

Analysis Report, Appendix 1: Updated

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

Waitlist Mortality Rates, 1-Year Posttransplant Graft Failure Rates, and 1-Year Posttransplant Patient Death Rates by Subgroup

Prepared By

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Timeline

Request made: March 28, 2019

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Analysis plan submitted: April 15, 2019

Analysis report due: June 17, 2019

Analysis report submitted: June 14, 2019

Analysis report update submitted: June 21, 2019

Next committee meeting: June 25, 2019

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Executive Summary

SRTR used the updated kidney-pancreas simulated allocation model (KPSAM) to assess the simulated impact of eleven allocation frameworks based on nautical miles (NM) between candidate listing program 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.

All KPSAM runs were performed using a donor-only acceptance model. In contrast to previously published KPSAM runs, which considered both donor and candidate factors as well as donor/candidate interactions, this model only considered donor factors and offer number when predicting the likelihood of offer acceptance.

Update: This report contains all 10 iterations of the requested models.

Description of Runs

Model Number	Model Nickname	Circle Size		Inner Circle Maximum Points		Outer Circle Maximum Points
		KI	KP/PA			
M2	500.500.0.8	500	500	0		8
M3	500.500.4.8	500	500	4		8
M4	500.150.0.8	500	150	0		8
M5	250.250.2.4	250	250	2		4
M6	250.250.0.8	250	250	0		8
M7	250.150.0.8	250	150	0		8
M8	150.150.0.8	150	150	0		8
M9	150.150.0.20	150	150	0		20
M10	500.500.step150	500	500	4		8
M11	500.500.step250	500	500	4		8

The baseline model (referred to as “BL” in all tables and figures) was the current allocation system, but with local pediatric candidates given priority over candidates with cPRA 98 and 99 for kidneys with KDPI < 35. The committee also wanted to similarly prioritize prior living donors, but prior living donors are not currently modeled by KPSAM.

Models 2-11 are single-circle allocation systems. Proximity points within the circle were assigned linearly, starting at X points for a 0-NM distance between the donor hospital and transplant program, and tapering to 0 points at the circle edge. Likewise, proximity points outside the circle were assigned linearly, starting at Y points at the circle’s edge, and tapering to 0 points at 2500 NM.

Models 10 and 11 also contain a stepwise element, wherein a constant 4 points was awarded between 0-150 NM and 0-250 NM, respectively. This is meant to negate the effect of distance within that area. From there, proximity points taper to 0 at 500 NM. Outside the 500-NM circle, proximity points are assigned as in Models 2, e.g. starting at 8 points at 500 NM and tapering to 0 points at 2500 NM.

Data Request

Using the most recently available KPSAM version and data, model the kidney, pancreas, and kidney-pancreas distribution systems outlined in the KI2019_01 Analysis Plan.

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
- Time on dialysis distribution at transplant, kidney-alone
- Time on waiting list distribution at transplant
- Organ travel distance (NM) distribution at transplant
- Percent of organs traveling over 250 NM
- Variance in transplant rates
- Variance of median time on dialysis at transplant
- Variance in median time on waiting list at transplant

Relevant DSA-level metrics are shown choropleth maps and provided in an appendix of tables:

- Transplant rates
- Median dialysis time at transplant
- Median time on waiting list at transplant
- Median cPRA at transplant, kidney-alone
- Waitlist mortality rates
- Change in count of waitlist deaths[^]

[^]In tables only

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

- **Candidate/recipient age:** 0-5, 6-10, 11-17, 18-34, 35-49, 50-64, ≥ 65 years
- **Candidate/recipient race:** white, African American, Asian, other/unknown
- **Candidate/recipient sex:** male vs. female
- **Candidate/recipient ethnicity:** Latino, Not Latino
- **Candidate/recipient blood type (ABO):** A, B, AB, O
- **Candidate/Recipient cPRA:** 0-79, 80-89, 90-94, 95-97, 98, 99, 100
- **Candidate/recipient diagnosis:** diabetes, hypertension, GN, cystic kidney disease, other
- **Candidate/recipient time on dialysis:** pre-emptive transplant, 0-< 1, 1-< 3, 3-< 5, 5-< 10, ≥ 10 years
- **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)
- **KDPI:** 0-20%, 21-34%, 35-85%, 86-100%
- **EPTS:** 0-20%, 21-100%
- **Donor type:** DCD vs DBD
- **Candidate/recipient sensitization:**
 - 0-HLA mismatch: 0 vs. non-0
 - DR mismatch level: 0, 1, 2
- **Geography:**
 - Percentage local (DSA), regional, national
 - By OPTN Region: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

Additional figures by subgroup are in this report (Appendix 1):

- Waitlist mortality rate
- Post-transplant graft failure rate (1 year)
- Post-transplant death rate (1 year)

The baseline model (referred to as “BL” in all tables and figures) was the current allocation system, but with local pediatrics given priority over cPRA 98 and 99 for kidneys with KDPI < 35.

Models 2 - 9 are single circle allocation systems. Proximity points within the circle were assigned linearly, starting at X points for a 0 NM distance between the donor hospital and transplant center, and tapering to 0 points at the circle edge. Likewise, proximity points outside the circle were assigned linearly, starting at Y points at the circle's edge, and tapering to 0 points at 2500 NM.

Models 10 and 11 are stepwise models, wherein a constant 4 points was awarded between 0 - 150 NM and 0 - 250 NM, respectively. From there, proximity points taper to 0 at 500 NM. Outside of the 500 NM circle, proximity points are assigned as in Models 2-9.

Analytic approach

Each of the eleven 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.

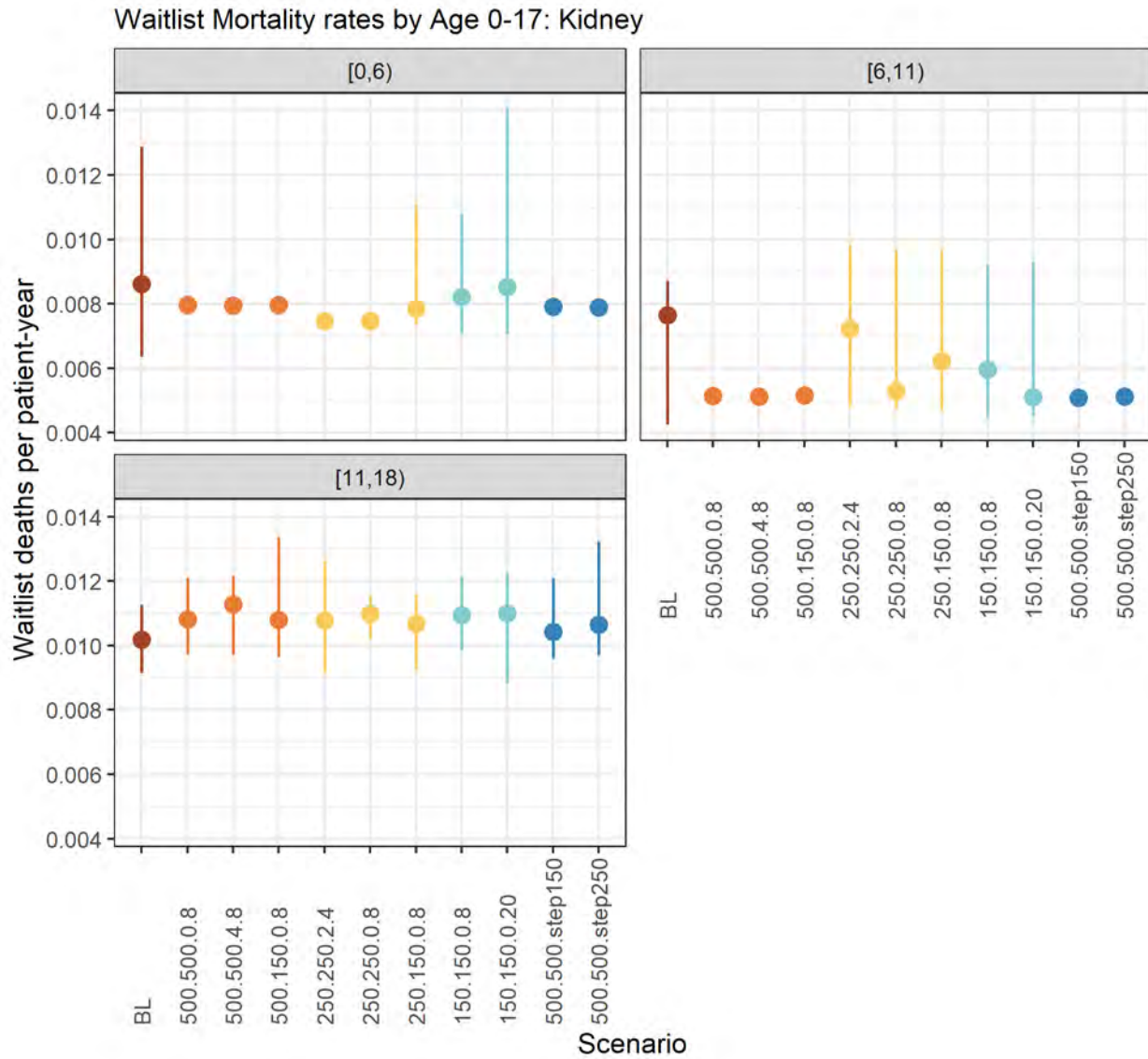
Subgroup Analyses

The dot plots below display 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.

