

# Analysis Report

Data Request from the OPTN Kidney Transplantation Committee: Provide KPSAM simulation data on effect of removing DSA and region from kidney/pancreas/kidney-pancreas organ allocation policy

## Prepared By

Sally Gustafson, MS, Tim Weaver, MS, Nick Salkowski, PhD, Josh Pyke, PhD, Bryn Thompson, MPH, Katie Audette, MS, Bertram Kasiske, MD, Ajay Israni, MD

Data Request ID#: KI2018\_01

## Timeline

Request made: September 10, 2018

Analysis plan due: September 24, 2018

Analysis plan submitted: September 24, 2018

Analysis report to be submitted: December 7, 2018

Next committee meeting: December 10, 2018

## Table of Contents

Analysis Report .....	1
Data Request from the OPTN Kidney Transplantation Committee: Provide KPSAM simulation data on effect of removing DSA and region from kidney/pancreas/kidney-pancreas organ allocation policy .....	1
Data Request ID#: KI2018_01 .....	1
Executive Summary .....	1
Data Request .....	4
Study population .....	4
Updates to KPSAM .....	4
Metrics assessed .....	5
Analytic approach .....	5
Results .....	6
Overview Data Tables .....	6
Transplant Distance Statistics (in Nautical Miles) .....	7

Subgroup Analyses .....	14
-------------------------	----

## Executive Summary

SRTR used the updated kidney-pancreas simulated allocation model (KPSAM) to assess the simulated impact of five allocation frameworks based on nautical miles (nm) between candidate listing center and donor hospital. In interpreting the modeling results it is important to consider that KPSAM cannot model changes in program behaviors under new allocation policies. In particular, SRTR used a model for kidney offer acceptance based on offers in the current allocation system that includes reference to current geographic boundaries (e.g., “local” and “non-local”). These elements are to be eliminated in the new allocation schemes under consideration, and it is impossible to say with certainty how this will affect the probability of offer acceptance. It may be beneficial to re-fit an offer acceptance model without local/non-local offer designations; however other characteristics will likely still reflect, and even be surrogates for, local, regional, or national offers under the current system.

One aspect of the simulation results strongly affected by acceptance probability is the number of projected transplants. KPSAM uses a simple model of organ discard: if an organ is offered 200 times without an acceptance, it is marked as discarded. This approach is computationally efficient but does not identify most behavioral or clinical factors for which organs are discarded, and this means that KPSAM in general is not a good tool for predicting an overall number of transplants in any given policy scenario. Specifically in this analysis, lower overall acceptance probabilities related to the removal of the local/regional/national distribution system likely affect the number of transplants across all allocation proposals. However it is not possible to determine whether proposals are affected equally. SRTR will continue to investigate potential improvements to the modeling approach.

## Main Findings

### Kidney

#### Transplant counts and rates

Compared with the baseline simulation (i.e., current policy), the number of projected transplants and the transplant rates decline under all proposed frameworks, because KPSAM cannot account for changes in acceptance behavior under new allocation systems. Moreover, the acceptance model in KPSAM was fit on acceptances occurring within a local/regional/national framework, wherein there is a strong preference for local offers. Decreases in projected transplants and transplant rate are smaller under the 2-circle (2CR) proposals than under the 1-circle (1CR) proposals. Acceptance behavior will likely change in response to changes in organ availability at a center, and transplant counts and rates may not decline in reality. Previous experience with the SAMs suggests that they underpredict the number of transplants that would occur in reality if a given policy scenario were adopted, although they typically predict the direction of subgroup changes.<sup>1,2</sup>

<sup>1</sup> Goel A, Kim WR, Pyke J, et al. Liver Simulated Allocation Modeling: Were the Predictions Accurate for Share 35? *Transplantation*. 2018;102(5):769-774.

<sup>2</sup> Israni AK, Salkowski N, Gustafson S, et al. New national allocation policy for deceased donor kidneys in the United States and possible effect on patient outcomes. *J Am Soc Nephrol*. 2014;25(8):1842-8.

### **Waitlist mortality and posttransplant graft failure counts and rates**

Overall mortality rates were nearly identical across runs ; slightly more waitlist deaths occurred under the proposed systems than at baseline, but because transplant is a competing risk for waitlist death, the decline in transplant is likely the driver of this increase in deaths. Given the above caveats regarding transplant counts and transplant rate, this may not occur in reality. Projected posttransplant graft failure was on-average slightly higher under all the proposed systems.

### **Median distance traveled**

Median distance (in nm) between recipient and donor tended to increase under all proposed systems. The increase was highest for the 1-CR proposals. However, the variance in distance among transplants was lowest in the 1-CR proposals, meaning that disparity in distance was reduced. This is intuitive when organs are shared more broadly. Furthermore, the distributions became less skewed, again pointing to a reduction in disparity. At baseline, the median distance was 108 miles, while the mean was 344. This large difference between mean and median at baseline, evidence of a high degree of variability in transplant distance, was reduced in all the simulations of the proposed systems (Table 4).

## **Kidney-Pancreas and Pancreas**

### **Transplant counts and rates**

#### **Kidney-Pancreas:**

Compared with the baseline simulation (i.e., current policy), the number of projected transplants and the transplant rates increase under all proposed frameworks. In contrast to the acceptance model for kidney, the acceptance models for kidney-pancreas and pancreas use no local designations. This may explain why transplants under the proposed systems increased, in contrast to kidney transplants. Nonetheless, acceptance behavior will likely change in response to changes in organ availability at a center, and transplant counts and rates may not mirror those predicted by KPSAM.

#### **Pancreas:**

Compared with the baseline simulation (i.e. current policy), the number of projected transplants and the transplant rates decrease under all proposed frameworks. Acceptance behavior will likely change in response to changes in organ availability at a center, and that transplant counts and rates may not mirror those predicted by KPSAM.

### **Waitlist mortality and posttransplant graft failure counts and rates**

For both kidney-pancreas and pancreas candidates, overall mortality rates and counts were nearly identical across runs. The trend for projected posttransplant graft failure was inconsistent across runs. For kidney-pancreas, it was lowest in the 2CR-150 model and highest in the 1CR-no points model; for pancreas, it was lowest in the 2CR-150 model and highest in the 1CR-steep points model. For both organs, however, the minimum and maximum ranges were wide enough to overlap for all runs.

## Median distance traveled

Median distance (in nm) between recipient and donor increased under all proposed systems, with the largest change in the 1-CR models. At baseline, pancreata traveled much farther than kidney-pancreata combinations. Therefore, the increases from baseline were more pronounced for kidney-pancreata.

## Data Request

Using the most recently available KPSAM version and data, model the kidney, pancreas, and kidney-pancreas distribution systems outlined in the KI2018\_01 Analysis Plan as Allocation Framework 1 and Allocation Framework 2.

Simulation 2CR\_150 will use the distances of 150 nm and 300 nm in place of local and regional designations. Simulation 2CR\_250 will use the distances of 250 nm and 500 nm in place of local and regional designations.

Simulations 1CR\_nopts, 1CR\_shallow, and 1CR\_steep will use the distance of 500 nm in place of the local designation, and regional sharing will be eliminated. Instead, organs will be shared nationally when beyond the 500 nm border.

Additionally, Simulations 1CR\_shallow and 1CR\_steep will include proximity points awarded for distance between candidate center and donor hospital zip code centroids. Proximity points within the 500nm circle will be assigned linearly, starting at X points for 0nm and tapering to 0 points at 500nm. National proximity points will be assigned linearly, starting at Y points for 501nm and tapering to 0 points at 2500nm. No proximity points will be assigned for candidates at centers > 2500nm from the donor hospital. In Simulation 2CR\_shallow, or the “shallow slopes” simulation, X and Y are equal to 1 and 2, respectively. In Simulation 2CR\_steep, or the “steep slopes” simulation, X and Y are equal to 2 and 4, respectively.

Simulation BL will be a baseline run using the current allocation system(s), shown for comparative purposes.

## Study population

KPSAM input files were updated to include transplant candidates listed on the kidney, kidney-pancreas, or pancreas transplant waiting lists between January 1, 2017, and December 31, 2017, and donors whose kidneys or pancreata were recovered for transplant in the same time period.

## Updates to KPSAM

The unacceptable antigen equivalences and antigen splits used by KPSAM have been updated to match current (September 2018) OPTN policy. In addition, all predictive models used by KPSAM have been updated to incorporate newer data and methodology, including but not limited to the acceptance models and posttransplant outcomes models.



## Metrics assessed

As noted in the OPTN data request, SRTR assessed the following outcome metrics for the simulations.

- \* Count (%) of transplants
- \* Transplant rates
- \* Count (%) of waitlist deaths
- \* Waitlist mortality rates
- \* Posttransplant graft survival rates
- \* Posttransplant patient survival rates
- \* Organ travel distance distribution (NM): average, median, Q1, Q3, 5th, 95th percentile

Relevant metrics will be displayed in maps by DSA and tables provided in an appendix for DSA-level results:

- \* Change in count of transplants
- \* Transplant rates
- \* Change in count of waitlist deaths
- \* Waitlist mortality rates

Metrics by organ above should also be assessed by the following subgroup populations (including a comparison of percentage of waiting list vs. percentage of transplants where applicable):

- \* KDPI: 0%-20%, 21%-34%, 35%-85%, 86%-100% (transplant only)
- \* Donor type: DCD vs. not DCD (transplant only)
- \* EPTS: 0%-20% vs. 21%-100%
- \* Candidate/recipient age: 0-5, 6-10, 11-17, 18-34, 35-49, 50-64, >= 65 years
- \* Candidate/recipient race/ethnicity: white, African American, Hispanic, Asian, other/unknown
- \* Candidate/recipient blood type (ABO): A, B, AB, O
- \* Candidate/recipient sex: male vs. female
- \* Candidate/recipient sensitization: 0-HLA mismatch: 0 vs. non-0
- + DR mismatch level: 0, 1, 2
- + CPRA (granular): 0, 1-19, 20-29, 30-39, 40-49, 50-59, 60-69, 70-79, 80-84, 85-89, 90-94, 95, 96, 97, 98, 99: 98.5-< 98.75, 98.75-< 99.0, 99.0-< 99.25, 99.25-< 99.5, and 100: 99.5-< 99.6, 99.6-< 99.7, 99.7-< 99.8, 99.8-< 99.9, 99.9-< 99.95, 99.95-< 99.975, 99.975-< 99.99, 99.99-< 100
- \* Candidate/recipient time on dialysis: pre-emptive transplant, 0-< 1, 1-< 3, 3-< 5, 5-< 10, >= 10 years
- \* Candidate/recipient diagnosis: diabetes, hypertension, GN, cystic kidney disease, other
- \* SES-related:
  - + Candidate/recipient insurance status: public vs. private
  - + Median income by recipient zip code at listing/transplant distribution: using the ACS zip code level publically available dataset + Urbanicity: urban vs. rural, based on RUCA codes (individually, and grouped by metropolitan vs. micropolitan + small town + rural)
- \* Geography:
  - + Percentage local (DSA), regional, national
  - + By OPTN Region: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
  - + By DSA

## Analytic approach

Each of the six requested changes to the allocation system was run with 10 iterations (repetitions) in KPSAM, to provide some measure of variability. Because the same donors and candidates are used

in each of the simulations, and they are the actual donors and candidates from 2017 rather than independent samples from a larger population, statistical tests for comparison have no validity. Instead, the average and range of results (minimum - maximum) for the 10 iterations are provided.

## Results

Results for the simulated scenarios are reported primarily in the form of plots, with each plot displaying the values for a given metric across the six scenarios simulated. In viewing these results, it is important to compare the new scenarios with the current allocation policy scenario to identify changes in outcome metrics due to the proposed policy changes. Each scenario was simulated 10 times, and the plot displays the range of results across the 10 simulations as a vertical line extending from the minimum value to the maximum value found for that metric and scenario. A point along that line marks the mean value of the metric across the 10 iterations.

### Overview Data Tables

*Table 1 Overview of Main Metrics for Kidney*

Scenario	Transplant Rate per Patient-Year	Transplant Count (N)	Waitlist Mortality Rate per Patient-Year	Waitlist Mortality Count (N)	Graft Failure Rate per Patient-Year
BL	0.122 (0.121,0.123)	13473 (13373,13536)	0.048 (0.047,0.048)	5262 (5247,5279)	0.116 (0.109,0.124)
1CR_nopts	0.105 (0.105,0.106)	11727 (11665,11839)	0.048 (0.048,0.048)	5308 (5299,5320)	0.12 (0.115,0.124)
1CR_shallow	0.106 (0.105,0.106)	11739 (11669,11823)	0.048 (0.048,0.048)	5312 (5300,5326)	0.119 (0.113,0.128)
1CR_steep	0.106 (0.105,0.106)	11767 (11710,11816)	0.048 (0.048,0.048)	5305 (5298,5317)	0.12 (0.113,0.131)
2CR_150	0.112 (0.111,0.113)	12399 (12319,12486)	0.048 (0.047,0.048)	5289 (5263,5312)	0.118 (0.108,0.129)
2CR_250	0.108 (0.107,0.109)	11981 (11894,12084)	0.048 (0.048,0.048)	5300 (5292,5309)	0.119 (0.113,0.126)

*Table 2 Overview of Main Metrics for Kidney-Pancreas*

Scenario	Transplant Rate per Patient-Year	Transplant Count (N)	Waitlist Mortality Rate per Patient-Year	Waitlist Mortality Count (N)	Graft Failure Rate per Patient-Year
BL	0.503 (0.49,0.515)	944 (923,961)	0.053 (0.05,0.055)	99 (95,103)	0.223 (0.195,0.266)
1CR_nopts	0.599 (0.589,0.608)	1081 (1074,1089)	0.053 (0.051,0.055)	96 (92,99)	0.228 (0.203,0.284)
1CR_shallow	0.599 (0.587,0.605)	1081 (1071,1089)	0.053 (0.051,0.054)	95 (91,98)	0.228 (0.198,0.272)

1CR_steep	0.601 (0.592,0.61)	1084 (1069,1095)	0.052 (0.05,0.054)	94 (91,98)	0.215 (0.186,0.276)
2CR_150	0.555 (0.549,0.566)	1020 (1011,1029)	0.052 (0.05,0.055)	96 (92,100)	0.219 (0.197,0.236)
2CR_250	0.584 (0.577,0.59)	1060 (1046,1072)	0.053 (0.05,0.055)	96 (91,100)	0.227 (0.186,0.261)

\*\* Graft Failure is modeled as the earlier failure of either the kidney or pancreas allograft. Note that predictive models for posttransplant pancreas graft failure were built on data that do not yet incorporate the new pancreas graft failure definition implemented in 2018.

*Table 3 Overview of Main Metrics for Pancreas*

Scenario	Transplant Rate per Patient-Year (N)	Transplant Count (N)	Waitlist Mortality Rate per Patient- Year	Waitlist Mortality Count (N)	Graft Failure Rate per Patient-Year
BL	0.295 (0.278,0.308)	210 (200,218)	0.019 (0.017,0.021)	13 (12,15)	0.306 (0.241,0.398)
1CR_nopts	0.195 (0.185,0.2)	146 (138,150)	0.018 (0.017,0.02)	14 (13,15)	0.355 (0.225,0.579)
1CR_shallow	0.195 (0.185,0.209)	145 (138,154)	0.019 (0.019,0.02)	14 (14,15)	0.345 (0.224,0.521)
1CR_steep	0.194 (0.186,0.208)	144 (139,155)	0.019 (0.017,0.021)	14 (13,16)	0.358 (0.258,0.53)
2CR_150	0.226 (0.212,0.239)	166 (157,175)	0.02 (0.018,0.023)	15 (13,17)	0.297 (0.21,0.357)
2CR_250	0.203 (0.194,0.222)	151 (145,164)	0.02 (0.017,0.022)	14 (13,16)	0.316 (0.224,0.415)

\*\* Note that predictive models for posttransplant pancreas graft failure were built on data that do not yet incorporate the new pancreas graft failure definition implemented in 2018.

### Transplant Distance Statistics (in Nautical Miles)

*Table 4 Recipient - Donor Distance Statistics (in NM), Kidney-Alone Transplants*

Scenario	5th %ile	Q1	Median	Mean	Q3	95th %ile	Std Deviation
BL	0.00	15.67	107.56	343.85	439.49	1592.12	522.86
1CR_nopts	11.54	188.82	354.29	485.21	487.56	1703.07	513.07
1CR_shallow	9.20	171.33	341.61	474.06	486.22	1683.09	510.76
1CR_steep	7.27	158.99	327.90	463.85	484.98	1670.79	509.84
2CR_150	0.51	43.23	128.83	389.15	495.65	1727.14	571.38
2CR_250	3.66	94.54	205.88	414.23	465.44	1704.28	539.95

*Table 5 Recipient - Donor Distance Statistics (in NM), Kidney-Pancreas Transplants*

Scenario	5th %ile	Q1	Median	Mean	Q3	95th %ile	Std Deviation
----------	----------	----	--------	------	----	-----------	---------------

BL	0.00	3.94	32.75	99.71	106.84	389.66	218.11
1CR_nopts	5.90	139.47	270.29	280.11	391.48	482.47	272.33
1CR_shallow	6.25	136.36	267.77	278.86	388.67	482.37	283.63
1CR_steep	5.27	131.48	262.85	276.18	389.28	483.02	277.18
2CR_150	0.00	17.87	80.89	122.33	125.12	258.63	297.95
2CR_250	1.41	63.48	142.61	158.37	199.95	247.55	260.36

*Table 6 Recipient - Donor Distance Statistics (in NM), Pancreas Transplants*

Scenario	5th %ile	Q1	Median	Mean	Q3	95th %ile	Std Deviation
BL	5.12	131.64	386.78	565.24	799.56	1757.77	607.74
1CR_nopts	28.82	173.98	304.27	428.46	426.73	1606.12	561.20
1CR_shallow	32.79	180.18	302.66	414.43	429.45	1416.55	530.05
1CR_steep	25.45	180.61	308.03	436.71	433.71	1557.74	568.66
2CR_150	7.60	98.59	223.74	541.20	839.52	1872.07	670.91
2CR_250	9.82	121.47	204.41	439.88	407.56	1754.20	631.49

## Maps of Transplant Rate by DSA

## Maps of Transplant Rate by DSA

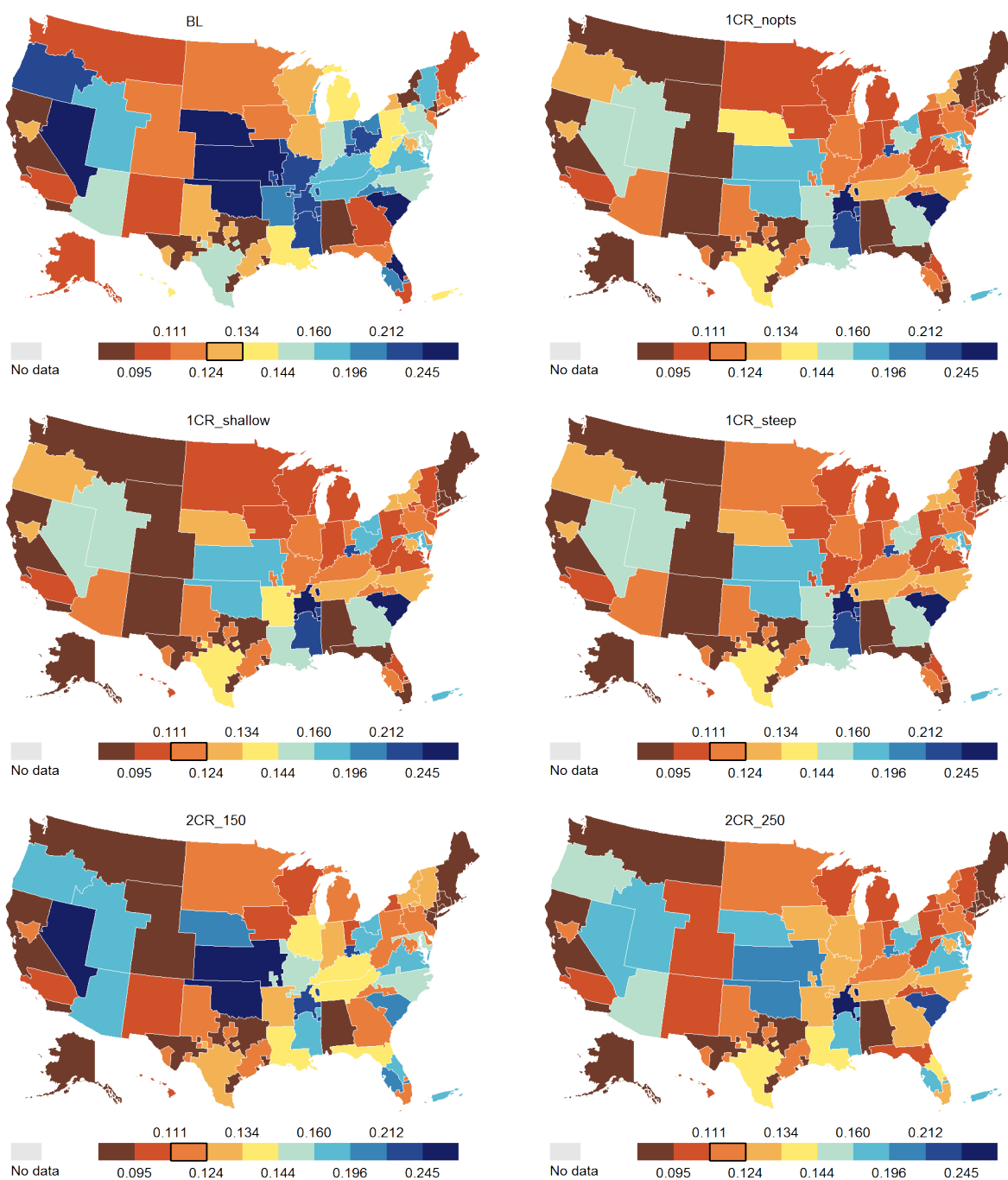


Figure 1 Maps of Transplant Rate by DSA

## Maps of Waitlist Mortality Rate by DSA

### Maps of Waitlist Mortality Rate by DSA

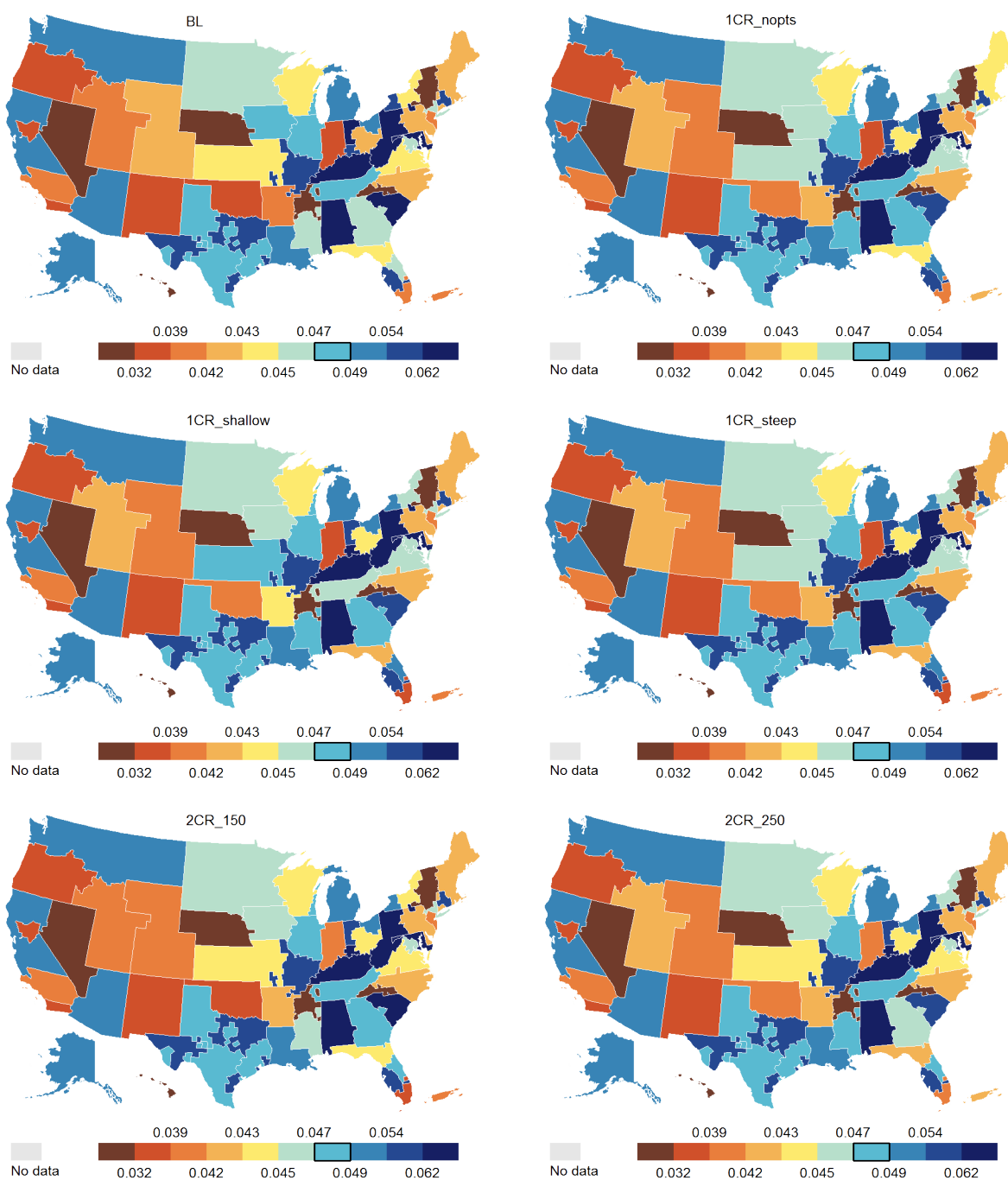


Figure 2 Maps of Waitlist Mortality Rate by DSA

## Maps of Transplant Rate by Region

### Maps of Transplant Rate by Region

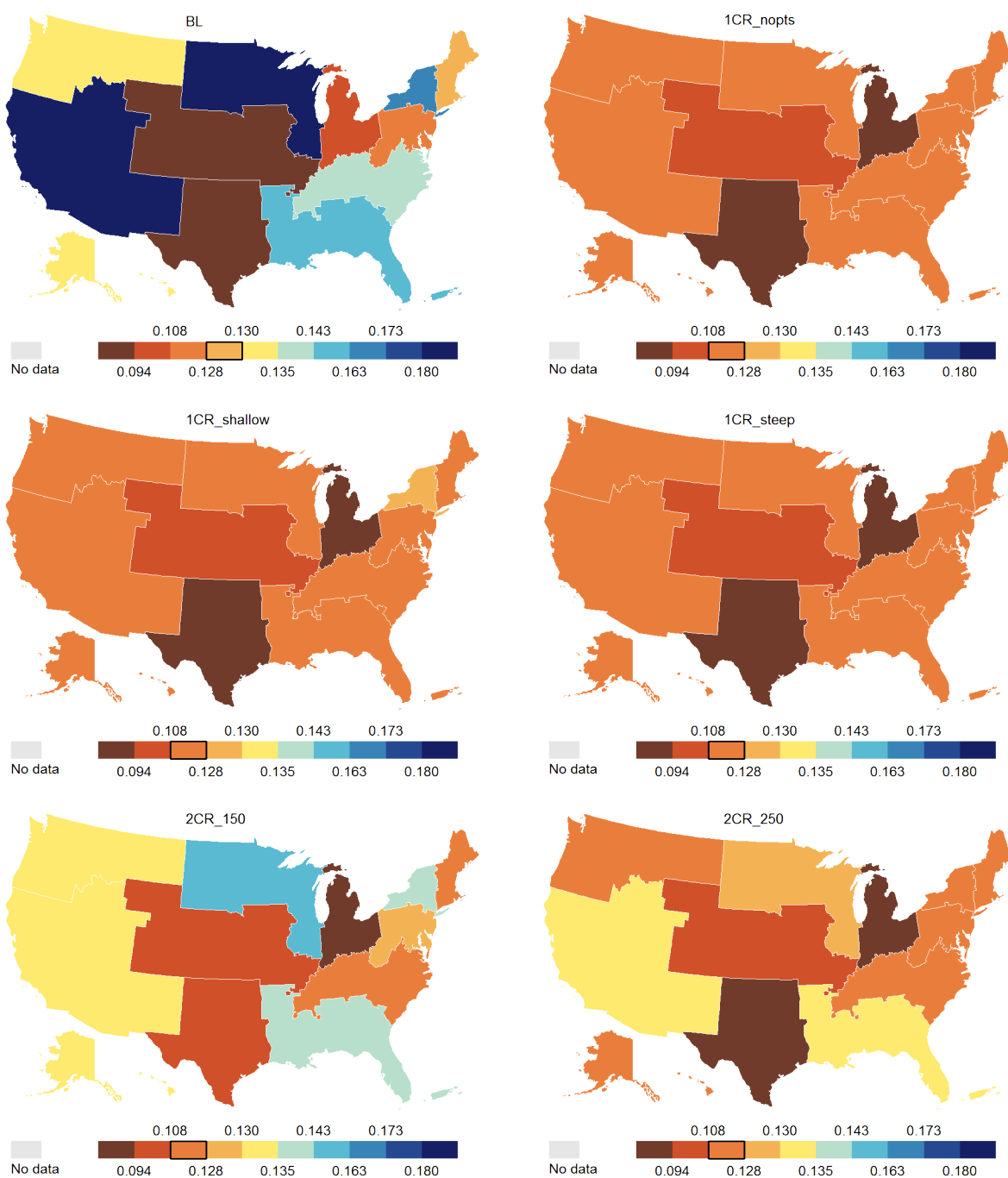


Figure 3 Maps of Transplant Rate by Region



## Maps of Median Organ Travel Distance by DSA

### Maps of Median Organ Travel Distance by DSA

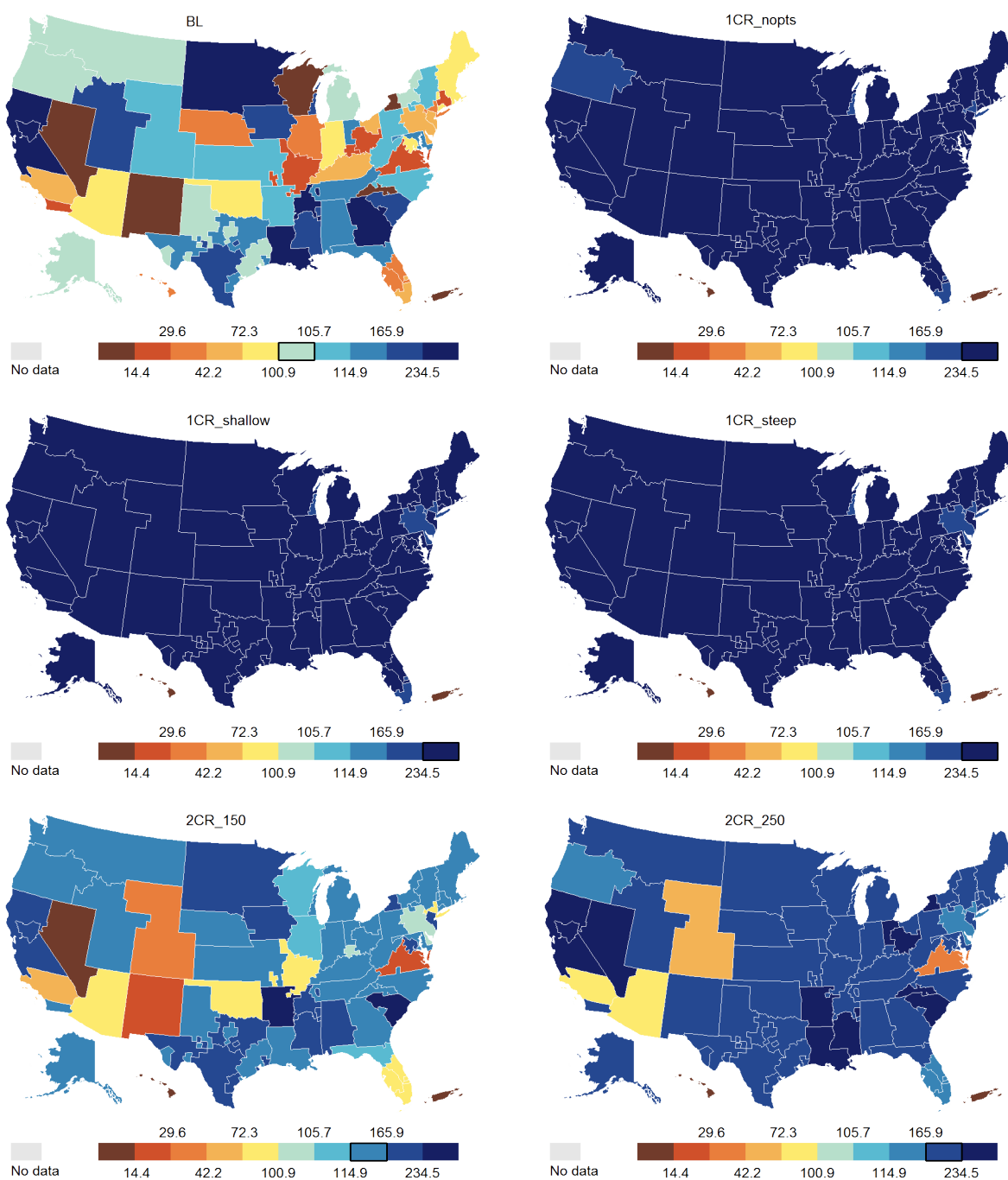


Figure 4 Maps of Median Organ Travel Distance by DSA

## Distribution of Organ Travel Distance

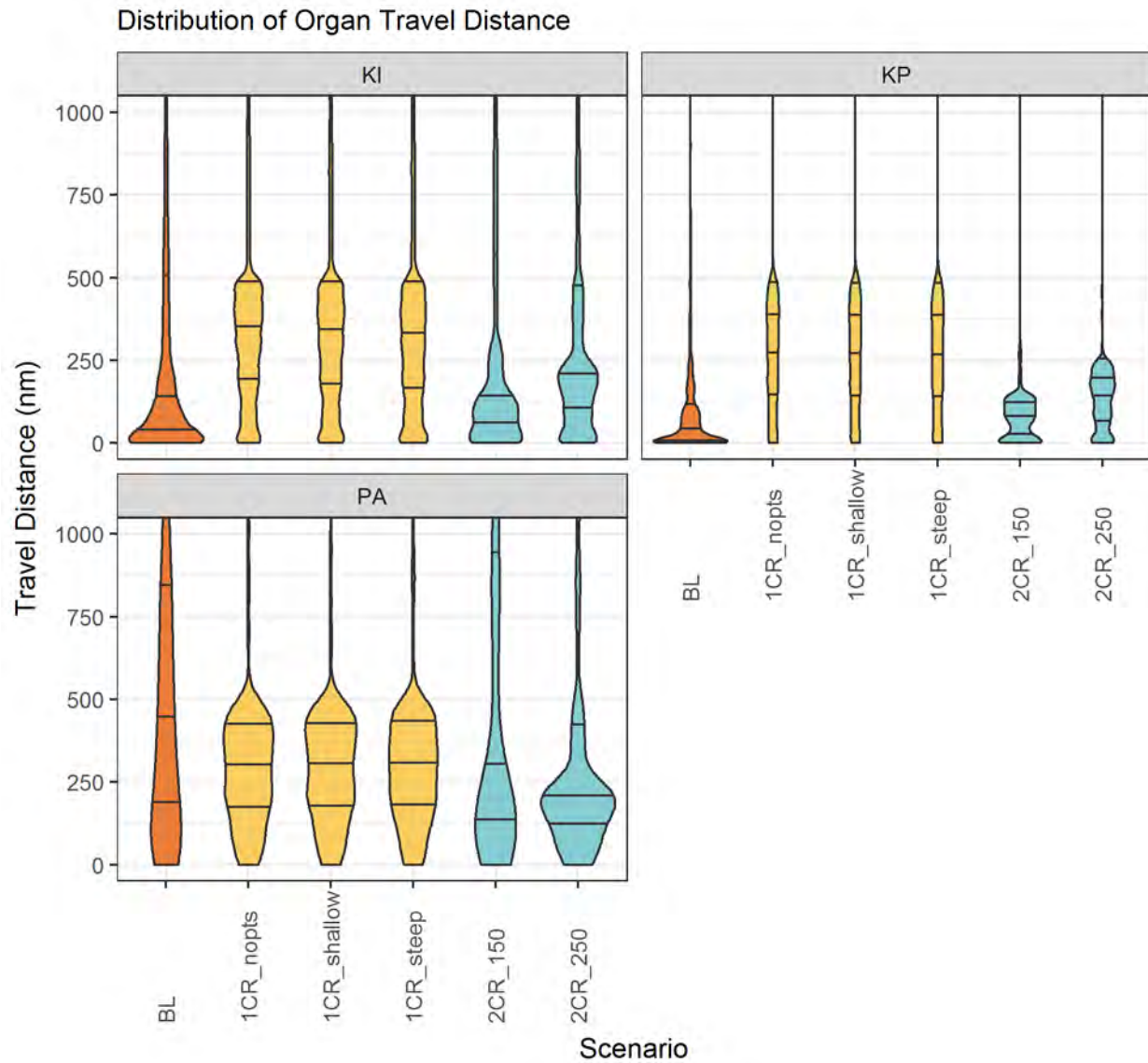


Figure 5 Distribution of Organ Travel Distance

Q1, Q2 (median), Q3, and 95th percentiles are shown with horizontal lines on each plot.

All metrics reported as *mean (min, max)* across the 10 simulation iterations.

## Subgroup Analyses

### Transplant

#### Transplant Rates

Transplant Rates: Age 0-17

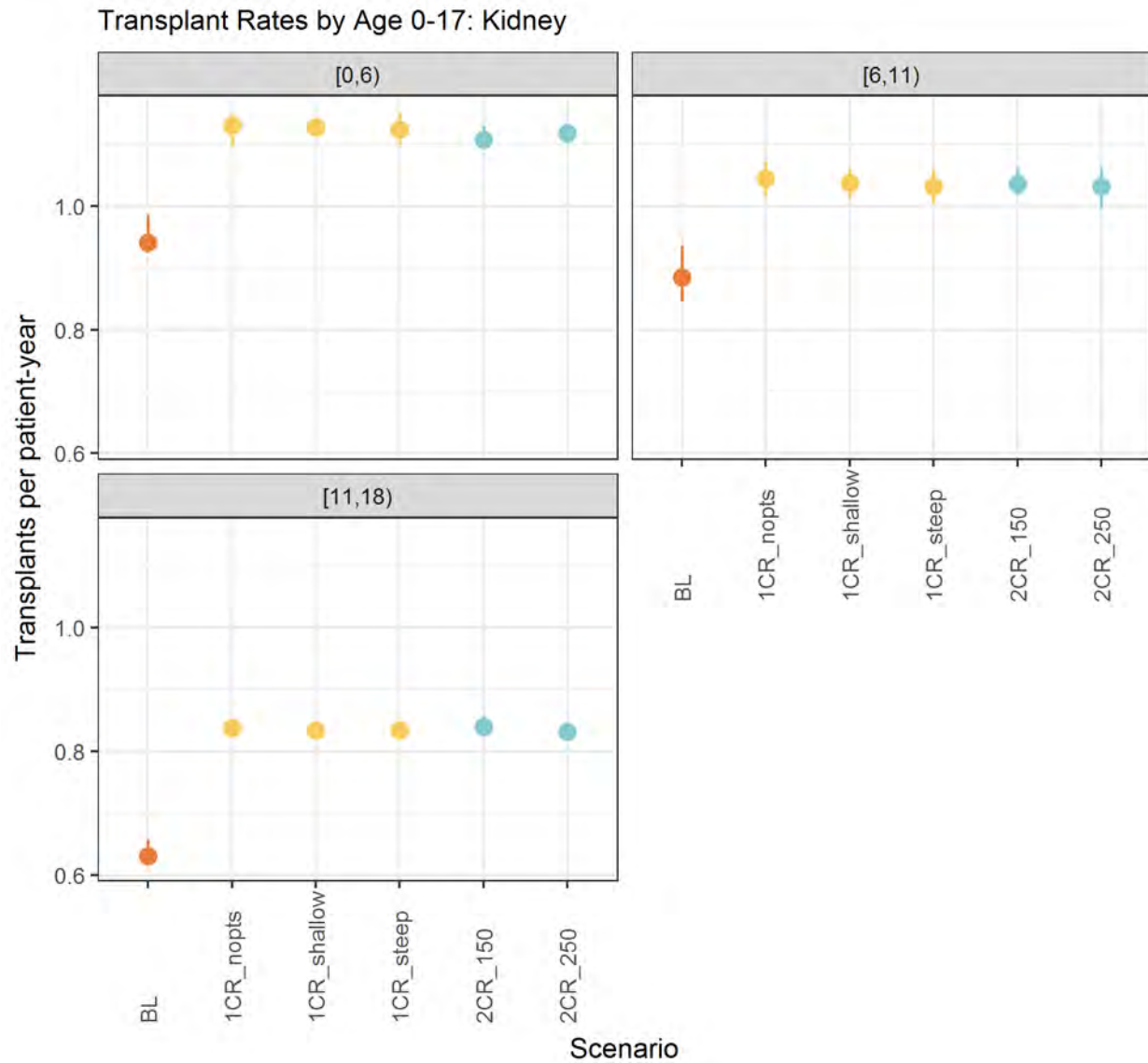


Figure 6 Transplant Rates by Age 0-17: Kidney

# Transplant Rates: Age 18+

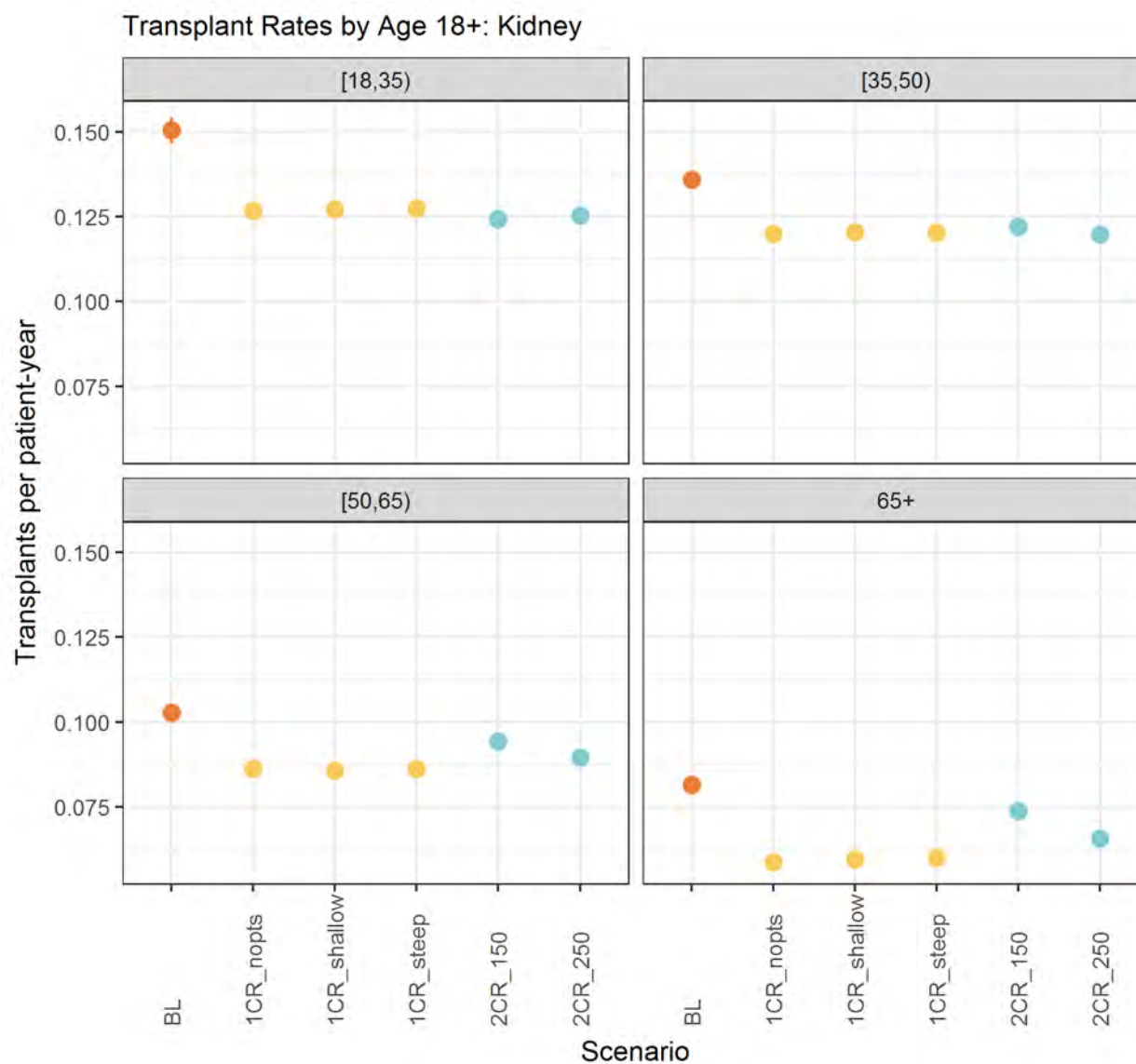


Figure 7 Transplant Rates by Age 18+: Kidney

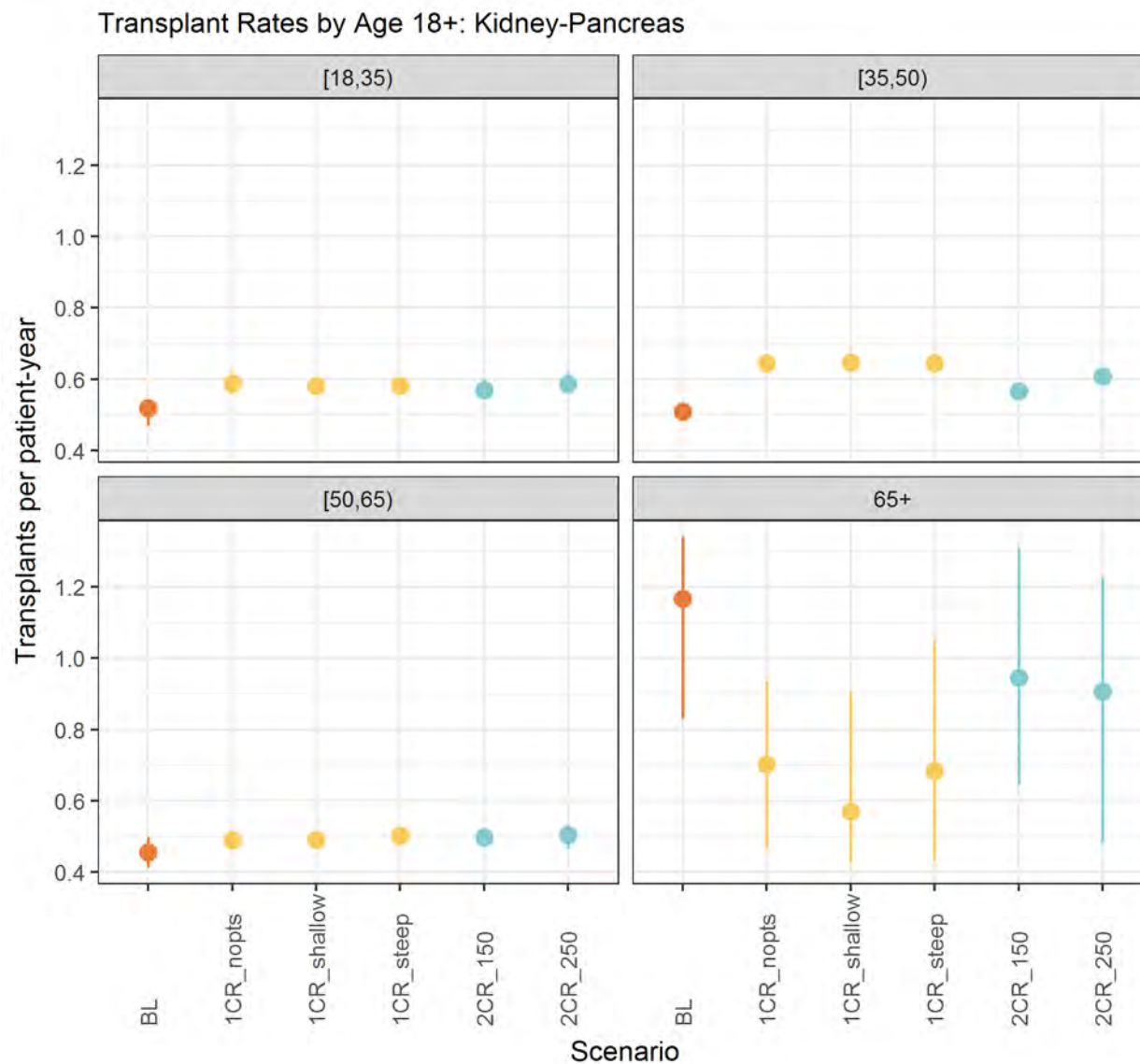


Figure 8 Transplant Rates by Age 18+: Kidney-Pancreas

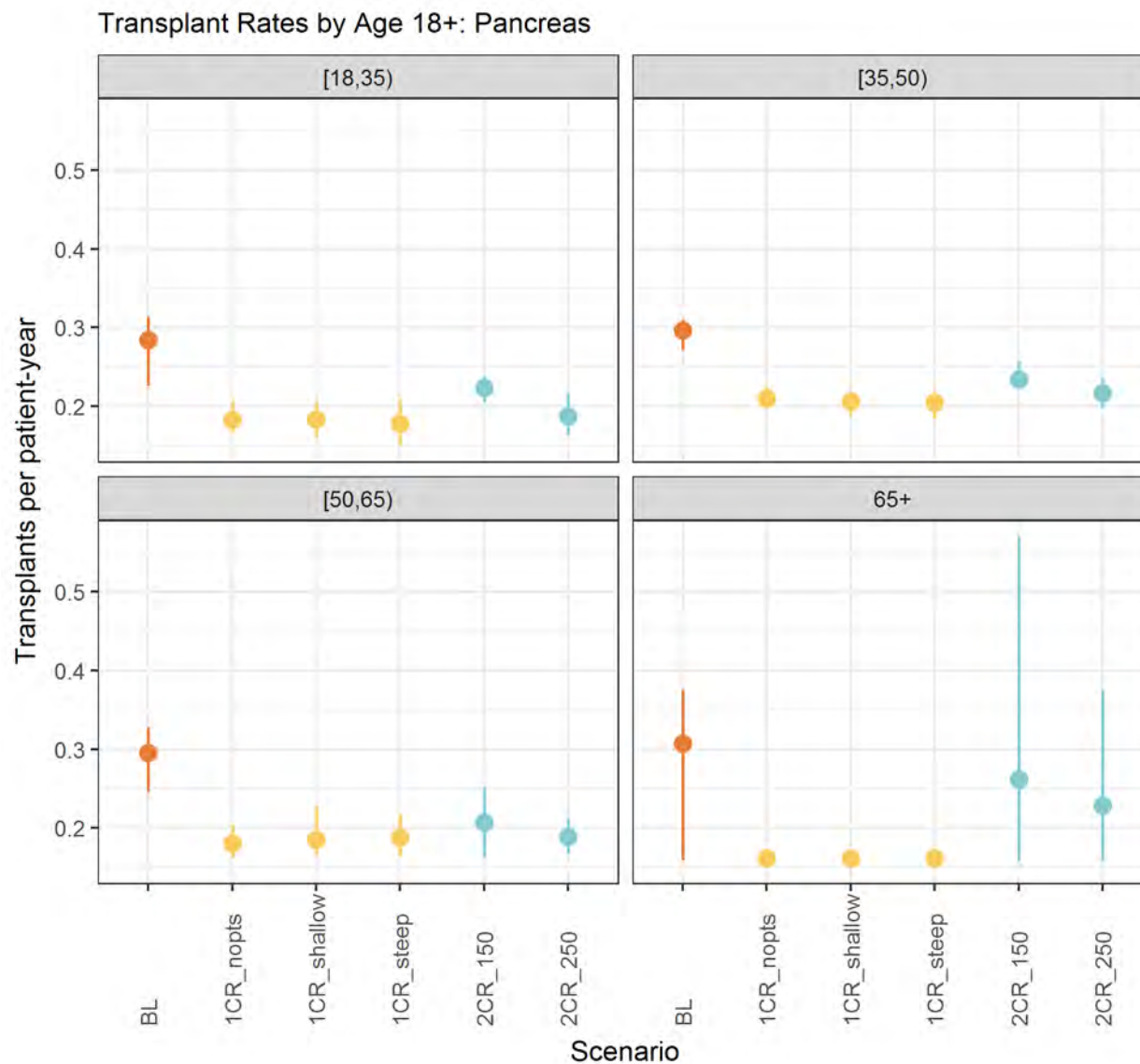


Figure 9 Transplant Rates by Age 18+: Pancreas



## Transplant Rates: Race

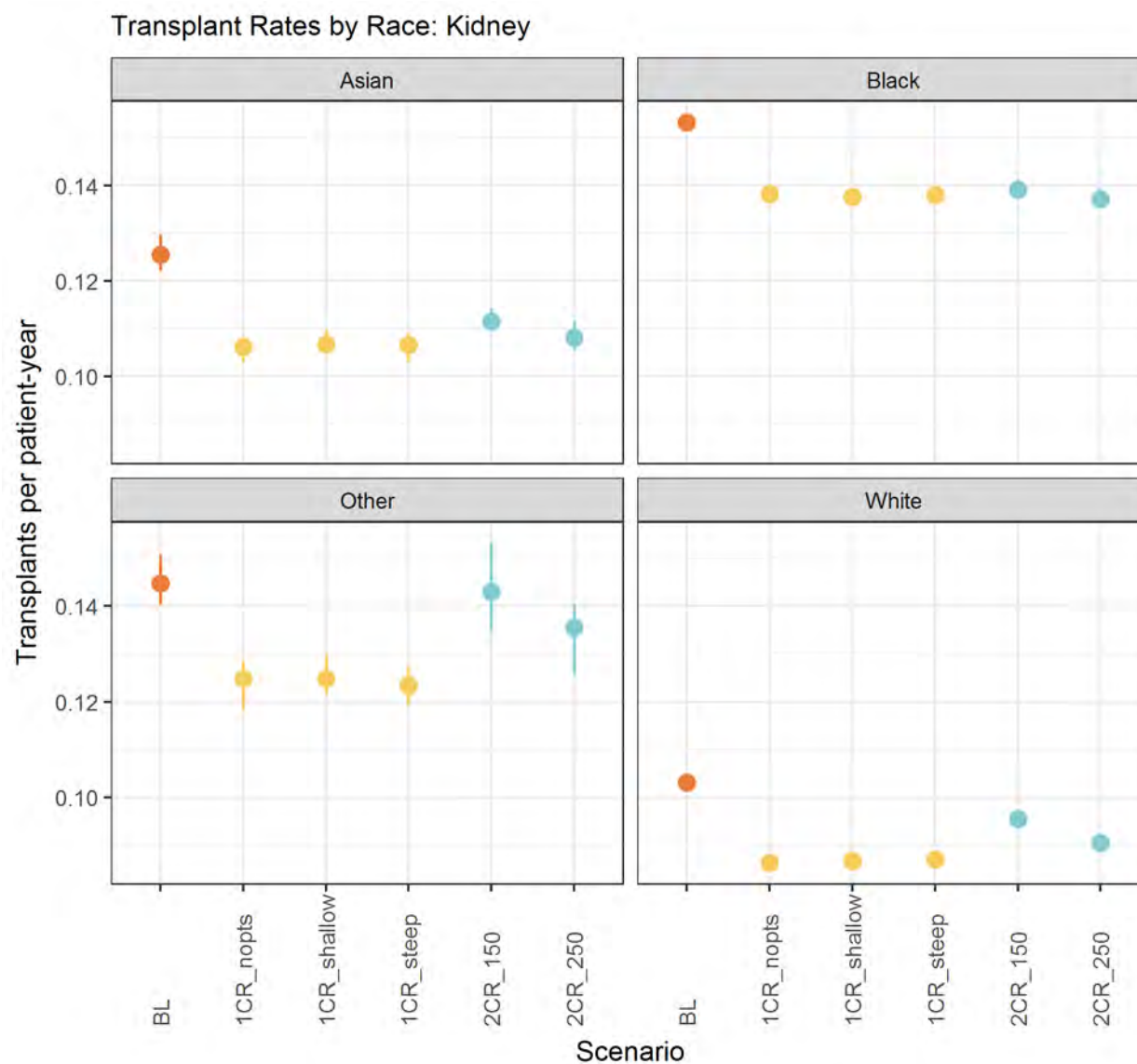


Figure 10 Transplant Rates by Race: Kidney



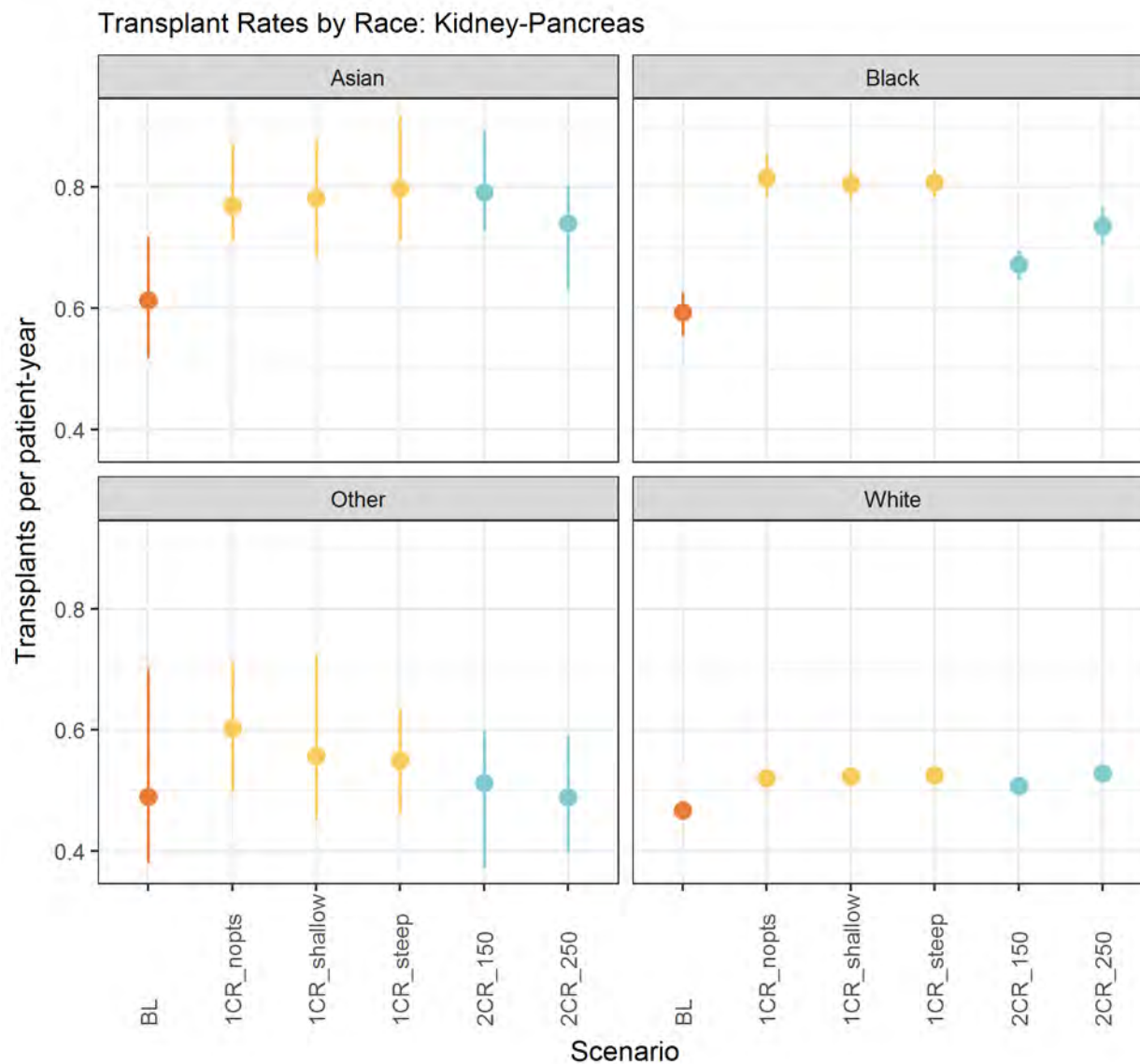


Figure 11 Transplant Rates by Race: Kidney-Pancreas

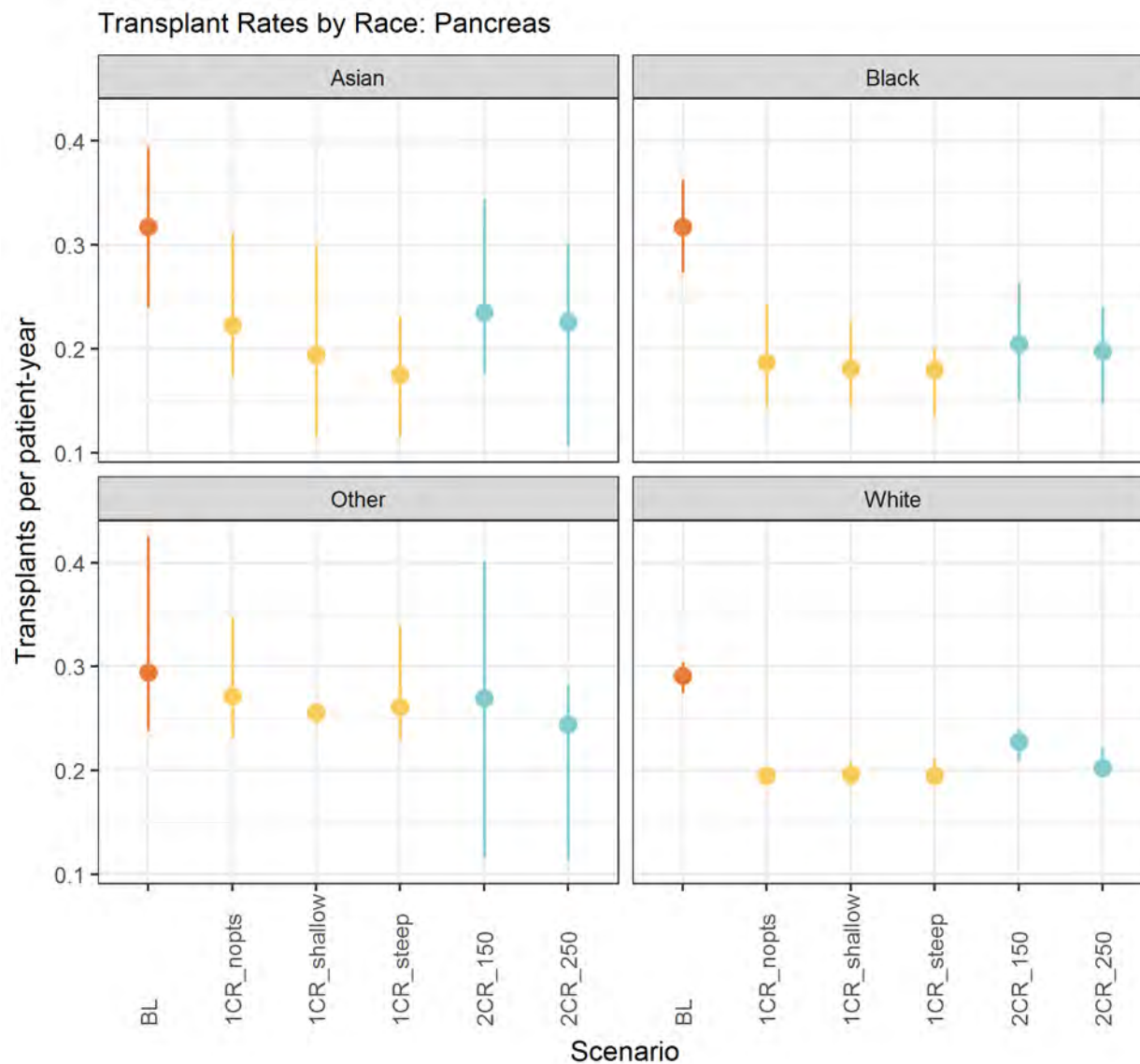


Figure 12 Transplant Rates by Race: Pancreas

## Transplant Rates: Ethnicity

### Transplant Rates by Ethnicity: Kidney

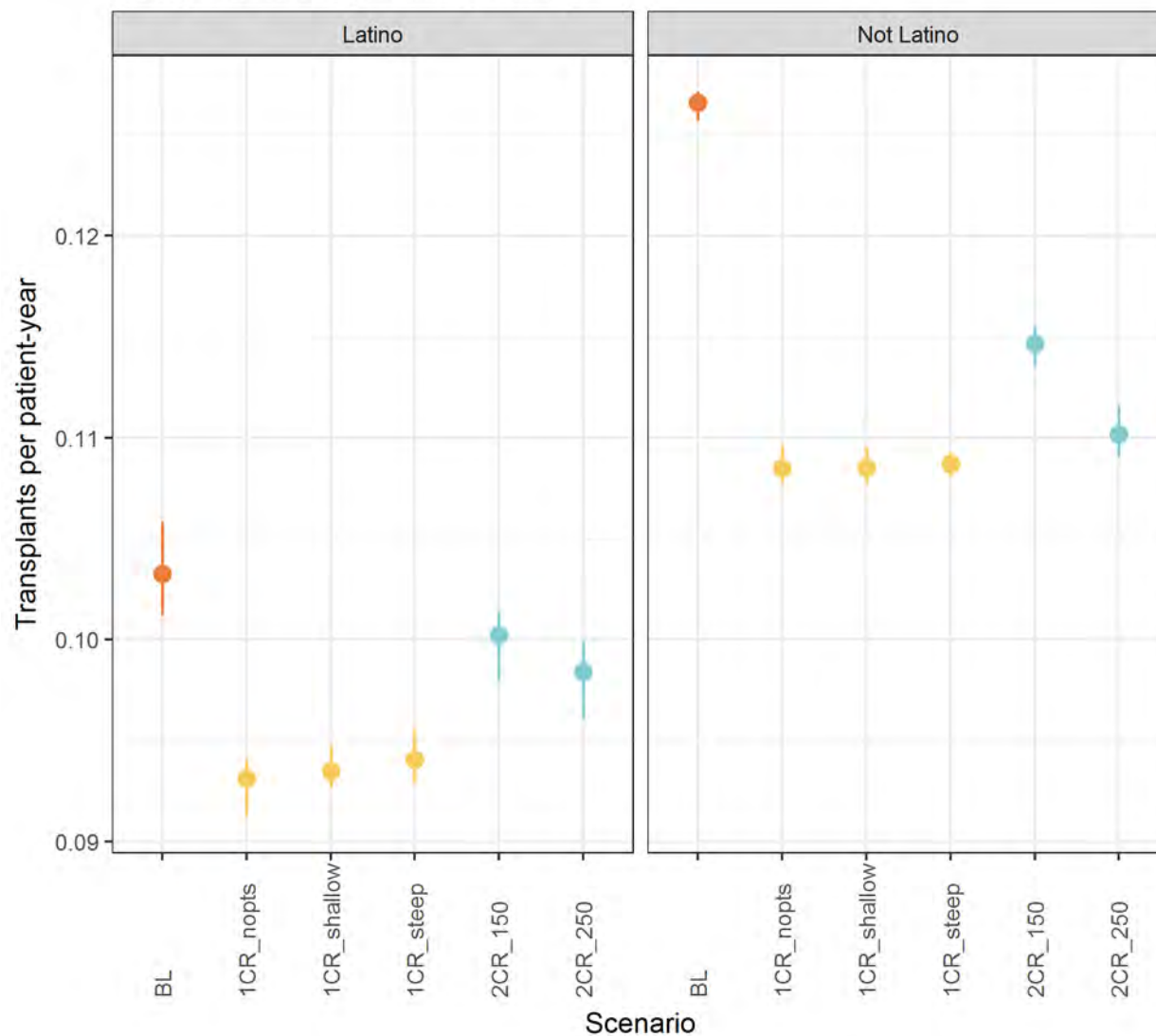


Figure 13 Transplant Rates by Ethnicity: Kidney

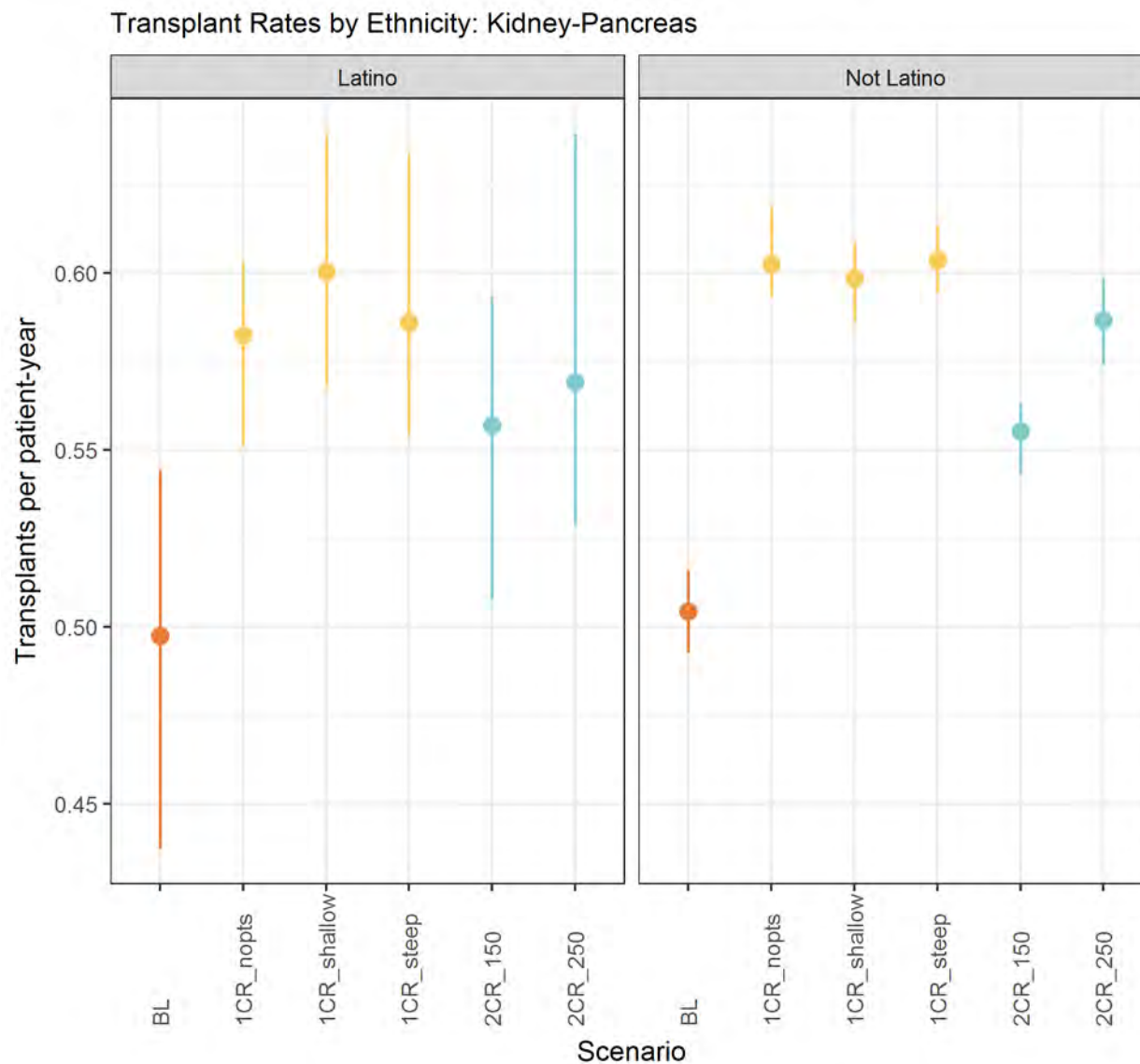


Figure 14 Transplant Rates by Ethnicity: Kidney-Pancreas

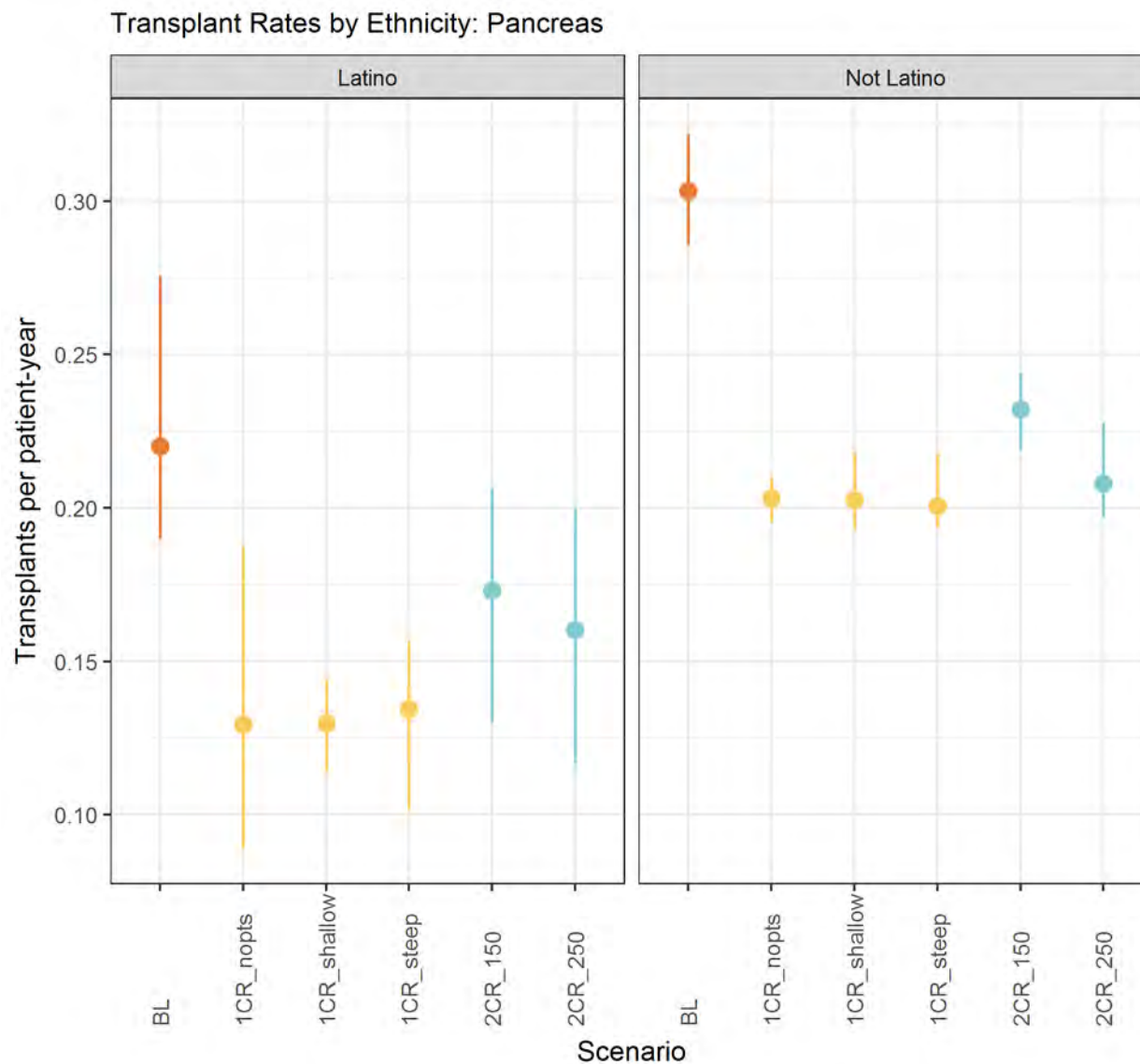


Figure 15 Transplant Rates by Ethnicity: Pancreas

## Transplant Rates: Sex

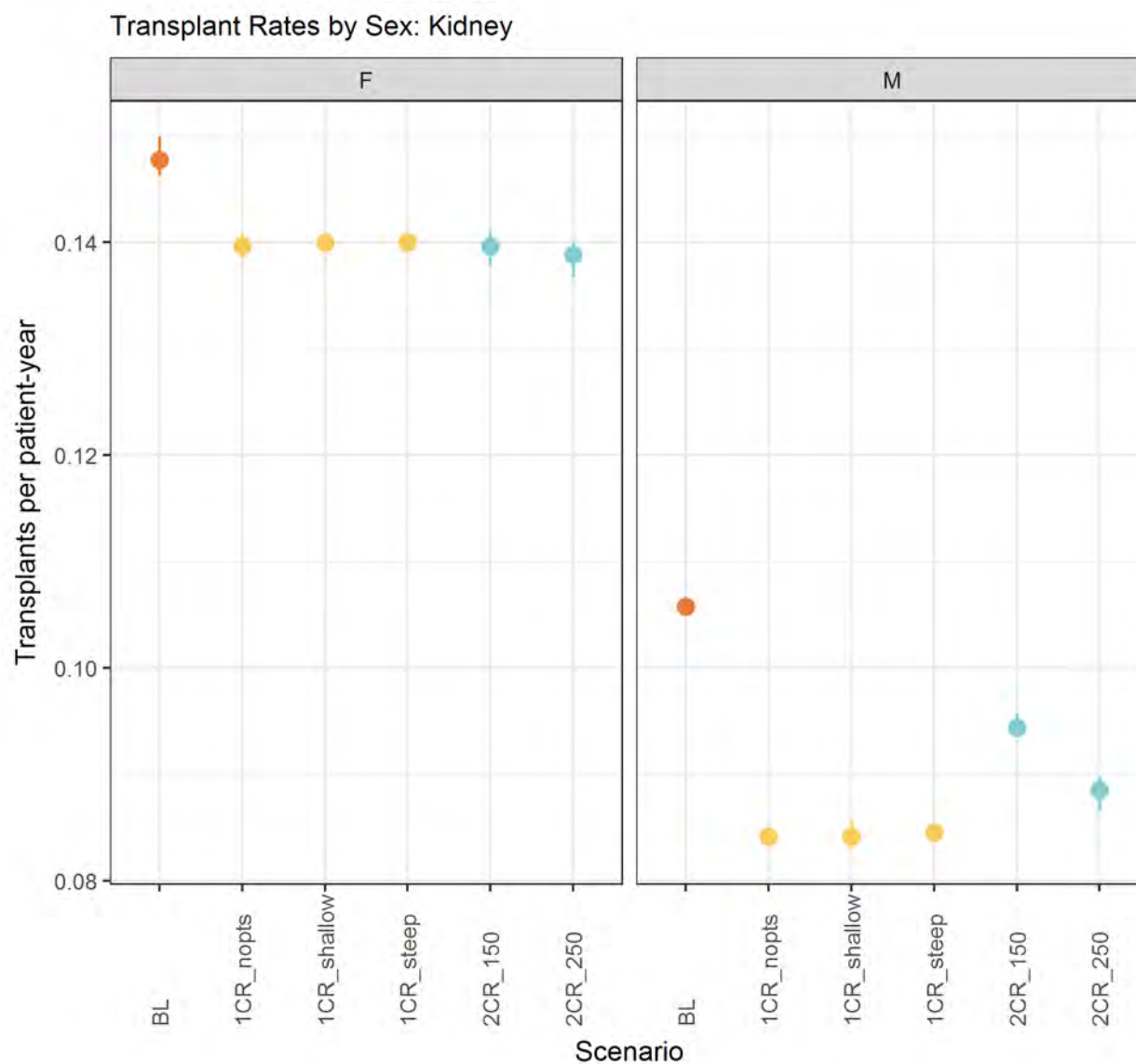


Figure 16 Transplant Rates by Sex: Kidney

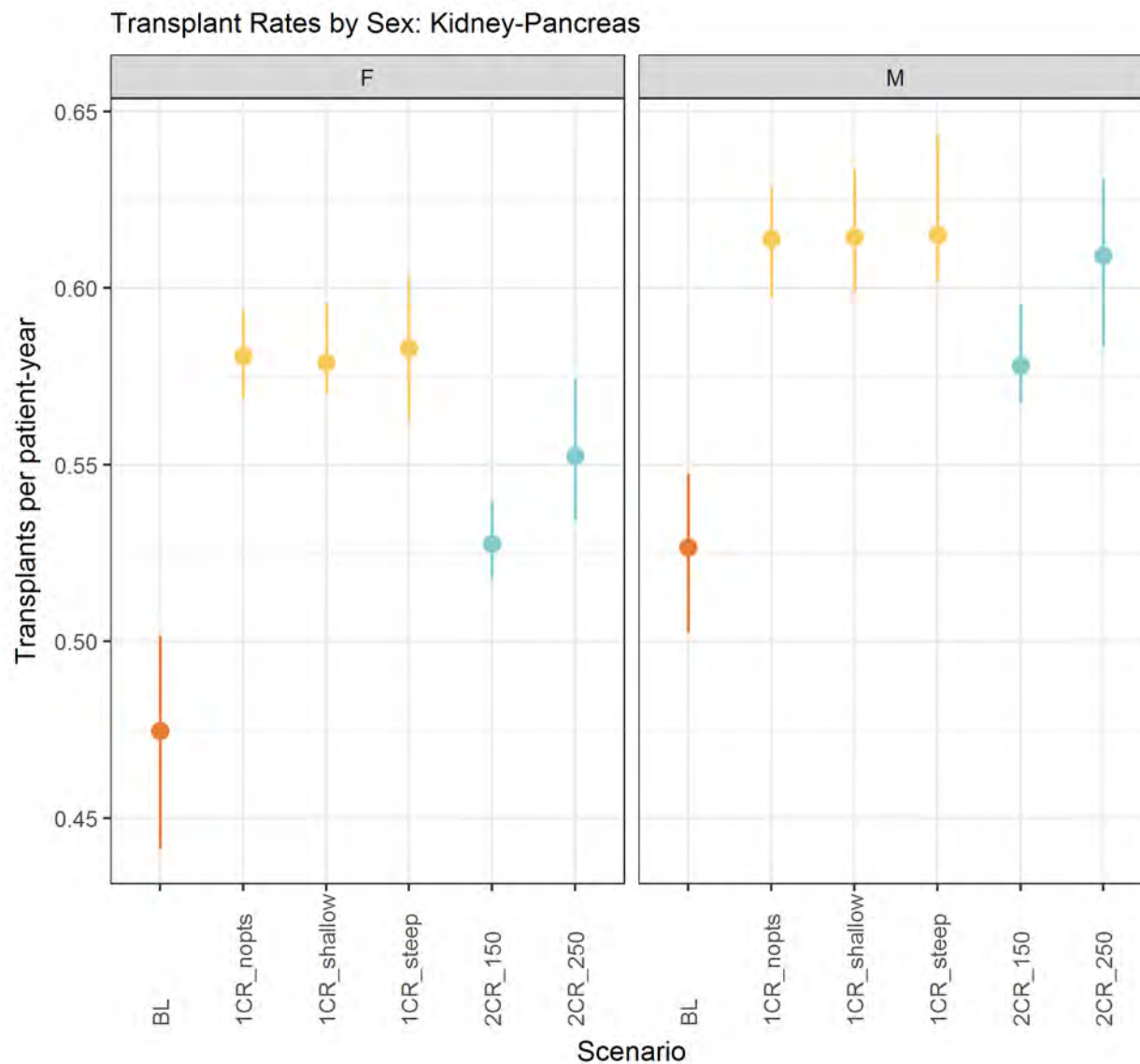


Figure 17 Transplant Rates by Sex: Kidney-Pancreas



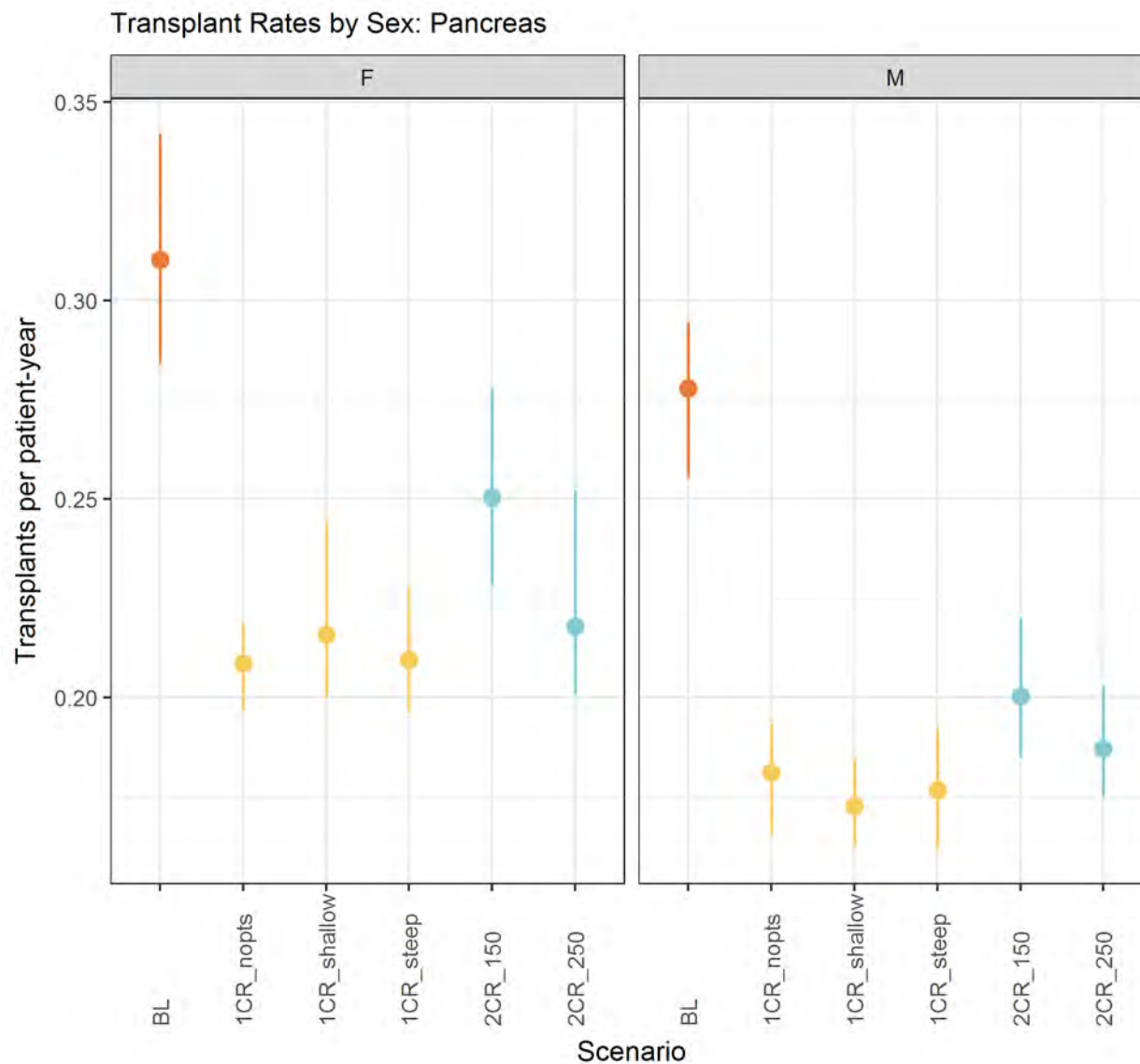


Figure 18 Transplant Rates by Sex: Pancreas

## Transplant Rates: ABO Group

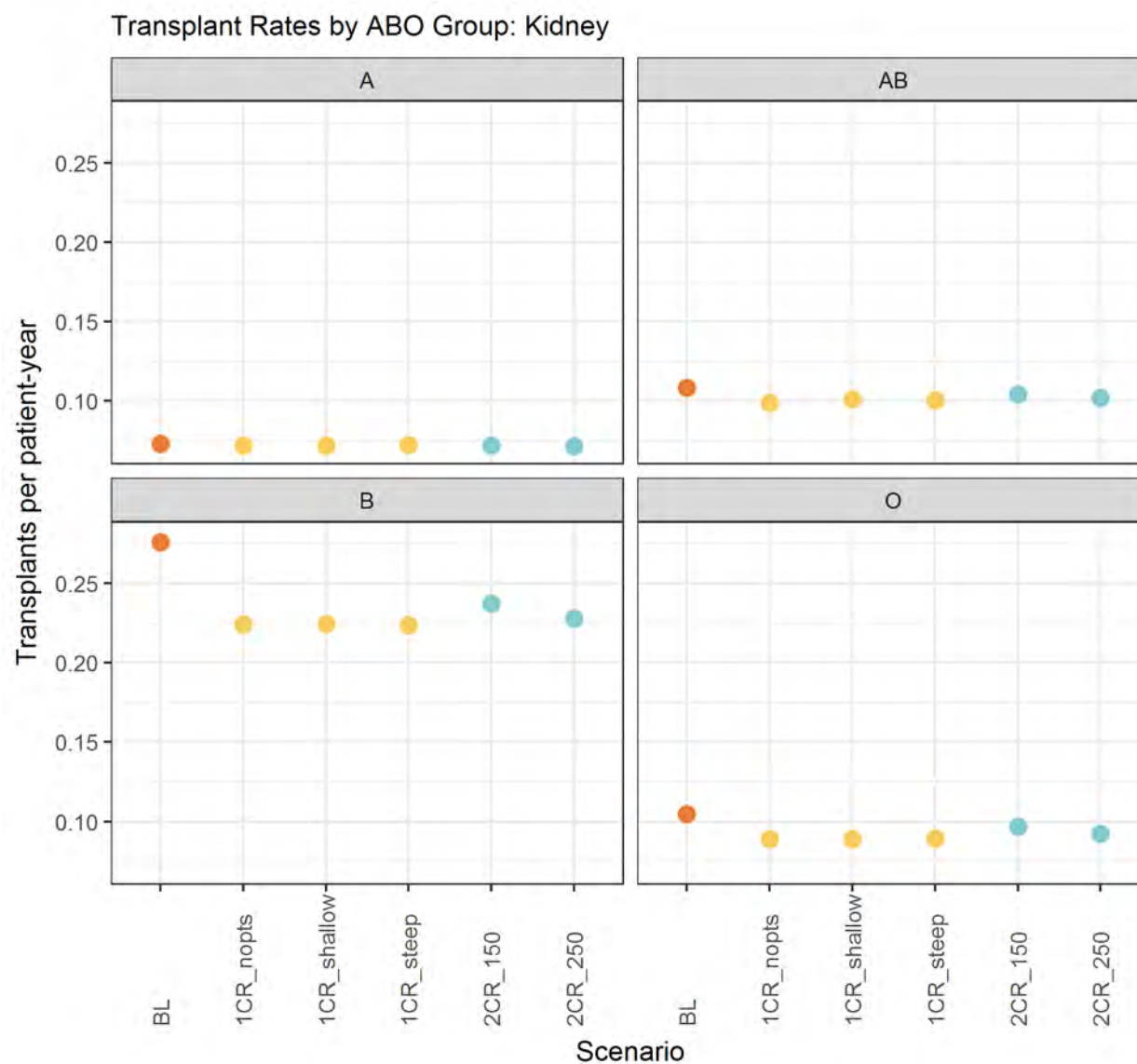


Figure 19 Transplant Rates by ABO Group: Kidney

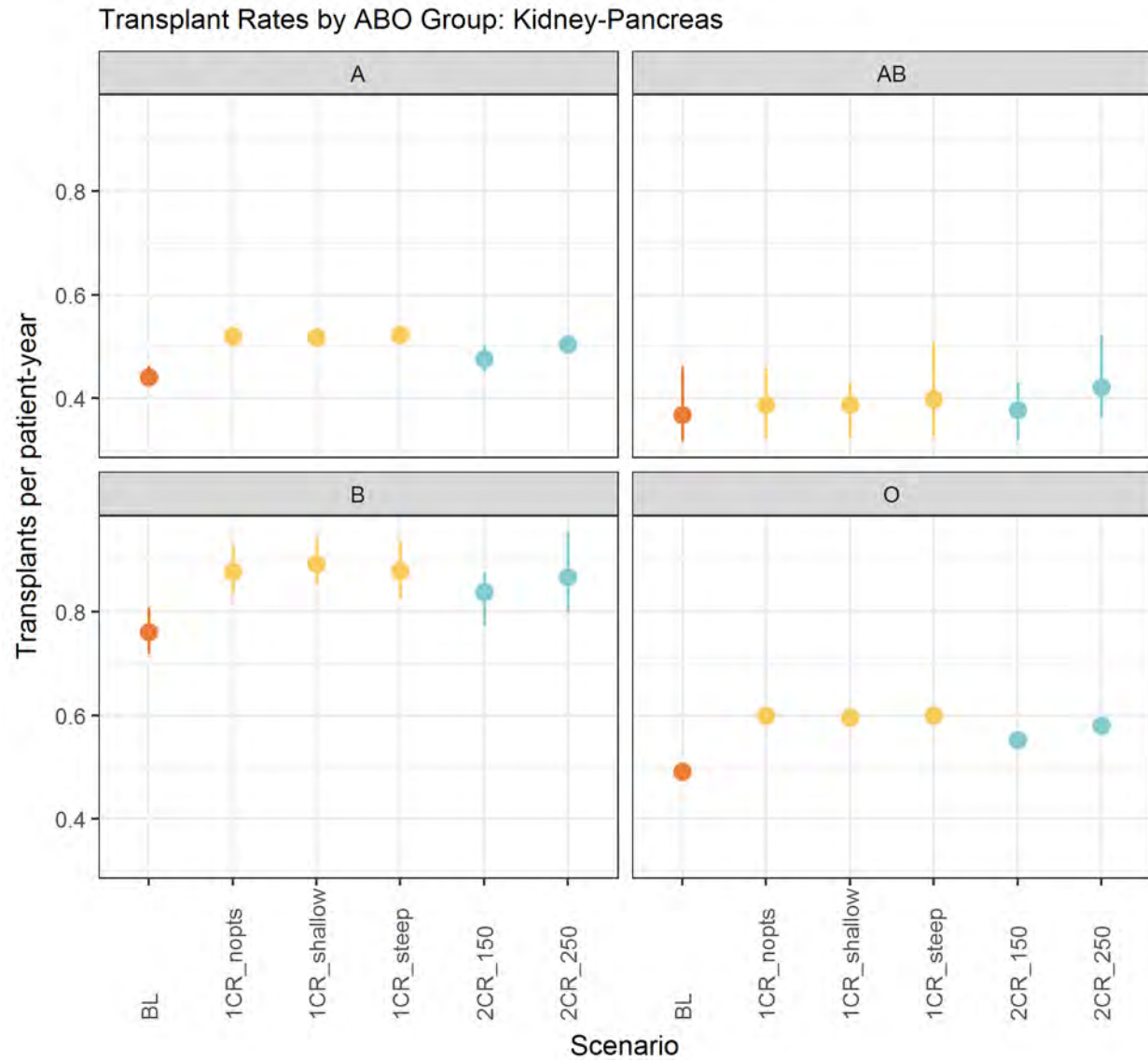


Figure 20 Transplant Rates by ABO Group: Kidney-Pancreas

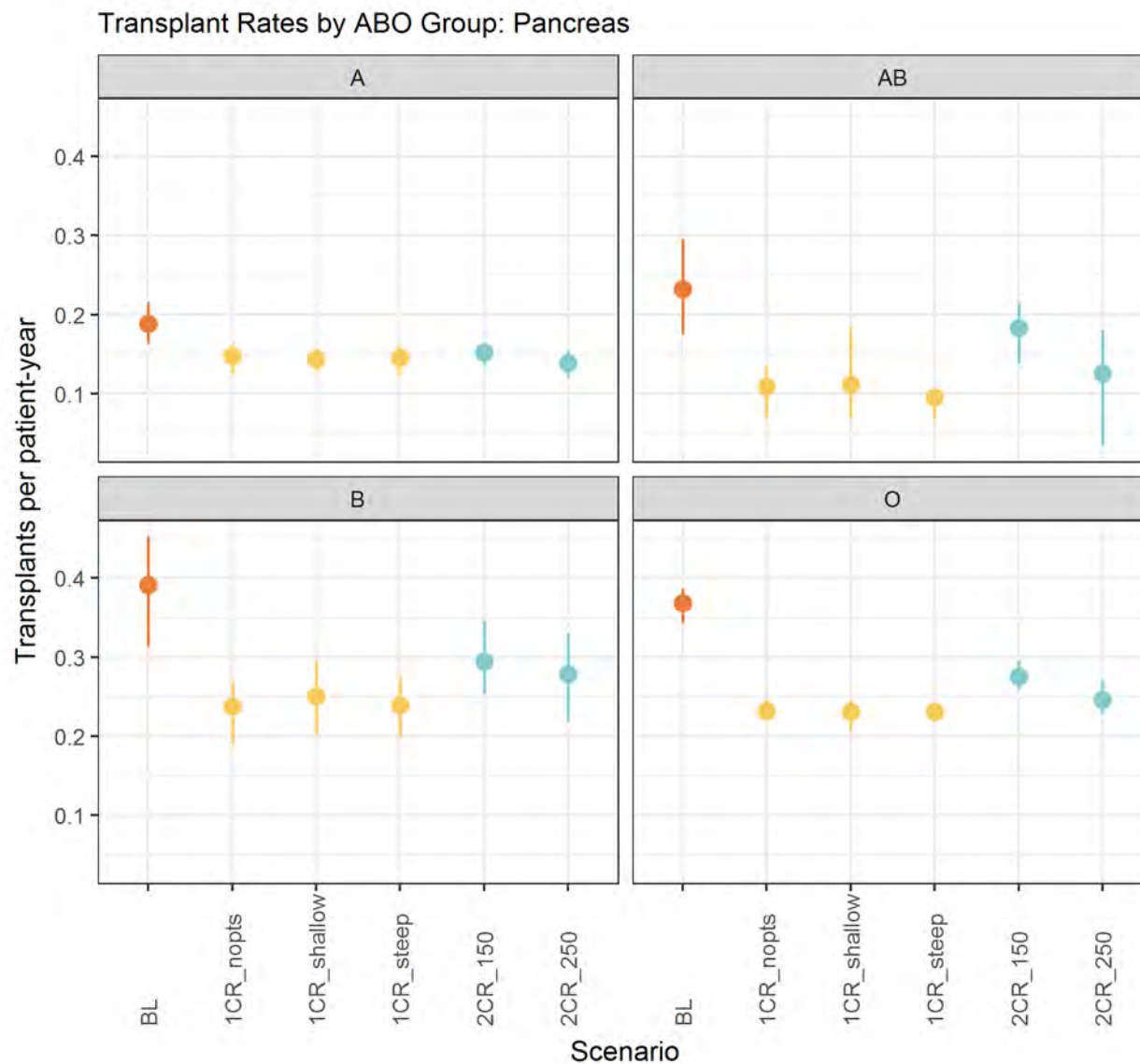


Figure 21 Transplant Rates by ABO Group: Pancreas

## Transplant Rates: Diagnosis

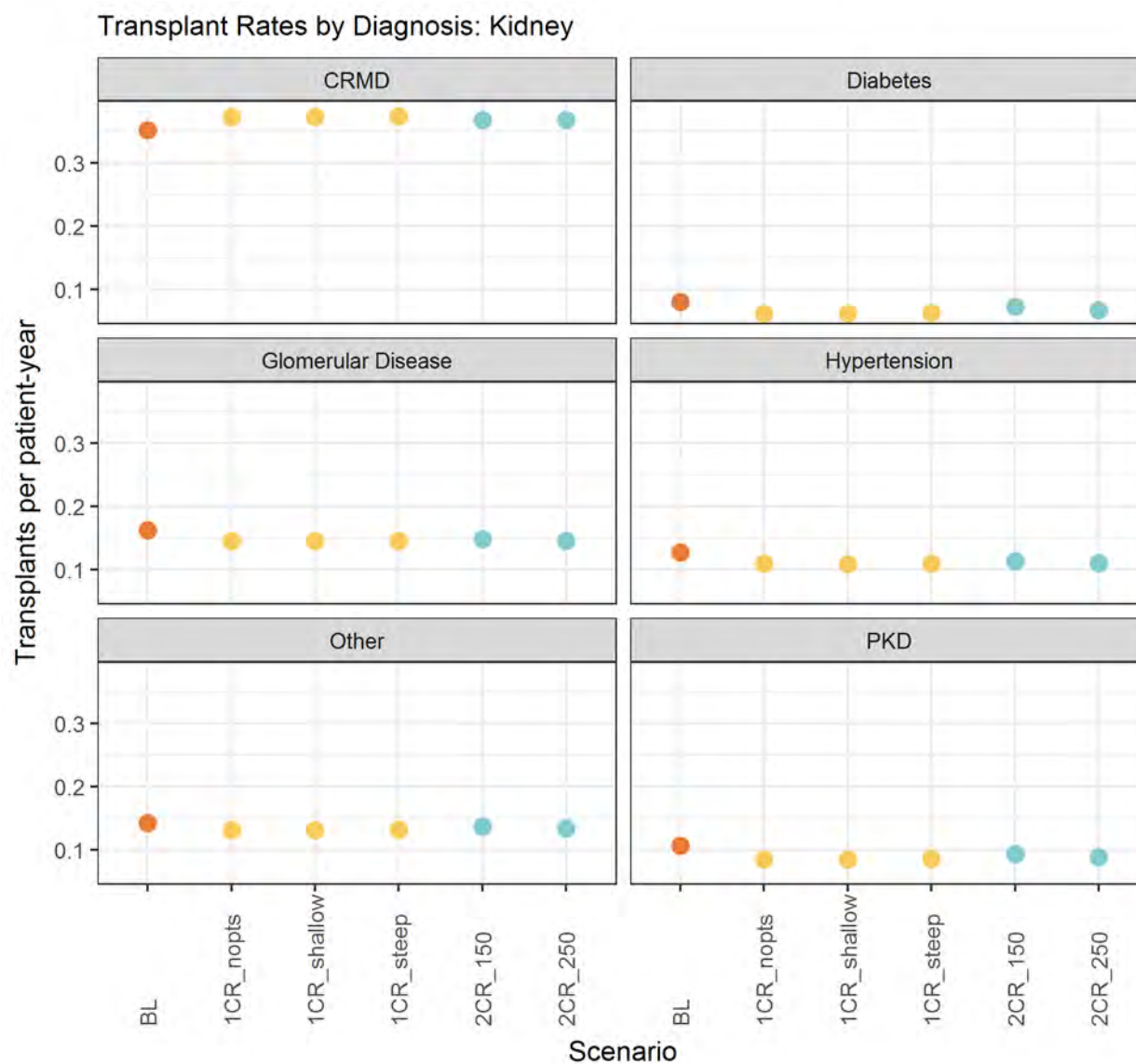


Figure 22 Transplant Rates by Diagnosis: Kidney

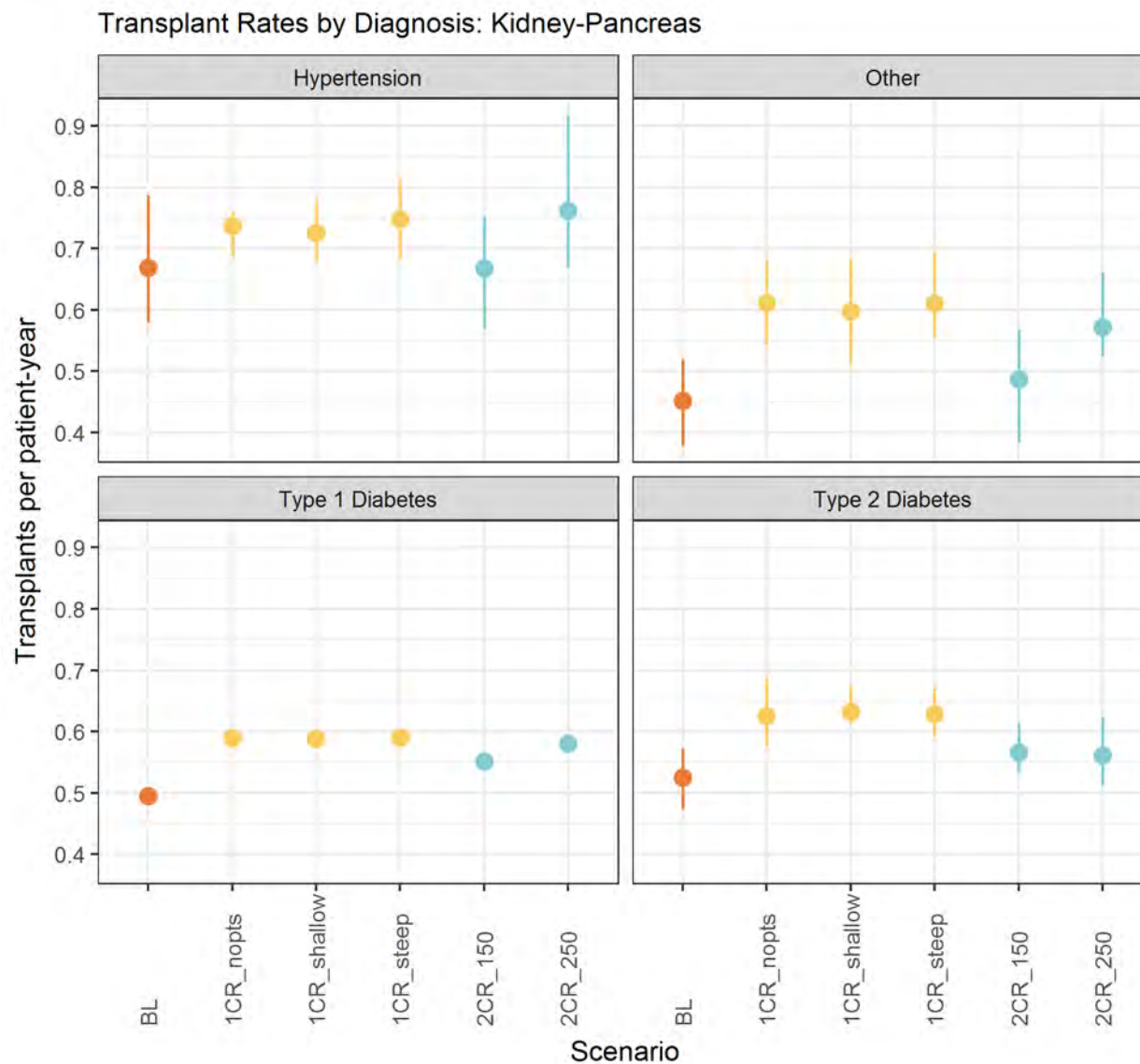


Figure 23 Transplant Rates by Diagnosis: Kidney-Pancreas



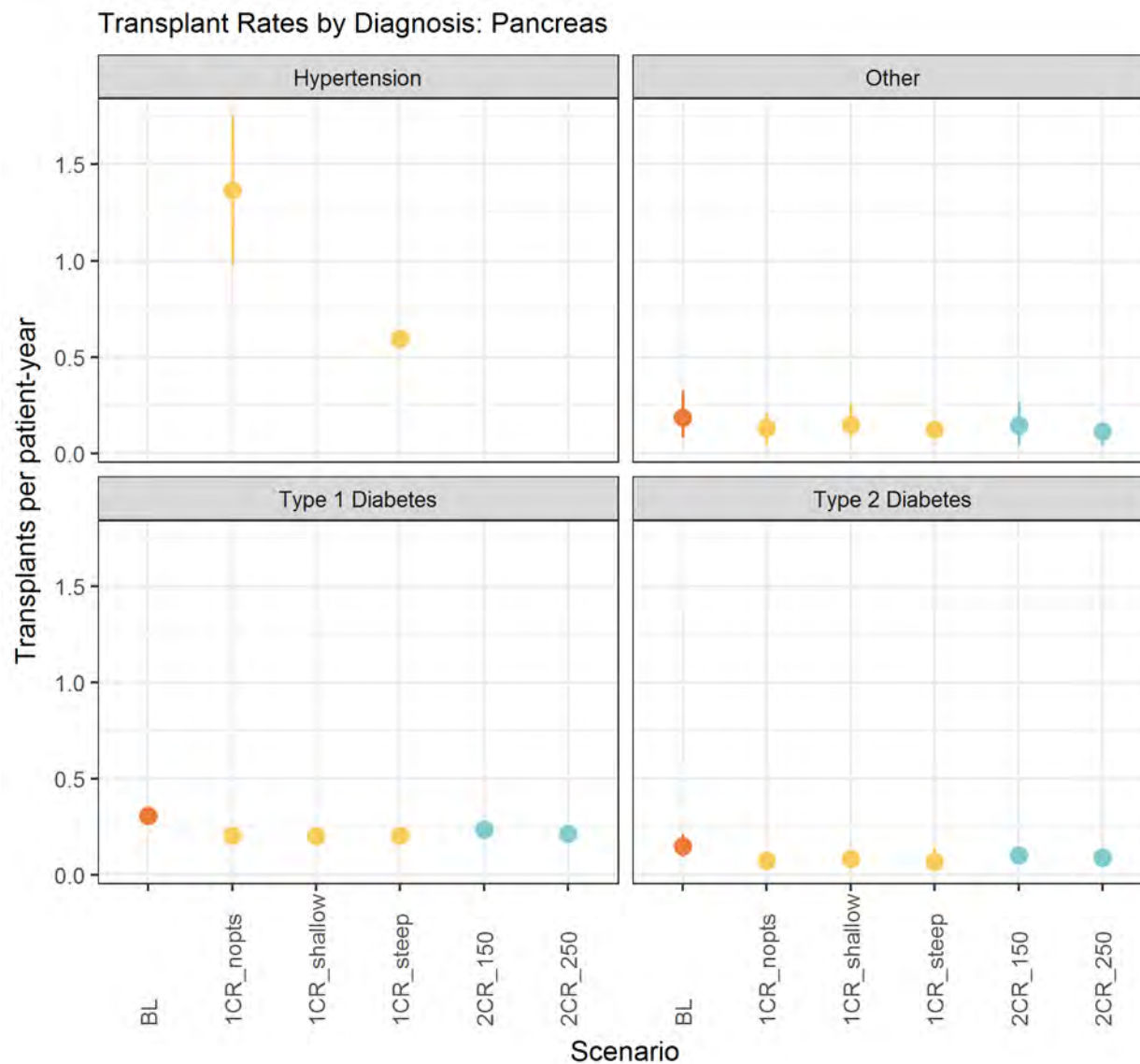


Figure 24 Transplant Rates by Diagnosis: Pancreas



## Transplant Rates: Dialysis Time

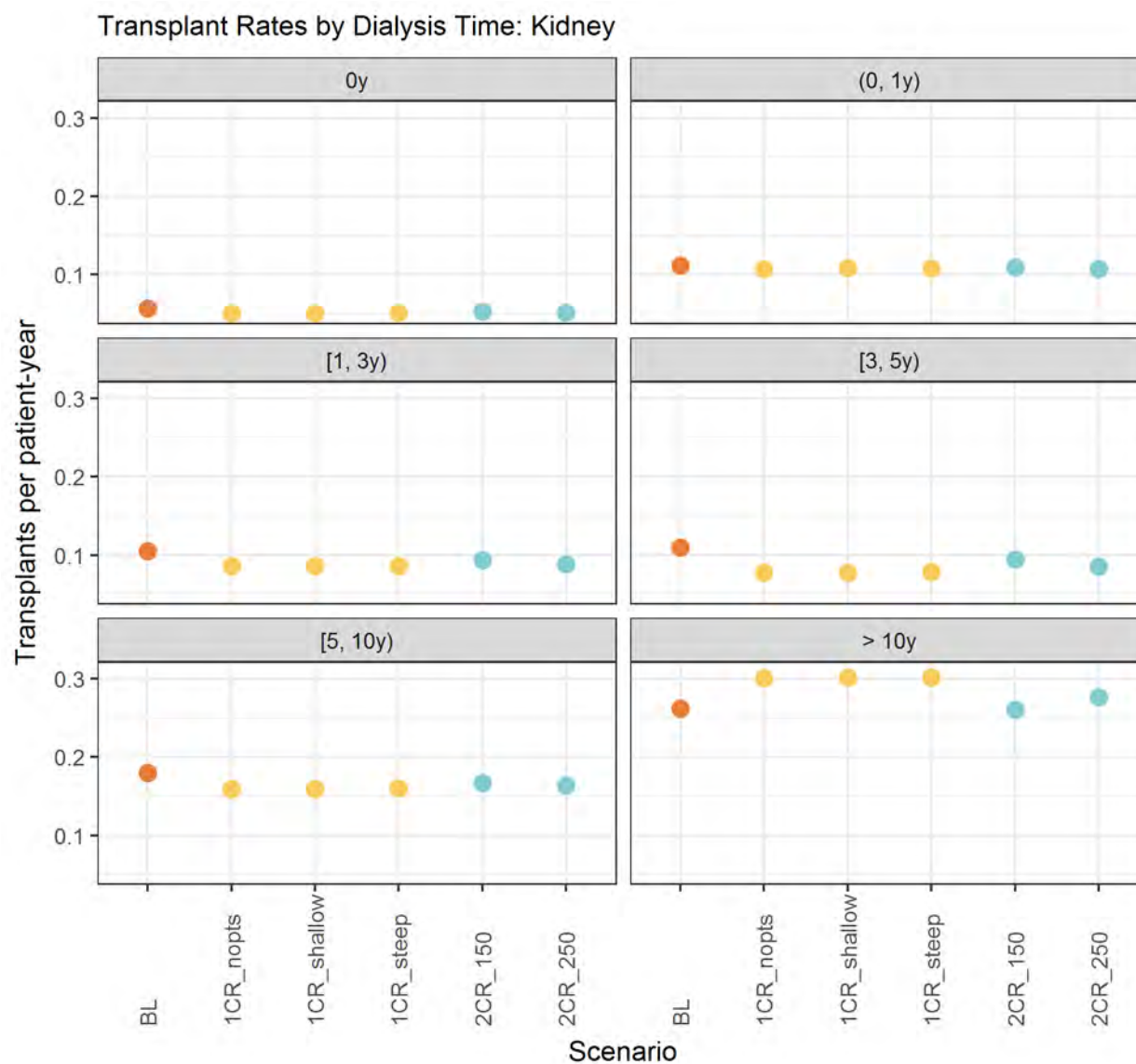


Figure 25 Transplant Rates by Dialysis Time: Kidney

Transplant Rates: cPRA: 0 - 60

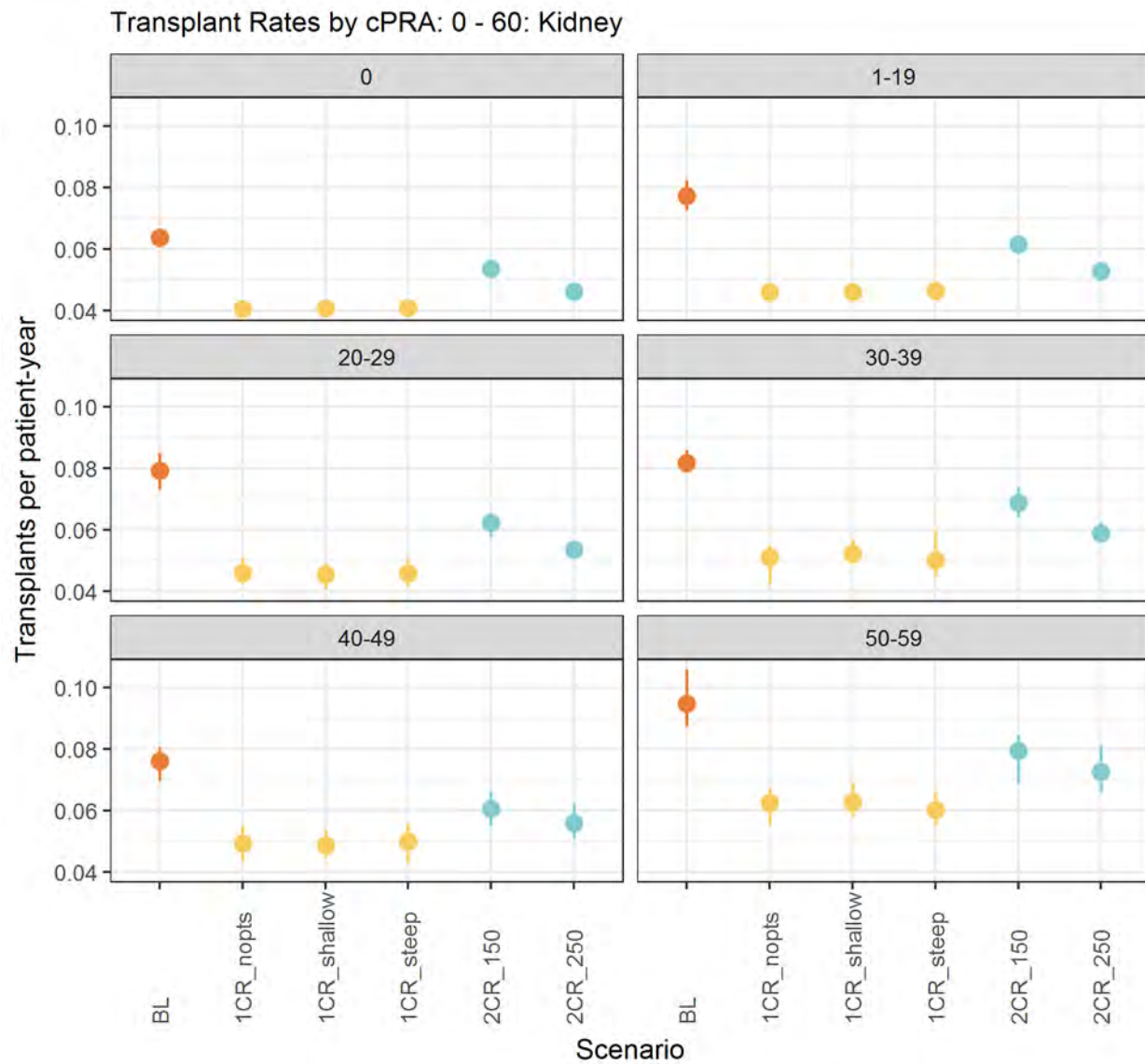


Figure 26 Transplant Rates by cPRA: 0 - 60: Kidney

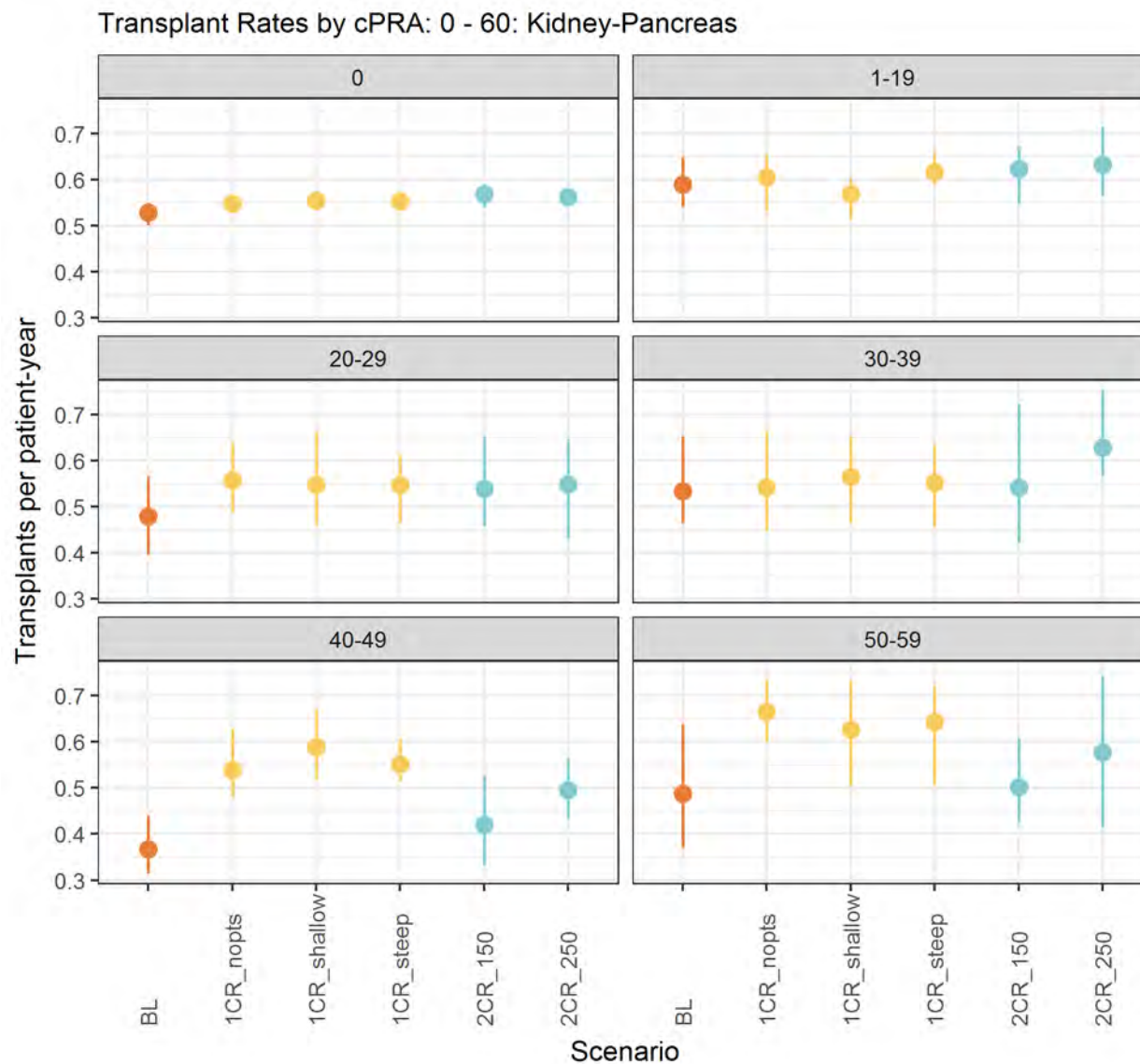


Figure 27 Transplant Rates by cPRA: 0 - 60: Kidney-Pancreas

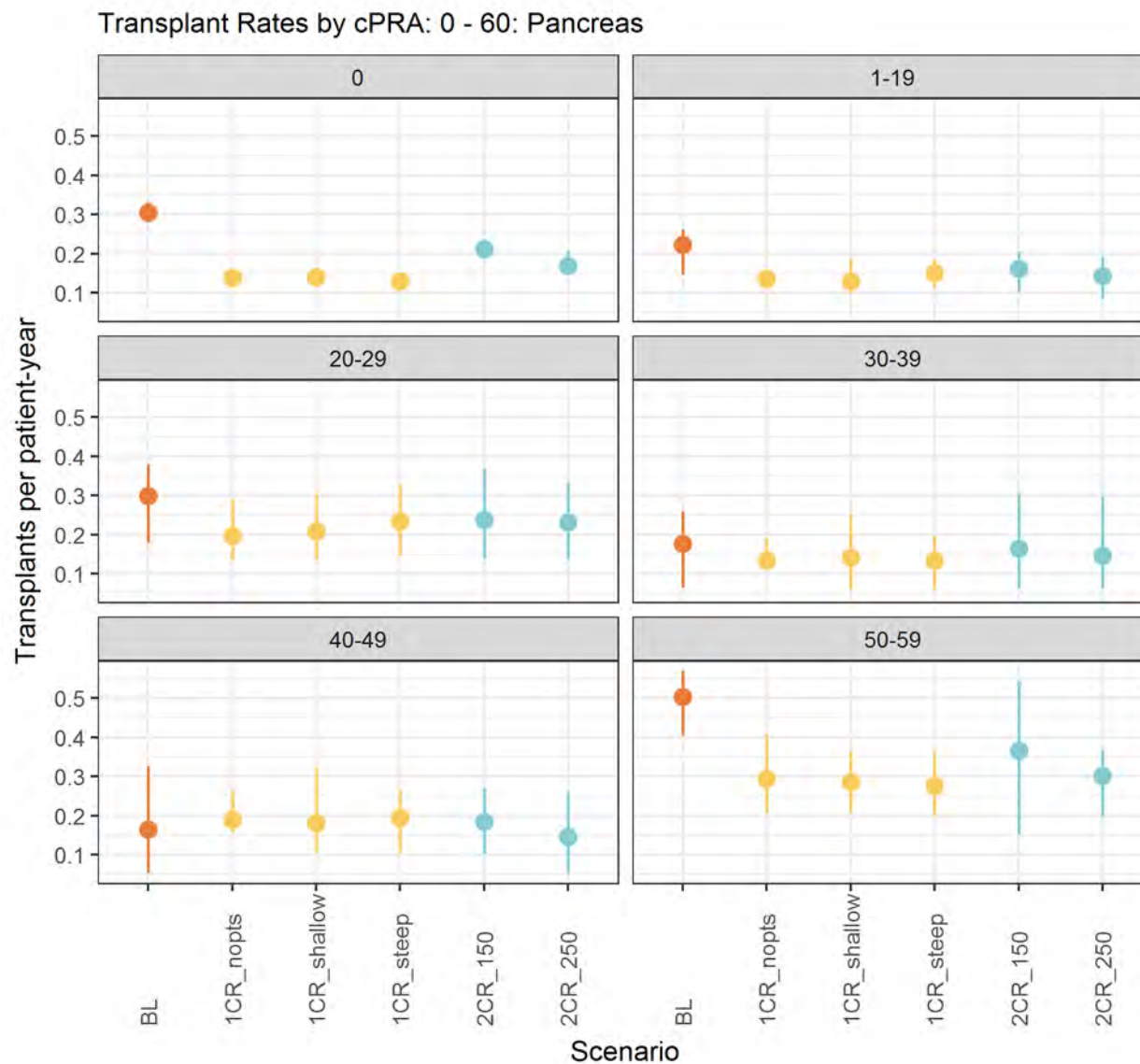


Figure 28 Transplant Rates by cPRA: 0 - 60: Pancreas

Transplant Rates: cPRA: 61 - 94

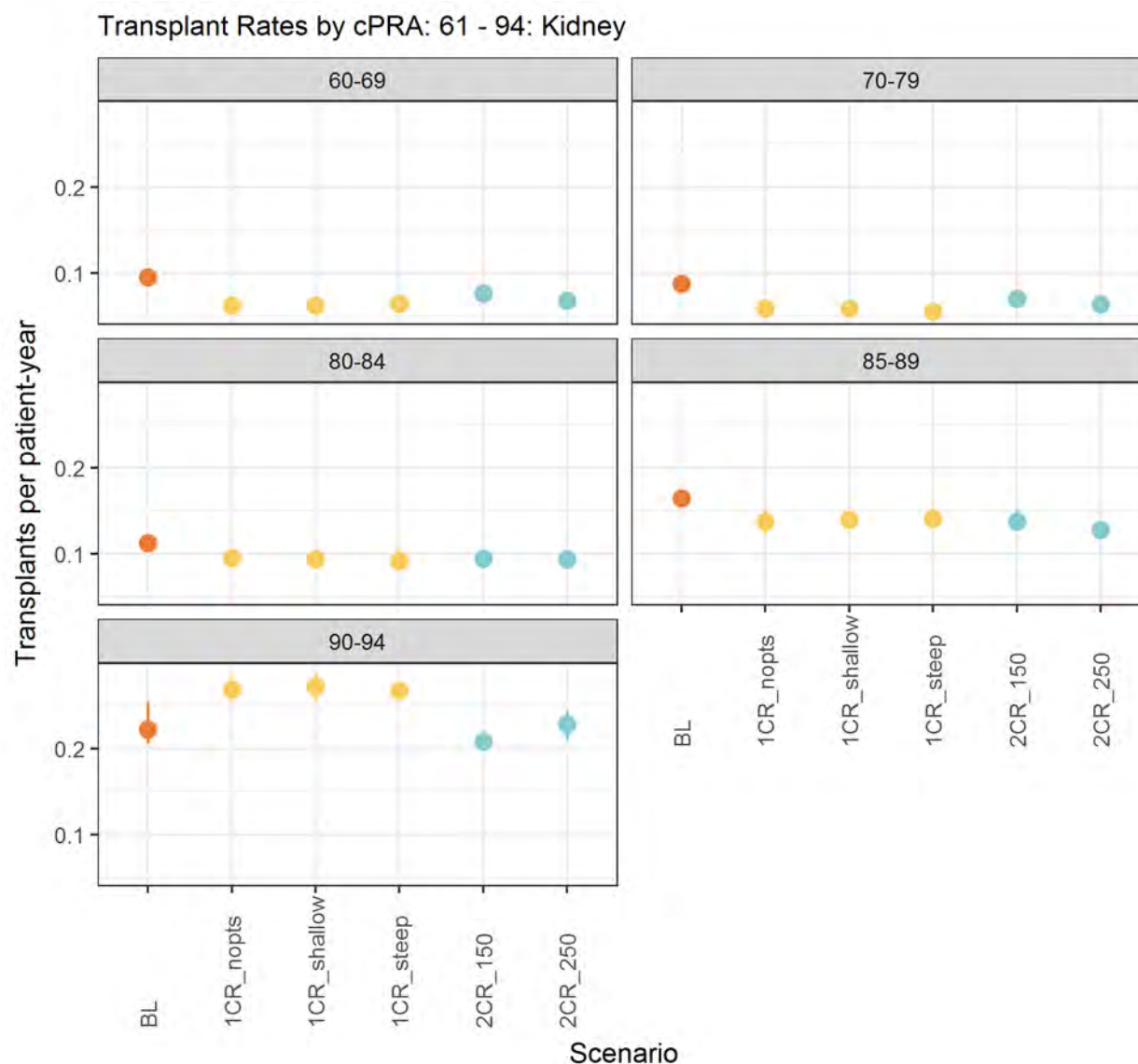


Figure 29 Transplant Rates by cPRA: 61 - 94: Kidney



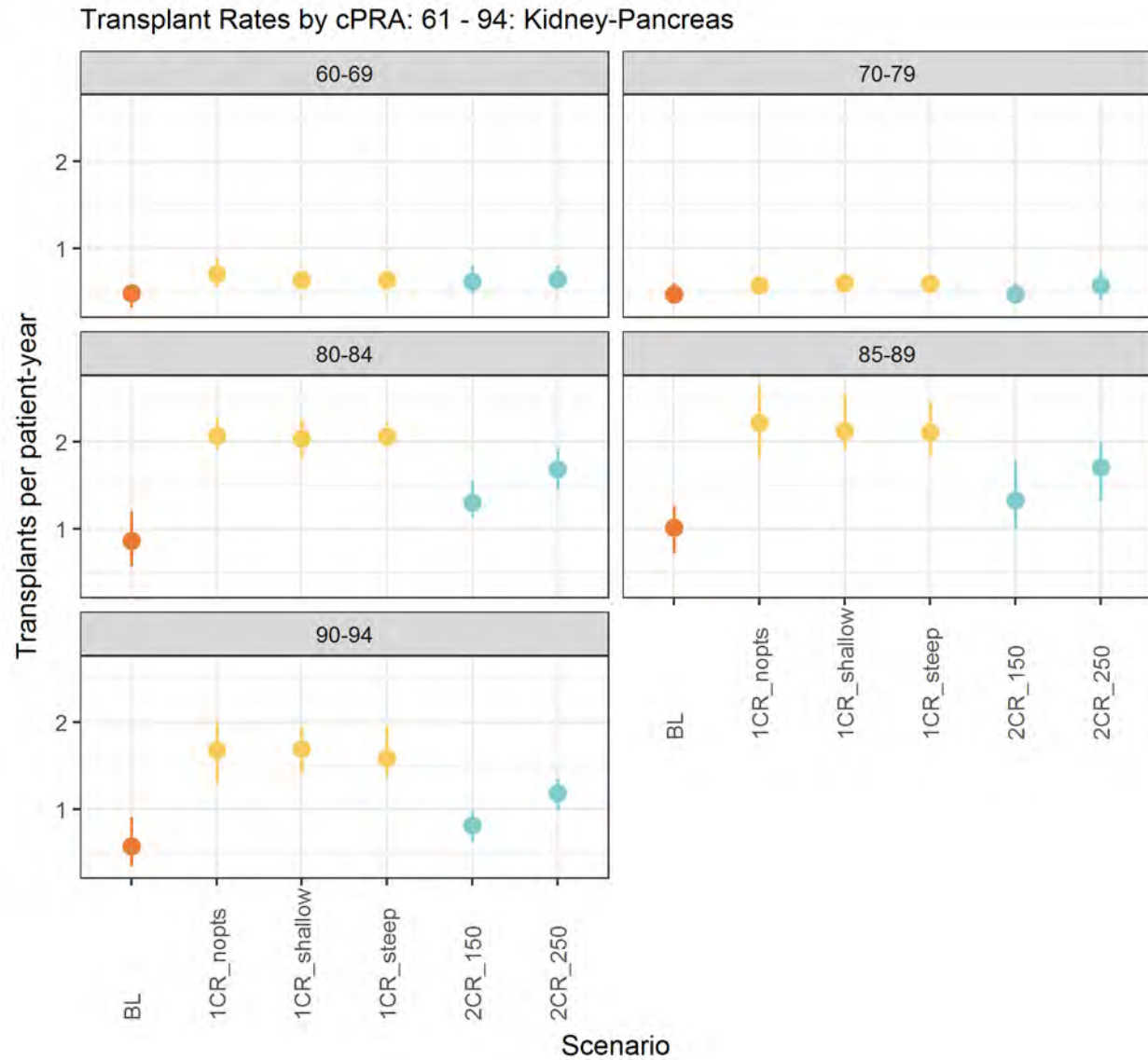


Figure 30 Transplant Rates by cPRA: 61 - 94: Kidney-Pancreas

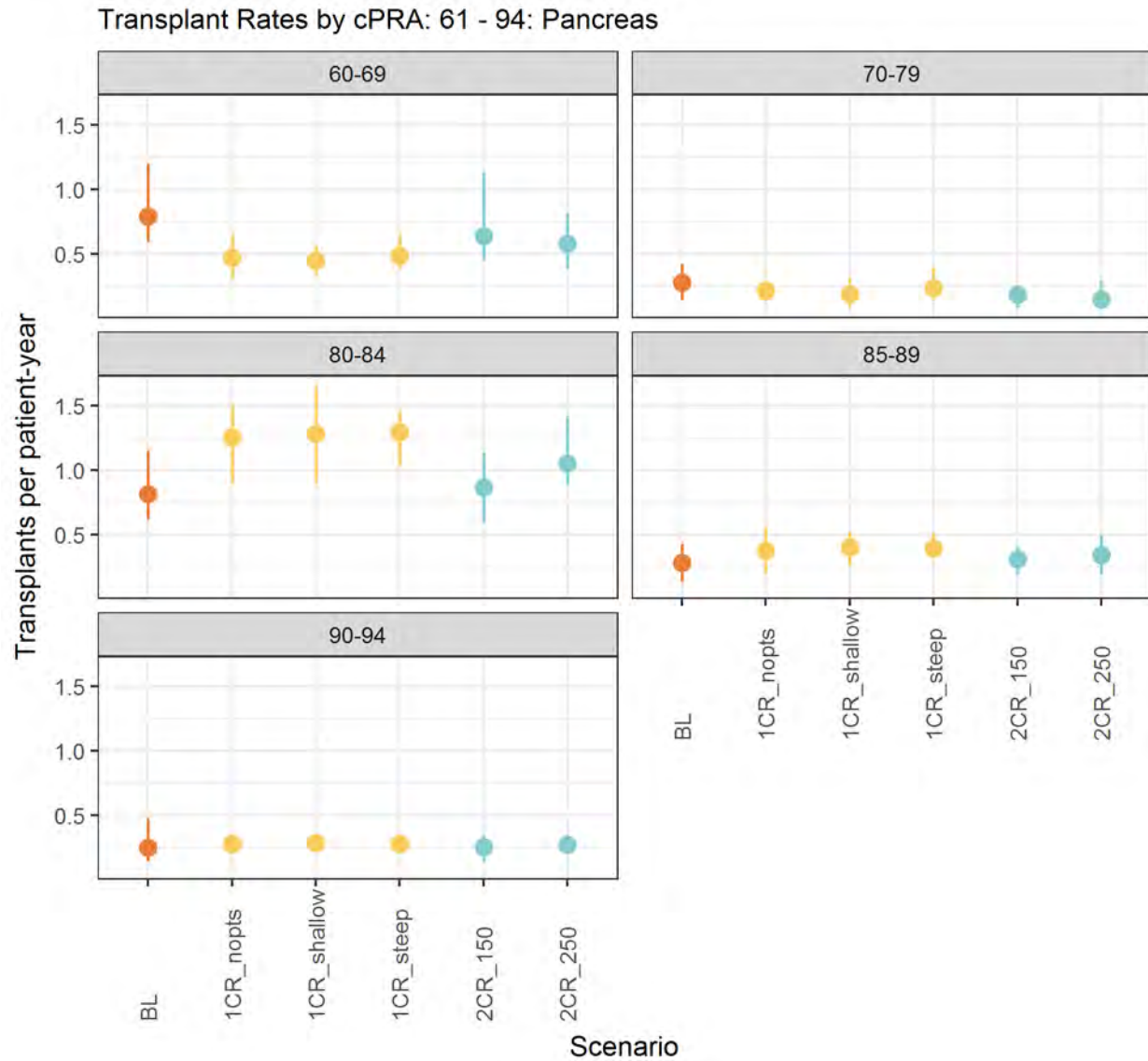


Figure 31 Transplant Rates by cPRA: 61 - 94: Pancreas



Transplant Rates: cPRA: 95 - 100

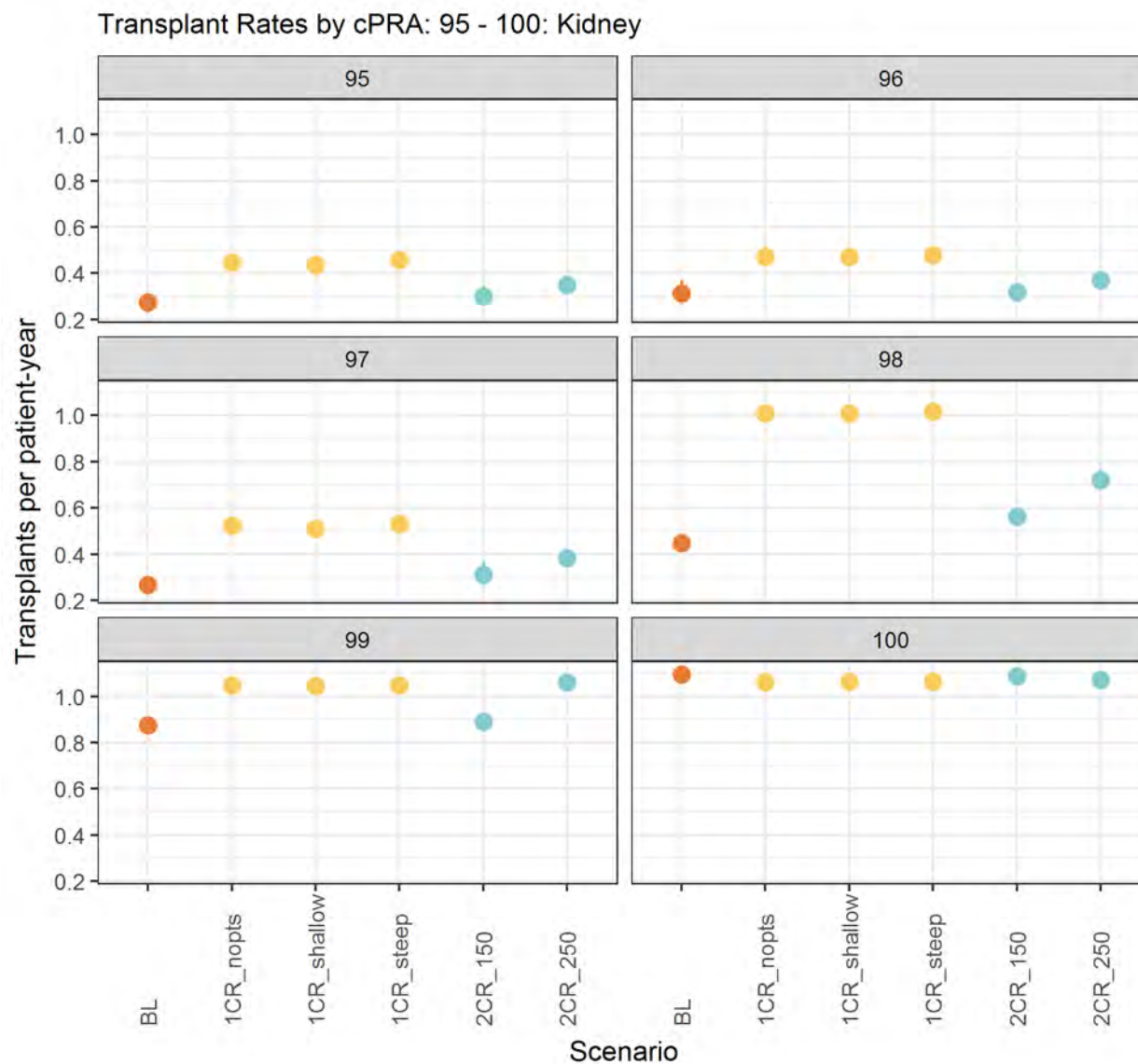


Figure 32 Transplant Rates by cPRA: 95 - 100: Kidney

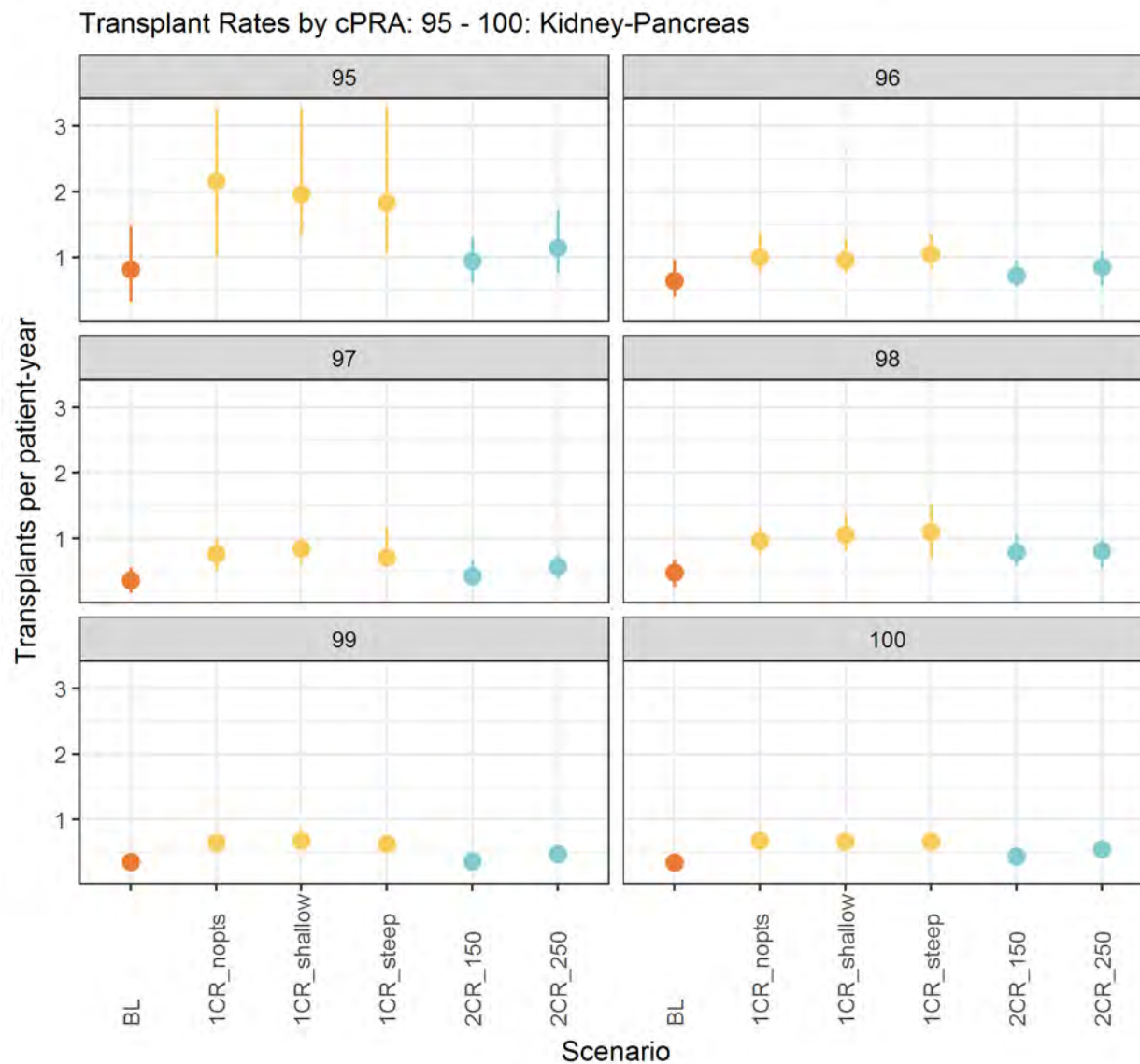


Figure 33 Transplant Rates by cPRA: 95 - 100: Kidney-Pancreas

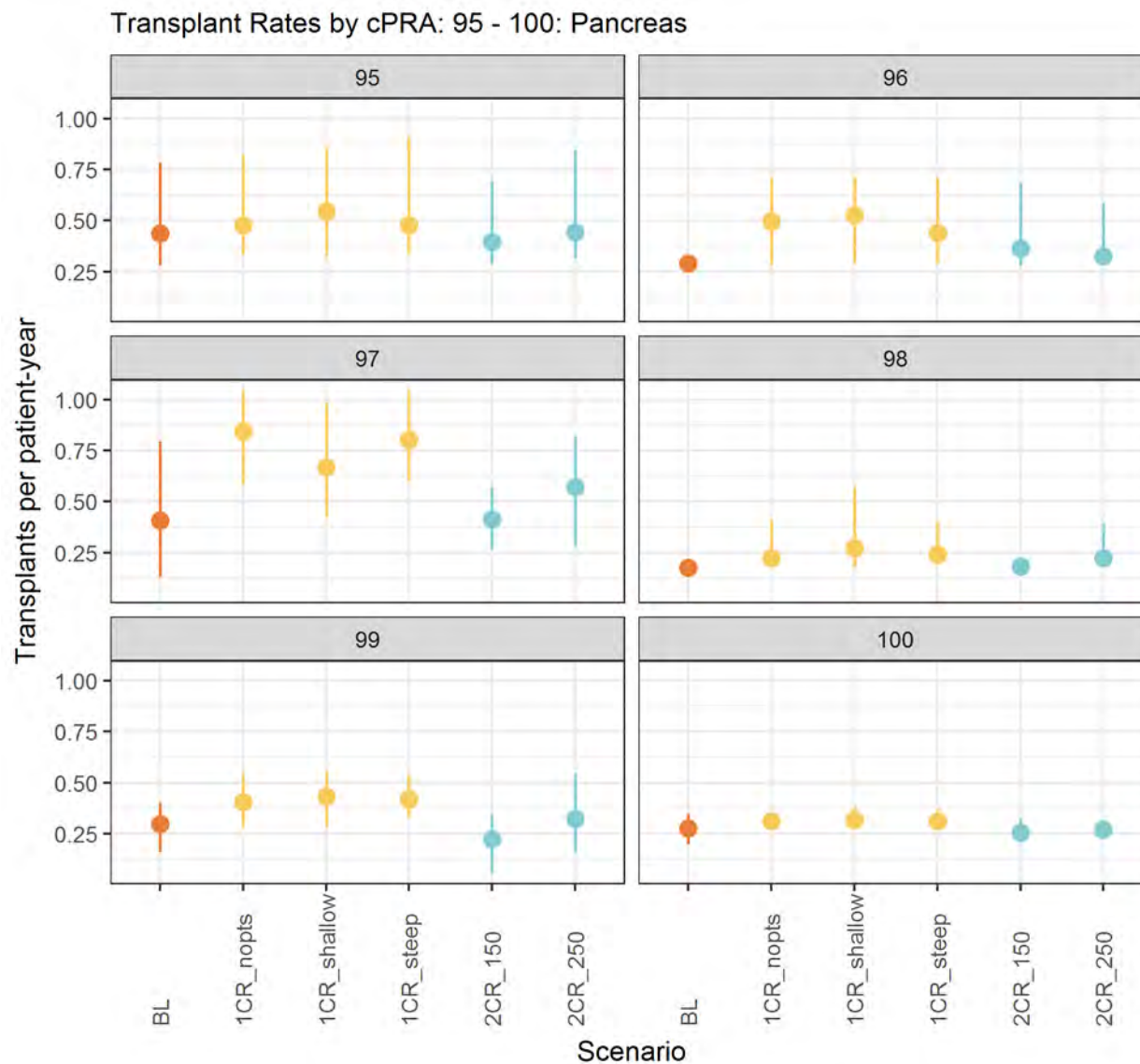


Figure 34 Transplant Rates by cPRA: 95 - 100: Pancreas

Transplant Rates: cPRA: 95 - 98

Transplant Rates by cPRA: 95 - 98: Kidney

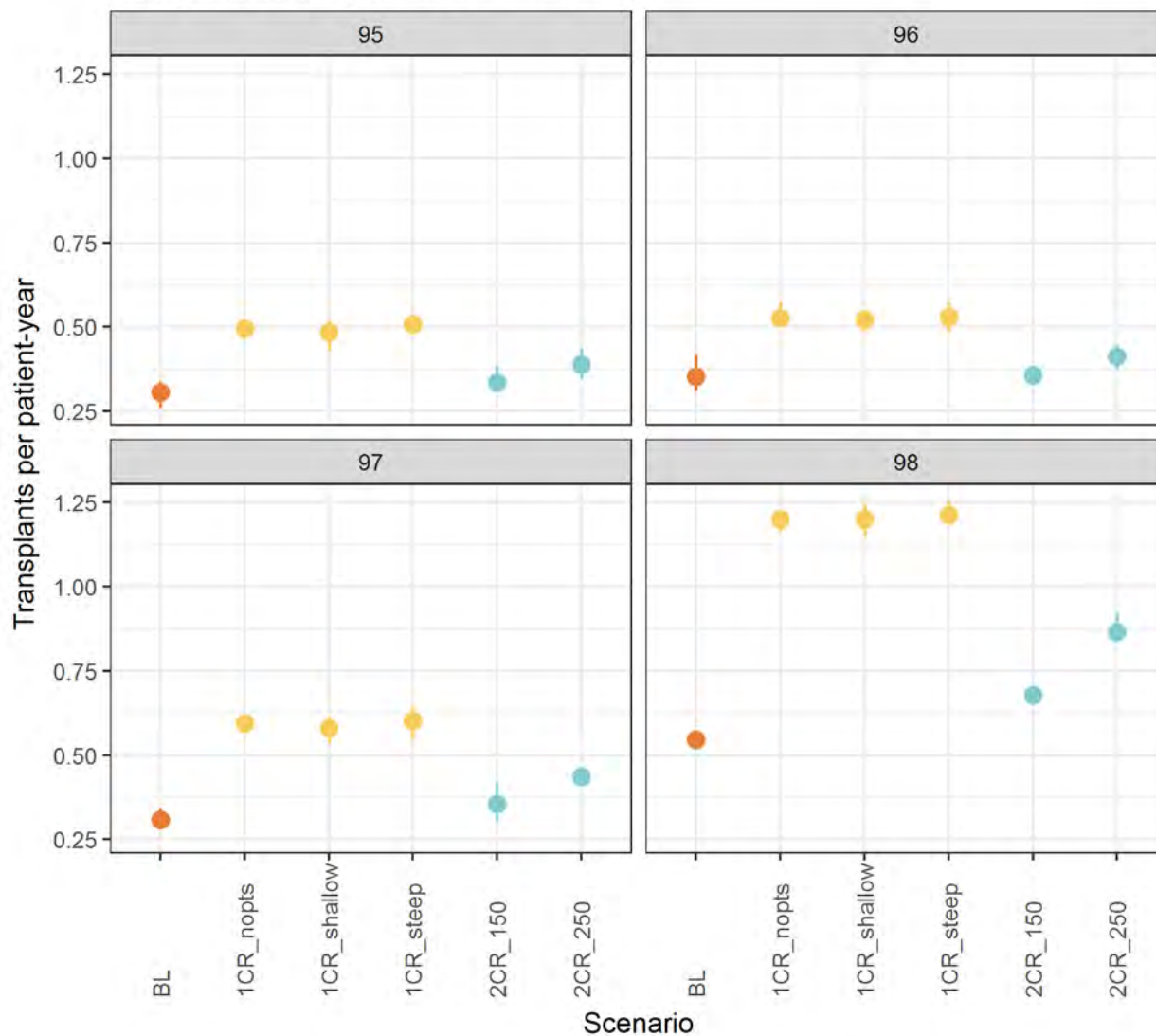


Figure 35 Transplant Rates by cPRA: 95 - 98: Kidney

Transplant Rates: cPRA: 99 - 100

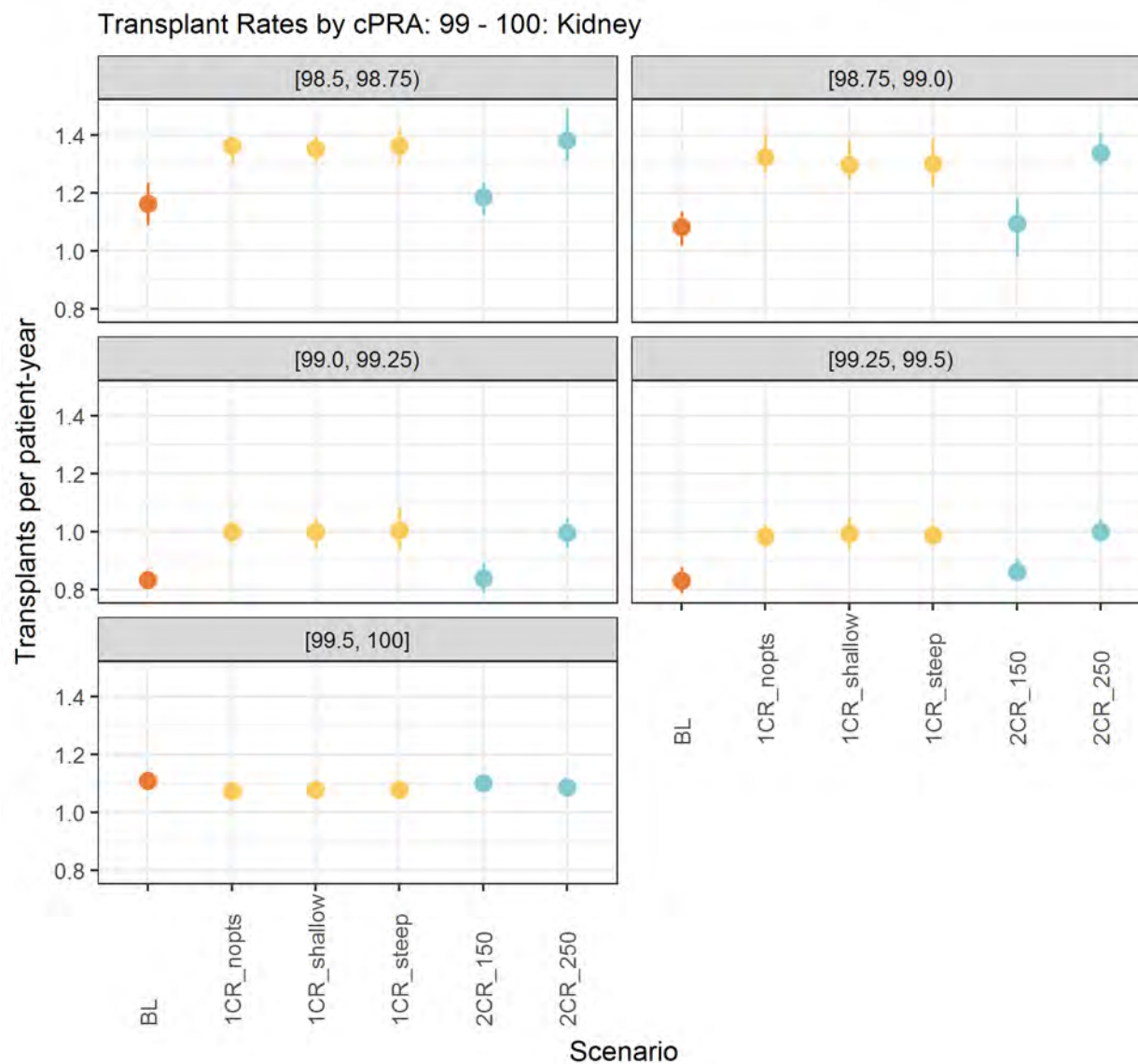


Figure 36 Transplant Rates by cPRA: 99 - 100: Kidney



Transplant Rates: cPRA: 95 - 99

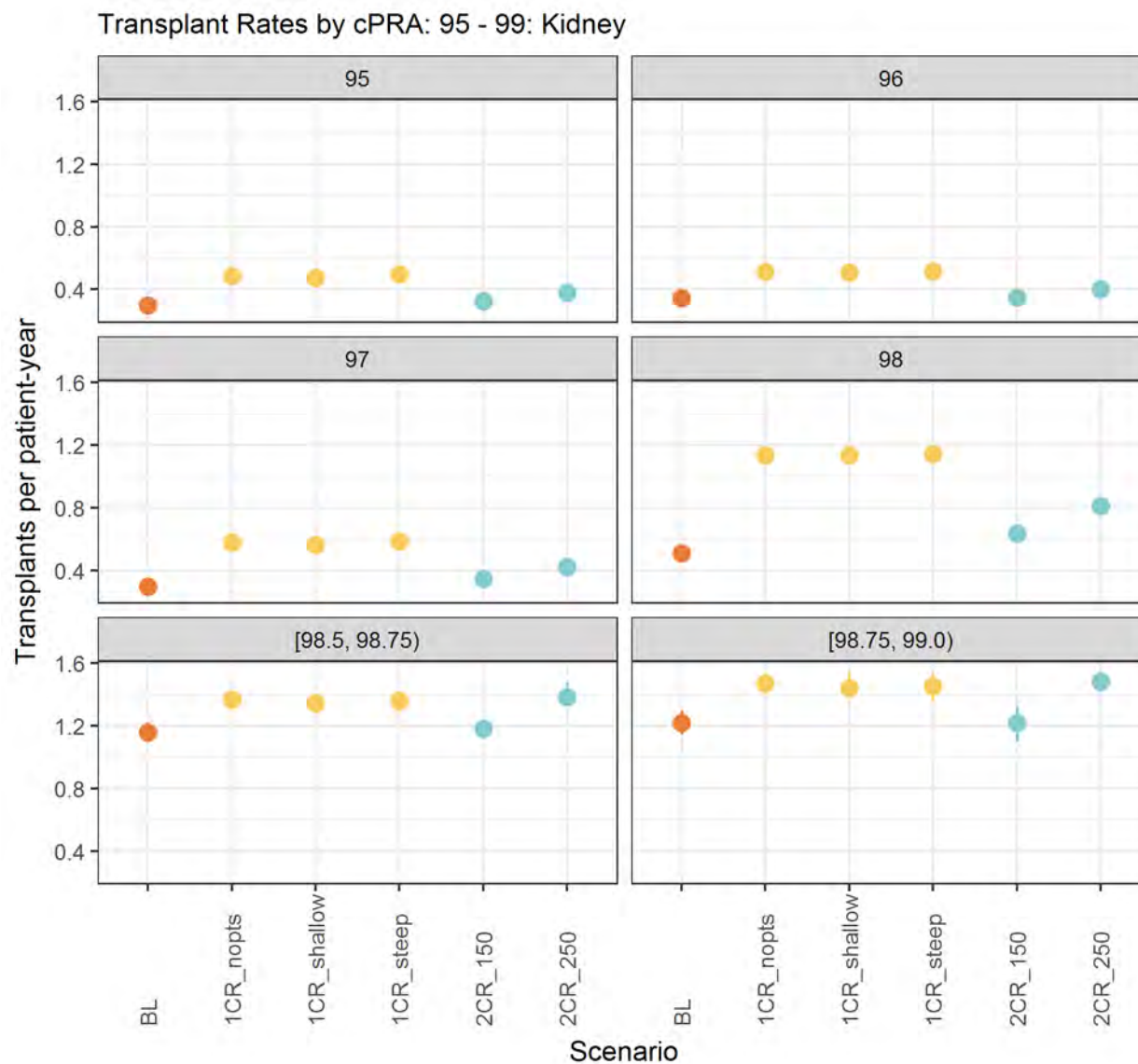


Figure 37 Transplant Rates by cPRA: 95 - 99: Kidney

Transplant Rates: cPRA: 99 - 99.8

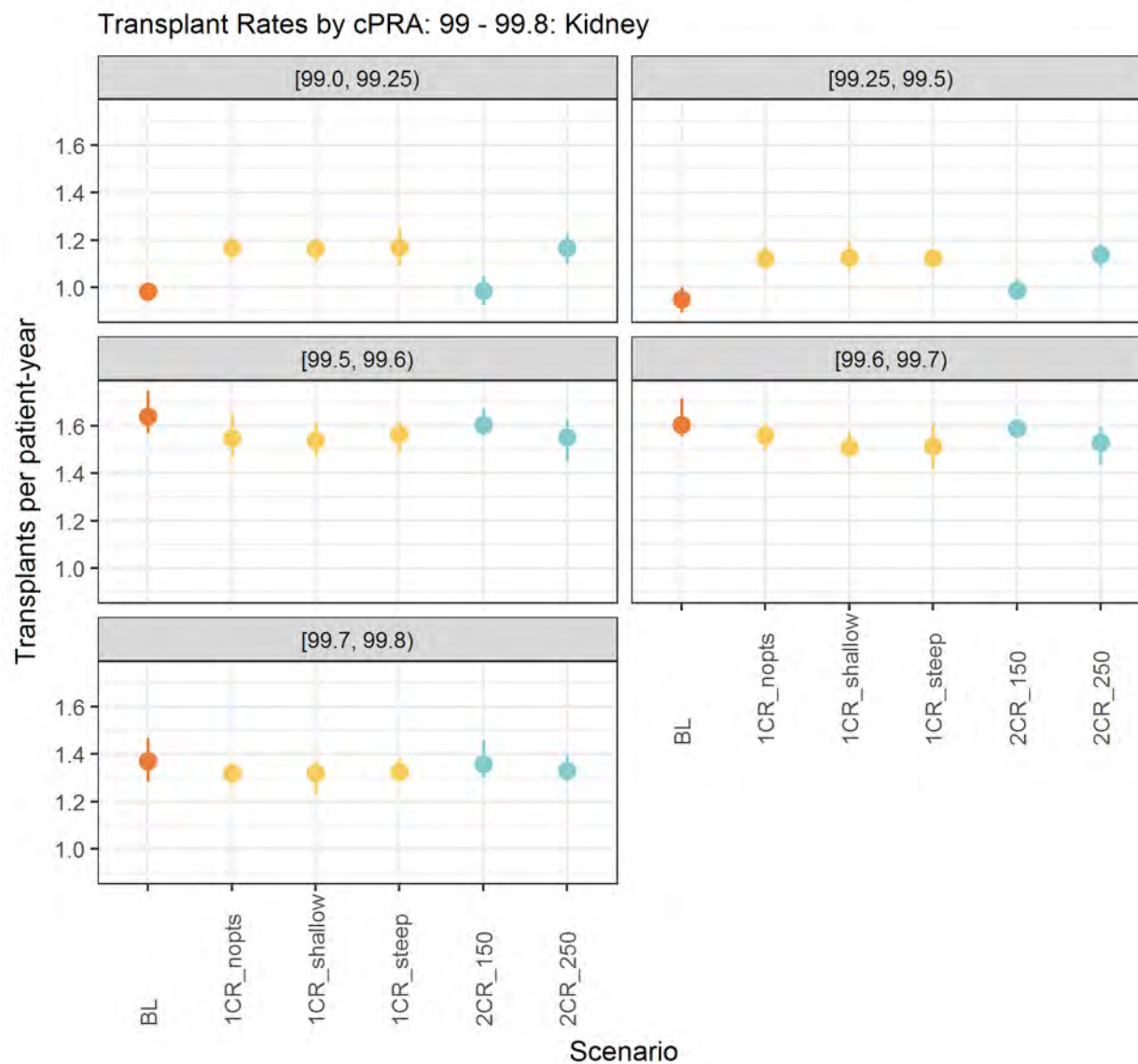


Figure 38 Transplant Rates by cPRA: 99 - 99.8: Kidney



Transplant Rates: cPRA: 99.8 - 100

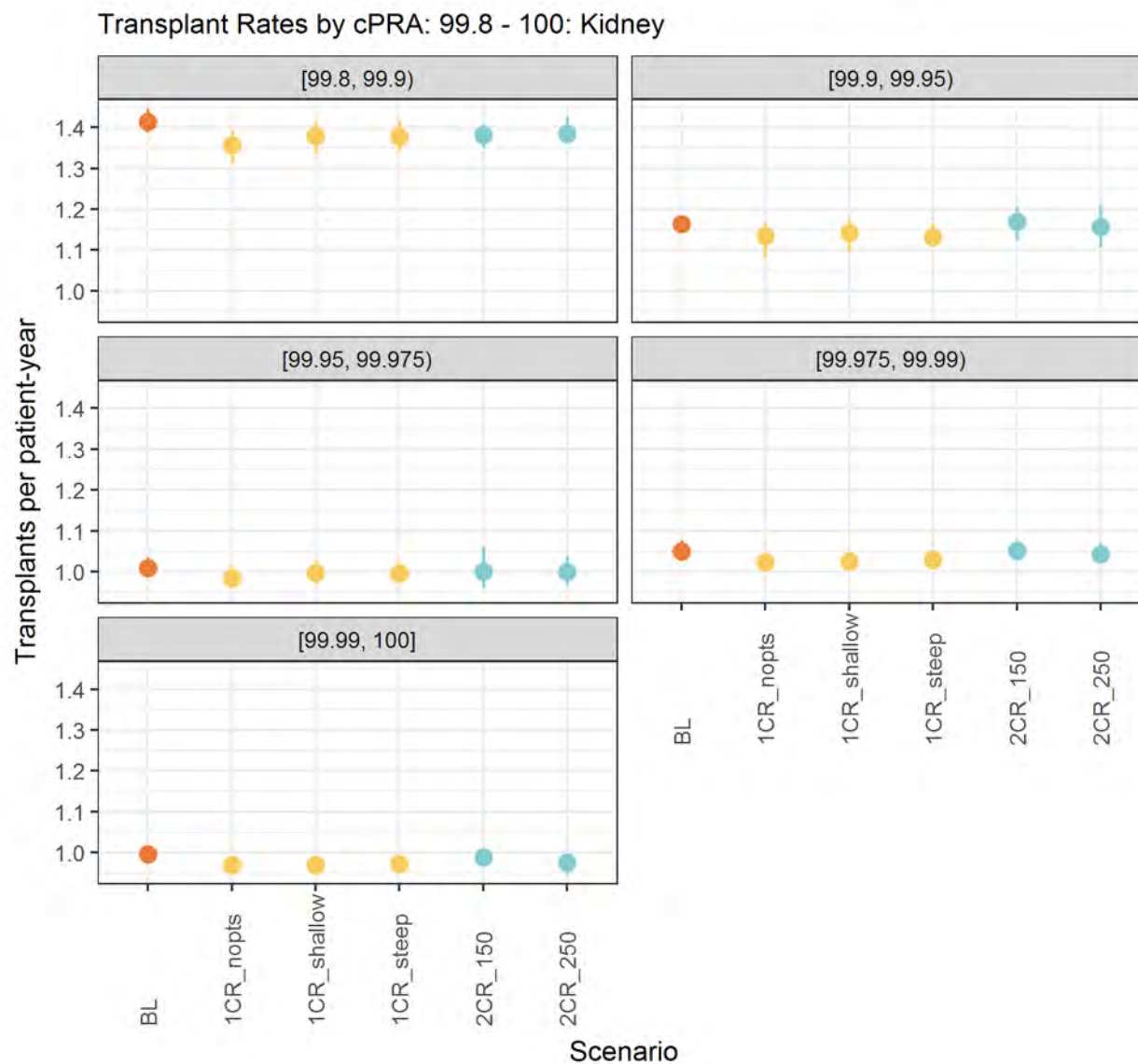


Figure 39 Transplant Rates by cPRA: 99.8 - 100: Kidney

## Transplant Rates: Payment Status

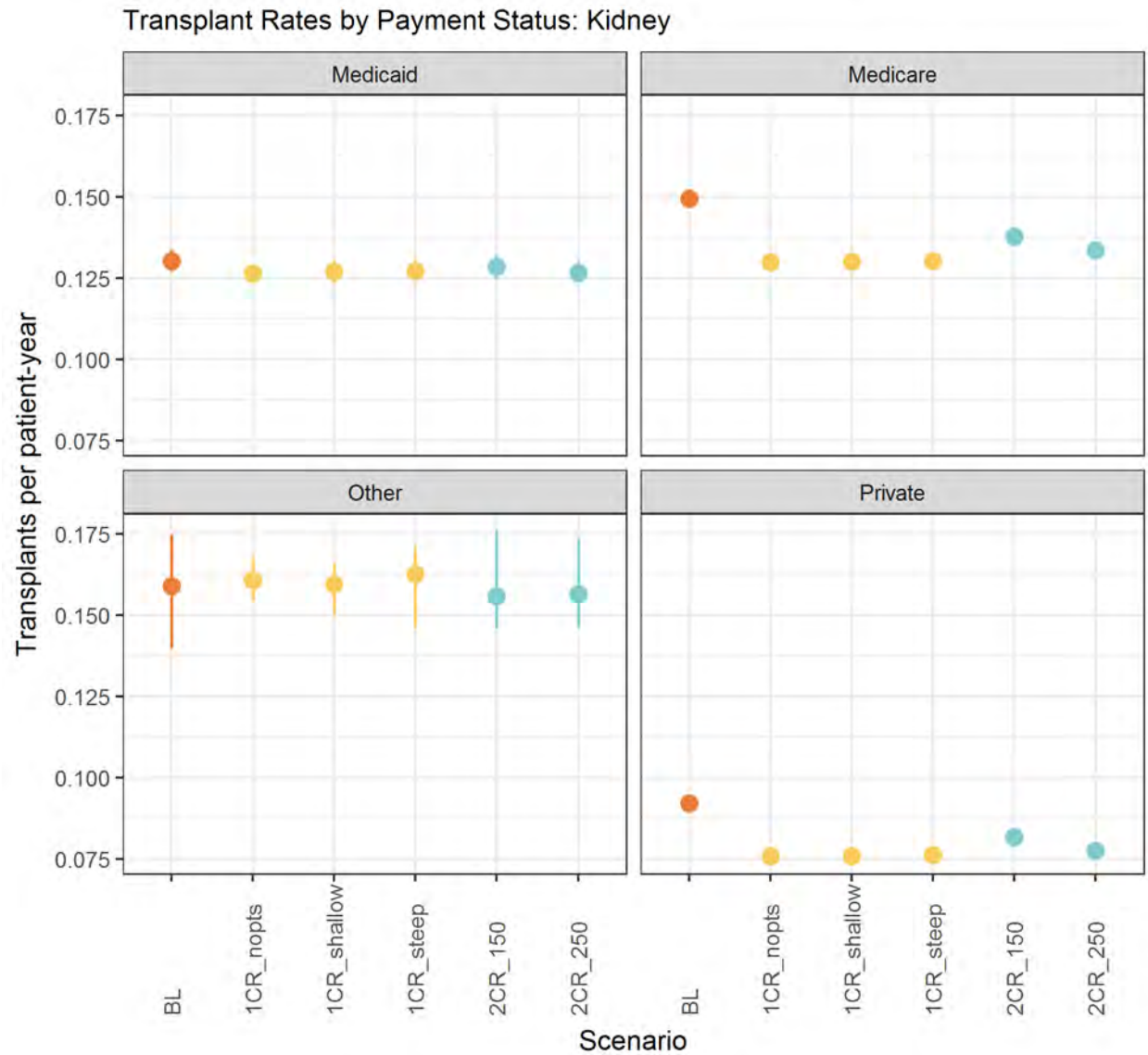


Figure 40 Transplant Rates by Payment Status: Kidney

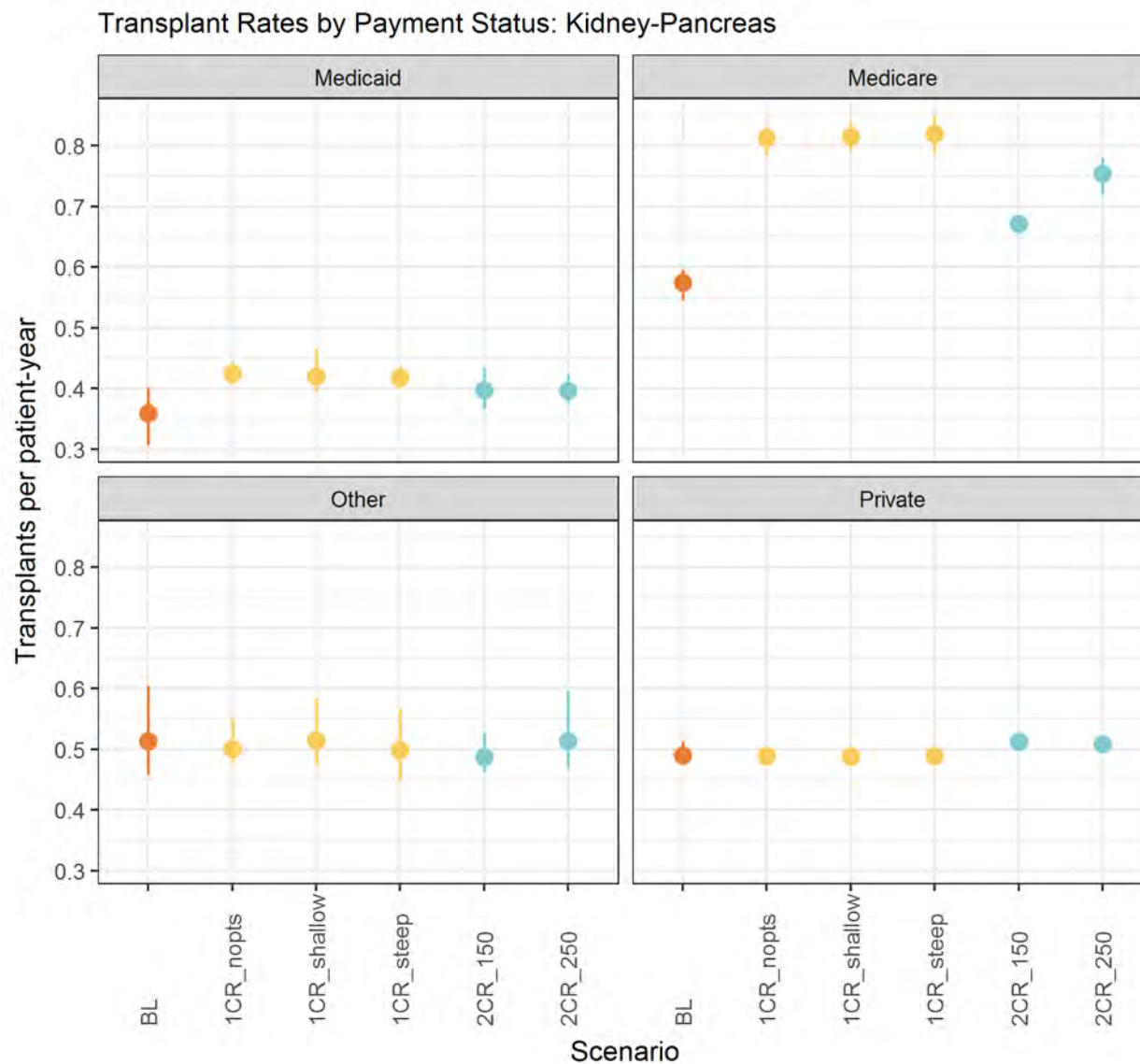


Figure 41 Transplant Rates by Payment Status: Kidney-Pancreas

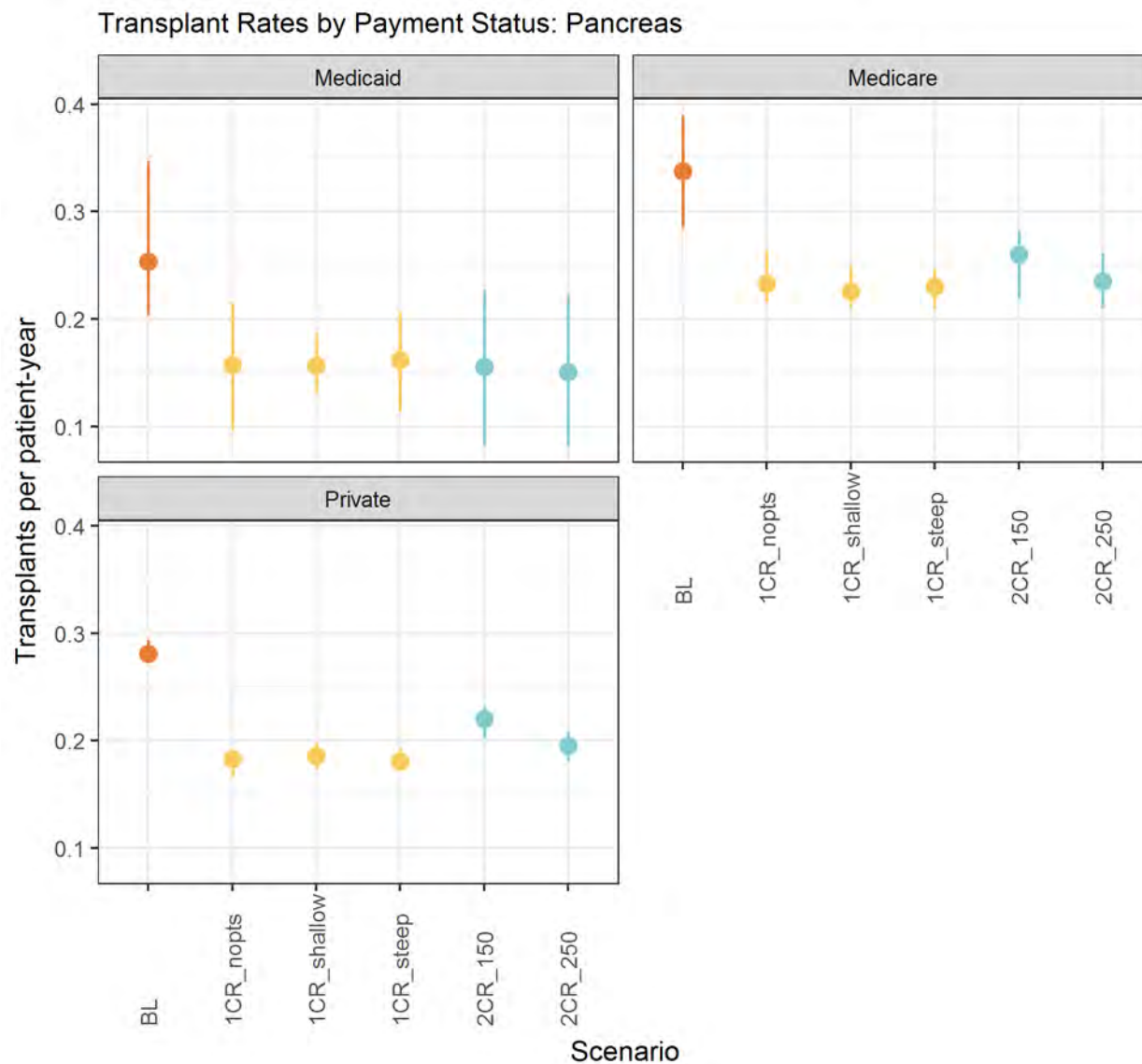


Figure 42 Transplant Rates by Payment Status: Pancreas

## Transplant Rates: Urbanicity

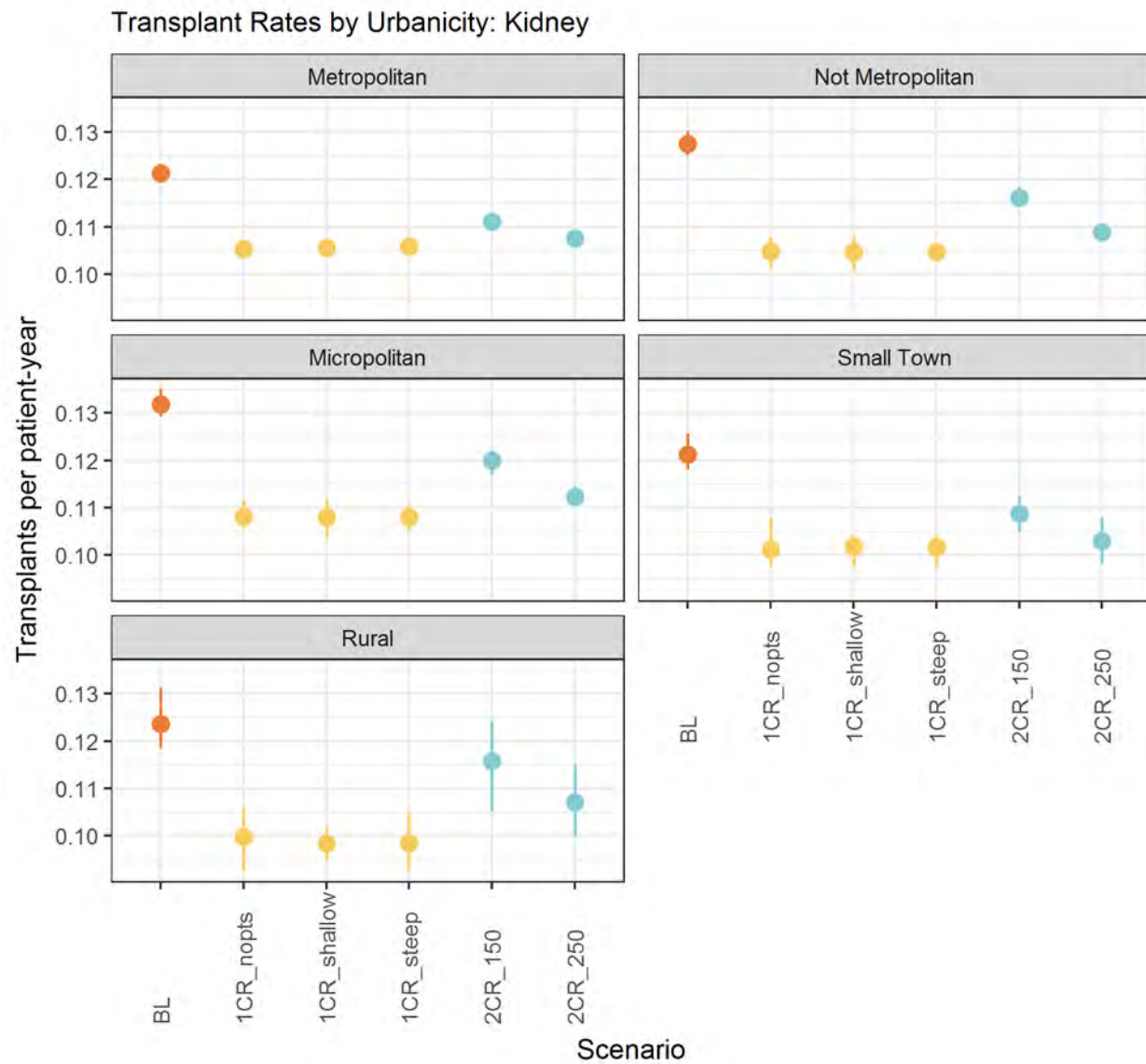


Figure 43 Transplant Rates by Urbanicity: Kidney

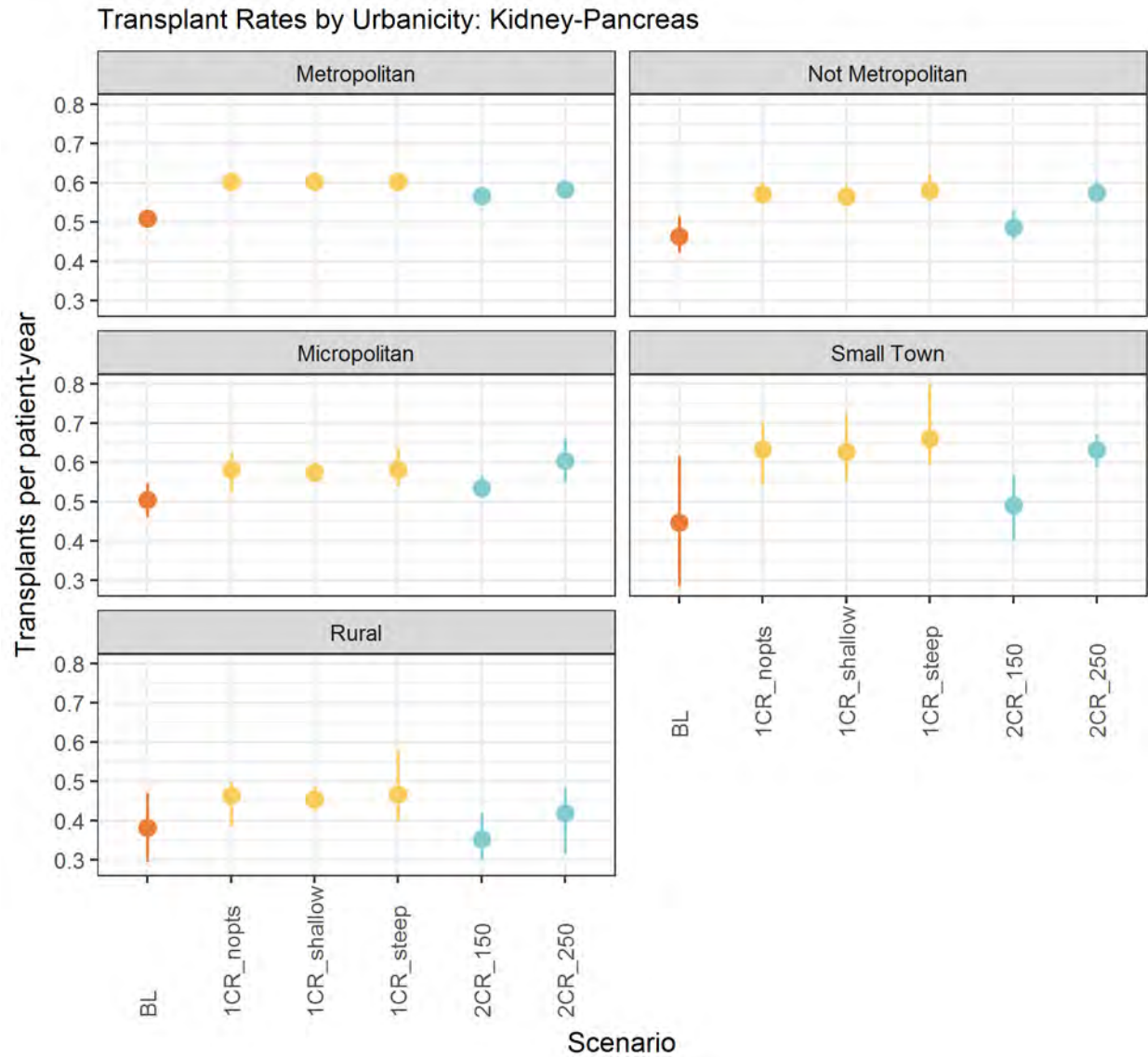


Figure 44 Transplant Rates by Urbanicity: Kidney-Pancreas



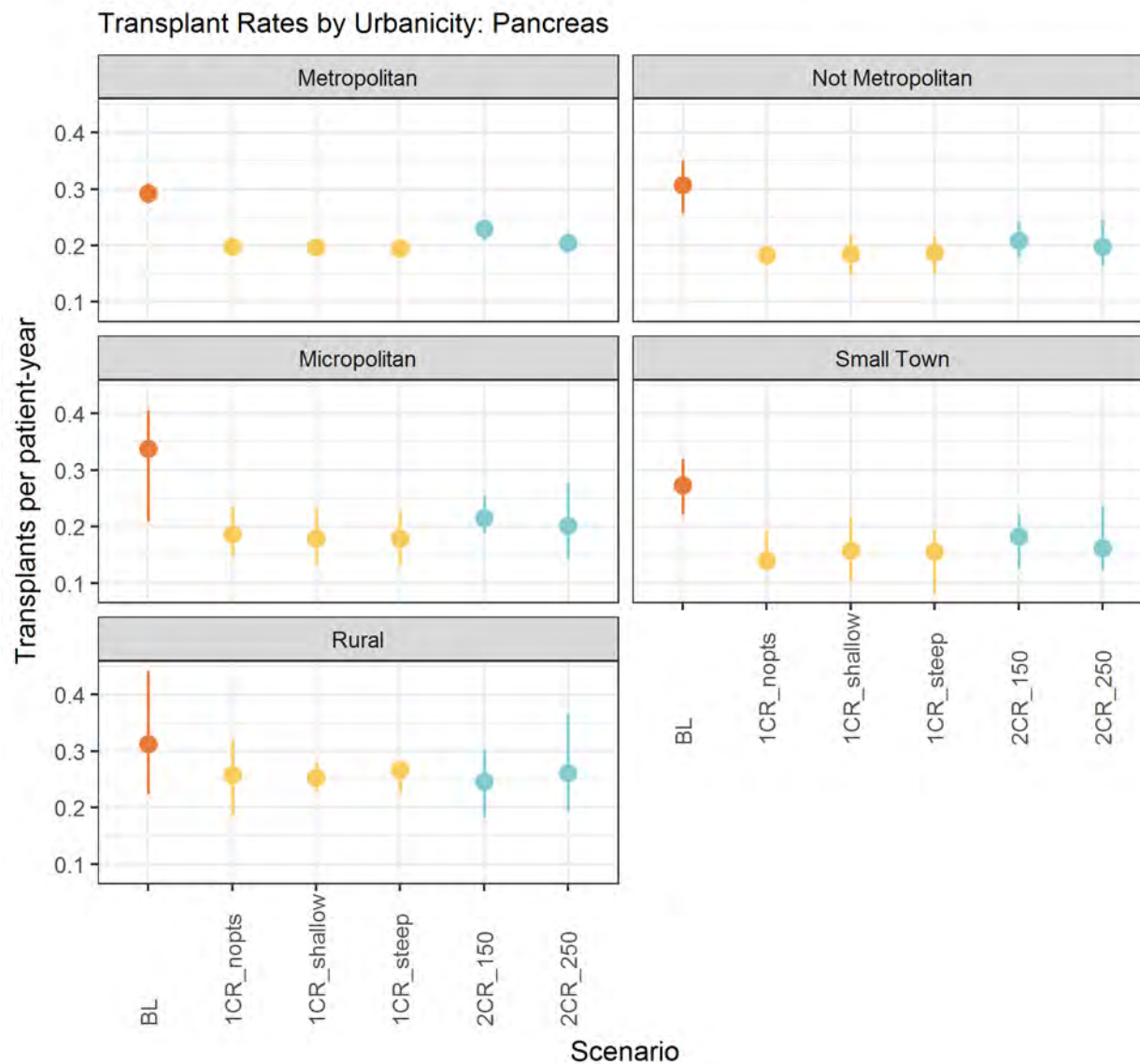


Figure 45 Transplant Rates by Urbanicity: Pancreas



## Transplant Rates: EPTS

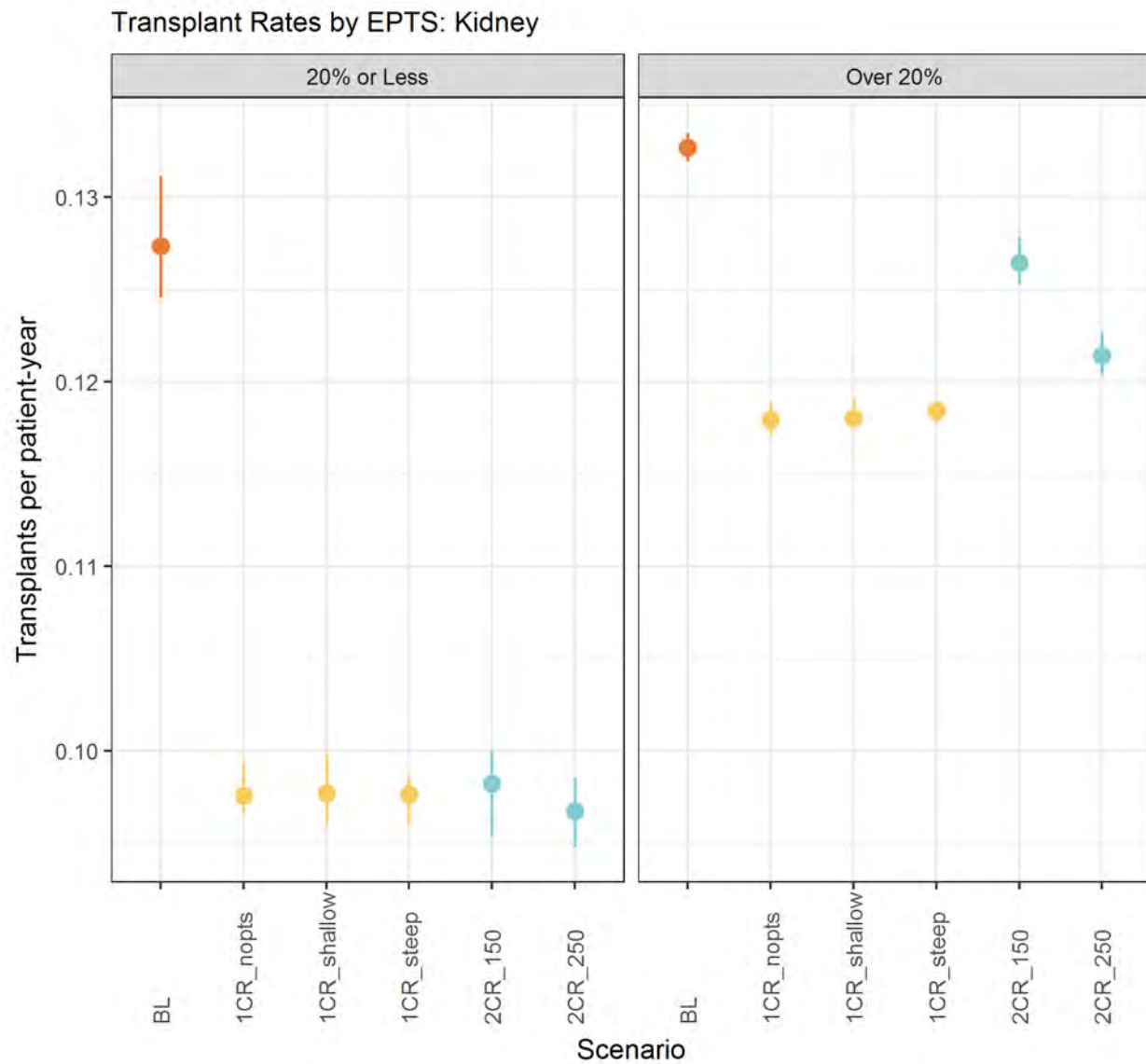


Figure 46 Transplant Rates by EPTS: Kidney

# Transplant Rates: Median Household Income by Zip Code

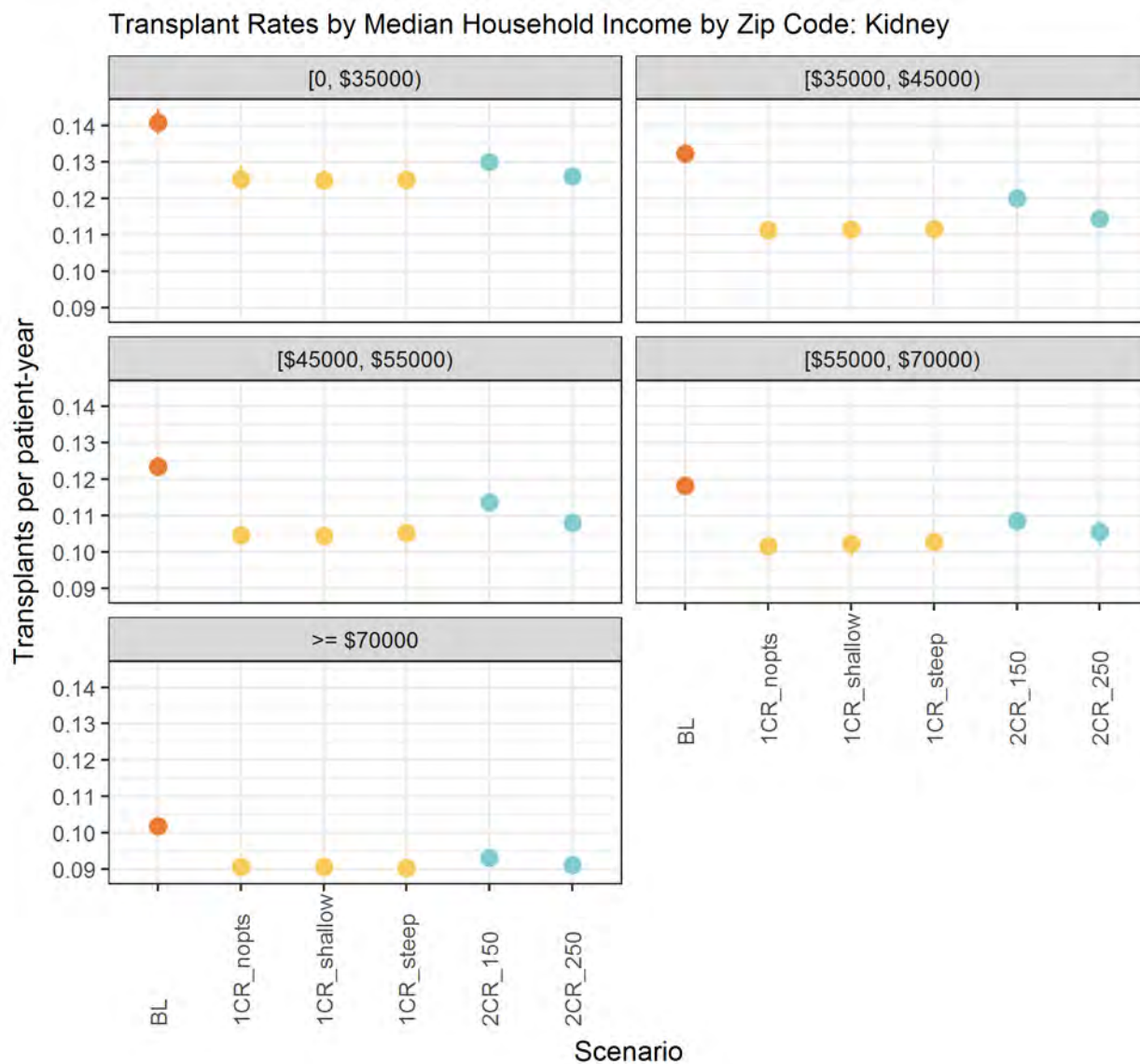


Figure 47 Transplant Rates by Median Household Income by Zip Code: Kidney

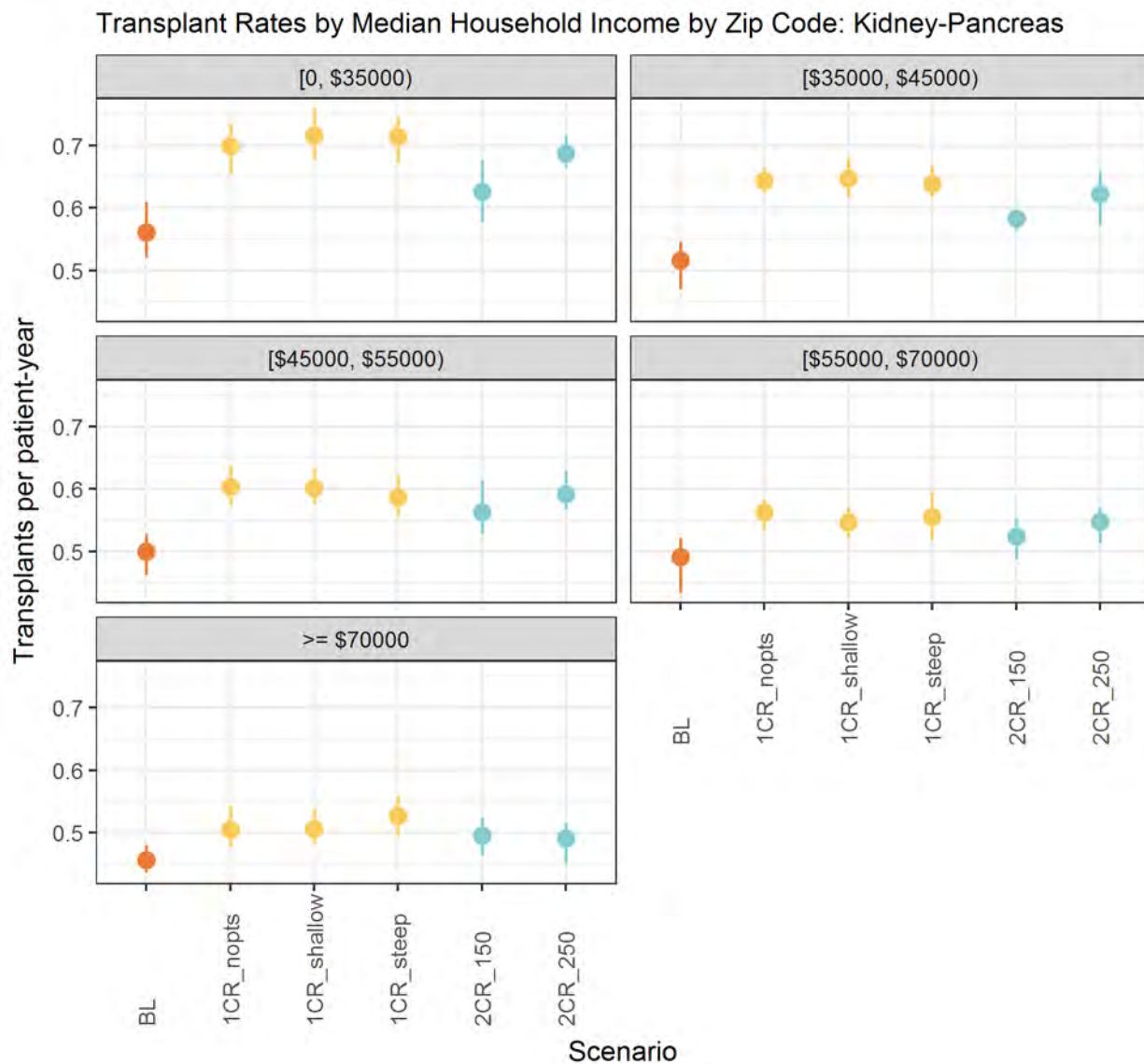


Figure 48 Transplant Rates by Median Household Income by Zip Code: Kidney-Pancreas

