX1	1	0	-100.00
WASM-TX1	2	0	-100.00
WAUW-TX1	5	3	-40.00
WAVM-TX1	1	1	0.00
WISE-TX1	3	0	-100.00
WISL-TX1	1	0	-100.00
WIUW-TX1	3	7	133.33
Total	227	281	23.79

Figure 39 and **Table 39** show deceased donor kidney-pancreas transplants from December 01, 2020 to June 30, 2021 by policy era and state. Of 35 states with at least one kidney-pancreas transplant during the cohort, the number of transplants increased in 16 states after policy implementation, and decreased in 15 states. Four states saw no change in transplant volume.

Figure 39: Deceased Donor Kidney-Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and State

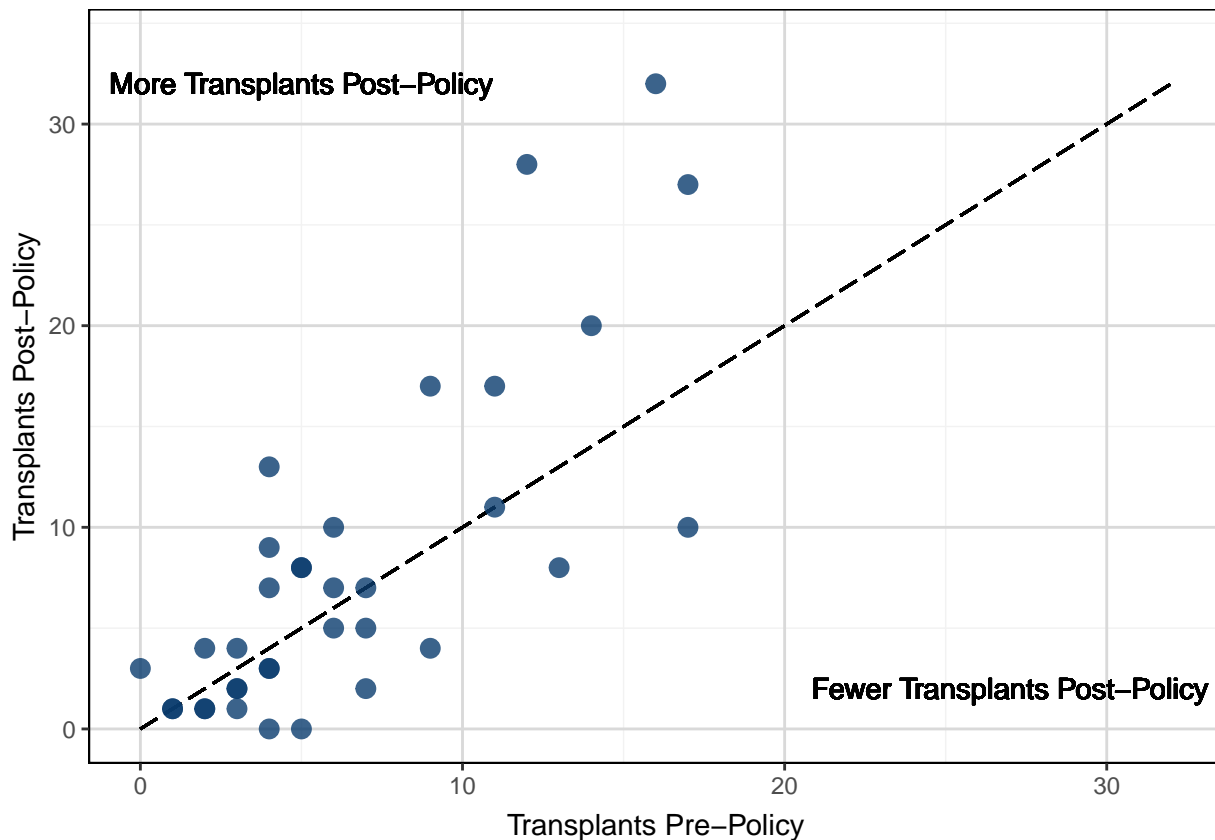


Table 39: Deceased Donor Kidney-Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and State

State	Pre-Policy	Post-Policy	% Change
Alabama	2	1	-50.00
Arizona	4	13	225.00
California	12	28	133.33
Colorado	2	1	-50.00
Dist. Of Columbia	7	2	-71.43
Florida	11	17	54.55
Georgia	4	7	75.00
Hawaii	1	1	0.00
Illinois	16	32	100.00
Indiana	5	8	60.00
Iowa	2	4	100.00
Kansas	4	3	-25.00
Kentucky	3	2	-33.33
Louisiana	11	11	0.00
Maryland	6	7	16.67
Massachusetts	1	1	0.00
Michigan	4	0	-100.00
Minnesota	9	17	88.89
Mississippi	3	1	-66.67
Missouri	3	4	33.33
New Jersey	5	8	60.00
New York	17	27	58.82
North Carolina	17	10	-41.18
Ohio	13	8	-38.46
Oklahoma	0	3	*
Oregon	5	0	-100.00
Pennsylvania	6	10	66.67
Puerto Rico	4	3	-25.00
South Carolina	6	5	-16.67
Tennessee	4	9	125.00
Texas	14	20	42.86
Utah	3	2	-33.33
Virginia	7	5	-28.57
Washington	9	4	-55.56
Wisconsin	7	7	0.00
Total	227	281	23.79

Figure 40 and **Table 40** show the distribution of cold ischemic time in hours for deceased donor kidney-pancreas transplants from December 01, 2020 to June 30, 2021 by policy era. Median cold ischemic time increased from 8.97 to 10.26 hours after policy implementation. Please note that some records were missing cold ischemic time due to outstanding TRRs at the time this analysis was performed (**Table 40**).

Figure 40: Distribution of Cold Ischemic Time for Deceased Donor Kidney-Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era

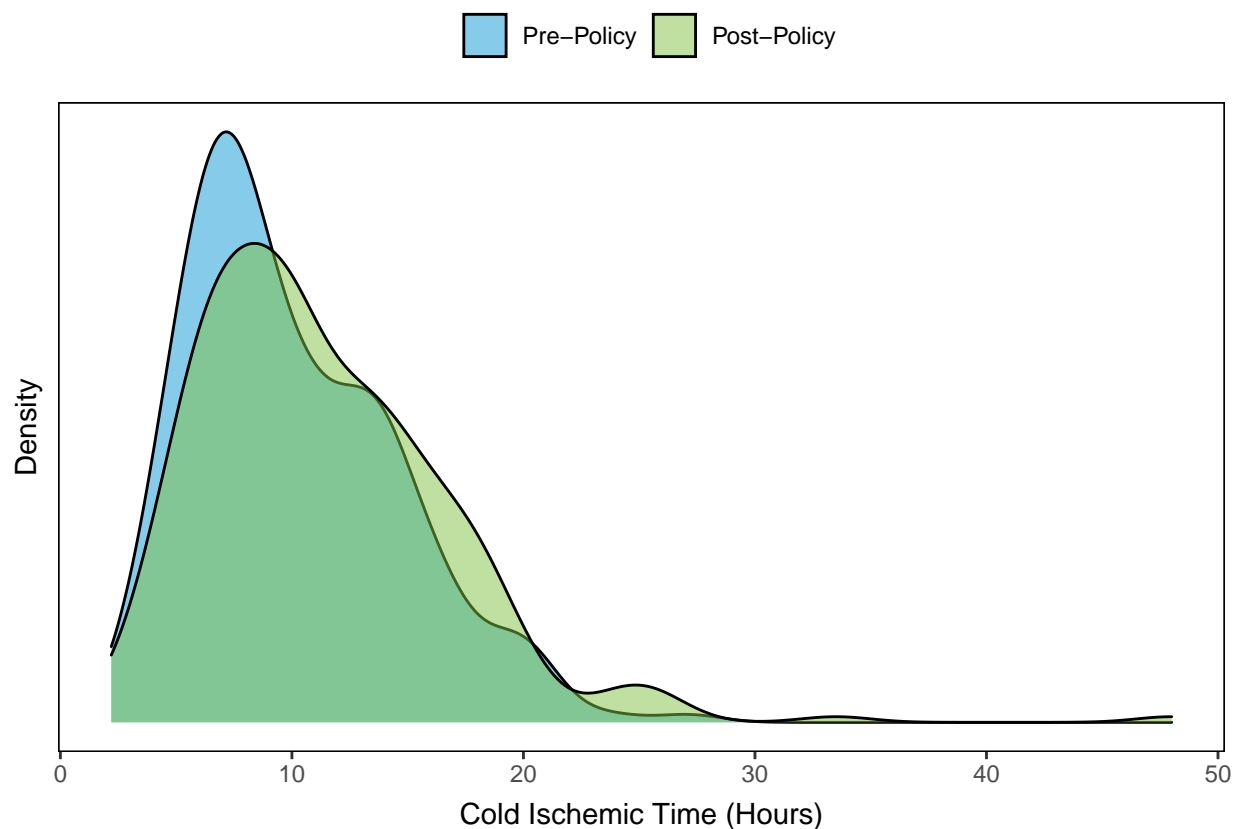


Table 40: Distribution of Cold Ischemic Time for Deceased Donor Kidney-Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era

Era	Total	Missing	Min	25th %-tile	Median	Mean	75th %-tile	Max
Pre-Policy	227	3	2.5	6.725	8.97	10.07938	13.265	27.15
Post-Policy	281	10	2.2	7.385	10.26	11.33638	14.390	48.00

Pancreas

Waiting List

Figure 41 and **Table 41** show the number of registrations waiting for a pancreas on the last day of each month from December 01, 2020 to June 30, 2021. Waiting list volume changed very little after policy implementation.

Figure 41: Pancreas Registrations Waiting on the Last Day of Each Month, December 01, 2020-June 30, 2021

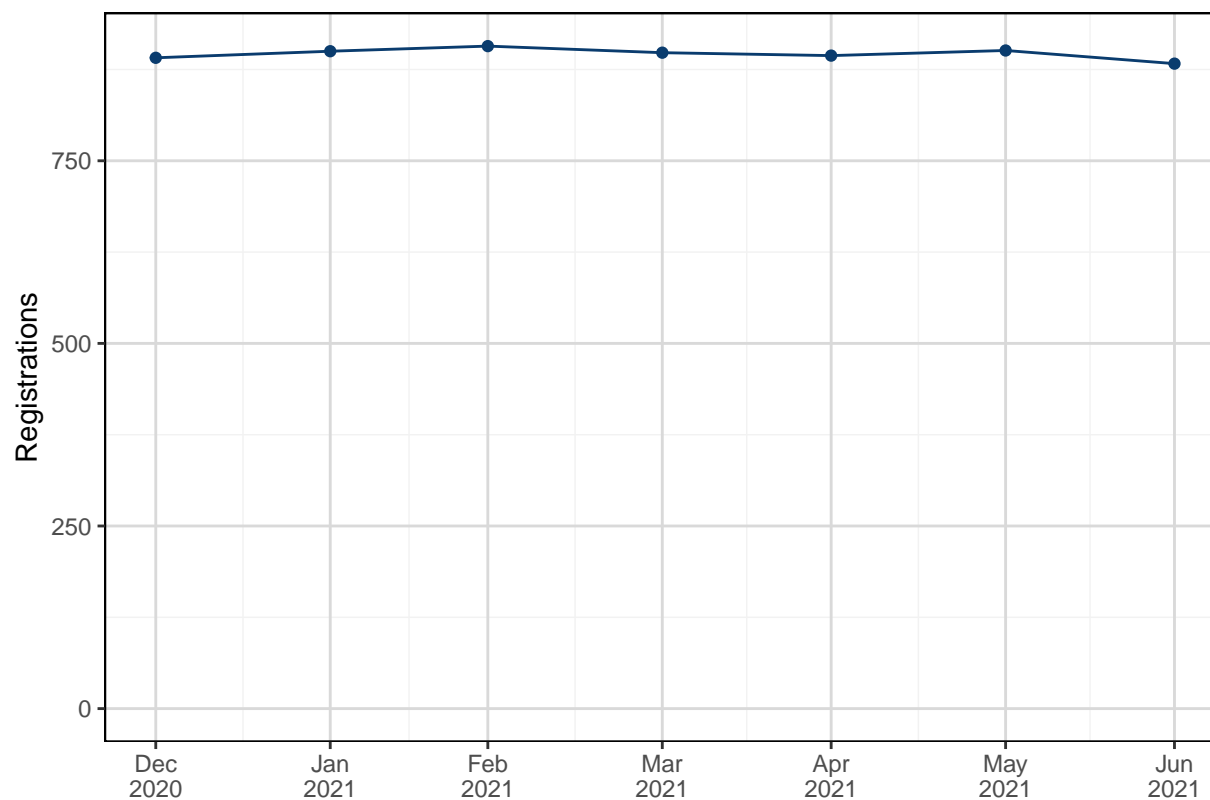


Table 41: Pancreas Registrations Waiting on the Last Day of Each Month, December 01, 2020-June 30, 2021

Date	Registrations
December 2020	891
January 2021	900
February 2021	907
March 2021	898
April 2021	894
May 2021	901
June 2021	883

Figure 42 and **Table 42** show the percentage of registrations waiting for a pancreas on the last day of each month from December 01, 2020 to June 30, 2021 by status. The proportion of registrations in active status increased slightly after policy implementation.

Figure 42: Pancreas Registrations Waiting on the Last Day of Each Month by Status, December 01, 2020-June 30, 2021

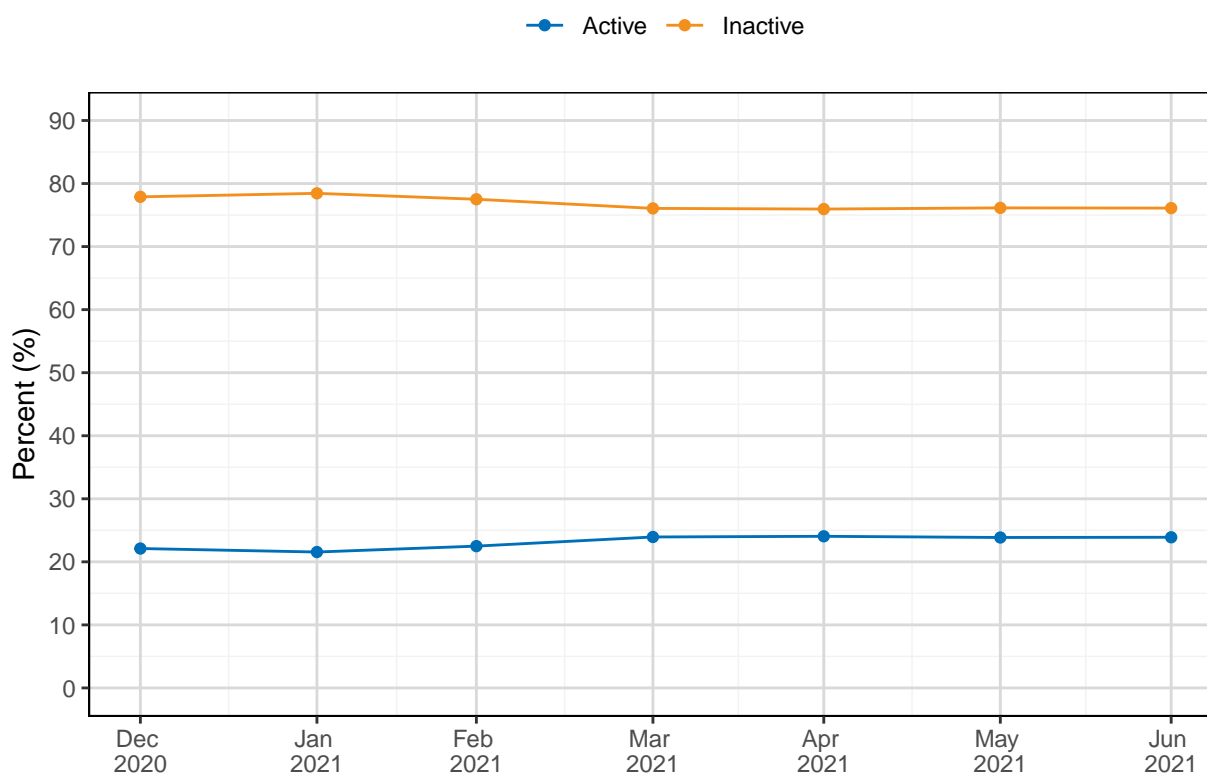


Table 42: Pancreas Registrations Waiting on the Last Day of Each Month by Status, December 01, 2020-June 30, 2021

Date	Active		Inactive		Total	
	N	%	N	%	N	%
December 2020	197	22.11	694	77.89	891	100.00
January 2021	194	21.56	706	78.44	900	100.00
February 2021	204	22.49	703	77.51	907	100.00
March 2021	215	23.94	683	76.06	898	100.00
April 2021	215	24.05	679	75.95	894	100.00
May 2021	215	23.86	686	76.14	901	100.00
June 2021	211	23.90	672	76.10	883	100.00

Figure 43 and **Table 43** show total pancreas registrations added to the waiting list from December 01, 2020 to June 30, 2021 by policy era. There were 167 registrations added to the waiting list in the pre-policy era, and 165 added in the post-policy era.

Figure 43: Pancreas Registrations Added December 01, 2020-June 30, 2021 by Policy Era

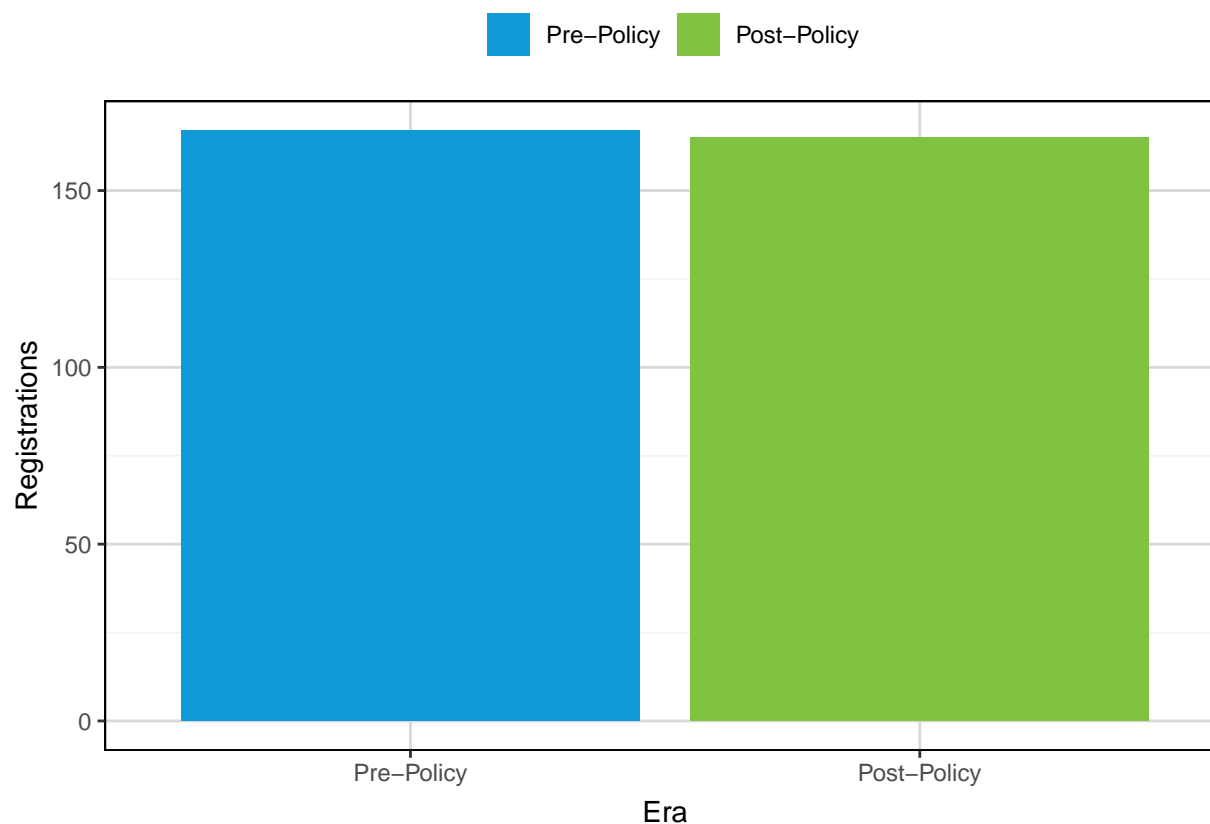


Table 43: Pancreas Registrations Added December 01, 2020-June 30, 2021 by Policy Era

Era	Registrations
Pre-Policy	167
Post-Policy	165

Figure 44 and **Table 44** show pancreas registrations added to the waiting list from December 01, 2020 to June 30, 2021 by policy era and age at listing. The volume and proportion of waiting list registrations increased post-policy for all pediatric age groups (0-5, 6-11, and 12-17), as well as for adult registrations aged 18-34. The volume and proportion of registrations decreased for the 35-49, 50-64, and 65+ age groups.

Figure 44: Pancreas Registrations Added December 01, 2020-June 30, 2021 by Policy Era and Age at Listing

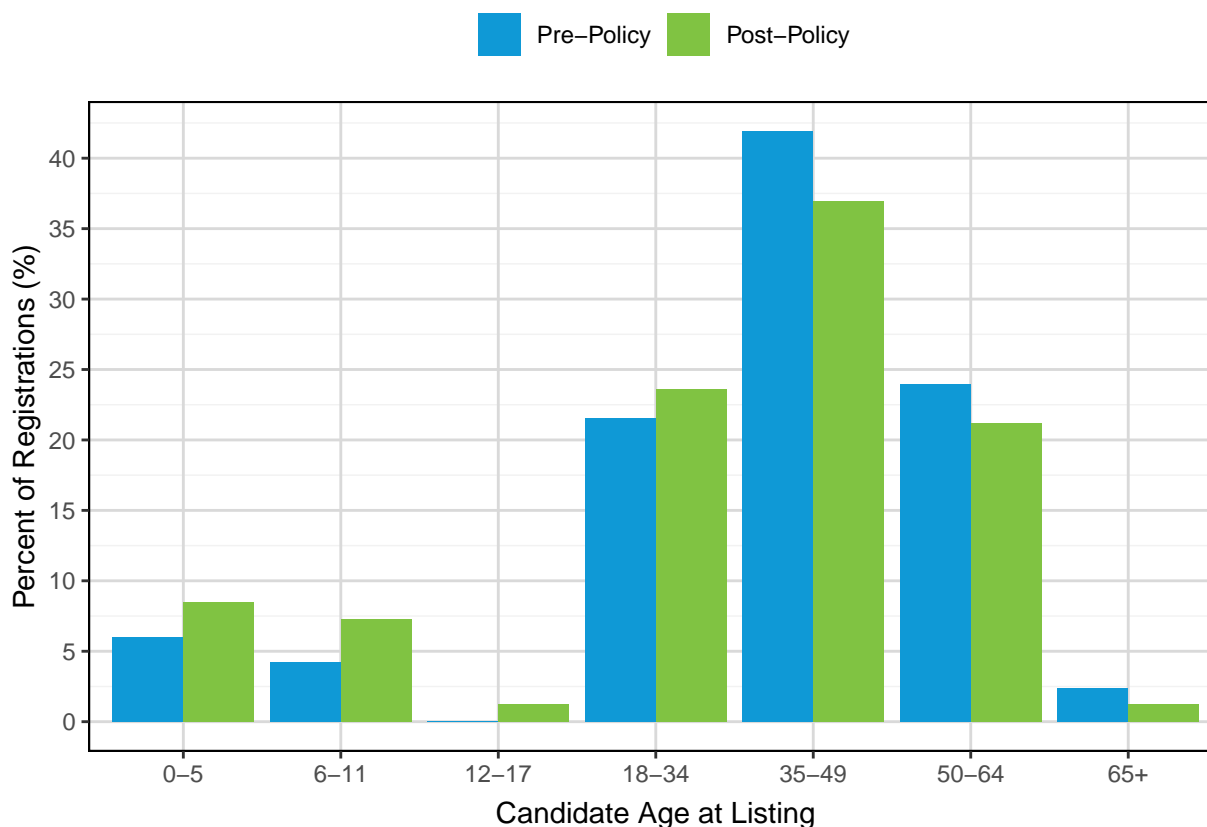


Table 44: Pancreas Registrations Added December 01, 2020-June 30, 2021 by Policy Era and Age at Listing

Age at Listing	Pre-Policy		Post-Policy	
	N	%	N	%
0-5	10	5.99	14	8.48
6-11	7	4.19	12	7.27
12-17	0	0.00	2	1.21
18-34	36	21.56	39	23.64
35-49	70	41.92	61	36.97
50-64	40	23.95	35	21.21
65+	4	2.40	2	1.21
Total	167	100.00	165	100.00

Figure 45 and **Table 45** show pancreas registrations added to the waiting list from December 01, 2020 to June 30, 2021 by policy era and gender. The volume of waiting list additions decreased for female candidates and increased for male candidates after implementation. The proportion of waiting list additions for female candidates decreased from 47.90% to 43.03%.

Figure 45: Pancreas Registrations Added December 01, 2020-June 30, 2021 by Policy Era and Gender

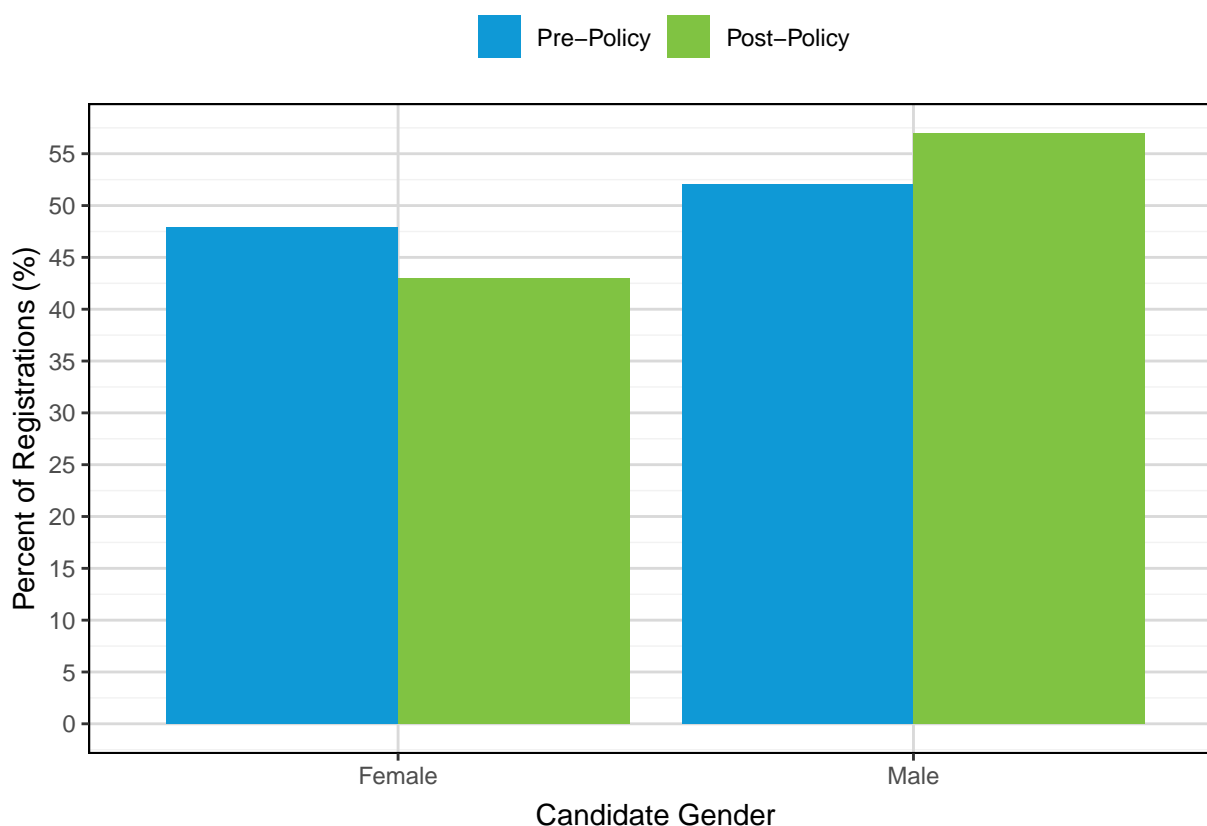


Table 45: Pancreas Registrations Added December 01, 2020-June 30, 2021 by Policy Era and Gender

Gender	Pre-Policy		Post-Policy	
	N	%	N	%
Female	80	47.90	71	43.03
Male	87	52.10	94	56.97
Total	167	100.00	165	100.00

Figure 46 and **Table 46** show pancreas registrations added to the waiting list from December 01, 2020 to June 30, 2021 by policy era and race/ethnicity. The volume and proportion of waiting list additions decreased for White and Black candidates after implementation, and increased for Hispanic and Asian candidates.