Waitlist Mortality

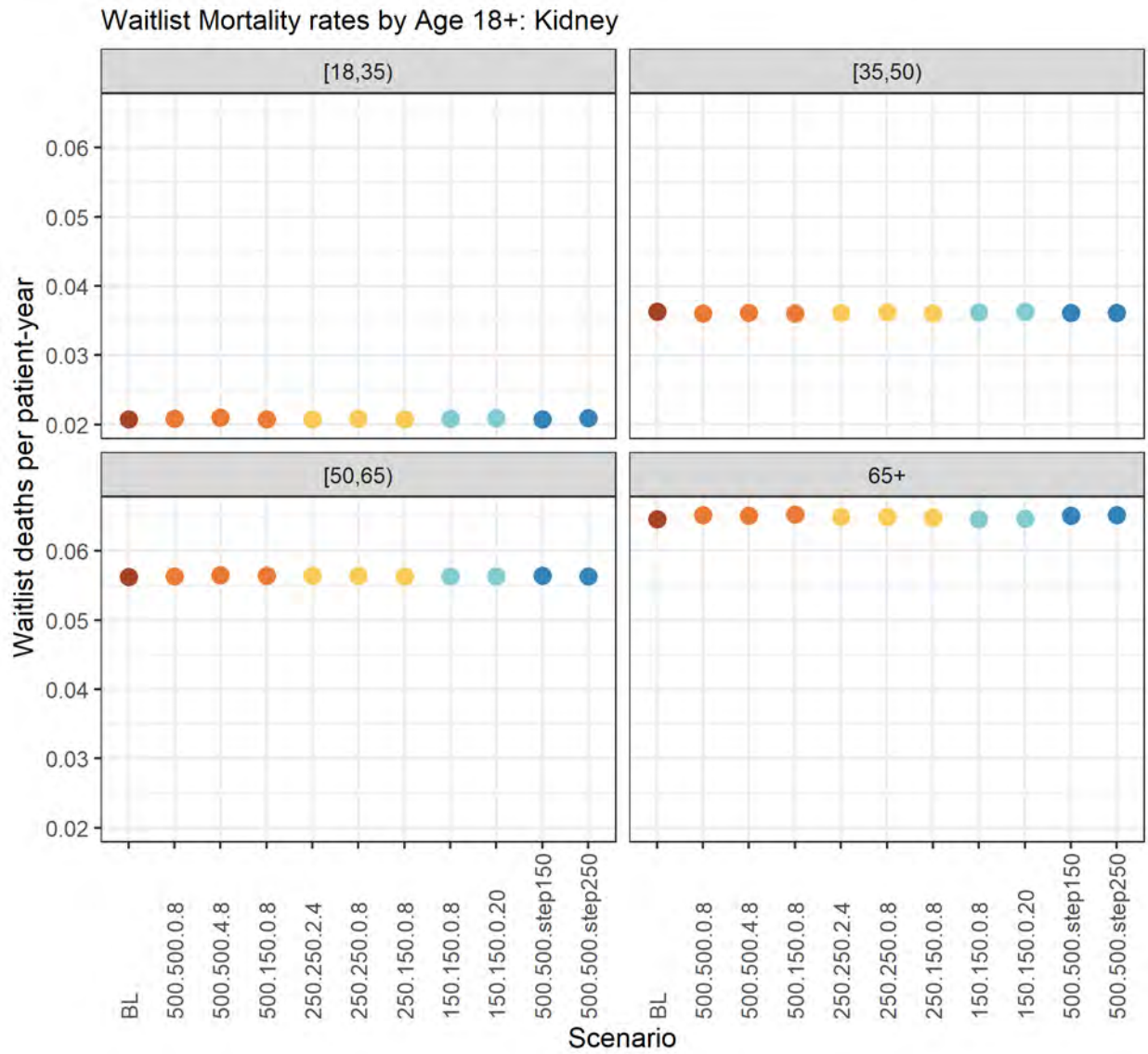
Waitlist Mortality Rates

Waitlist Mortality Rates: Age 0-17

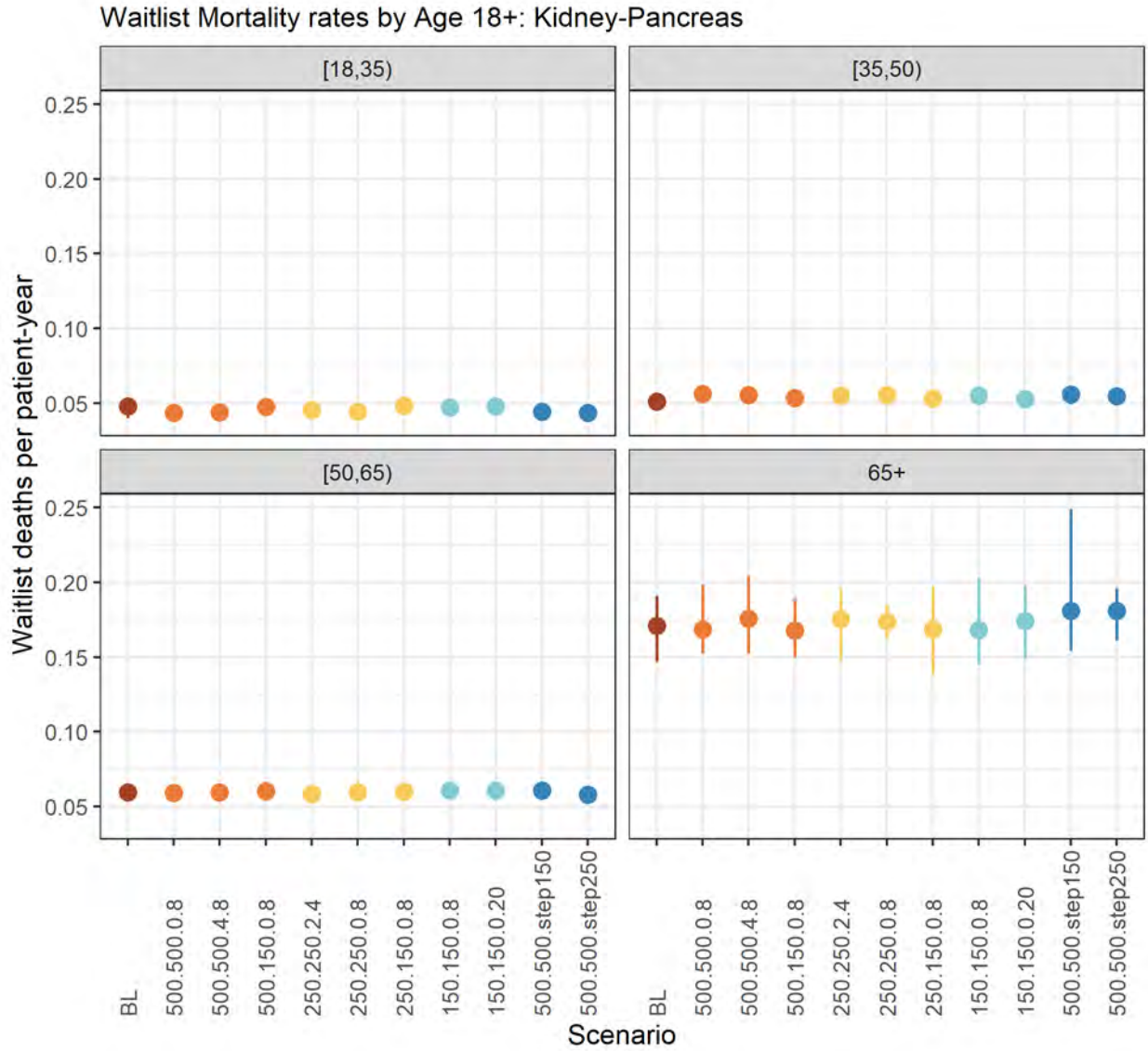


Waitlist Mortality rates by Age 0-17: Kidney