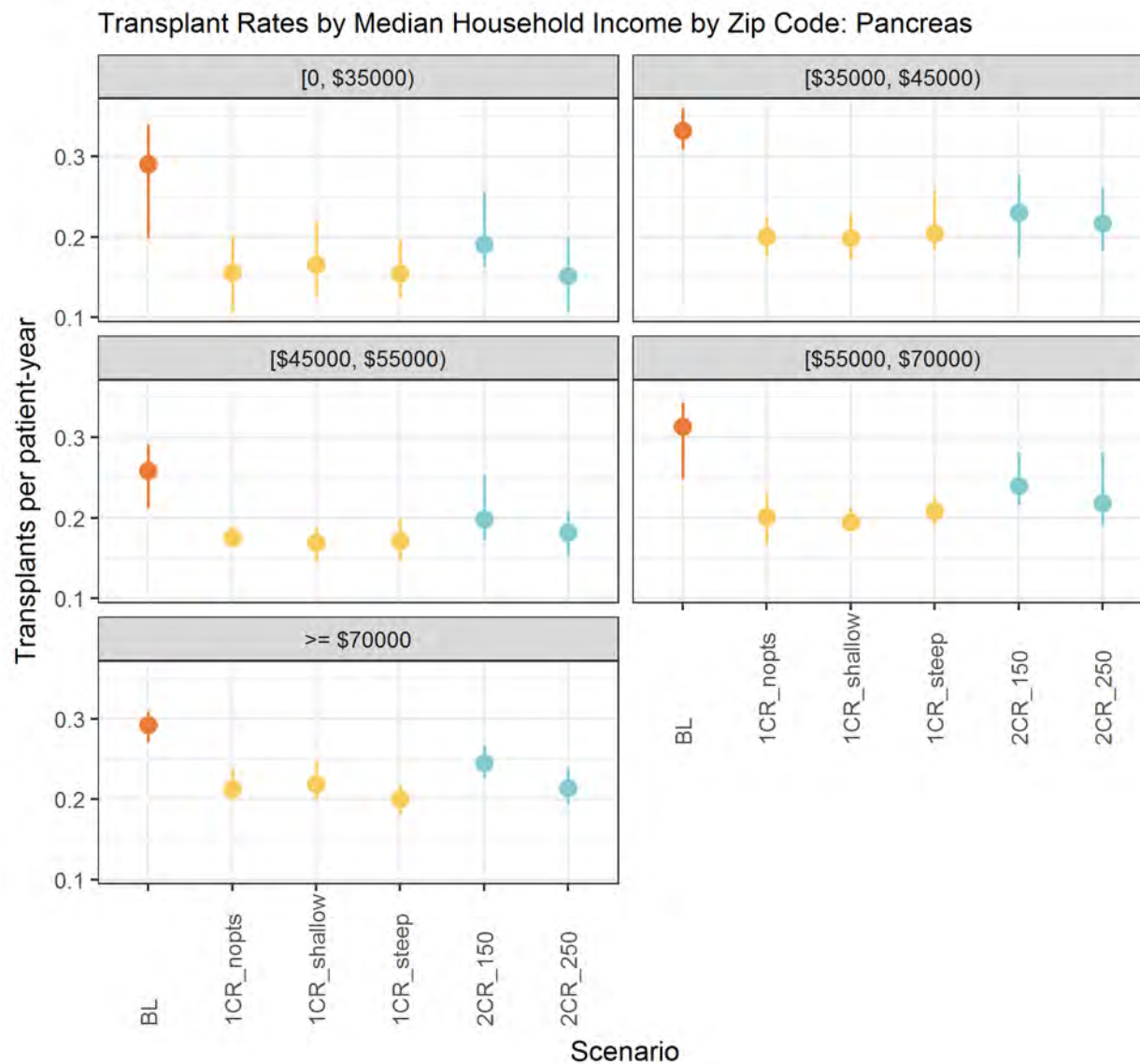


Figure 49 Transplant Rates by Median Household Income by Zip Code: Pancreas

## Transplant Counts

Transplant Counts: Age at Transplant 0-17

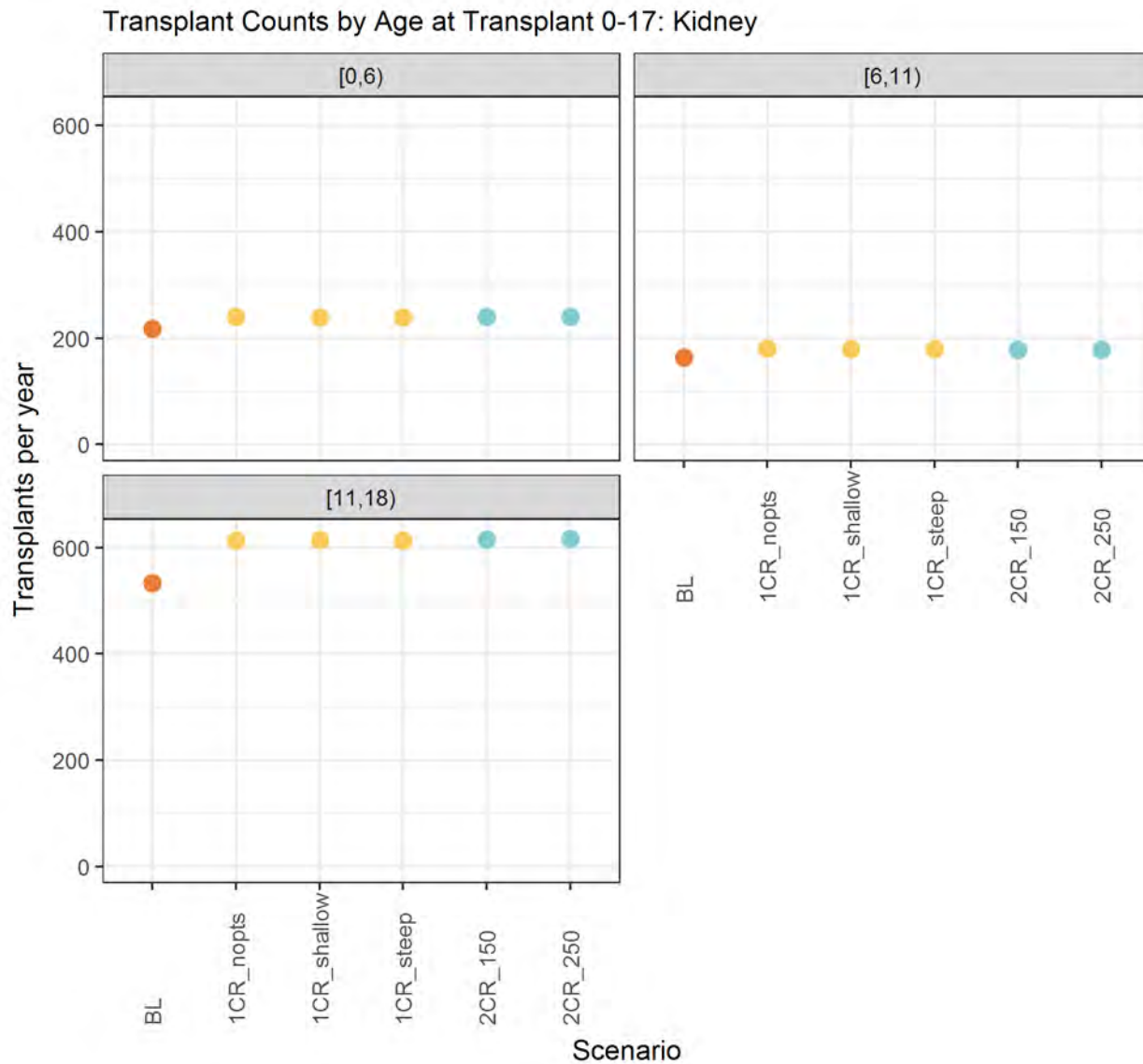


Figure 50 Transplant Counts by Age at Transplant 0-17: Kidney

## Transplant Counts: Age at Transplant 18+

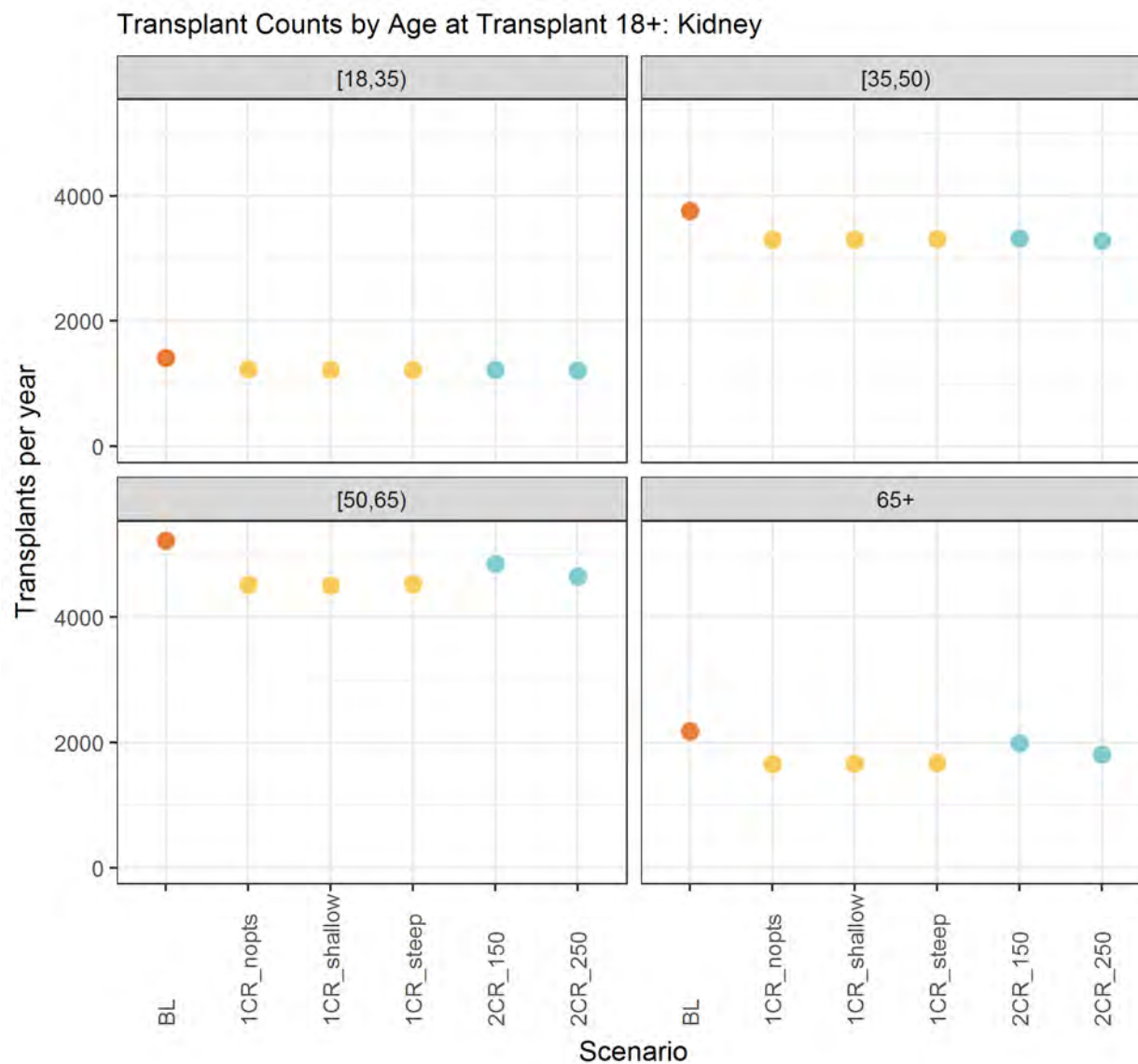


Figure 51 Transplant Counts by Age at Transplant 18+: Kidney



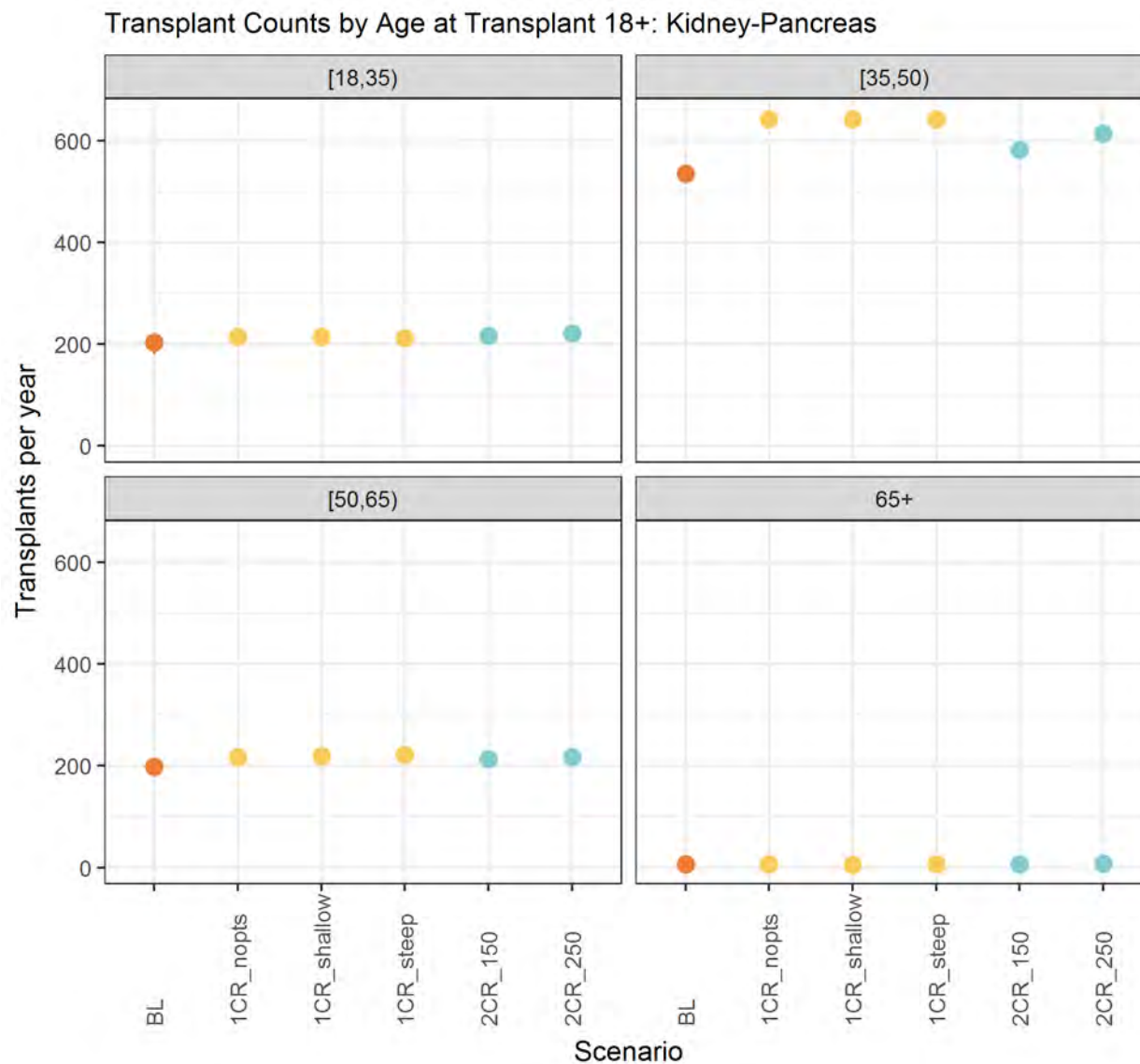


Figure 52 Transplant Counts by Age at Transplant 18+: Kidney-Pancreas



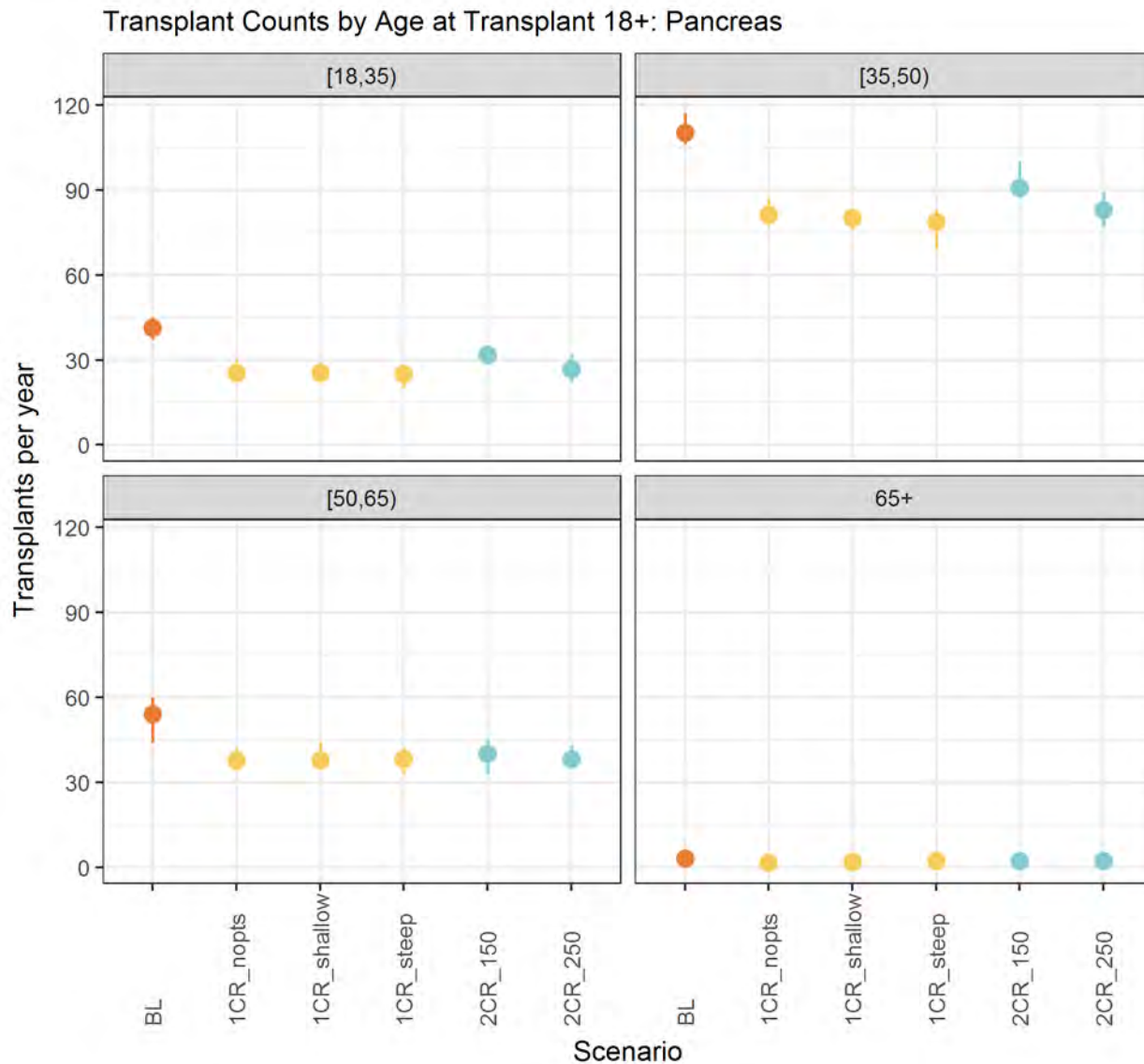


Figure 53 Transplant Counts by Age at Transplant 18+: Pancreas

## Transplant Counts: Race

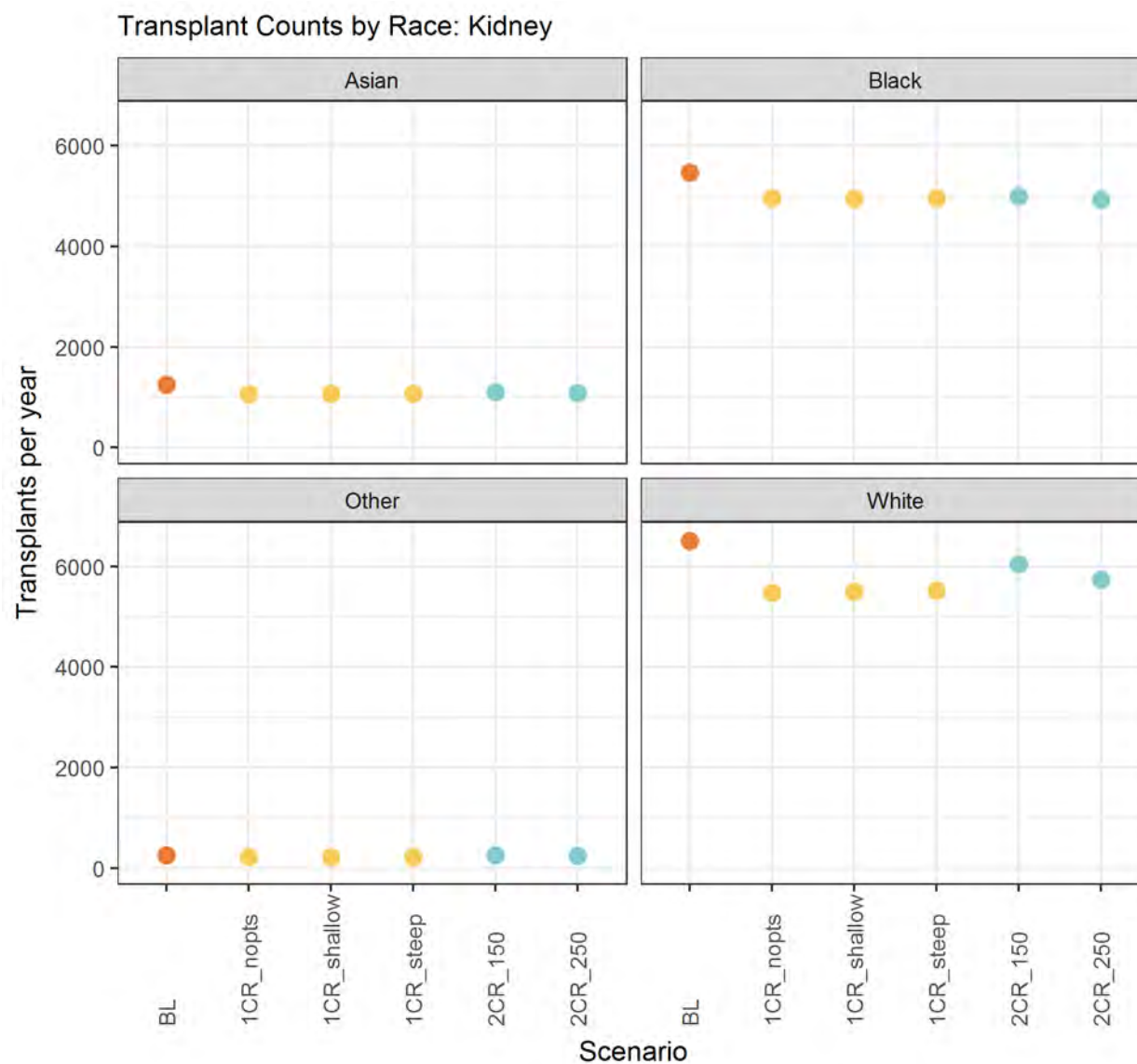


Figure 54 Transplant Counts by Race: Kidney

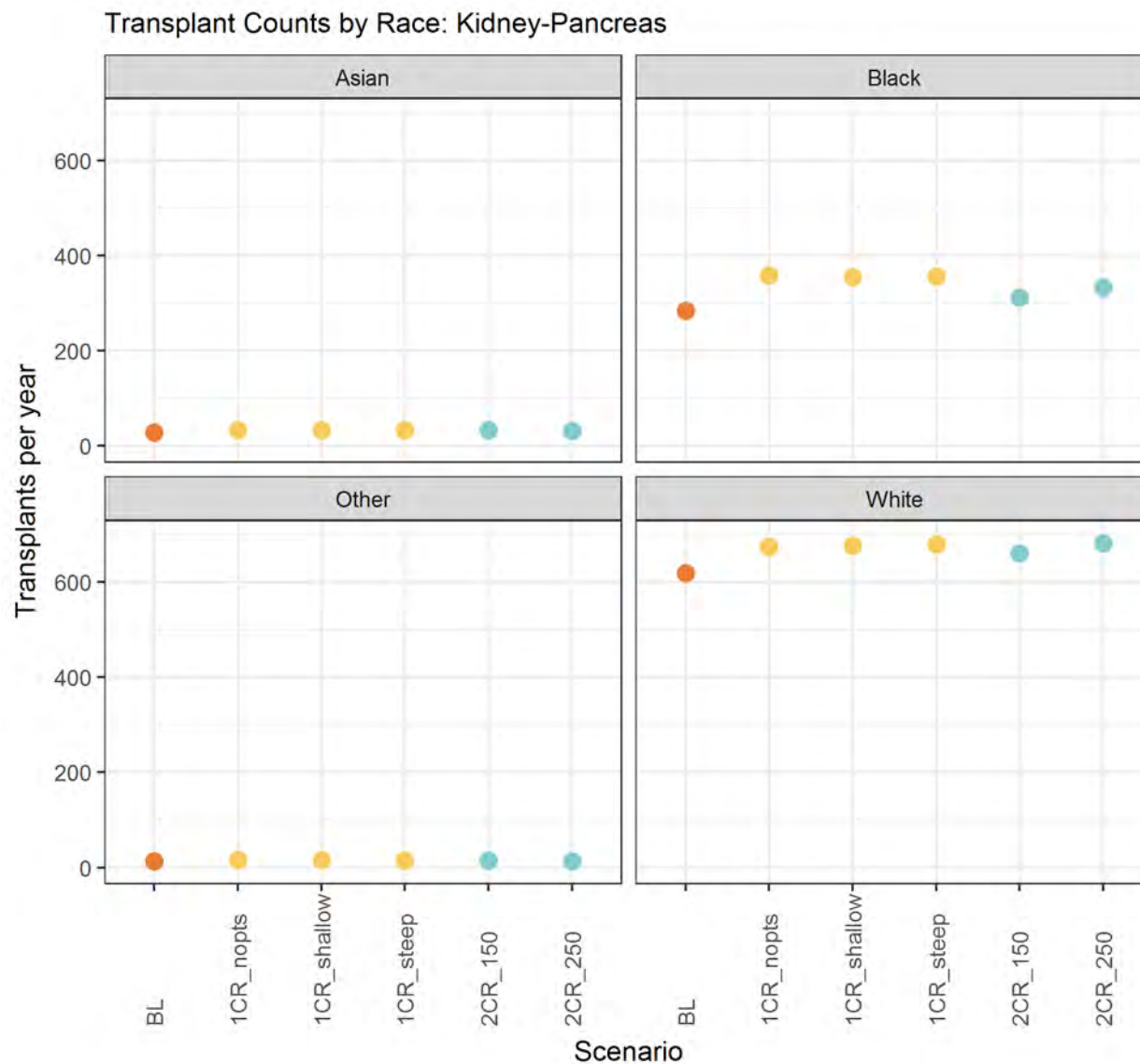


Figure 55 Transplant Counts by Race: Kidney-Pancreas

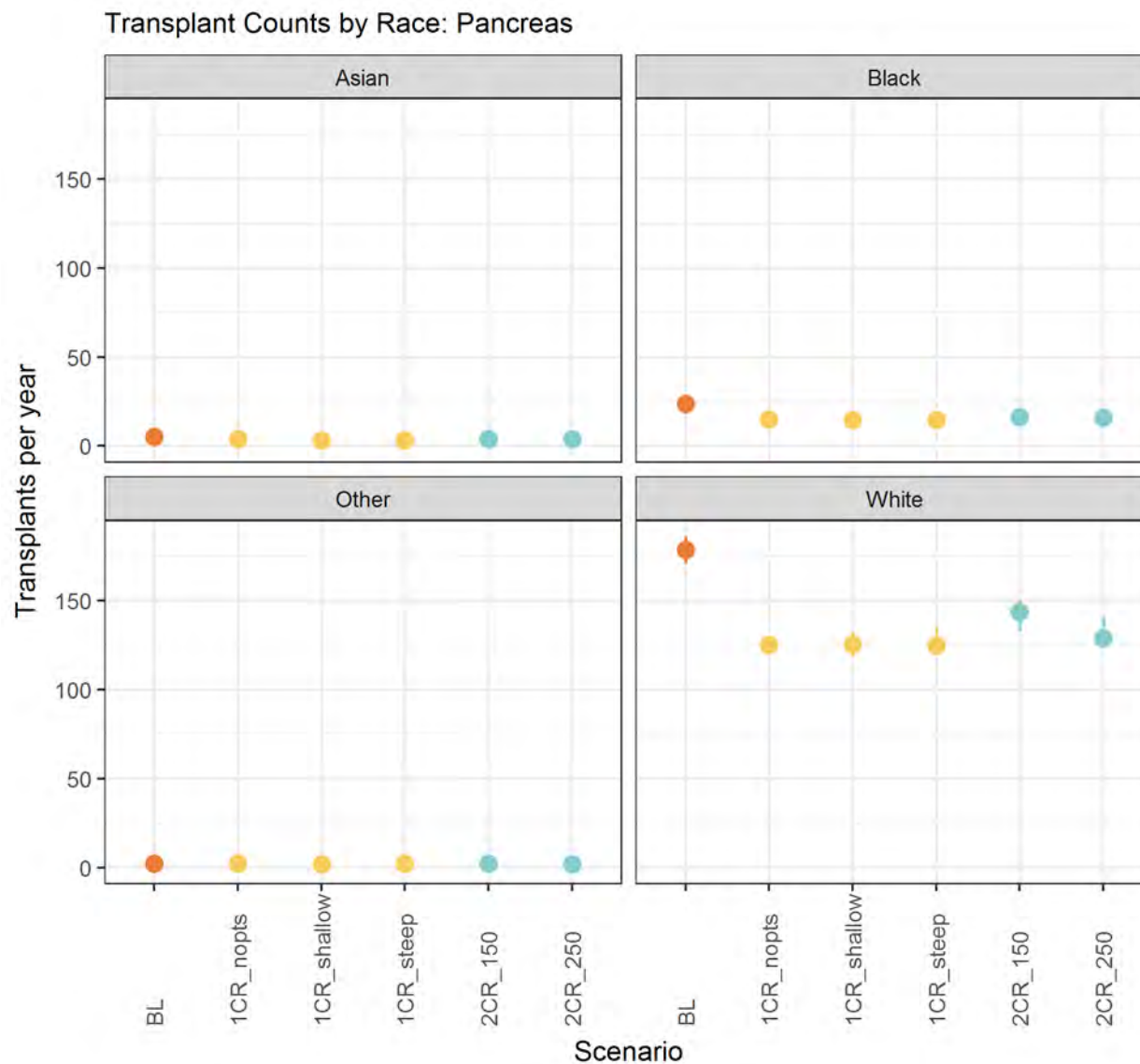


Figure 56 Transplant Counts by Race: Pancreas

## Transplant Counts: Ethnicity

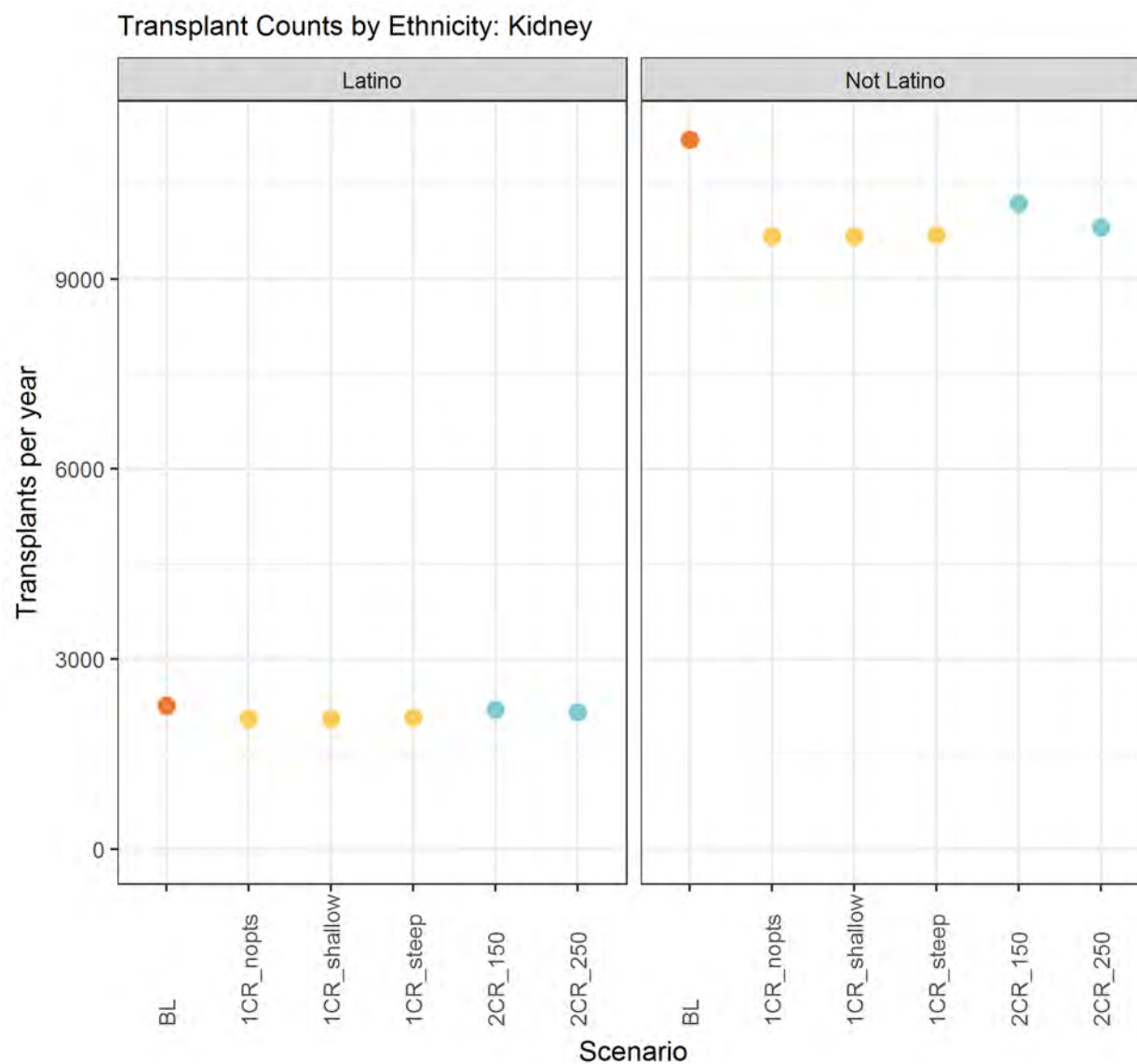


Figure 57 Transplant Counts by Ethnicity: Kidney

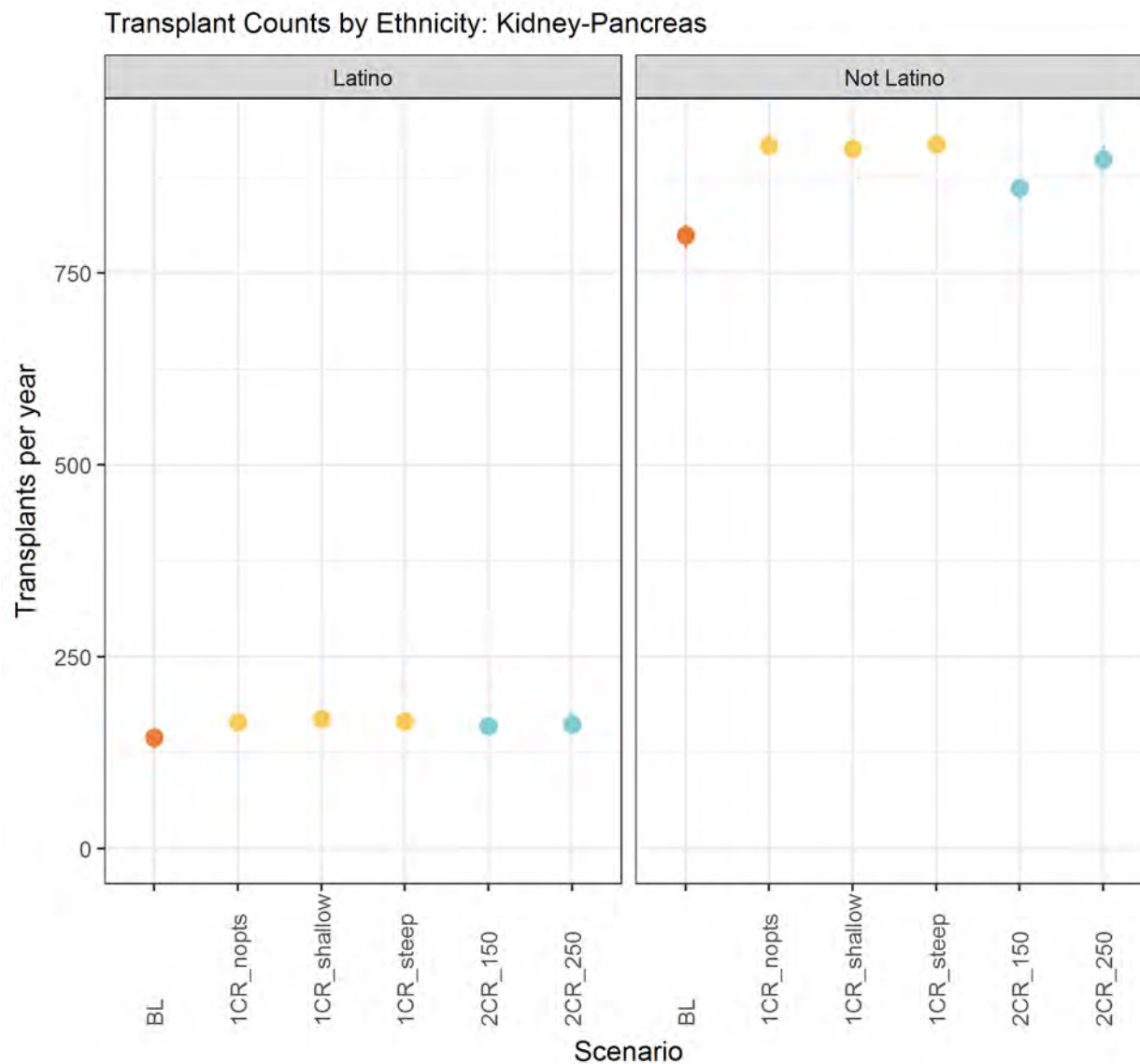


Figure 58 Transplant Counts by Ethnicity: Kidney-Pancreas



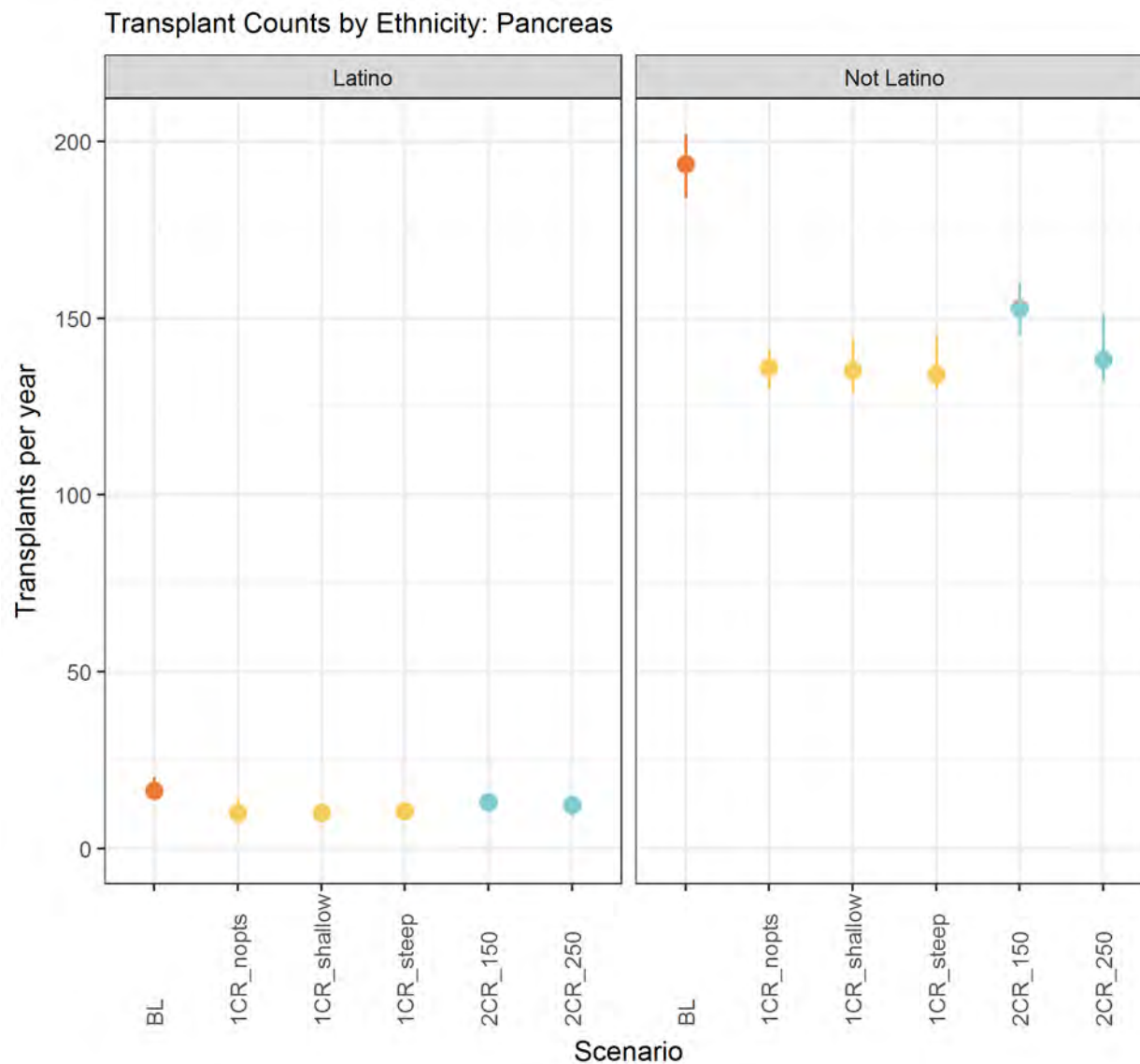


Figure 59 Transplant Counts by Ethnicity: Pancreas

## Transplant Counts: Sex

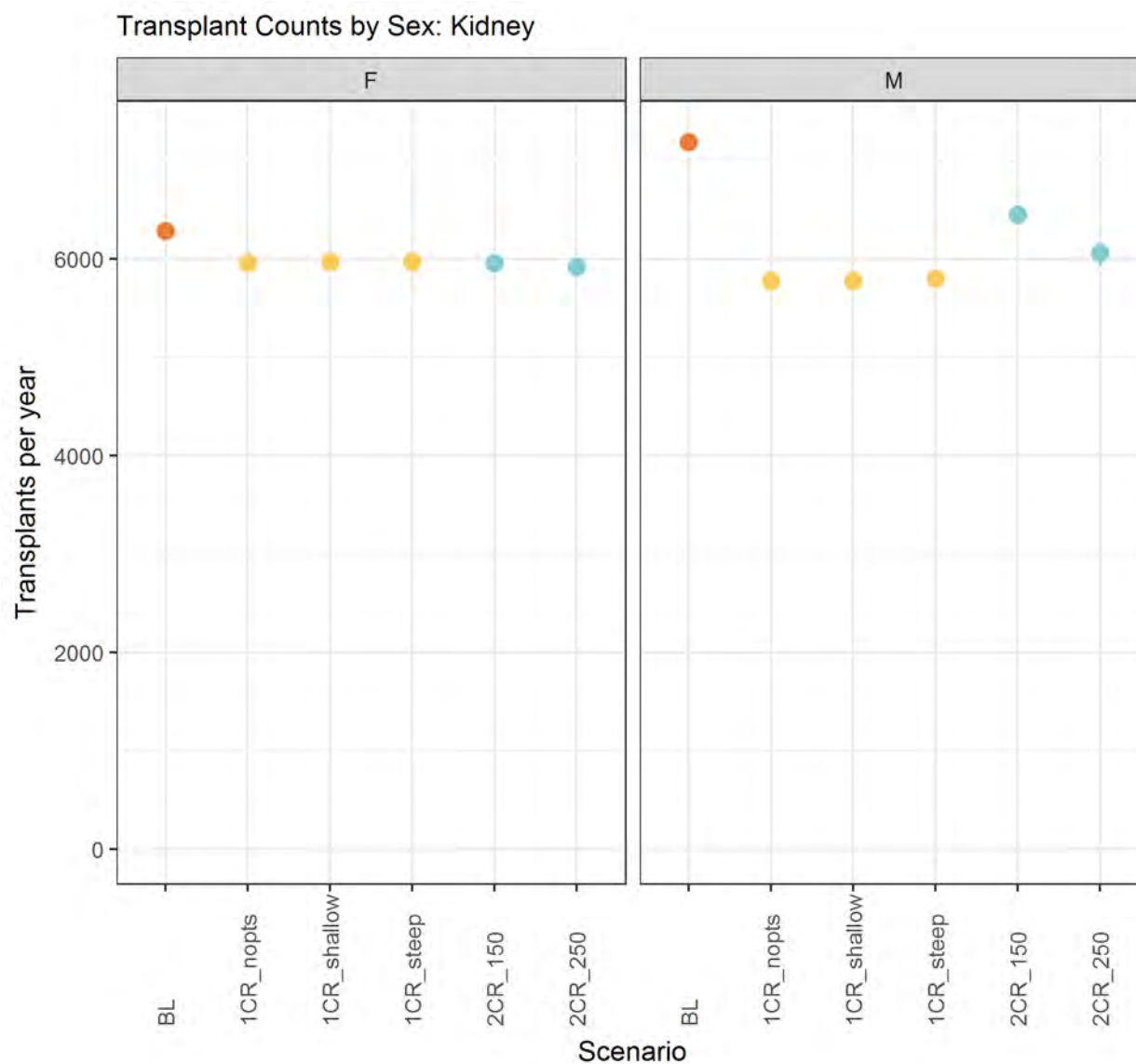


Figure 60 Transplant Counts by Sex: Kidney

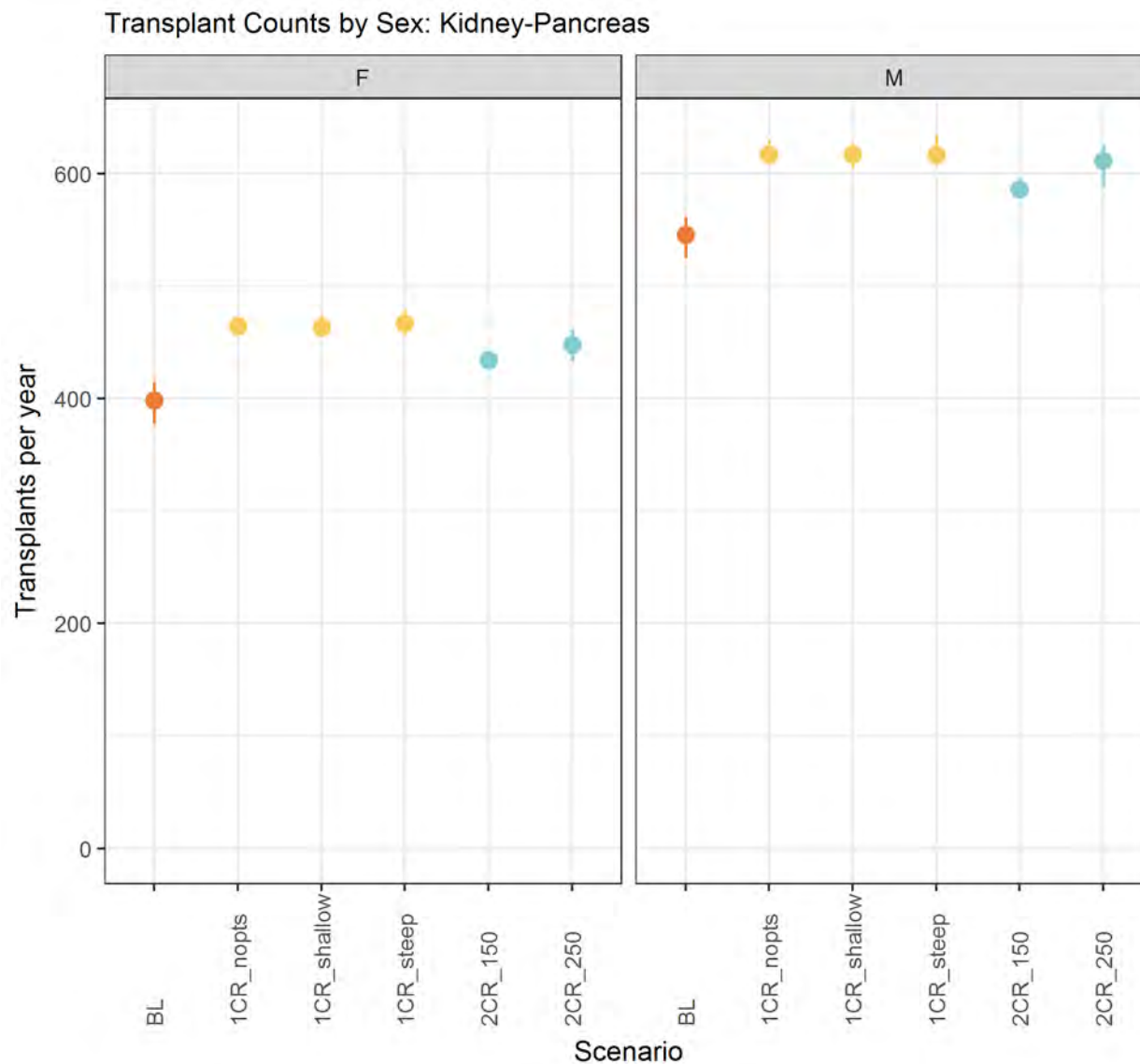


Figure 61 Transplant Counts by Sex: Kidney-Pancreas

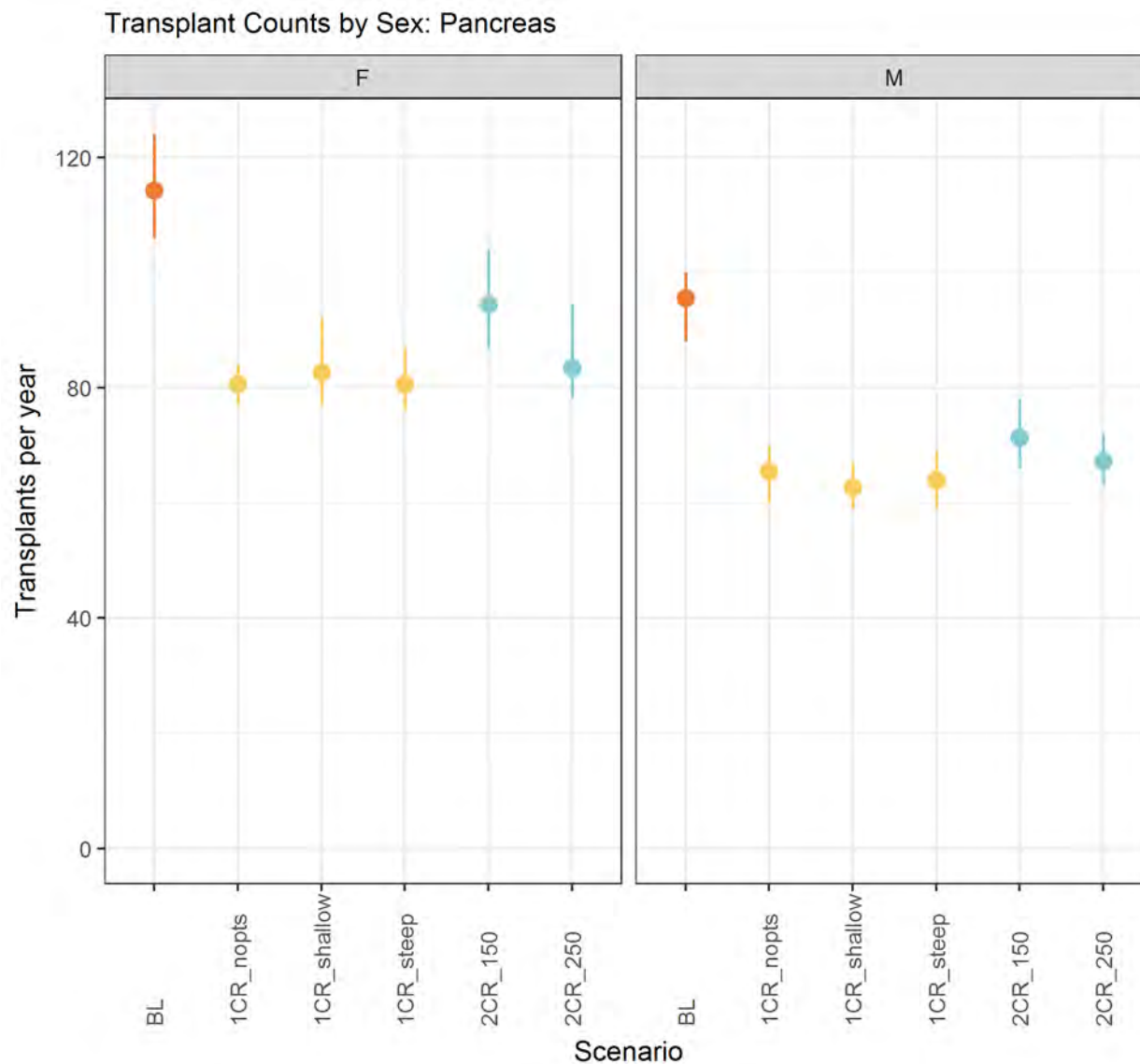


Figure 62 Transplant Counts by Sex: Pancreas

## Transplant Counts: ABO Group

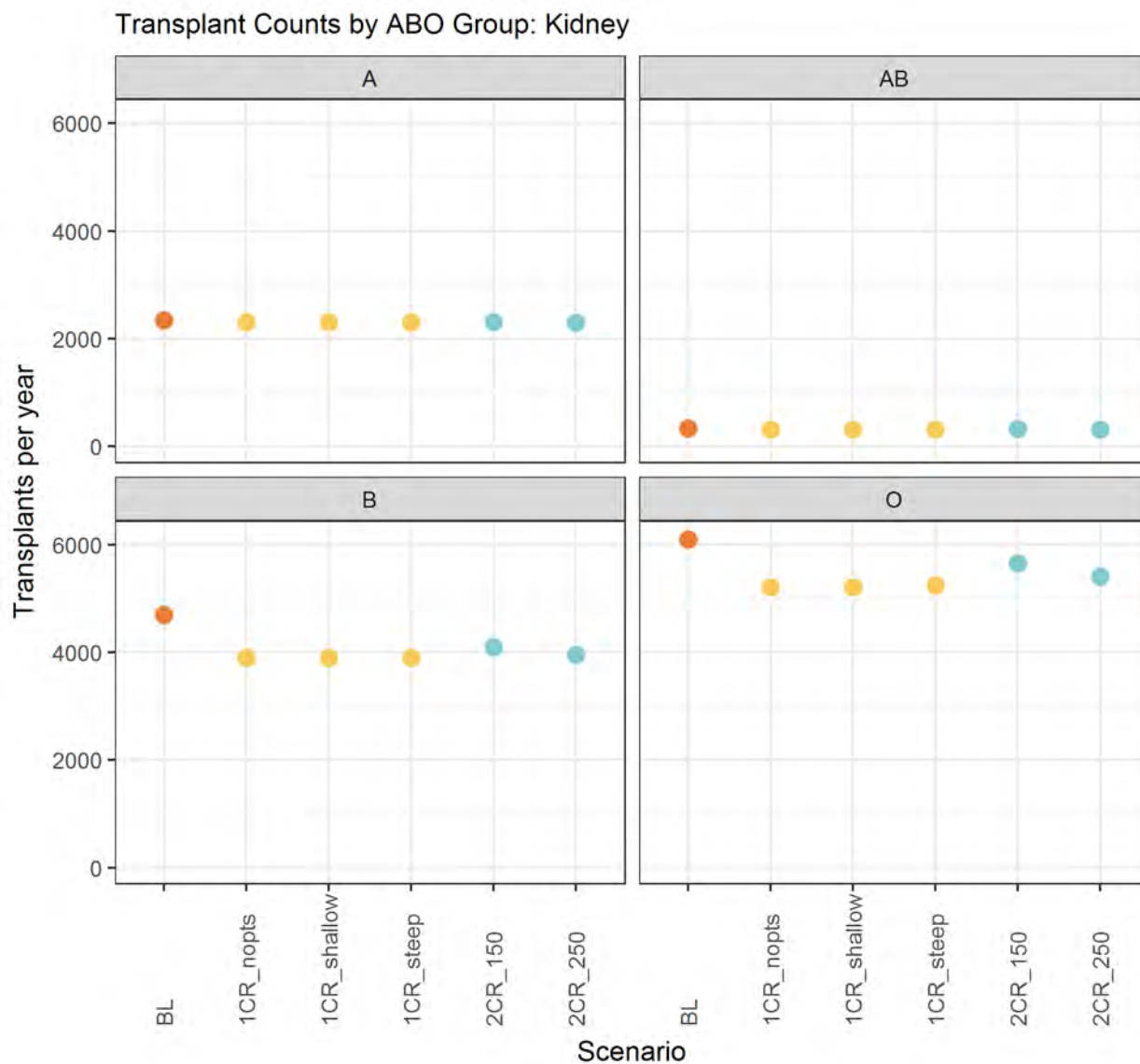


Figure 63 Transplant Counts by ABO Group: Kidney

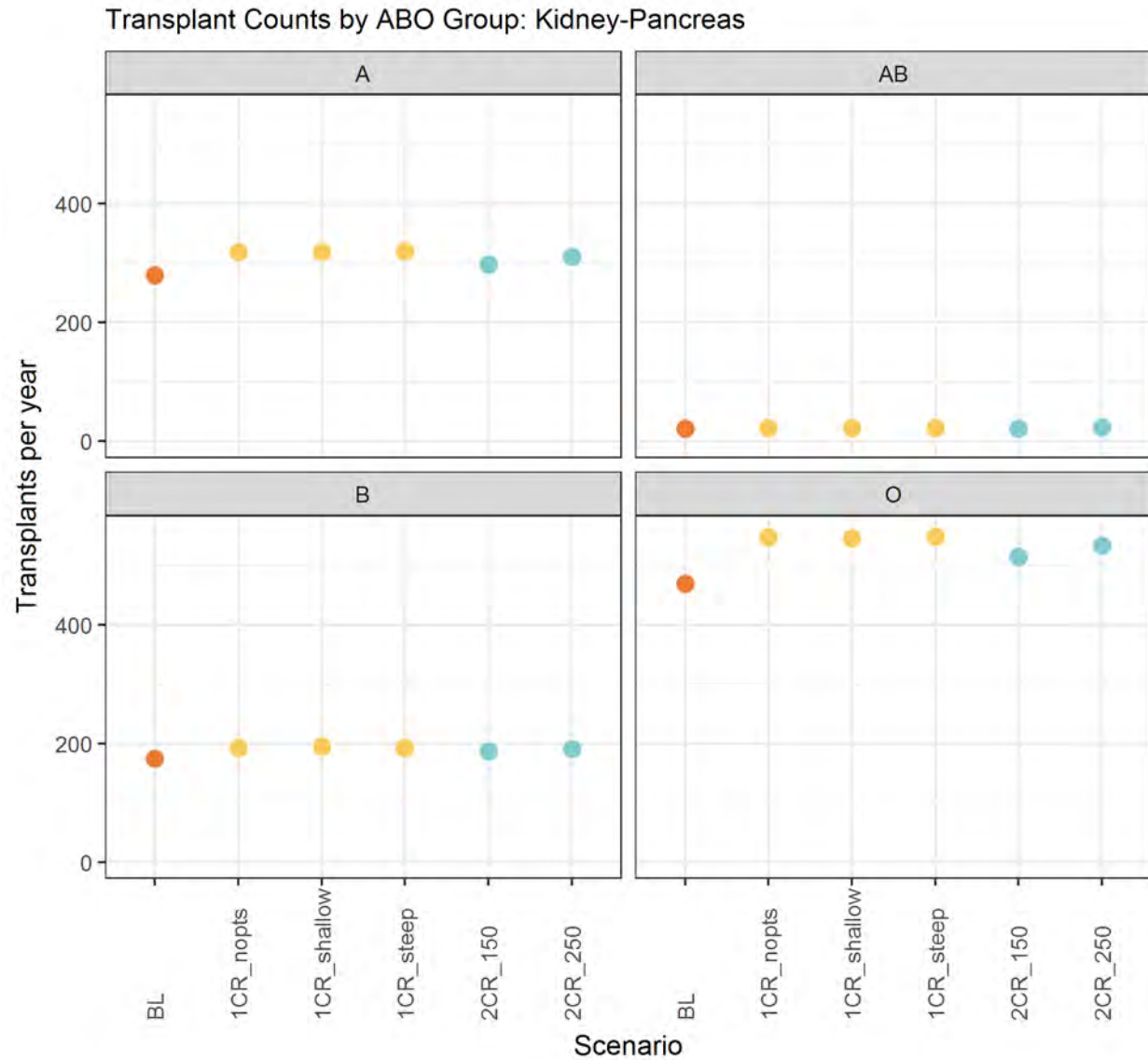


Figure 64 Transplant Counts by ABO Group: Kidney-Pancreas



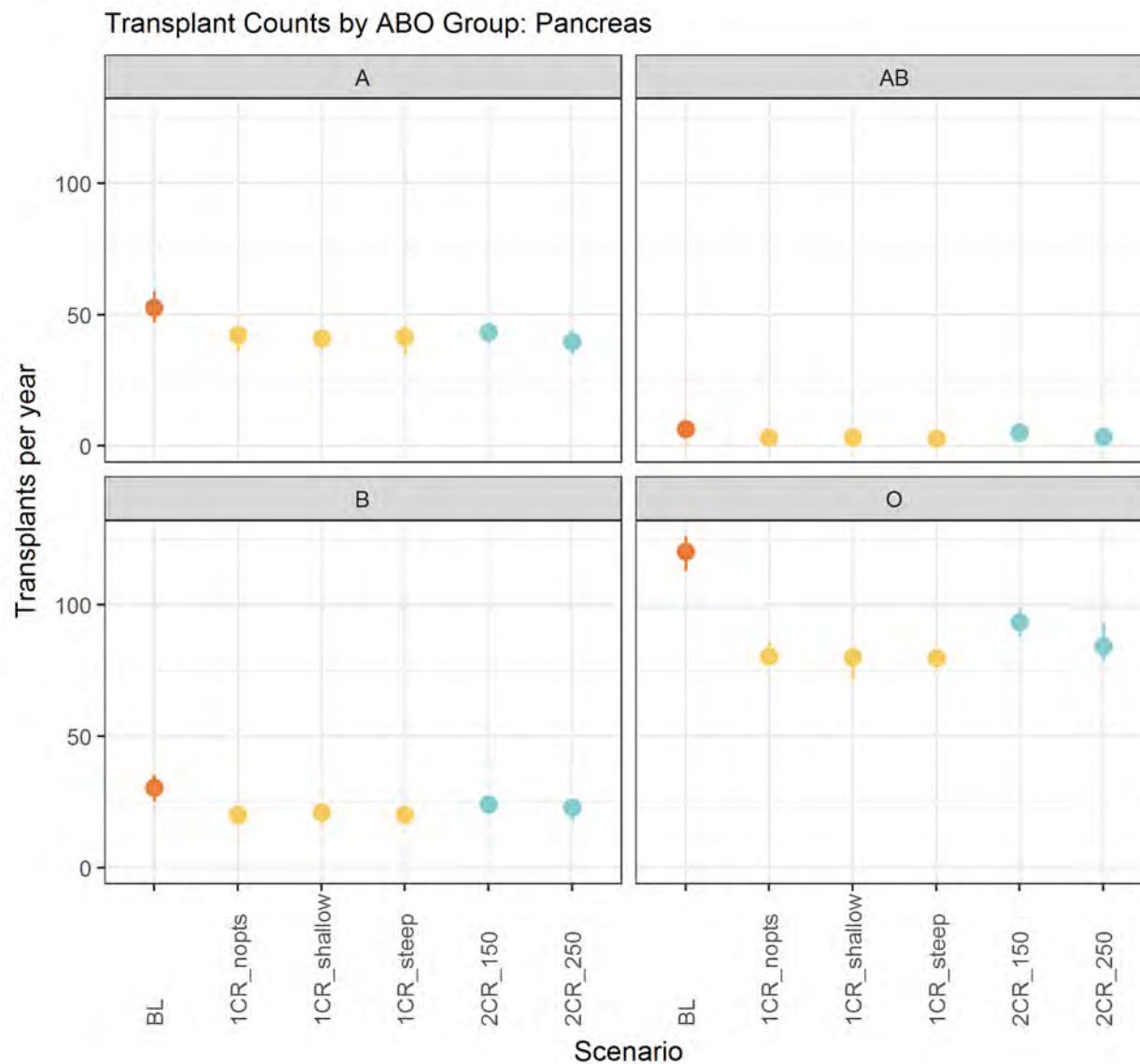


Figure 65 Transplant Counts by ABO Group: Pancreas

## Transplant Counts: Diagnosis

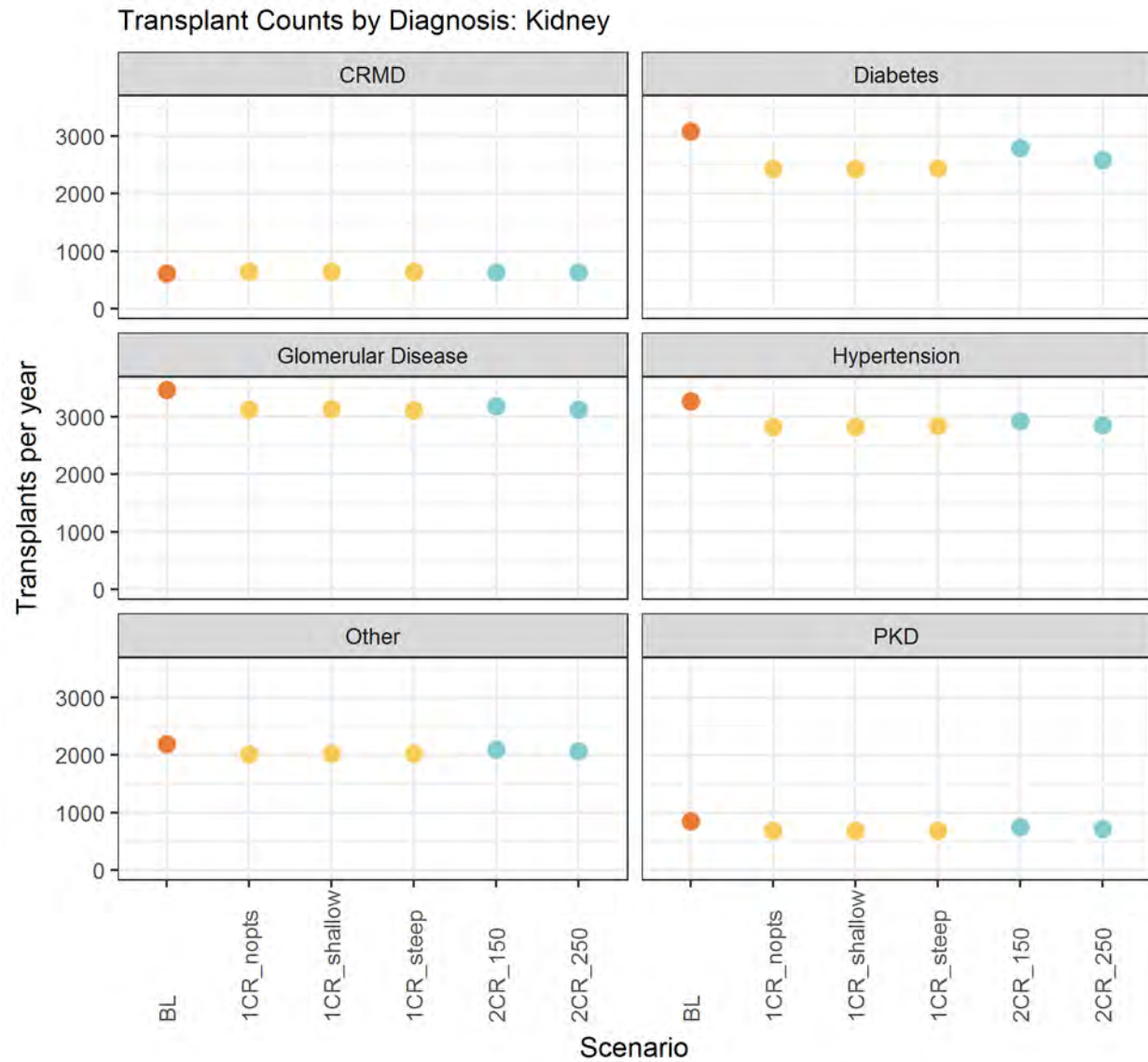


Figure 66 Transplant Counts by Diagnosis: Kidney

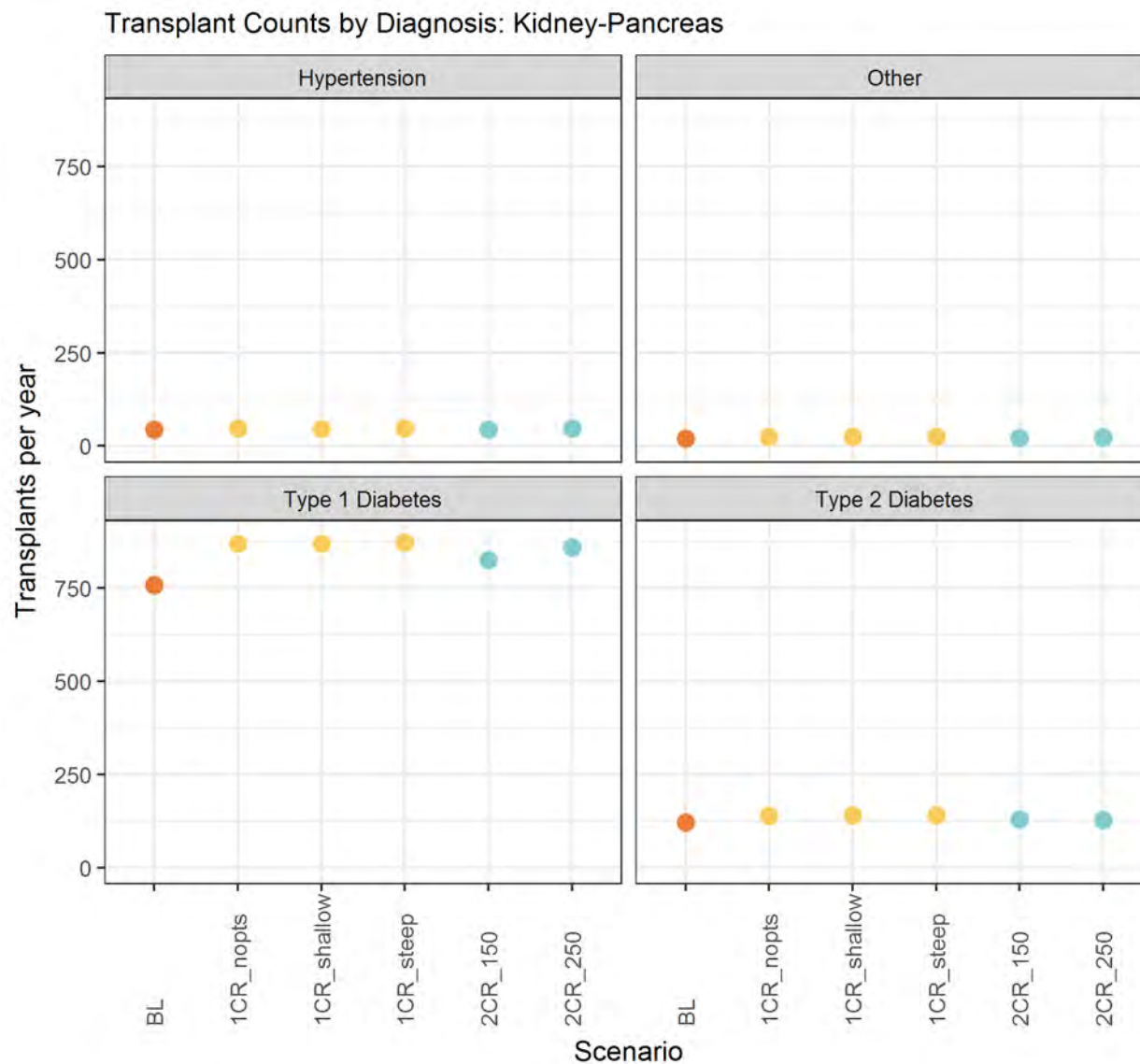


Figure 67 Transplant Counts by Diagnosis: Kidney-Pancreas

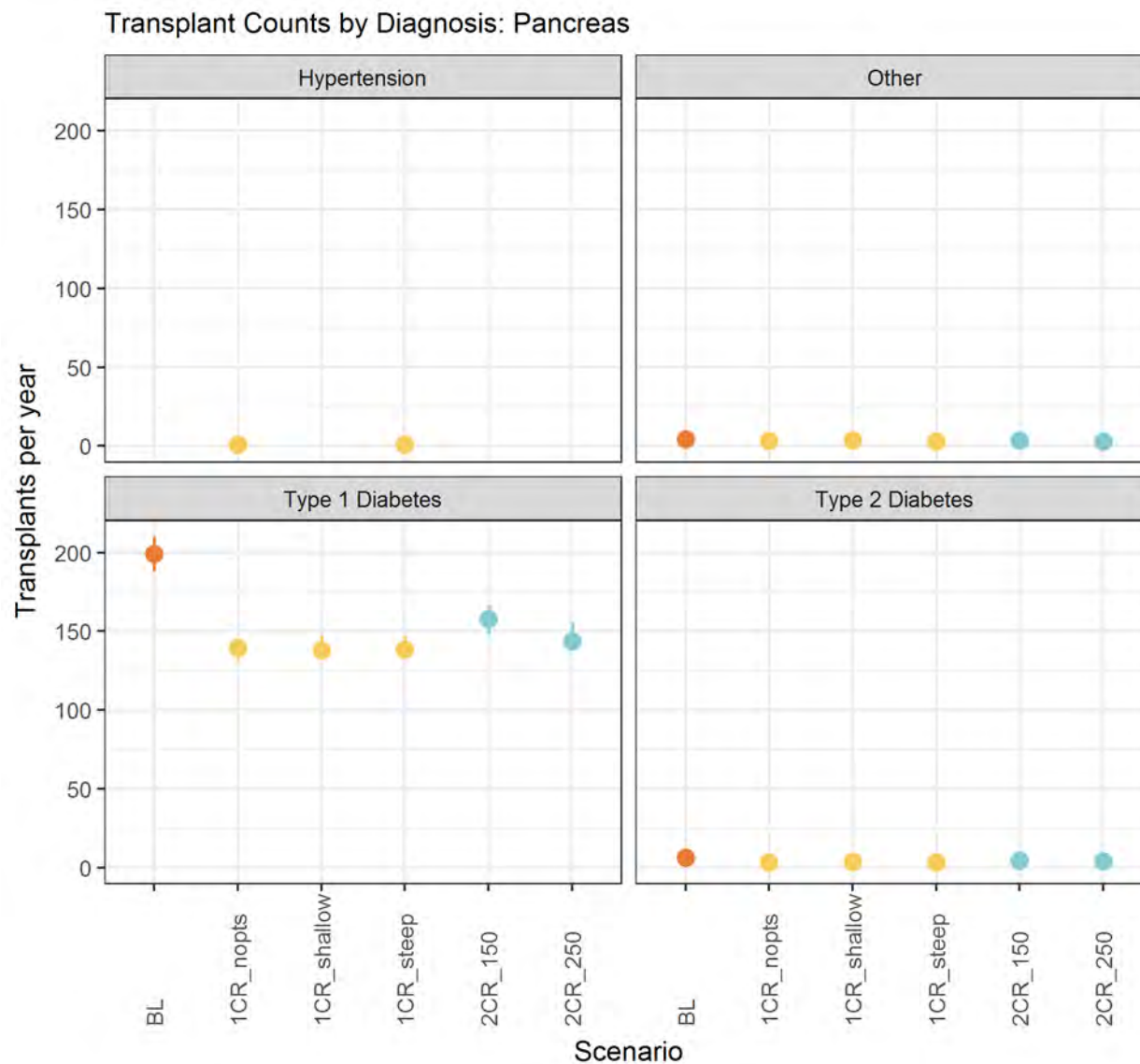


Figure 68 Transplant Counts by Diagnosis: Pancreas

## Transplant Counts: Dialysis Time

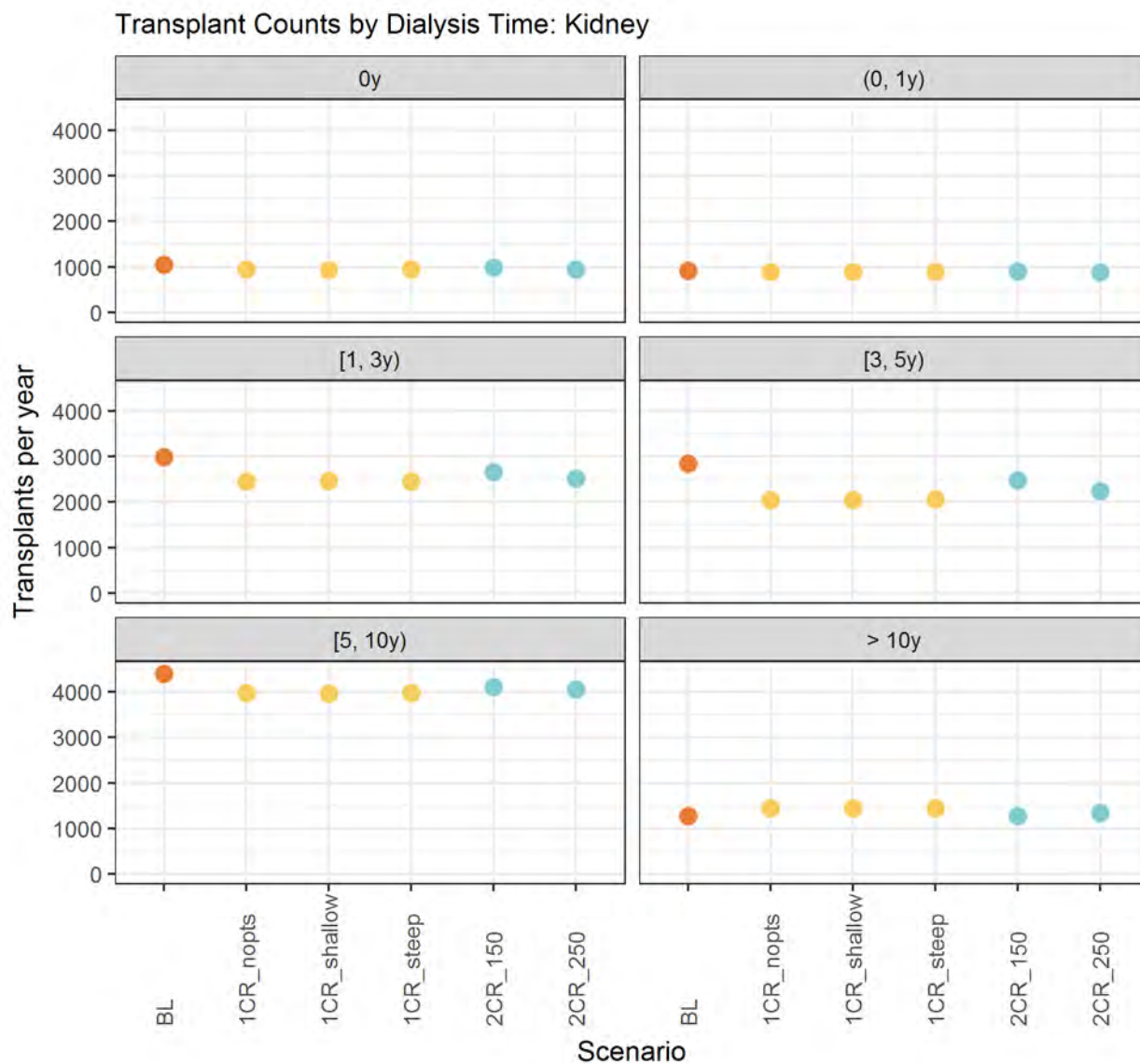


Figure 69 Transplant Counts by Dialysis Time: Kidney

Transplant Counts: cPRA: 0 - 60

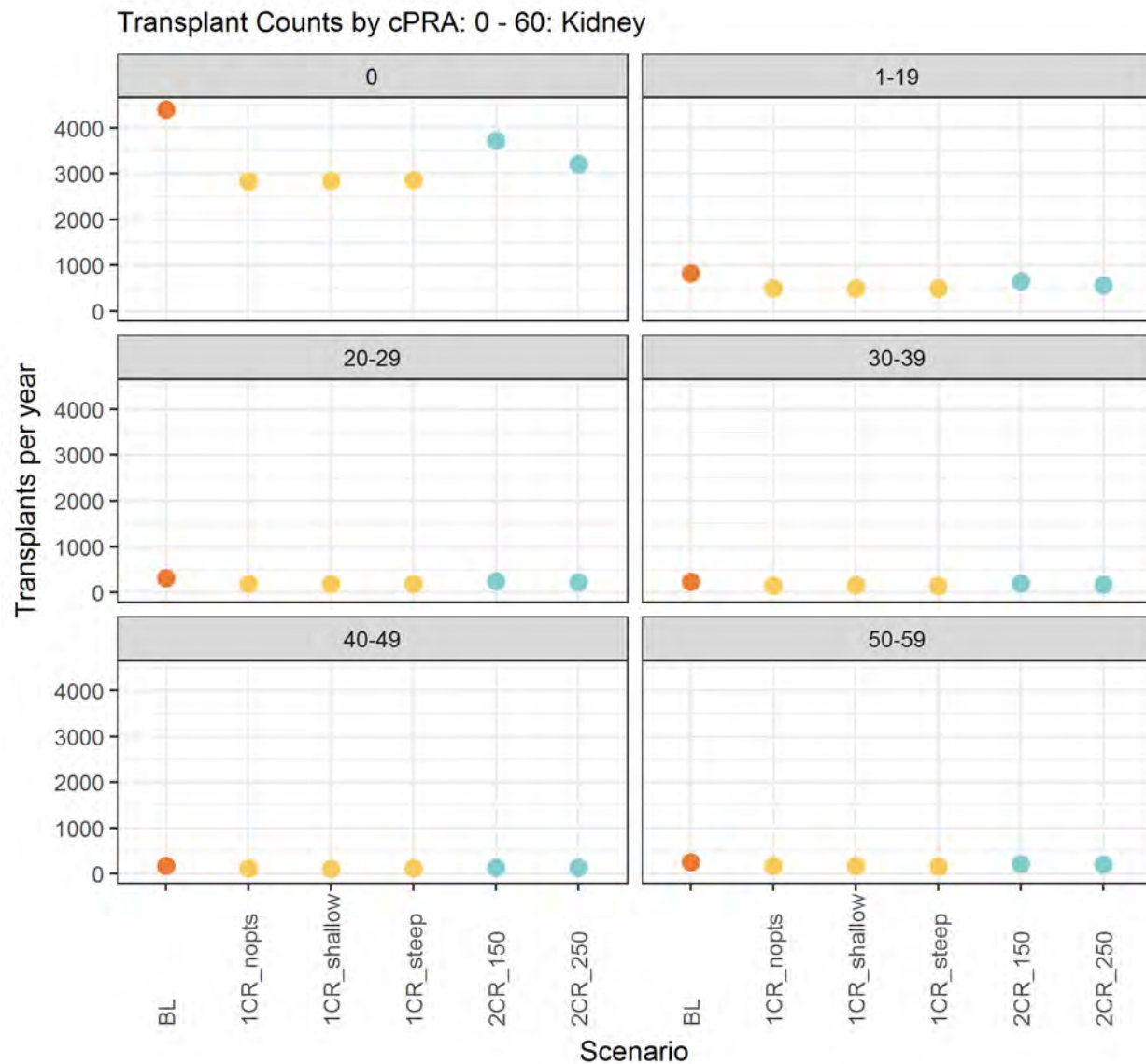


Figure 70 Transplant Counts by cPRA: 0 - 60: Kidney



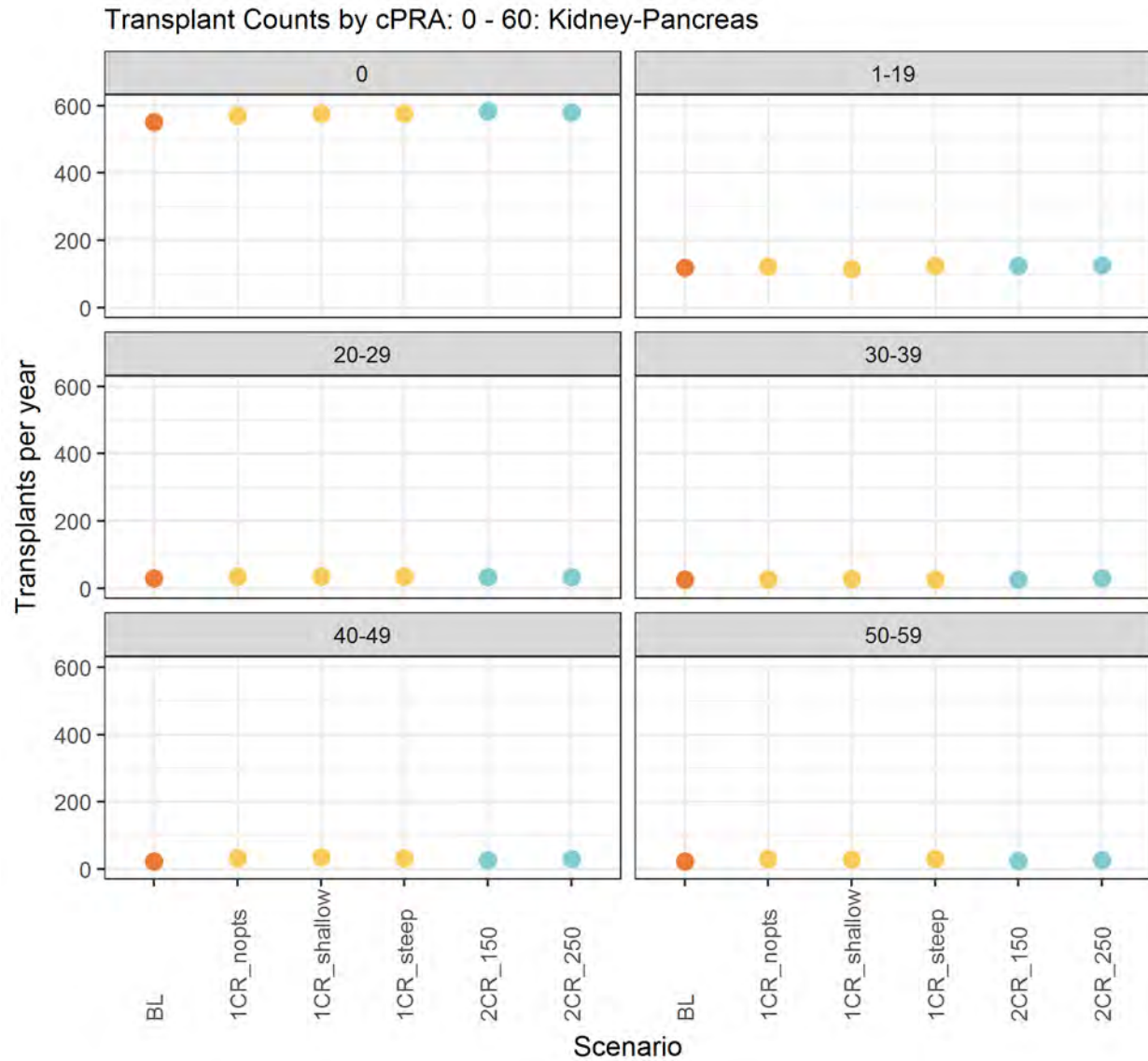


Figure 71 Transplant Counts by cPRA: 0 - 60: Kidney-Pancreas

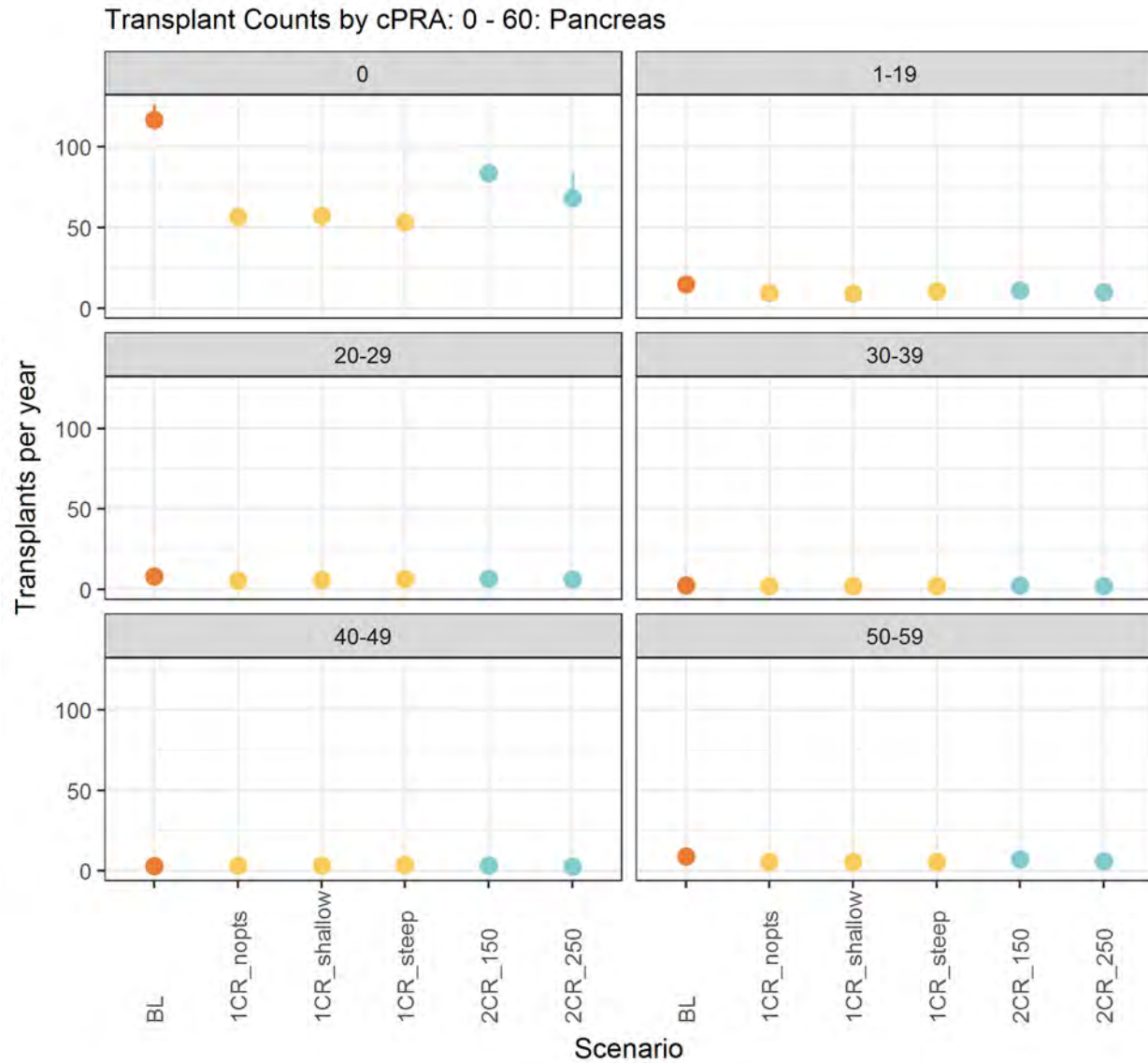


Figure 72 Transplant Counts by cPRA: 0 - 60: Pancreas

Transplant Counts: cPRA: 61 - 94

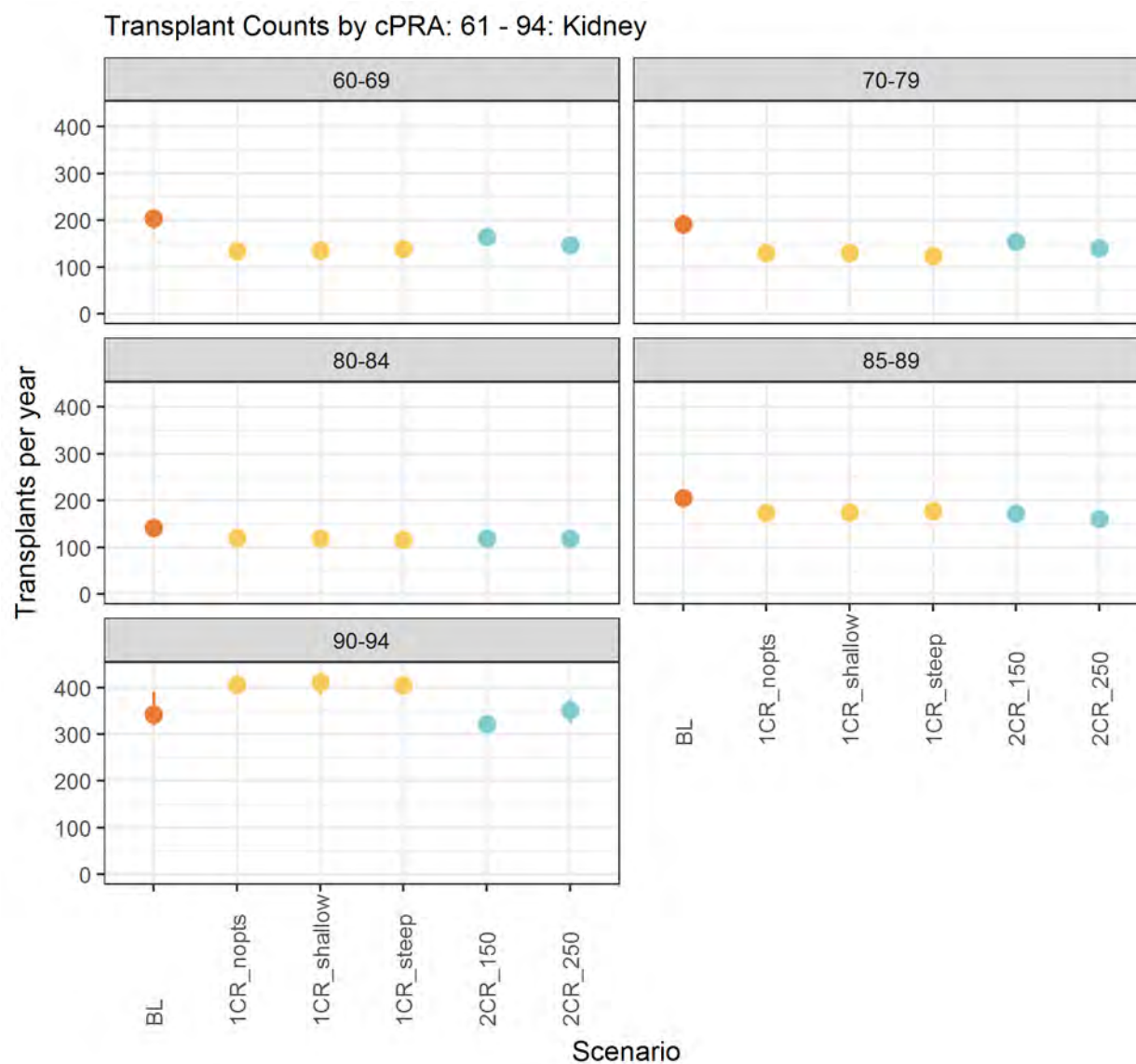


Figure 73 Transplant Counts by cPRA: 61 - 94: Kidney

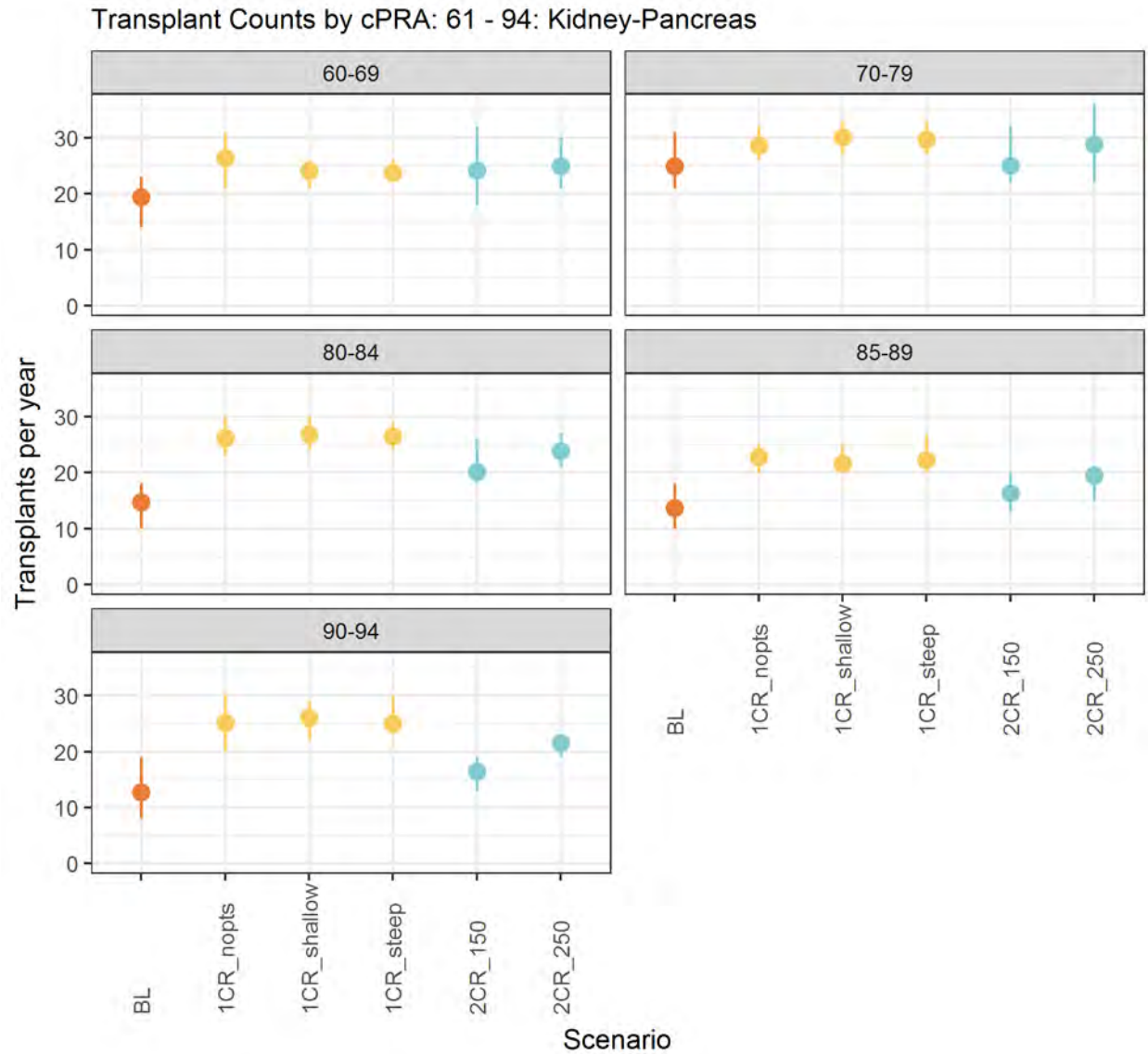


Figure 74 Transplant Counts by cPRA: 61 - 94: Kidney-Pancreas

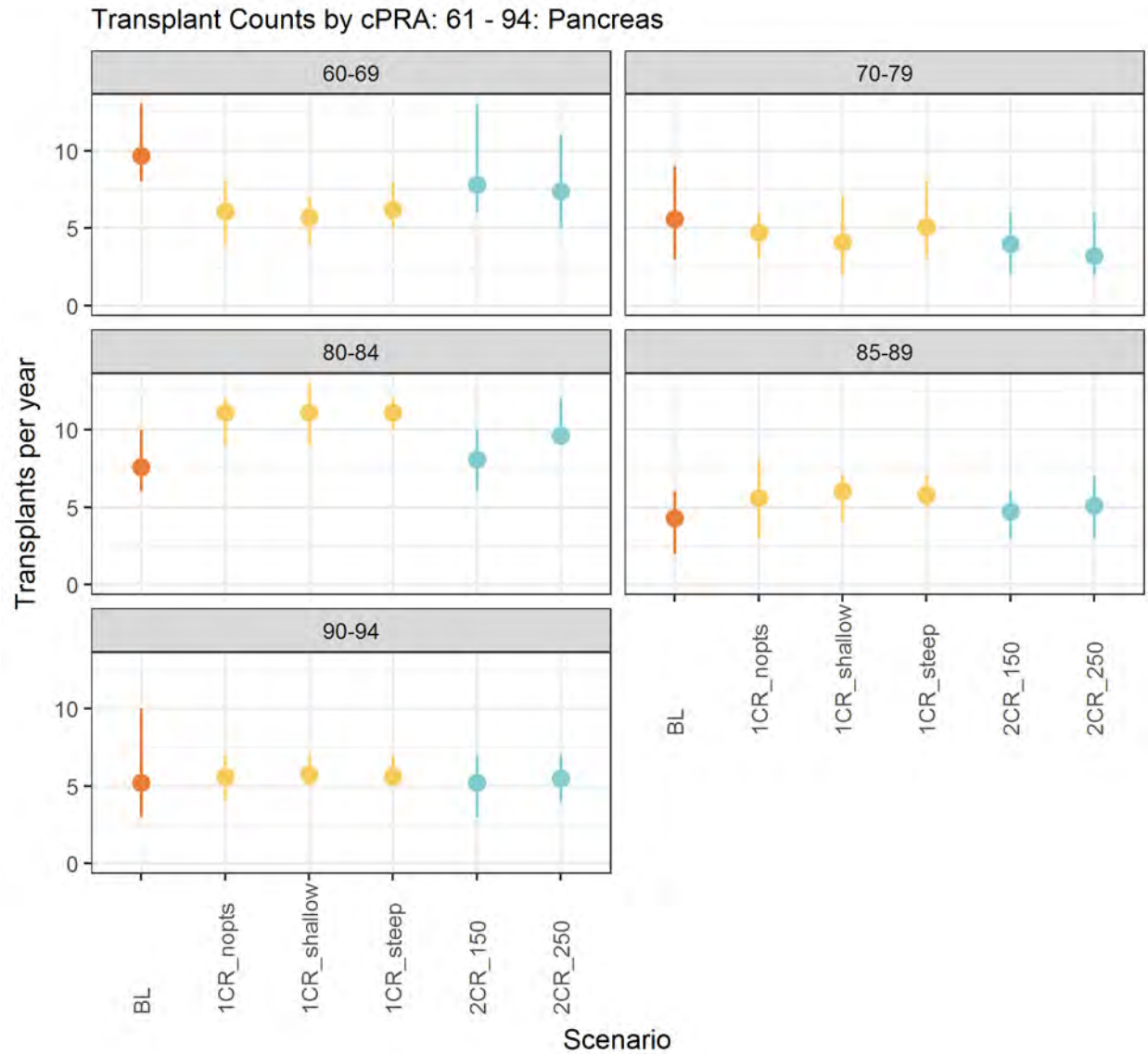


Figure 75 Transplant Counts by cPRA: 61 - 94: Pancreas

Transplant Counts: cPRA: 95 - 100

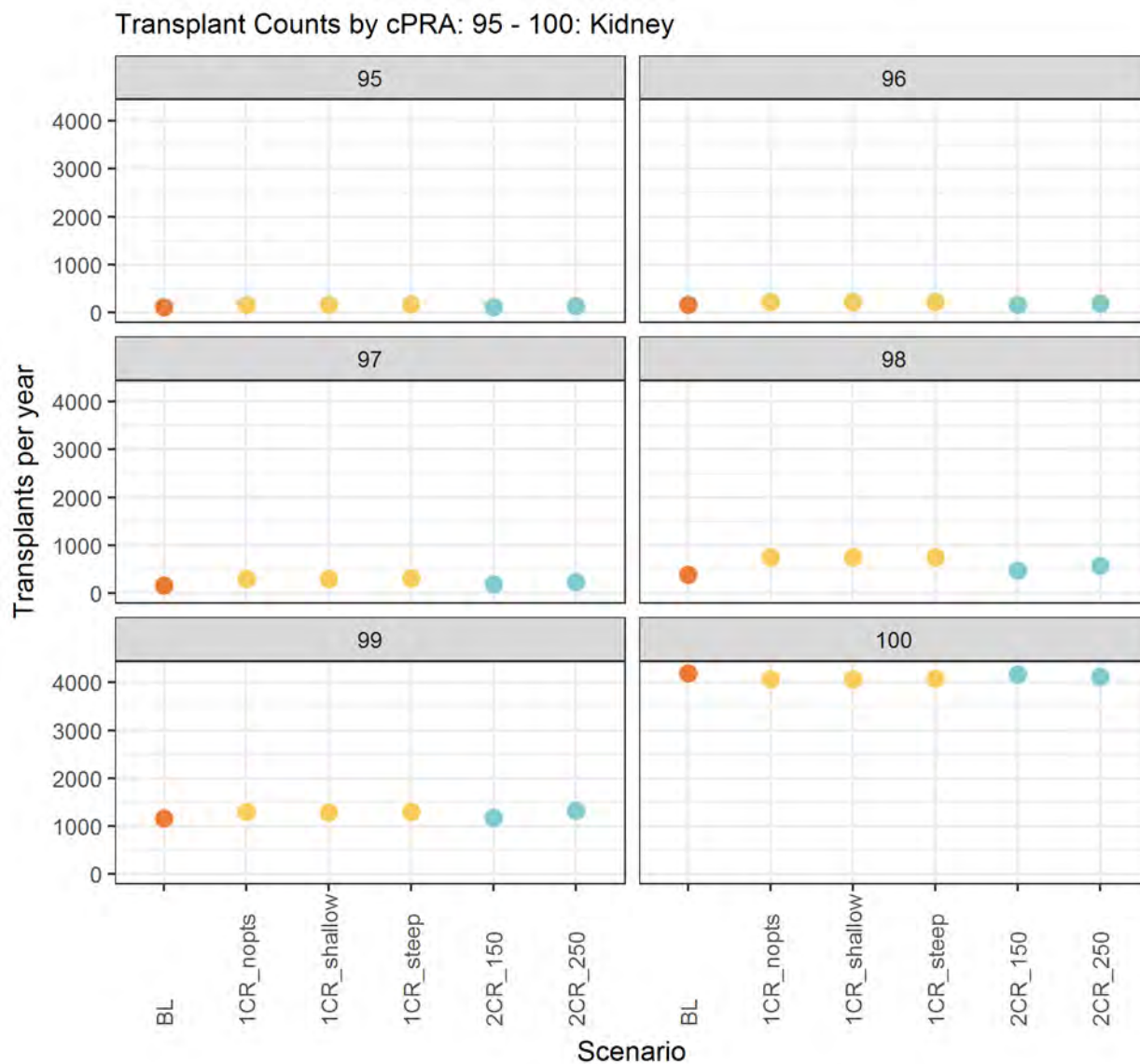


Figure 76 Transplant Counts by cPRA: 95 - 100: Kidney



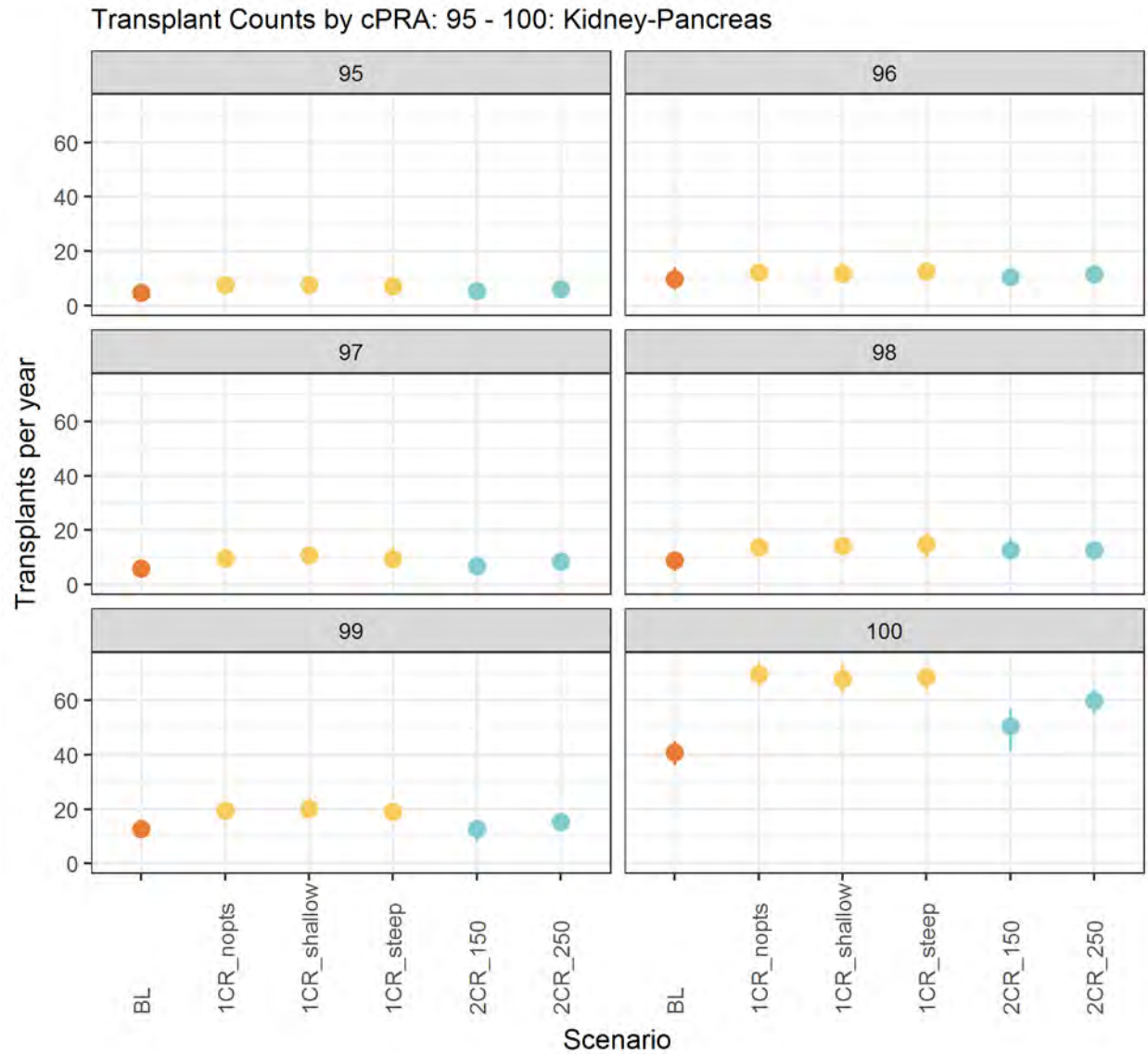


Figure 77 Transplant Counts by cPRA: 95 - 100: Kidney-Pancreas

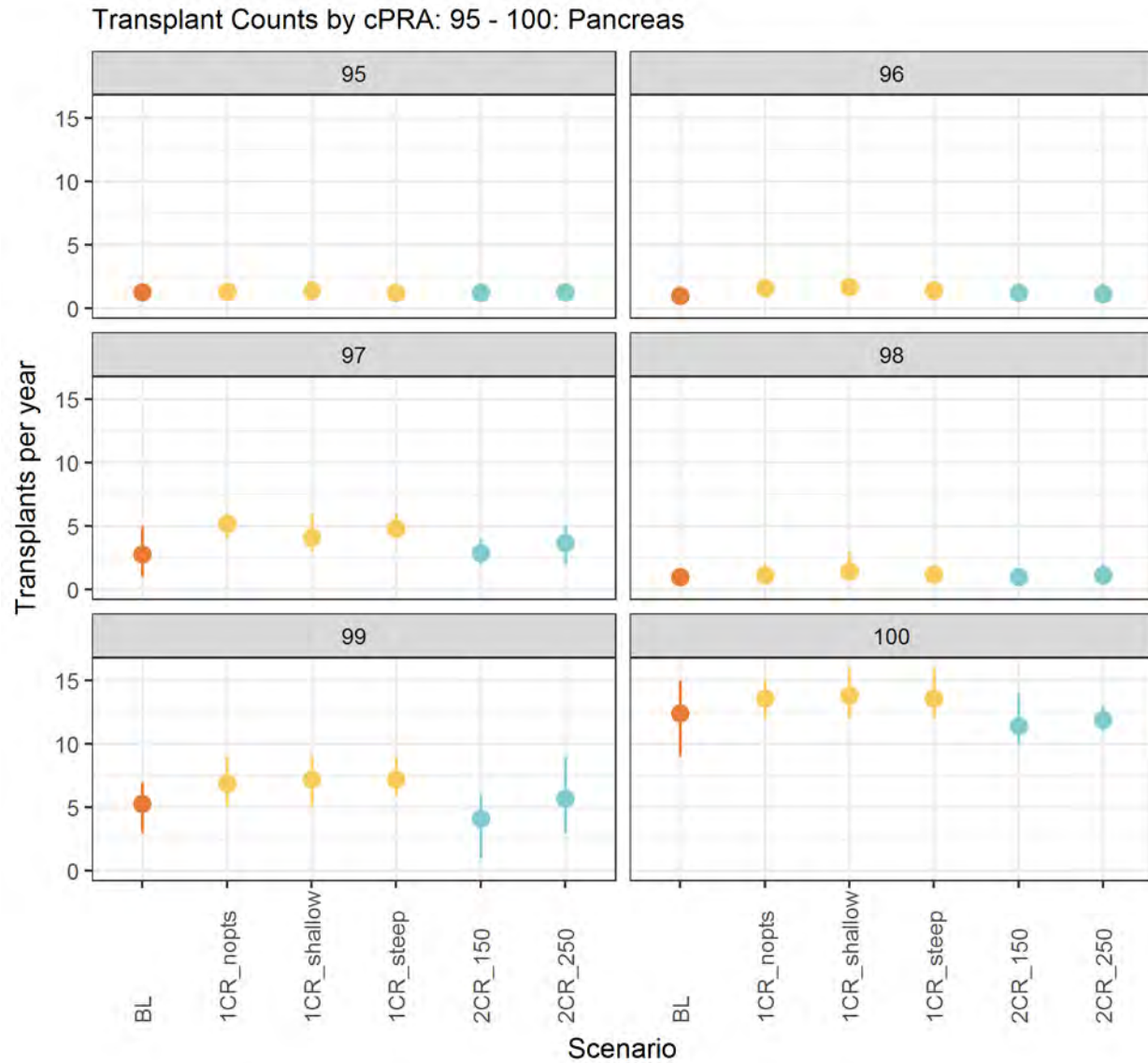


Figure 78 Transplant Counts by cPRA: 95 - 100: Pancreas

Transplant Counts: cPRA: 95 - 98

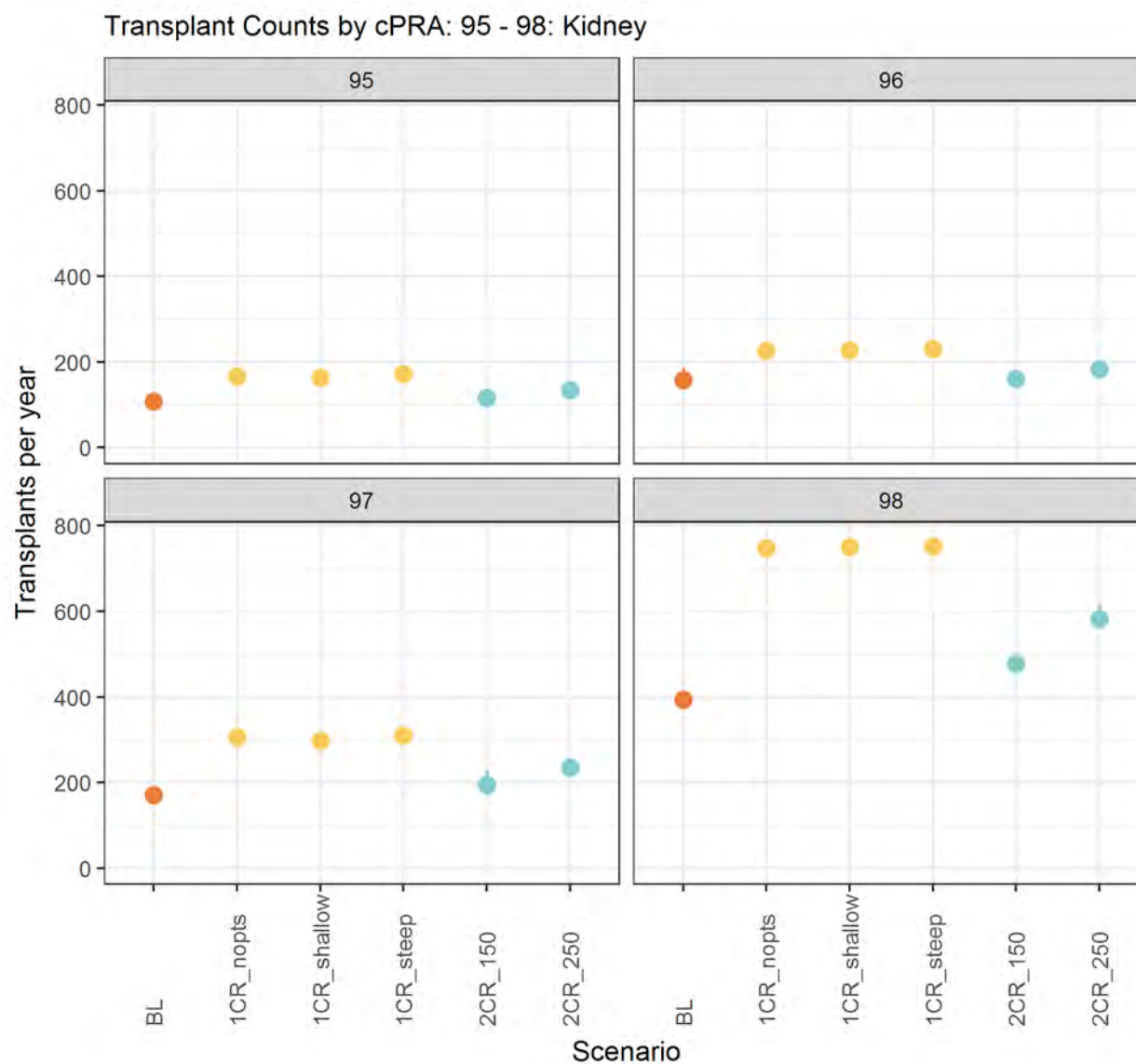


Figure 79 Transplant Counts by cPRA: 95 - 98: Kidney

Transplant Counts: cPRA: 99 - 100

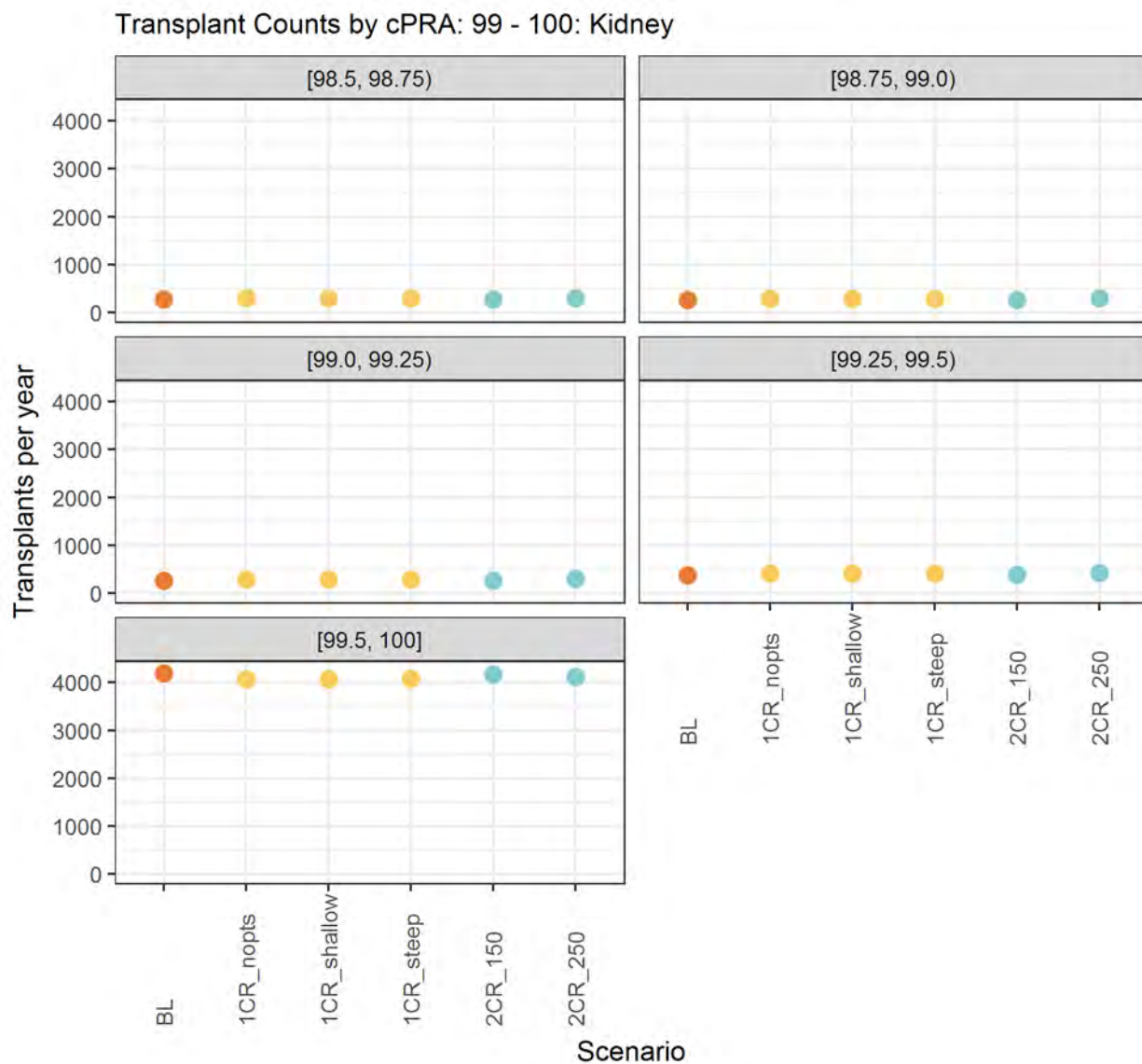


Figure 80 Transplant Counts by cPRA: 99 - 100: Kidney

Transplant Counts: cPRA: 95 - 99

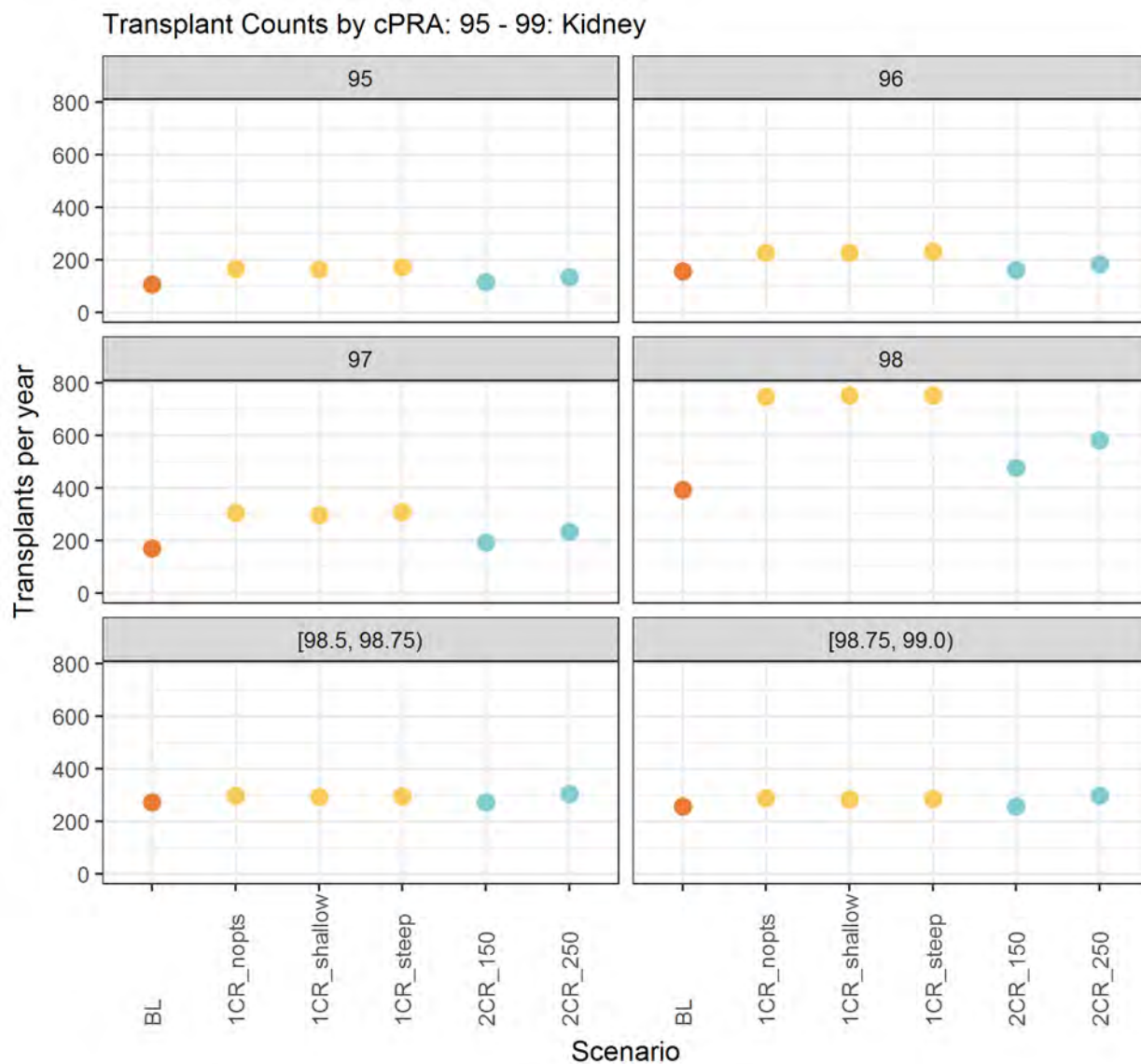


Figure 81 Transplant Counts by cPRA: 95 - 99: Kidney

Transplant Counts: cPRA: 99 - 99.8

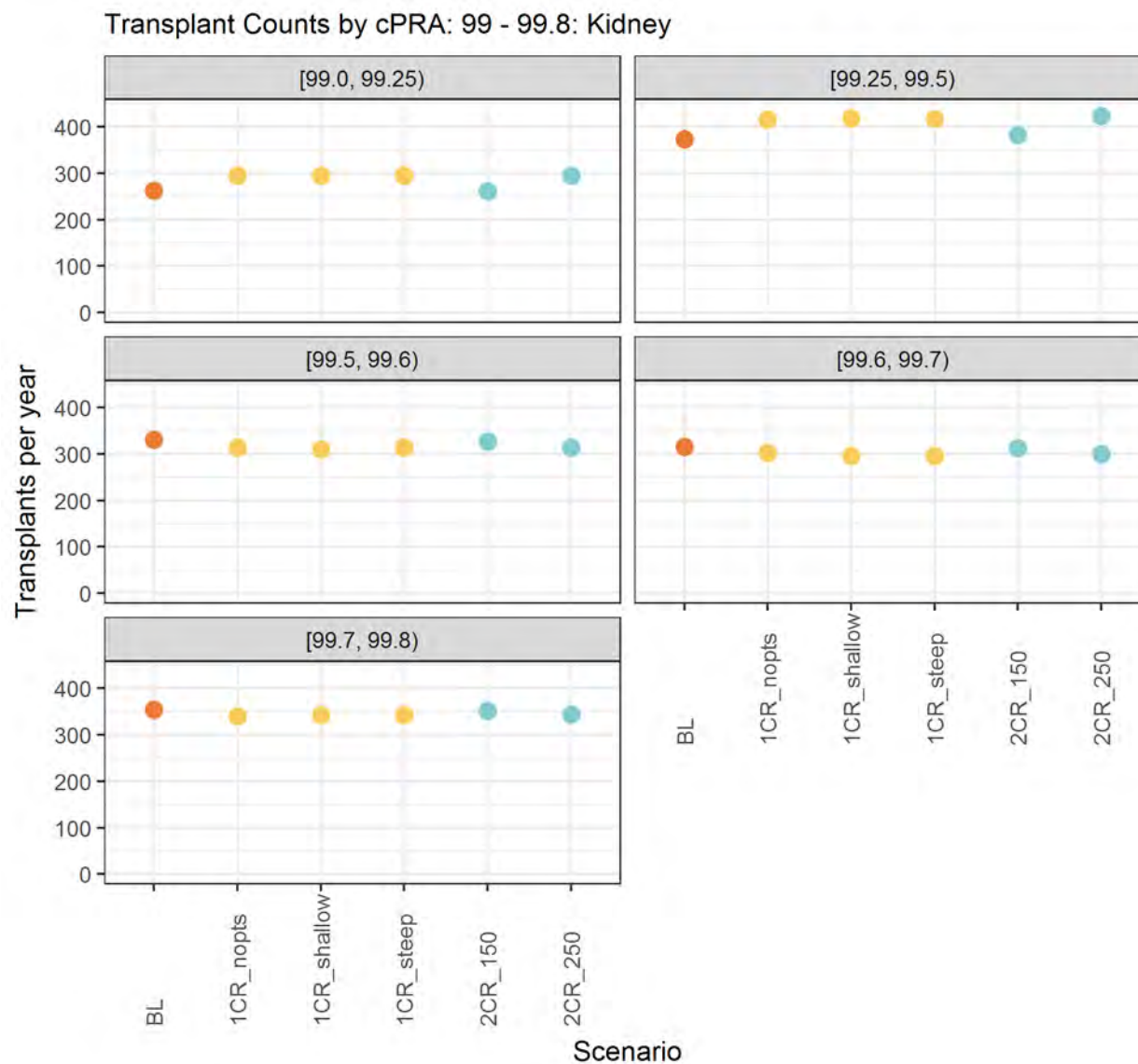


Figure 82 Transplant Counts by cPRA: 99 - 99.8: Kidney



Transplant Counts: cPRA: 99.8 - 100

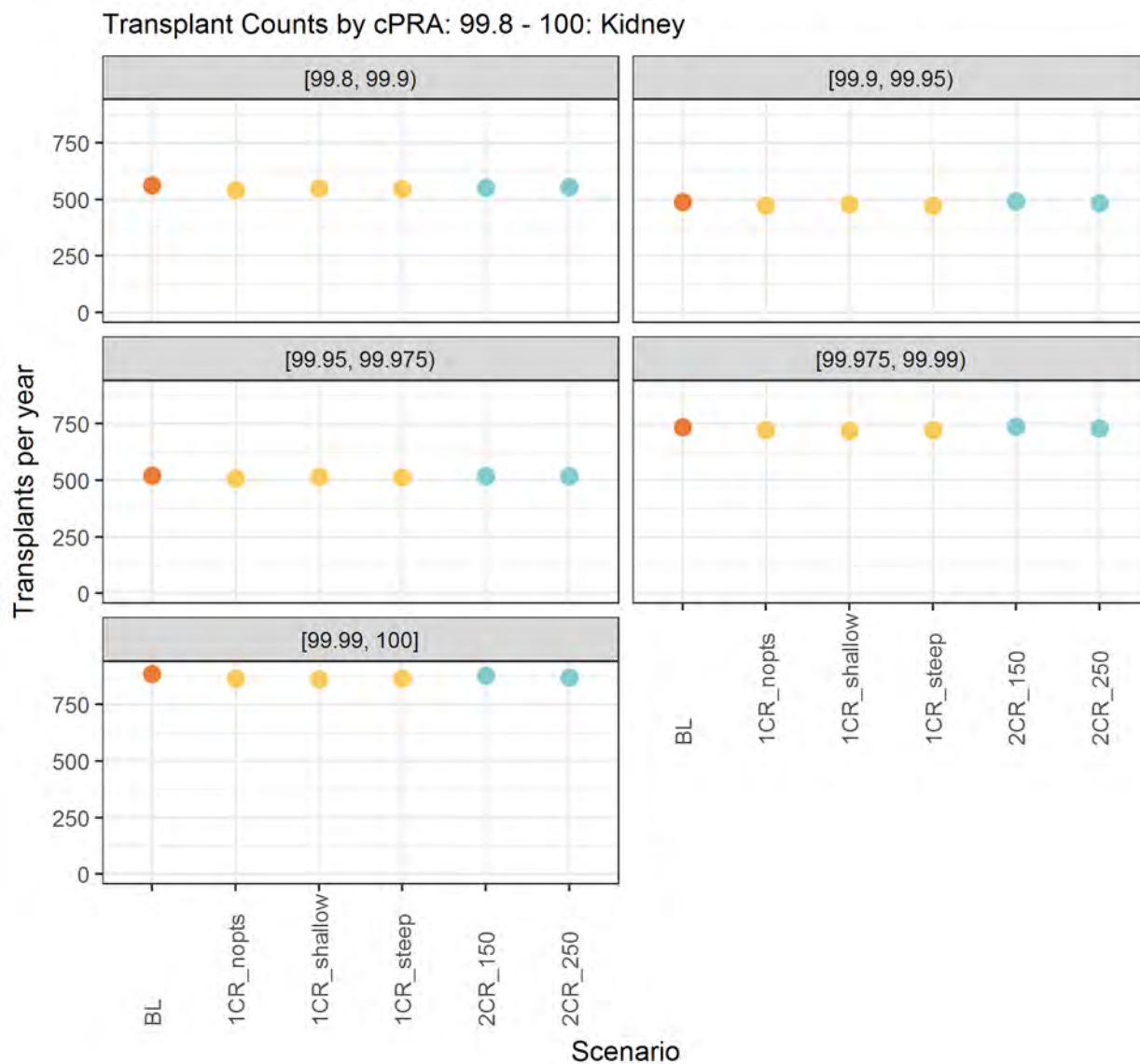


Figure 83 Transplant Counts by cPRA: 99.8 - 100: Kidney

## Transplant Counts: Payment Status

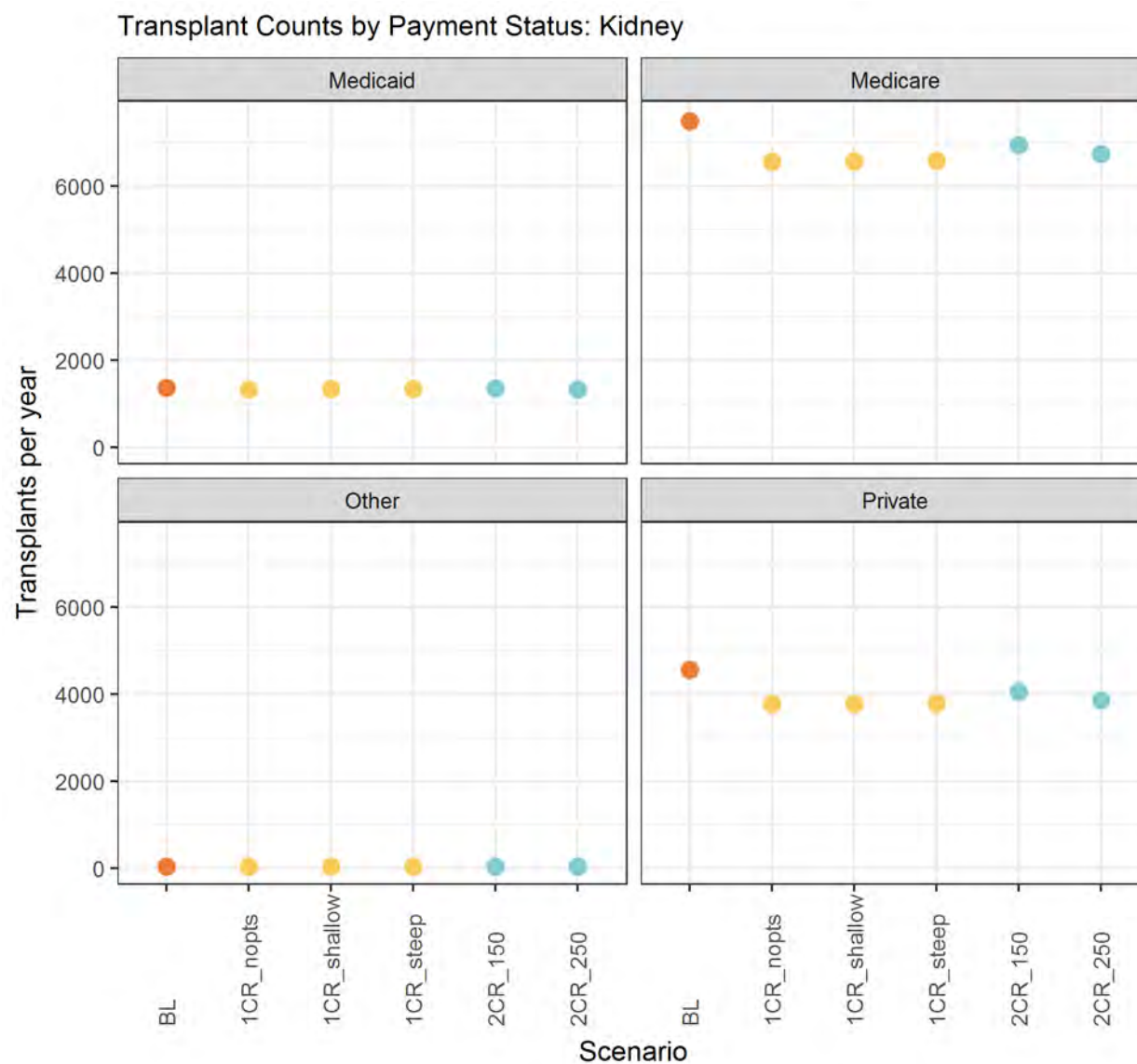


Figure 84 Transplant Counts by Payment Status: Kidney

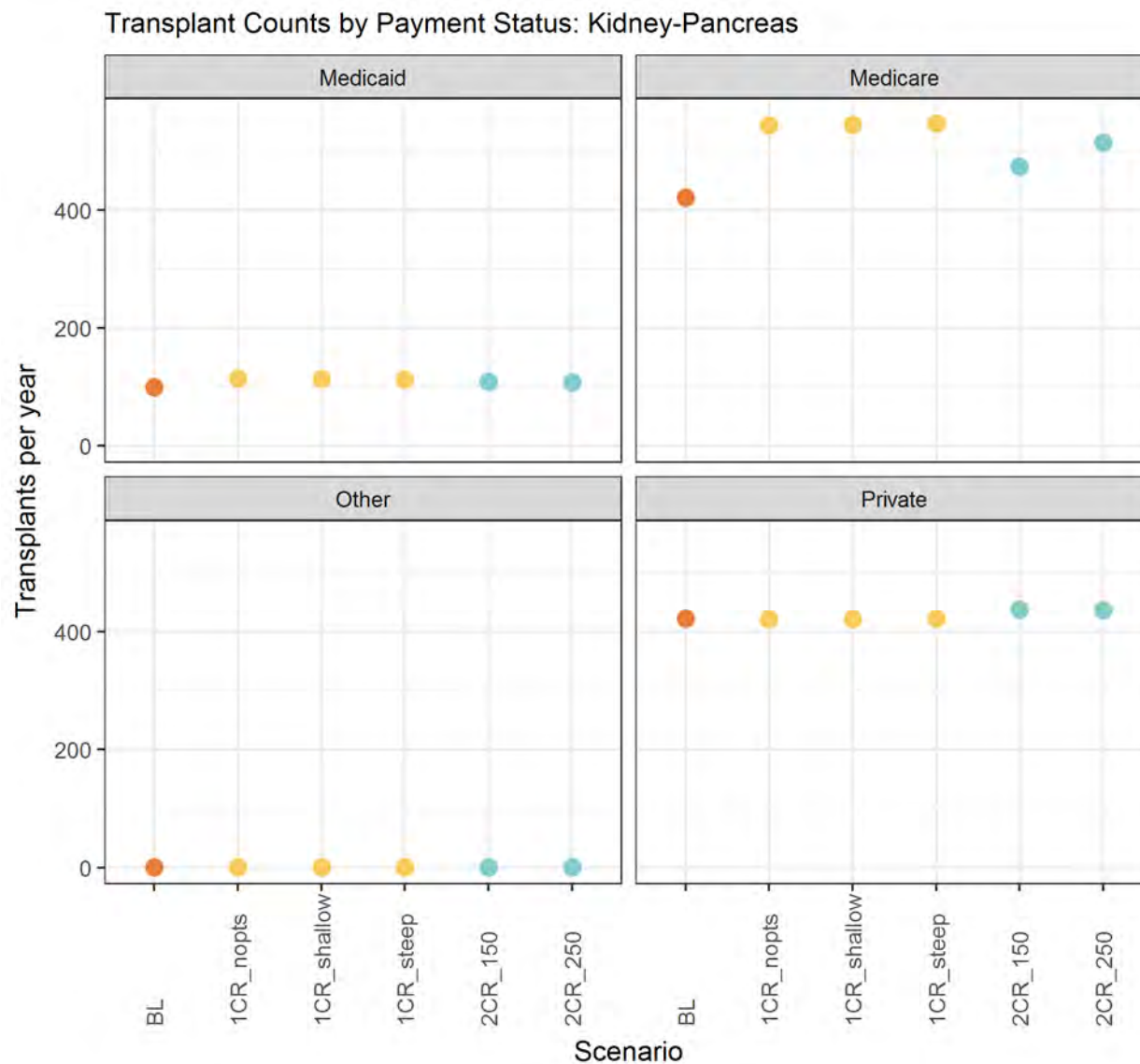


Figure 85 Transplant Counts by Payment Status: Kidney-Pancreas

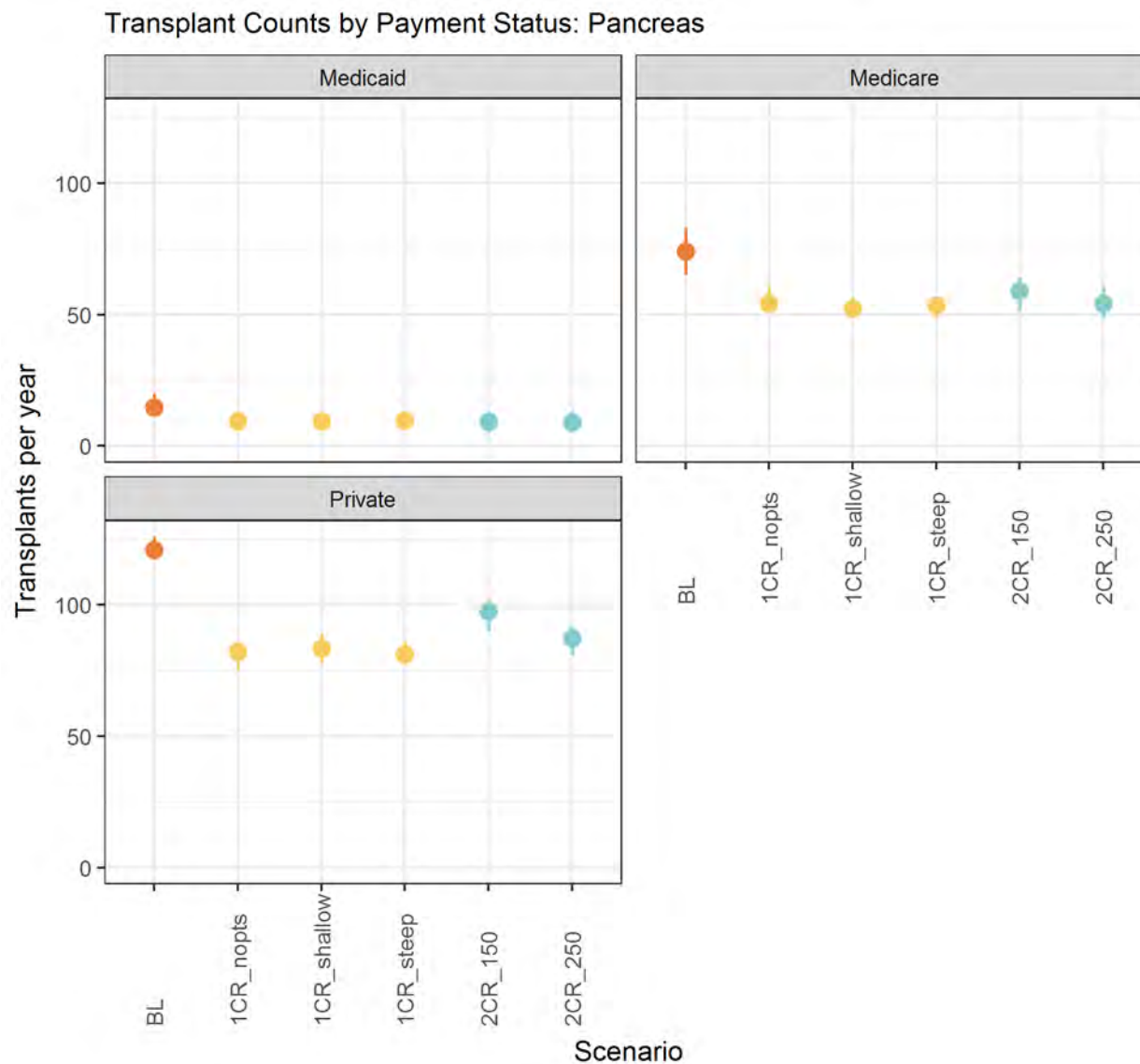


Figure 86 Transplant Counts by Payment Status: Pancreas

## Transplant Counts: Urbanicity

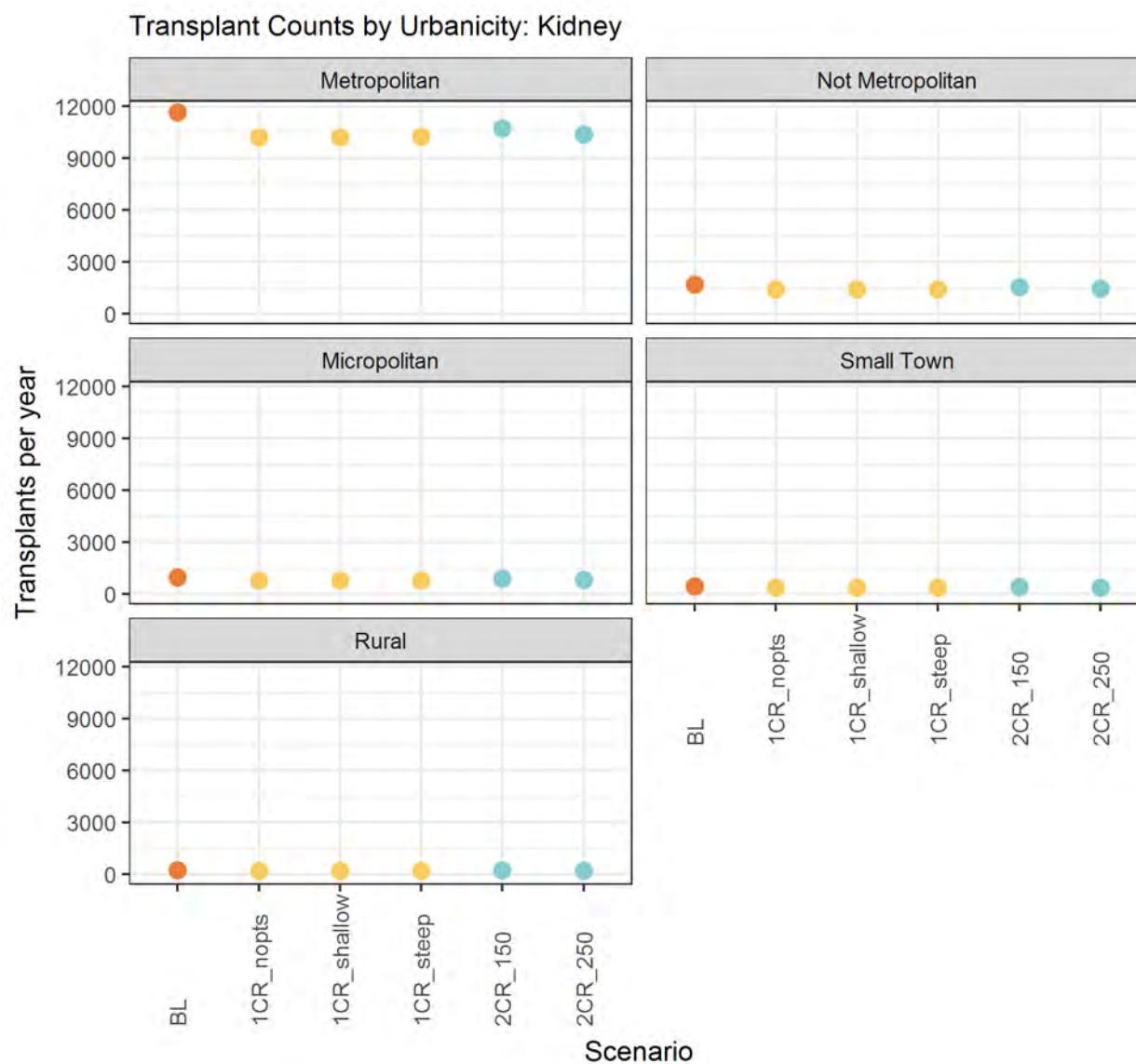


Figure 87 Transplant Counts by Urbanicity: Kidney

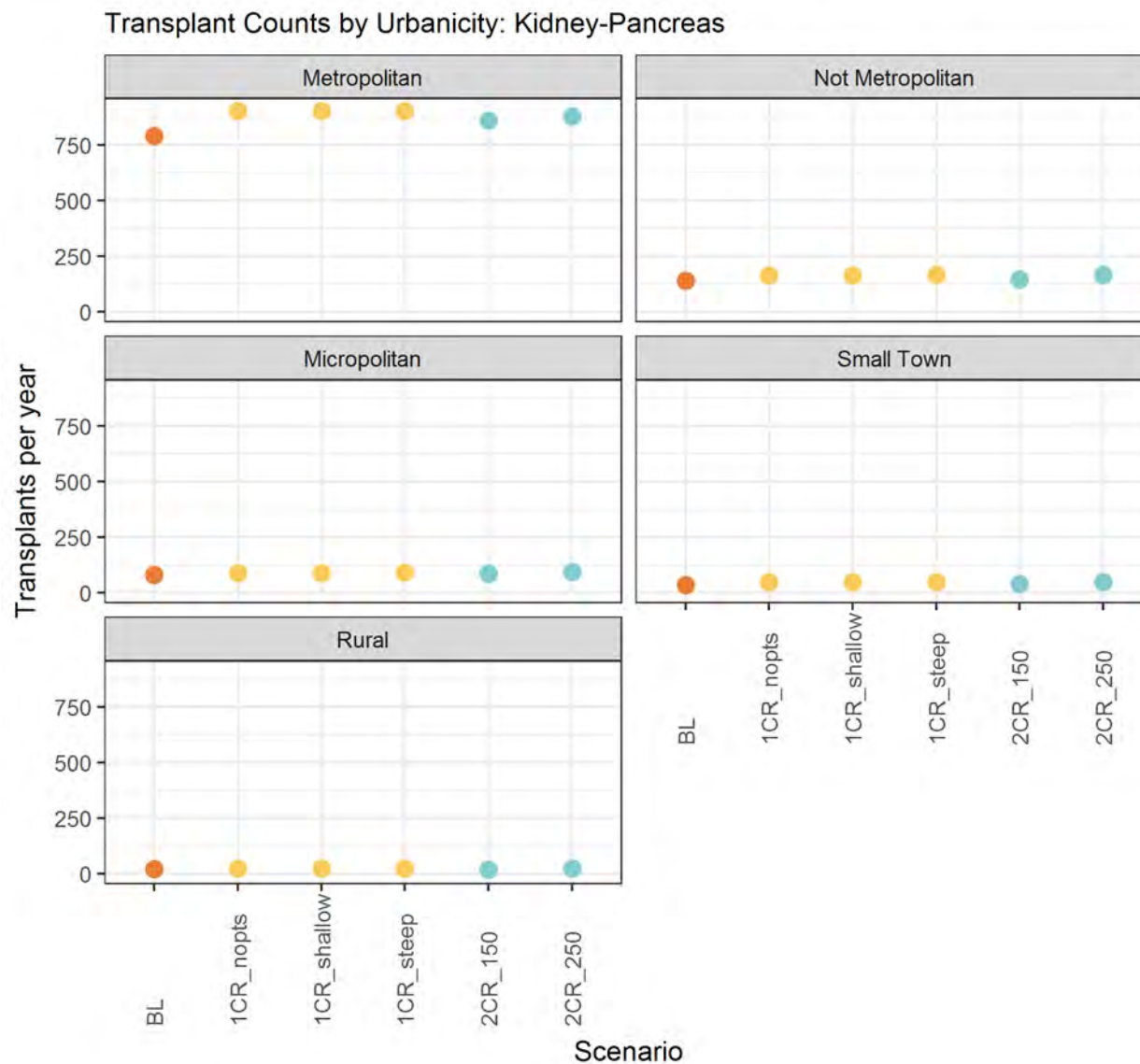


Figure 88 Transplant Counts by Urbanicity: Kidney-Pancreas



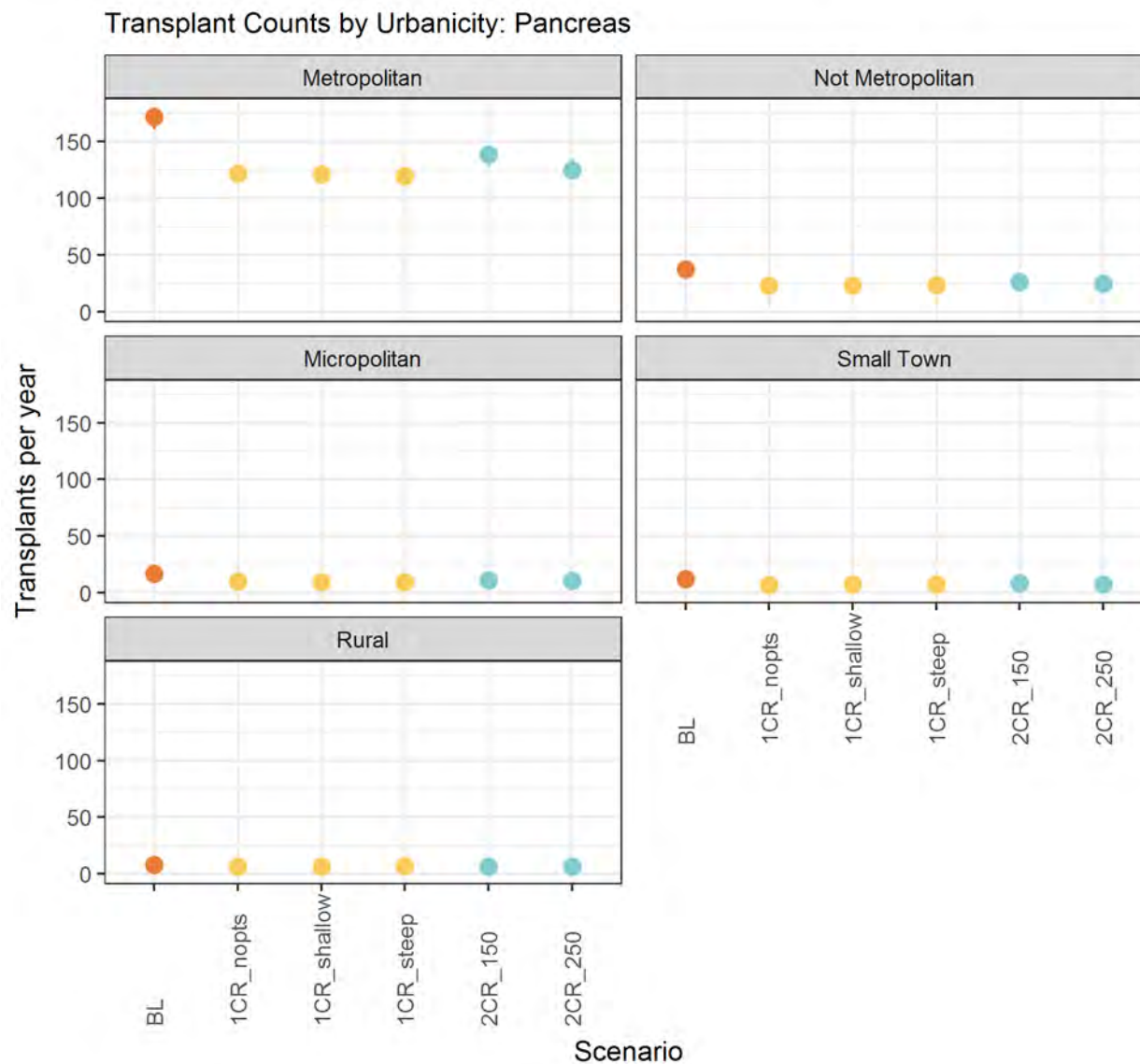


Figure 89 Transplant Counts by Urbanicity: Pancreas

## Transplant Counts: Local/Regional/National

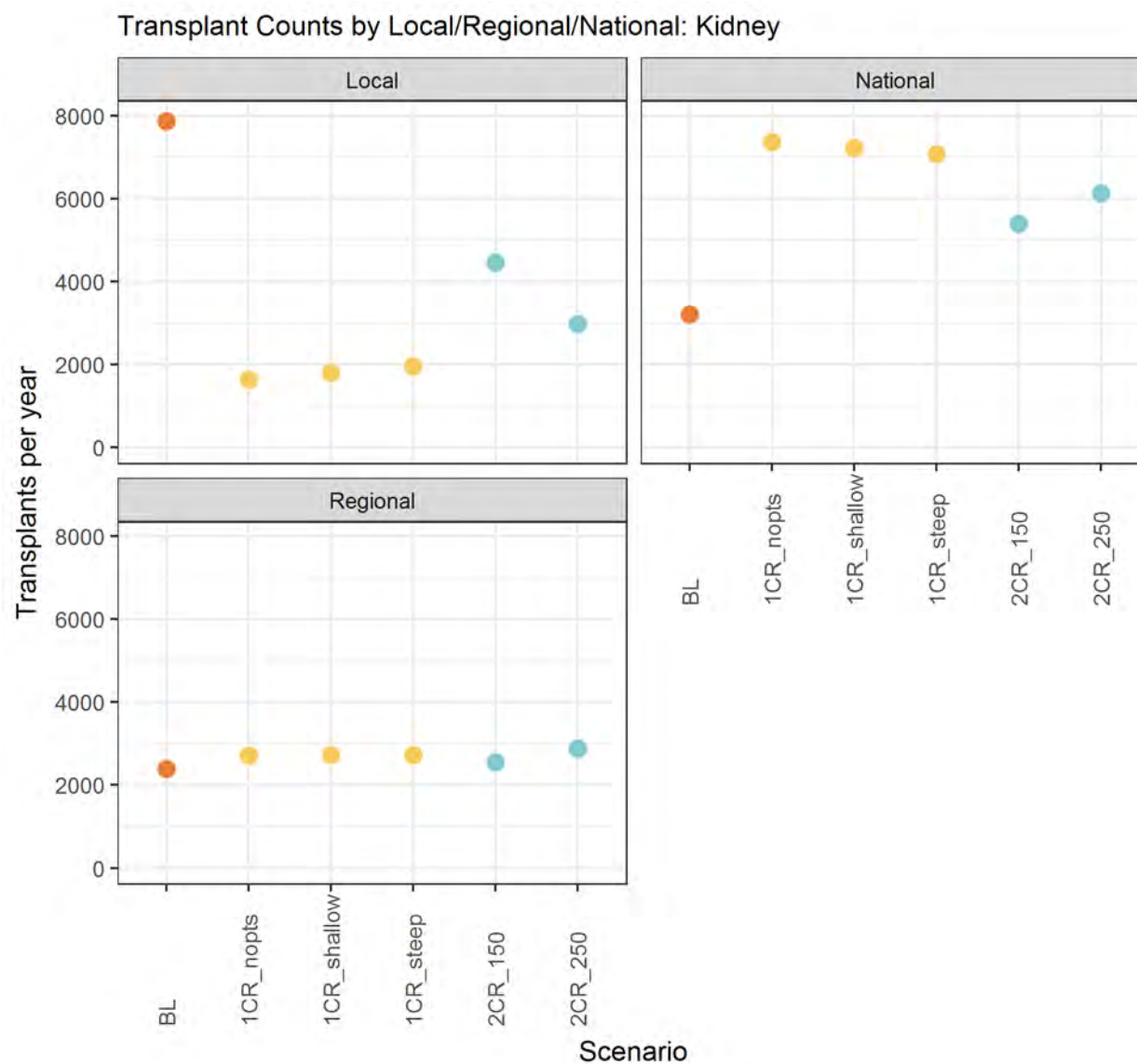


Figure 90 Transplant Counts by Local/Regional/National: Kidney

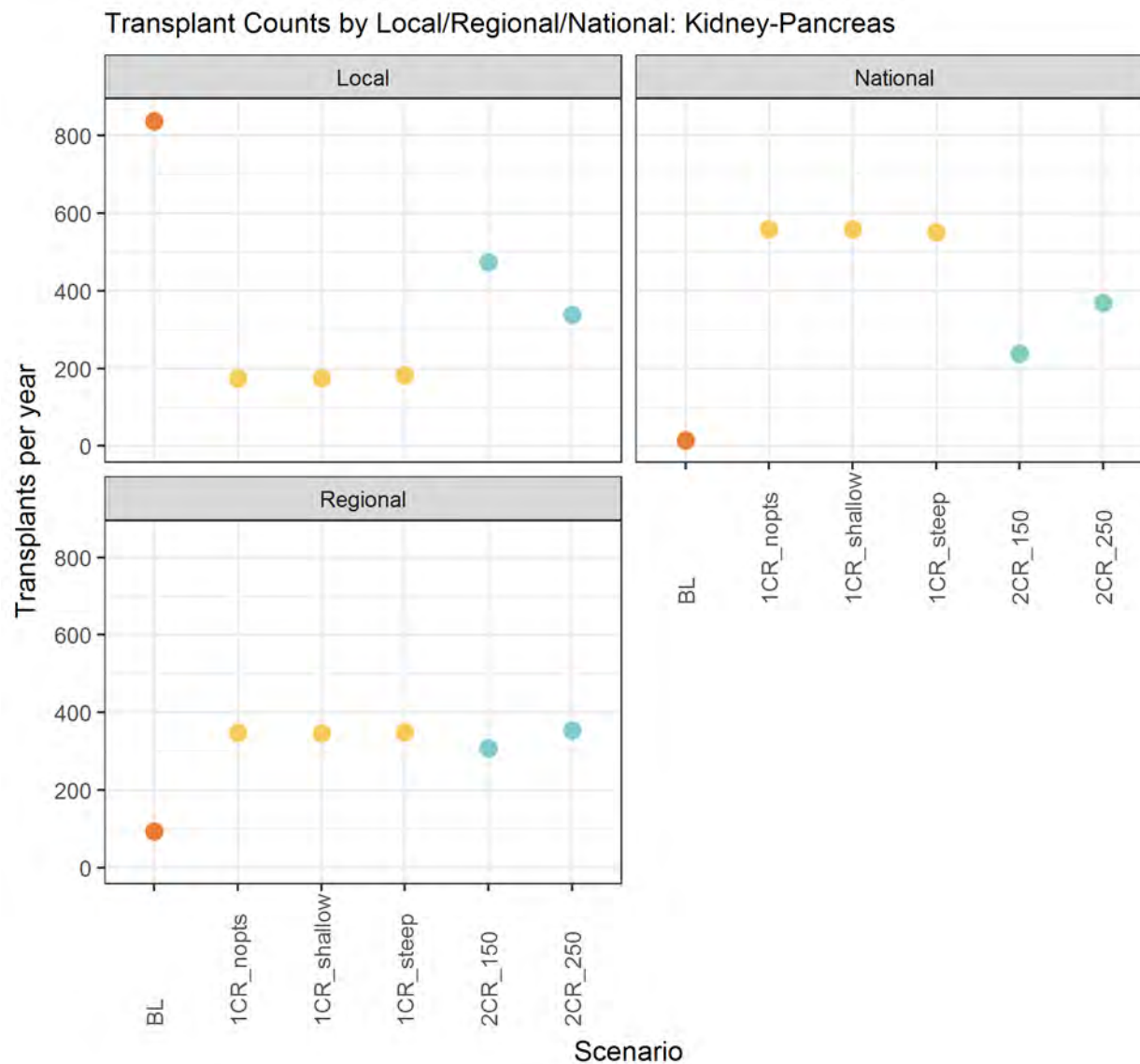


Figure 91 Transplant Counts by Local/Regional/National: Kidney-Pancreas

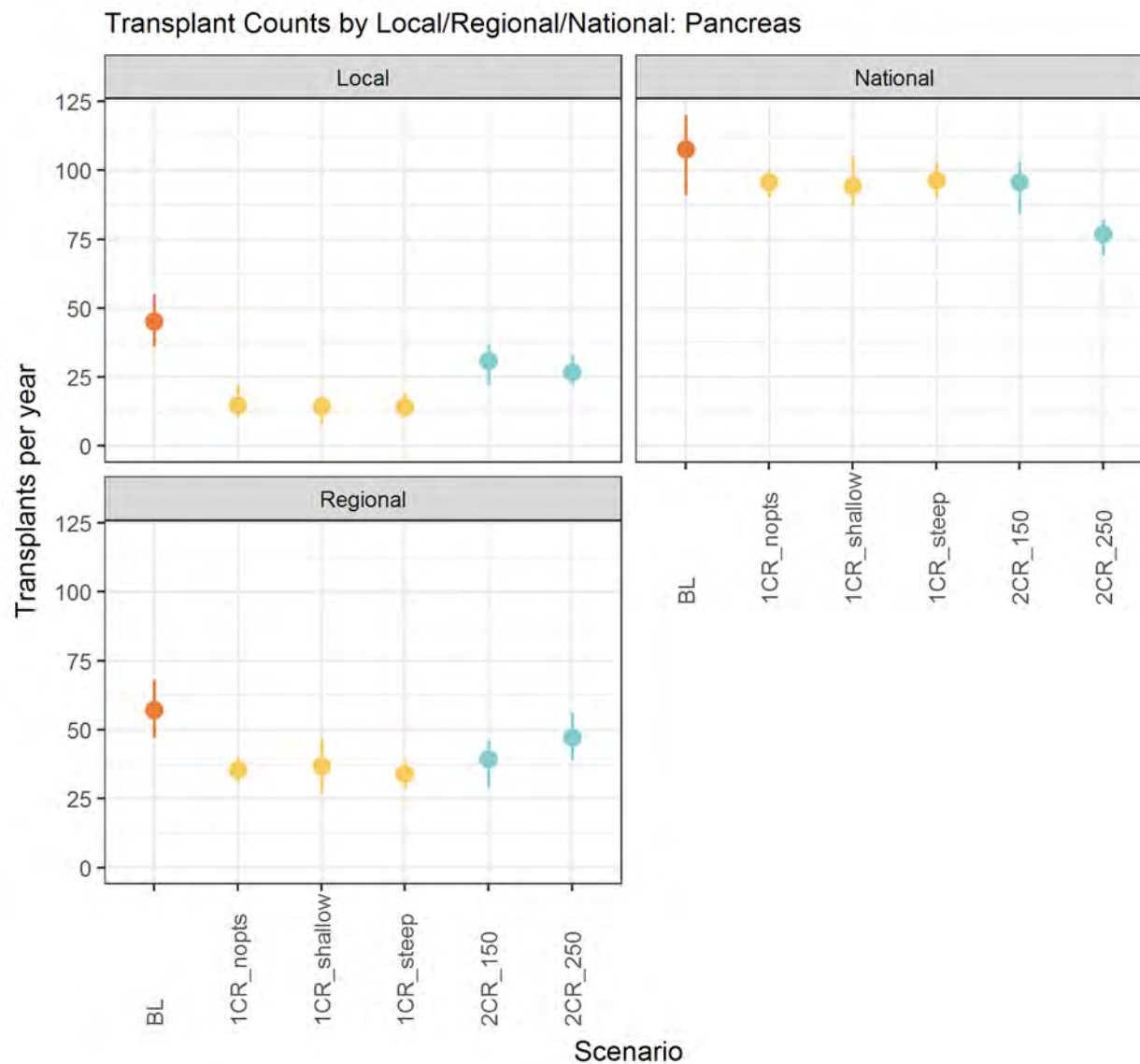


Figure 92 Transplant Counts by Local/Regional/National: Pancreas

## Transplant Counts: EPTS

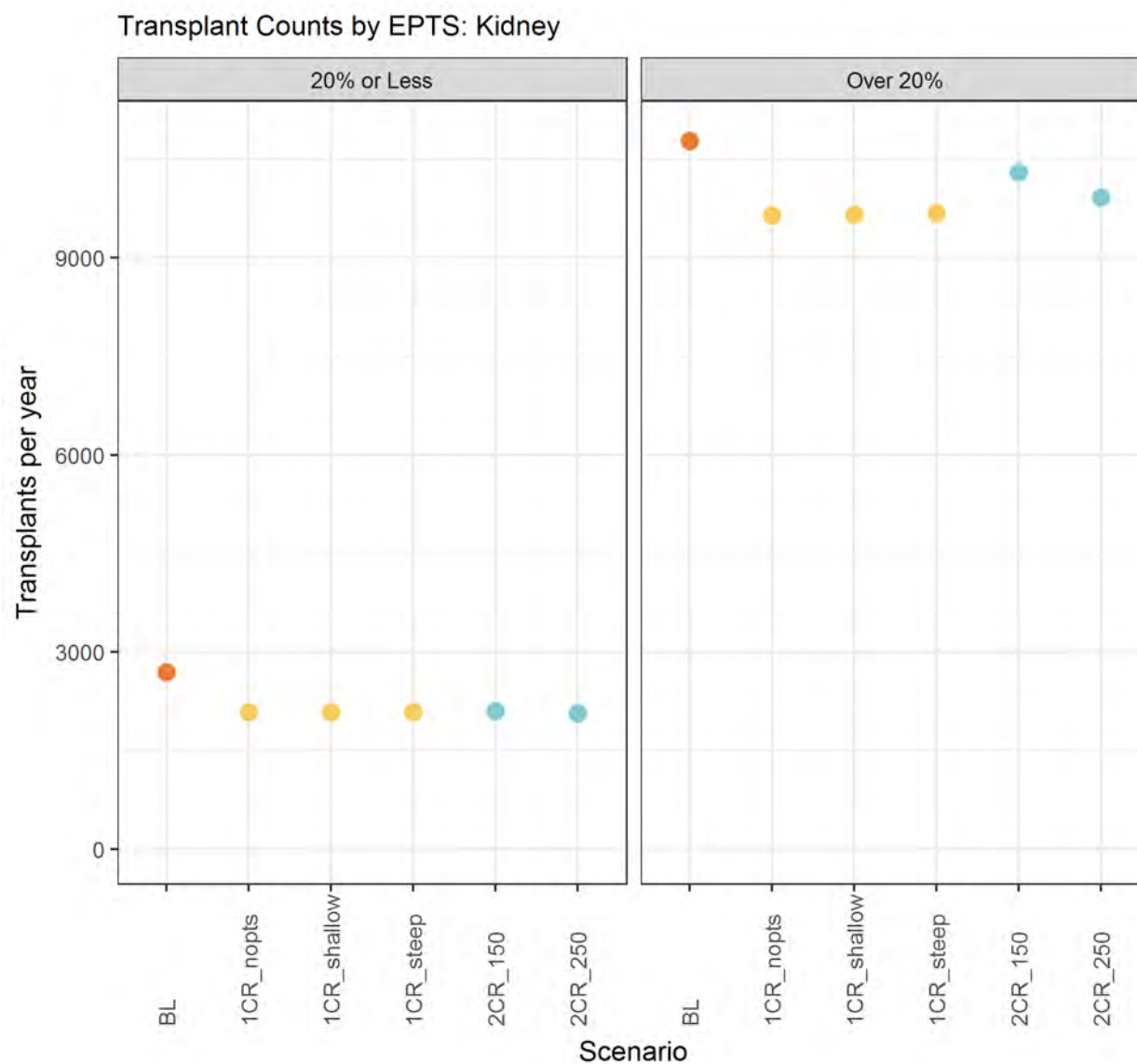


Figure 93 Transplant Counts by EPTS: Kidney

## Transplant Counts: Median Household Income by Zip Code

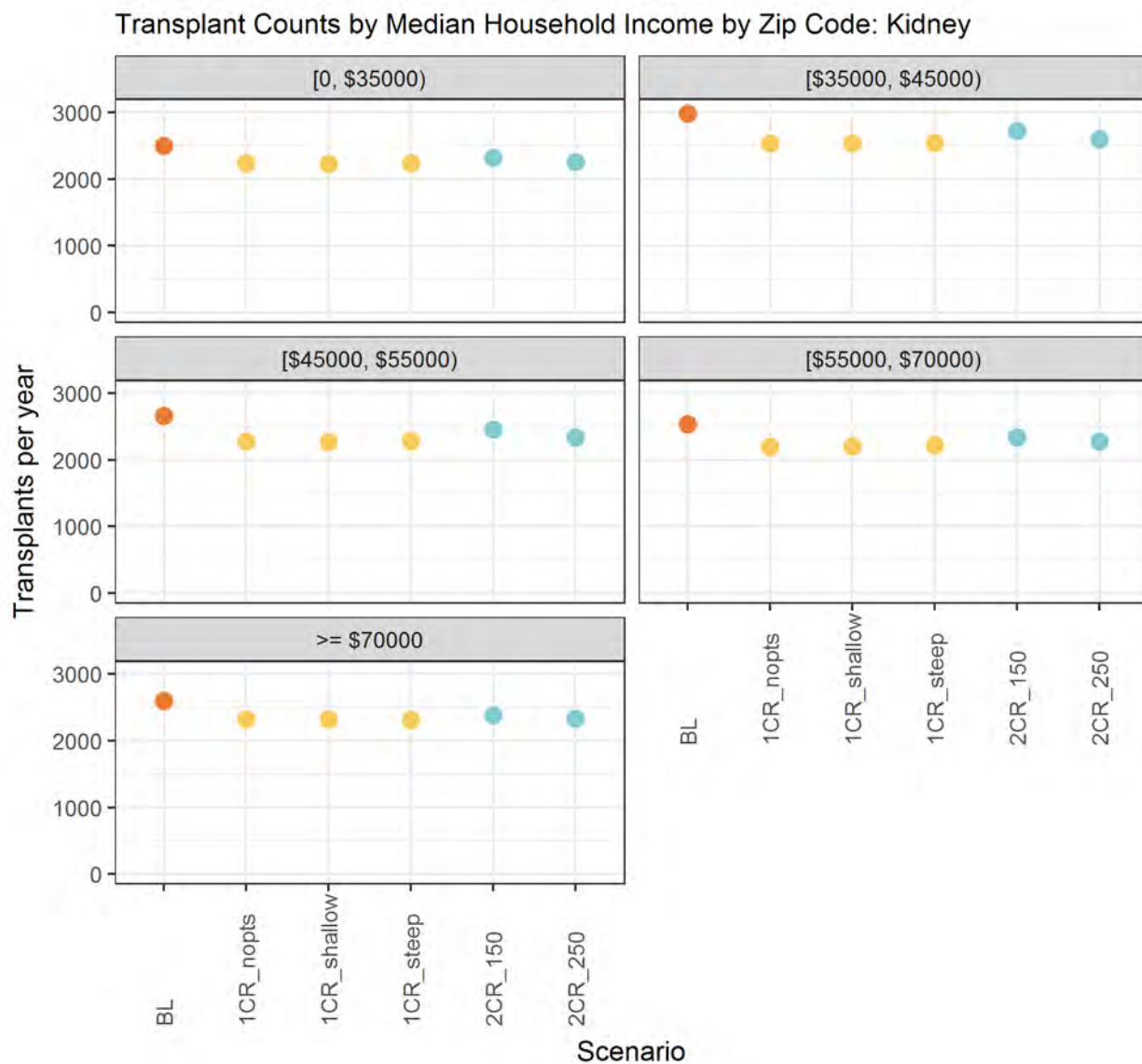


Figure 94 Transplant Counts by Median Household Income by Zip Code: Kidney



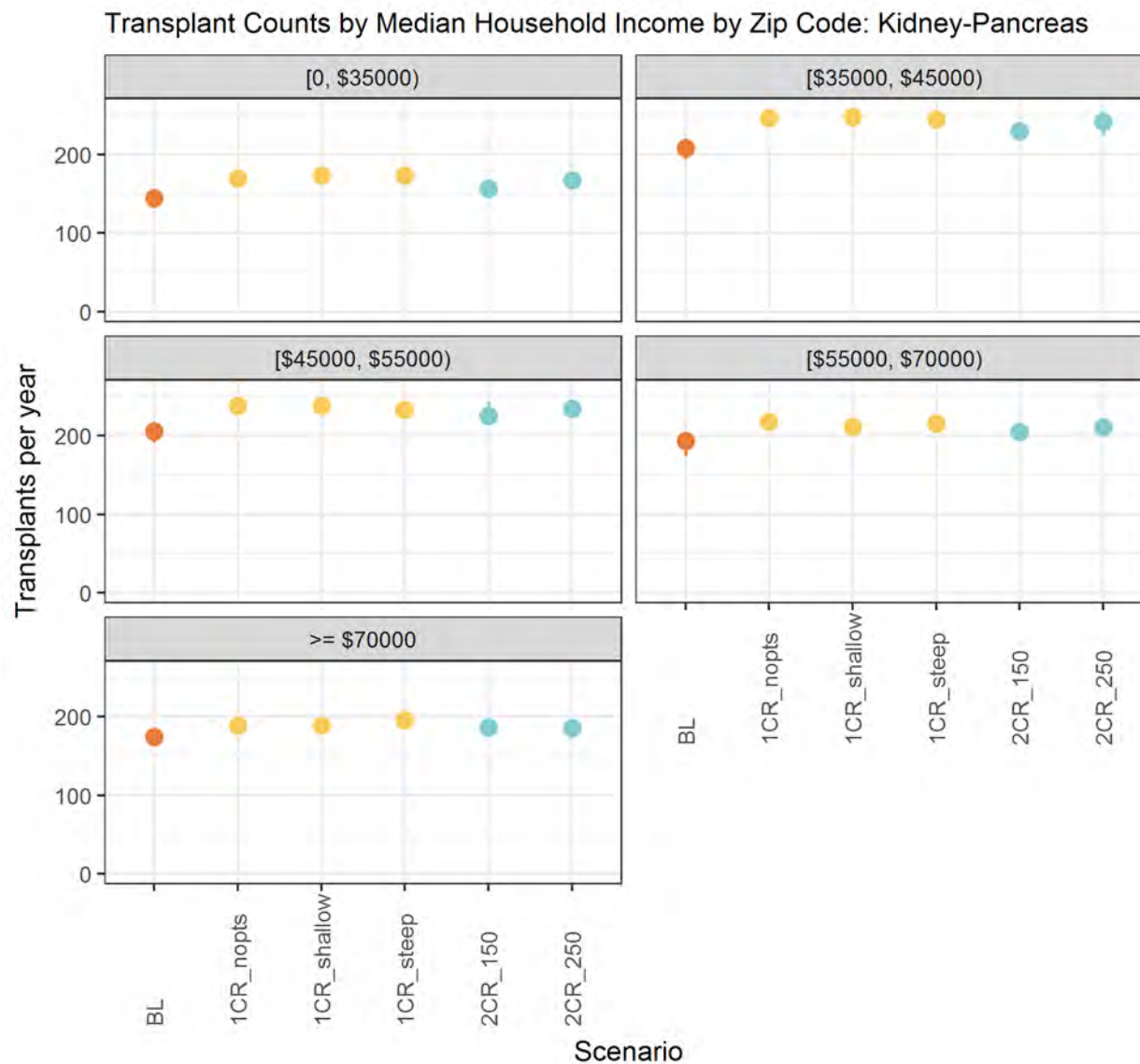


Figure 95 Transplant Counts by Median Household Income by Zip Code: Kidney-Pancreas