Figure 46: Pancreas Registrations Added December 01, 2020-June 30, 2021 by Policy Era and Ethnicity

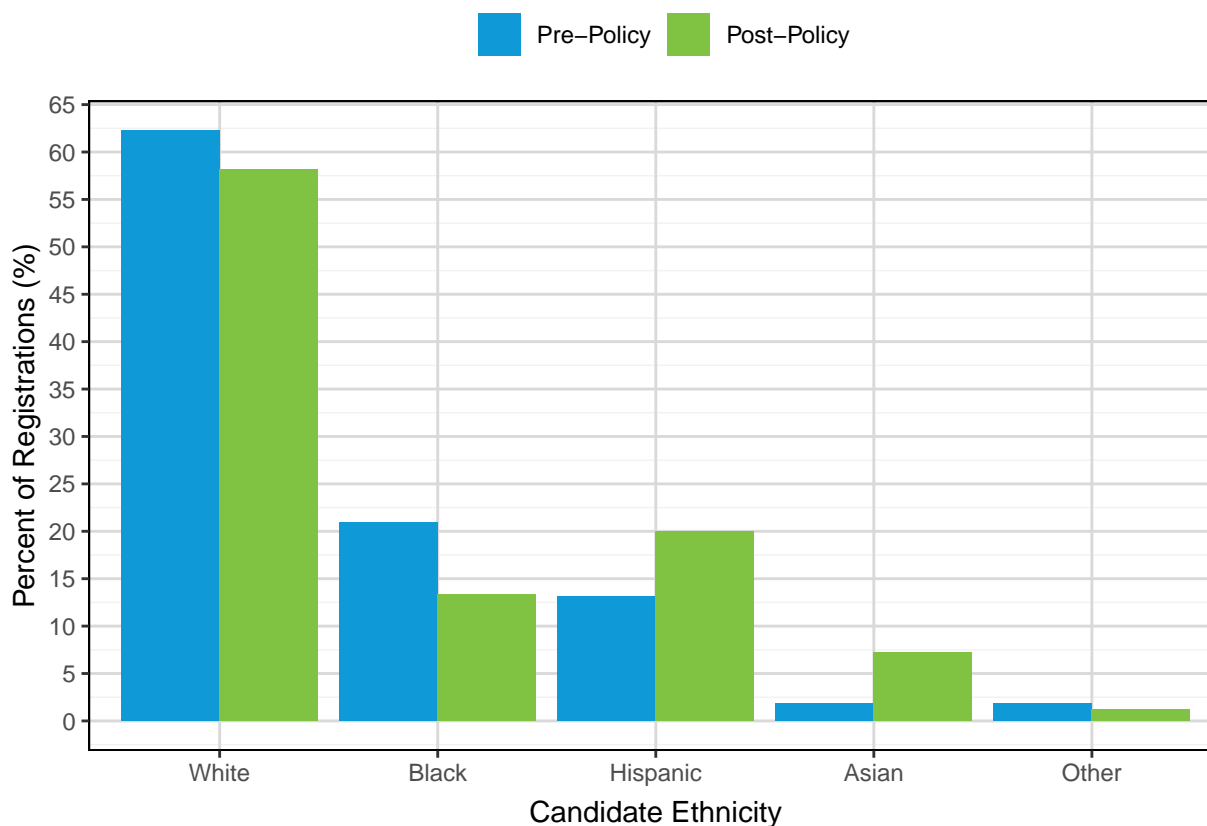


Table 46: Pancreas Registrations Added December 01, 2020-June 30, 2021 by Policy Era and Ethnicity

Ethnicity	Pre-Policy		Post-Policy	
	N	%	N	%
White	104	62.28	96	58.18
Black	35	20.96	22	13.33
Hispanic	22	13.17	33	20.00
Asian	3	1.80	12	7.27
Other	3	1.80	2	1.21
Total	167	100.00	165	100.00

Figure 47 and **Table 47** show pancreas registrations added to the waiting list from December 01, 2020 to June 30, 2021 by policy era and blood type. The volume and proportion of waiting list additions increased for blood type AB and B candidates after implementation, and decreased for blood type A and O candidates.

Figure 47: Pancreas Registrations Added December 01, 2020-June 30, 2021 by Policy Era and Blood Type

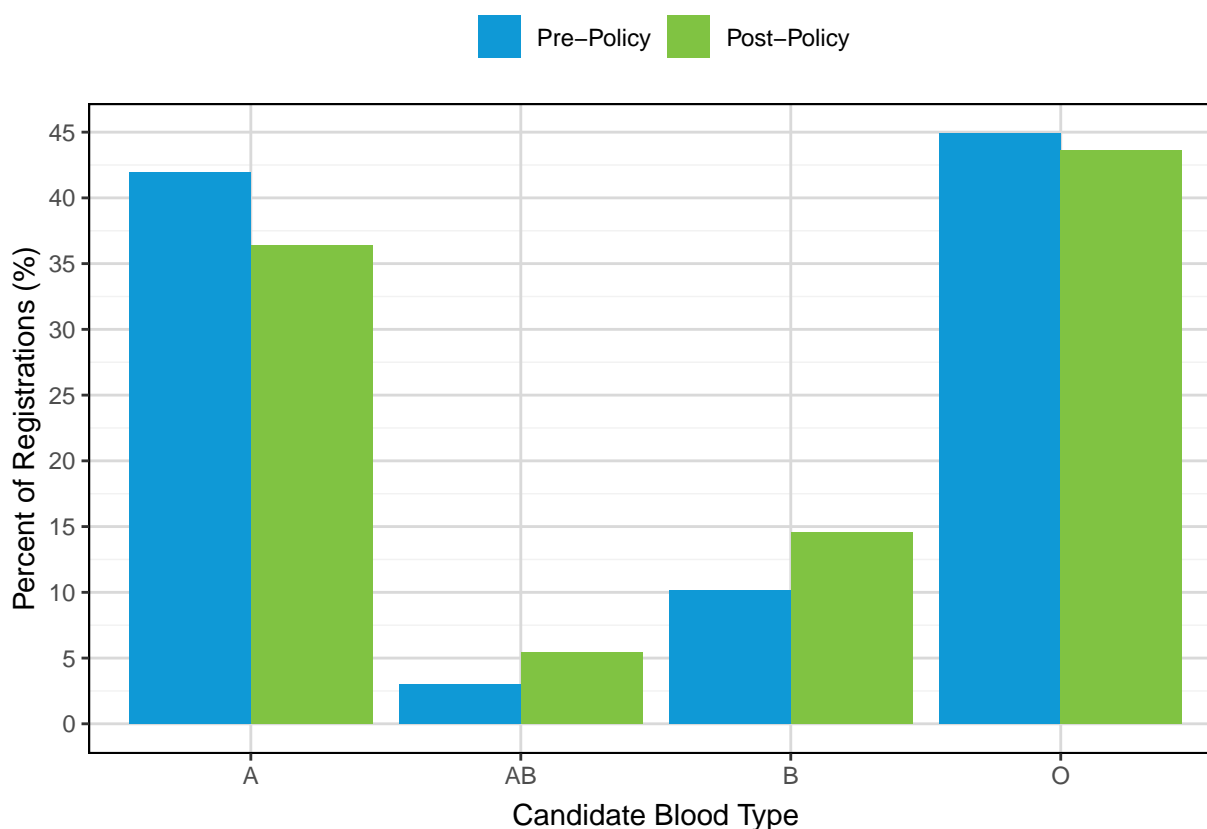


Table 47: Pancreas Registrations Added December 01, 2020-June 30, 2021 by Policy Era and Blood Type

Blood Type	Pre-Policy		Post-Policy	
	N	%	N	%
A	70	41.92	60	36.36
AB	5	2.99	9	5.45
B	17	10.18	24	14.55
O	75	44.91	72	43.64
Total	167	100.00	165	100.00

Figure 48 and **Table 48** show pancreas registrations added to the waiting list from December 01, 2020 to June 30, 2021 by policy era and CPRA at listing. The volume and proportion of waiting list additions increased post-policy for the CPRA 0% and 20-79% groups, and decreased for the 1-19%, 80-97%, and 98-100% groups.

Figure 48: Pancreas Registrations Added December 01, 2020-June 30, 2021 by Policy Era and CPRA

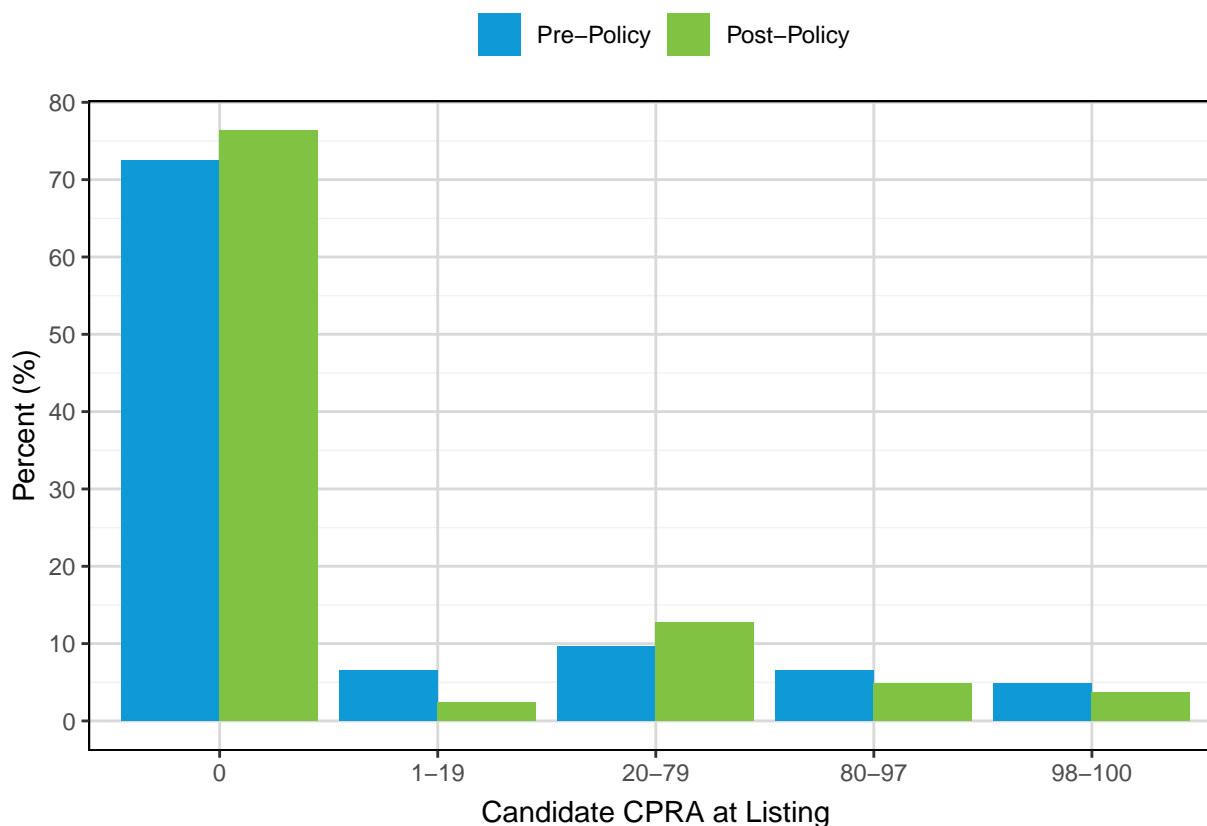


Table 48: Pancreas Registrations Added December 01, 2020-June 30, 2021 by Policy Era and CPRA

CPRA (%)	Pre-Policy		Post-Policy	
	N	%	N	%
0	121	72.46	126	76.36
1-19	11	6.59	4	2.42
20-79	16	9.58	21	12.73
80-97	11	6.59	8	4.85
98-100	8	4.79	6	3.64
Total	167	100.00	165	100.00

Figure 49 and **Table 49** show pancreas registrations added to the waiting list from December 01, 2020 to June 30, 2021 by policy era and insurance status at listing. There was little change in the distribution of insurance type after policy implementation.

Figure 49: Pancreas Registrations Added December 01, 2020-June 30, 2021 by Policy Era and Insurance Status at Listing

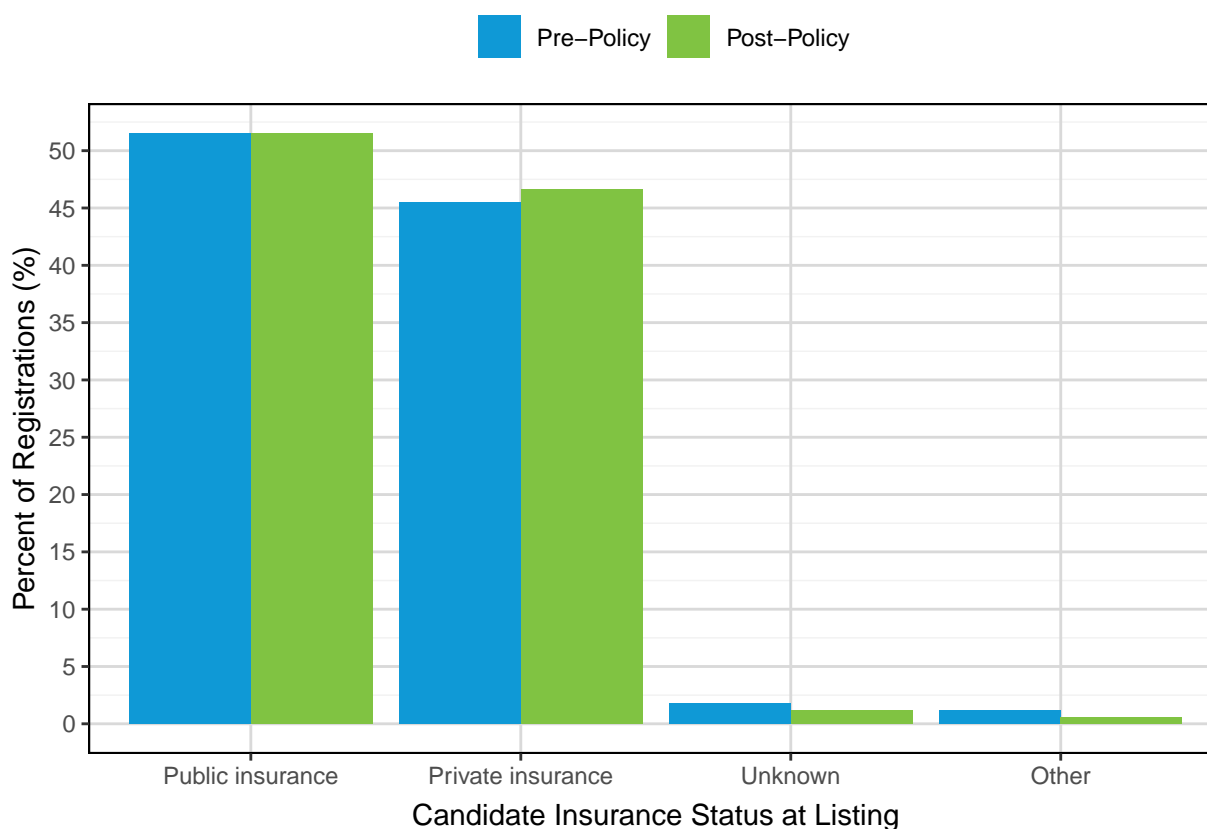


Table 49: Pancreas Registrations Added December 01, 2020-June 30, 2021 by Policy Era and Insurance Status at Listing

Insurance at Listing	Pre-Policy		Post-Policy	
	N	%	N	%
Public insurance	86	51.50	85	51.52
Private insurance	76	45.51	77	46.67
Unknown	3	1.80	2	1.21
Other	2	1.20	1	0.61
Total	167	100.00	165	100.00

Figure 50 and **Table 50** show pancreas registrations added to the waiting list from December 01, 2020 to June 30, 2021 by policy era and primary diagnosis at listing. The proportion of waiting list additions decreased post-policy for candidates diagnosed with type 1 diabetes from 50.30% to 46.67%, and for candidates with type 2 diabetes from 13.17% to 10.91%. The proportion of waiting list additions increased for candidates with other diagnoses from 36.53% to 42.42%.

Figure 50: Pancreas Registrations Added December 01, 2020 - June 30, 2021 by Policy Era and Diagnosis at Listing

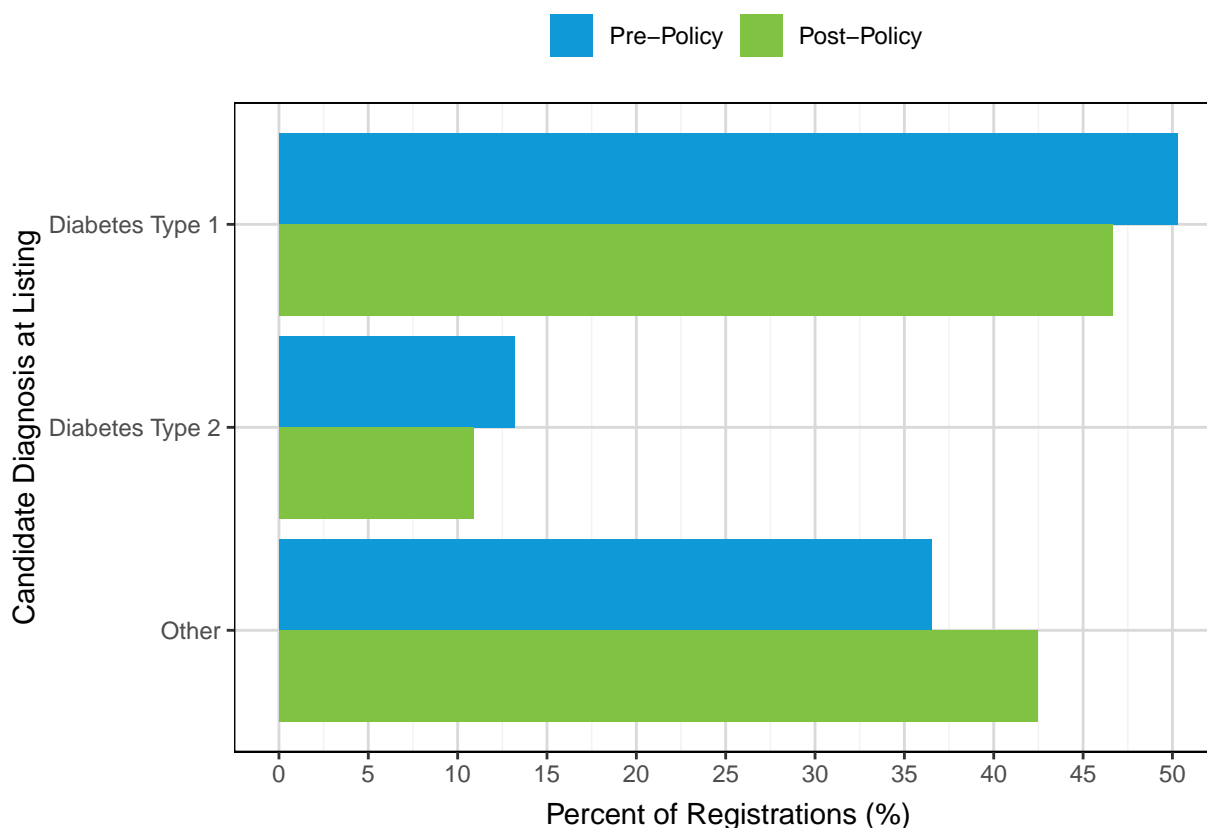


Table 50: Pancreas Registrations Added December 01, 2020 - June 30, 2021 by Policy Era and Diagnosis at Listing

Diagnosis	Pre-Policy		Post-Policy	
	N	%	N	%
Diabetes Type 1	84	50.30	77	46.67
Diabetes Type 2	22	13.17	18	10.91
Other	61	36.53	70	42.42
Total	167	100.00	165	100.00

Figure 51 and **Table 51** show waiting list mortality rates for pancreas registrations ever waiting between December 01, 2020 and June 30, 2021 by policy era. There were 3 deaths on the waiting list pre-policy and 5 deaths post-policy. The overall pancreas waiting list mortality rate increased post-policy from 1.68 to 2.63 deaths per 100 patient years; this increase was not statistically significant.

Figure 51: Waiting List Mortality Rates for Pancreas Registrations Ever Waiting January 01, 2021 - May 31, 2021 by Policy Era

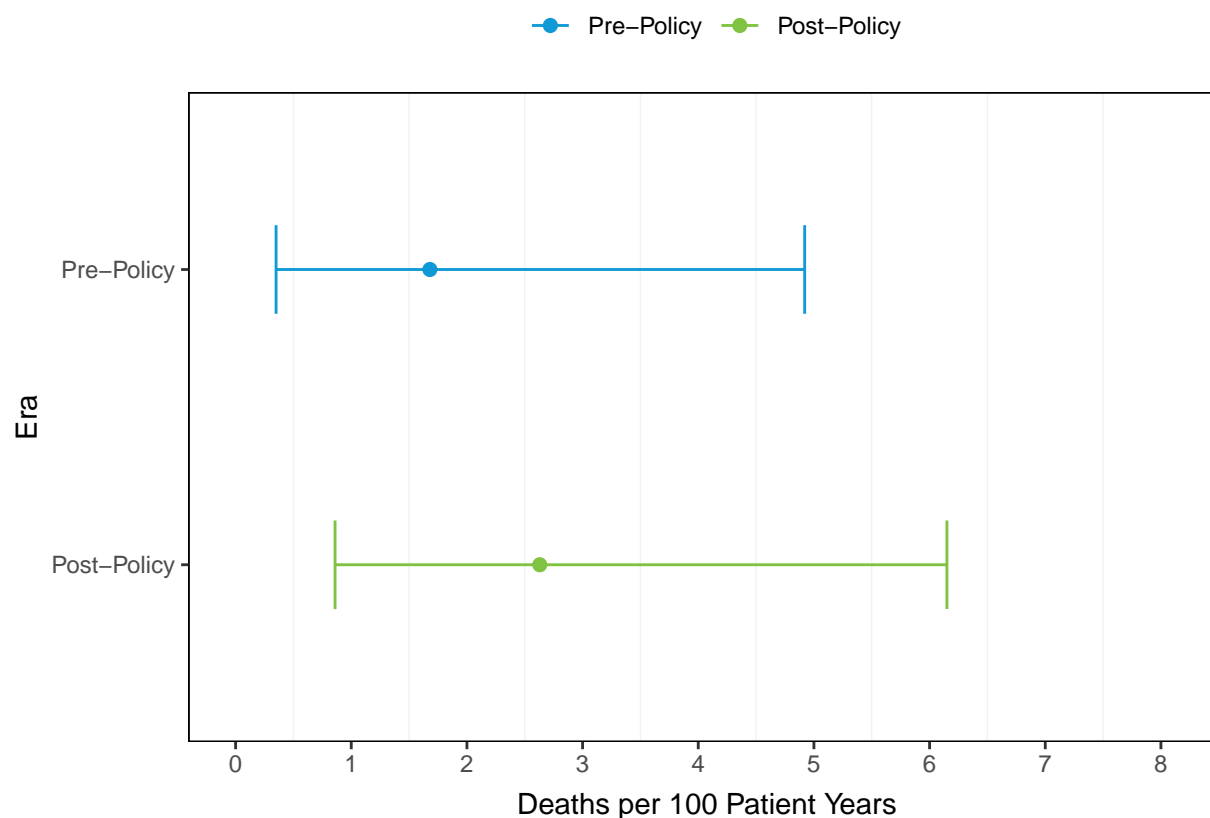


Table 51: Waiting List Mortality Rates for Pancreas Registrations Ever Waiting January 01, 2021 - May 31, 2021 by Policy Era

Era	Registrations	Deaths	Deaths per 100 Patient Years	95% CI
Pre-Policy	976	3	1.68	(0.35, 4.92)
Post-Policy	994	5	2.63	(0.86, 6.15)

Figure 52 and **Table 52** show deceased donor transplants per 100 active patient years for pancreas registrations ever waiting between December 01, 2020 and June 30, 2021 by policy era. The overall deceased donor pancreas transplant rate increased post-policy from 63.53 to 73.74 transplants per 100 active patient years; this increase was not statistically significant.

Figure 52: Transplants per 100 Active Patient Years for Pancreas Registrations Ever Waiting December 01, 2020-June 30, 2021 by Policy Era

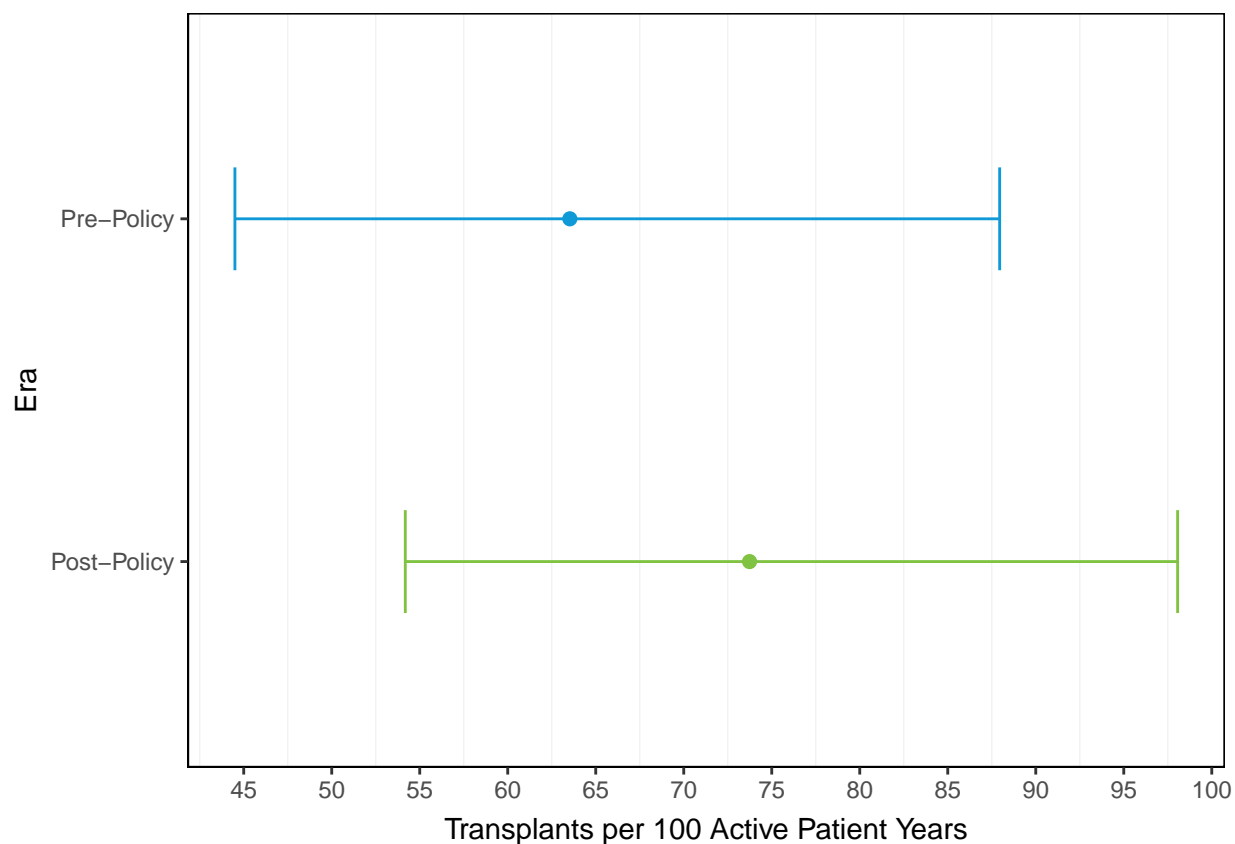


Table 52: Transplants per 100 Active Patient Years for Pancreas Registrations Ever Waiting December 01, 2020-June 30, 2021 by Policy Era

Era	Registrations	Transplants	Transplants per 100 Patient Years	95% CI
Pre-Policy	295	36	63.53	(44.5, 87.95)
Post-Policy	312	47	73.74	(54.18, 98.06)

Figure 53 and **Table 53** show deceased donor transplants per 100 active patient years for pancreas registrations ever waiting between December 01, 2020 and June 30, 2021 by policy era and age at listing. The transplant rate increased post-policy for the 35-49 age group from 34.83 to 83.61 transplants per 100 active patient years, and for the 65+ age group from 107.99 to 170.96 transplants per 100 active patient years. The transplant rate decreased for the 0-17 age group from 78.20 to 44.45 transplants per 100 active patient years, for the 18-34 age group from 81.13 to 76.64 transplants per 100 active patient years, and for the 50-64 age group from 94.23 to 66.94 transplants per 100 active patient years. These changes were not statistically significant, and the wide confidence intervals are reflective of small event counts.