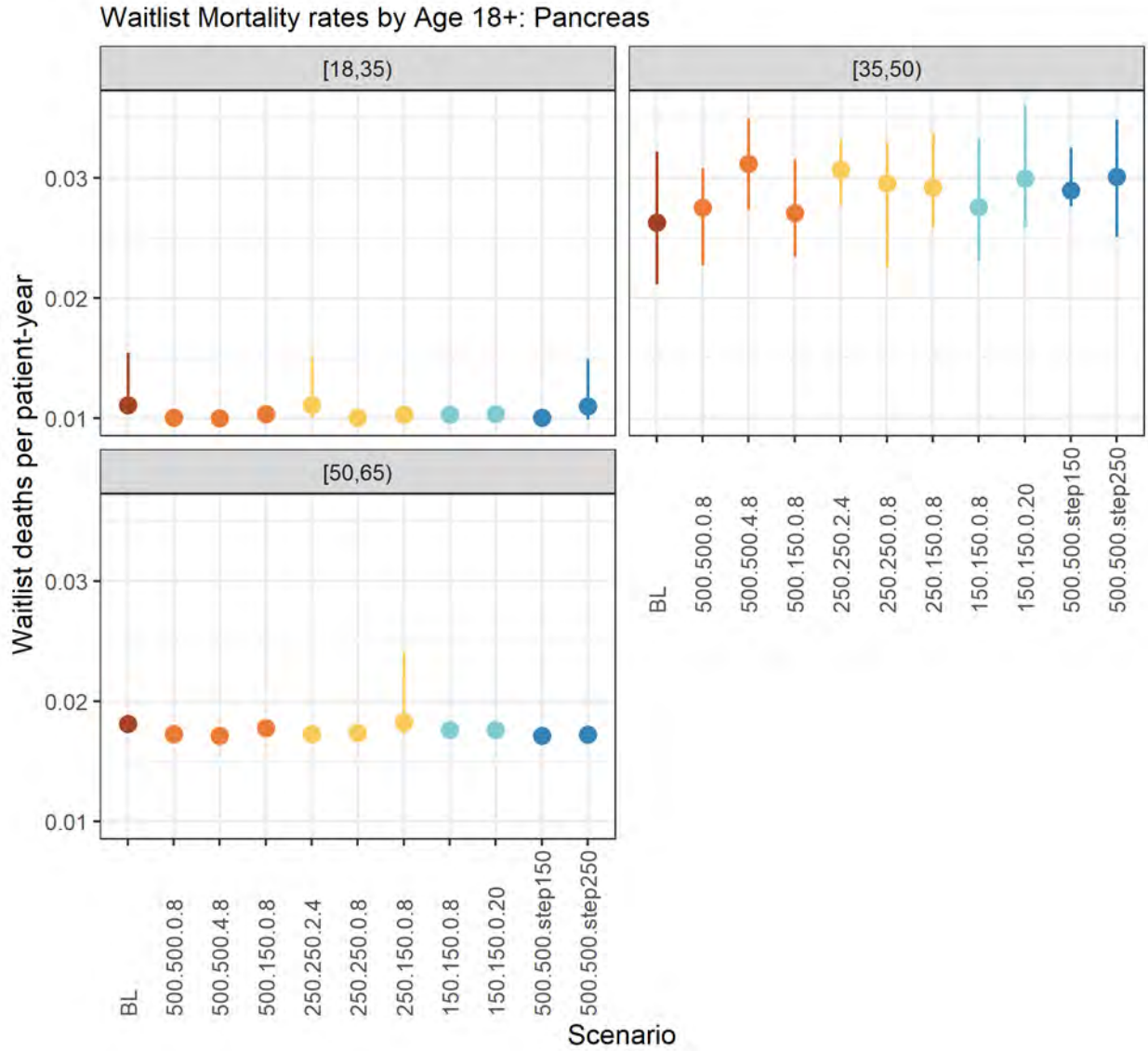
Waitlist Mortality Rates: Age 18+



Waitlist Mortality rates by Age 18+: Kidney

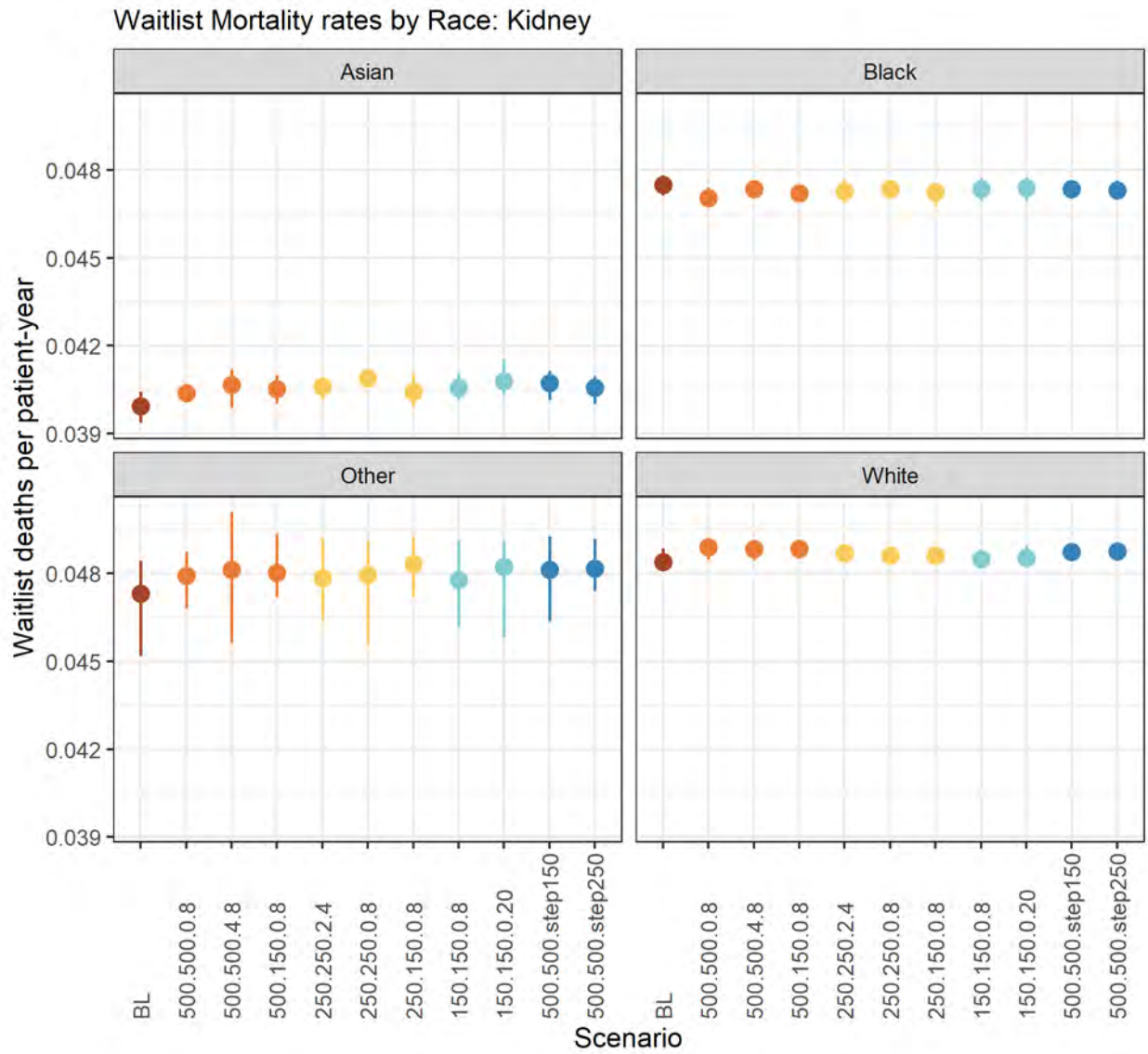


Waitlist Mortality rates by Age 18+: Kidney-Pancreas