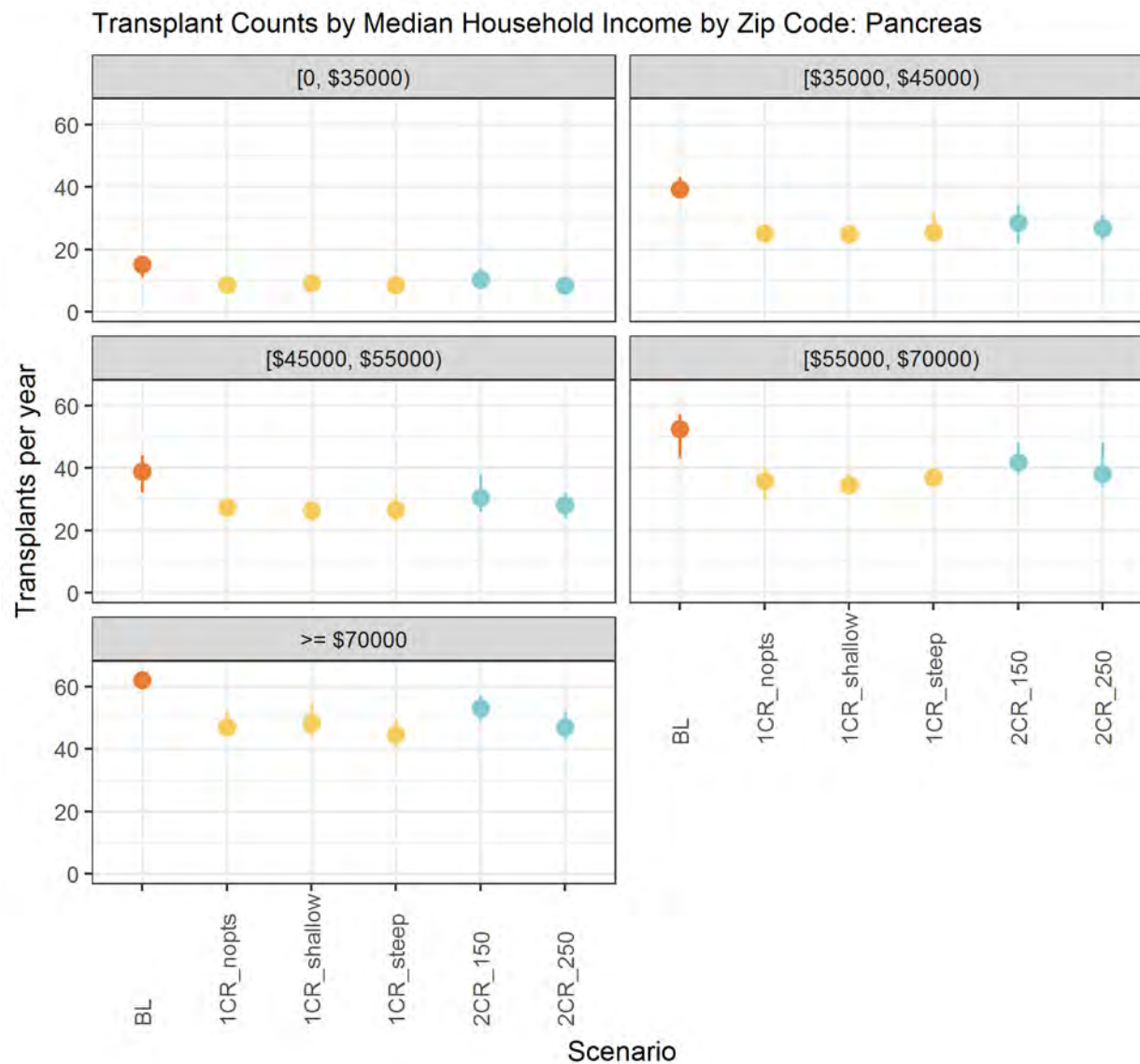


Figure 96 Transplant Counts by Median Household Income by Zip Code: Pancreas

## Transplant Counts: Donor KDPI

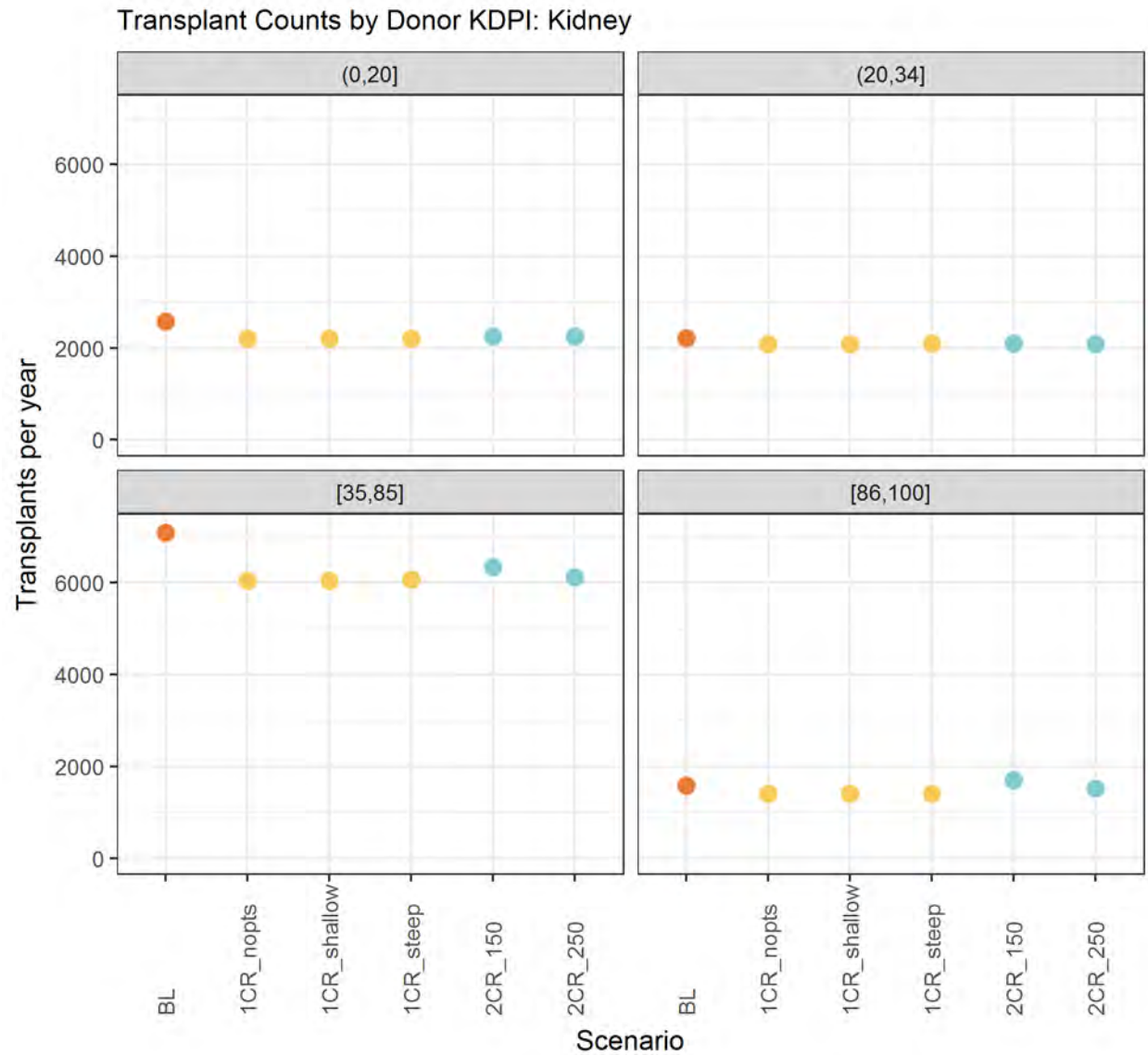


Figure 97 Transplant Counts by Donor KDPI: Kidney

## Transplant Counts: DCD Donor

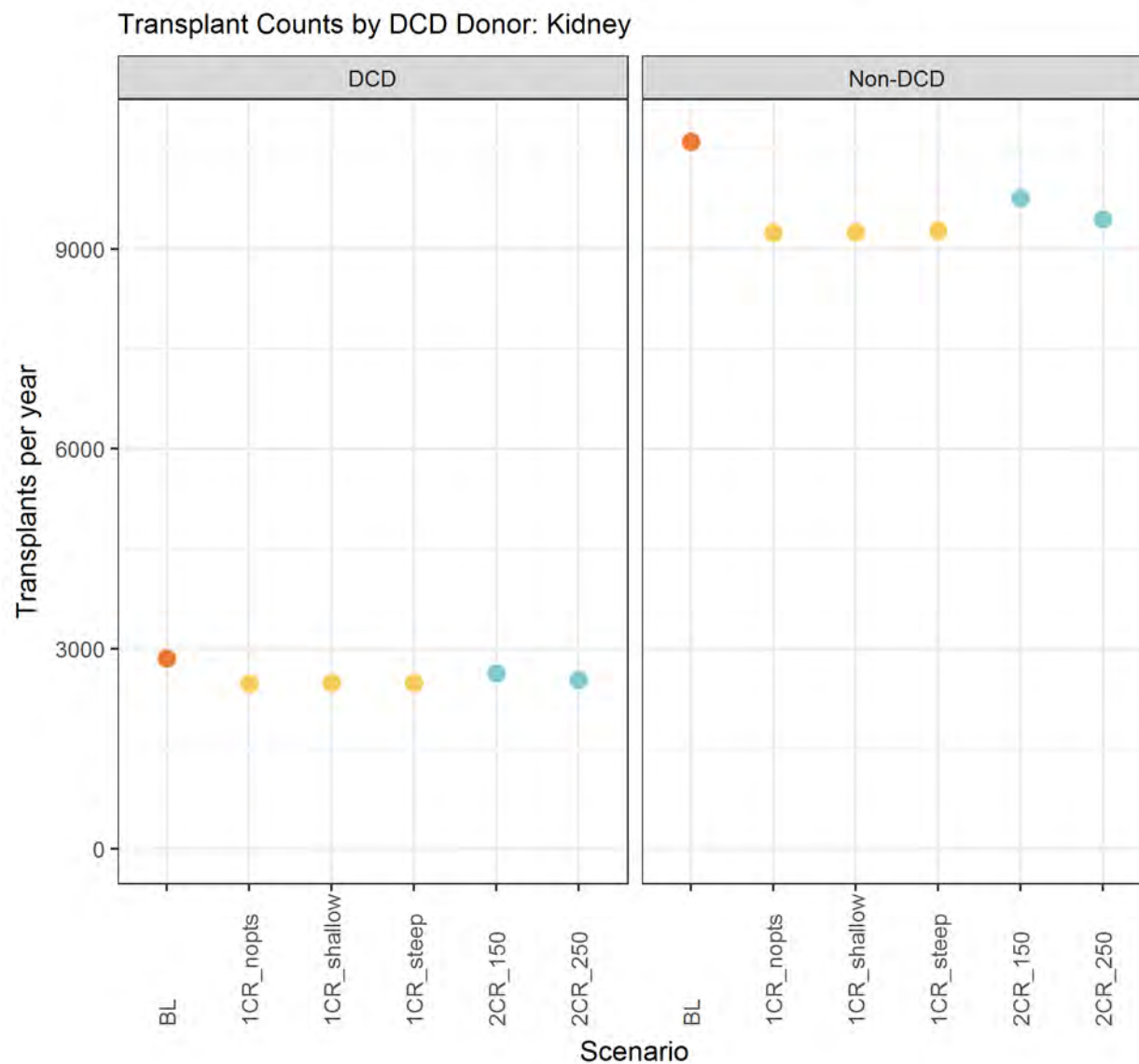


Figure 98 Transplant Counts by DCD Donor: Kidney

Transplant Counts: Number of DR mismatches

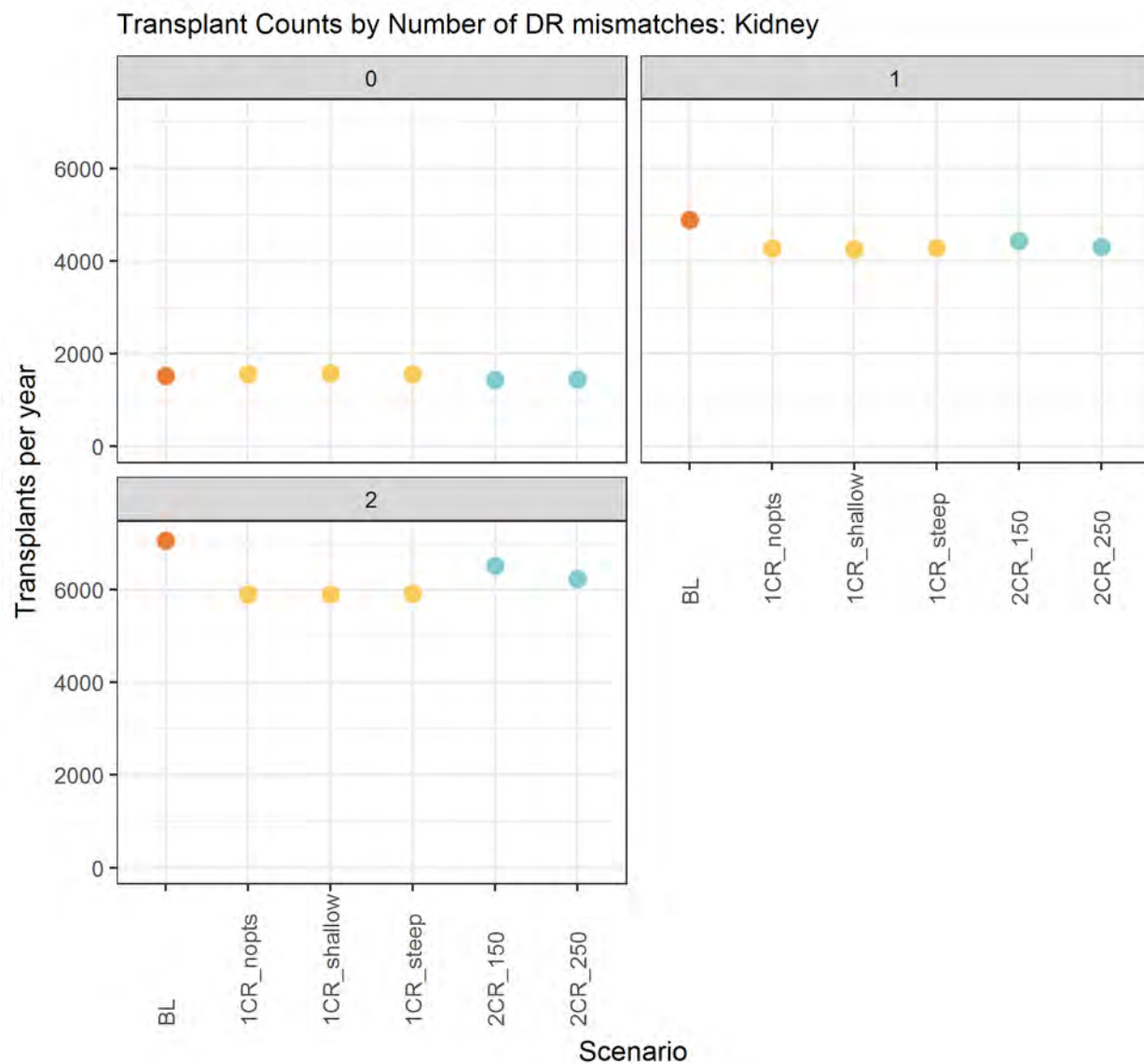


Figure 99 Transplant Counts by Number of DR mismatches: Kidney

## Transplant Percentages

Transplant Percentages: Age at Transplant 0-17

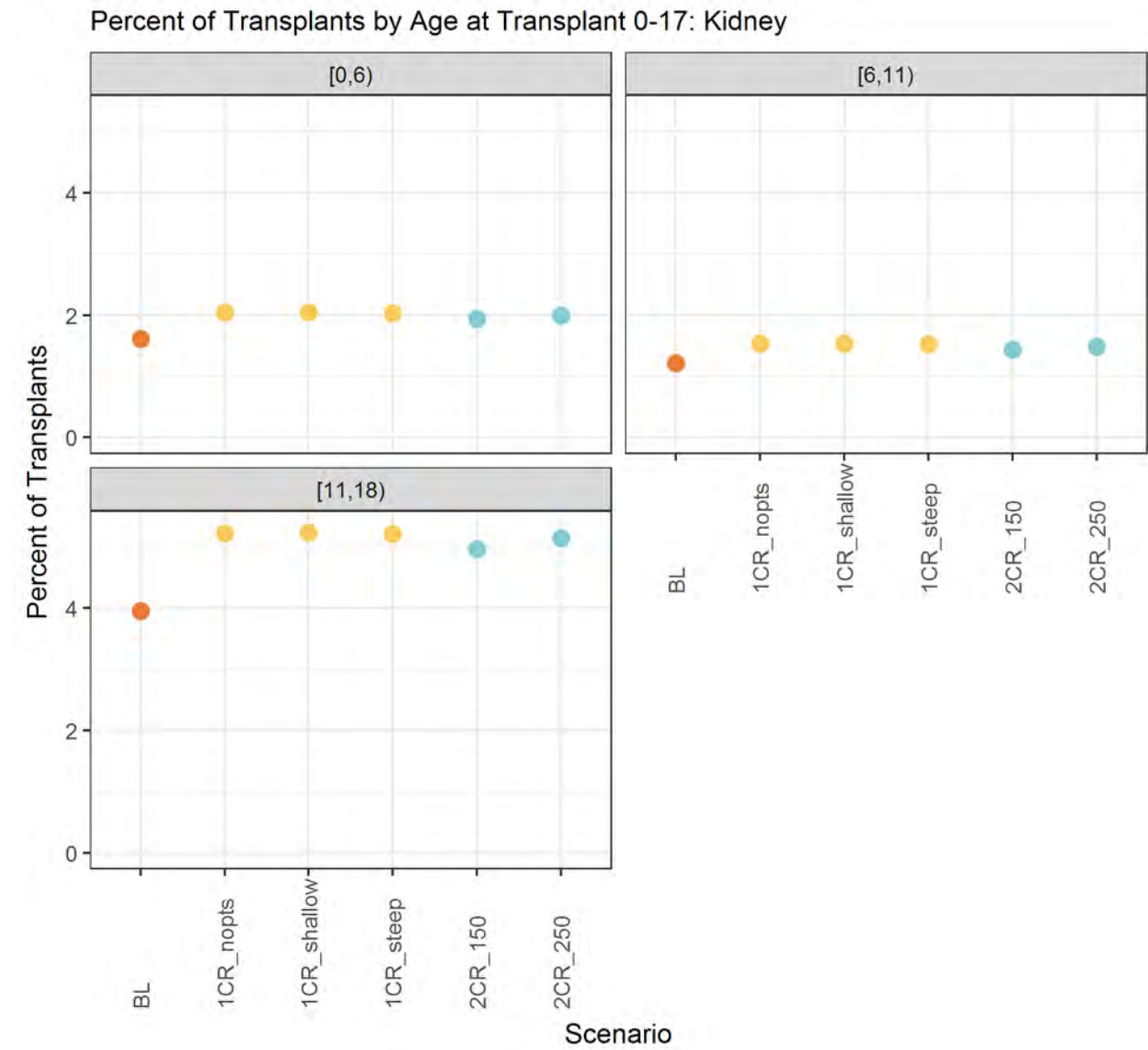


Figure 100 Percent of Transplants by Age at Transplant 0-17: Kidney



Transplant Percentages: Age at Transplant 18+

Percent of Transplants by Age at Transplant 18+: Kidney

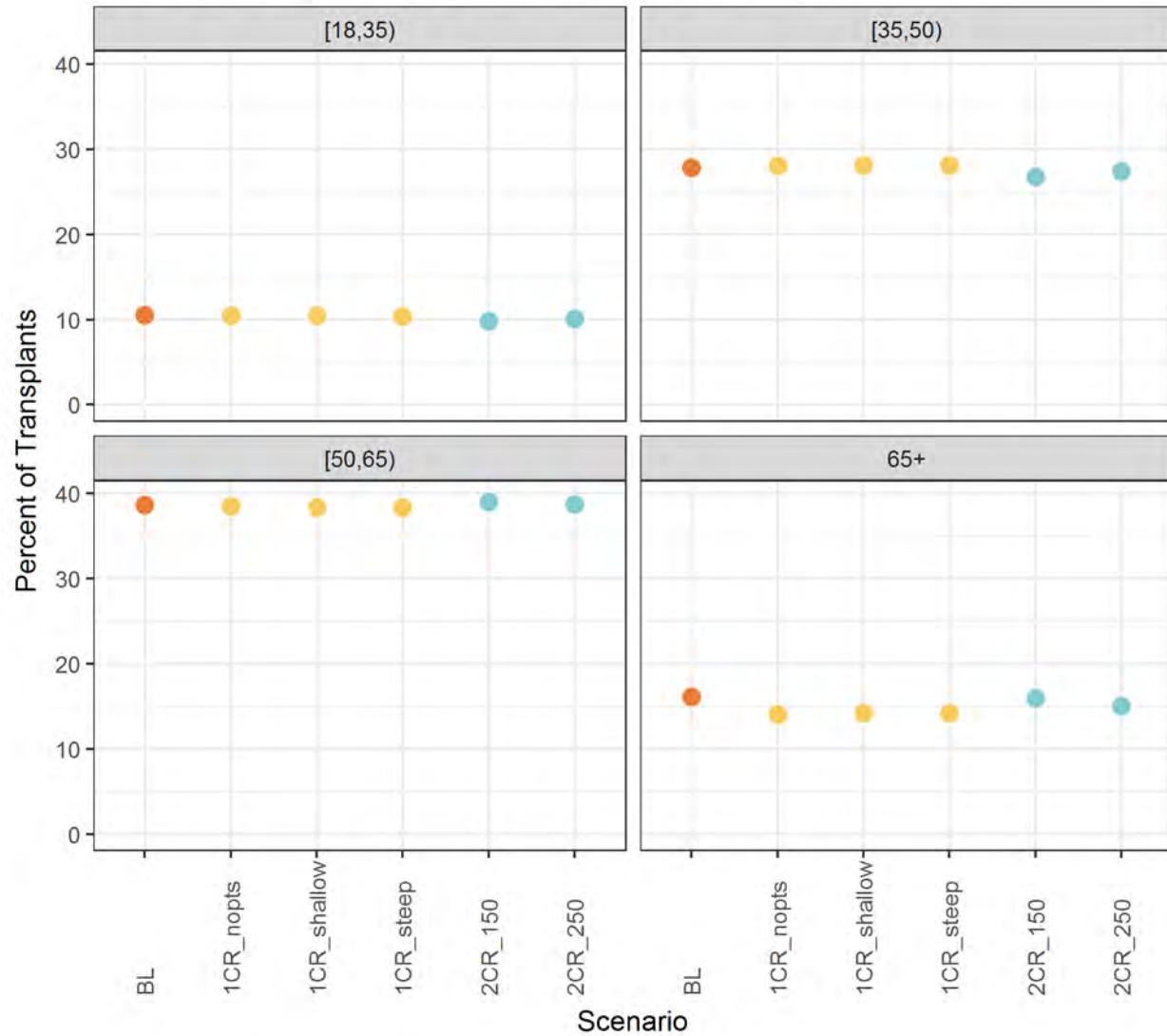


Figure 101 Percent of Transplants by Age at Transplant 18+: Kidney

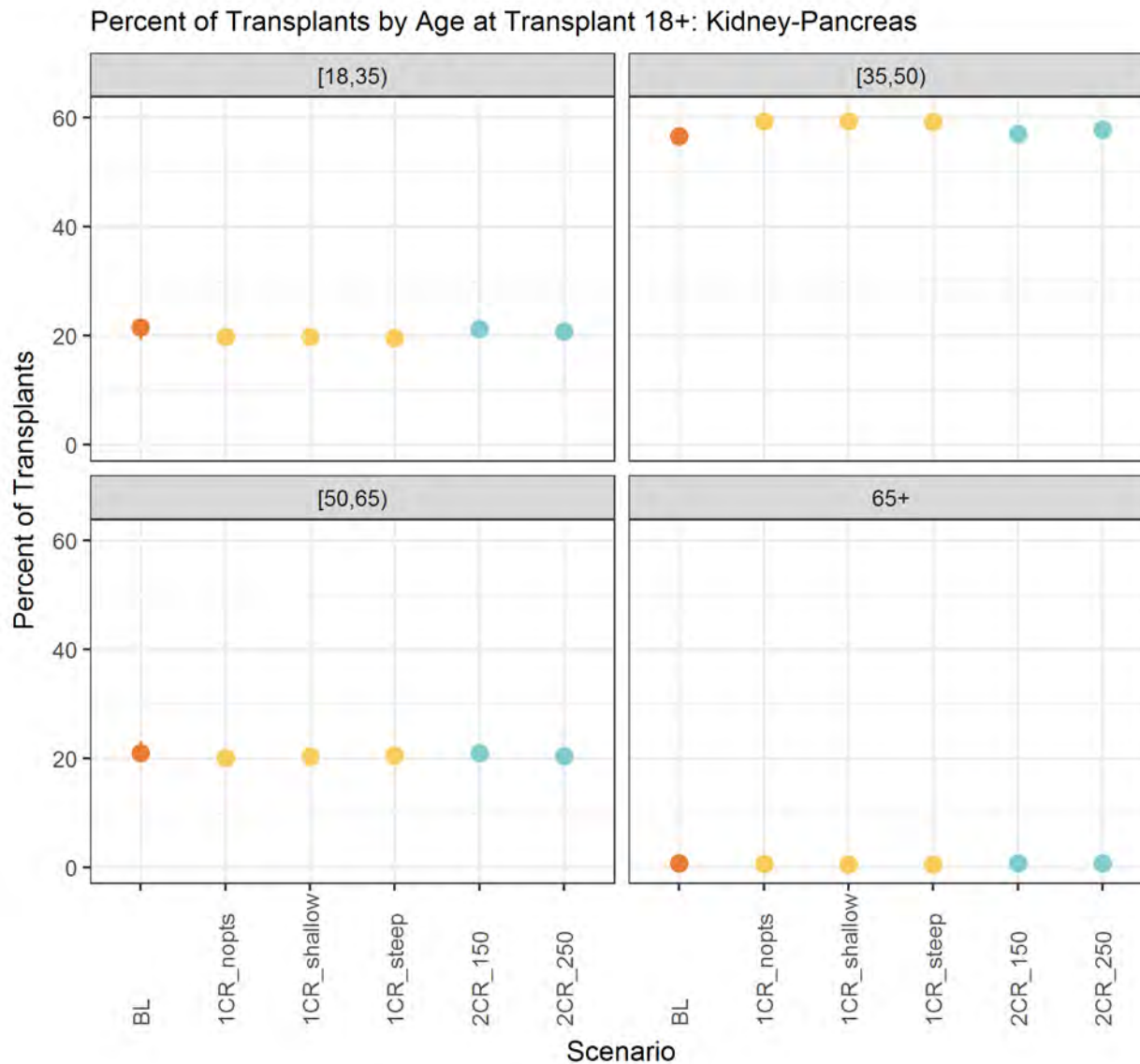


Figure 102 Percent of Transplants by Age at Transplant 18+: Kidney-Pancreas

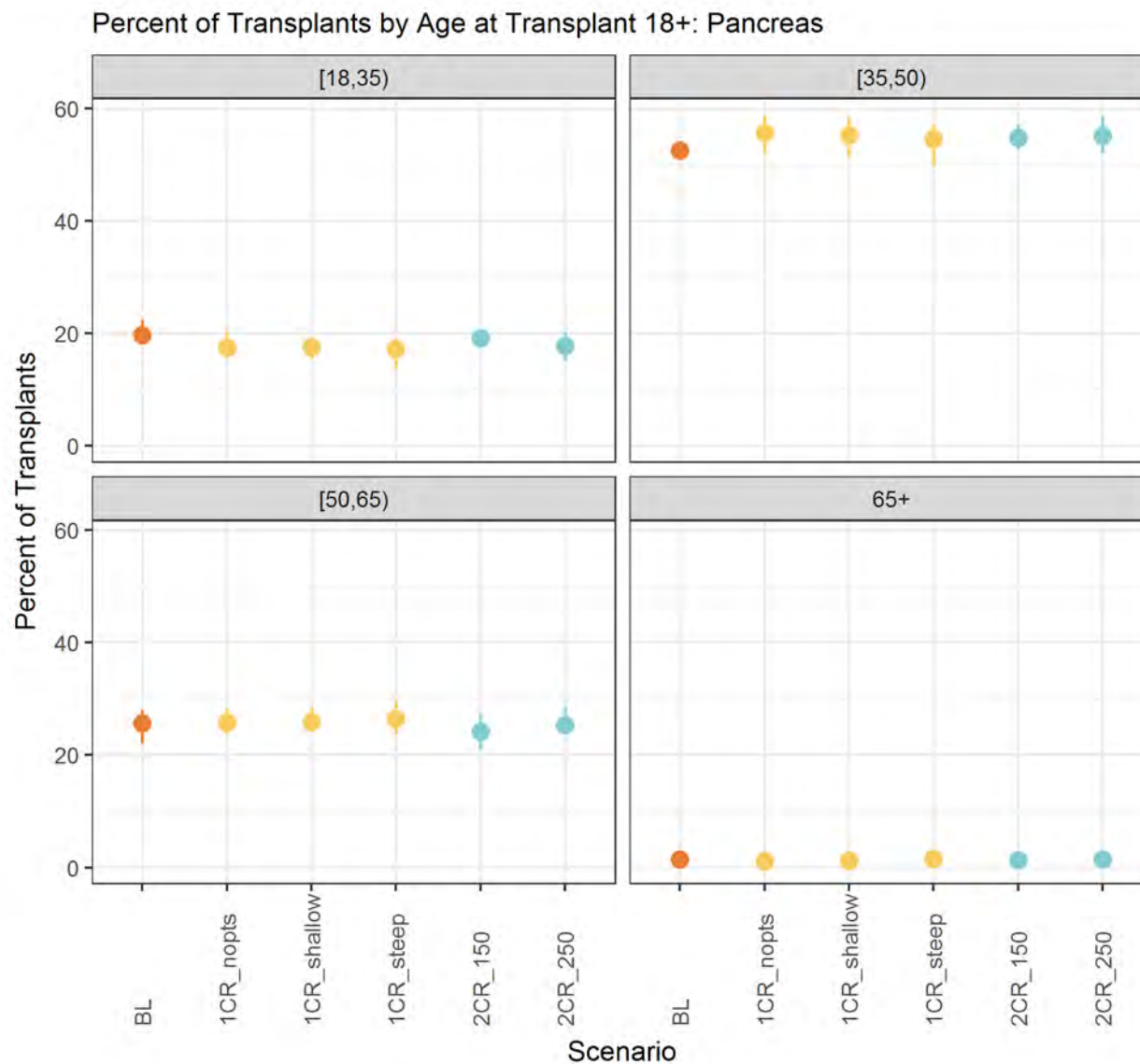


Figure 103 Percent of Transplants by Age at Transplant 18+: Pancreas

## Transplant Percentages: Race

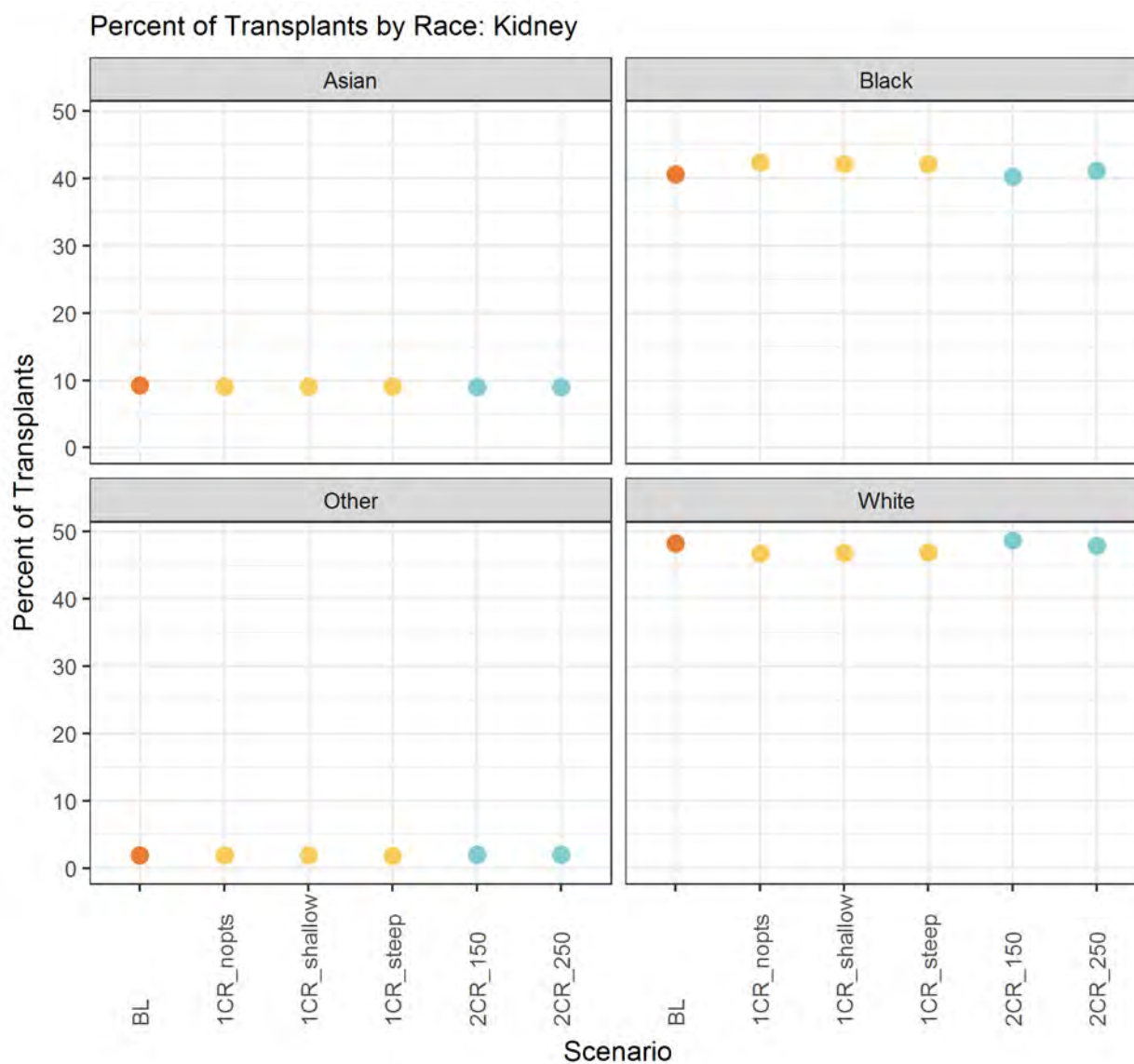


Figure 104 Percent of Transplants by Race: Kidney

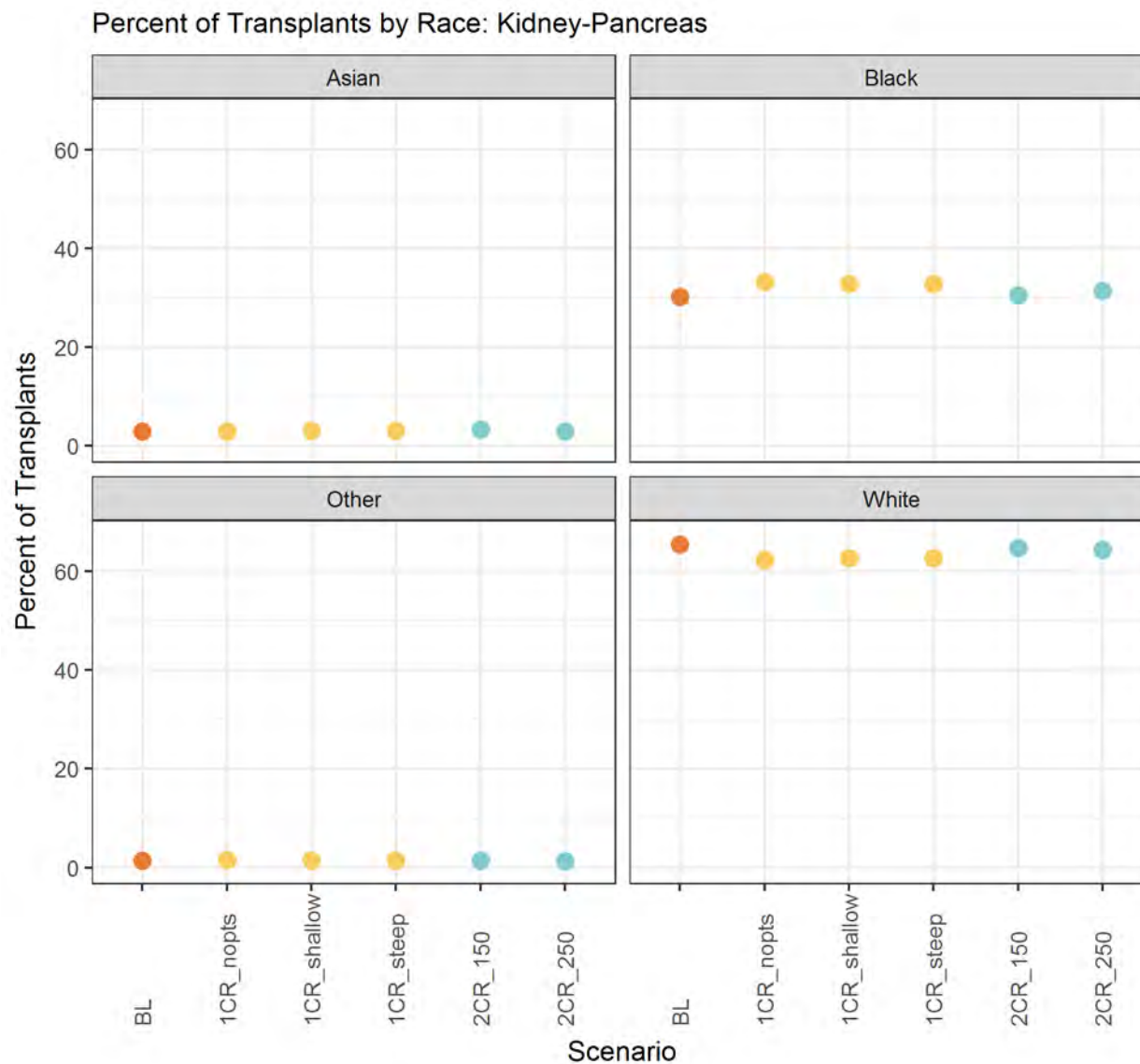


Figure 105 Percent of Transplants by Race: Kidney-Pancreas

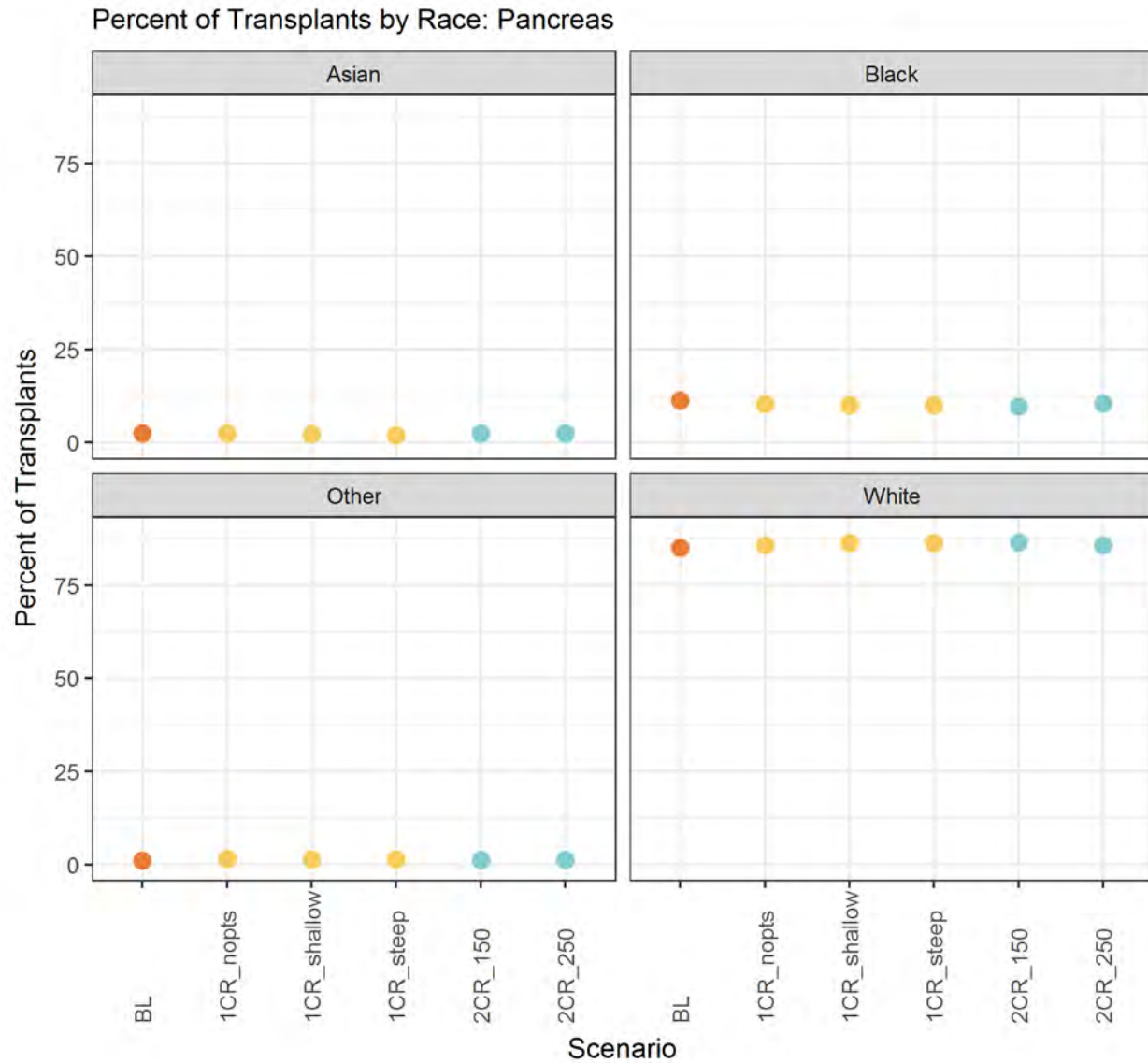


Figure 106 Percent of Transplants by Race: Pancreas



## Transplant Percentages: Ethnicity

### Percent of Transplants by Ethnicity: Kidney

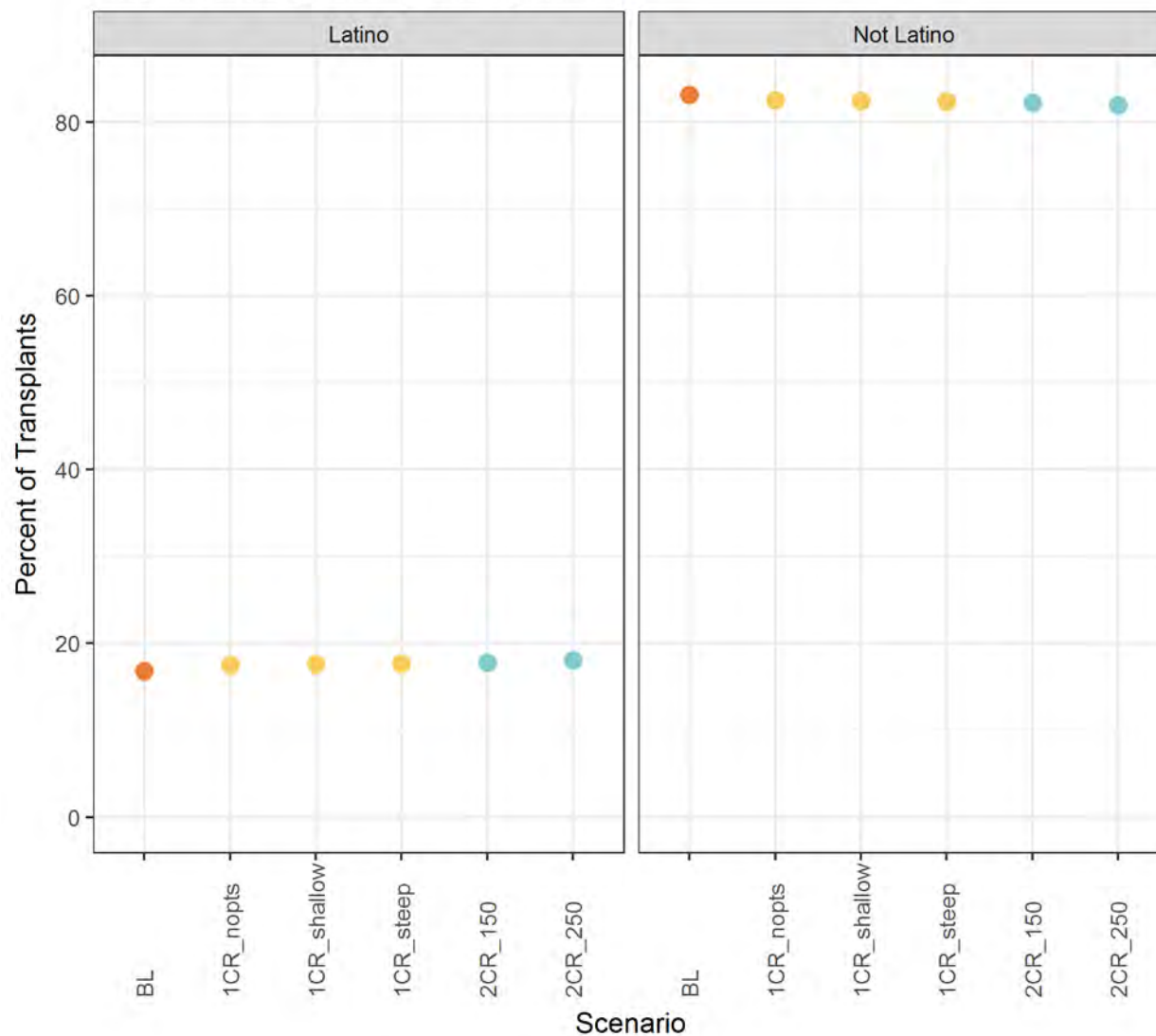


Figure 107 Percent of Transplants by Ethnicity: Kidney

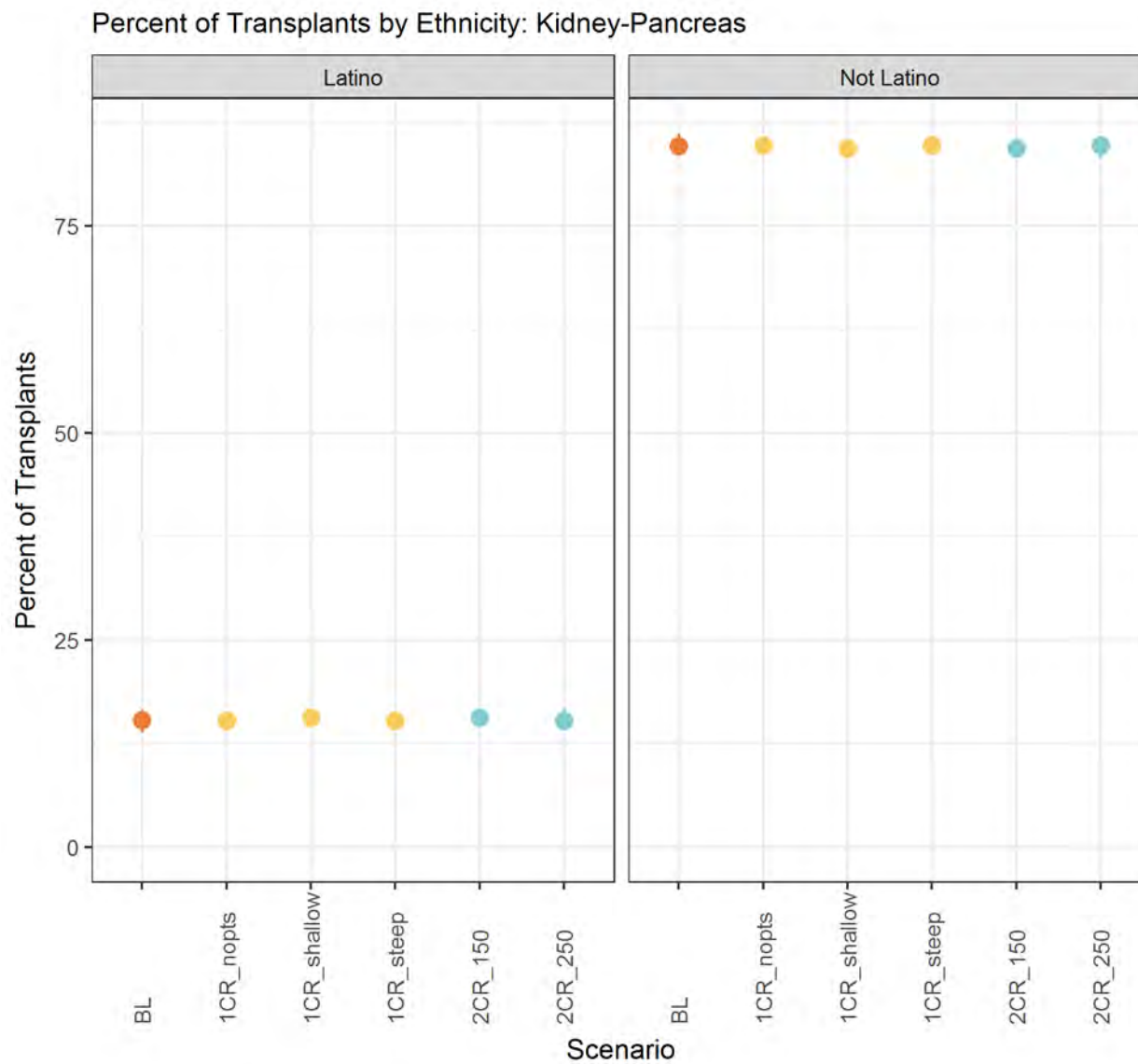


Figure 108 Percent of Transplants by Ethnicity: Kidney-Pancreas

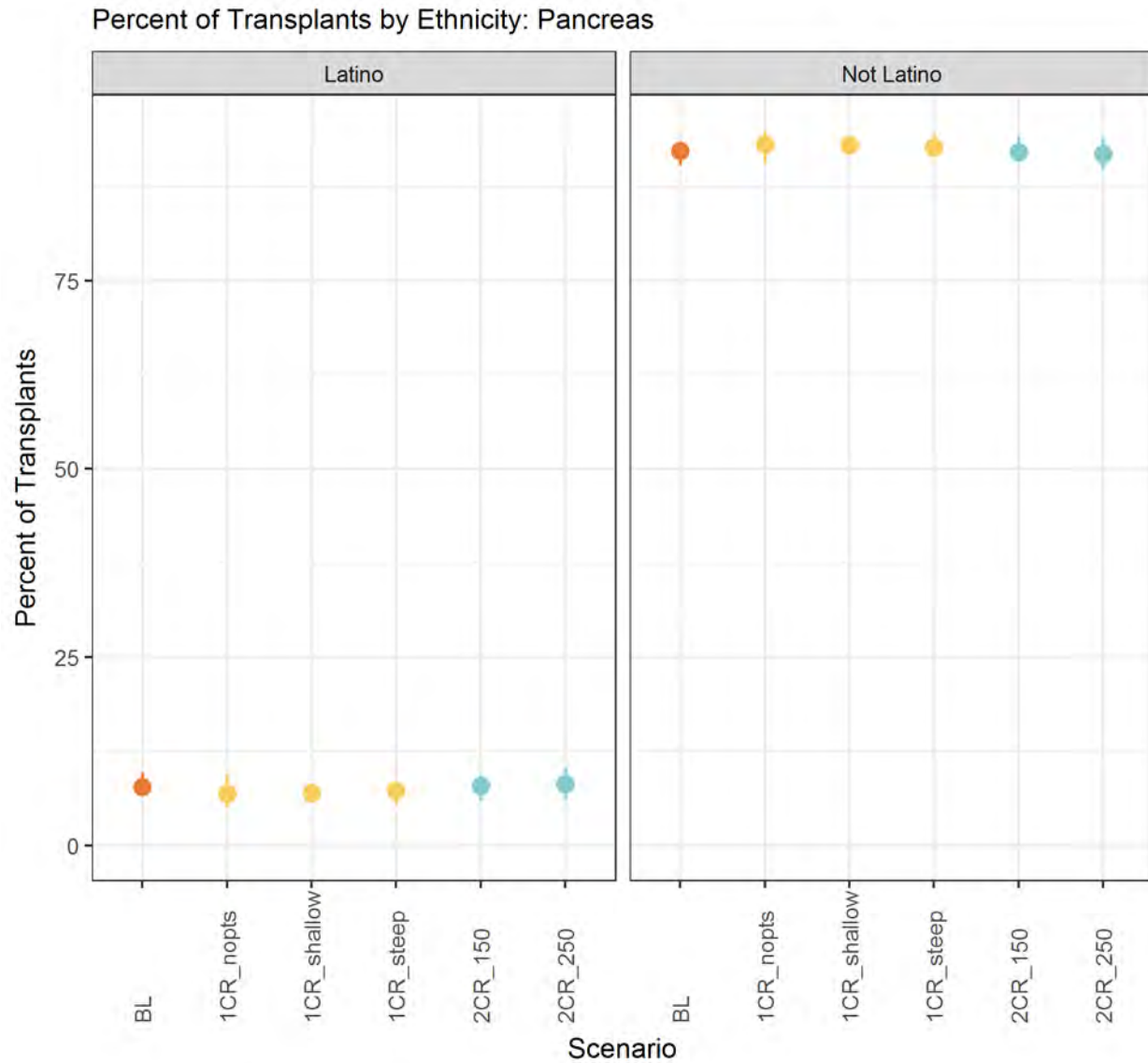


Figure 109 Percent of Transplants by Ethnicity: Pancreas

## Transplant Percentages: Sex

### Percent of Transplants by Sex: Kidney

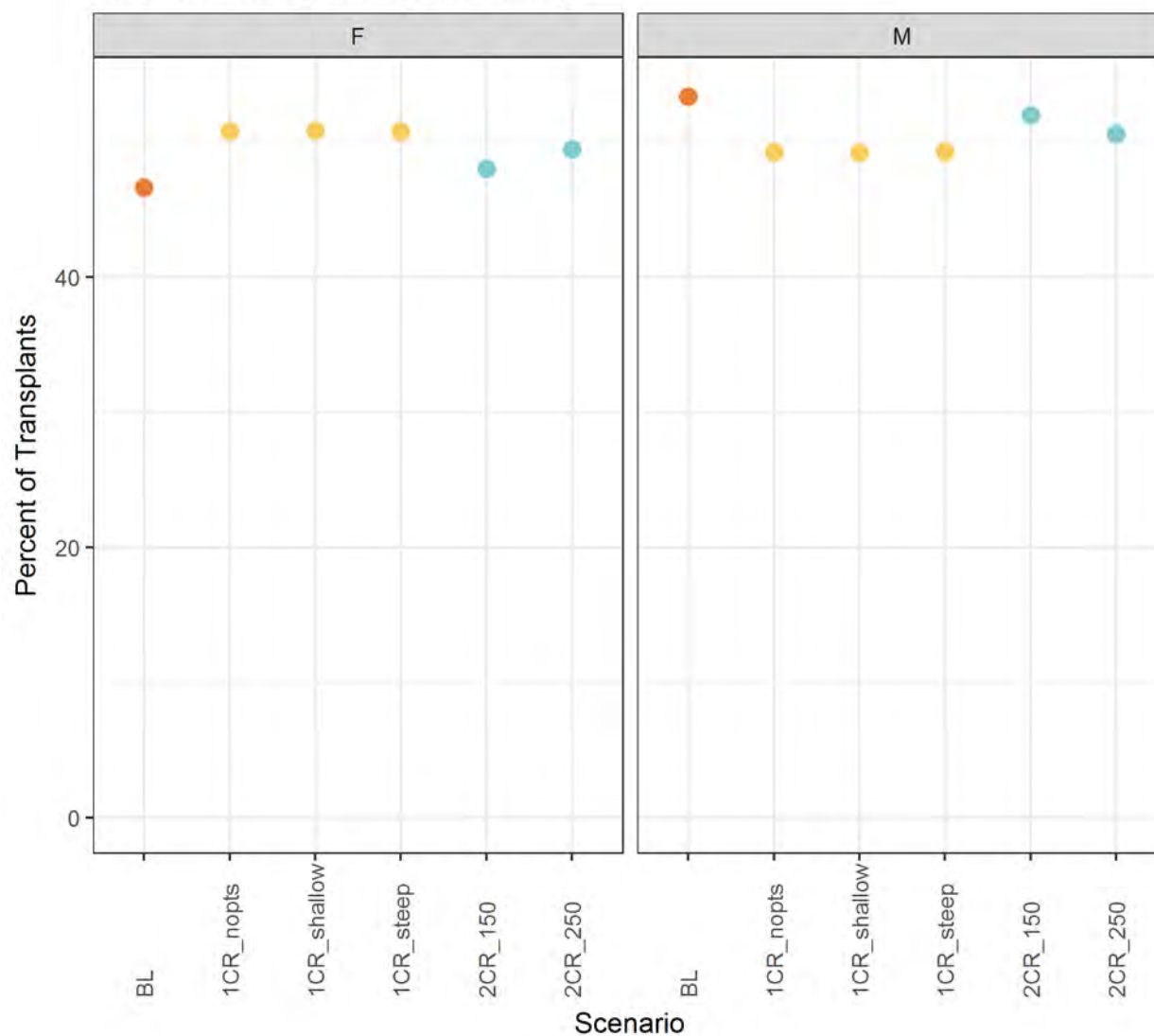


Figure 110 Percent of Transplants by Sex: Kidney

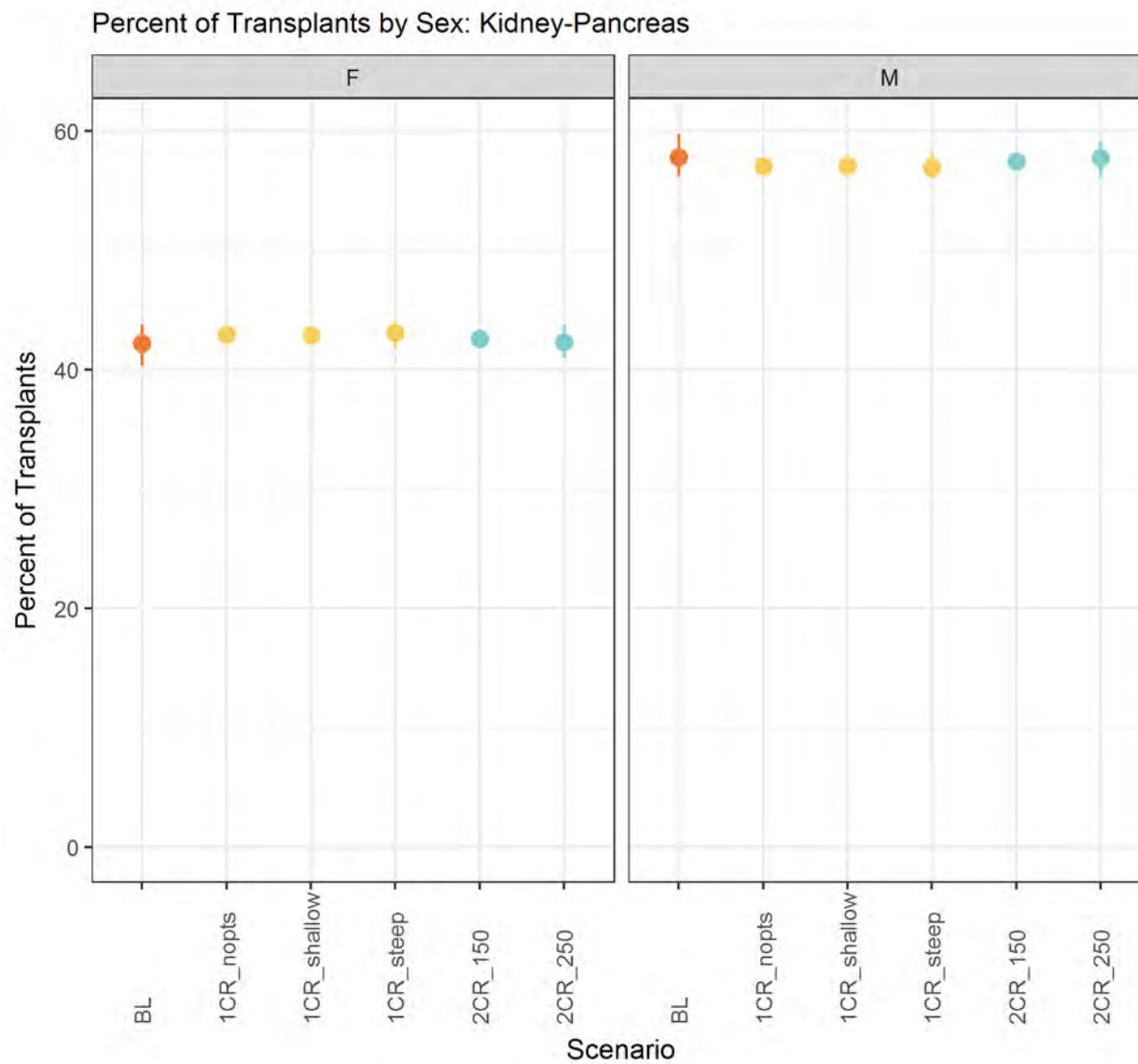


Figure 111 Percent of Transplants by Sex: Kidney-Pancreas

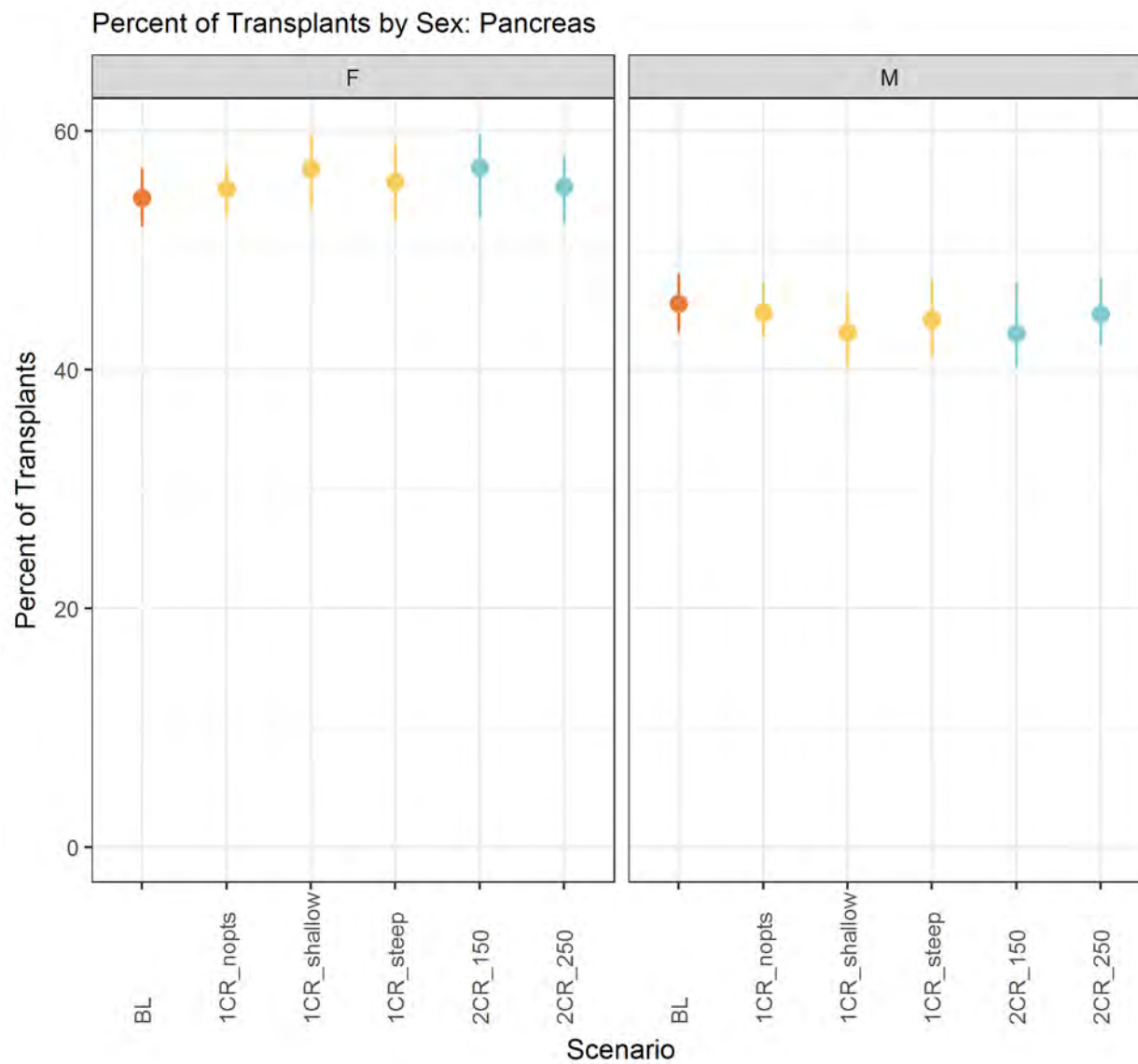


Figure 112 Percent of Transplants by Sex: Pancreas



## Transplant Percentages: ABO Group

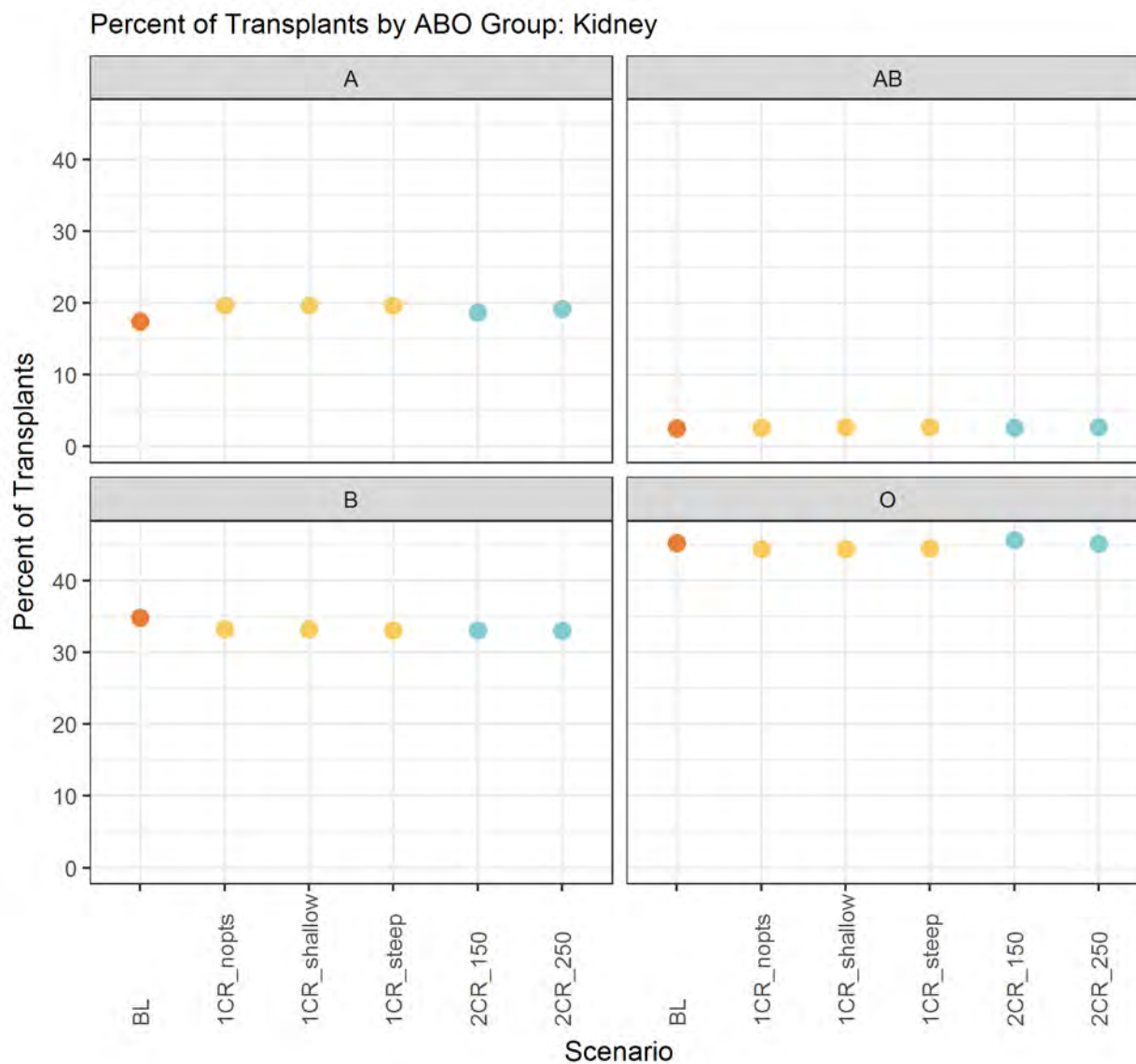


Figure 113 Percent of Transplants by ABO Group: Kidney

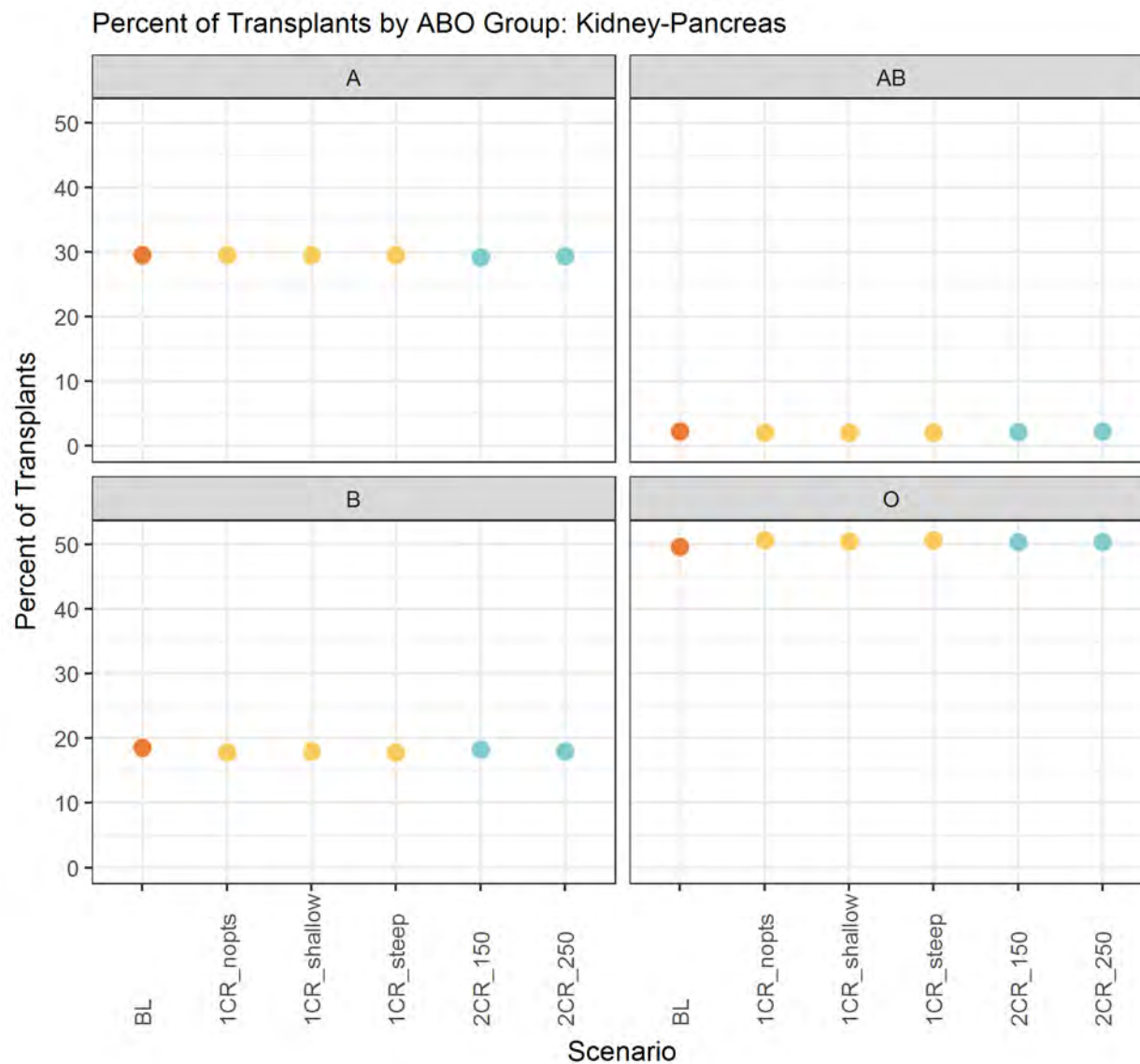


Figure 114 Percent of Transplants by ABO Group: Kidney-Pancreas

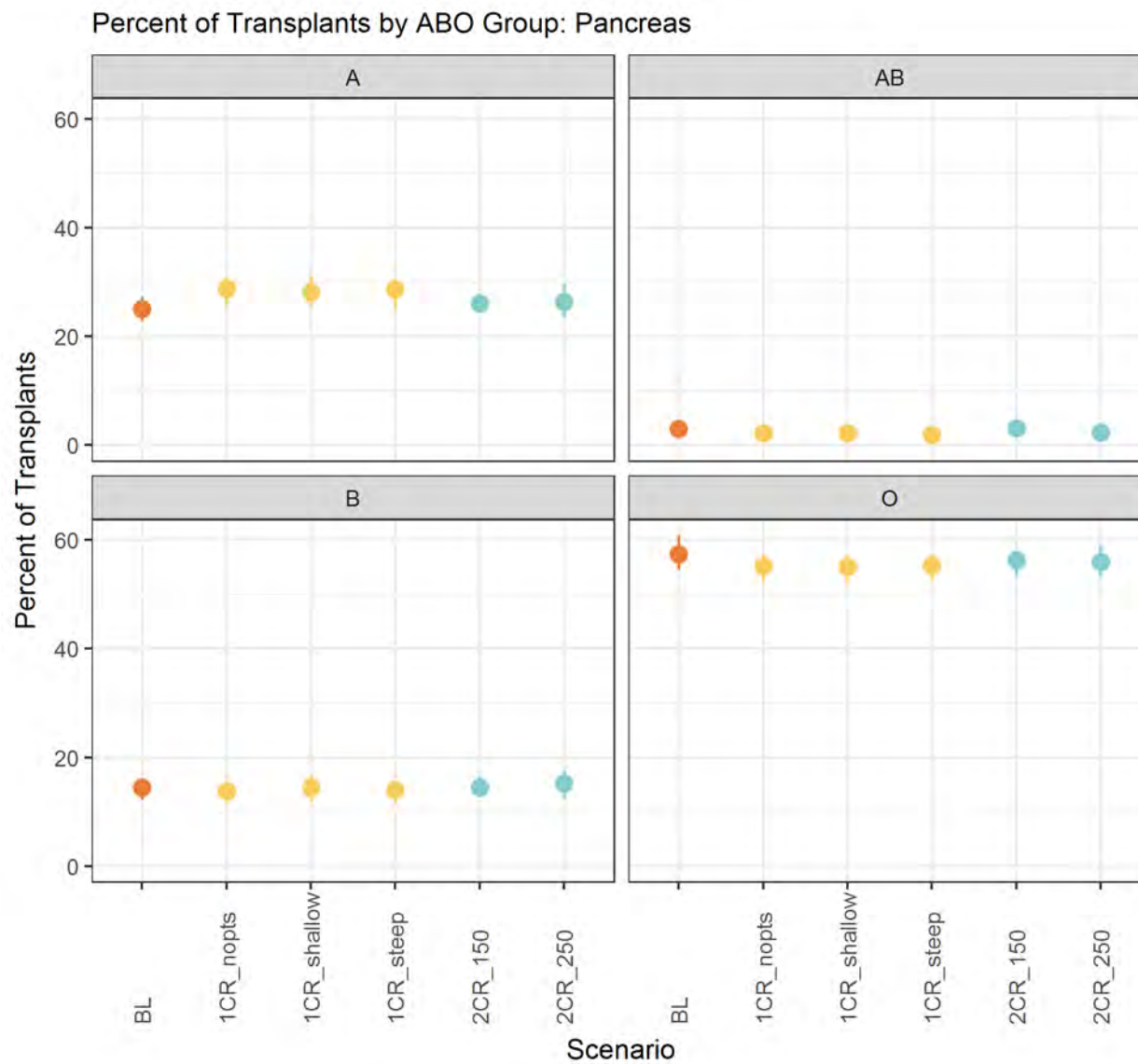


Figure 115 Percent of Transplants by ABO Group: Pancreas

## Transplant Percentages: Diagnosis

### Percent of Transplants by Diagnosis: Kidney

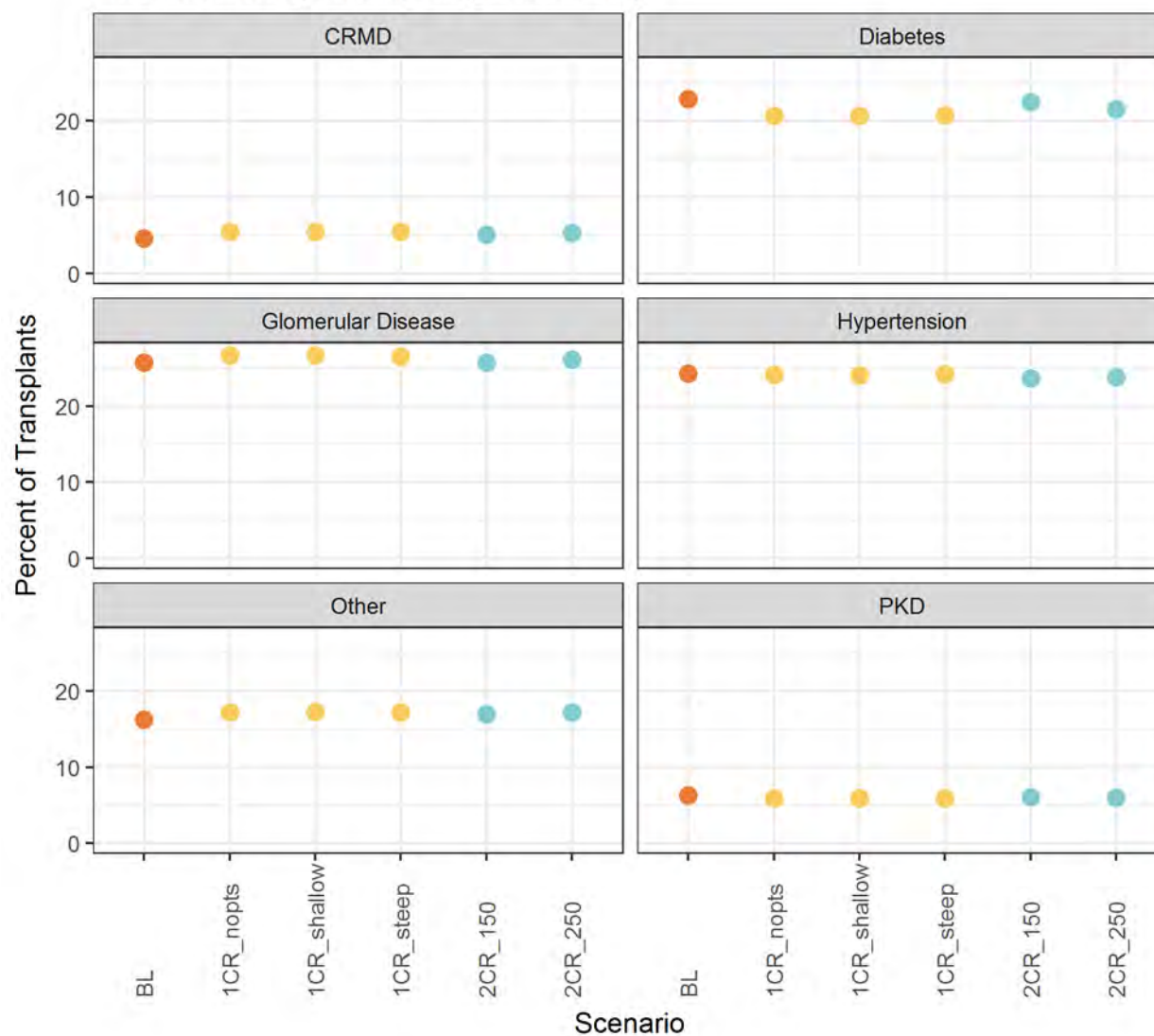


Figure 116 Percent of Transplants by Diagnosis: Kidney

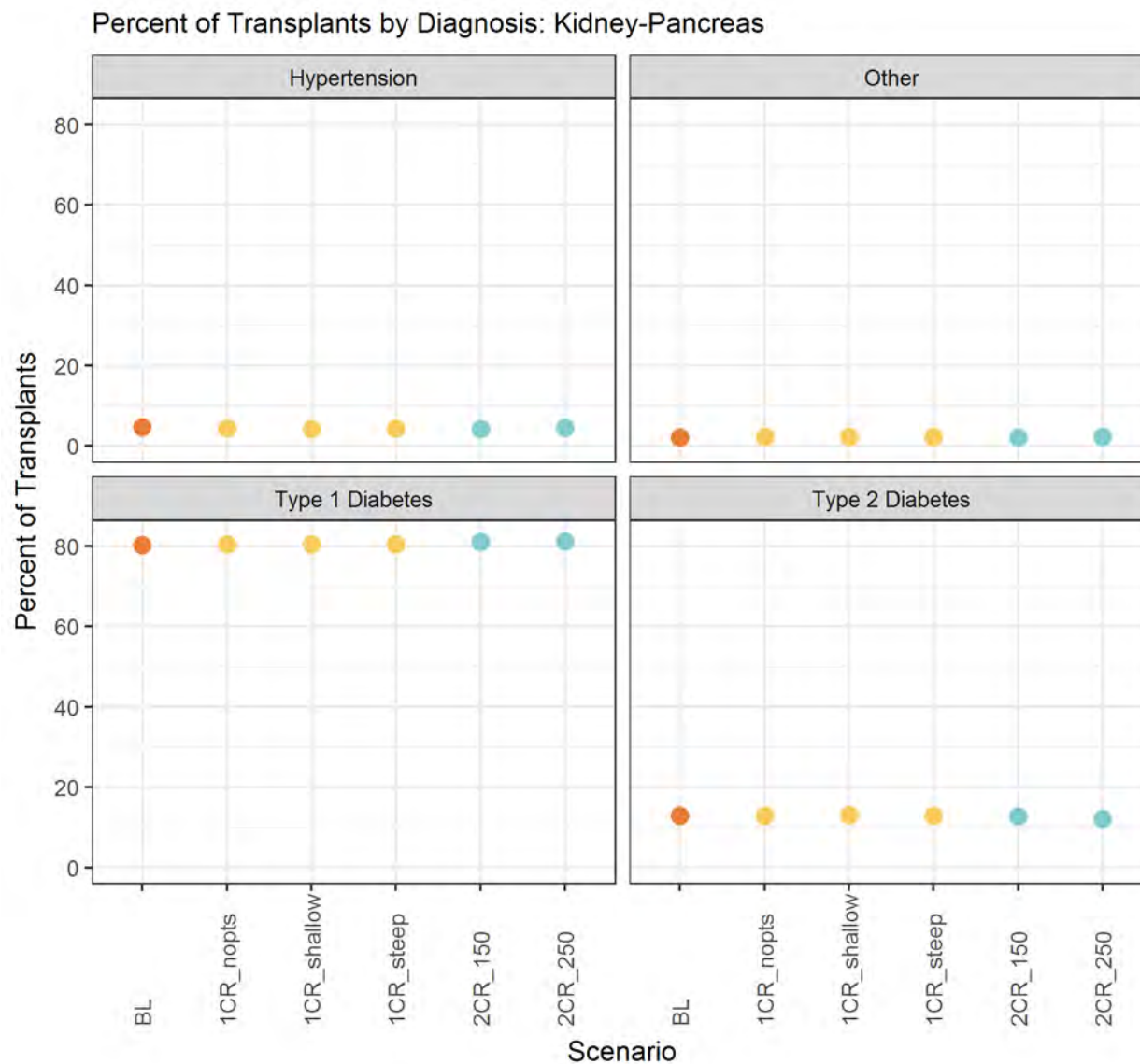


Figure 117 Percent of Transplants by Diagnosis: Kidney-Pancreas

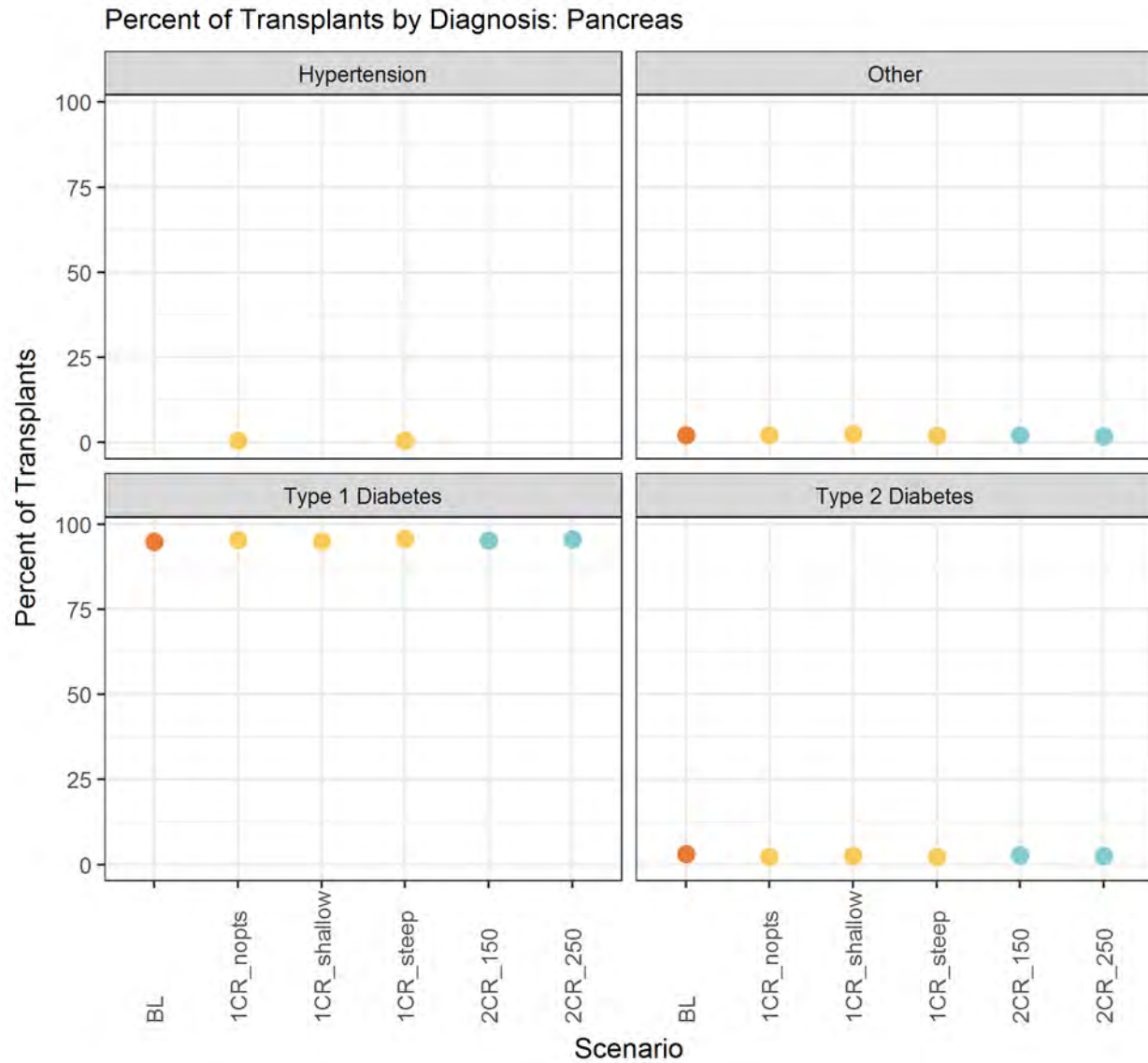


Figure 118 Percent of Transplants by Diagnosis: Pancreas



## Transplant Percentages: Dialysis Time

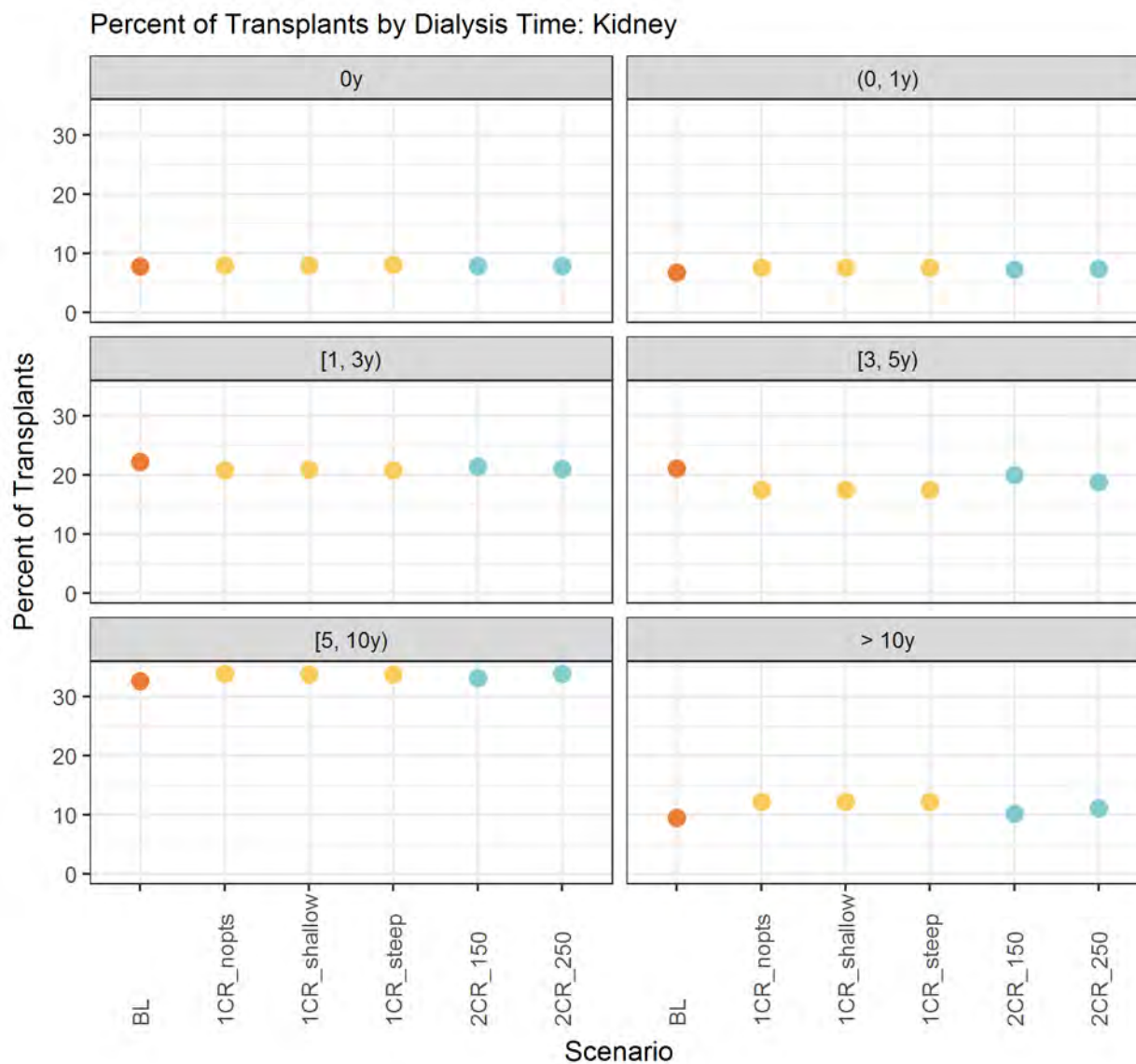


Figure 119 Percent of Transplants by Dialysis Time: Kidney

Transplant Percentages: cPRA: 0 - 60

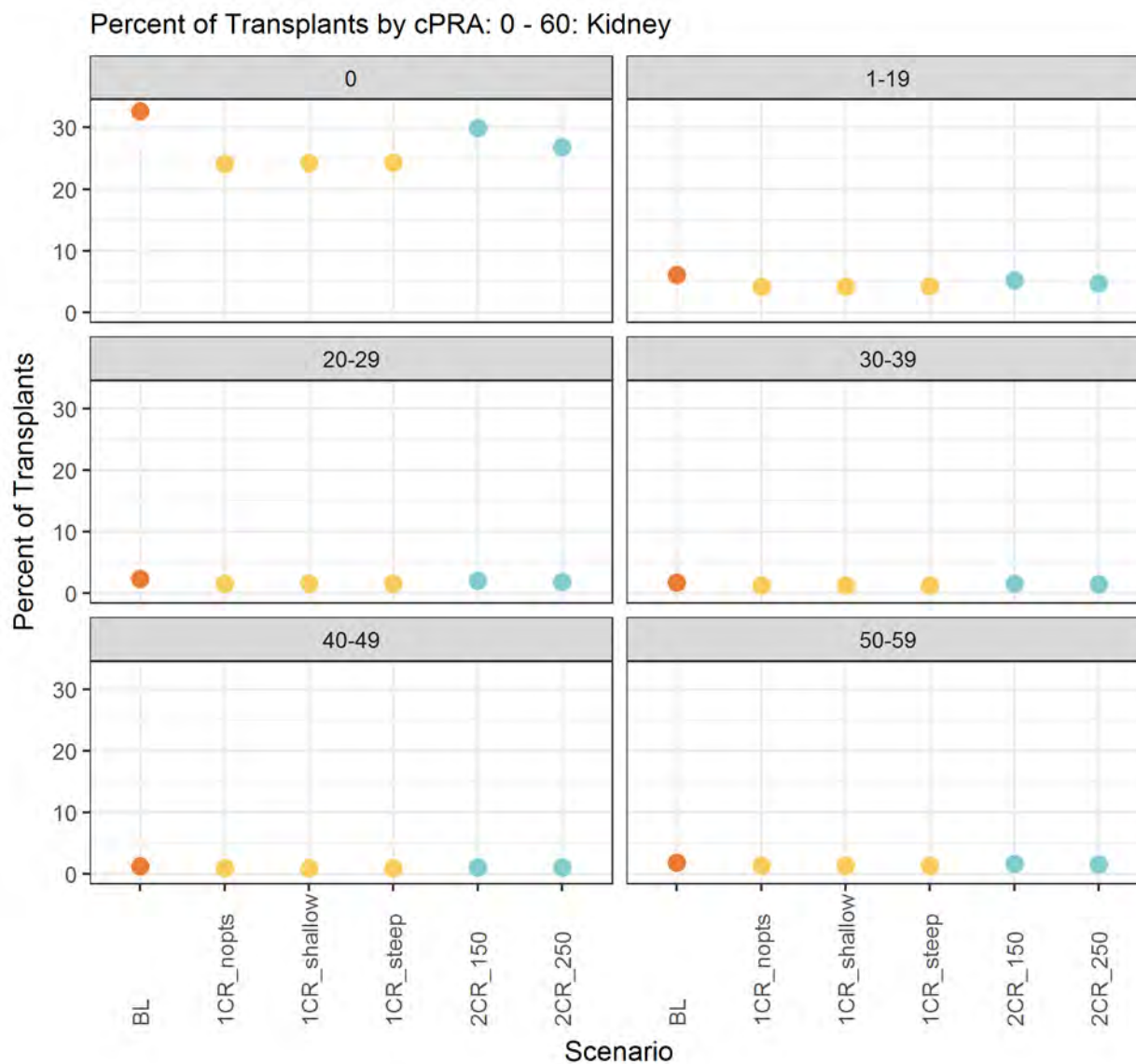


Figure 120 Percent of Transplants by cPRA: 0 - 60: Kidney

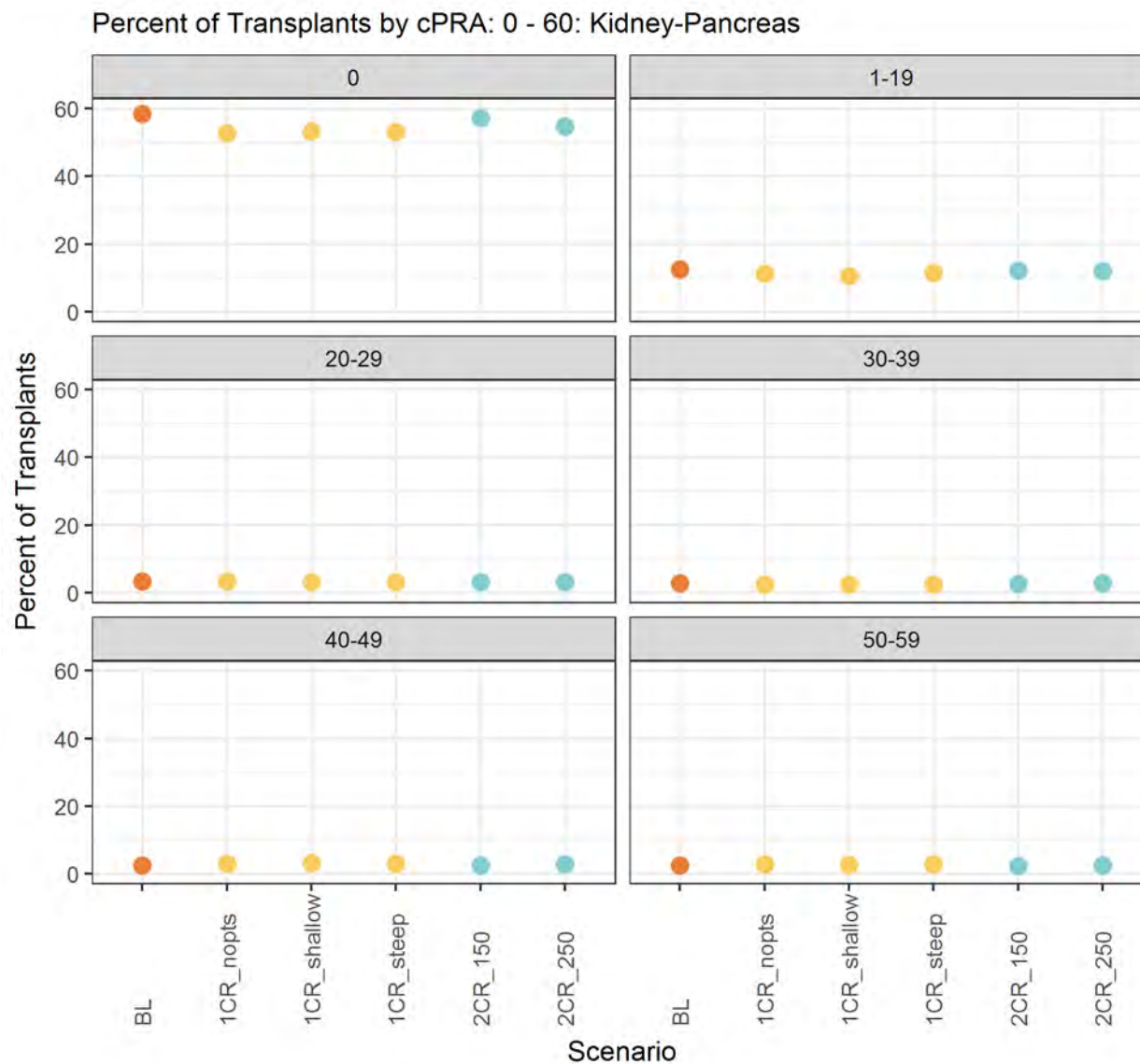


Figure 121 Percent of Transplants by cPRA: 0 - 60: Kidney-Pancreas

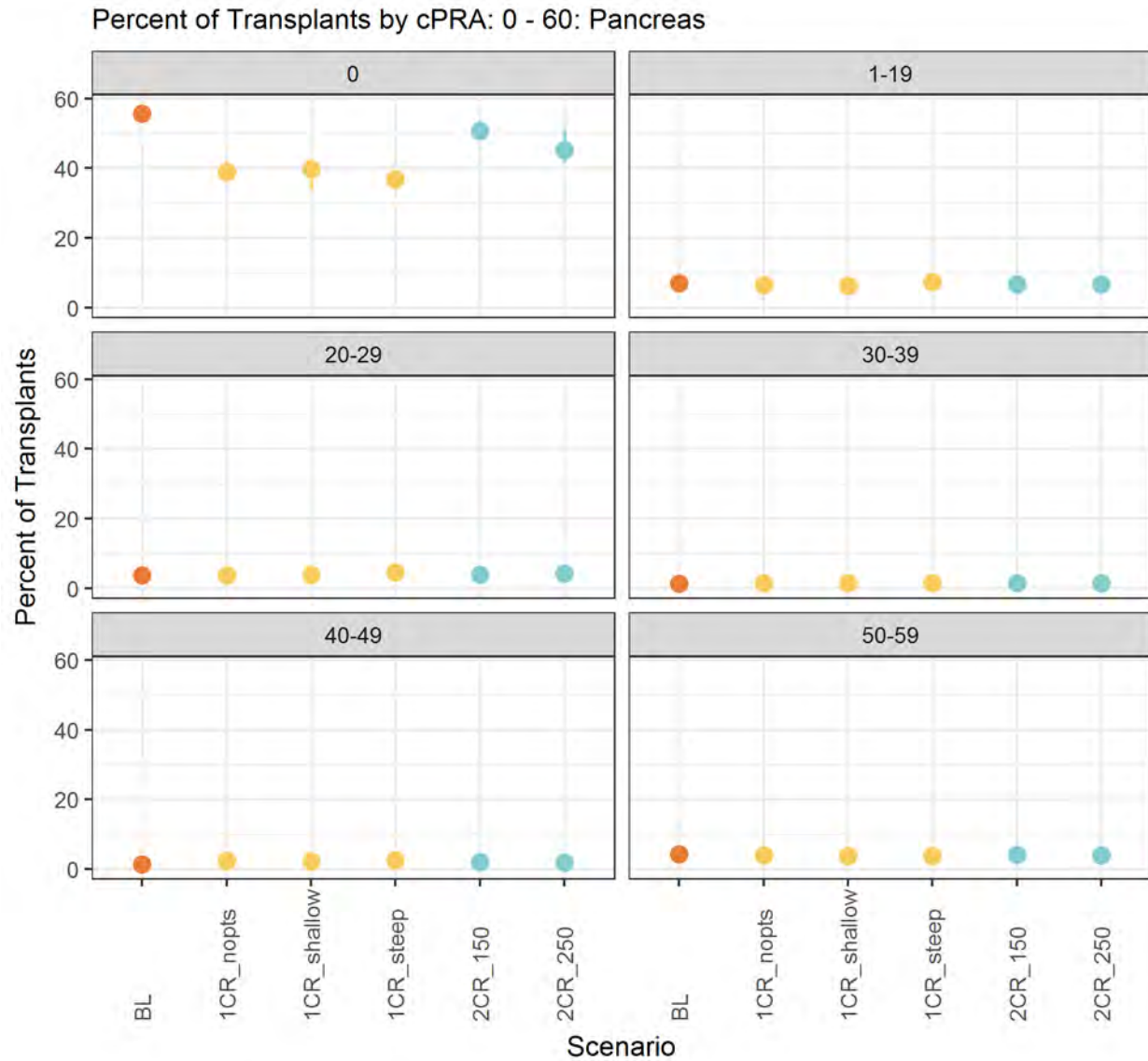


Figure 122 Percent of Transplants by cPRA: 0 - 60: Pancreas

Transplant Percentages: cPRA: 61 - 94

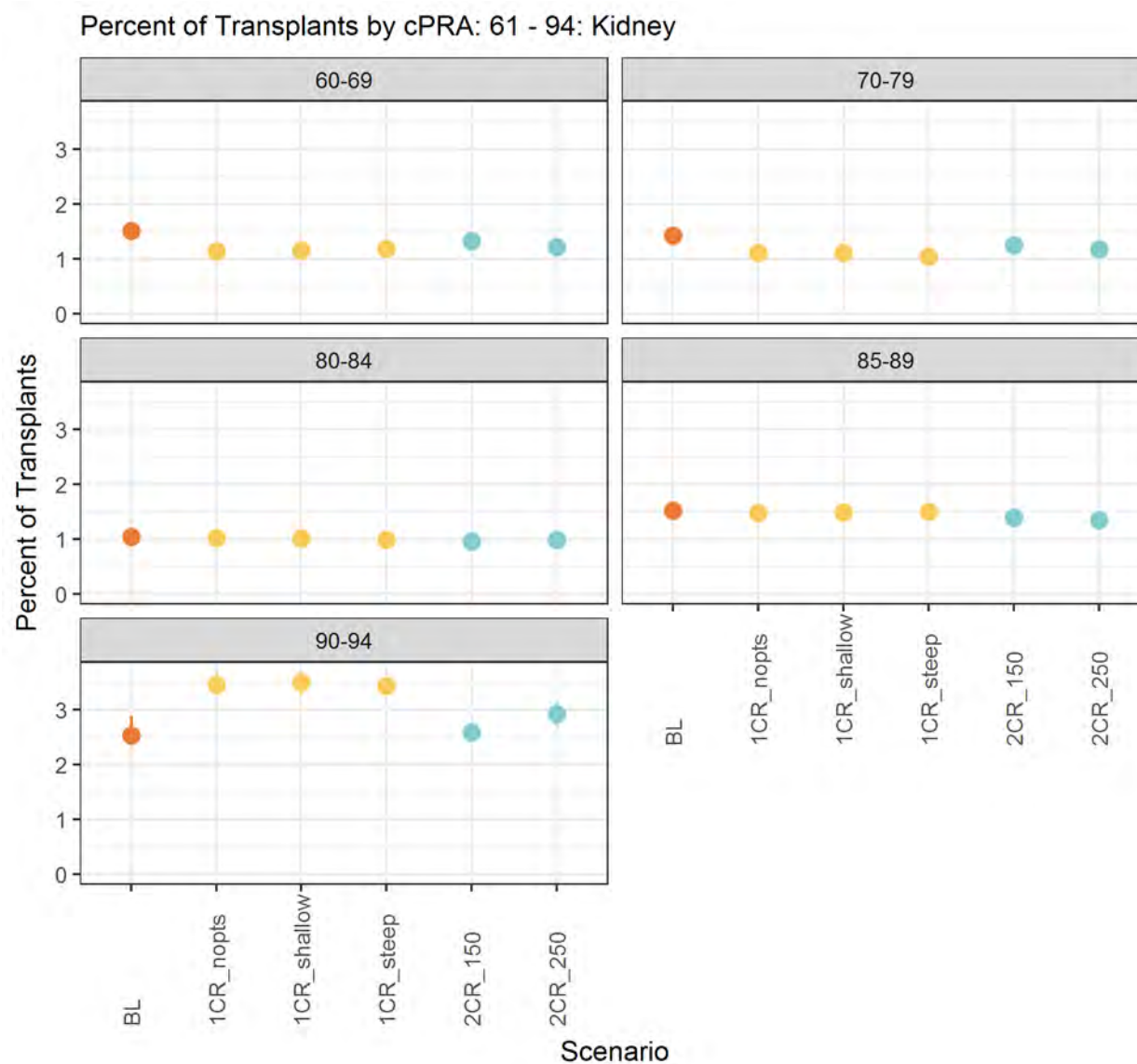


Figure 123 Percent of Transplants by cPRA: 61 - 94: Kidney

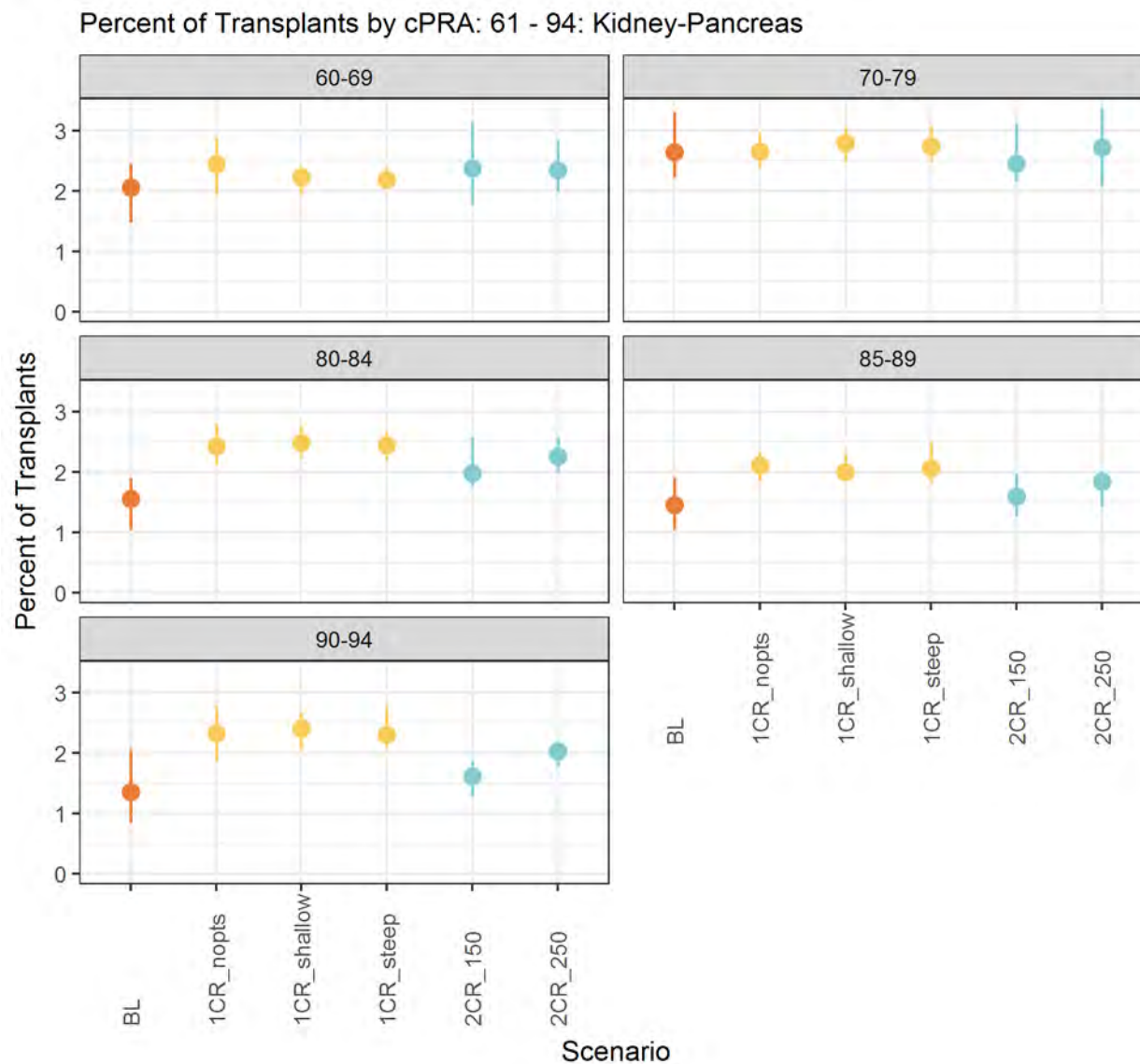


Figure 124 Percent of Transplants by cPRA: 61 - 94: Kidney-Pancreas



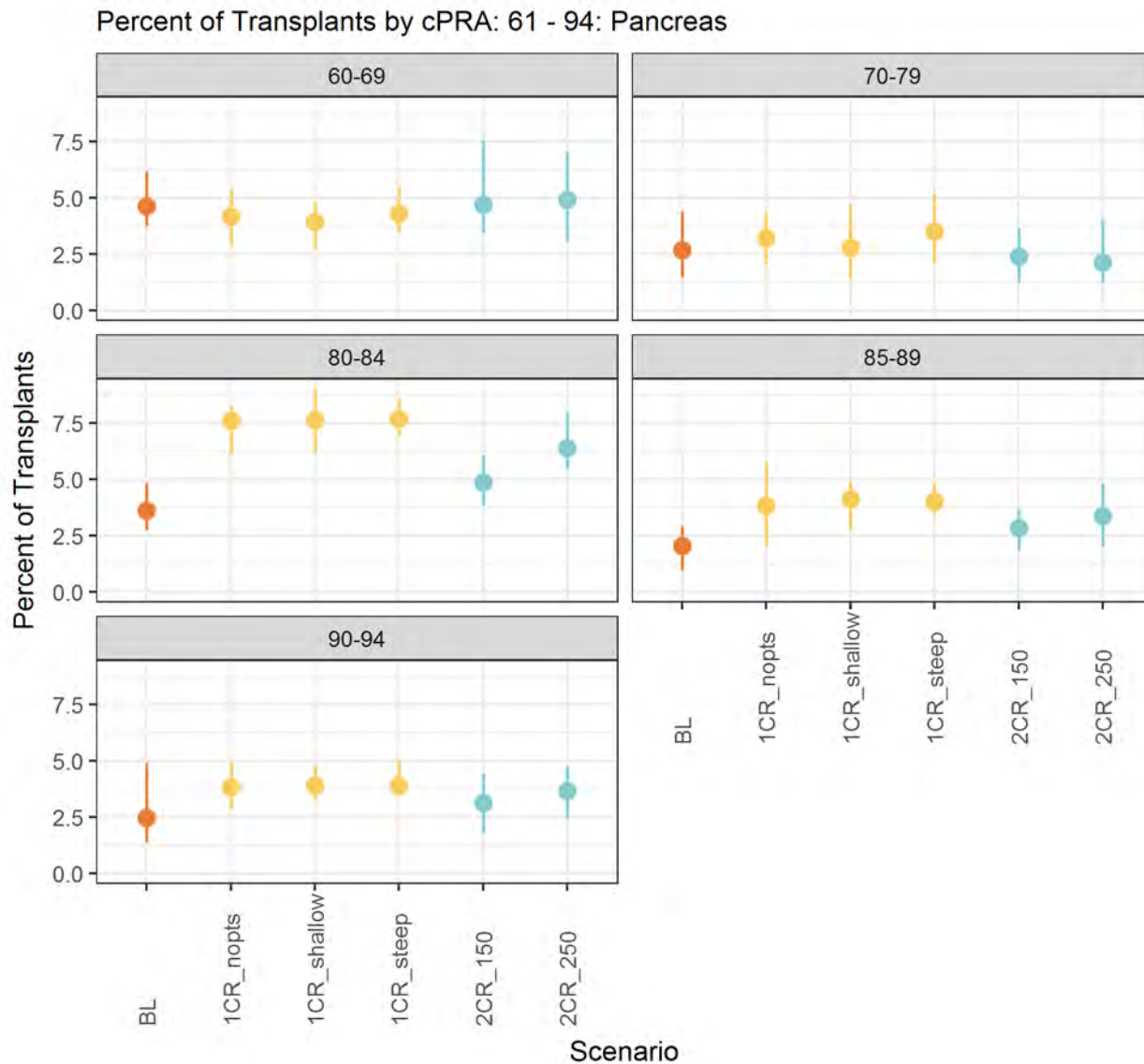


Figure 125 Percent of Transplants by cPRA: 61 - 94: Pancreas

Transplant Percentages: cPRA: 95 - 100

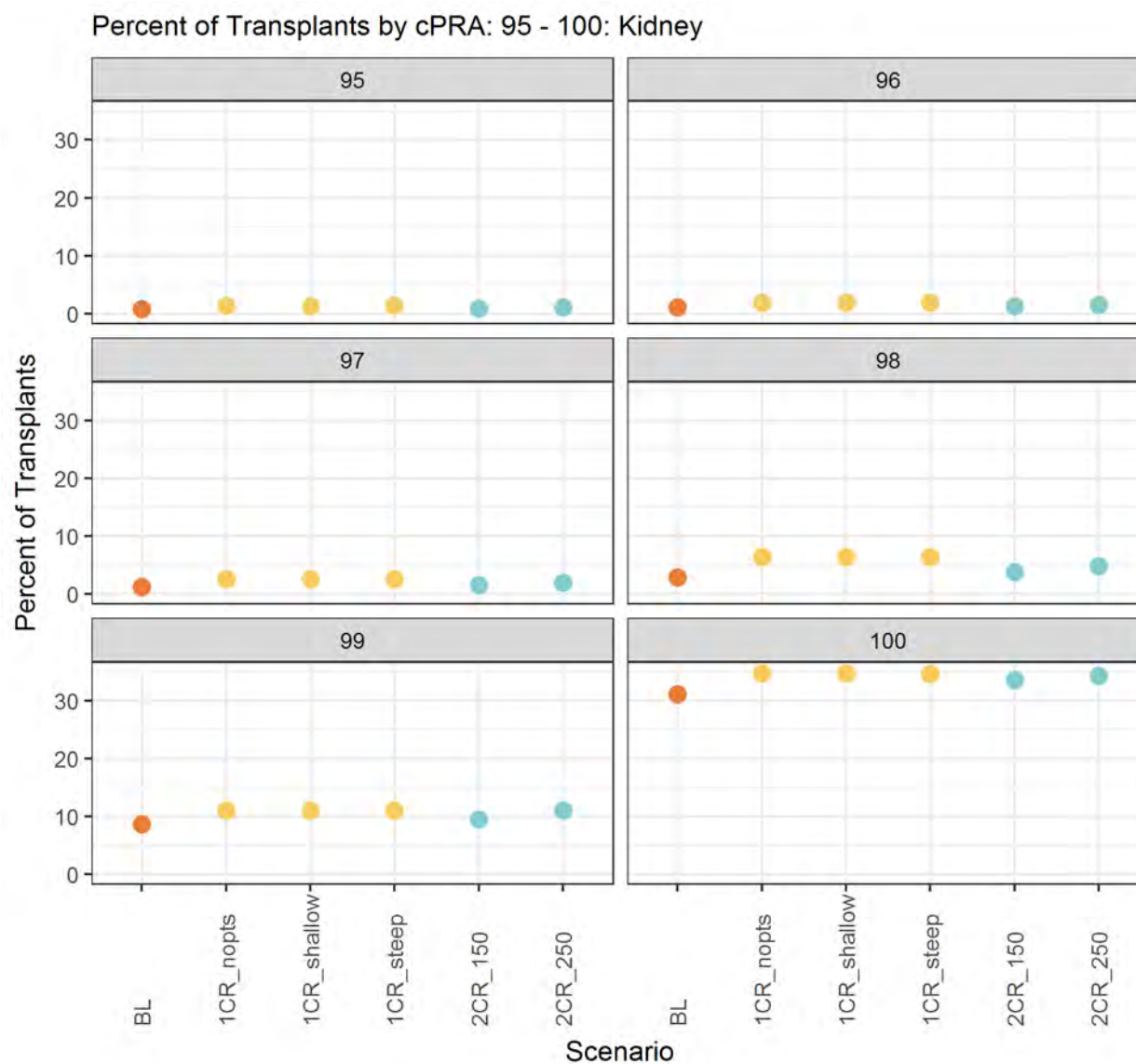


Figure 126 Percent of Transplants by cPRA: 95 - 100: Kidney

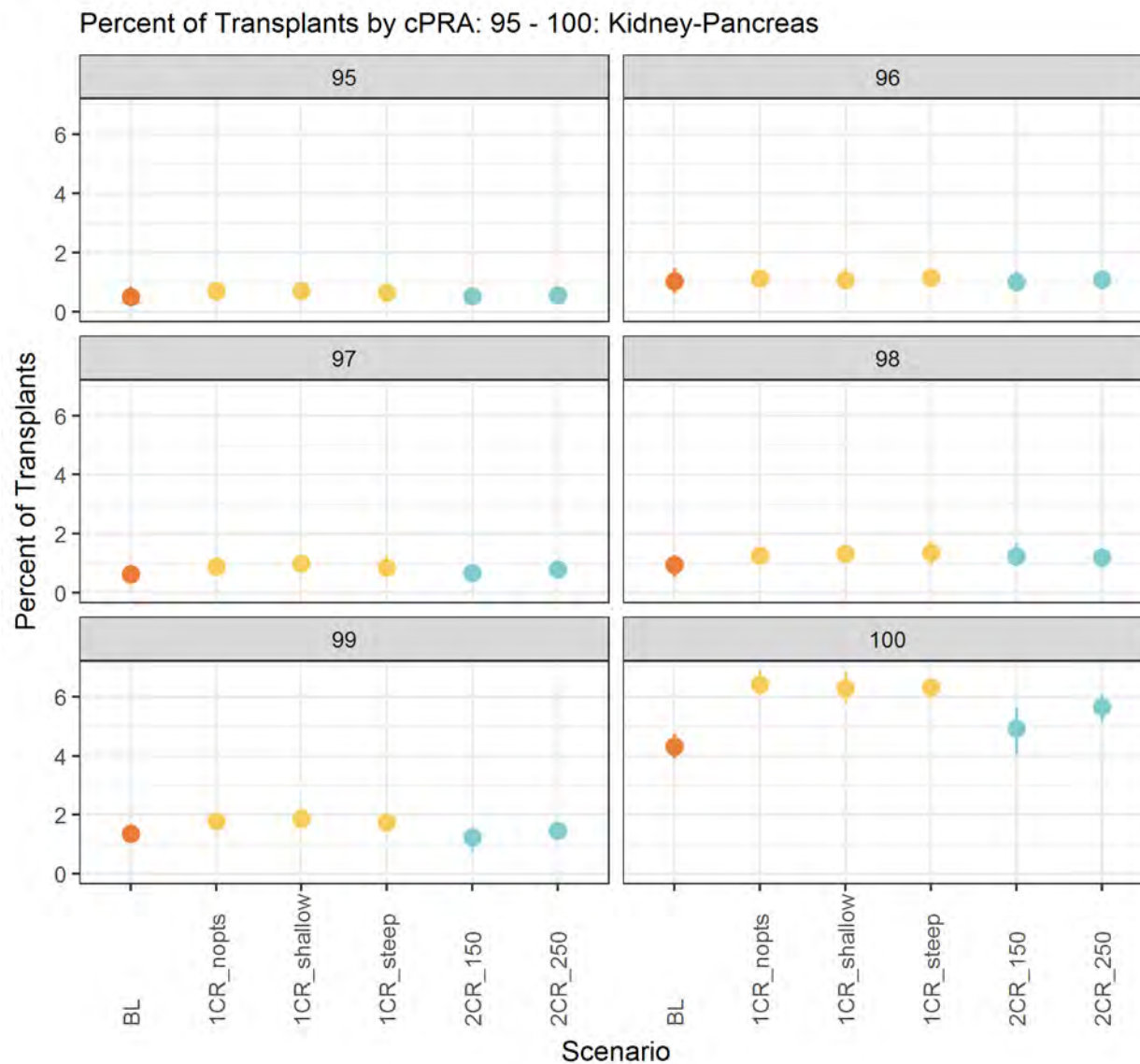


Figure 127 Percent of Transplants by cPRA: 95 - 100: Kidney-Pancreas

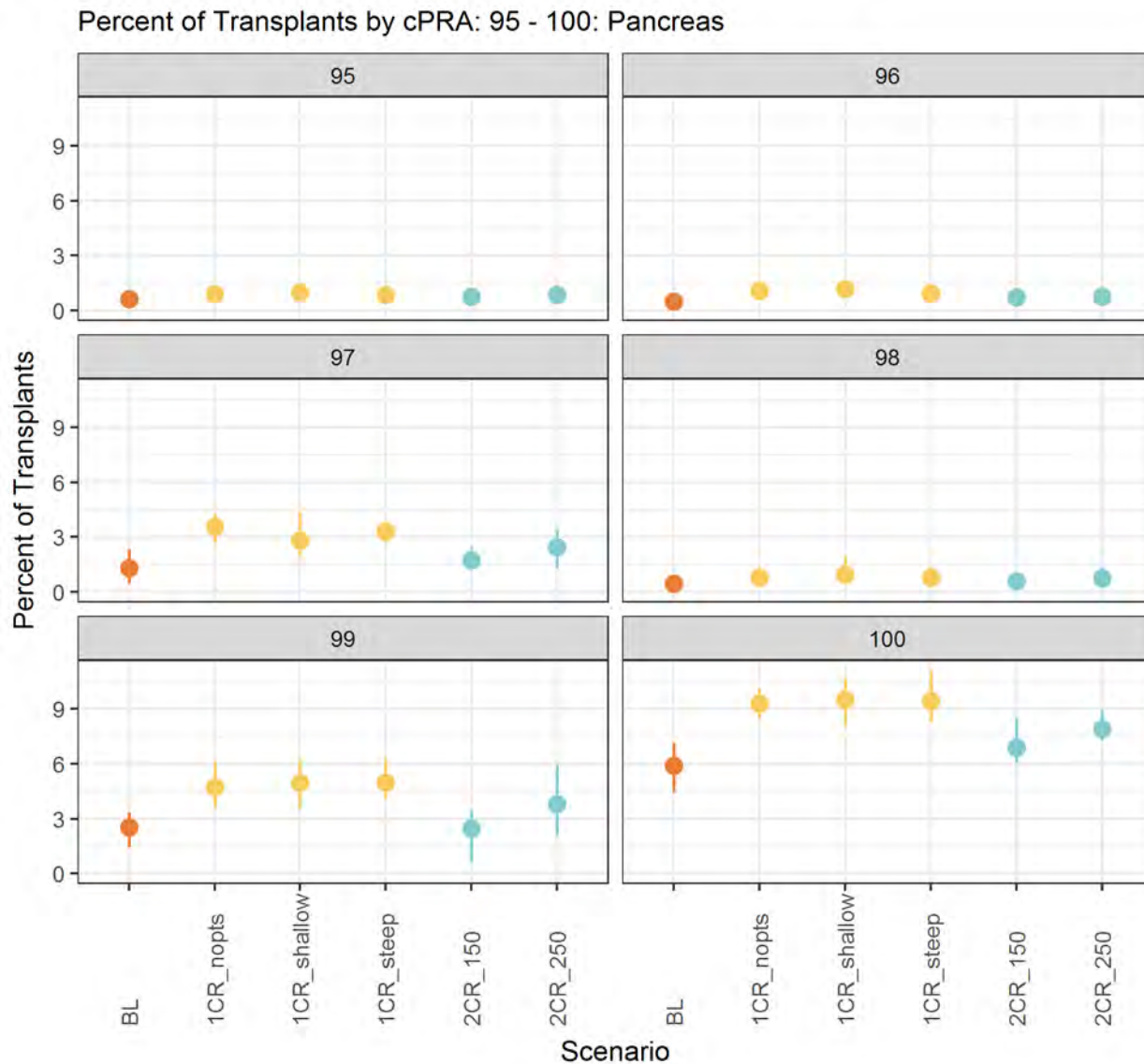


Figure 128 Percent of Transplants by cPRA: 95 - 100: Pancreas

Transplant Percentages: cPRA: 95 - 98

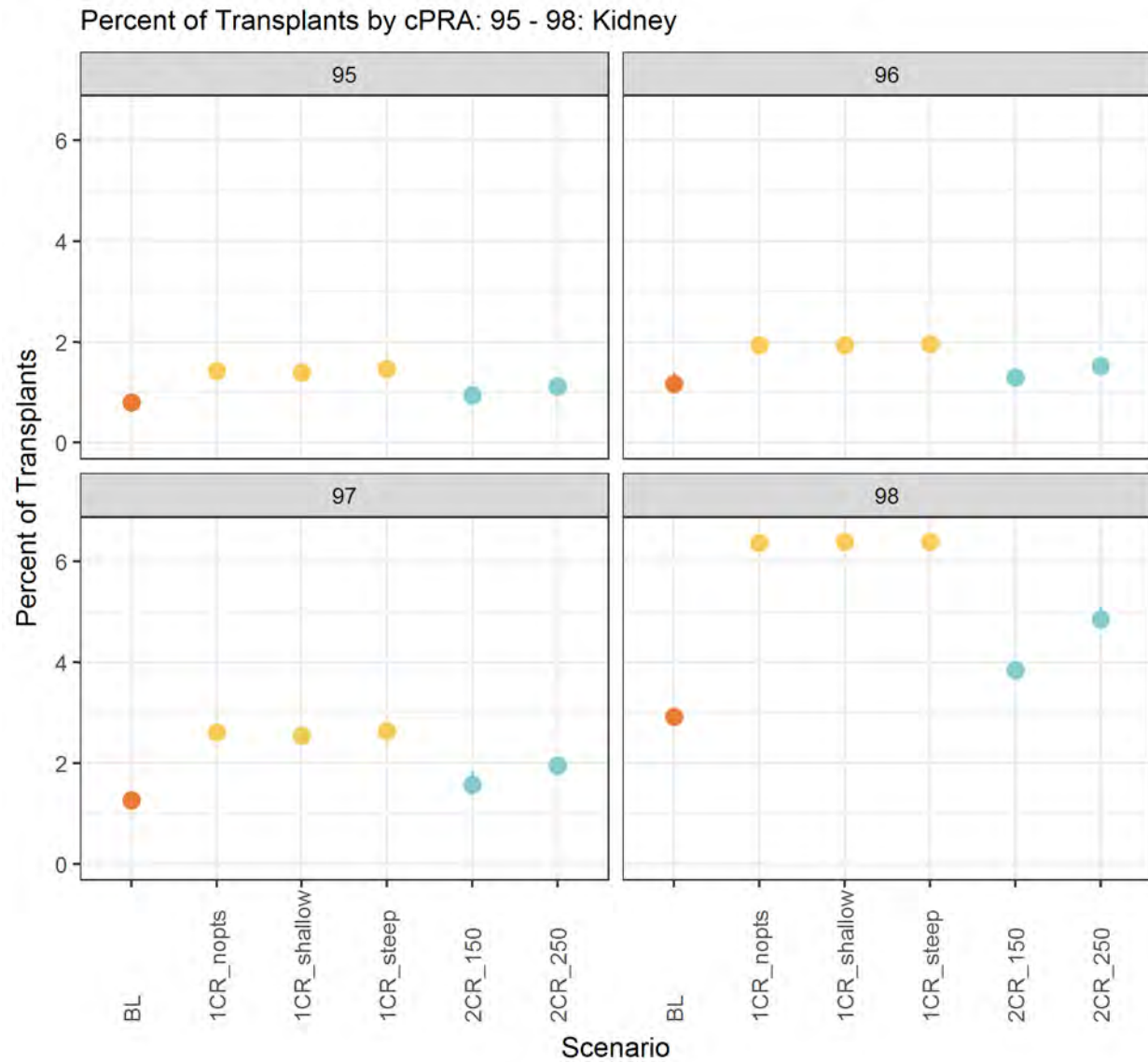


Figure 129 Percent of Transplants by cPRA: 95 - 98: Kidney

Transplant Percentages: cPRA: 99 - 100

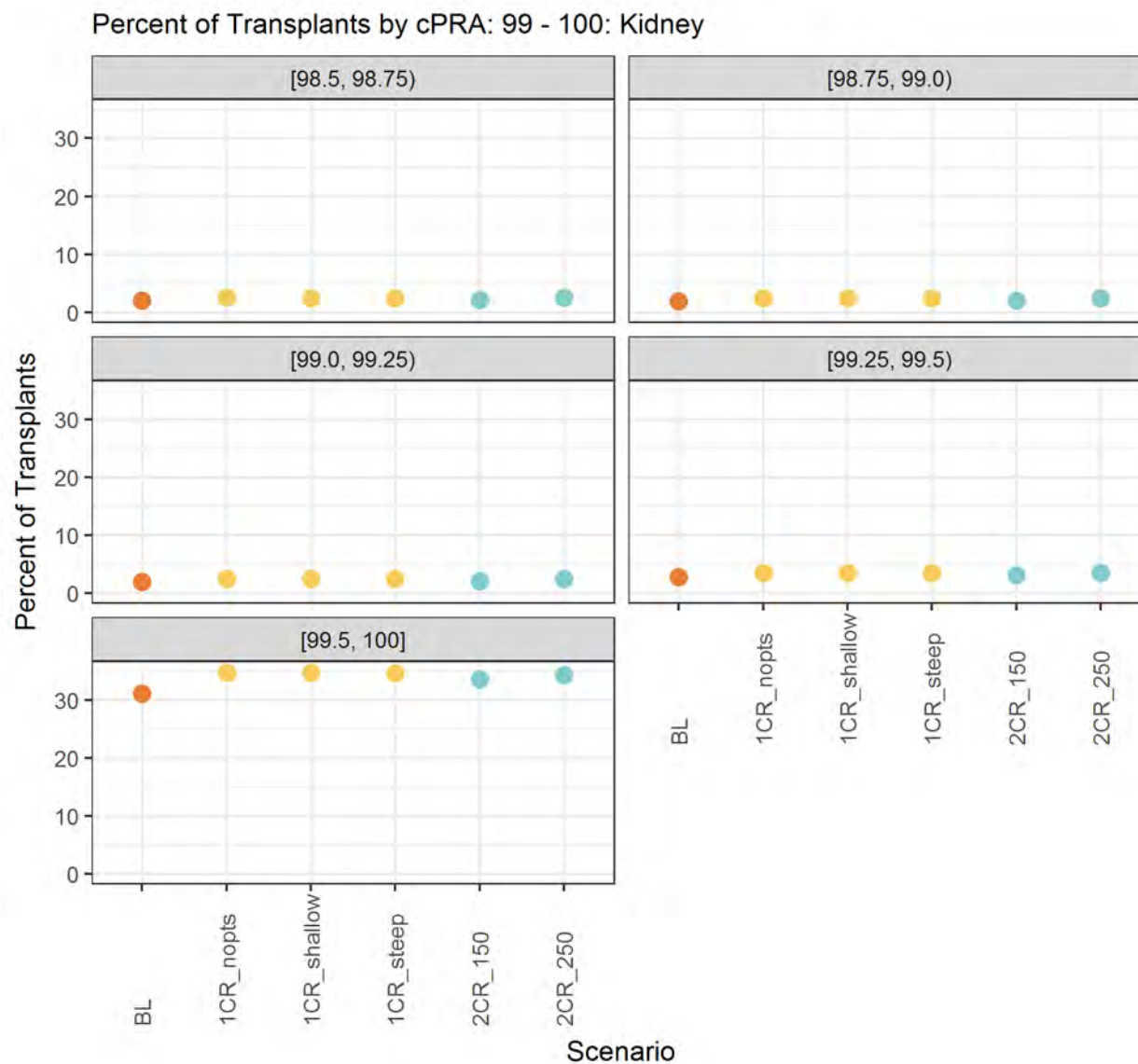


Figure 130 Percent of Transplants by cPRA: 99 - 100: Kidney



Transplant Percentages: cPRA: 95 - 99

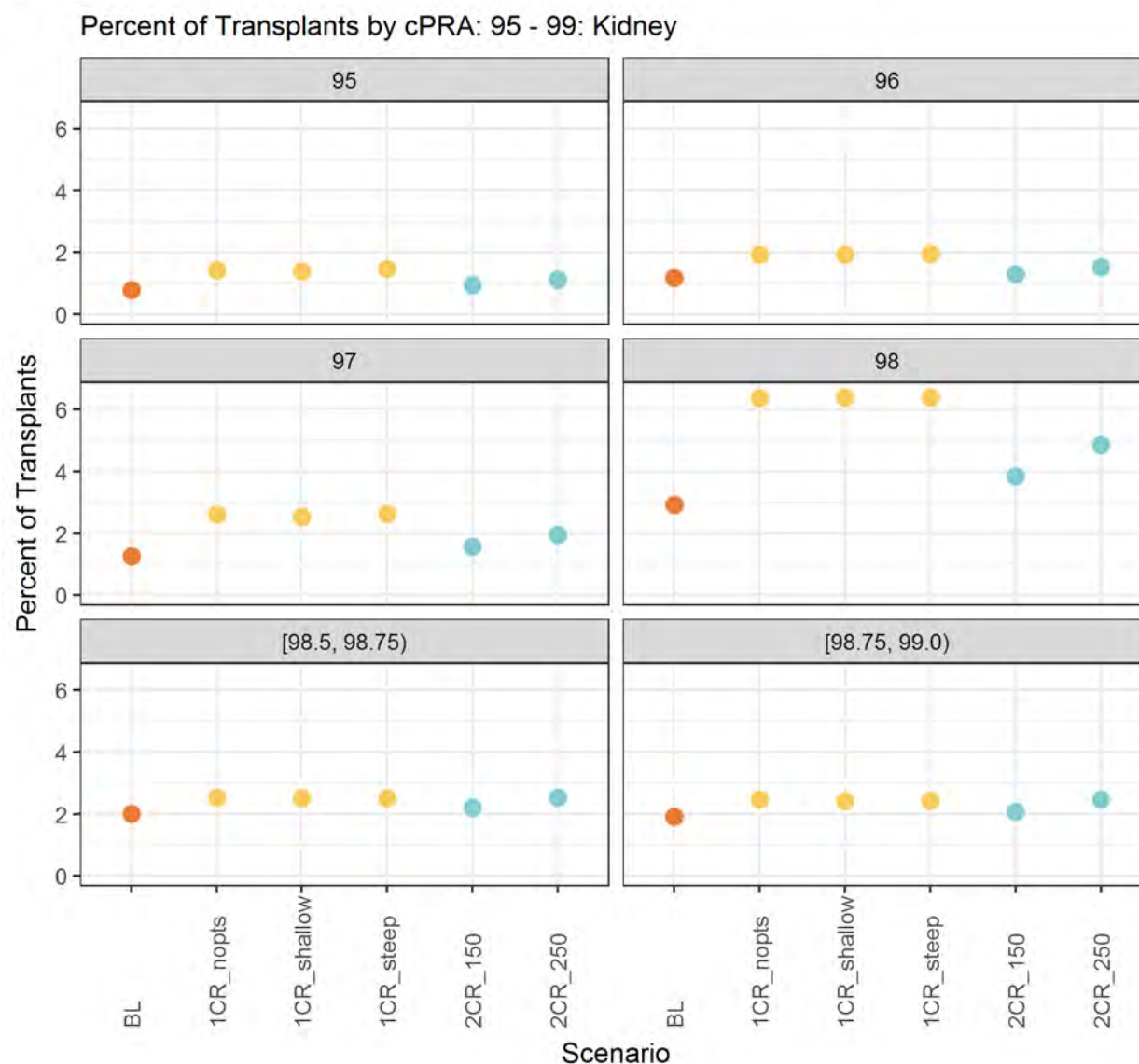


Figure 131 Percent of Transplants by cPRA: 95 - 99: Kidney

Transplant Percentages: cPRA: 99 - 99.8

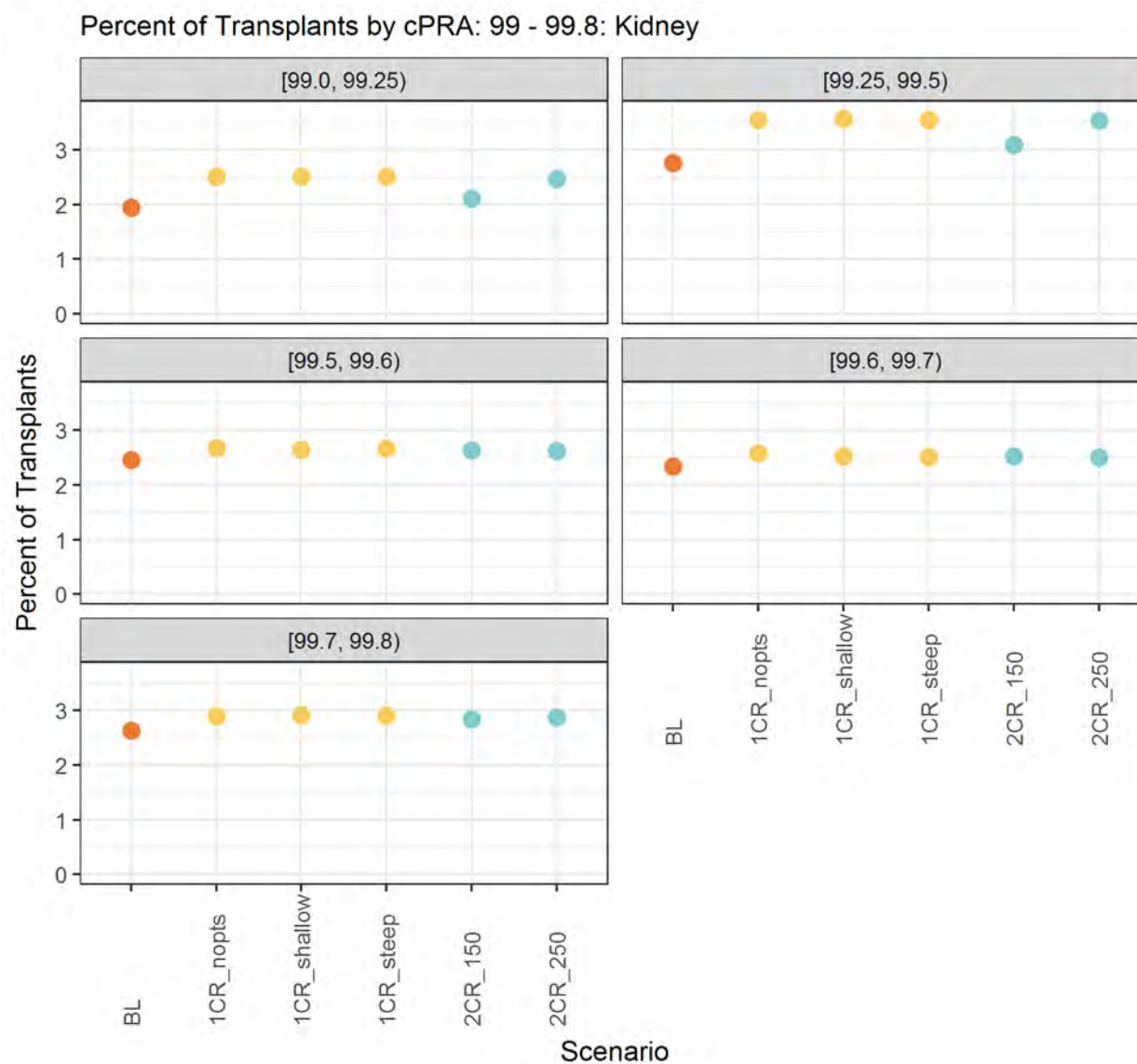


Figure 132 Percent of Transplants by cPRA: 99 - 99.8: Kidney

Transplant Percentages: cPRA: 99.8 - 100

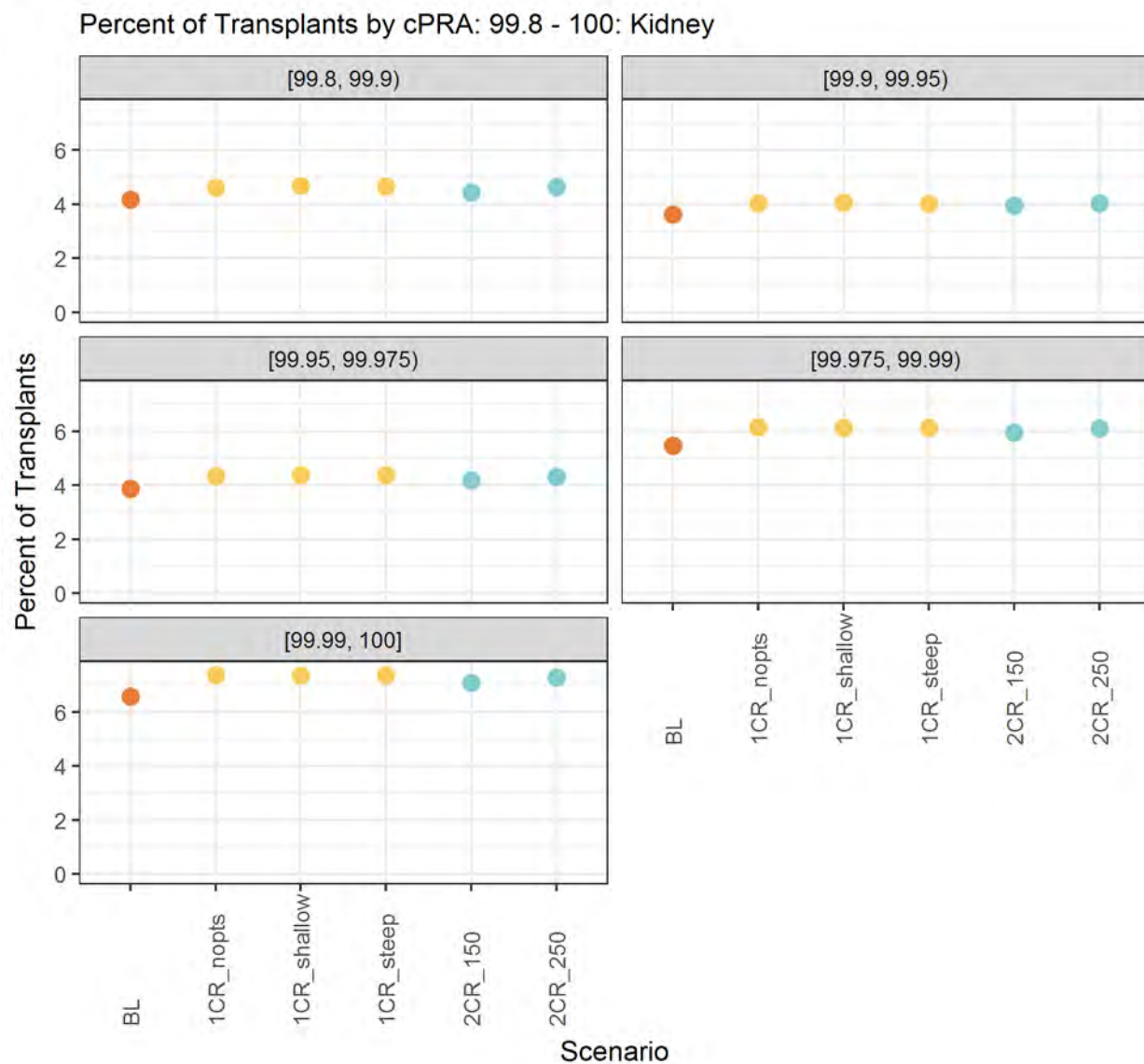


Figure 133 Percent of Transplants by cPRA: 99.8 - 100: Kidney

## Transplant Percentages: Payment Status

### Percent of Transplants by Payment Status: Kidney

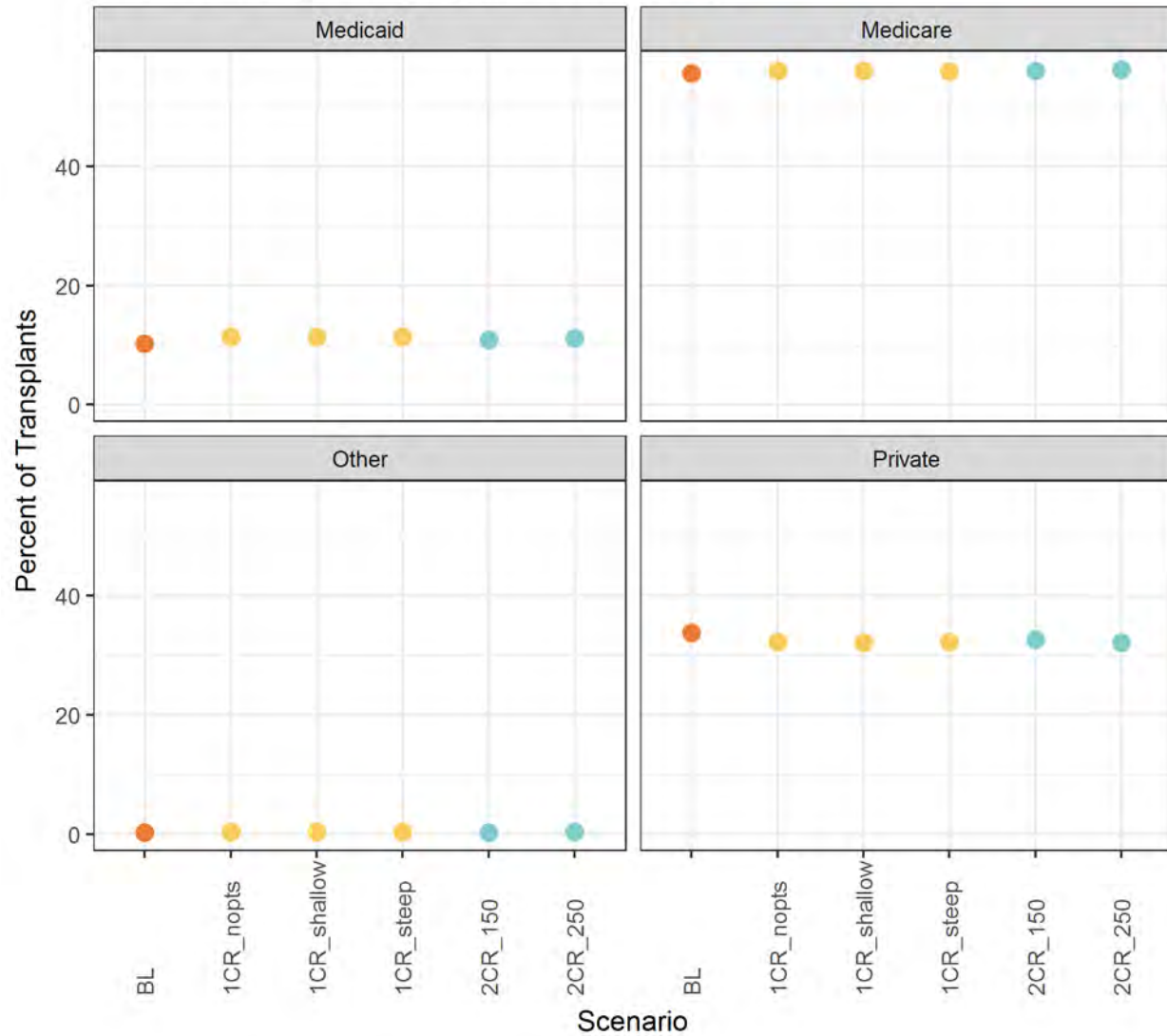


Figure 134 Percent of Transplants by Payment Status: Kidney

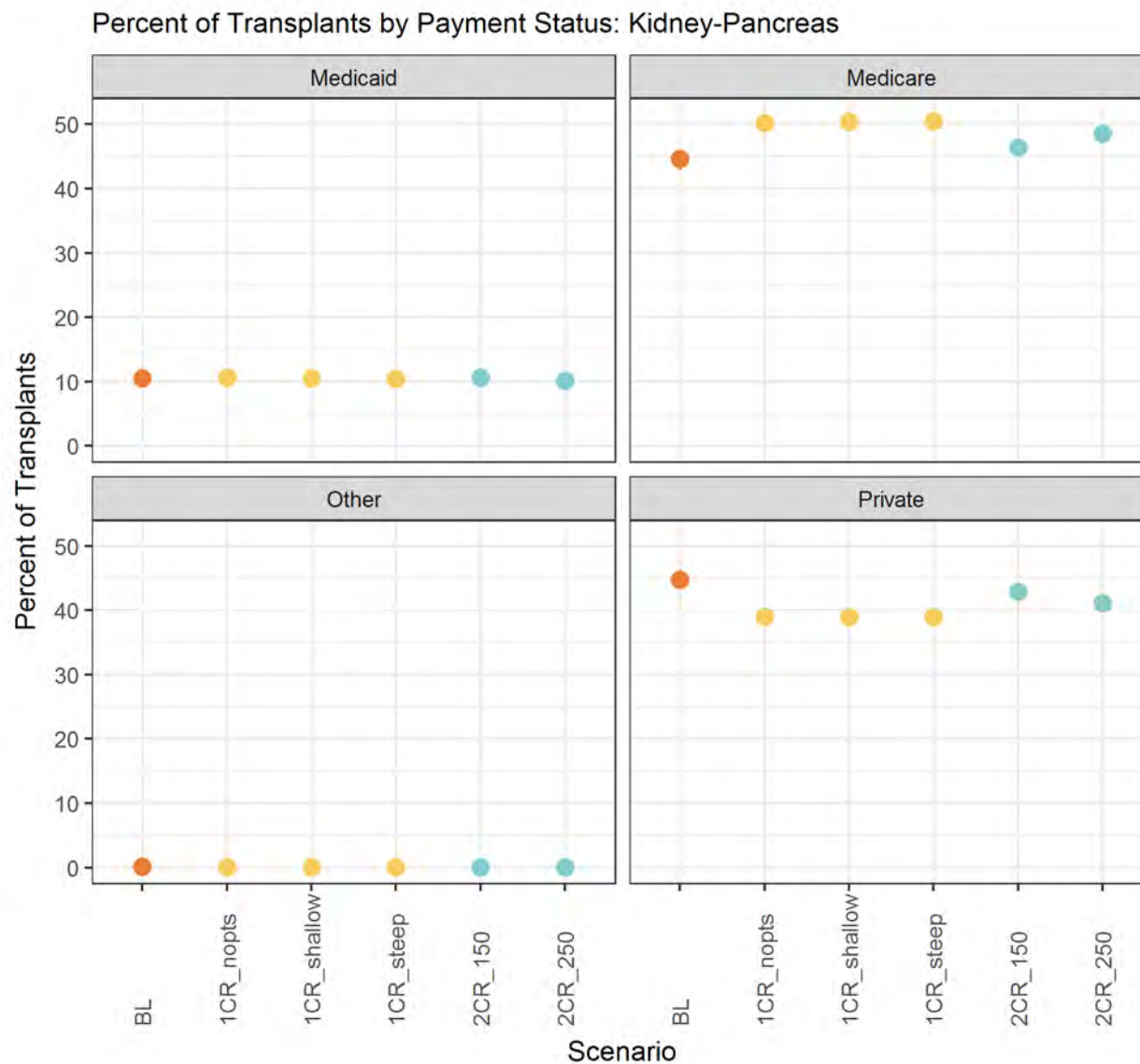


Figure 135 Percent of Transplants by Payment Status: Kidney-Pancreas

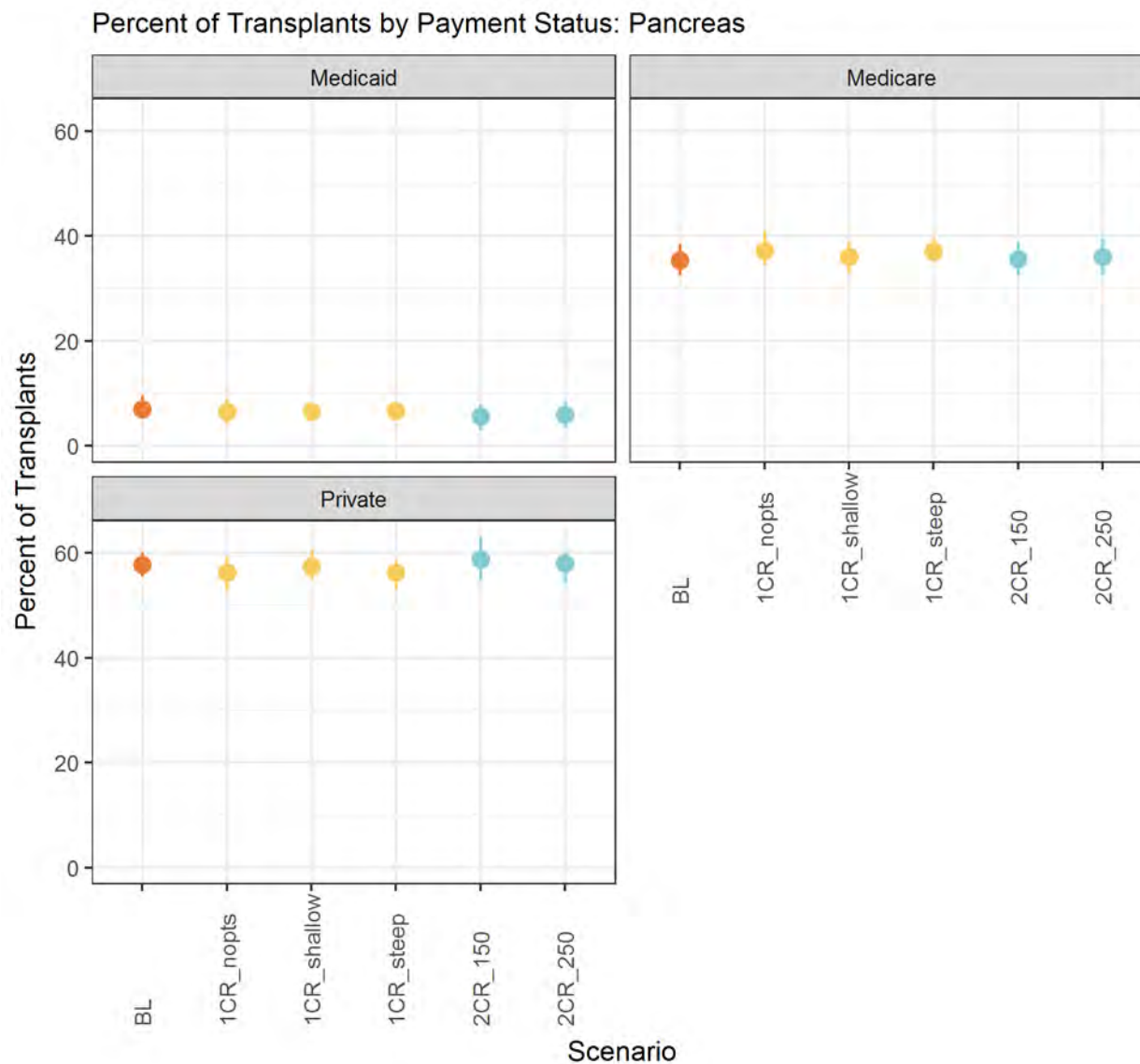


Figure 136 Percent of Transplants by Payment Status: Pancreas



## Transplant Percentages: Urbanicity

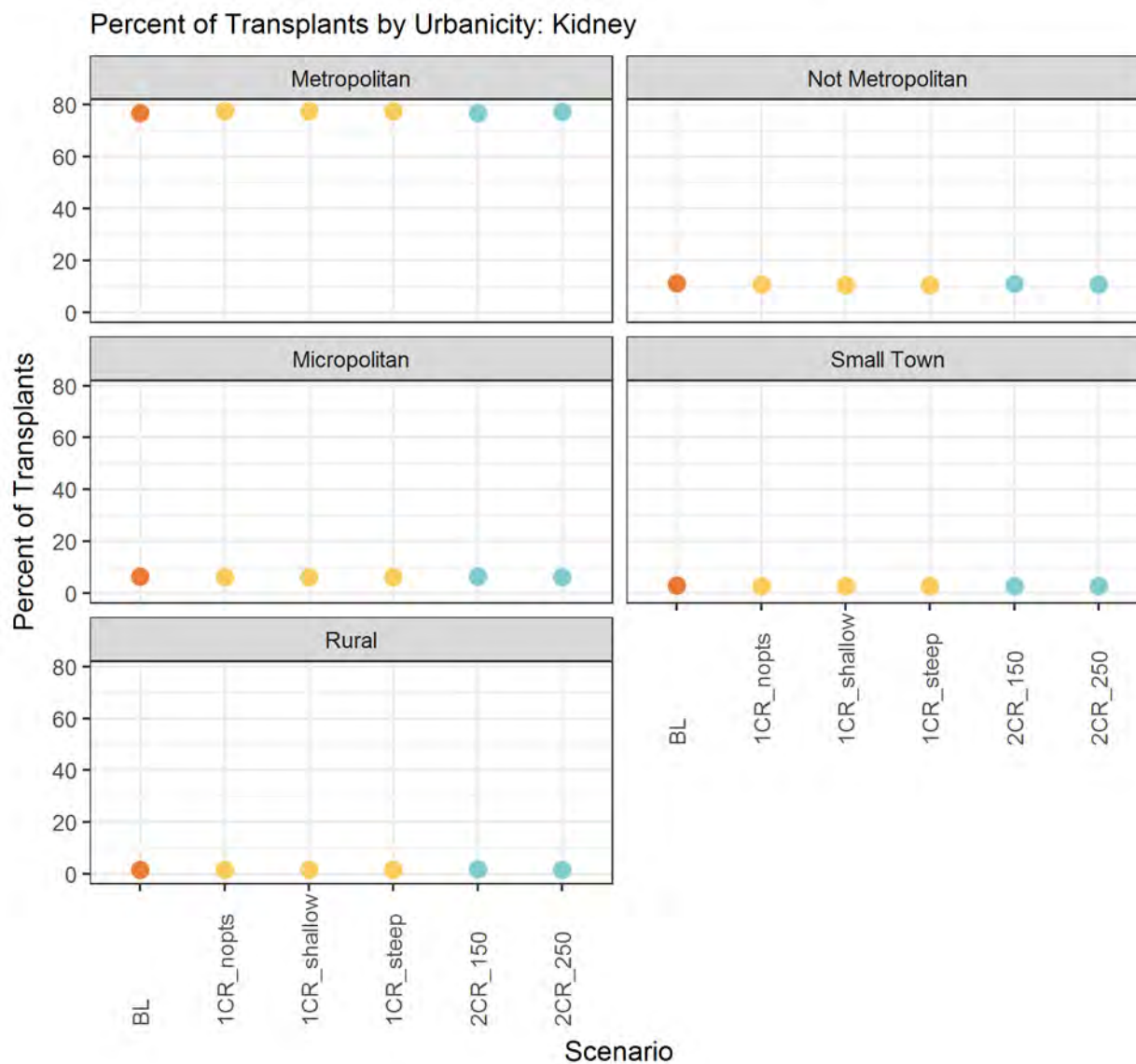


Figure 137 Percent of Transplants by Urbanicity: Kidney

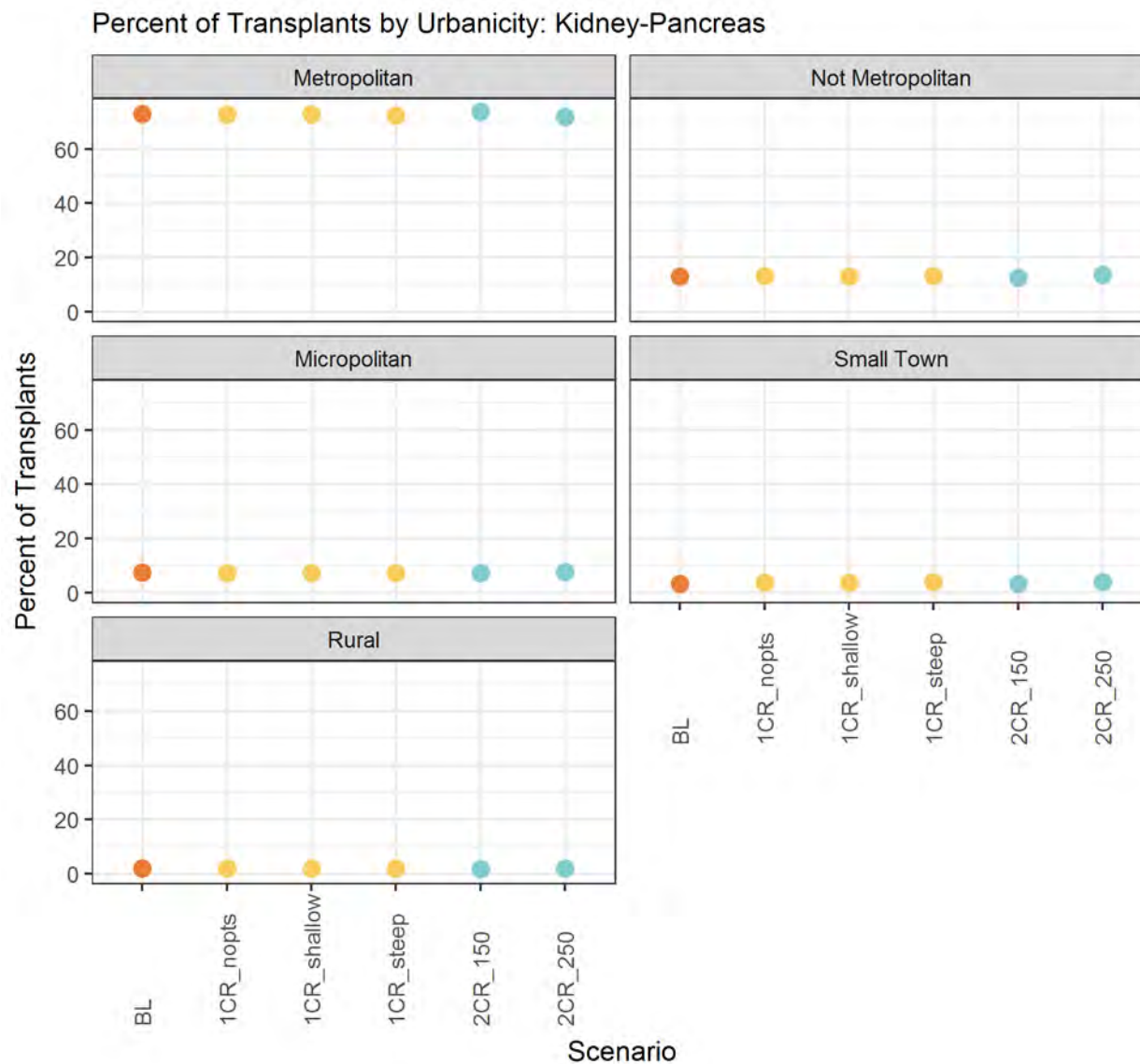


Figure 138 Percent of Transplants by Urbanicity: Kidney-Pancreas

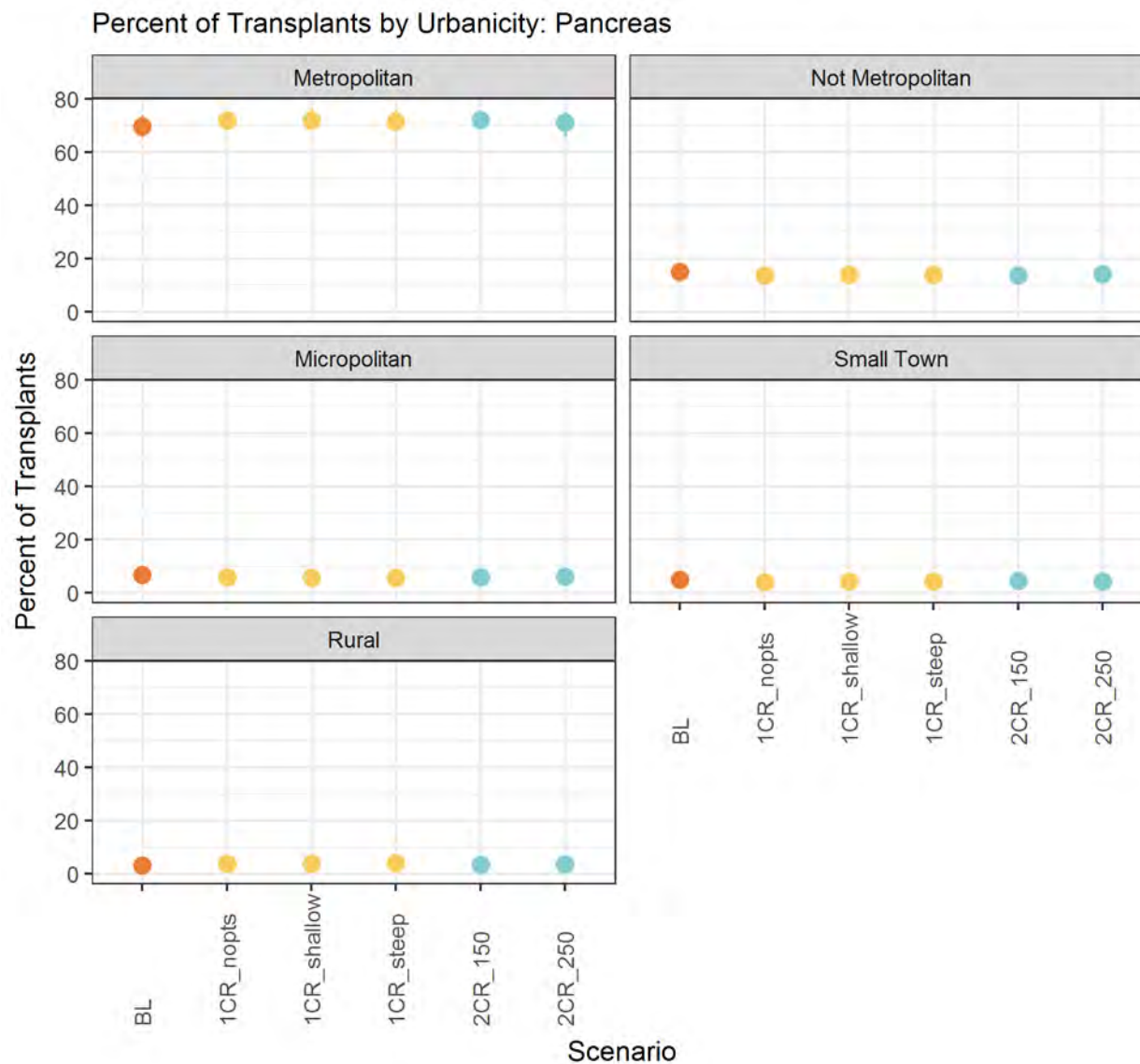


Figure 139 Percent of Transplants by Urbanicity: Pancreas

# Transplant Percentages: Local/Regional/National

## Percent of Transplants by Local/Regional/National: Kidney

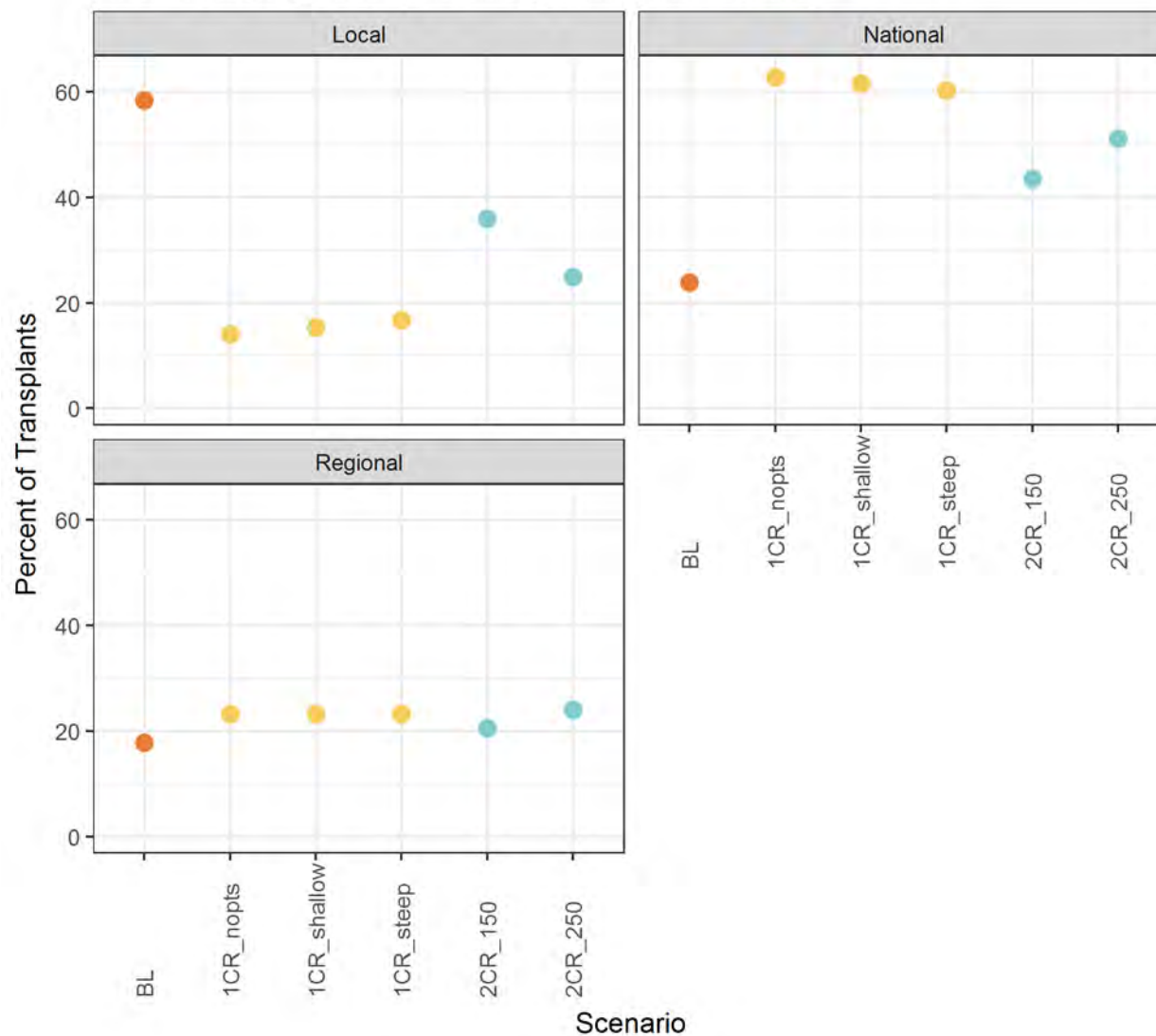


Figure 140 Percent of Transplants by Local/Regional/National: Kidney

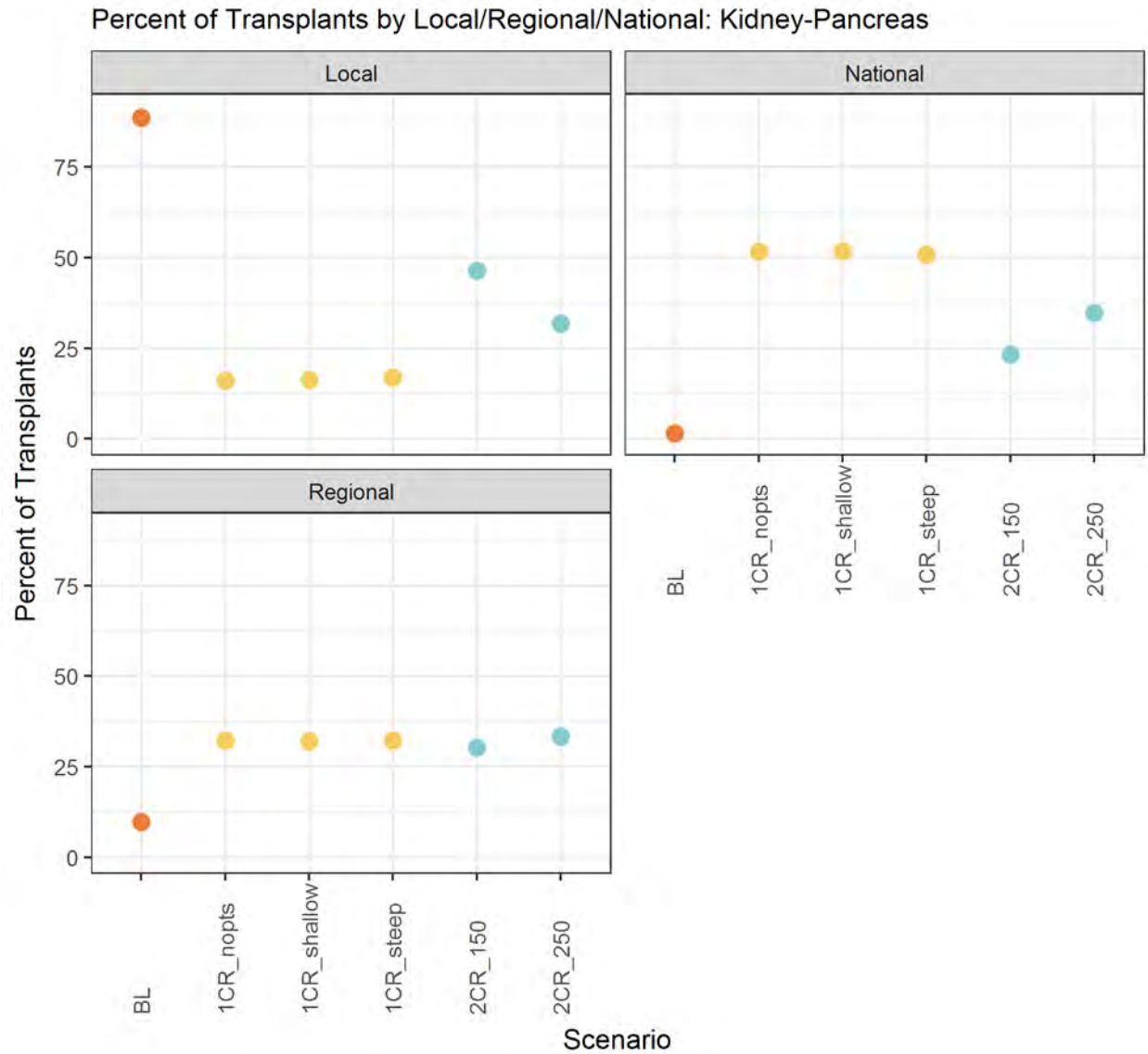


Figure 141 Percent of Transplants by Local/Regional/National: Kidney-Pancreas

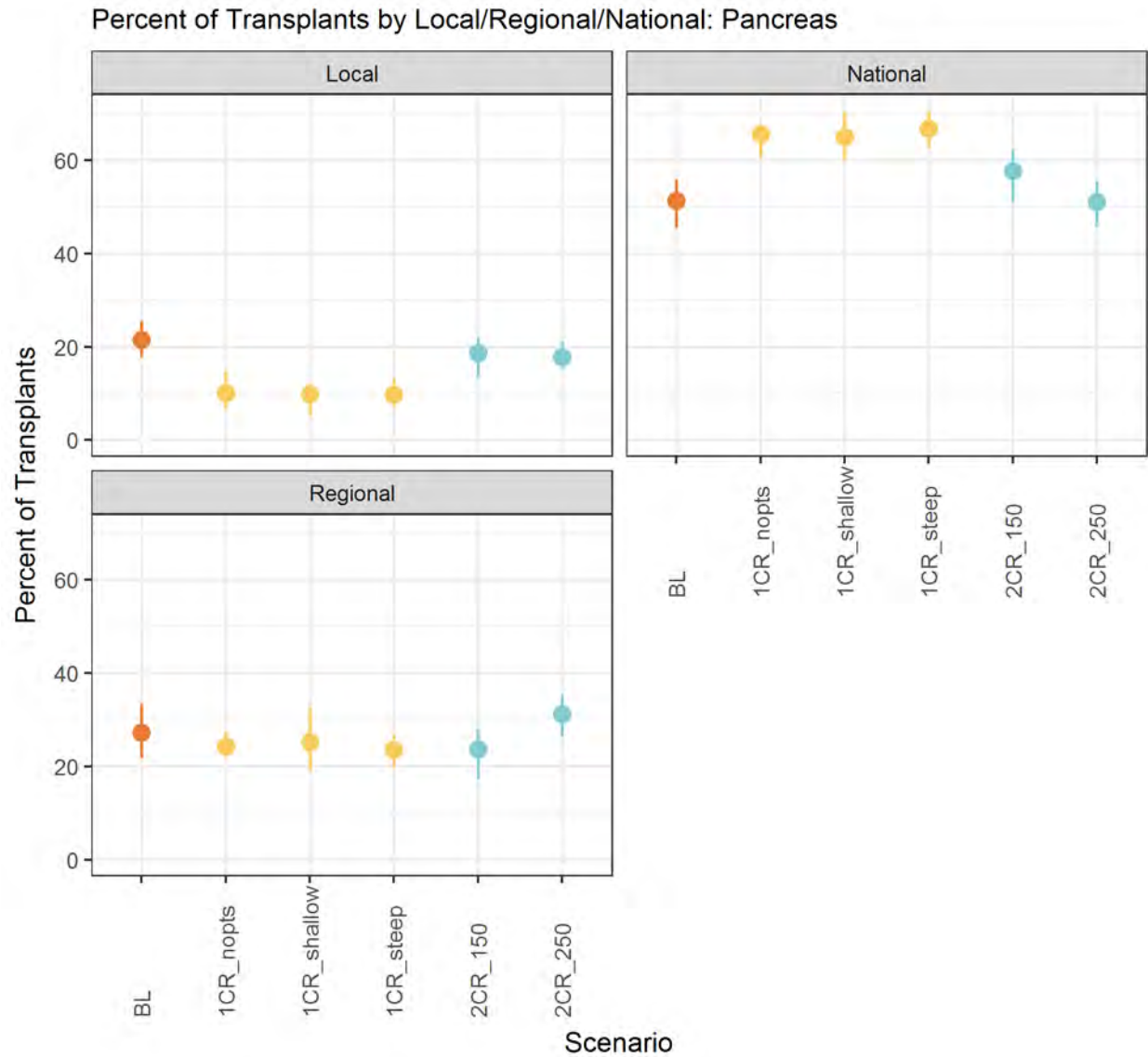


Figure 142 Percent of Transplants by Local/Regional/National: Pancreas



## Transplant Percentages: EPTS

### Percent of Transplants by EPTS: Kidney

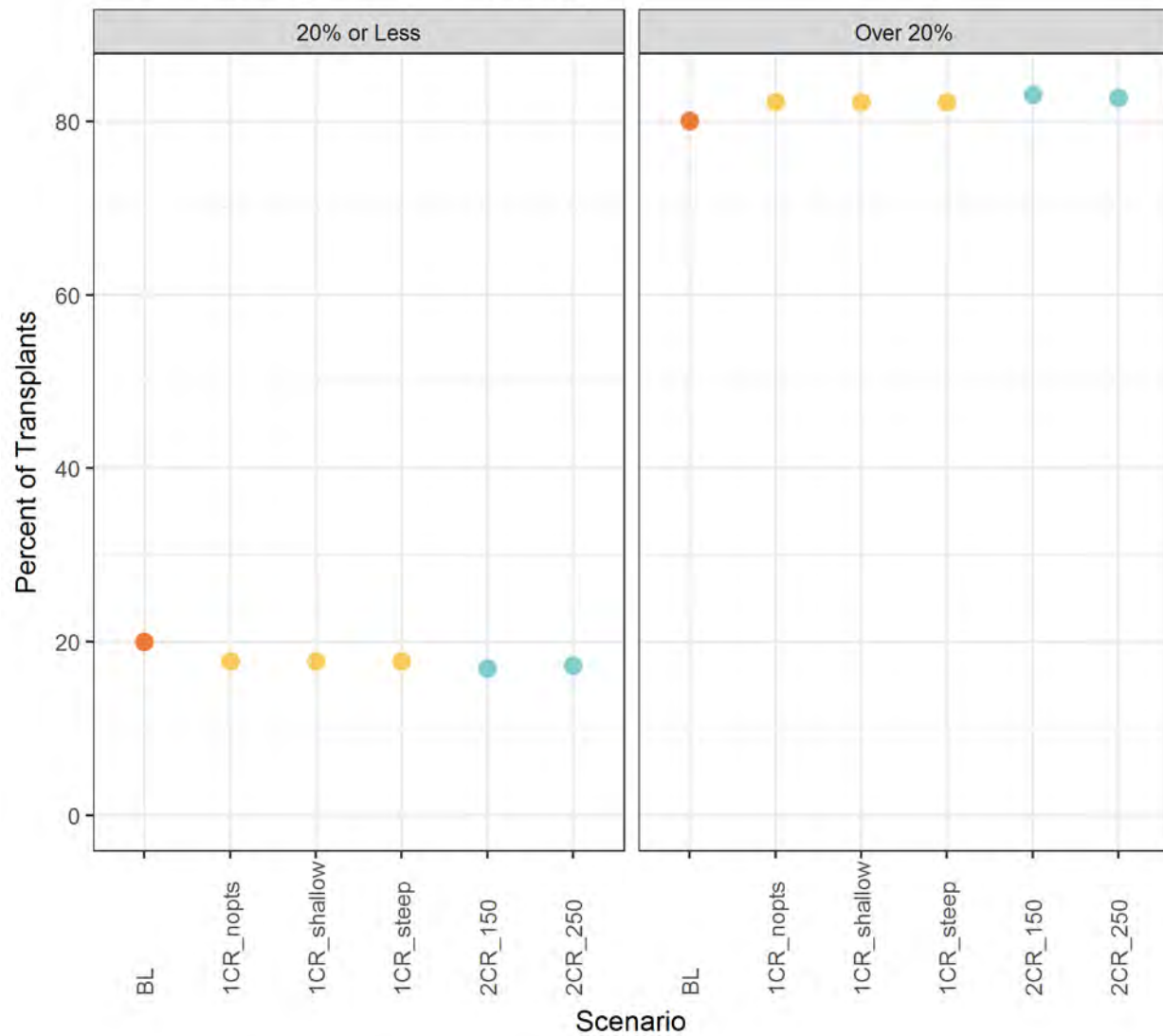


Figure 143 Percent of Transplants by EPTS: Kidney

# Transplant Percentages: Median Household Income by Zip Code

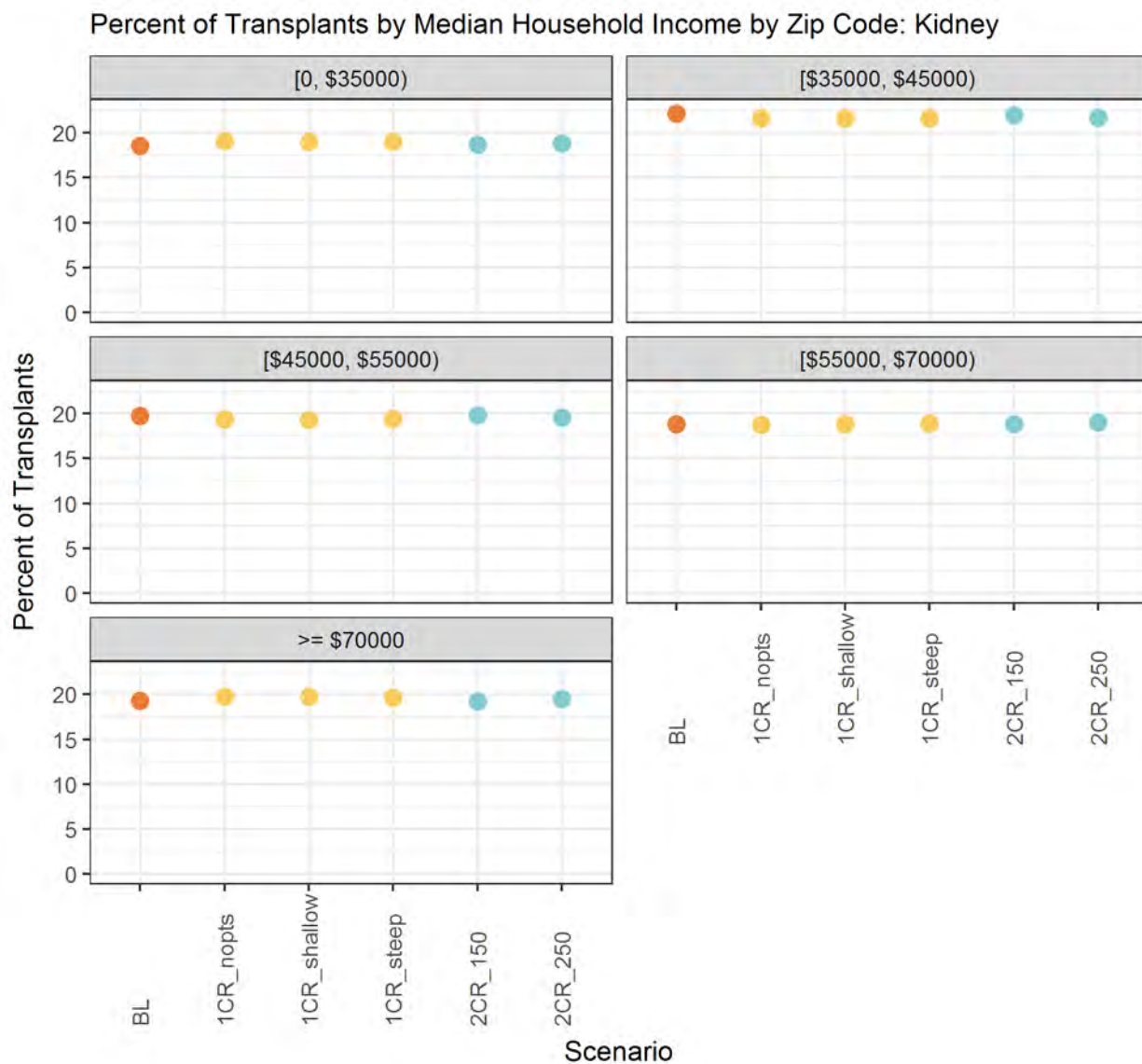


Figure 144 Percent of Transplants by Median Household Income by Zip Code: Kidney

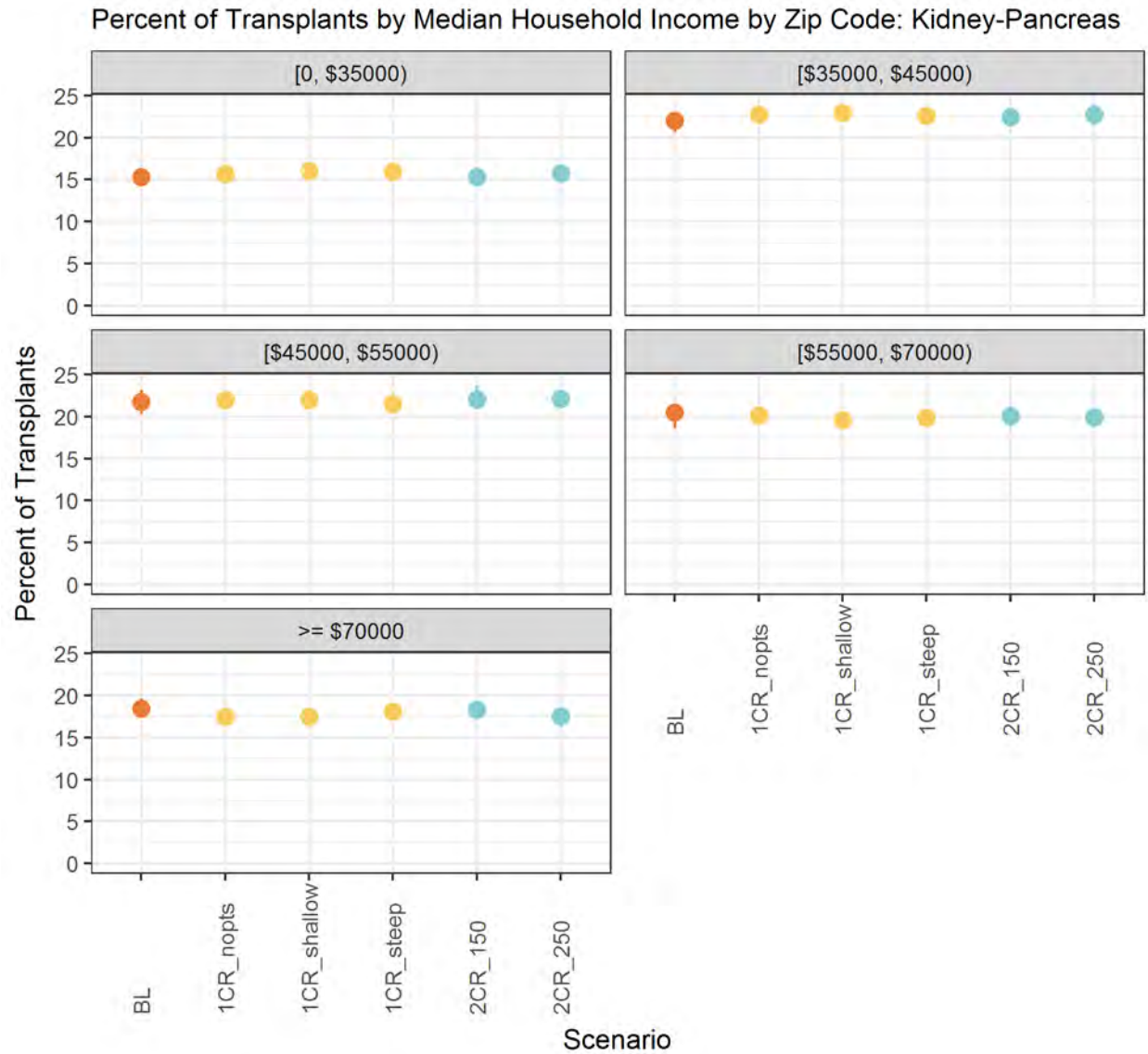


Figure 145 Percent of Transplants by Median Household Income by Zip Code: Kidney-Pancreas