Figure 53: Transplants per 100 Active Patient Years for Pancreas Registrations Ever Waiting December 01, 2020 - June 30, 2021 by Policy Era and Age at Listing

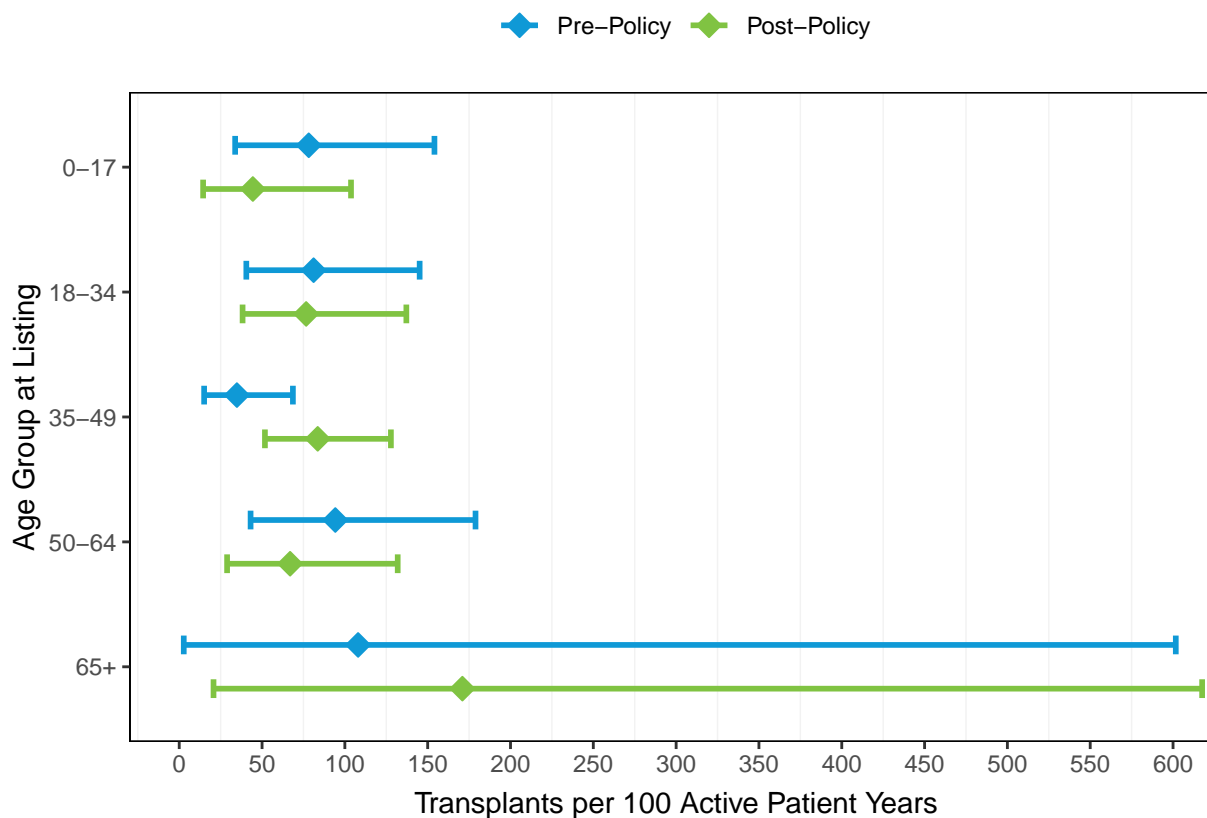


Table 53: Transplants per 100 Active Patient Years for Pancreas Registrations Ever Waiting December 01, 2020 - June 30, 2021 by Policy Era and Age at Listing

Age at Listing	Era	Registrations	Transplants	Transplants per 100 Patient Years	95% CI
0-17	Pre-Policy	45	8	78.20	(33.76, 154.09)
	Post-Policy	52	5	44.45	(14.43, 103.72)
18-34	Pre-Policy	75	11	81.13	(40.5, 145.16)
	Post-Policy	75	11	76.64	(38.26, 137.12)
35-49	Pre-Policy	115	8	34.83	(15.04, 68.63)
	Post-Policy	124	21	83.61	(51.75, 127.8)
50-64	Pre-Policy	59	9	94.23	(43.09, 178.89)
	Post-Policy	58	8	66.94	(28.9, 131.9)
65+	Pre-Policy	5	1	107.99	(2.73, 601.67)
	Post-Policy	6	2	170.96	(20.7, 617.57)

Figure 54 and **Table 54** show deceased donor transplants per 100 active patient years for pancreas registrations ever waiting between December 01, 2020 and June 30, 2021 by policy era and gender. The transplant rate increased post-policy for female registrations from 67.95 to 83.31 transplants per 100 active patient years, and for male registrations from 58.23 to 63.84 transplants per 100 active patient years. These increases were not statistically significant.

Figure 54: Transplants per 100 Active Patient Years for Pancreas Registrations Ever Waiting December 01, 2020-June 30, 2021 by Policy Era and Gender

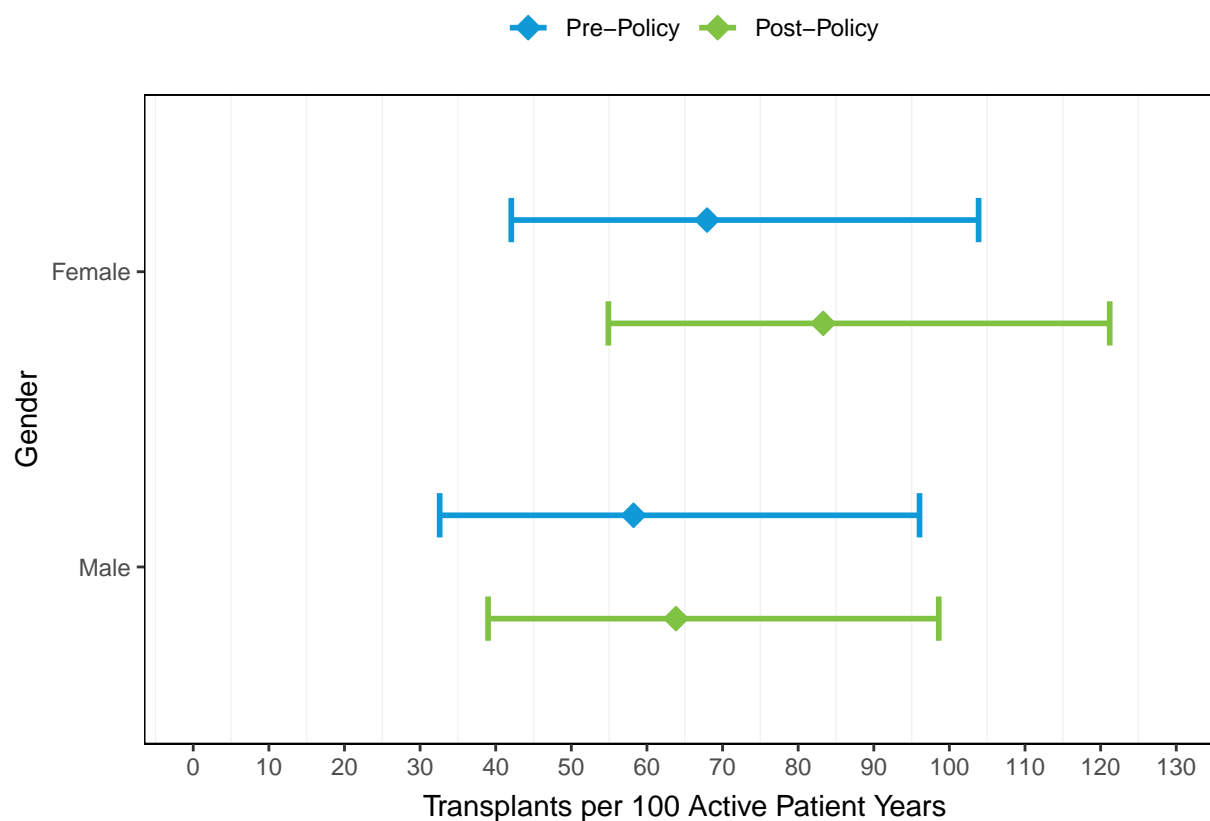


Table 54: Transplants per 100 Active Patient Years for Pancreas Registrations Ever Waiting December 01, 2020-June 30, 2021 by Policy Era and Gender

Gender	Era	Registrations	Transplants	Transplants per 100 Patient Years	95% CI
Female	Pre-Policy	155	21	67.95	(42.06, 103.86)
	Post-Policy	162	27	83.31	(54.9, 121.2)
Male	Pre-Policy	140	15	58.23	(32.59, 96.05)
	Post-Policy	150	20	63.84	(38.99, 98.59)

Figure 55 and **Table 55** show deceased donor transplants per 100 active patient years for pancreas registrations ever waiting between December 01, 2020 and June 30, 2021 by policy era and race/ethnicity. Transplant rates increased for White, Black and Hispanic candidates and decreased for Asian candidates. These changes were not statistically significant, and the wide confidence intervals are reflective of small event counts.

Figure 55: Transplants per 100 Active Patient Years for Pancreas Registrations Ever Waiting December 01, 2020 - June 30, 2021 by Policy Era and Ethnicity

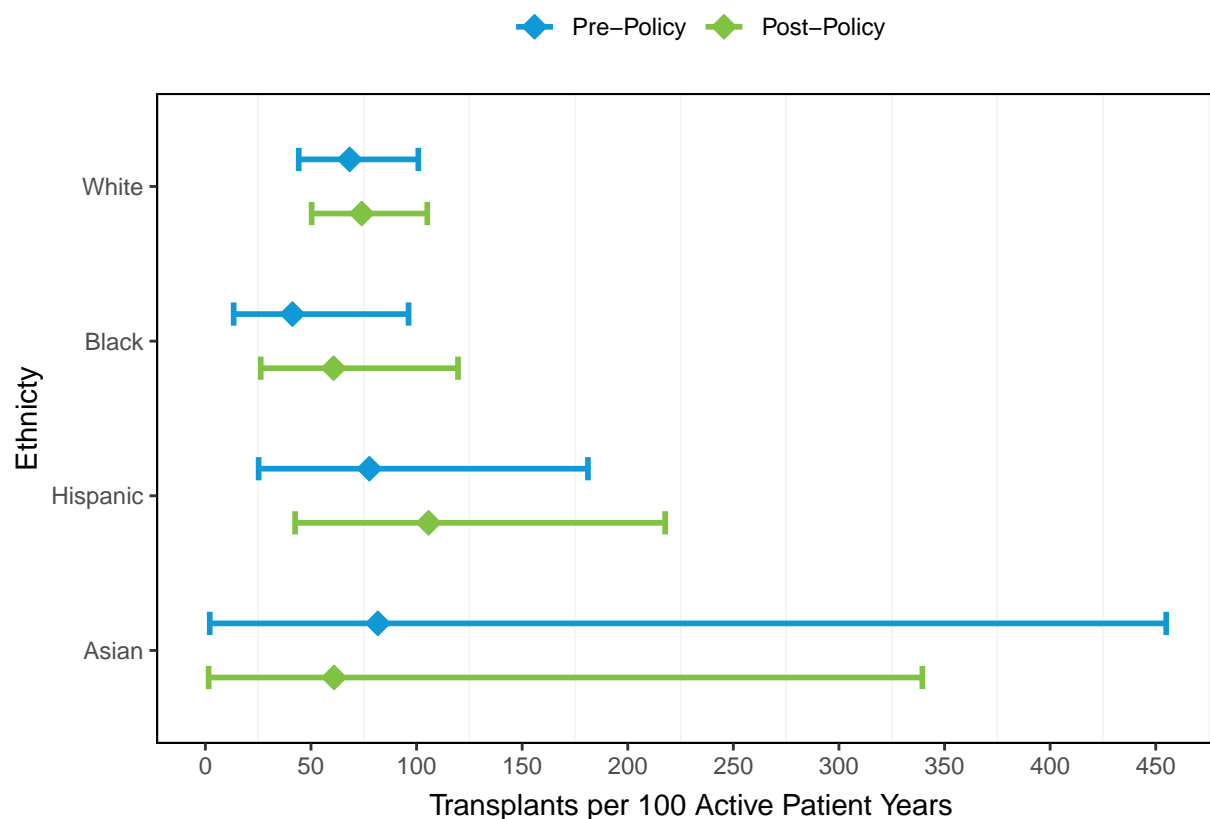


Table 55: Transplants per 100 Active Patient Years for Pancreas Registrations Ever Waiting December 01, 2020 - June 30, 2021 by Policy Era and Ethnicity

Ethnicity	Era	Registrations	Transplants	Transplants per 100 Patient Years	95% CI
White	Pre-Policy	196	25	68.31	(44.2, 100.83)
	Post-Policy	208	31	74.03	(50.3, 105.08)
Black	Pre-Policy	59	5	41.22	(13.39, 96.2)
	Post-Policy	59	8	60.71	(26.21, 119.62)
Hispanic	Pre-Policy	33	5	77.63	(25.21, 181.15)
	Post-Policy	35	7	105.67	(42.48, 217.71)
Asian	Pre-Policy	6	1	81.66	(2.07, 454.96)
	Post-Policy	8	1	60.93	(1.54, 339.51)
Other	Pre-Policy	2	0	0.00	-
	Post-Policy	3	0	0.00	-

Figure 56 and **Table 56** show deceased donor transplants per 100 active patient years for pancreas registrations ever waiting between December 01, 2020 and June 30, 2021 by policy era and CPRA at listing. Transplant rates increased post-policy for registrations in the 0%, 20-79%, and 80-97% groups, and decreased for registrations in the CPRA 1-19% group. These changes were not statistically significant and the confidence intervals are very wide, reflective of small event counts.

Figure 56: Transplants per 100 Active Patient Years for Pancreas Registrations Ever Waiting December 01, 2020 - June 30, 2021 by Policy Era and CPRA at Listing

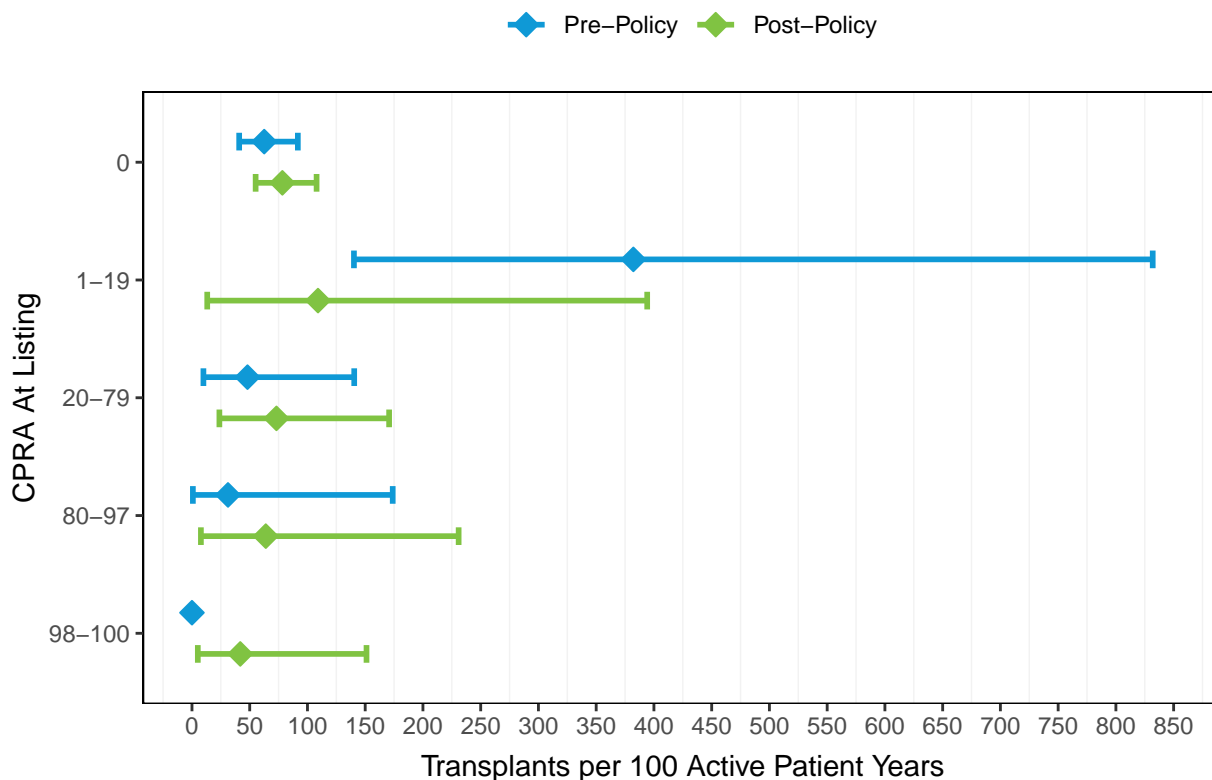


Table 56: Transplants per 100 Active Patient Years for Pancreas Registrations Ever Waiting December 01, 2020 - June 30, 2021 by Policy Era and CPRA at Listing

CPRA (%)	Era	Registrations	Transplants	Transplants per 100 Patient Years	95% CI
0	Pre-Policy	212	26	62.56	(40.87, 91.67)
	Post-Policy	233	37	78.29	(55.12, 107.91)
1-19	Pre-Policy	15	6	382.20	(140.26, 831.89)
	Post-Policy	10	2	109.12	(13.21, 394.17)
20-79	Pre-Policy	32	3	48.07	(9.91, 140.48)
	Post-Policy	37	5	73.15	(23.75, 170.7)
80-97	Pre-Policy	18	1	31.20	(0.79, 173.82)
	Post-Policy	15	2	63.92	(7.74, 230.91)
98-100	Pre-Policy	20	0	0.00	-
	Post-Policy	20	2	41.83	(5.07, 151.12)

Figure 57 and **Table 57** show deceased donor transplants per 100 active patient years for pancreas registrations ever waiting between December 01, 2020 and June 30, 2021 by policy era and candidate blood type. Transplant rates increased for blood type B candidates from 34.29 to 108.22 transplants per 100 active patient years, and for type O candidates from 44.65 to 71.16 transplants per 100 active patient years. Transplant rates decreased for blood type A candidates from 105.62 to 66.07 transplants per 100 active patient years. These changes were not statistically significant and the confidence intervals are very wide, reflective of small event counts.

Figure 57: Transplants per 100 Active Patient Years for Pancreas Registrations Ever Waiting December 01, 2020 - June 30, 2021 by Policy Era and Blood Type

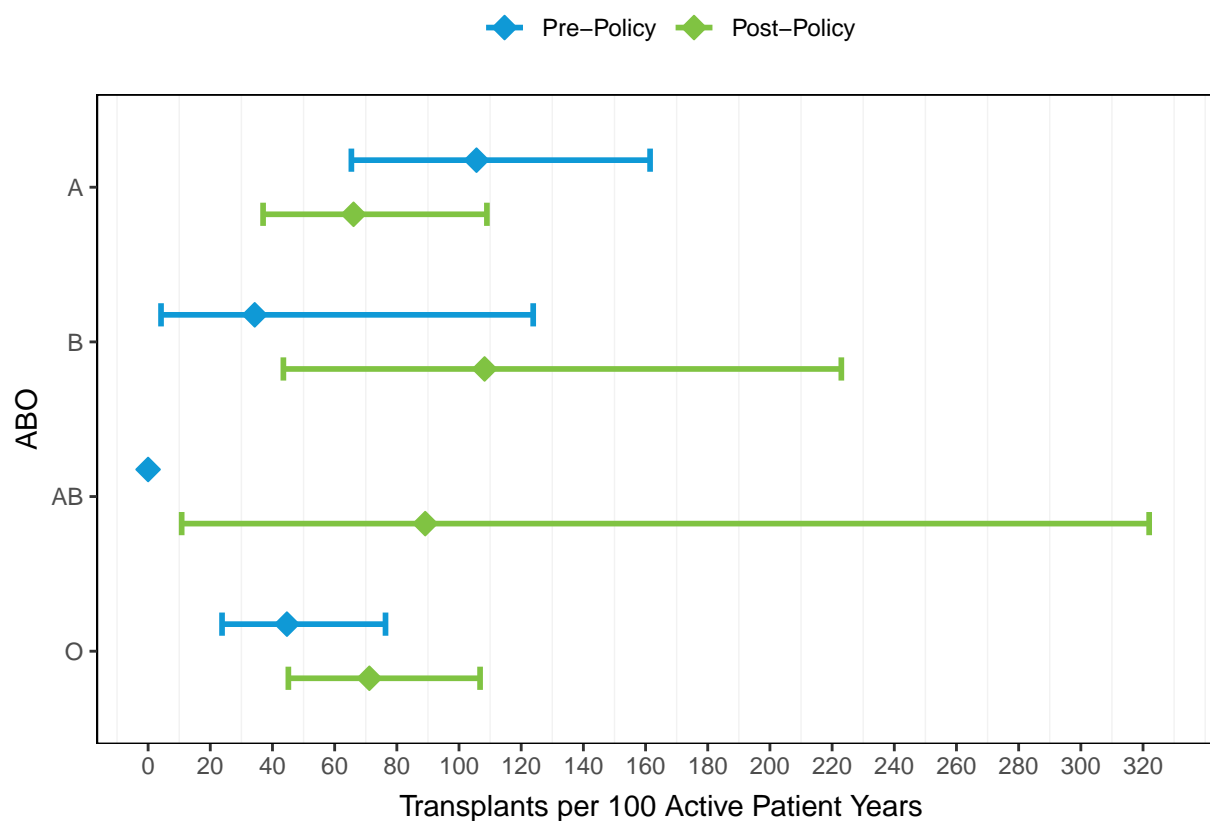


Table 57: Transplants per 100 Active Patient Years for Pancreas Registrations Ever Waiting December 01, 2020 - June 30, 2021 by Policy Era and Blood Type

ABO	Era	Registrations	Transplants	Transplants per 100 Patient Years	95% CI
A	Pre-Policy	108	21	105.62	(65.38, 161.45)
	Post-Policy	111	15	66.07	(36.98, 108.97)
B	Pre-Policy	27	2	34.29	(4.15, 123.86)
	Post-Policy	34	7	108.22	(43.51, 222.97)
AB	Pre-Policy	11	0	0.00	-
	Post-Policy	11	2	89.13	(10.79, 321.98)
O	Pre-Policy	149	13	44.65	(23.78, 76.36)
	Post-Policy	156	23	71.16	(45.11, 106.77)

Deceased Donor Transplants

Figure 58 and **Table 58** show deceased donor pancreas transplants from December 01, 2020 to June 30, 2021 by policy era. There were 37 transplants in the pre-policy era, and 50 in the post-policy era.

Figure 58: Deceased Donor Pancreas Transplants December 01, 2020- June 30, 2021 by Policy Era

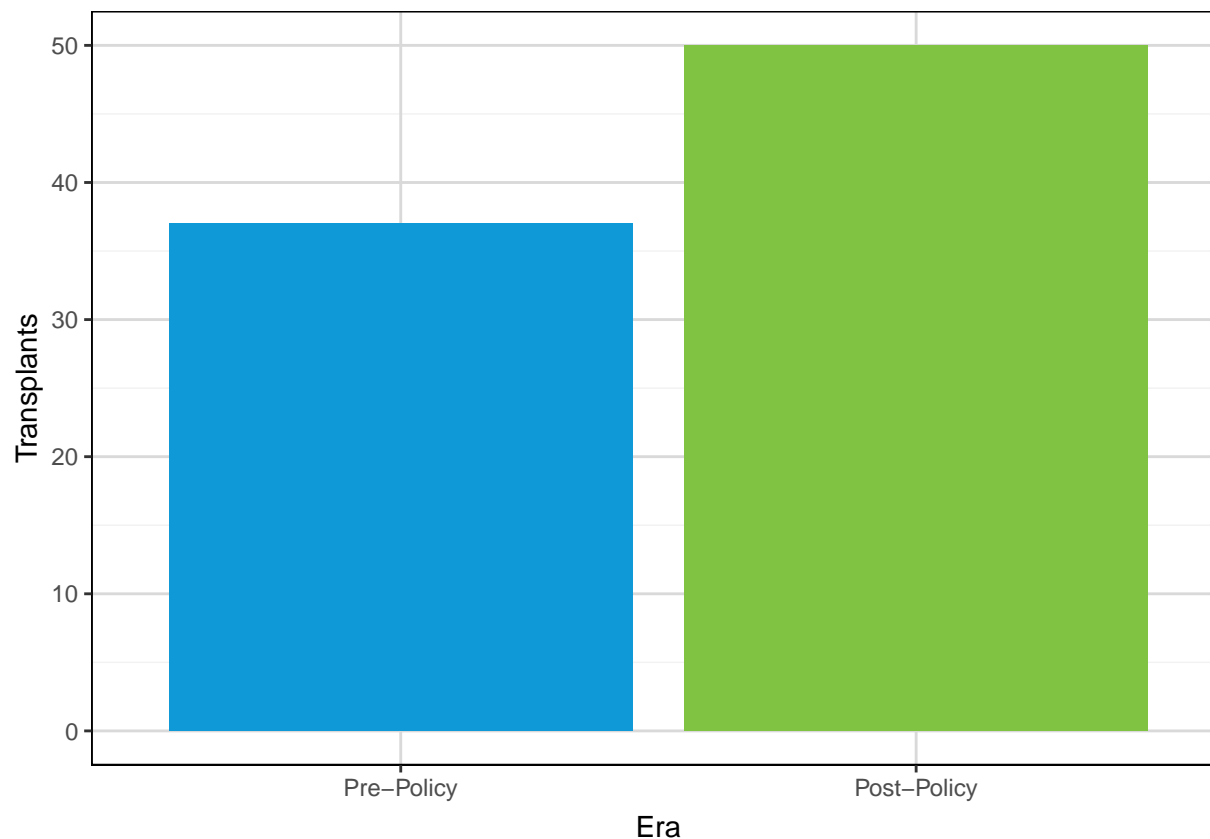
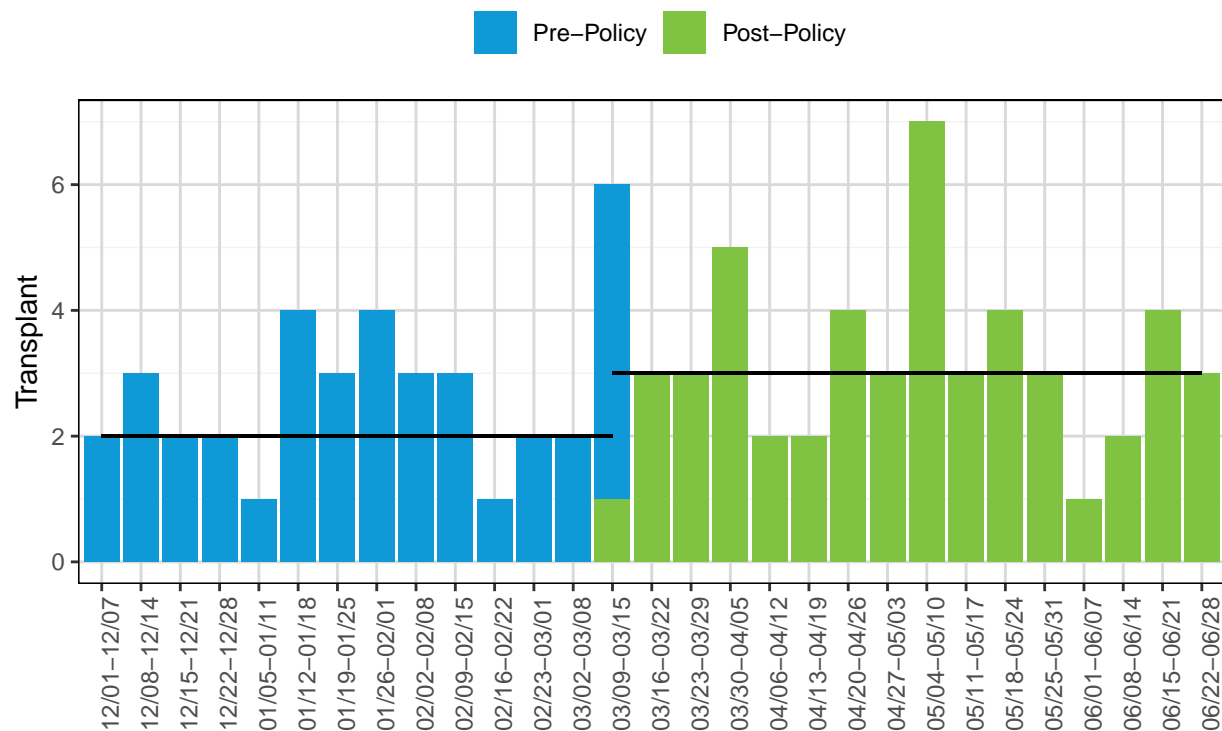


Table 58: Deceased Donor Pancreas Transplants December 01, 2020- June 30, 2021 by Policy Era

Era	Transplants
Pre-Policy	37
Post-Policy	50

Figure 59 and **Table 59** show weekly deceased donor pancreas transplants from December 01, 2020 to June 30, 2021. The average number of transplants per week was 2 pre-policy and 3 post-policy.