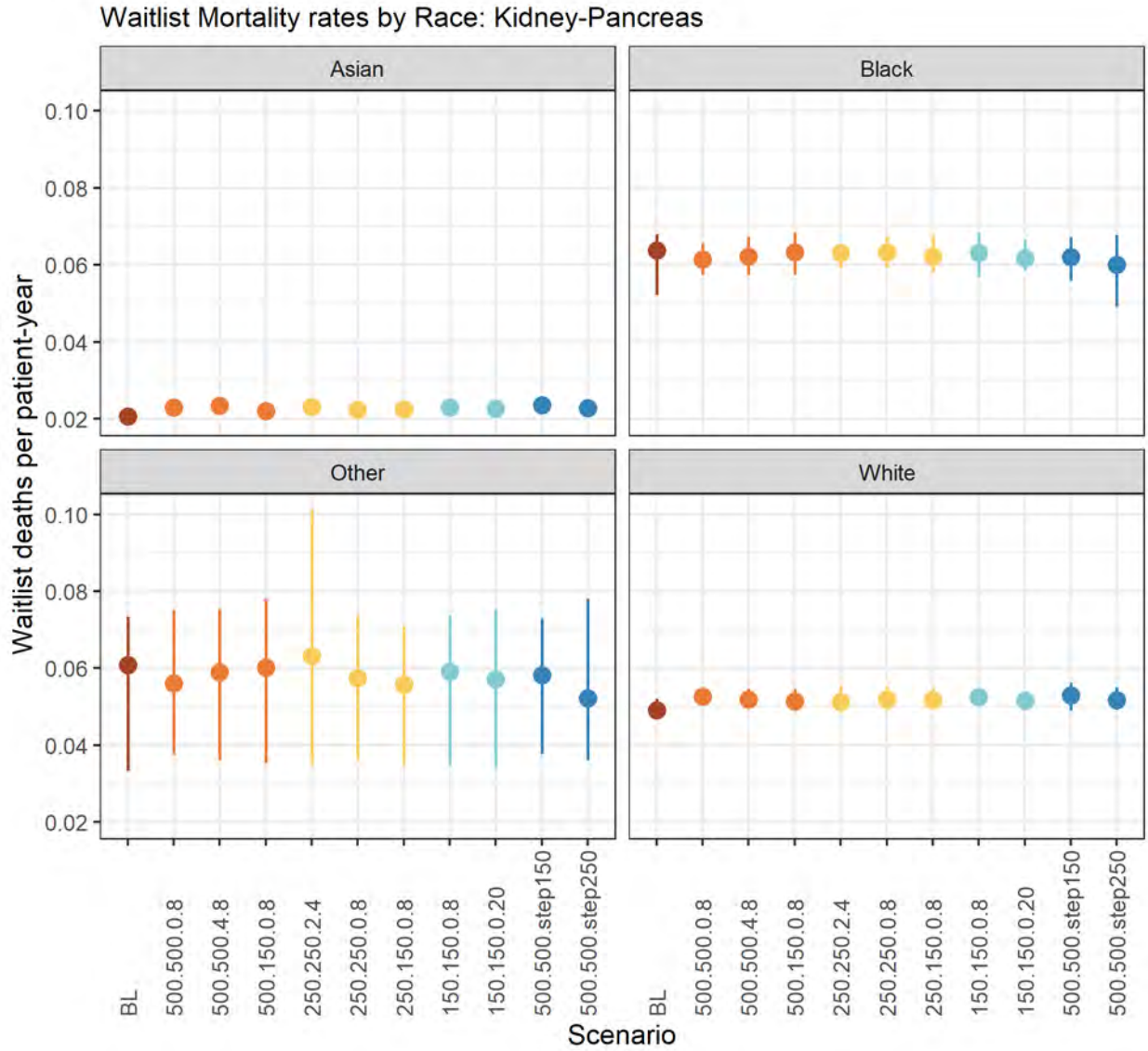


Waitlist Mortality rates by Age 18+: Pancreas

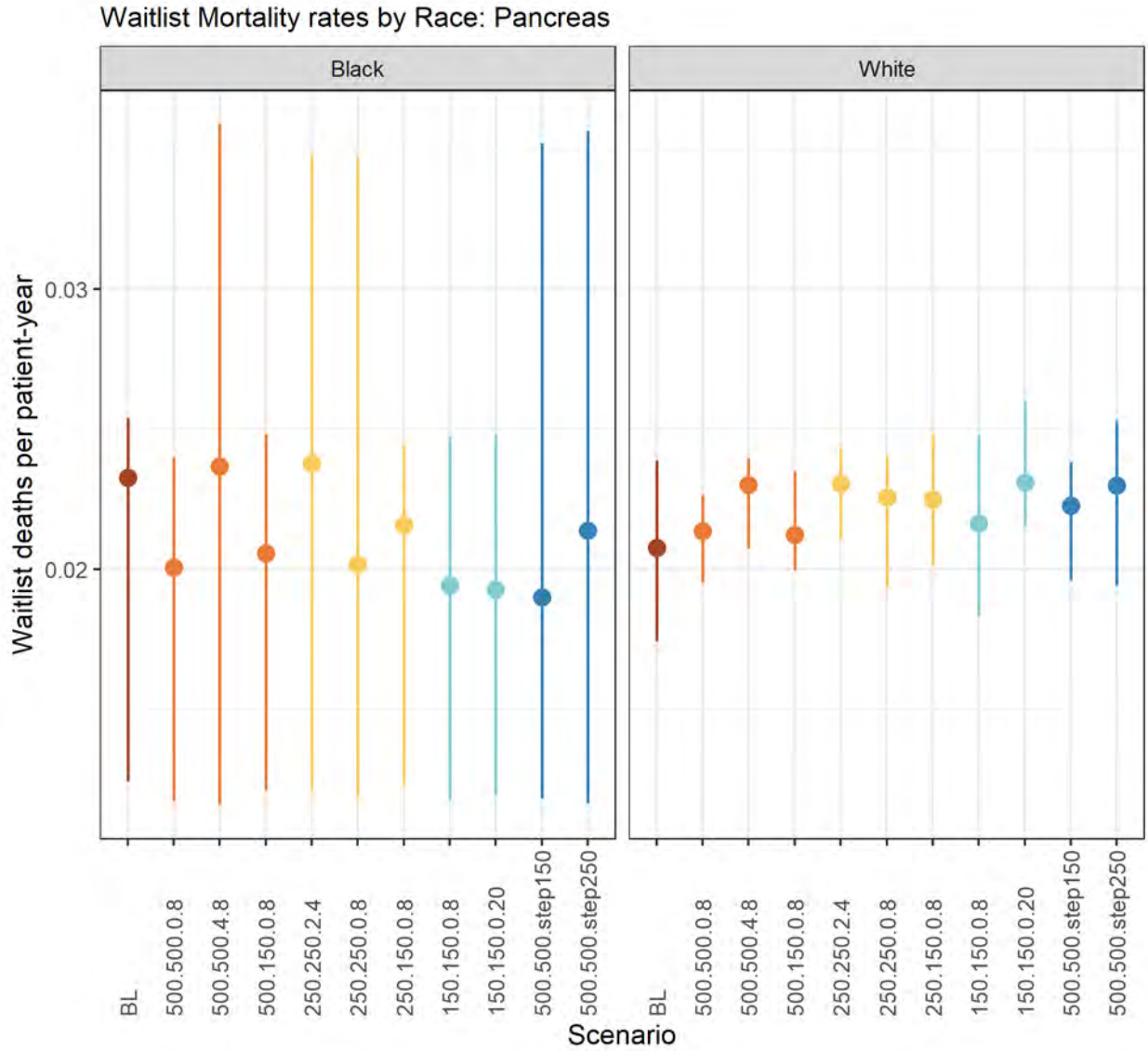
Waitlist Mortality Rates: Race