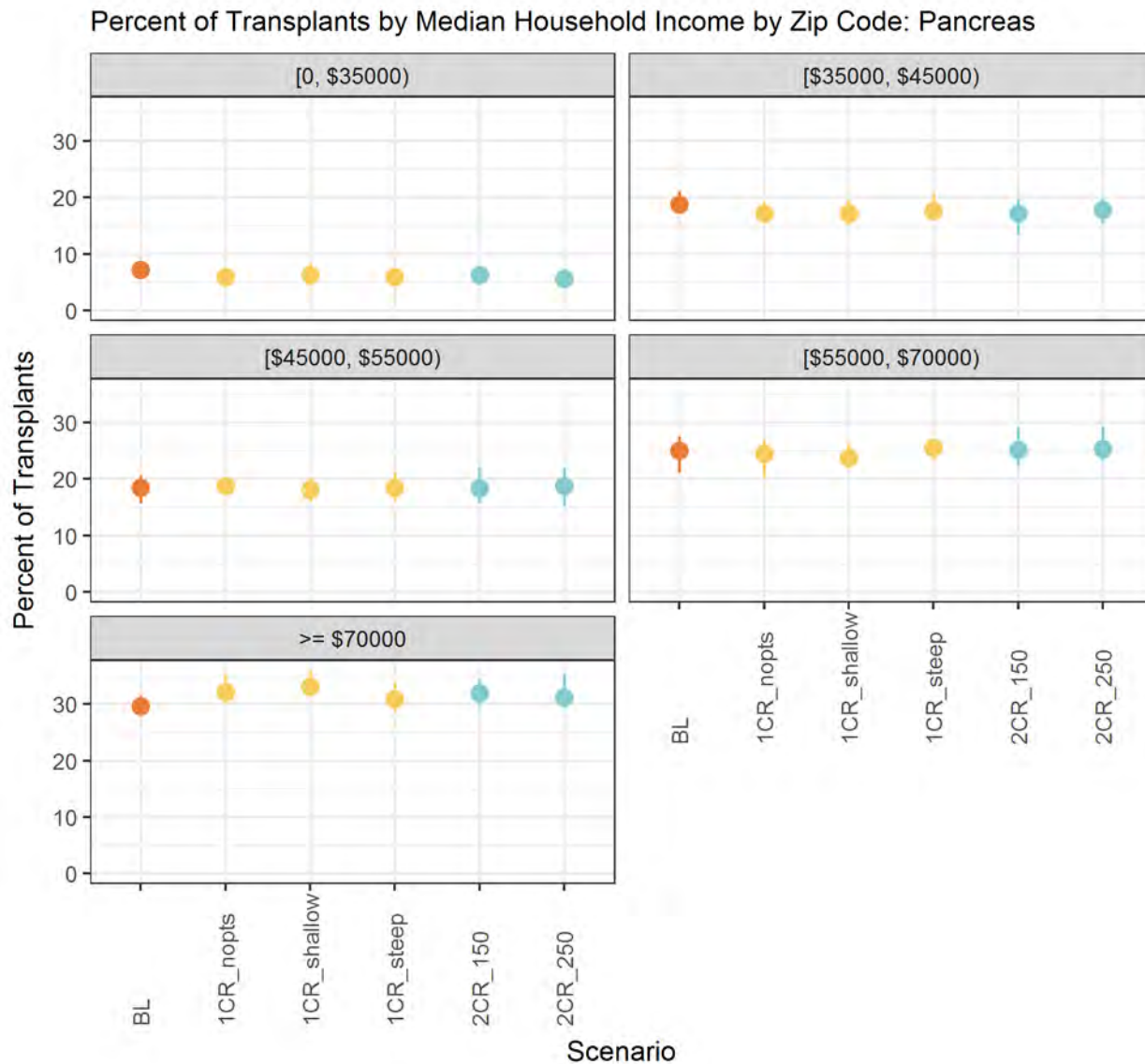


Figure 146 Percent of Transplants by Median Household Income by Zip Code: Pancreas

## Transplant Percentages: Donor KDPI

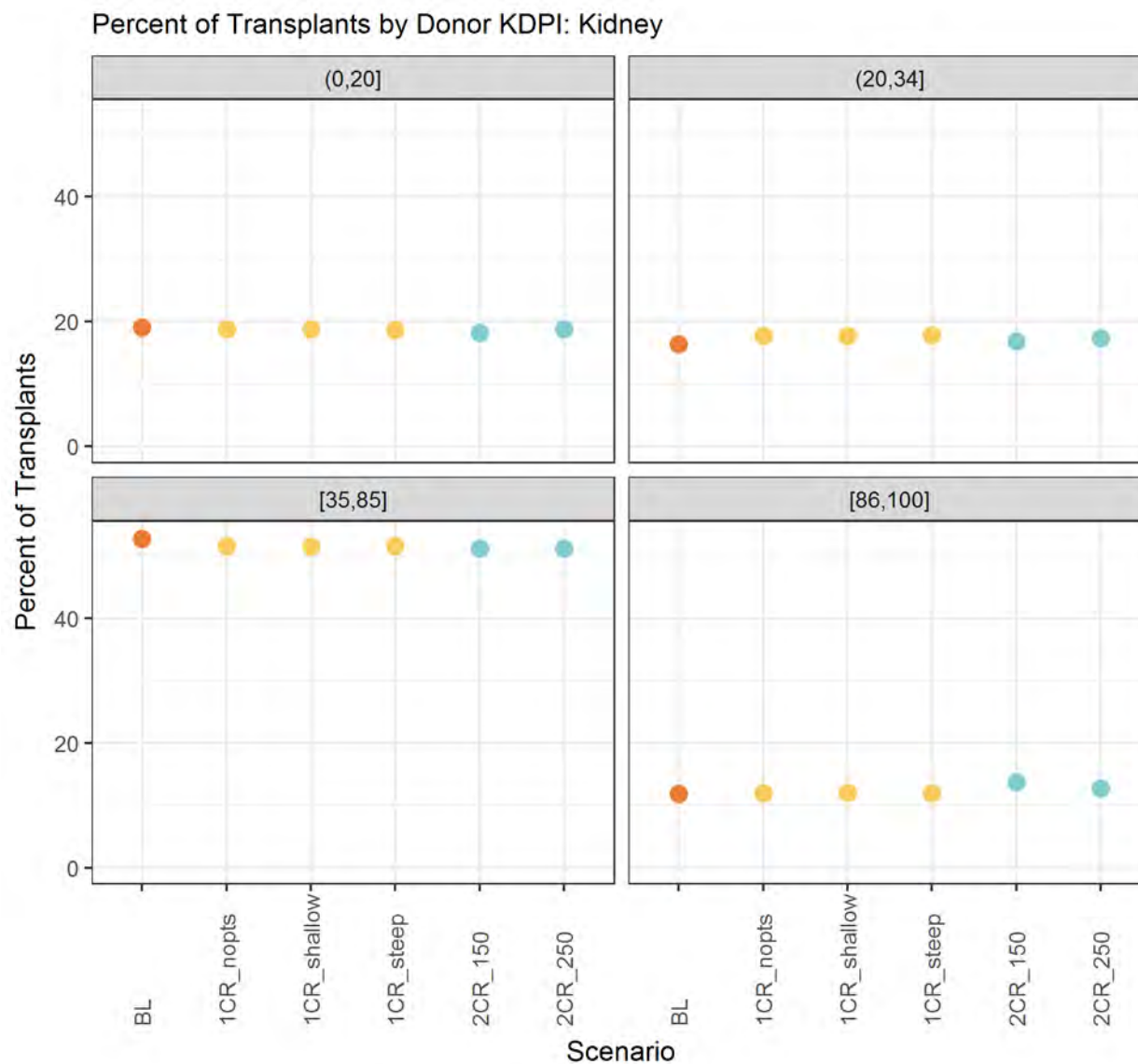


Figure 147 Percent of Transplants by Donor KDPI: Kidney

# Transplant Percentages: DCD Donor

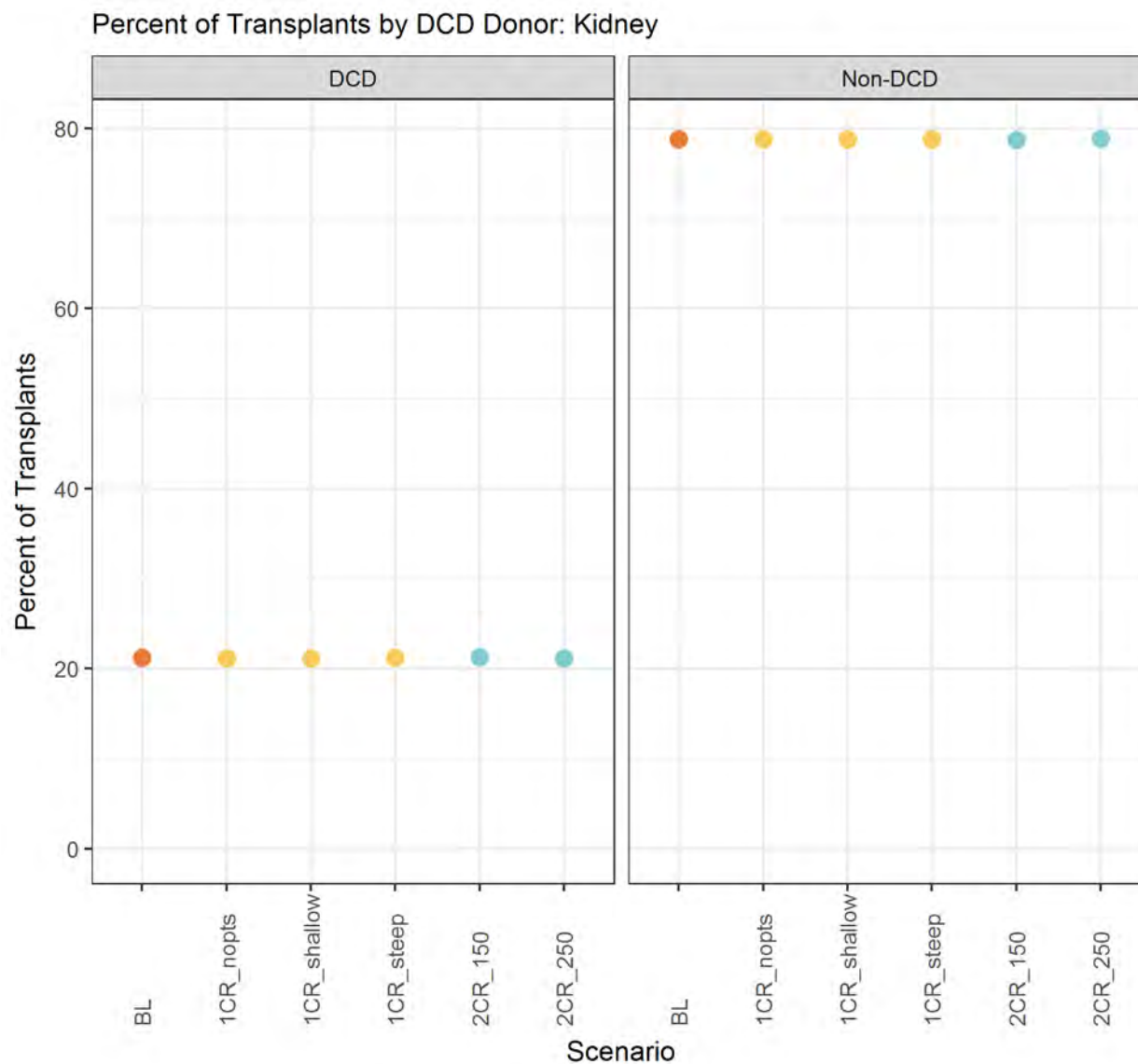


Figure 148 Percent of Transplants by DCD Donor: Kidney



Transplant Percentages: Number of DR mismatches

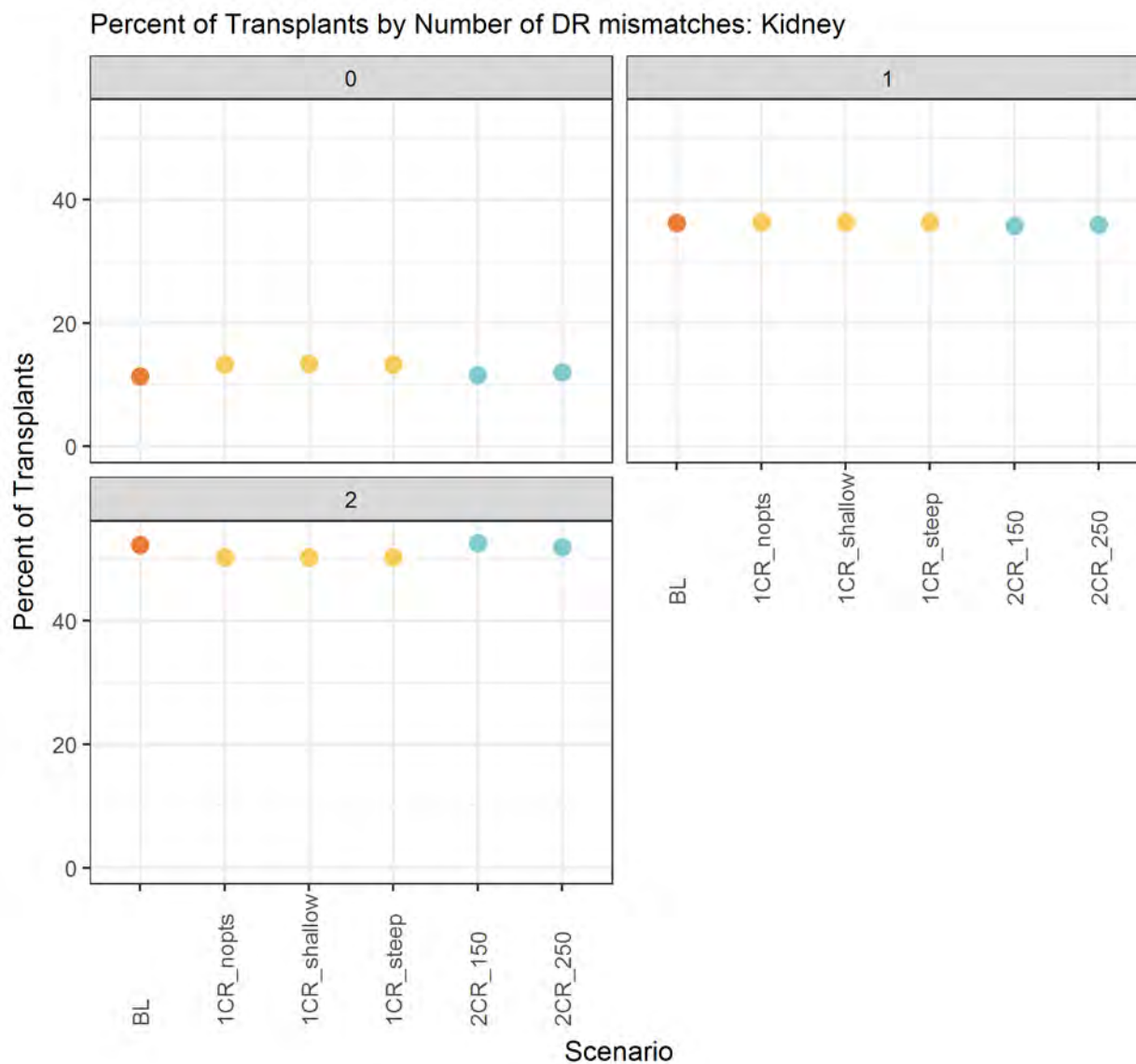


Figure 149 Percent of Transplants by Number of DR mismatches: Kidney

## Waitlist Mortality

### Waitlist Mortality Rates

Waitlist Mortality Rates: Age 0-17

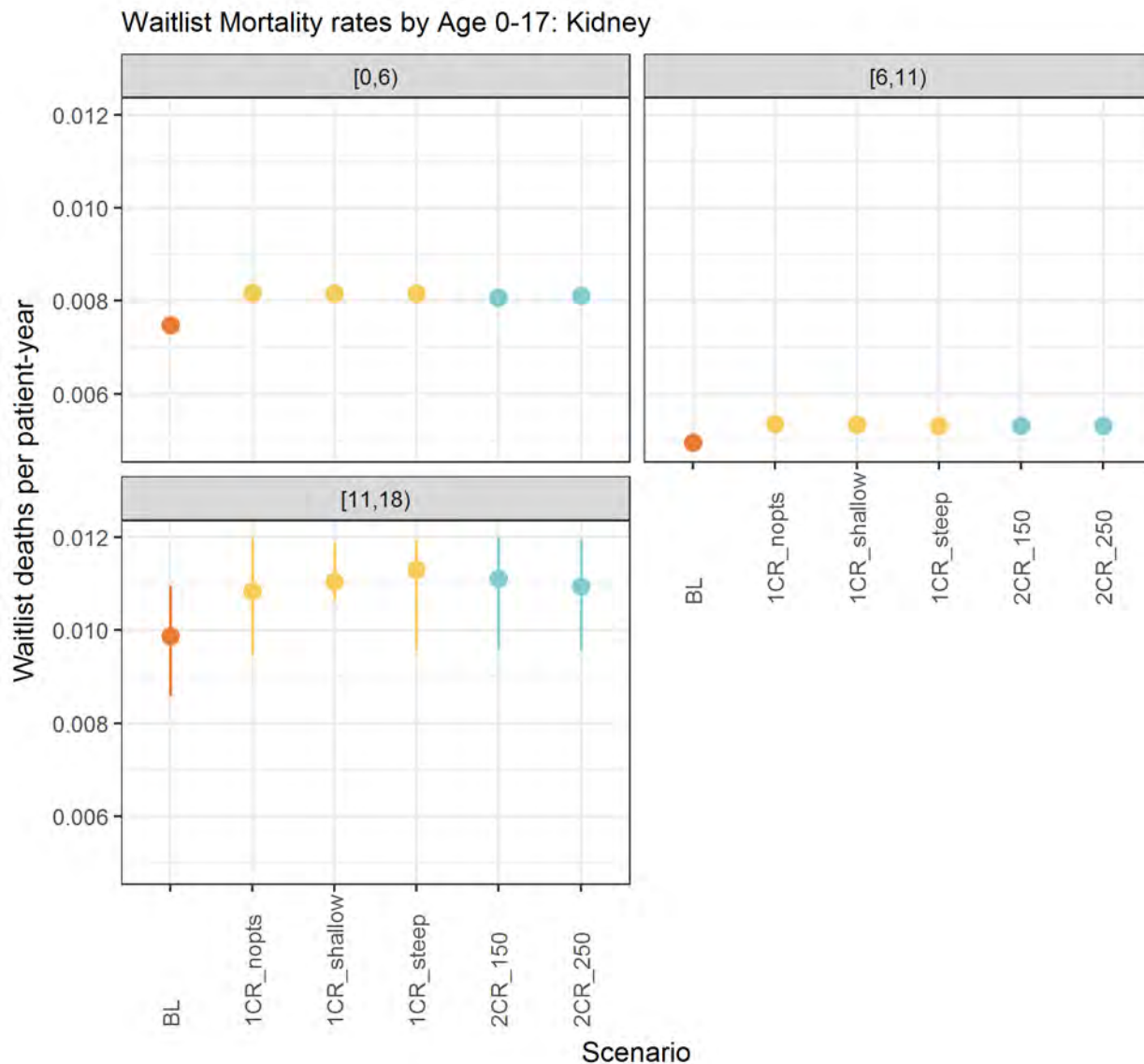


Figure 150 Waitlist Mortality rates by Age 0-17: Kidney

Waitlist Mortality Rates: Age 18+

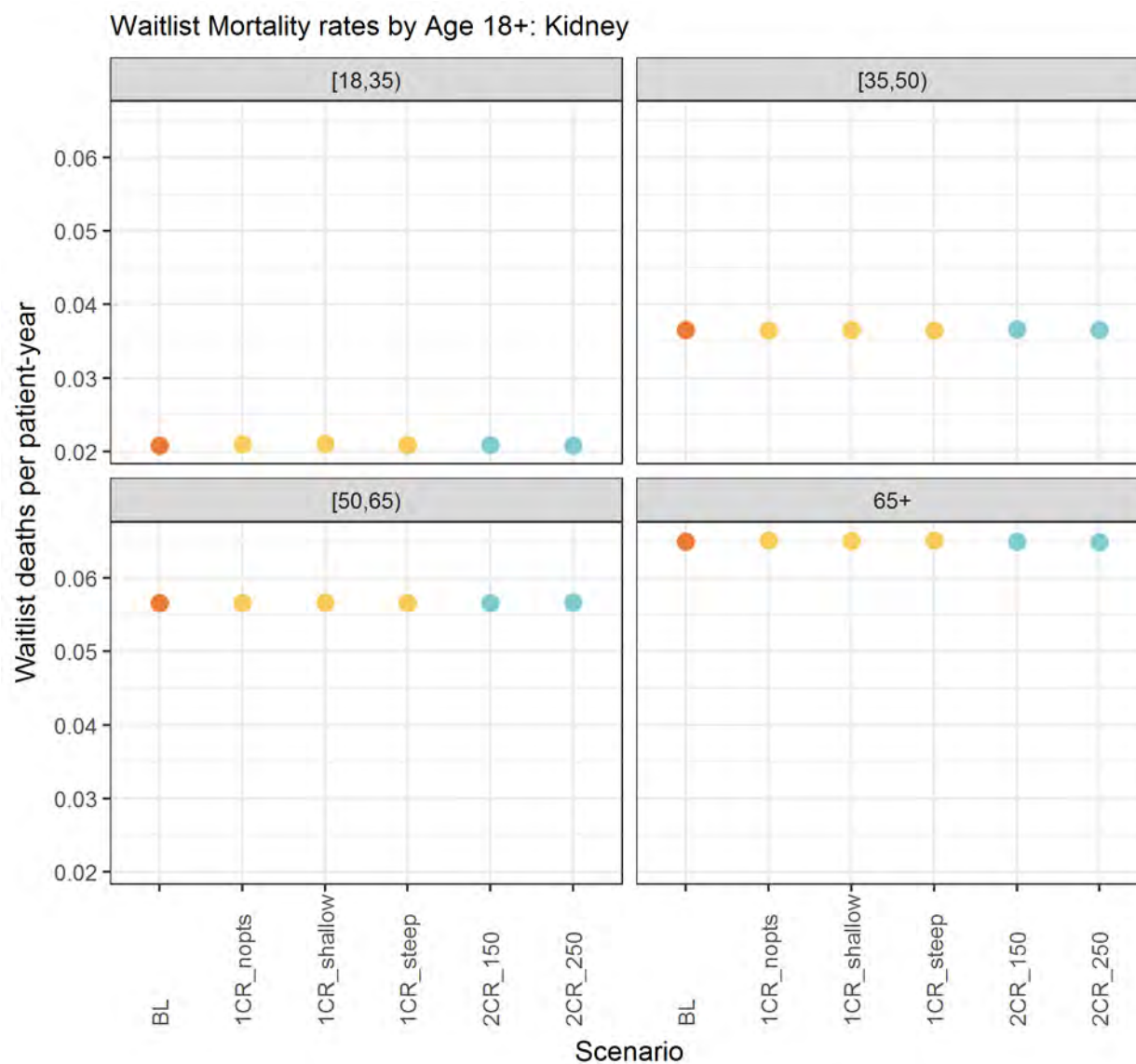


Figure 151 Waitlist Mortality rates by Age 18+: Kidney

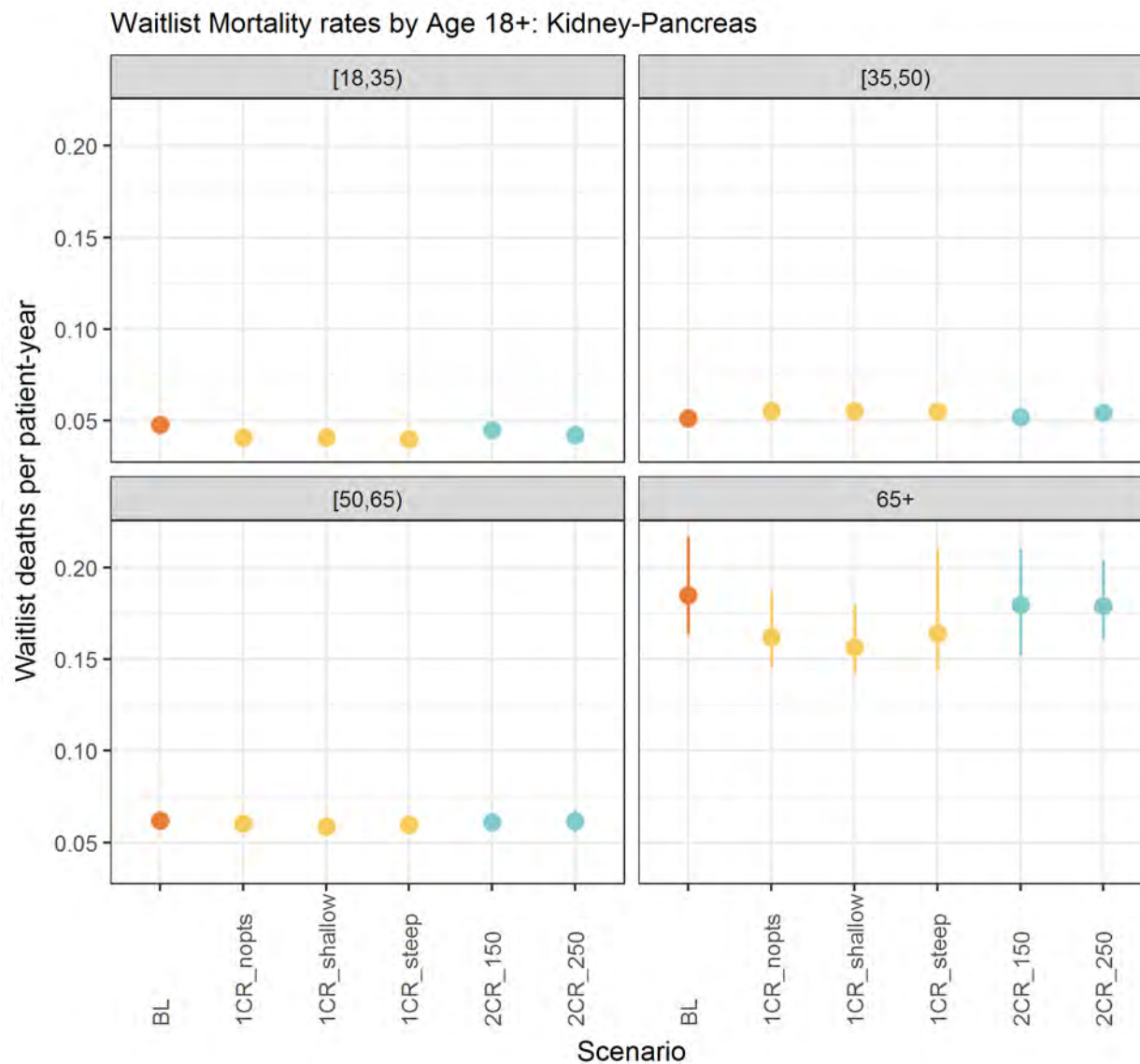


Figure 152 Waitlist Mortality rates by Age 18+: Kidney-Pancreas

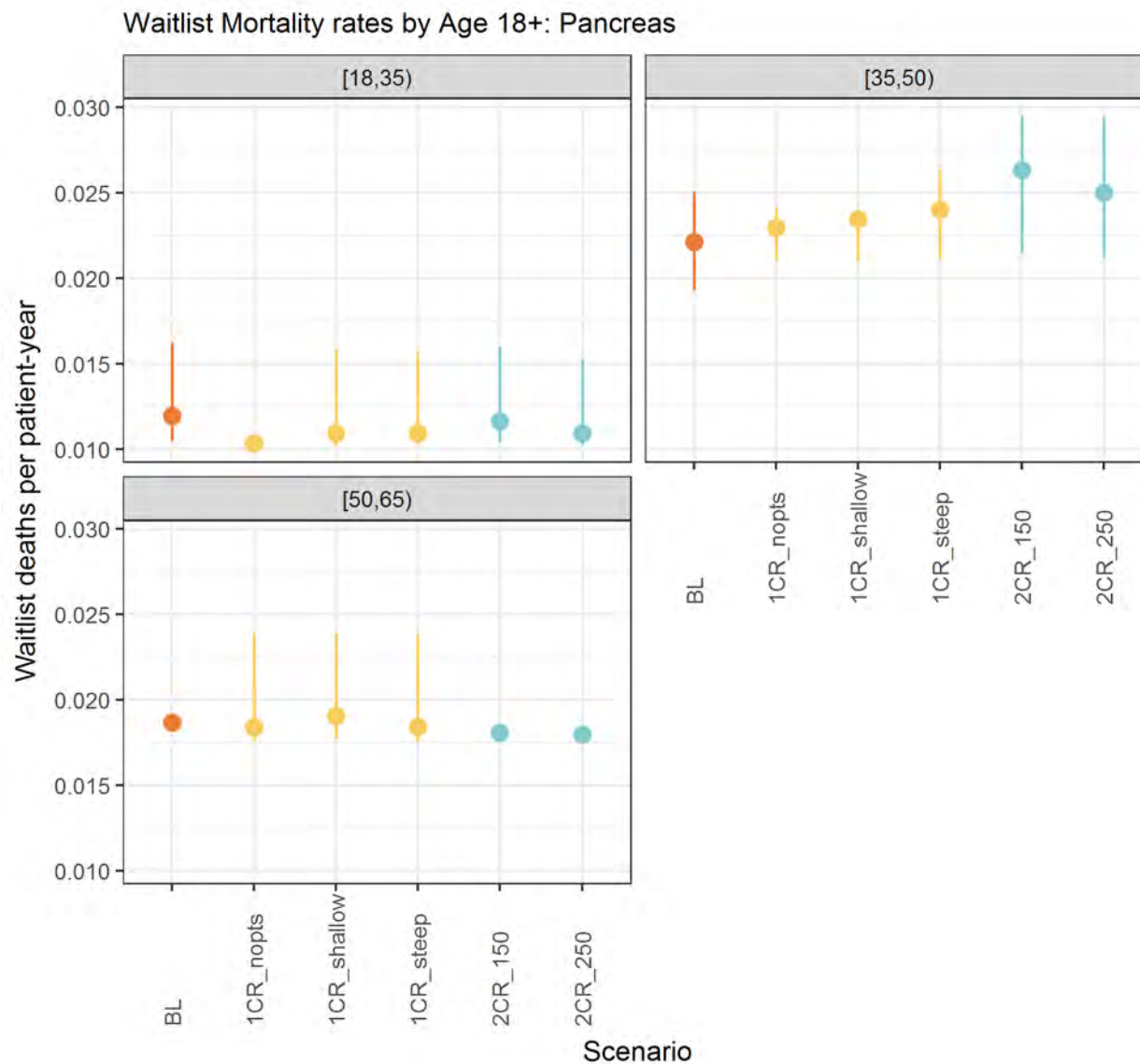


Figure 153 Waitlist Mortality rates by Age 18+: Pancreas

## Waitlist Mortality Rates: Race

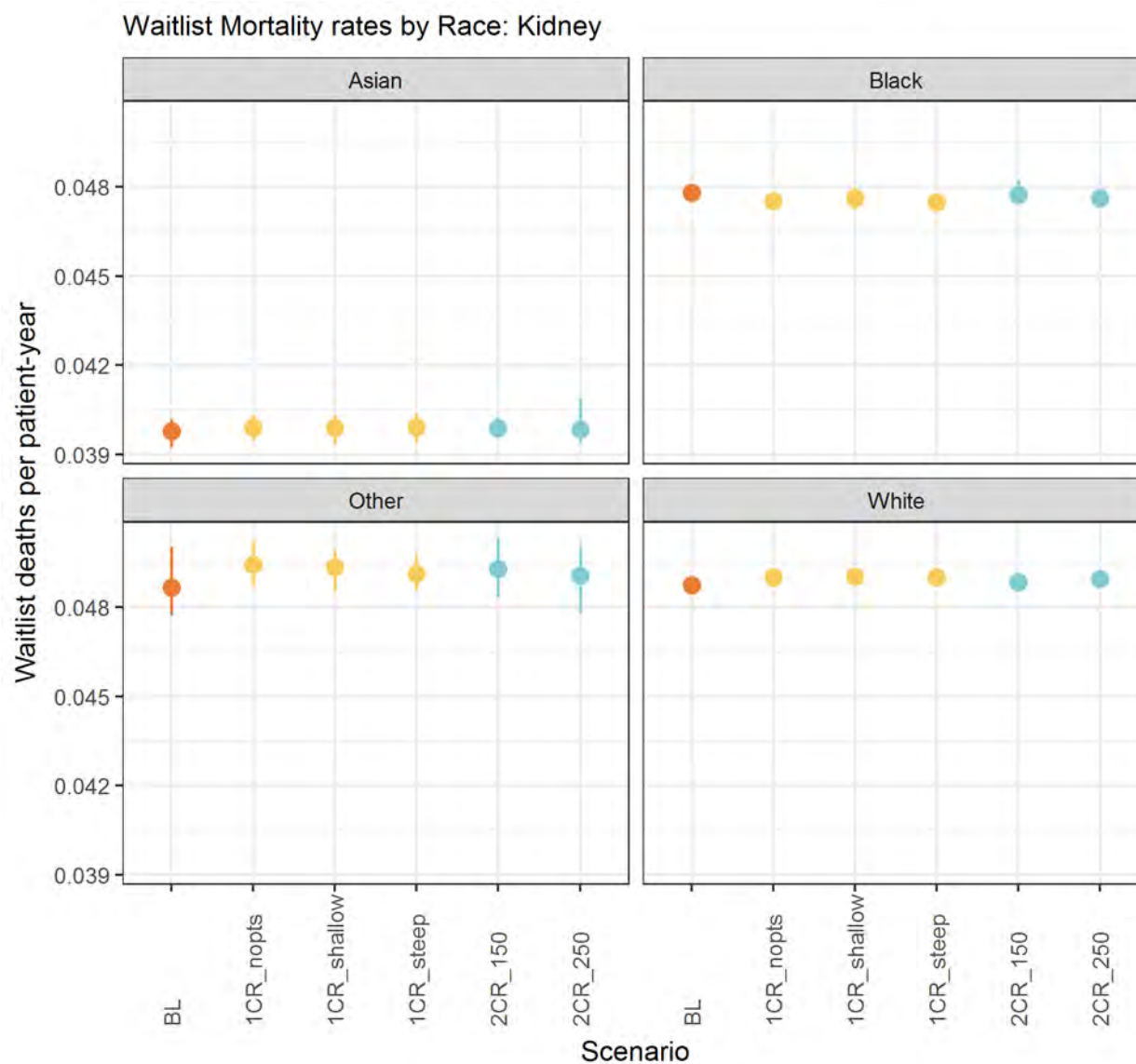


Figure 154 Waitlist Mortality rates by Race: Kidney



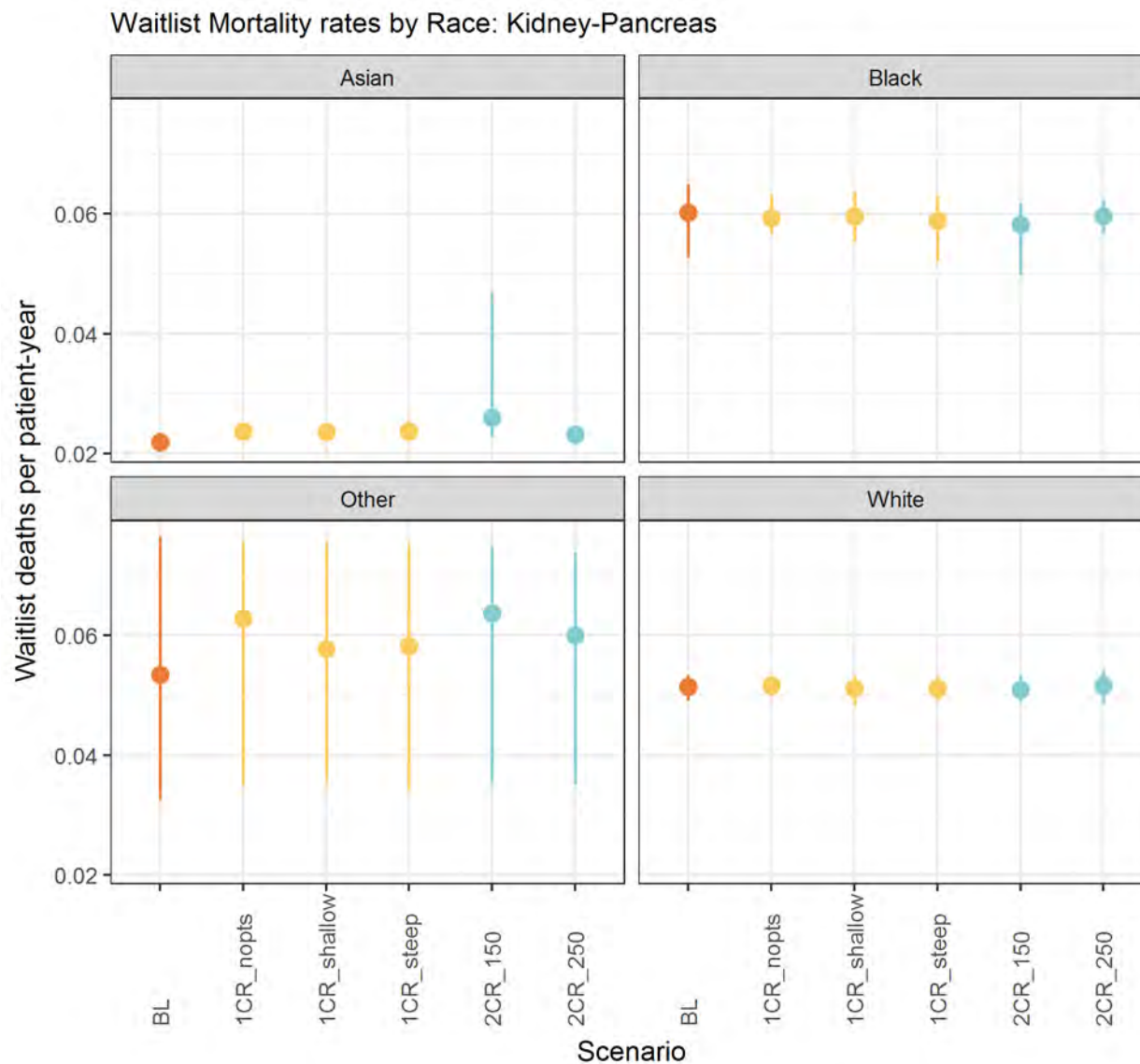


Figure 155 Waitlist Mortality rates by Race: Kidney-Pancreas

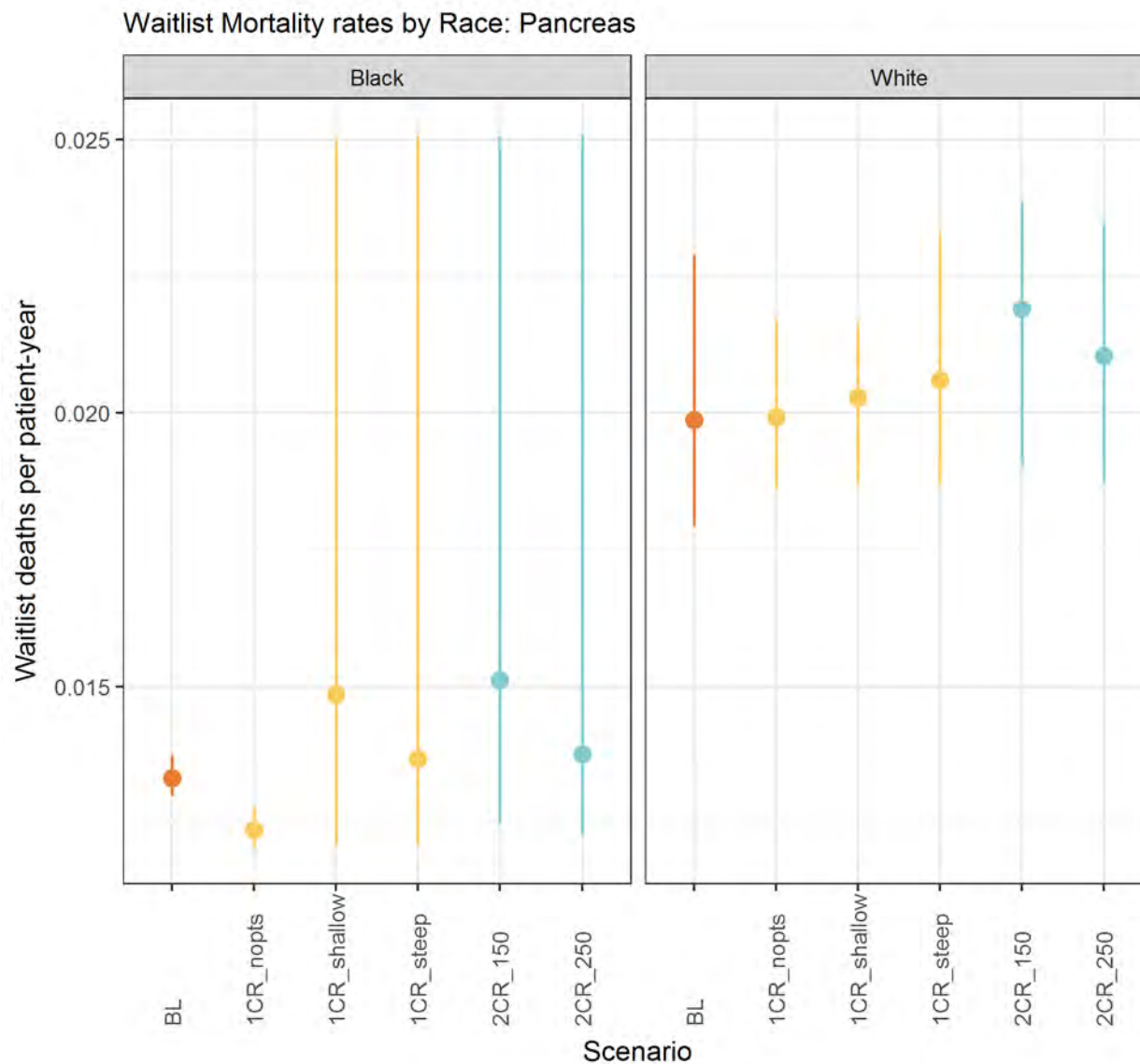


Figure 156 Waitlist Mortality rates by Race: Pancreas

## Waitlist Mortality Rates: Ethnicity

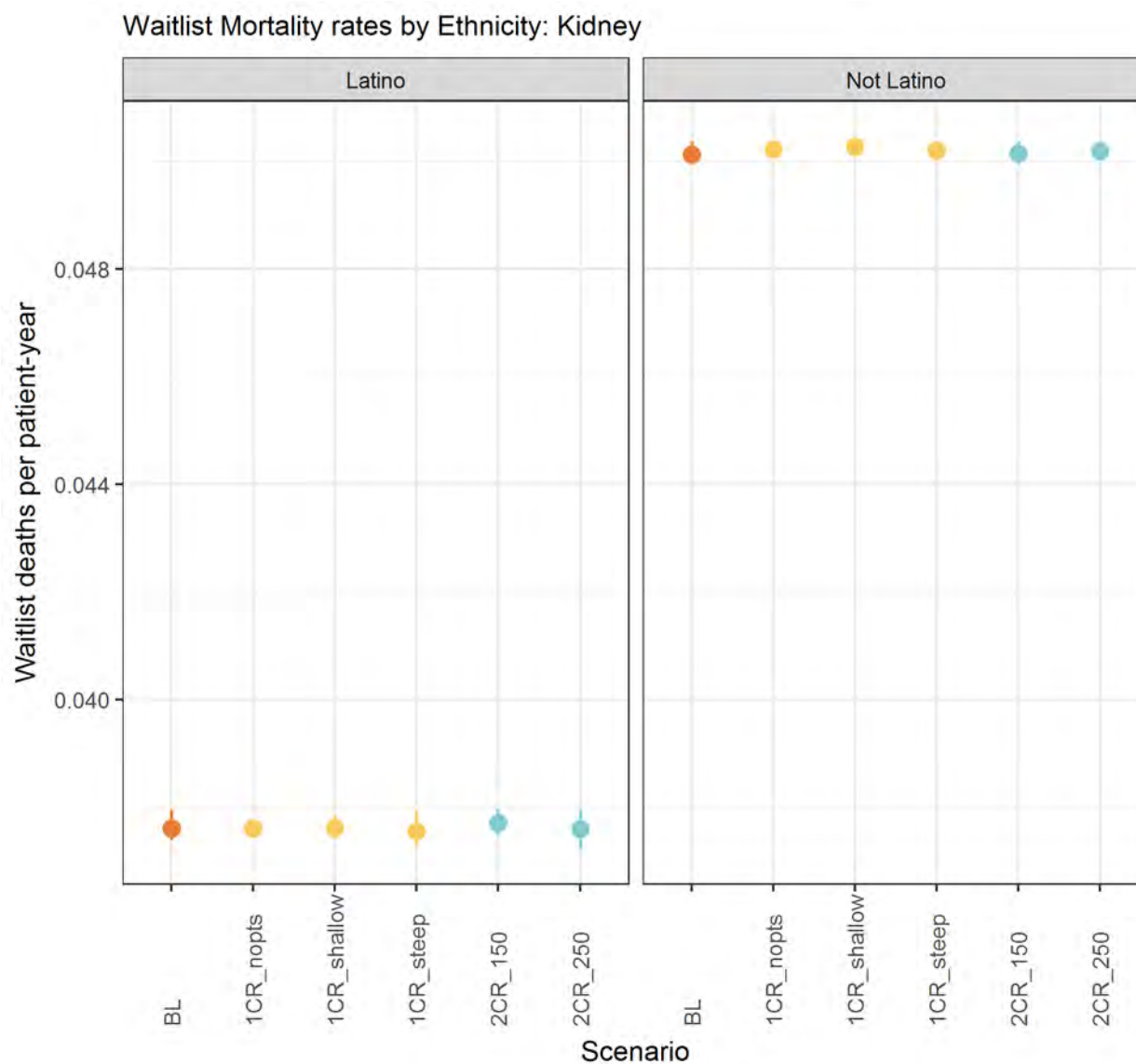


Figure 157 Waitlist Mortality rates by Ethnicity: Kidney

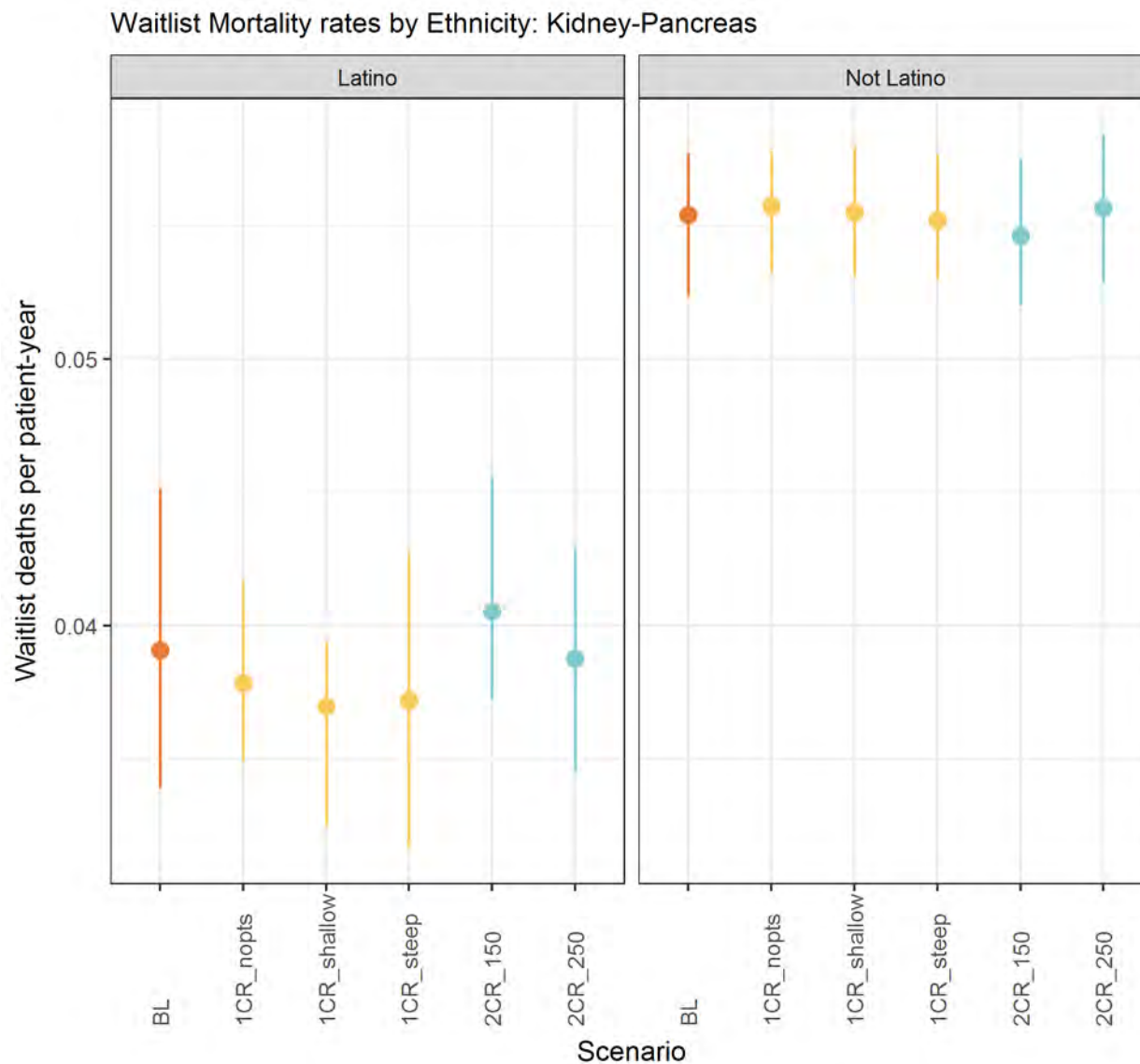


Figure 158 Waitlist Mortality rates by Ethnicity: Kidney-Pancreas

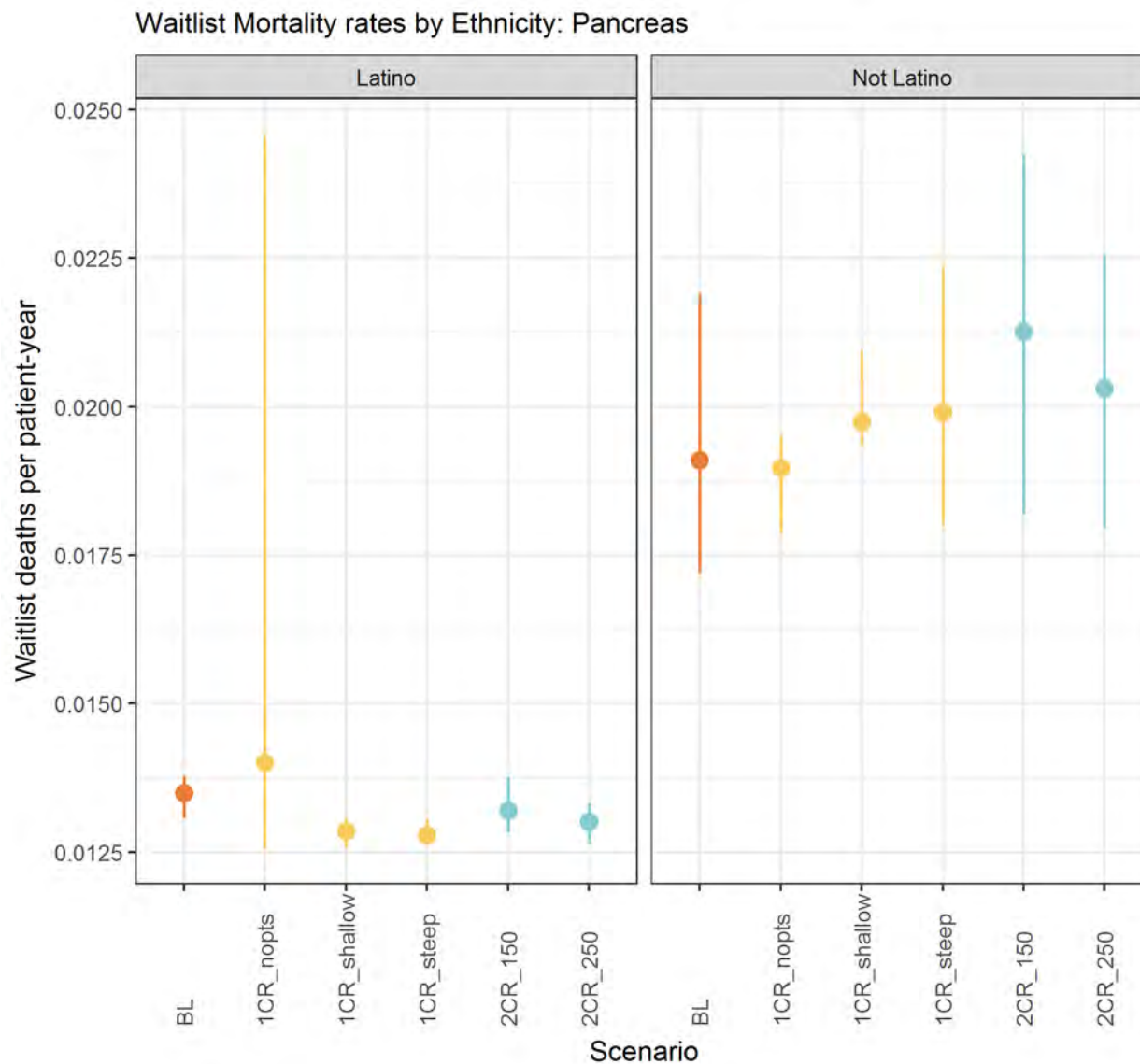


Figure 159 Waitlist Mortality rates by Ethnicity: Pancreas

## Waitlist Mortality Rates: Sex

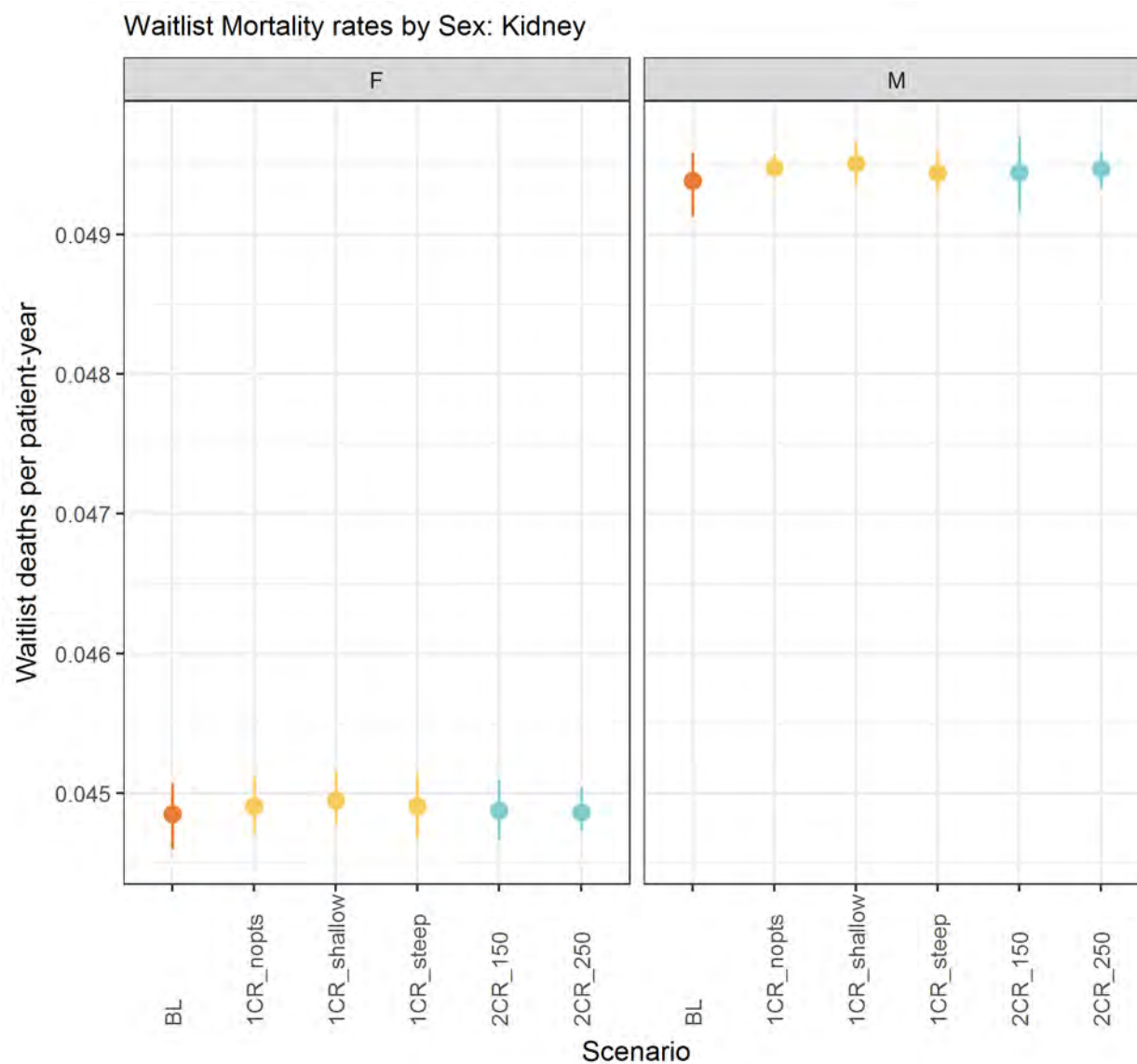


Figure 160 Waitlist Mortality rates by Sex: Kidney



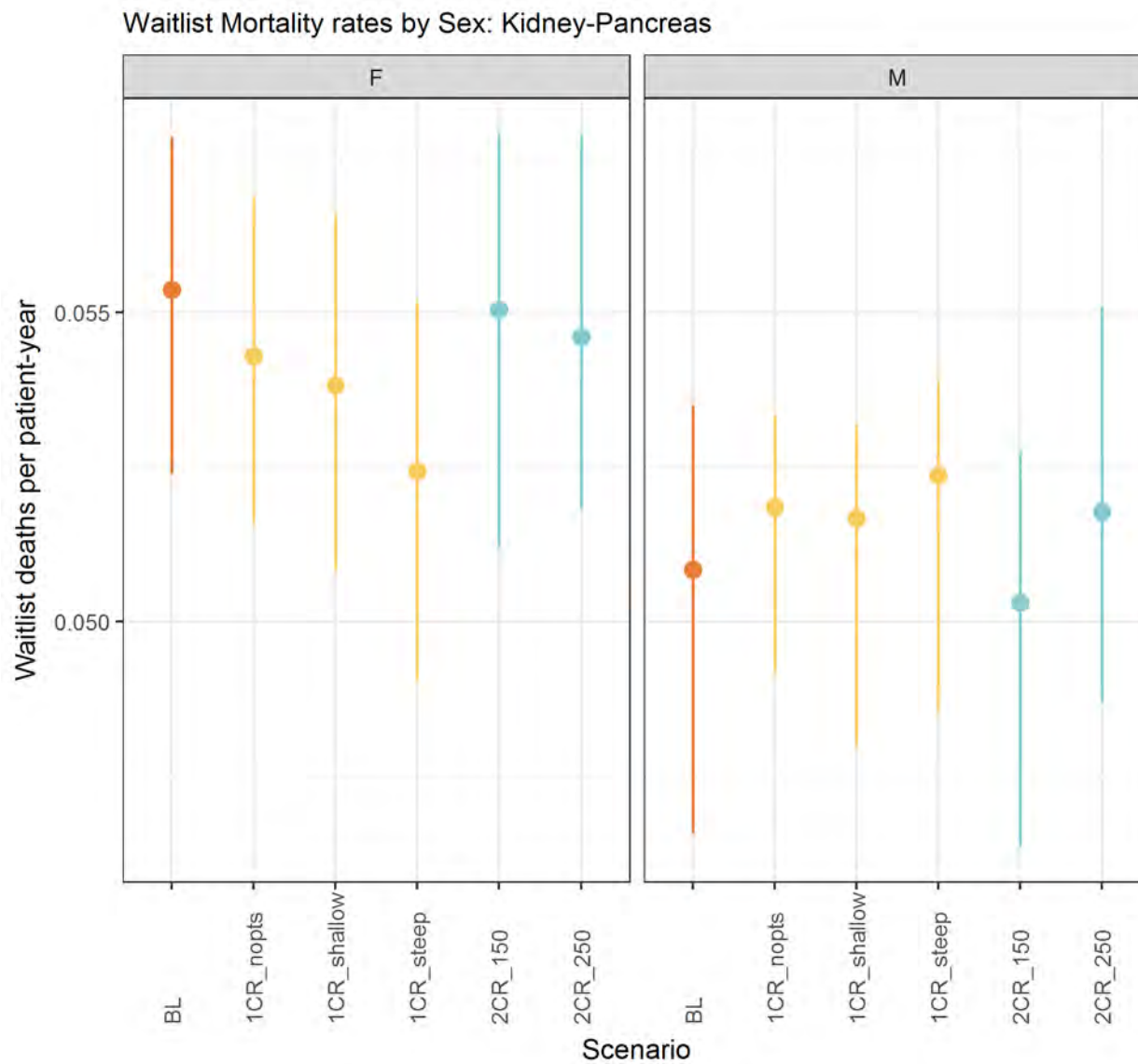


Figure 161 Waitlist Mortality rates by Sex: Kidney-Pancreas

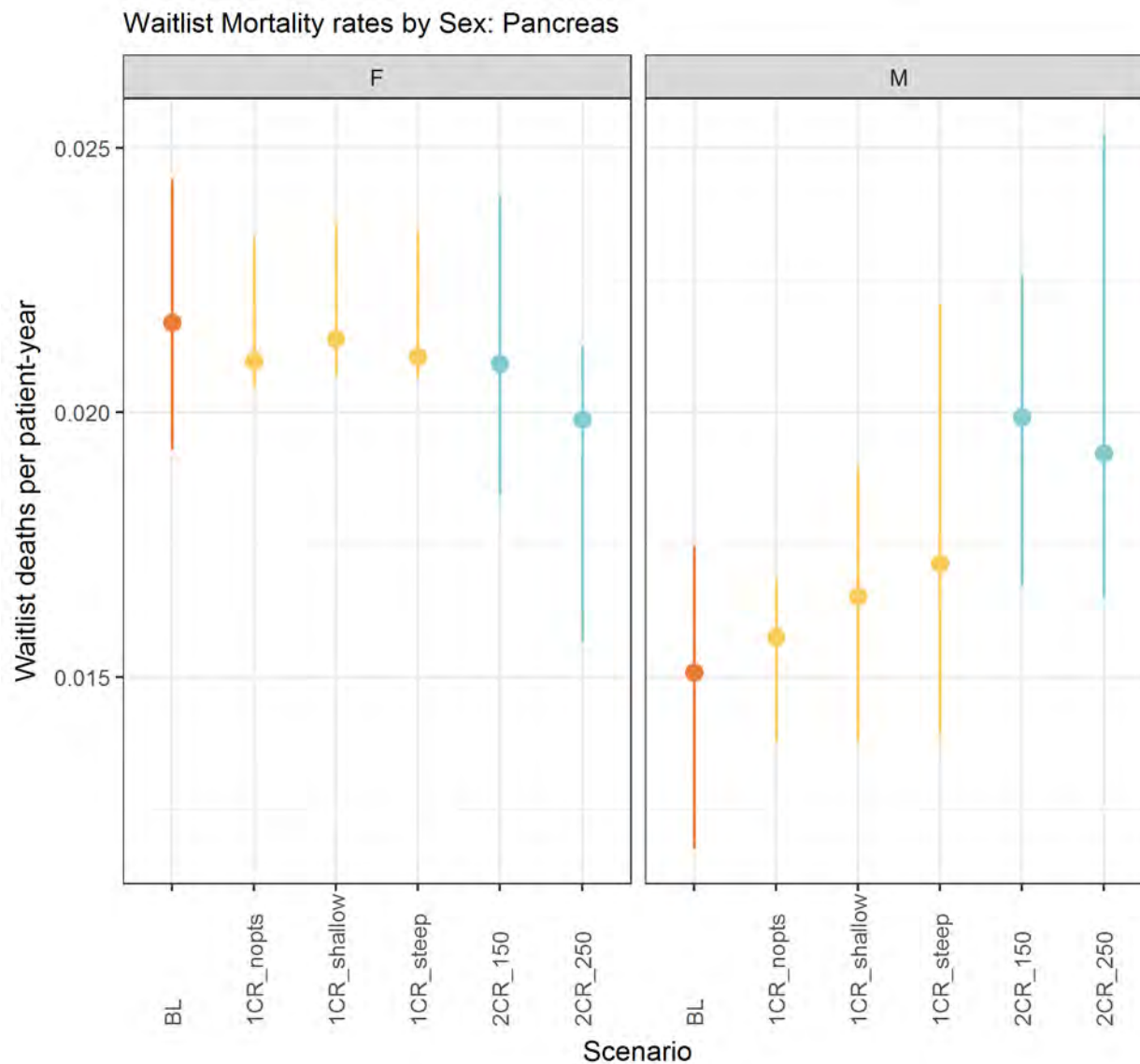


Figure 162 Waitlist Mortality rates by Sex: Pancreas

## Waitlist Mortality Rates: ABO Group

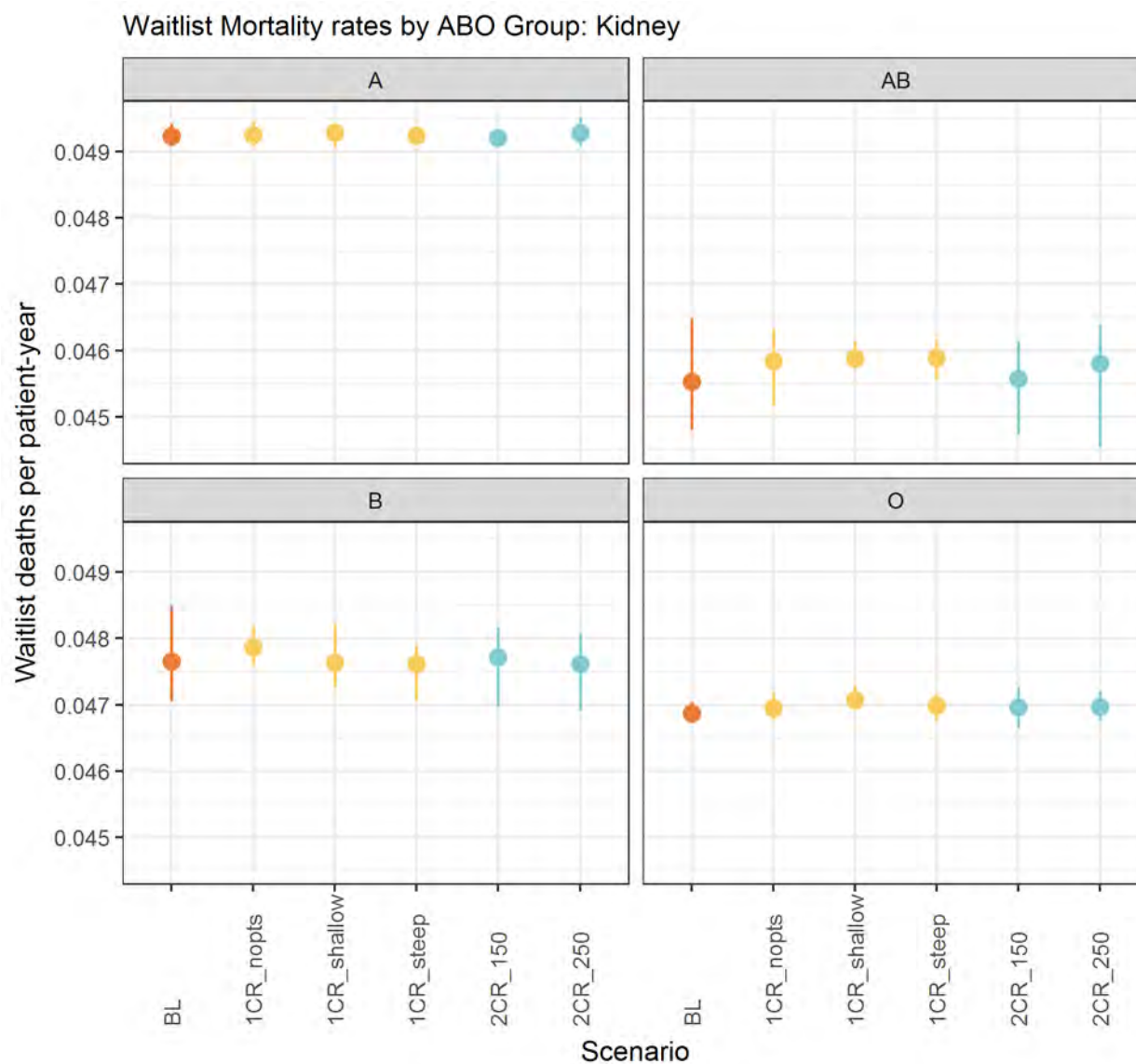


Figure 163 Waitlist Mortality rates by ABO Group: Kidney

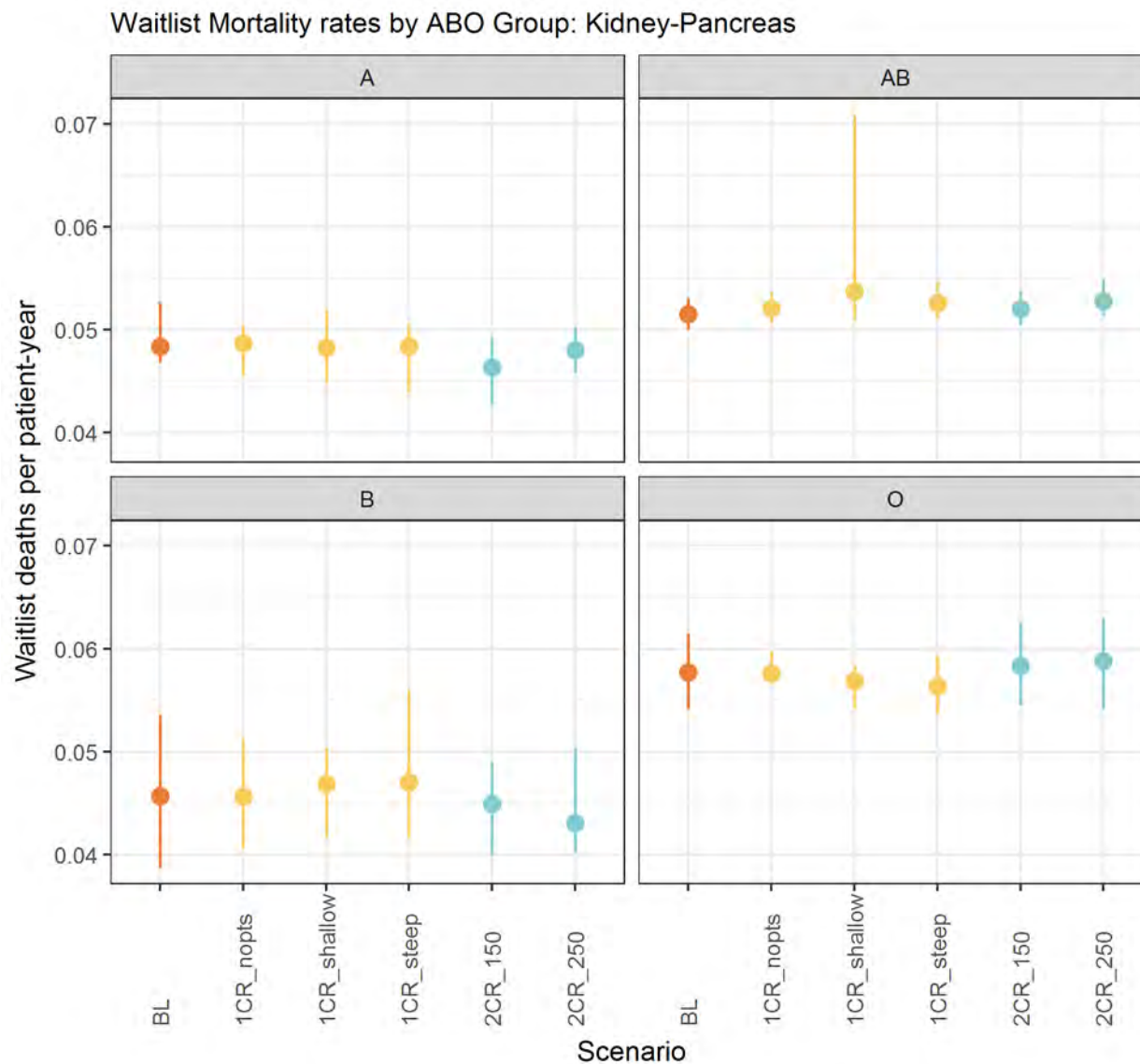


Figure 164 Waitlist Mortality rates by ABO Group: Kidney-Pancreas

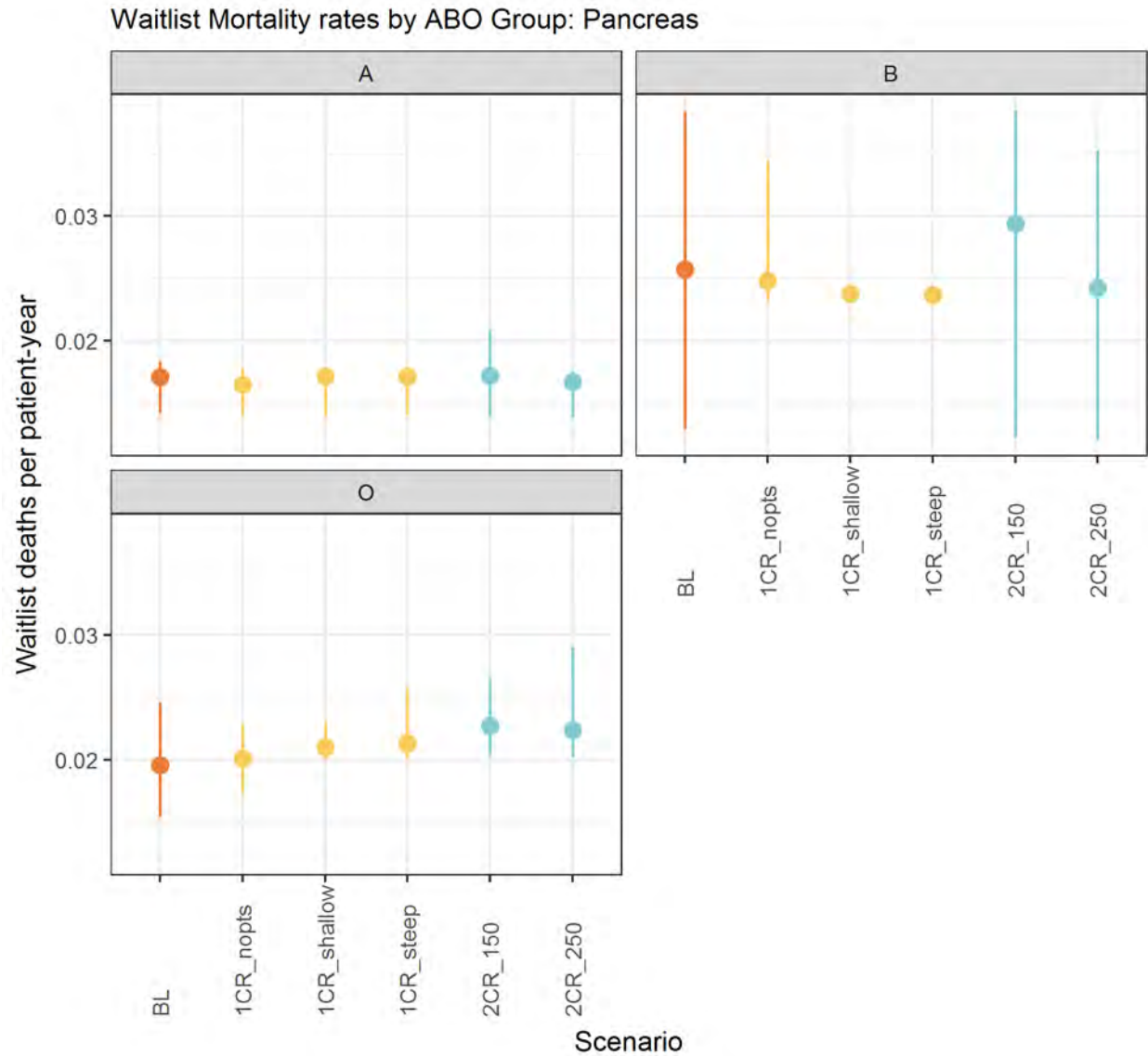


Figure 165 Waitlist Mortality rates by ABO Group: Pancreas

## Waitlist Mortality Rates: Diagnosis

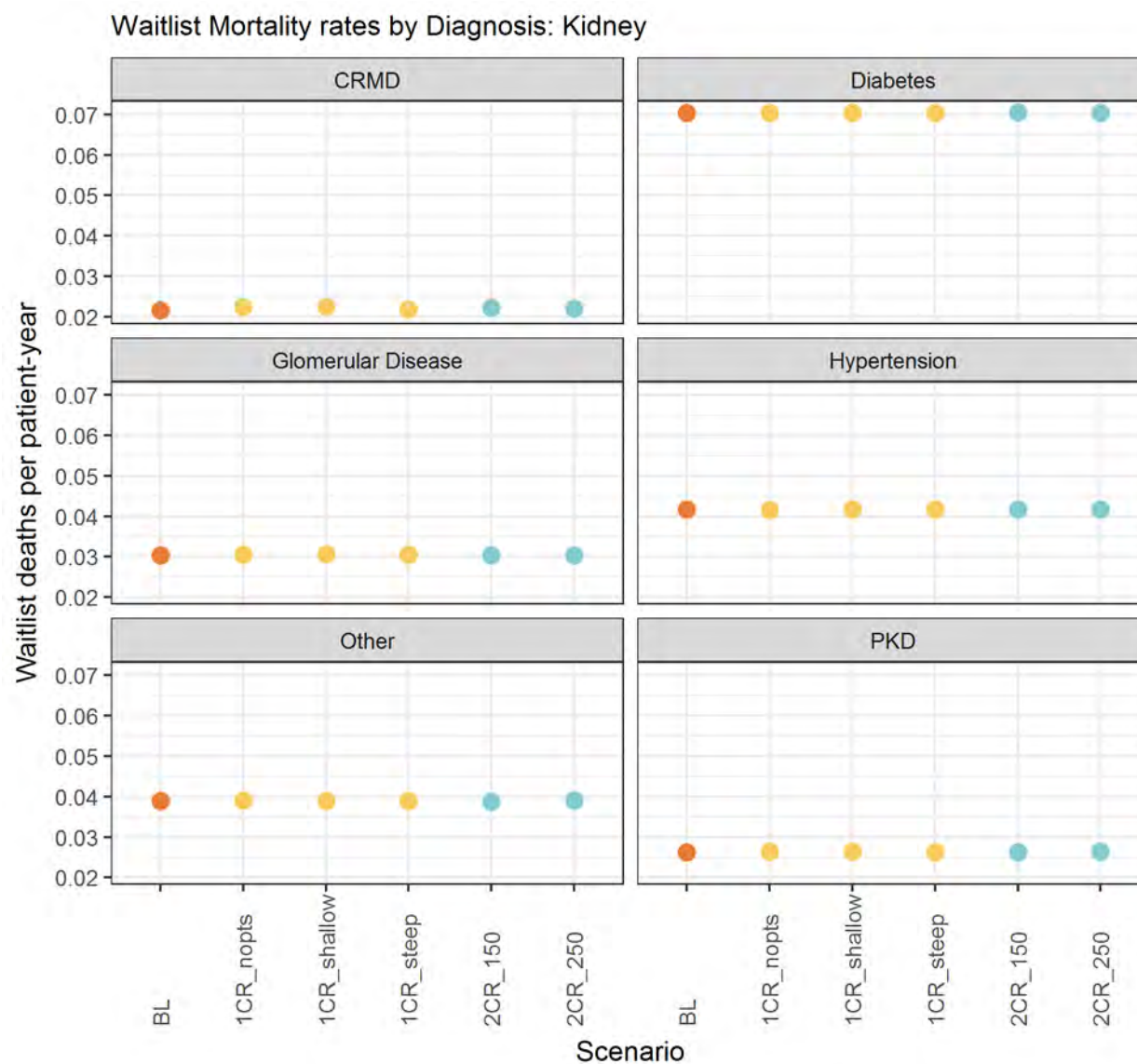


Figure 166 Waitlist Mortality rates by Diagnosis: Kidney



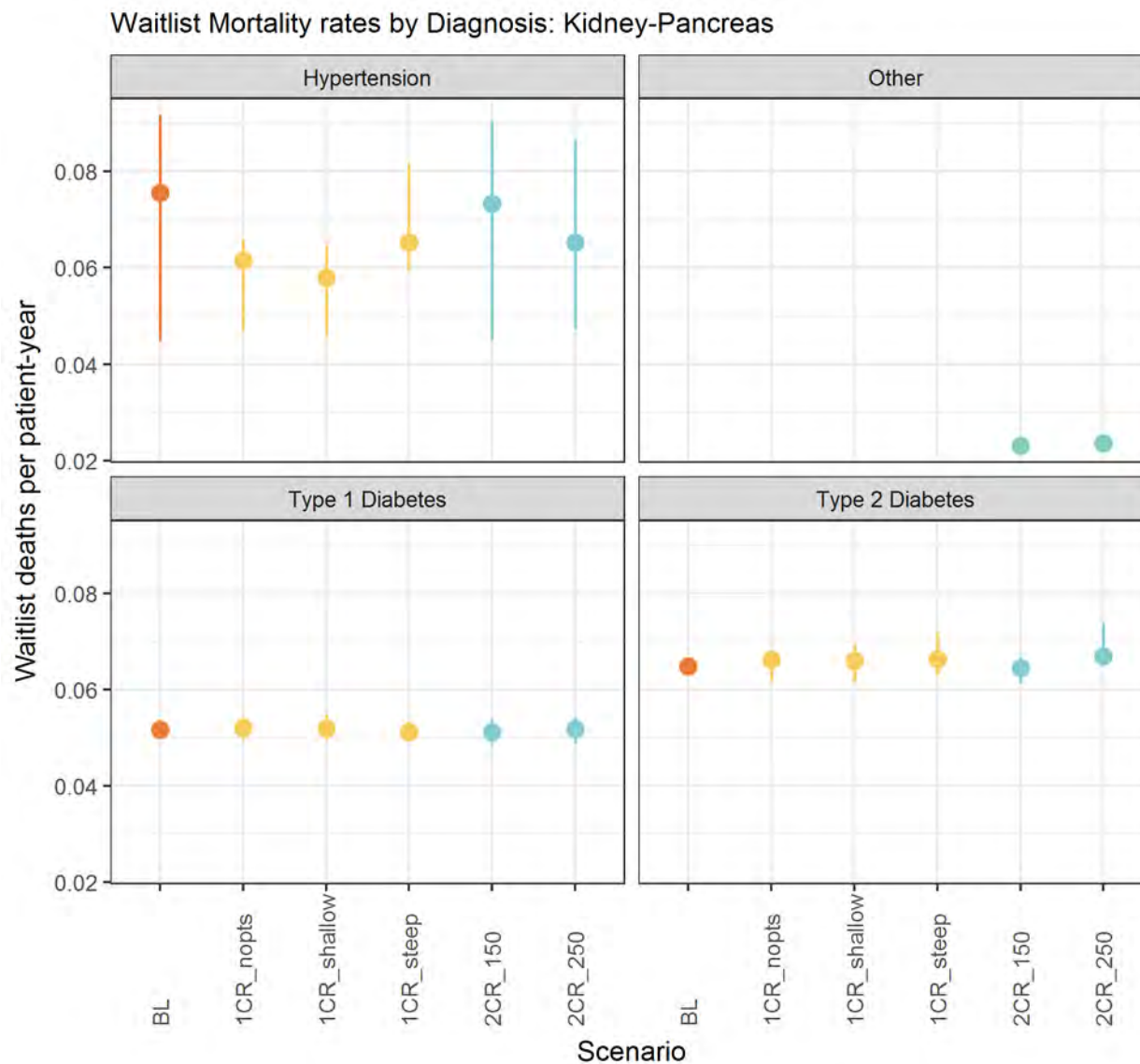


Figure 167 Waitlist Mortality rates by Diagnosis: Kidney-Pancreas

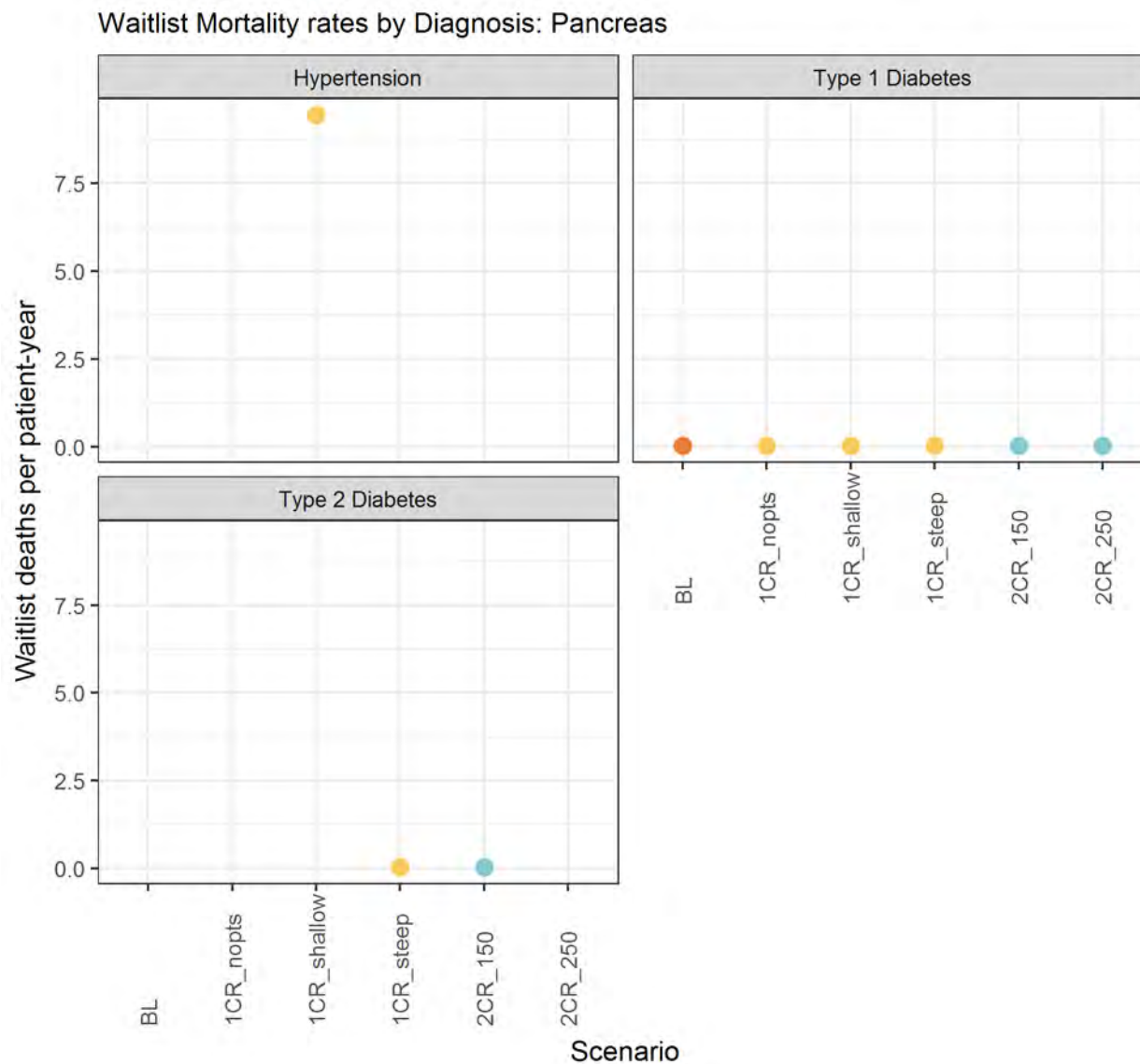


Figure 168 Waitlist Mortality rates by Diagnosis: Pancreas

## Waitlist Mortality Rates: Dialysis Time



Figure 169 Waitlist Mortality rates by Dialysis Time: Kidney

Waitlist Mortality Rates: cPRA: 0 - 60

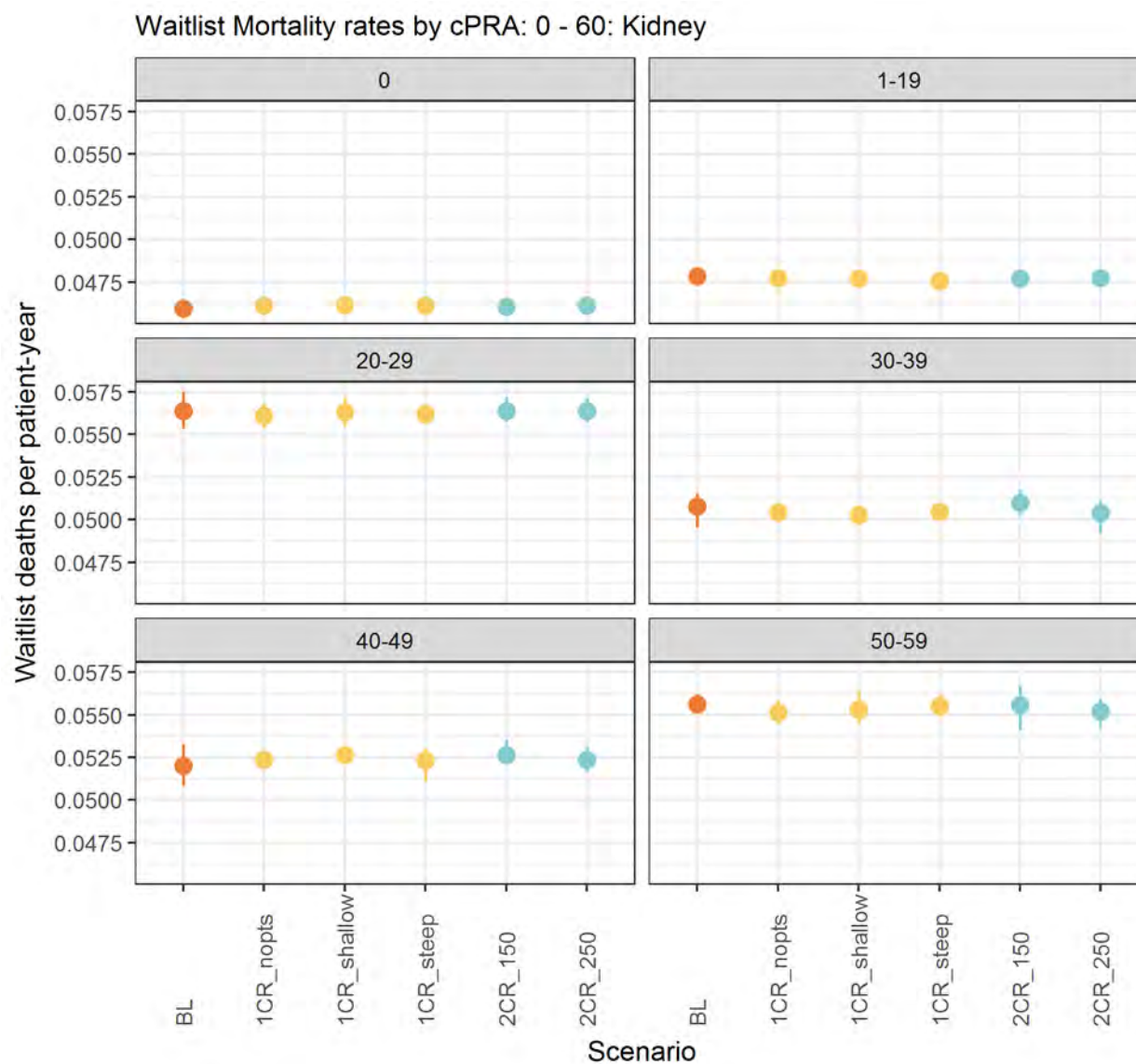


Figure 170 Waitlist Mortality rates by cPRA: 0 - 60: Kidney

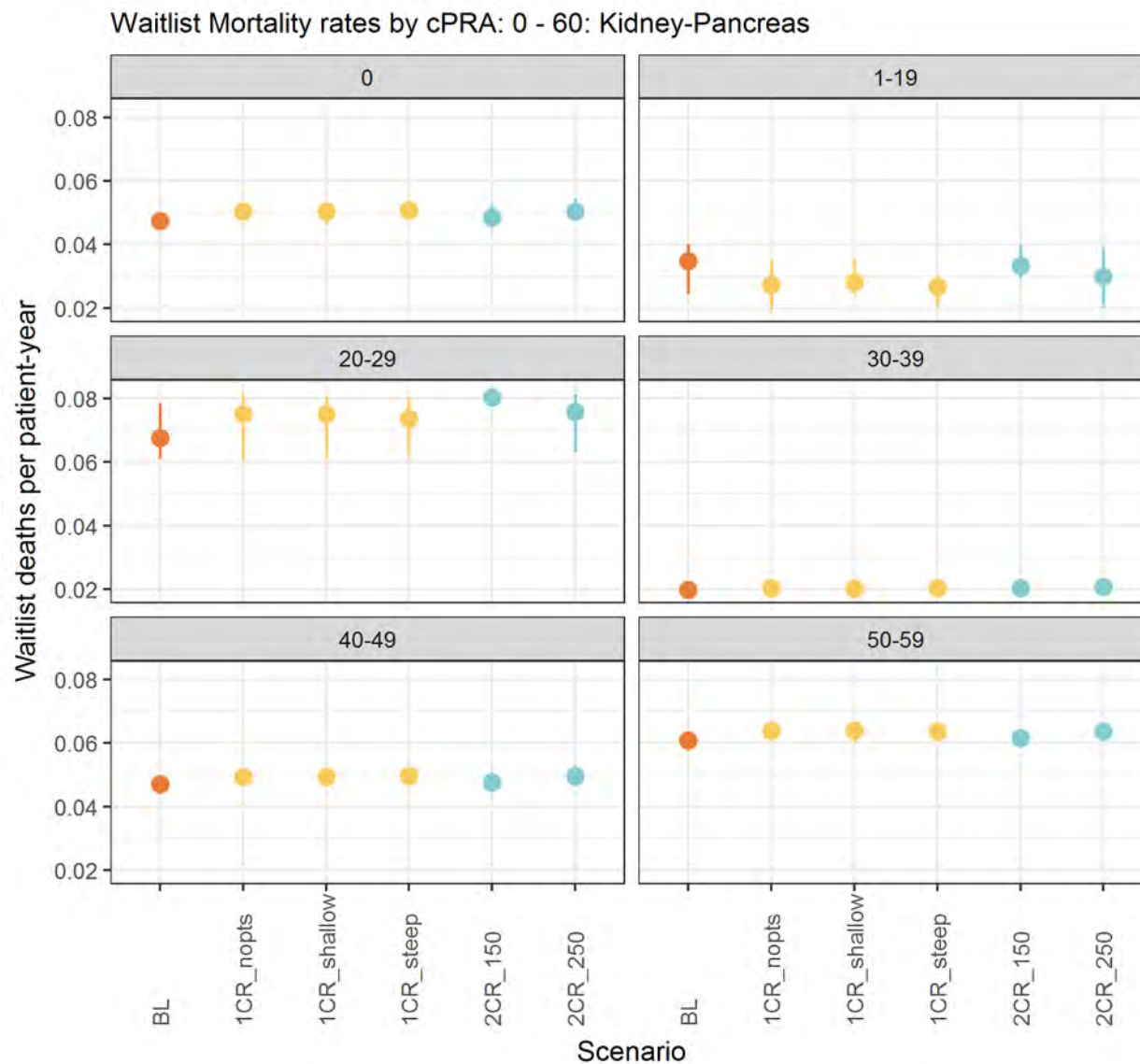


Figure 171 Waitlist Mortality rates by cPRA: 0 - 60: Kidney-Pancreas

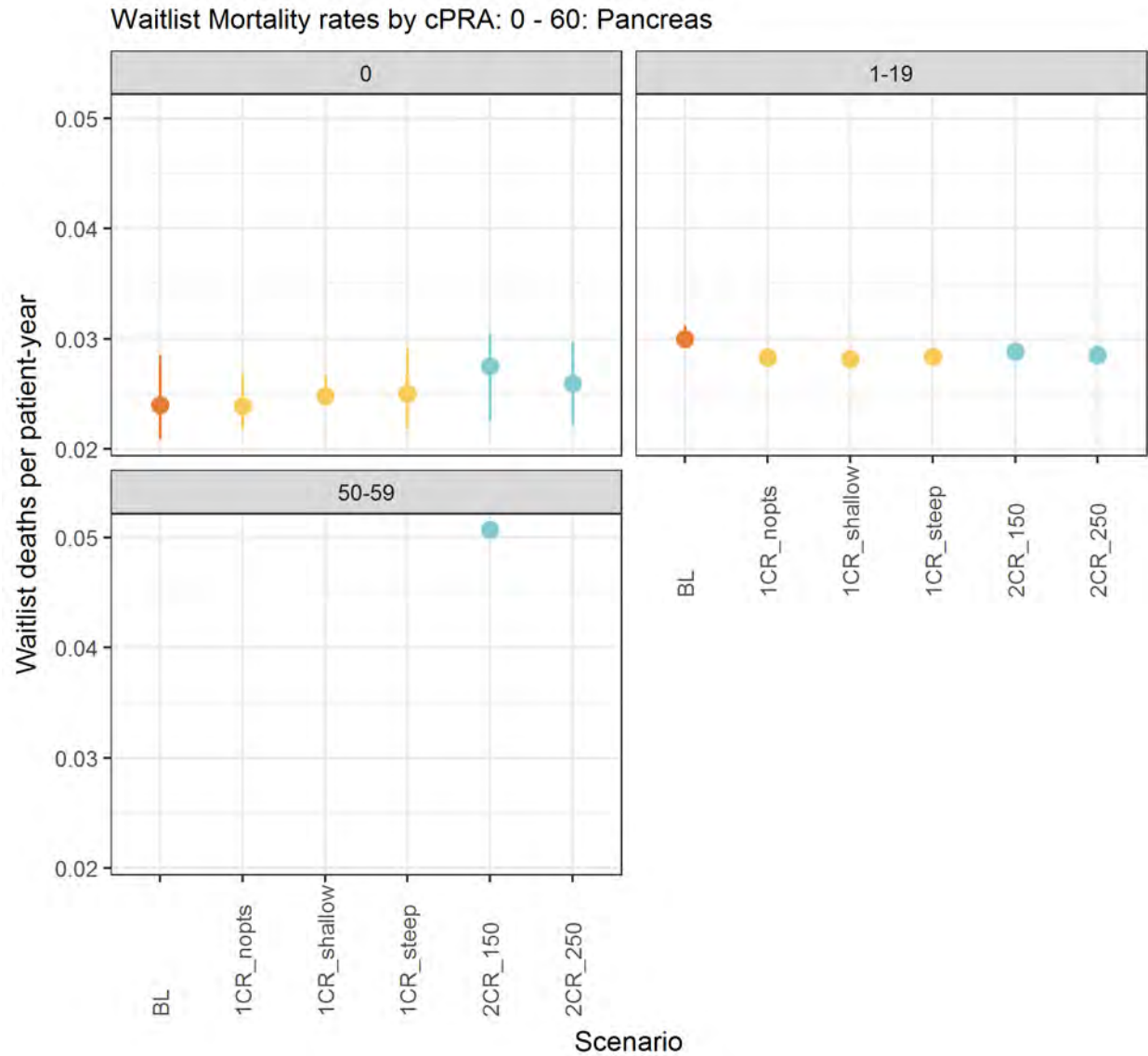


Figure 172 Waitlist Mortality rates by cPRA: 0 - 60: Pancreas



Waitlist Mortality Rates: cPRA: 61 - 94

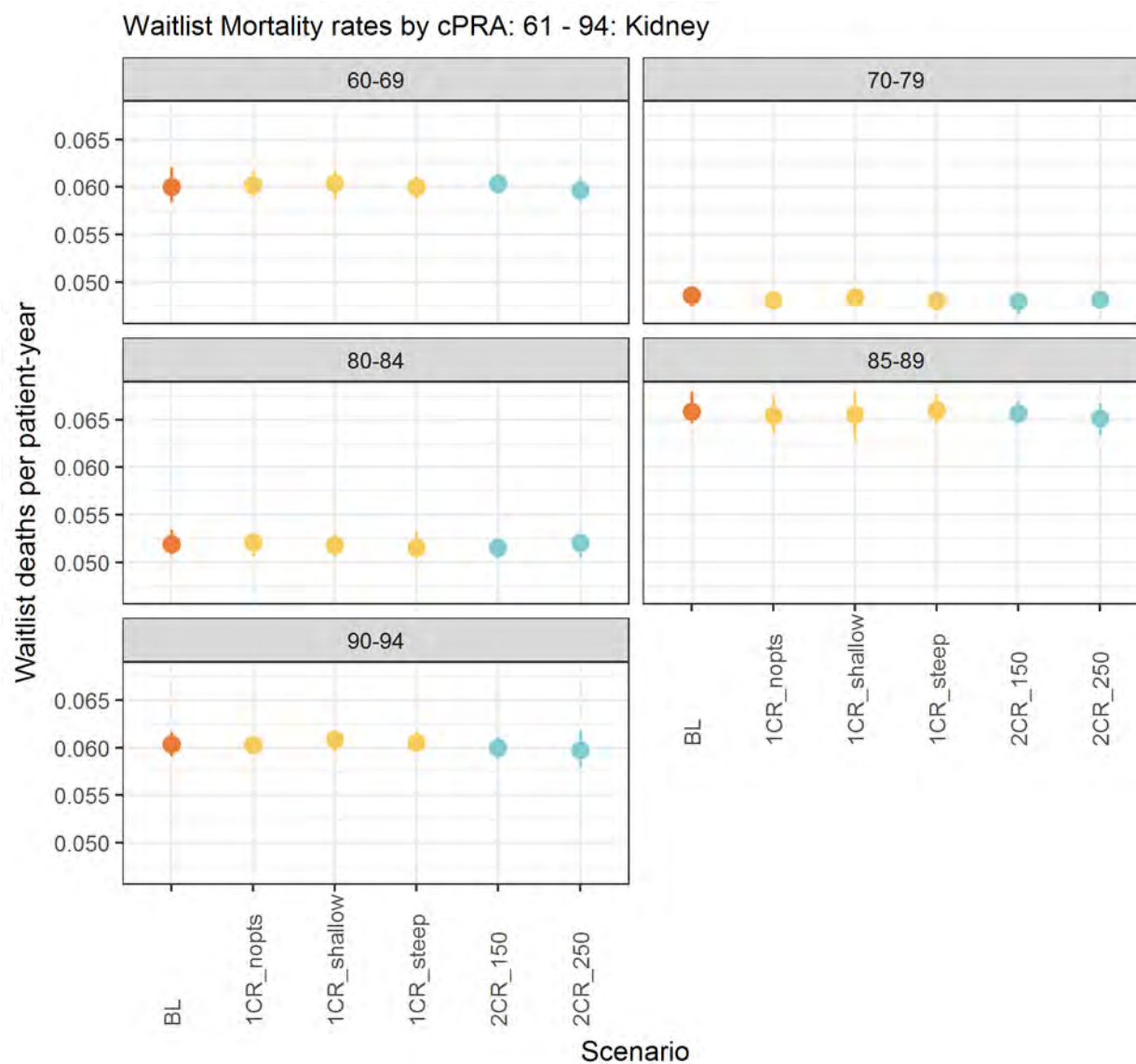


Figure 173 Waitlist Mortality rates by cPRA: 61 - 94: Kidney

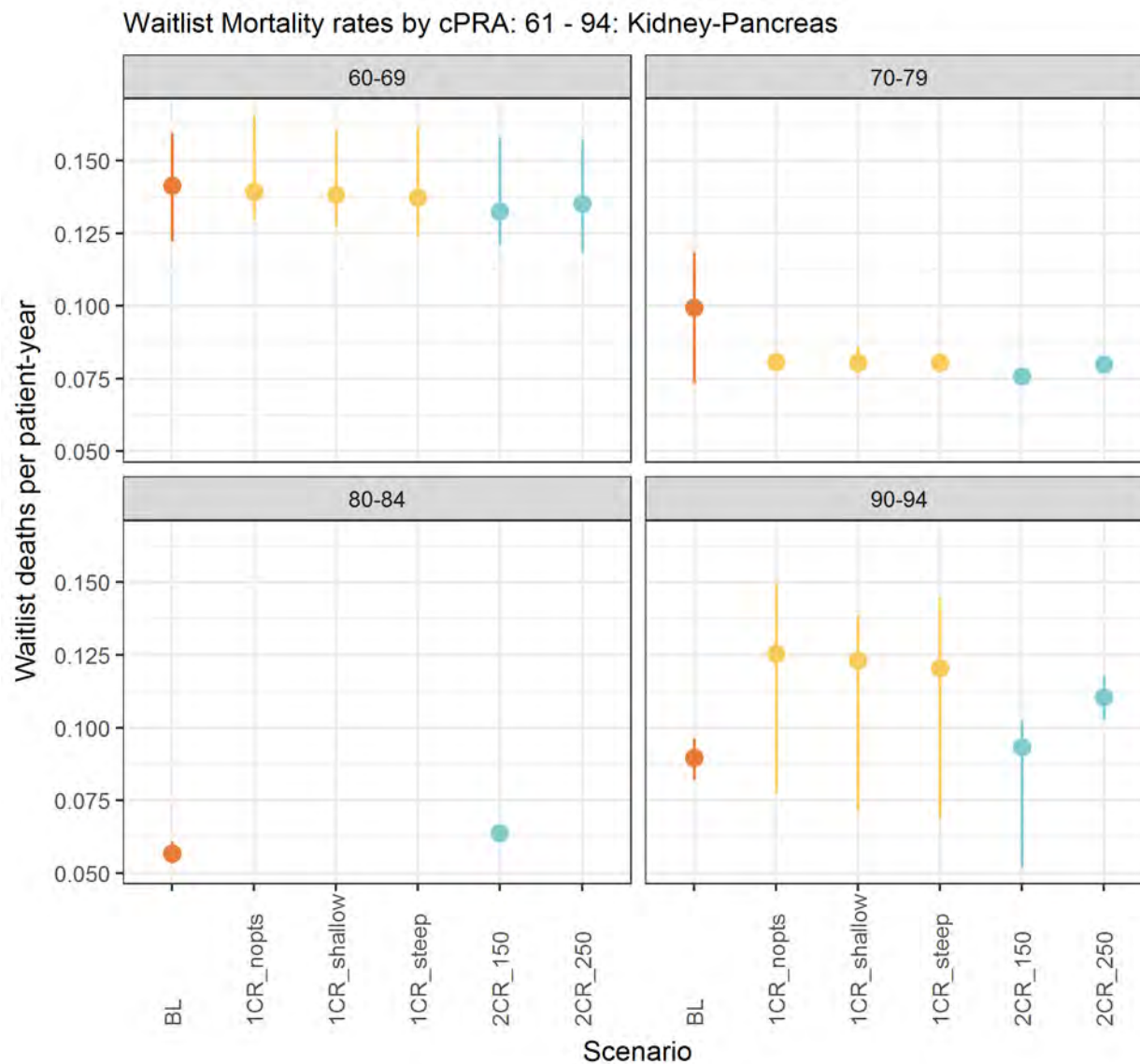


Figure 174 Waitlist Mortality rates by cPRA: 61 - 94: Kidney-Pancreas

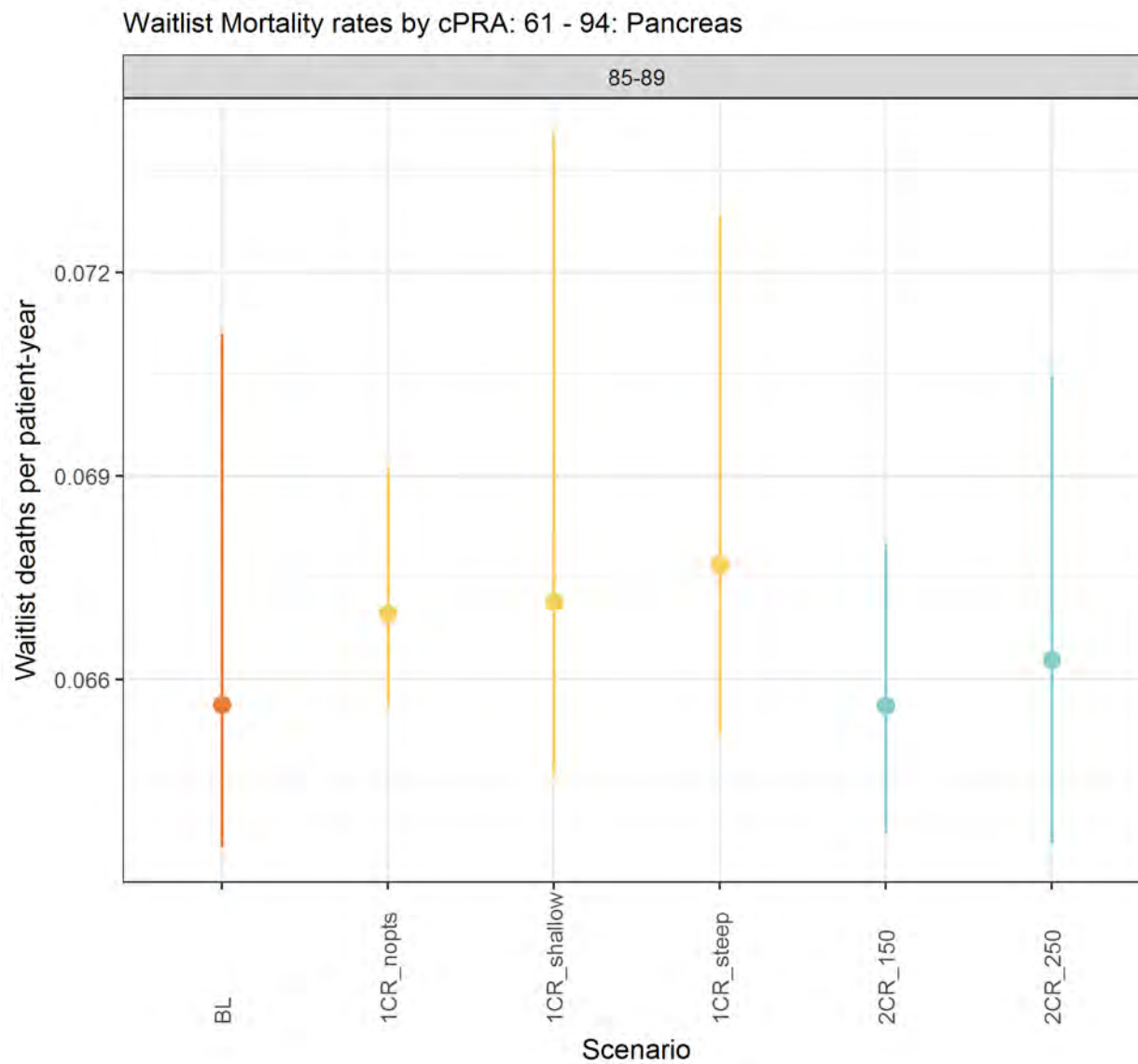


Figure 175 Waitlist Mortality rates by cPRA: 61 - 94: Pancreas

Waitlist Mortality Rates: cPRA: 95 - 100

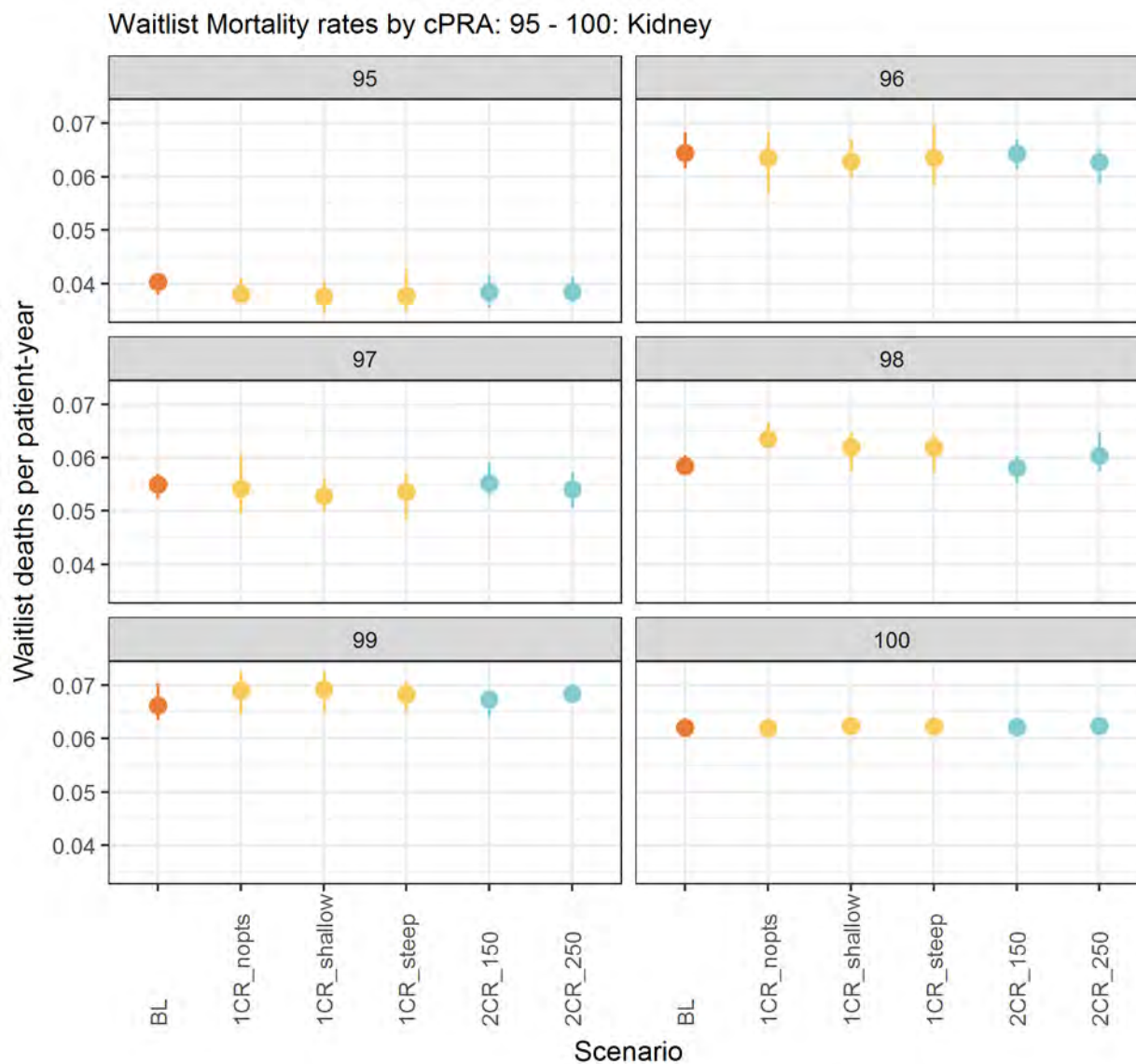


Figure 176 Waitlist Mortality rates by cPRA: 95 - 100: Kidney

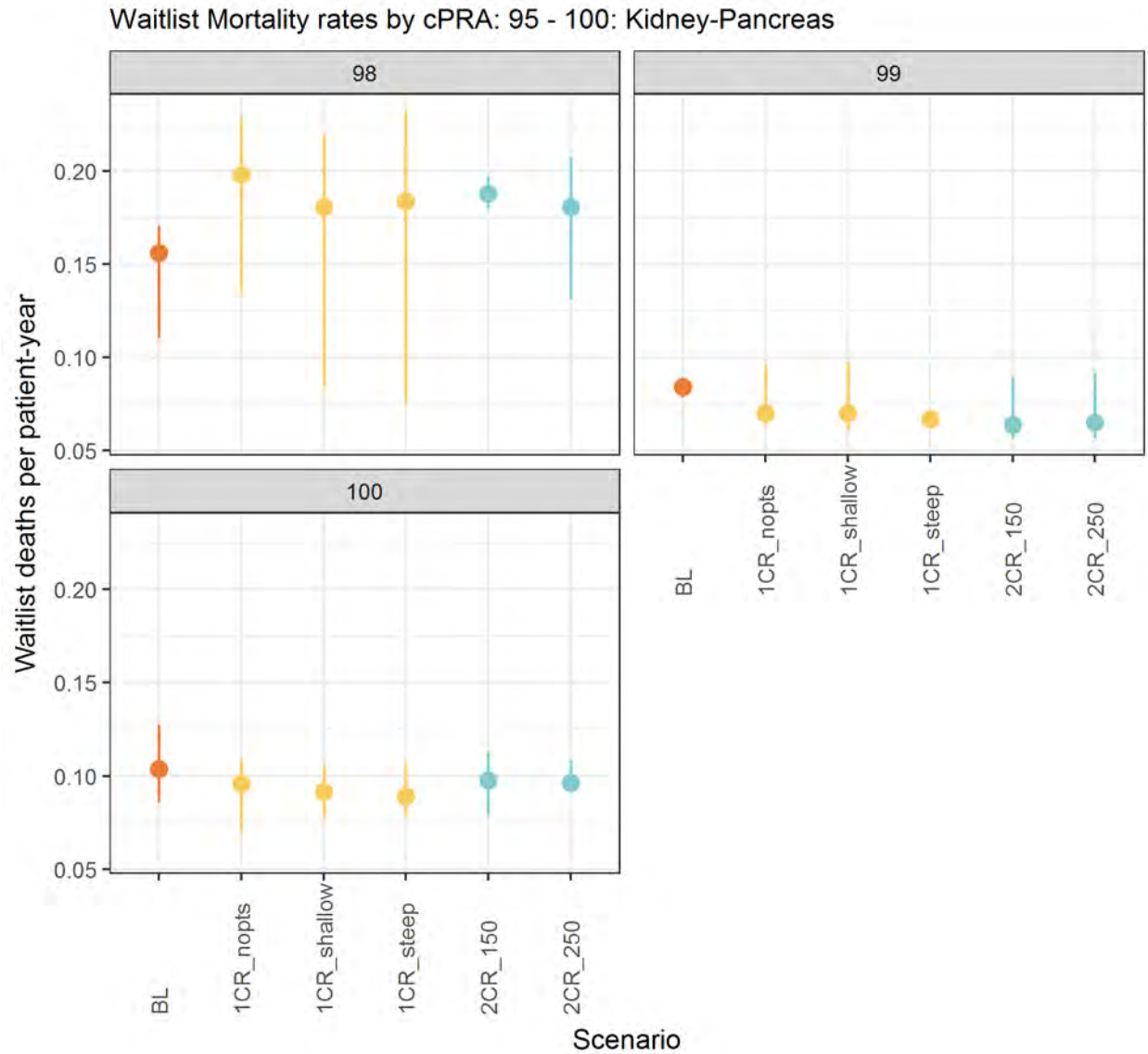


Figure 177 Waitlist Mortality rates by cPRA: 95 - 100: Kidney-Pancreas

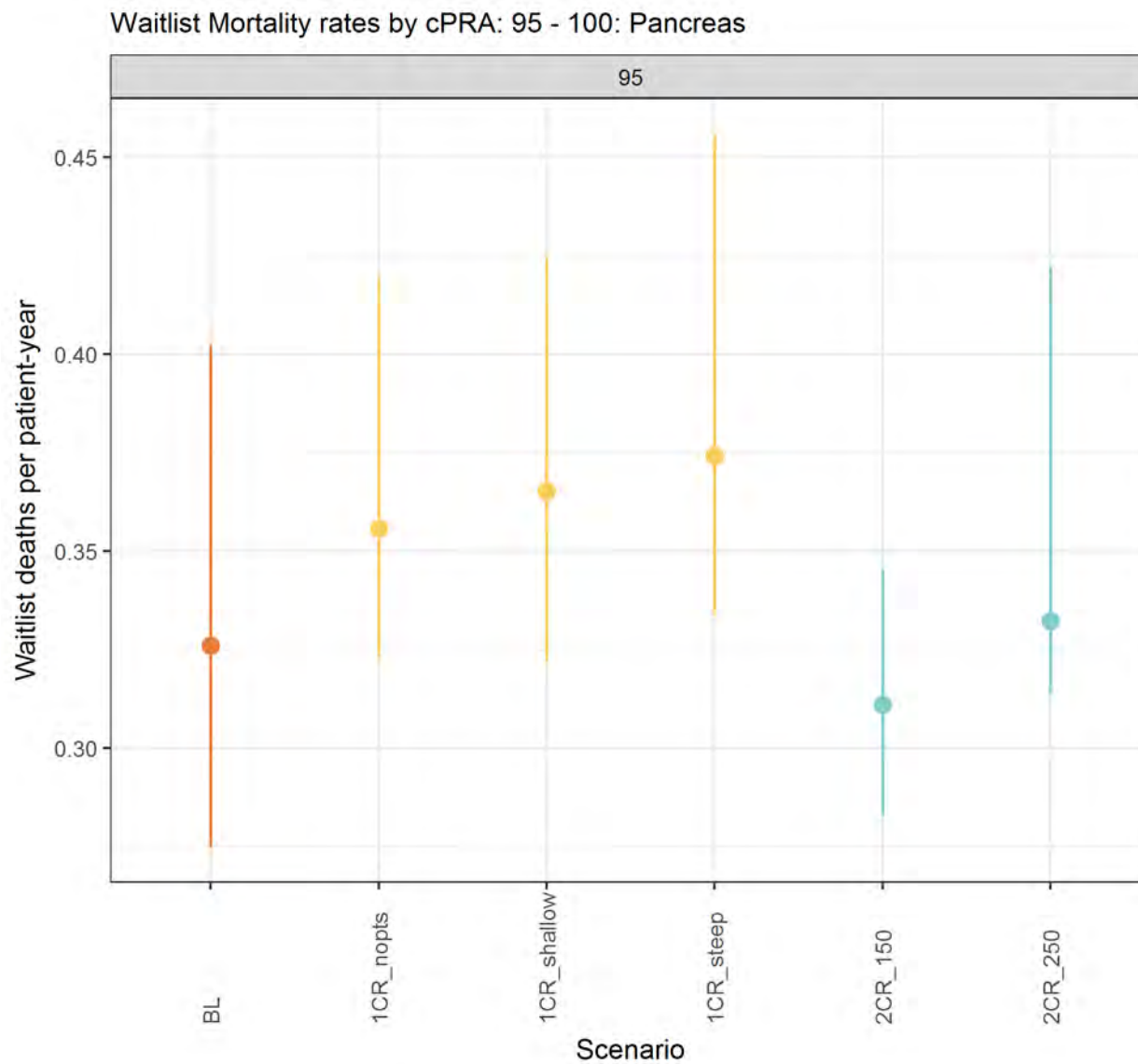


Figure 178 Waitlist Mortality rates by cPRA: 95 - 100: Pancreas



Waitlist Mortality Rates: cPRA: 95 - 98

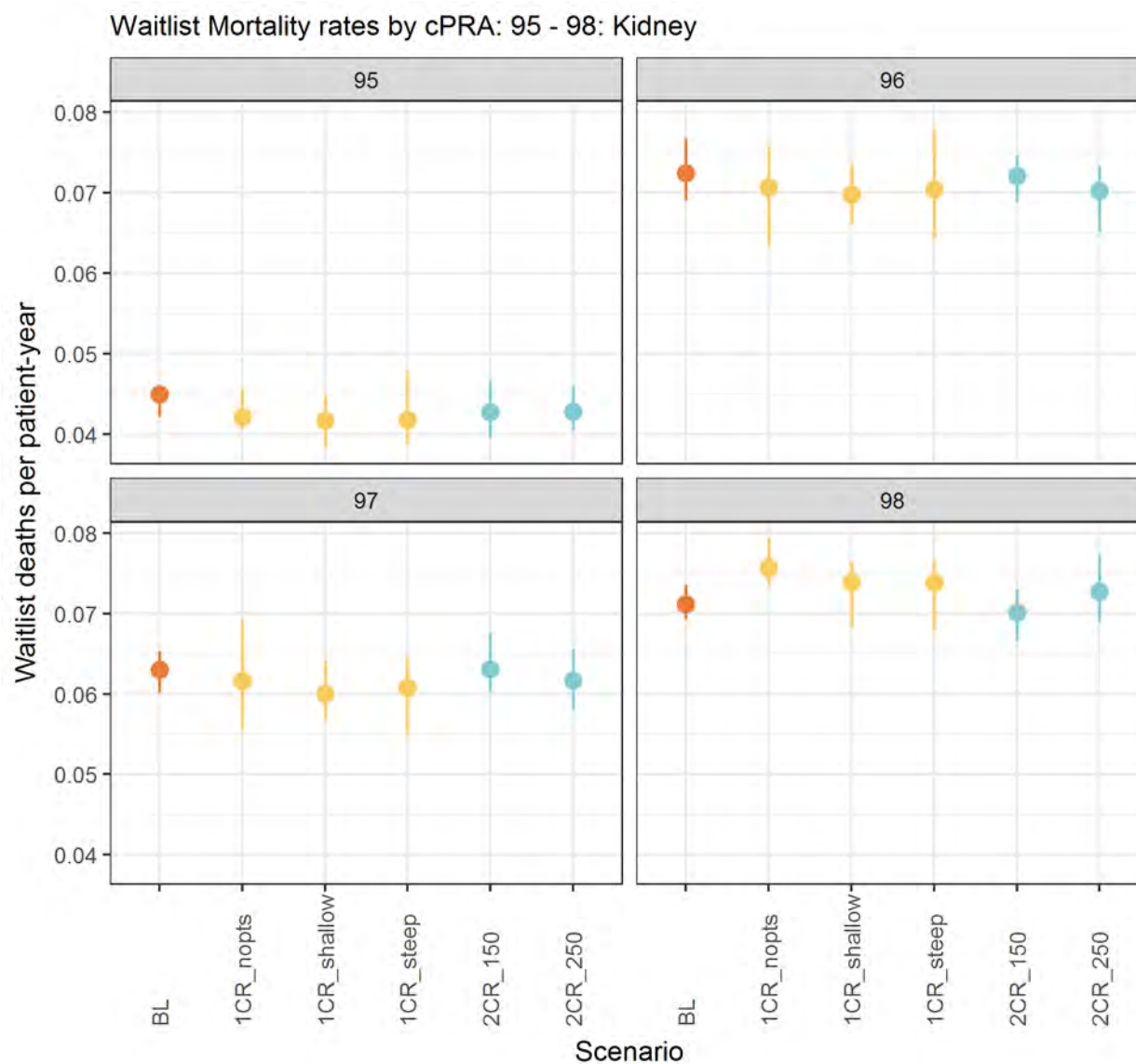


Figure 179 Waitlist Mortality rates by cPRA: 95 - 98: Kidney

Waitlist Mortality Rates: cPRA: 99 - 100

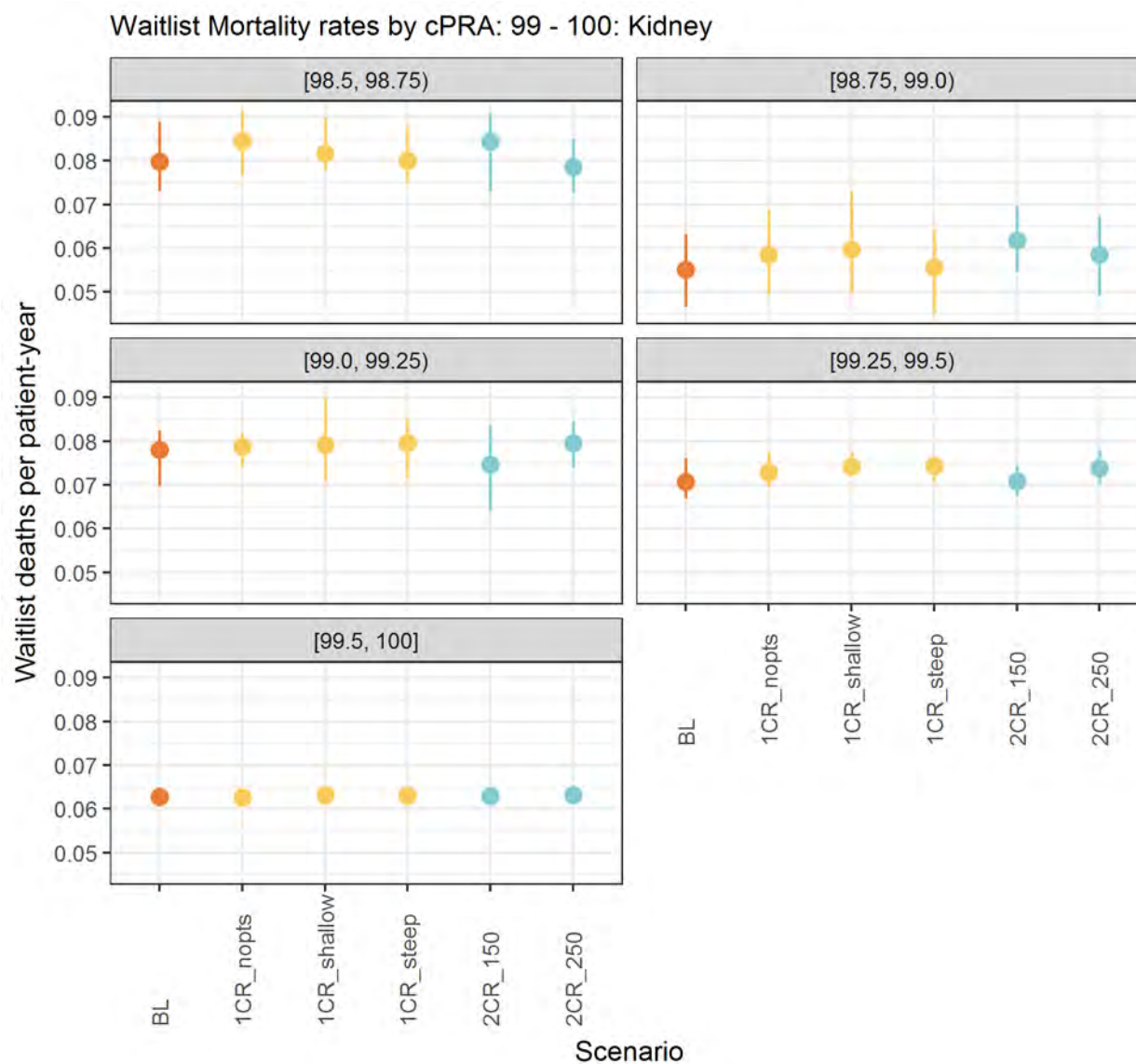


Figure 180 Waitlist Mortality rates by cPRA: 99 - 100: Kidney

Waitlist Mortality Rates: cPRA: 95 - 99

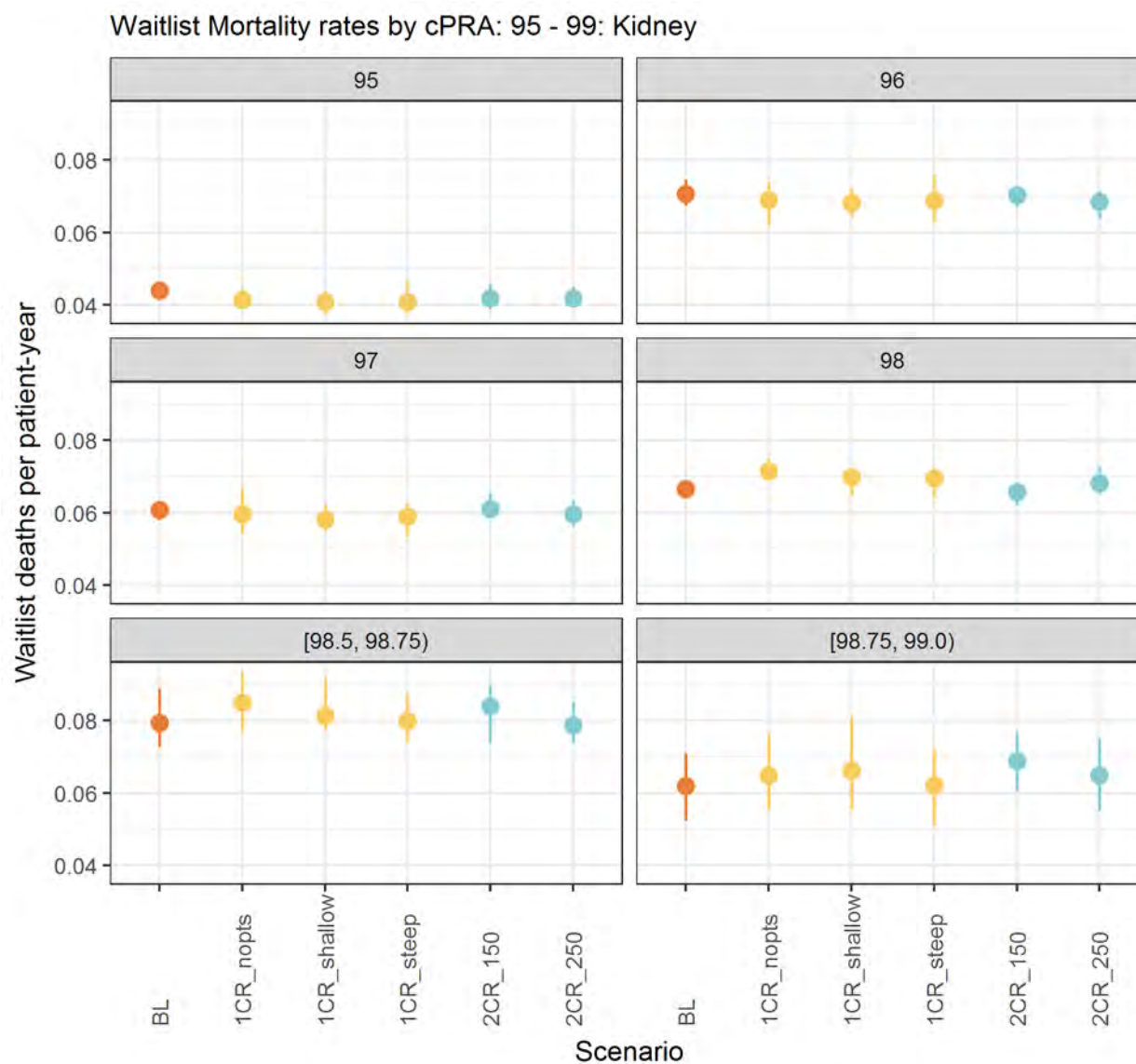


Figure 181 Waitlist Mortality rates by cPRA: 95 - 99: Kidney

Waitlist Mortality Rates: cPRA: 99 - 99.8

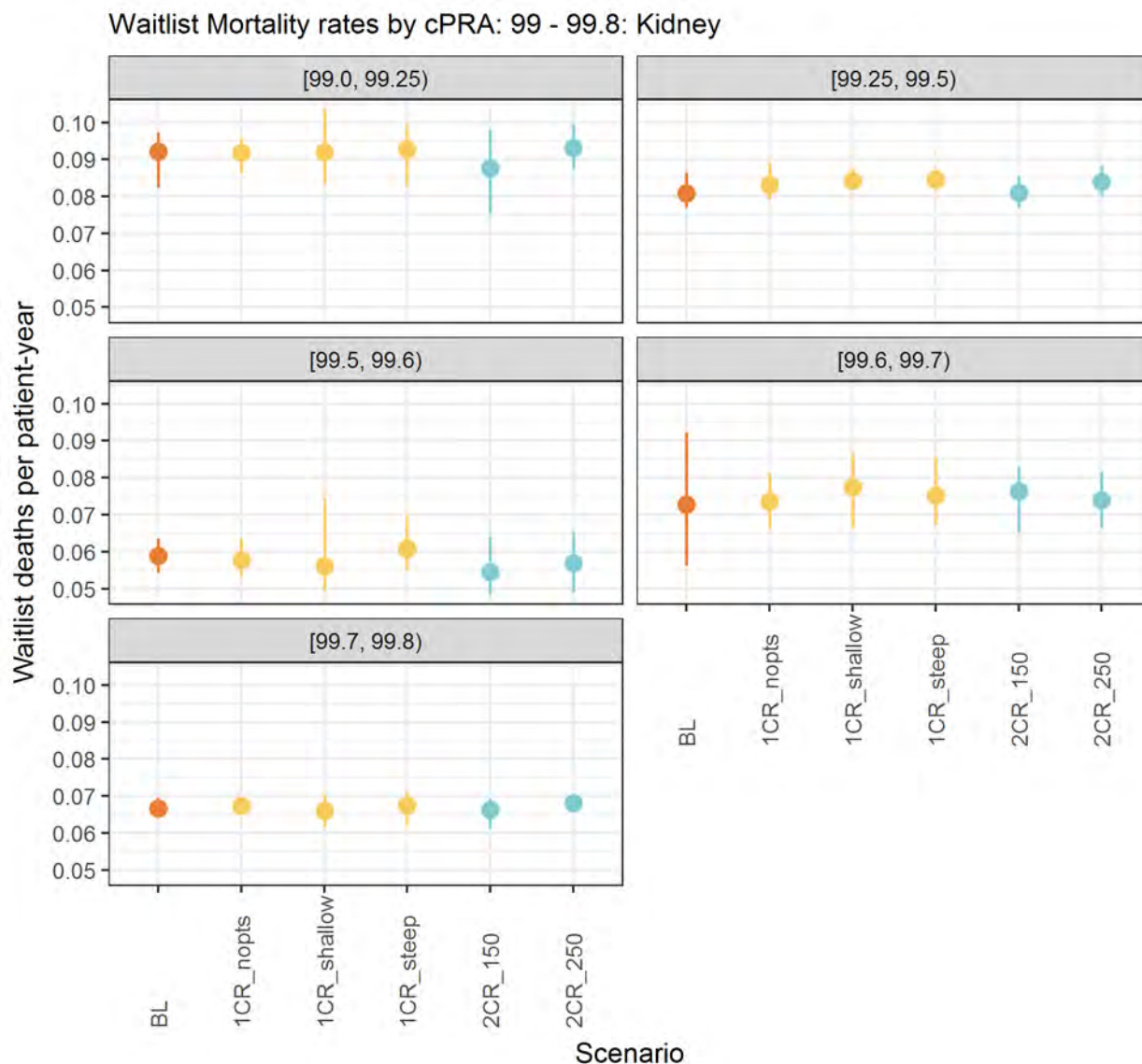


Figure 182 Waitlist Mortality rates by cPRA: 99 - 99.8: Kidney

Waitlist Mortality Rates: cPRA: 99.8 - 100

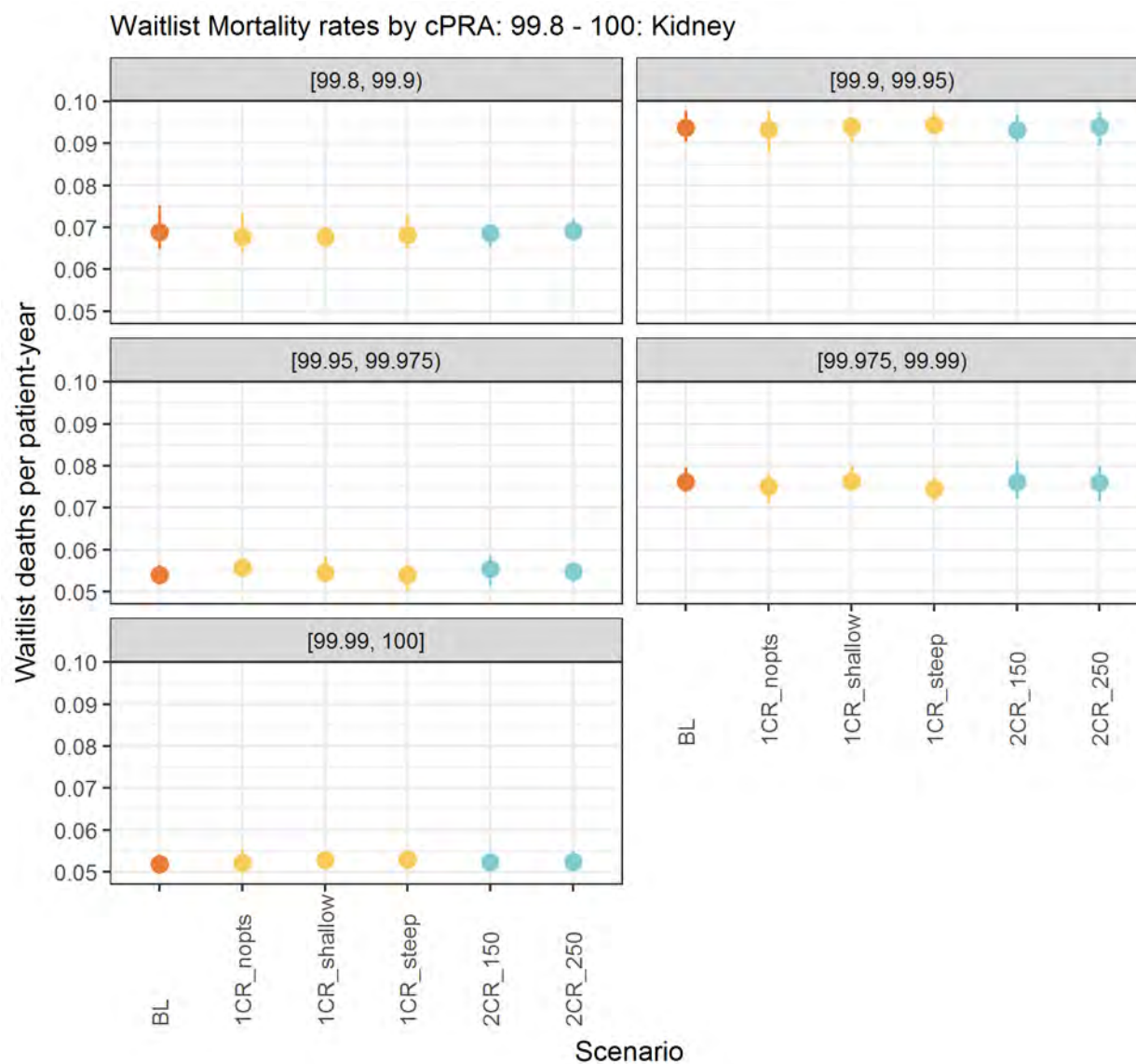


Figure 183 Waitlist Mortality rates by cPRA: 99.8 - 100: Kidney



## Waitlist Mortality Rates: Payment Status

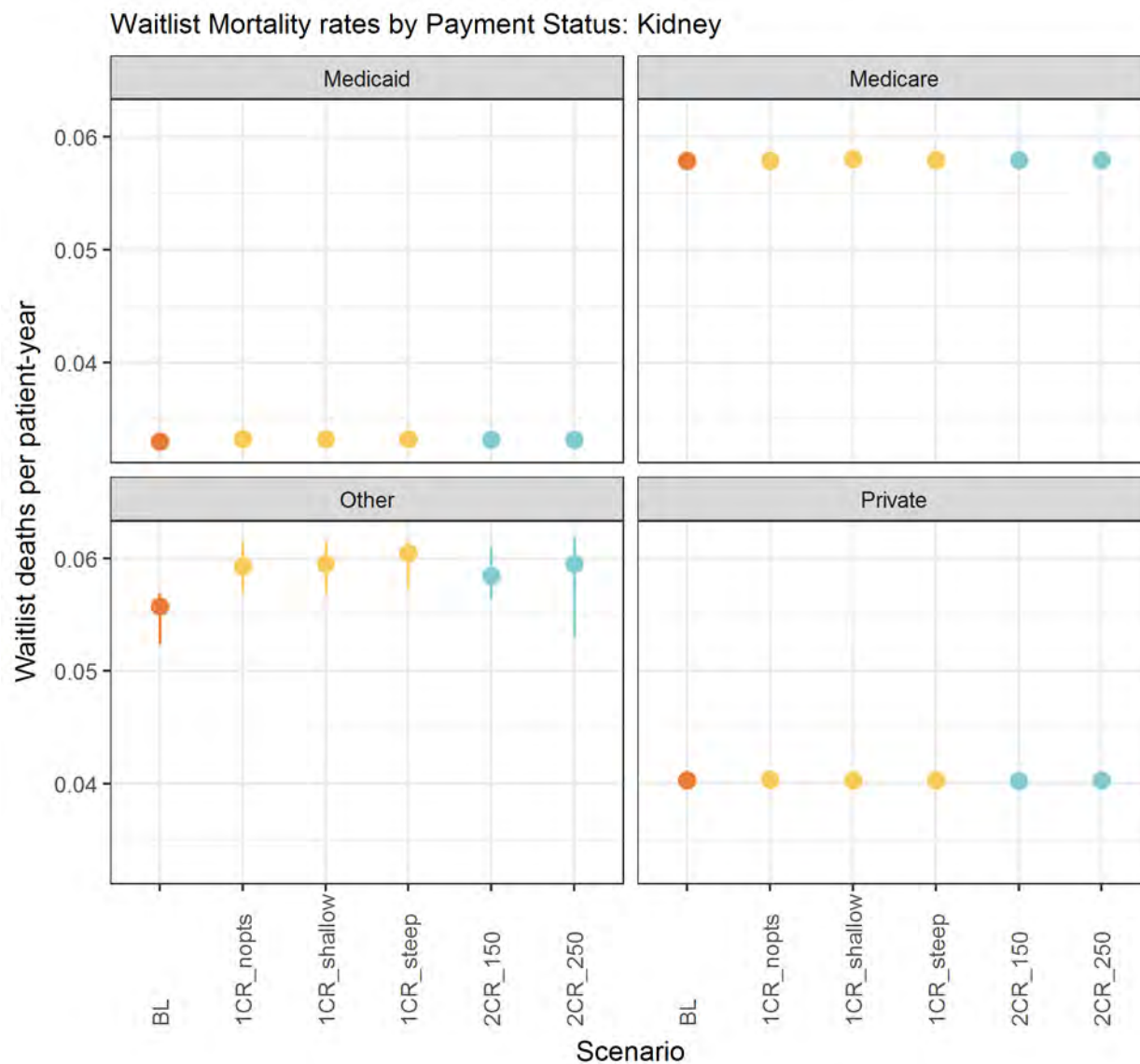


Figure 184 Waitlist Mortality rates by Payment Status: Kidney



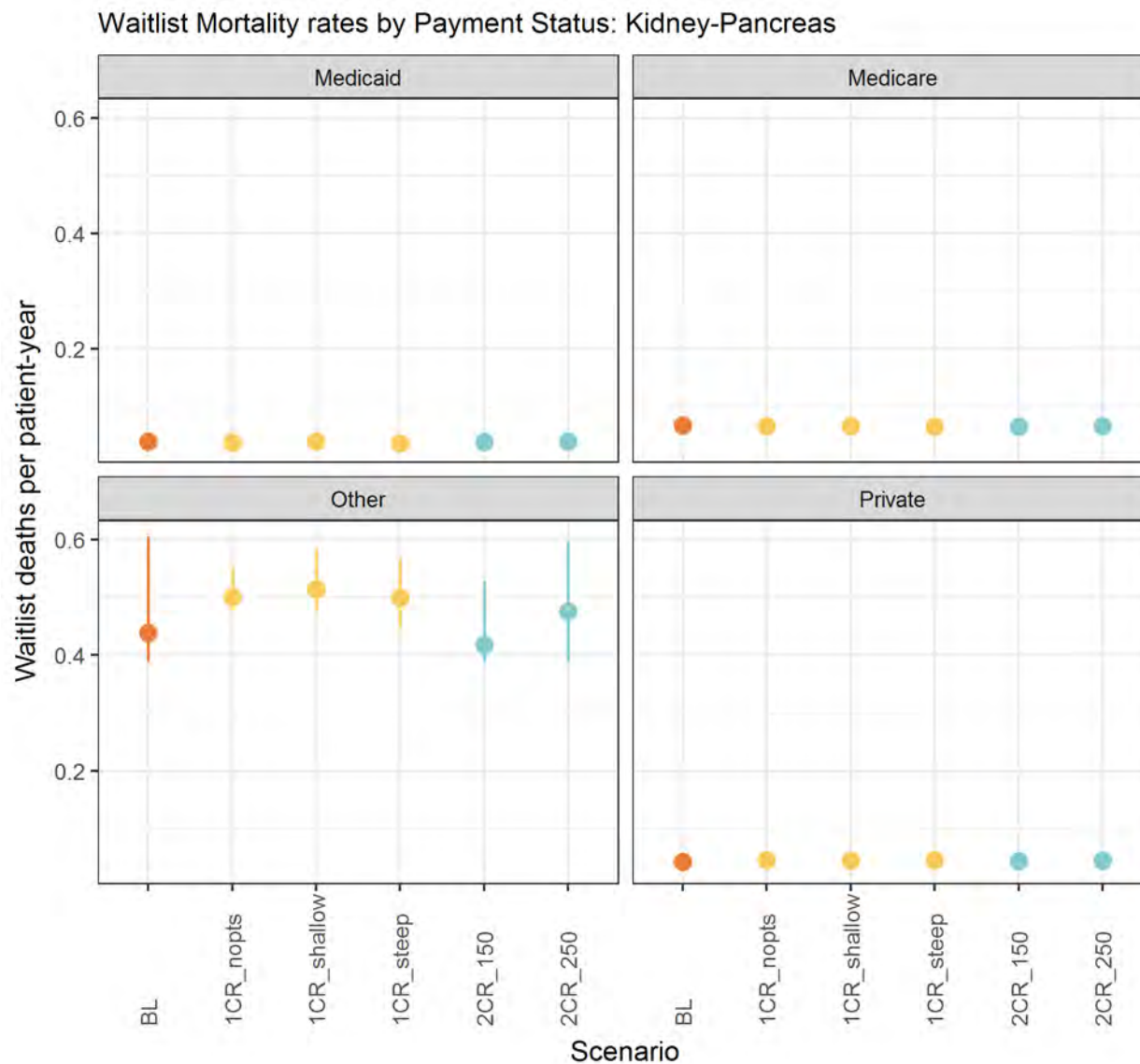


Figure 185 Waitlist Mortality rates by Payment Status: Kidney-Pancreas

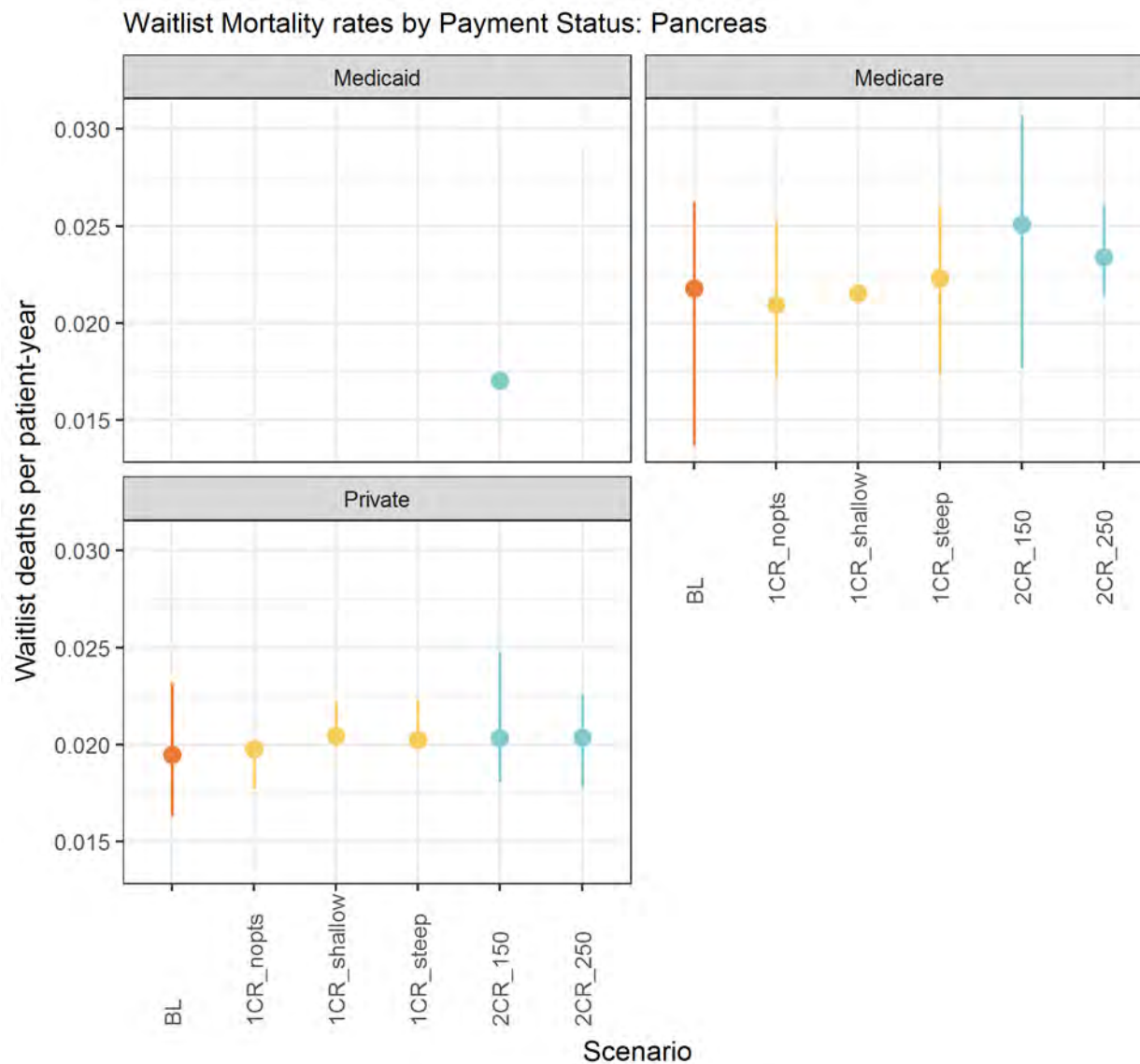


Figure 186 Waitlist Mortality rates by Payment Status: Pancreas

## Waitlist Mortality Rates: Urbanicity

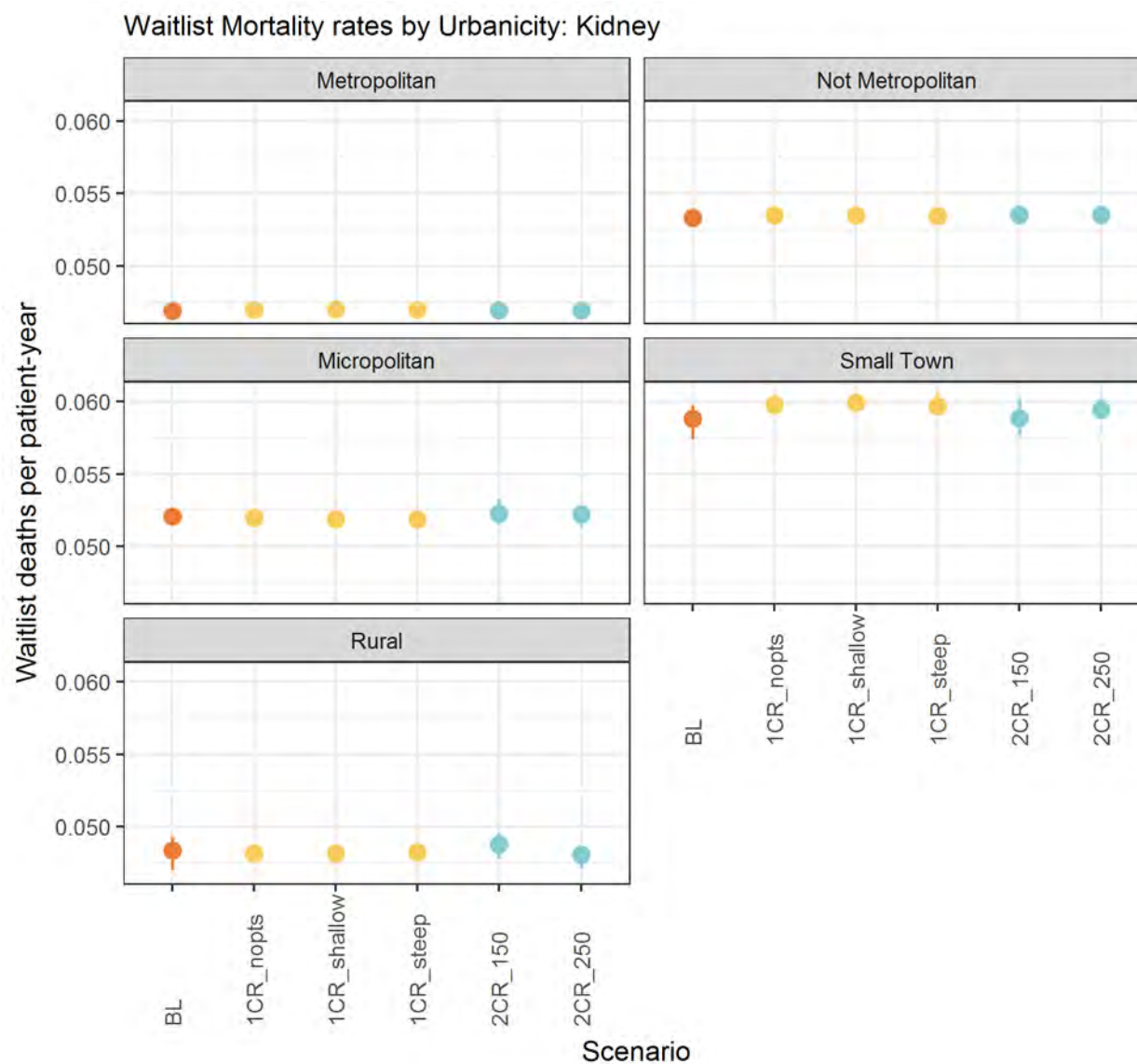


Figure 187 Waitlist Mortality rates by Urbanicity: Kidney

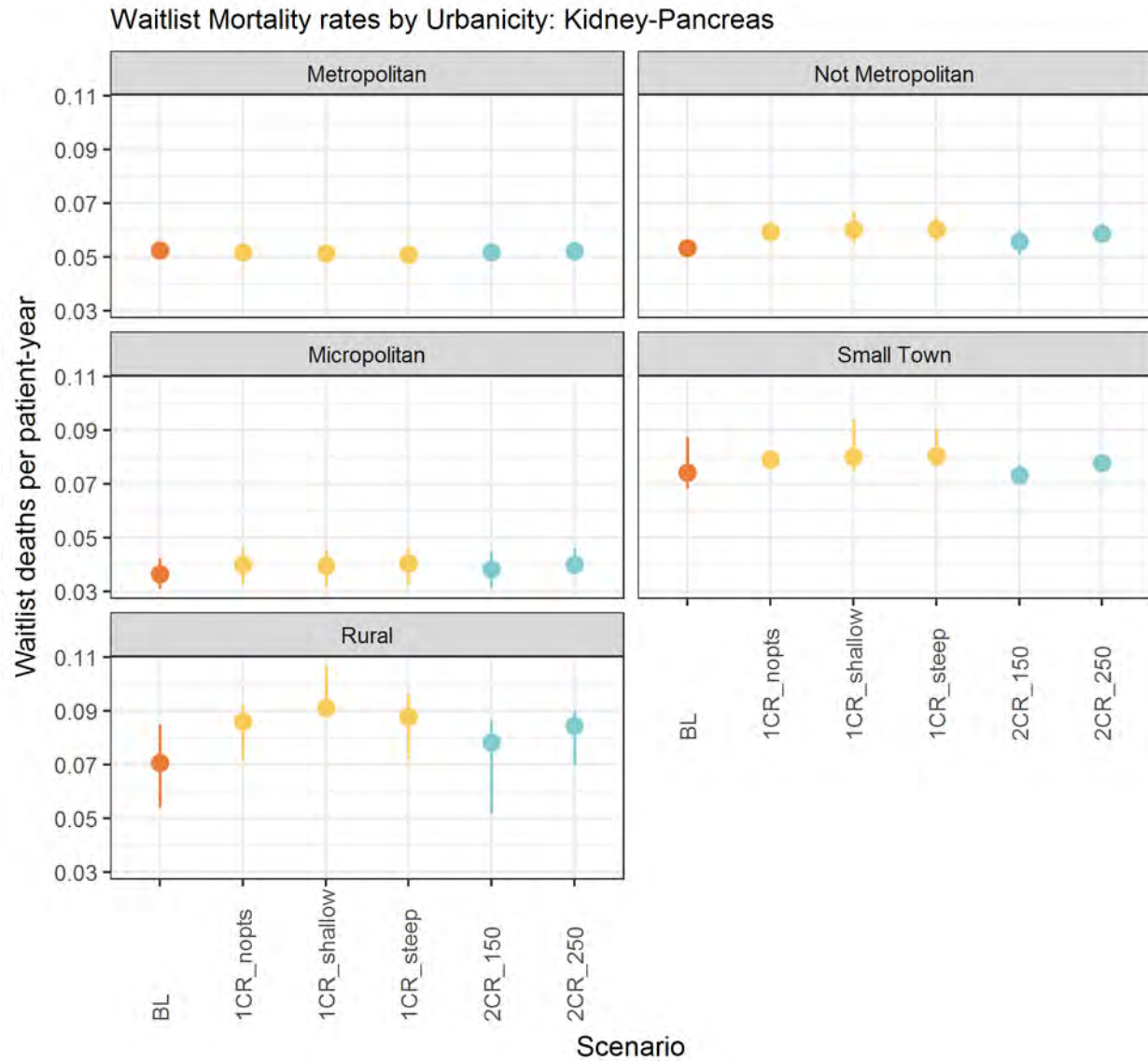


Figure 188 Waitlist Mortality rates by Urbanicity: Kidney-Pancreas

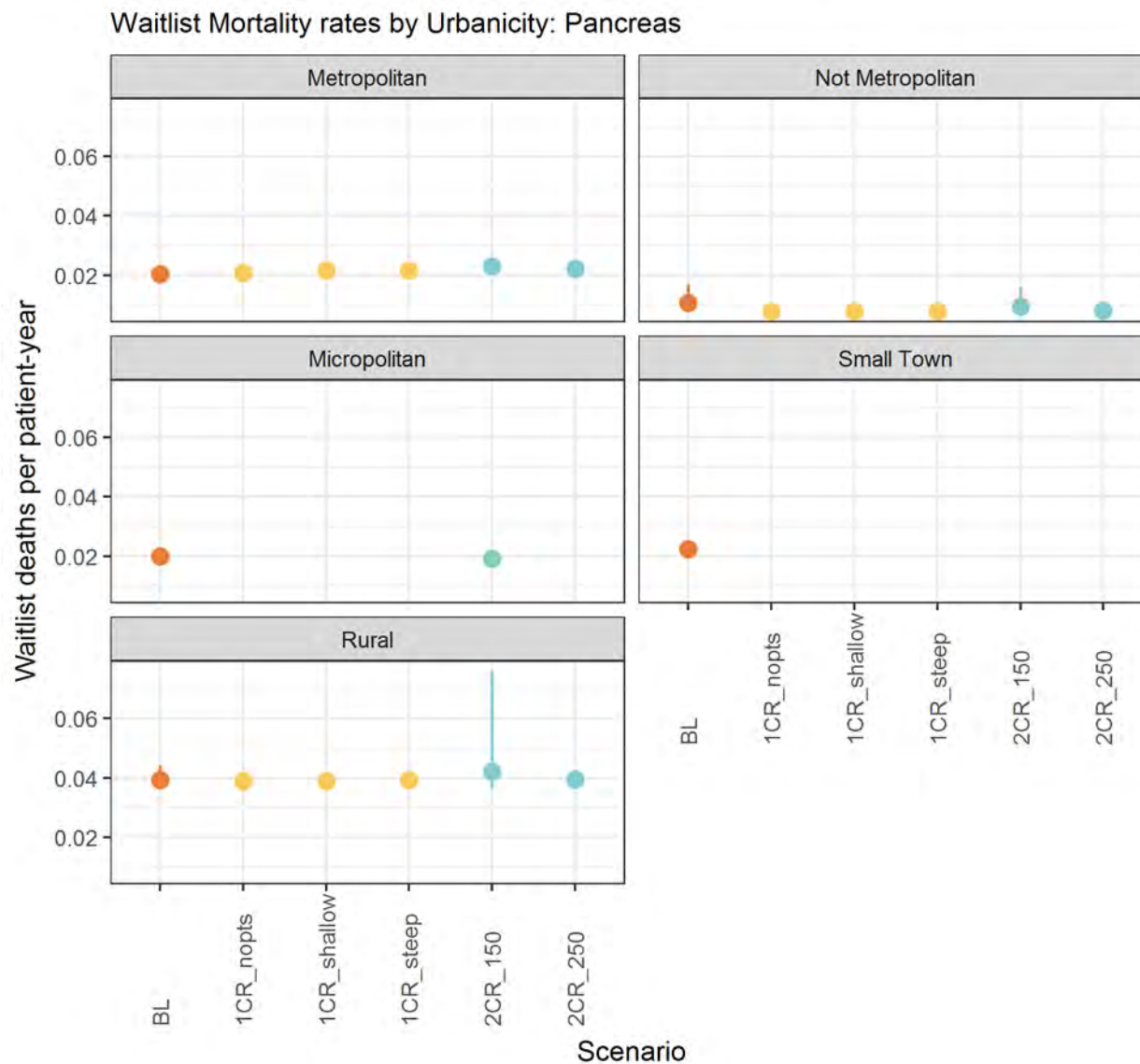


Figure 189 Waitlist Mortality rates by Urbanicity: Pancreas

## Waitlist Mortality Rates: EPTS

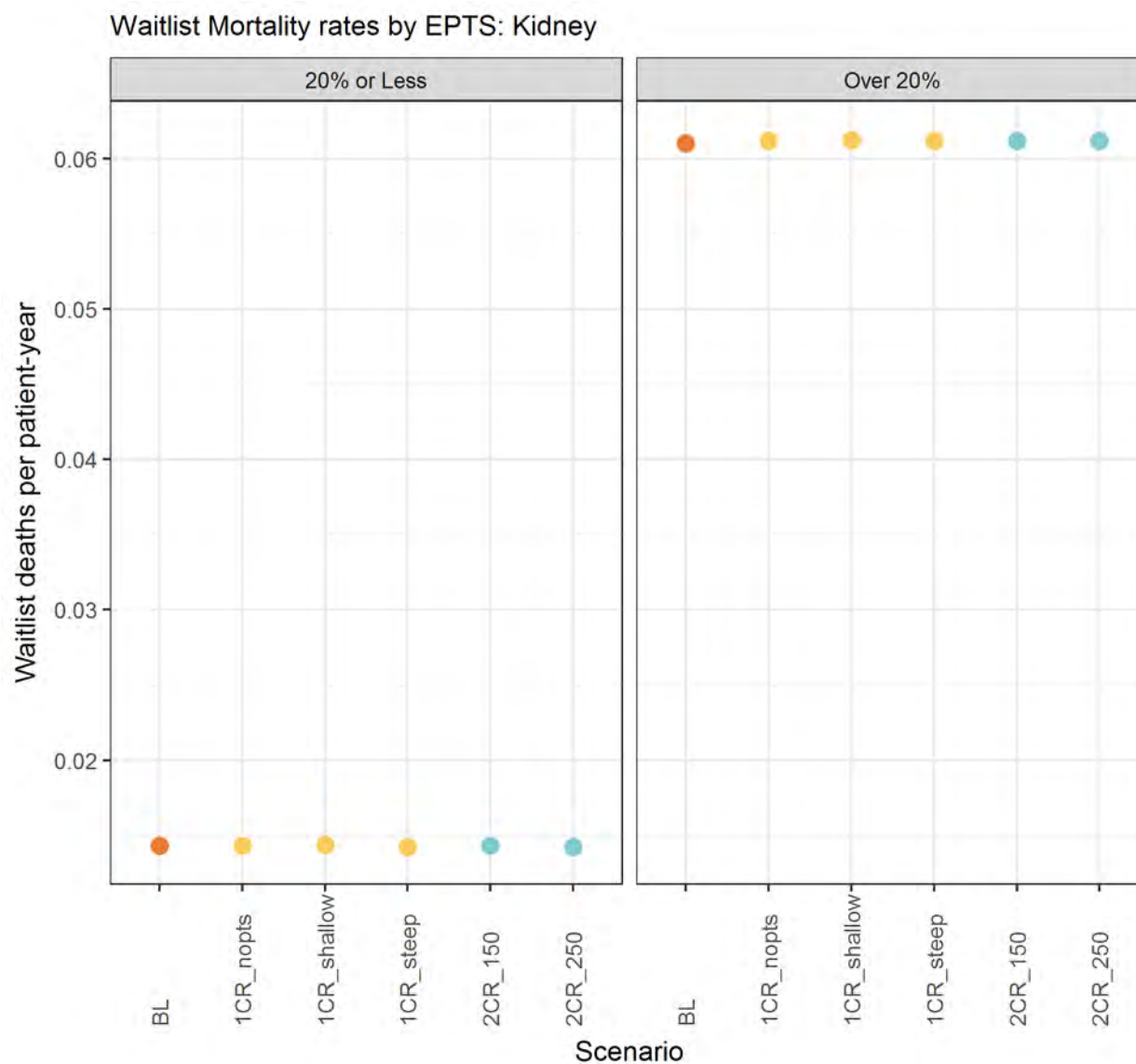


Figure 190 Waitlist Mortality rates by EPTS: Kidney



## Waitlist Mortality Rates: Median Household Income by Zip Code



Figure 191 Waitlist Mortality rates by Median Household Income by Zip Code: Kidney