Figure 59: Weekly Deceased Donor Pancreas Transplants December 01, 2020-June 30, 2021 by Policy Era



Lines represent the average number of transplants per week.
Some weeks shown in the figure include federal holidays.

Table 59: Weekly Deceased Donor Pancreas Transplants December 01, 2020-June 30, 2021

Weeks	Transplants
12/01-12/07	2
12/08-12/14	3
12/15-12/21	2
12/22-12/28	2
01/05-01/11	1
01/12-01/18	4
01/19-01/25	3
01/26-02/01	4
02/02-02/08	3
02/09-02/15	3
02/16-02/22	1
02/23-03/01	2
03/02-03/08	2
03/09-03/15	6
03/16-03/22	3
03/23-03/29	3
03/30-04/05	5
04/06-04/12	2
04/13-04/19	2
04/20-04/26	4
04/27-05/03	3
05/04-05/10	7
05/11-05/17	3
05/18-05/24	4
05/25-05/31	3
06/01-06/07	1
06/08-06/14	2
06/15-06/21	4
06/22-06/28	3

Figure 60 and **Table 60** show deceased donor pancreas transplants from December 01, 2020 to June 30, 2021 by policy era and recipient age at transplant. The proportion of transplants increased post-policy for the 35-49 and 65+ age groups, and decreased for the 0-5, 6-11, 12-17, 18-34, and 50-64 age groups.

Figure 60: Deceased Donor Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and Recipient Age at Transplant

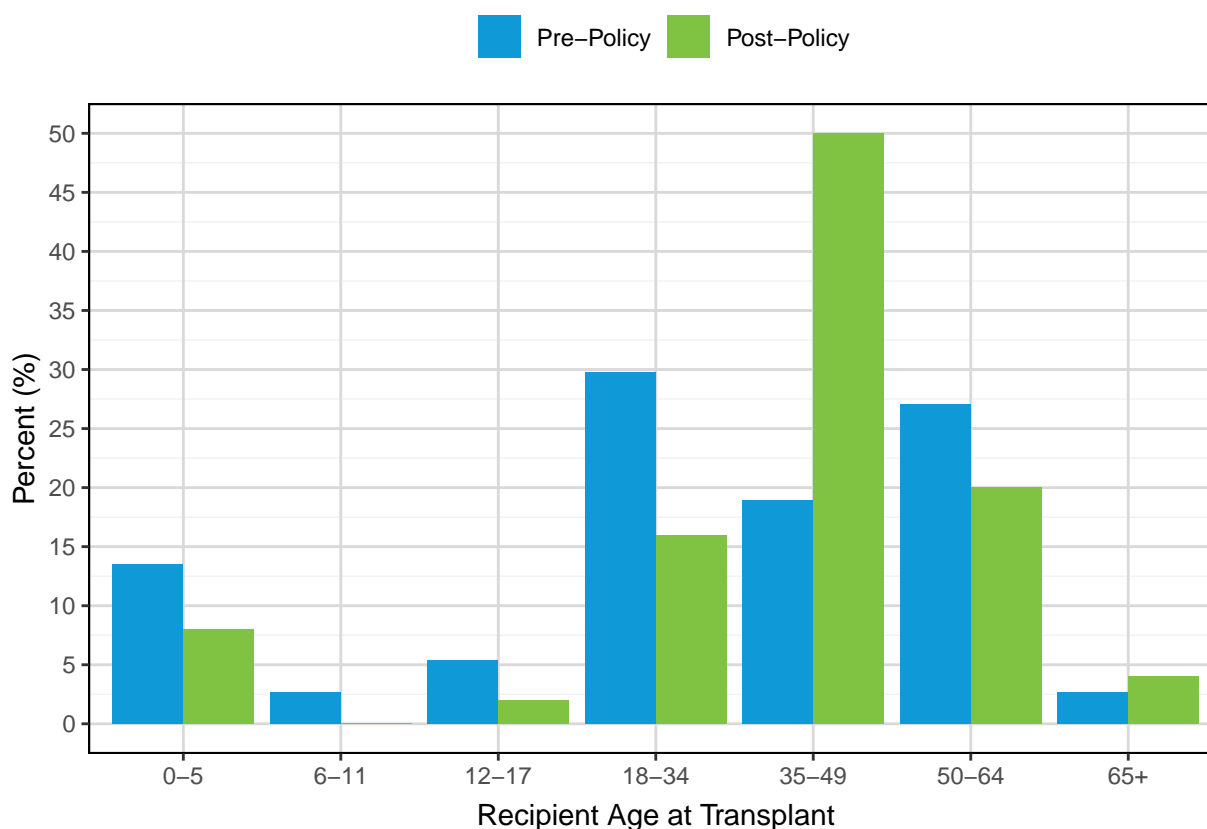


Table 60: Deceased Donor Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and Recipient Age at Transplant

Age at Transplant	Pre-Policy		Post-Policy	
	N	%	N	%
0-5	5	13.51	4	8.00
6-11	1	2.70	0	0.00
12-17	2	5.41	1	2.00
18-34	11	29.73	8	16.00
35-49	7	18.92	25	50.00
50-64	10	27.03	10	20.00
65+	1	2.70	2	4.00
Total	37	100.00	50	100.00

Figure 61 and **Table 61** show deceased donor pancreas transplants from December 01, 2020 to June 30, 2021 by policy era and recipient race/ethnicity. The proportion of transplants to Black recipients increased from 13.51% to 16.00% after policy implementation. The proportion of transplants to Hispanic recipients decreased from 16.22% to 14.00%.

Figure 61: Deceased Donor Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and Recipient Ethnicity

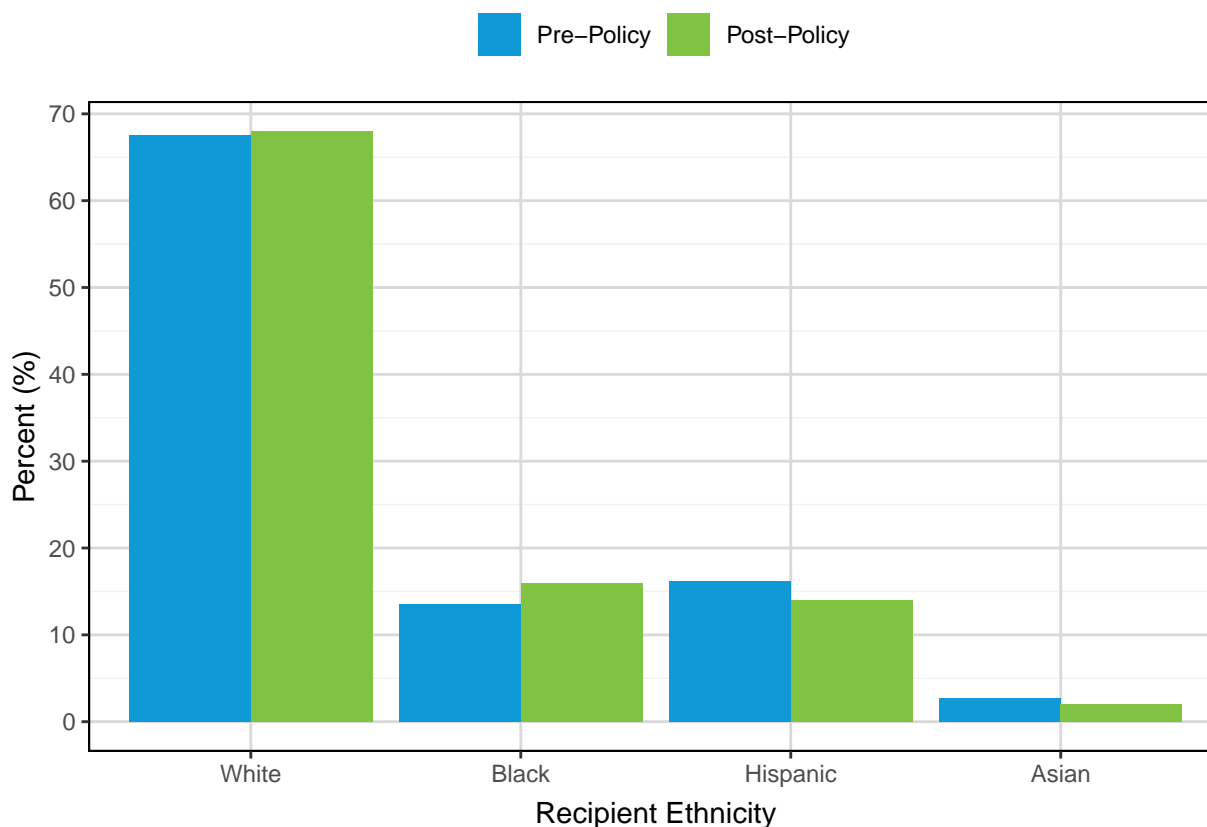


Table 61: Deceased Donor Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and Recipient Ethnicity

Ethnicity	Pre-Policy		Post-Policy	
	N	%	N	%
White	25	67.57	34	68.00
Black	5	13.51	8	16.00
Hispanic	6	16.22	7	14.00
Asian	1	2.70	1	2.00
Total	37	100.00	50	100.00

Figure 62 and **Table 62** show the distribution of waiting time in years for deceased donor pancreas transplants from December 01, 2020 to June 30, 2021 by policy era. Median time from listing to transplant increased from 0.40 to 0.79 years after policy implementation.

Figure 62: Distribution of Waiting Time for Deceased Donor Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era

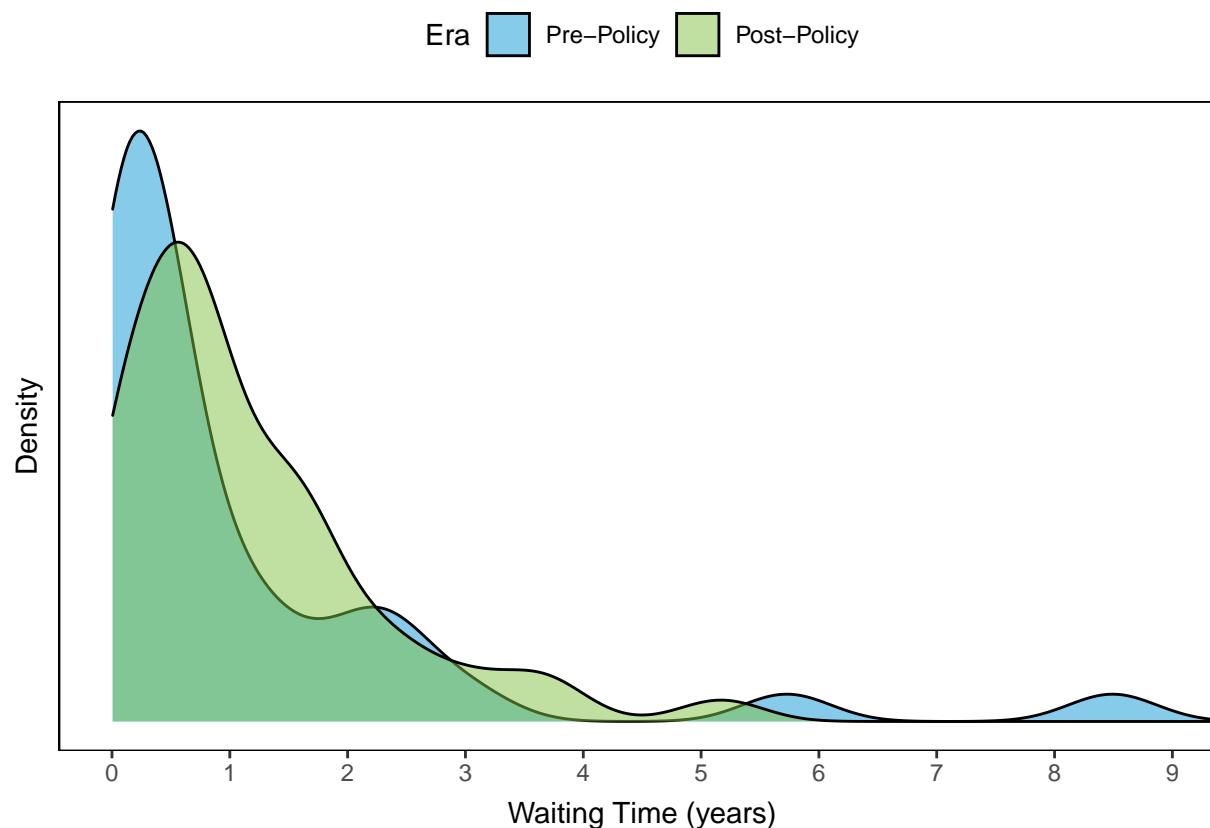


Table 62: Distribution of Waiting Time for Deceased Donor Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era

Era	Total	Missing	Min	25th %-tile	Median	Mean	75th %-tile	Max
Pre-Policy	37	0	0.02	0.14	0.40	1.37	1.28	12.26
Post-Policy	50	0	0.01	0.48	0.79	1.14	1.63	5.17

Figure 63 and **Table 63** show deceased donor pancreas transplants from December 01, 2020 to June 30, 2021 by policy era and recipient blood type. The number and proportion of transplants increased after implementation for blood type AB, B, and O recipients, and decreased for type A recipients.

Figure 63: Deceased Donor Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and Recipient Blood Type

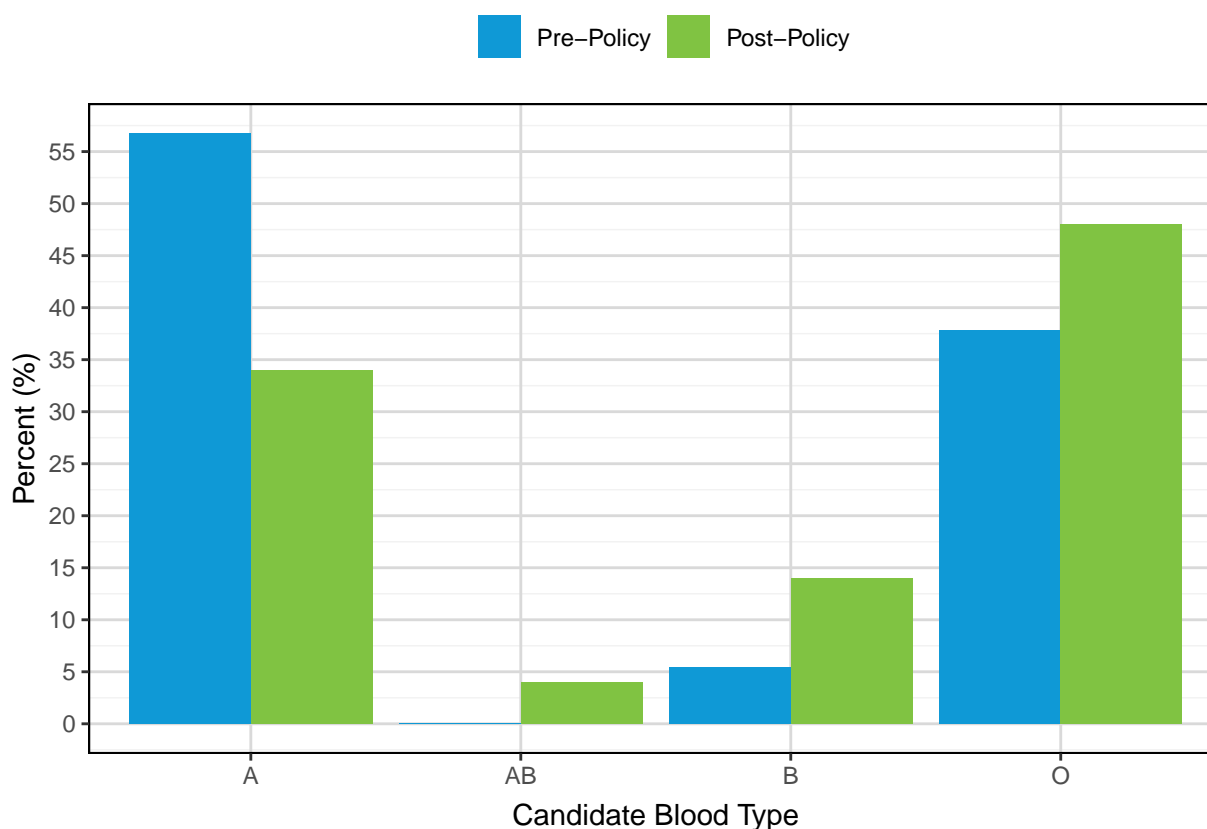


Table 63: Deceased Donor Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and Recipient Blood Type

Blood Type	Pre-Policy		Post-Policy	
	N	%	N	%
A	21	56.76	17	34.00
AB	0	0.00	2	4.00
B	2	5.41	7	14.00
O	14	37.84	24	48.00
Total	37	100.00	50	100.00

Figure 64 and **Table 64** show deceased donor pancreas transplants from December 01, 2020 to June 30, 2021 by policy era and CPRA at transplant. The proportion of transplants to recipients in the CPRA 20-79%, 80-97%, and 98-100% groups increased after policy implementation, while the proportion of transplants to recipients in the CPRA 0% and 1-19% groups decreased.

Figure 64: Deceased Donor Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and CPRA

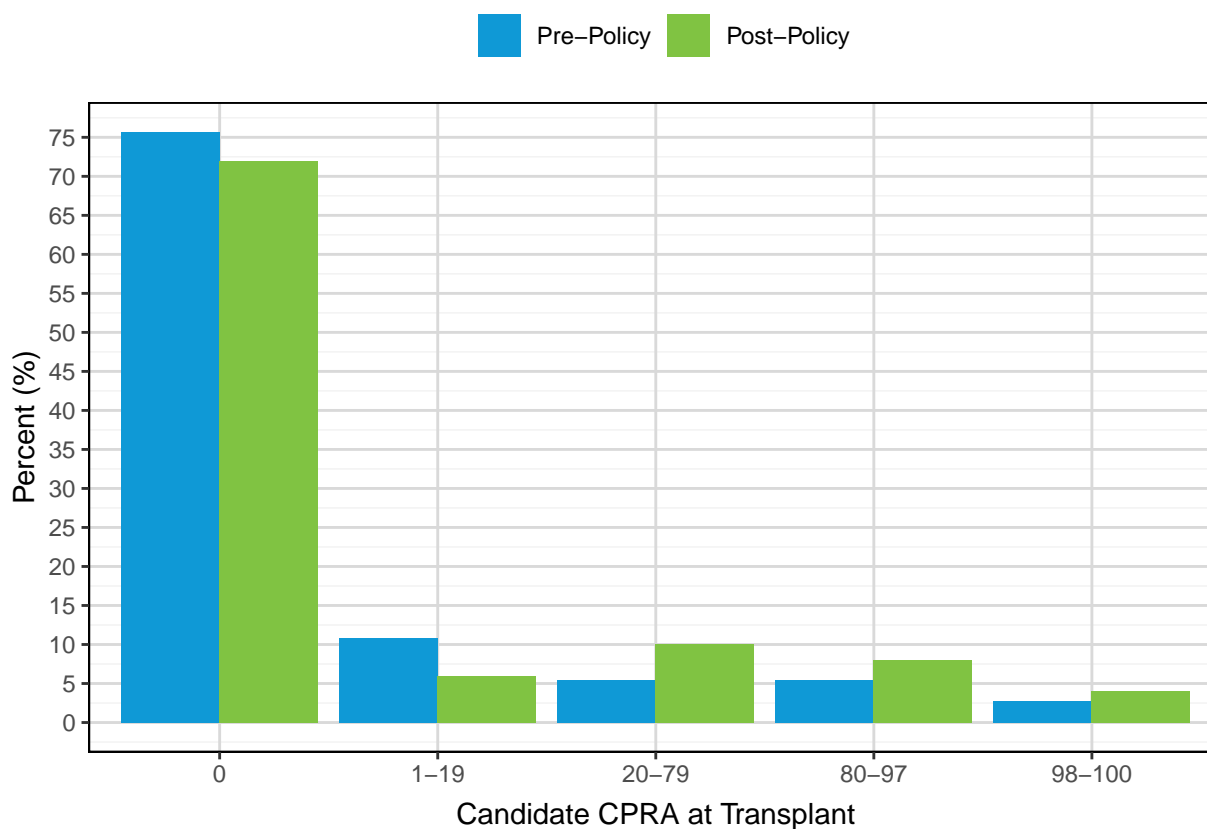


Table 64: Deceased Donor Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and CPRA

CPRA (%)	Pre-Policy		Post-Policy	
	N	%	N	%
0	28	75.68	36	72.00
1-19	4	10.81	3	6.00
20-79	2	5.41	5	10.00
80-97	2	5.41	4	8.00
98-100	1	2.70	2	4.00
Total	37	100.00	50	100.00

Figure 65 and **Table 65** show deceased donor pancreas transplants from December 01, 2020 to June 30, 2021 by policy era and level of HLA mismatch. Multi-organ transplants including a pancreas were excluded. In general, the number and proportion of transplants increased for higher levels of ABDR mismatch and decreased for lower levels of ABDR mismatch.

Figure 65: Deceased Donor Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and HLA Mismatch

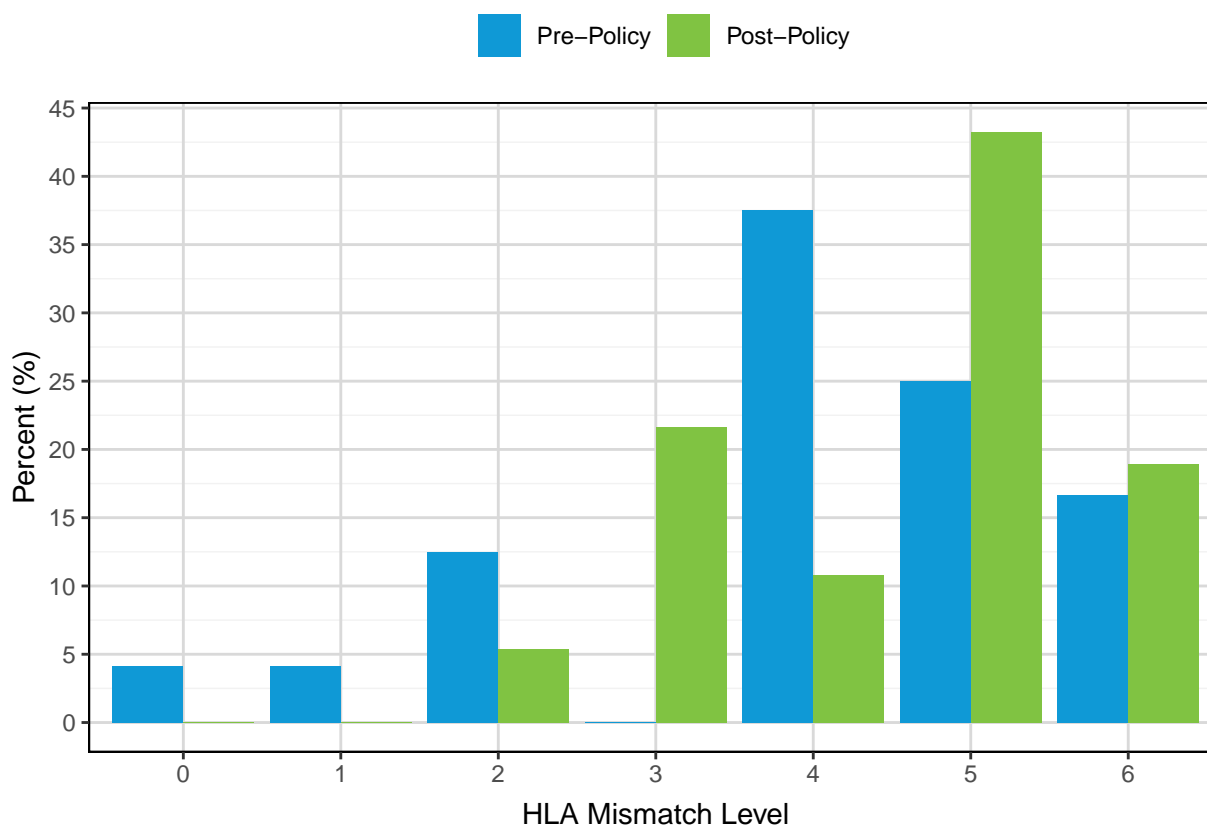


Table 65: Deceased Donor Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and HLA Mismatch

HLA Mismatch Level	Pre-Policy		Post-Policy	
	N	%	N	%
0	1	4.17	0	0.00
1	1	4.17	0	0.00
2	3	12.50	2	5.41
3	0	0.00	8	21.62
4	9	37.50	4	10.81
5	6	25.00	16	43.24
6	4	16.67	7	18.92
Total	24	100.00	37	100.00

Figure 66 and **Table 66** show deceased donor pancreas transplants from December 01, 2020 to June 30, 2021 by policy era and primary diagnosis. The proportion of recipients diagnosed with type 1 diabetes increased post-policy from 51.35% to 56.00%, and the proportion of recipients with type 2 diabetes increased from 5.41% to 8.00%. The proportion of recipients with other diagnoses decreased from 43.24% to 36.00%.

Figure 66: Deceased Donor Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and Diagnosis

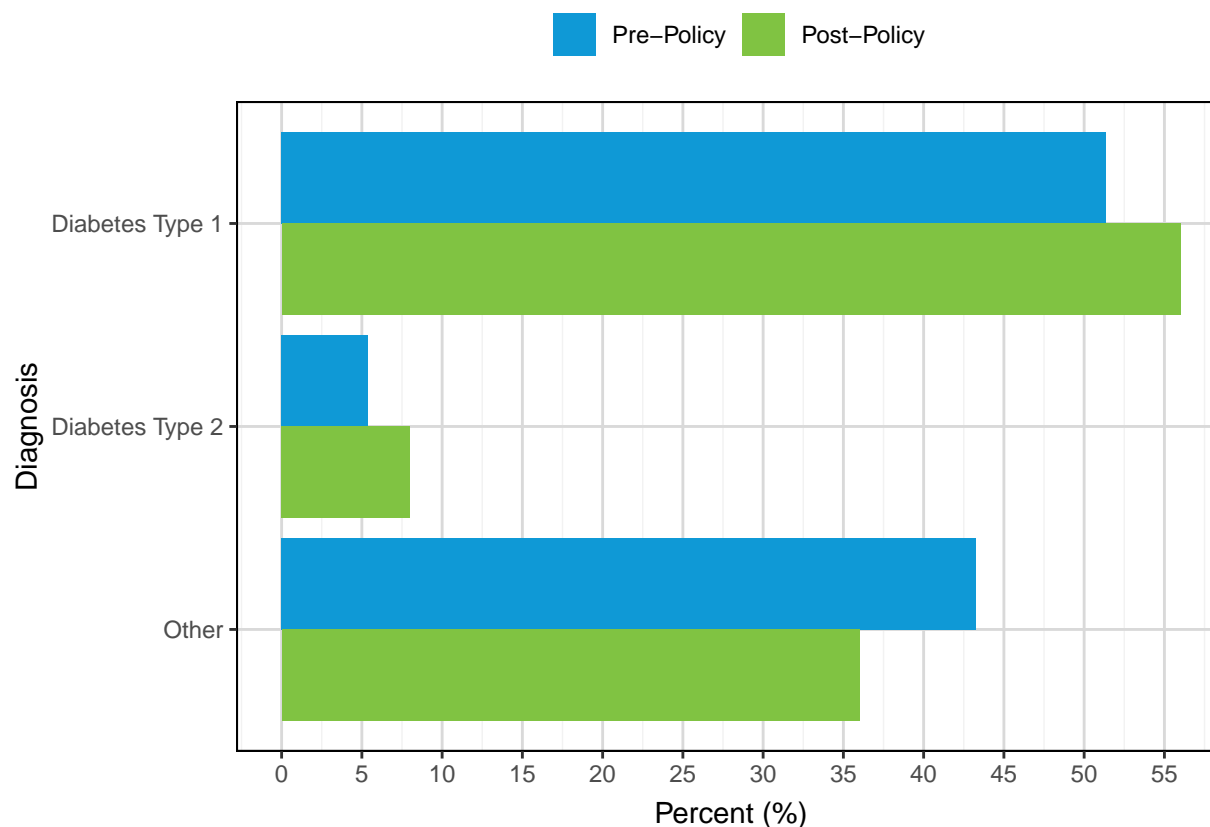


Table 66: Deceased Donor Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and Diagnosis

Diagnosis	Pre-Policy		Post-Policy	
	N	%	N	%
Diabetes Type 1	19	51.35	28	56.00
Diabetes Type 2	2	5.41	4	8.00
Other	16	43.24	18	36.00
Total	37	100.00	50	100.00

Figure 67 and **Table 67** show deceased donor pancreas transplants from December 01, 2020 to June 30, 2021 by policy era and donor DCD status. There were no pancreas transplants from DCD donors in the pre-policy era, and one transplant from a DCD donor post-policy.