Waitlist Mortality rates by Race: Kidney



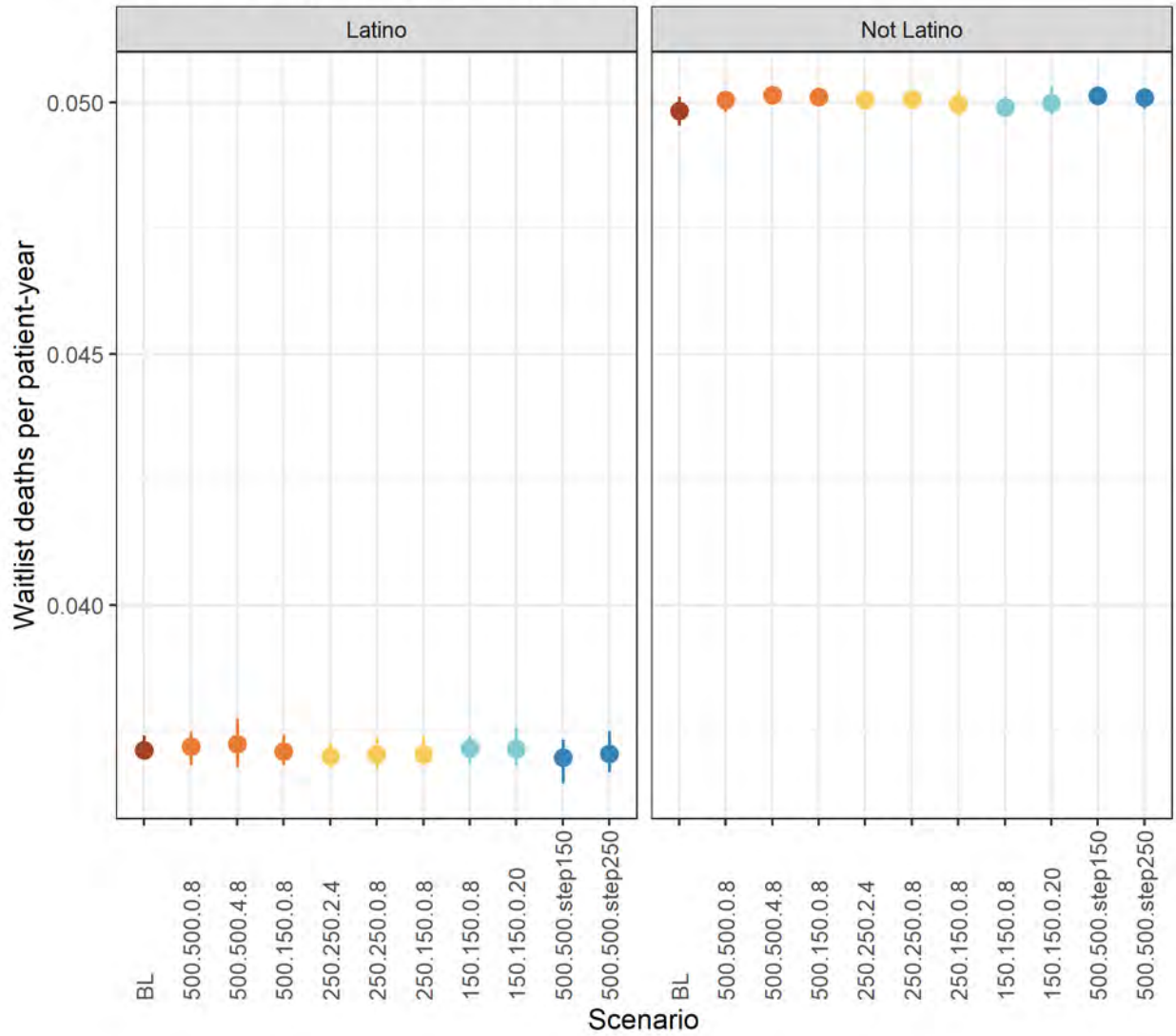
Waitlist Mortality rates by Race: Kidney-Pancreas



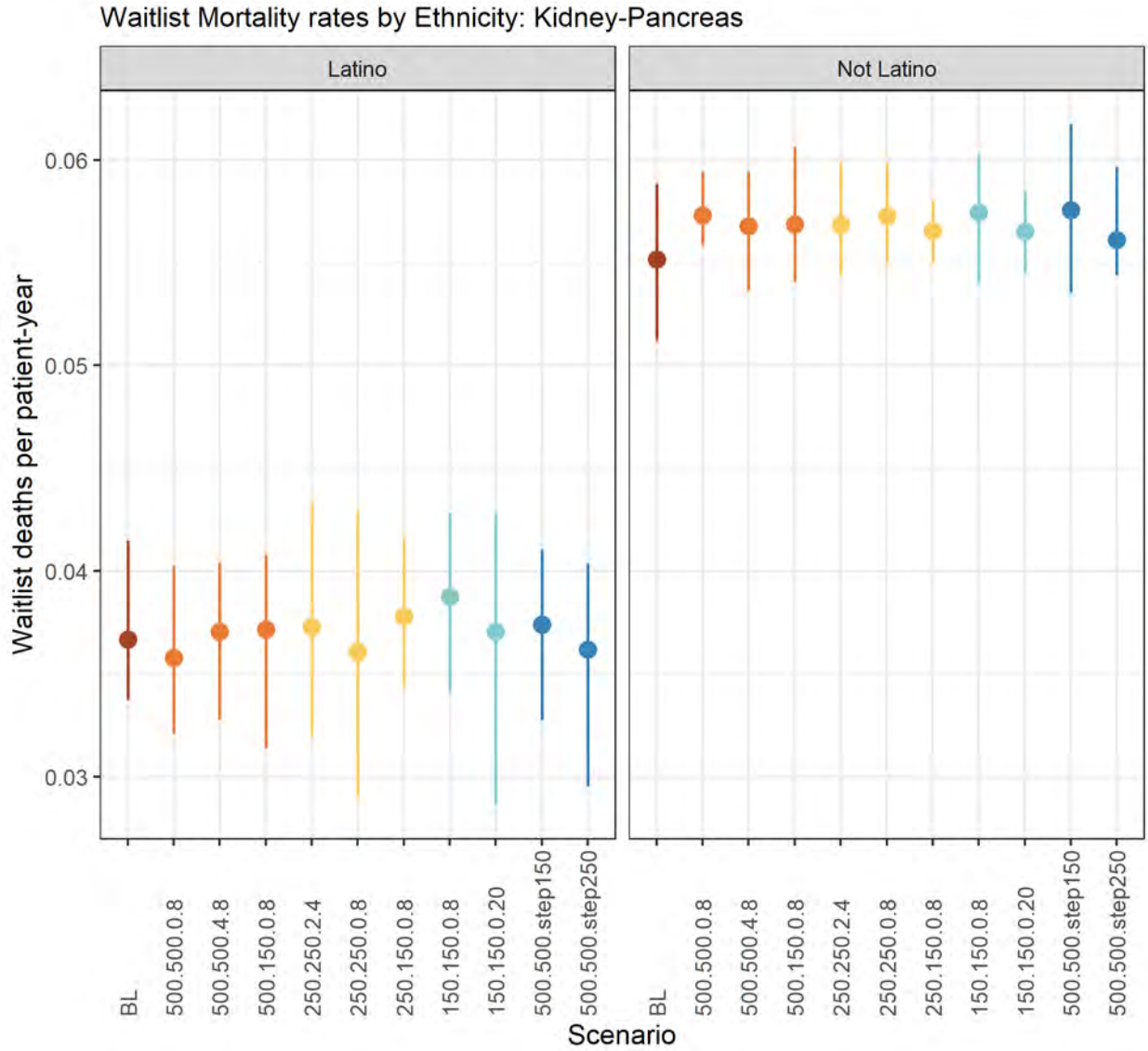
Waitlist Mortality rates by Race: Pancreas