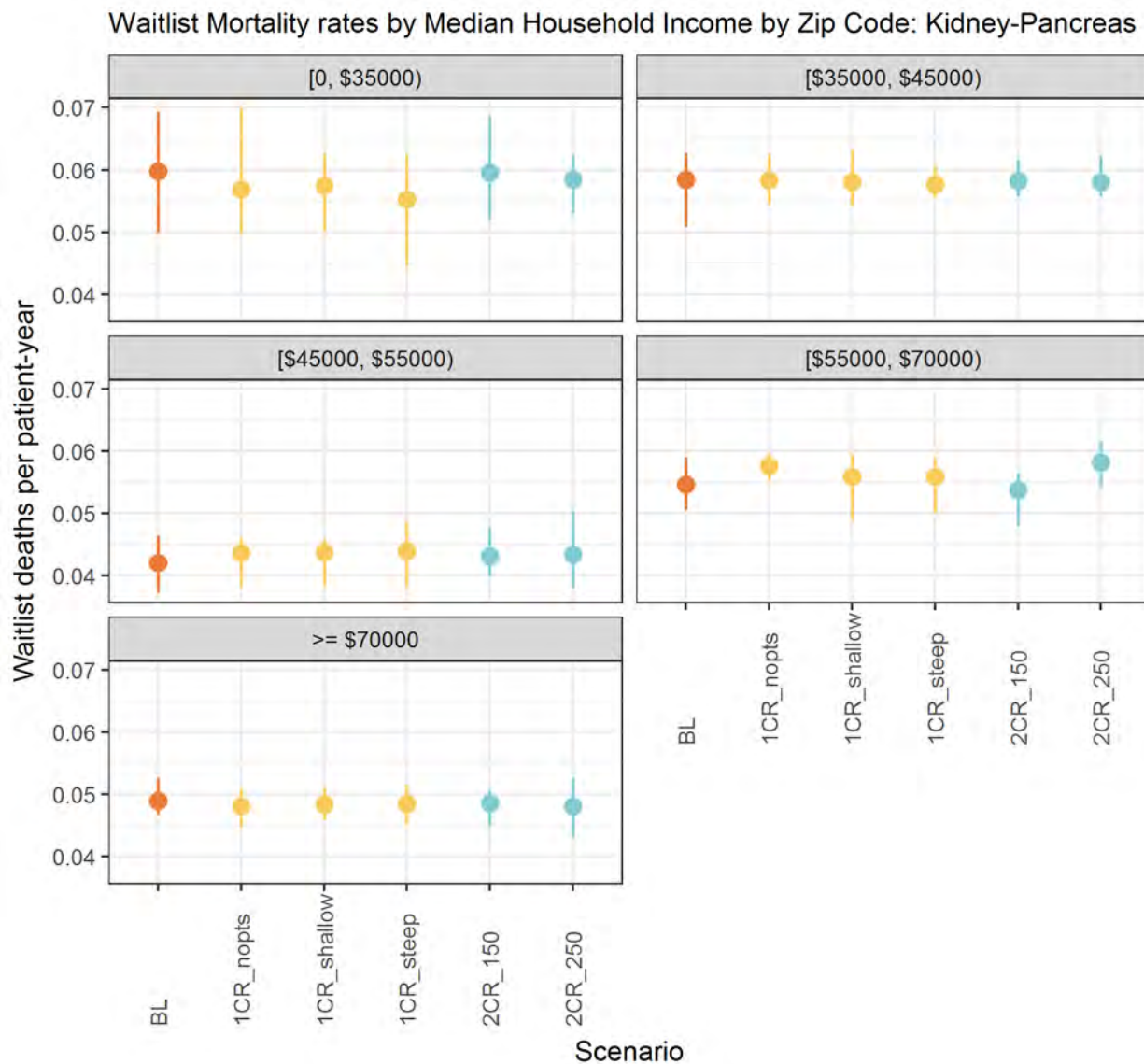


Figure 192 Waitlist Mortality rates by Median Household Income by Zip Code: Kidney-Pancreas

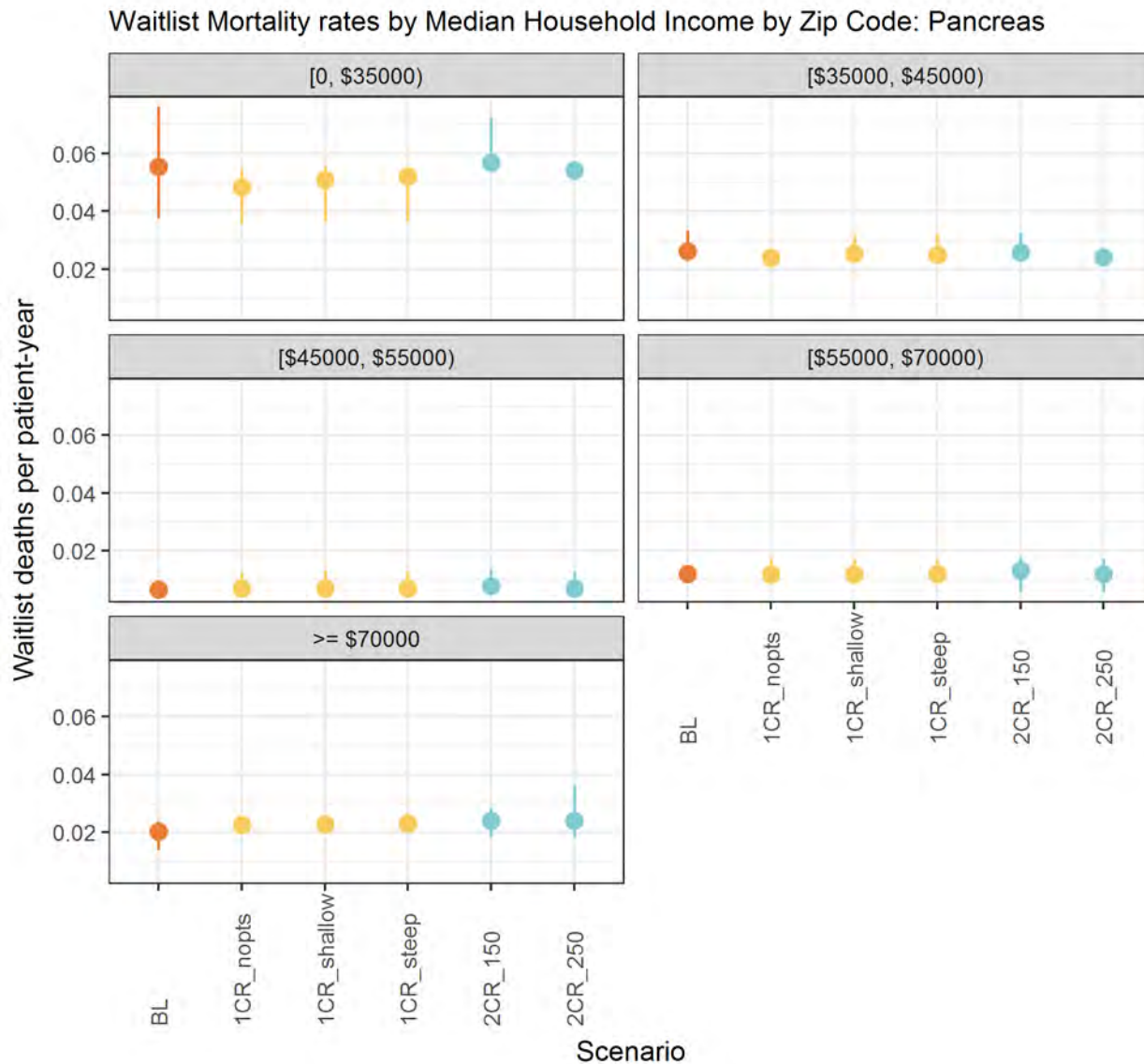


Figure 193 Waitlist Mortality rates by Median Household Income by Zip Code: Pancreas

## Waitlist Mortality Counts

Waitlist Mortality Counts: Age 0-17

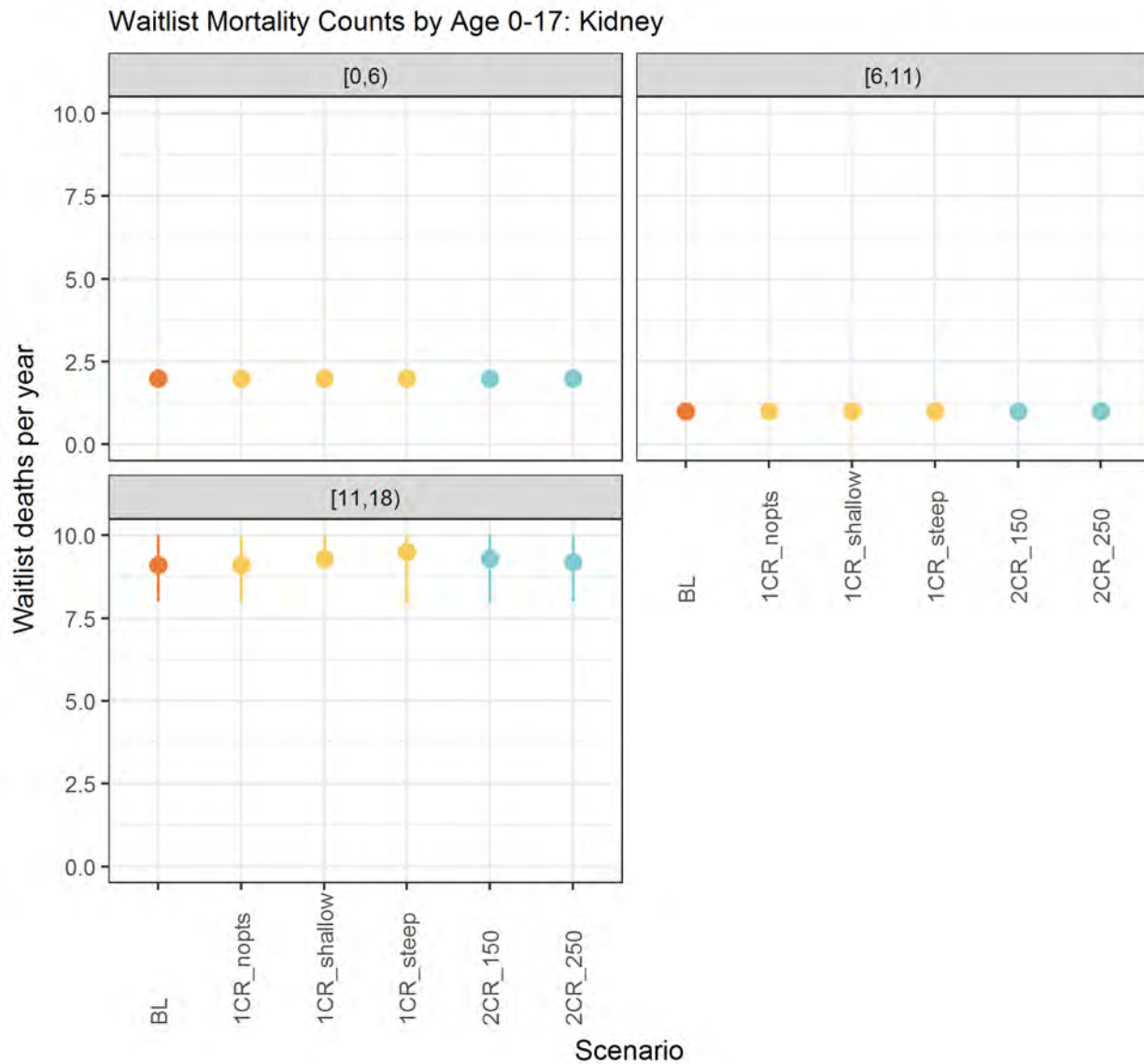


Figure 194 Waitlist Mortality Counts by Age 0-17: Kidney

Waitlist Mortality Counts: Age 18+

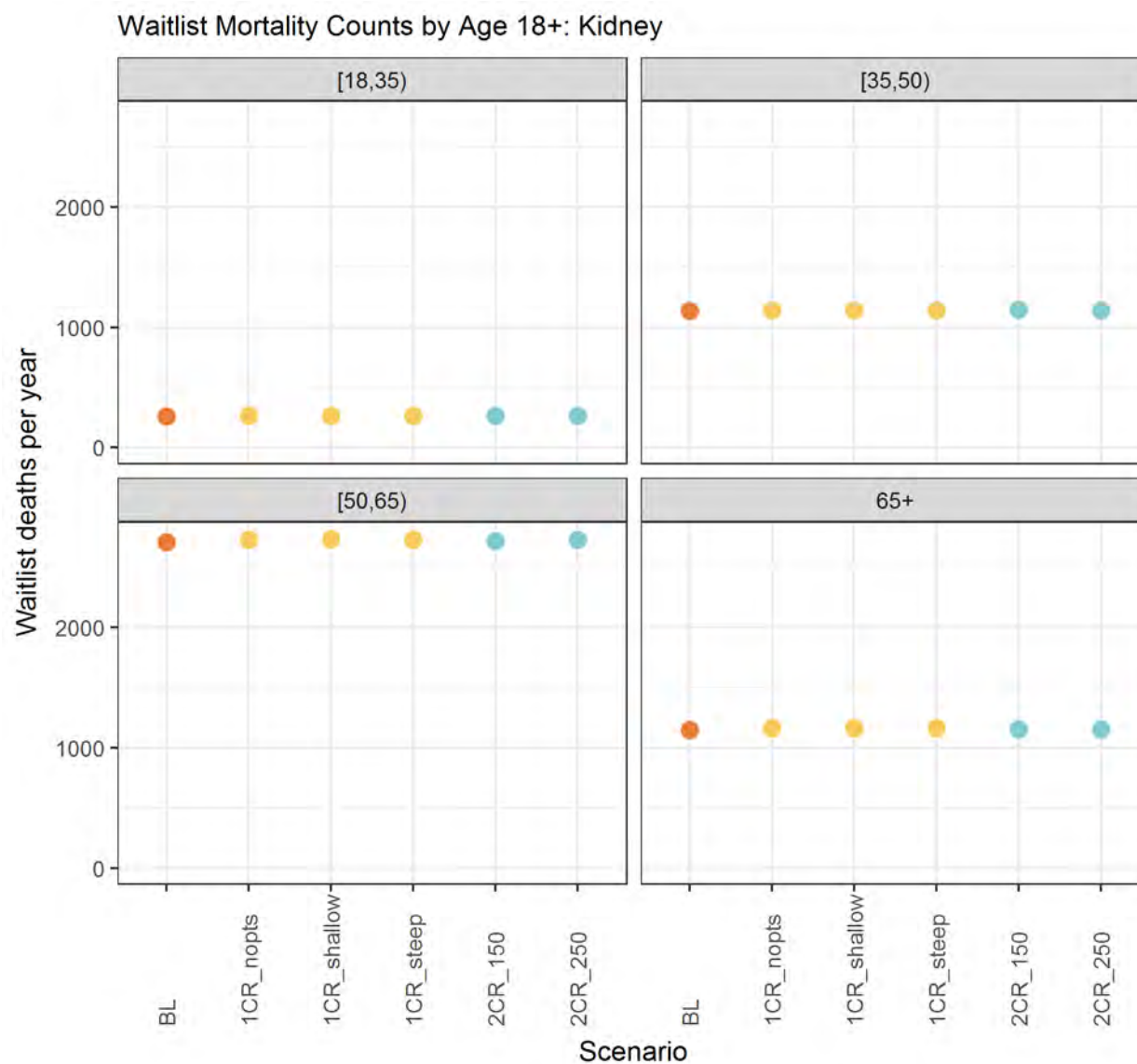


Figure 195 Waitlist Mortality Counts by Age 18+: Kidney

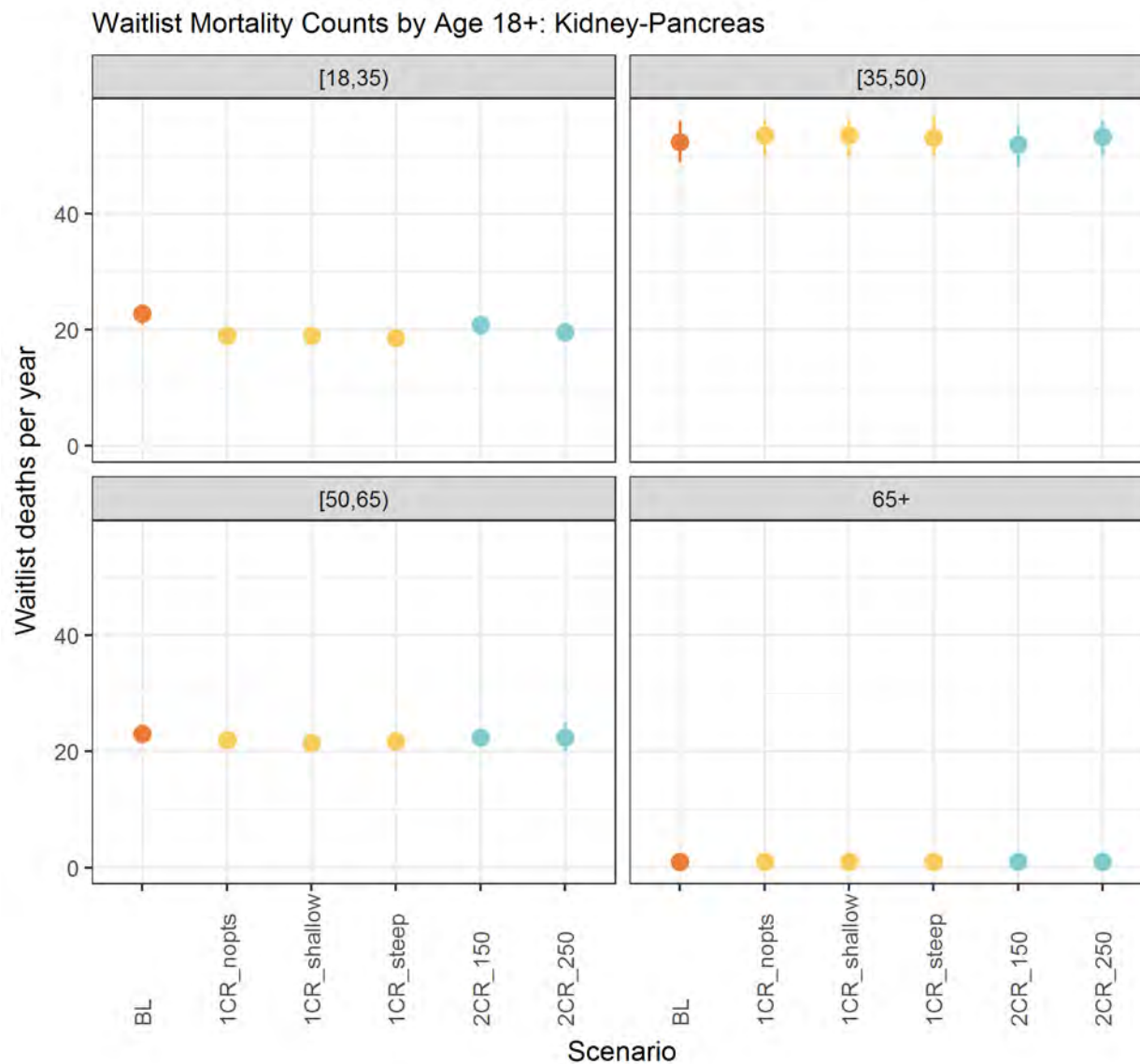


Figure 196 Waitlist Mortality Counts by Age 18+: Kidney-Pancreas



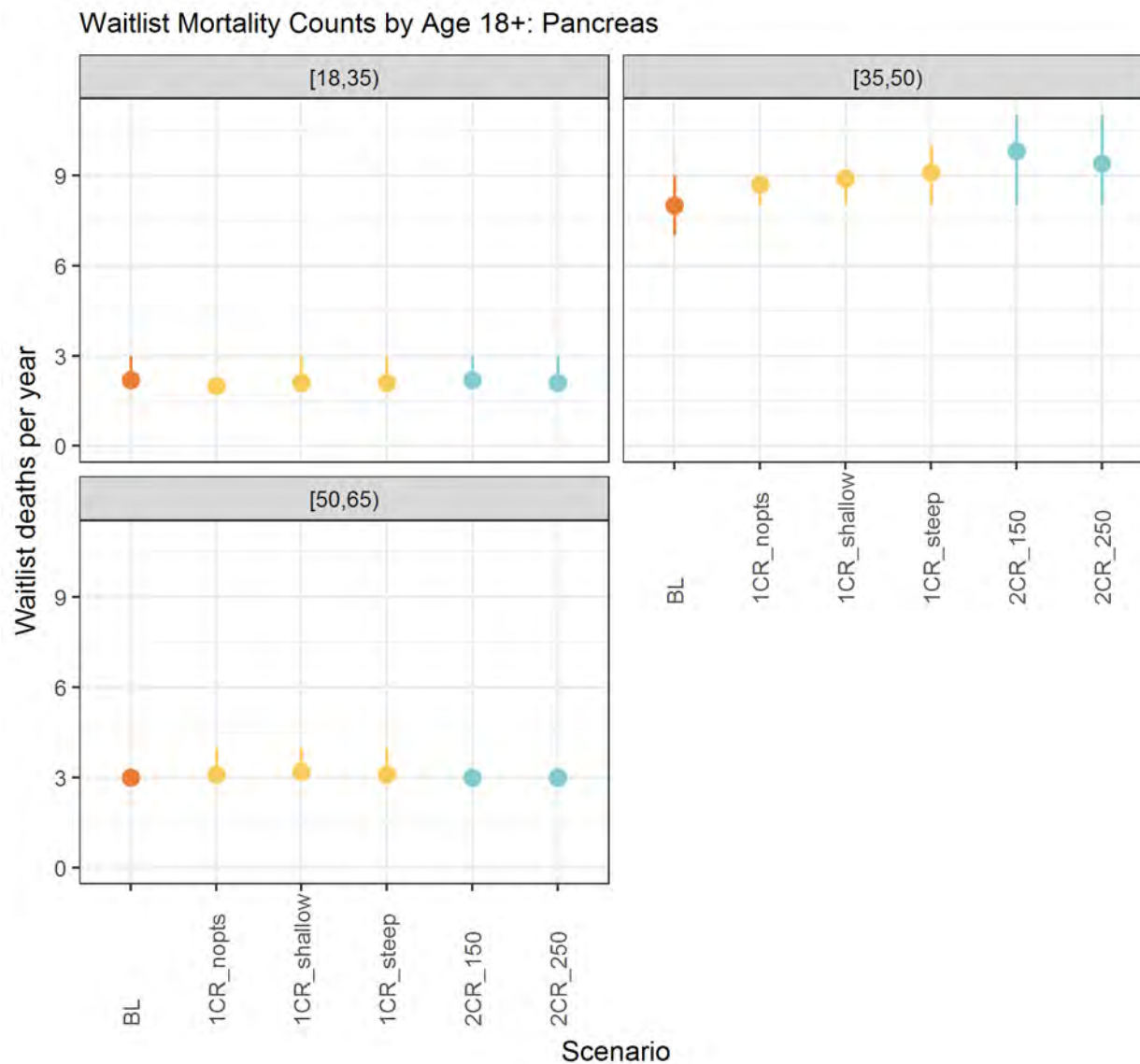


Figure 197 Waitlist Mortality Counts by Age 18+: Pancreas

## Waitlist Mortality Counts: Race

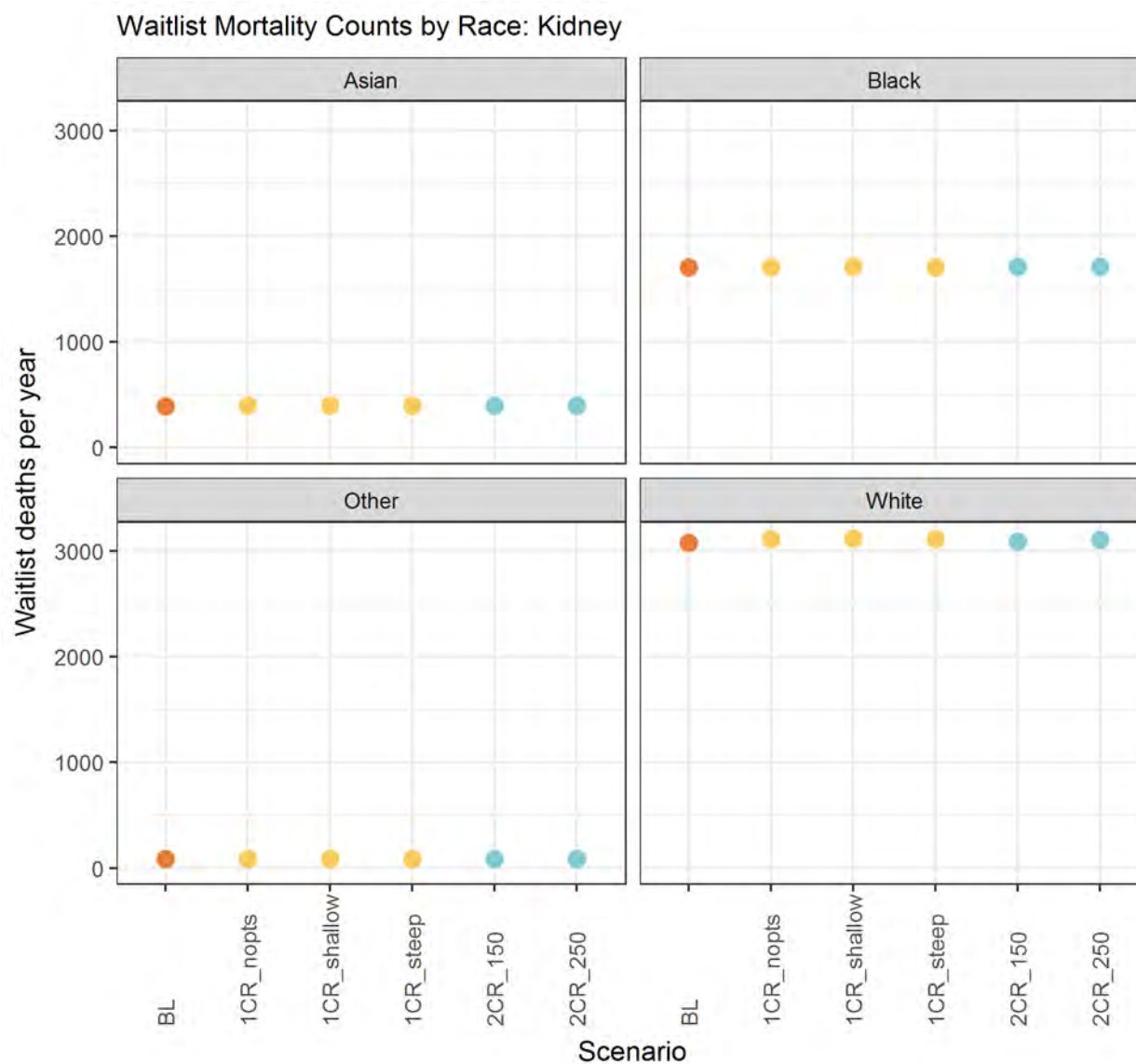


Figure 198 Waitlist Mortality Counts by Race: Kidney

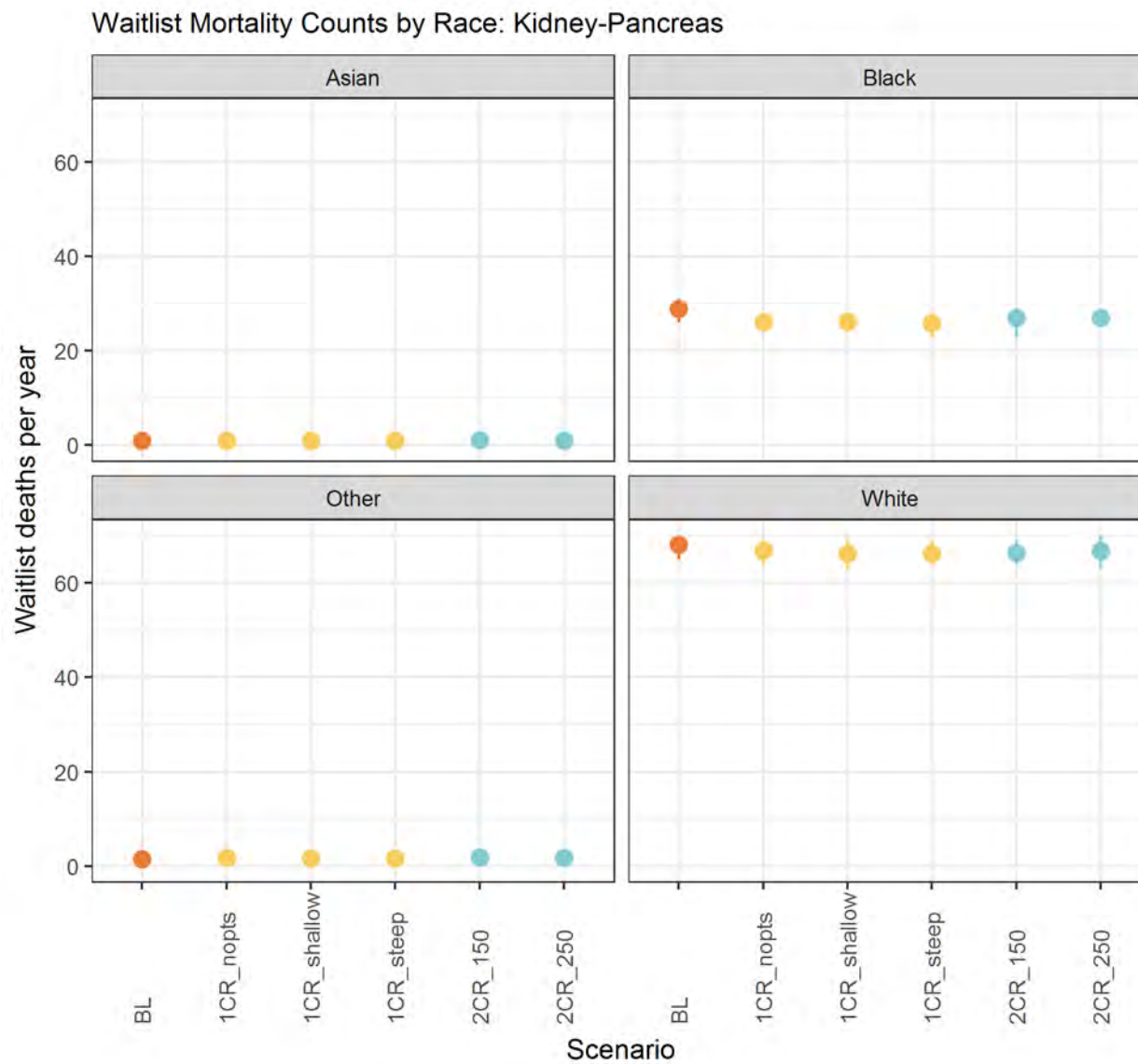


Figure 199 Waitlist Mortality Counts by Race: Kidney-Pancreas

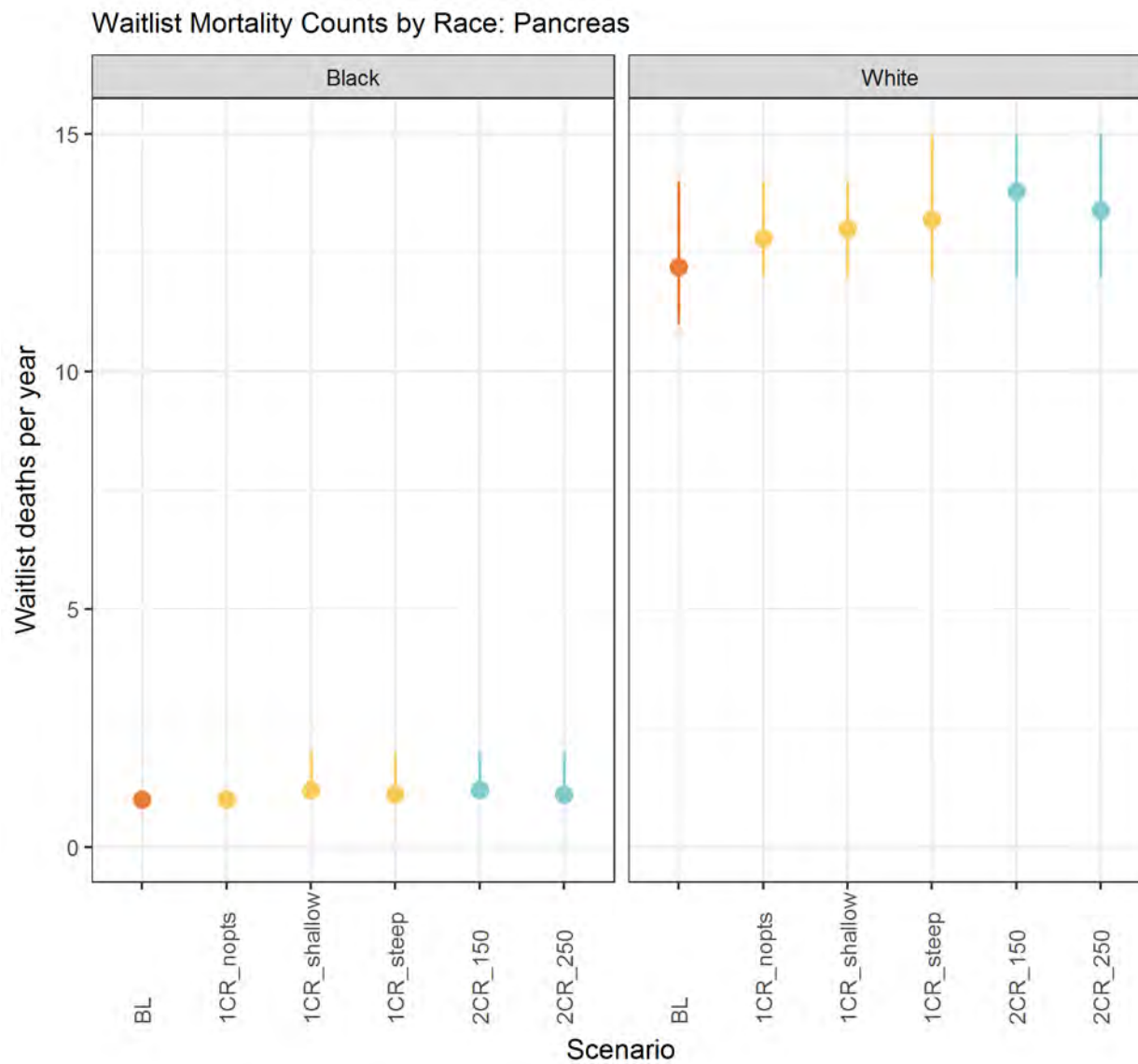


Figure 200 Waitlist Mortality Counts by Race: Pancreas

## Waitlist Mortality Counts: Ethnicity

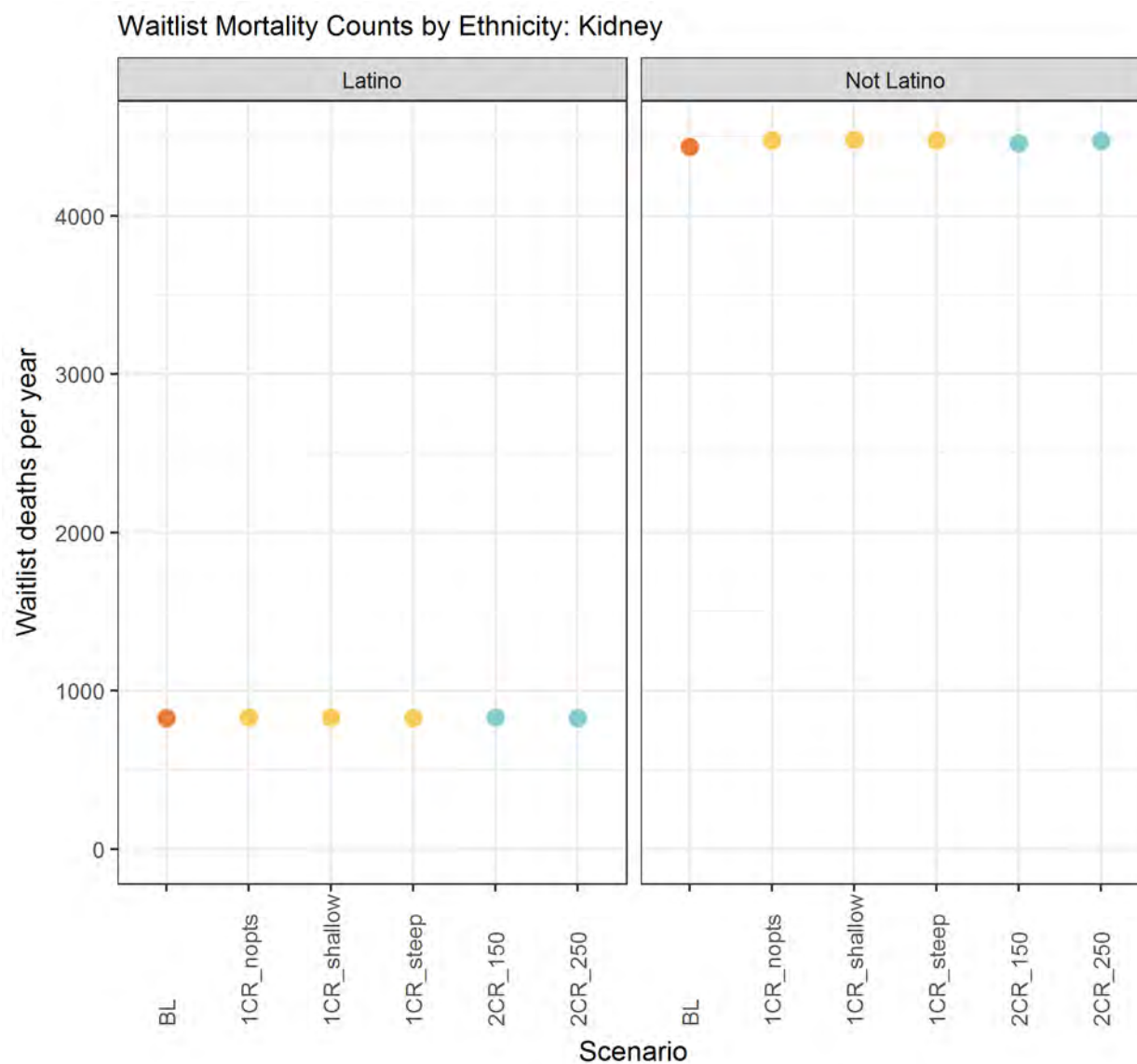


Figure 201 Waitlist Mortality Counts by Ethnicity: Kidney

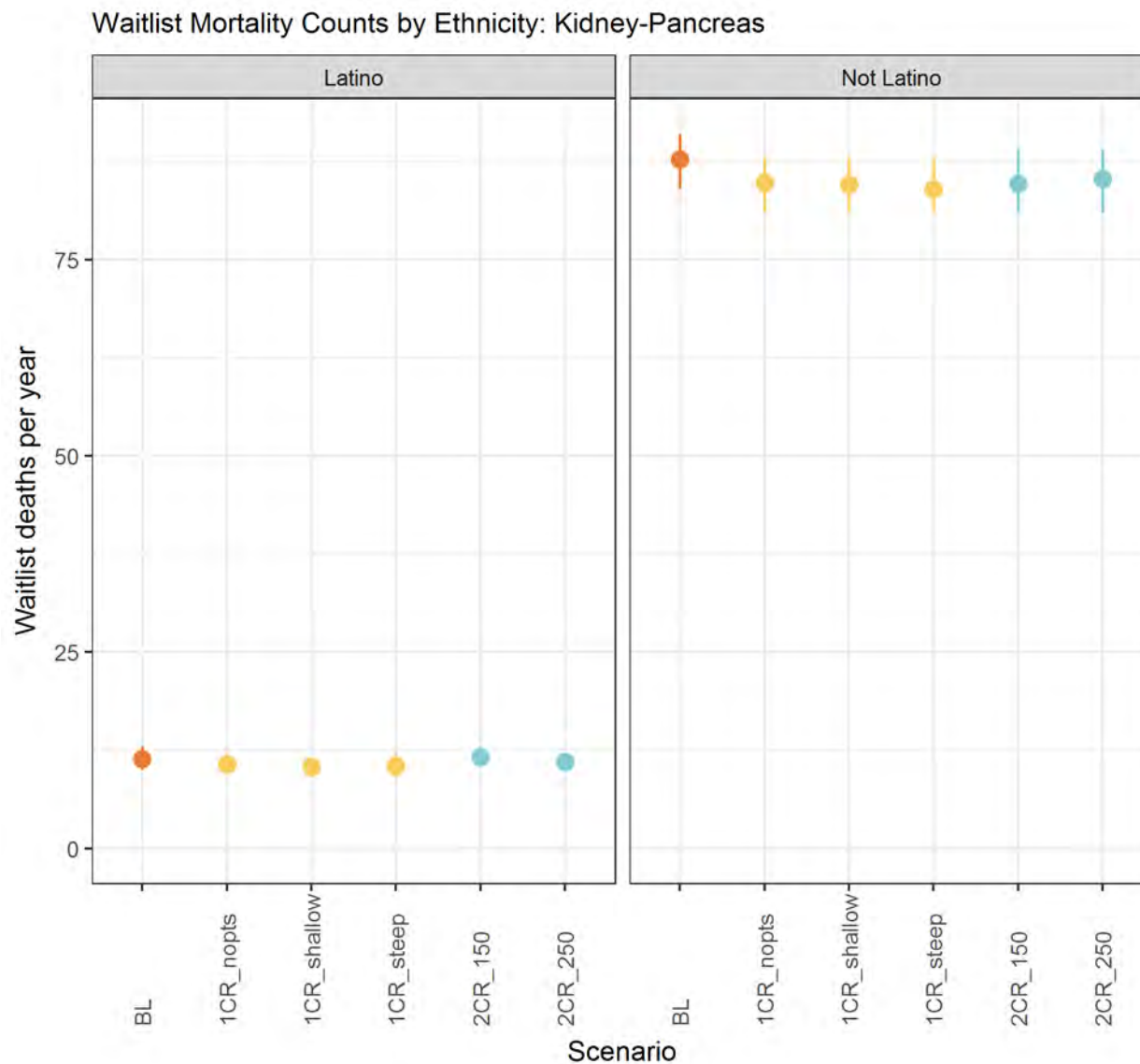


Figure 202 Waitlist Mortality Counts by Ethnicity: Kidney-Pancreas



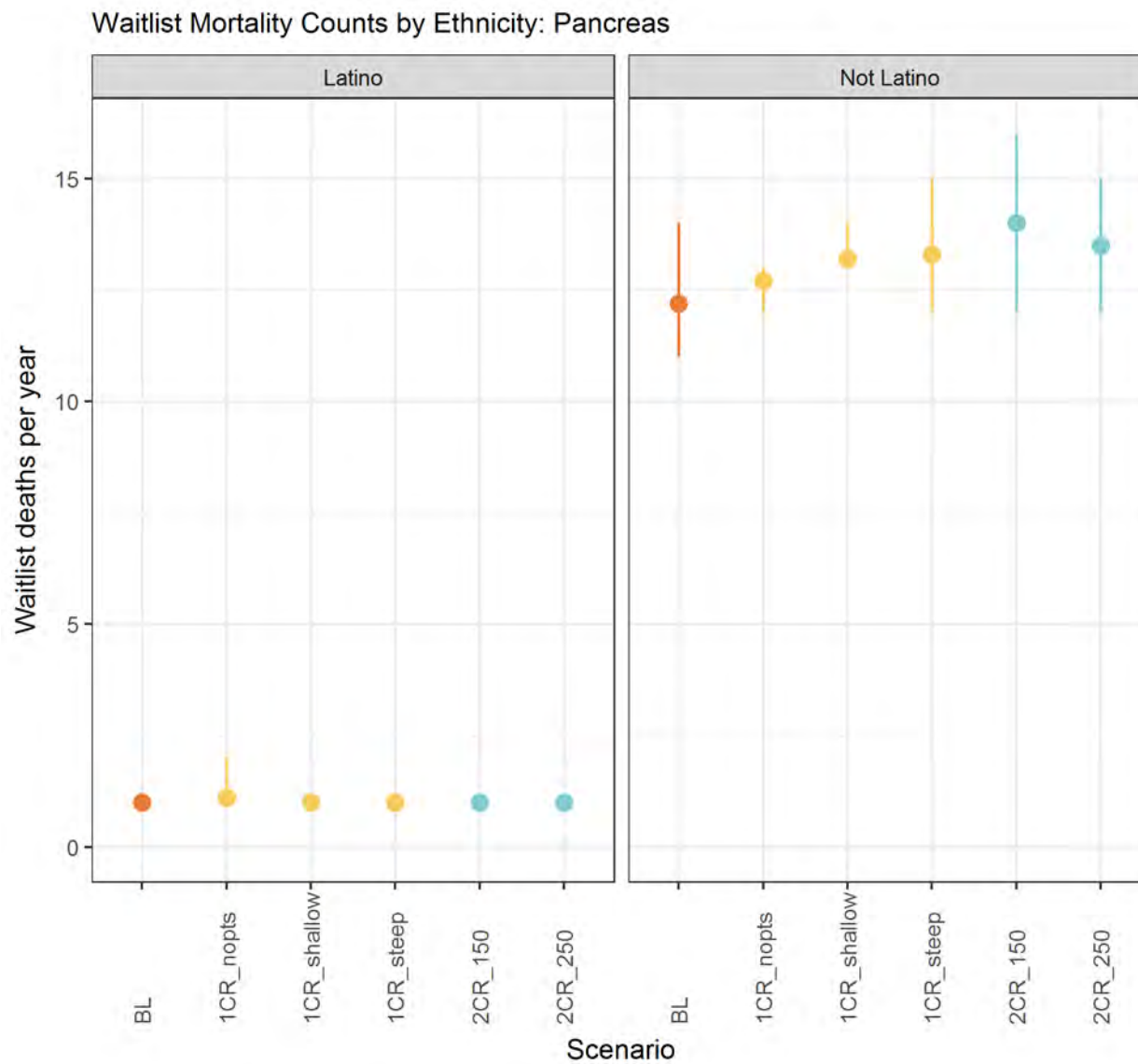


Figure 203 Waitlist Mortality Counts by Ethnicity: Pancreas

# Waitlist Mortality Counts: Sex

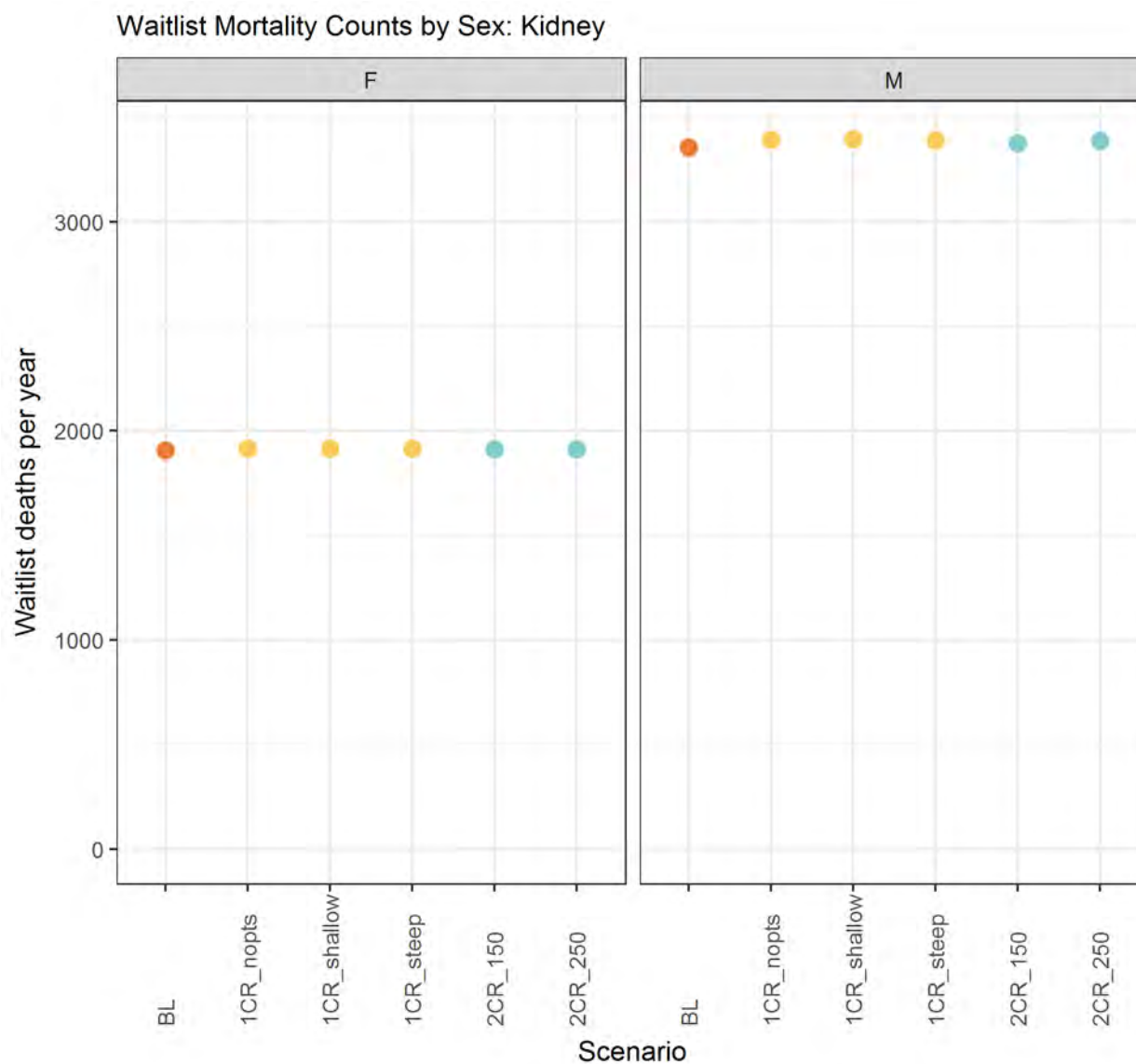


Figure 204 Waitlist Mortality Counts by Sex: Kidney

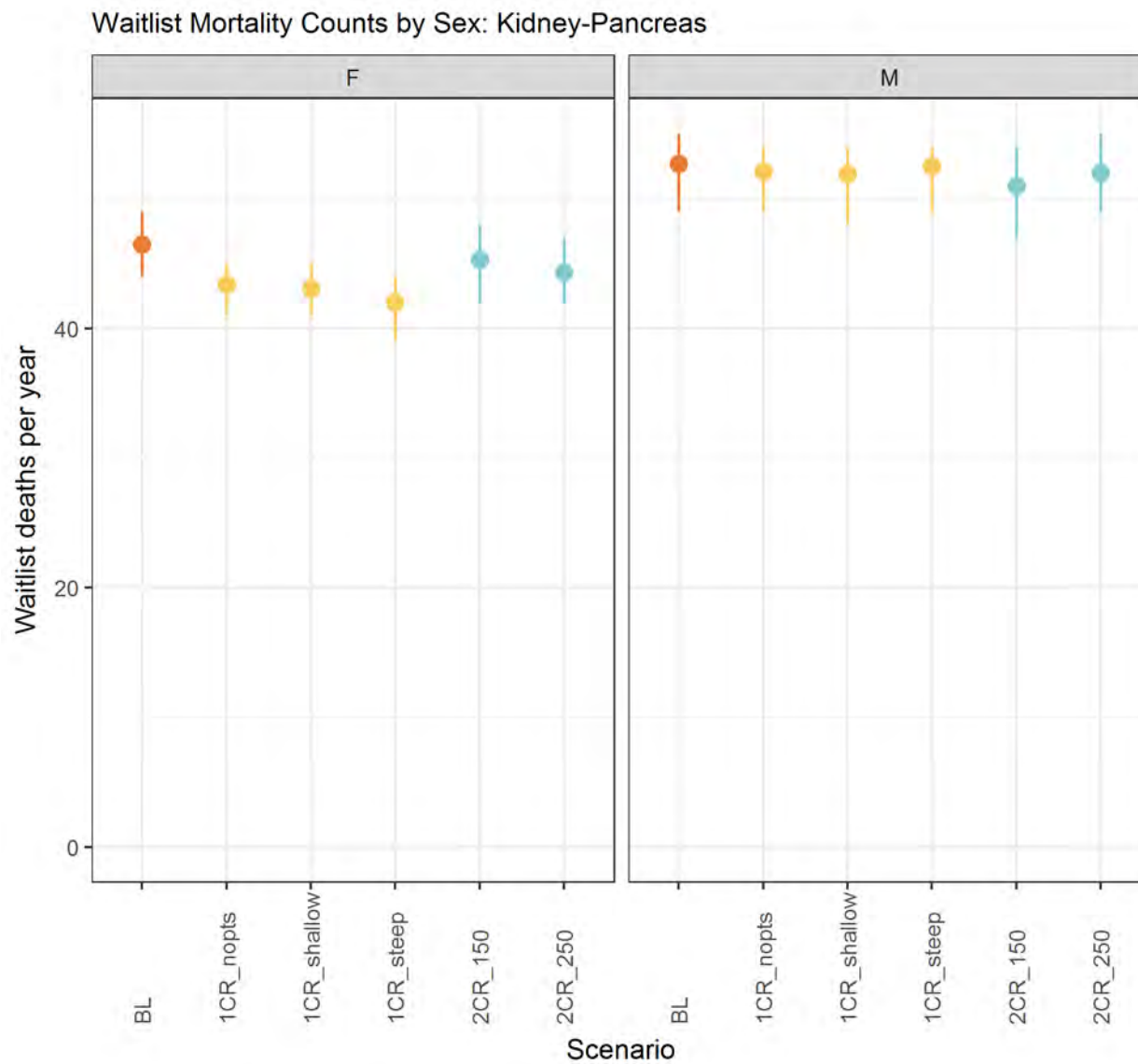


Figure 205 Waitlist Mortality Counts by Sex: Kidney-Pancreas

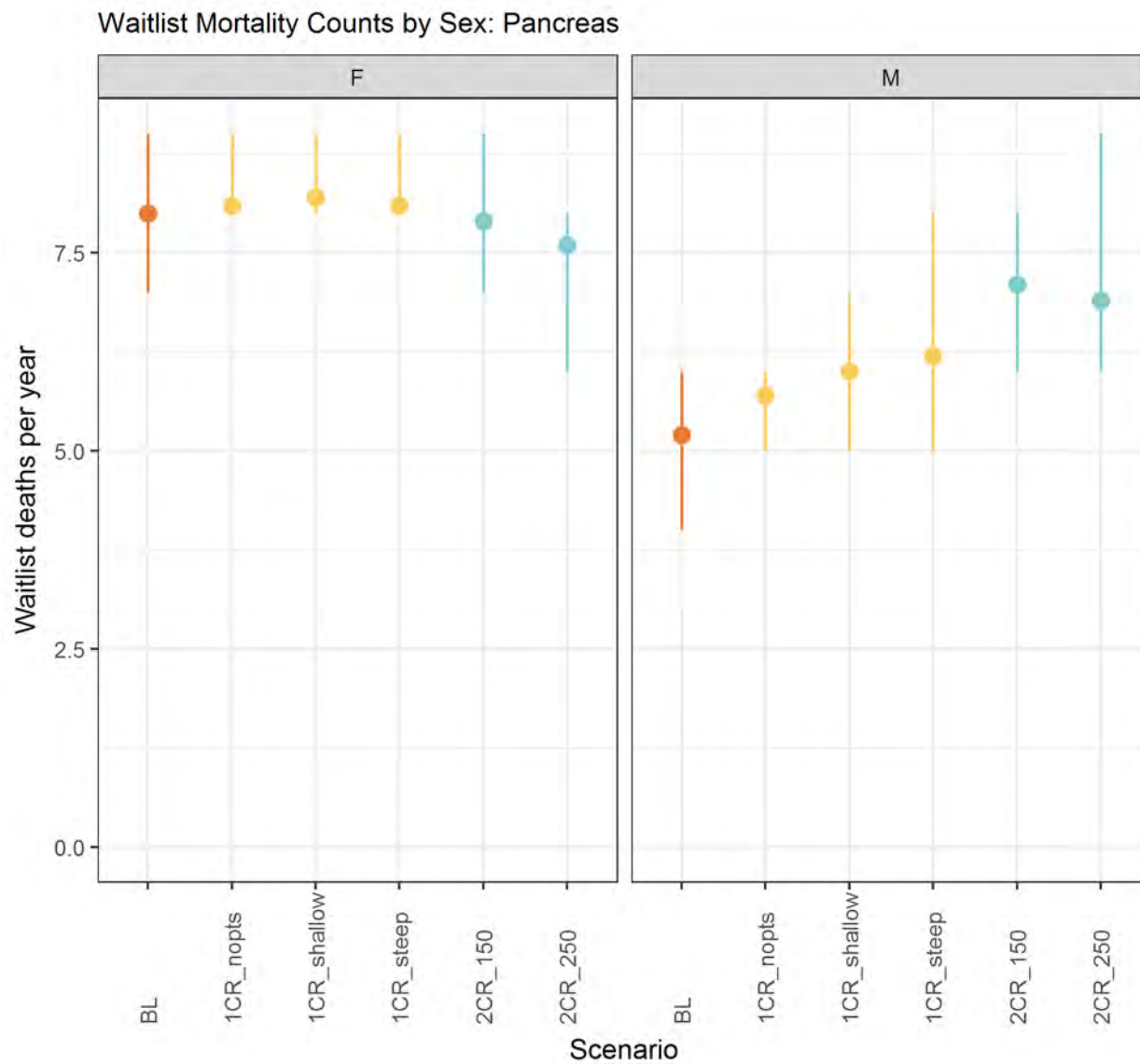


Figure 206 Waitlist Mortality Counts by Sex: Pancreas

## Waitlist Mortality Counts: ABO Group

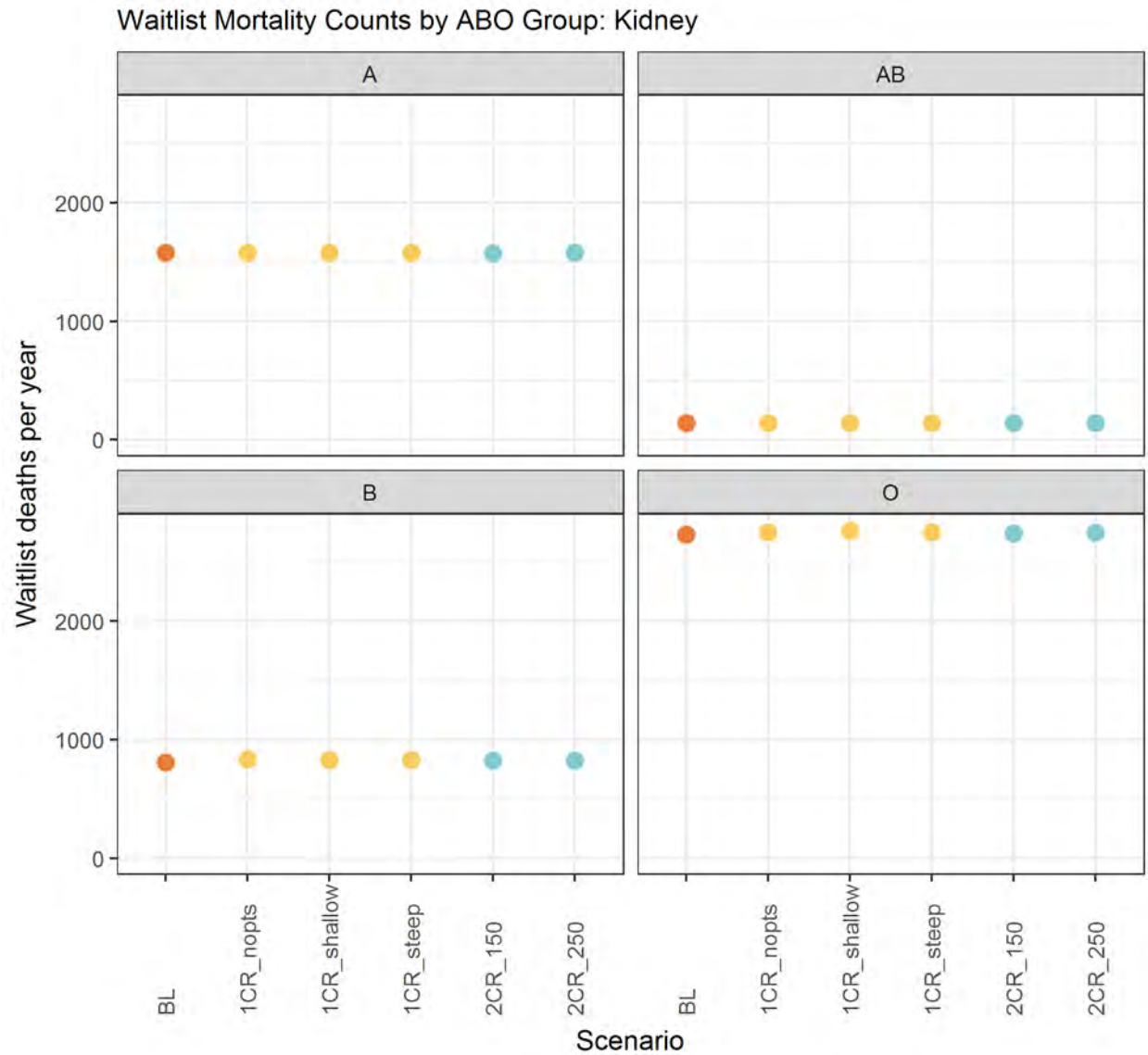


Figure 207 Waitlist Mortality Counts by ABO Group: Kidney

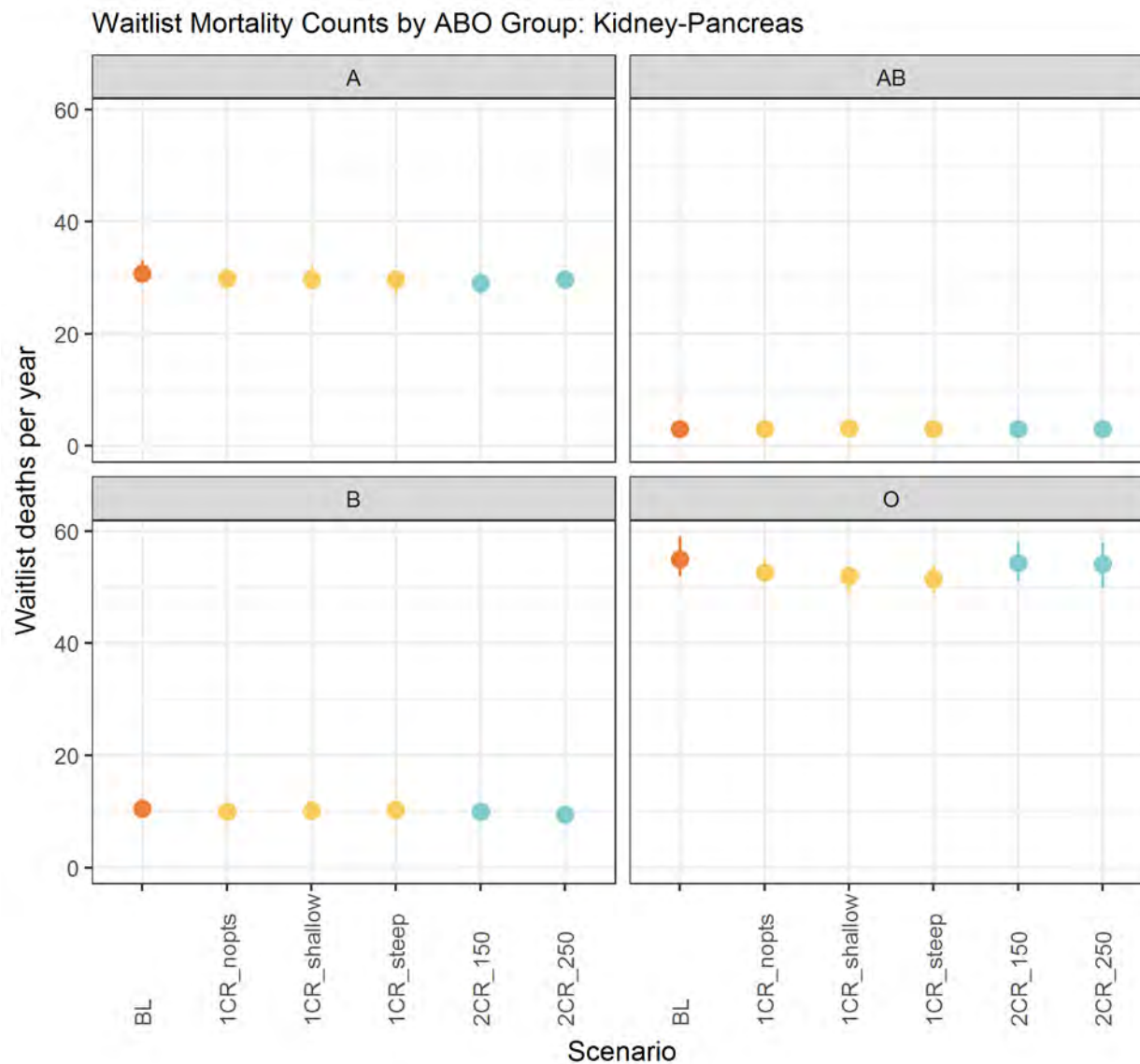


Figure 208 Waitlist Mortality Counts by ABO Group: Kidney-Pancreas



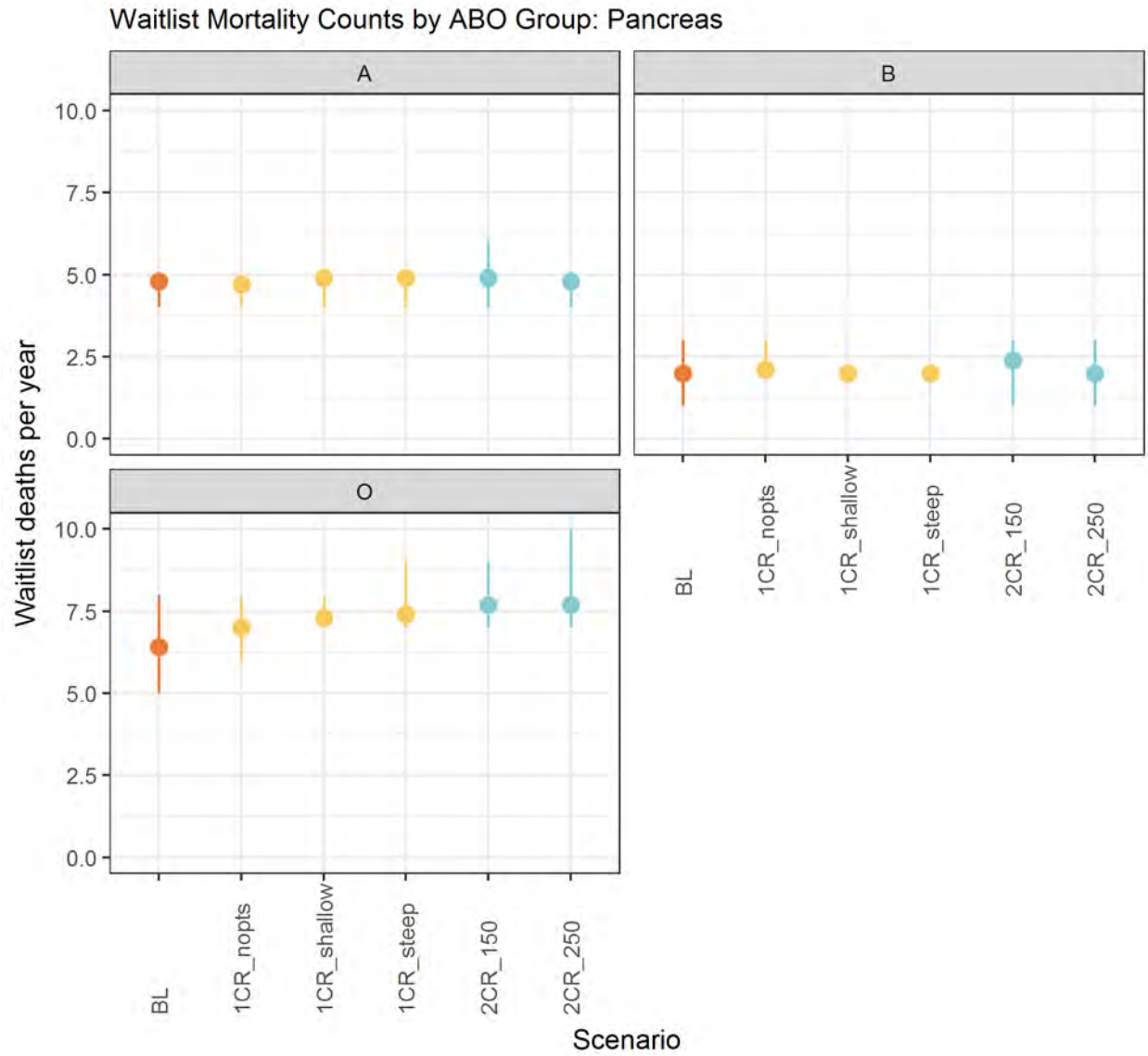


Figure 209 Waitlist Mortality Counts by ABO Group: Pancreas

## Waitlist Mortality Counts: Diagnosis

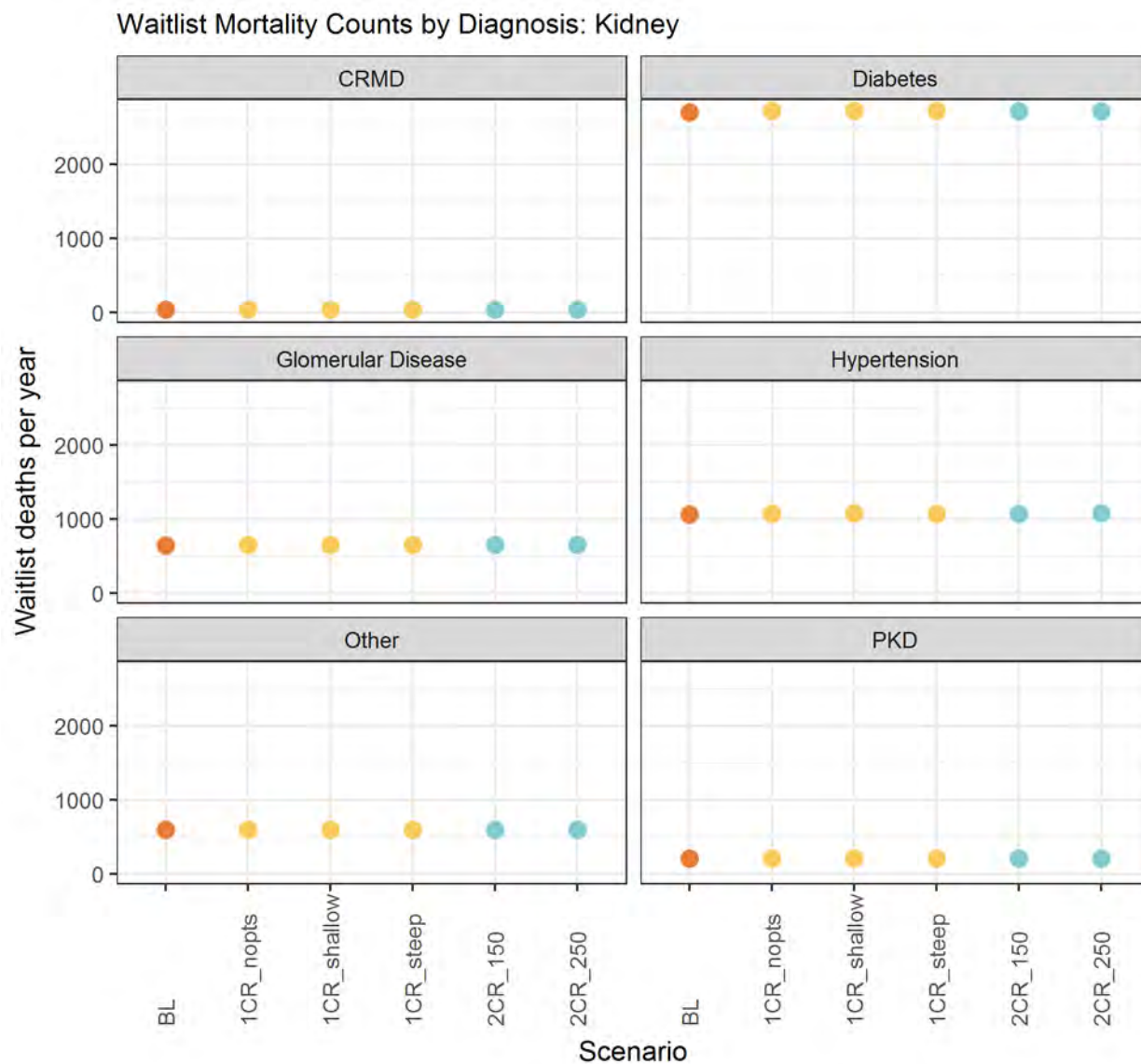


Figure 210 Waitlist Mortality Counts by Diagnosis: Kidney

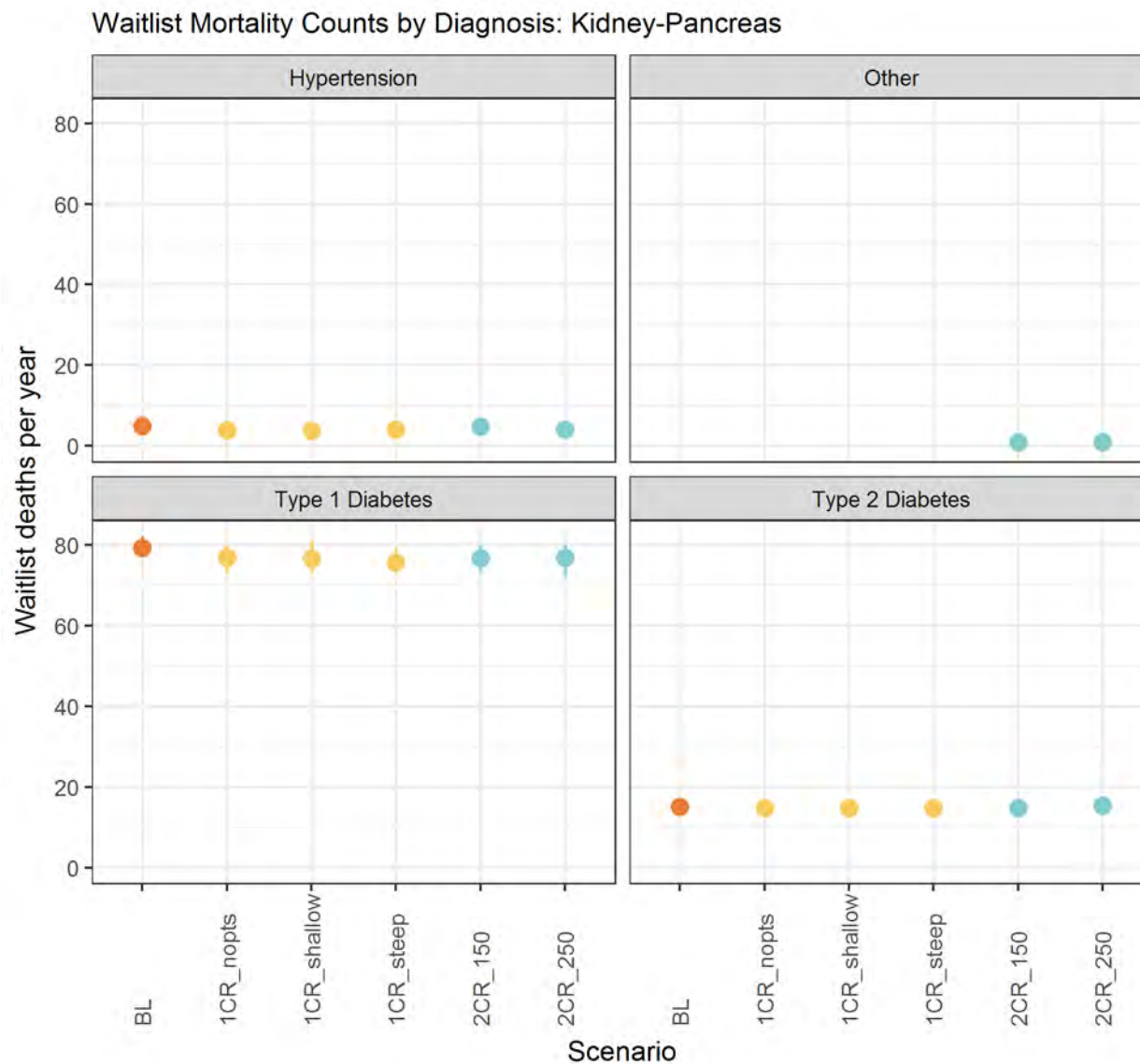


Figure 211 Waitlist Mortality Counts by Diagnosis: Kidney-Pancreas

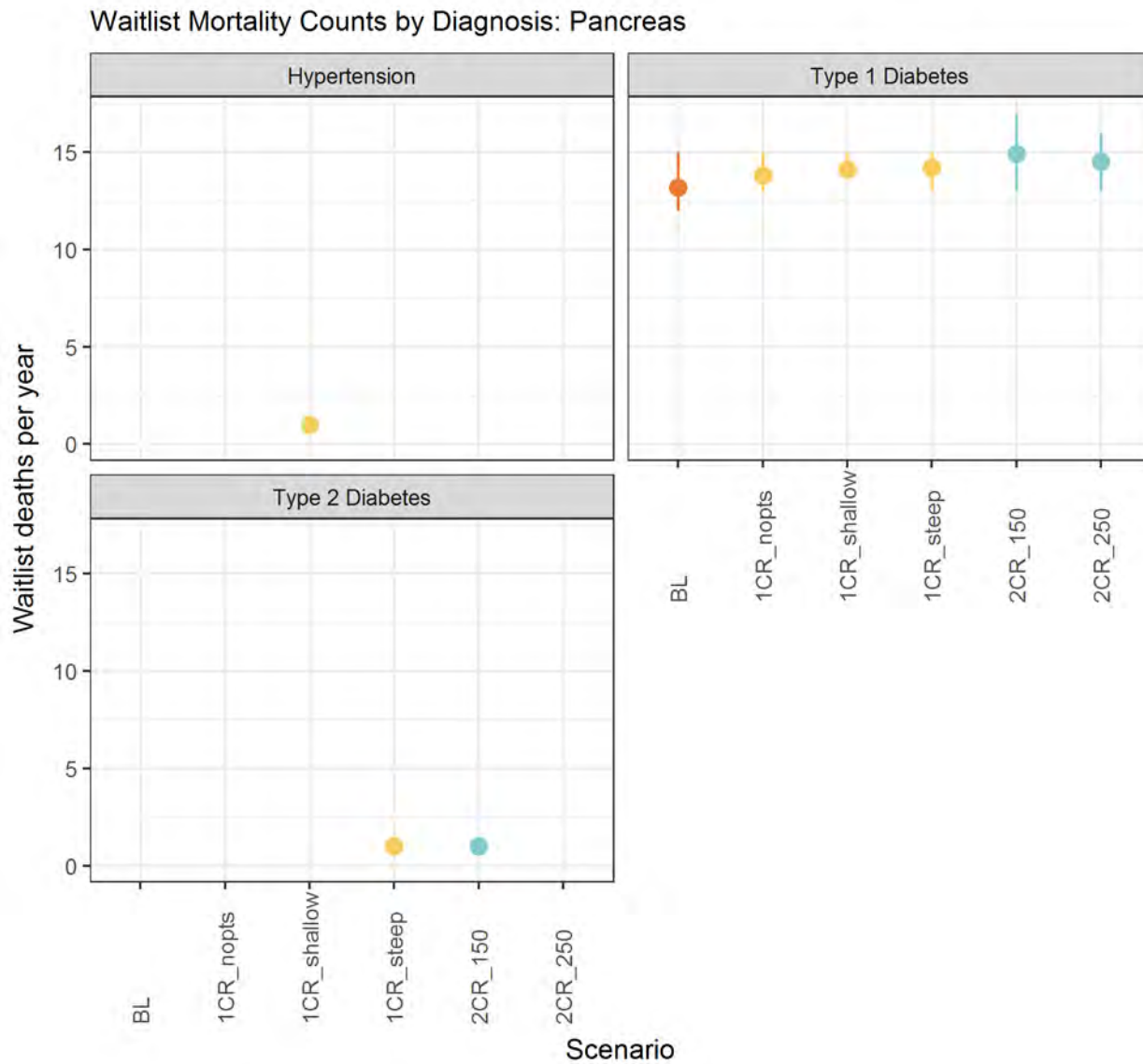


Figure 212 Waitlist Mortality Counts by Diagnosis: Pancreas

## Waitlist Mortality Counts: Dialysis Time

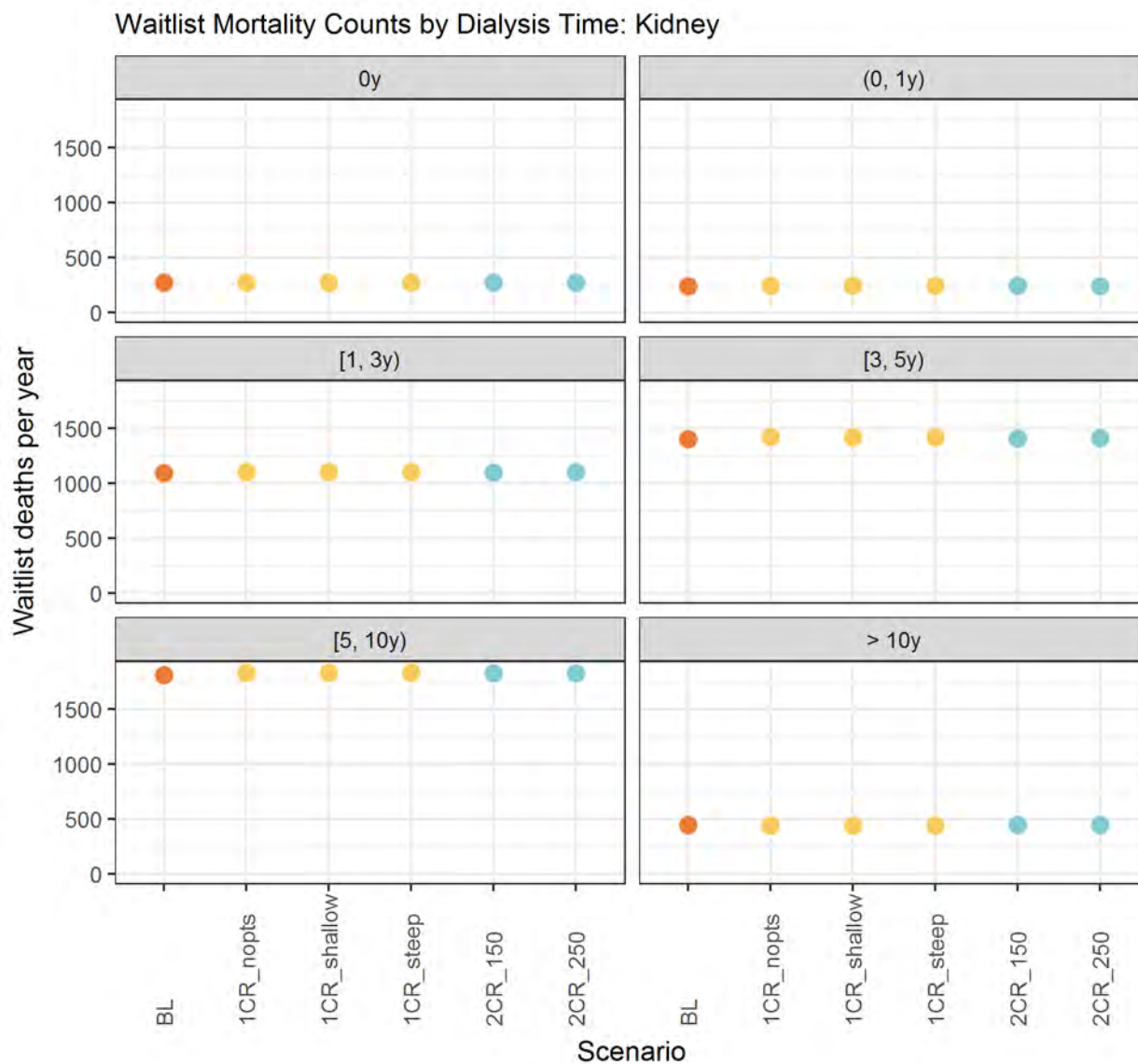


Figure 213 Waitlist Mortality Counts by Dialysis Time: Kidney

Waitlist Mortality Counts: cPRA: 0 - 60

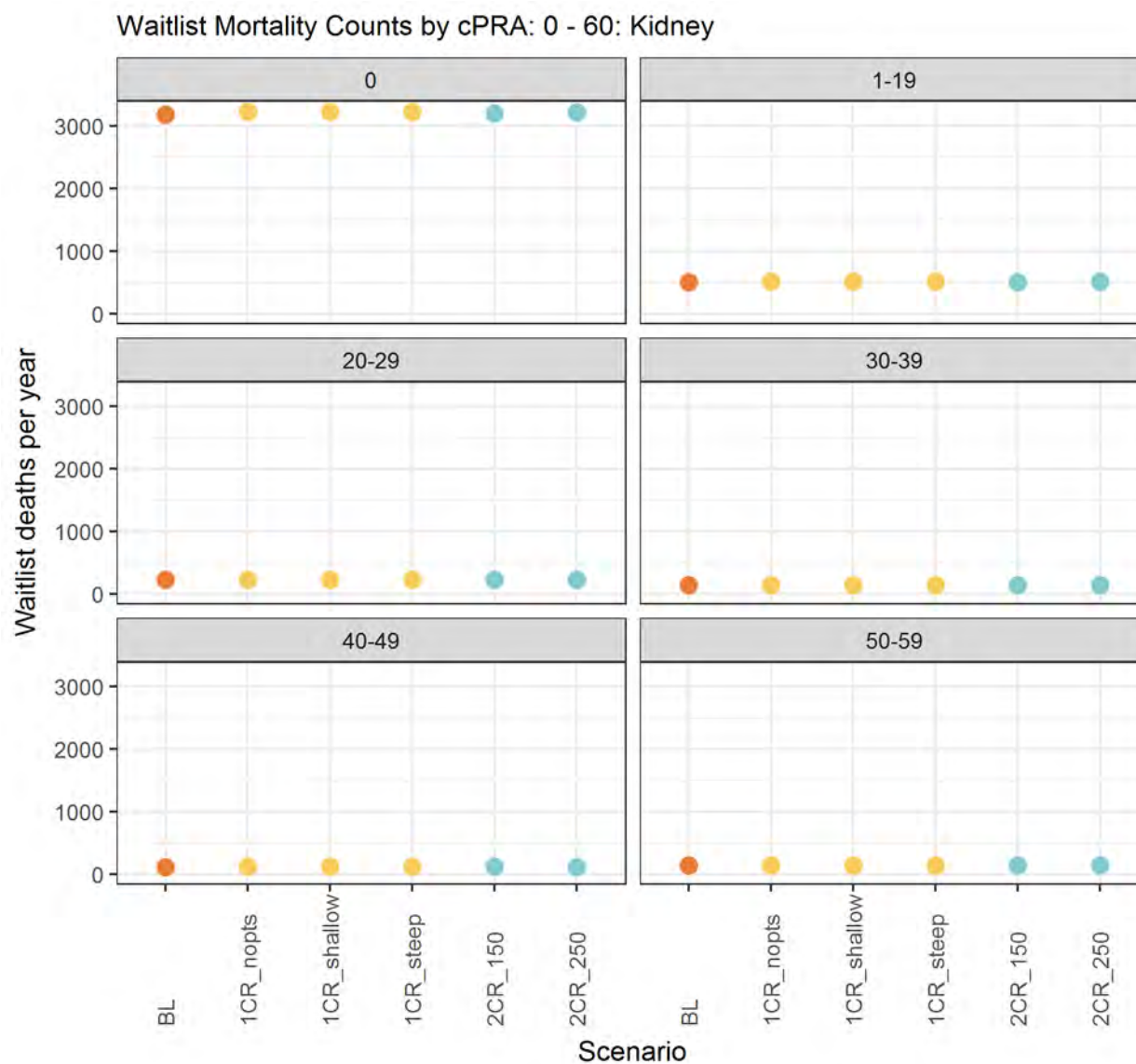


Figure 214 Waitlist Mortality Counts by cPRA: 0 - 60: Kidney



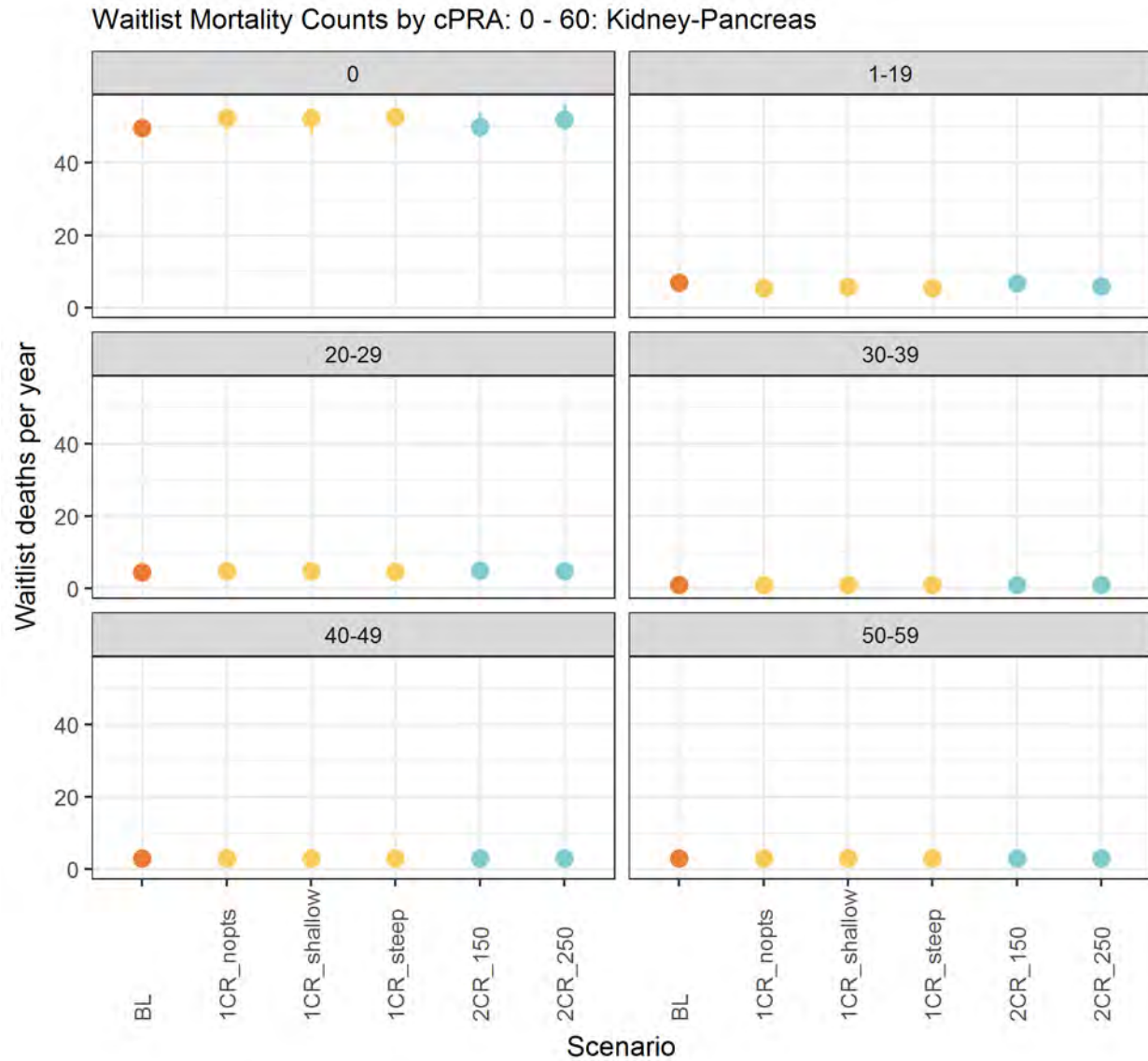


Figure 215 Waitlist Mortality Counts by cPRA: 0 - 60: Kidney-Pancreas

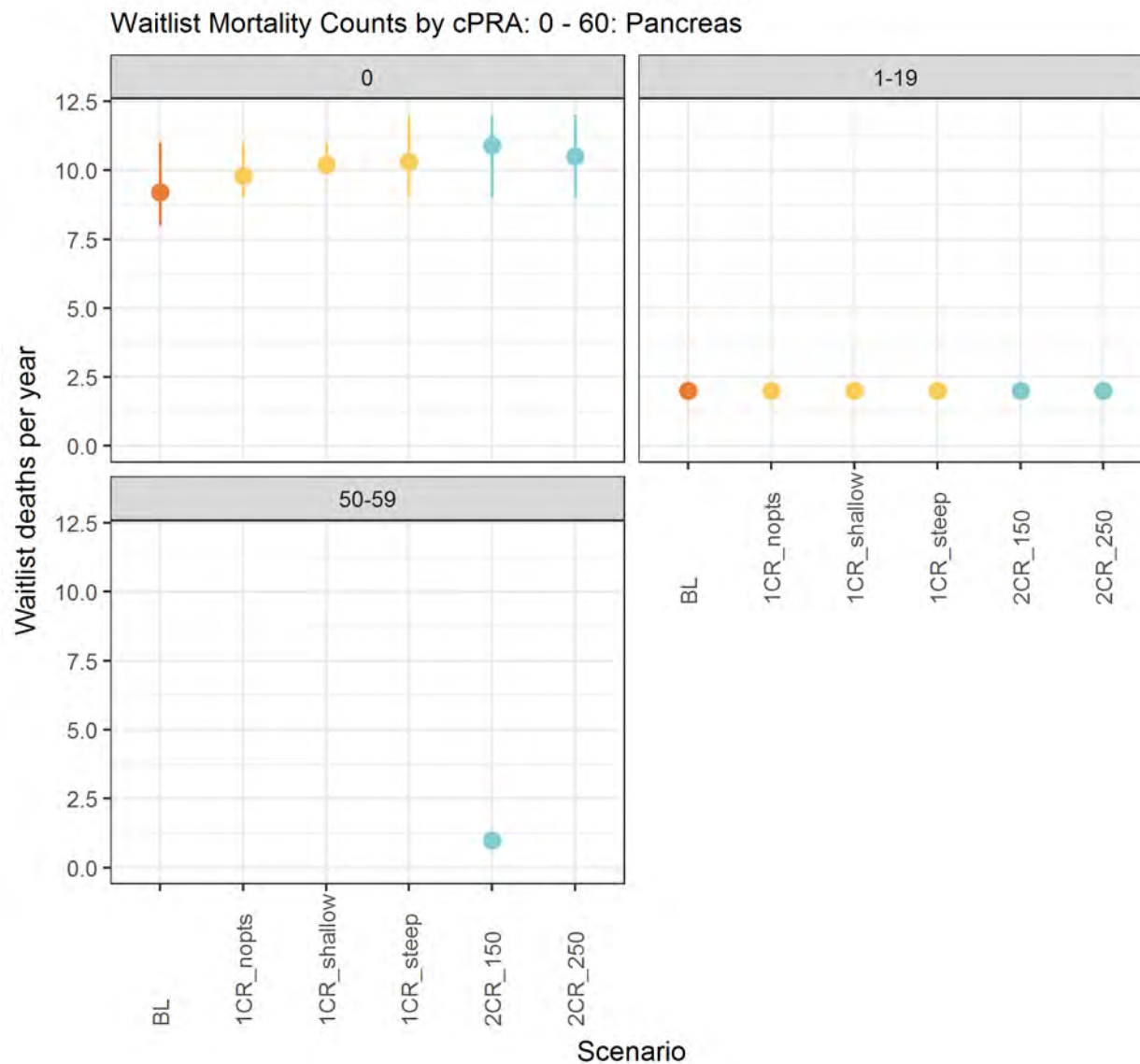


Figure 216 Waitlist Mortality Counts by cPRA: 0 - 60: Pancreas

Waitlist Mortality Counts: cPRA: 61 - 94

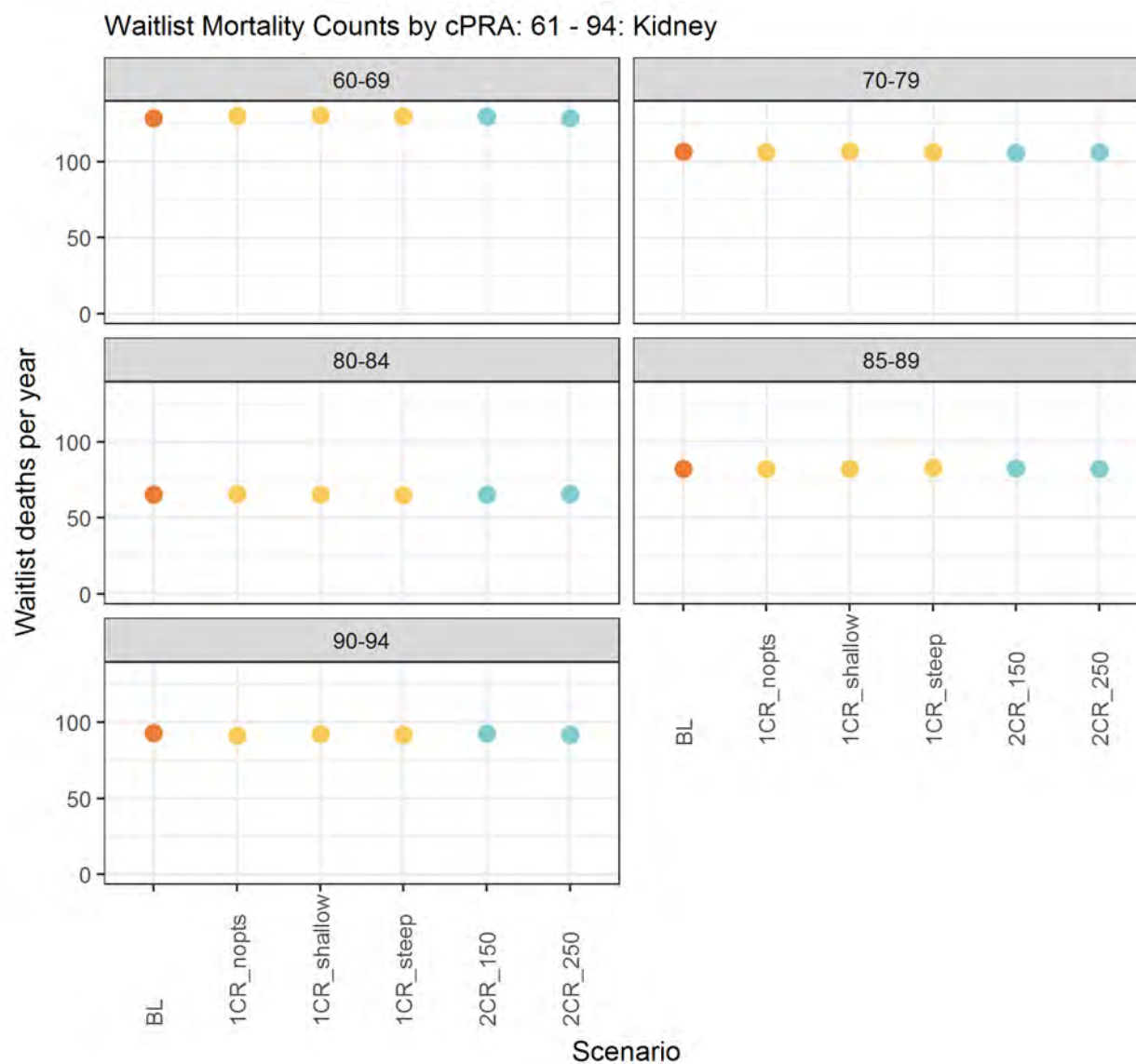


Figure 217 Waitlist Mortality Counts by cPRA: 61 - 94: Kidney

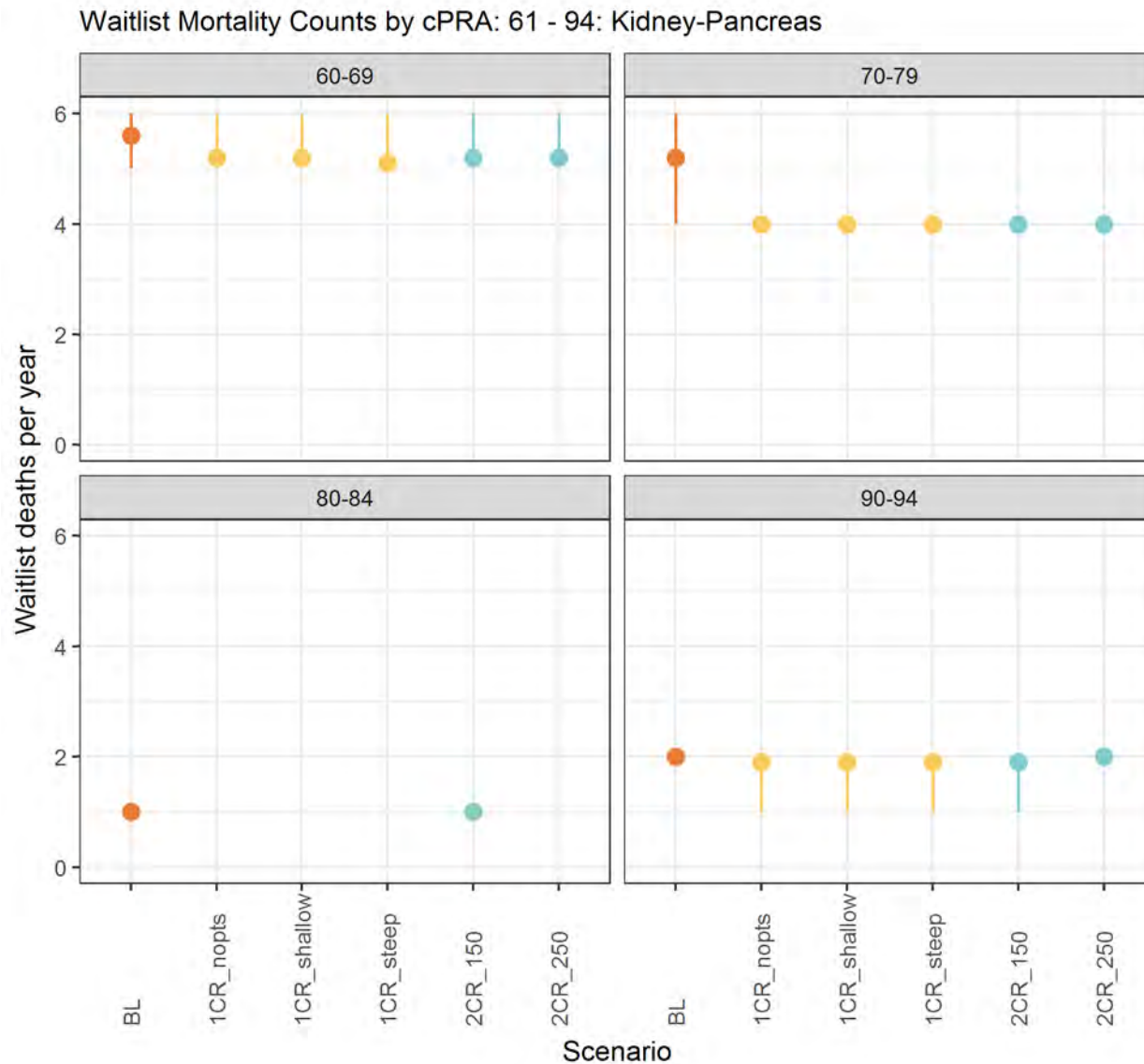


Figure 218 Waitlist Mortality Counts by cPRA: 61 - 94: Kidney-Pancreas

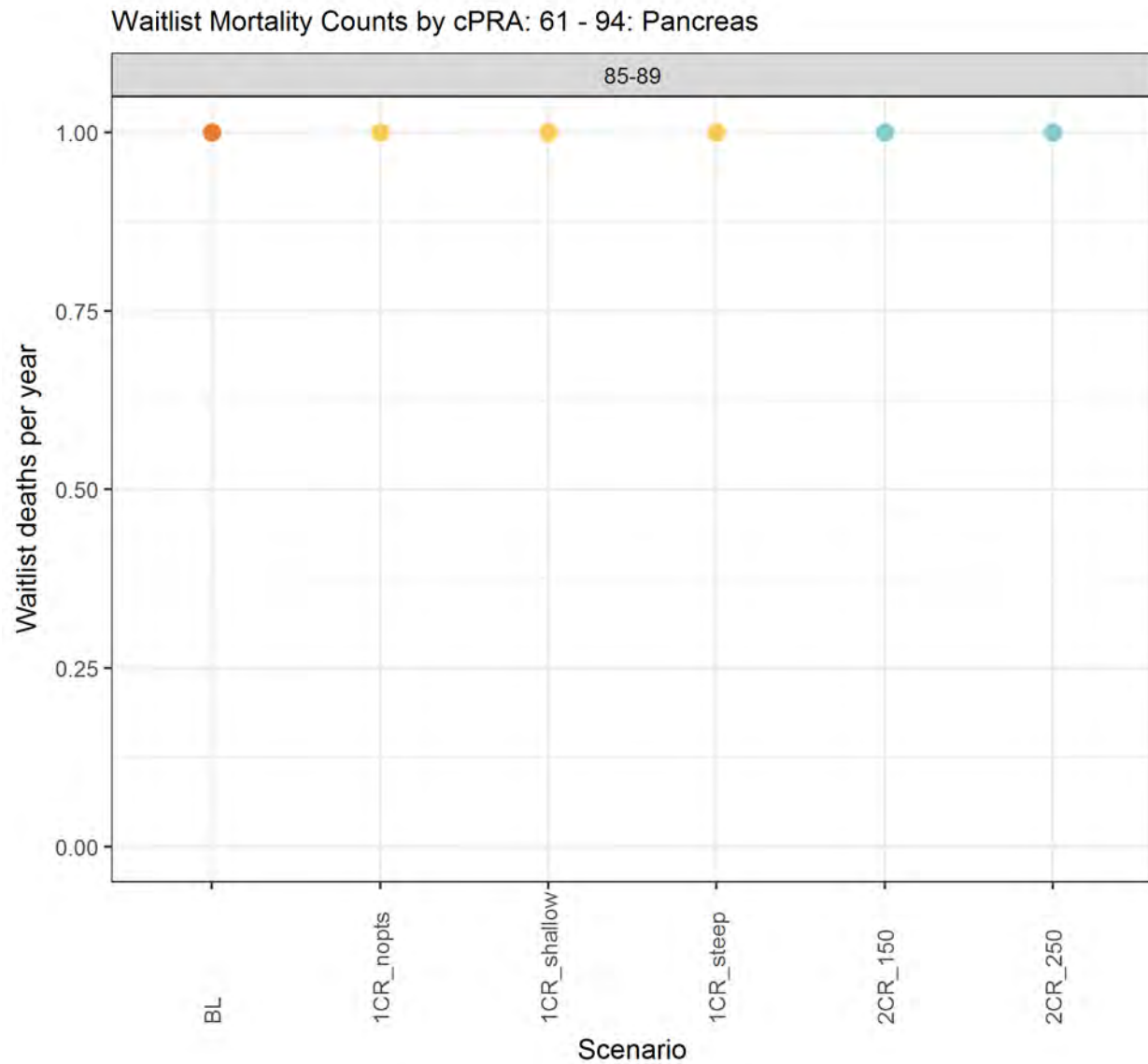


Figure 219 Waitlist Mortality Counts by cPRA: 61 - 94: Pancreas

Waitlist Mortality Counts: cPRA: 95 - 100

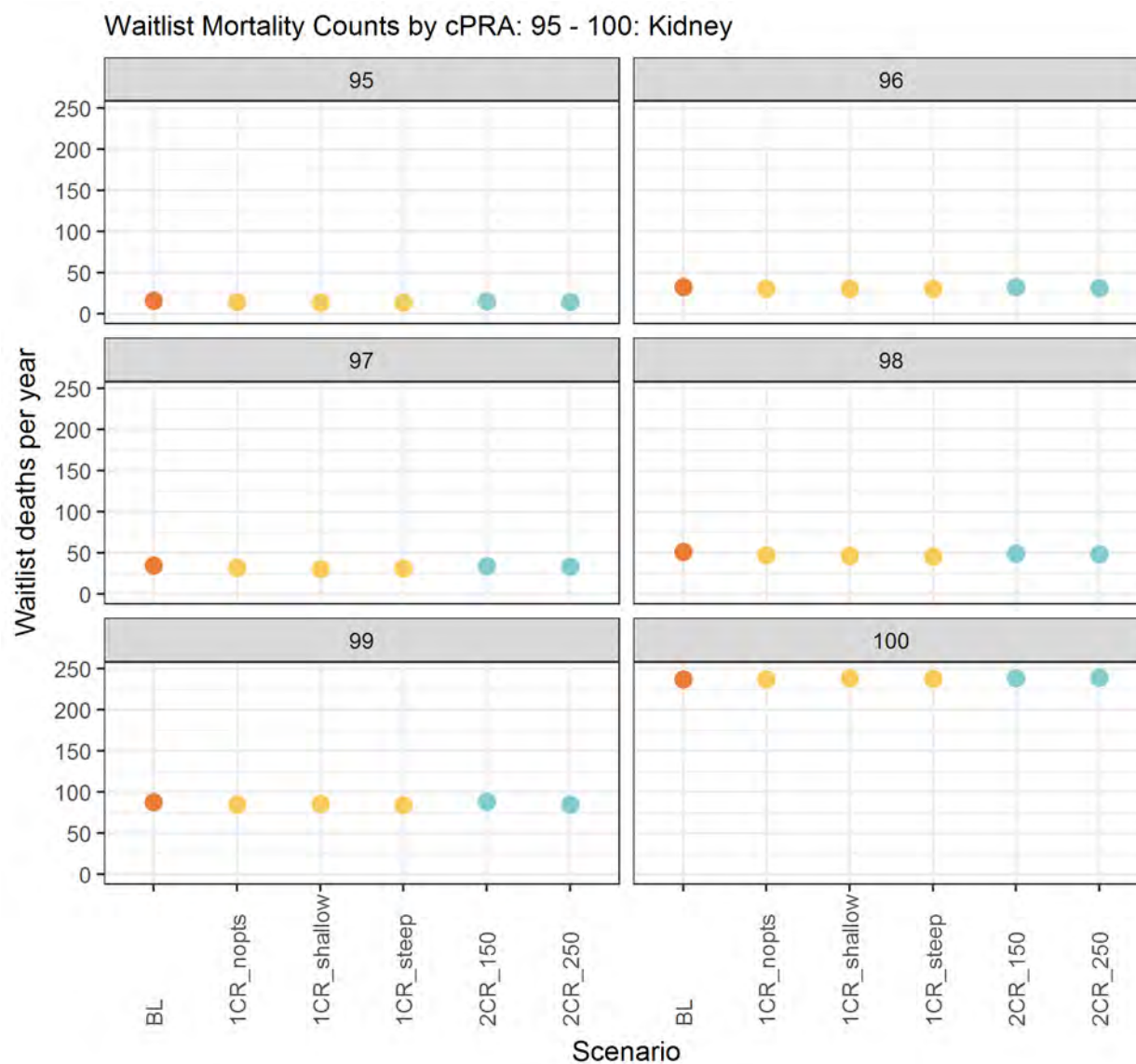


Figure 220 Waitlist Mortality Counts by cPRA: 95 - 100: Kidney



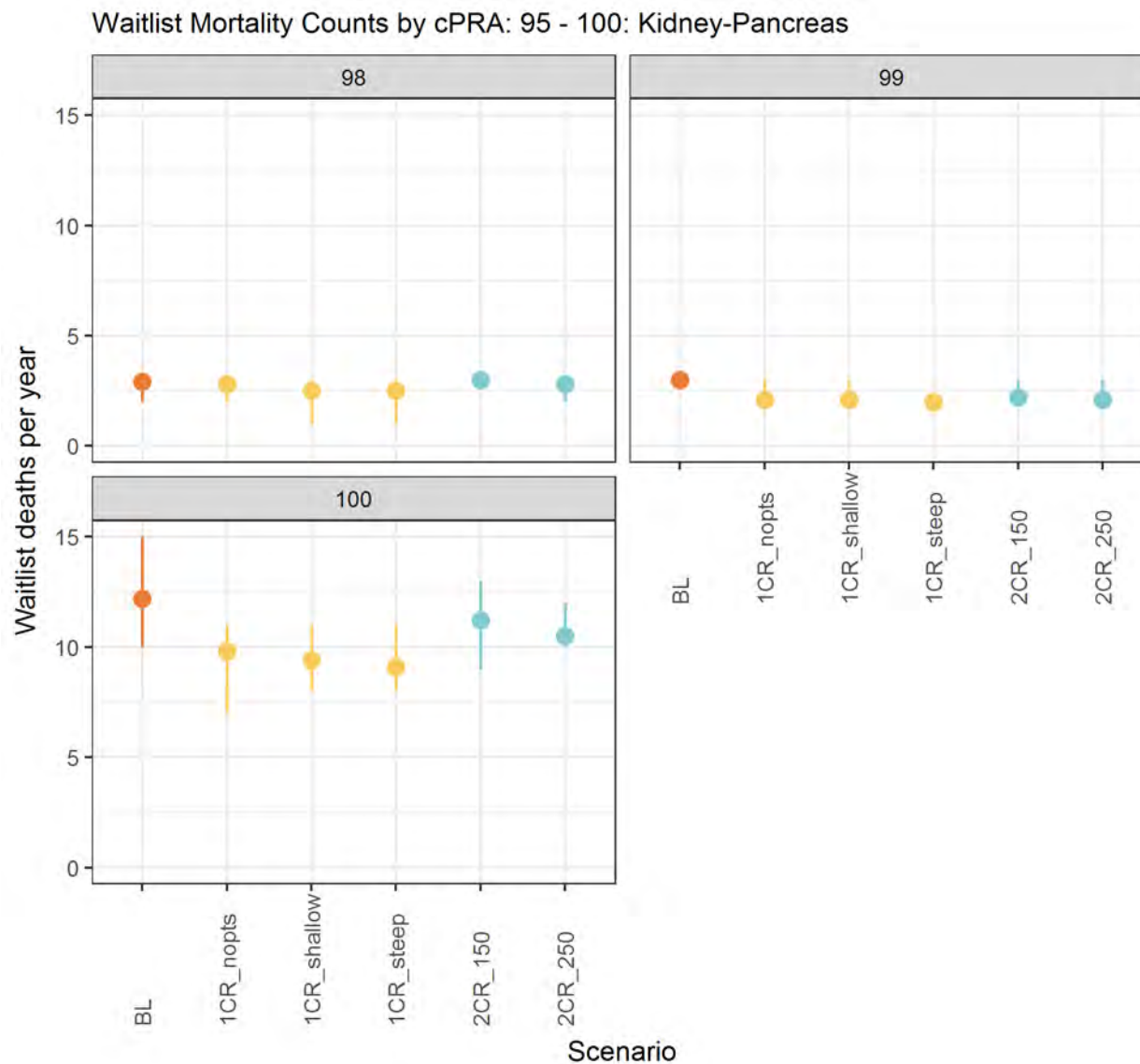


Figure 221 Waitlist Mortality Counts by cPRA: 95 - 100: Kidney-Pancreas

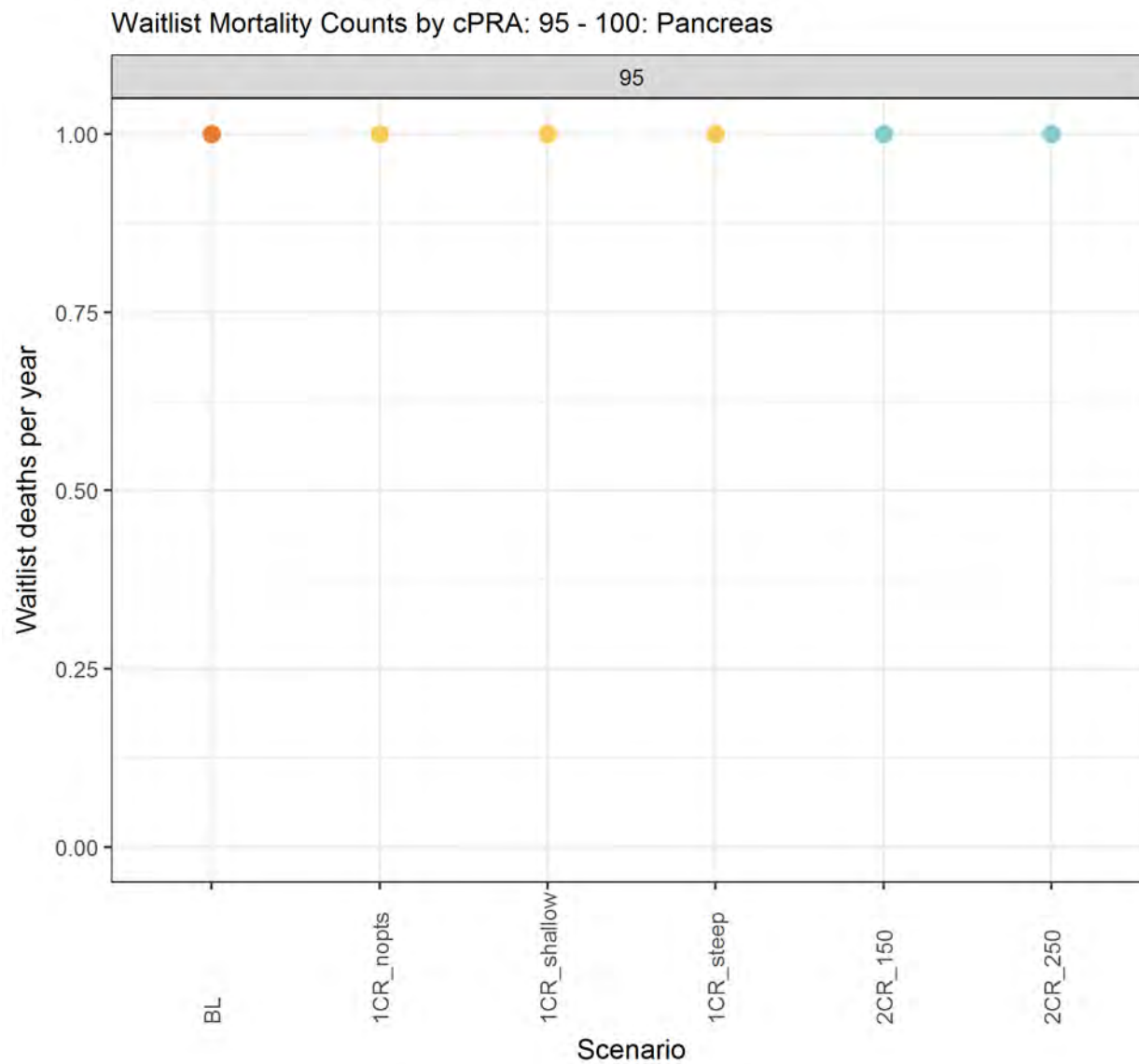


Figure 222 Waitlist Mortality Counts by cPRA: 95 - 100: Pancreas

Waitlist Mortality Counts: cPRA: 95 - 98

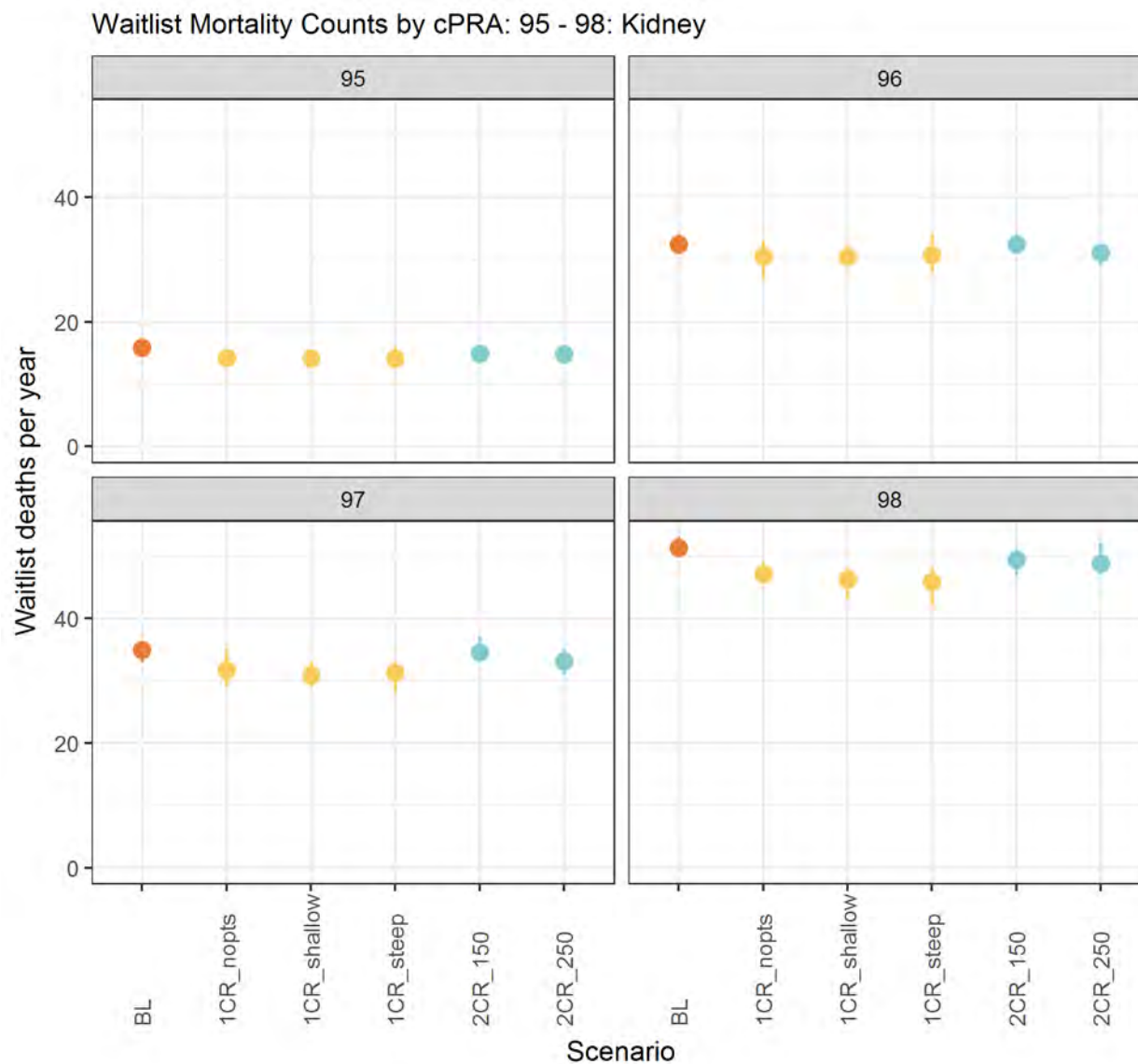


Figure 223 Waitlist Mortality Counts by cPRA: 95 - 98: Kidney

Waitlist Mortality Counts: cPRA: 99 - 100

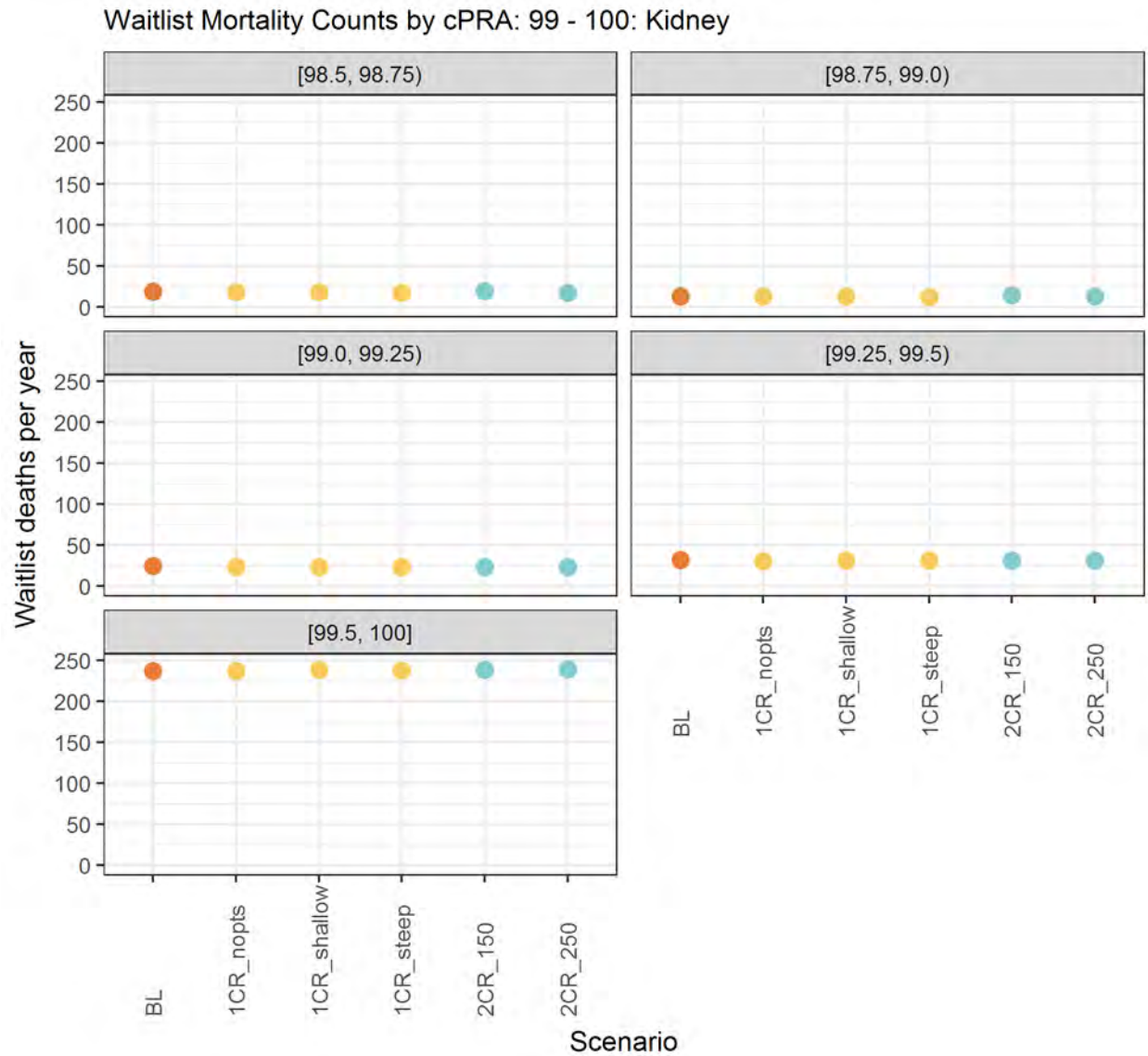


Figure 224 Waitlist Mortality Counts by cPRA: 99 - 100: Kidney

Waitlist Mortality Counts: cPRA: 95 - 99

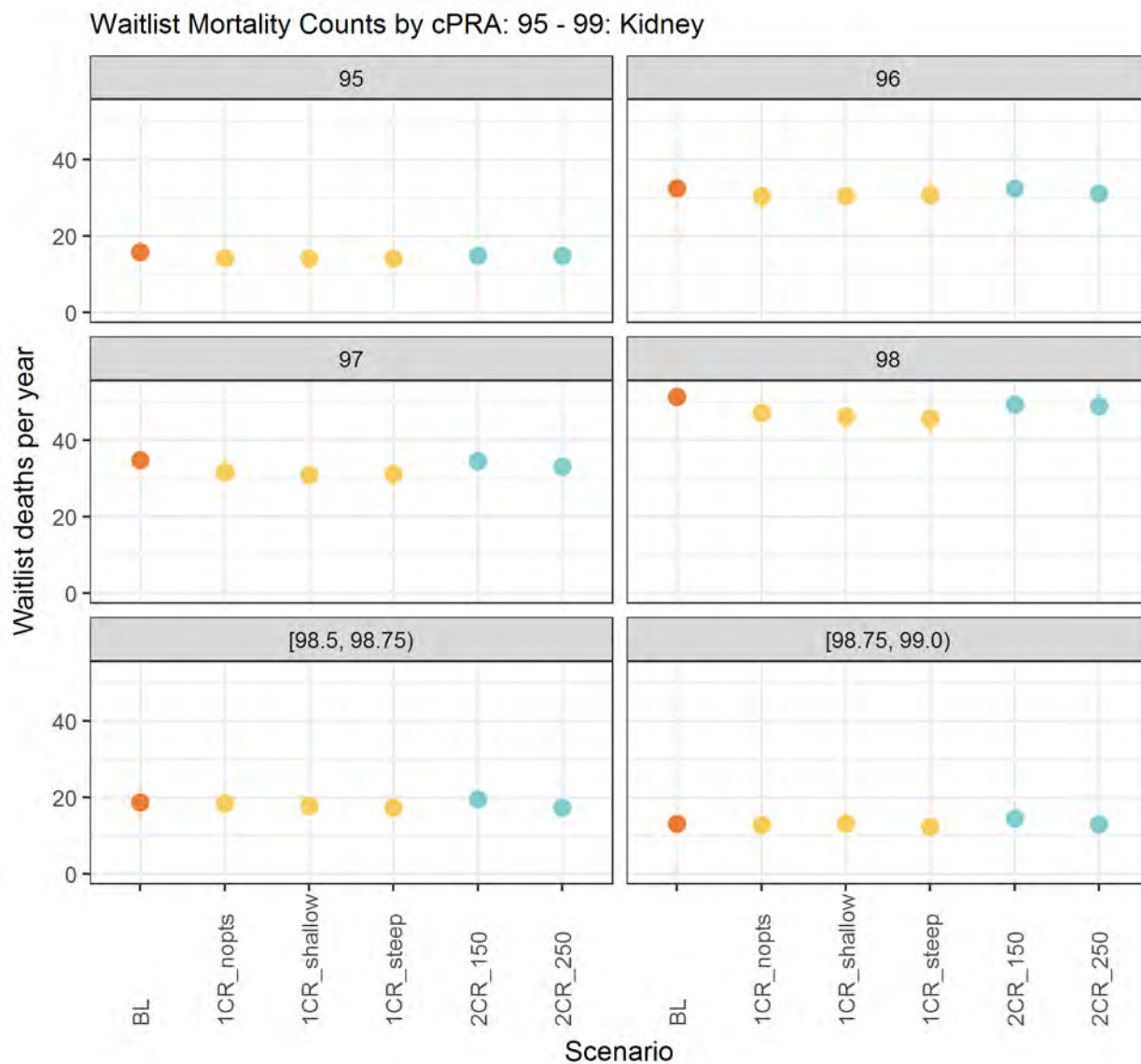


Figure 225 Waitlist Mortality Counts by cPRA: 95 - 99: Kidney

Waitlist Mortality Counts: cPRA: 99 - 99.8

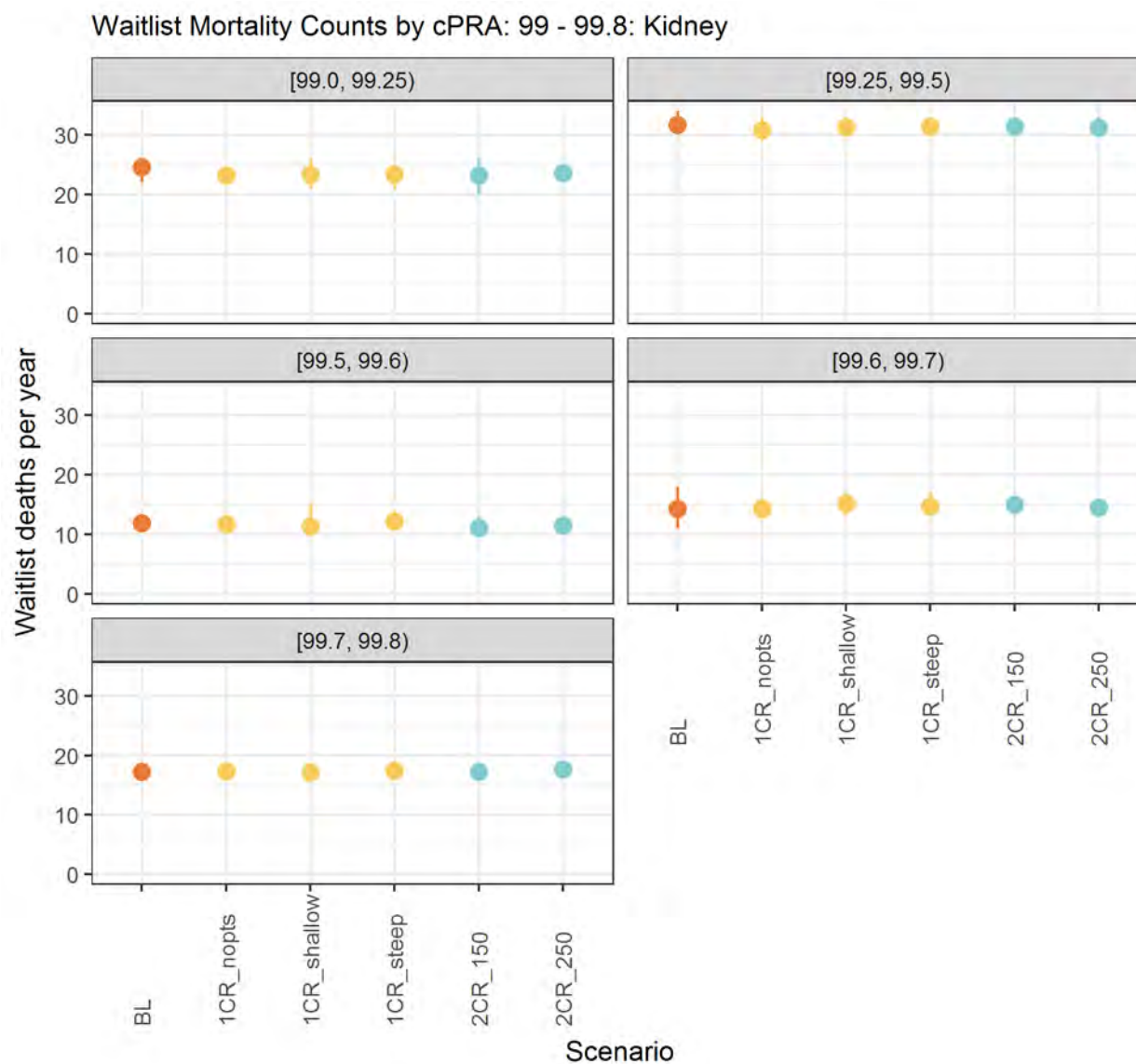


Figure 226 Waitlist Mortality Counts by cPRA: 99 - 99.8: Kidney



Waitlist Mortality Counts: cPRA: 99.8 - 100

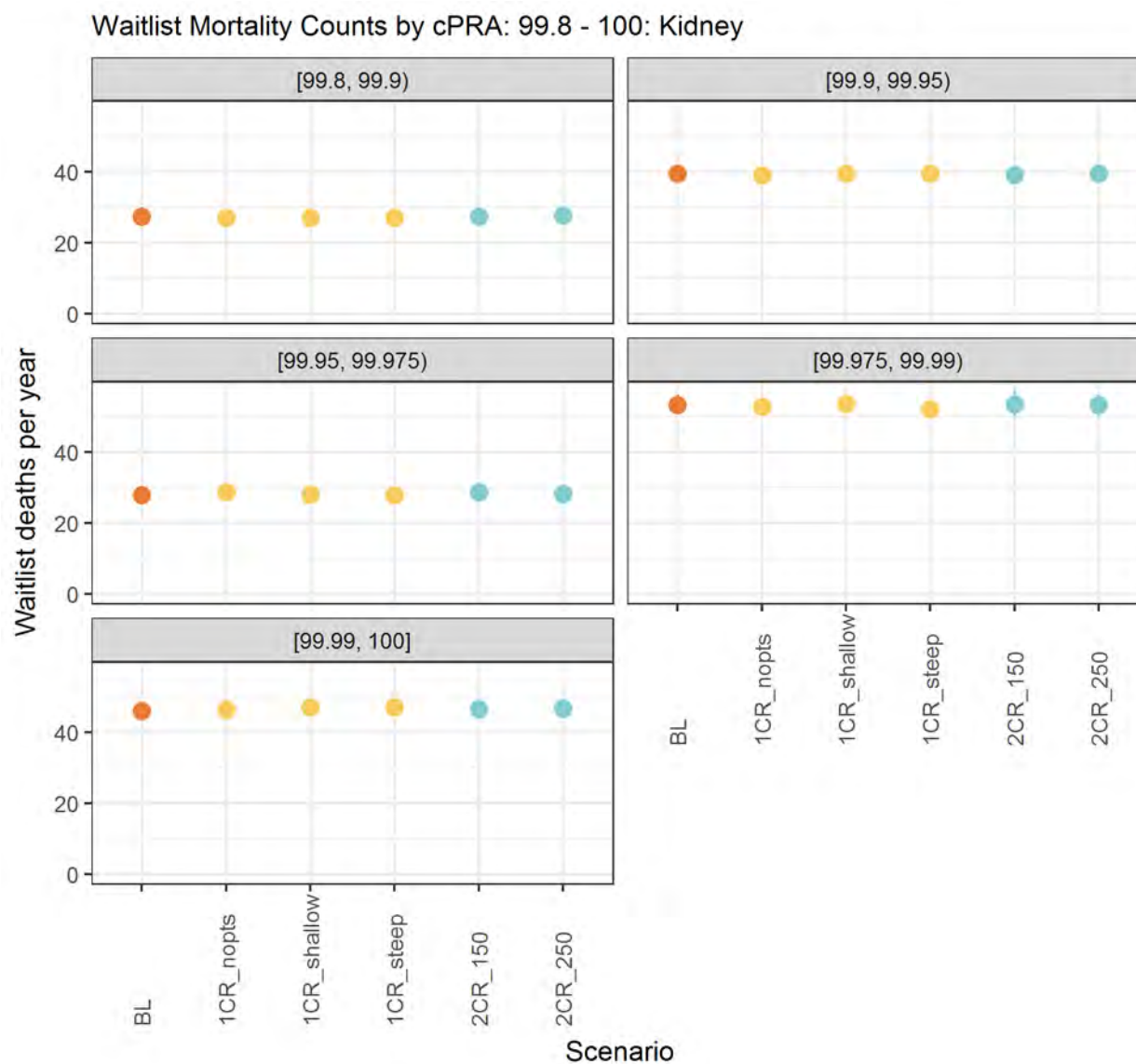


Figure 227 Waitlist Mortality Counts by cPRA: 99.8 - 100: Kidney

## Waitlist Mortality Counts: Payment Status

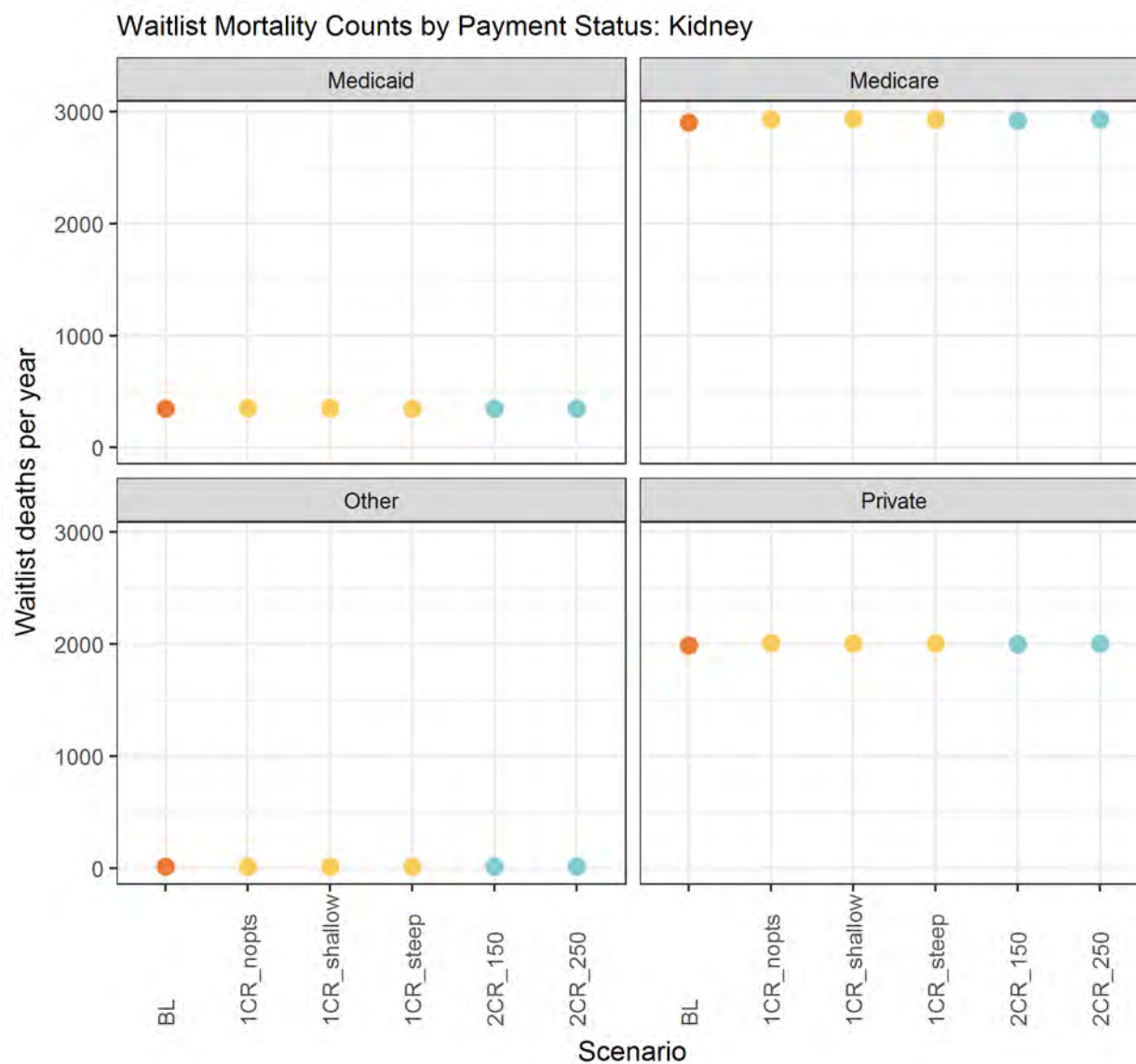


Figure 228 Waitlist Mortality Counts by Payment Status: Kidney

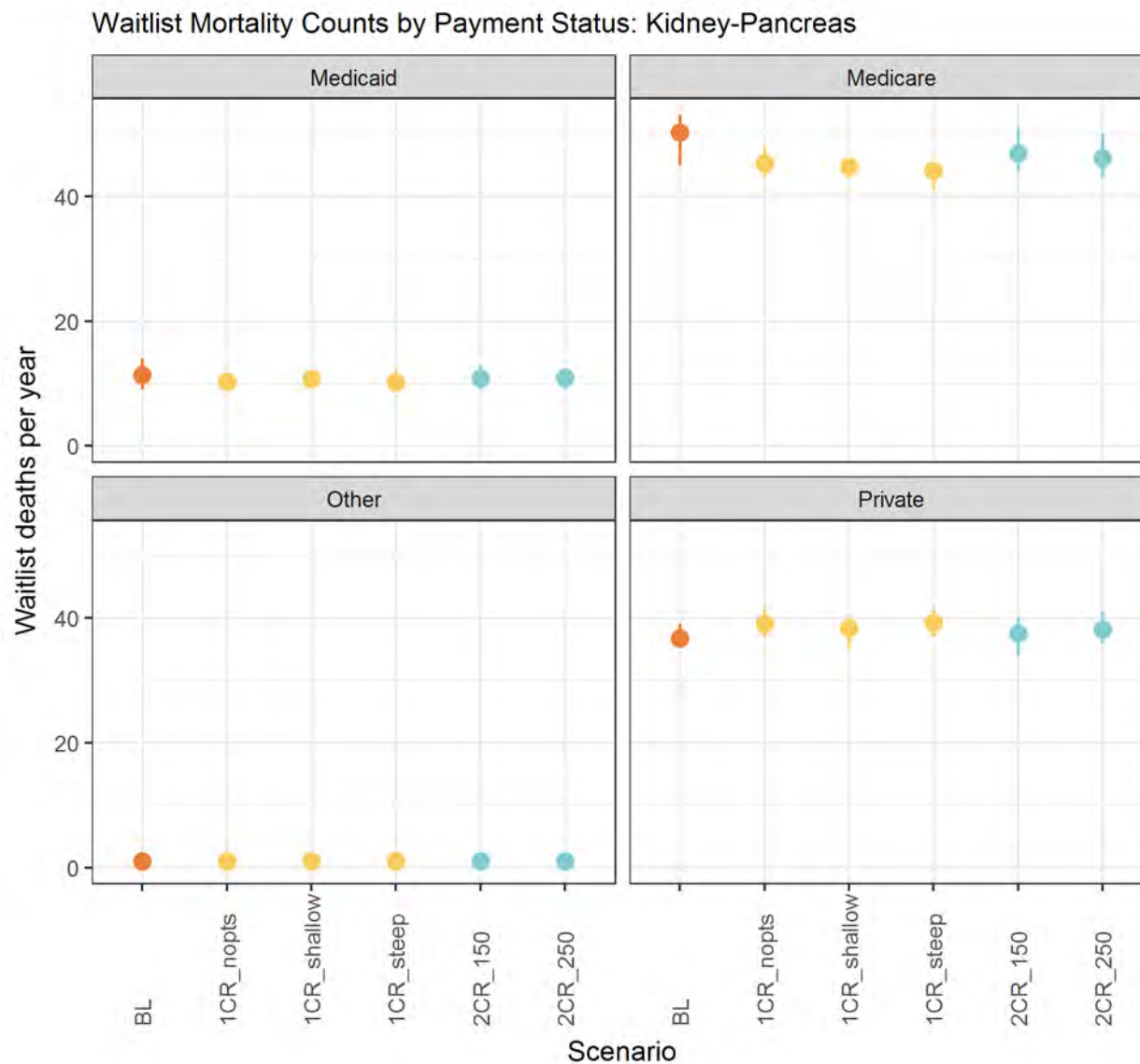


Figure 229 Waitlist Mortality Counts by Payment Status: Kidney-Pancreas

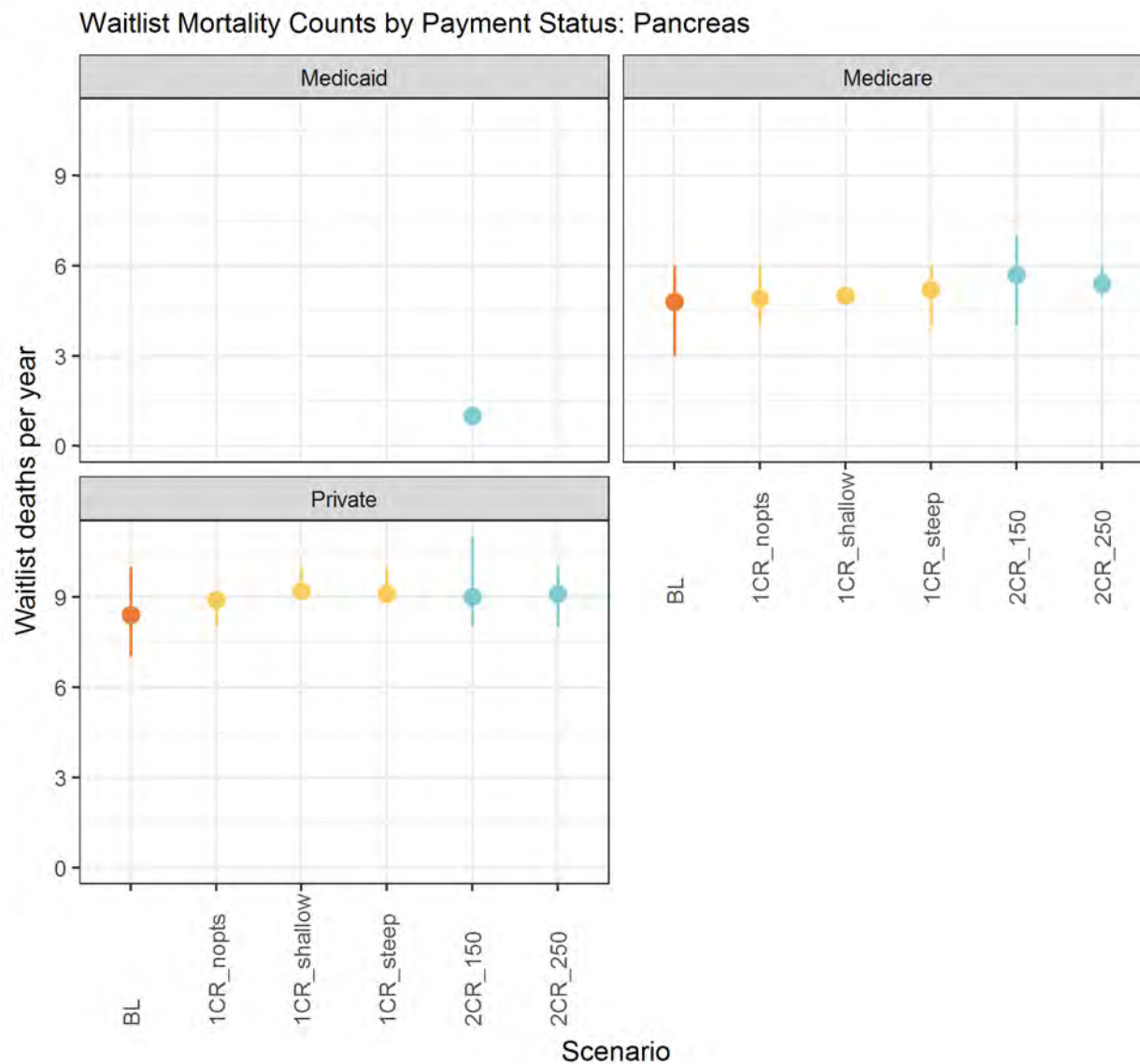


Figure 230 Waitlist Mortality Counts by Payment Status: Pancreas

## Waitlist Mortality Counts: Urbanicity



Figure 231 Waitlist Mortality Counts by Urbanicity: Kidney

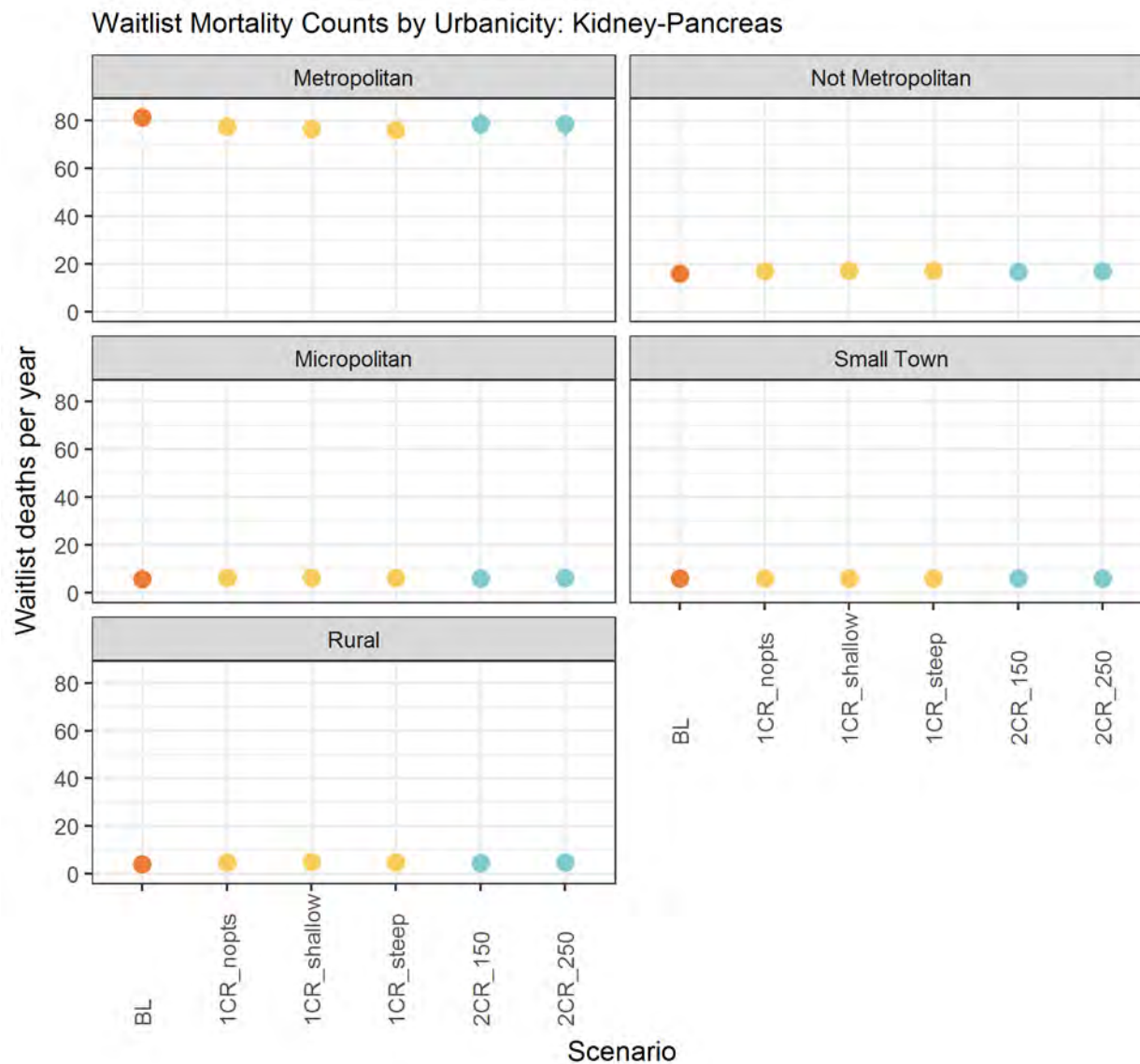


Figure 232 Waitlist Mortality Counts by Urbanicity: Kidney-Pancreas



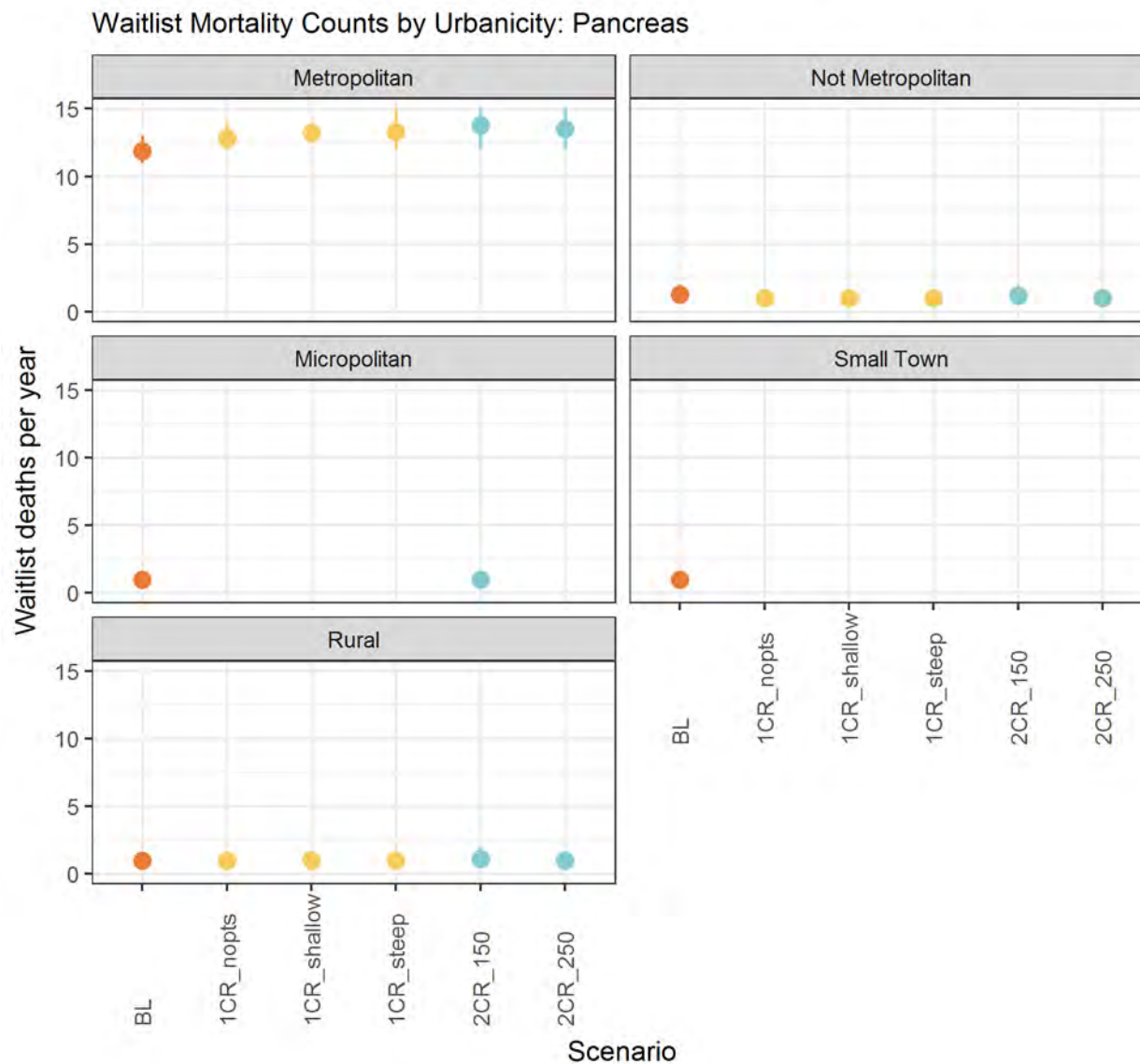


Figure 233 Waitlist Mortality Counts by Urbanicity: Pancreas

## Waitlist Mortality Counts: EPTS

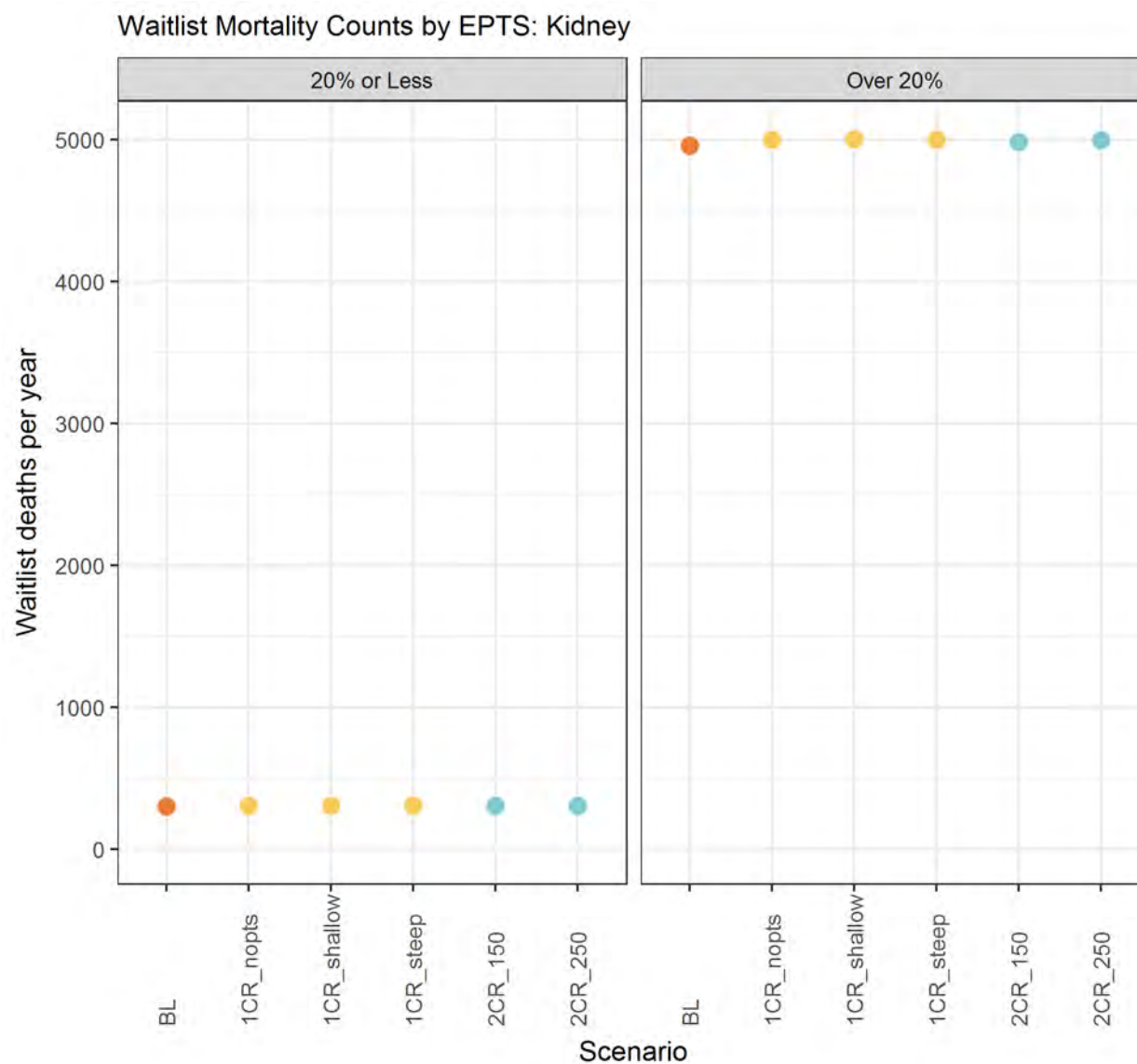


Figure 234 Waitlist Mortality Counts by EPTS: Kidney

## Waitlist Mortality Counts: Median Household Income by Zip Code

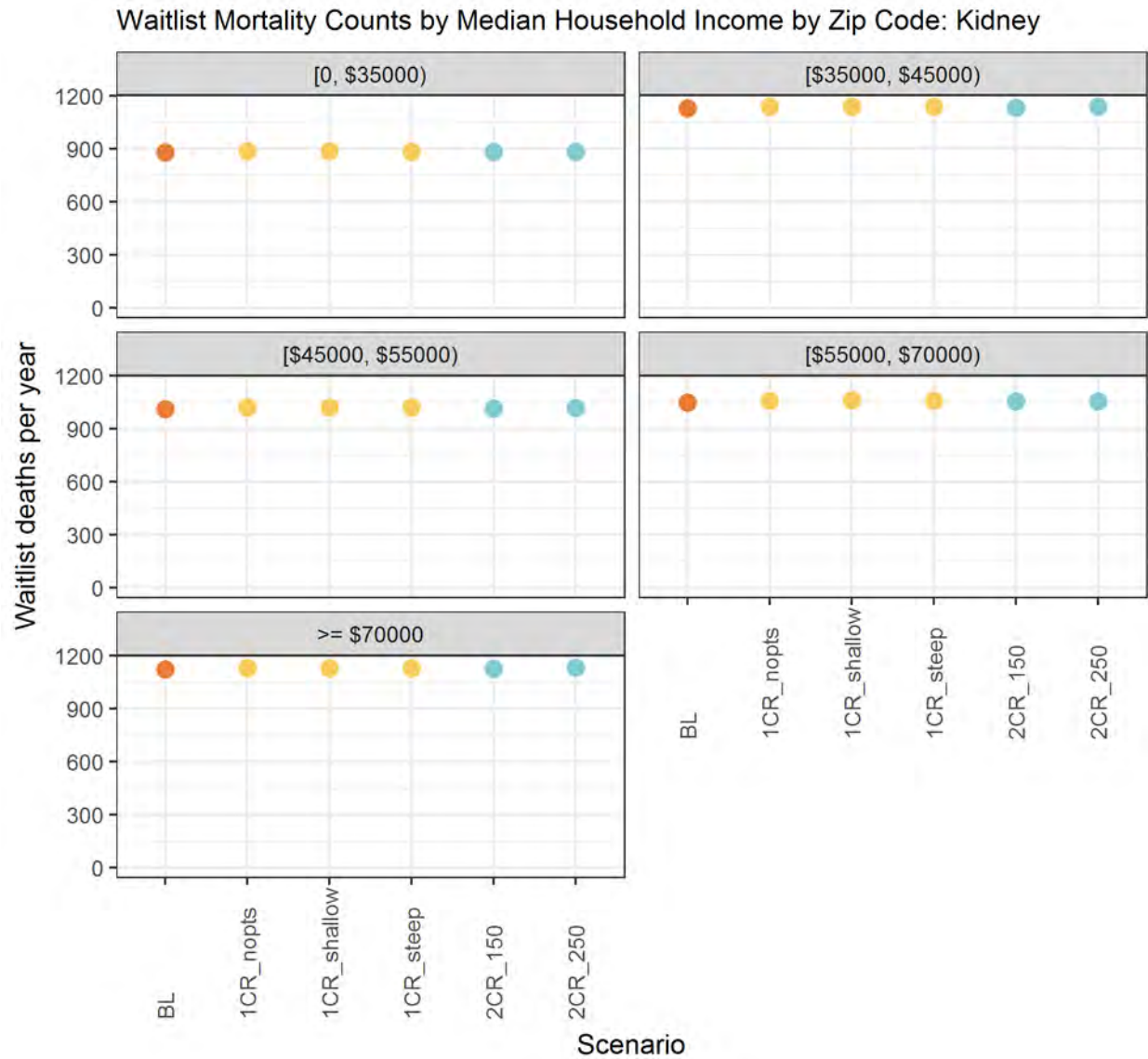


Figure 235 Waitlist Mortality Counts by Median Household Income by Zip Code: Kidney

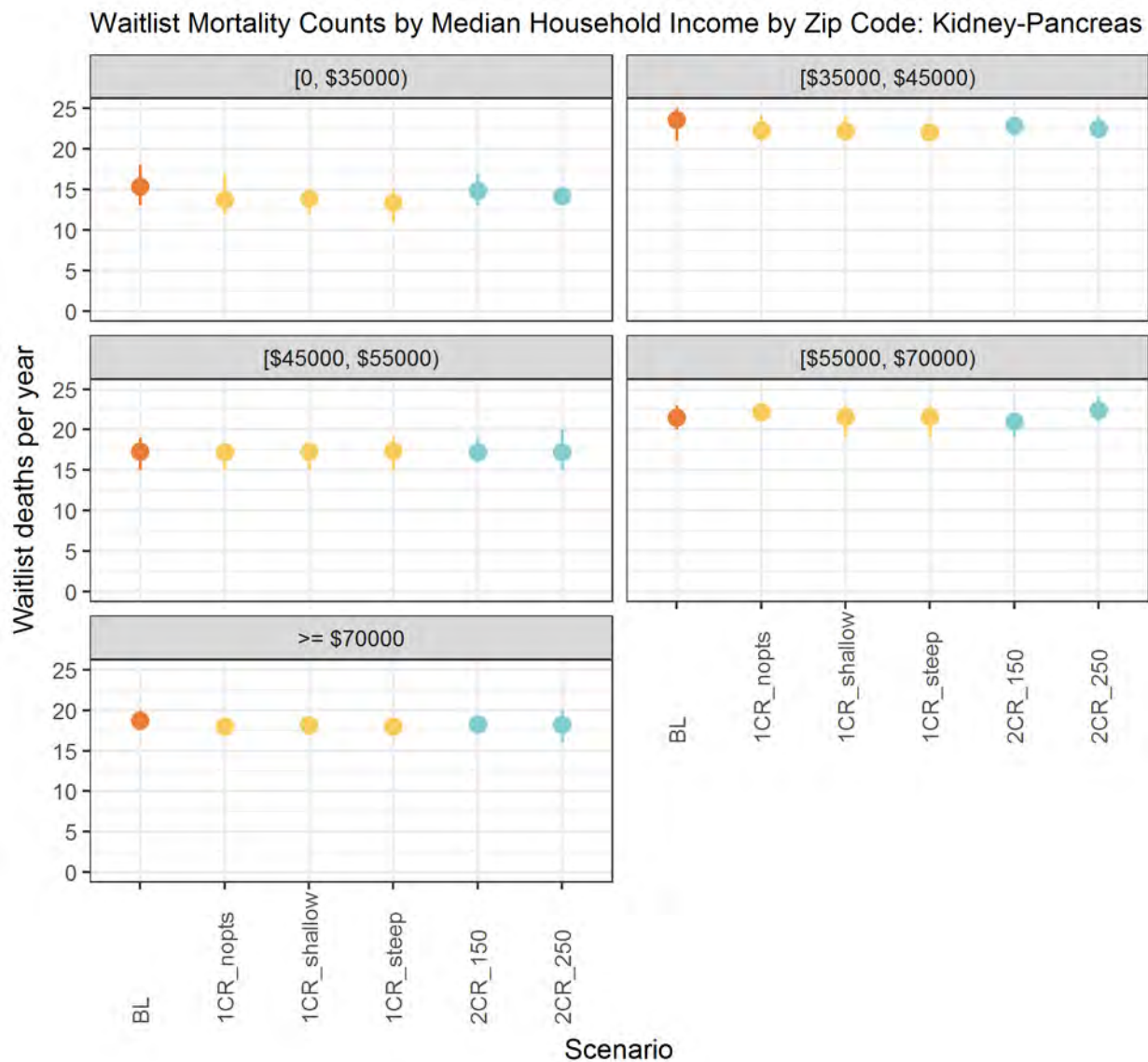


Figure 236 Waitlist Mortality Counts by Median Household Income by Zip Code: Kidney-Pancreas

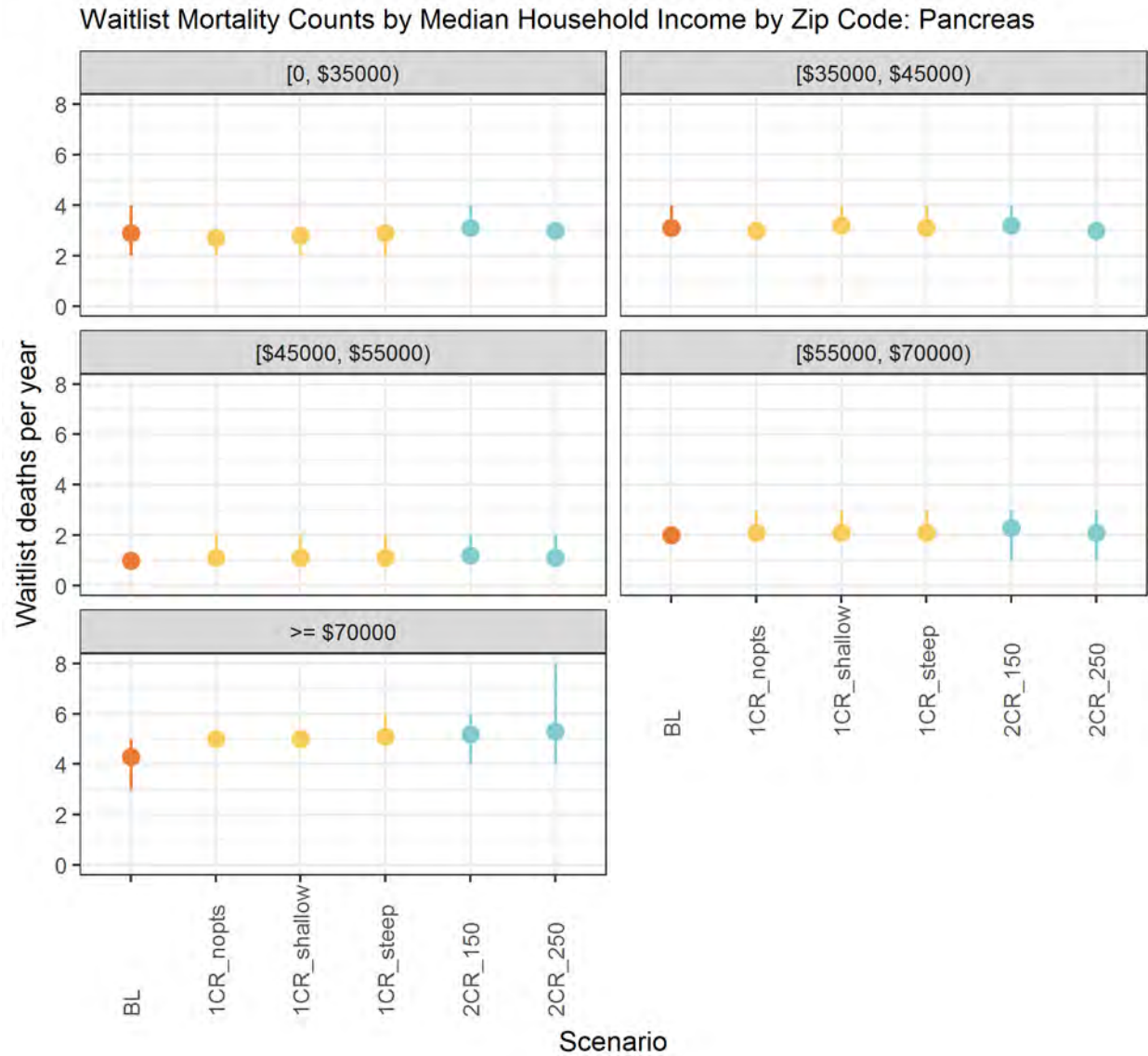


Figure 237 Waitlist Mortality Counts by Median Household Income by Zip Code: Pancreas