Figure 67: Deceased Donor Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and DCD Status

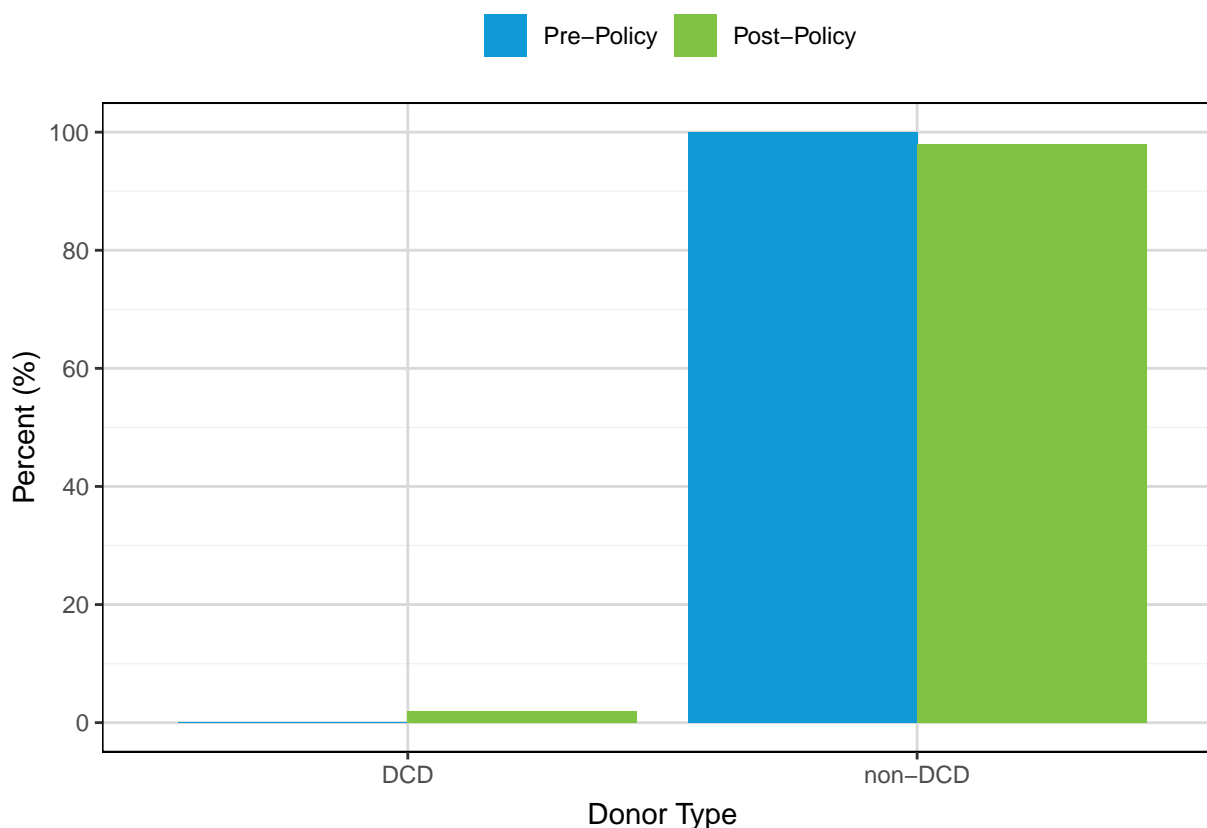


Table 67: Deceased Donor Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and DCD Status

	Pre-Policy		Post-Policy	
	N	%	N	%
DCD Donor				
DCD	0	0.00	1	2.00
non-DCD	37	100.00	49	98.00
Total	37	100.00	50	100.00

Figure 68 and **Table 68** show deceased donor pancreas transplants from December 01, 2020 to June 30, 2021 by policy era and distance from donor hospital. The proportion of transplants within 250 NM of the donor hospital increased post-policy from 56.76% to 60.00%.

Figure 68: Deceased Donor Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and Distance from Donor Hospital

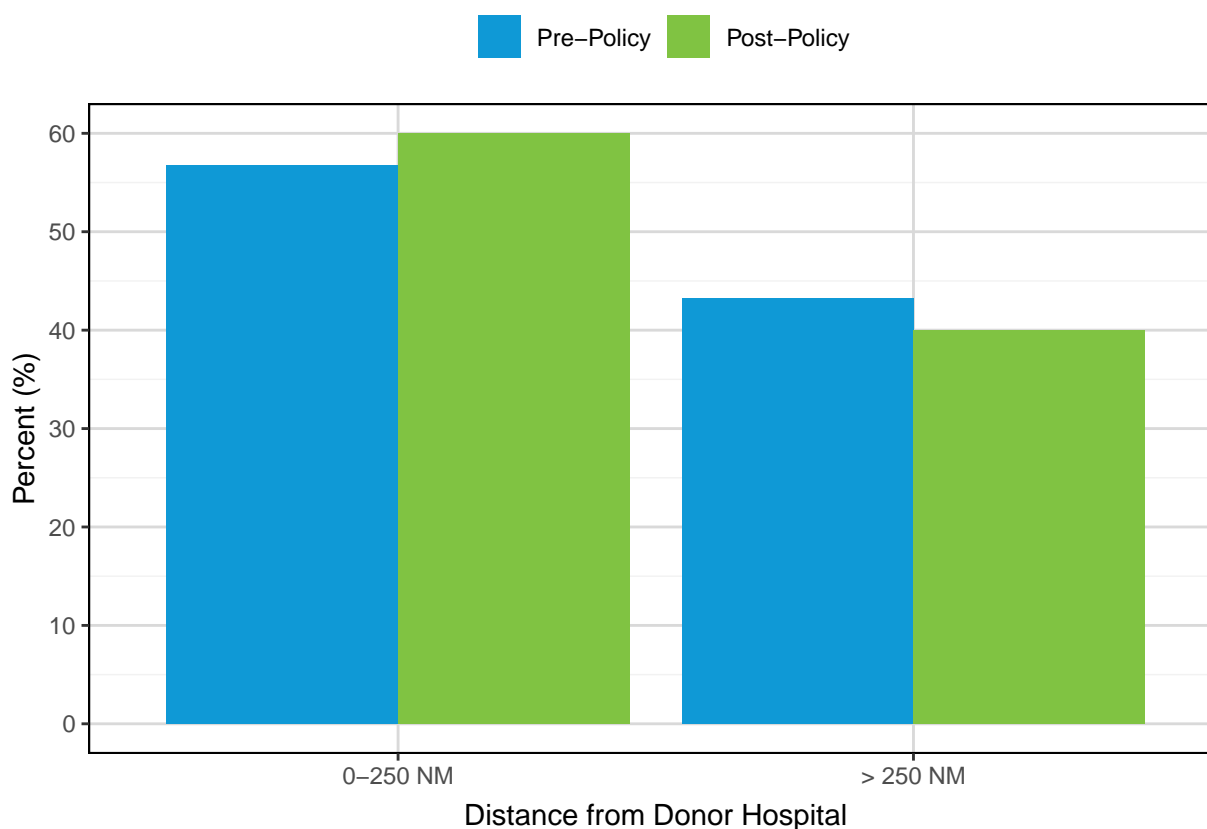


Table 68: Deceased Donor Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and Distance from Donor Hospital

DCD Donor	Pre-Policy		Post-Policy	
	N	%	N	%
0-250 NM	21	56.76	30	60.00
> 250 NM	16	43.24	20	40.00
Total	37	100.00	50	100.00

Figure 69 and **Table 69** show deceased donor pancreas transplants from December 01, 2020 to June 30, 2021 by policy era and share type. The proportion of transplants using organs procured in the same DSA as the transplant hospital decreased from 43.24% to 30.00% after the policy change. The proportion of regional and national shares increased from 18.92% to 24.00% and from 37.84% to 46.00%, respectively.

Figure 69: Deceased Donor Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and Share Type

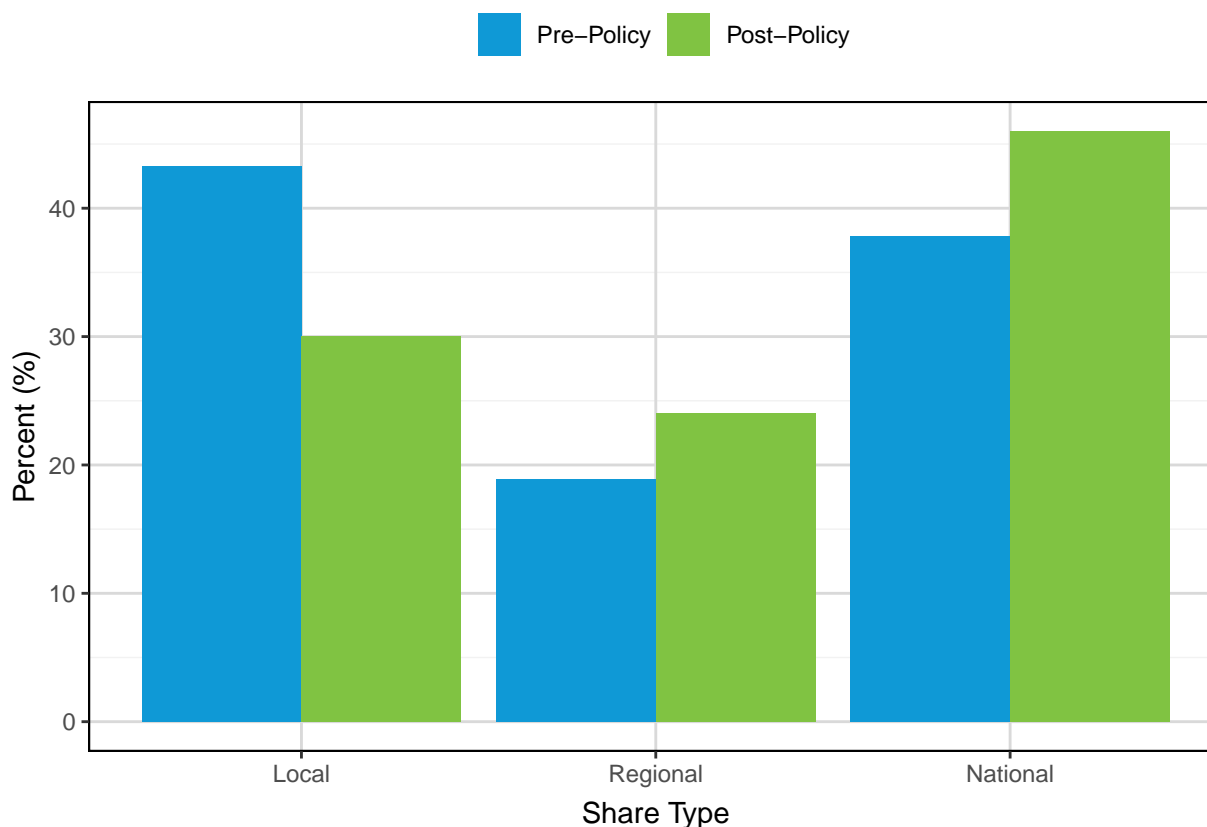


Table 69: Deceased Donor Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and Share Type

Share Type	Pre-Policy		Post-Policy	
	N	%	N	%
Local	16	43.24	15	30.00
Regional	7	18.92	12	24.00
National	14	37.84	23	46.00
Total	37	100.00	50	100.00

Figure 70 and **Table 70** show the distribution of distance in NM from donor hospital for deceased donor pancreas transplants from December 01, 2020 to June 30, 2021 by policy era. Median distance from donor hospital decreased from 199 NM to 146.5 NM after policy implementation.

Figure 70: Distribution of Distance from Donor Hospital for Deceased Donor Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era

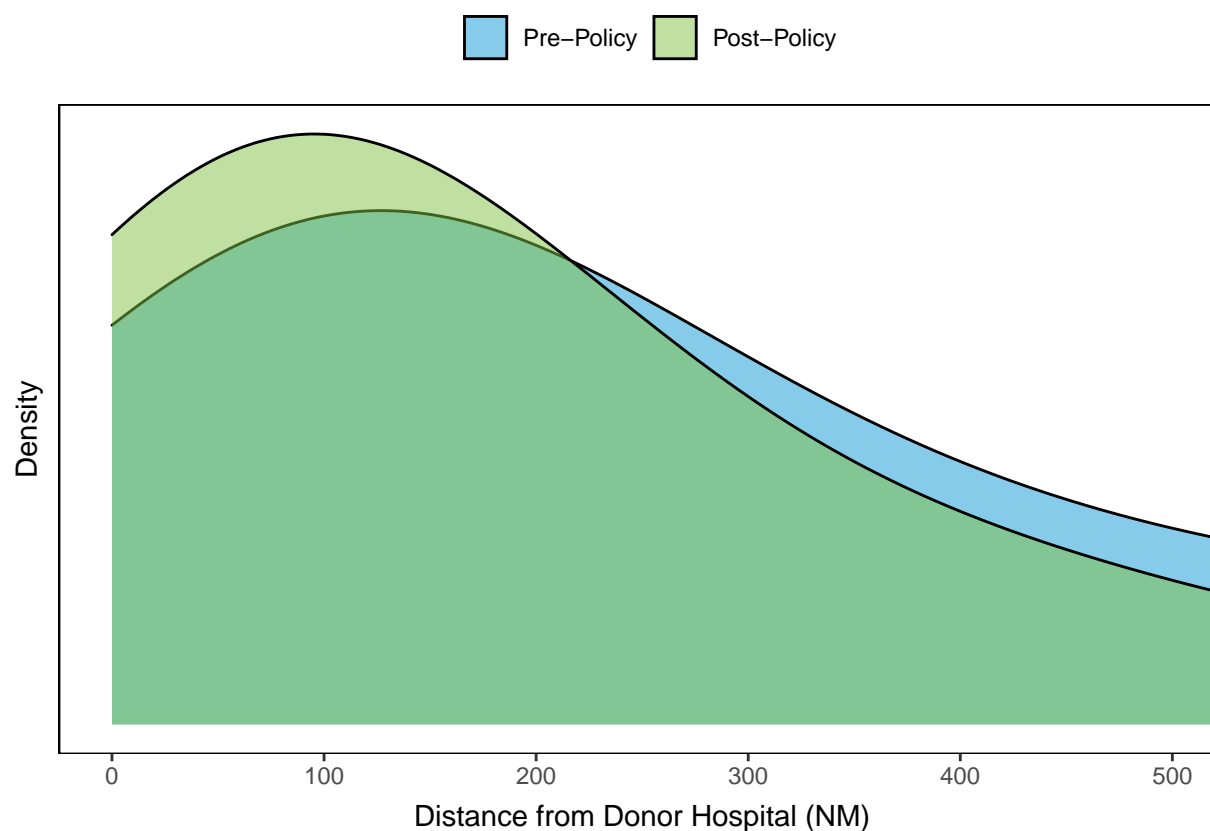


Table 70: Distribution of Distance from Donor Hospital for Deceased Donor Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era

Era	Total	Missing	Min	25th %-tile	Median	Mean	75th %-tile	Max
Pre-Policy	37	0	0	107.00	199.0	360.7838	525.00	1653
Post-Policy	50	0	0	64.75	146.5	330.7000	484.25	1397

Figure 71 and **Table 71** show deceased donor pancreas transplants from December 01, 2020 to June 30, 2021 by policy era and OPTN region. The majority of OPTN regions saw an increase in transplants.

Figure 71: Deceased Donor Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and Region

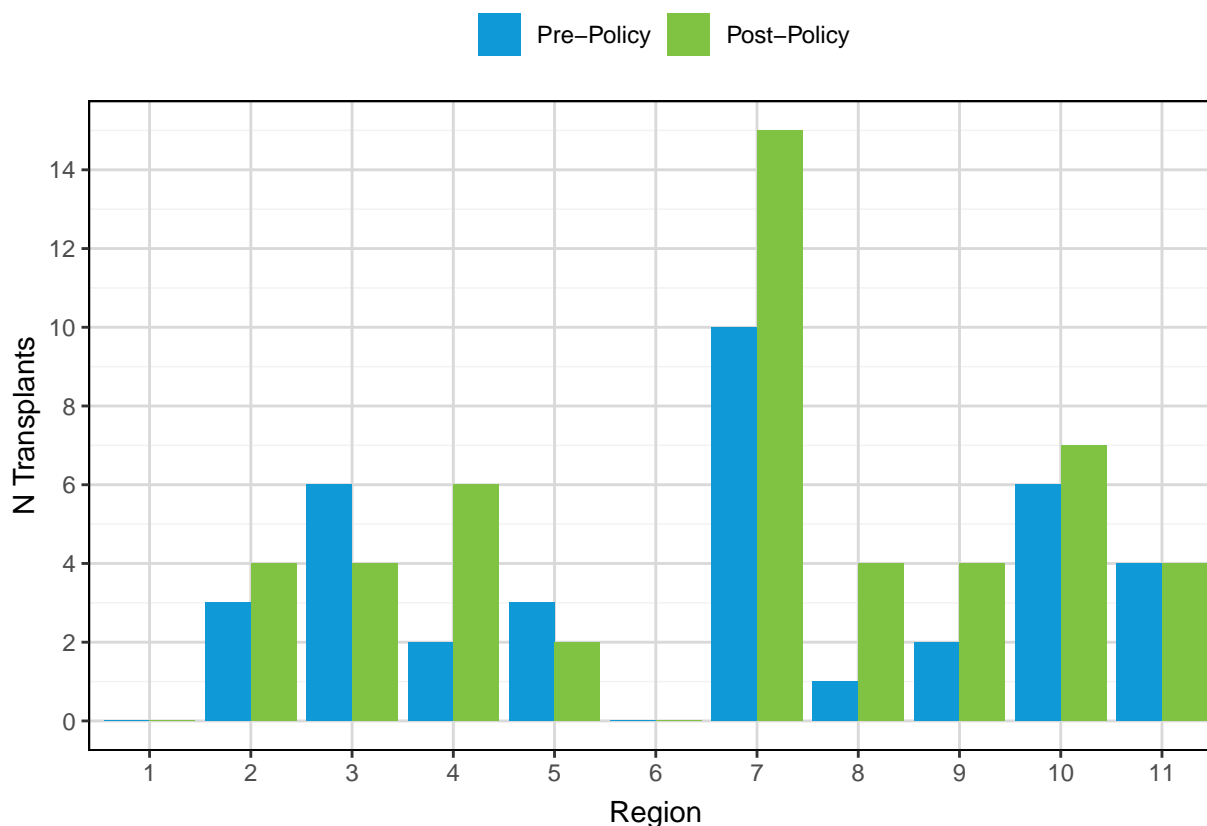


Table 71: Deceased Donor Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and Region

Region	Pre-Policy		Post-Policy	
	N	%	N	%
1	0	0.00	0	0.00
2	3	8.11	4	8.00
3	6	16.22	4	8.00
4	2	5.41	6	12.00
5	3	8.11	2	4.00
6	0	0.00	0	0.00
7	10	27.03	15	30.00
8	1	2.70	4	8.00
9	2	5.41	4	8.00
10	6	16.22	7	14.00
11	4	10.81	4	8.00
Total	37	100.00	50	100.00

Table 72 shows deceased donor pancreas transplants from December 01, 2020 to June 30, 2021 by policy era and DSA. Of 27 DSAs with at least one pancreas transplant during the cohort, the number of transplants increased in 16 DSAs after policy implementation, and decreased in 8 DSAs. Three DSAs saw no change in transplant volume.

Table 72: Deceased Donor Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and DSA

DSA	Pre-Policy	Post-Policy	% Change
AZOB	0	1	*
CADN	1	0	-100.00
CAOP	1	1	0.00
DCTC	2	1	-50.00
FLMP	4	3	-25.00
FLUF	2	1	-50.00
ILIP	1	4	300.00
INOP	3	4	33.33
MDPC	0	1	*
MNOP	4	4	0.00
MOMA	0	2	*
NCNC	1	1	0.00
NEOR	1	2	100.00
NJTO	0	1	*
NYRT	2	3	50.00
NYWN	0	1	*
OHLB	0	3	*
OHOV	3	0	-100.00
PADV	0	1	*
PATF	1	0	-100.00
SCOP	3	1	-66.67
TNMS	0	2	*
TXGC	0	1	*
TXSA	0	1	*
TXSB	2	4	100.00
UTOP	1	0	-100.00
WIUW	5	7	40.00
Total	37	50	35.14

Table 73 shows deceased donor pancreas transplants from December 01, 2020 to June 30, 2021 by policy era and transplant center. Of 36 centers with at least one pancreas transplant during the cohort, the number of transplants increased at 21 centers after policy implementation, and decreased in 14 centers. One center saw no change in transplant volume.

Table 73: Deceased Donor Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and Transplant Center

Center	Pre-Policy	Post-Policy	% Change
AZUA-TX1	0	1	*
CACS-TX1	0	1	*
CASU-TX1	1	0	-100.00
CAUC-TX1	1	0	-100.00
DCGU-TX1	2	1	-50.00
FLJM-TX1	4	3	-25.00
FLSL-TX1	2	1	-50.00
ILNM-TX1	0	3	*
ILPL-TX1	0	1	*
ILUC-TX1	1	0	-100.00
INIM-TX1	3	4	33.33
MDUM-TX1	0	1	*
MNMC-TX1	2	3	50.00
MNUM-TX1	2	1	-50.00
MOBH-TX1	0	2	*
NCBG-TX1	1	1	0.00
NEUN-TX1	1	2	100.00
NJSB-TX1	0	1	*
NYCP-TX1	1	2	100.00
NYEC-TX1	0	1	*
NYMS-TX1	1	0	-100.00
NYNY-TX1	0	1	*
OHCC-TX1	0	3	*
OHCM-TX1	2	0	-100.00
OHUC-TX1	1	0	-100.00
PACH-TX1	1	0	-100.00
PAUP-TX1	0	1	*
SCMU-TX1	3	1	-66.67
TNMH-TX1	0	2	*
TXHD-TX1	0	1	*
TXHS-TX1	0	1	*
TXMH-TX1	0	1	*
TXSW-TX1	1	3	200.00
TXTX-TX1	1	0	-100.00
UTMC-TX1	1	0	-100.00
WIUW-TX1	5	7	40.00
Total	37	50	35.14

Table 74 shows deceased donor pancreas transplants from December 01, 2020 to June 30, 2021 by policy era and state. Of 20 states with at least one pancreas transplant during the cohort, the number of transplants increased in 11 states after policy implementation, and decreased in 5 states. Four states saw no change in transplant volume.

Table 74: Deceased Donor Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era and State

State	Pre-Policy	Post-Policy	% Change
Arizona	0	1	*
California	2	1	-50.00
Dist. Of Columbia	2	1	-50.00
Florida	6	4	-33.33
Illinois	1	4	300.00
Indiana	3	4	33.33
Maryland	0	1	*
Minnesota	4	4	0.00
Missouri	0	2	*
Nebraska	1	2	100.00
New Jersey	0	1	*
New York	2	4	100.00
North Carolina	1	1	0.00
Ohio	3	3	0.00
Pennsylvania	1	1	0.00
South Carolina	3	1	-66.67
Tennessee	0	2	*
Texas	2	6	200.00
Utah	1	0	-100.00
Wisconsin	5	7	40.00
Total	37	50	35.14

Figure 72 and **Table 75** show the distribution of preservation time (time between procurement cross-clamp to recipient organ reperfusion) in hours for deceased donor pancreas transplants from December 01, 2020 to June 30, 2021 by policy era. Median preservation time increased from 7.45 to 7.87 hours after policy implementation.

Figure 72: Distribution of Preservation Time for Deceased Donor Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era

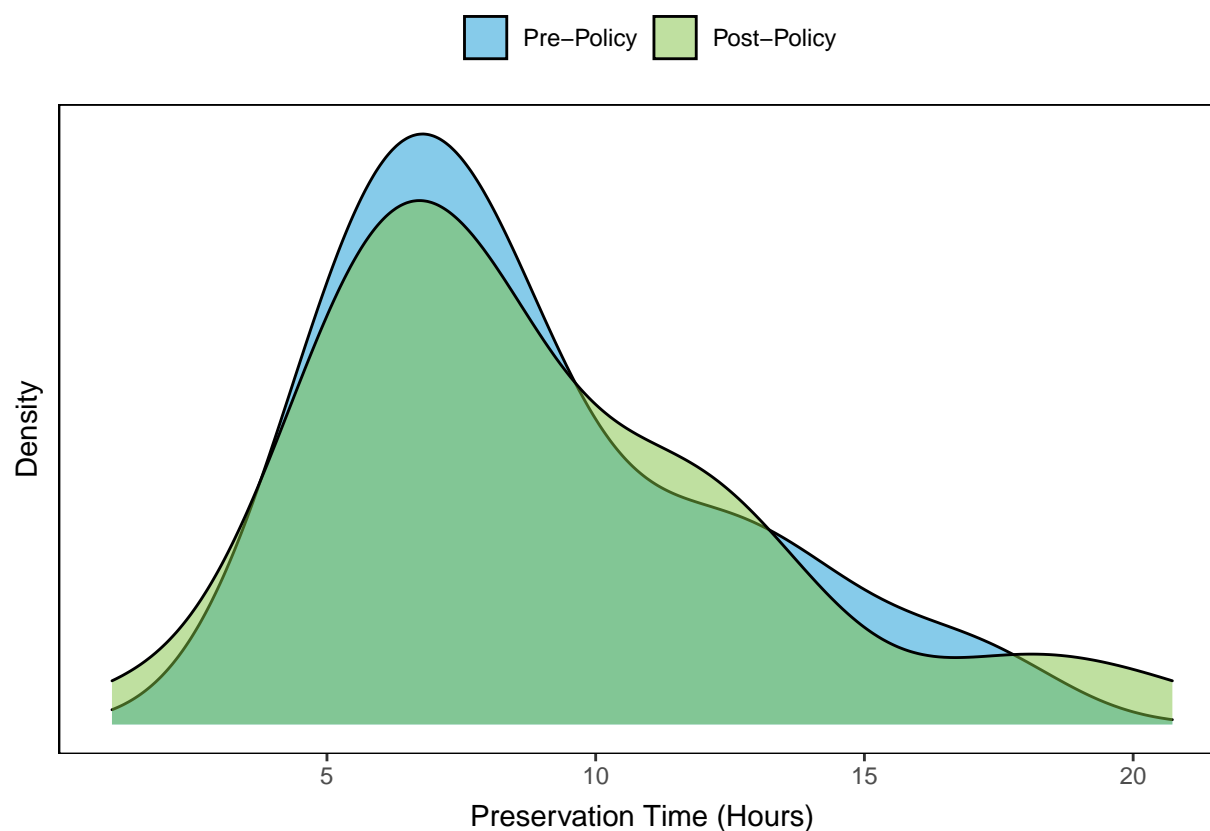


Table 75: Distribution of Preservation Time for Deceased Donor Pancreas Transplants from December 01, 2020-June 30, 2021 by Policy Era

Era	Total	Missing	Min	25th %-tile	Median	Mean	75th %-tile	Max
Pre-Policy	37	2	3.9	6.02	7.45	8.69	10.89	17.23
Post-Policy	50	1	1.0	5.85	7.87	8.88	11.30	20.73

Utilization and Efficiency of Allocation

Figure 73 and **Table 76** show total pancreas donors recovered from December 01, 2020 to June 30, 2021 by policy era. There were 365 pancreas donors recovered in the pre-policy era, and 434 recovered in the post-policy era.