Waitlist Mortality Rates: Ethnicity

Waitlist Mortality rates by Ethnicity: Kidney

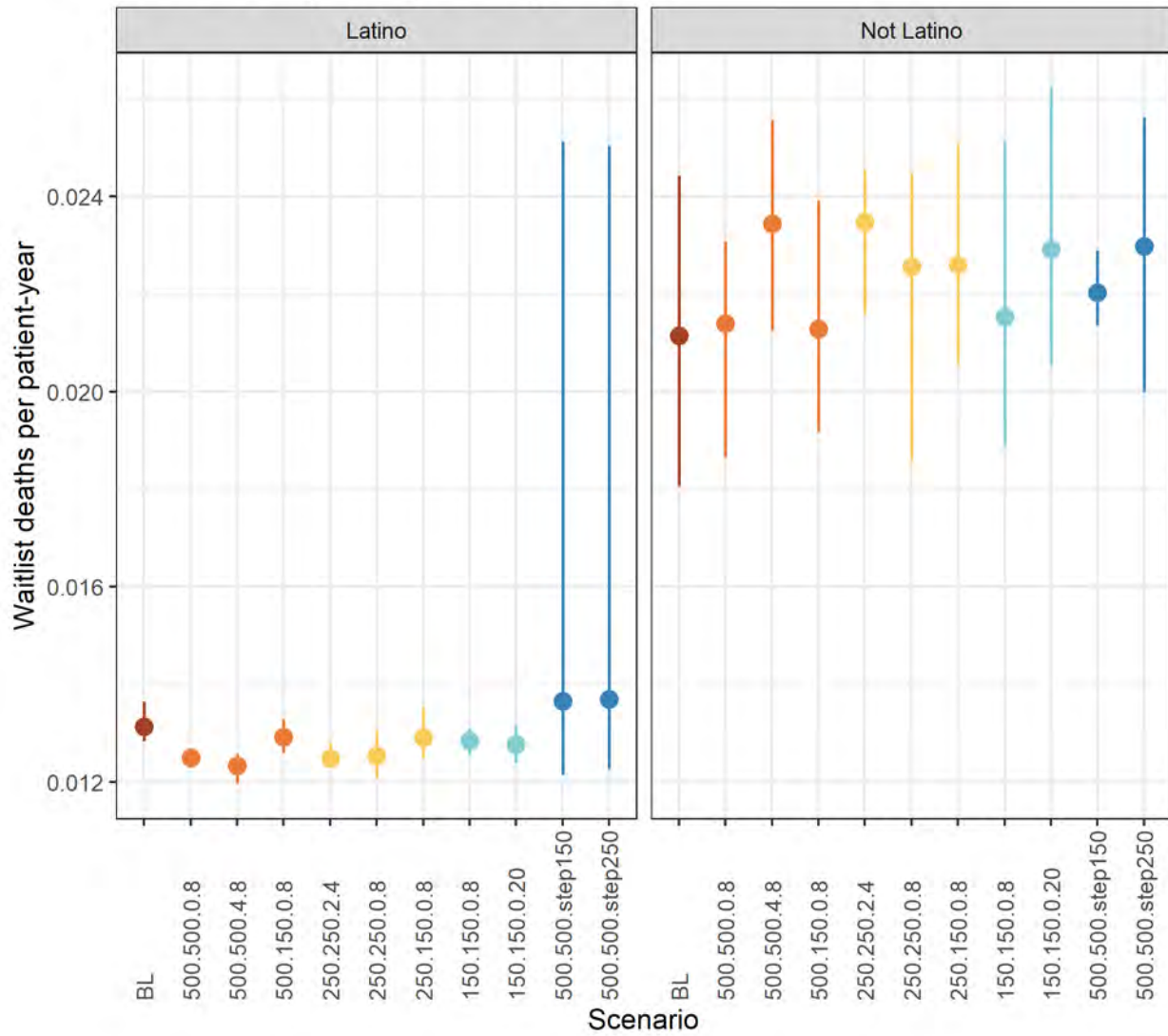


Waitlist Mortality rates by Ethnicity: Kidney



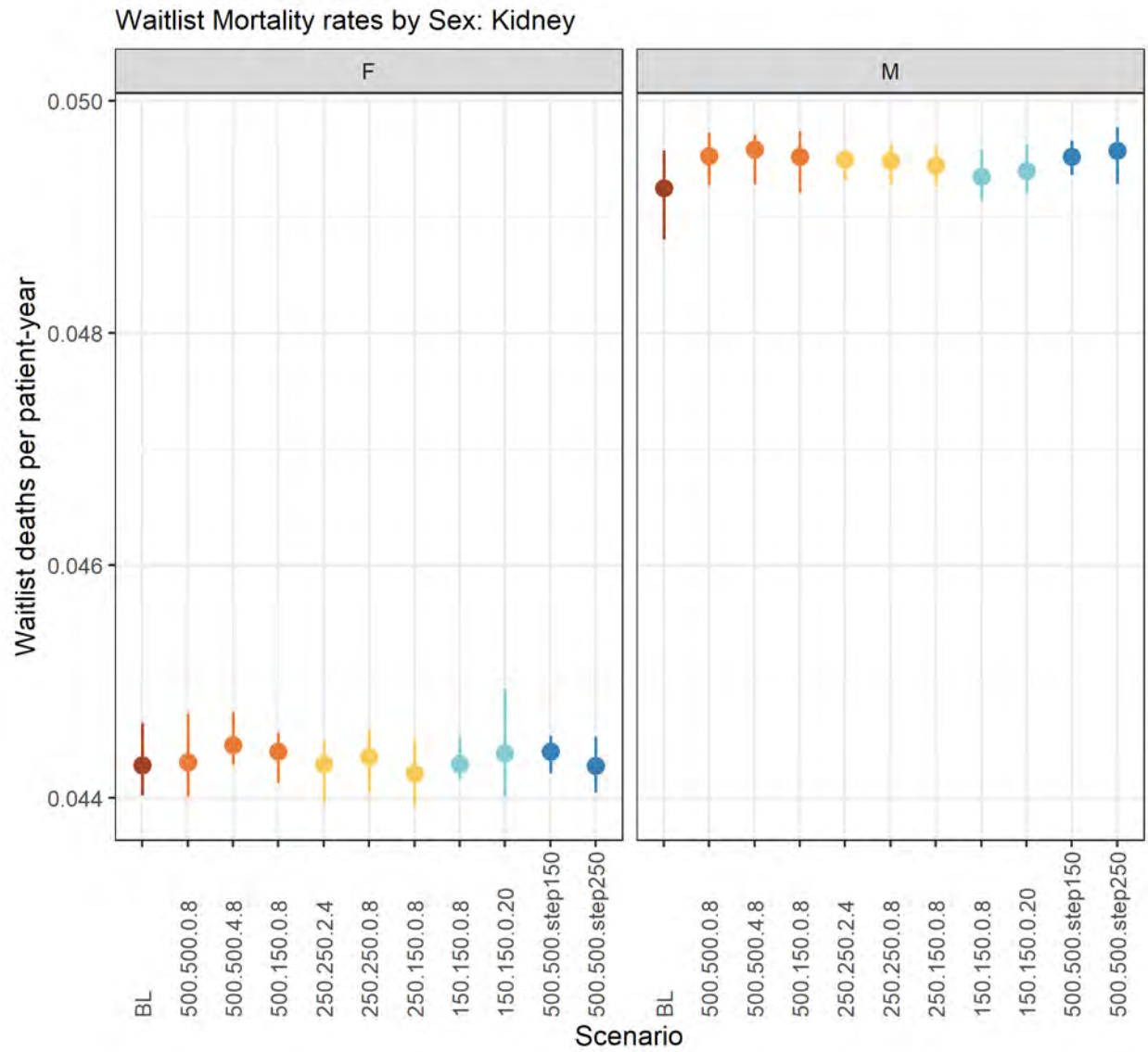
Waitlist Mortality rates by Ethnicity: Kidney-Pancreas

Waitlist Mortality rates by Ethnicity: Pancreas



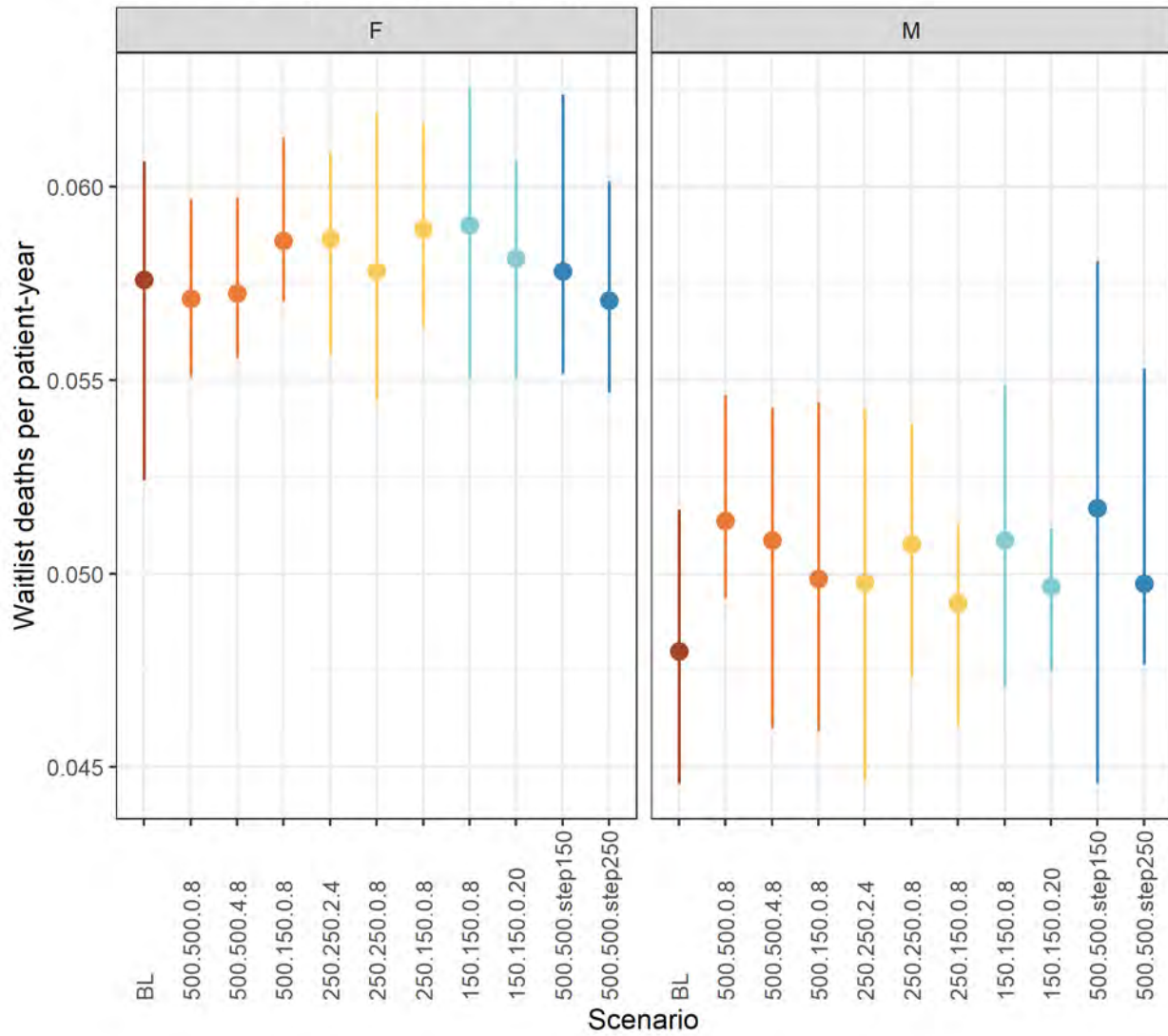
Waitlist Mortality rates by Ethnicity: Pancreas