## Waitlist Mortality Percentages

Waitlist Mortality Percentages: Age 0-17

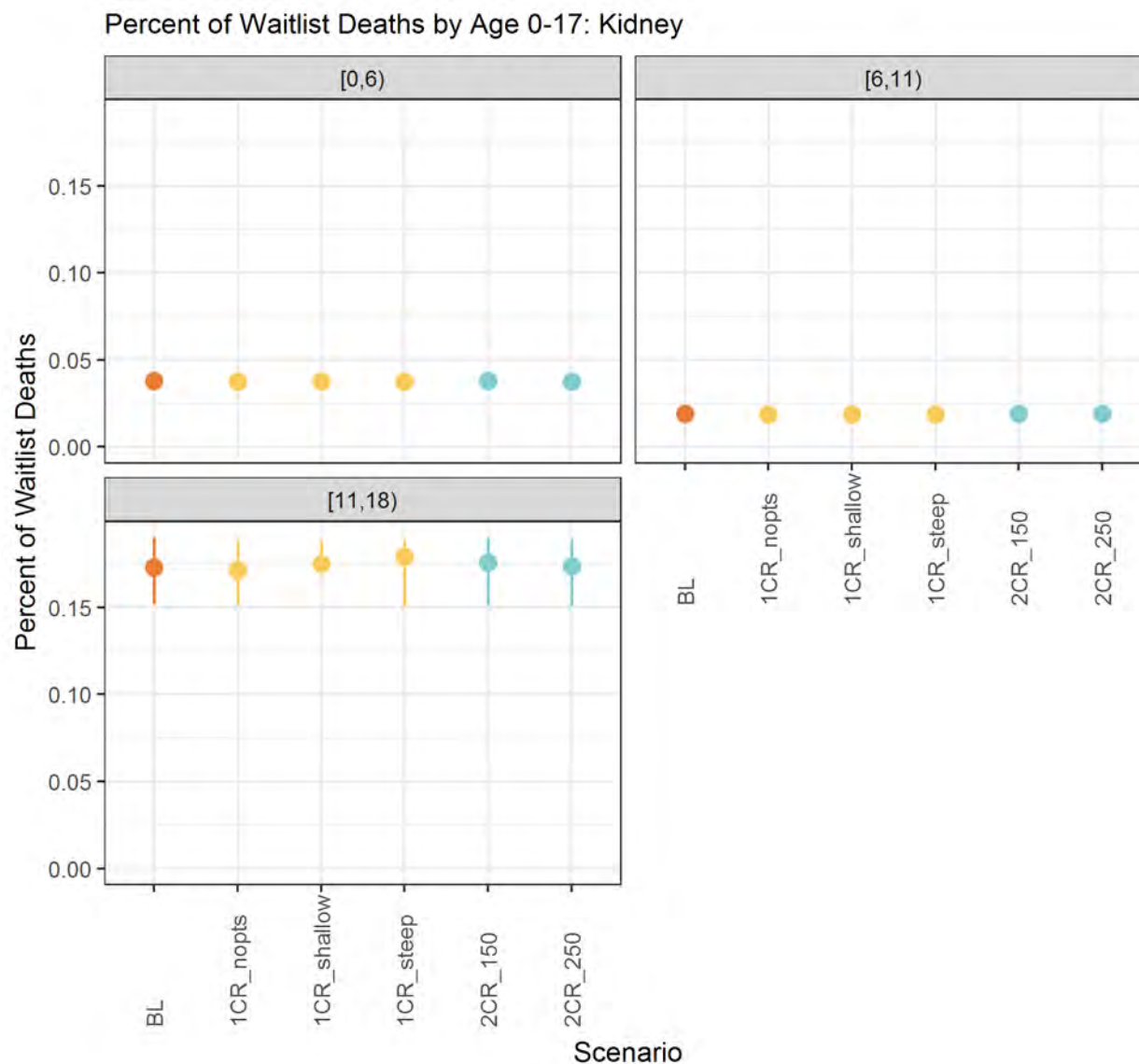


Figure 238 Percent of Waitlist Deaths by Age 0-17: Kidney



# Waitlist Mortality Percentages: Age 18+

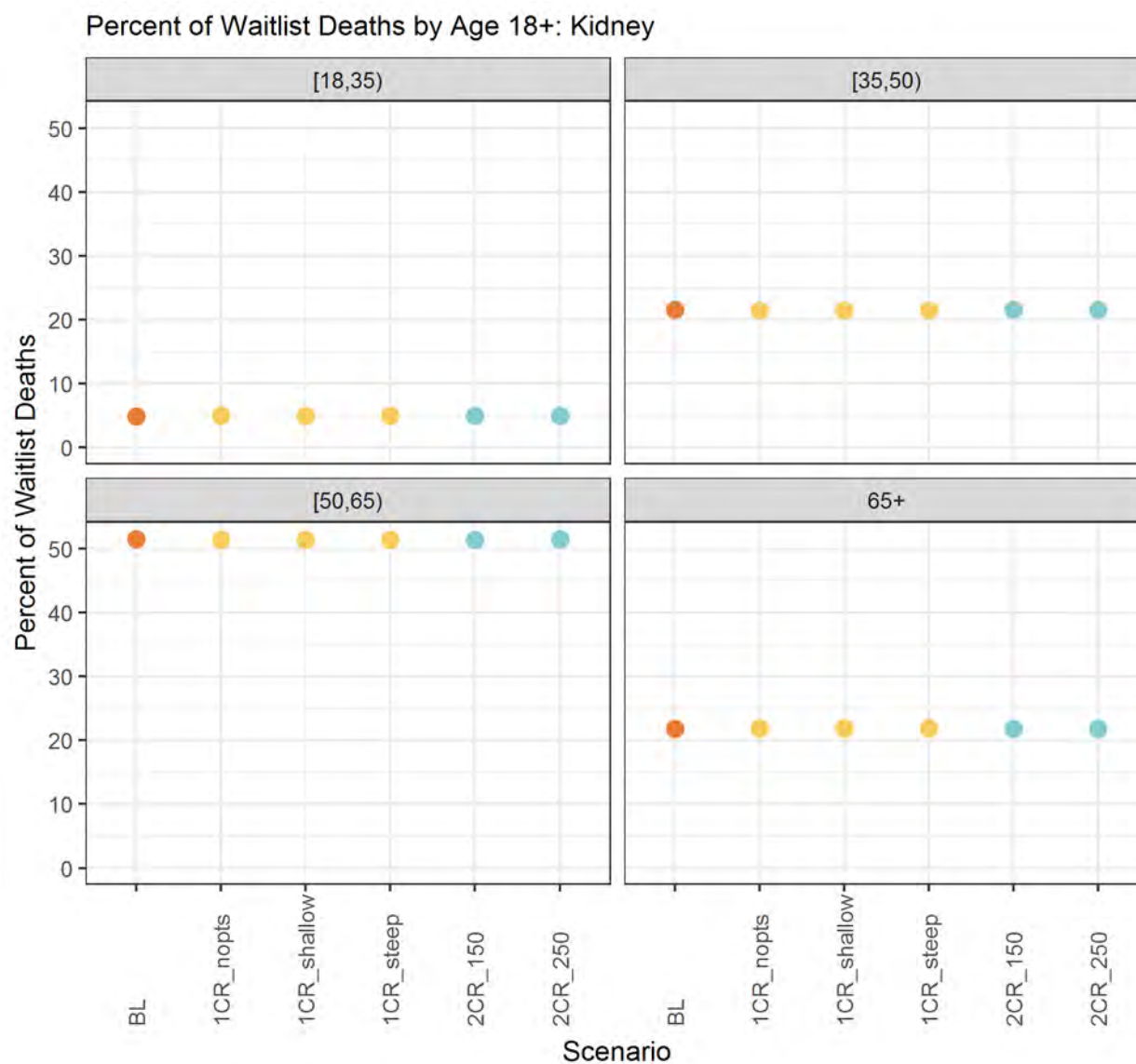


Figure 239 Percent of Waitlist Deaths by Age 18+: Kidney

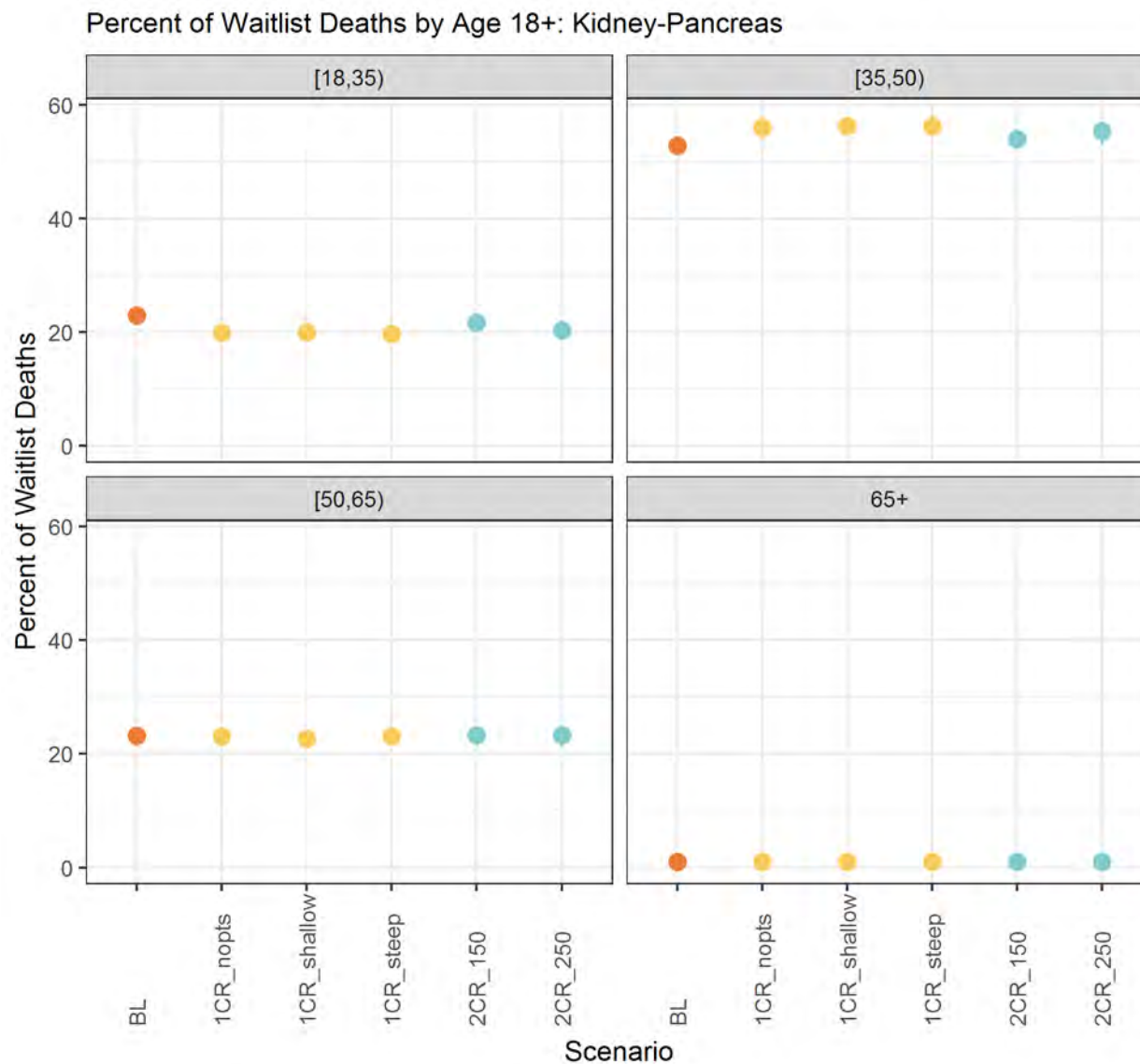


Figure 240 Percent of Waitlist Deaths by Age 18+: Kidney-Pancreas

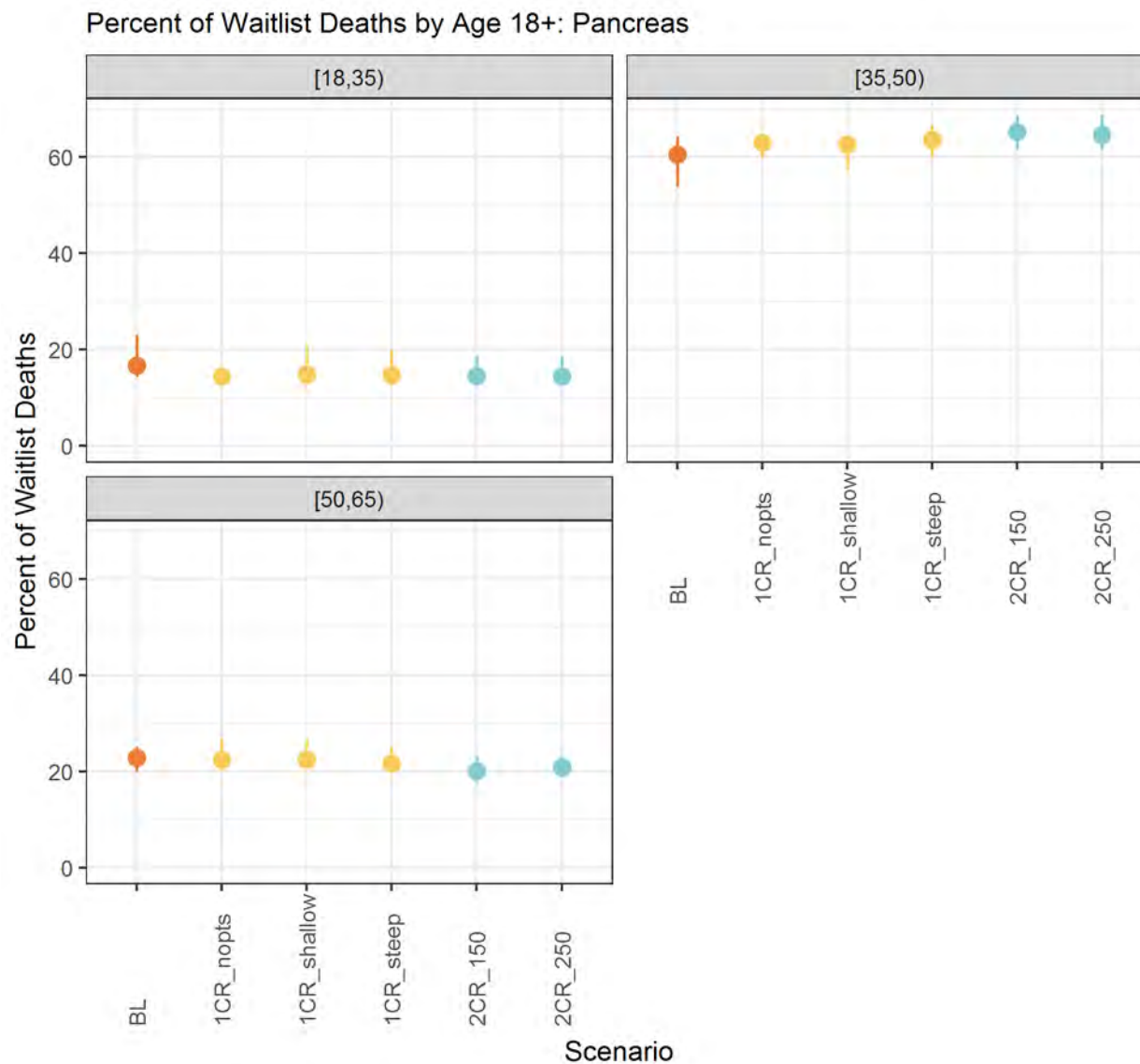


Figure 241 Percent of Waitlist Deaths by Age 18+: Pancreas

## Waitlist Mortality Percentages: Race

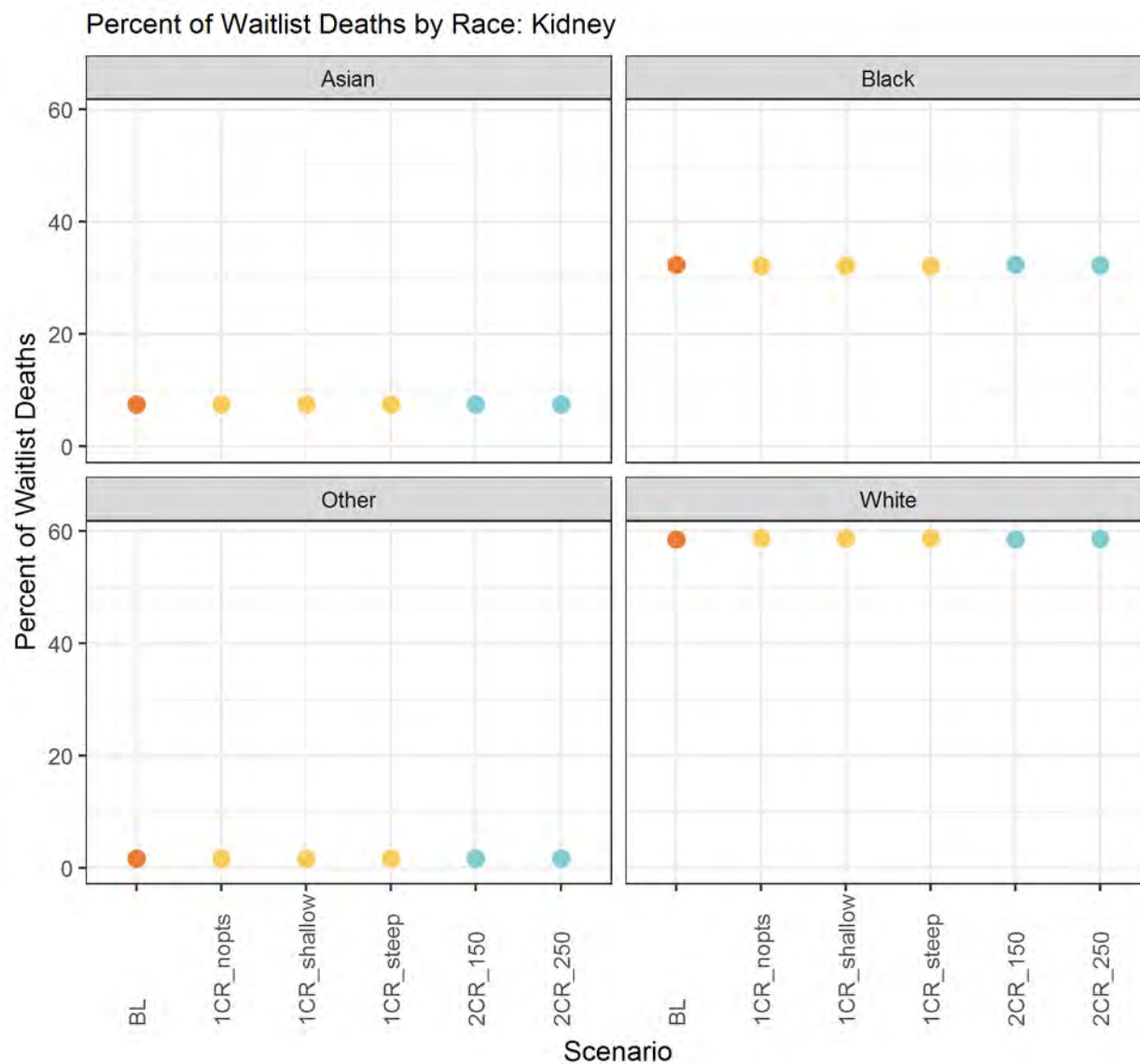


Figure 242 Percent of Waitlist Deaths by Race: Kidney

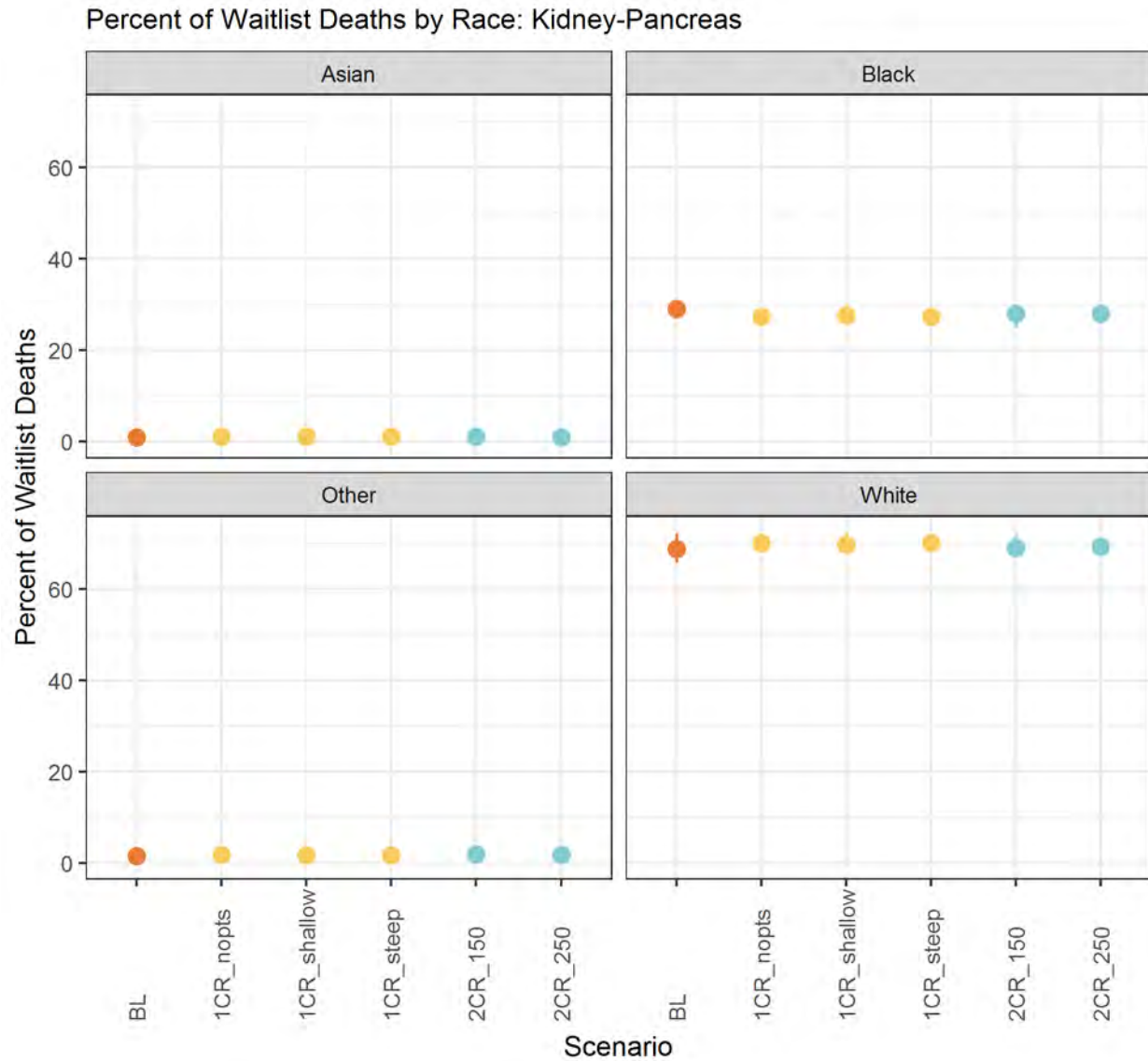


Figure 243 Percent of Waitlist Deaths by Race: Kidney-Pancreas

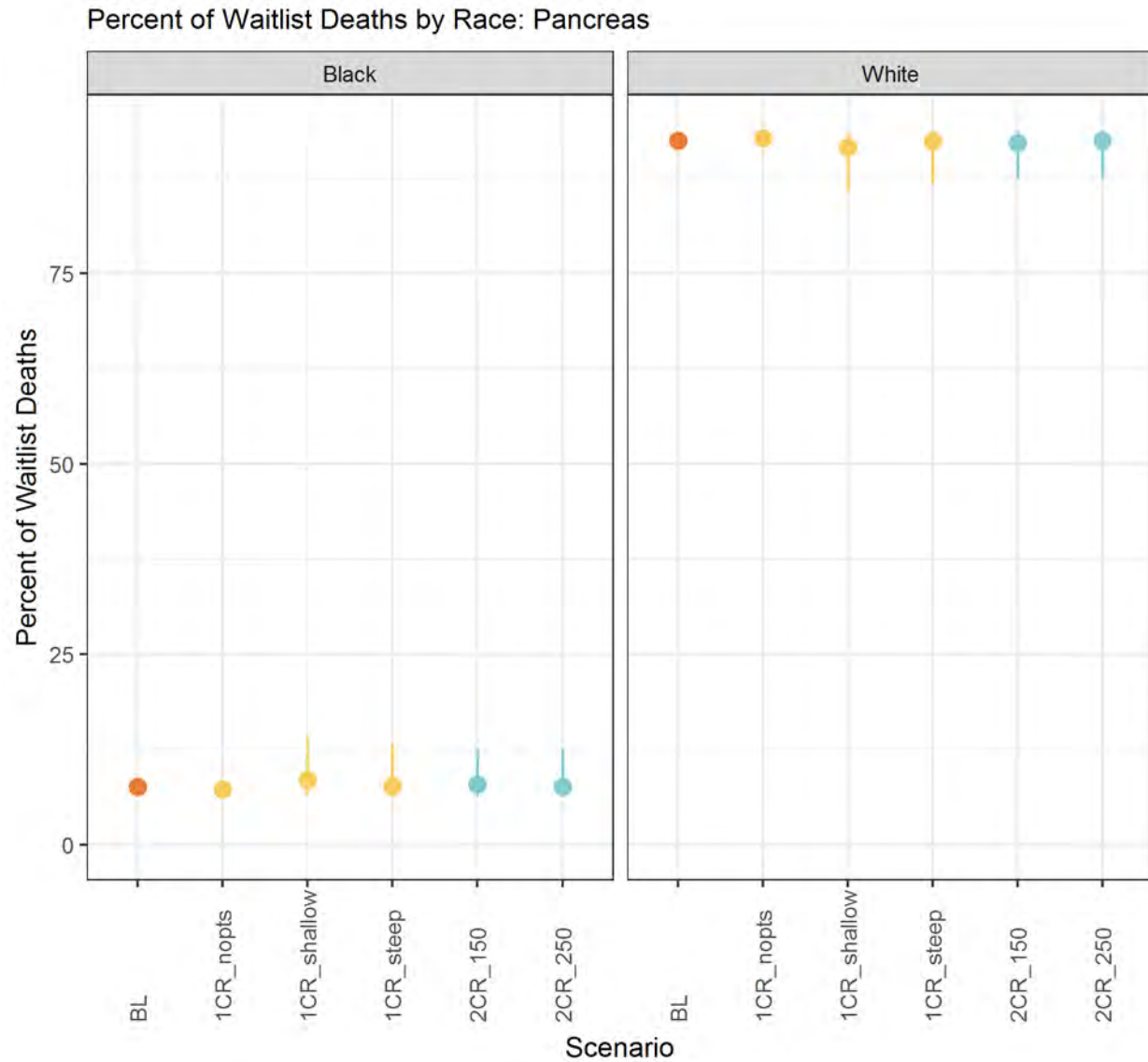


Figure 244 Percent of Waitlist Deaths by Race: Pancreas



# Waitlist Mortality Percentages: Ethnicity

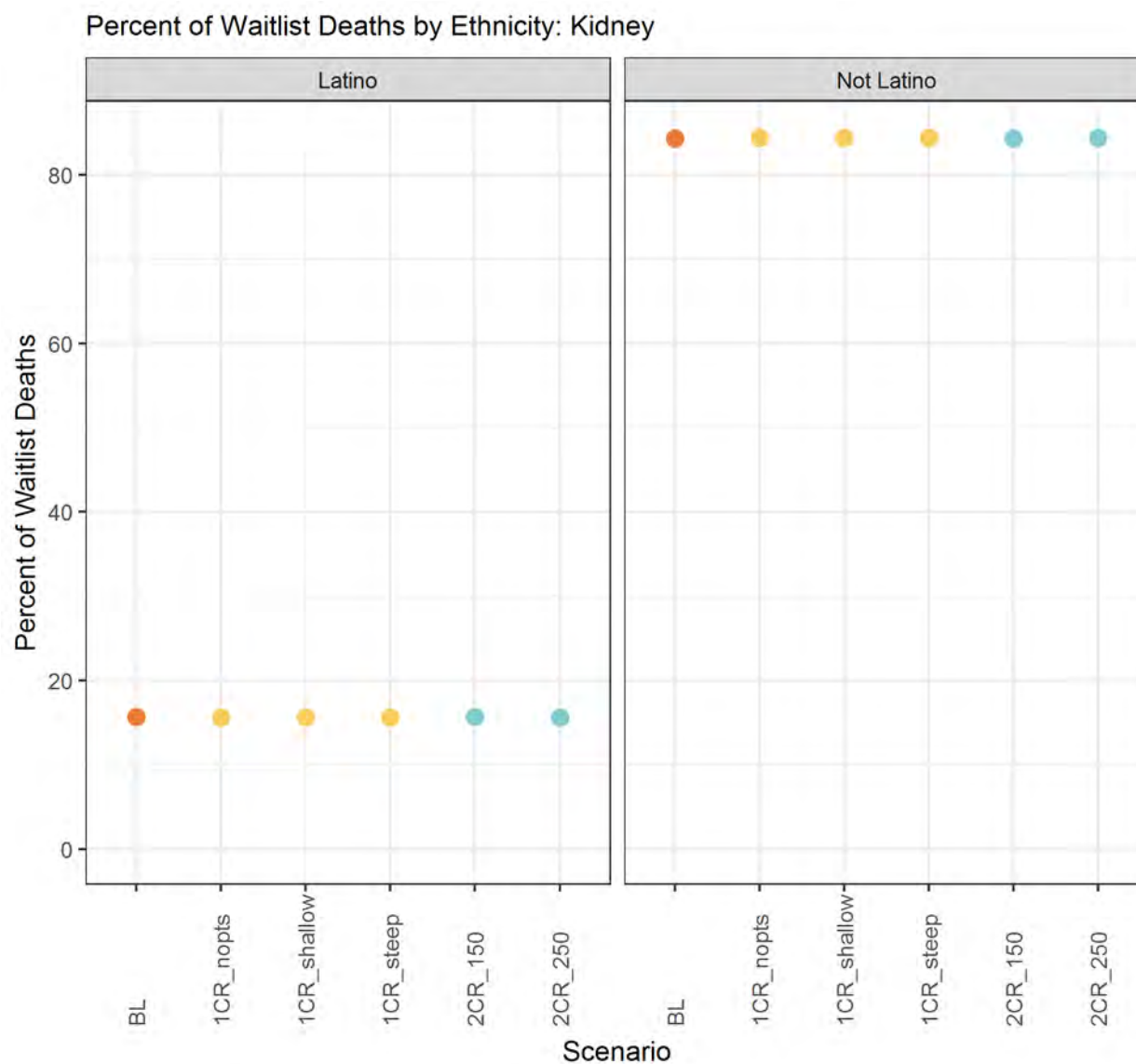


Figure 245 Percent of Waitlist Deaths by Ethnicity: Kidney

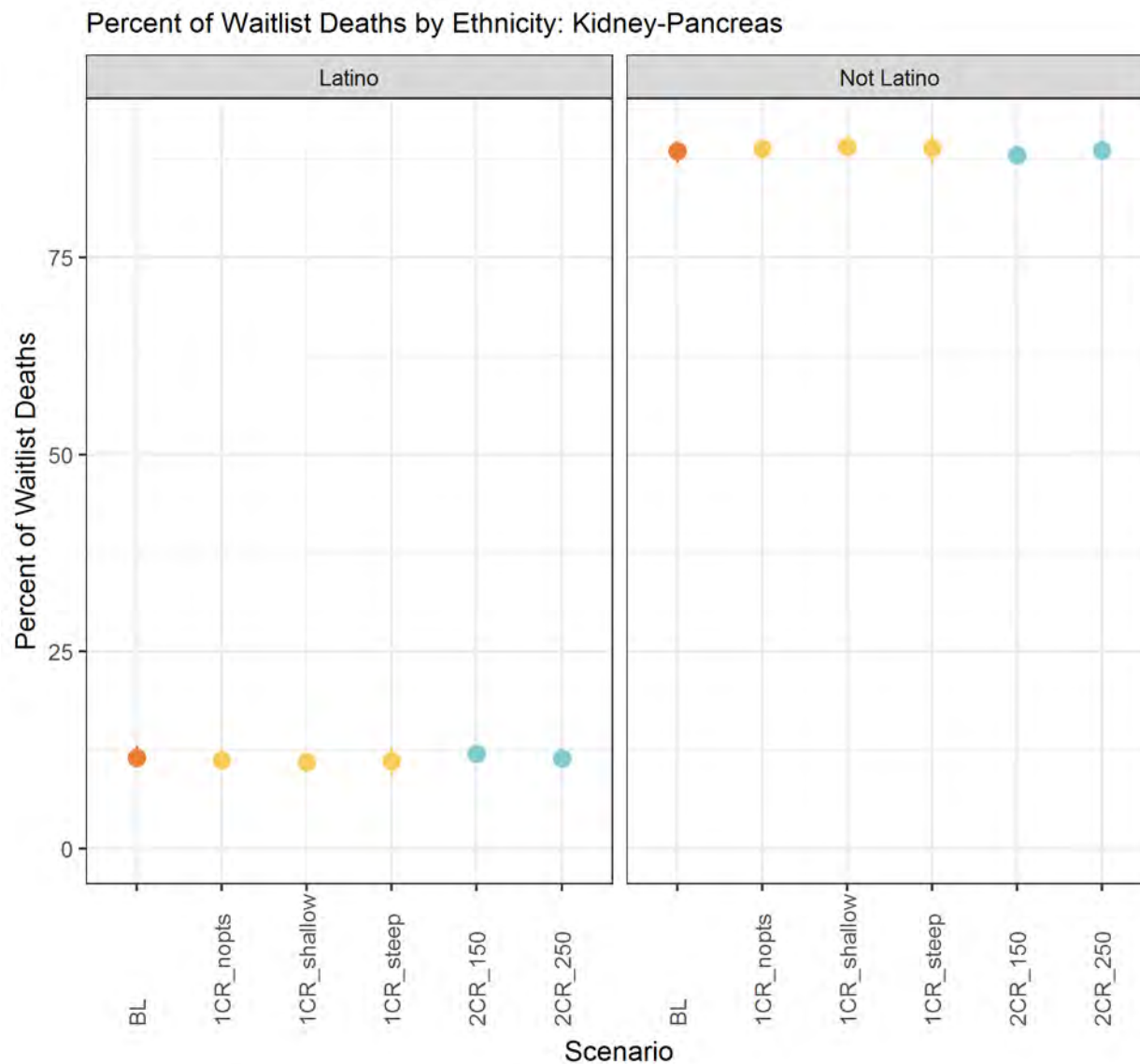


Figure 246 Percent of Waitlist Deaths by Ethnicity: Kidney-Pancreas

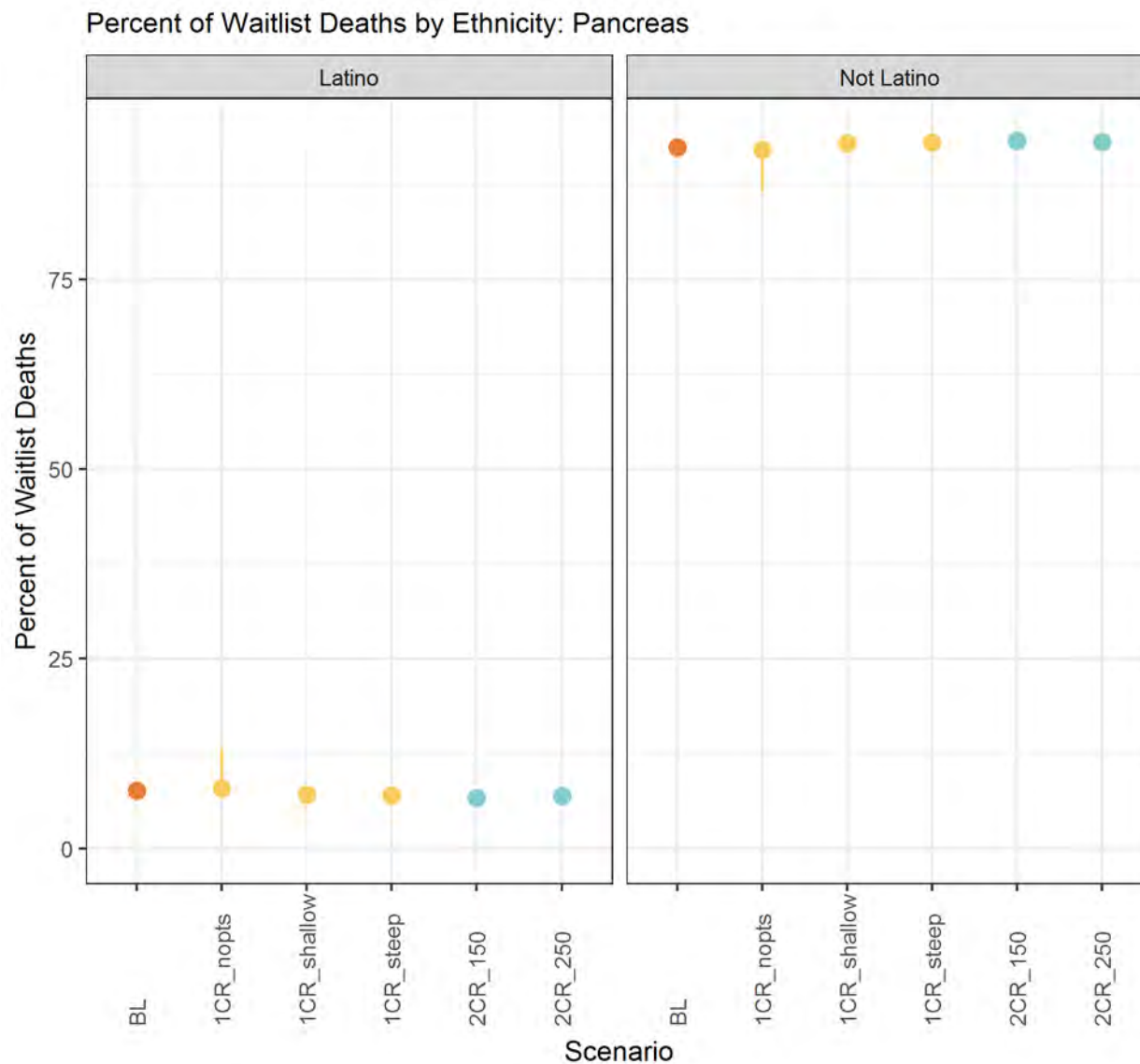


Figure 247 Percent of Waitlist Deaths by Ethnicity: Pancreas

# Waitlist Mortality Percentages: Sex

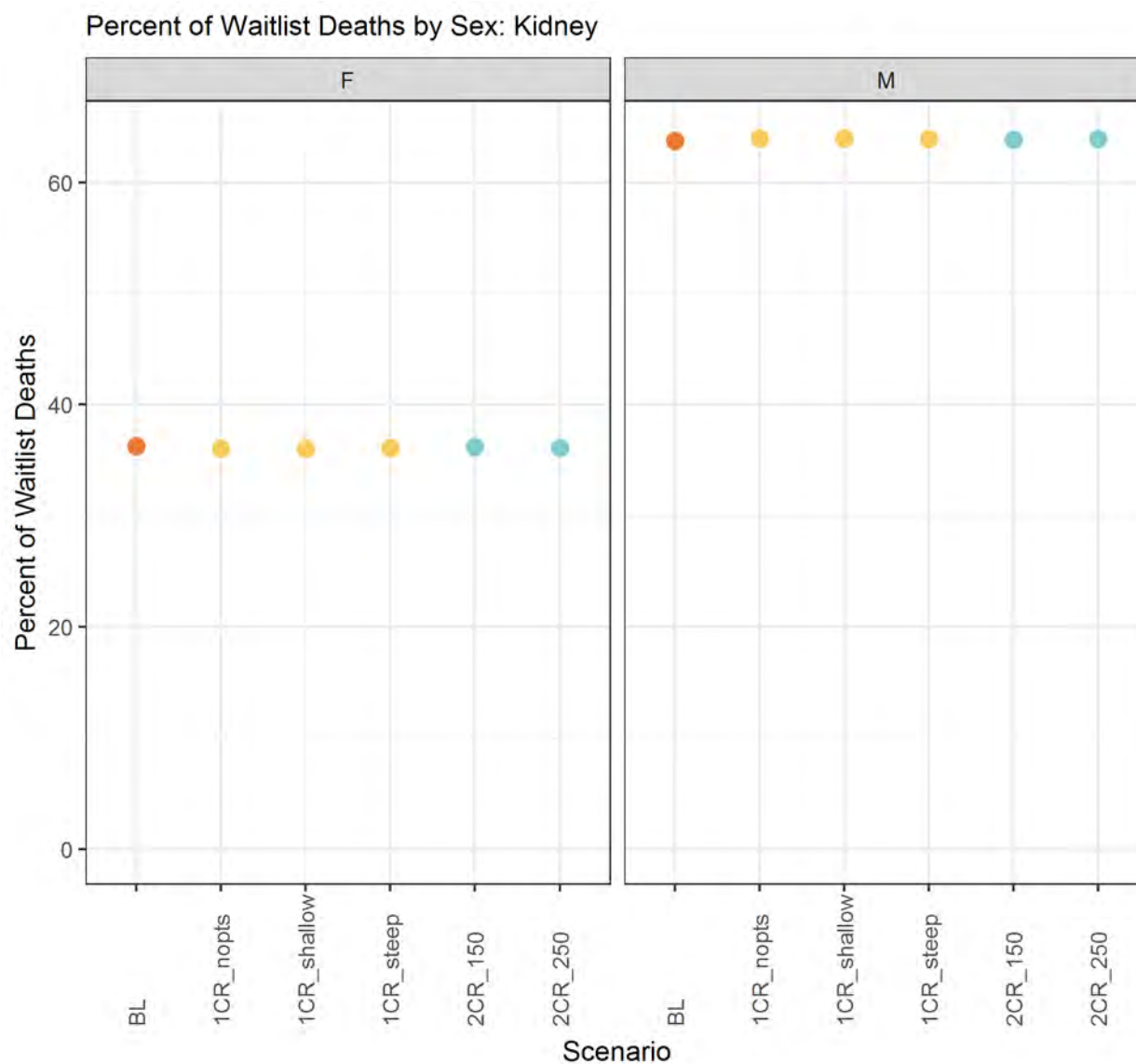


Figure 248 Percent of Waitlist Deaths by Sex: Kidney

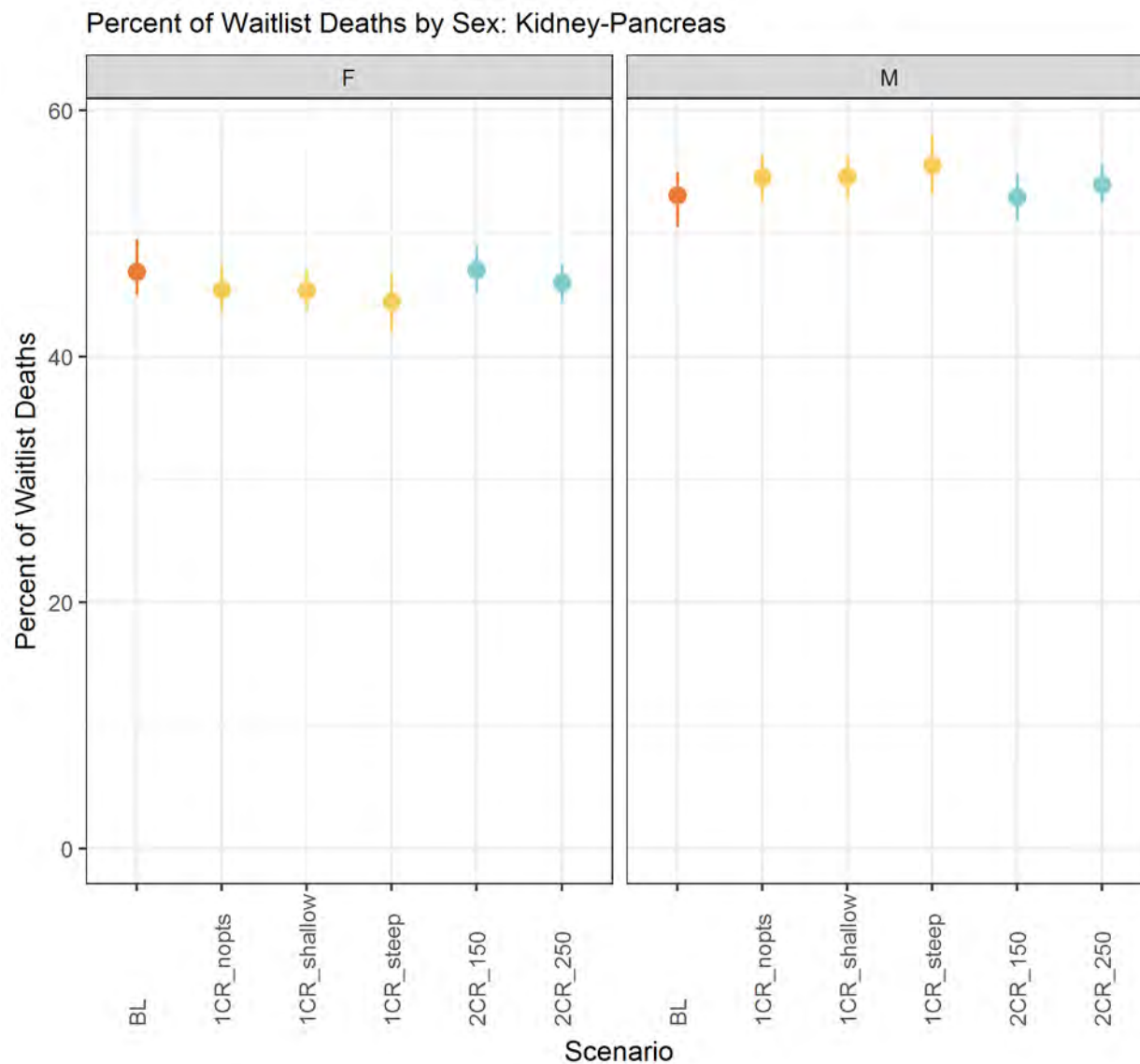


Figure 249 Percent of Waitlist Deaths by Sex: Kidney-Pancreas

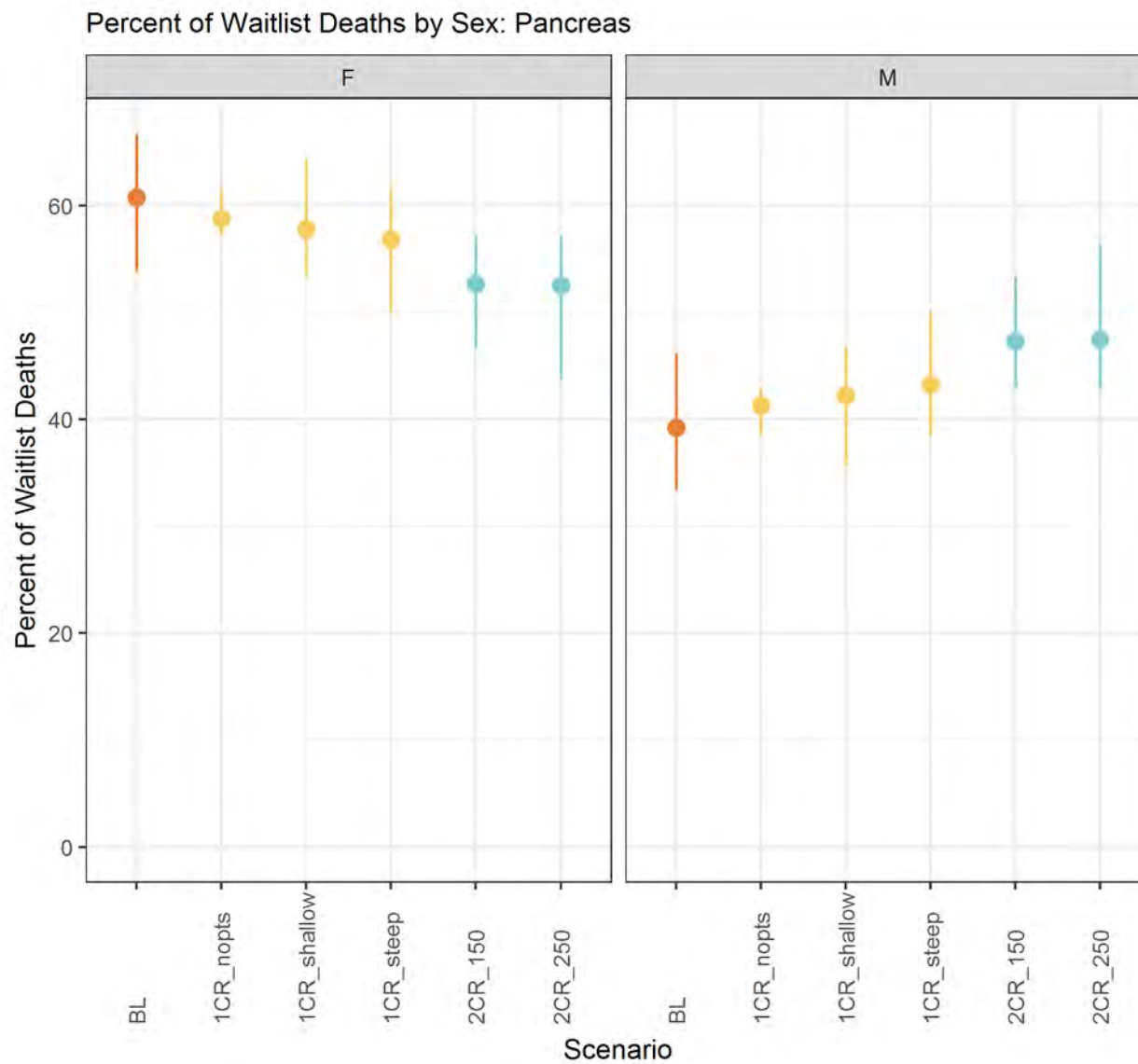


Figure 250 Percent of Waitlist Deaths by Sex: Pancreas



# Waitlist Mortality Percentages: ABO Group

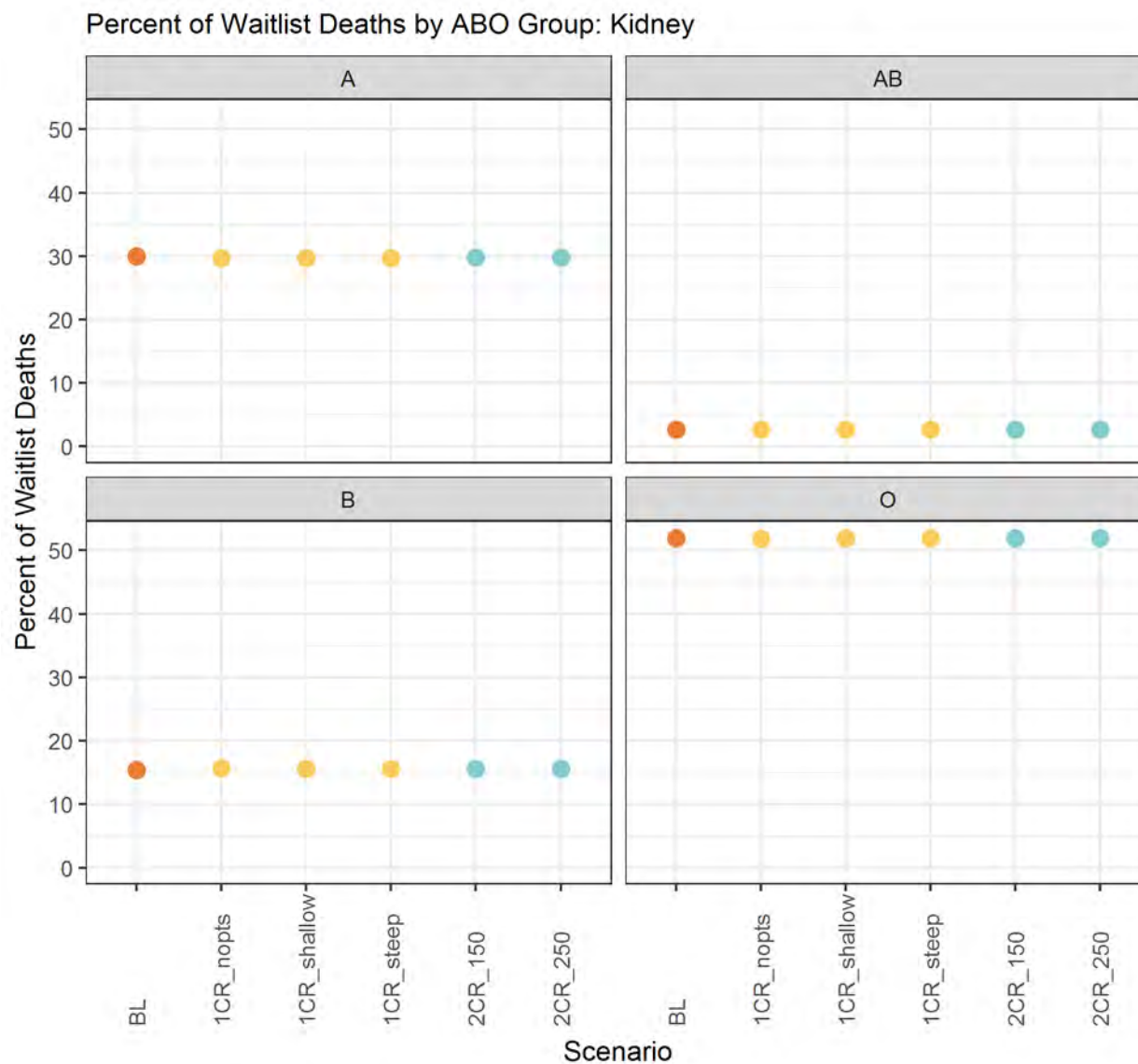


Figure 251 Percent of Waitlist Deaths by ABO Group: Kidney

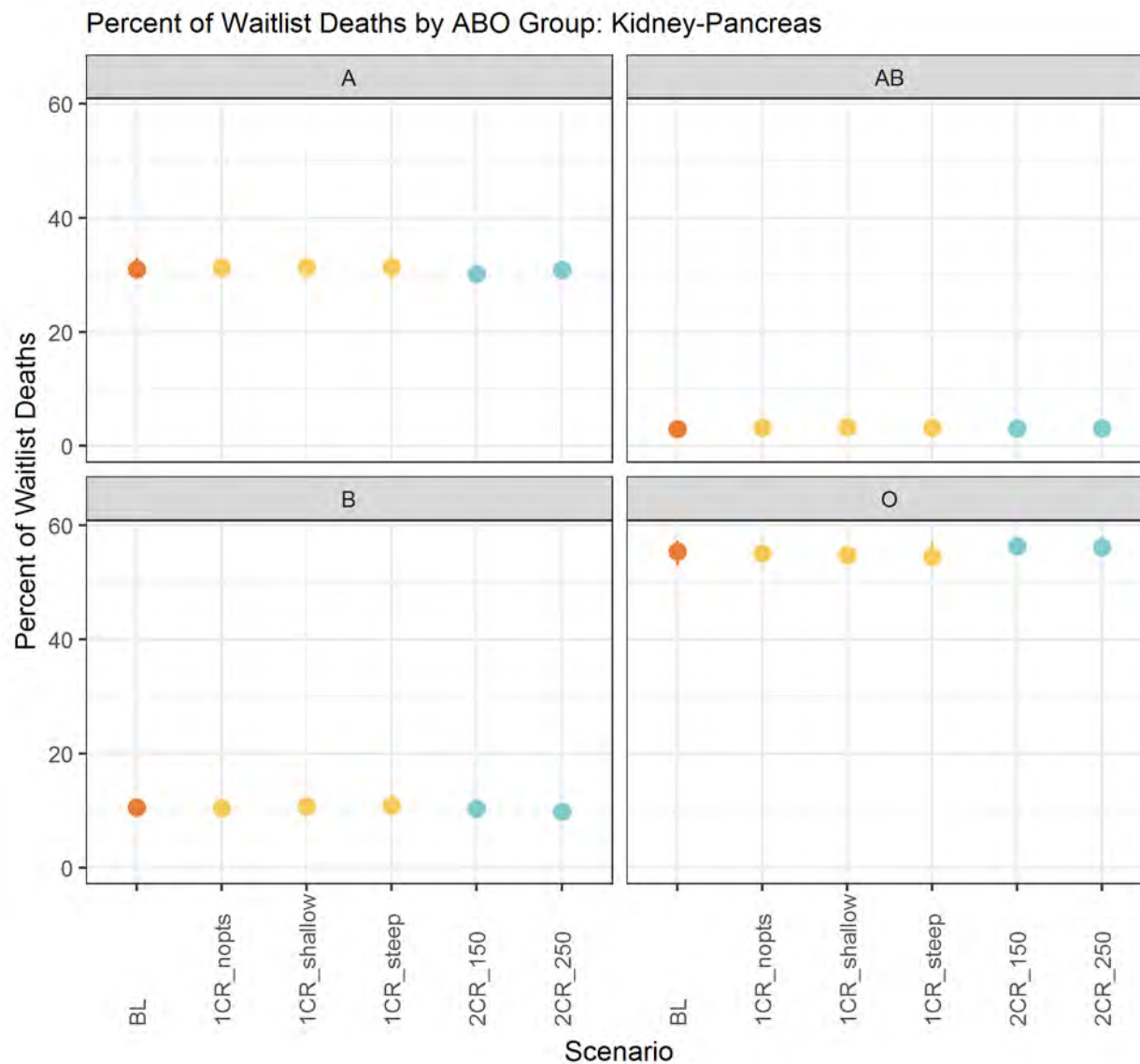


Figure 252 Percent of Waitlist Deaths by ABO Group: Kidney-Pancreas

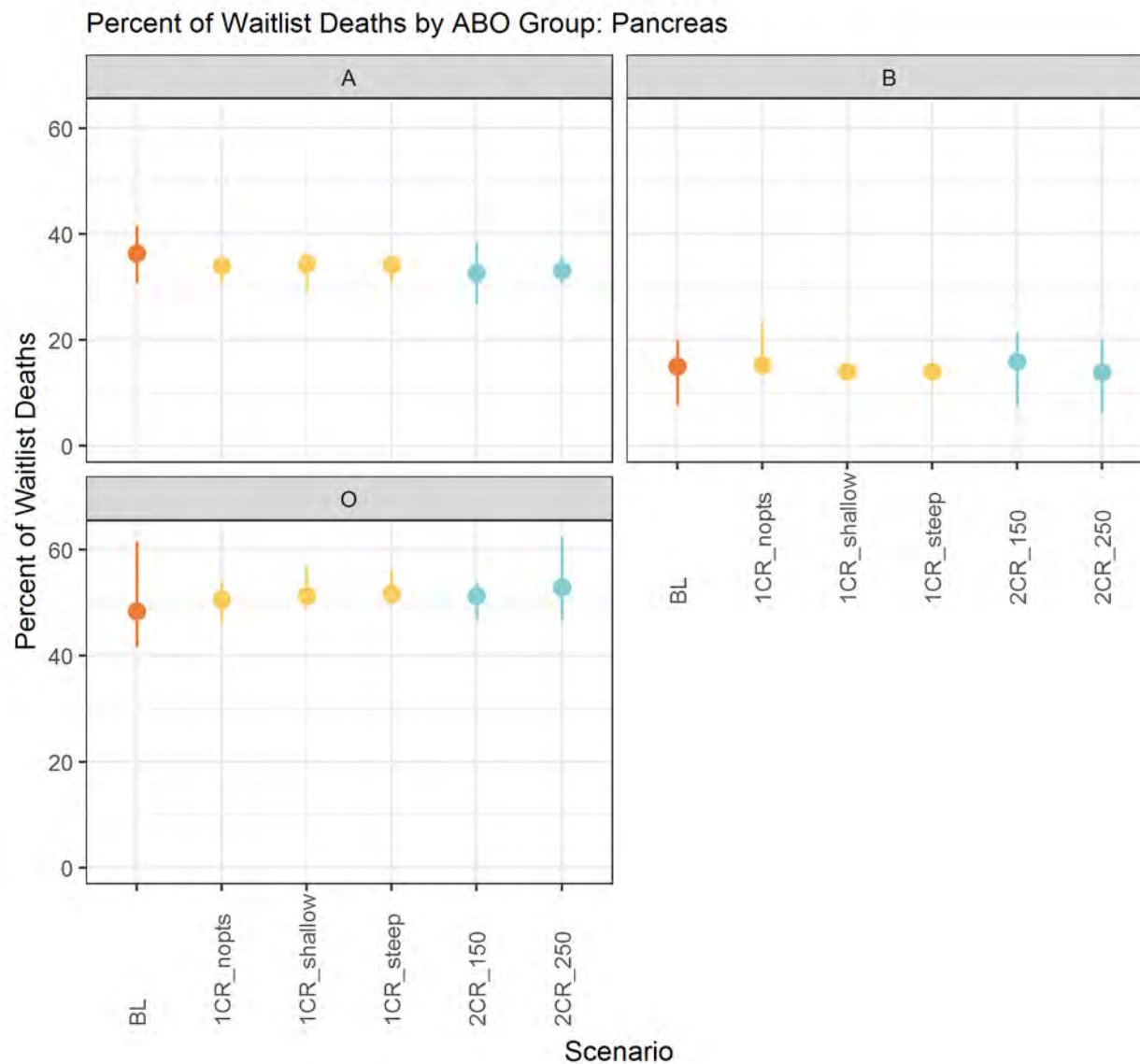


Figure 253 Percent of Waitlist Deaths by ABO Group: Pancreas

## Waitlist Mortality Percentages: Diagnosis

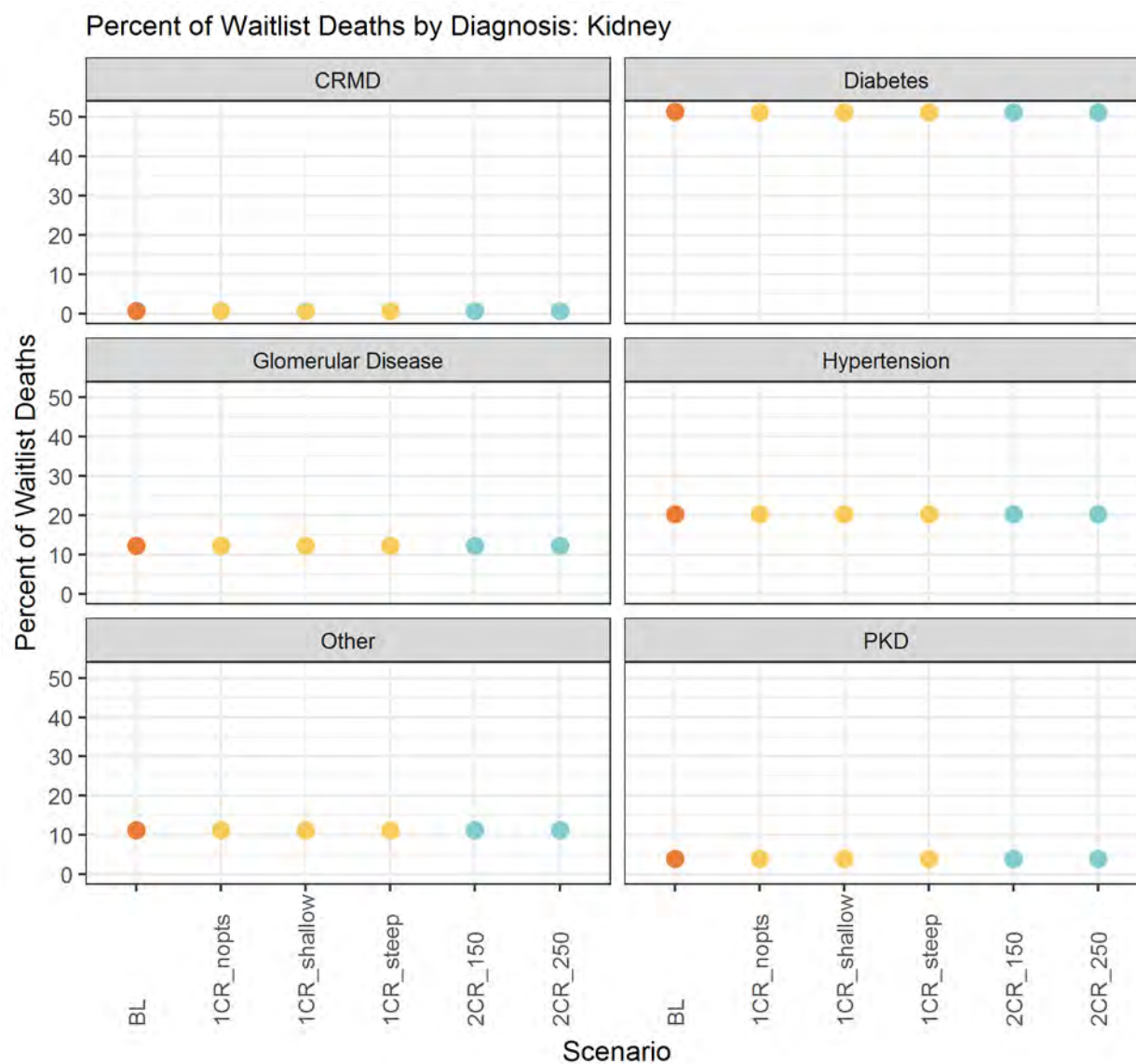


Figure 254 Percent of Waitlist Deaths by Diagnosis: Kidney

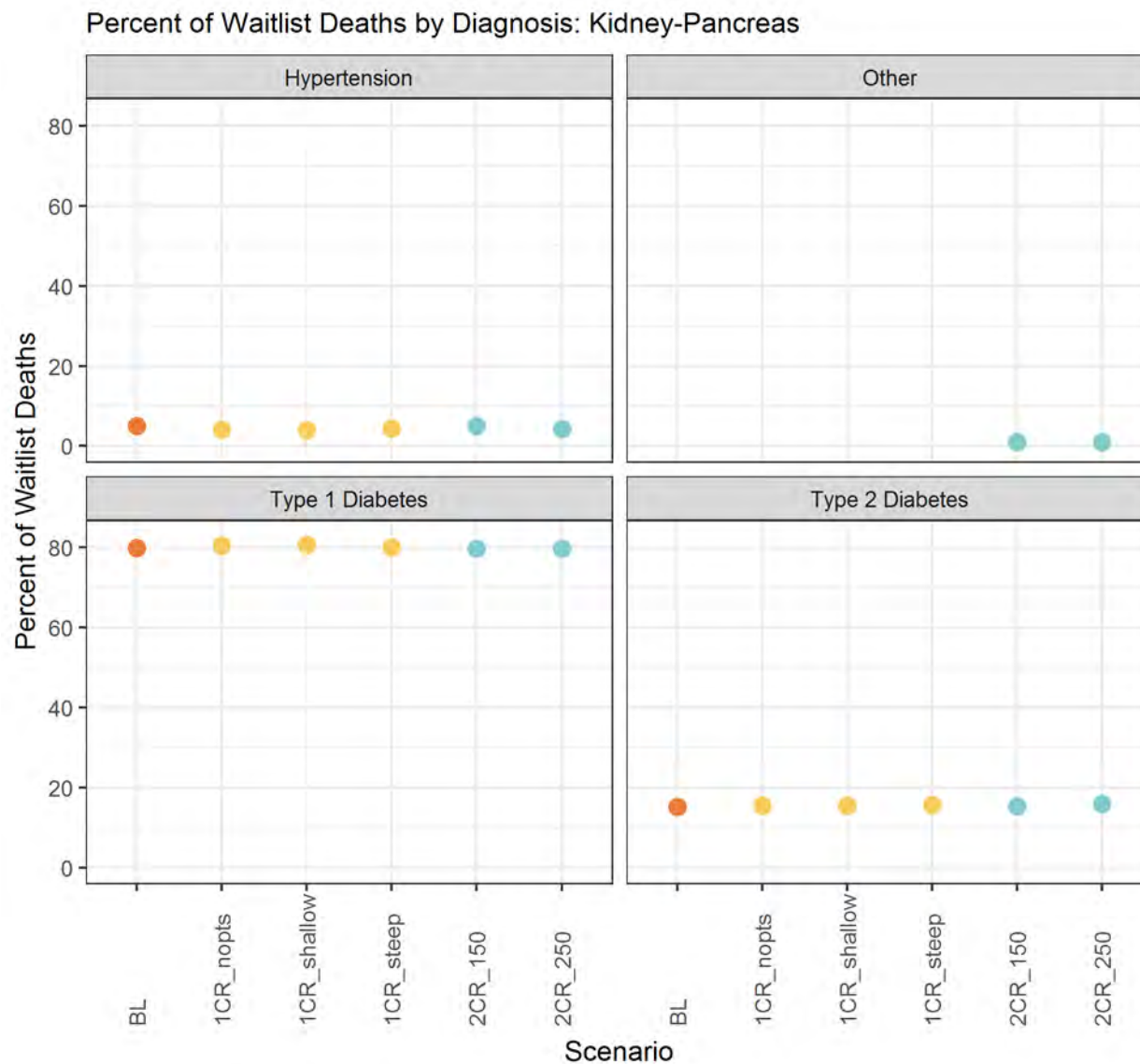


Figure 255 Percent of Waitlist Deaths by Diagnosis: Kidney-Pancreas

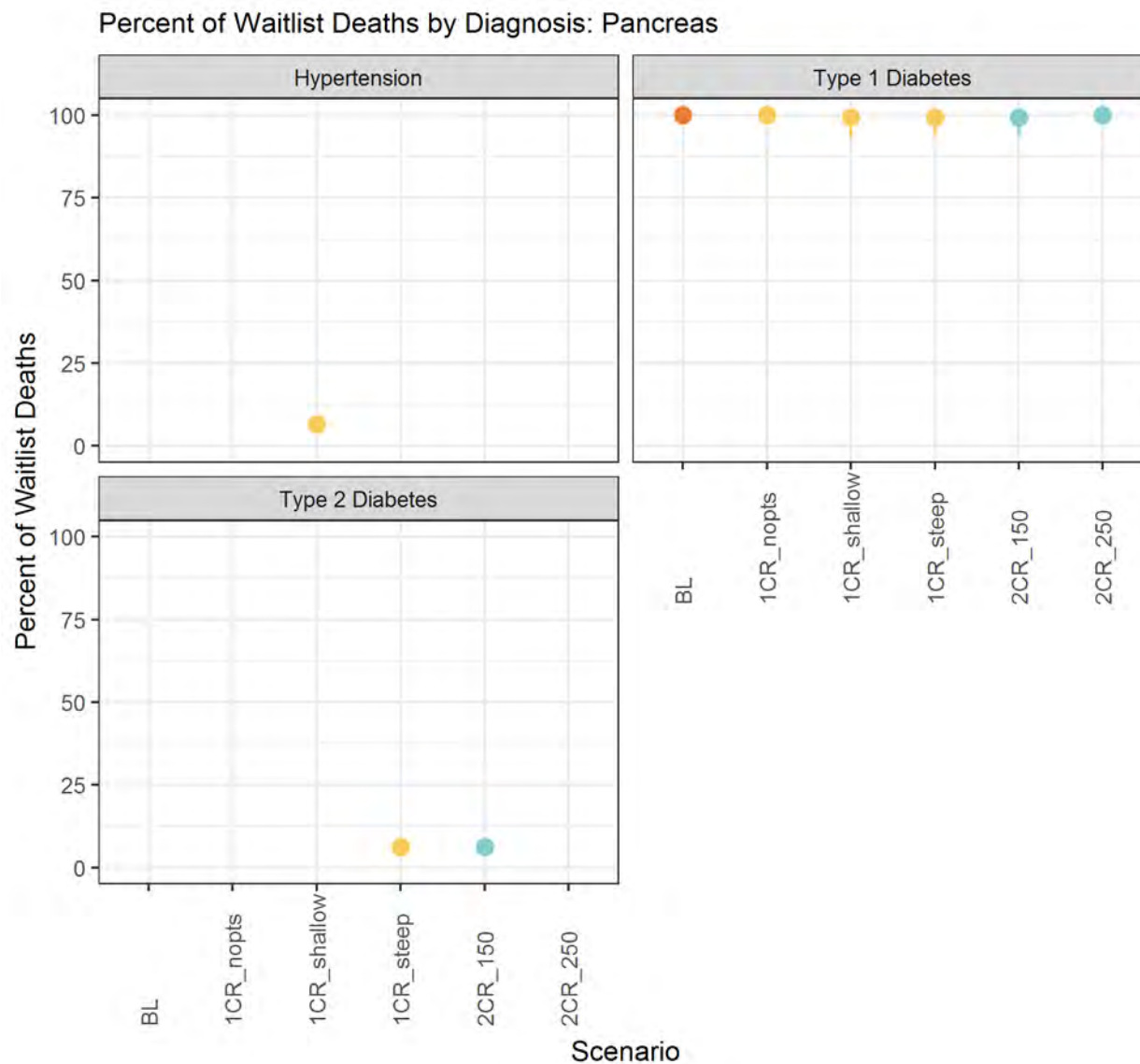


Figure 256 Percent of Waitlist Deaths by Diagnosis: Pancreas



## Waitlist Mortality Percentages: Dialysis Time

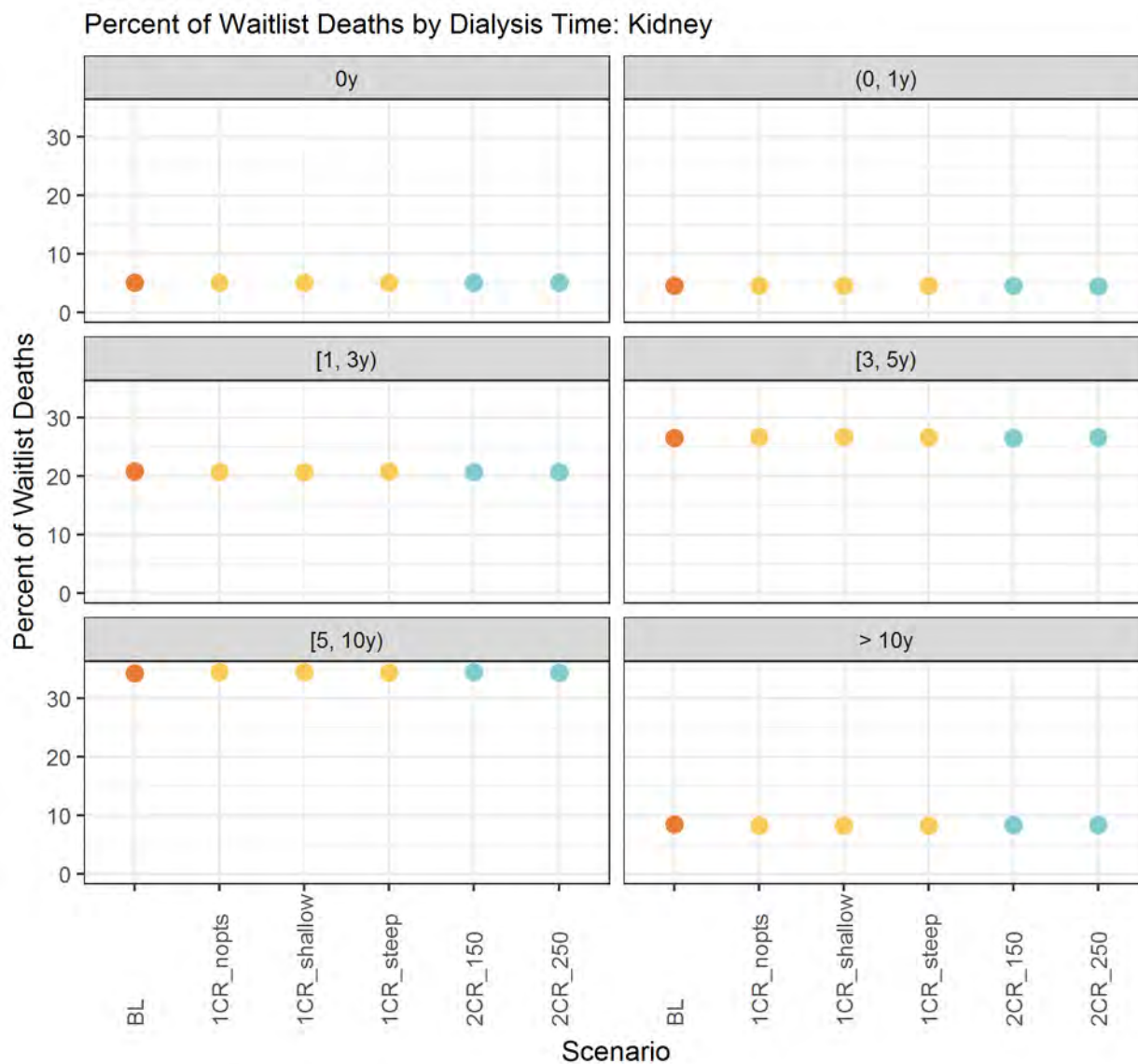


Figure 257 Percent of Waitlist Deaths by Dialysis Time: Kidney

Waitlist Mortality Percentages: cPRA: 0 - 60

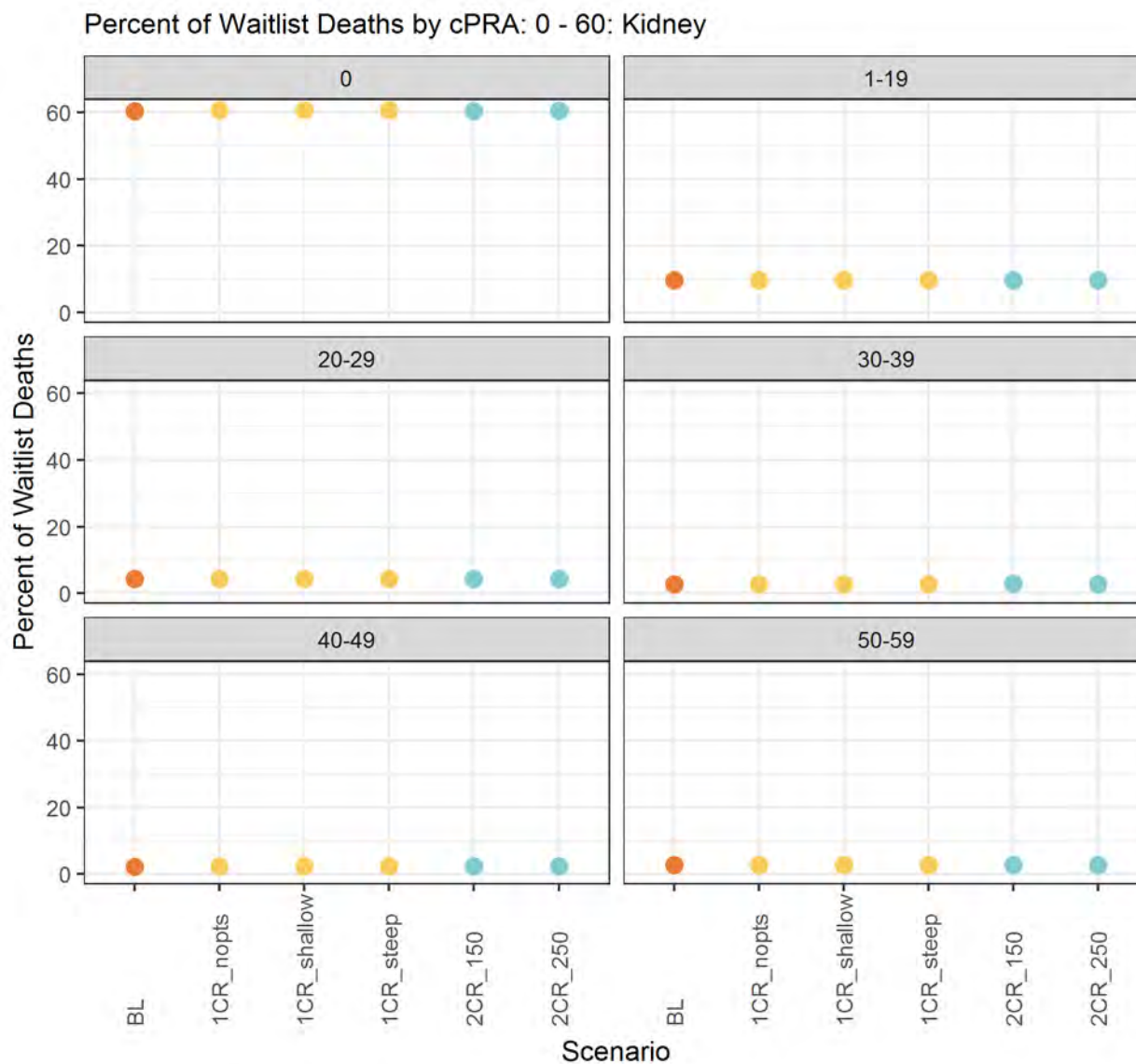


Figure 258 Percent of Waitlist Deaths by cPRA: 0 - 60: Kidney

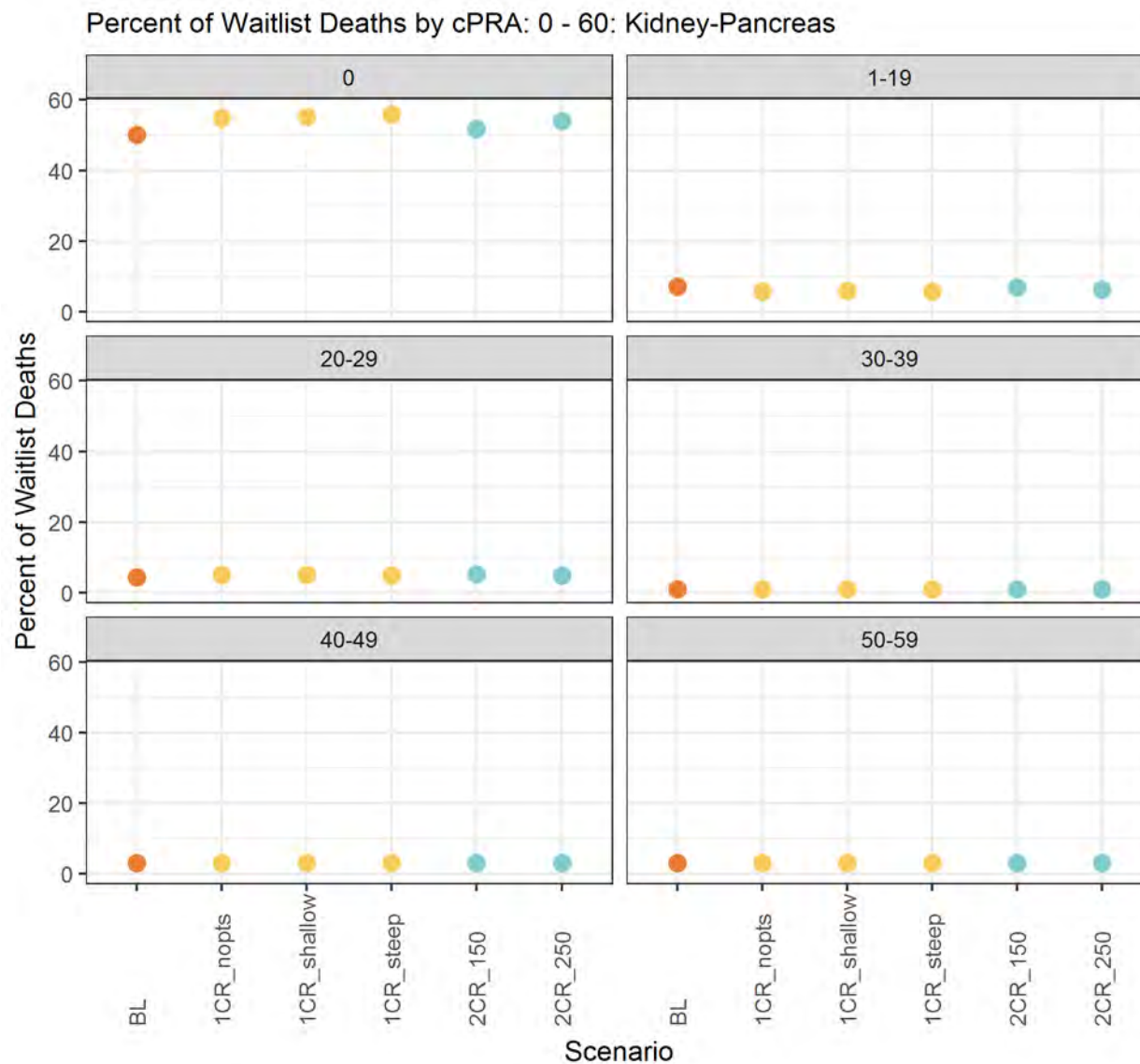


Figure 259 Percent of Waitlist Deaths by cPRA: 0 - 60: Kidney-Pancreas

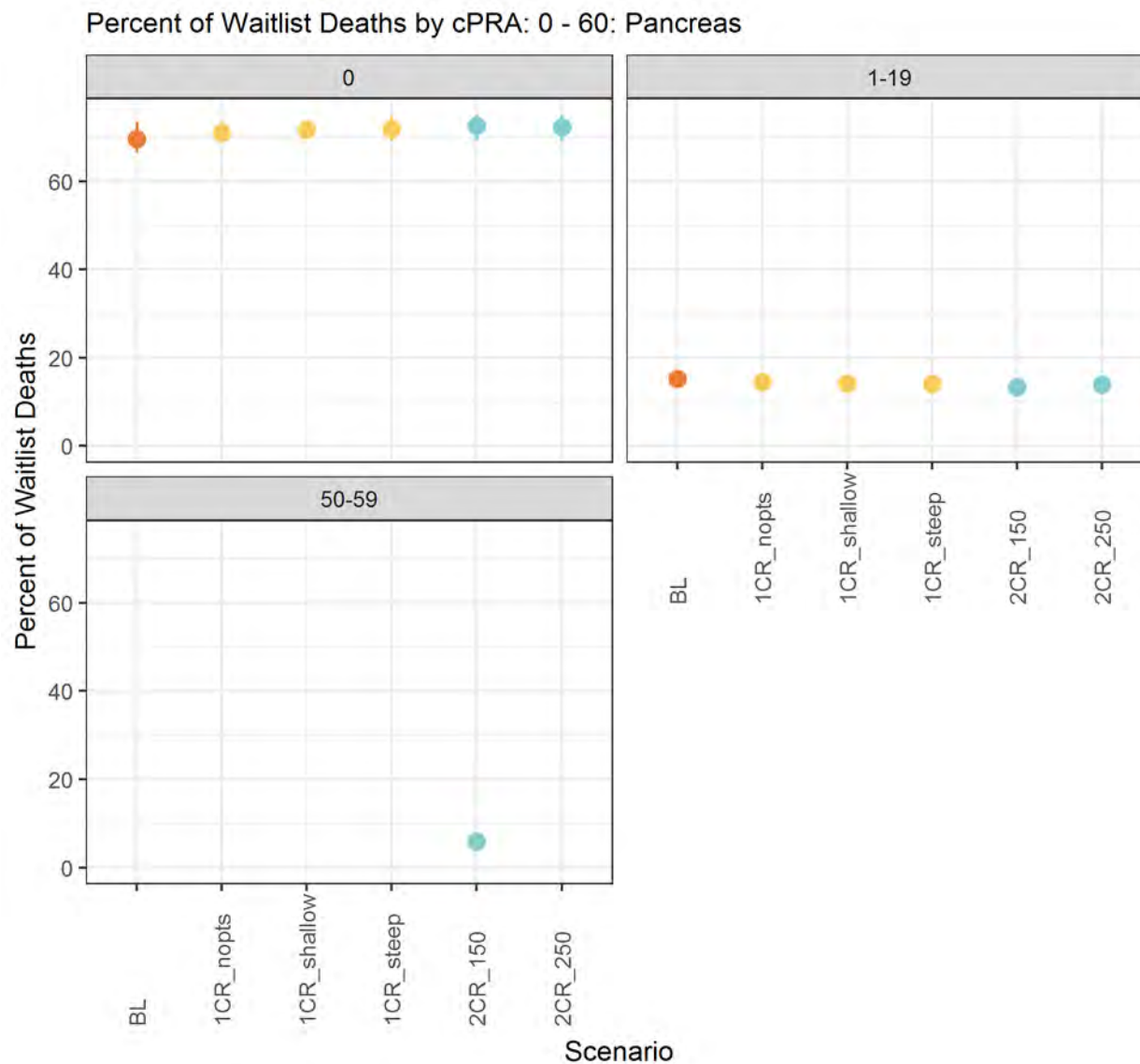


Figure 260 Percent of Waitlist Deaths by cPRA: 0 - 60: Pancreas

Waitlist Mortality Percentages: cPRA: 61 - 94

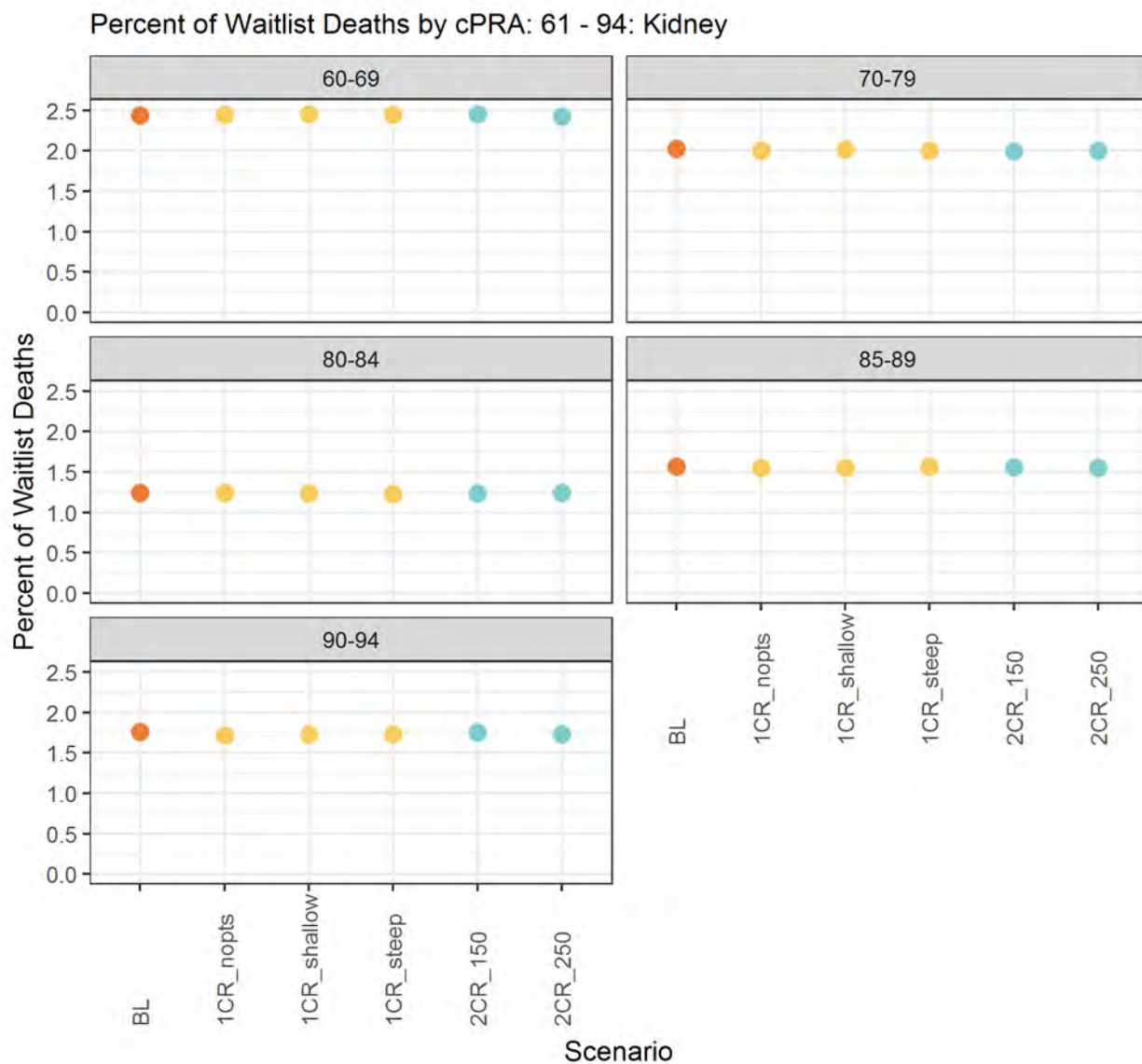


Figure 261 Percent of Waitlist Deaths by cPRA: 61 - 94: Kidney

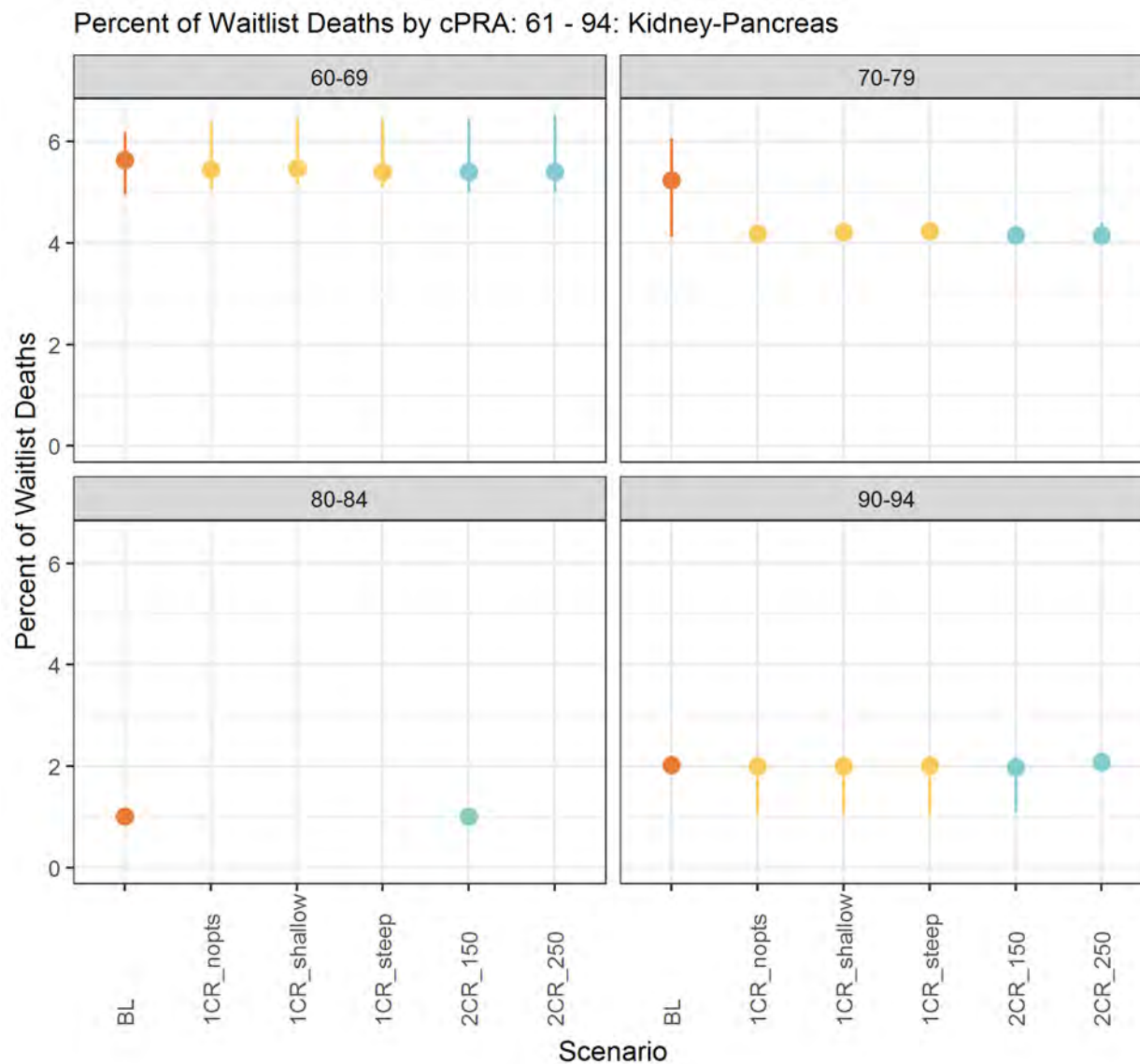


Figure 262 Percent of Waitlist Deaths by cPRA: 61 - 94: Kidney-Pancreas



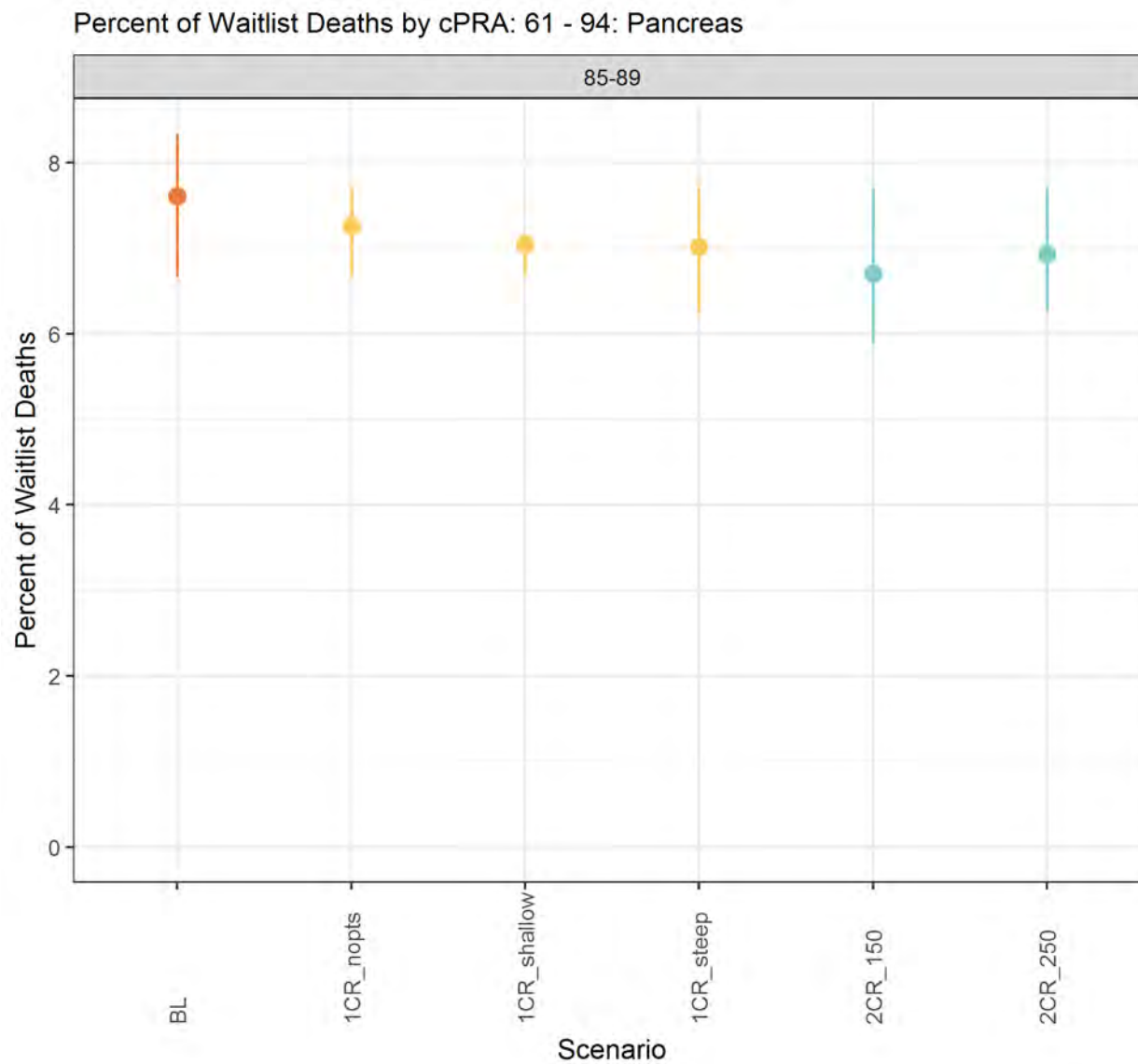


Figure 263 Percent of Waitlist Deaths by cPRA: 61 - 94: Pancreas

Waitlist Mortality Percentages: cPRA: 95 - 100

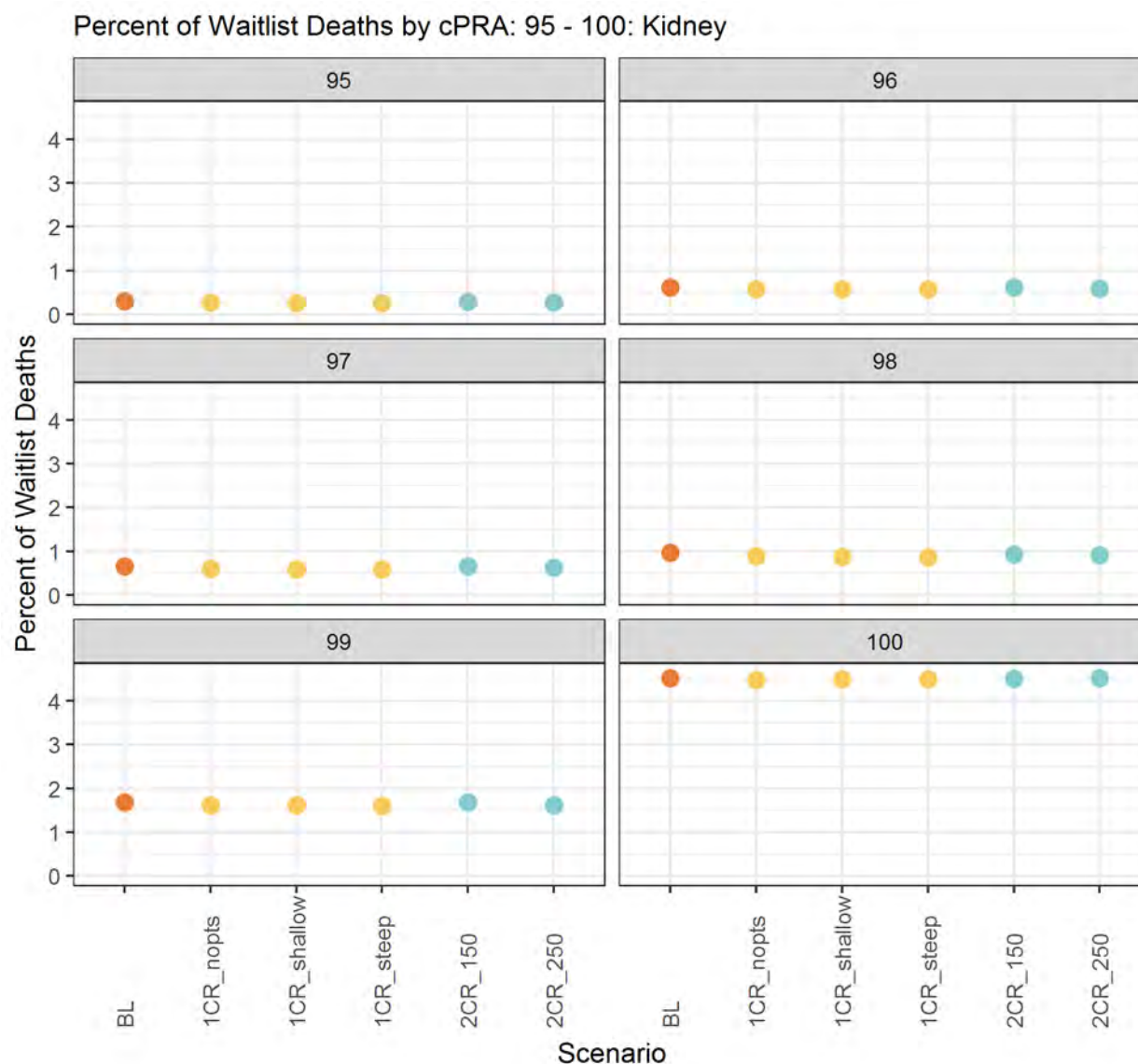


Figure 264 Percent of Waitlist Deaths by cPRA: 95 - 100: Kidney

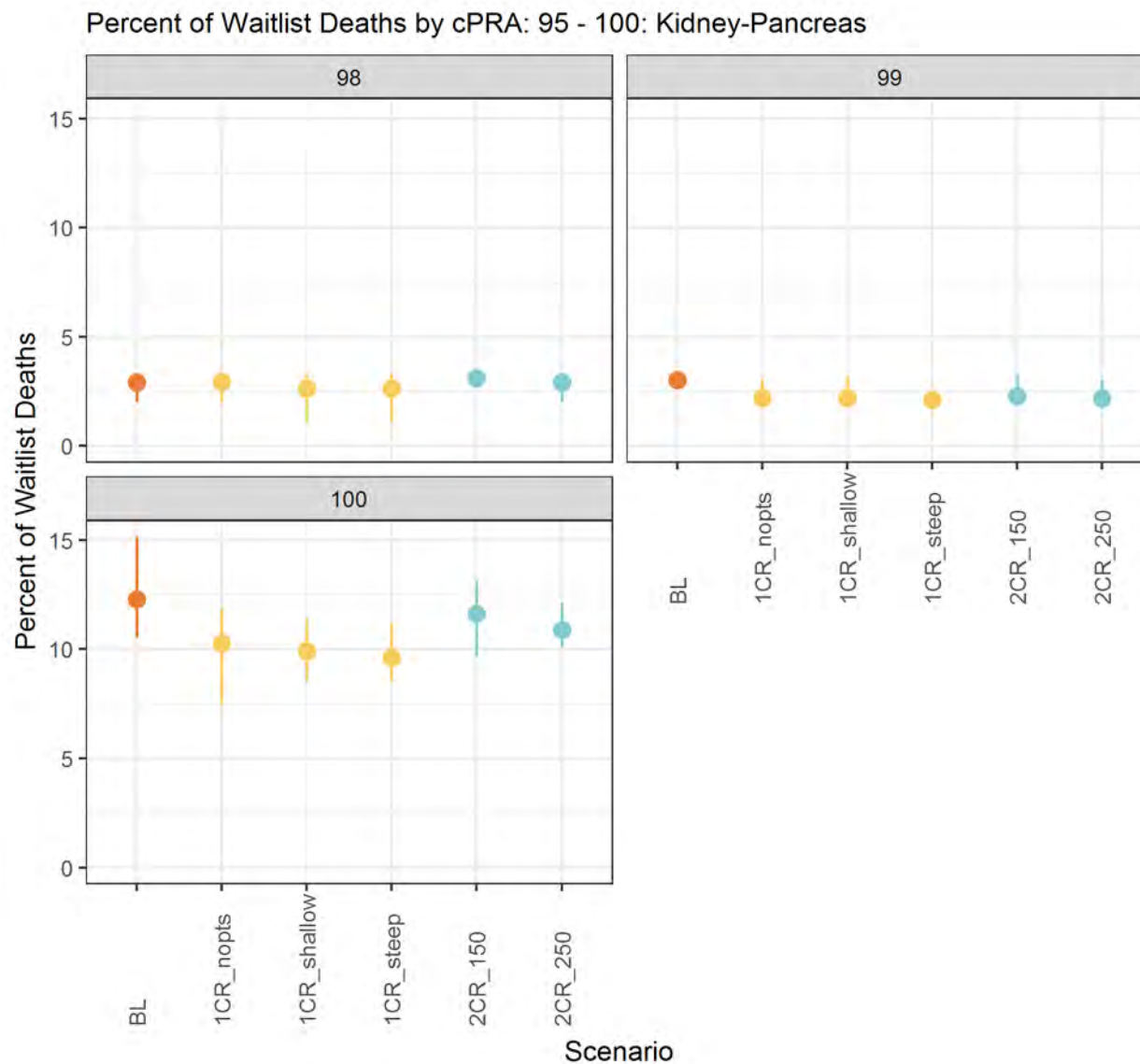


Figure 265 Percent of Waitlist Deaths by cPRA: 95 - 100: Kidney-Pancreas

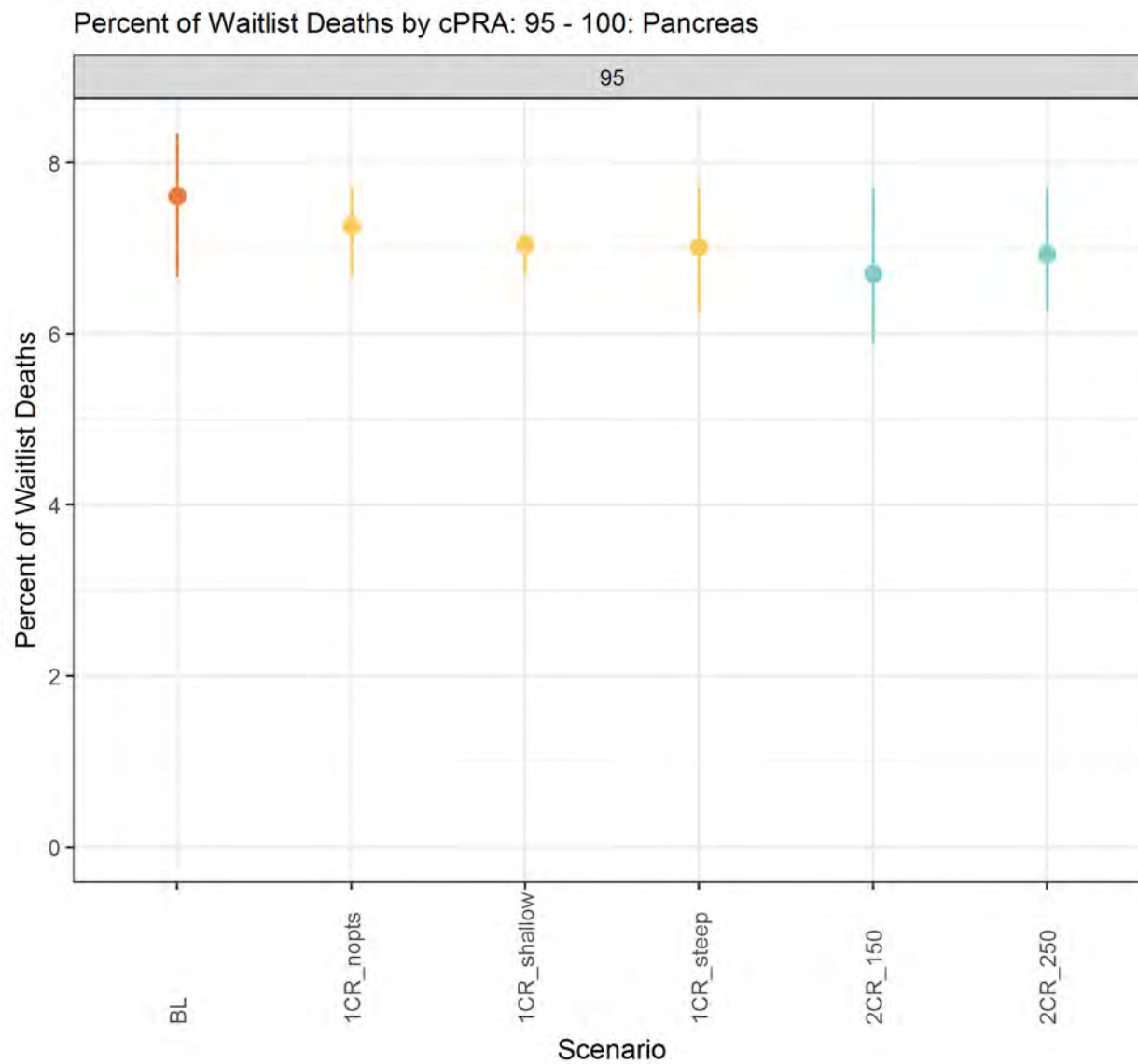


Figure 266 Percent of Waitlist Deaths by cPRA: 95 - 100: Pancreas

Waitlist Mortality Percentages: cPRA: 95 - 98

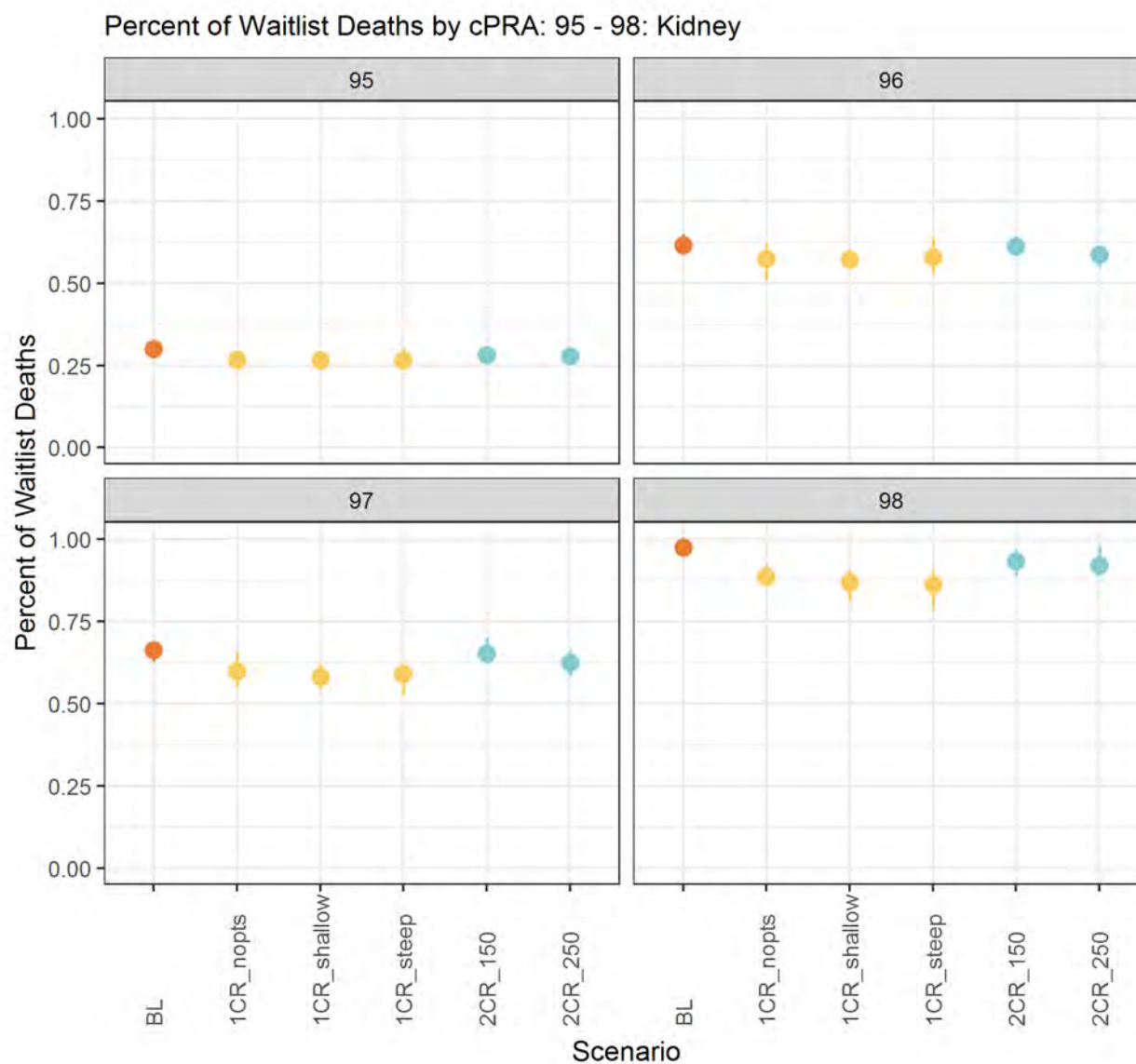


Figure 267 Percent of Waitlist Deaths by cPRA: 95 - 98: Kidney

Waitlist Mortality Percentages: cPRA: 99 - 100

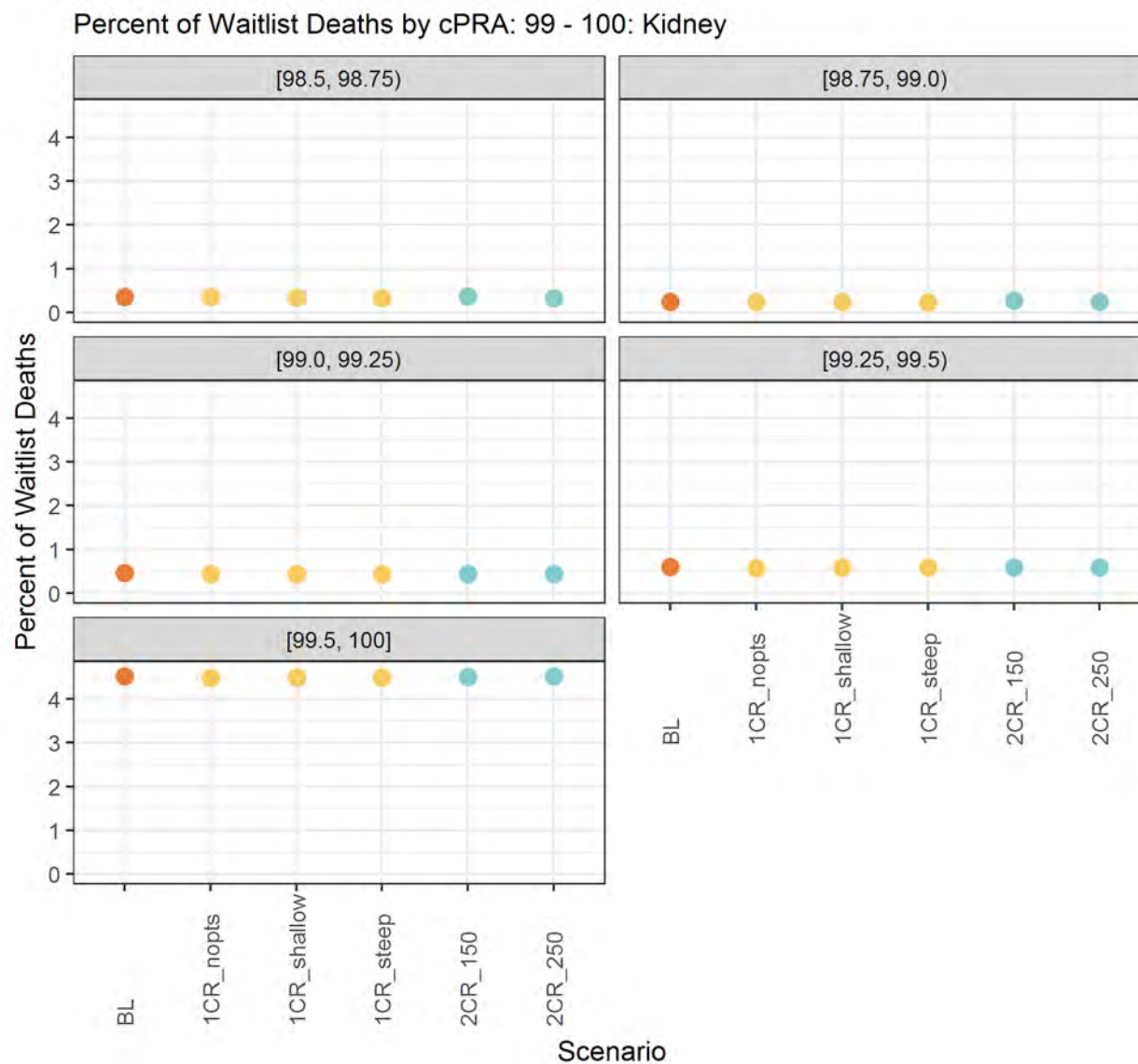


Figure 268 Percent of Waitlist Deaths by cPRA: 99 - 100: Kidney



Waitlist Mortality Percentages: cPRA: 95 - 99

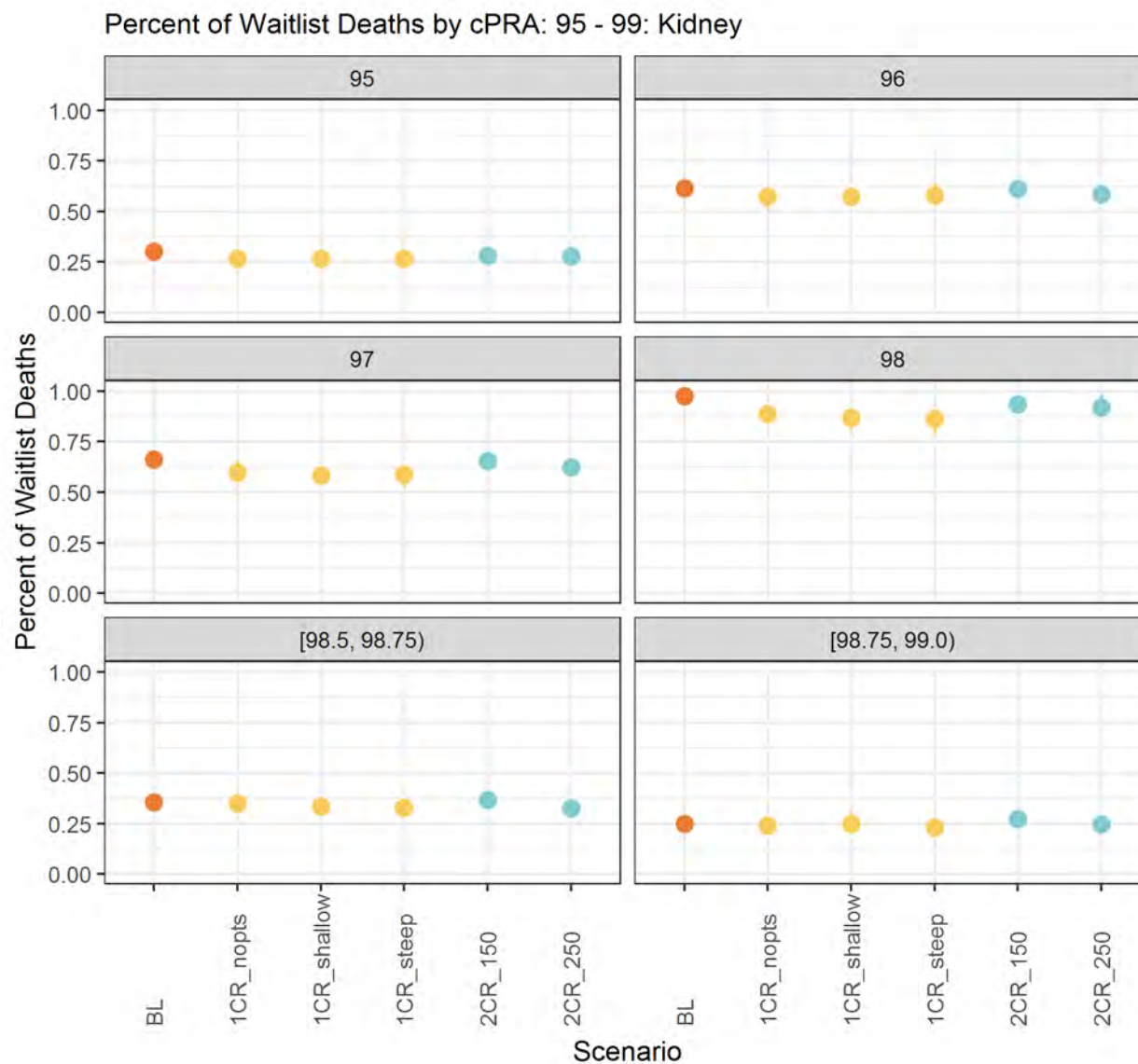


Figure 269 Percent of Waitlist Deaths by cPRA: 95 - 99: Kidney

Waitlist Mortality Percentages: cPRA: 99 - 99.8

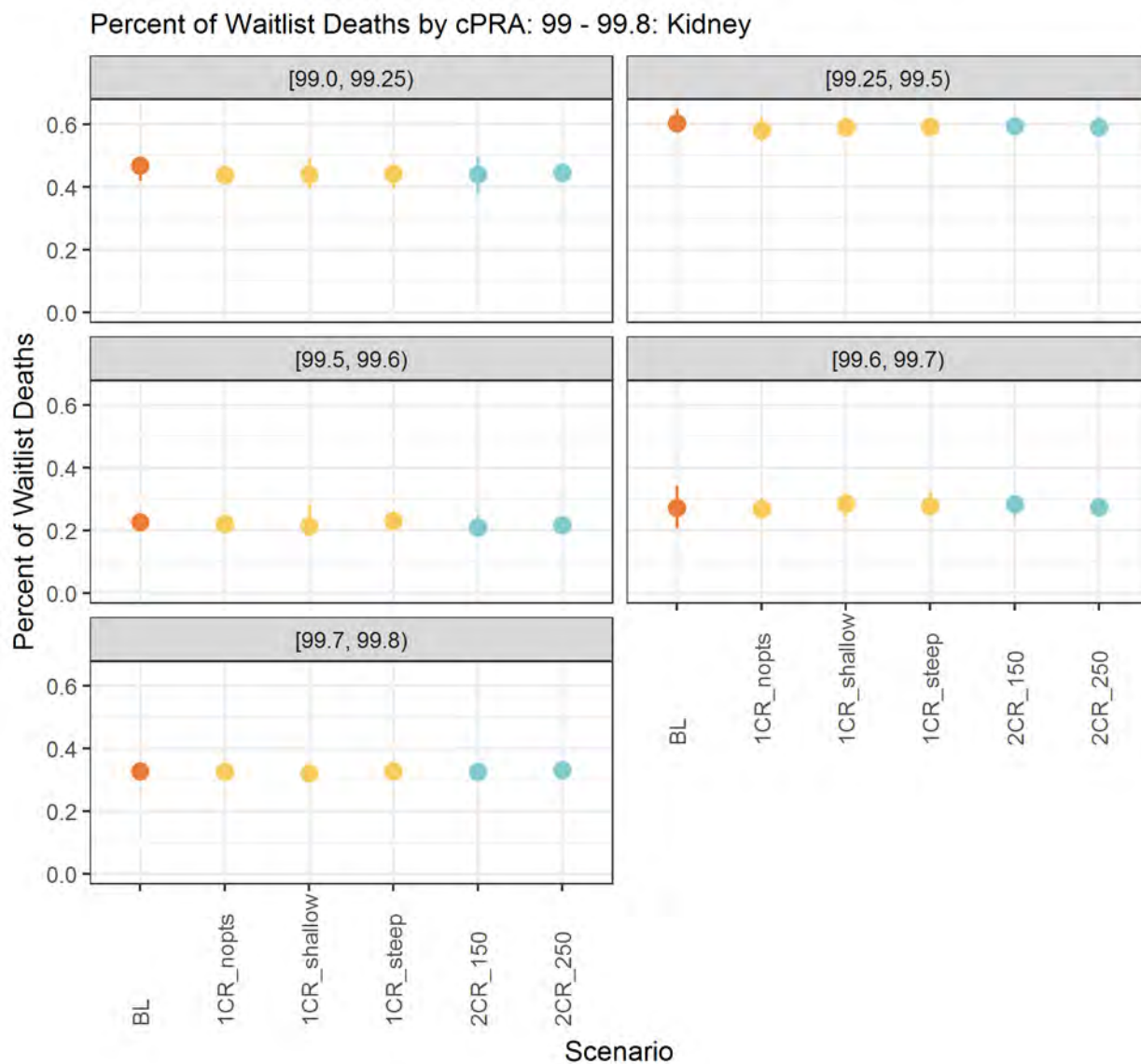


Figure 270 Percent of Waitlist Deaths by cPRA: 99 - 99.8: Kidney

Waitlist Mortality Percentages: cPRA: 99.8 - 100

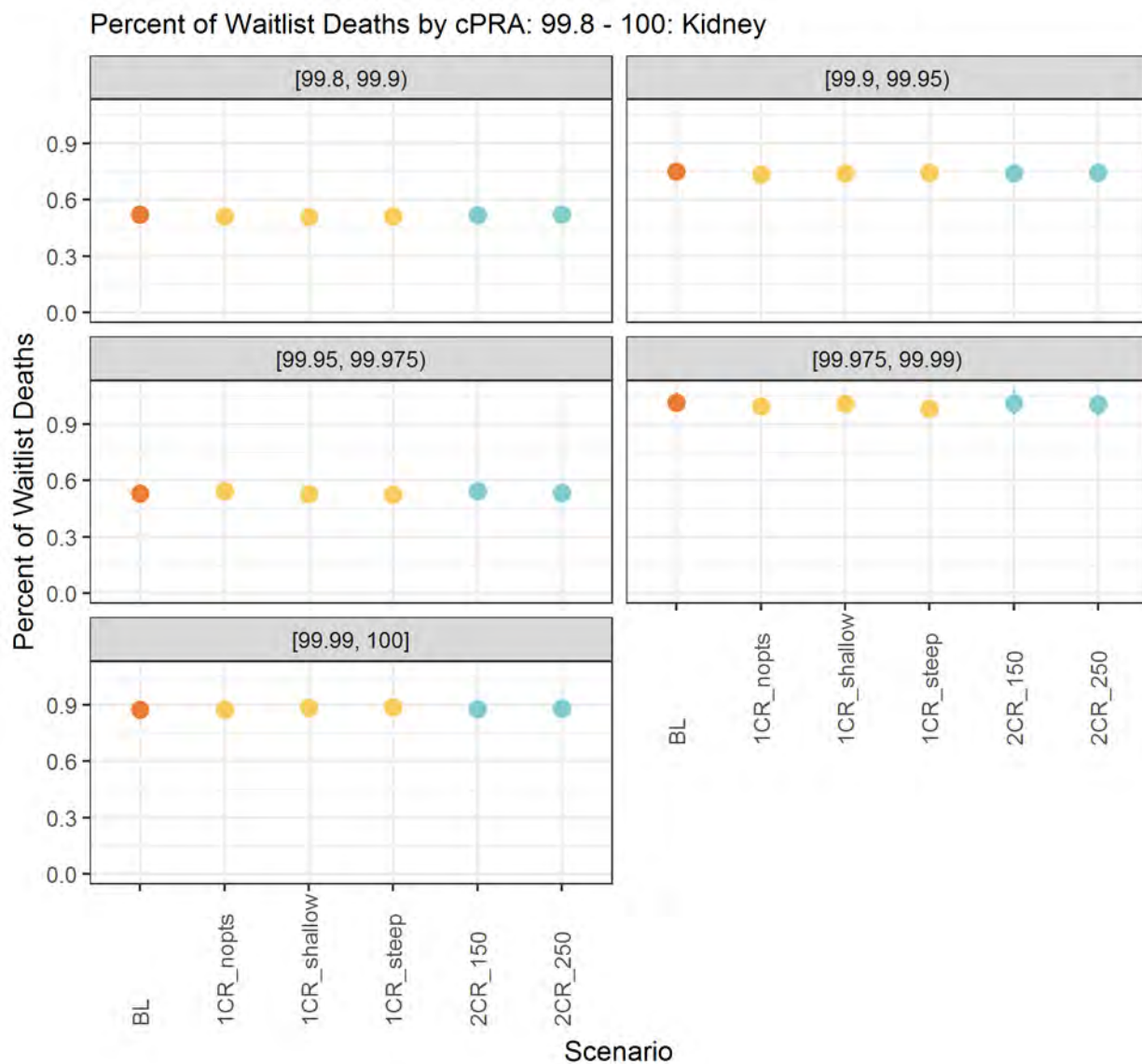


Figure 271 Percent of Waitlist Deaths by cPRA: 99.8 - 100: Kidney

## Waitlist Mortality Percentages: Payment Status

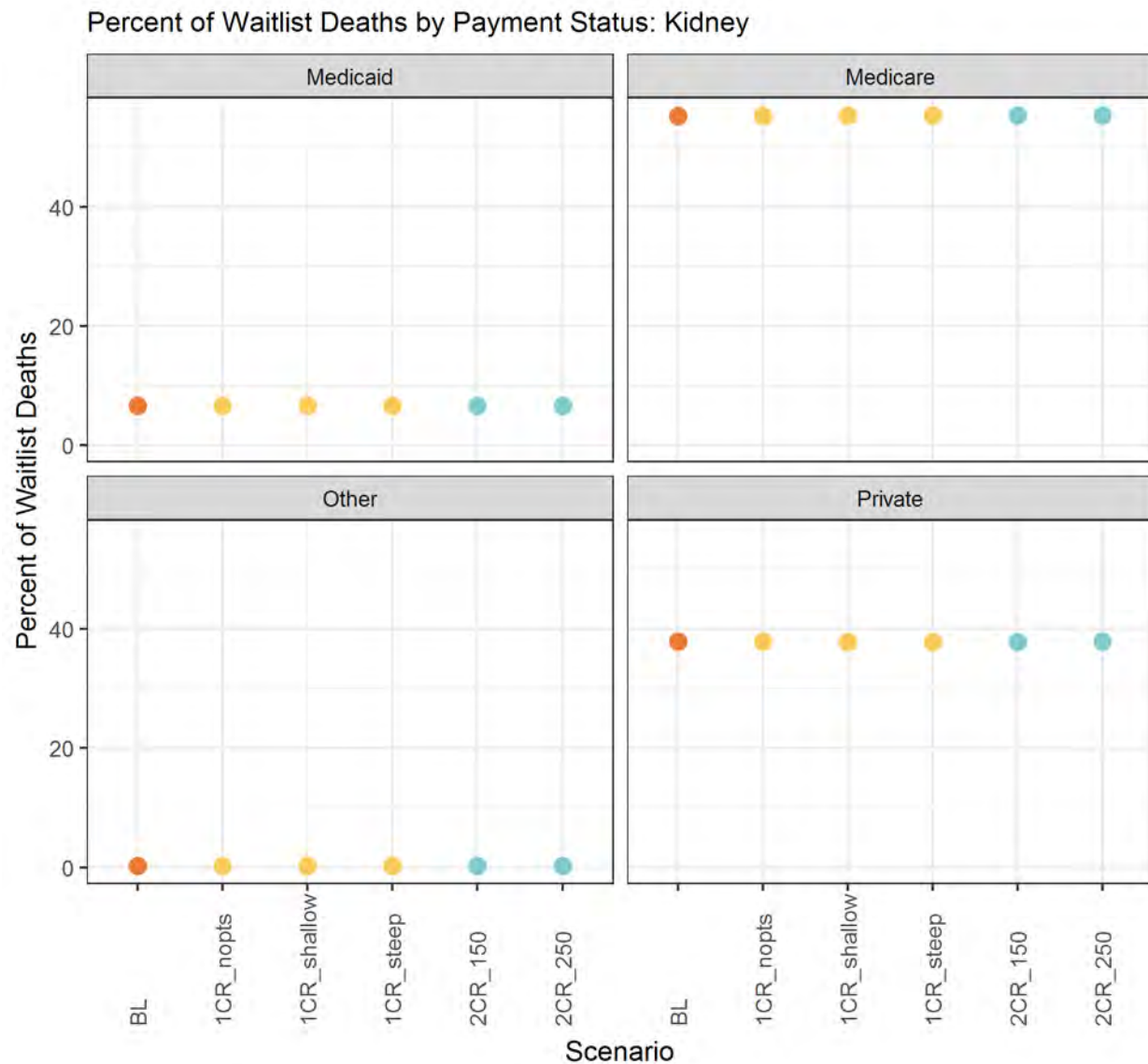


Figure 272 Percent of Waitlist Deaths by Payment Status: Kidney

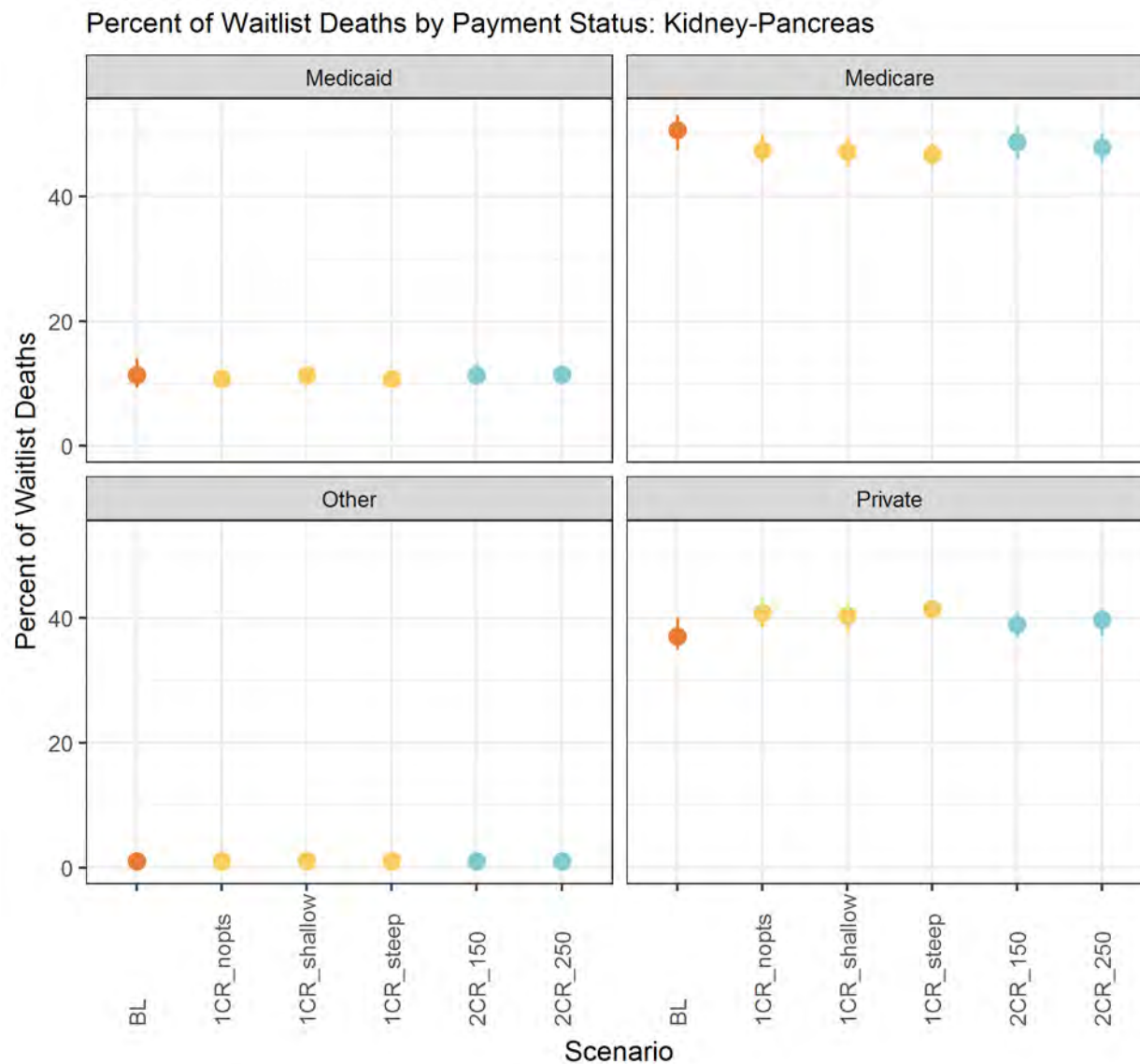


Figure 273 Percent of Waitlist Deaths by Payment Status: Kidney-Pancreas

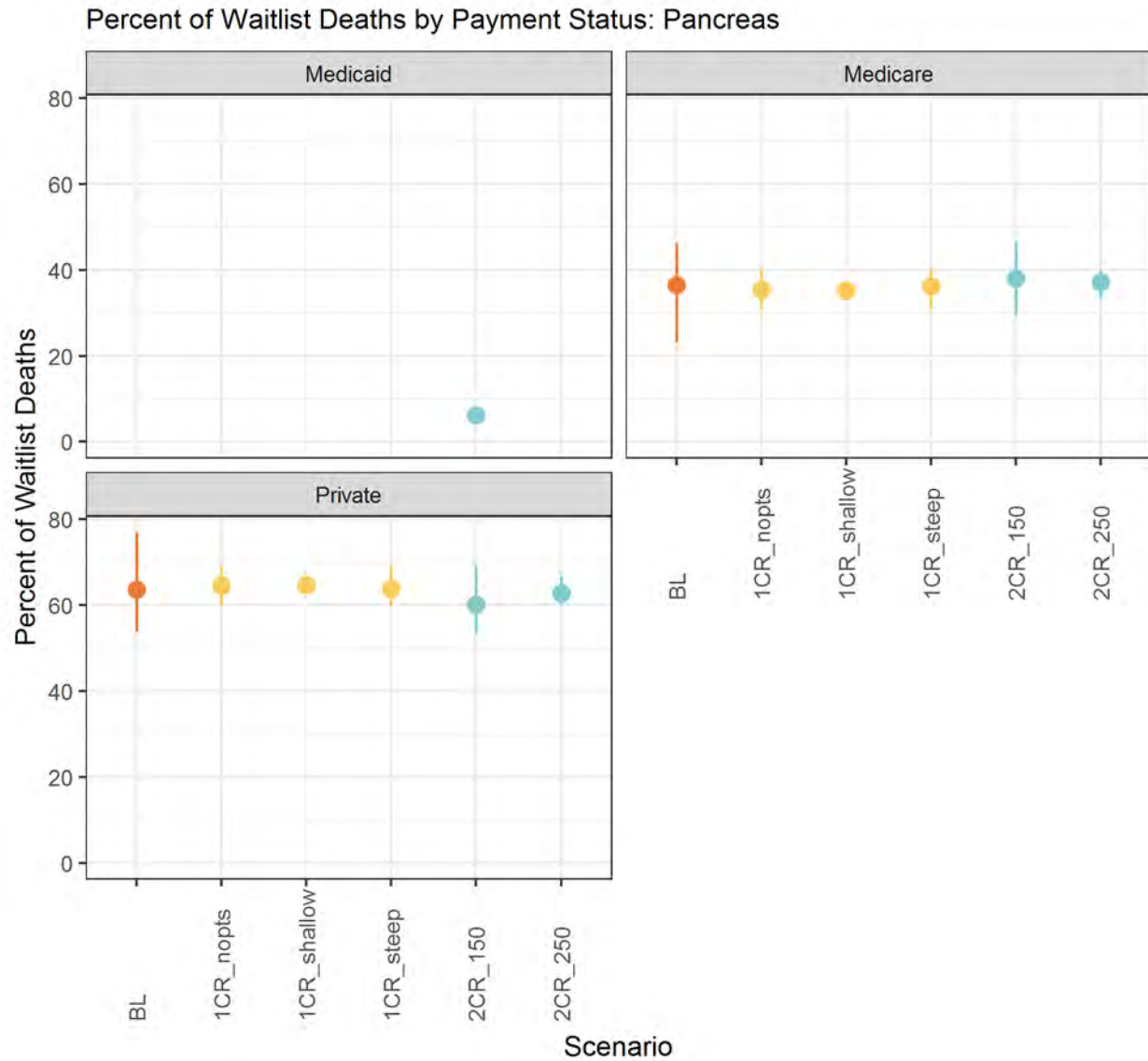


Figure 274 Percent of Waitlist Deaths by Payment Status: Pancreas



## Waitlist Mortality Percentages: Urbanicity

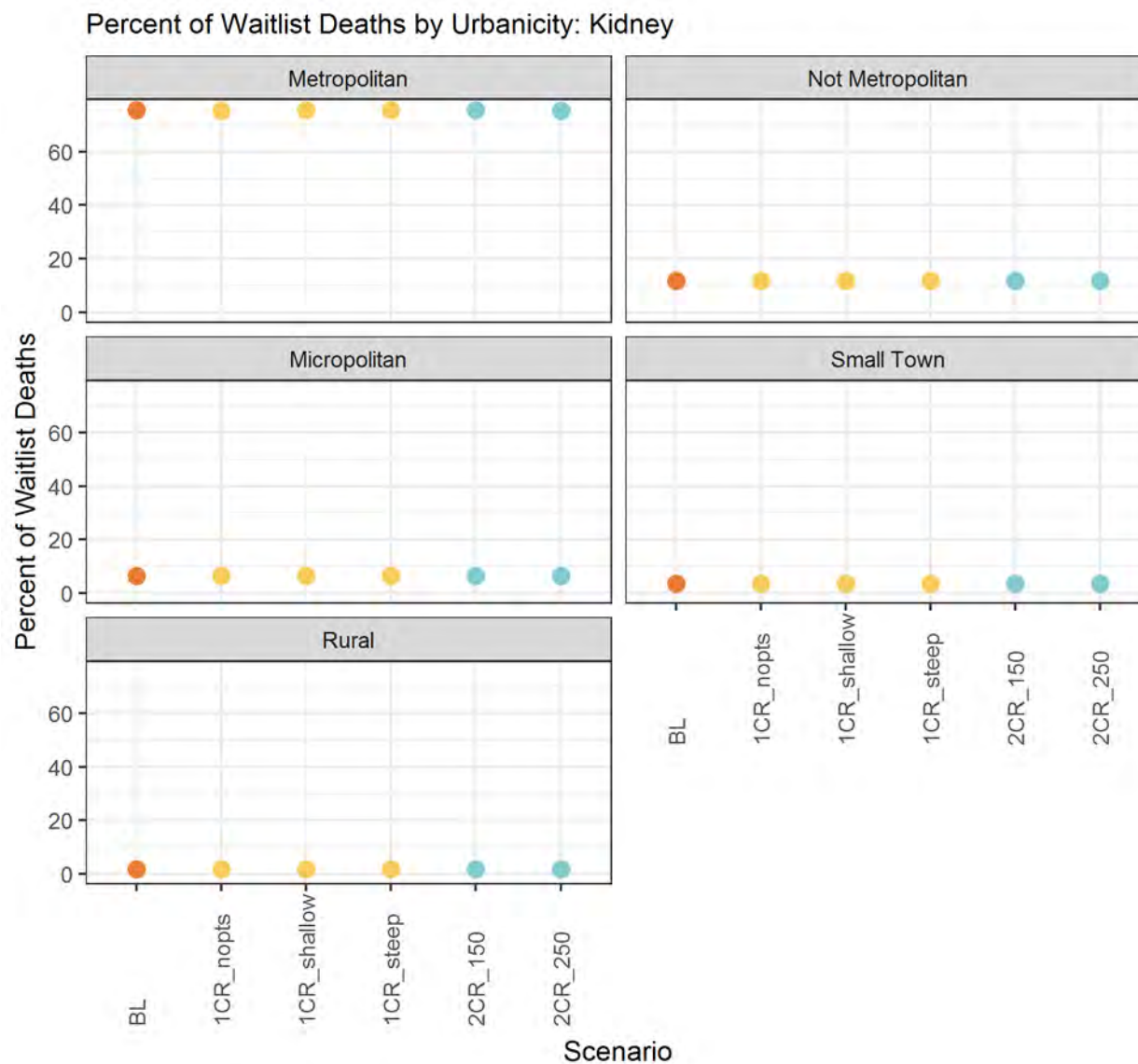


Figure 275 Percent of Waitlist Deaths by Urbanicity: Kidney

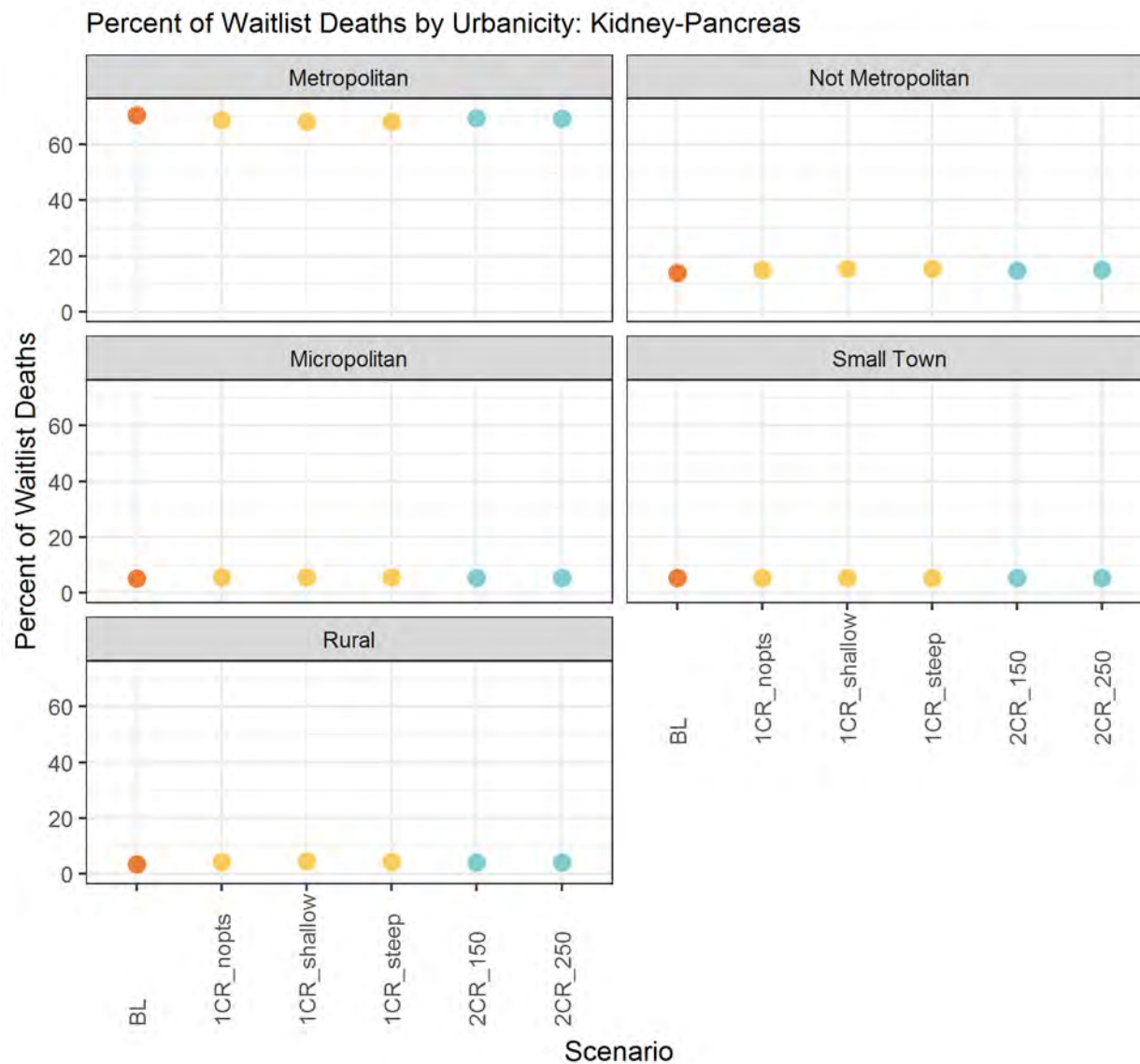


Figure 276 Percent of Waitlist Deaths by Urbanicity: Kidney-Pancreas

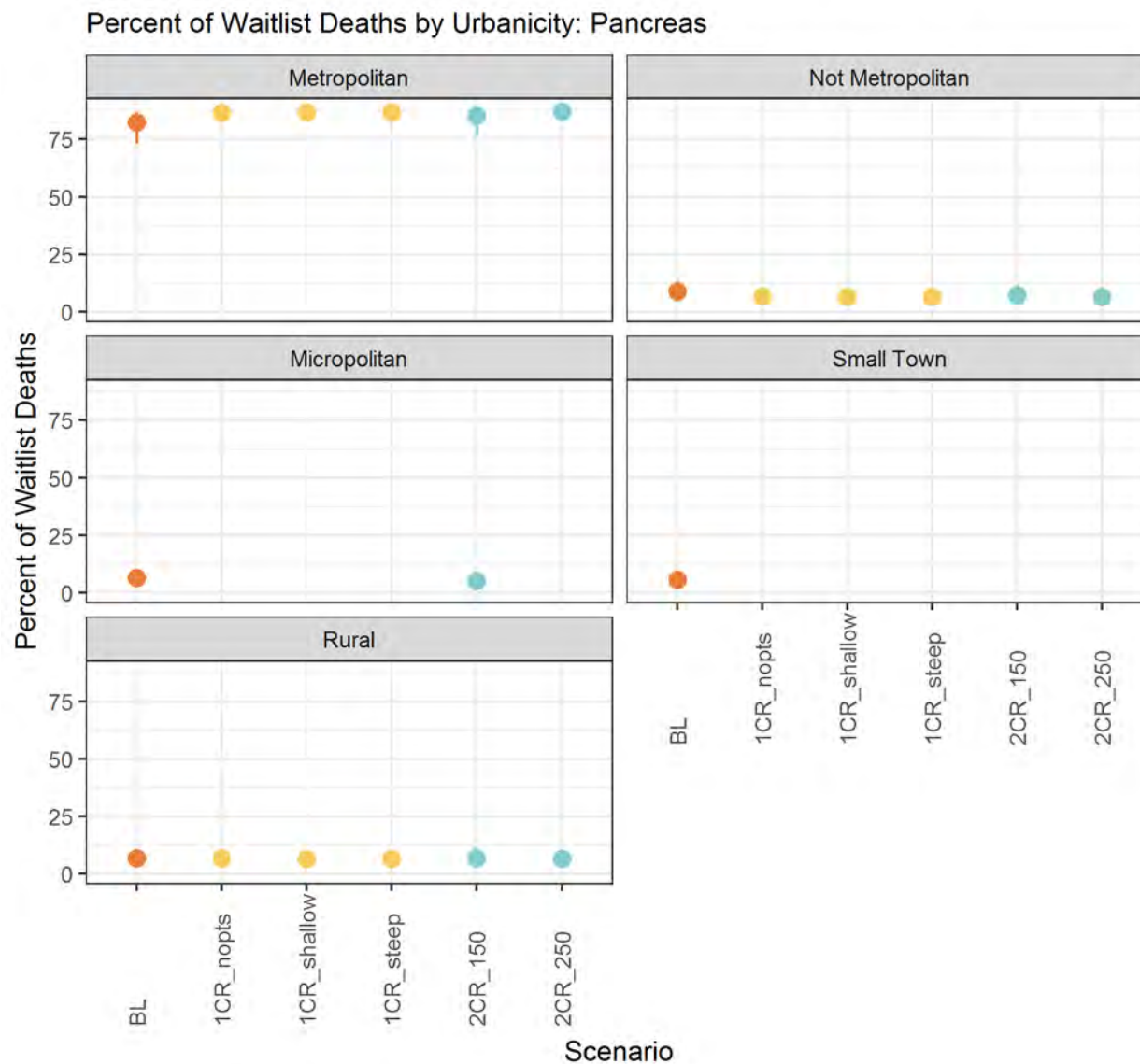


Figure 277 Percent of Waitlist Deaths by Urbanicity: Pancreas

## Waitlist Mortality Percentages: EPTS

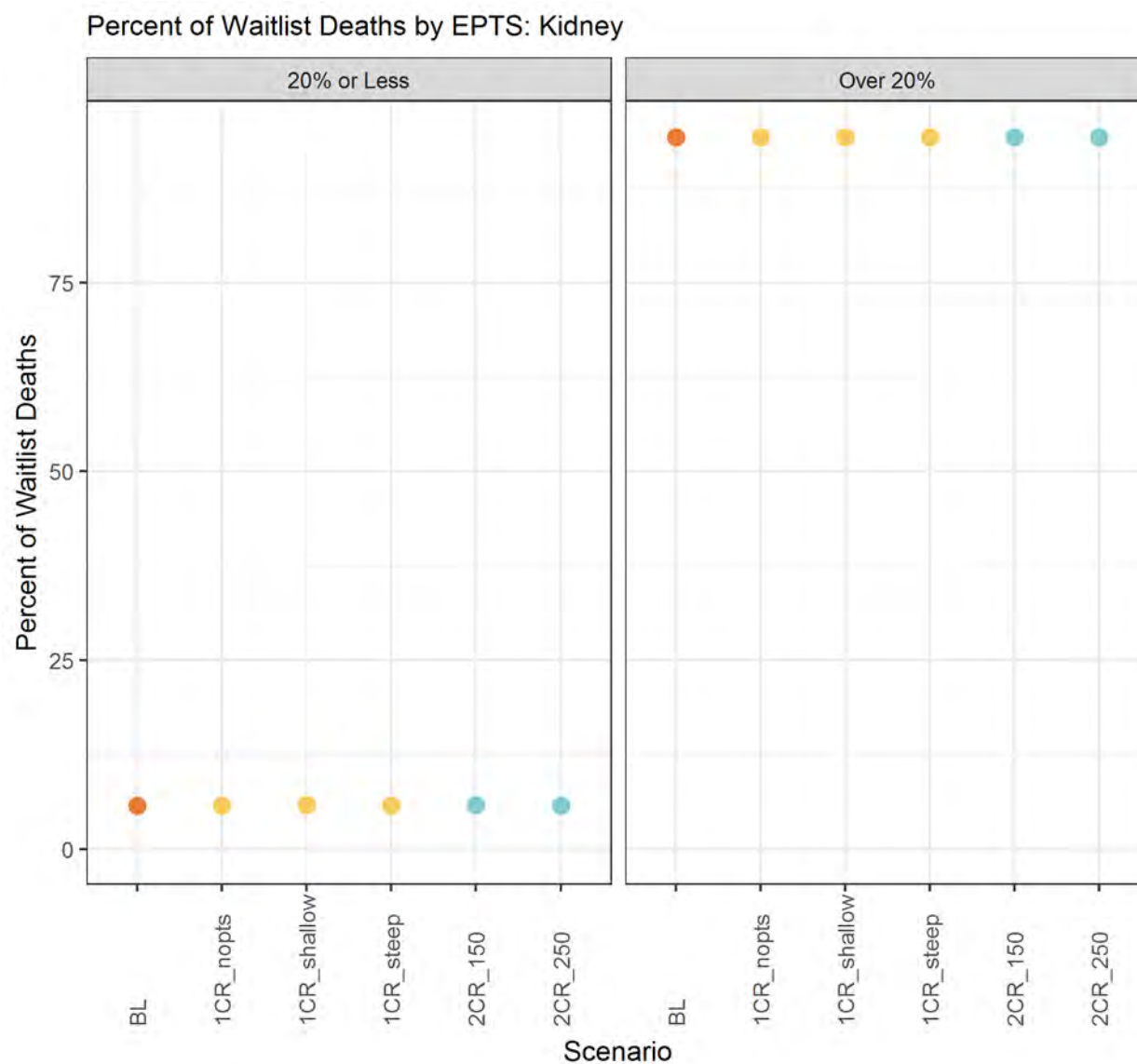


Figure 278 Percent of Waitlist Deaths by EPTS: Kidney

Waitlist Mortality Percentages: Median Household Income by Zip Code

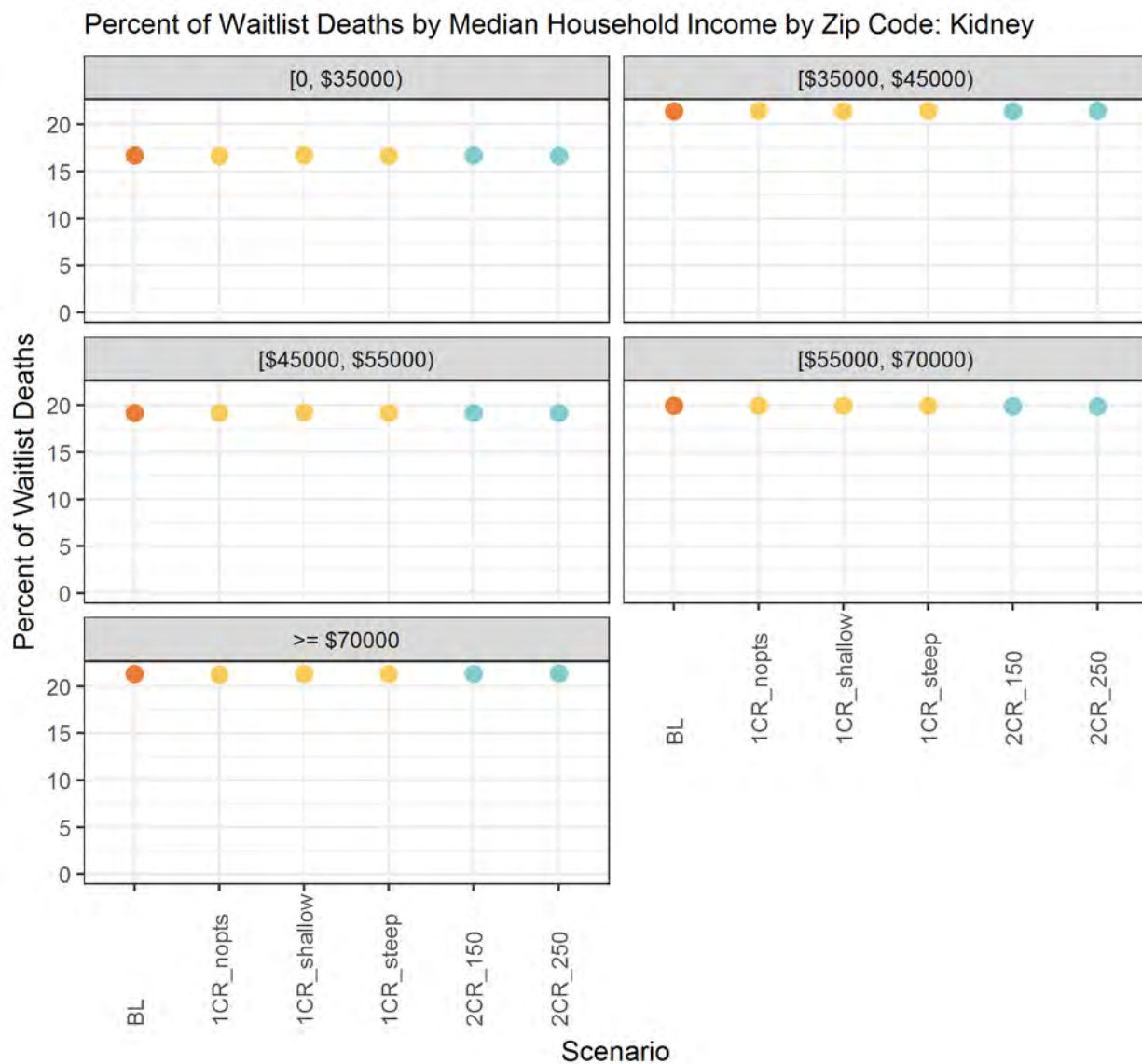


Figure 279 Percent of Waitlist Deaths by Median Household Income by Zip Code: Kidney

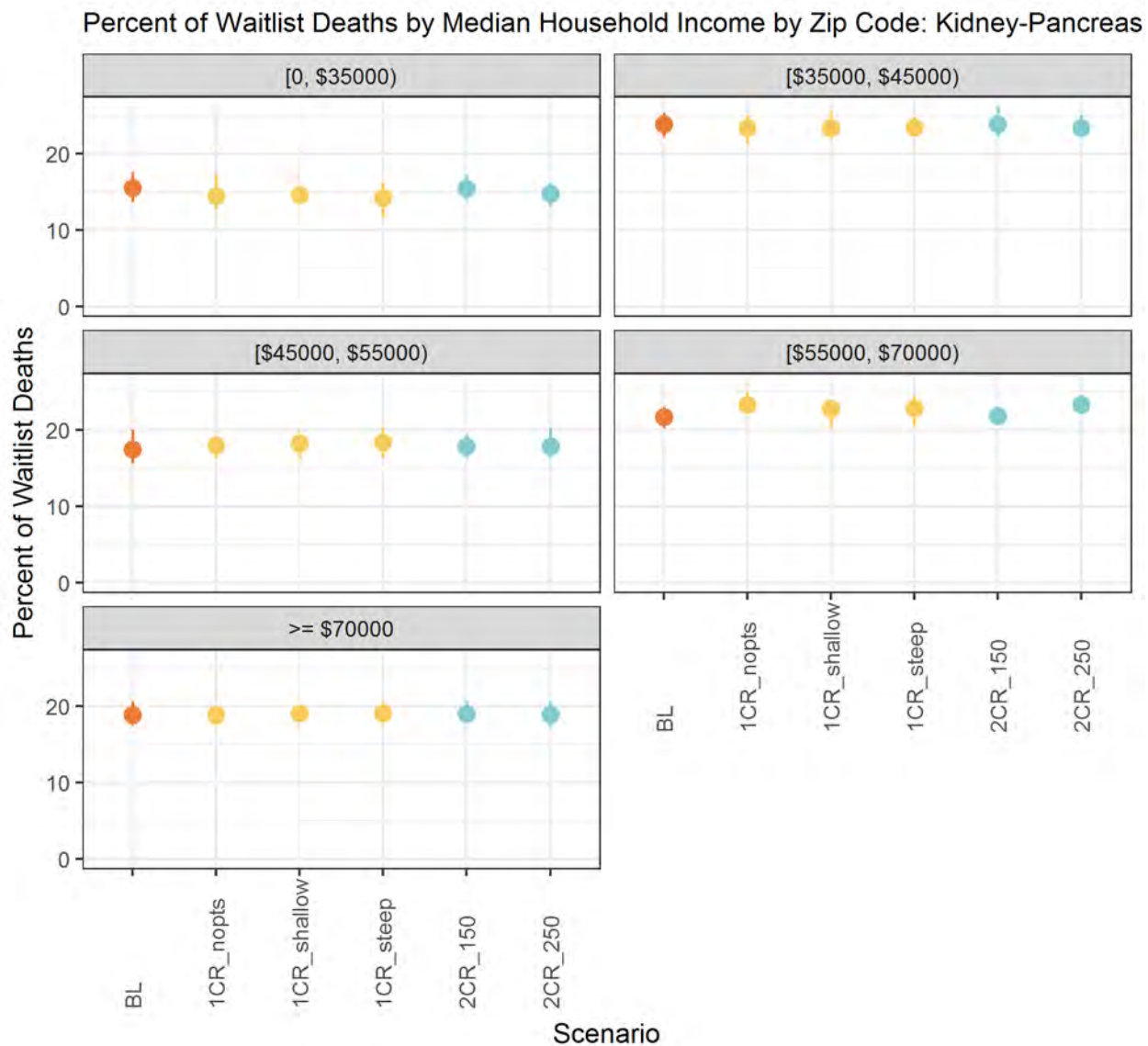


Figure 280 Percent of Waitlist Deaths by Median Household Income by Zip Code: Kidney-Pancreas



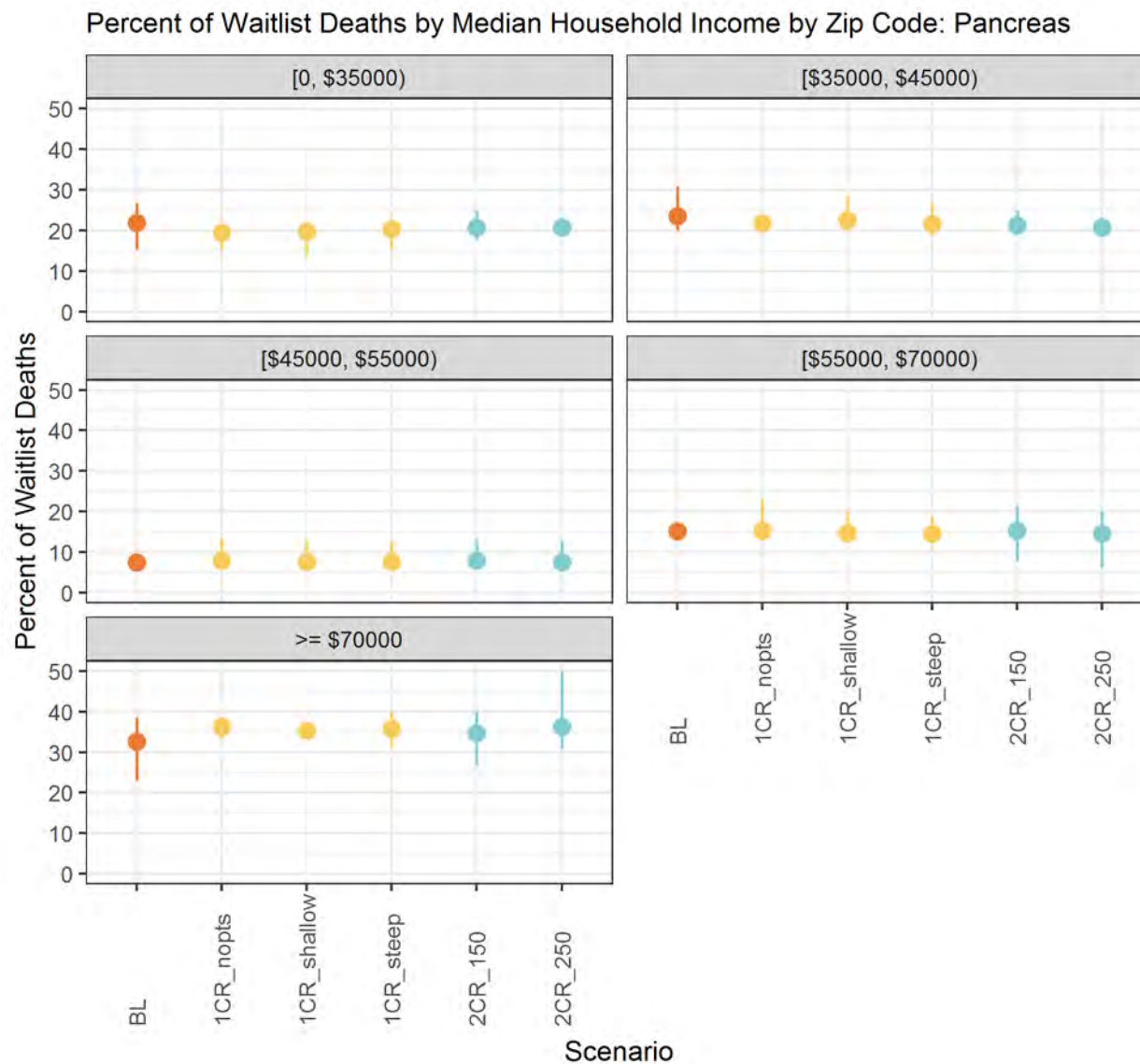


Figure 281 Percent of Waitlist Deaths by Median Household Income by Zip Code: Pancreas

## Posttransplant Mortality

### Posttransplant Mortality Rates

Posttransplant Mortality Rates: Age at Transplant 0-17

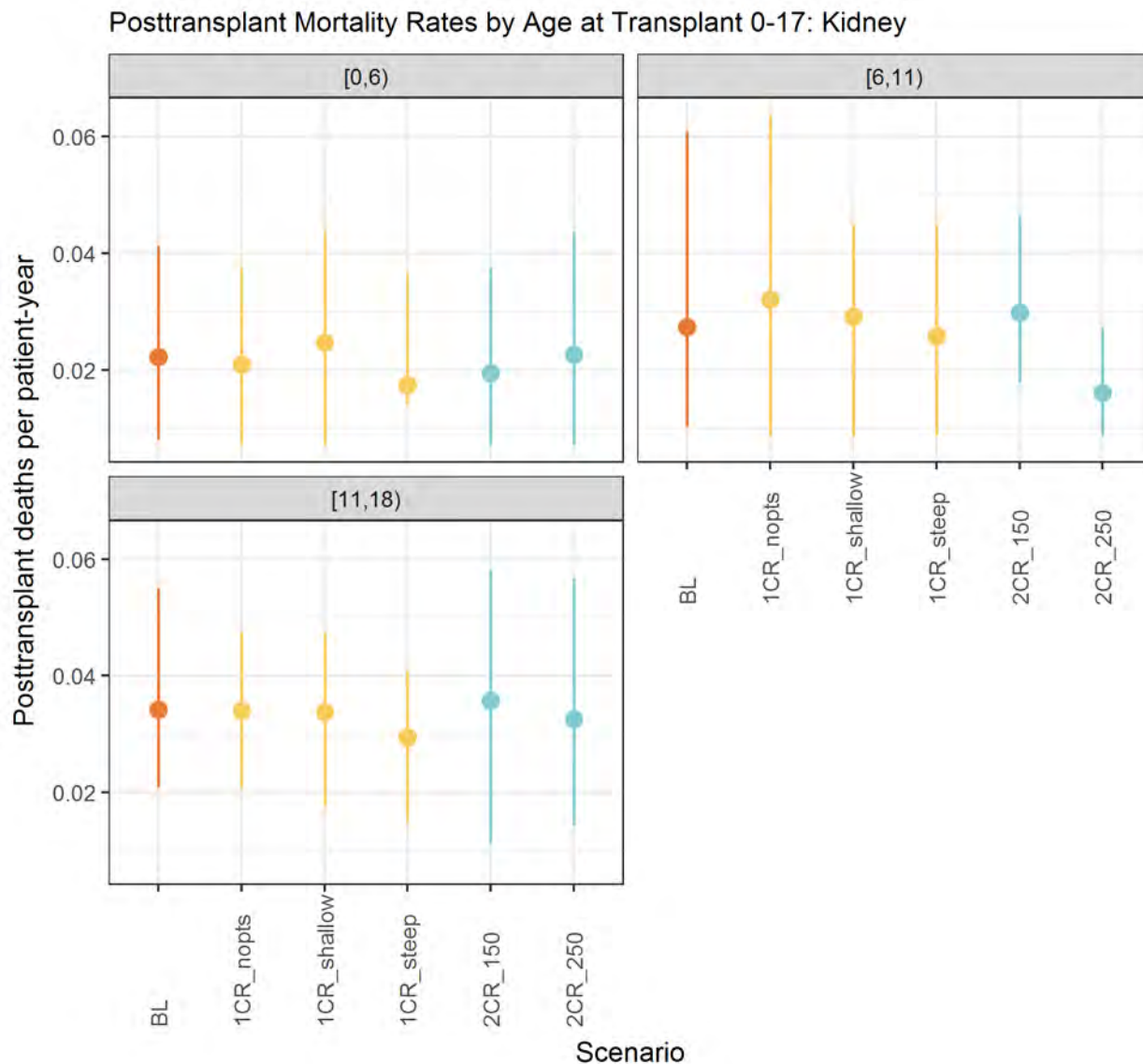


Figure 282 Posttransplant Mortality Rates by Age at Transplant 0-17: Kidney

Posttransplant Mortality Rates: Age at Transplant 18+

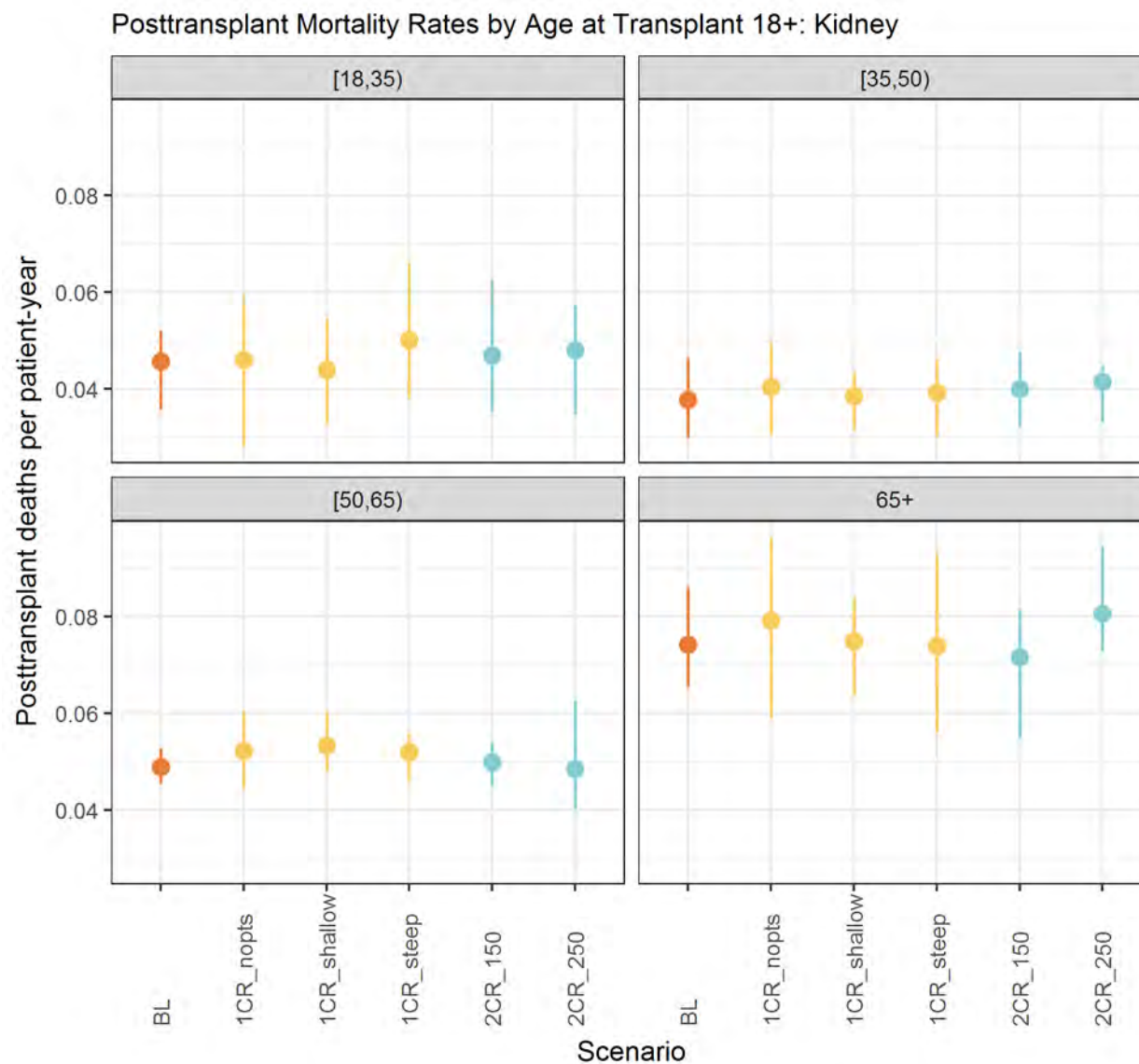


Figure 283 Posttransplant Mortality Rates by Age at Transplant 18+: Kidney

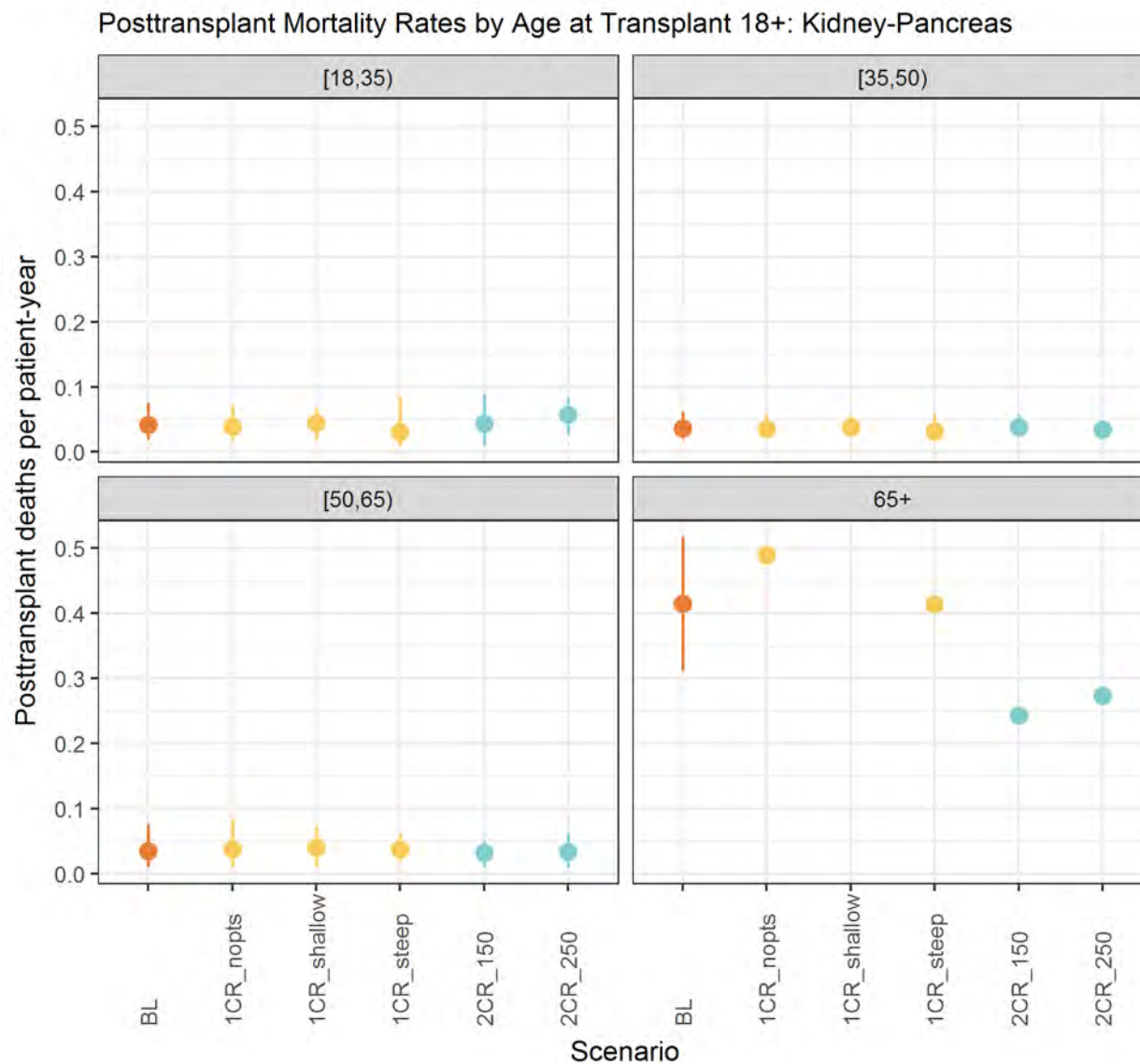


Figure 284 Posttransplant Mortality Rates by Age at Transplant 18+: Kidney-Pancreas