Figure 73: Pancreas Donors Recovered December 01, 2020-June 30, 2021 by Policy Era

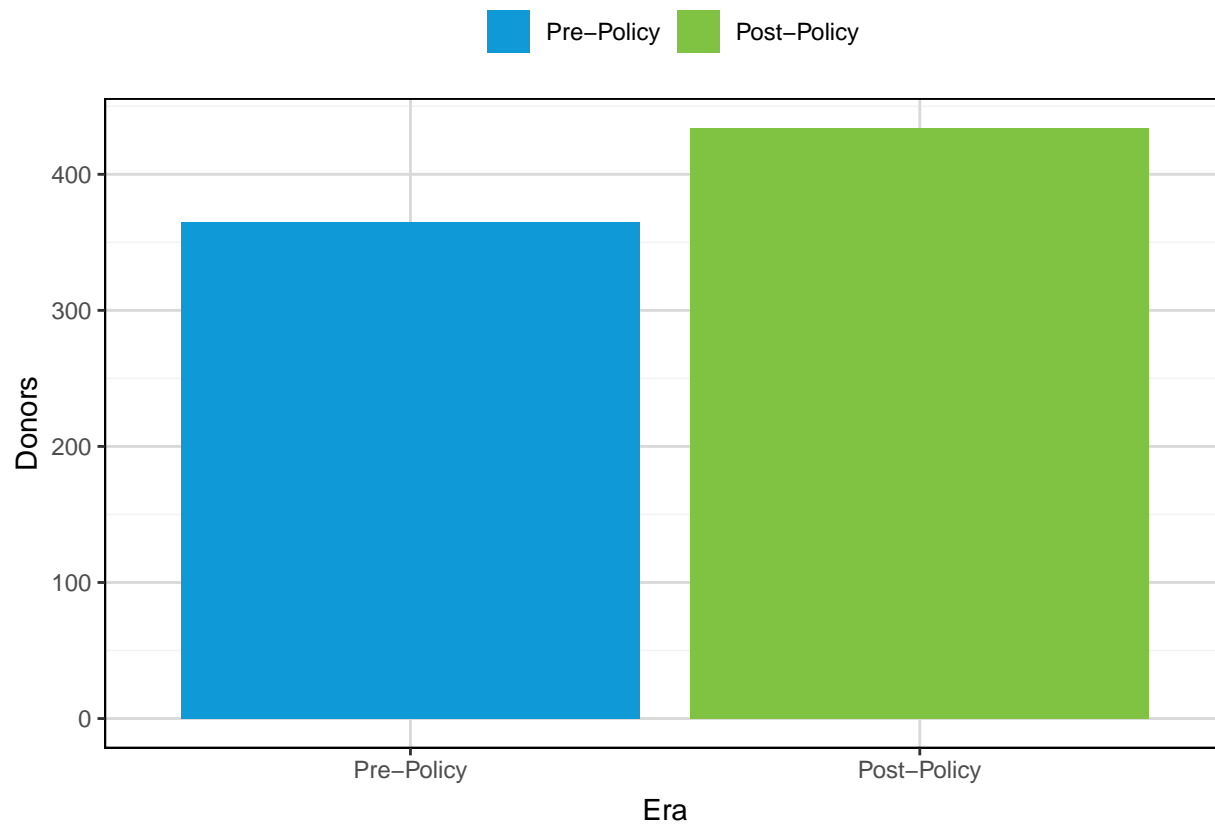
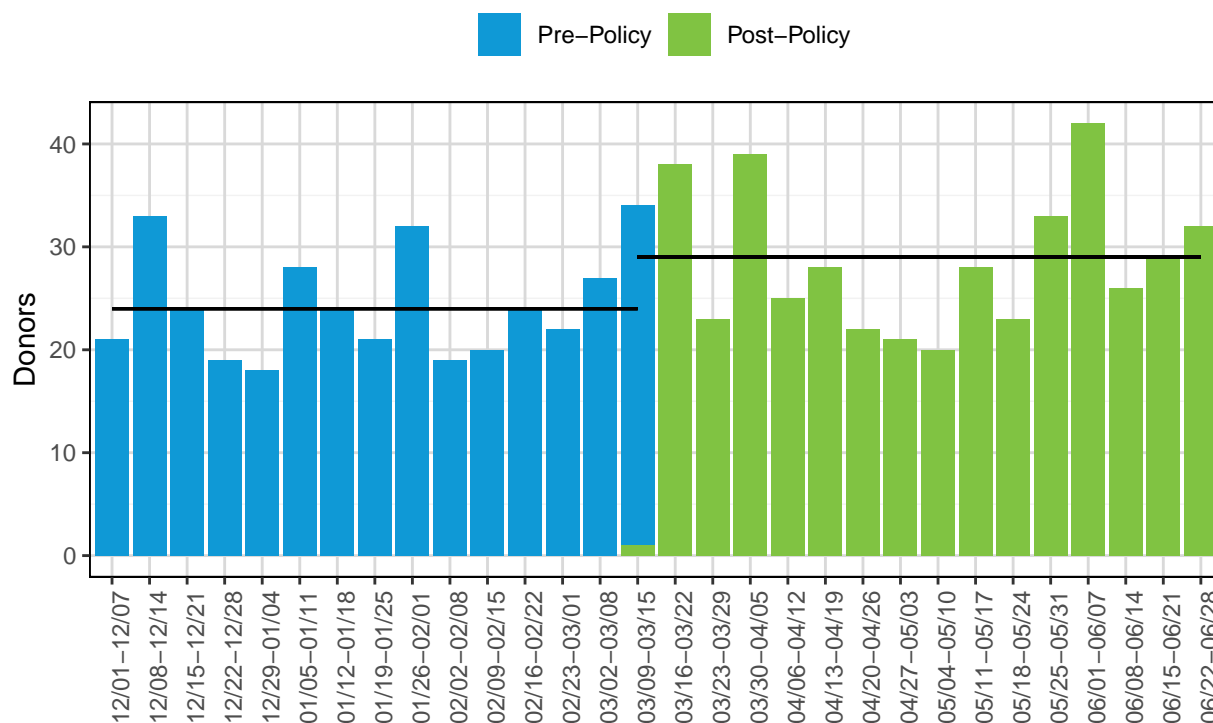


Table 76: Pancreas Donors Recovered December 01, 2020-June 30, 2021 by Policy Era

Era	Donors
Pre-Policy	365
Post-Policy	434

Figure 74 and **Table 77** show weekly deceased pancreas donors recovered from December 01, 2020 to June 30, 2021. The average number of pancreas donors recovered per week was 24 pre-policy and 29 post-policy.

Figure 74: Weekly Deceased Pancreas Donors Recovered December 01, 2020-June 30, 2021 by Policy Era



Lines represent the average number of donors recovered per week.
Some weeks shown in the figure include federal holidays.

Table 77: Weekly Deceased Pancreas Donors Recovered December 01, 2020-June 30, 2021

Weeks	Donors Recovered
12/01-12/07	21
12/08-12/14	33
12/15-12/21	24
12/22-12/28	19
12/29-01/04	18
01/05-01/11	28
01/12-01/18	24
01/19-01/25	21
01/26-02/01	32
02/02-02/08	19
02/09-02/15	20
02/16-02/22	24
02/23-03/01	22
03/02-03/08	27
03/09-03/15	34
03/16-03/22	38
03/23-03/29	23
03/30-04/05	39
04/06-04/12	25
04/13-04/19	28
04/20-04/26	22
04/27-05/03	21
05/04-05/10	20
05/11-05/17	28
05/18-05/24	23
05/25-05/31	33
06/01-06/07	42
06/08-06/14	26
06/15-06/21	29
06/22-06/28	32

Figure 75 and **Table 78** show deceased pancreas donors recovered from December 01, 2020 to June 30, 2021 by policy era and donor DCD status. The proportion of DCD pancreas donors recovered increased slightly post-policy from 4.11% to 5.30%.

Figure 75: Deceased Pancreas Donors Recovered December 01, 2020-June 30, 2021 by DCD Status and Policy Era

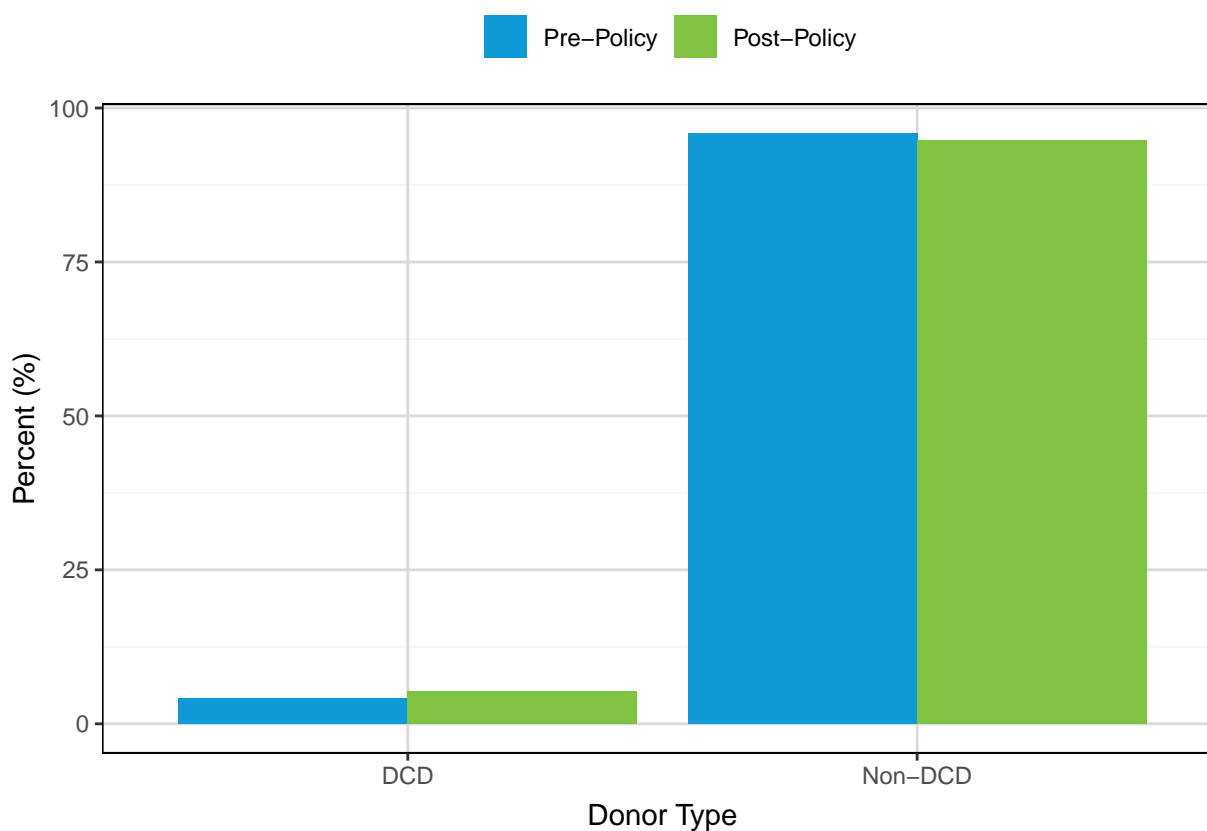


Table 78: Deceased Pancreas Donors Recovered December 01, 2020-June 30, 2021 by DCD Status and Policy Era

Donor Type	Pre-Policy		Post-Policy	
	N	%	N	%
DCD	15	4.11	23	5.30
Non-DCD	350	95.89	411	94.70
Total	365	100.00	434	100.00

Figure 76 and **Table 79** show deceased pancreas donors recovered from December 01, 2020 to June 30, 2021 by age and policy era. The proportion of deceased pancreas donors aged <18 years increased post-policy from 16.44% to 20.05%. The proportion of donors aged 18-34 years decreased post-policy from 67.95% to 63.13%.

Figure 76: Deceased Pancreas Donors Recovered December 01, 2020-June 30, 2021 by Age and Policy Era

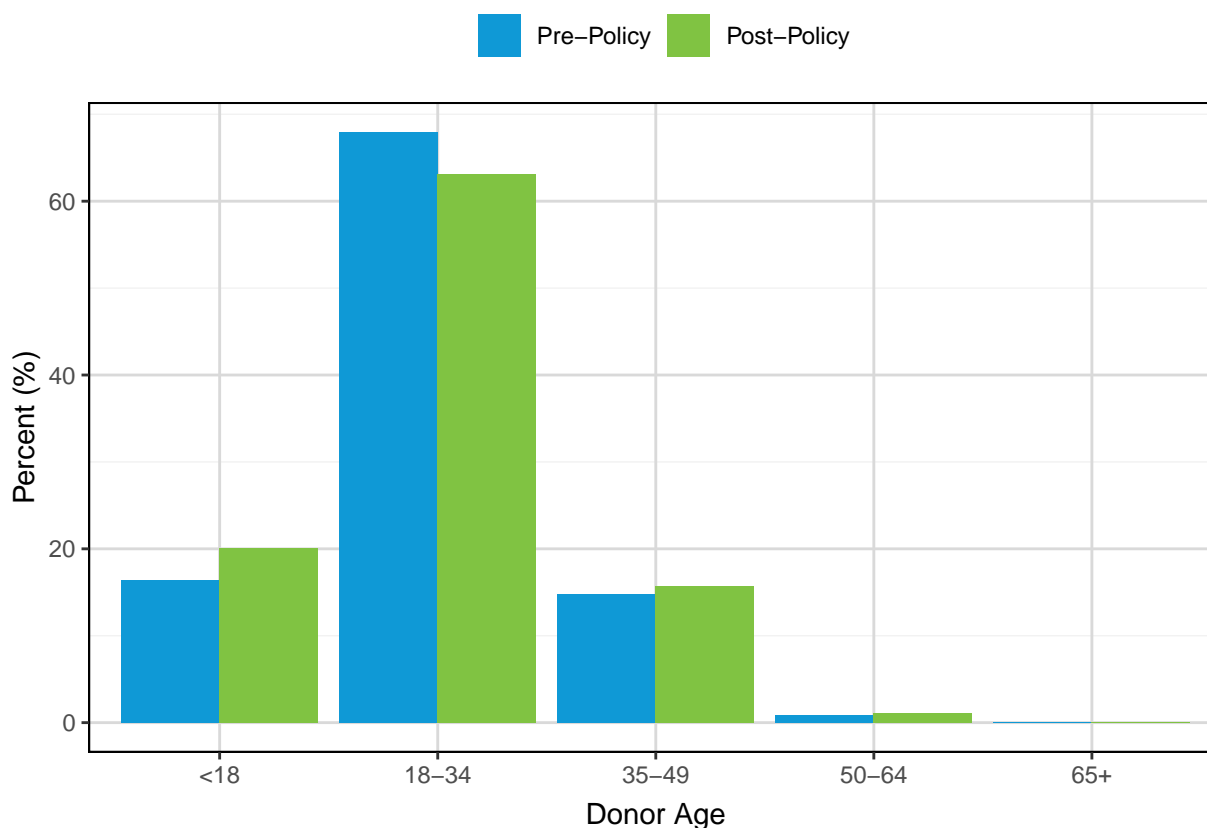


Table 79: Deceased Pancreas Donors Recovered December 01, 2020-June 30, 2021 by Age and Policy Era

Donor Age	Pre-Policy		Post-Policy	
	N	%	N	%
<18	60	16.44	87	20.05
18-34	248	67.95	274	63.13
35-49	54	14.79	68	15.67
50-64	3	0.82	5	1.15
65+	0	0.00	0	0.00
Total	365	100.00	434	100.00

Figure 77 and **Table 80** show discard rates for deceased donor pancreata recovered from December 01, 2020 to June 30, 2021 by policy era. The overall pancreas discard rate decreased post-policy from 26.58% to 23.27%.

Figure 77: Discard Rates for Deceased Donor Pancreas Recovered December 01, 2020 - June 30, 2021 by Policy Era

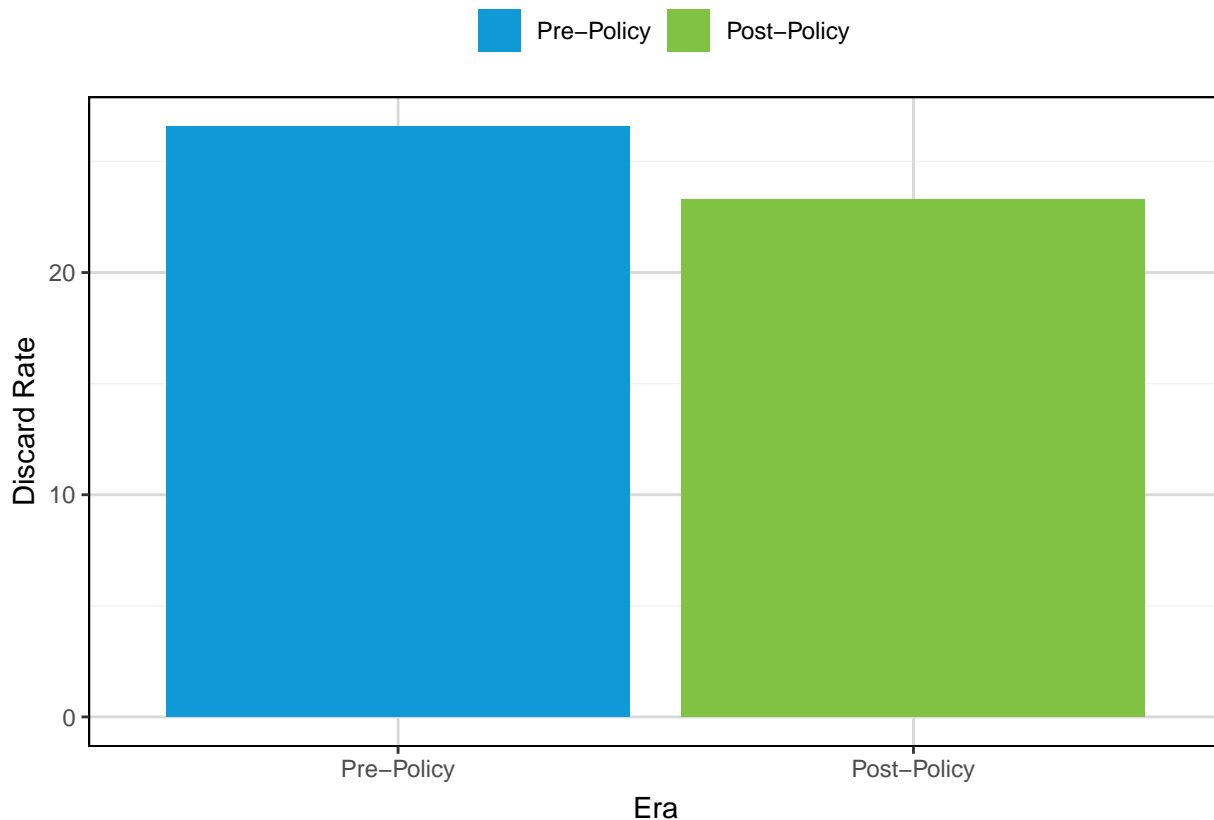


Table 80: Discard Rates for Deceased Donor Pancreas Recovered December 01, 2020 - June 30, 2021 by Policy Era

Era	Pancreata Recovered	Pancreata Not TXed	Discard Rate
Pre-Policy	365	97	26.58
Post-Policy	434	101	23.27

Table 81 shows deceased donor pancreata recovered but not transplanted from December 01, 2020 to June 30, 2021 by discard reason and policy era. A total of 97 pancreata were discarded pre-policy, and 101 were discarded post-policy. The most common reason for pancreas discard in both policy eras was “Other” followed by “Anatomical abnormalities”. The proportion of discards for “Other” reasons decreased post-policy from 40.21% to 35.64%. The proportion of discards due to “Anatomical abnormalities” increased from 20.62% to 22.77%.

Table 81: Deceased Donor Pancreas Recovered but Not Transplanted December 01, 2020-June 30, 2021 by Discard Reason and Policy Era

Discard Reason	Pre-Policy		Post-Policy	
	N	%	N	%
Other, specify	39	40.21	36	35.64
Anatomical abnormalities	20	20.62	23	22.77
No recipient located - list exhausted	16	16.49	15	14.85
Diseased organ	6	6.19	7	6.93
Poor organ function	4	4.12	4	3.96
Vascular damage	4	4.12	4	3.96
Organ trauma	2	2.06	3	2.97
Recipient determined to be unsuitable for TX in OR	3	3.09	2	1.98
Organ not as described	2	2.06	2	1.98
Too old on ice	1	1.03	2	1.98
Warm ischemic time too long	0	0.00	2	1.98
Donor Medical history	0	0.00	1	0.99
Total	97	100.00	101	100.00

Figure 78 and **Table 82** show offers per active patient year for kidney-pancreas match runs from December 01, 2020 to June 30, 2021 by policy era. The overall offer rate increased after policy implementation from 17 to 21 offers per active patient year.

Figure 78: Offers per Active Patient Year for Kidney-Pancreas Match Runs December 01, 2020 - June 30, 2021 by Policy Era

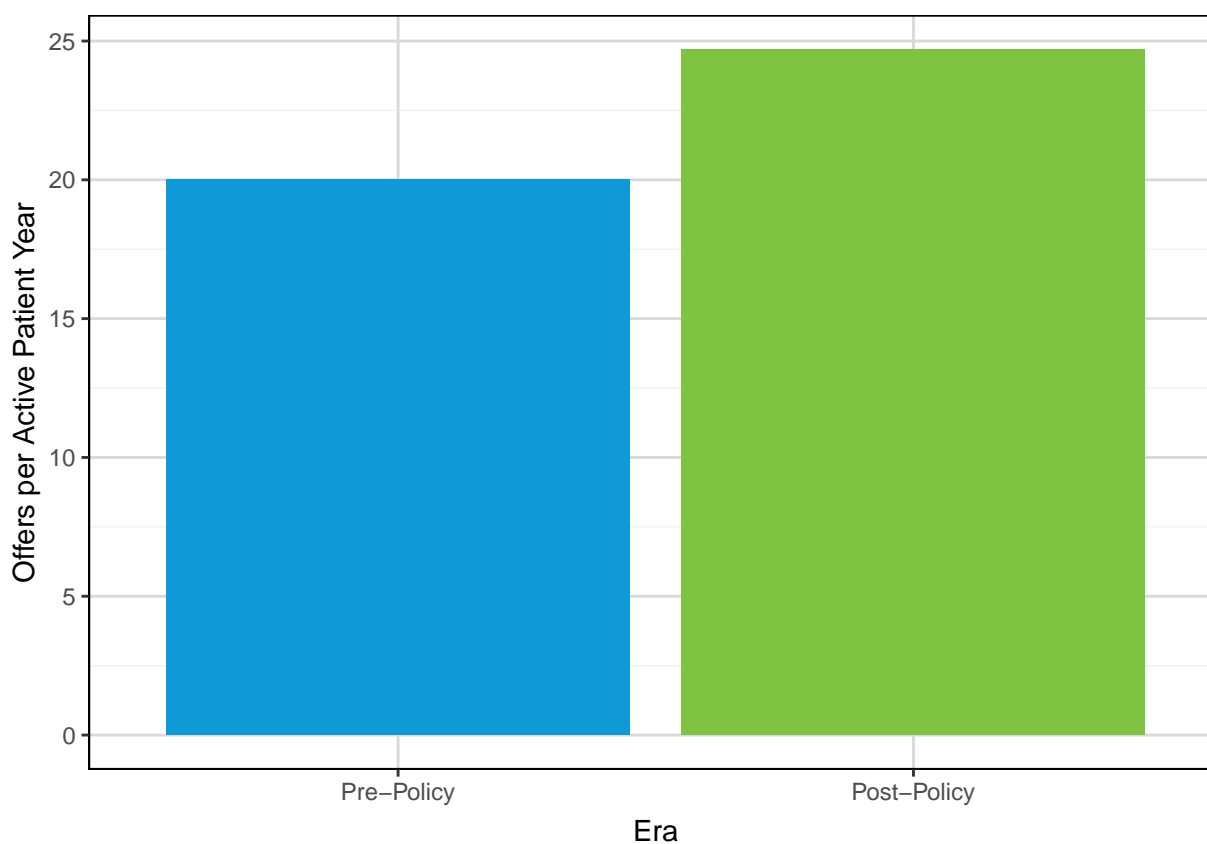


Table 82: Offer and Acceptance Rates for Kidney-Pancreas Match Runs December 01, 2020 - June 30, 2021 by Policy Era

Era	Active Patient Years	Offers	Acceptances	Offers per Active Patient Year	Acceptances per 1000 Offers
Pre-Policy	279.22	5591	281	20.02	50.26
Post-Policy	300.81	7428	333	24.69	44.83

Figure 79 shows acceptances per 1000 offers for kidney-pancreas match runs from December 01, 2020 to June 30, 2021 by policy era. The overall acceptance rate decreased from 52 to 48 acceptances per 1000 offers after policy implementation.

Figure 79: Acceptances per 1000 Offers for Kidney-Pancreas Match Runs December 01, 2020 - June 30, 2021 by Policy Era

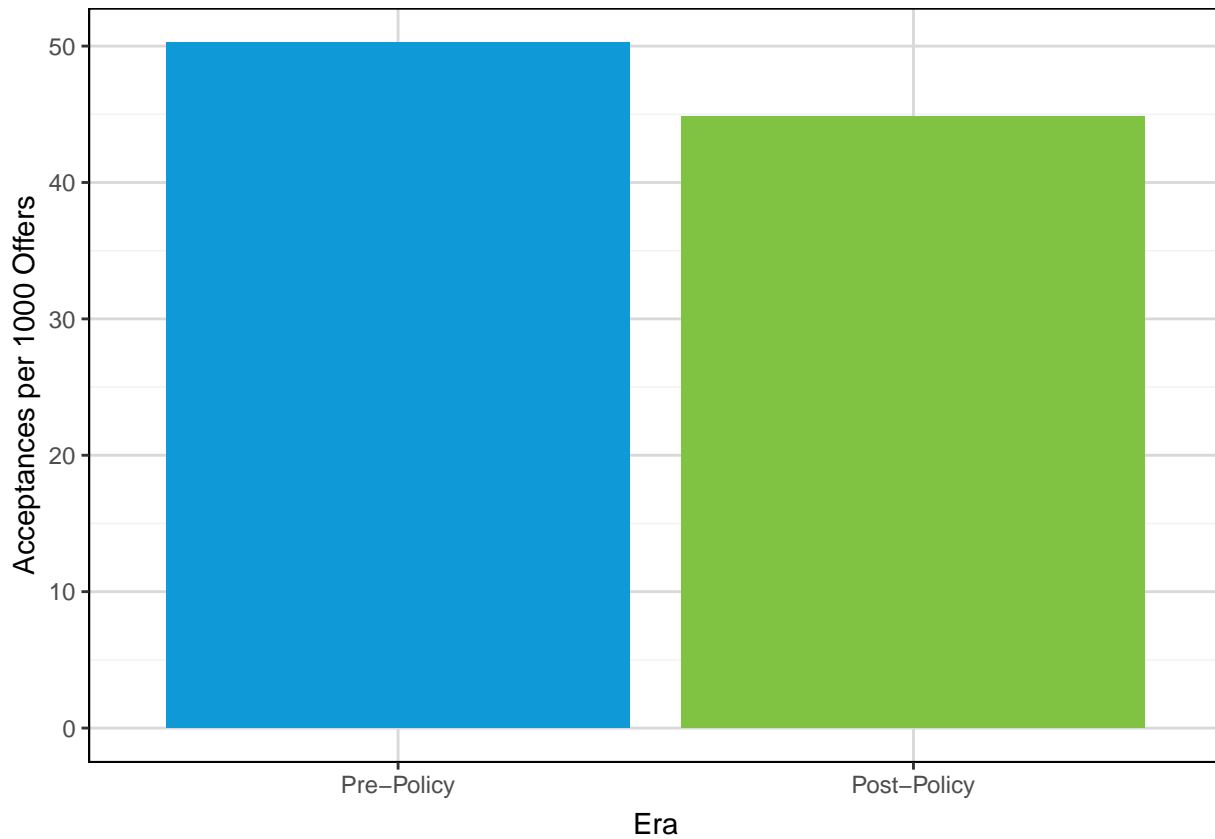


Figure 80 and **Table 83** show offers per active patient year for kidney-pancreas match runs from December 01, 2020 to June 30, 2021 by policy era and age at listing. Offer rates increased for all age groups after policy implementation. Offer rates increased with age at listing, with candidates aged 65 years or older seeing the highest offer rates both pre- and post-policy (27 and 35 offers per active patient year).