Waitlist Mortality Rates: Sex



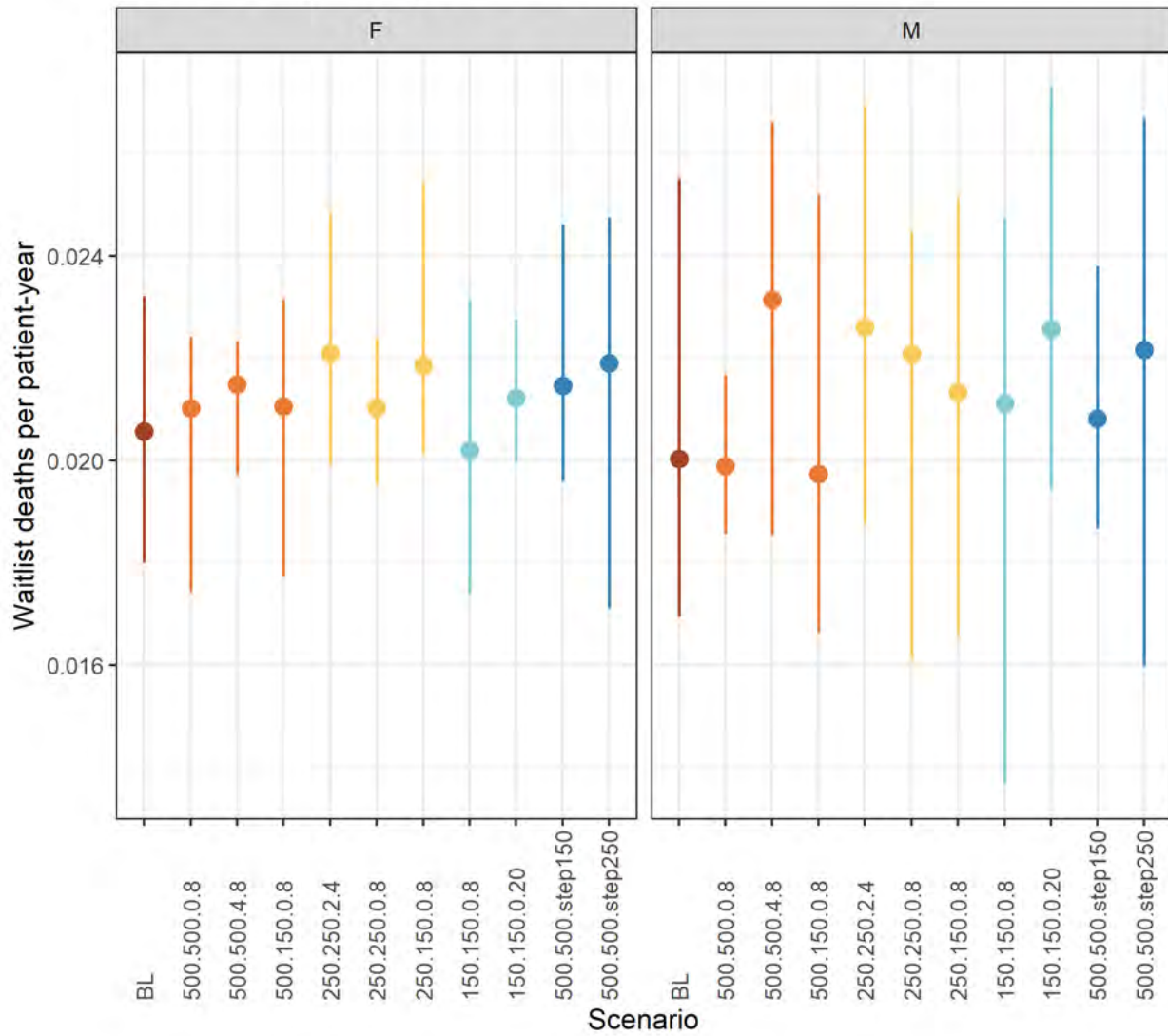
Waitlist Mortality rates by Sex: Kidney

Waitlist Mortality rates by Sex: Kidney-Pancreas



Waitlist Mortality rates by Sex: Kidney-Pancreas

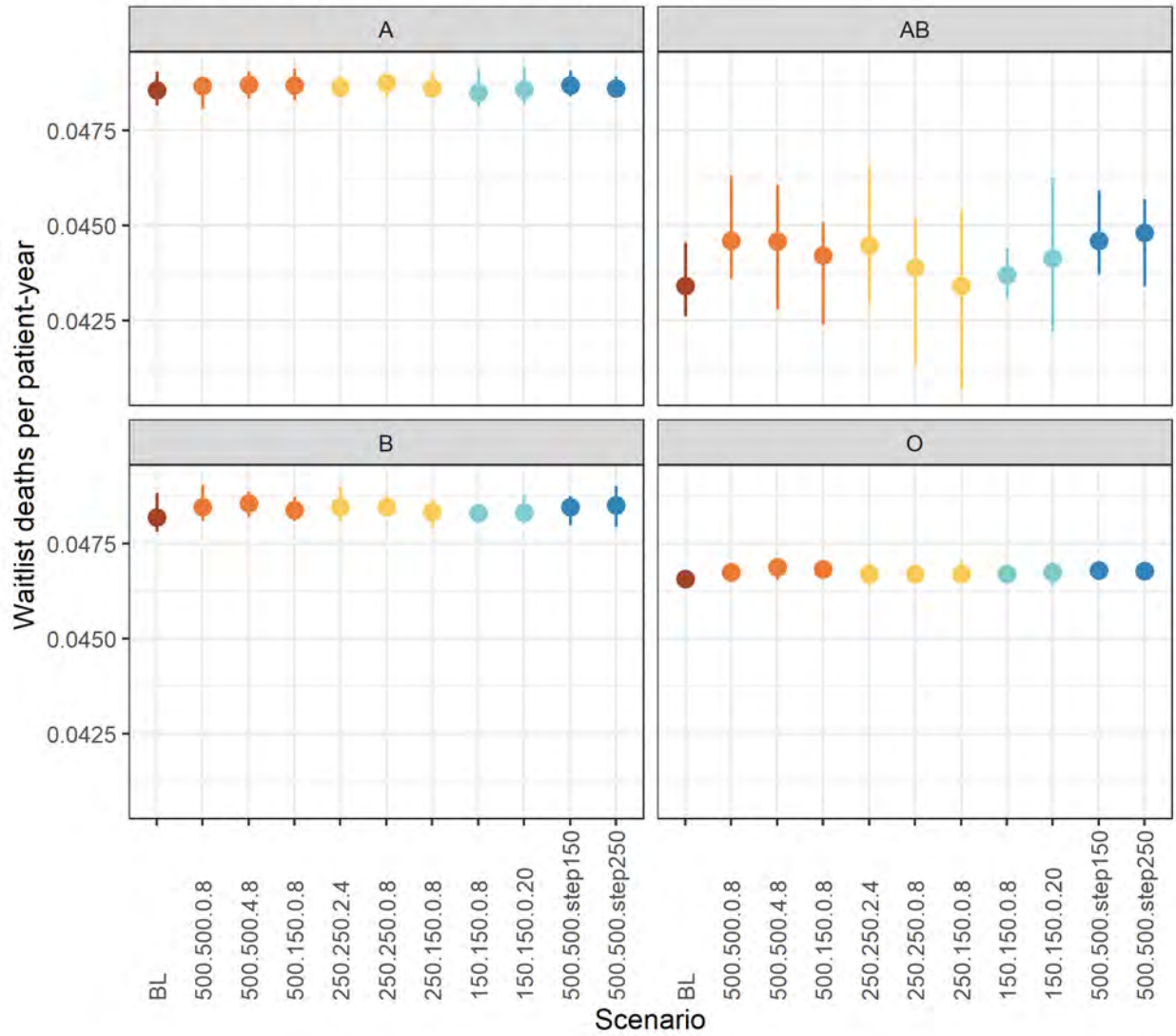
Waitlist Mortality rates by Sex: Pancreas