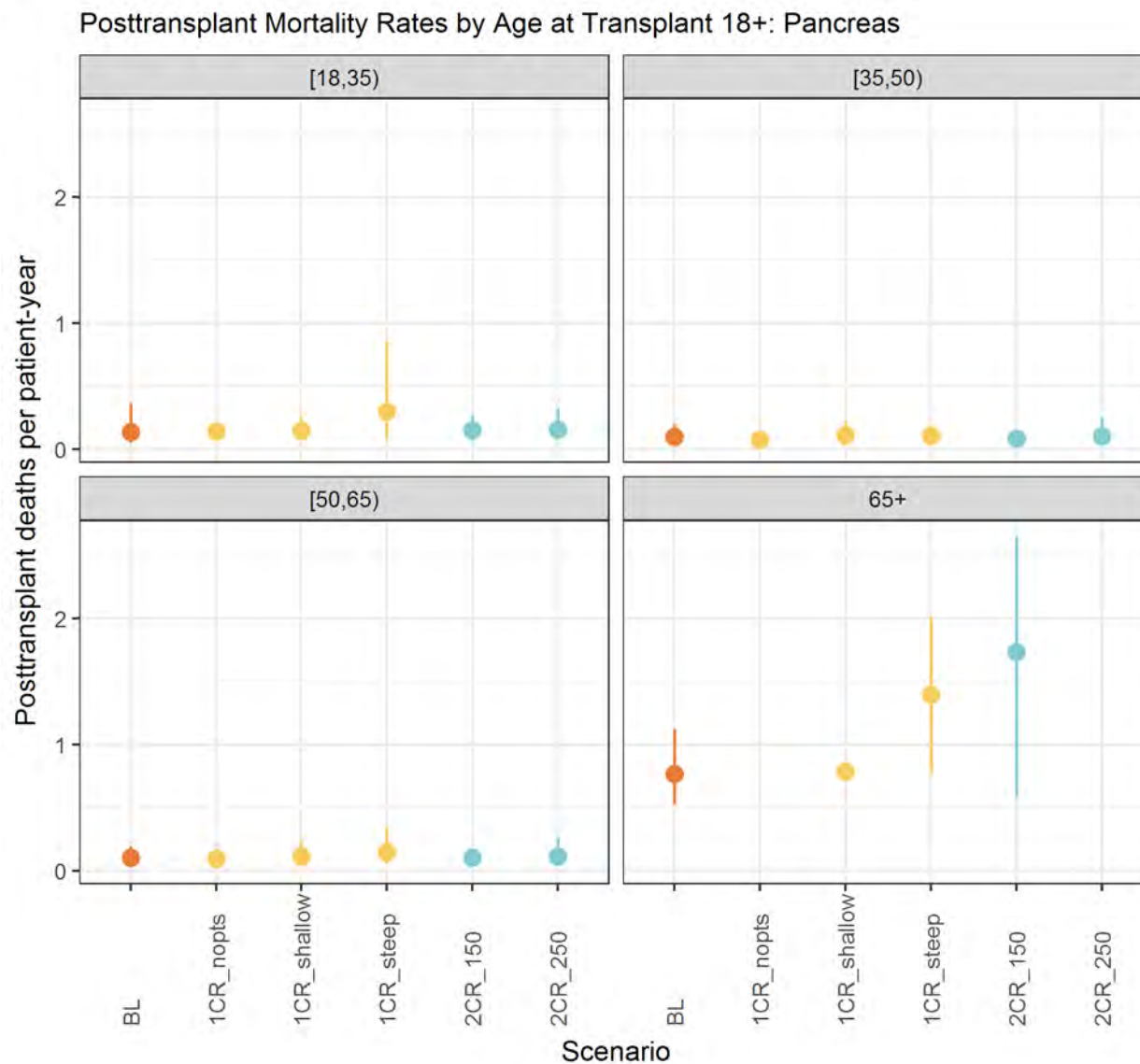


Figure 285 Posttransplant Mortality Rates by Age at Transplant 18+: Pancreas

## Posttransplant Mortality Rates: Race

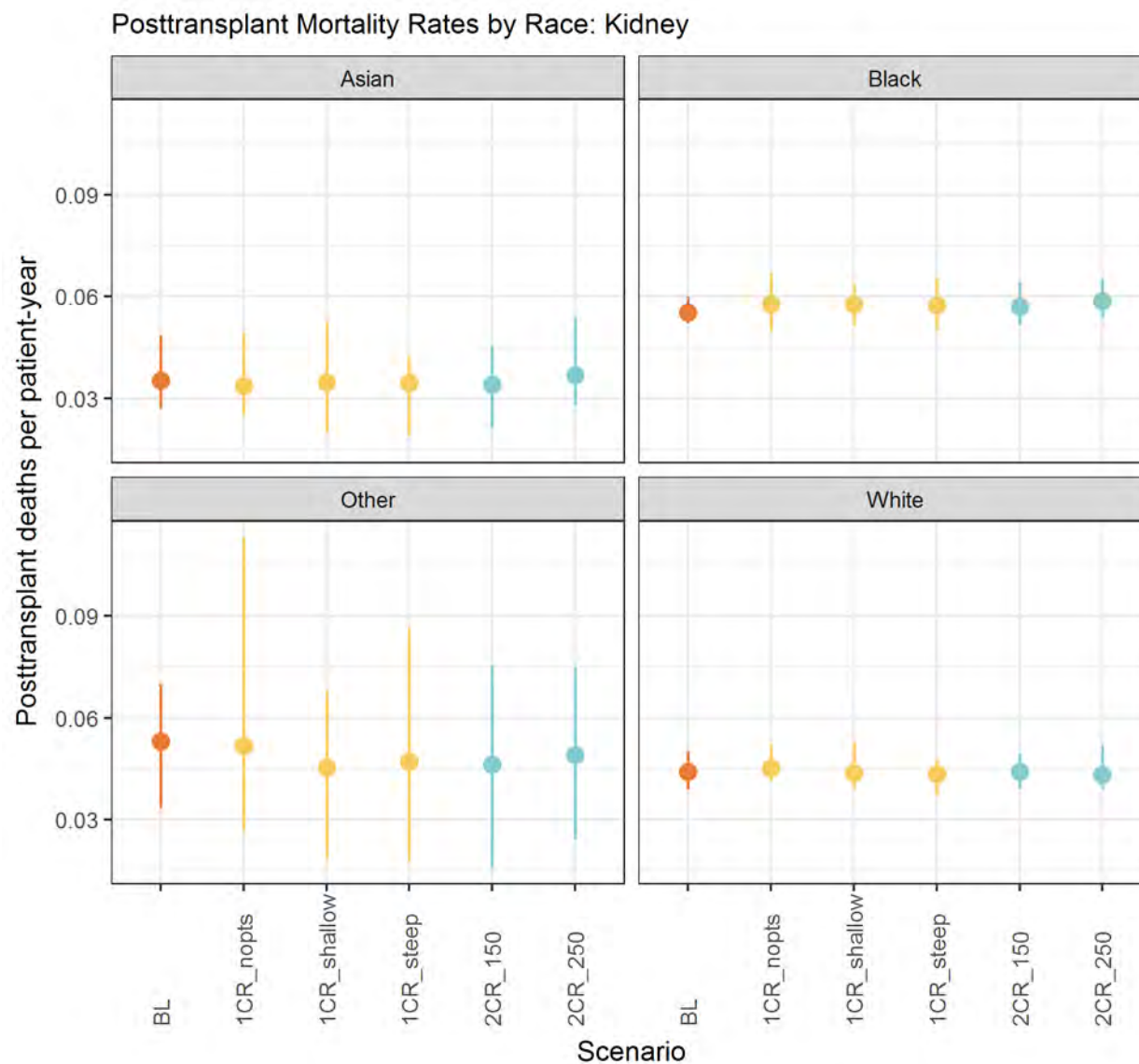


Figure 286 Posttransplant Mortality Rates by Race: Kidney



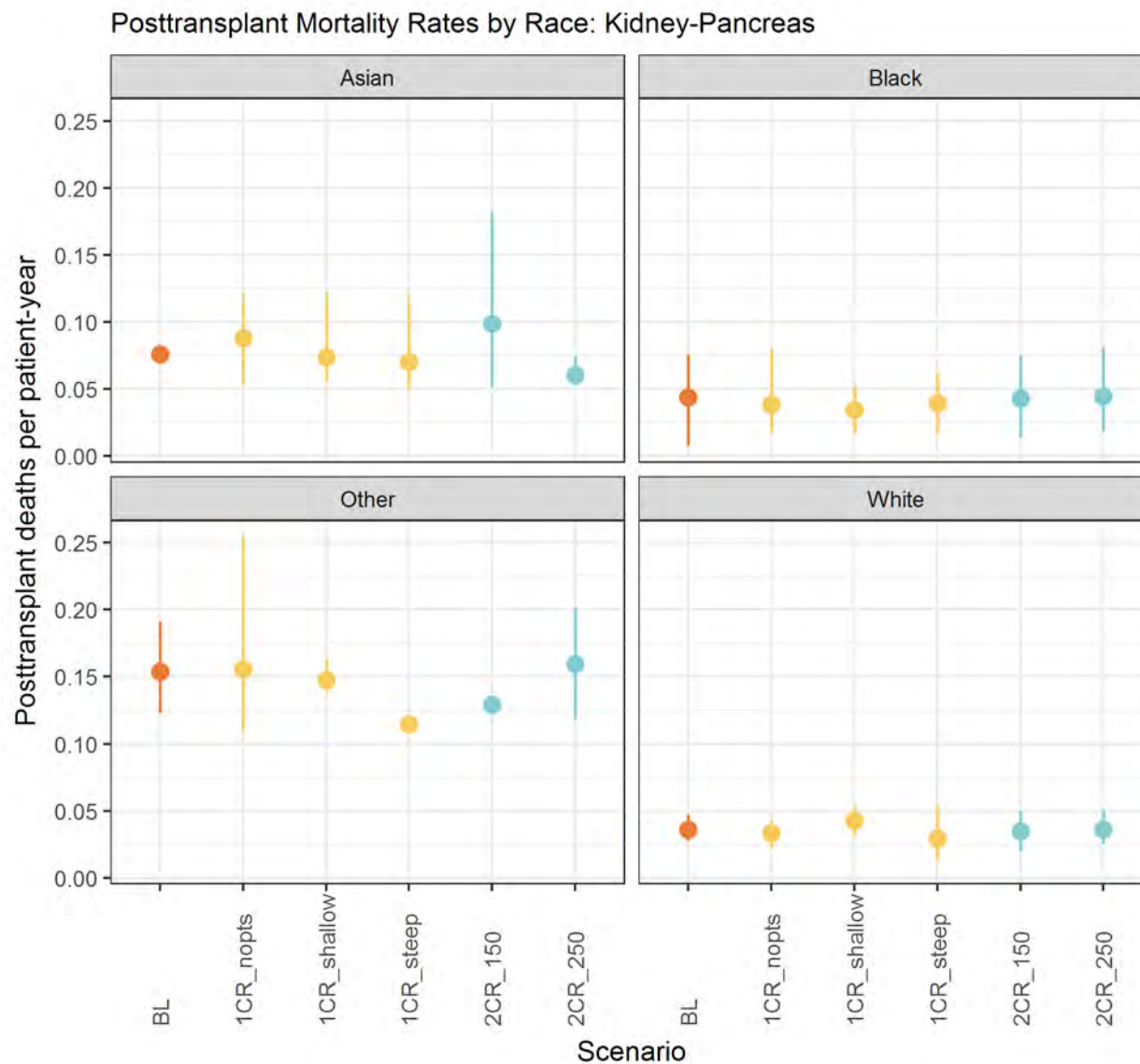


Figure 287 Posttransplant Mortality Rates by Race: Kidney-Pancreas

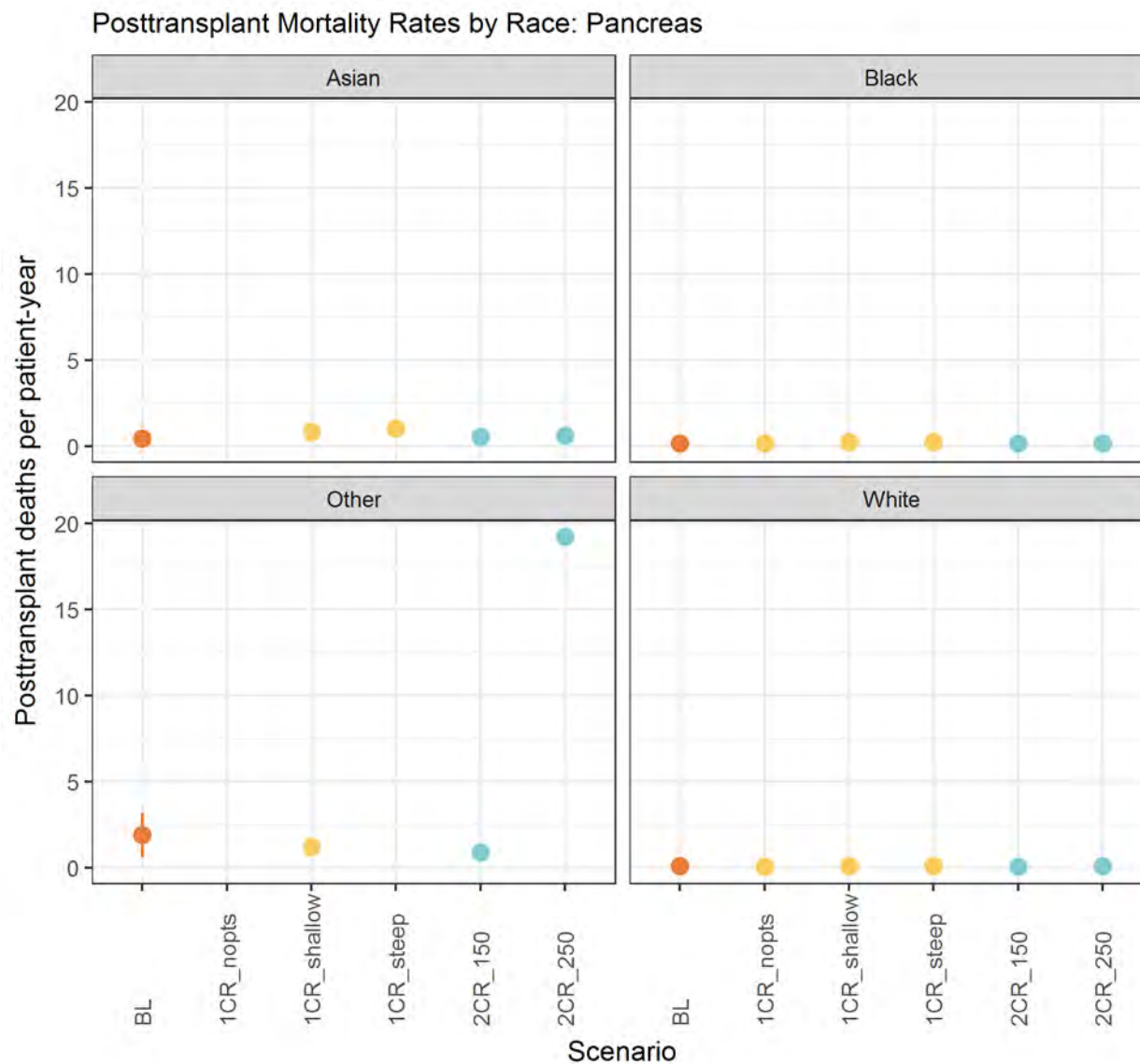


Figure 288 Posttransplant Mortality Rates by Race: Pancreas

## Posttransplant Mortality Rates: Ethnicity

### Posttransplant Mortality Rates by Ethnicity: Kidney

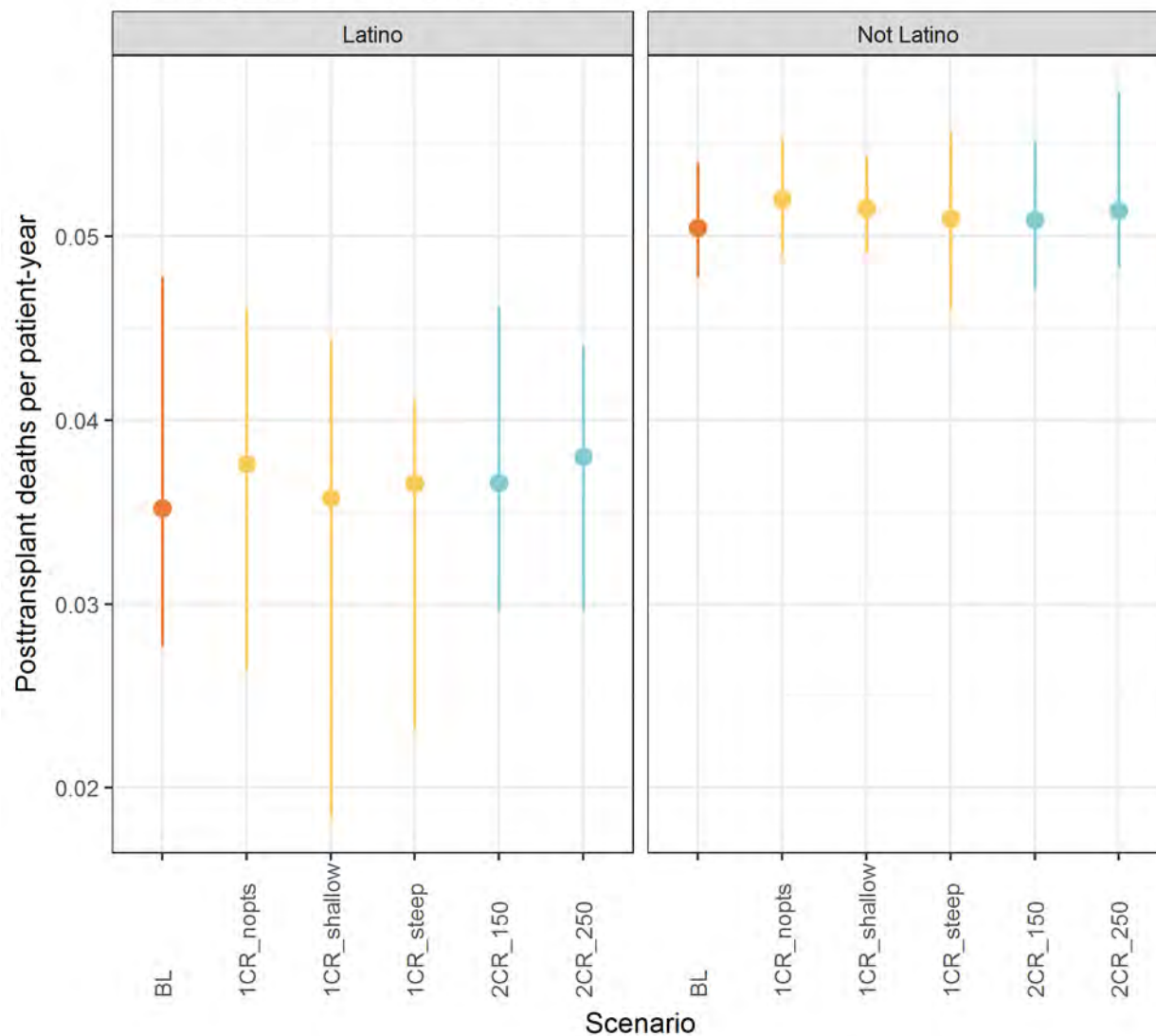


Figure 289 Posttransplant Mortality Rates by Ethnicity: Kidney

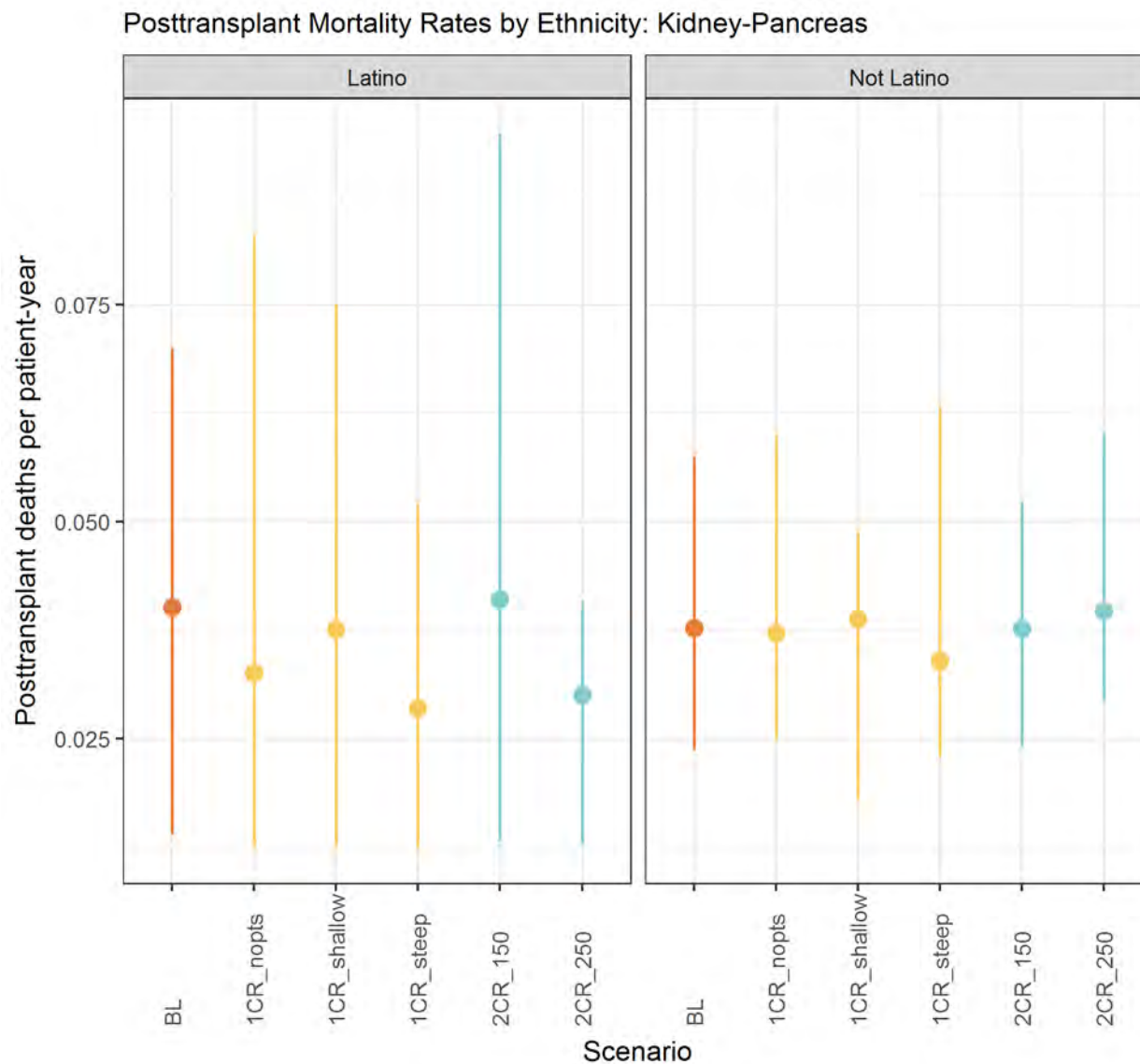


Figure 290 Posttransplant Mortality Rates by Ethnicity: Kidney-Pancreas

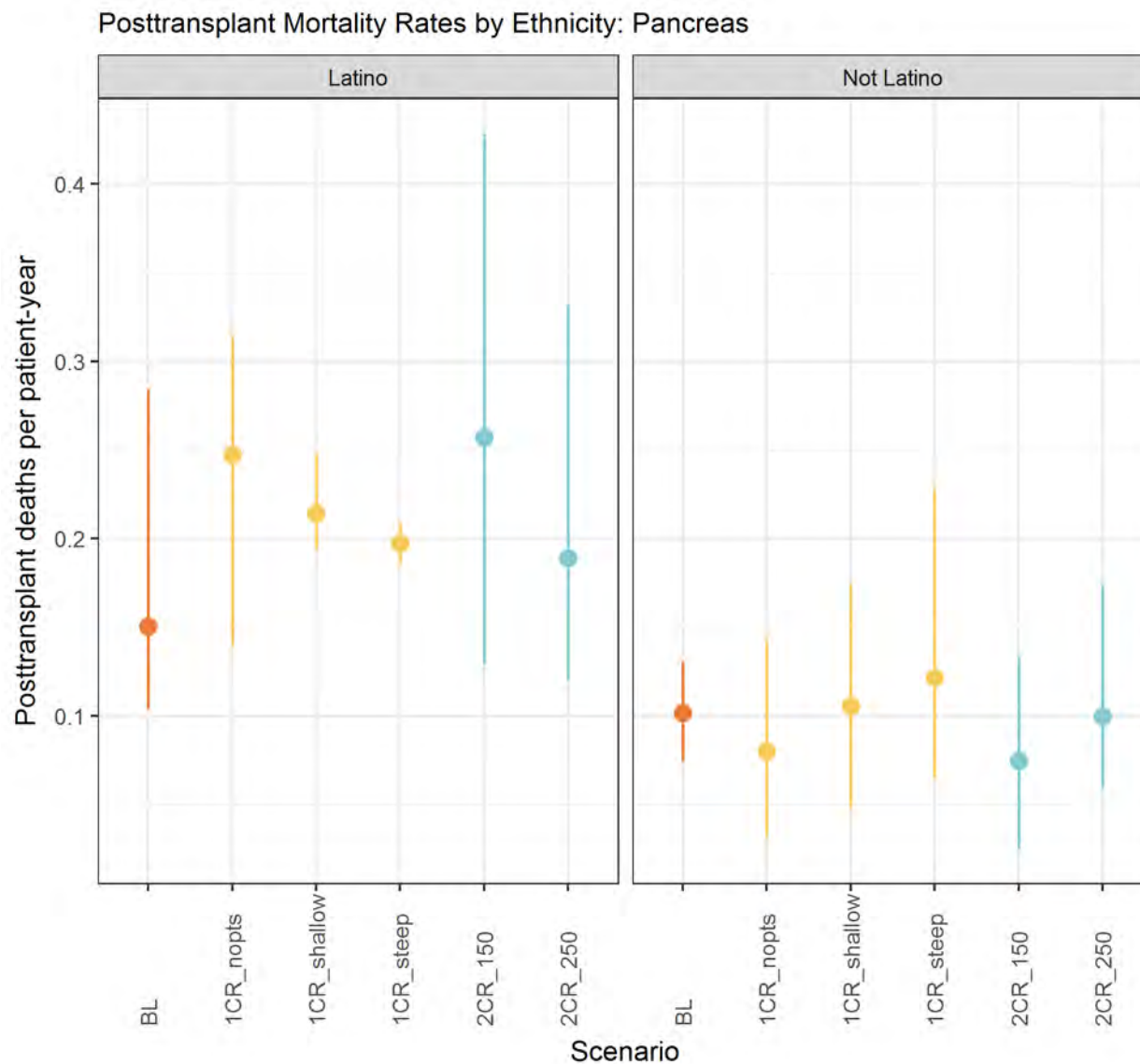


Figure 291 Posttransplant Mortality Rates by Ethnicity: Pancreas

## Posttransplant Mortality Rates: Sex

### Posttransplant Mortality Rates by Sex: Kidney

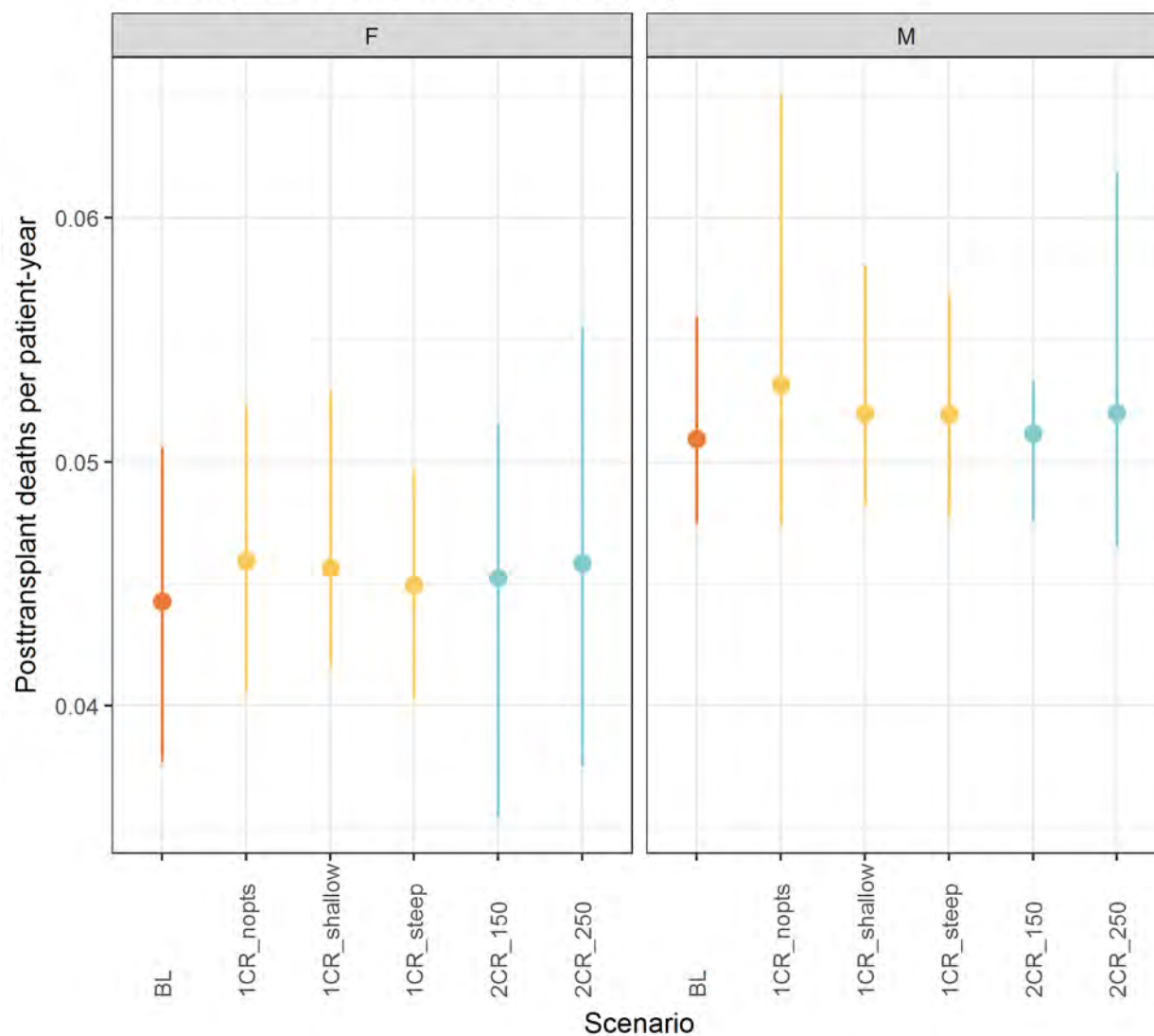


Figure 292 Posttransplant Mortality Rates by Sex: Kidney



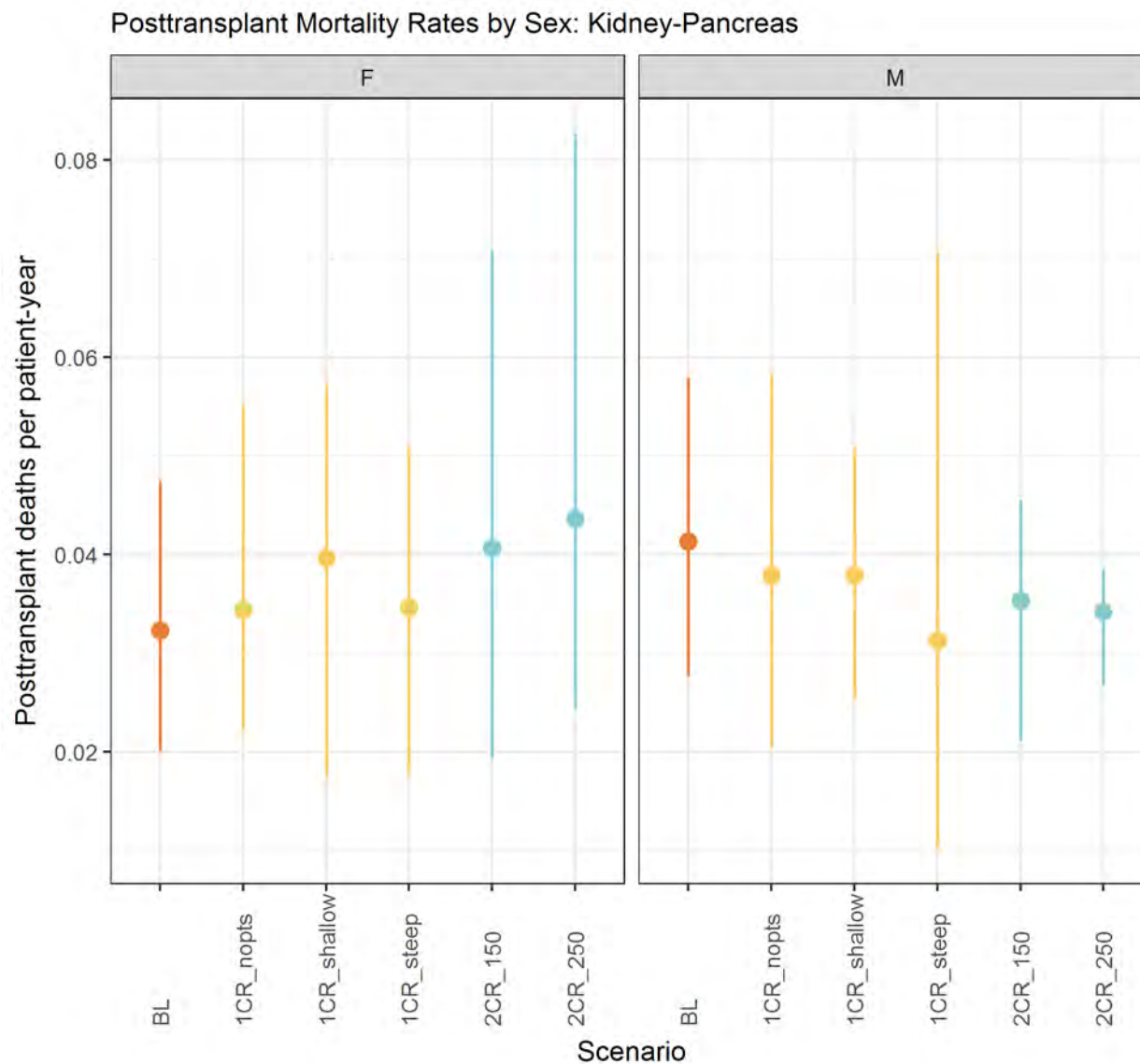


Figure 293 Posttransplant Mortality Rates by Sex: Kidney-Pancreas

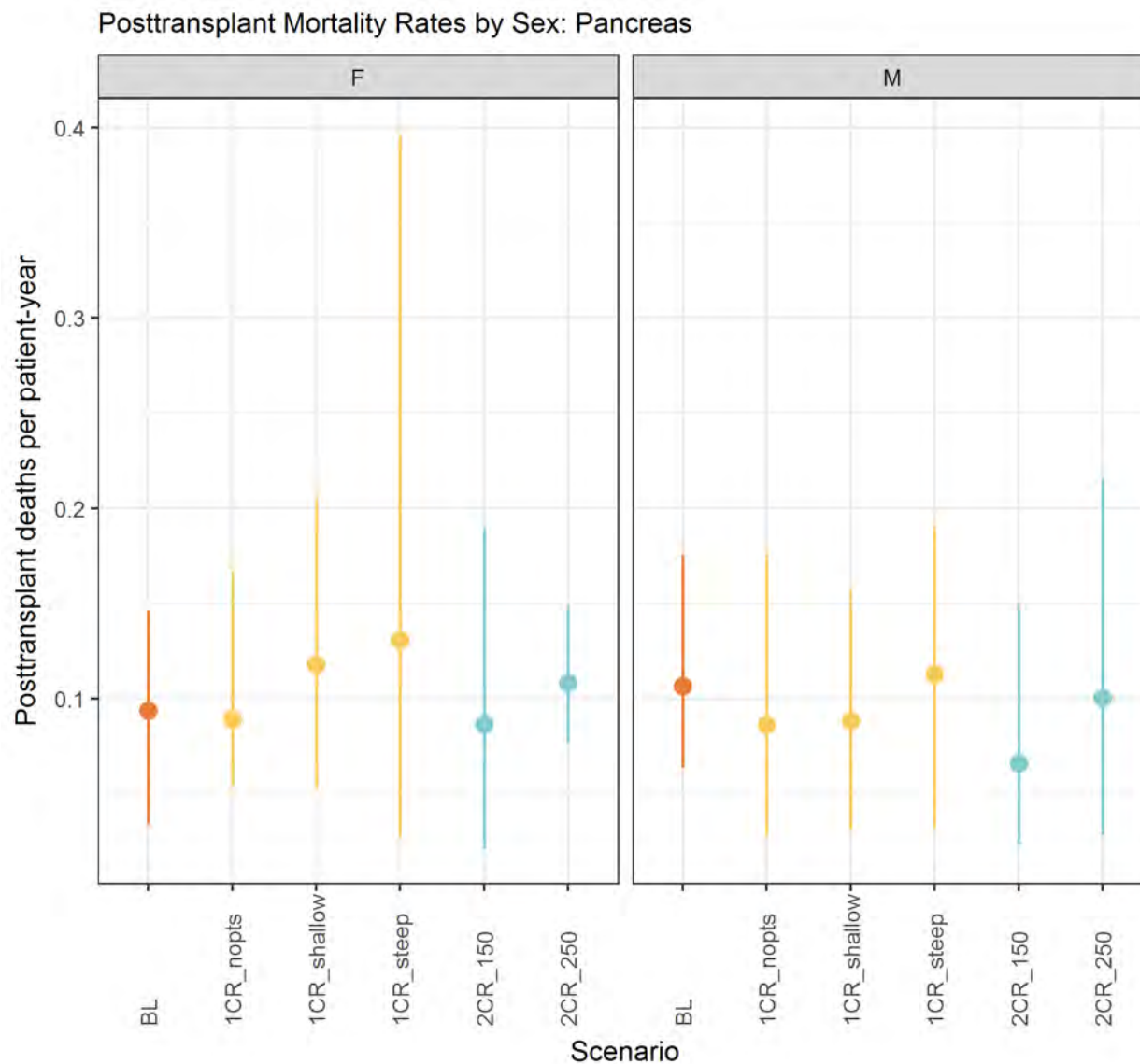


Figure 294 Posttransplant Mortality Rates by Sex: Pancreas

## Posttransplant Mortality Rates: ABO Group

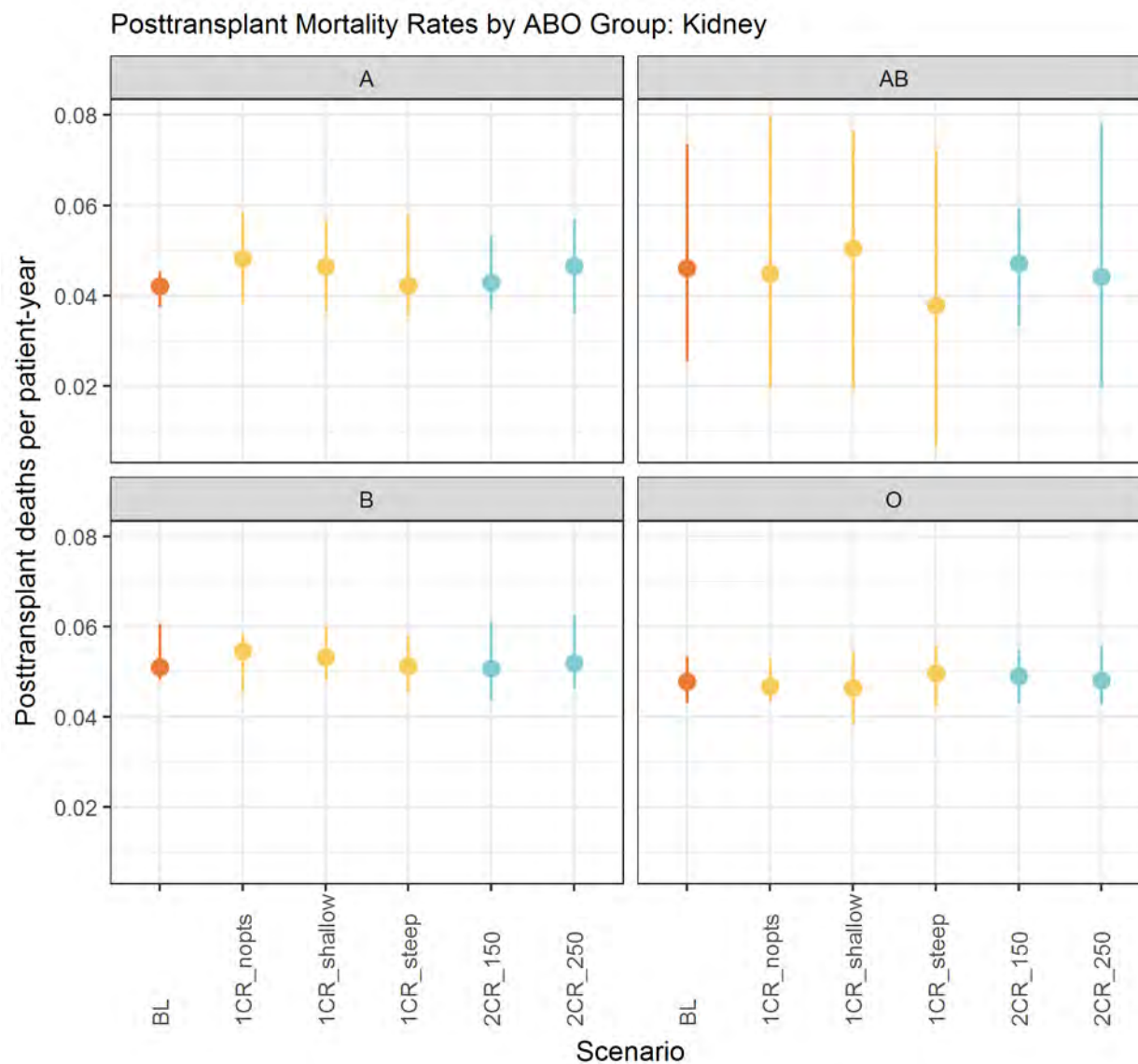


Figure 295 Posttransplant Mortality Rates by ABO Group: Kidney

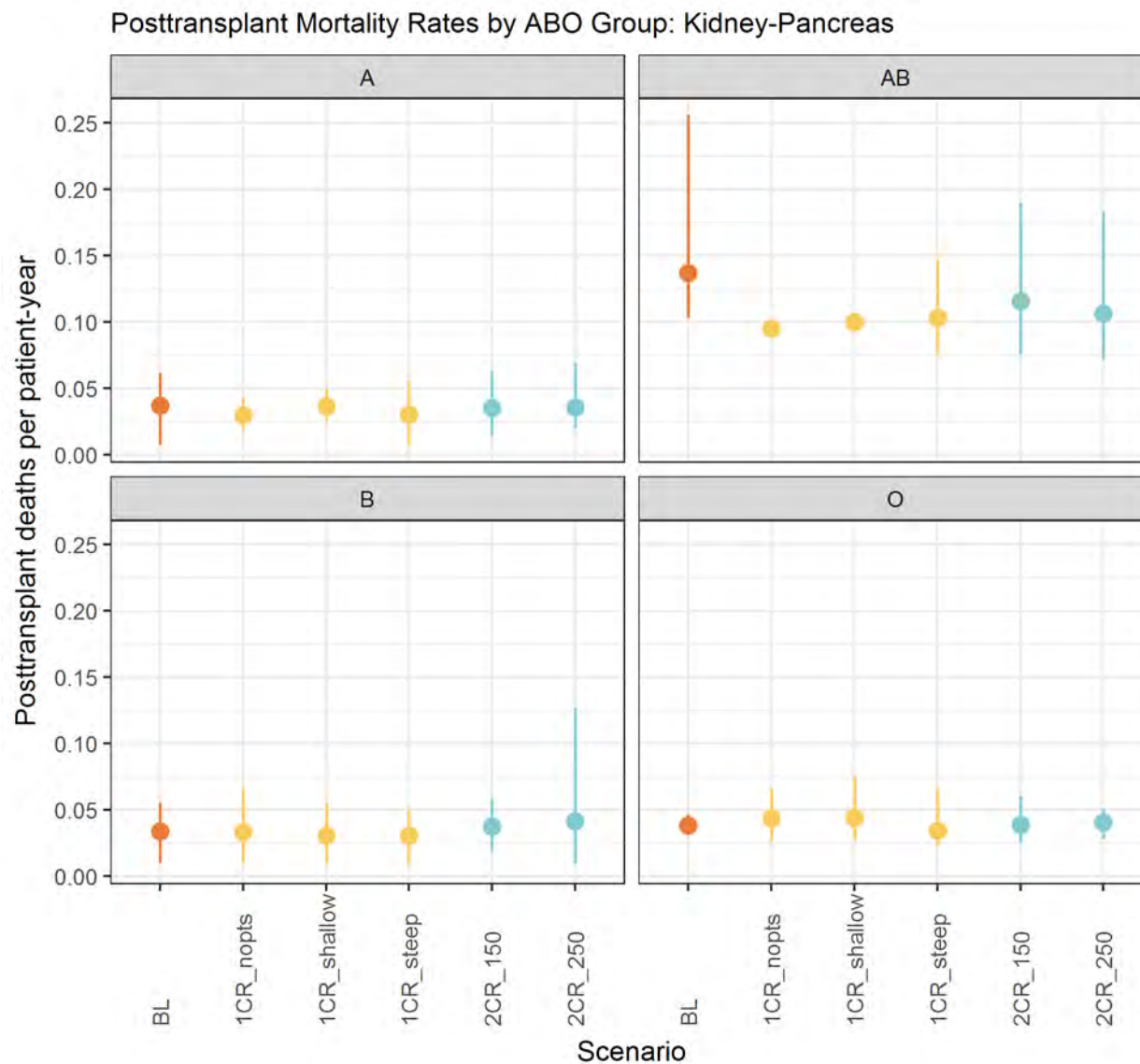


Figure 296 Posttransplant Mortality Rates by ABO Group: Kidney-Pancreas

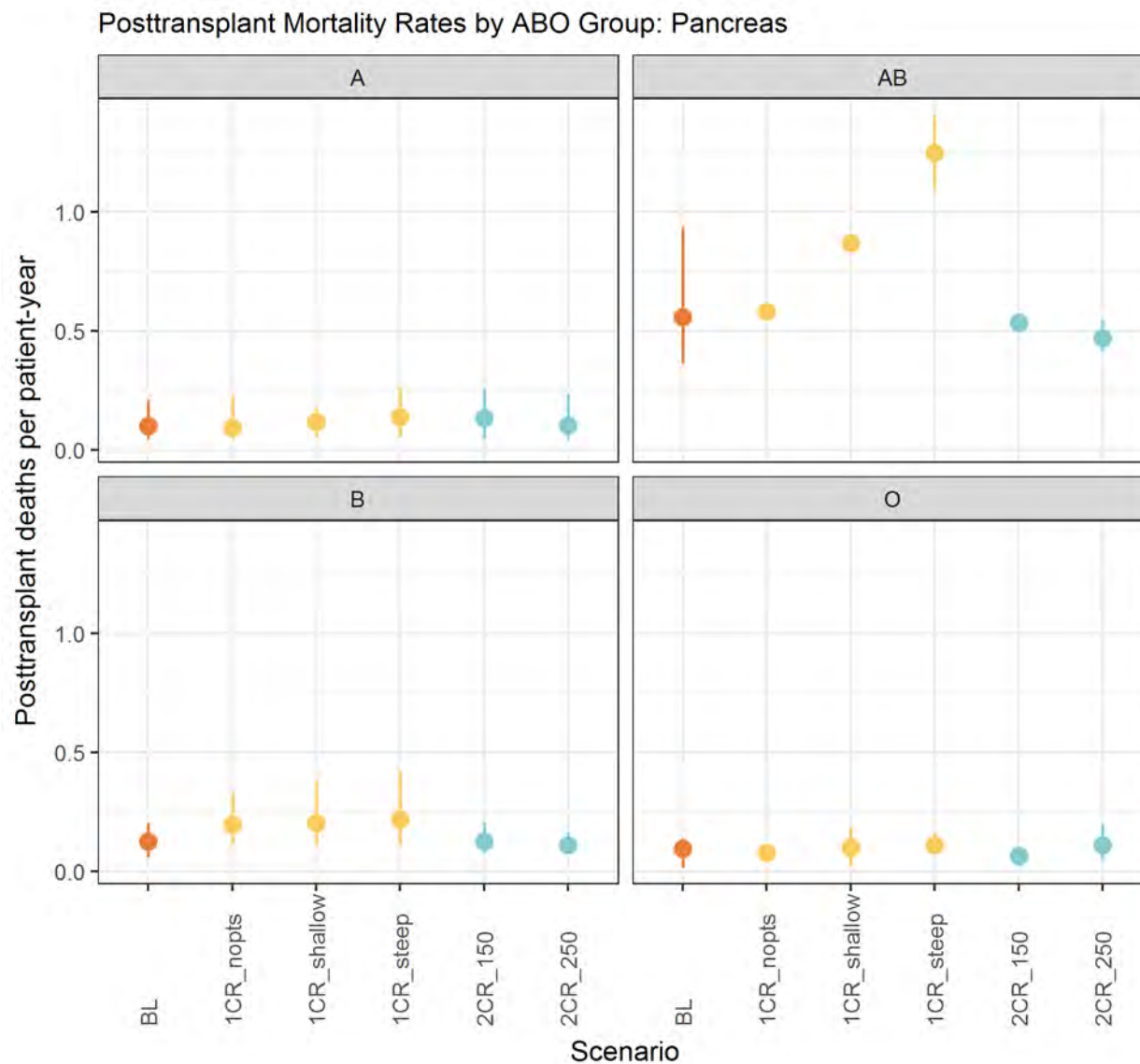


Figure 297 Posttransplant Mortality Rates by ABO Group: Pancreas

## Posttransplant Mortality Rates: Diagnosis

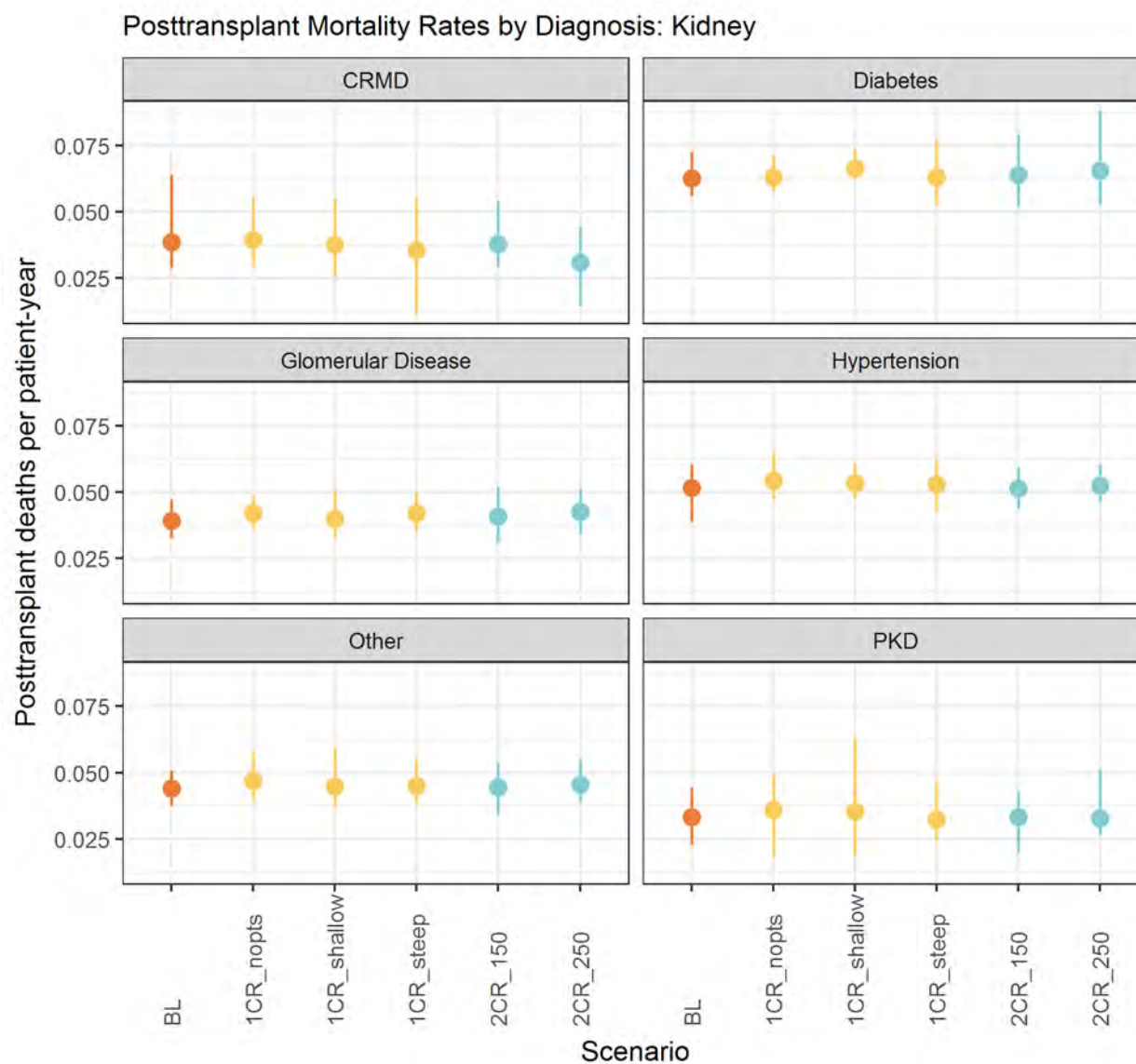


Figure 298 Posttransplant Mortality Rates by Diagnosis: Kidney



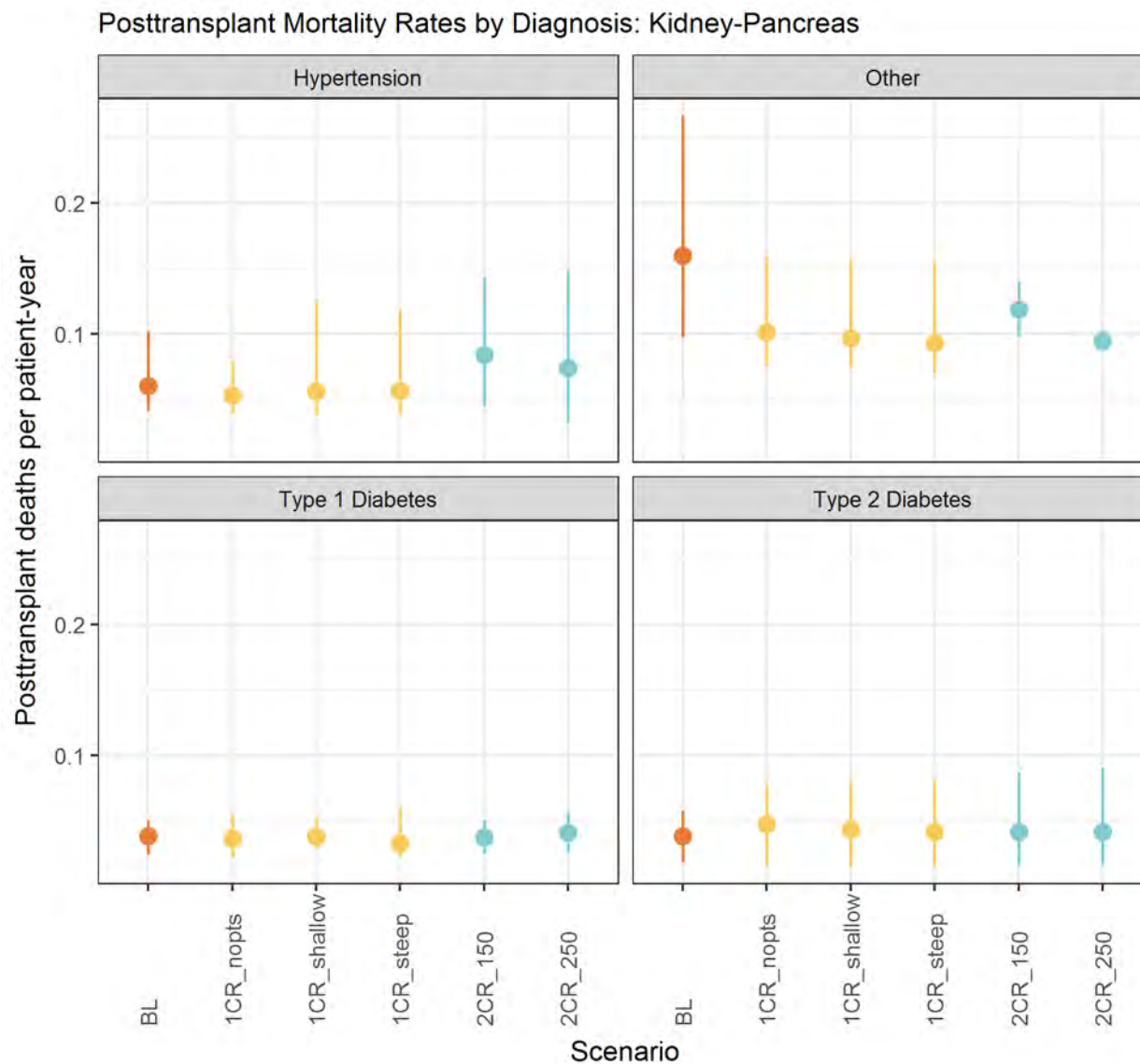


Figure 299 Posttransplant Mortality Rates by Diagnosis: Kidney-Pancreas

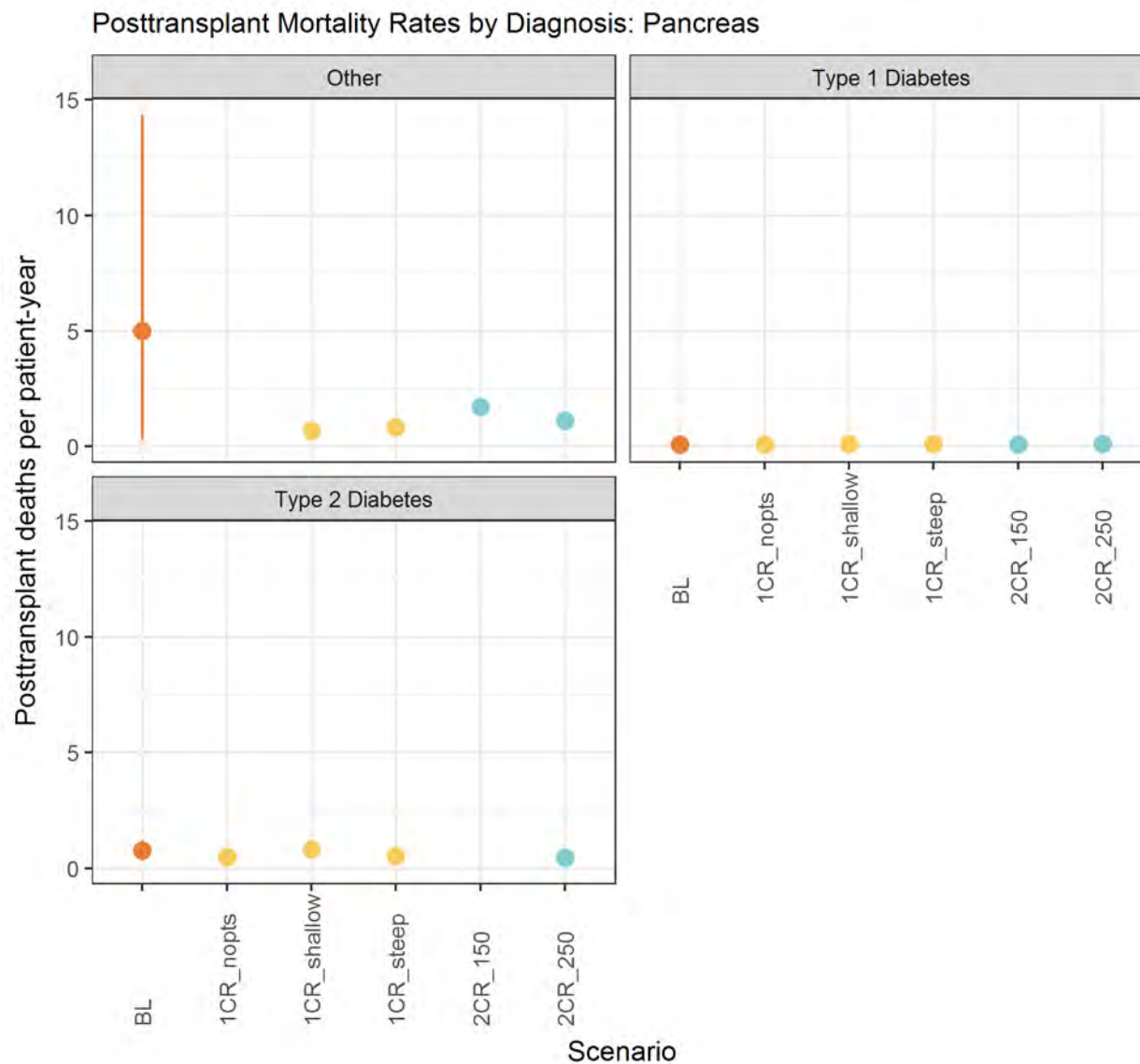


Figure 300 Posttransplant Mortality Rates by Diagnosis: Pancreas

## Posttransplant Mortality Rates: Dialysis Time

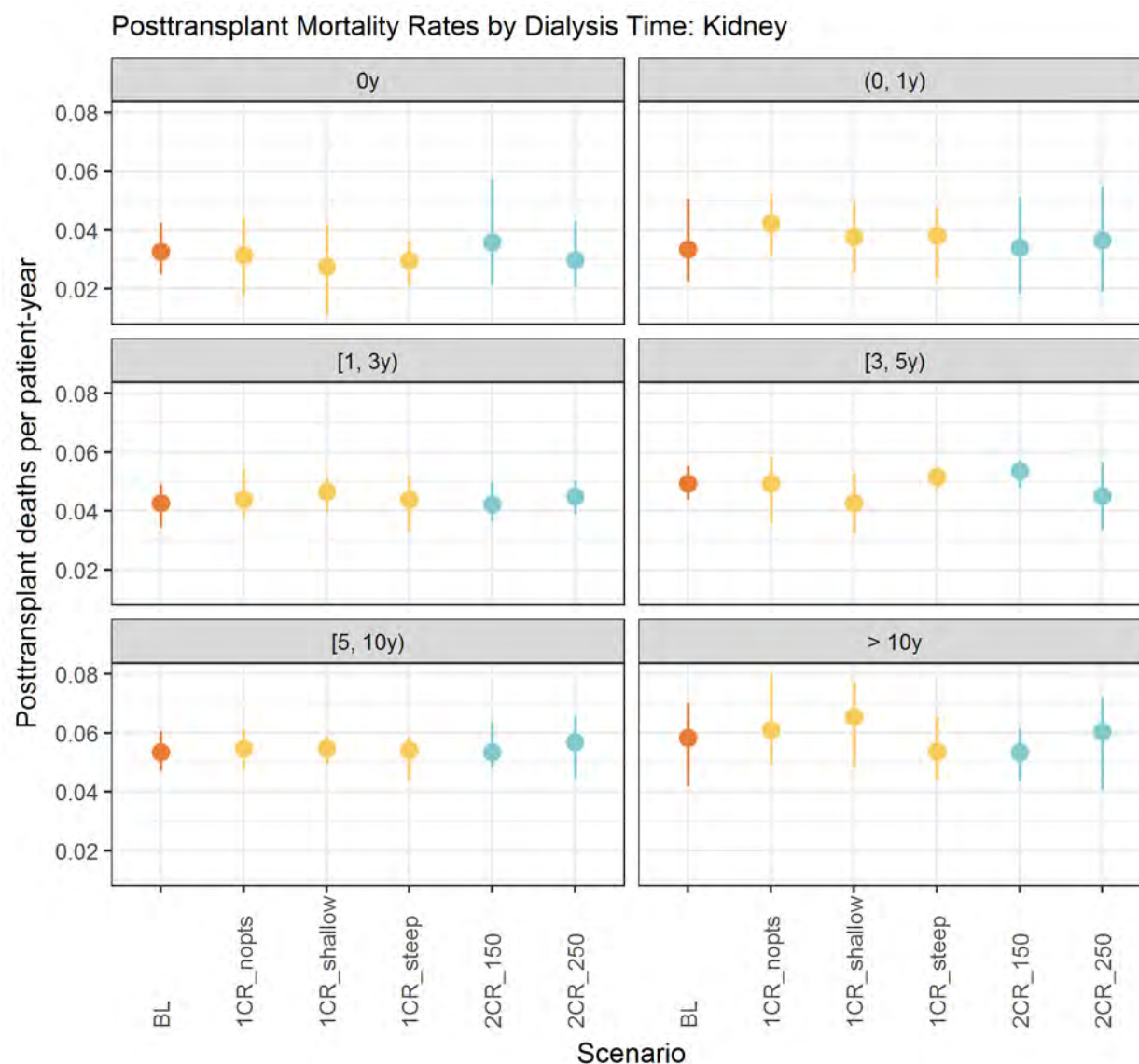


Figure 301 Posttransplant Mortality Rates by Dialysis Time: Kidney

Posttransplant Mortality Rates: cPRA: 0 - 60

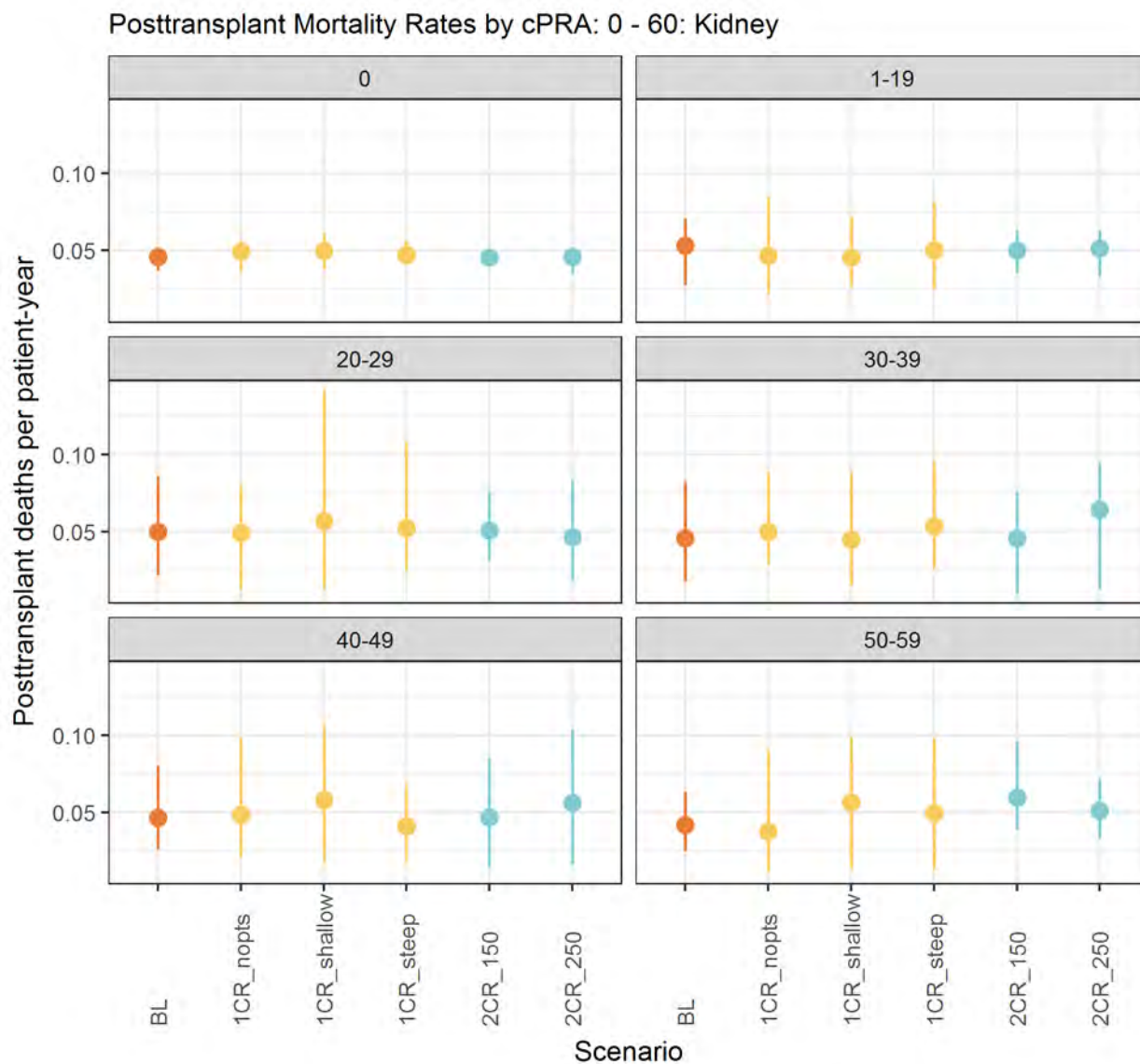


Figure 302 Posttransplant Mortality Rates by cPRA: 0 - 60: Kidney

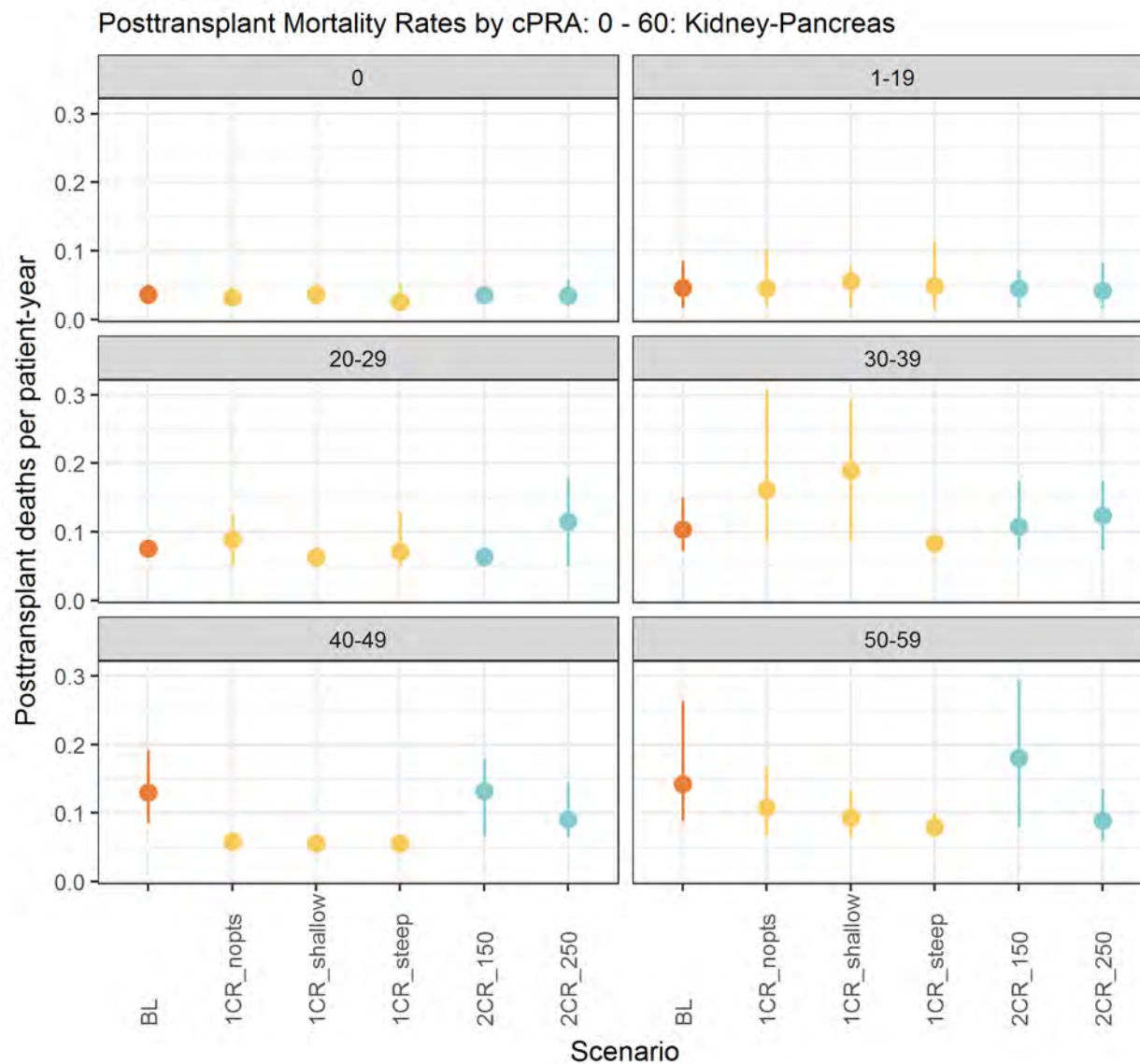


Figure 303 Posttransplant Mortality Rates by cPRA: 0 - 60: Kidney-Pancreas



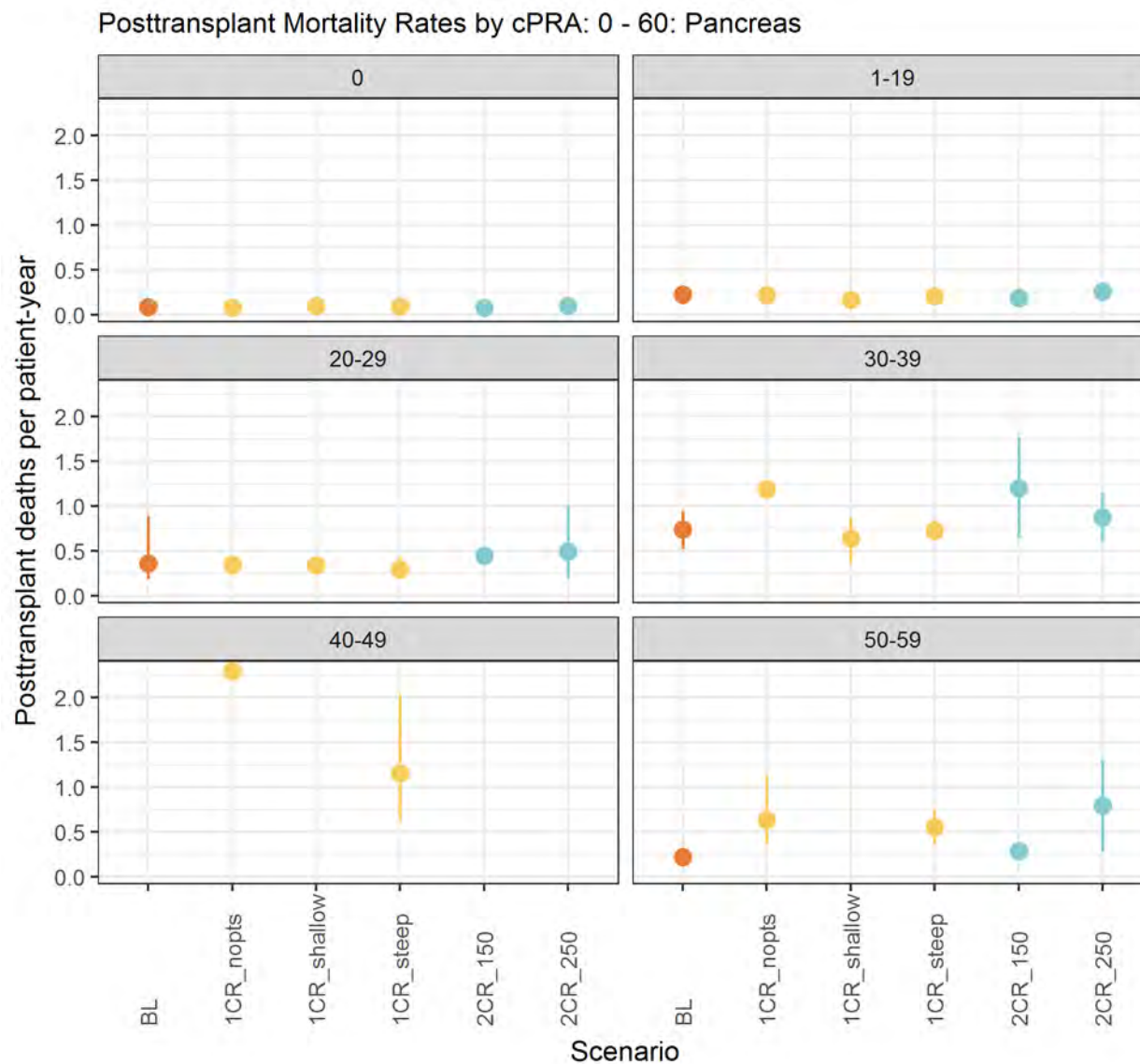


Figure 304 Posttransplant Mortality Rates by cPRA: 0 - 60: Pancreas



Posttransplant Mortality Rates: cPRA: 61 - 94

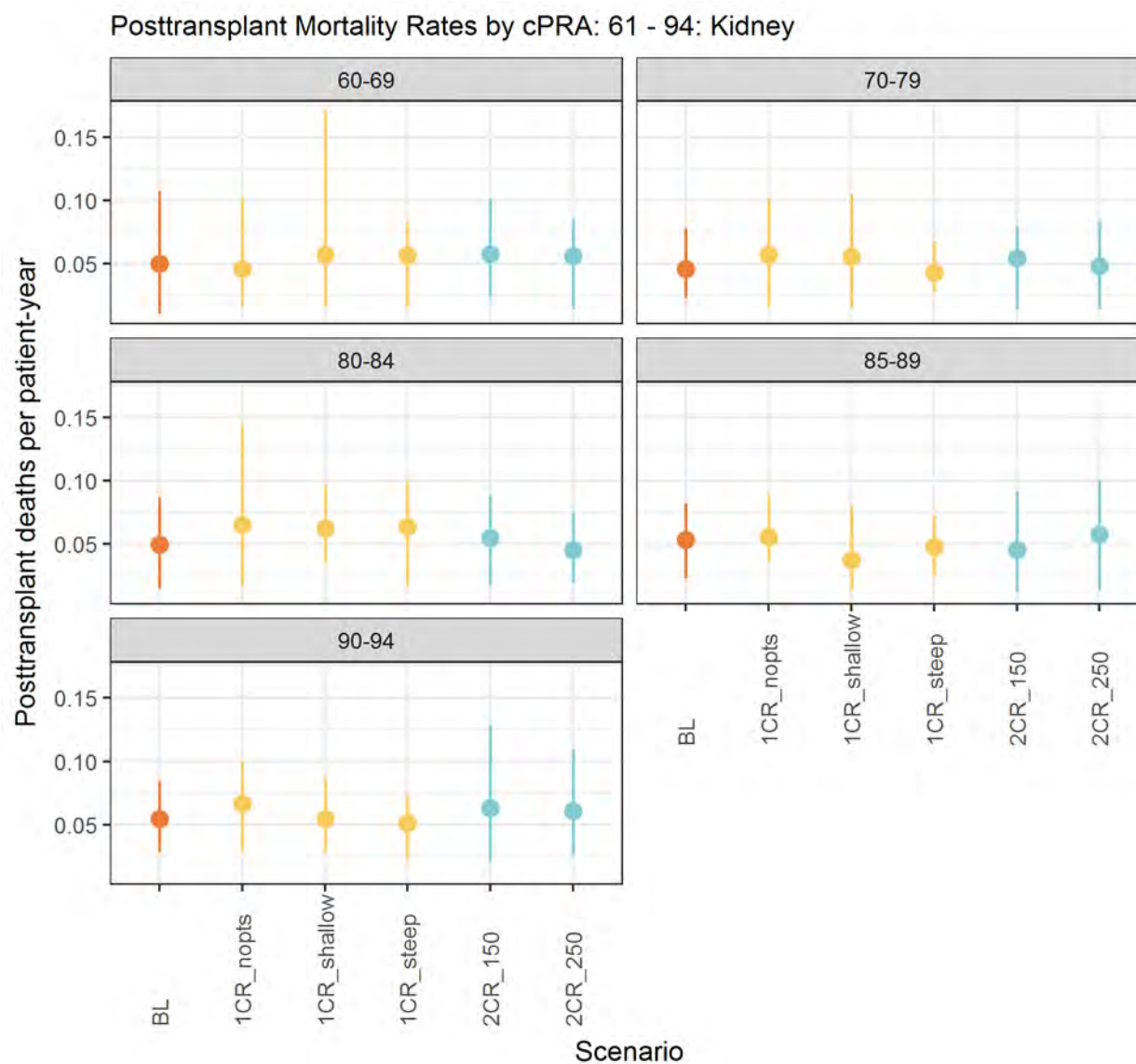


Figure 305 Posttransplant Mortality Rates by cPRA: 61 - 94: Kidney

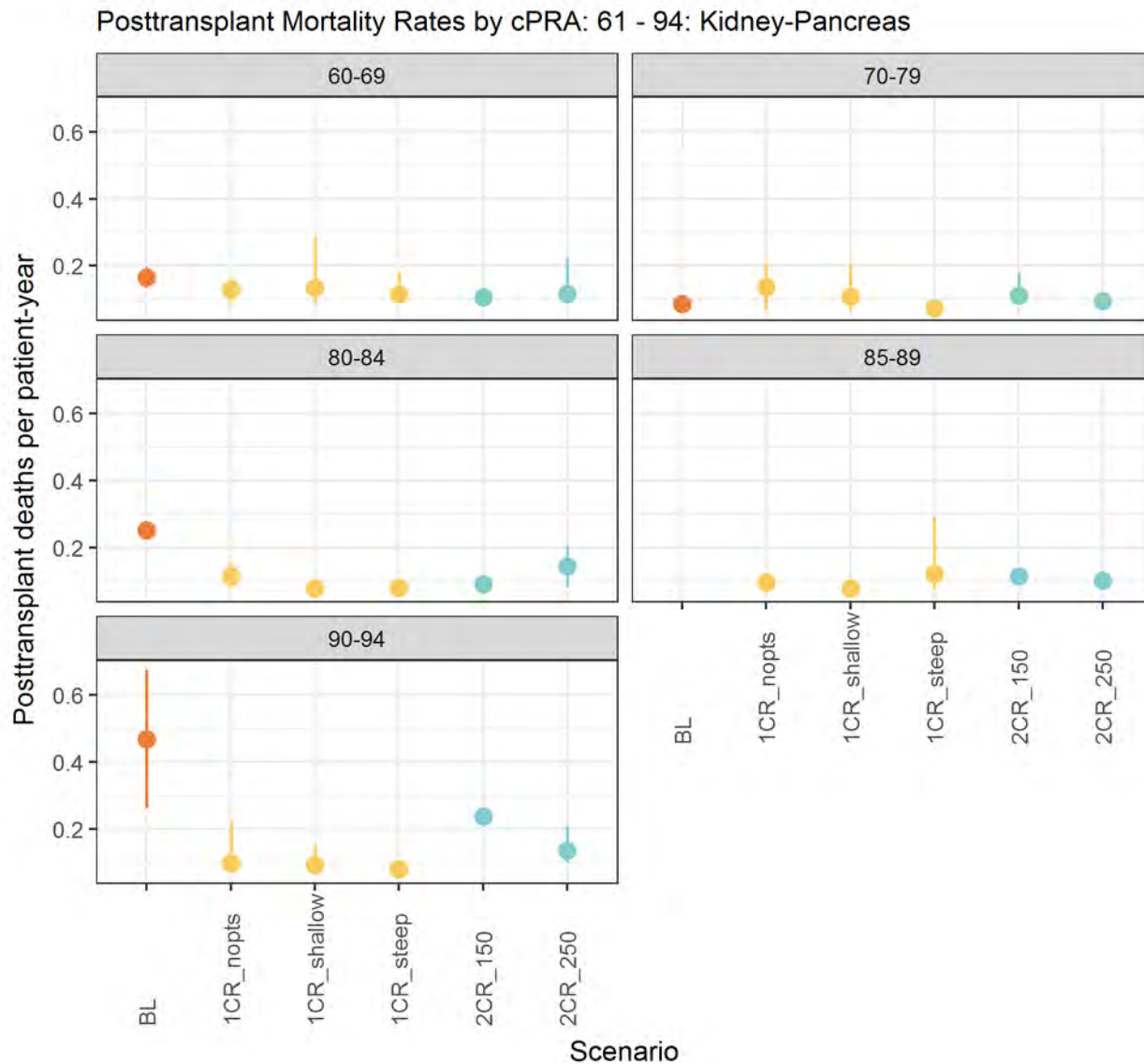


Figure 306 Posttransplant Mortality Rates by cPRA: 61 - 94: Kidney-Pancreas

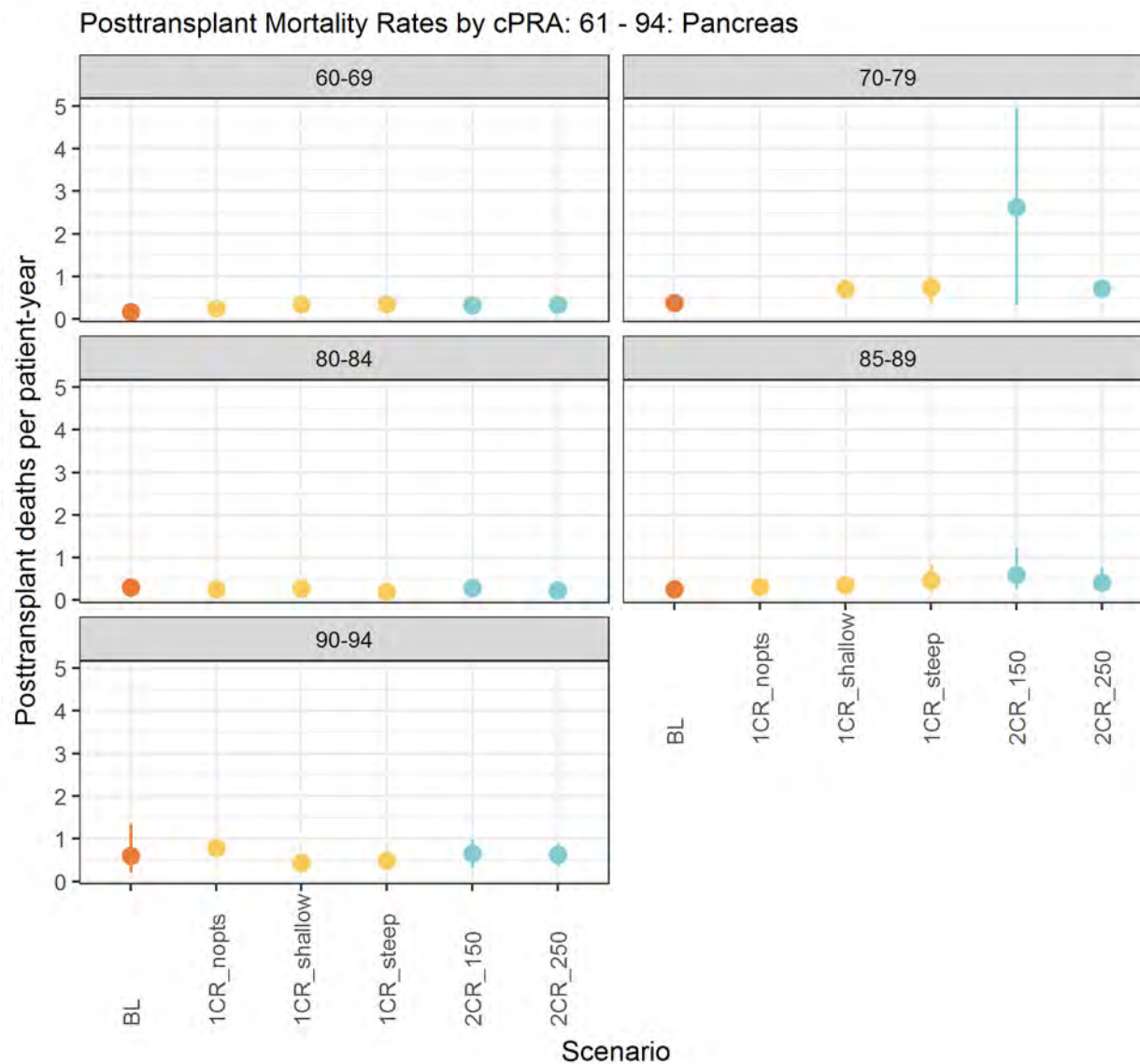


Figure 307 Posttransplant Mortality Rates by cPRA: 61 - 94: Pancreas

Posttransplant Mortality Rates: cPRA: 95 - 100

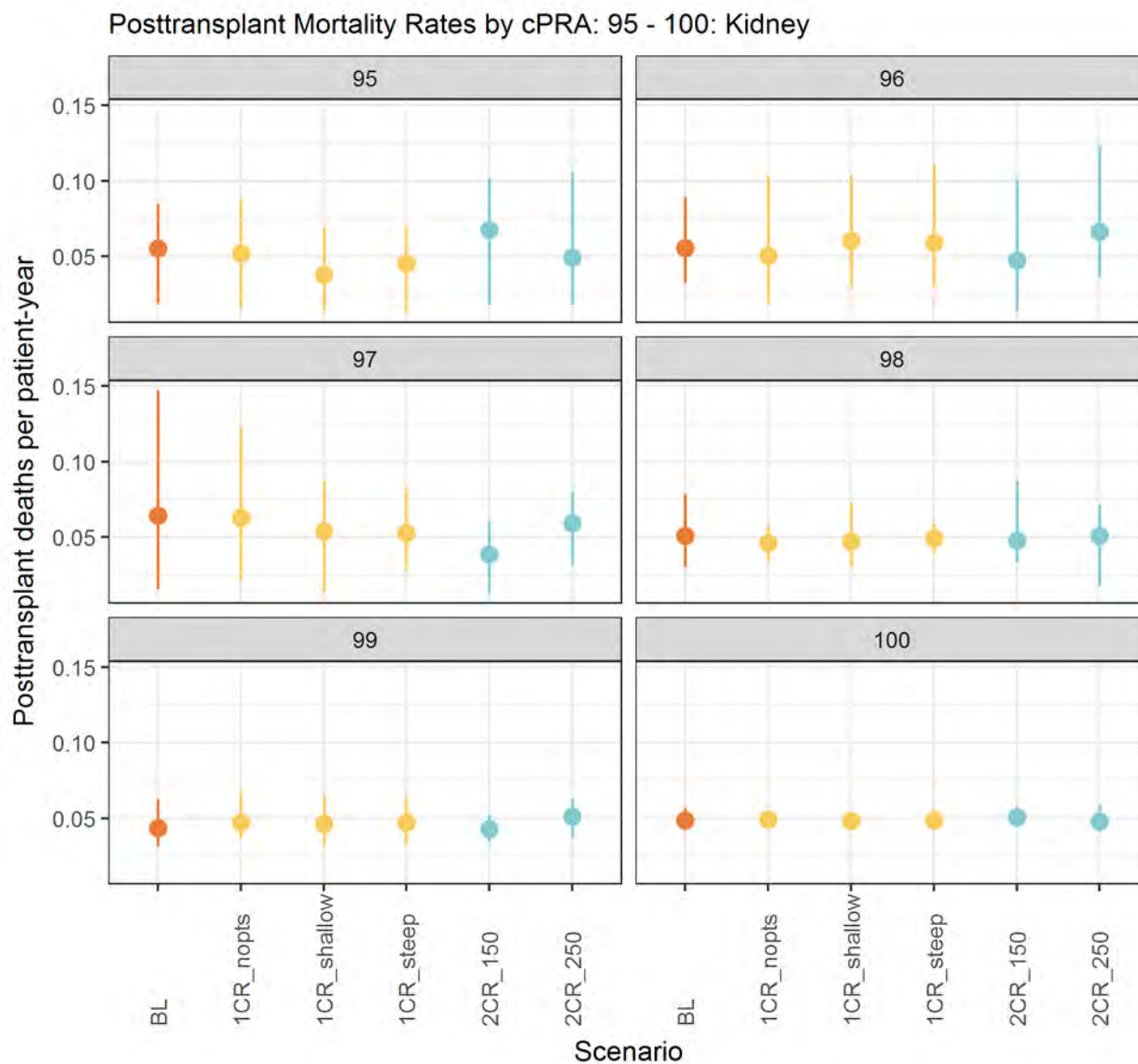


Figure 308 Posttransplant Mortality Rates by cPRA: 95 - 100: Kidney

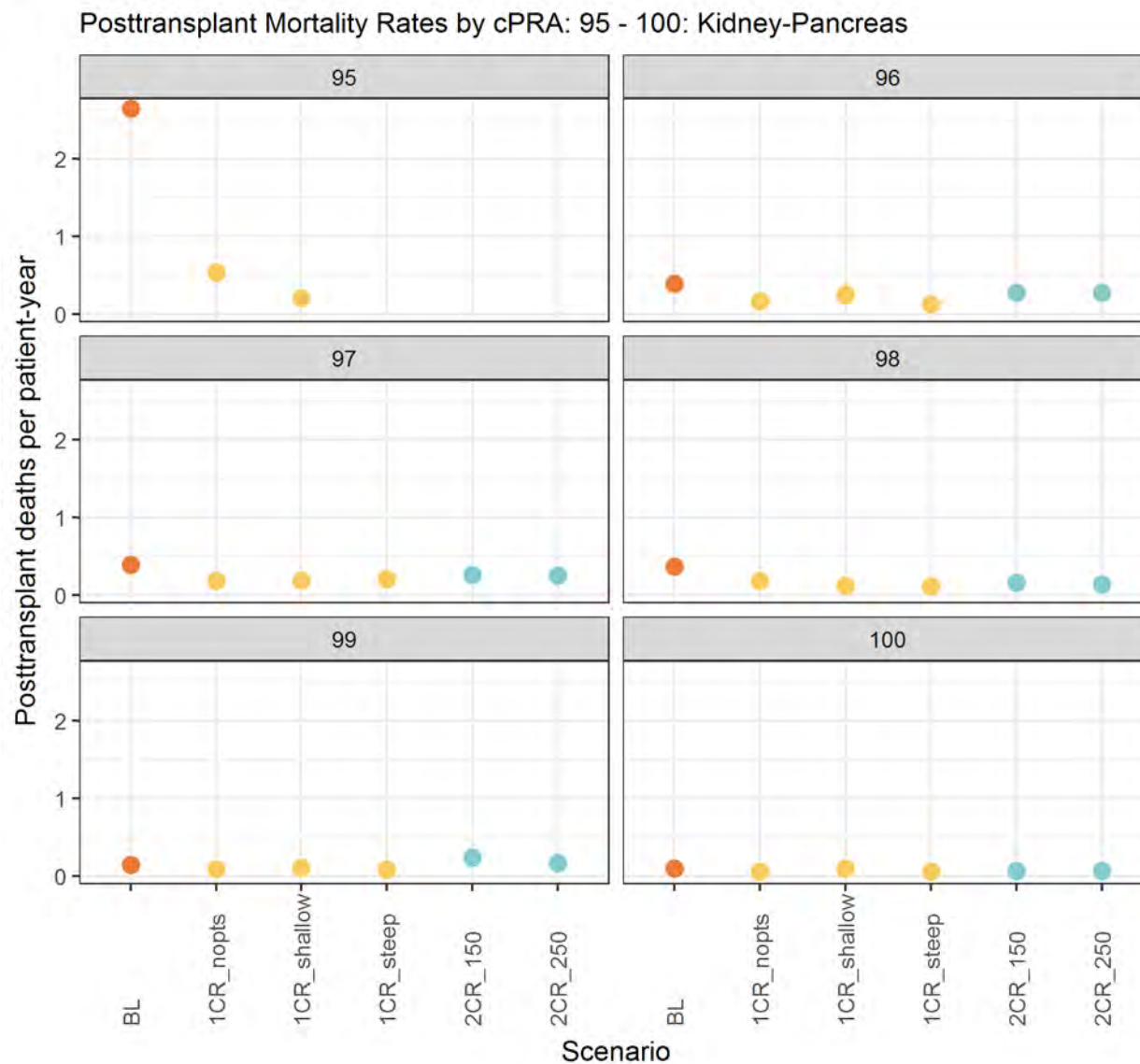


Figure 309 Posttransplant Mortality Rates by cPRA: 95 - 100: Kidney-Pancreas

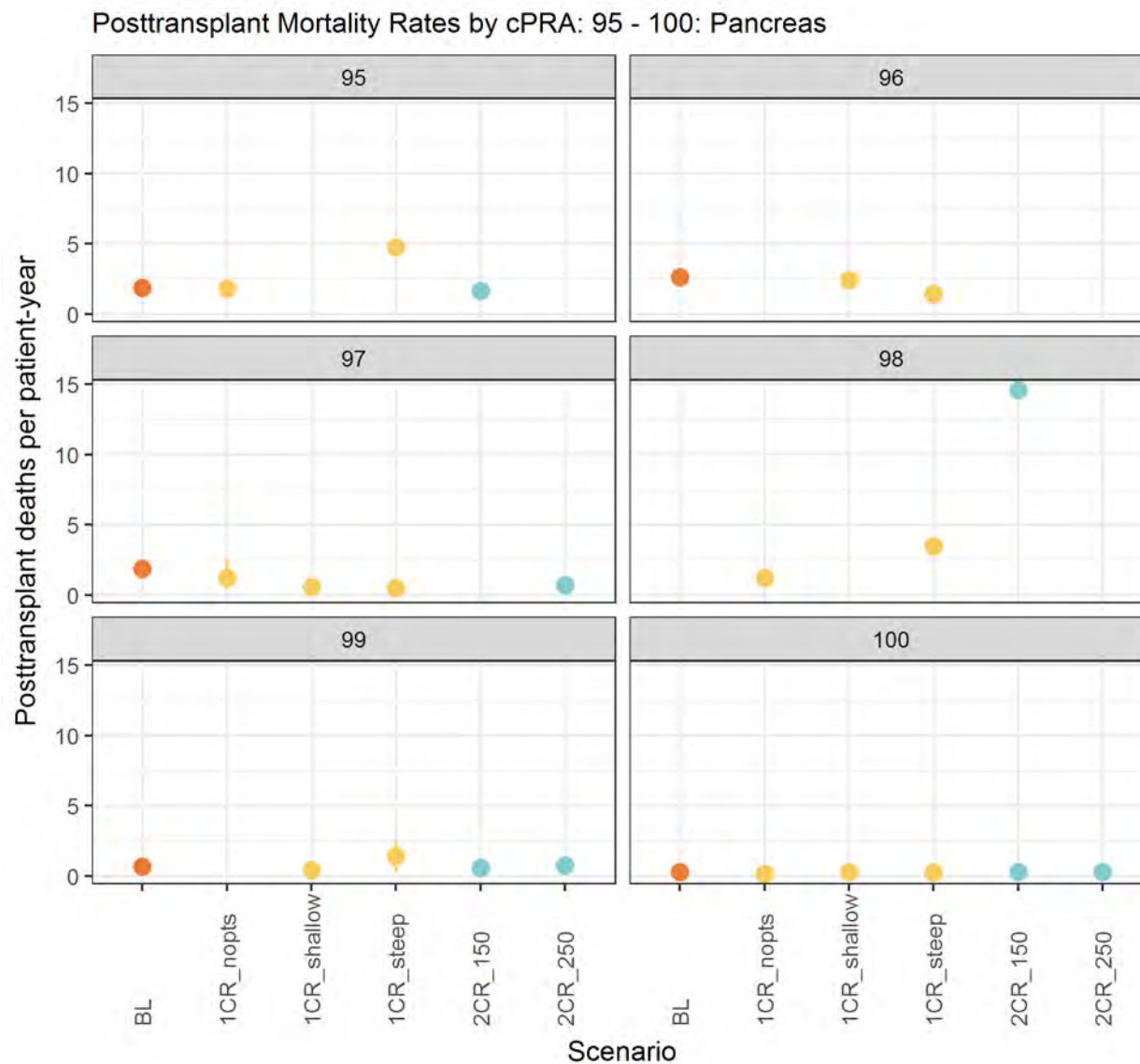


Figure 310 Posttransplant Mortality Rates by cPRA: 95 - 100: Pancreas



Posttransplant Mortality Rates: cPRA: 95 - 98

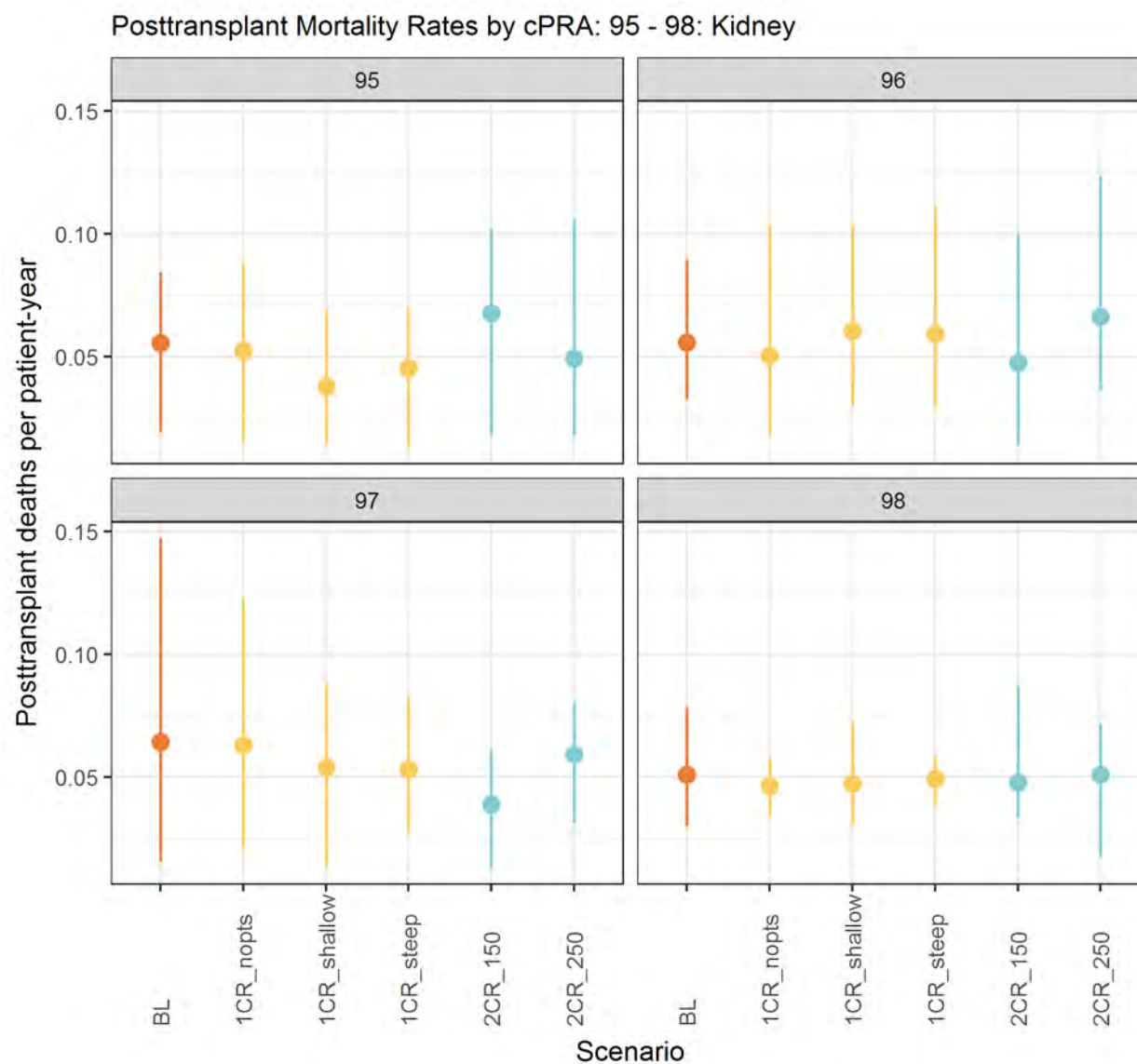


Figure 311 Posttransplant Mortality Rates by cPRA: 95 - 98: Kidney

Posttransplant Mortality Rates: cPRA: 99 - 100

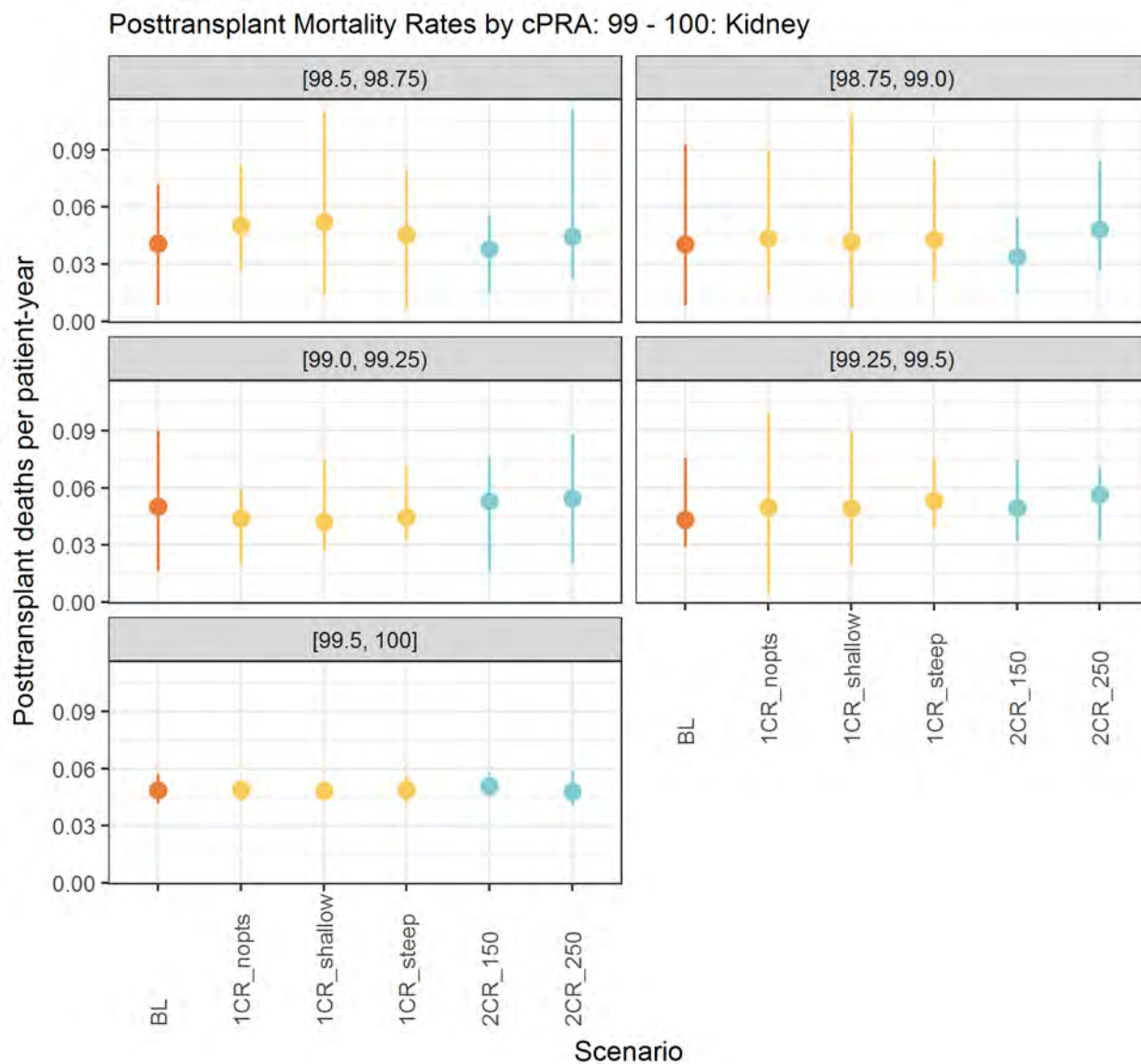


Figure 312 Posttransplant Mortality Rates by cPRA: 99 - 100: Kidney

Posttransplant Mortality Rates: cPRA: 95 - 99

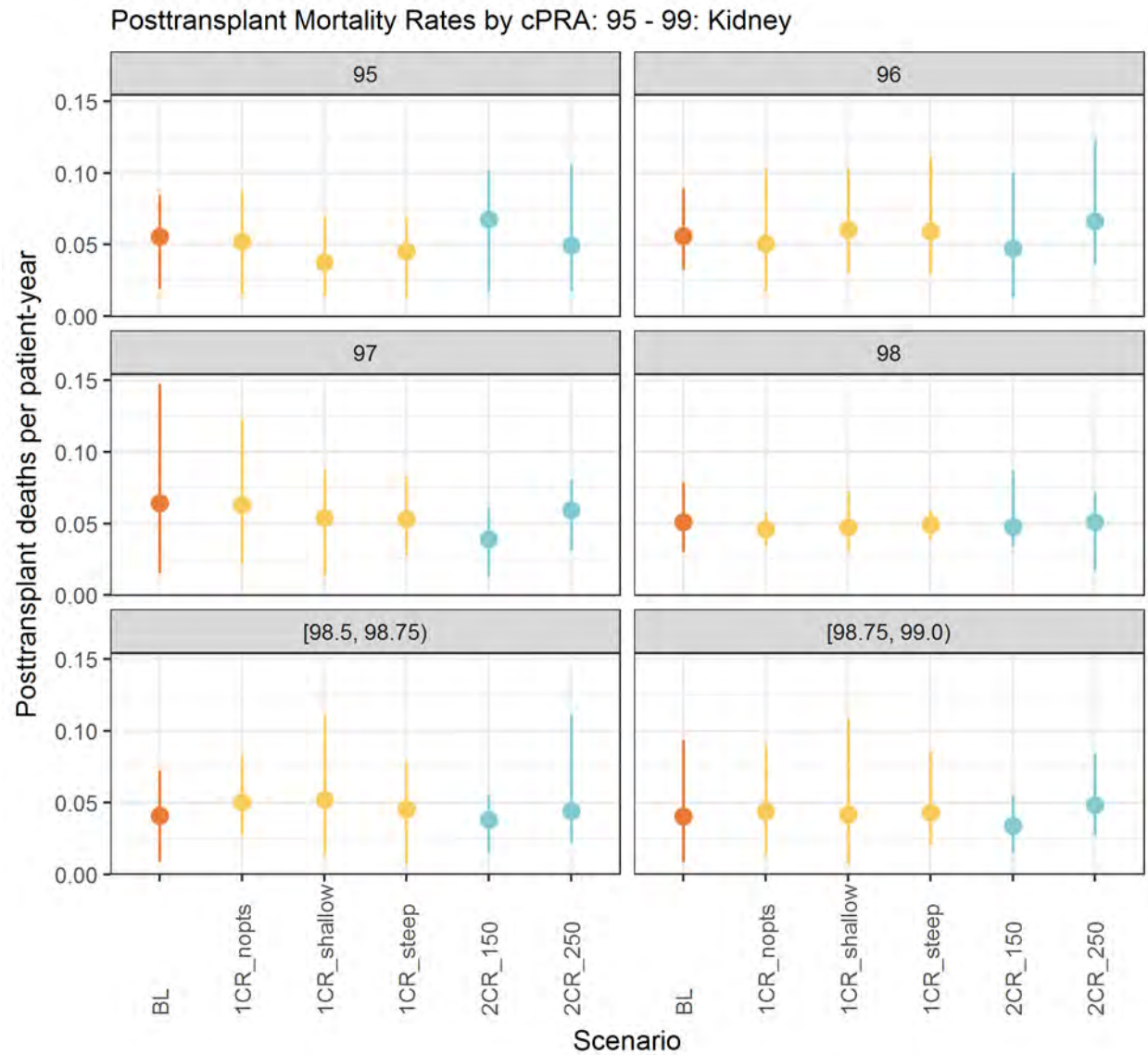


Figure 313 Posttransplant Mortality Rates by cPRA: 95 - 99: Kidney

Posttransplant Mortality Rates: cPRA: 99 - 99.8

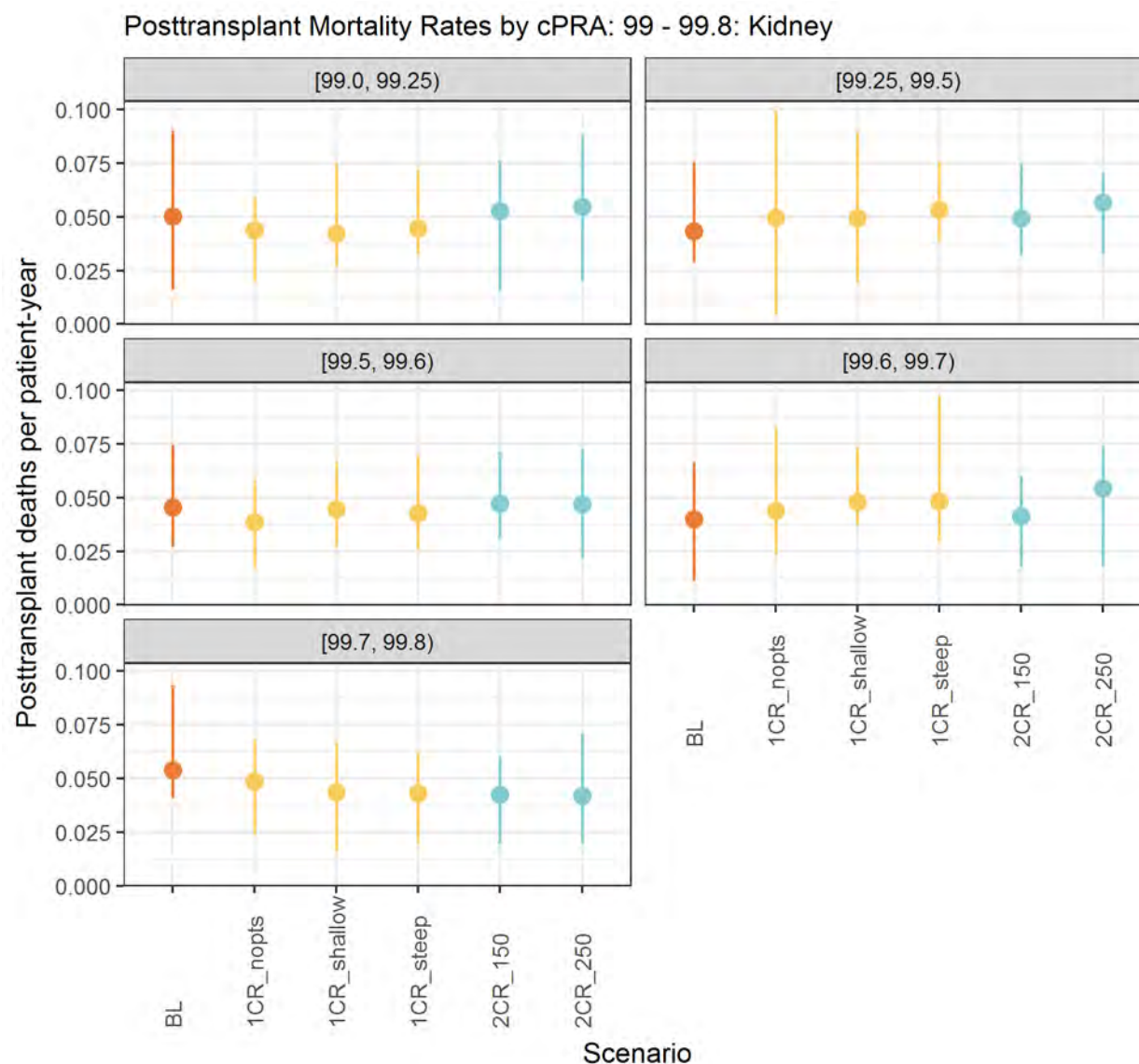


Figure 314 Posttransplant Mortality Rates by cPRA: 99 - 99.8: Kidney

Posttransplant Mortality Rates: cPRA: 99.8 - 100

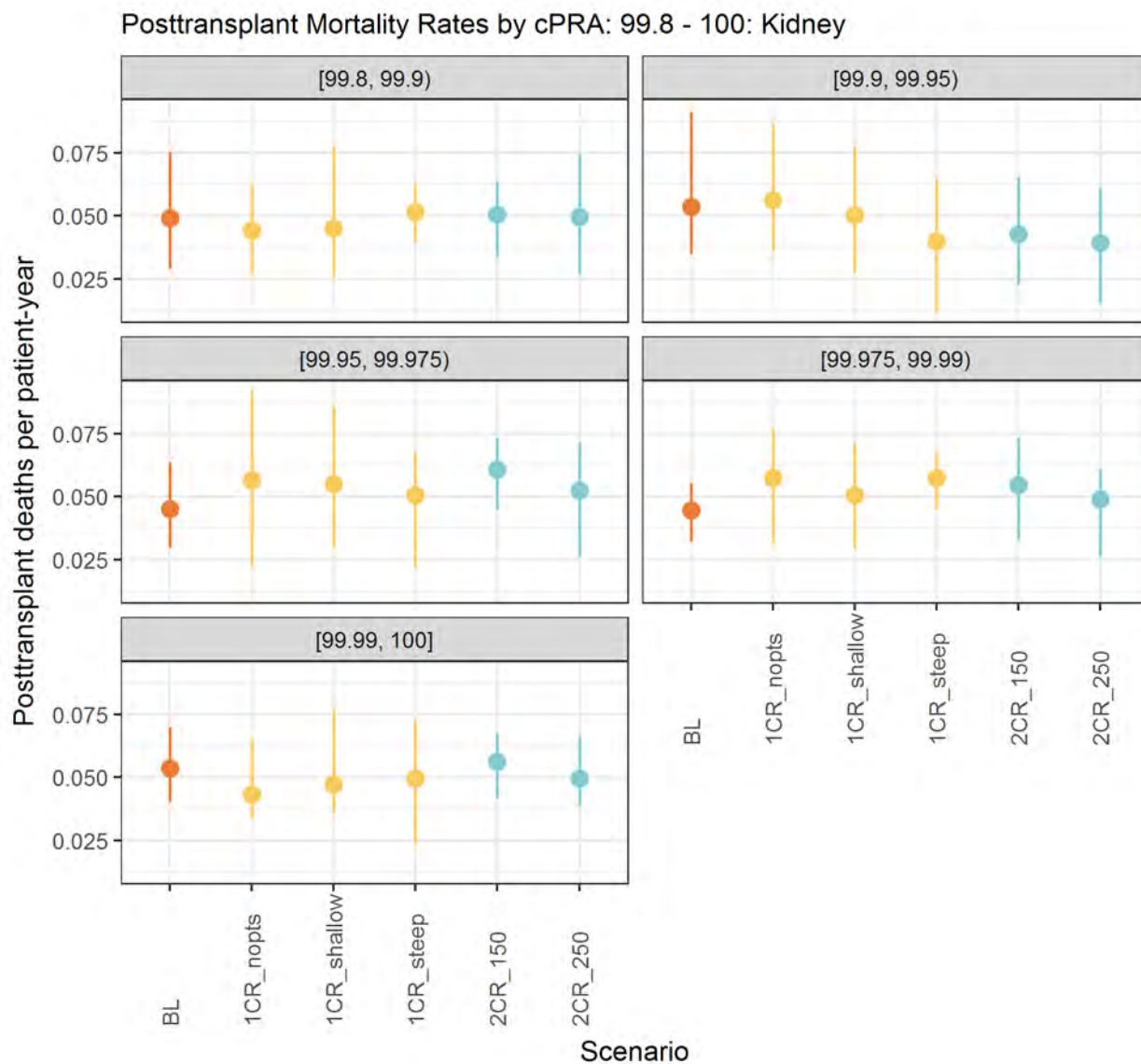


Figure 315 Posttransplant Mortality Rates by cPRA: 99.8 - 100: Kidney



## Posttransplant Mortality Rates: Payment Status

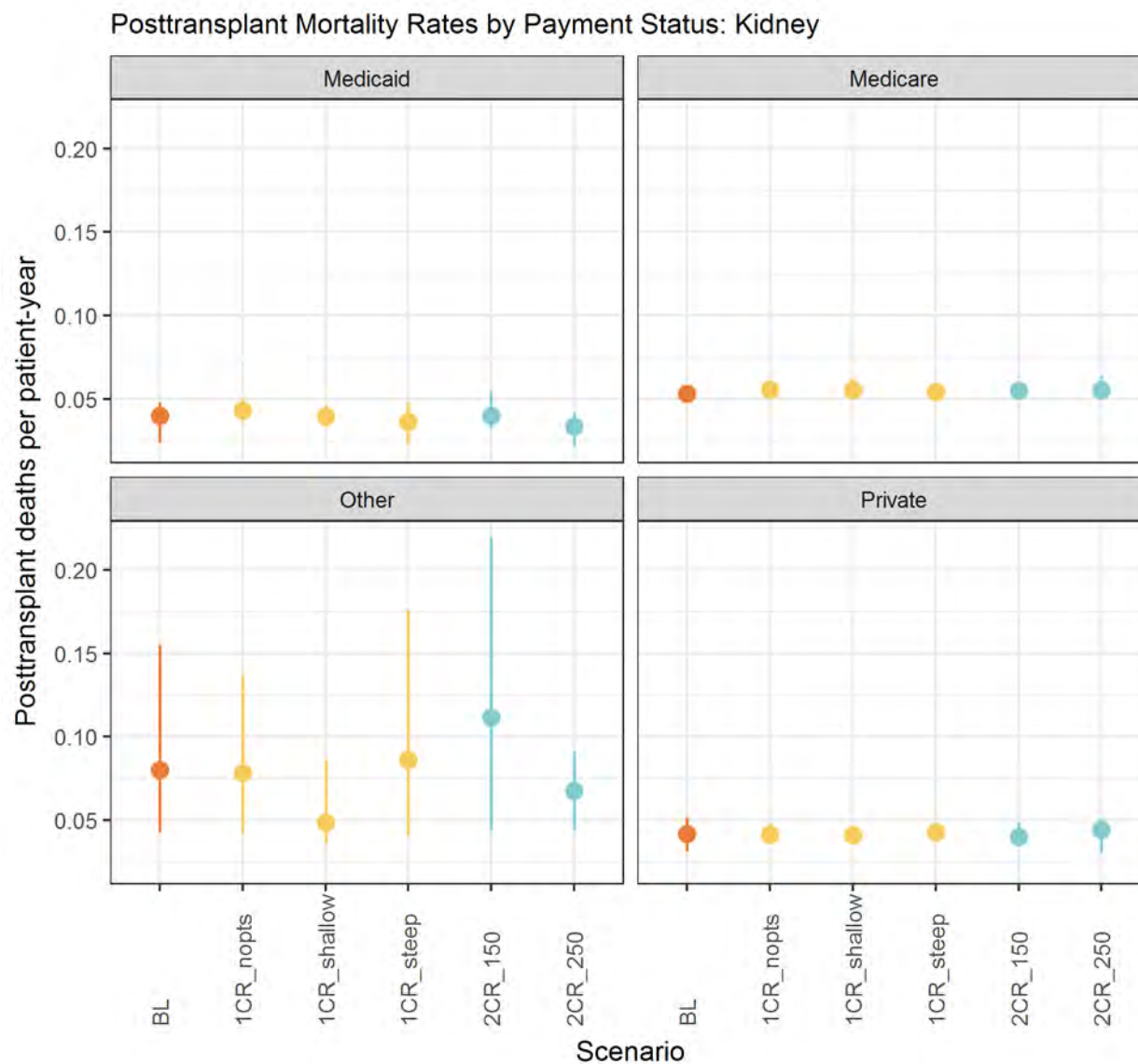


Figure 316 Posttransplant Mortality Rates by Payment Status: Kidney



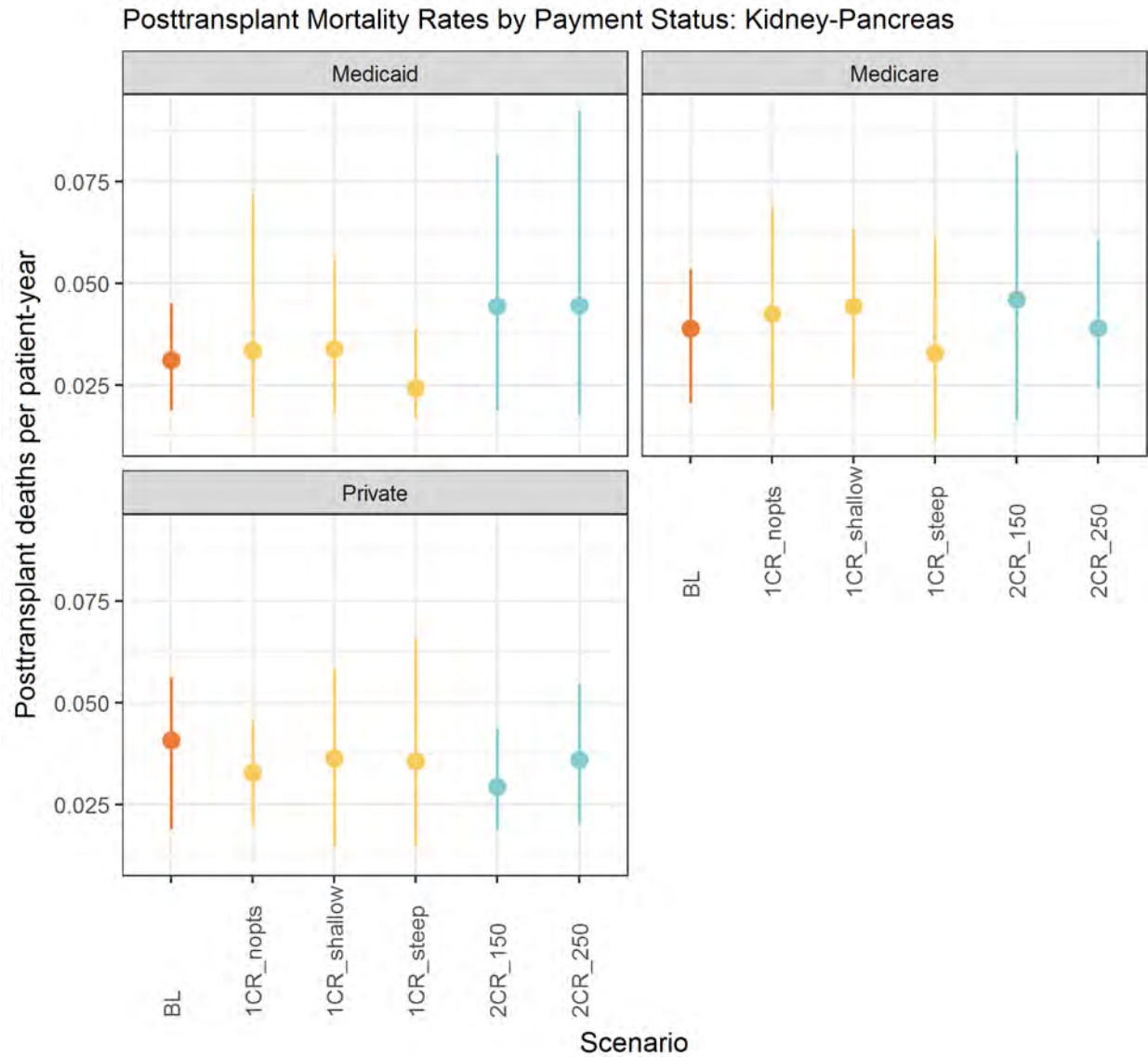


Figure 317 Posttransplant Mortality Rates by Payment Status: Kidney-Pancreas

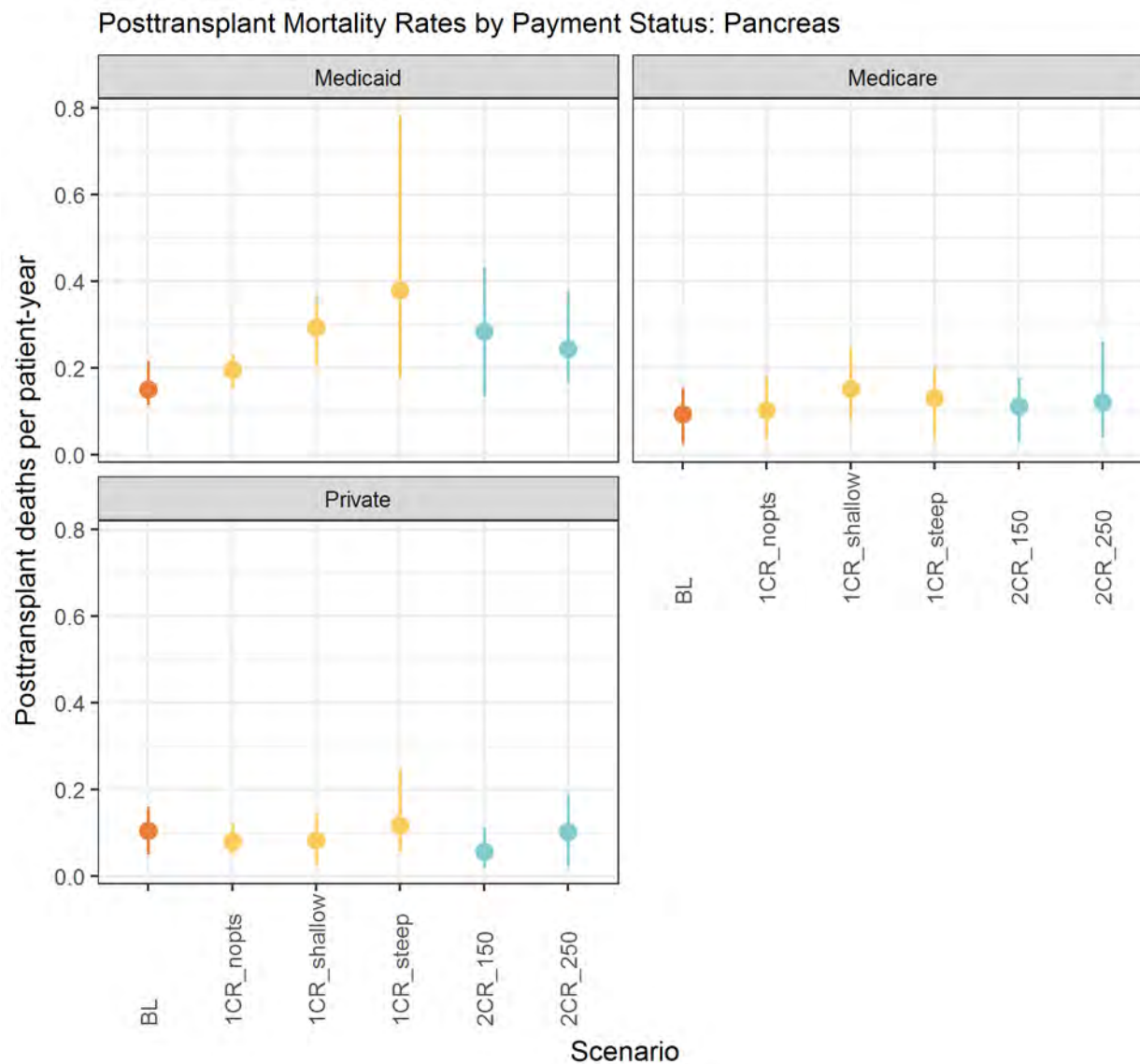


Figure 318 Posttransplant Mortality Rates by Payment Status: Pancreas

## Posttransplant Mortality Rates: Urbanicity

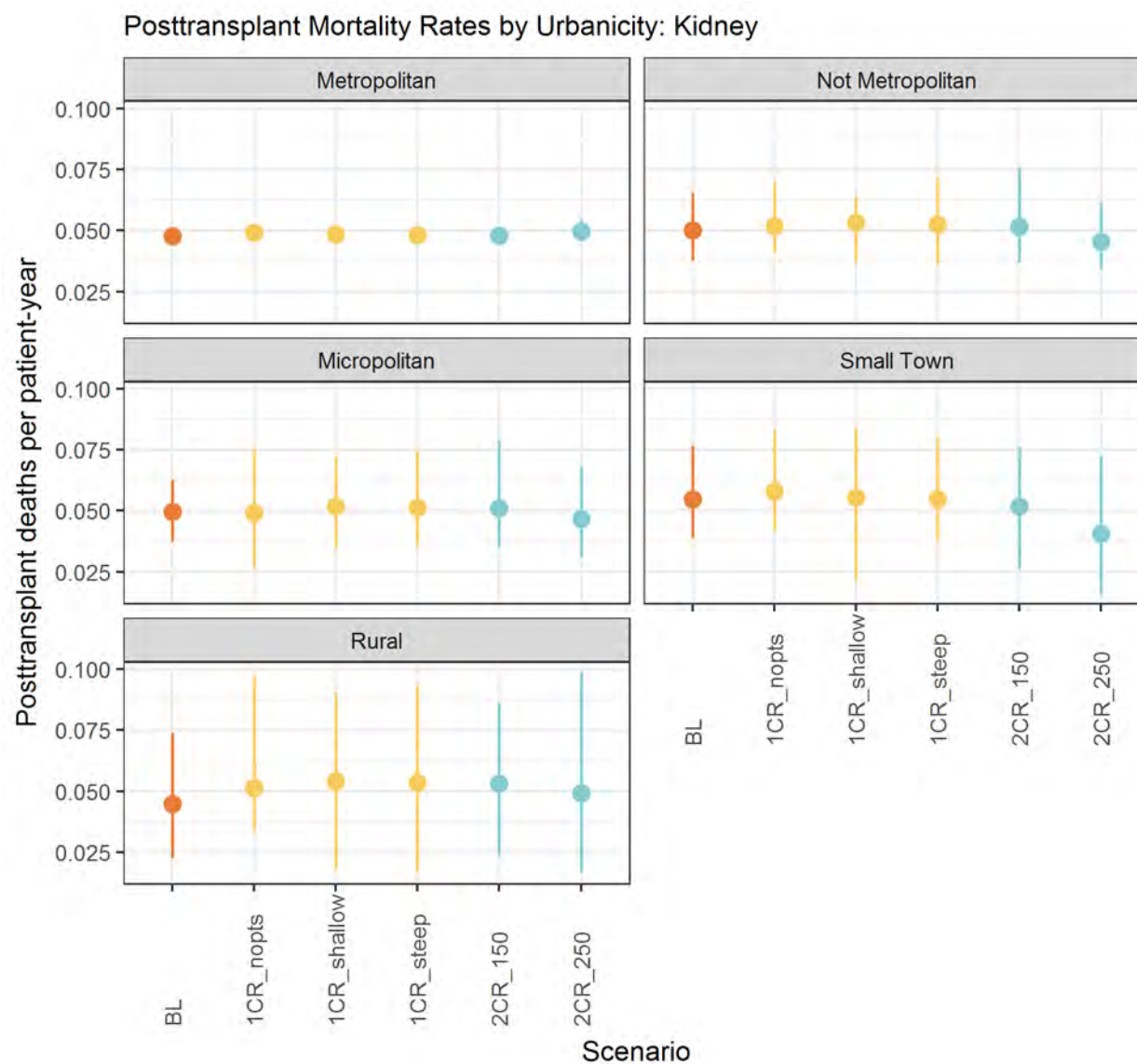


Figure 319 Posttransplant Mortality Rates by Urbanicity: Kidney

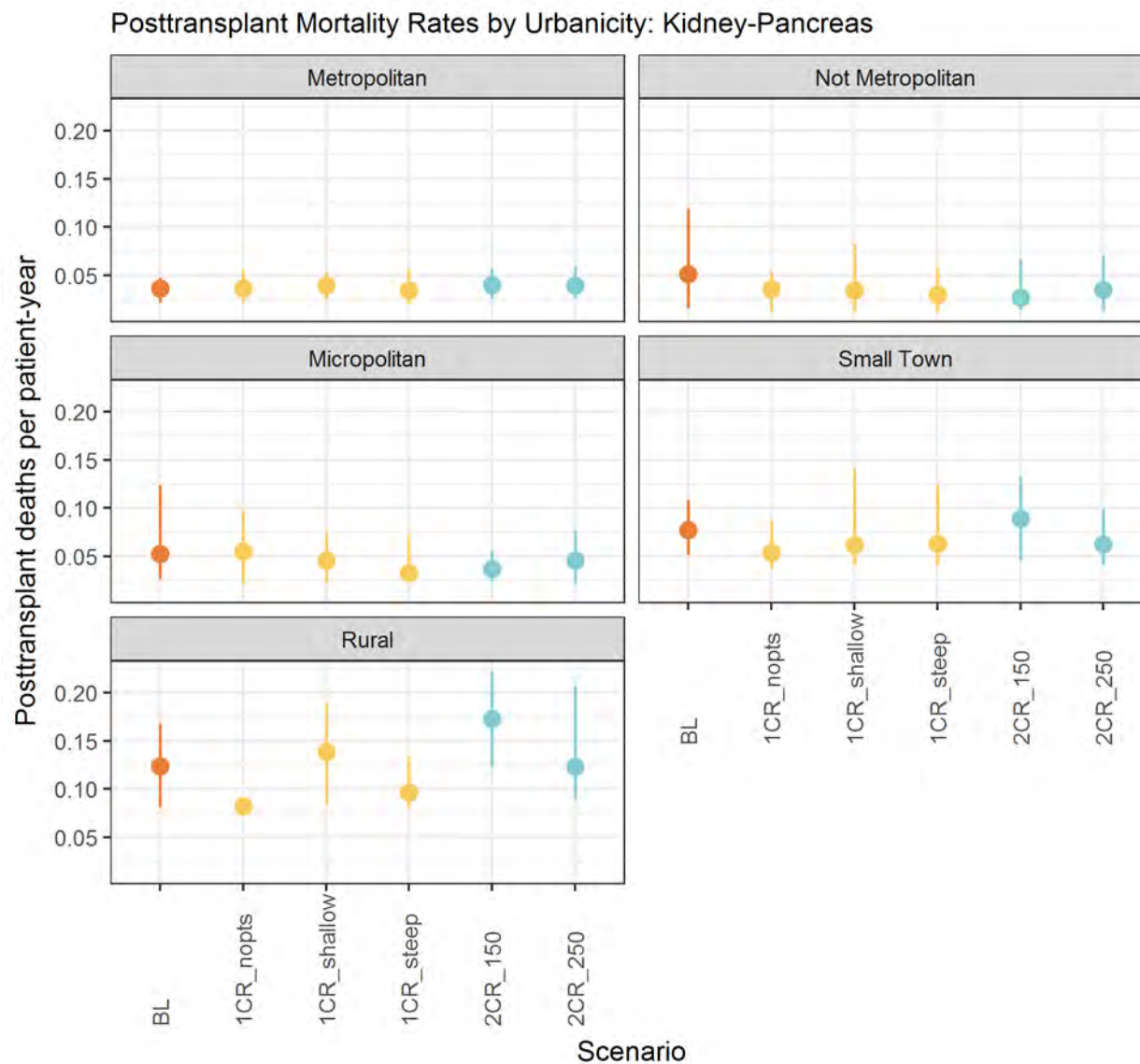


Figure 320 Posttransplant Mortality Rates by Urbanicity: Kidney-Pancreas

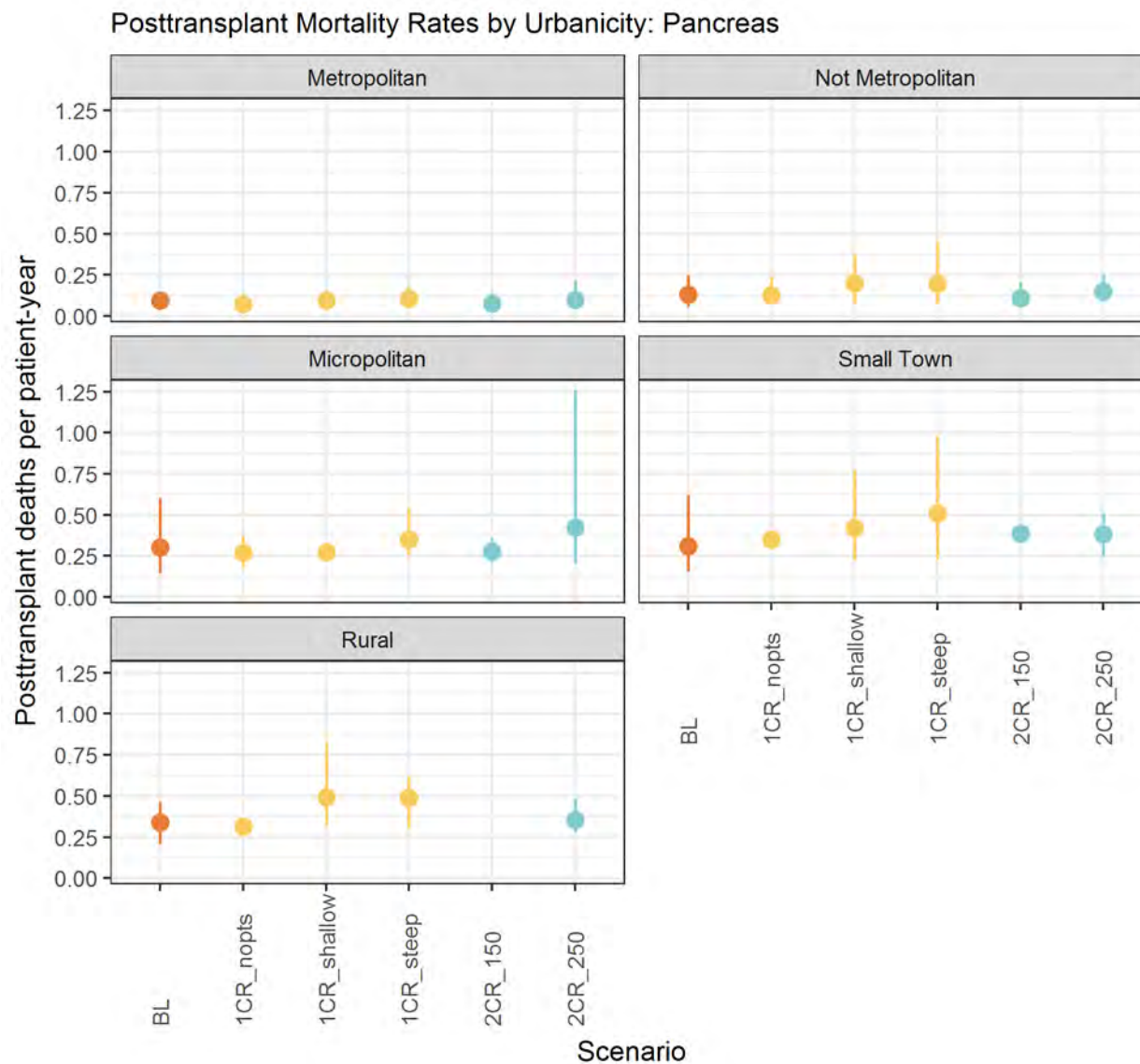


Figure 321 Posttransplant Mortality Rates by Urbanicity: Pancreas

## Posttransplant Mortality Rates: Local/Regional/National

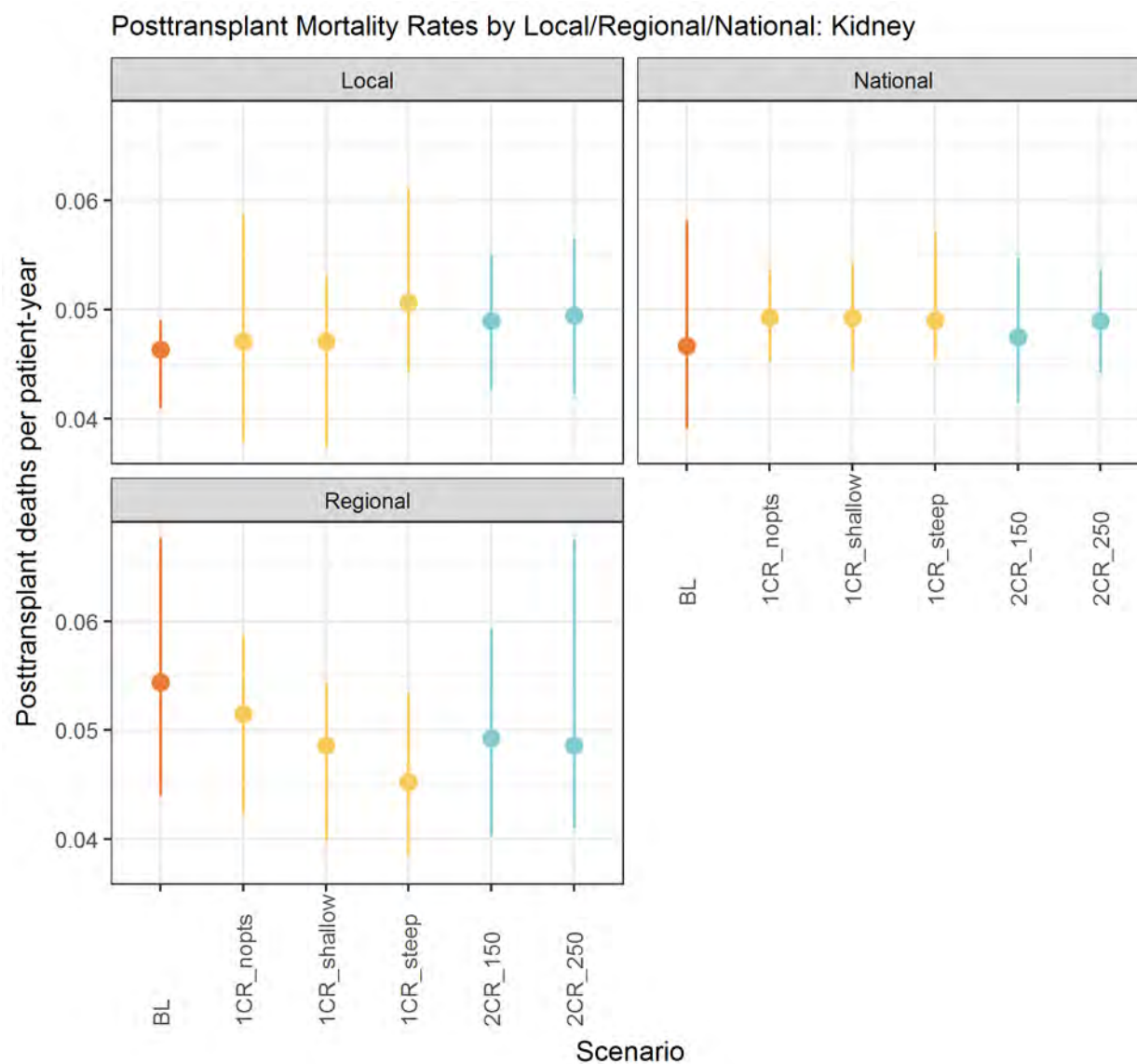


Figure 322 Posttransplant Mortality Rates by Local/Regional/National: Kidney



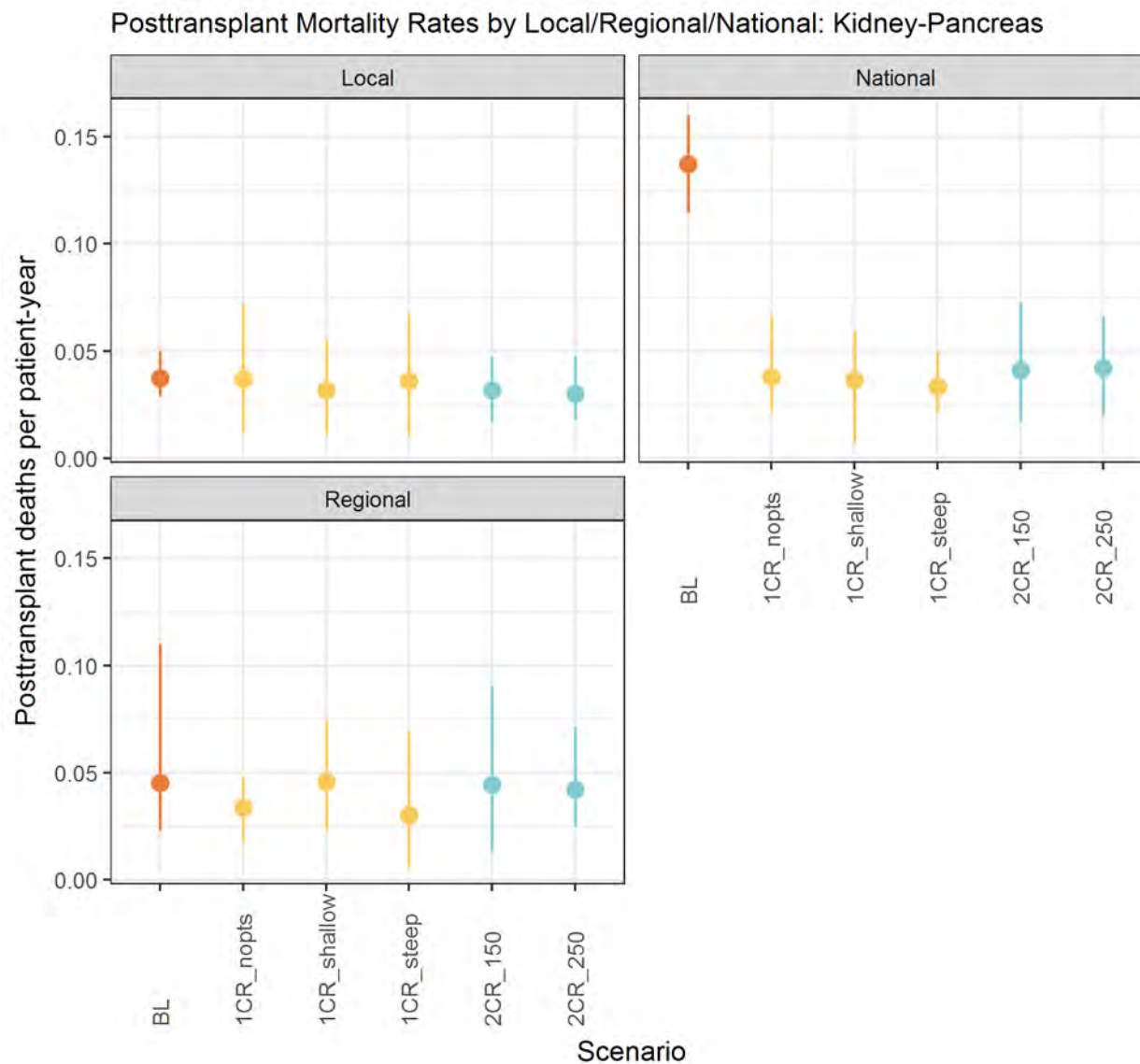


Figure 323 Posttransplant Mortality Rates by Local/Regional/National: Kidney-Pancreas

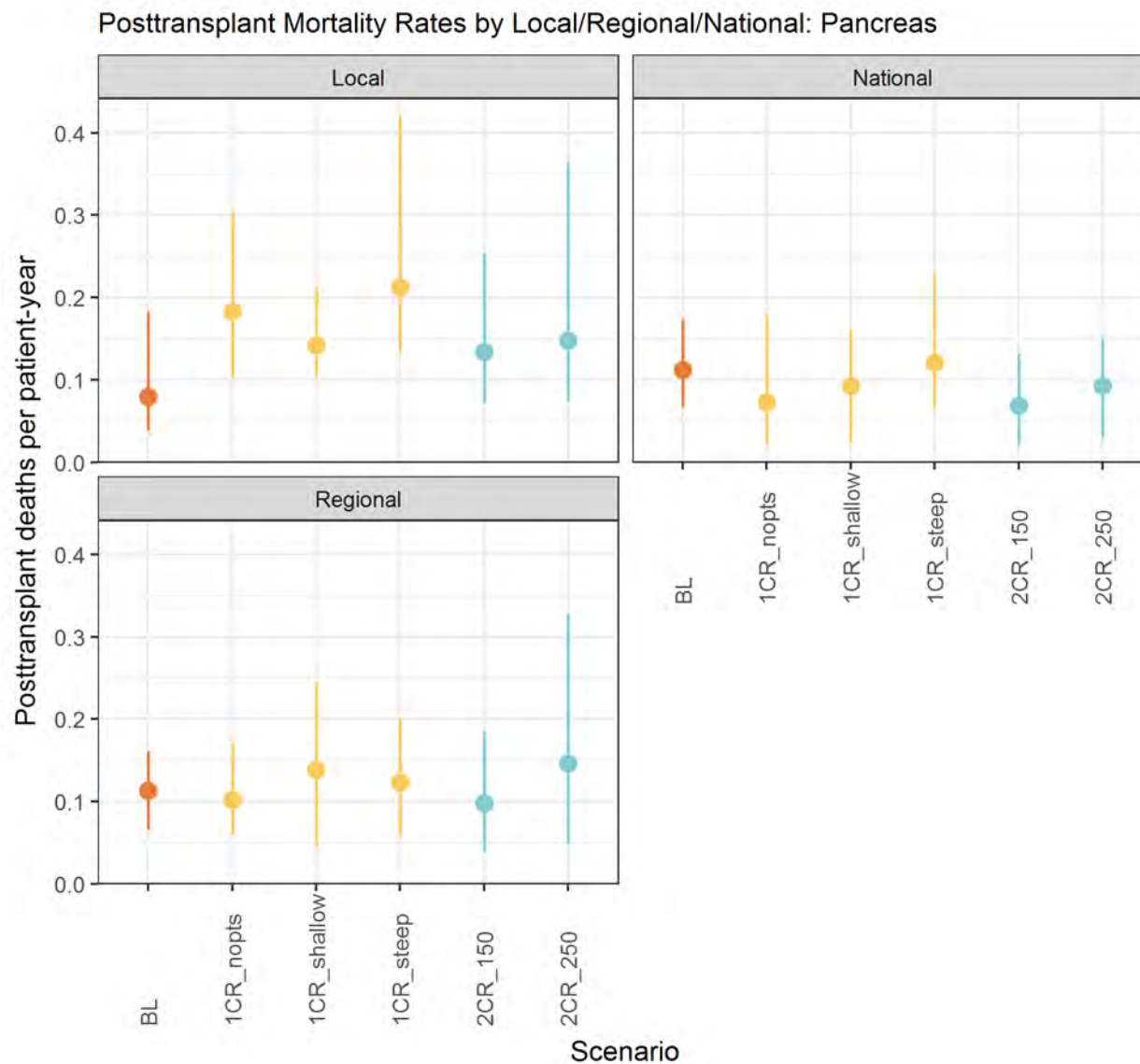


Figure 324 Posttransplant Mortality Rates by Local/Regional/National: Pancreas

## Posttransplant Mortality Rates: EPTS

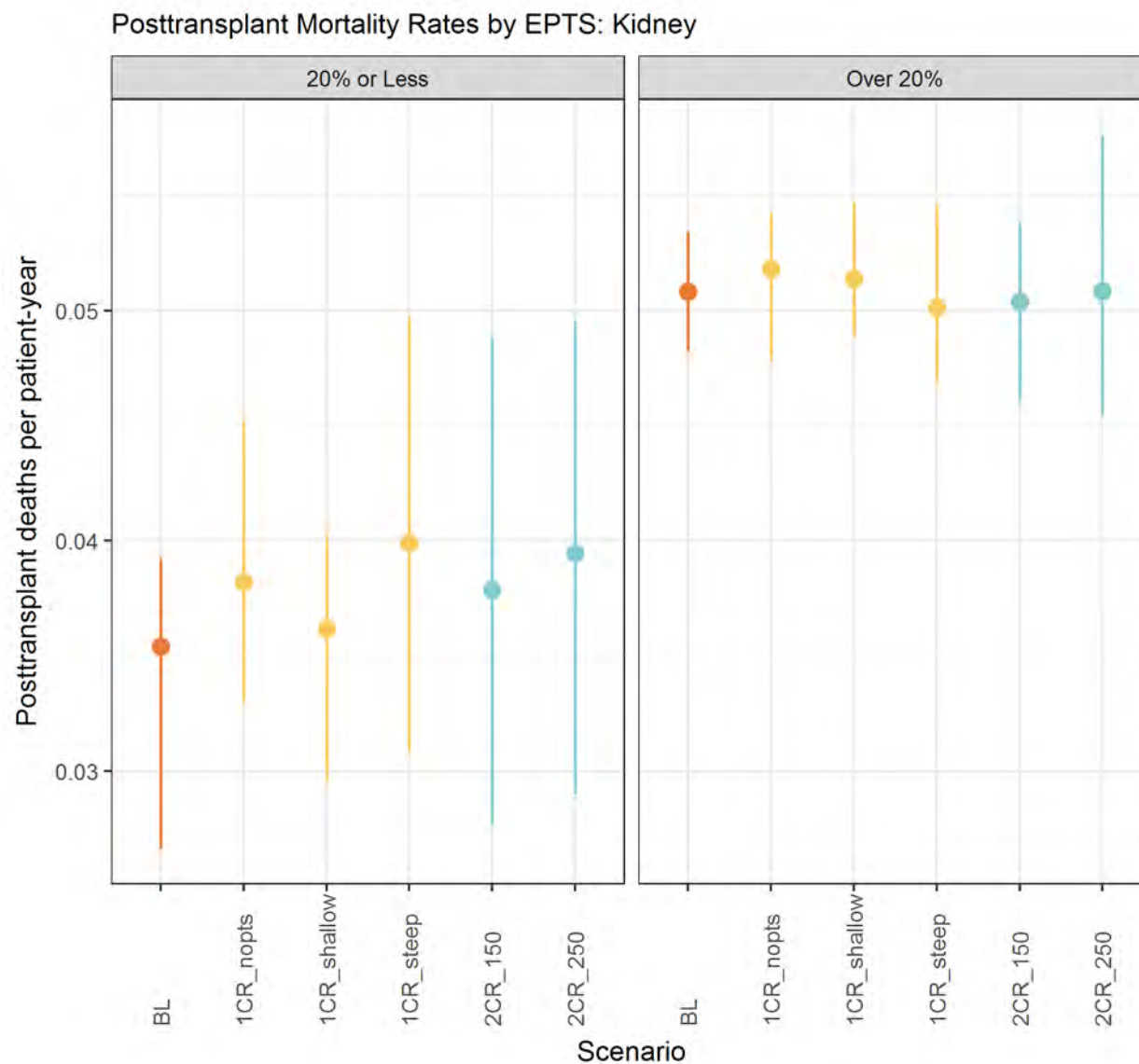


Figure 325 Posttransplant Mortality Rates by EPTS: Kidney

Posttransplant Mortality Rates: Median Household Income by Zip Code

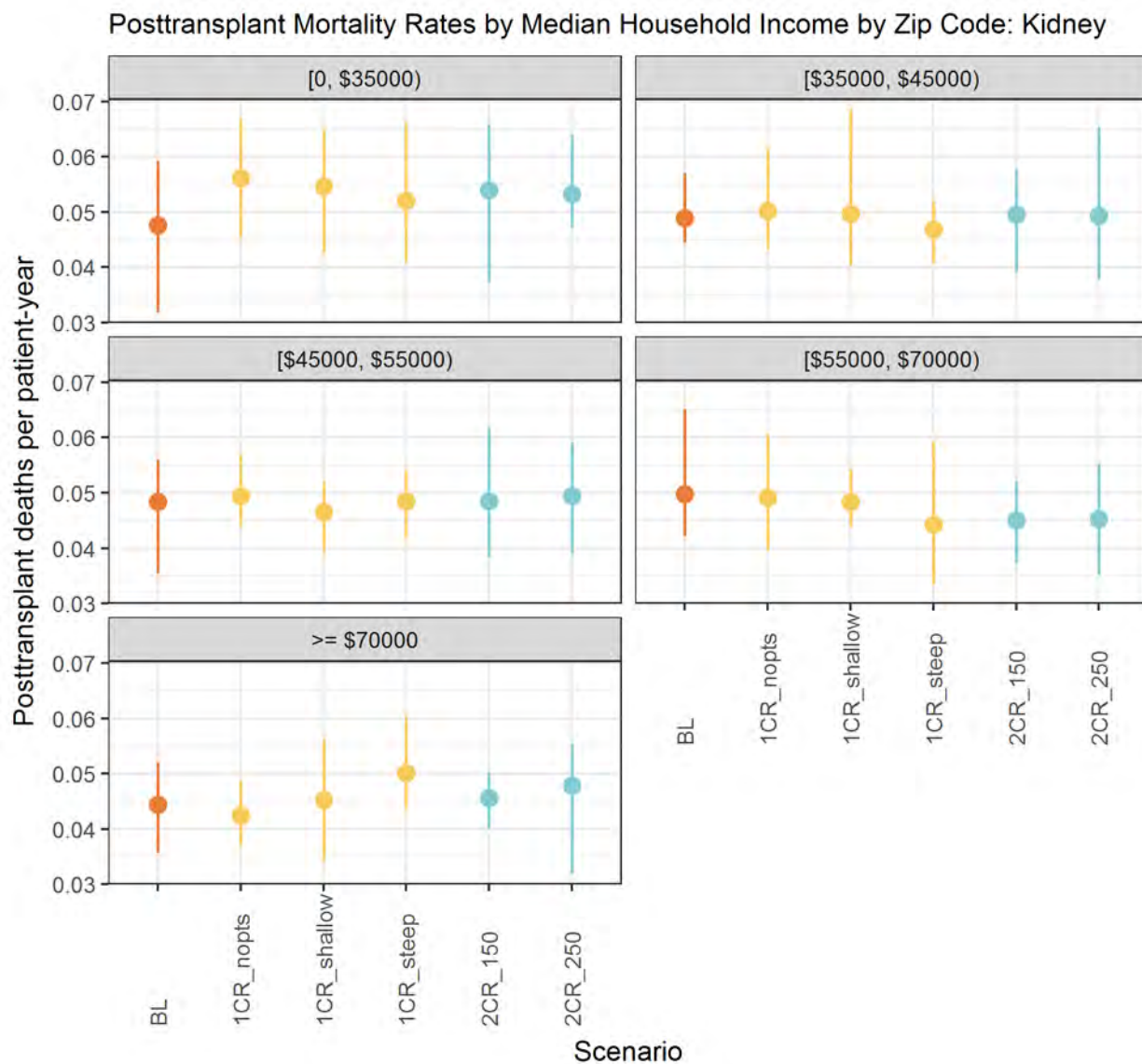


Figure 326 Posttransplant Mortality Rates by Median Household Income by Zip Code: Kidney

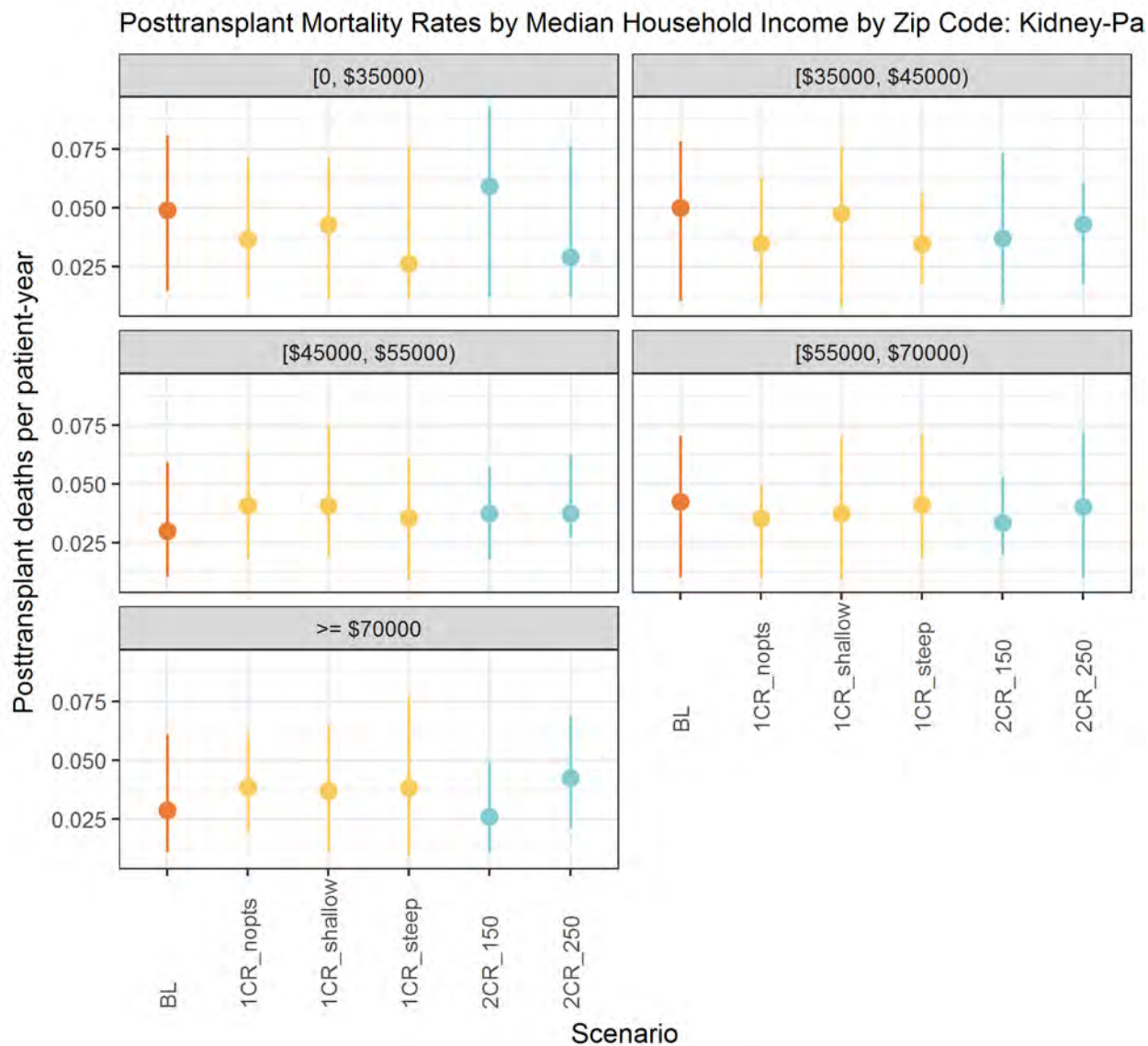


Figure 327 Posttransplant Mortality Rates by Median Household Income by Zip Code: Kidney-Pancreas



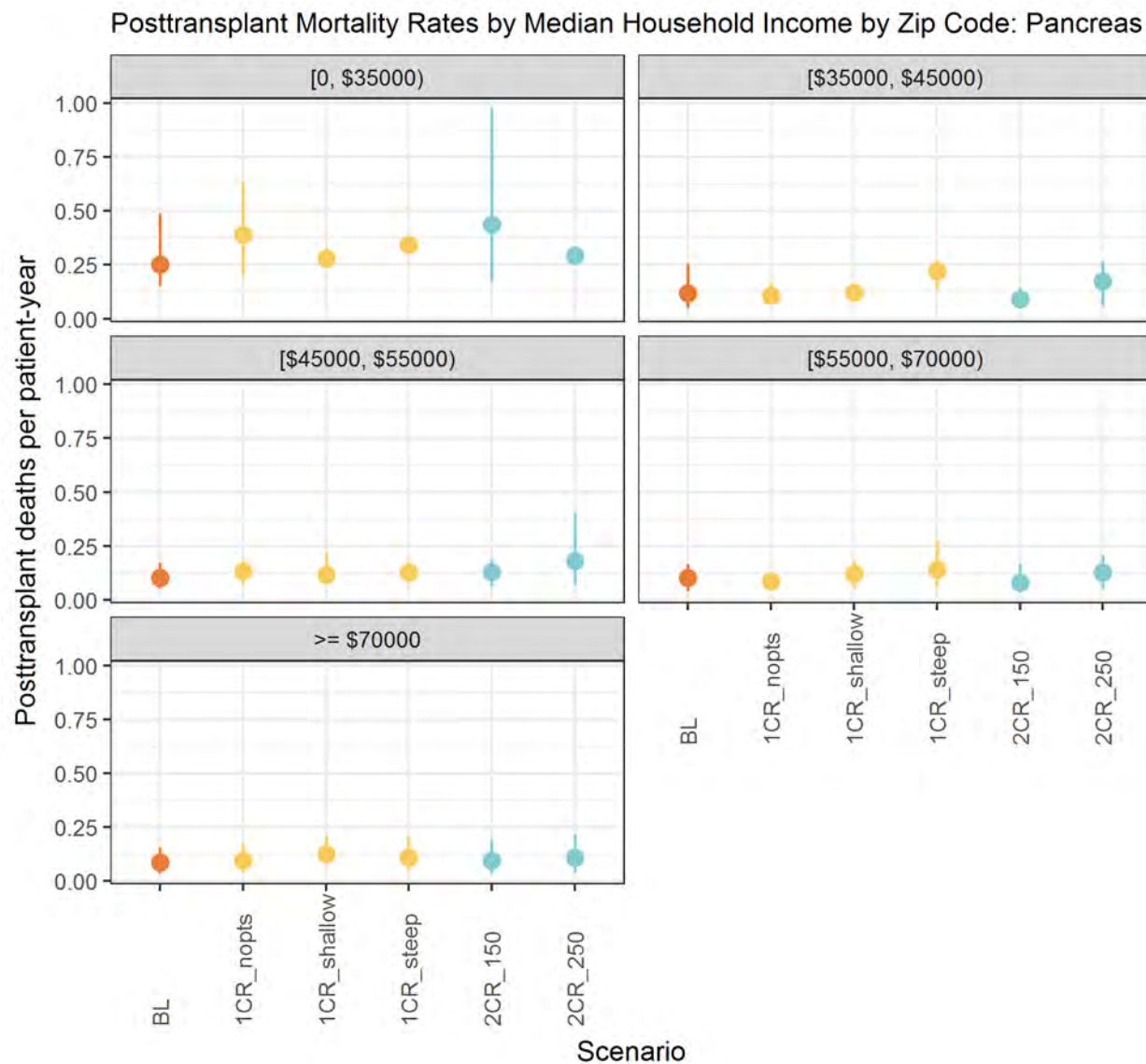


Figure 328 Posttransplant Mortality Rates by Median Household Income by Zip Code: Pancreas



# Posttransplant Mortality Rates: Donor KDPI

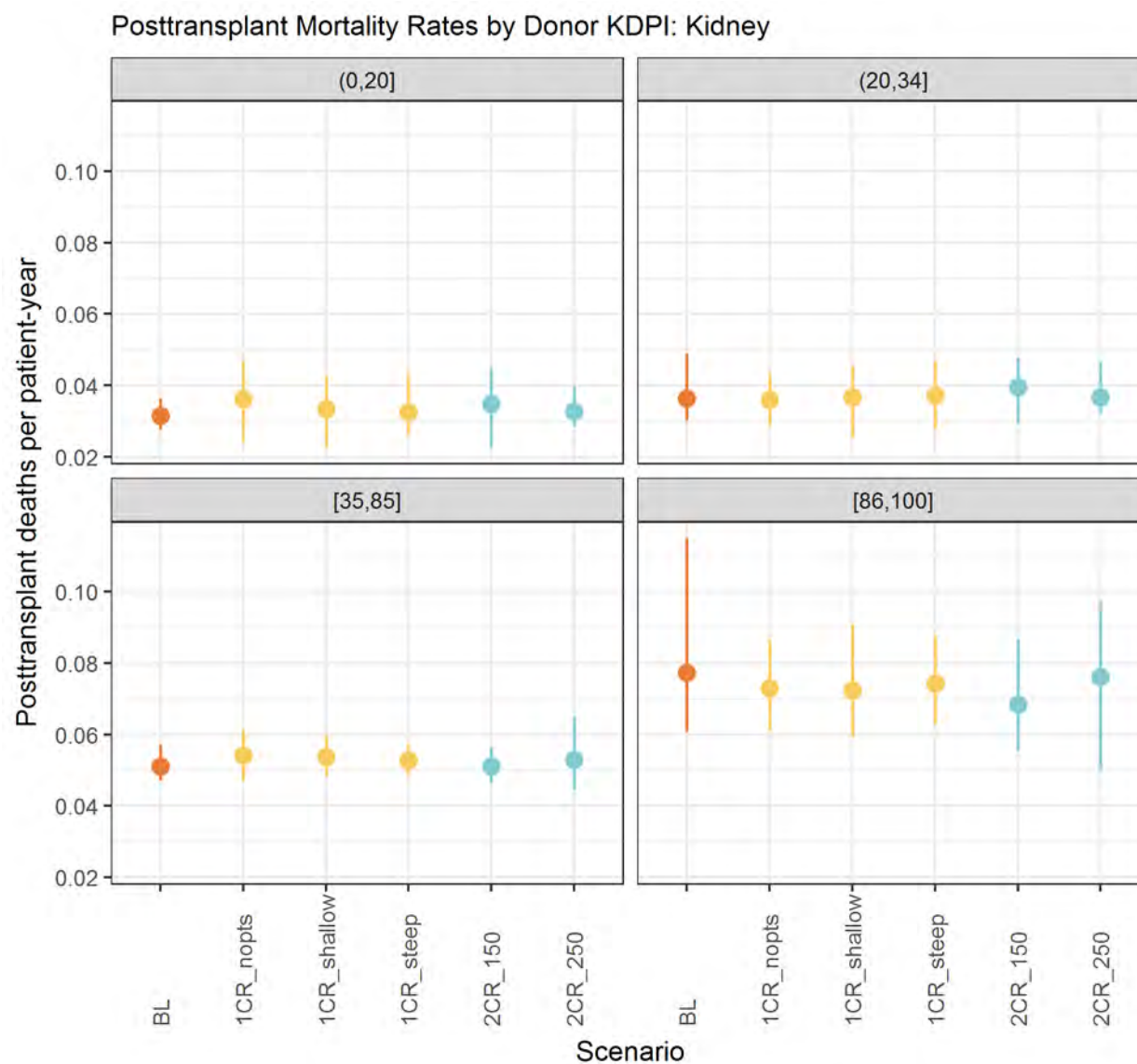


Figure 329 Posttransplant Mortality Rates by Donor KDPI: Kidney

## Posttransplant Mortality Rates: DCD Donor

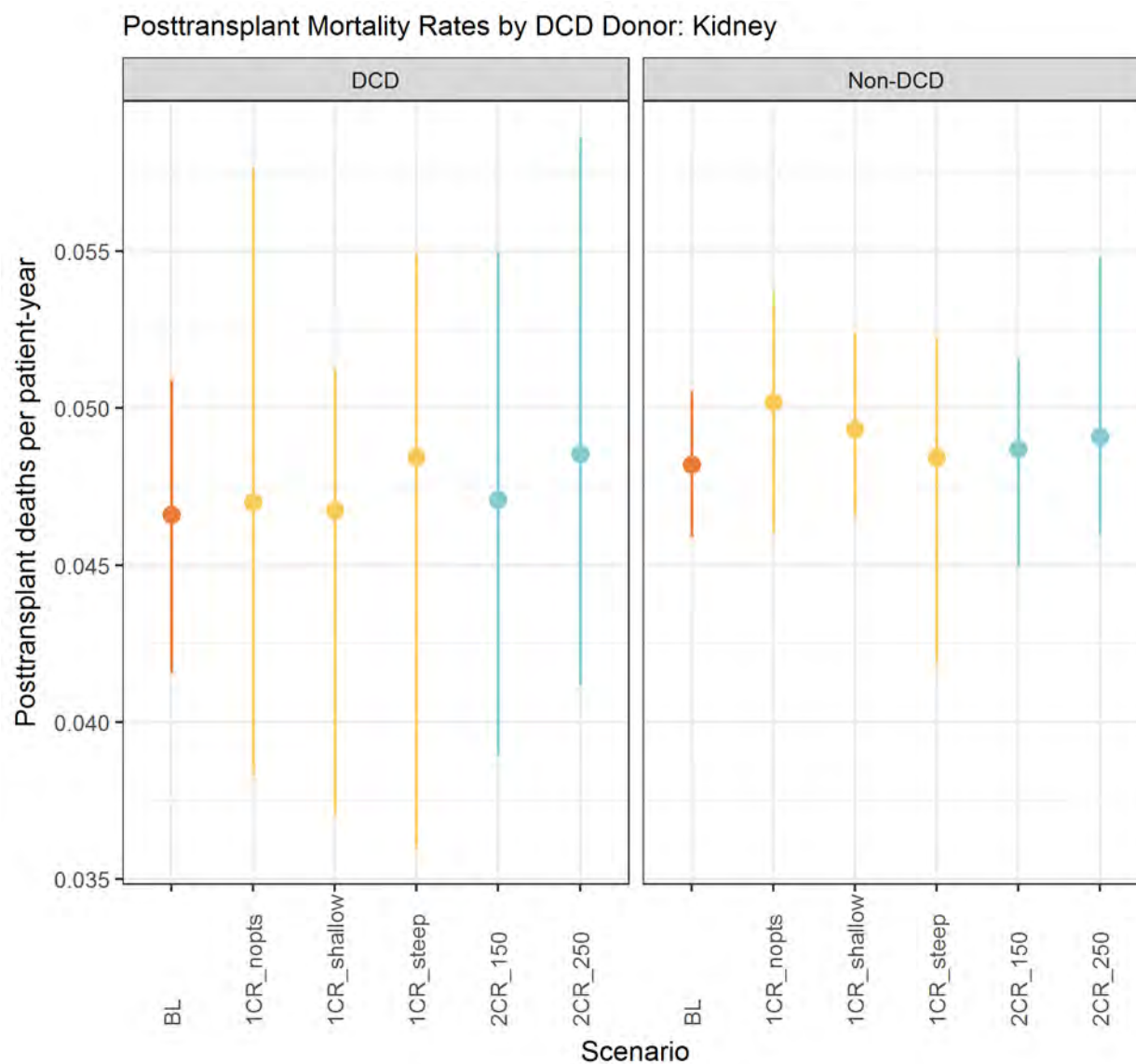


Figure 330 Posttransplant Mortality Rates by DCD Donor: Kidney

Posttransplant Mortality Rates: Number of DR mismatches

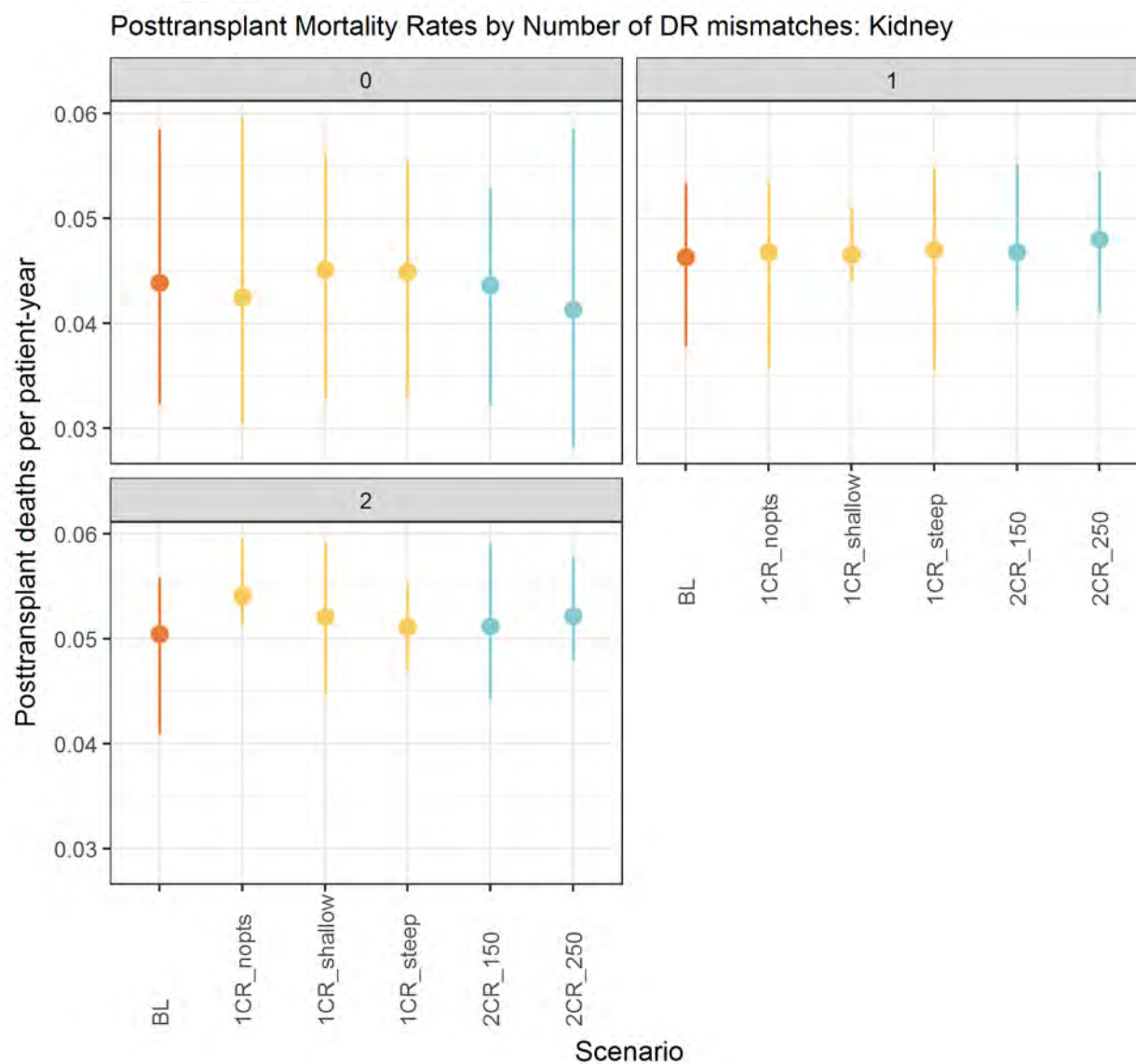


Figure 331 Posttransplant Mortality Rates by Number of DR mismatches: Kidney

## Posttransplant Graft Failure Rates

Posttransplant Graft Failure Rates: Age at Transplant 0-17

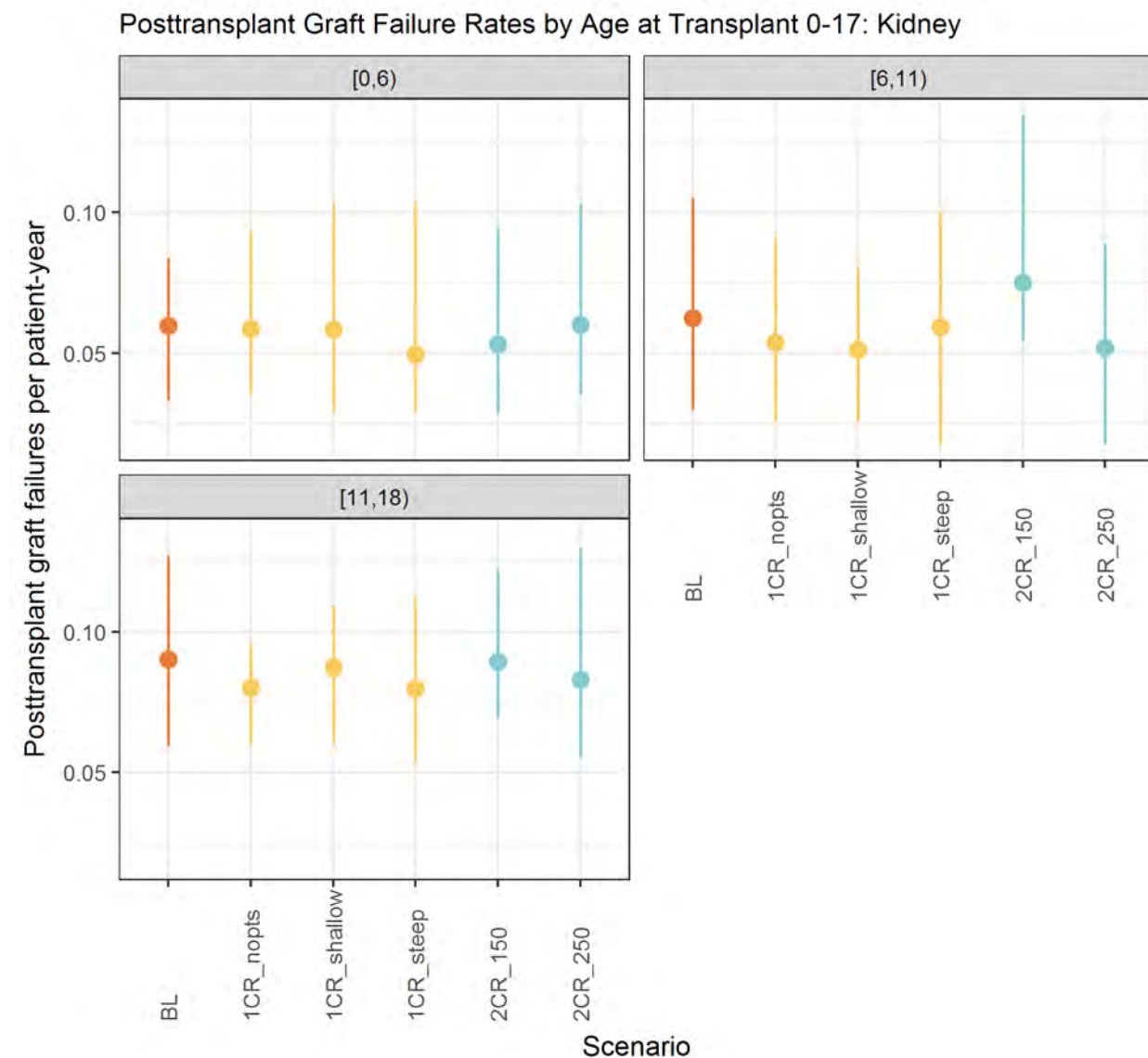


Figure 332 Posttransplant Graft Failure Rates by Age at Transplant 0-17: Kidney

Posttransplant Graft Failure Rates: Age at Transplant 18+

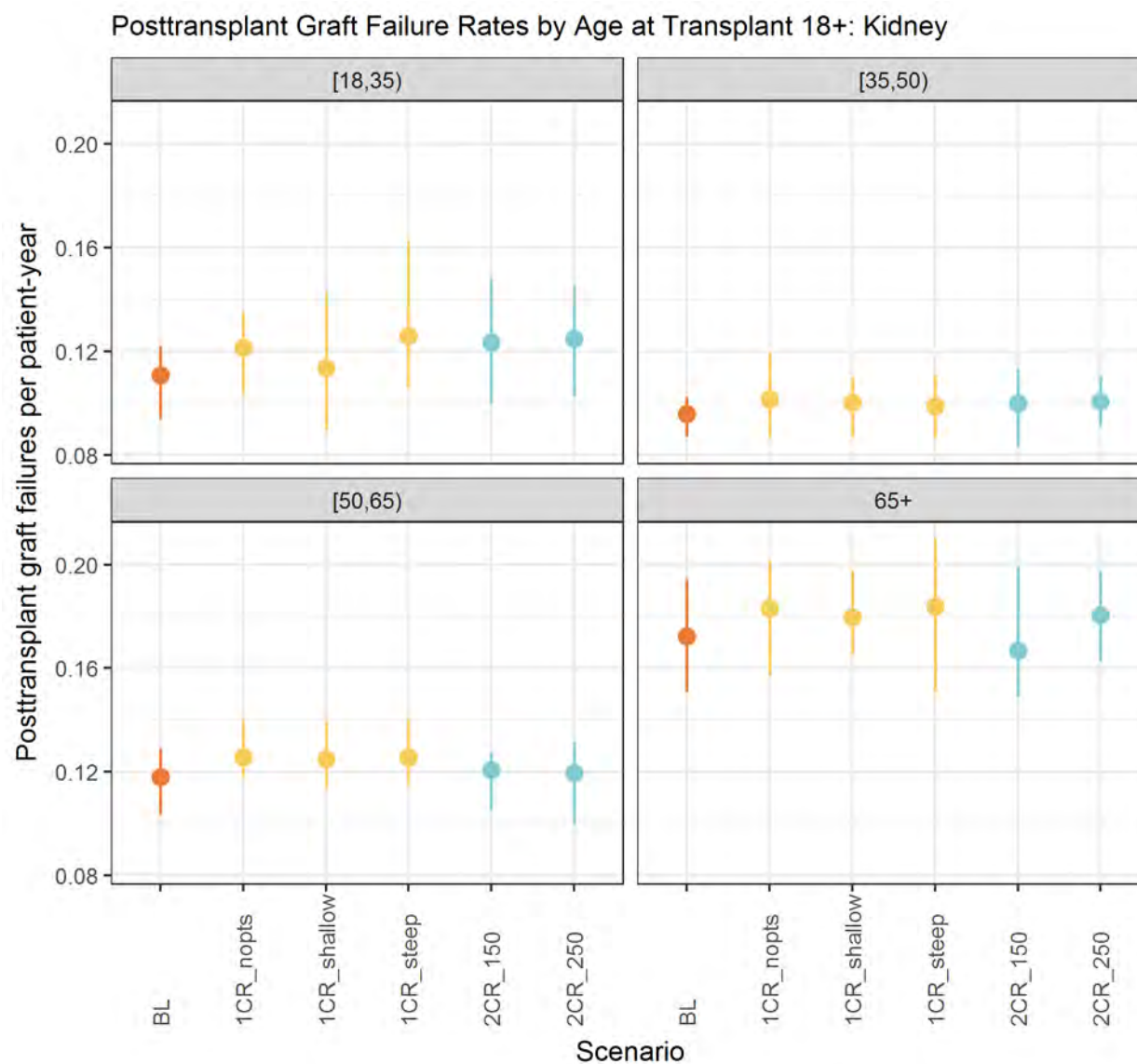


Figure 333 Posttransplant Graft Failure Rates by Age at Transplant 18+: Kidney

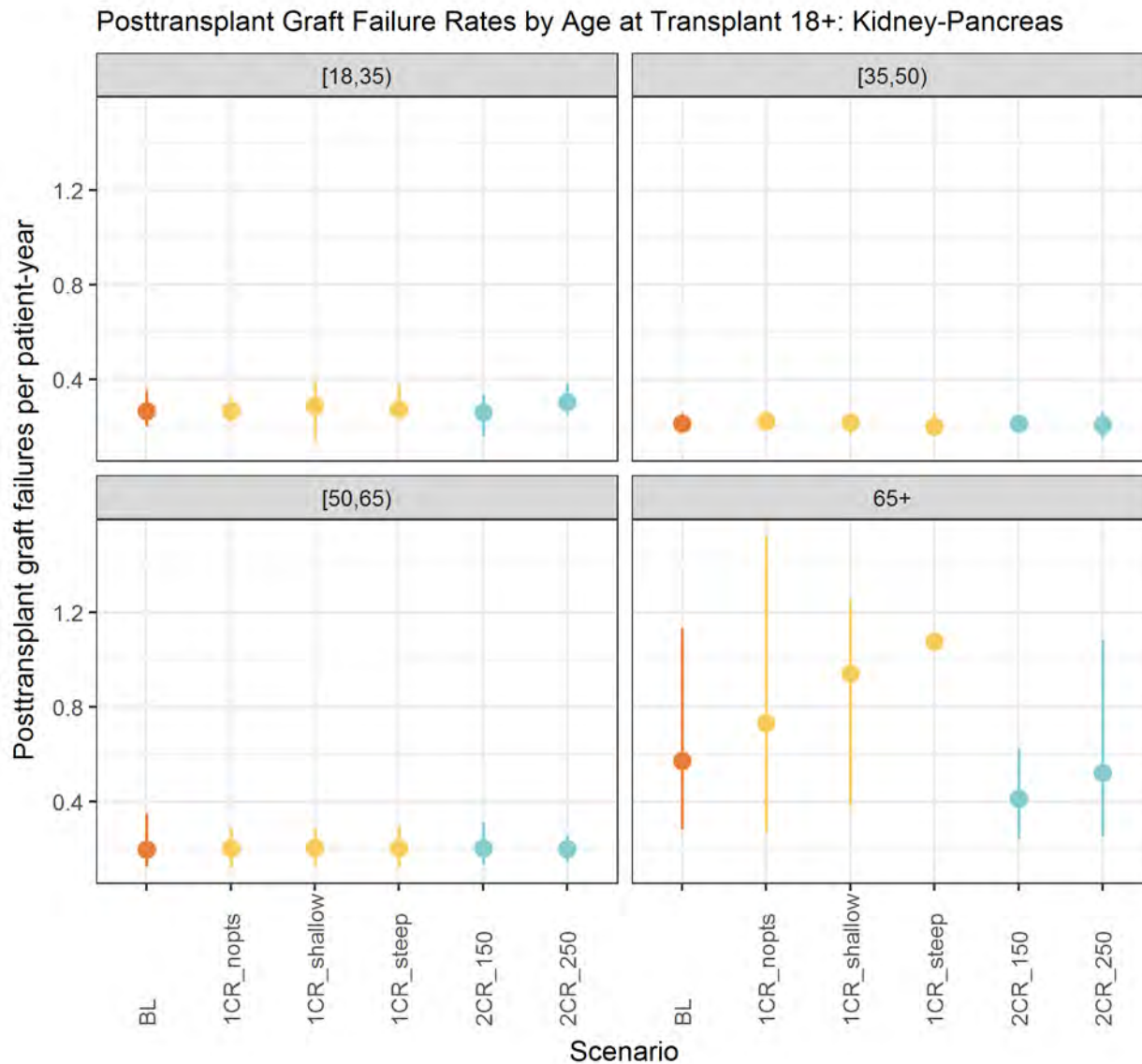


Figure 334 Posttransplant Graft Failure Rates by Age at Transplant 18+: Kidney-Pancreas