Figure 80: Offers per Active Patient Year for Kidney-Pancreas Match Runs December 01, 2020 - June 30, 2021 by Policy Era and Age at Listing

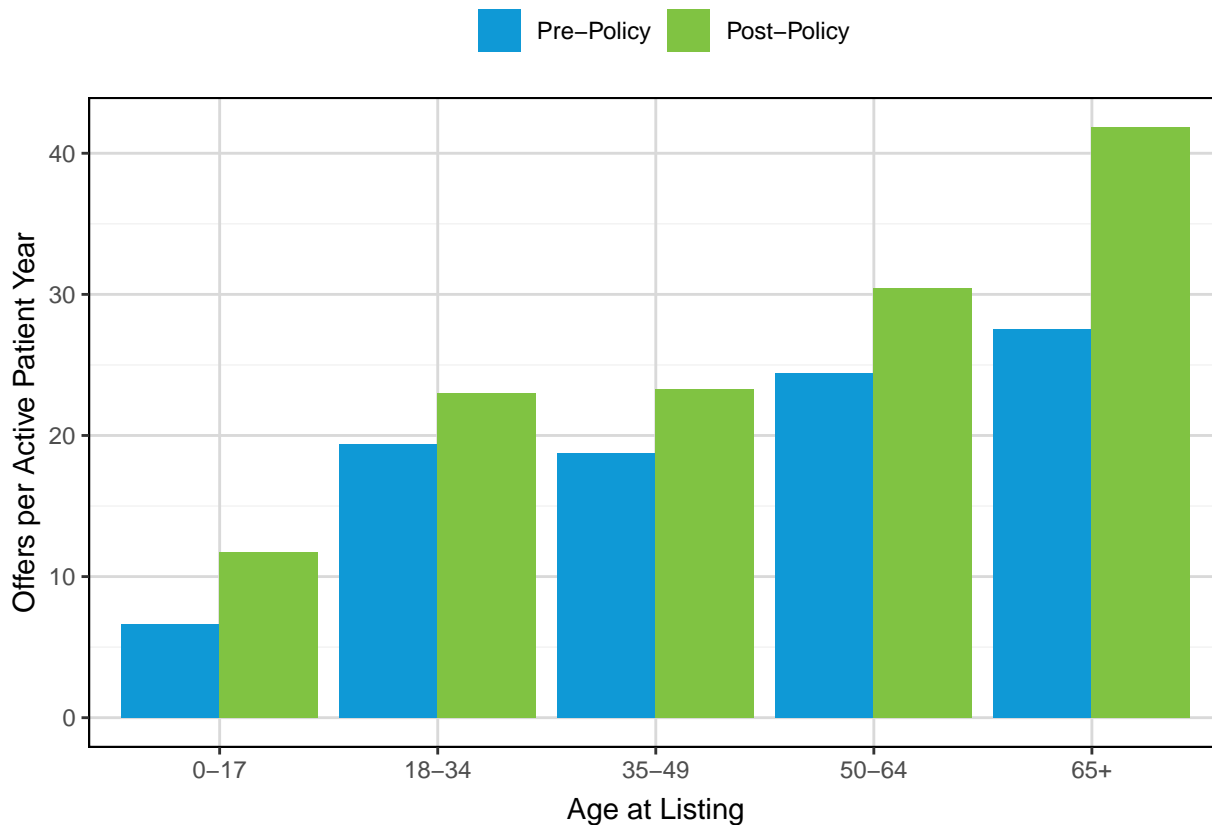


Table 83: Offer and Acceptance Rates for Kidney-Pancreas Match Runs December 01, 2020 - June 30, 2021 by Policy Era and Age at Listing

Era	Age	Active Patient Years	Offers	Acceptances	Offers per Active Patient Year	Acceptances per 1000 Offers
Pre-Policy	0-17	10.85	72	1	6.63	13.89
	18-34	70.08	1357	79	19.36	58.22
	35-49	145.38	2729	124	18.77	45.44
	50-64	57.28	1398	70	24.41	50.07
	65+	0.98	27	2	27.53	74.07
Post-Policy	0-17	12.19	143	0	11.73	0.00
	18-34	76.59	1764	72	23.03	40.82
	35-49	153.21	3569	163	23.30	45.67
	50-64	62.07	1889	93	30.43	49.23
	65+	1.29	54	2	41.85	37.04

Figure 81 shows acceptances per 1000 offers for kidney-pancreas match runs from December 01, 2020 to June 30, 2021 by policy era and age at listing. Acceptance rates decreased after policy implementation for the 18-34 and 65+ age groups. There was little change in the acceptance rates after implementation for candidates aged 35-49 and 50-64.

Figure 81: Acceptances per 1000 Offers for Kidney-Pancreas Match Runs December 01, 2020 - June 30, 2021 by Policy Era and Age at Listing

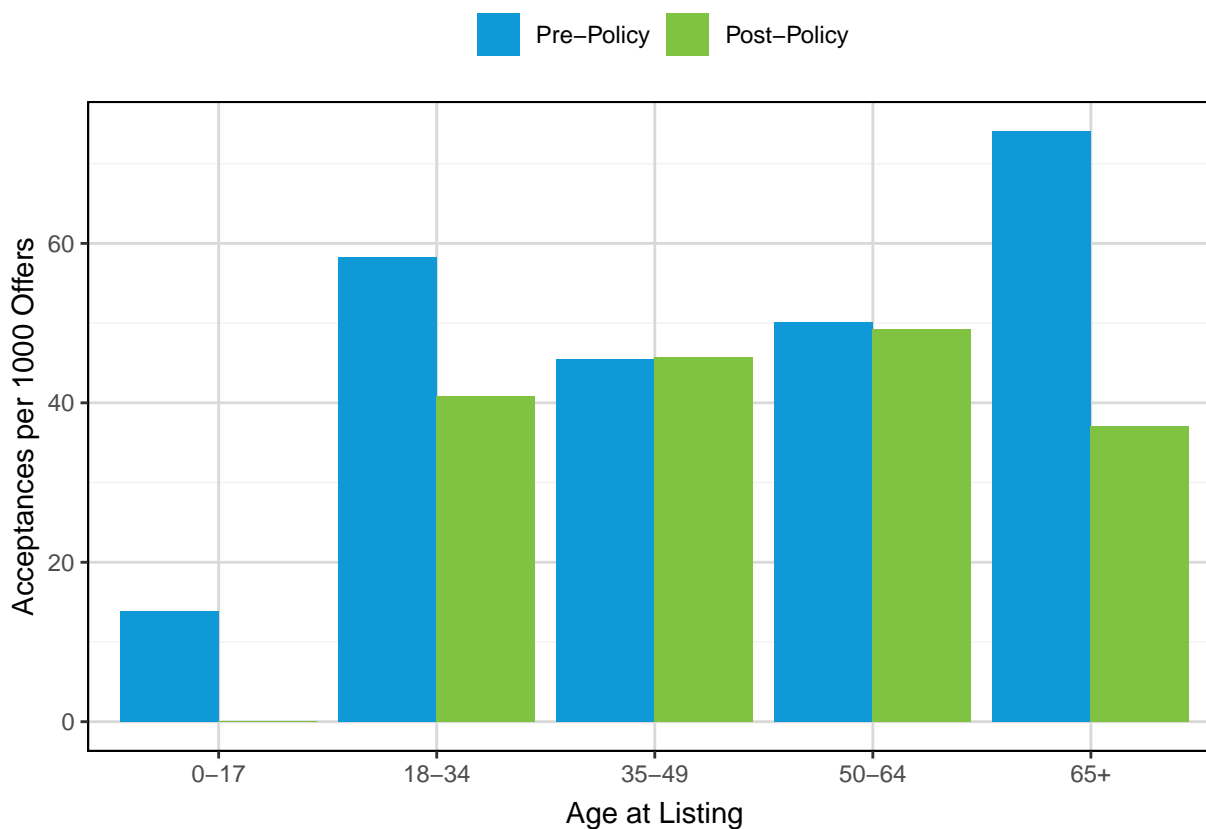


Figure 82 and **Table 84** show offers per active patient year for kidney-pancreas matches from December 01, 2020 to June 30, 2021 by policy era and race/ethnicity. Offer rates increased for candidates of all race/ethnicities after policy implementation.

Figure 82: Offers per Active Patient Year for Kidney-Pancreas Match Runs December 01, 2020 - June 30, 2021 by Policy Era and Ethnicity

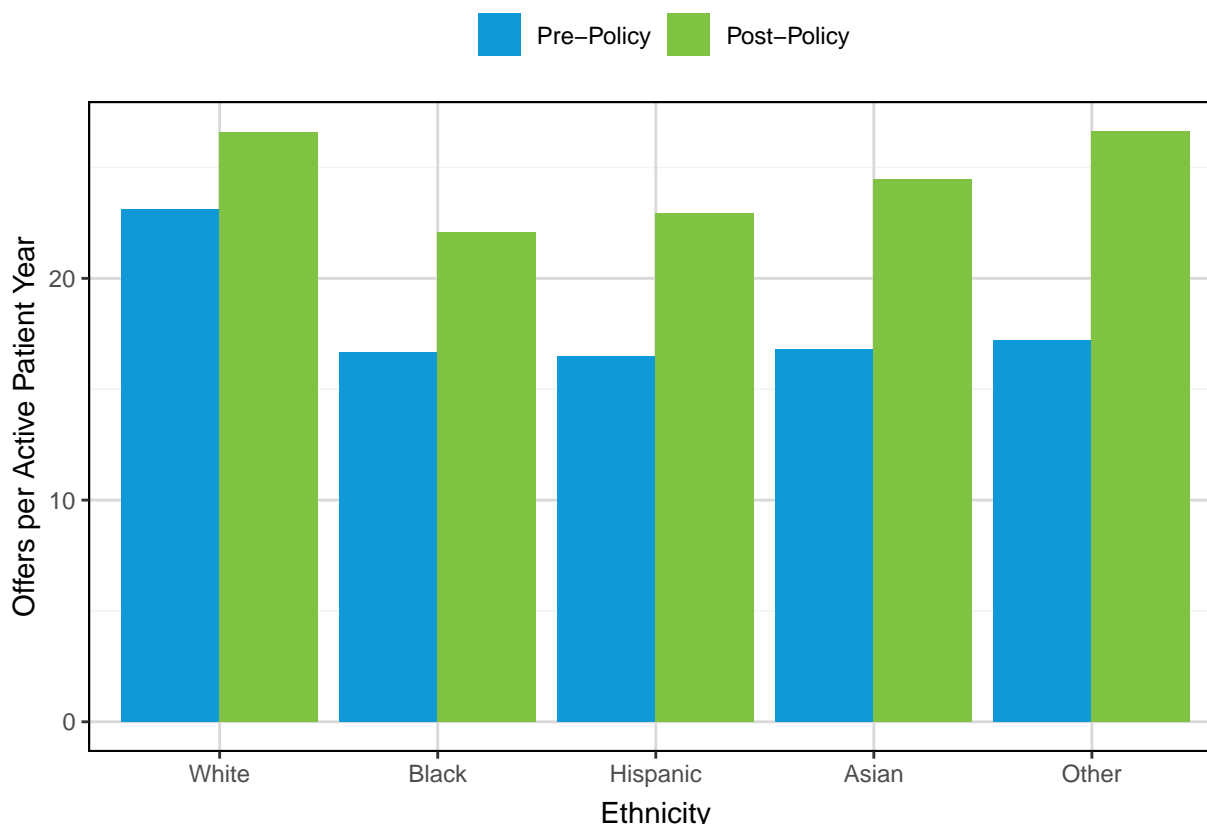


Table 84: Offer and Acceptance Rates for Kidney-Pancreas Match Runs December 01, 2020 - June 30, 2021 by Policy Era and Ethnicity

Era	Ethnicity	Active Patient Years	Offers	Acceptances	Offers per Active Patient Year	Acceptances per 1000 Offers
Pre-Policy	White	144.45	3336	144	23.09	43.17
	Black	81.42	1356	84	16.65	61.95
	Hispanic	36.52	602	39	16.49	64.78
	Asian	11.83	199	9	16.82	45.23
	Other	5.70	98	5	17.20	51.02
Post-Policy	White	152.53	4053	159	26.57	39.23
	Black	88.85	1962	94	22.08	47.91
	Hispanic	40.43	928	55	22.95	59.27
	Asian	12.76	312	20	24.45	64.10
	Other	6.50	173	5	26.63	28.90

Figure 83 shows acceptances per 1000 offers for kidney-pancreas match runs from December 01, 2020 to June 30, 2021 by policy era and ethnicity. Acceptance rates decreased after implementation for Black, Hispanic, and Other race/ethnicities. Acceptance rates increased for Asian candidates after implementation. There was little change in acceptance rates for White candidates after implementation.

Figure 83: Acceptances per 1000 Offers for Kidney-Pancreas Match Runs December 01, 2020 - June 30, 2021 by Policy Era and Ethnicity

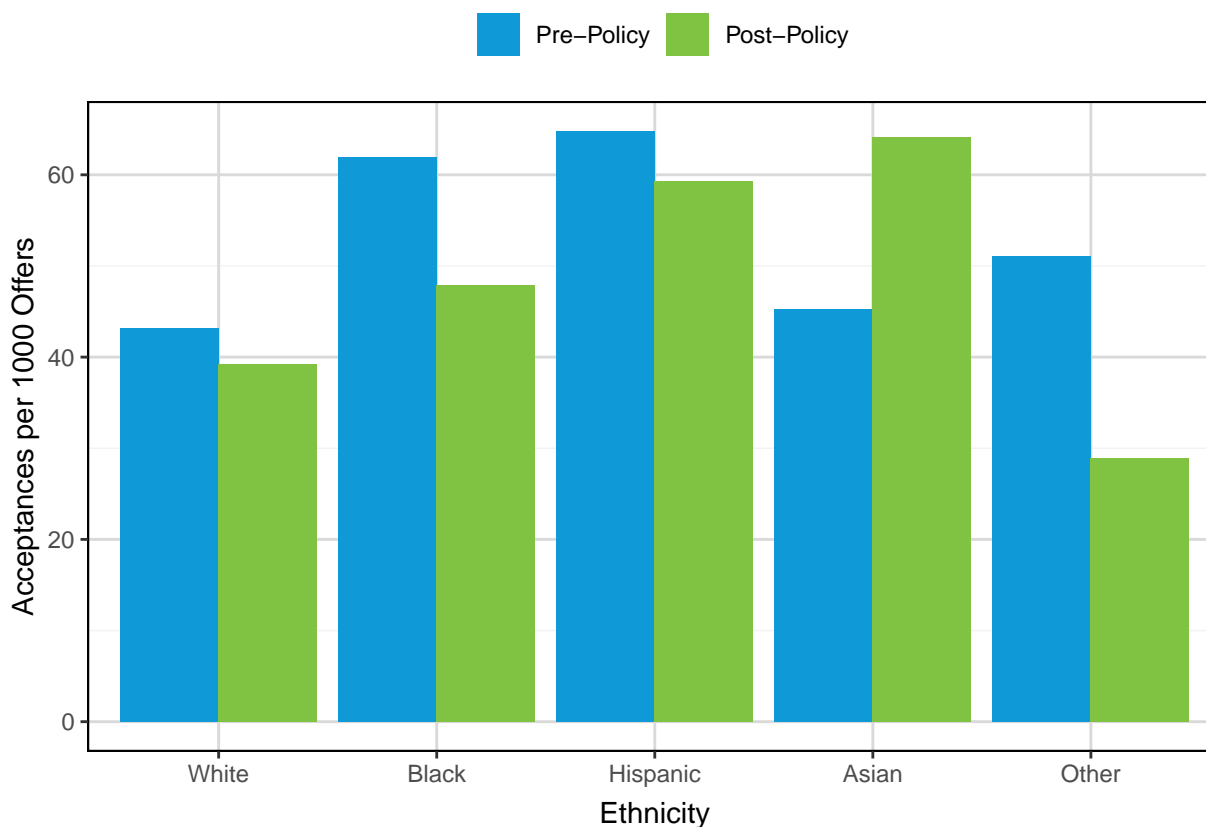


Figure 84 and **Table 85** show offers per active patient year for kidney-pancreas matches from December 01, 2020 to June 30, 2021 by policy era and blood type. Offer rates increased for all blood types after policy implementation. The largest increase was among type AB candidates, increasing from 22 to 31 offers per active patient year.

Figure 84: Offers per Active Patient Year for Kidney-Pancreas Match Runs December 01, 2020 - June 30, 2021 by Policy Era and Blood Type

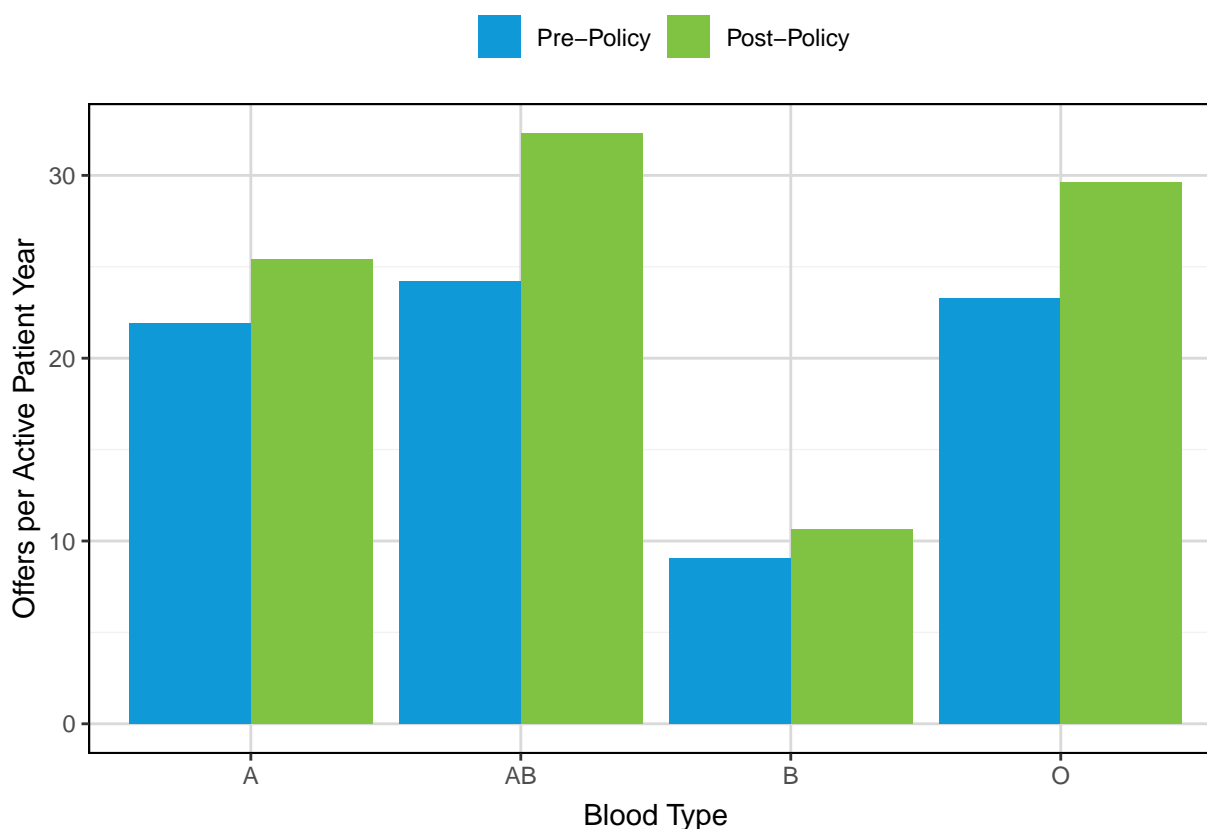


Table 85: Offer and Acceptance Rates for Kidney-Pancreas Match Runs December 01, 2020 - June 30, 2021 by Policy Era and Blood Type

Era	Blood Type	Active Patient Years	Offers	Acceptances	Offers per Active Patient Year	Acceptances per 1000 Offers
Pre-Policy	A	79.16	1734	107	21.90	61.71
	AB	6.24	151	6	24.18	39.74
	B	56.72	515	34	9.08	66.02
	O	137.09	3191	134	23.28	41.99
Post-Policy	A	84.25	2139	109	25.39	50.96
	AB	8.05	260	9	32.30	34.62
	B	60.62	645	40	10.64	62.02
	O	147.89	4384	175	29.64	39.92

Figure 85 shows acceptances per 1000 offers for kidney-pancreas match runs from December 01, 2020 to June 30, 2021 by policy era and blood type. Acceptance rates decreased for type A candidates after policy implementation. There was little change in acceptance rates for type AB, B, or O candidates after implementation.

Figure 85: Acceptances per 1000 Offers for Kidney-Pancreas Match Runs December 01, 2020 - June 30, 2021 by Policy Era and Blood Type

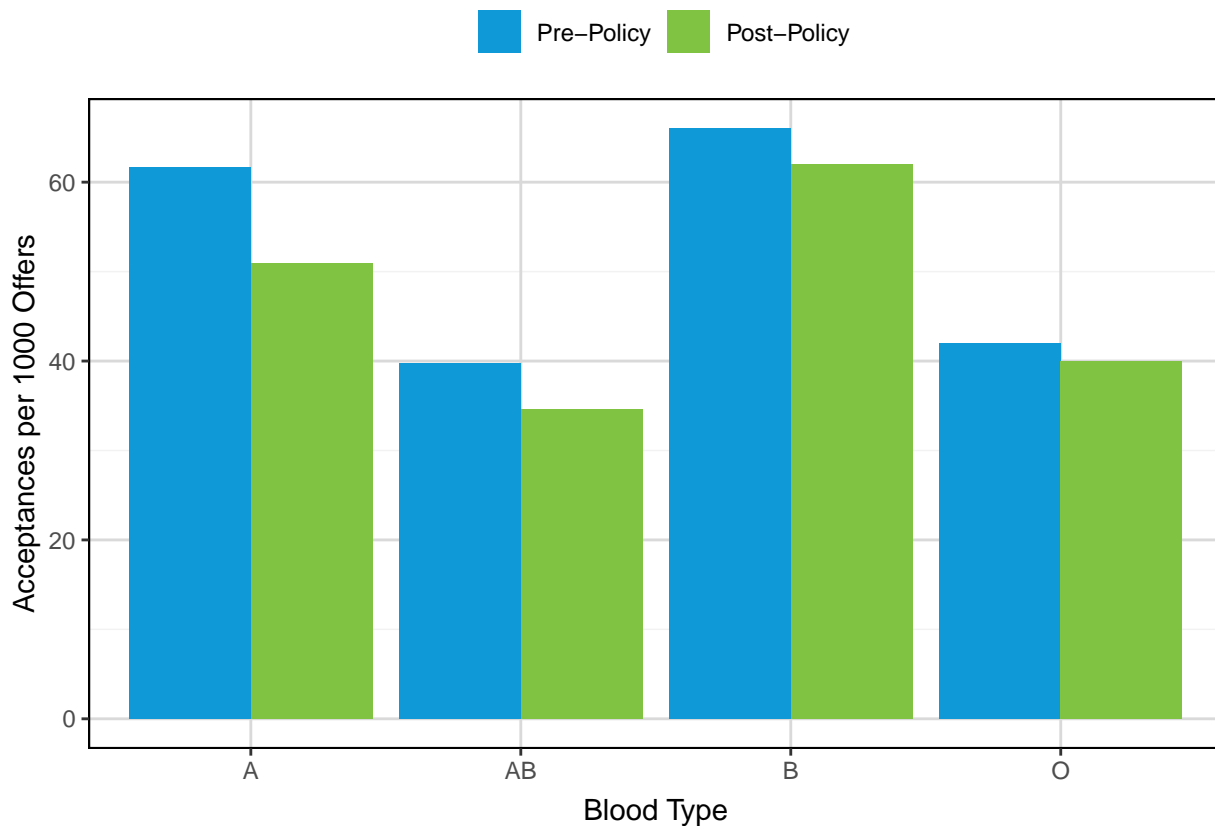


Figure 86 and **Table 86** show offers per active patient year for kidney-pancreas match runs from December 01, 2020 to June 30, 2021 by policy era and CPRA at listing. There was little change in the offer rate for candidates with CPRA 98-100% after implementation (1.20 vs 0.89 offers per active patient year). Offer rates increased for all other CPRA groups after implementation.

Figure 86: Offers per Active Patient Year for Kidney-Pancreas Match Runs December 01, 2020 - June 30, 2021 by Policy Era and CPRA at Listing

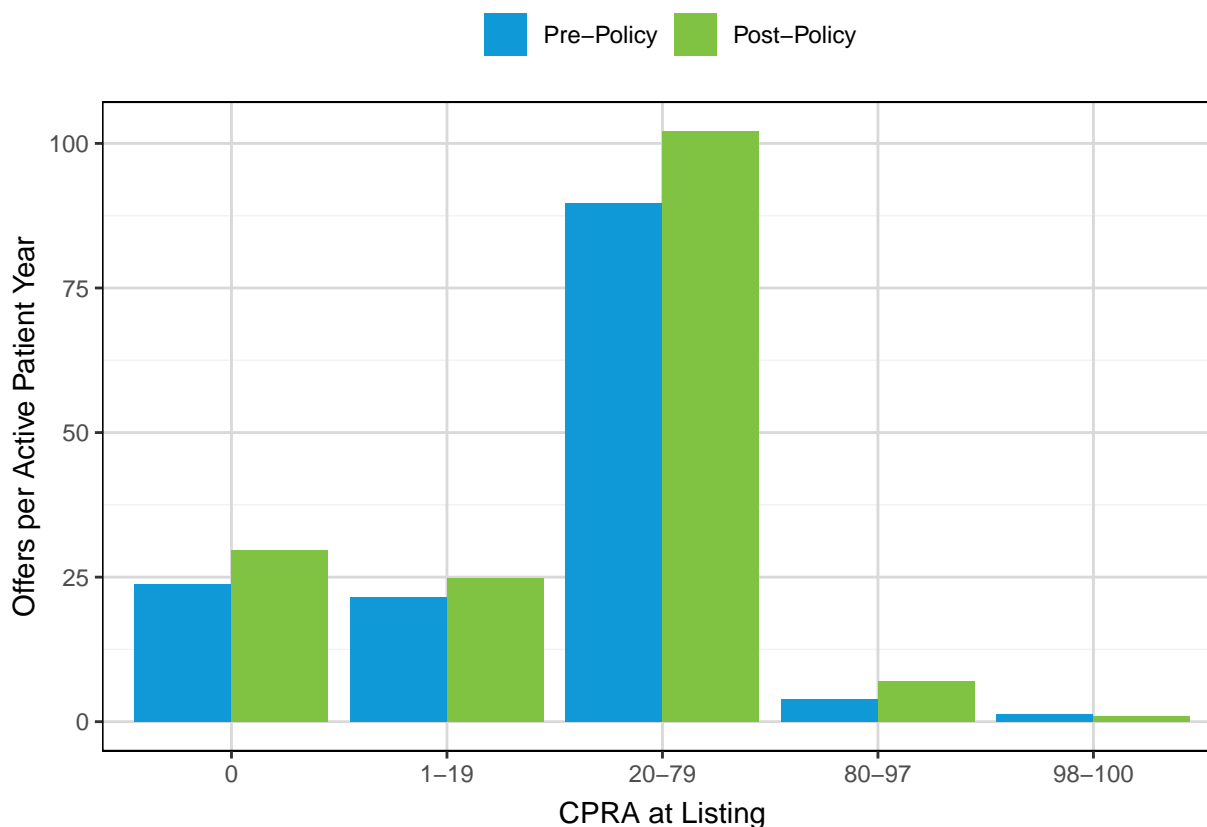


Table 86: Offer and Acceptance Rates for Kidney-Pancreas Match Runs December 01, 2020 - June 30, 2021 by Policy Era and CPRA at Listing

Era	CPRA (%)	Active Patient Years	Offers	Acceptances	Offers per Active Patient Year	Acceptances per 1000 Offers
Pre-Policy	0	186.25	4436	195	23.82	43.96
	1-19	23.51	507	35	21.57	69.03
	20-79	35.68	560	37	15.70	66.07
	20-79	6.24	560	37	89.73	66.07
	80-97	14.88	59	6	3.96	101.69
	98-100	16.69	21	3	1.26	142.86
Post-Policy	0	202.62	6023	237	29.72	39.35
	1-19	23.41	579	31	24.74	53.54
	20-79	39.75	698	45	17.56	64.47
	20-79	6.84	698	45	102.11	64.47
	80-97	14.87	103	13	6.92	126.21
	98-100	16.81	16	4	0.95	250.00

Figure 87 shows acceptances per 1000 offers for kidney-pancreas match runs from December 01, 2020 to June 30, 2021 by policy era and CPRA at listing. Acceptance rates decreased for the CPRA 0% and 1-19% groups, and increased for the CPRA 20-79%, 80-97%, and 98-100% groups.

Figure 87: Acceptances per 1000 Offers for Kidney-Pancreas Match Runs December 01, 2020 - June 30, 2021 by Policy Era and CPRA at Listing

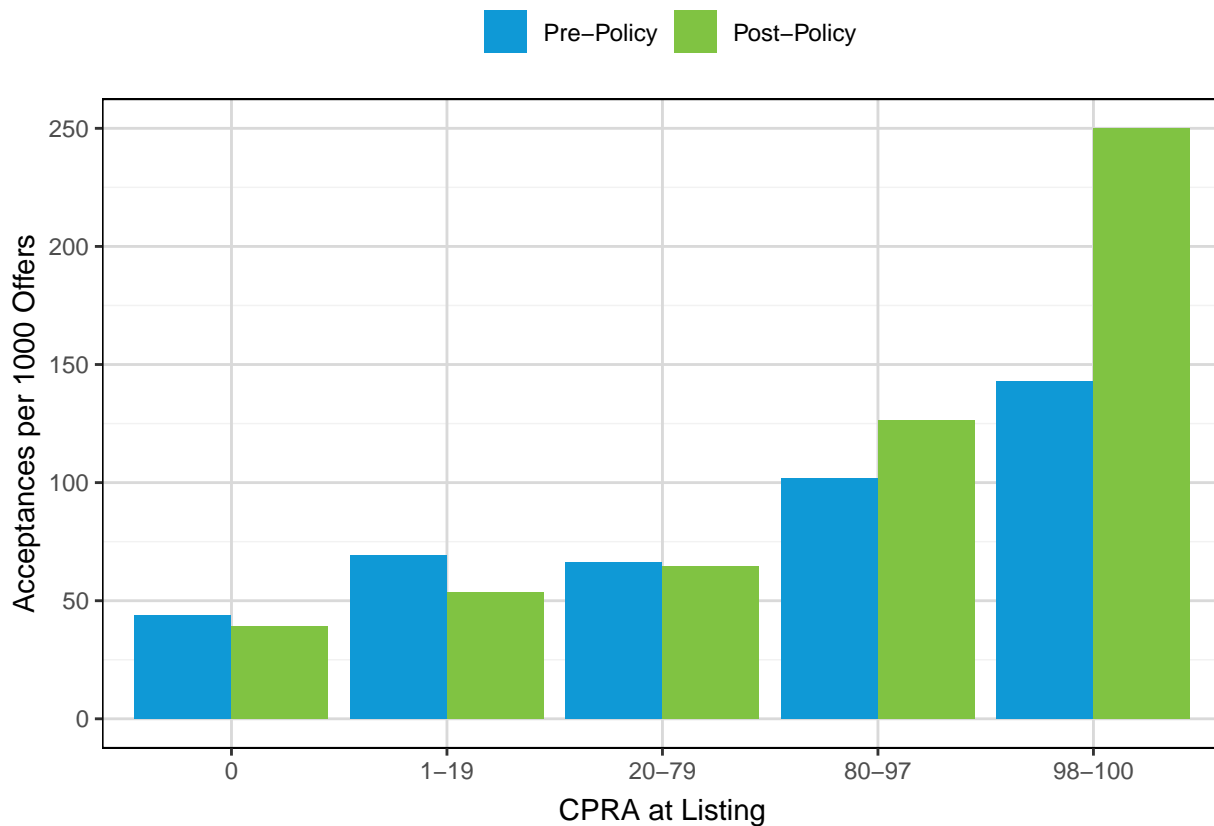


Figure 88 and **Table 87** show acceptances per 1000 offers for kidney-pancreas match runs from December 01, 2020 to June 30, 2021 by policy era and share type. The acceptance rate for organs recovered in the same DSA as the potential transplant recipient's center decreased from 282 to 173 acceptances per 1000 offers after policy implementation. The acceptance rate for organs recovered outside the same DSA as the potential transplant recipient increased from 23 to 34 acceptances per 1000 offers.

Figure 88: Acceptances per 1000 Offers for Kidney-Pancreas Match Runs December 01, 2020 - June 30, 2021 by Policy Era and Share Type

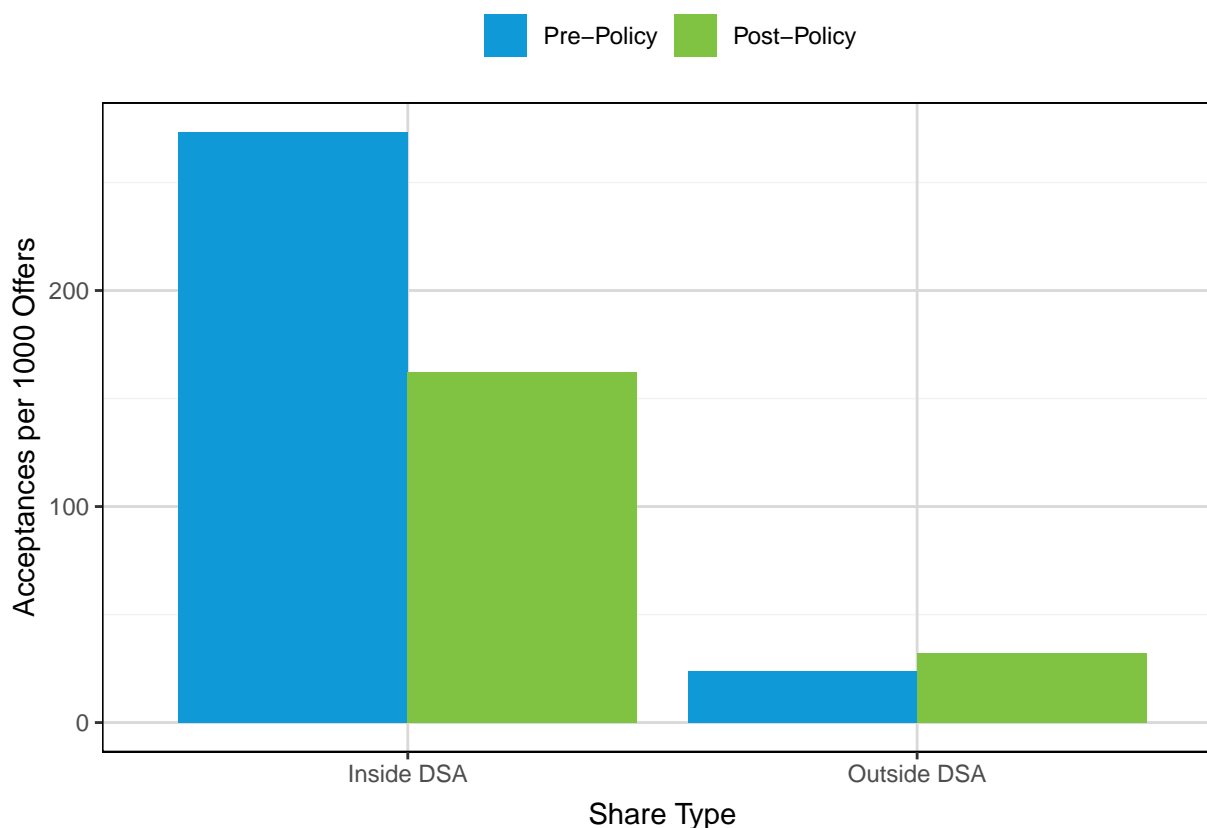


Table 87: Acceptances per 1000 Offers for Kidney-Pancreas Match Runs December 01, 2020 - June 30, 2021 by Policy Era and Share Type

Share Type	Pre-Policy			Post-Policy		
	Offers	Acceptances	Acceptances per 1000 Offers	Offers	Acceptances	Acceptances per 1000 Offers
Inside DSA	589	161	273.34	715	116	162.24
Outside DSA	5002	120	23.99	6713	217	32.33

Figure 89 and **Table 88** show acceptances per 1000 offers for kidney-pancreas match runs from December 01, 2020 to June 30, 2021 by policy era and distance. The offer acceptance rate decreased for offers within 250 NM of the donor hospital, from 81 to 65 acceptances per 1000 offers. There was little change in the acceptance rate for offers > 250 NM (19 vs 18 acceptances per 1000 offers).

Figure 89: Acceptances per 1000 Offers for Kidney-Pancreas Match Runs December 01, 2020 - June 30, 2021 by Policy Era and Distance

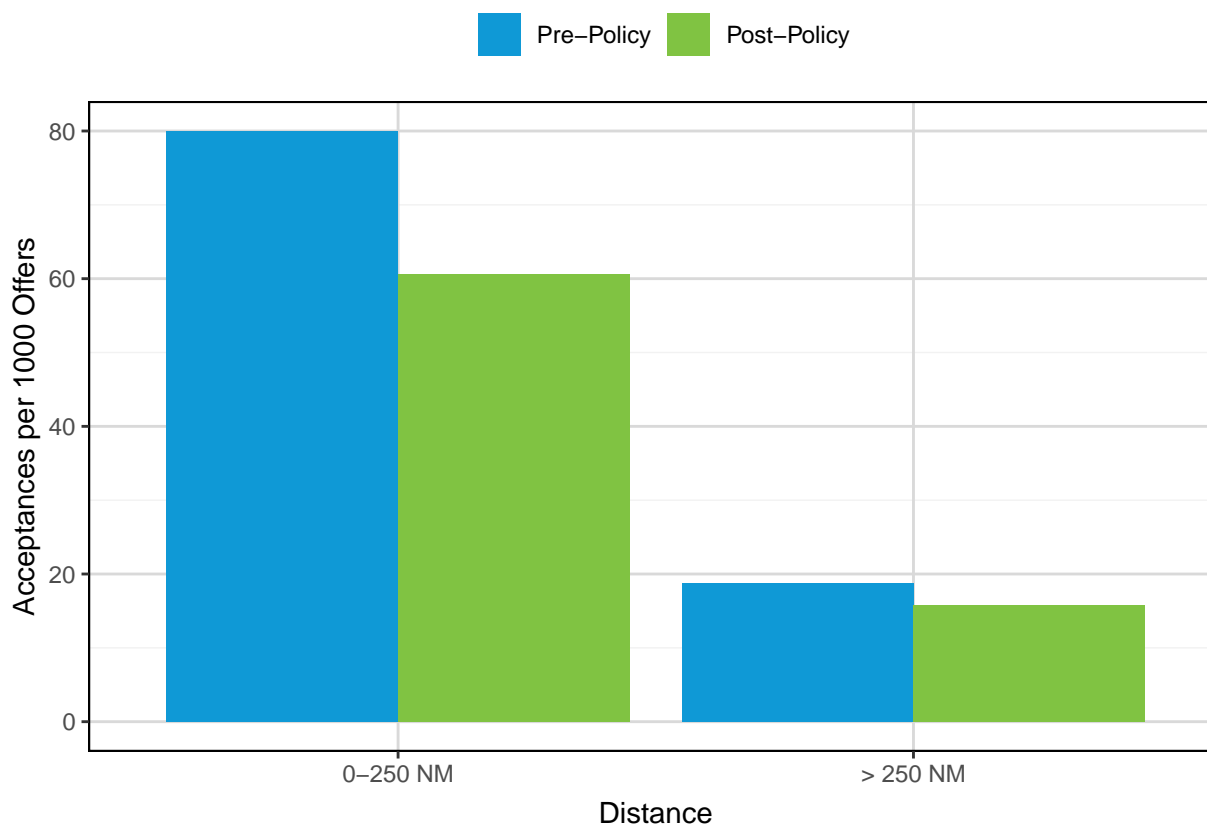


Table 88: Acceptances per 1000 Offers for Kidney-Pancreas Match Runs December 01, 2020 - June 30, 2021 by Policy Era and Distance

Distance	Pre-Policy			Post-Policy		
	Offers	Acceptances	Acceptances per 1000 Offers	Offers	Acceptances	Acceptances per 1000 Offers
0-250 NM	2876	230	79.97	4822	292	60.56
> 250 NM	2715	51	18.78	2606	41	15.73

Figure 90 shows the distribution of sequence number of the final acceptor for kidney-pancreas match runs. The median sequence number of final acceptor increased from 2 to 4 after policy implementation.

Figure 90: Distribution of Sequence Number of Final Acceptor for Kidney-Pancreas Match Runs December 01, 2020 - June 30, 2021 by Policy Era

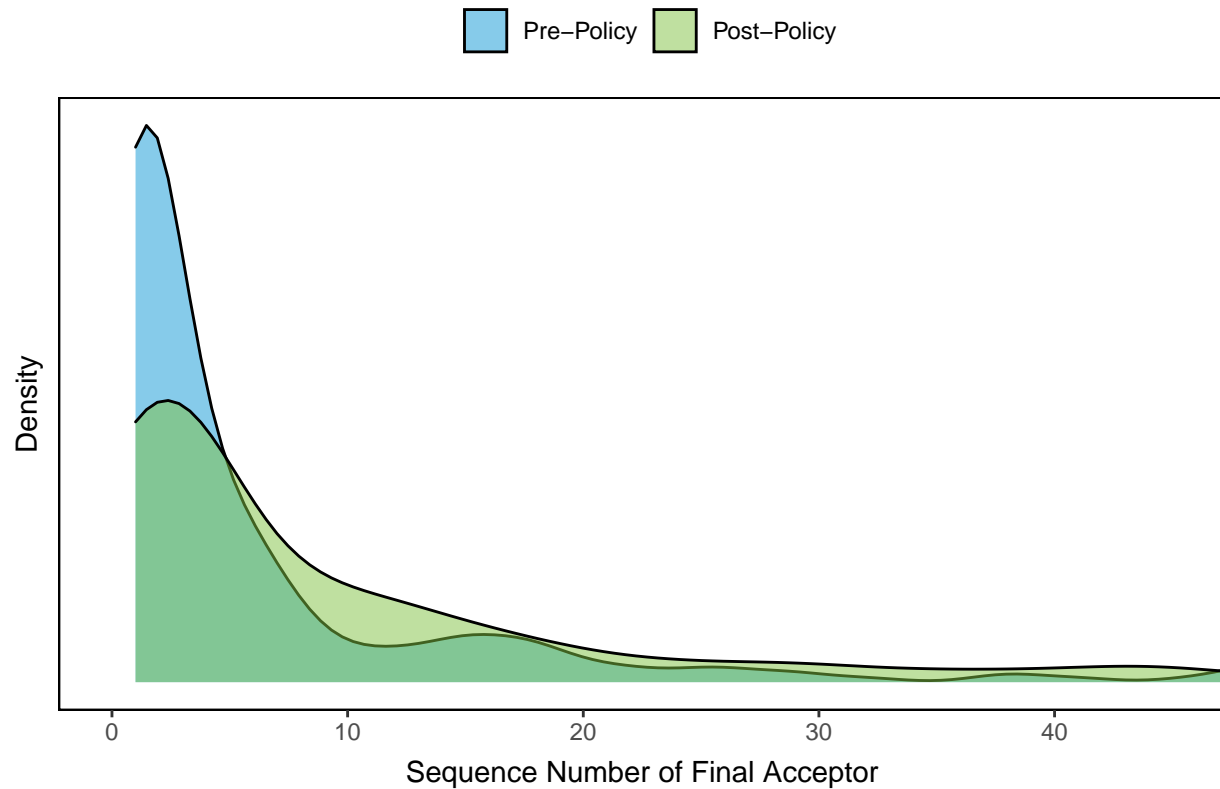


Table 89: Distribution of Sequence Number of Final Acceptor for Kidney-Pancreas Match Runs December 01, 2020 - June 30, 2021 by Policy Era

Era	N	Min	25th %-tile	Median	Mean	75th %-tile	Max
Pre-Policy	281	1	1	3	13.3	8	237
Post-Policy	333	1	2	4	16.6	16	235

Figure 91 and **Table 90** show the distribution of time from first offer to cross-clamp for kidney-pancreas match runs. Median time from first offer to cross-clamp increased after implementation from 28.57 hours to 29.37 hours.

Figure 91: Distribution of Hours from First Offer to Cross-Clamp for Kidney-Pancreas Match Runs December 01, 2020 - June 30, 2021 by Policy Era

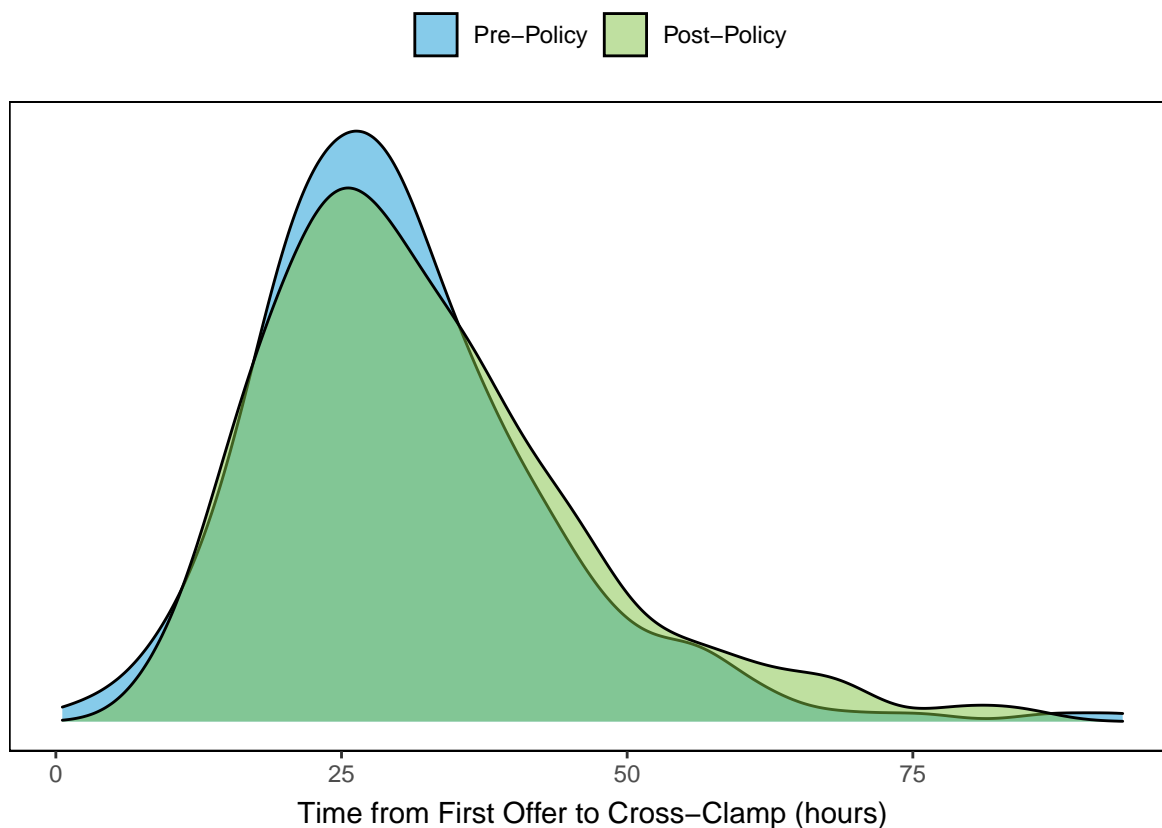


Table 90: Distribution of Hours from First Offer to Cross-Clamp for Kidney-Pancreas Match Runs December 01, 2020 - June 30, 2021 by Policy Era

Era	N	Min	25th %-tile	Median	Mean	75th %-tile	Max
Pre-Policy	281	0.57	21.64	28.52	30.26	36.55	93.37
Post-Policy	333	8.30	22.42	29.57	32.03	38.85	84.53

Figure 92 and **Table 91** describe kidney-pancreas match run offer refusals due to positive crossmatch by CPRA. The proportion of refusals due to positive crossmatch was highest for candidates with CPRA 98-100% both before and after policy implementation. The proportion of refusals due to positive crossmatch increased after implementation for the CPRA 80-97% and 98-100% groups. There was little change in the overall proportion of refusals due to positive crossmatch (0.66% vs 0.56%) or for the CPRA 0%, 1-19%, or 20-79% groups.

Figure 92: Percent of Refusals Due to Positive Crossmatch for Kidney-Pancreas Matches December 01, 2020 - June 30, 2021 by Policy Era and CPRA

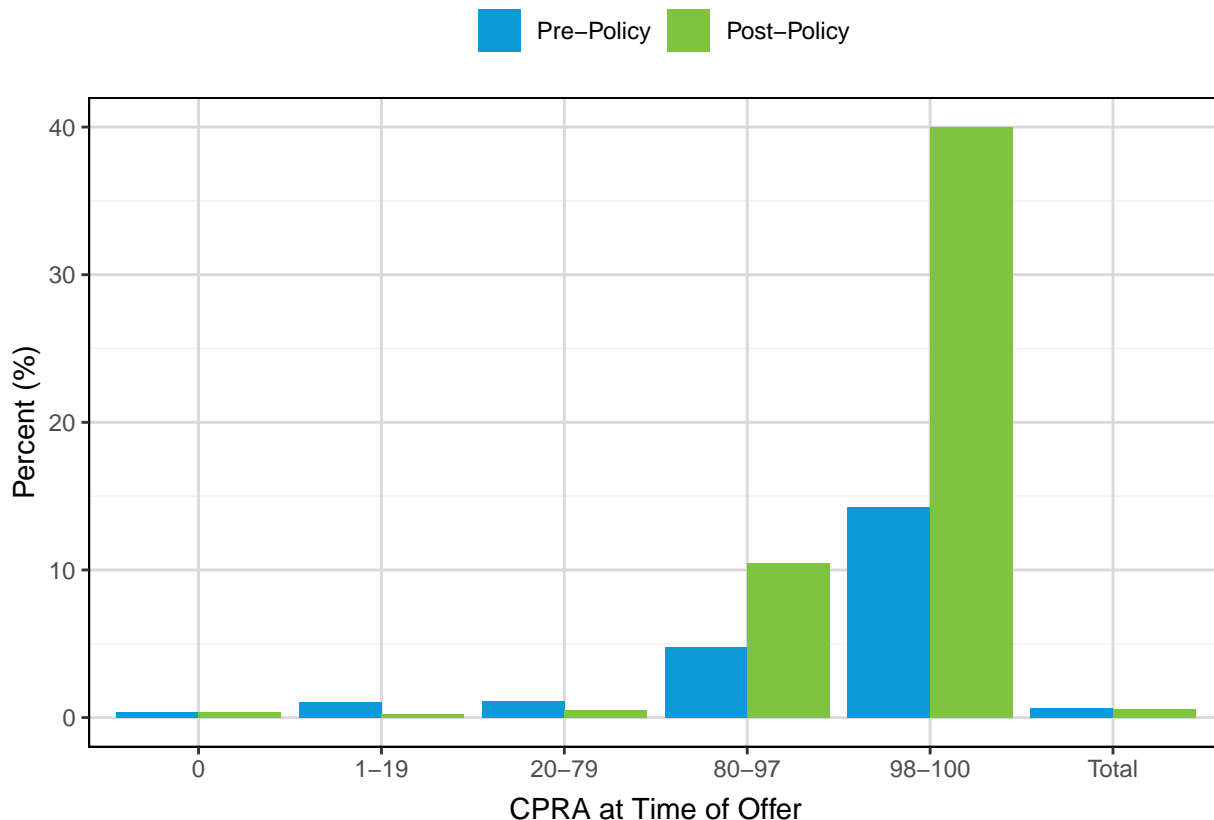


Table 91: Number and Percent of Refusals Due to Positive Crossmatch for Kidney-Pancreas Matches December 01, 2020 - June 30, 2021 by Policy Era and CPRA

CPRA (%)	Pre-Policy			Post-Policy		
	Refusals	Due to Xmatch	%	Refusals	Due to Xmatch	%
0	2259	9	0.40	4066	14	0.34
1-19	284	3	1.06	455	1	0.22
20-79	363	4	1.10	590	3	0.51
80-97	42	2	4.76	86	9	10.47
98-100	7	1	14.29	5	2	40.00
Total	2955	19	0.64	5202	29	0.56

Donors Recovered in Alaska

Pre-policy, one donor in Alaska had a pancreas recovered, which was not transplanted. Post-policy, there were no donors in Alaska with pancreata recovered or transplanted.

Released Organs

There were two released pancreata where the local placement bypass code was executed to allocate at the transplant hospital where it was originally accepted.

Facilitated Pancreas Allocation

Table 92 shows the number of programs qualified for facilitated placement. A total of 44 programs qualified for facilitated placement pre-policy, and 53 programs qualified post-policy. 39 programs qualified for facilitated placement in both policy eras. 5 programs qualified for facilitated placement in pre-policy but did not qualify post-policy; 14 centers qualified post-policy that did not qualify pre-policy.

Table 92: Number of Programs that Qualified for Facilitated Pancreas Allocation December 01, 2020 - June 30, 2021 by Policy Era

Qualify in Pre-policy	Qualify in Post-policy		
	Yes	No	Total
Yes	39	5	44
No	14	0	14
Total	53	5	58

Figure 93 and **Table 93** show the frequency of facilitated pancreas offers by policy era and whether the offer was made by the OPO or the UNOS Organ Center. A total of 57 and 63 facilitated pancreas offers were made in the pre- and post-policy eras, respectively.

Figure 93: Frequency of Facilitated Pancreas Offers December 01, 2020 - June 30, 2021 by Policy Era

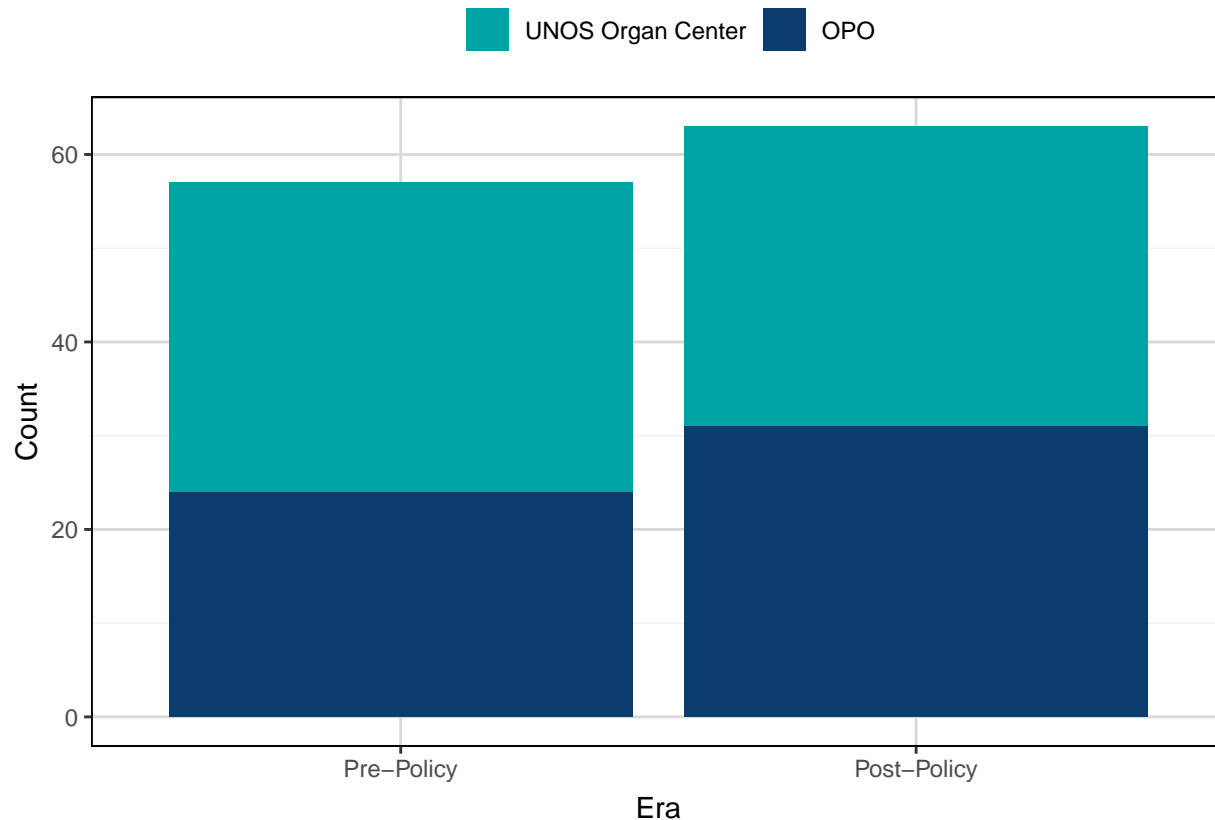


Table 93: Frequency of Facilitated Pancreas Offers December 01, 2020 - June 30, 2021 by Policy Era

Program Type	Pre-Policy	Post-Policy
OPO	24	31
UNOS Organ Center	33	32
Total	57	63

Table 94 shows the number of offers, unique donors, and transplants using facilitated pancreas allocation by policy era. Pre-policy, a total of 57 facilitated pancreas offers were made from 53 pancreas donors, resulting in 2 transplants. Post-policy, a total of 63 facilitated pancreas offers were made from 56 pancreas donors, resulting in 3 transplants.

Table 94: Number of Unique Donors, Offers, and Transplants using Facilitated Pancreas Allocation December 01, 2020 - June 30, 2021 by Policy Era

	Pre-Policy	Post-Policy
Offers	57	63
Unique donors	53	56
Transplants	2	3

Conclusion

Increases in both kidney-pancreas and pancreas transplants, and pancreas donors recovered, were observed after the removal of DSA and OPTN Region from kidney-pancreas and pancreas allocation, though may not be fully attributable to the change in OPTN policy and volumes remain low, specifically for pancreas. Many observed changes for kidney-pancreas, based on early data, show alignment with the KPSAM analysis used during the development of this policy, such as overall increases in kidney-pancreas transplants and various sub-populations. Additionally, pancreas volumes were expected to decrease in light of the expected increase in kidney-pancreas transplants, and counts remain small. The OPTN Pancreas Transplantation Committee will continue to monitor this policy as data accumulate and/or become available.