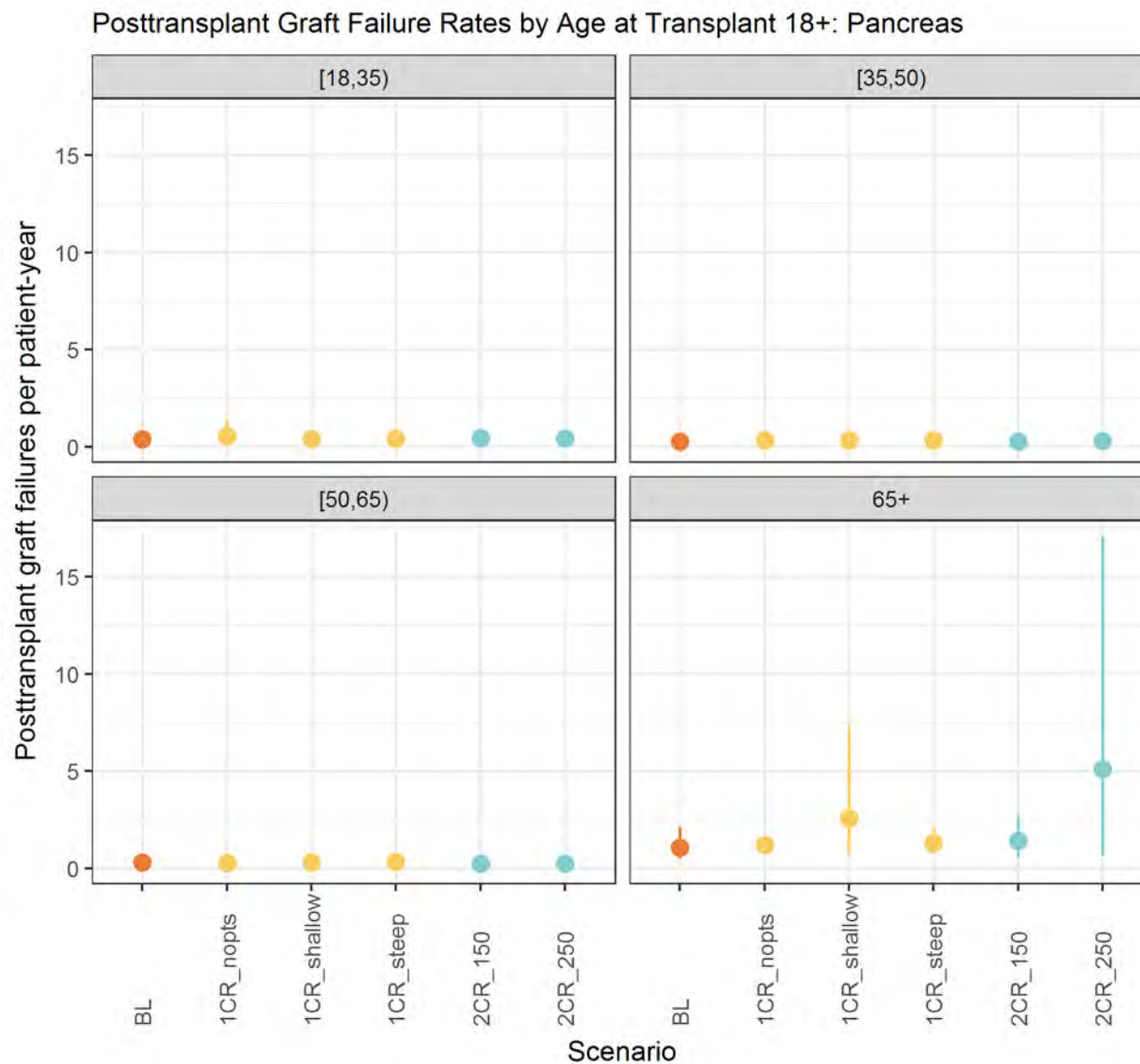


Figure 335 Posttransplant Graft Failure Rates by Age at Transplant 18+: Pancreas

## Posttransplant Graft Failure Rates: Race

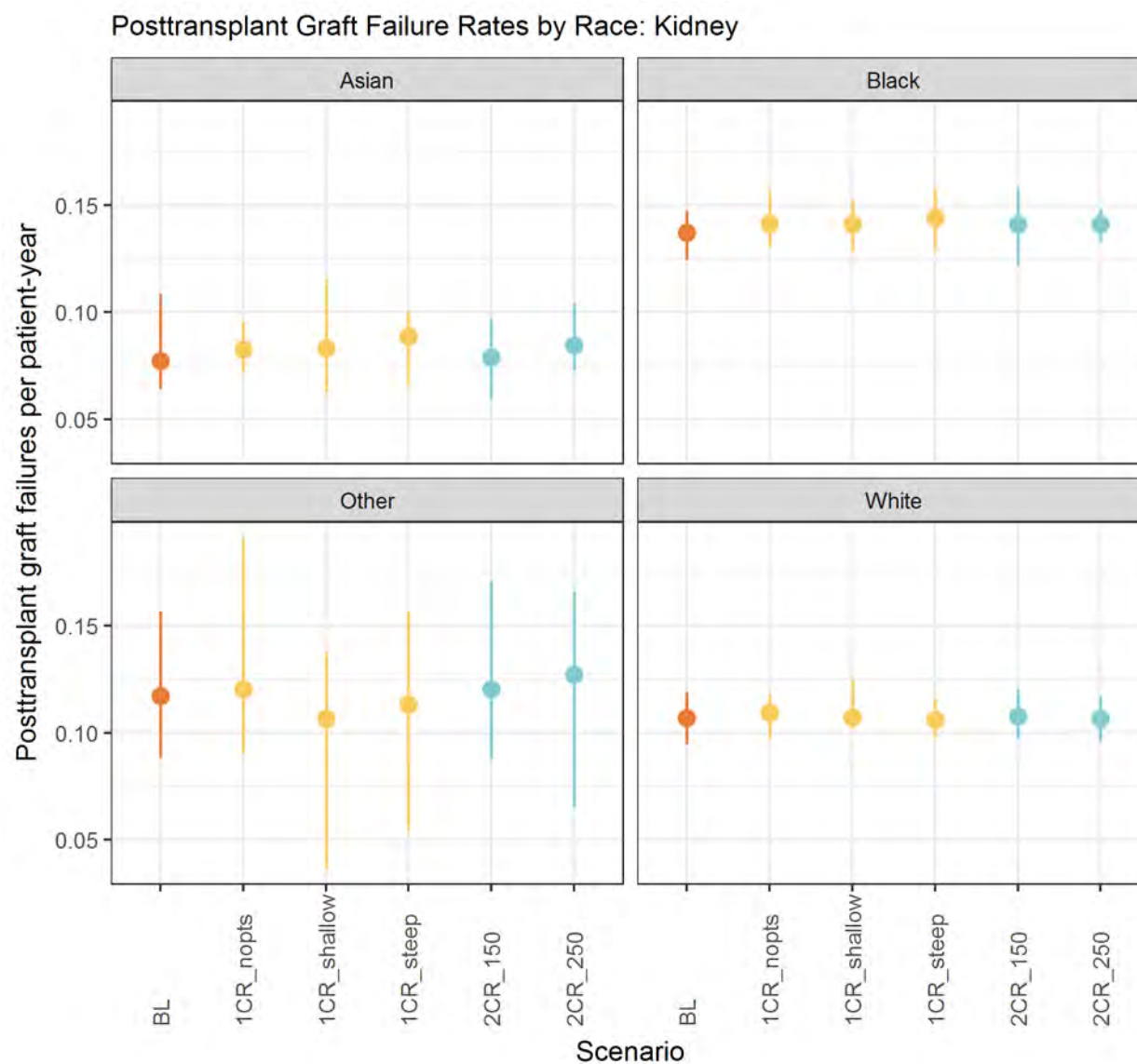


Figure 336 Posttransplant Graft Failure Rates by Race: Kidney

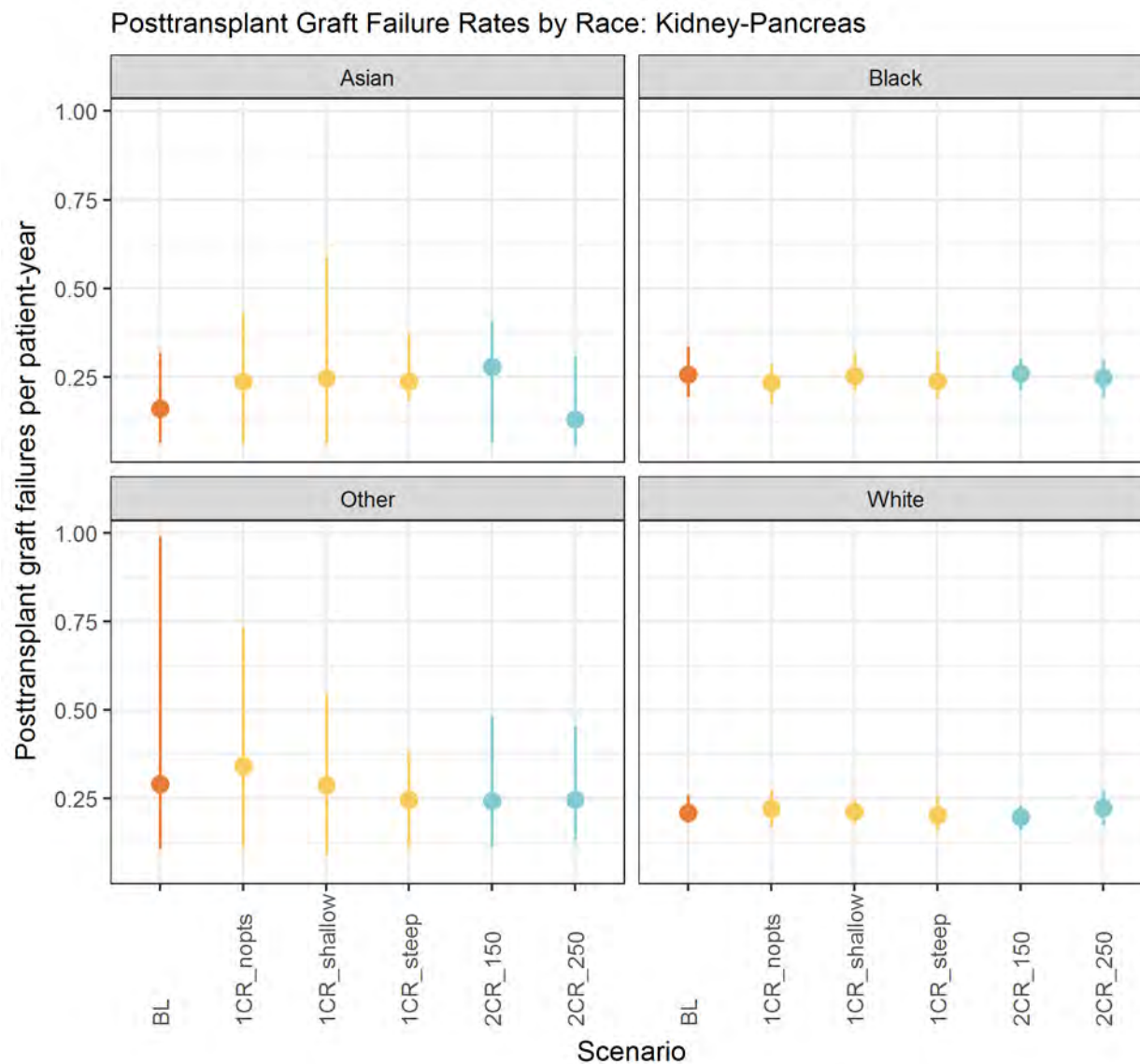


Figure 337 Posttransplant Graft Failure Rates by Race: Kidney-Pancreas

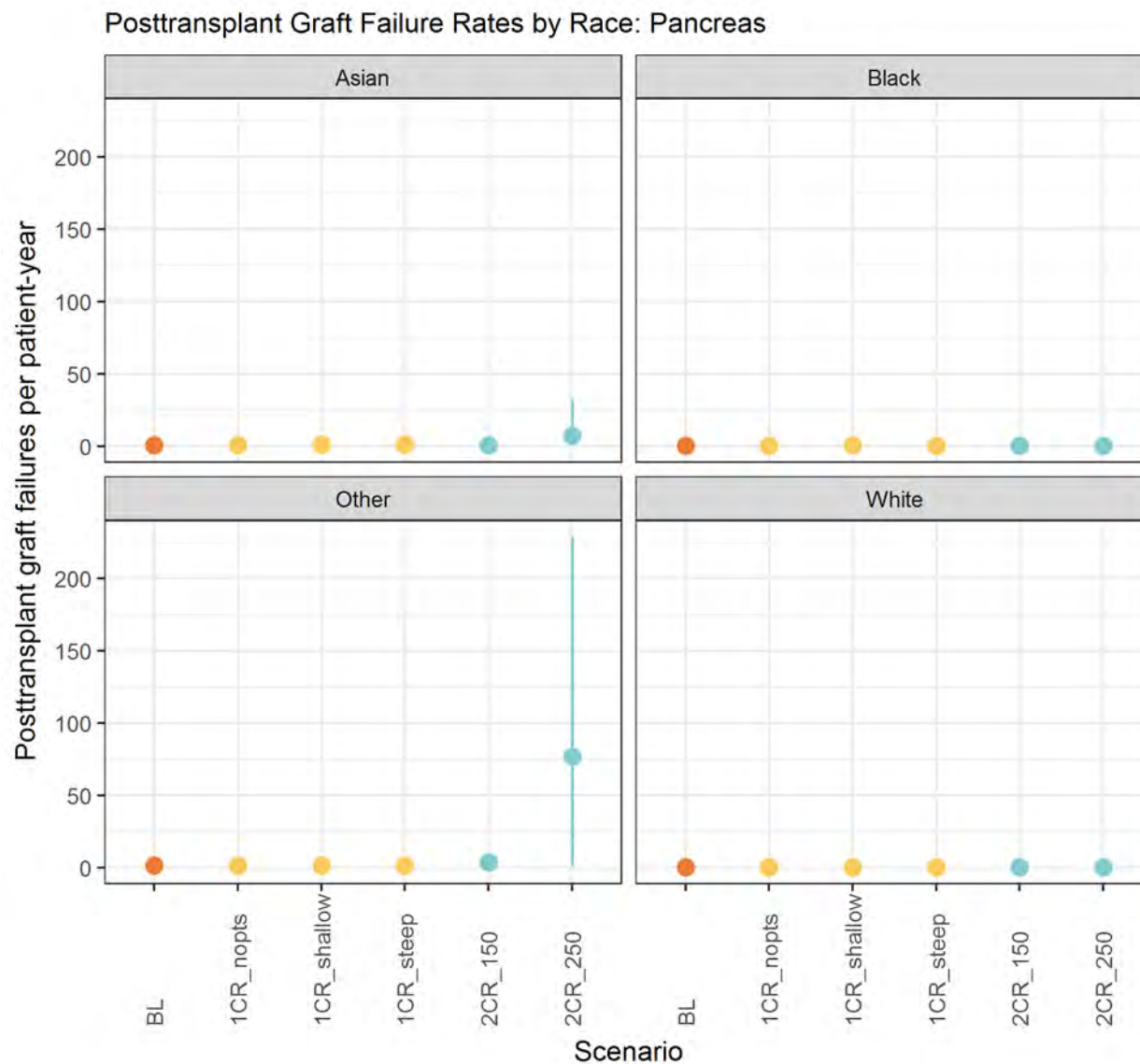


Figure 338 Posttransplant Graft Failure Rates by Race: Pancreas

## Posttransplant Graft Failure Rates: Ethnicity

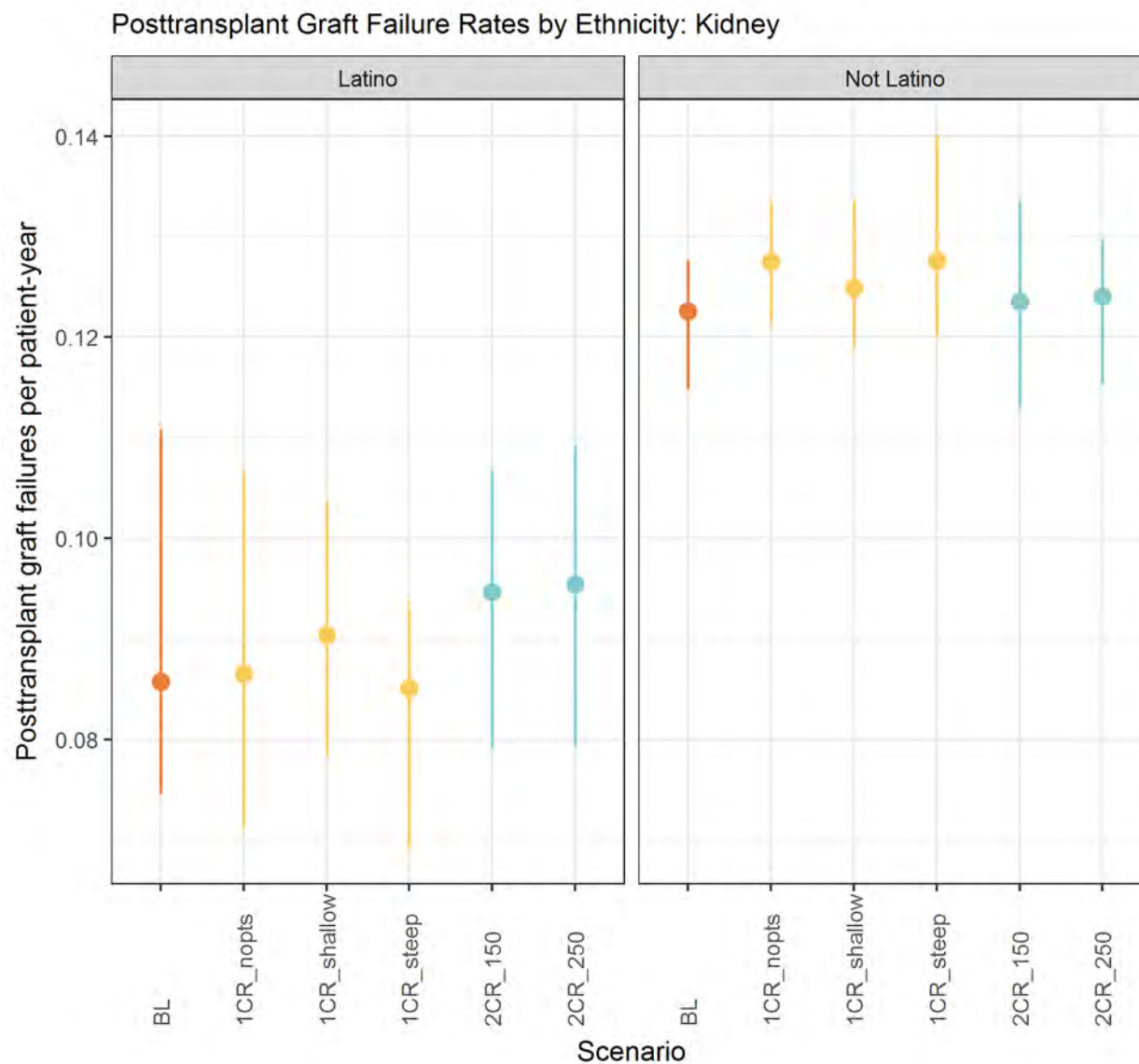


Figure 339 Posttransplant Graft Failure Rates by Ethnicity: Kidney

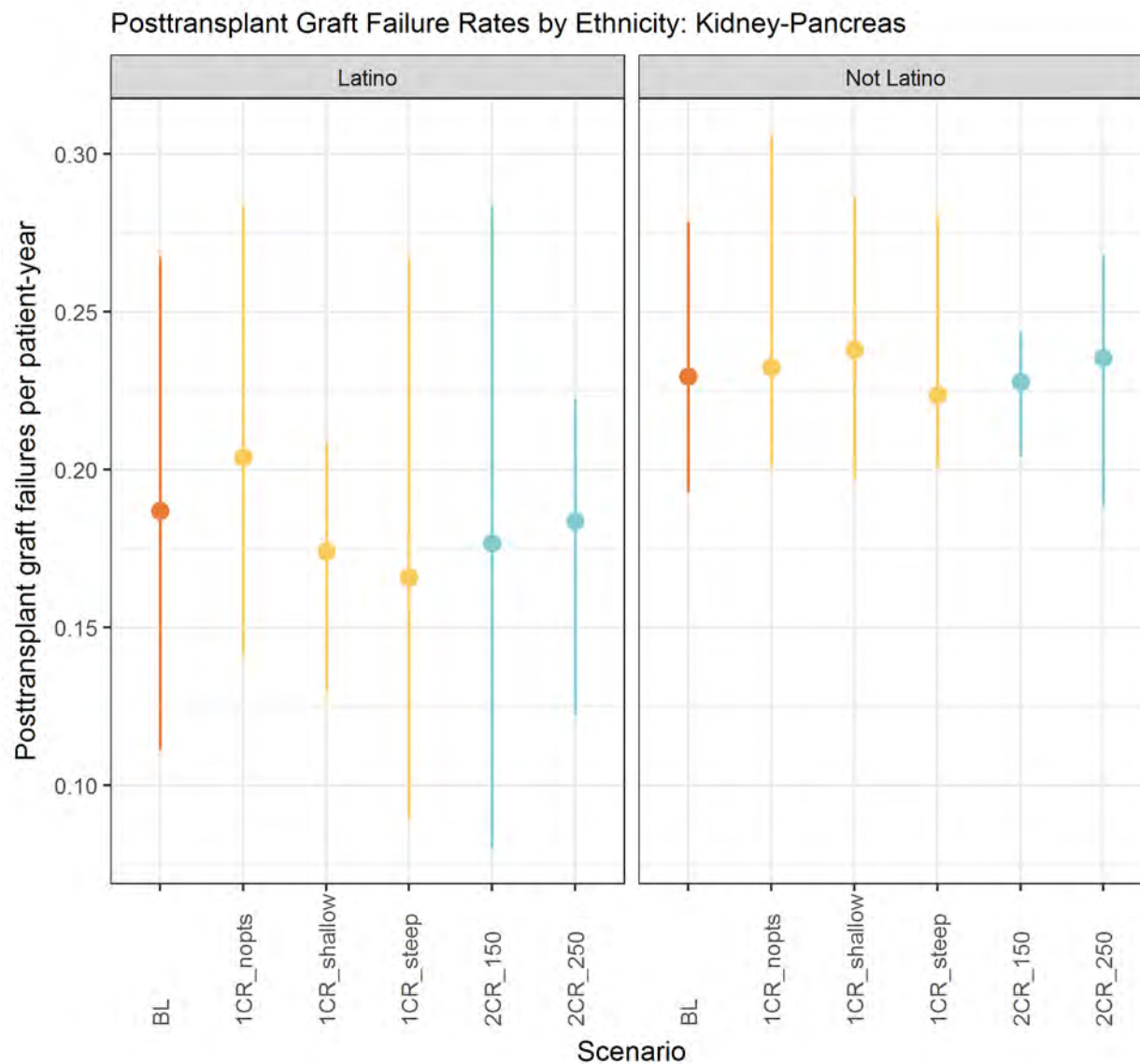


Figure 340 Posttransplant Graft Failure Rates by Ethnicity: Kidney-Pancreas



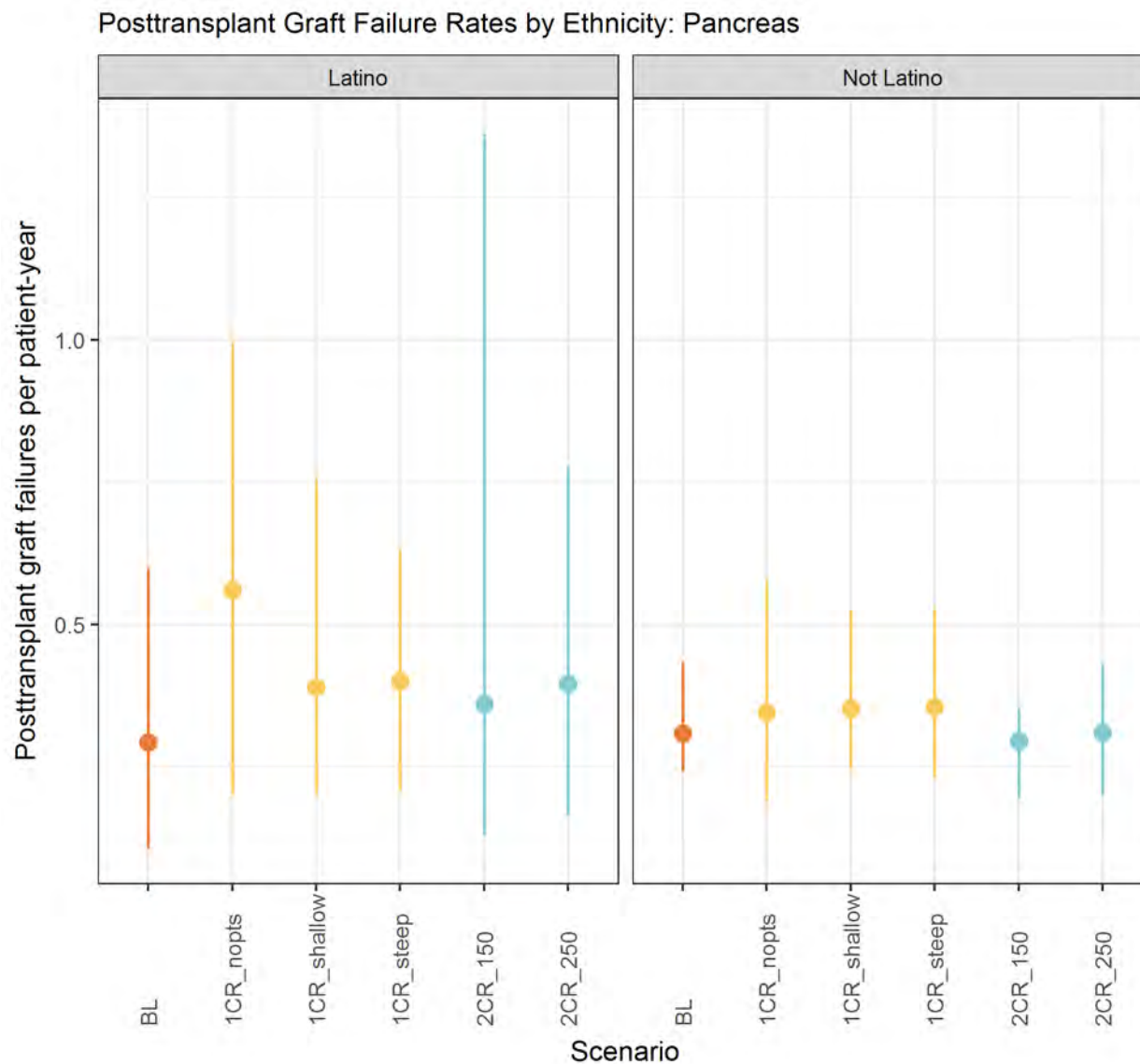


Figure 341 Posttransplant Graft Failure Rates by Ethnicity: Pancreas

## Posttransplant Graft Failure Rates: Sex

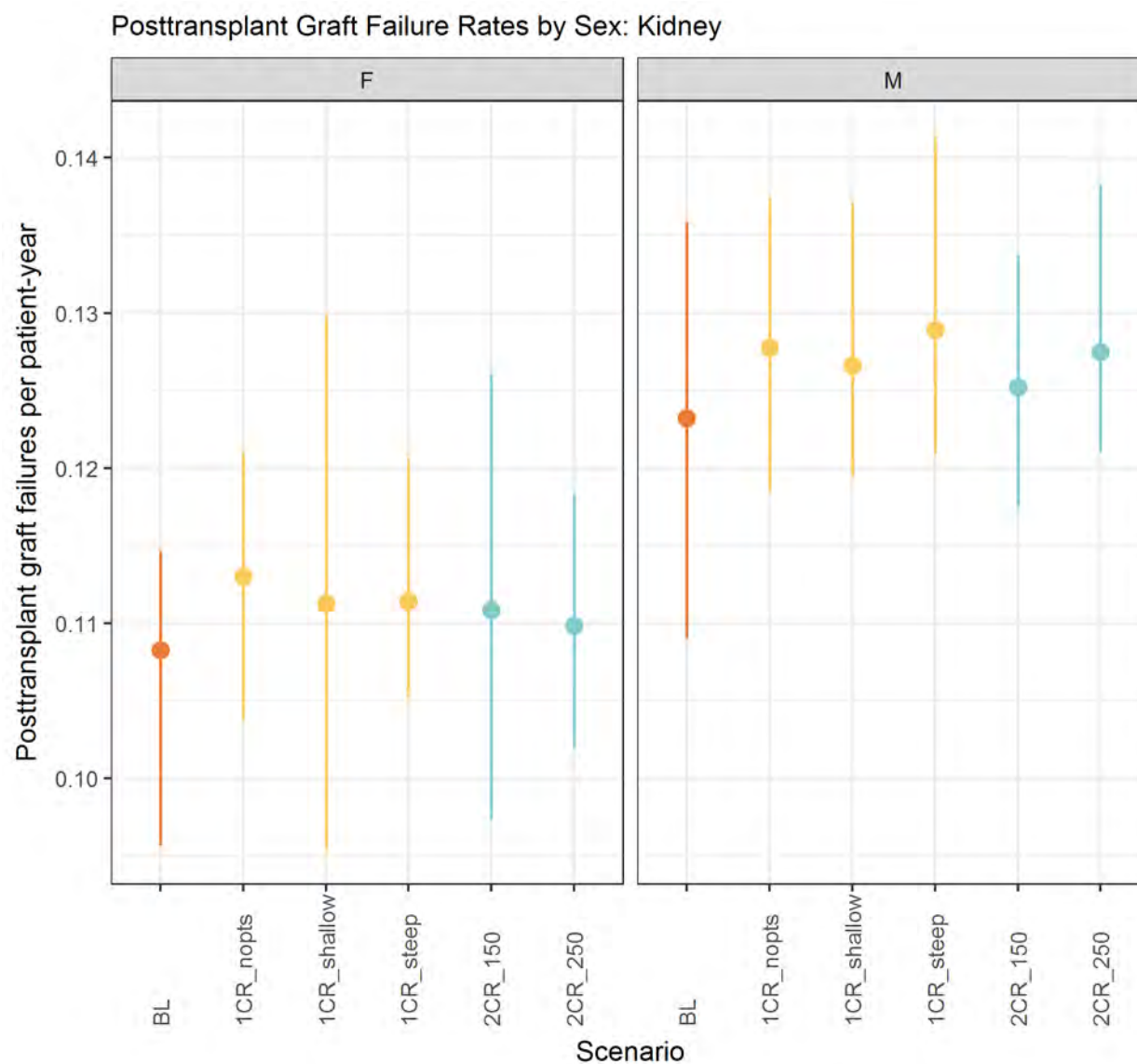


Figure 342 Posttransplant Graft Failure Rates by Sex: Kidney

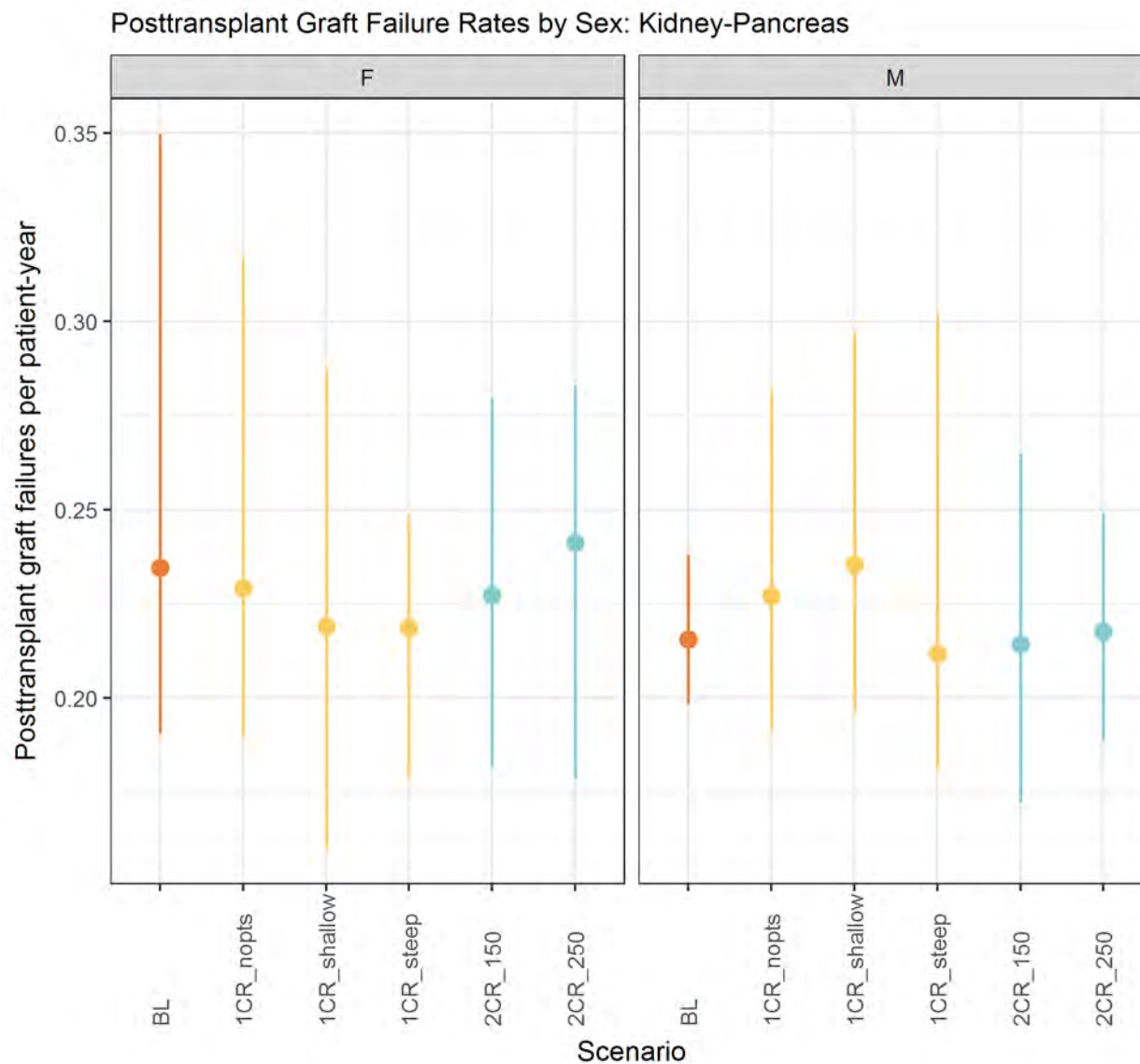


Figure 343 Posttransplant Graft Failure Rates by Sex: Kidney-Pancreas

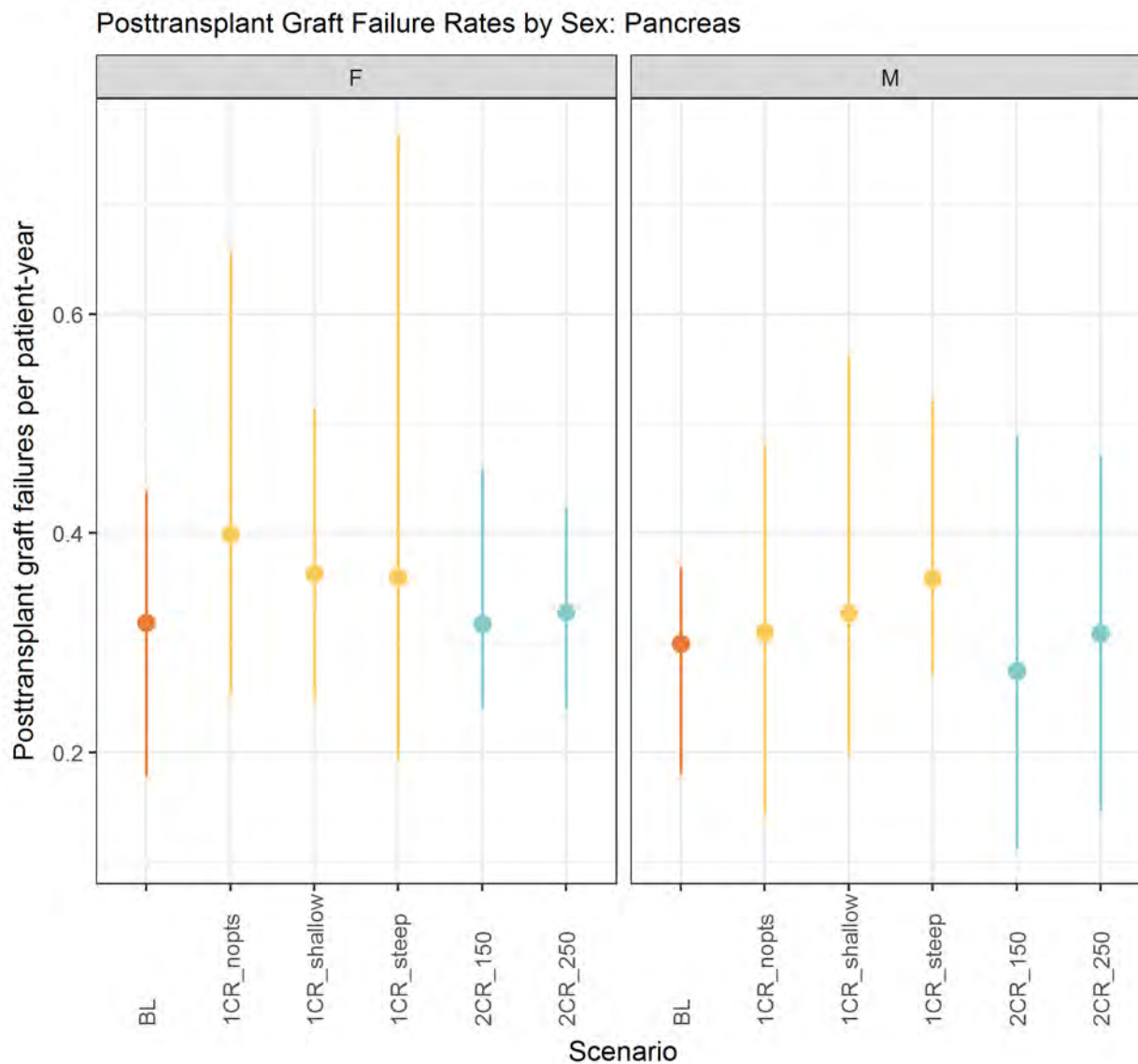


Figure 344 Posttransplant Graft Failure Rates by Sex: Pancreas

## Posttransplant Graft Failure Rates: ABO Group

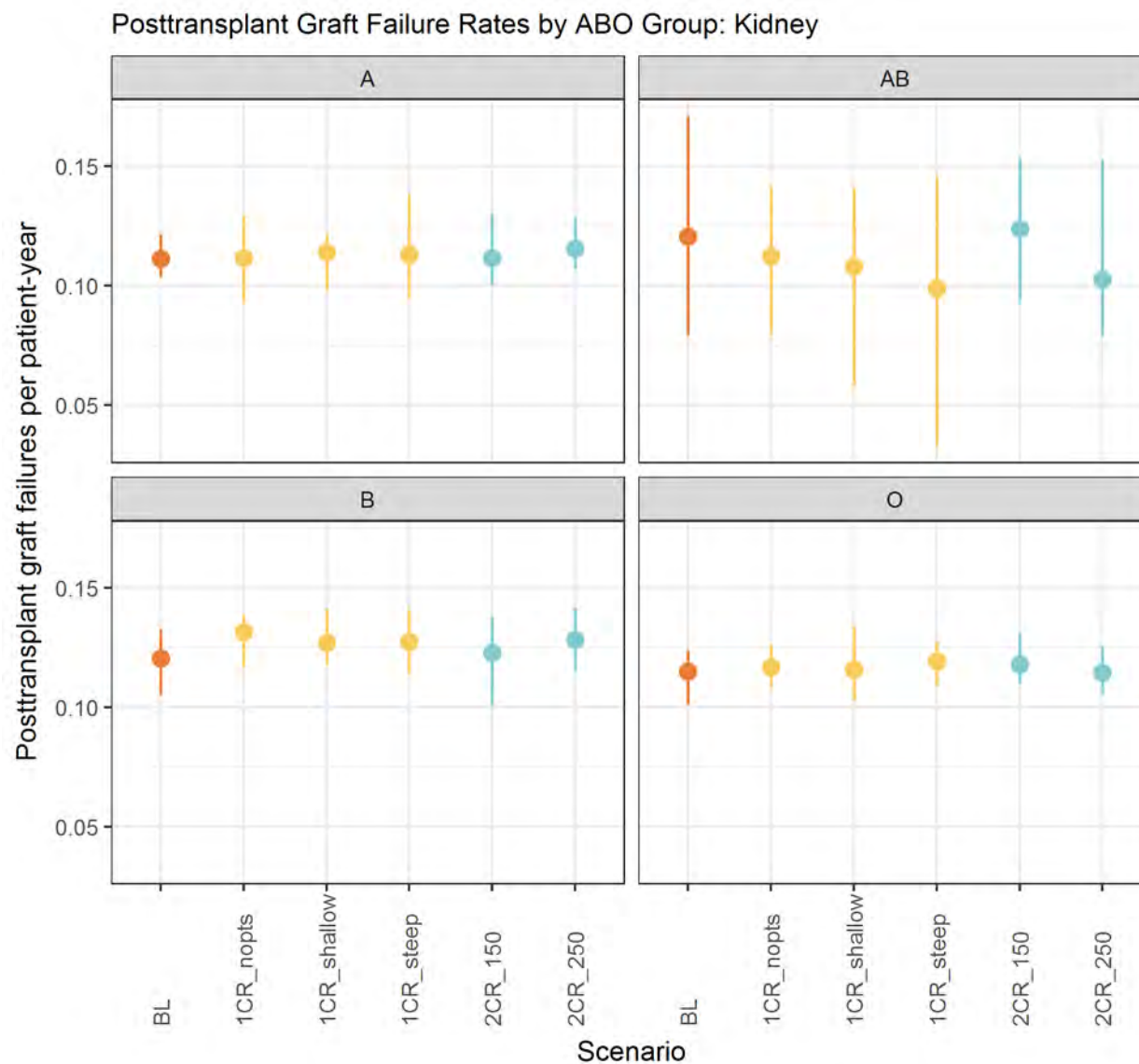


Figure 345 Posttransplant Graft Failure Rates by ABO Group: Kidney

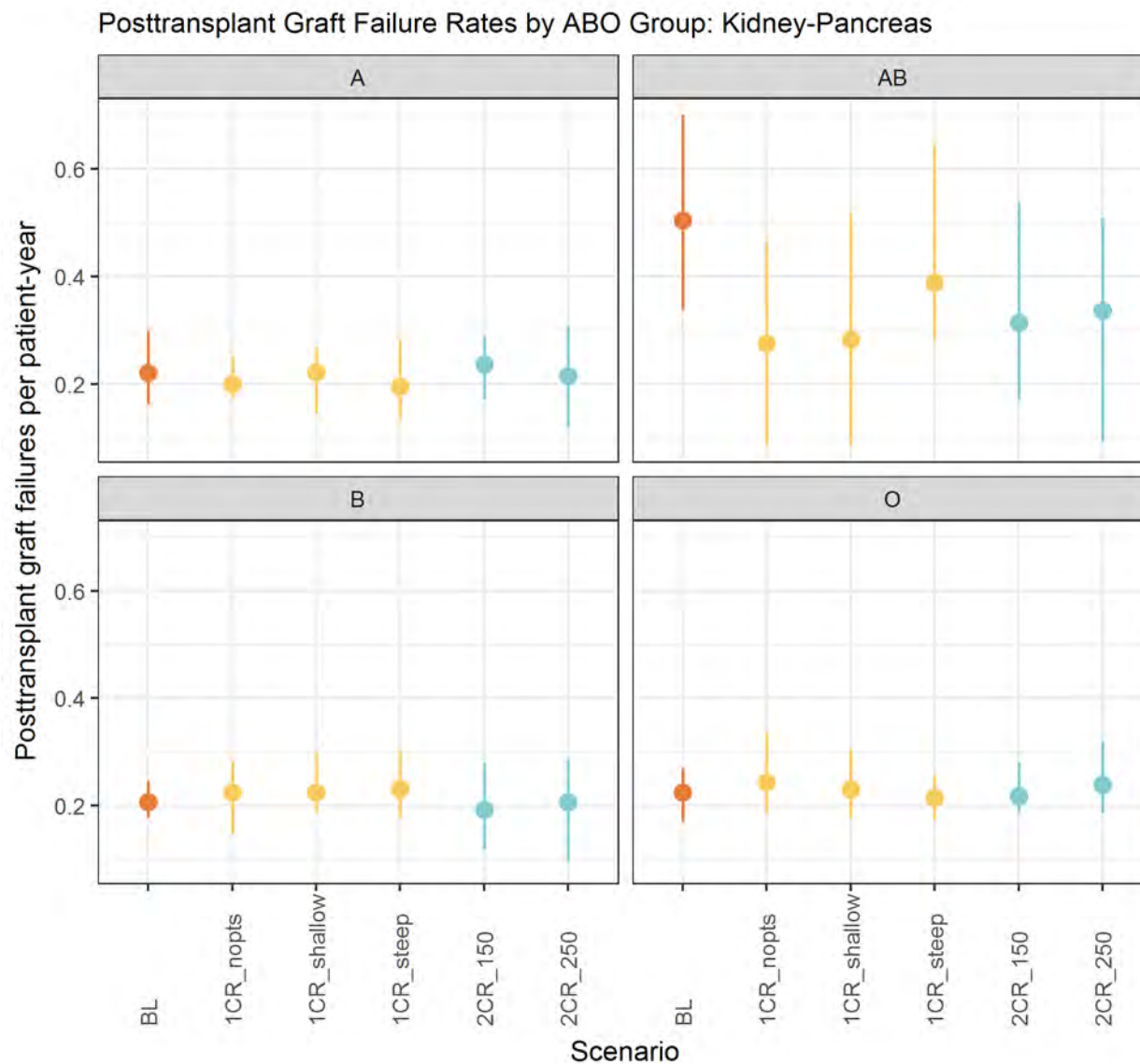


Figure 346 Posttransplant Graft Failure Rates by ABO Group: Kidney-Pancreas



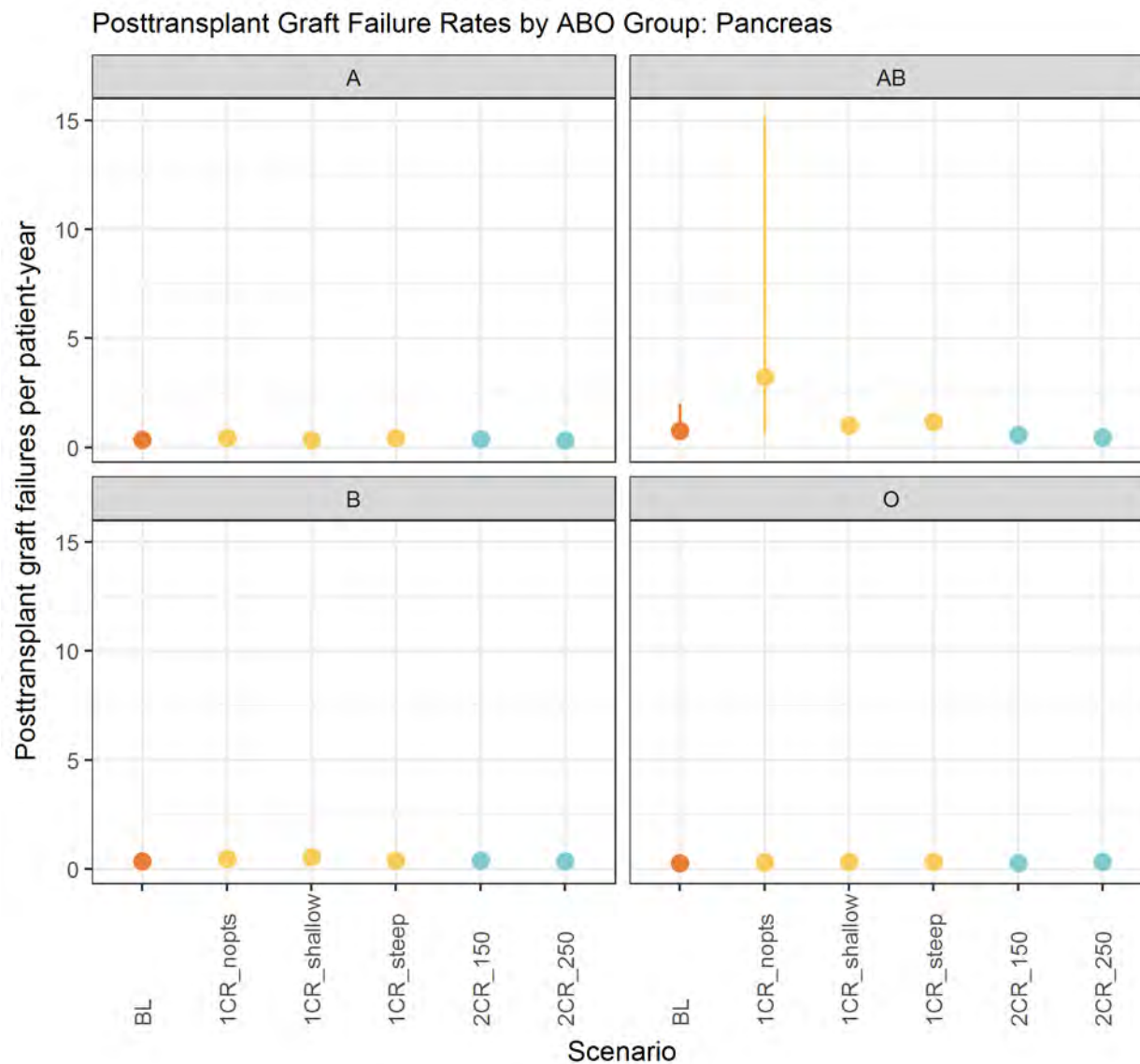


Figure 347 Posttransplant Graft Failure Rates by ABO Group: Pancreas

## Posttransplant Graft Failure Rates: Diagnosis

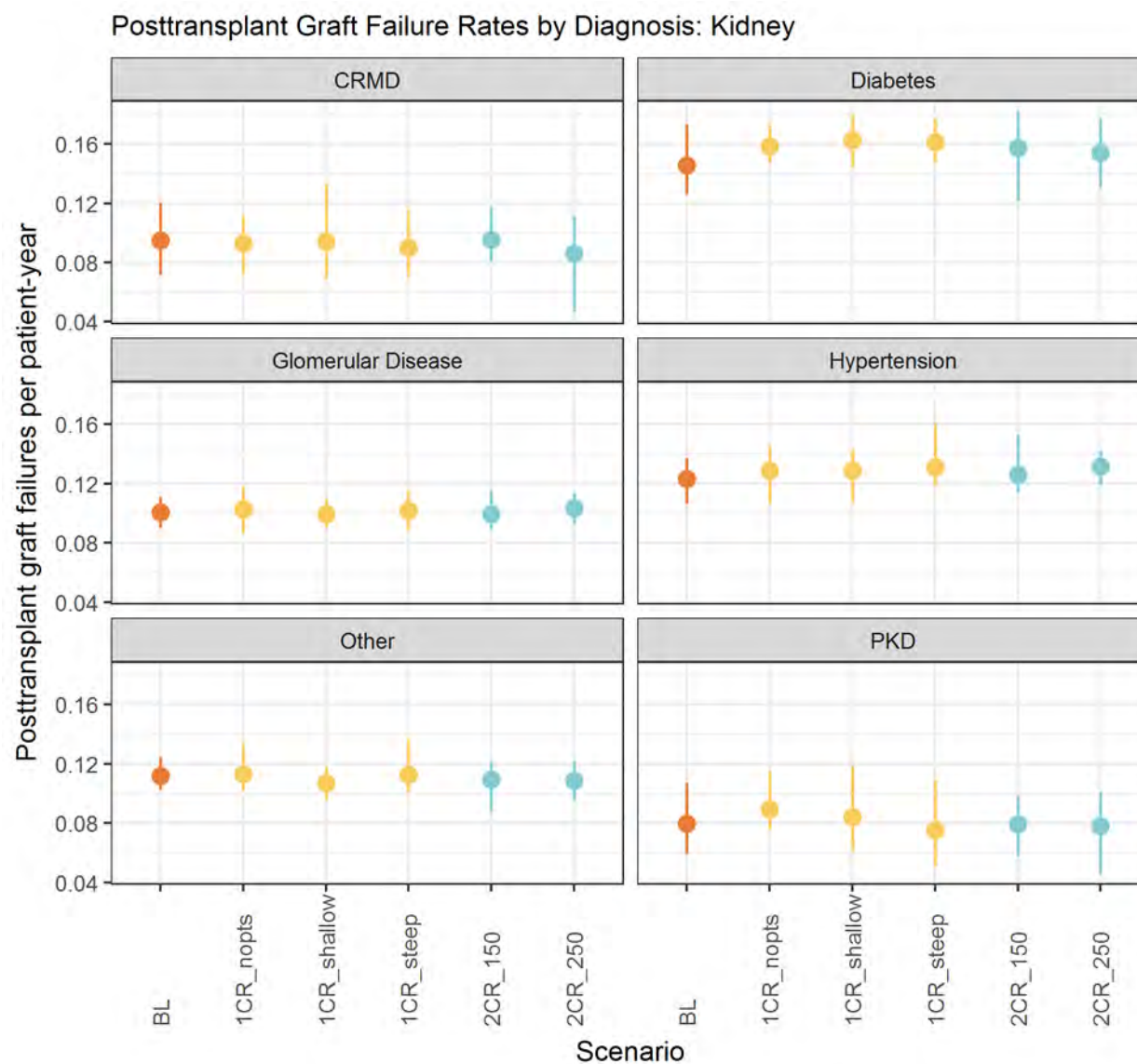


Figure 348 Posttransplant Graft Failure Rates by Diagnosis: Kidney

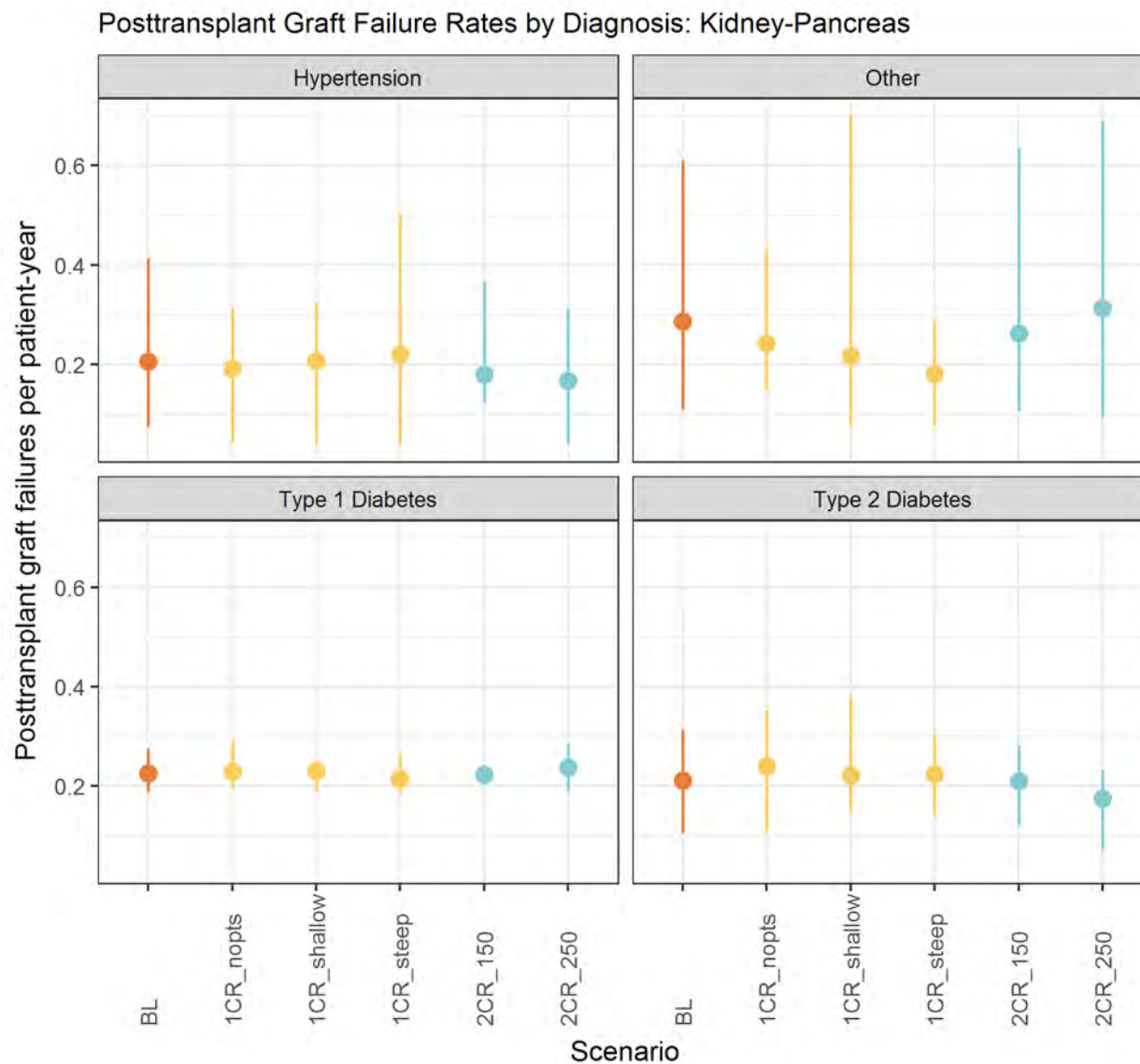


Figure 349 Posttransplant Graft Failure Rates by Diagnosis: Kidney-Pancreas

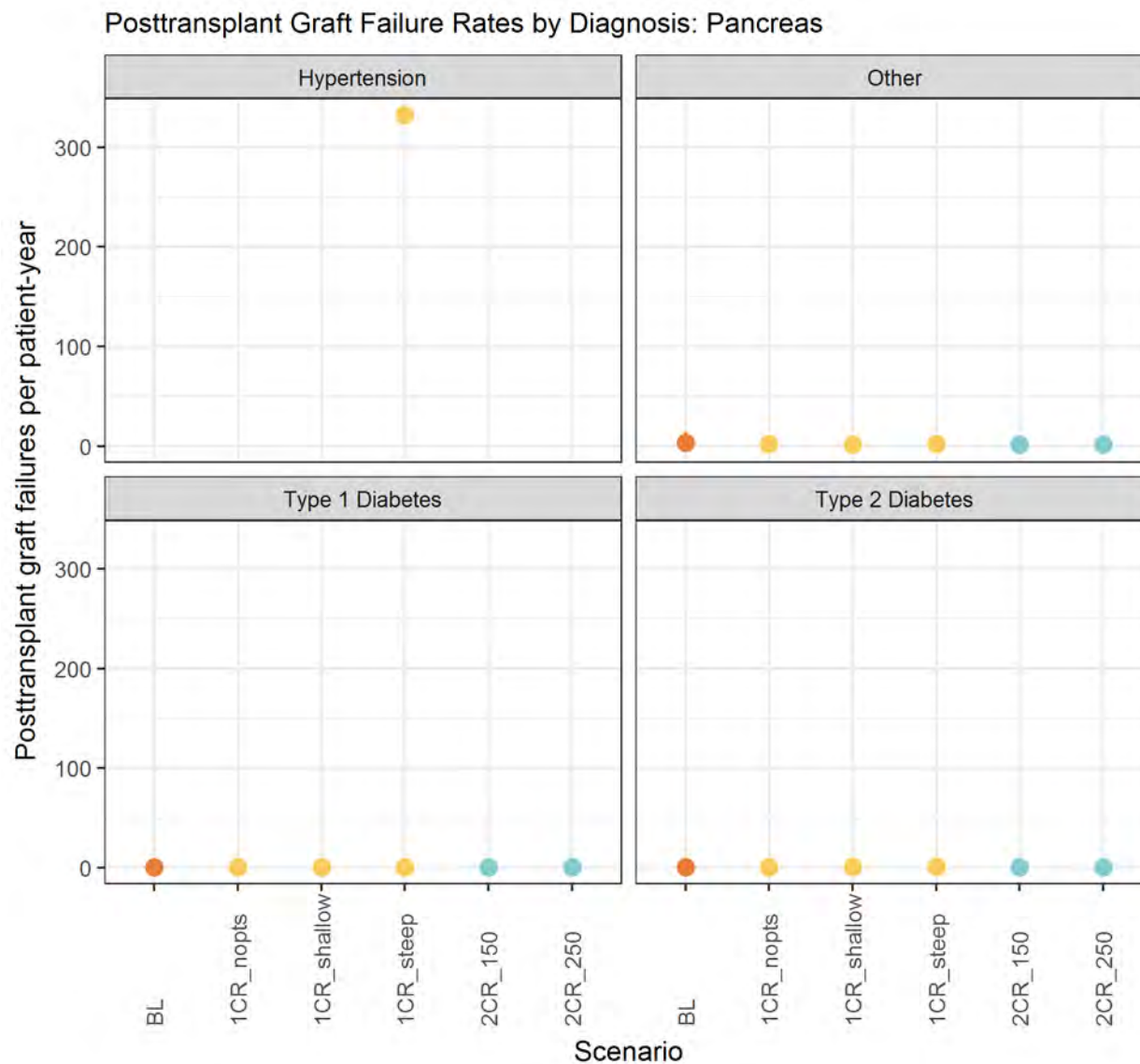


Figure 350 Posttransplant Graft Failure Rates by Diagnosis: Pancreas

## Posttransplant Graft Failure Rates: Dialysis Time

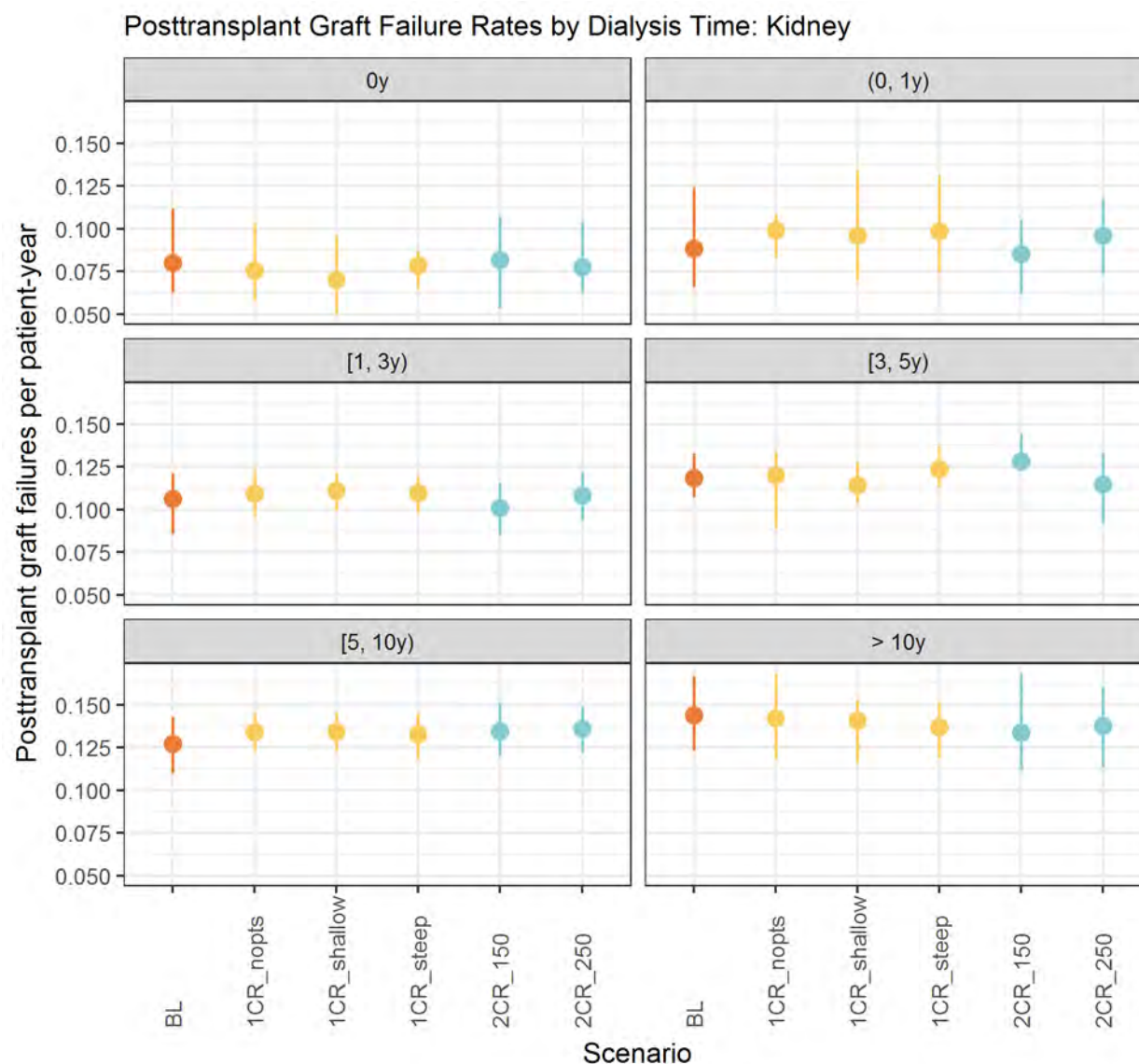


Figure 351 Posttransplant Graft Failure Rates by Dialysis Time: Kidney



Posttransplant Graft Failure Rates: cPRA: 0 - 60

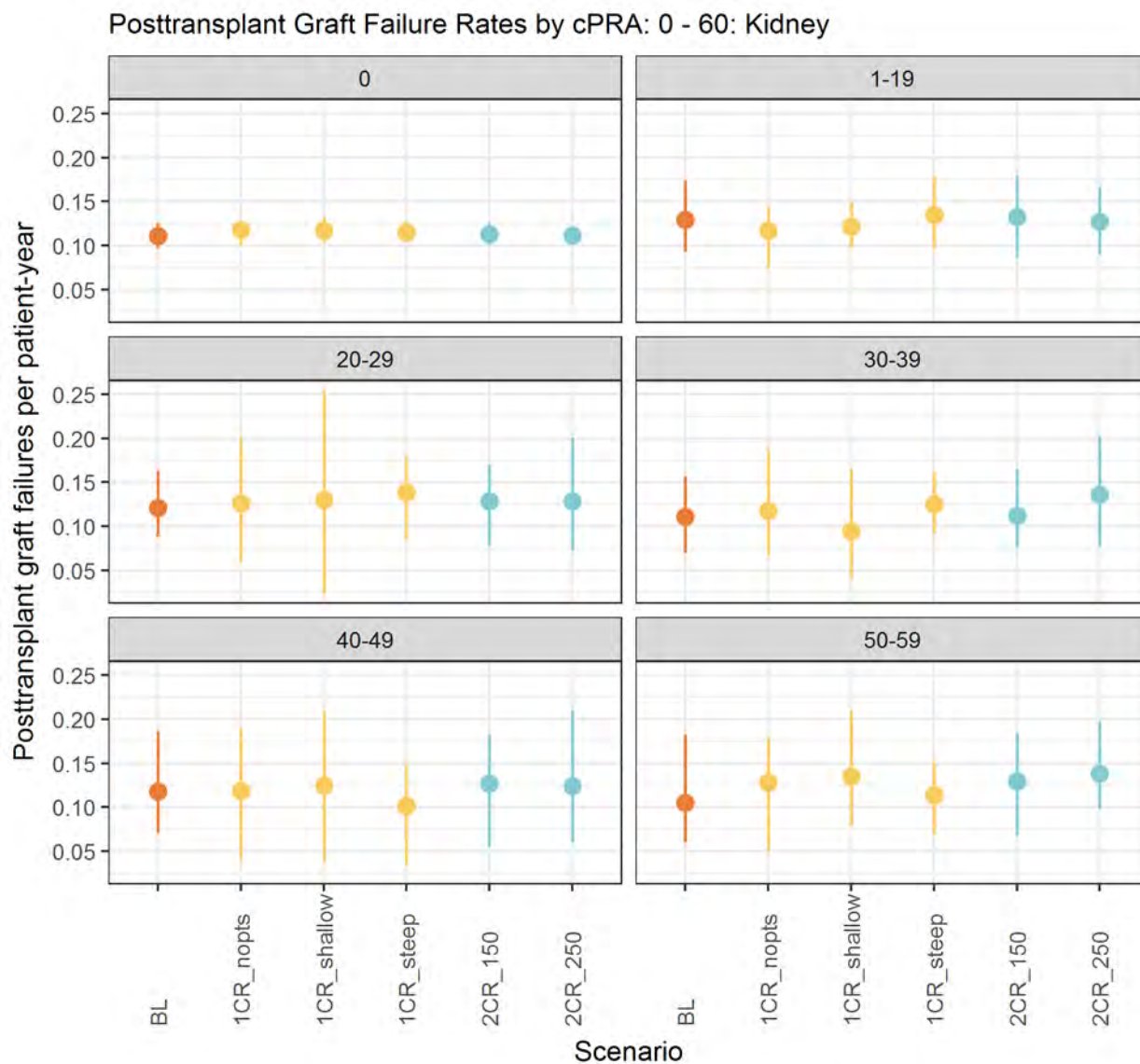


Figure 352 Posttransplant Graft Failure Rates by cPRA: 0 - 60: Kidney



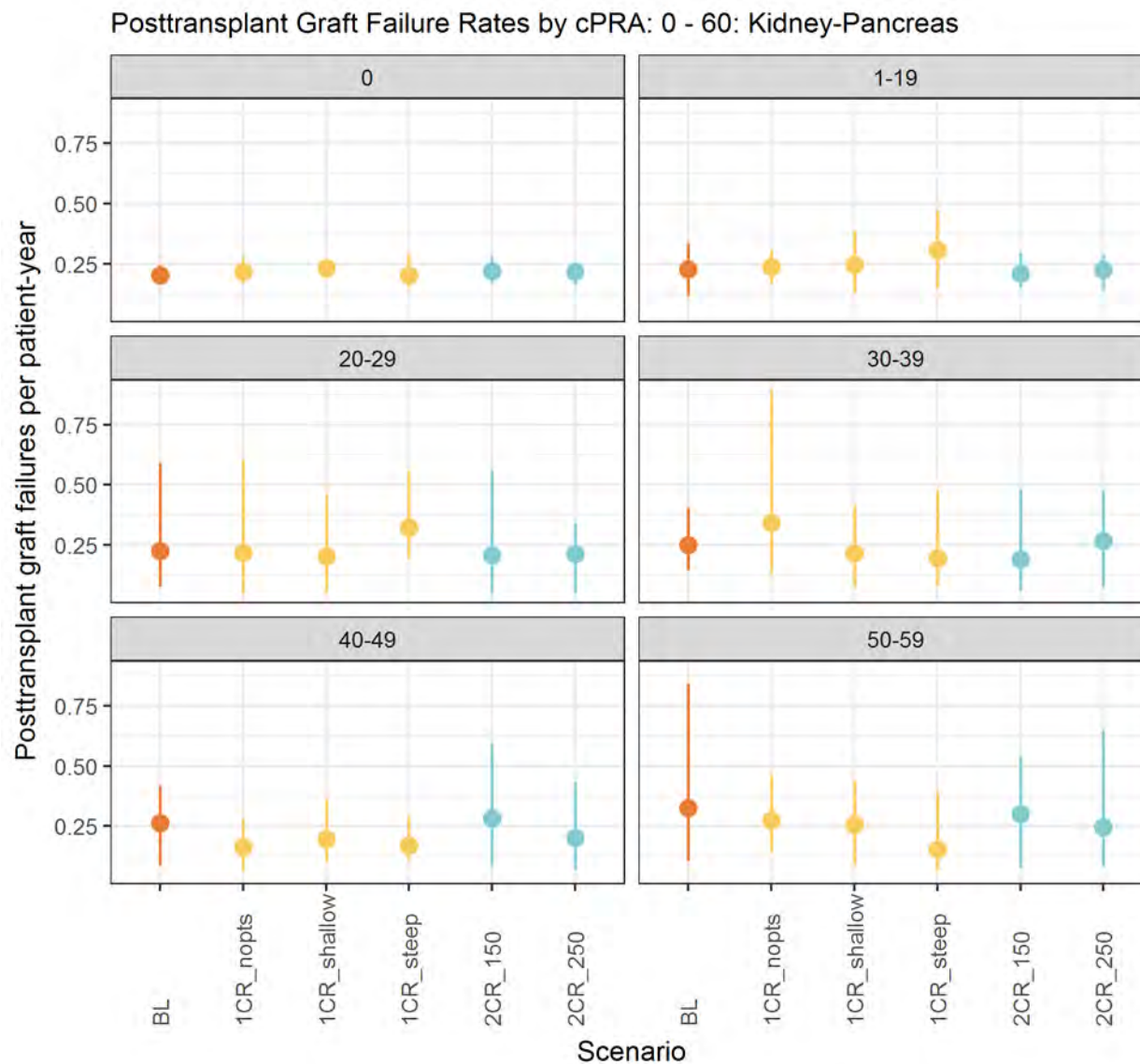


Figure 353 Posttransplant Graft Failure Rates by cPRA: 0 - 60: Kidney-Pancreas

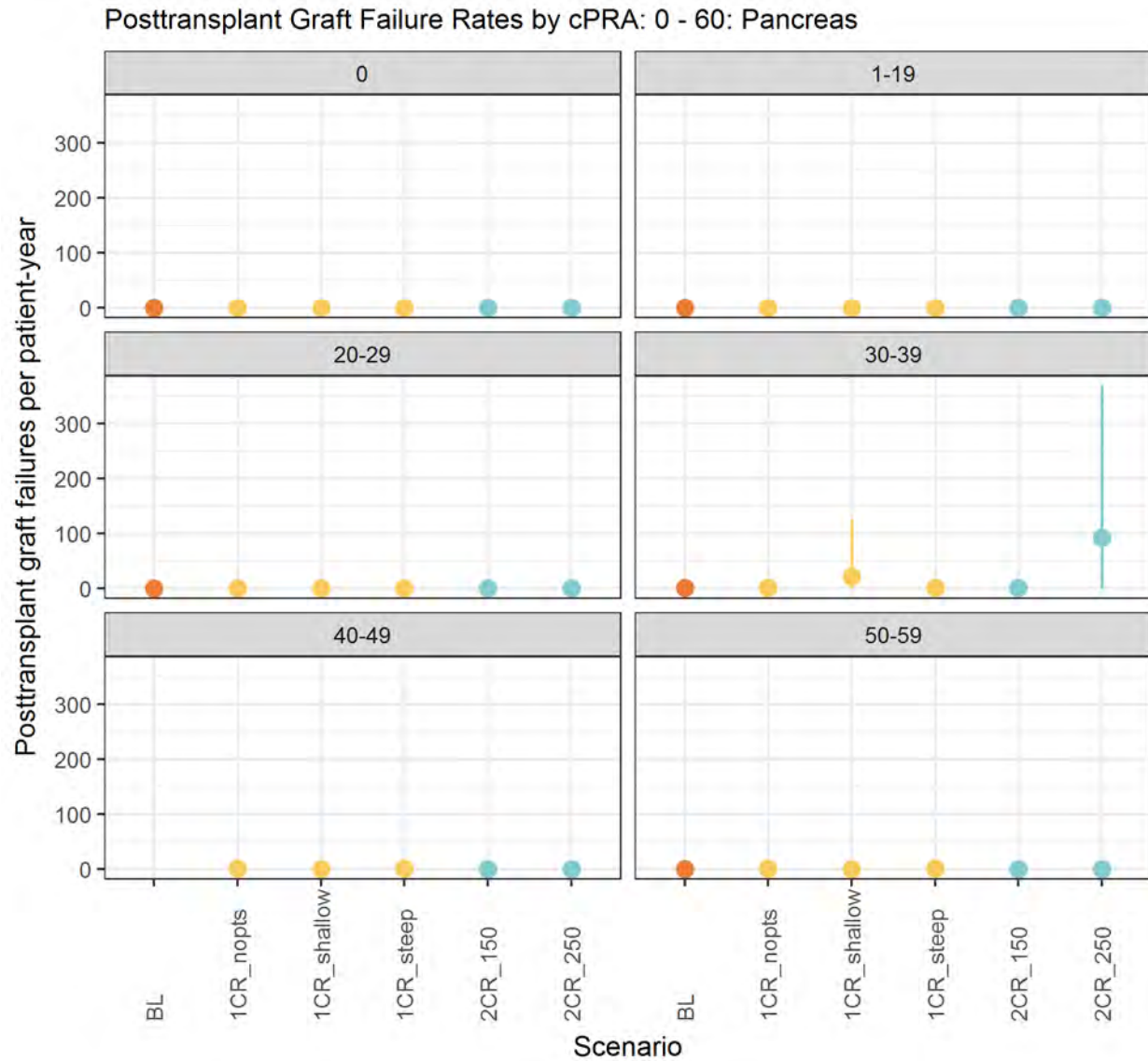


Figure 354 Posttransplant Graft Failure Rates by cPRA: 0 - 60: Pancreas

Posttransplant Graft Failure Rates: cPRA: 61 - 94

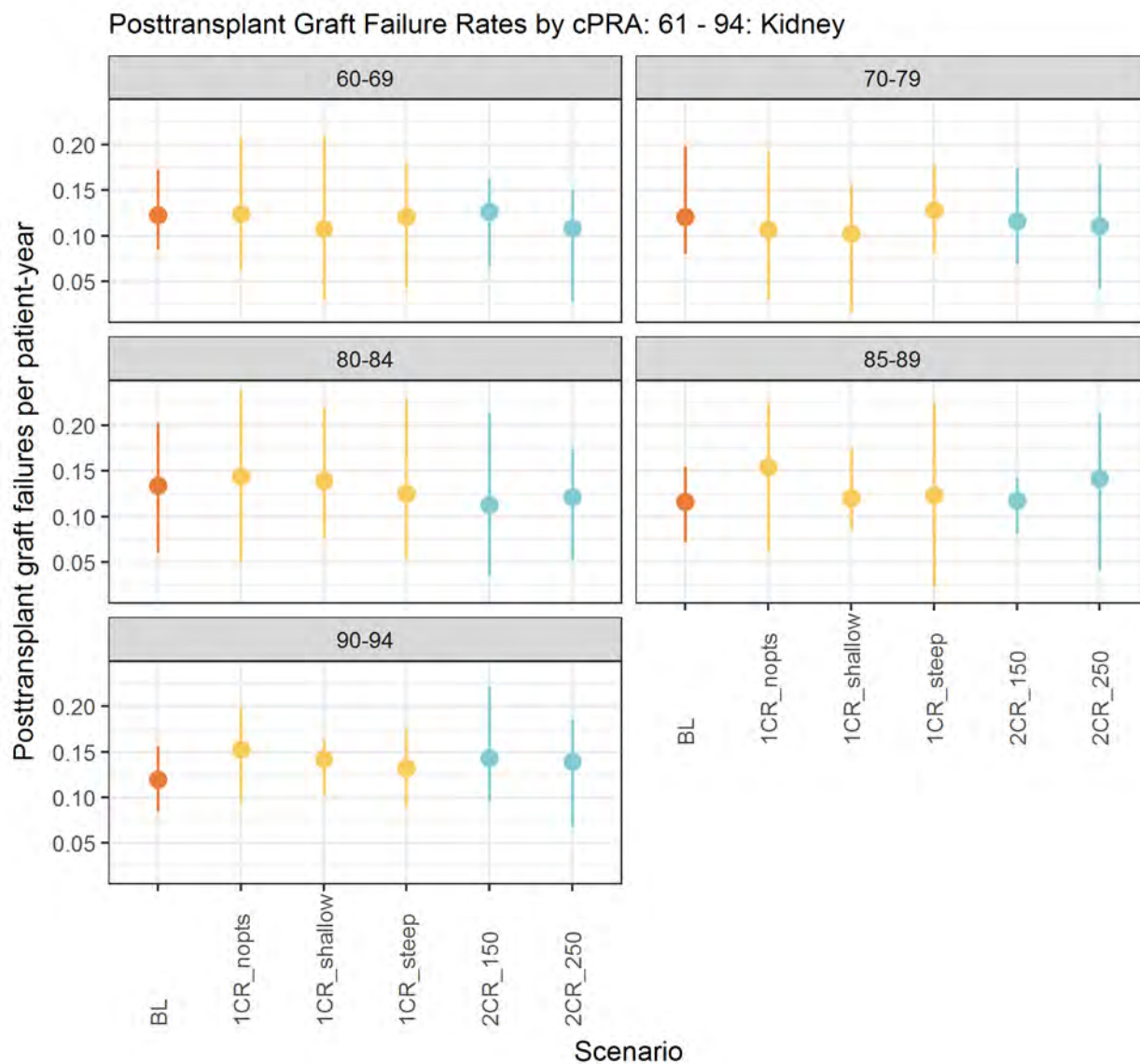


Figure 355 Posttransplant Graft Failure Rates by cPRA: 61 - 94: Kidney

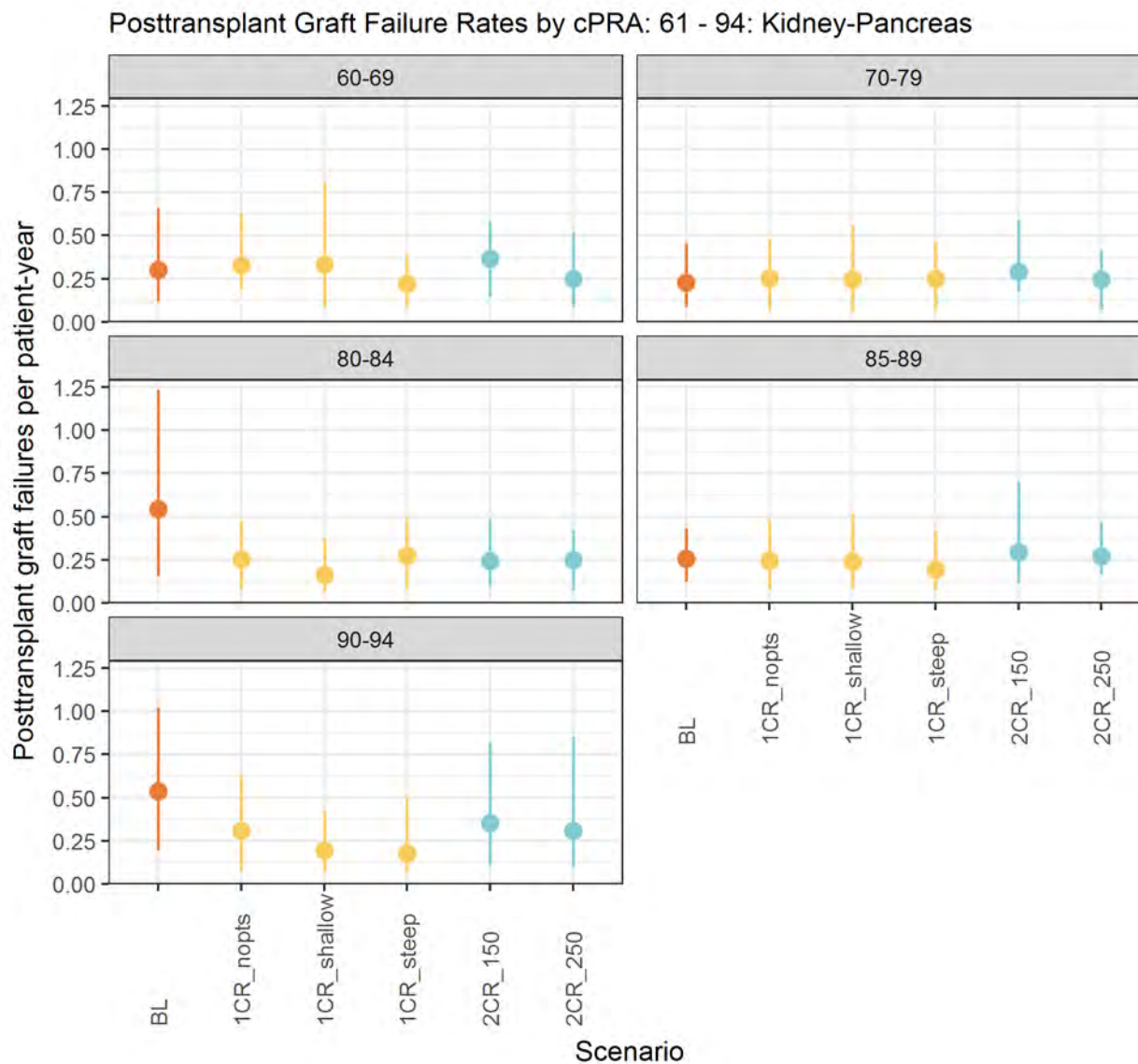


Figure 356 Posttransplant Graft Failure Rates by cPRA: 61 - 94: Kidney-Pancreas

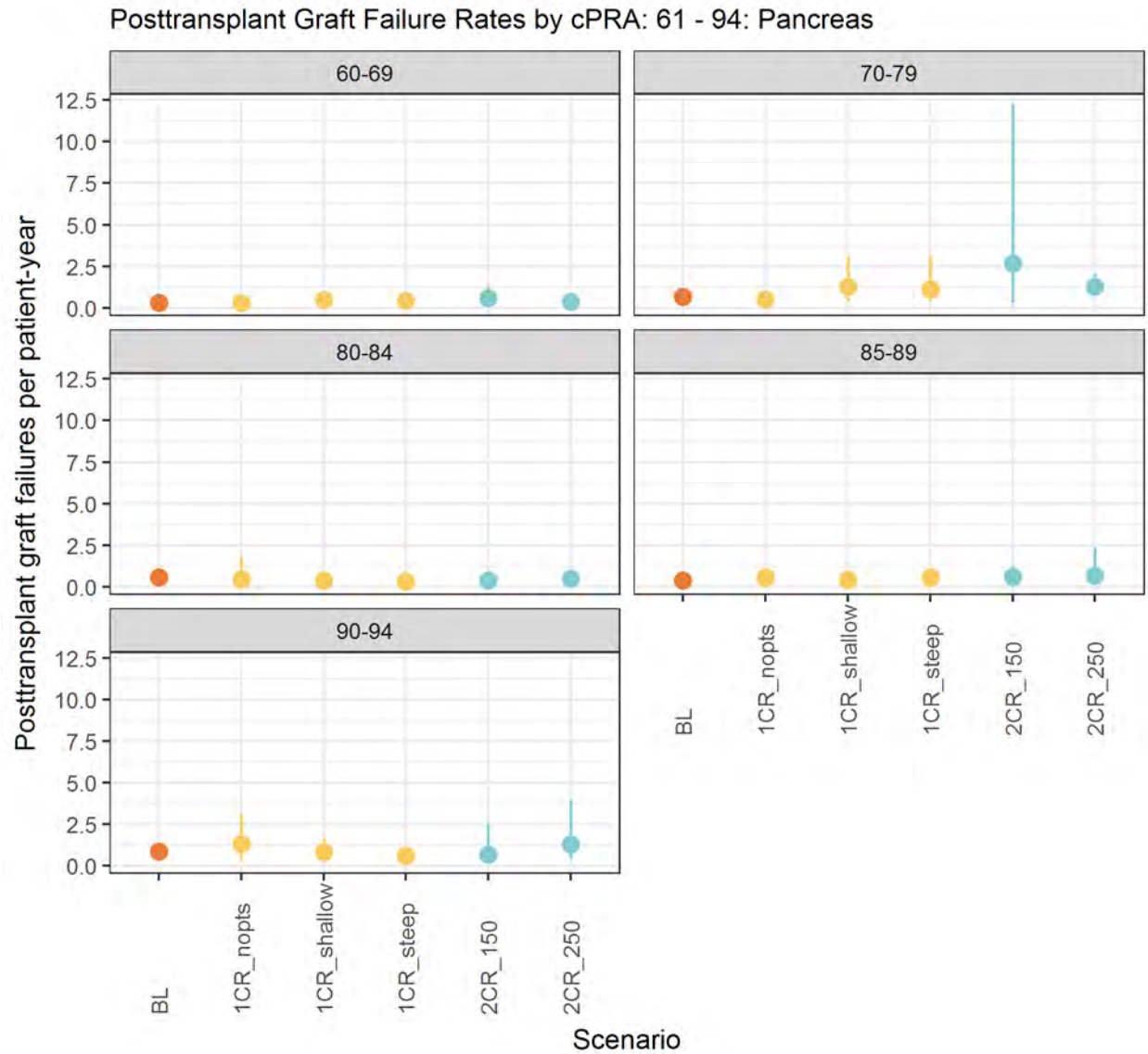


Figure 357 Posttransplant Graft Failure Rates by cPRA: 61 - 94: Pancreas



Posttransplant Graft Failure Rates: cPRA: 95 - 100

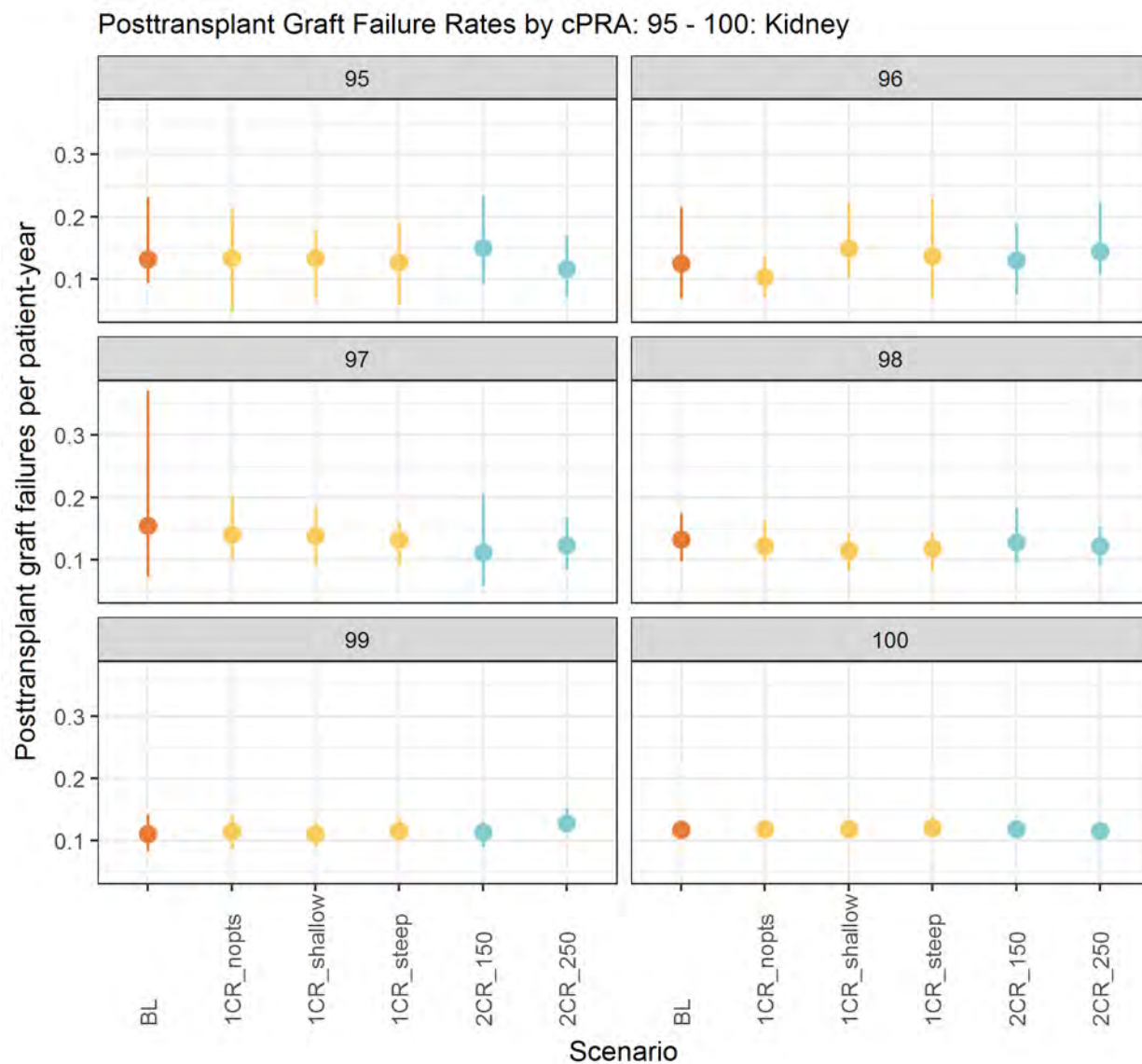


Figure 358 Posttransplant Graft Failure Rates by cPRA: 95 - 100: Kidney



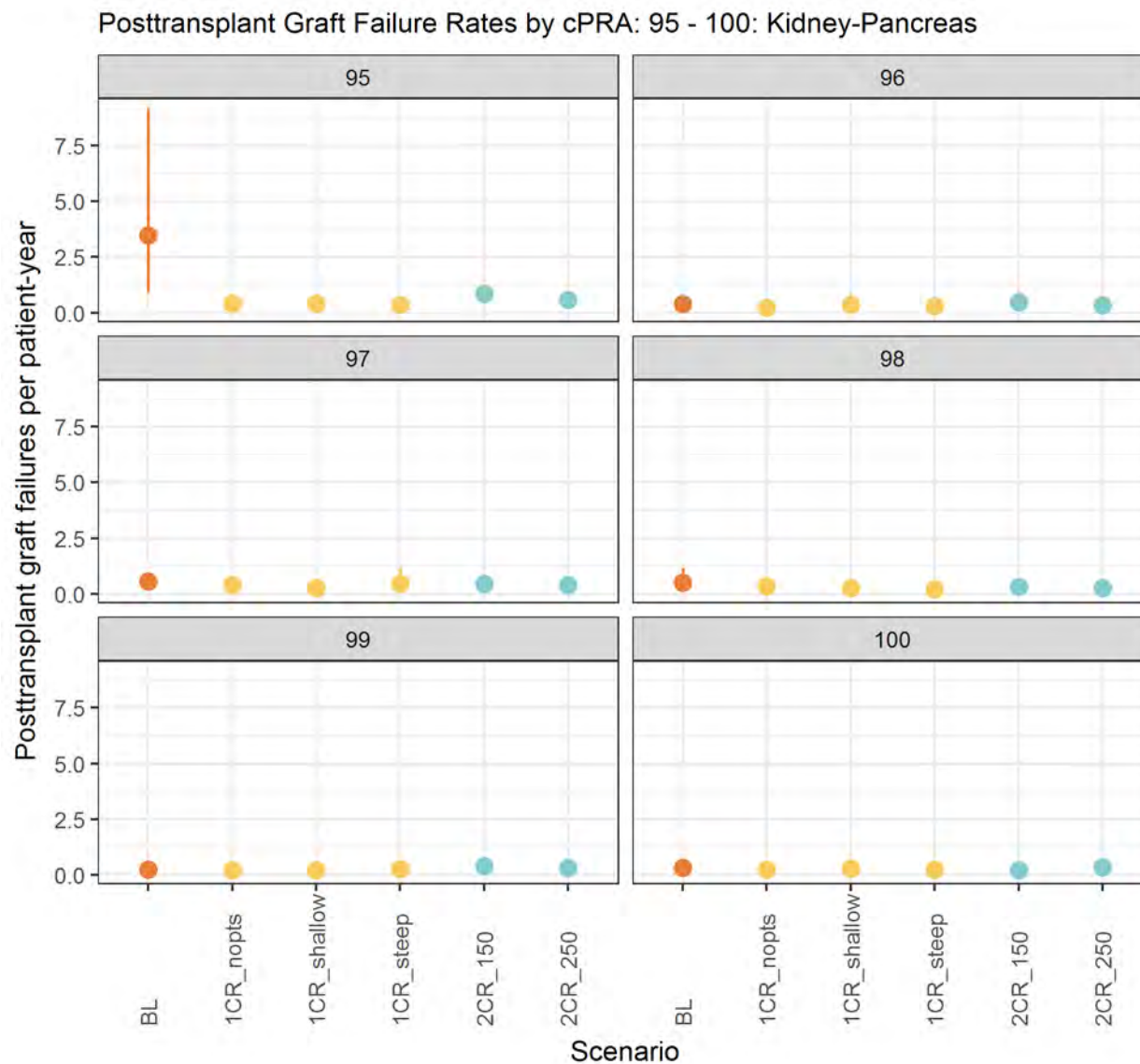


Figure 359 Posttransplant Graft Failure Rates by cPRA: 95 - 100: Kidney-Pancreas

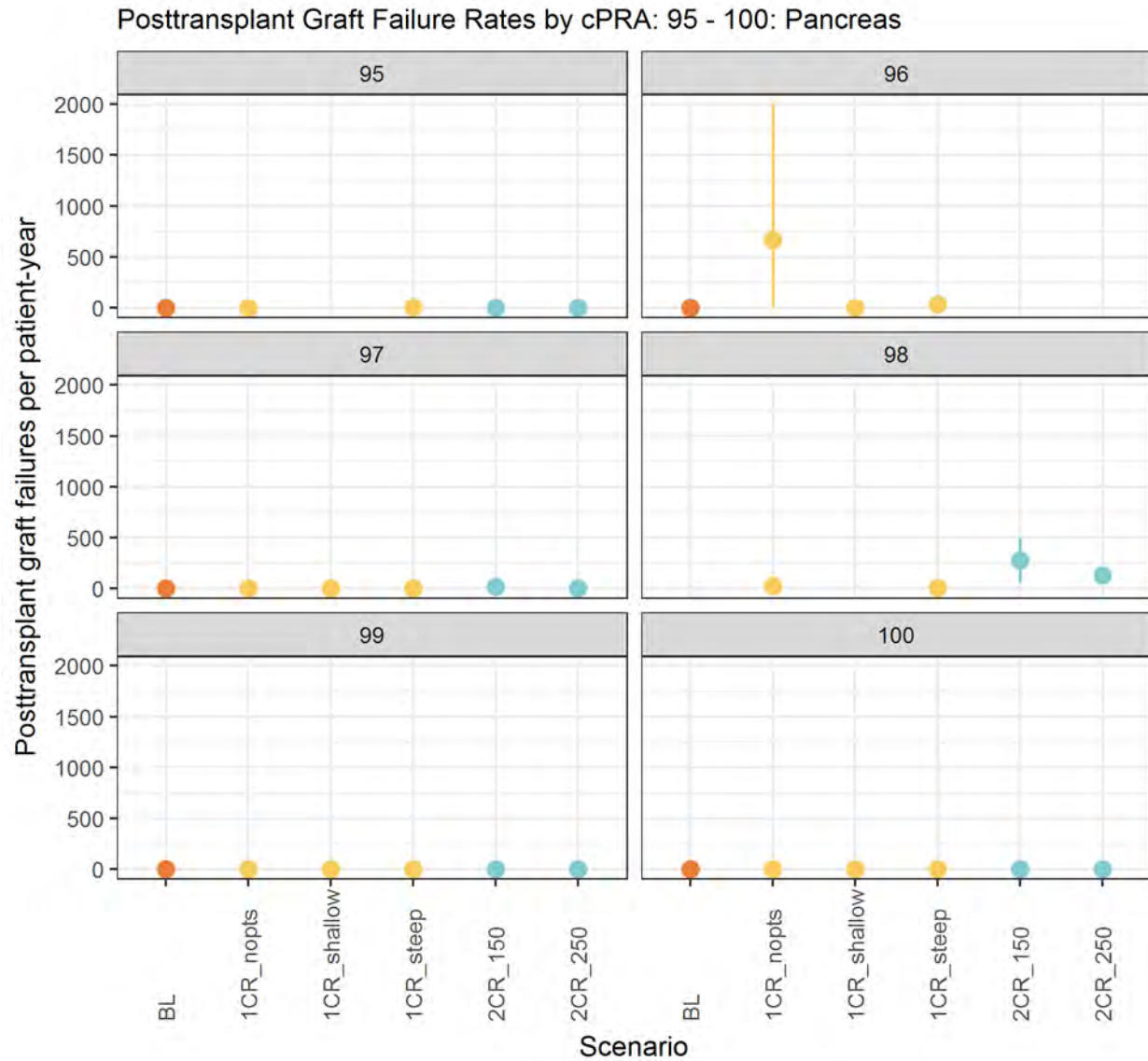


Figure 360 Posttransplant Graft Failure Rates by cPRA: 95 - 100: Pancreas

Posttransplant Graft Failure Rates: cPRA: 95 - 98

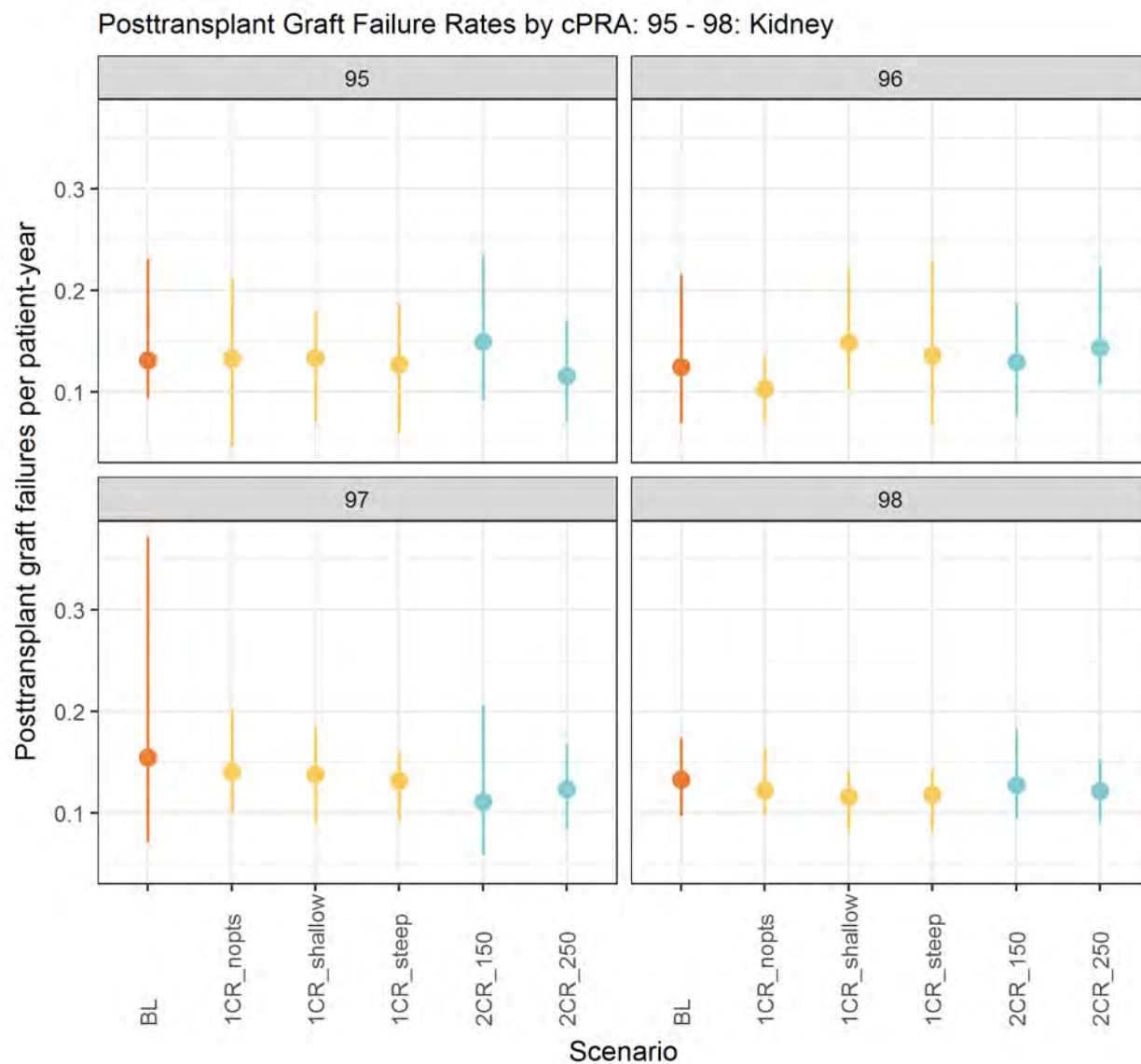


Figure 361 Posttransplant Graft Failure Rates by cPRA: 95 - 98: Kidney

Posttransplant Graft Failure Rates: cPRA: 99 - 100

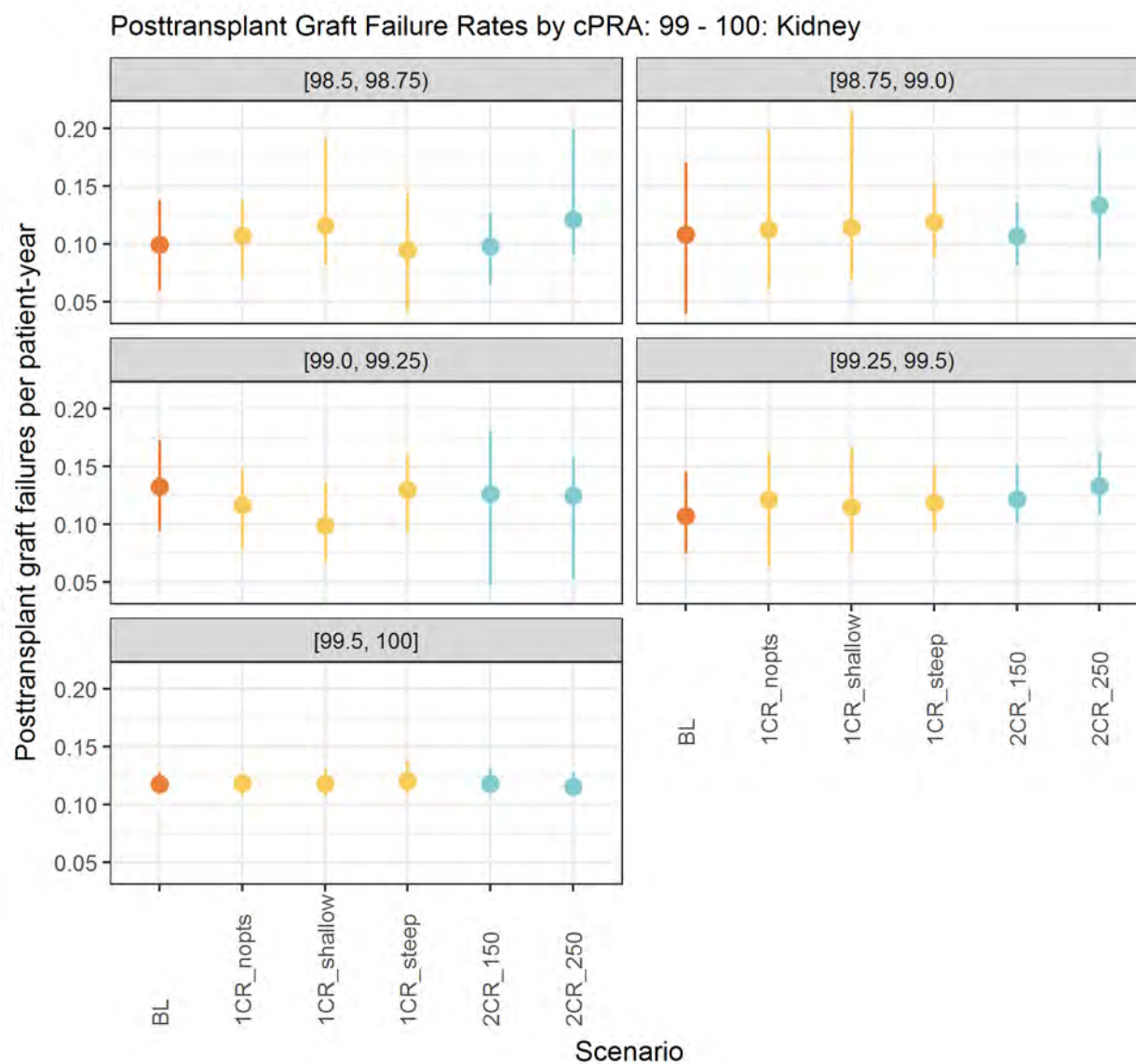


Figure 362 Posttransplant Graft Failure Rates by cPRA: 99 - 100: Kidney

Posttransplant Graft Failure Rates: cPRA: 95 - 99

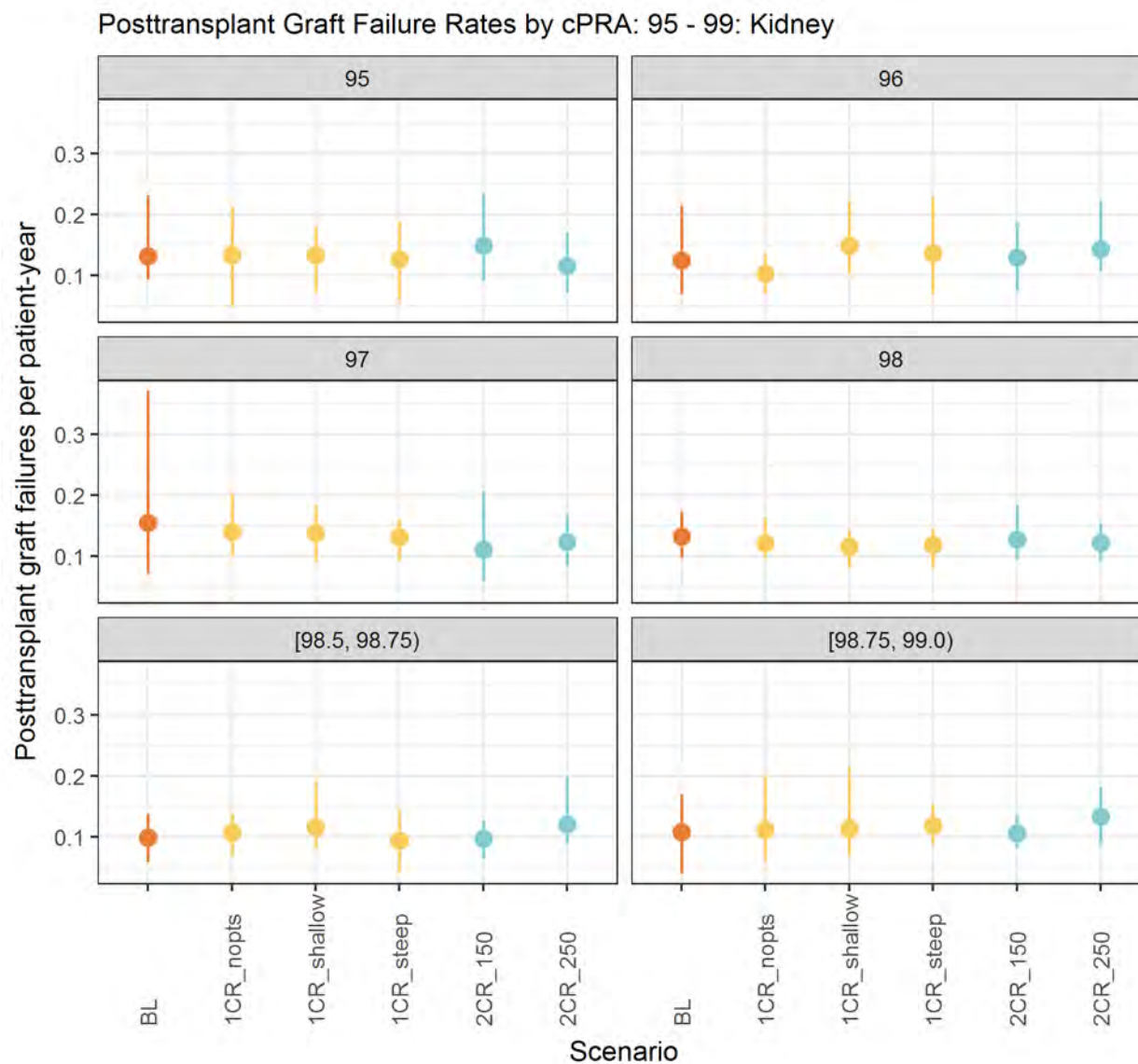


Figure 363 Posttransplant Graft Failure Rates by cPRA: 95 - 99: Kidney



Posttransplant Graft Failure Rates: cPRA: 99 - 99.8

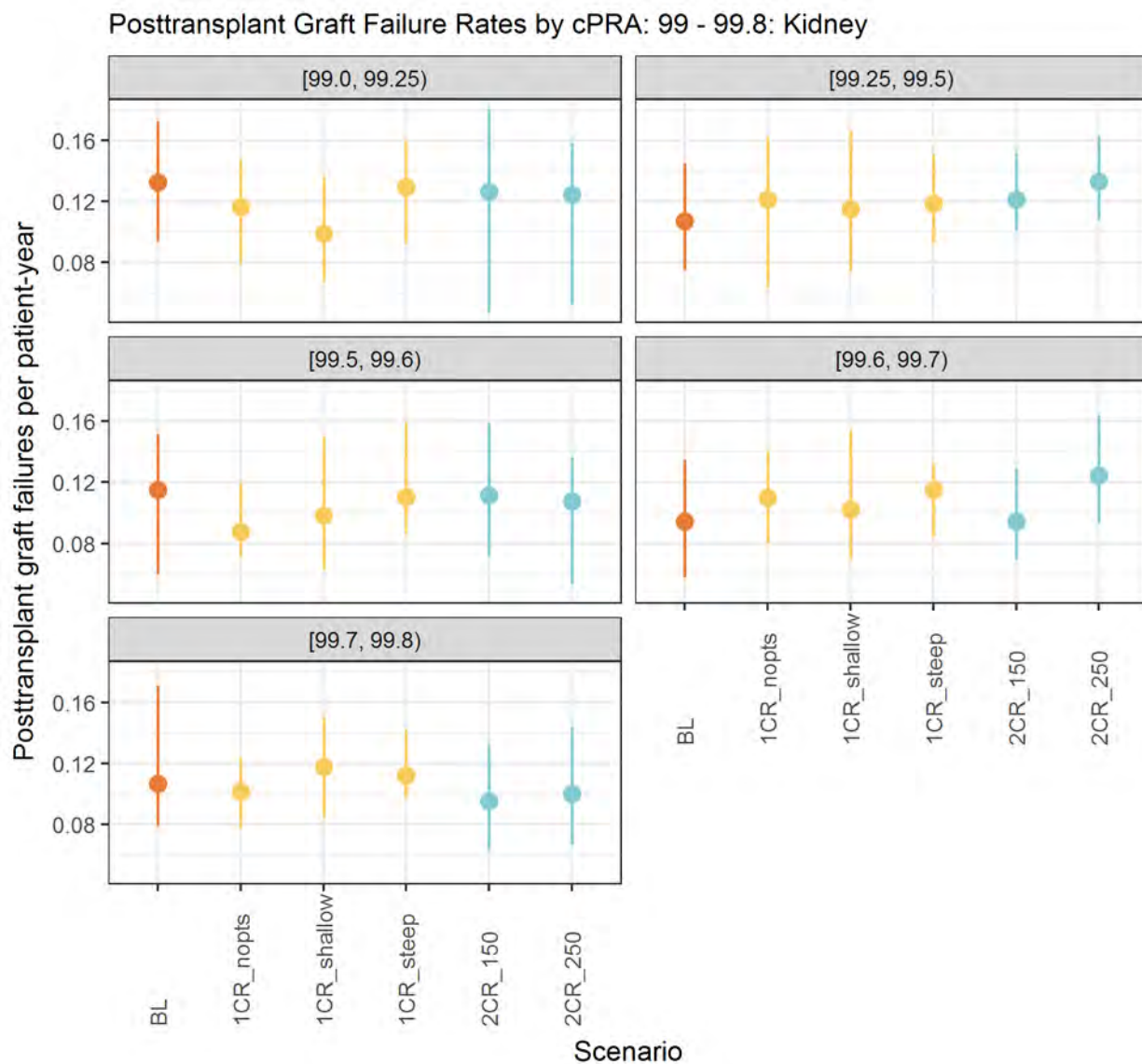


Figure 364 Posttransplant Graft Failure Rates by cPRA: 99 - 99.8: Kidney



Posttransplant Graft Failure Rates: cPRA: 99.8 - 100

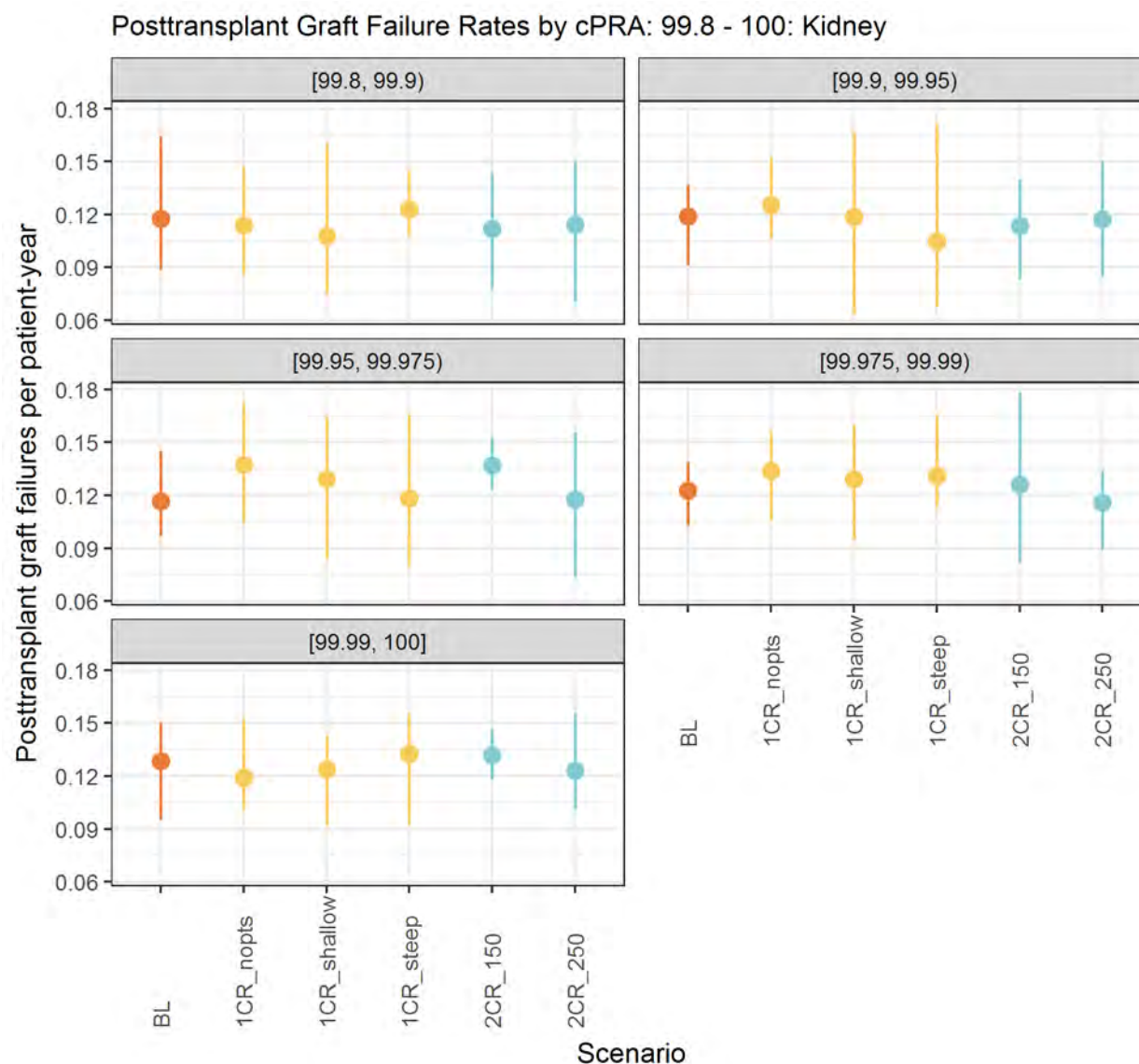


Figure 365 Posttransplant Graft Failure Rates by cPRA: 99.8 - 100: Kidney

## Posttransplant Graft Failure Rates: Payment Status

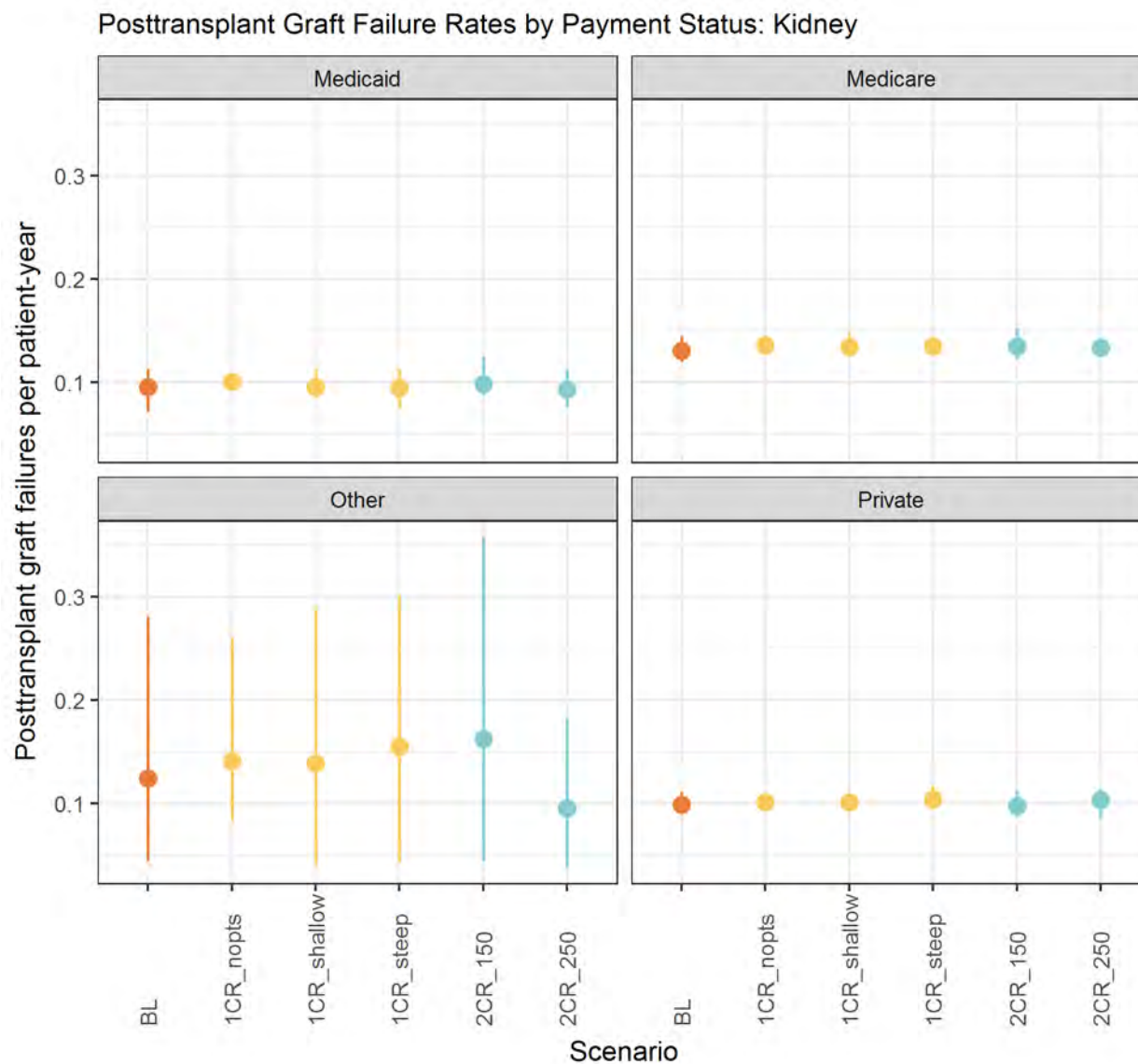


Figure 366 Posttransplant Graft Failure Rates by Payment Status: Kidney

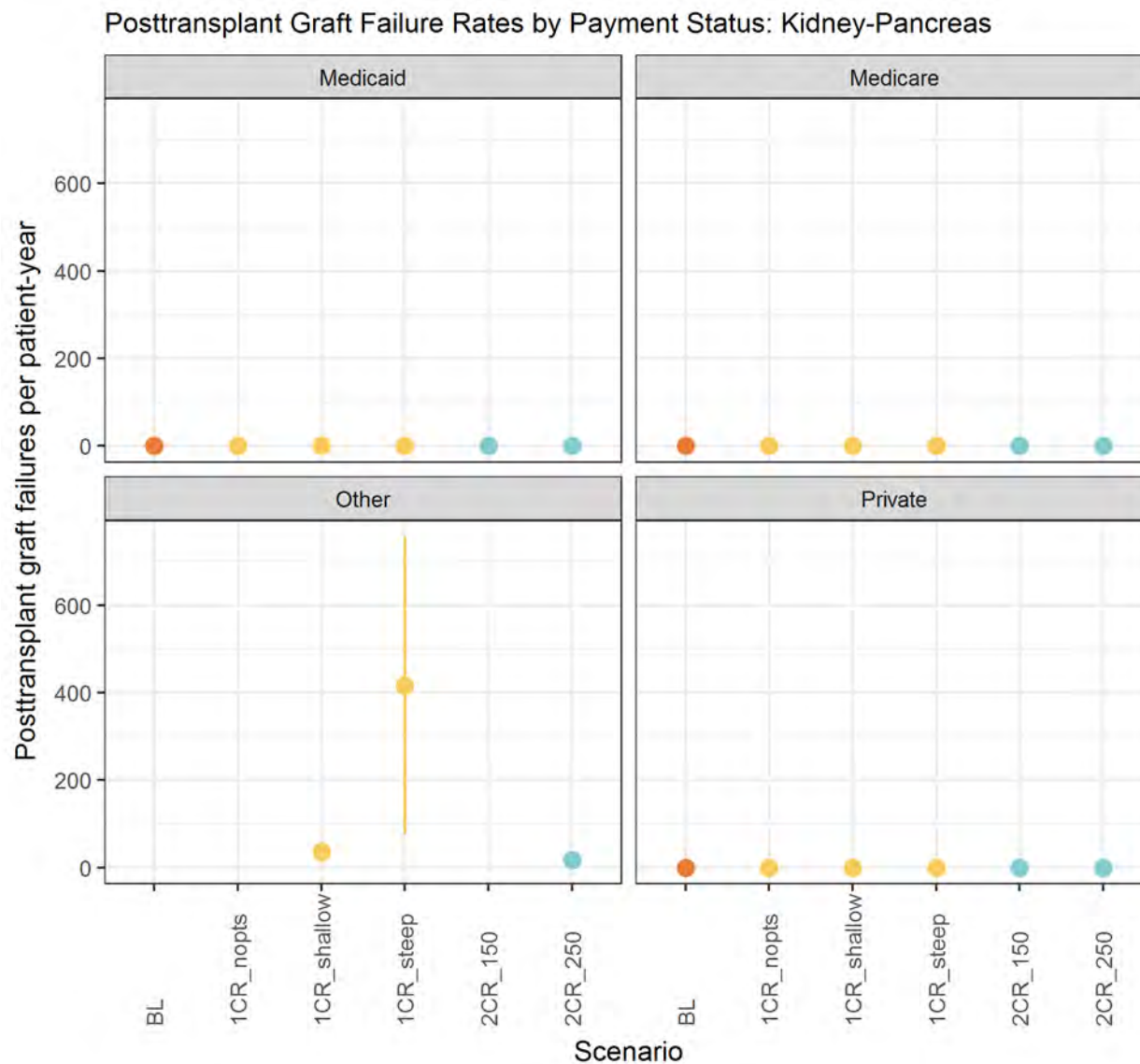


Figure 367 Posttransplant Graft Failure Rates by Payment Status: Kidney-Pancreas

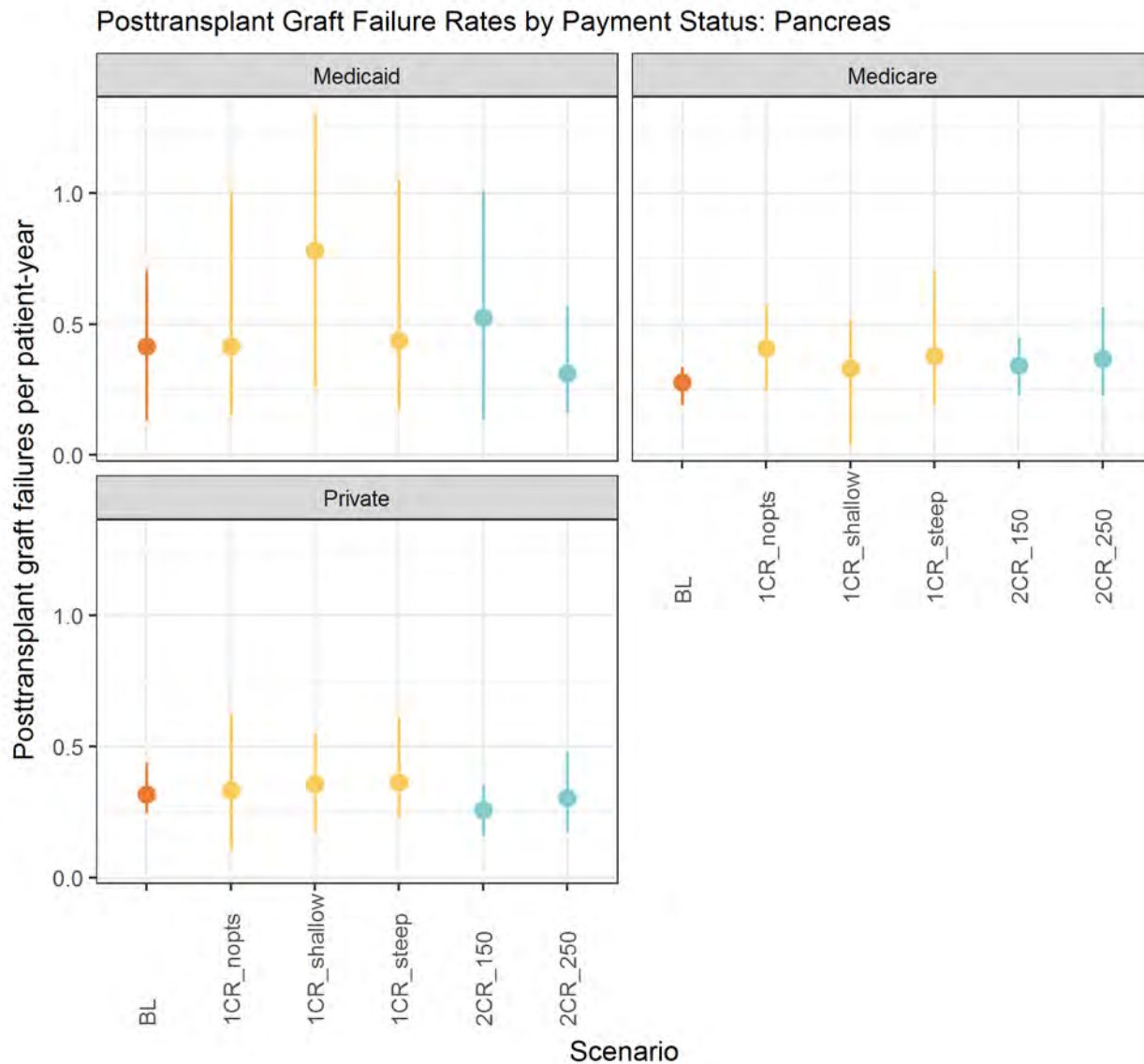


Figure 368 Posttransplant Graft Failure Rates by Payment Status: Pancreas

## Posttransplant Graft Failure Rates: Urbanicity

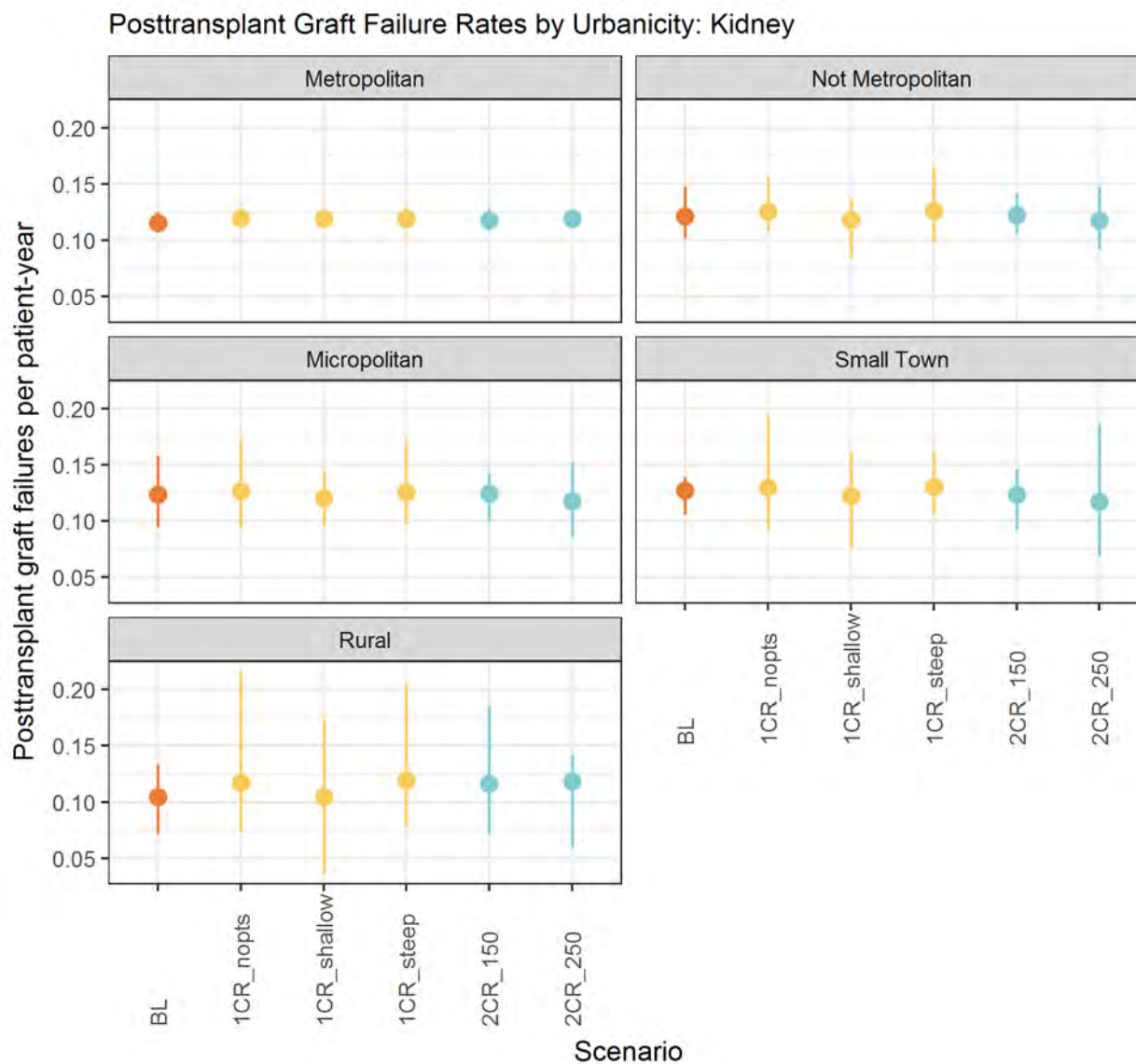


Figure 369 Posttransplant Graft Failure Rates by Urbanicity: Kidney



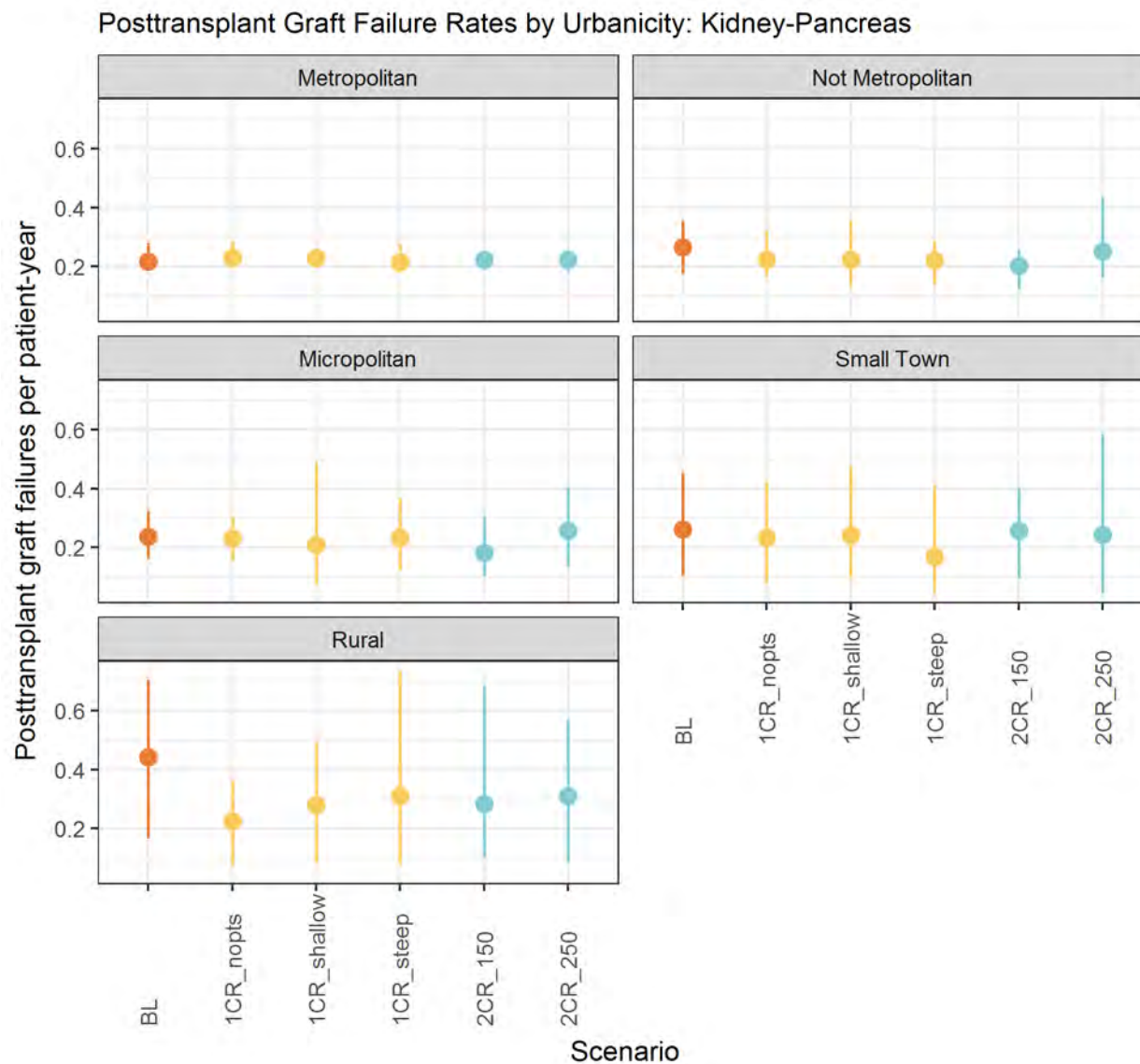


Figure 370 Posttransplant Graft Failure Rates by Urbanicity: Kidney-Pancreas



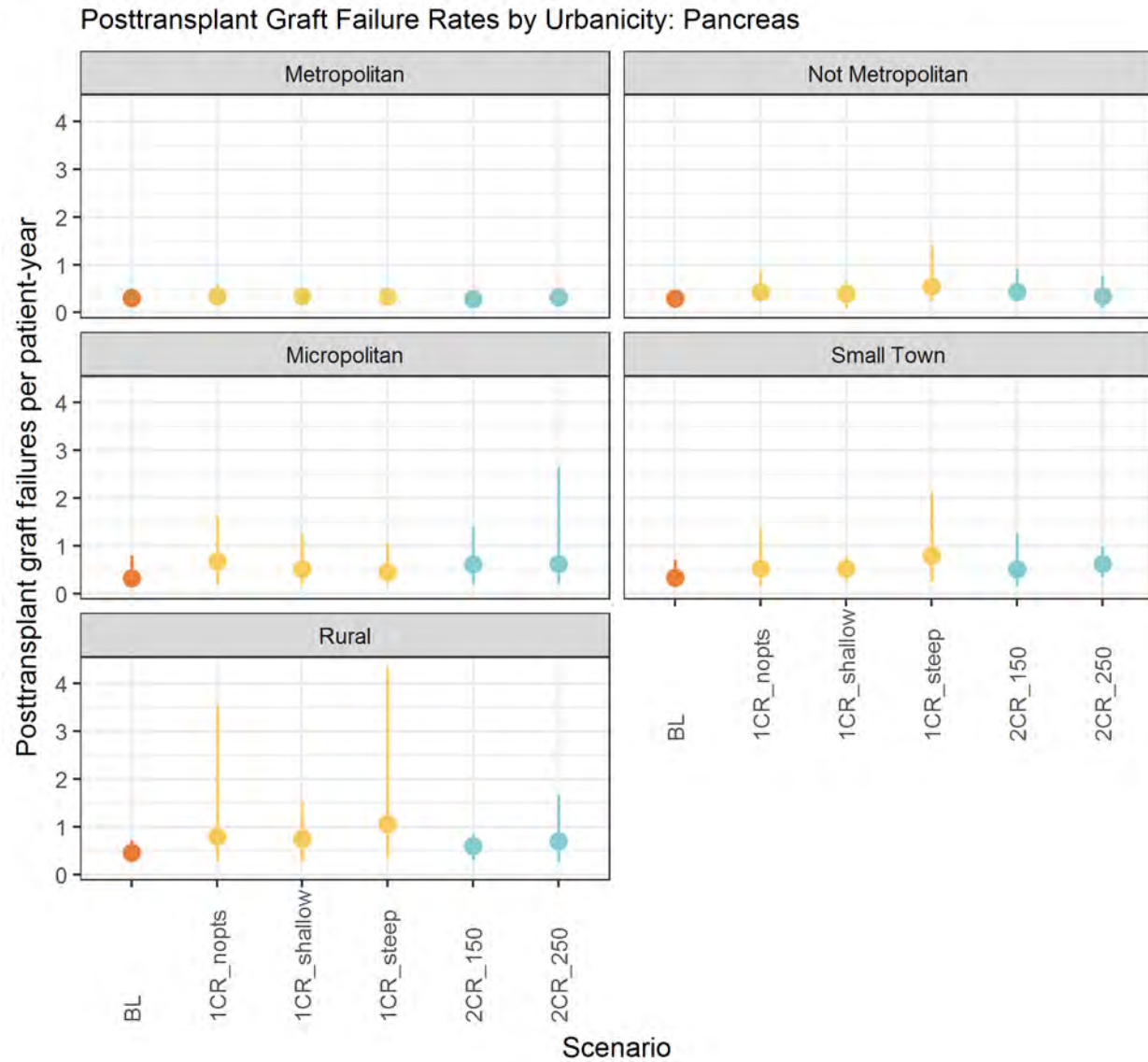


Figure 371 Posttransplant Graft Failure Rates by Urbanicity: Pancreas

## Posttransplant Graft Failure Rates: Local/Regional/National

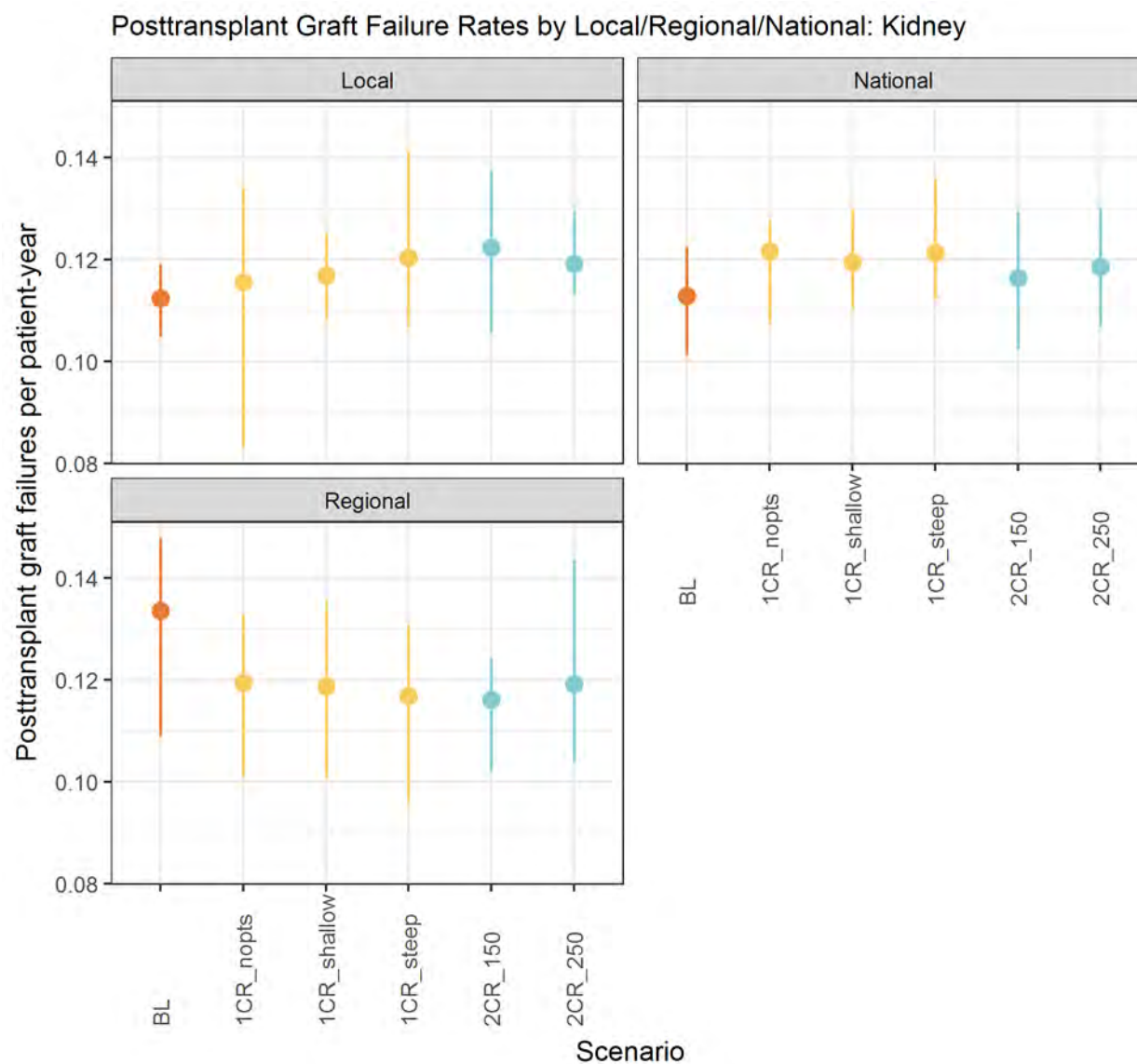


Figure 372 Posttransplant Graft Failure Rates by Local/Regional/National: Kidney

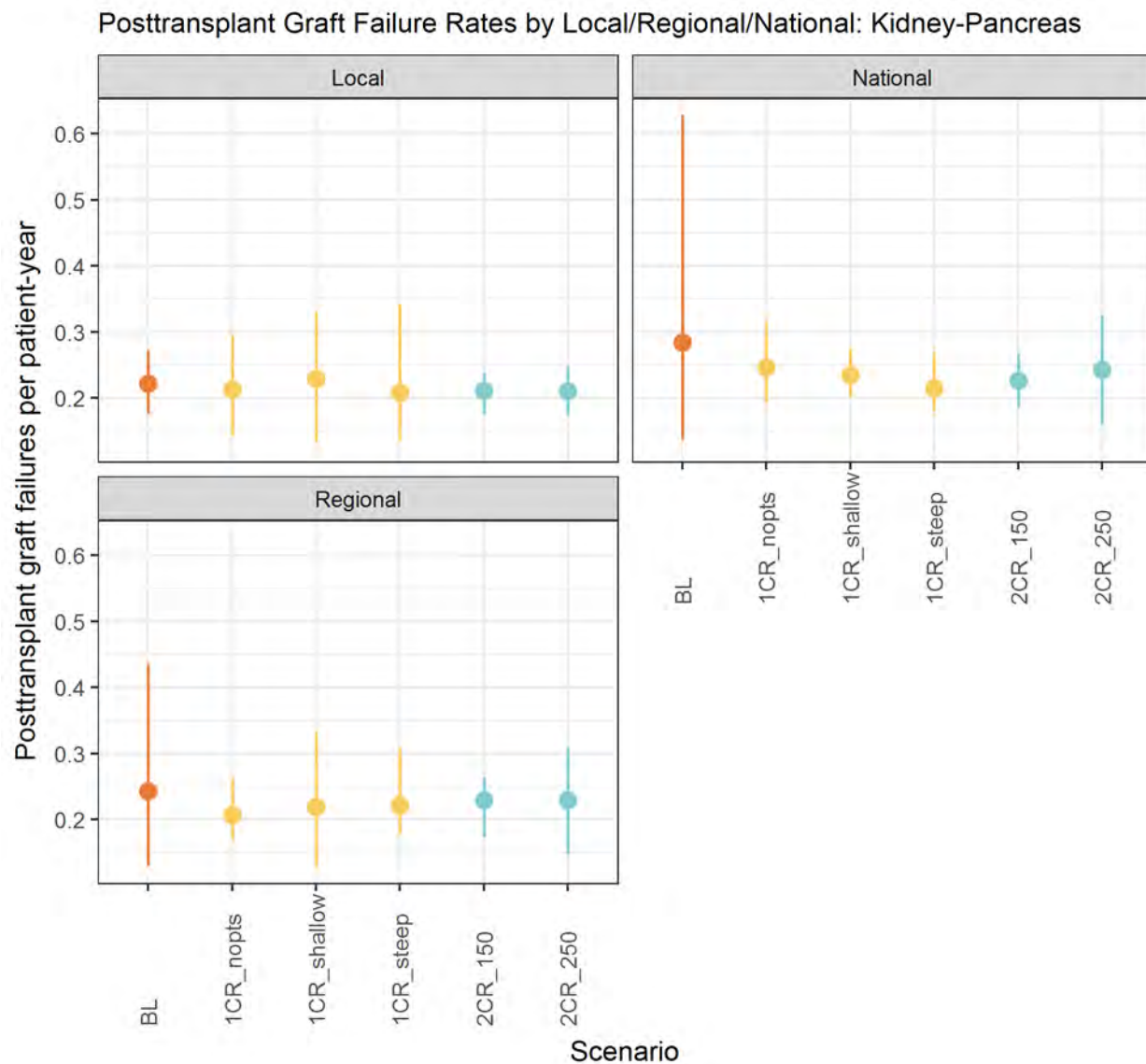


Figure 373 Posttransplant Graft Failure Rates by Local/Regional/National: Kidney-Pancreas

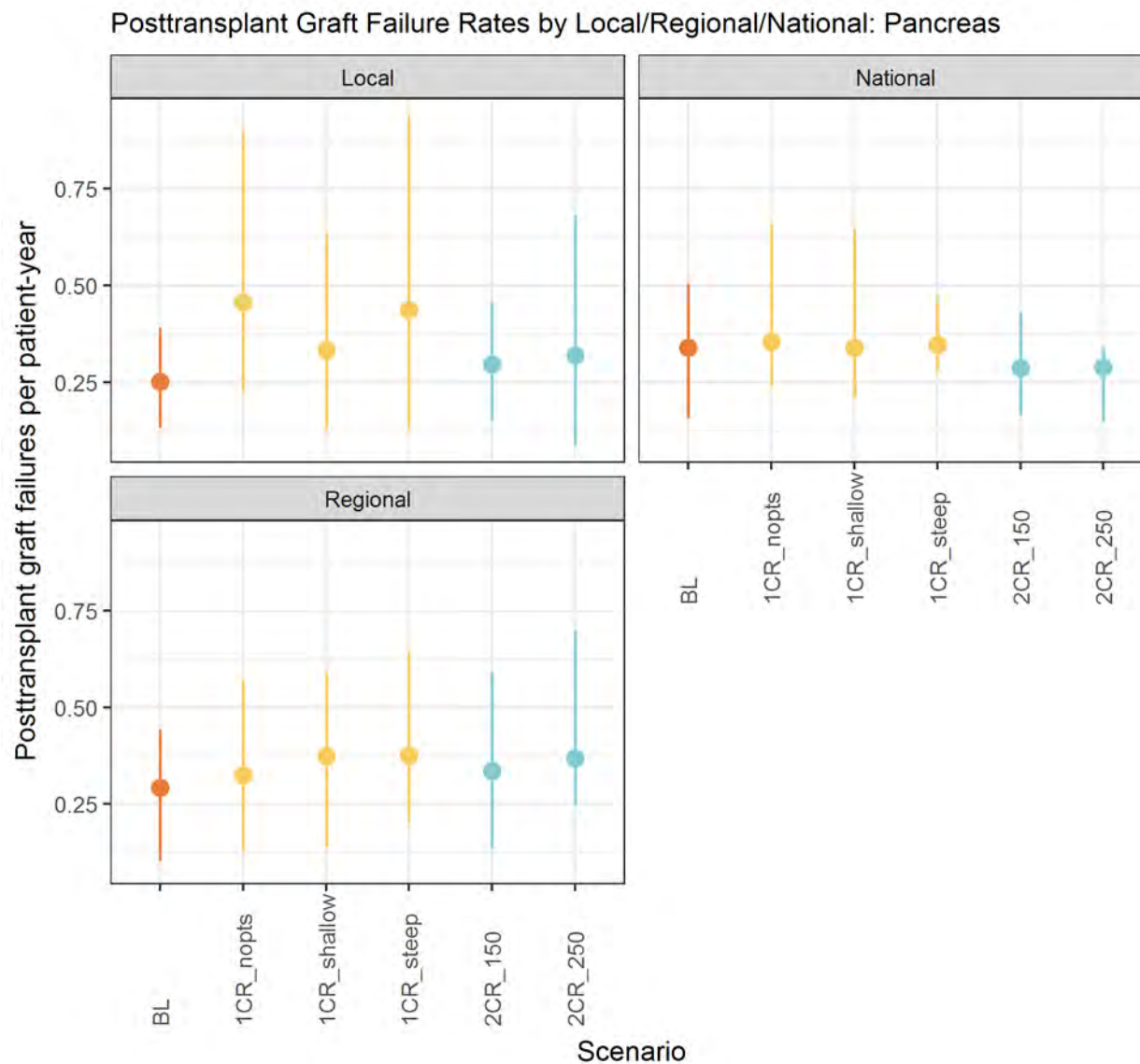


Figure 374 Posttransplant Graft Failure Rates by Local/Regional/National: Pancreas

## Posttransplant Graft Failure Rates: EPTS

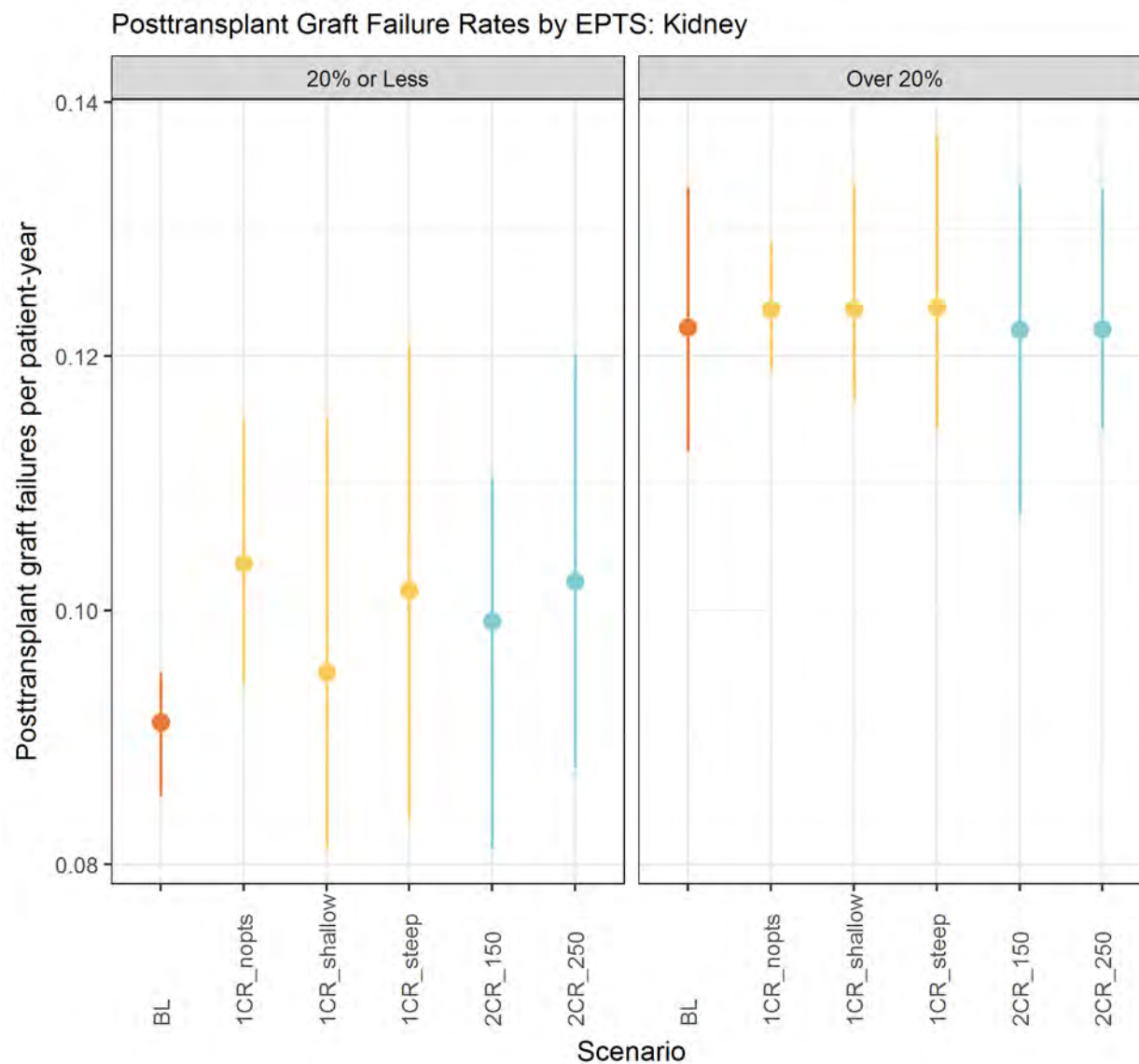


Figure 375 Posttransplant Graft Failure Rates by EPTS: Kidney

## Posttransplant Graft Failure Rates: Median Household Income by Zip Code

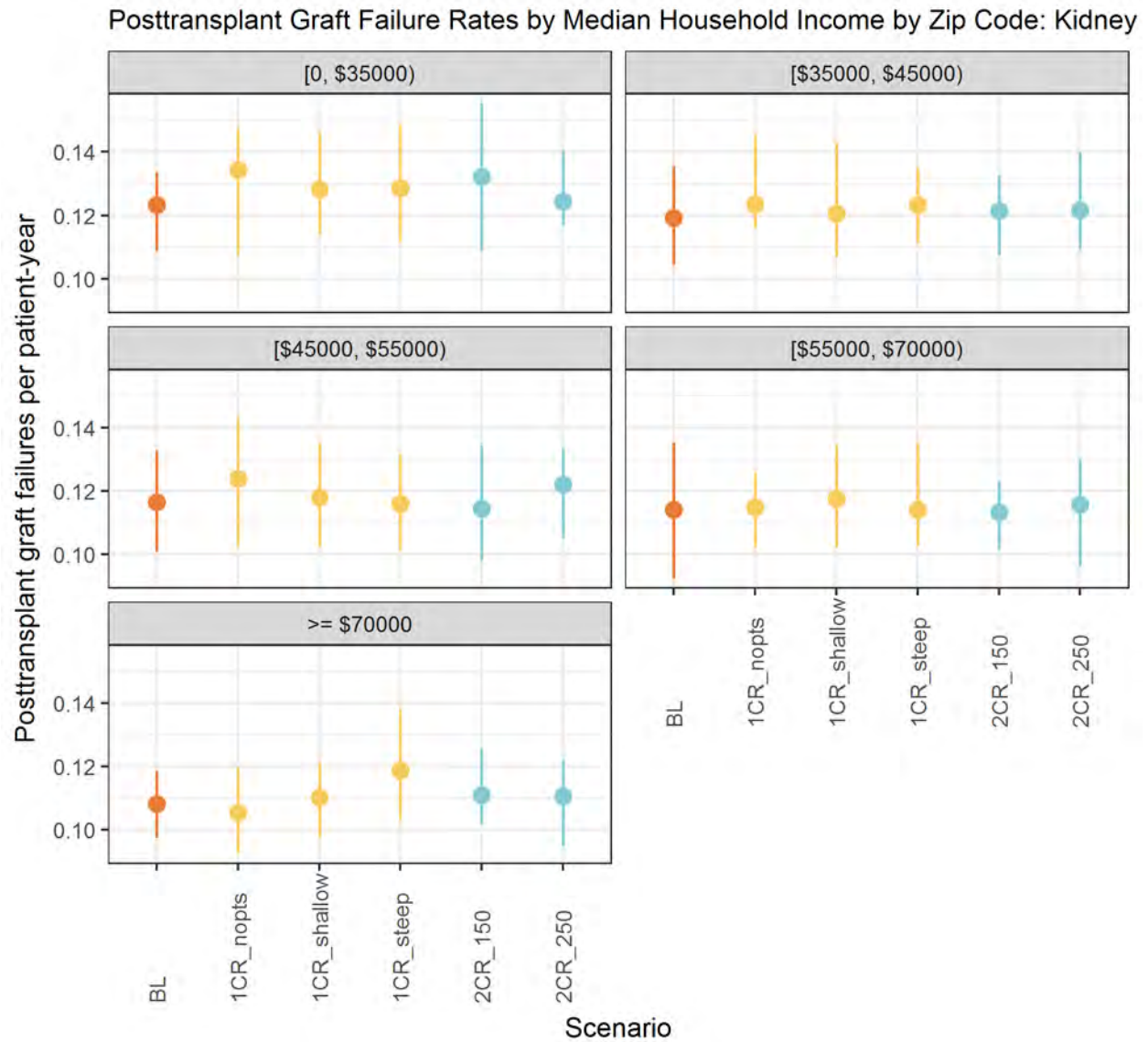


Figure 376 Posttransplant Graft Failure Rates by Median Household Income by Zip Code: Kidney



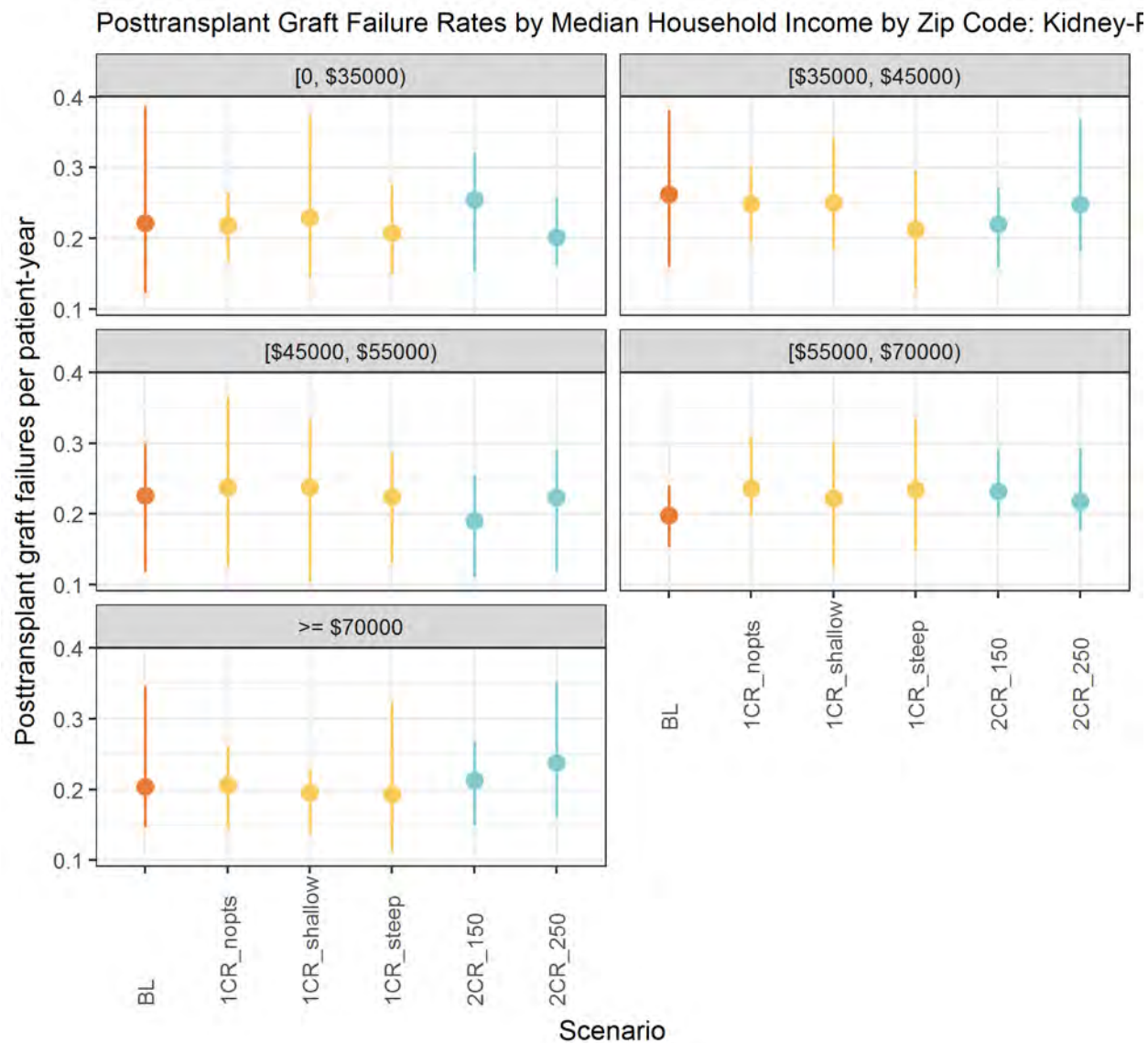


Figure 377 Posttransplant Graft Failure Rates by Median Household Income by Zip Code: Kidney-Pancreas

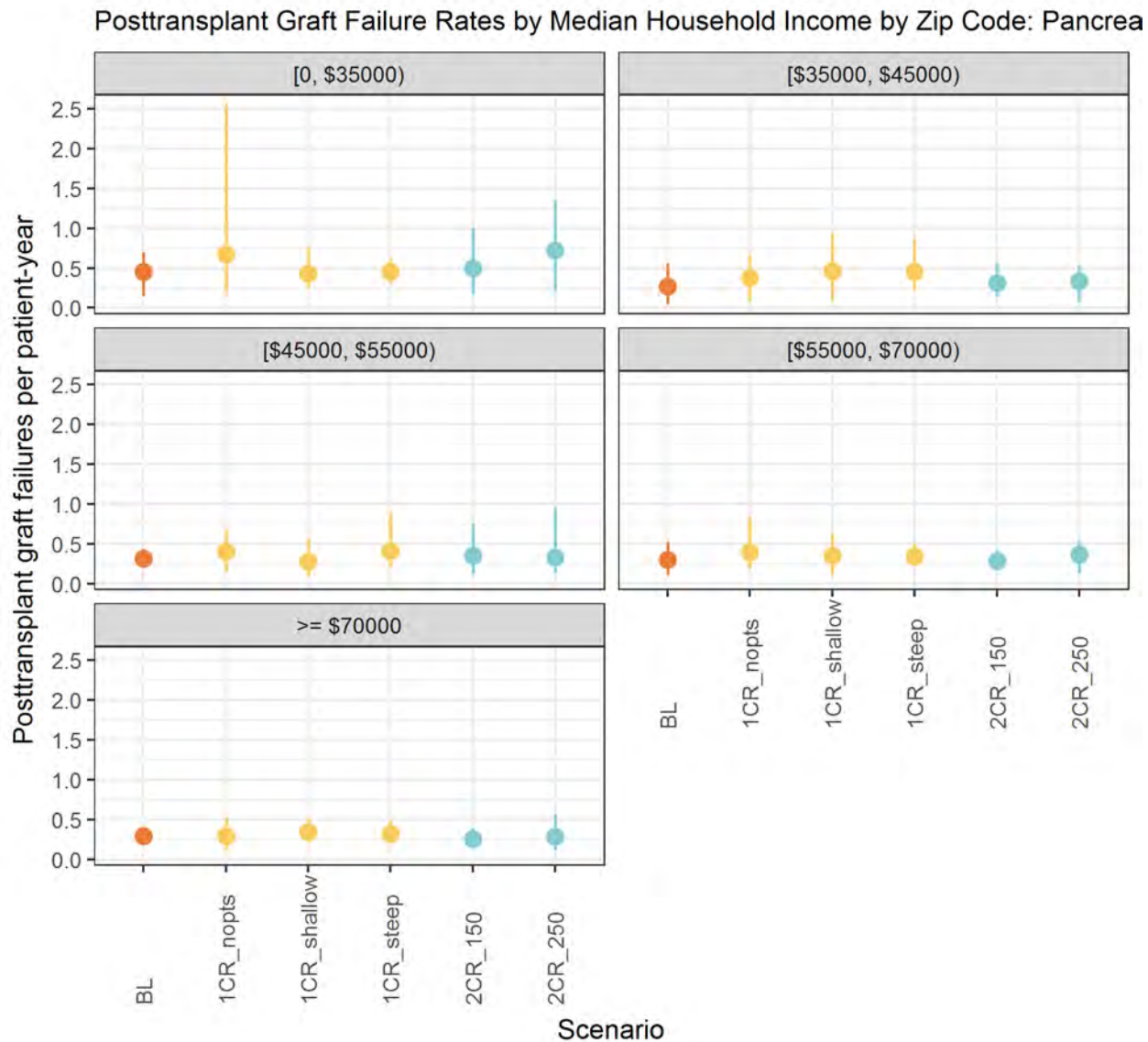


Figure 378 Posttransplant Graft Failure Rates by Median Household Income by Zip Code: Pancreas

## Posttransplant Graft Failure Rates: Donor KDPI

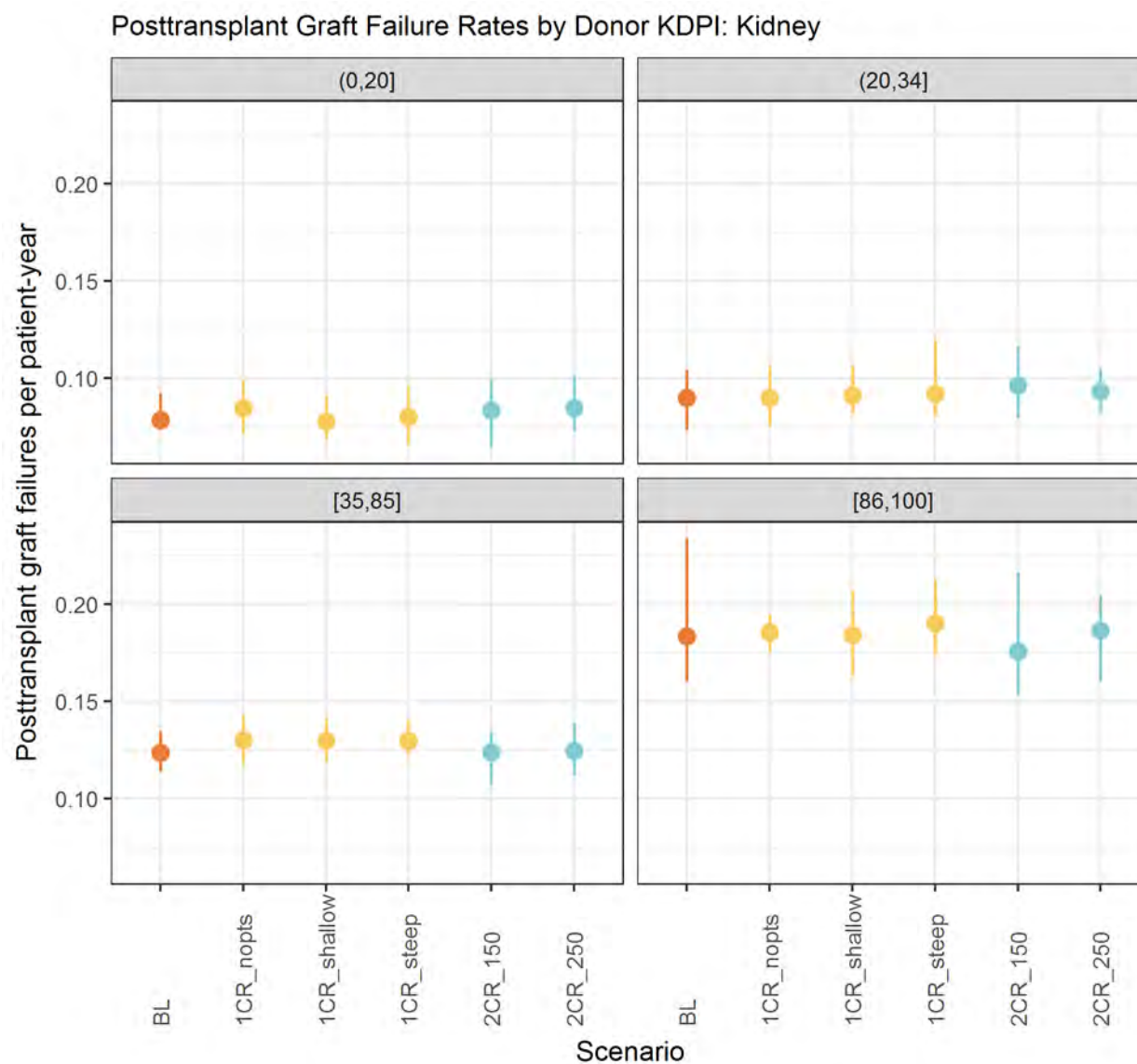


Figure 379 Posttransplant Graft Failure Rates by Donor KDPI: Kidney

Posttransplant Graft Failure Rates: DCD Donor

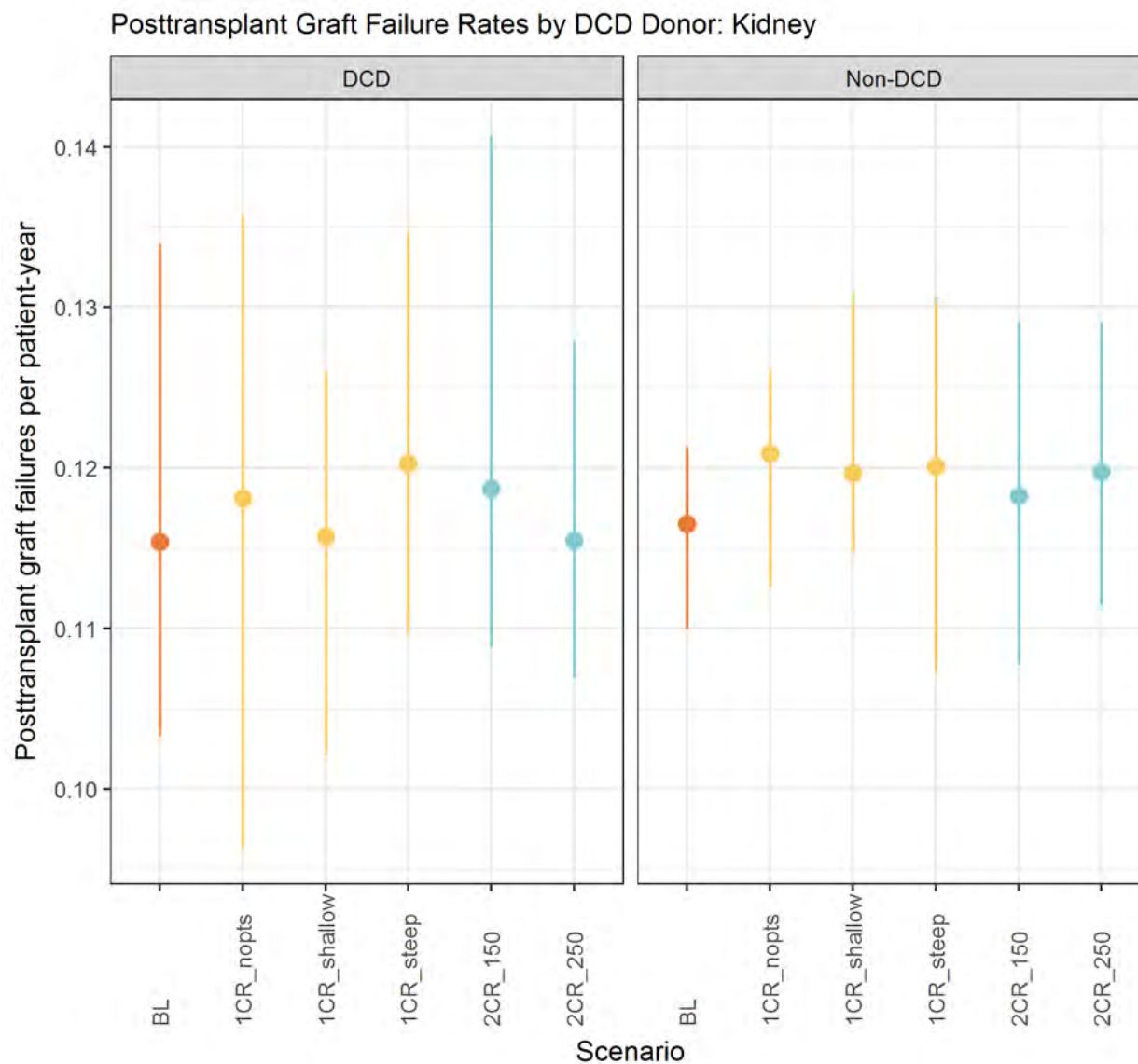


Figure 380 Posttransplant Graft Failure Rates by DCD Donor: Kidney

Posttransplant Graft Failure Rates: Number of DR mismatches

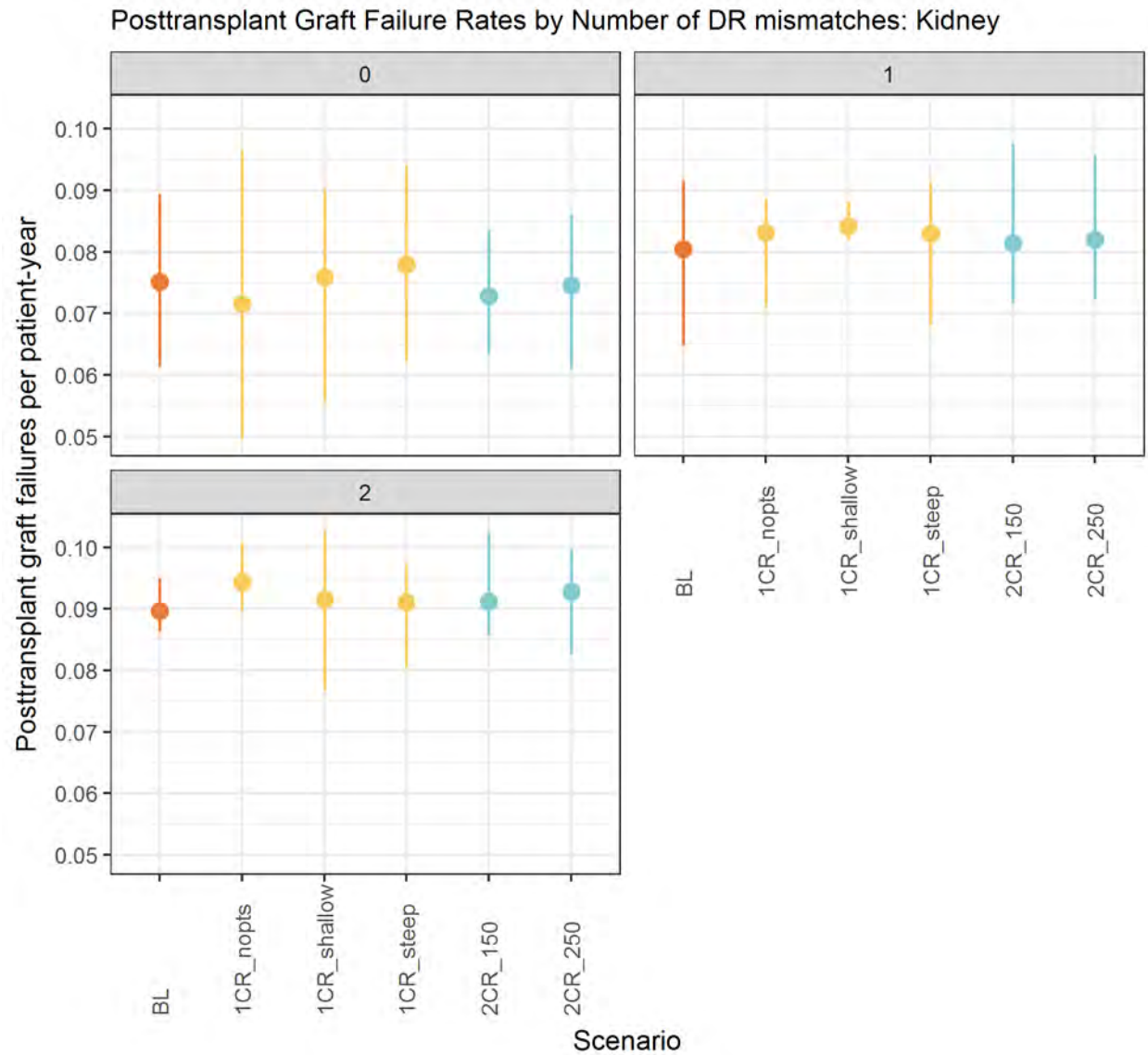


Figure 381 Posttransplant Graft Failure Rates by Number of DR mismatches: Kidney