Waitlist Mortality rates by Sex: Pancreas

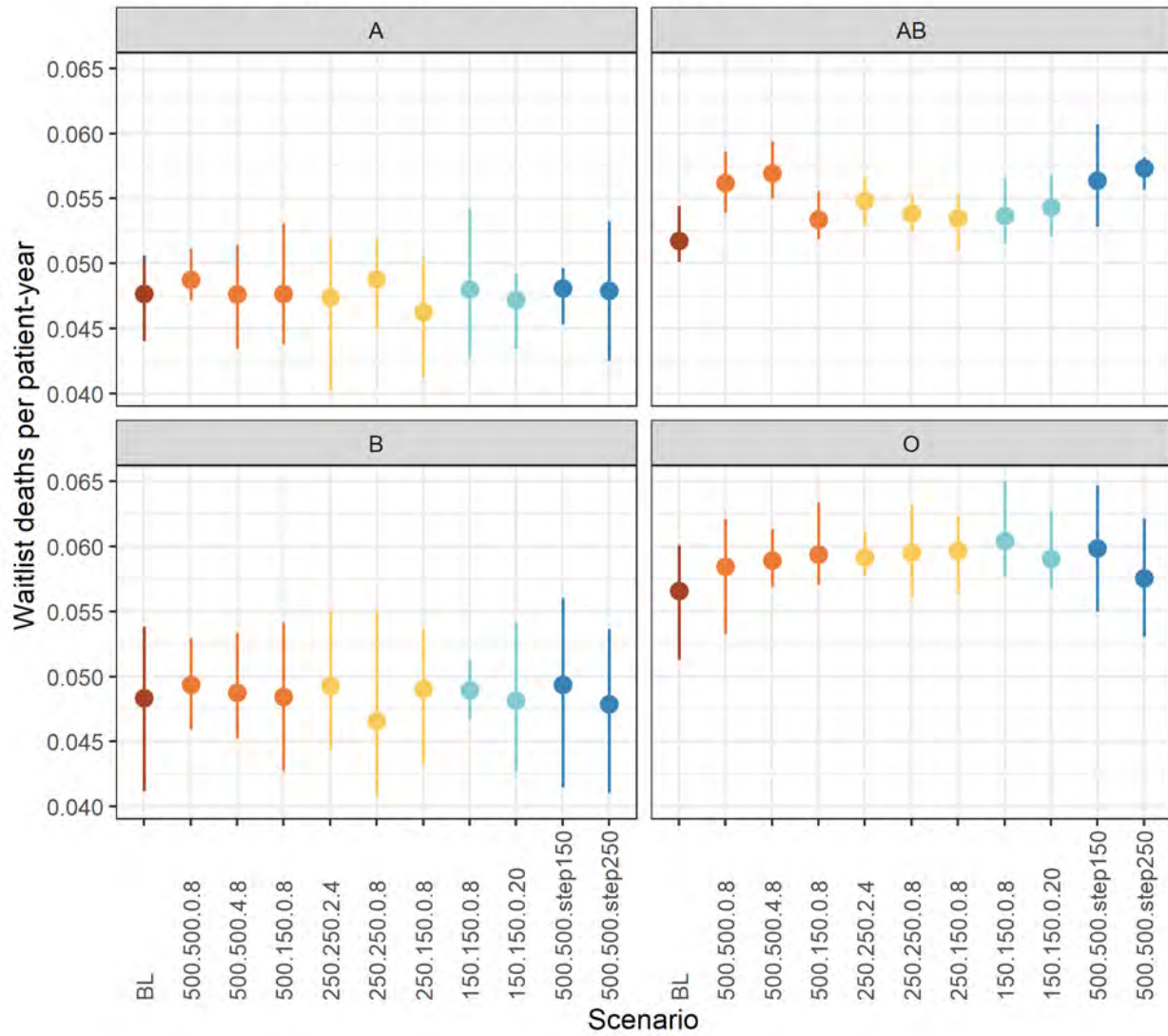
Waitlist Mortality Rates: ABO Group

Waitlist Mortality rates by ABO Group: Kidney

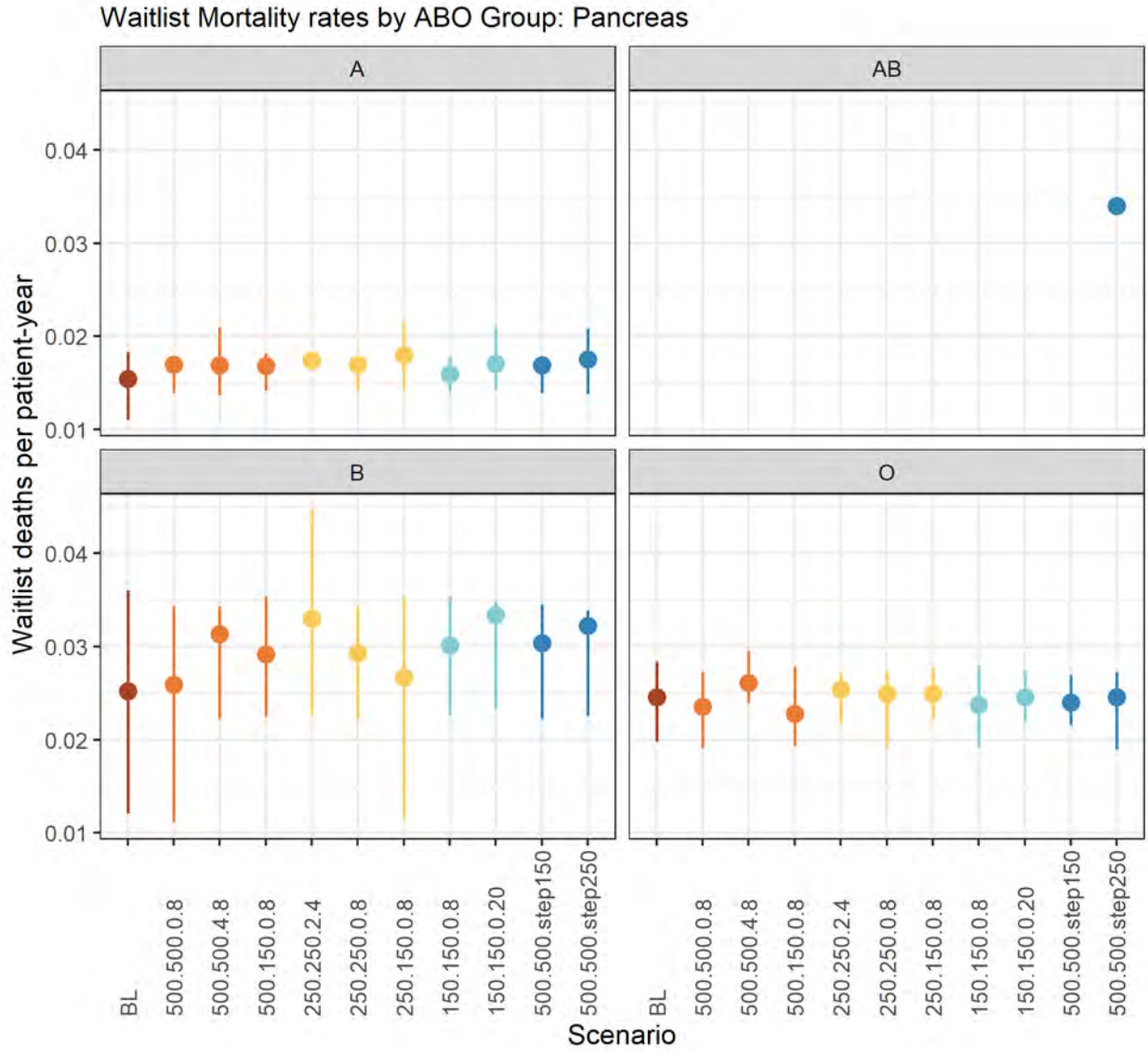


Waitlist Mortality rates by ABO Group: Kidney

Waitlist Mortality rates by ABO Group: Kidney-Pancreas

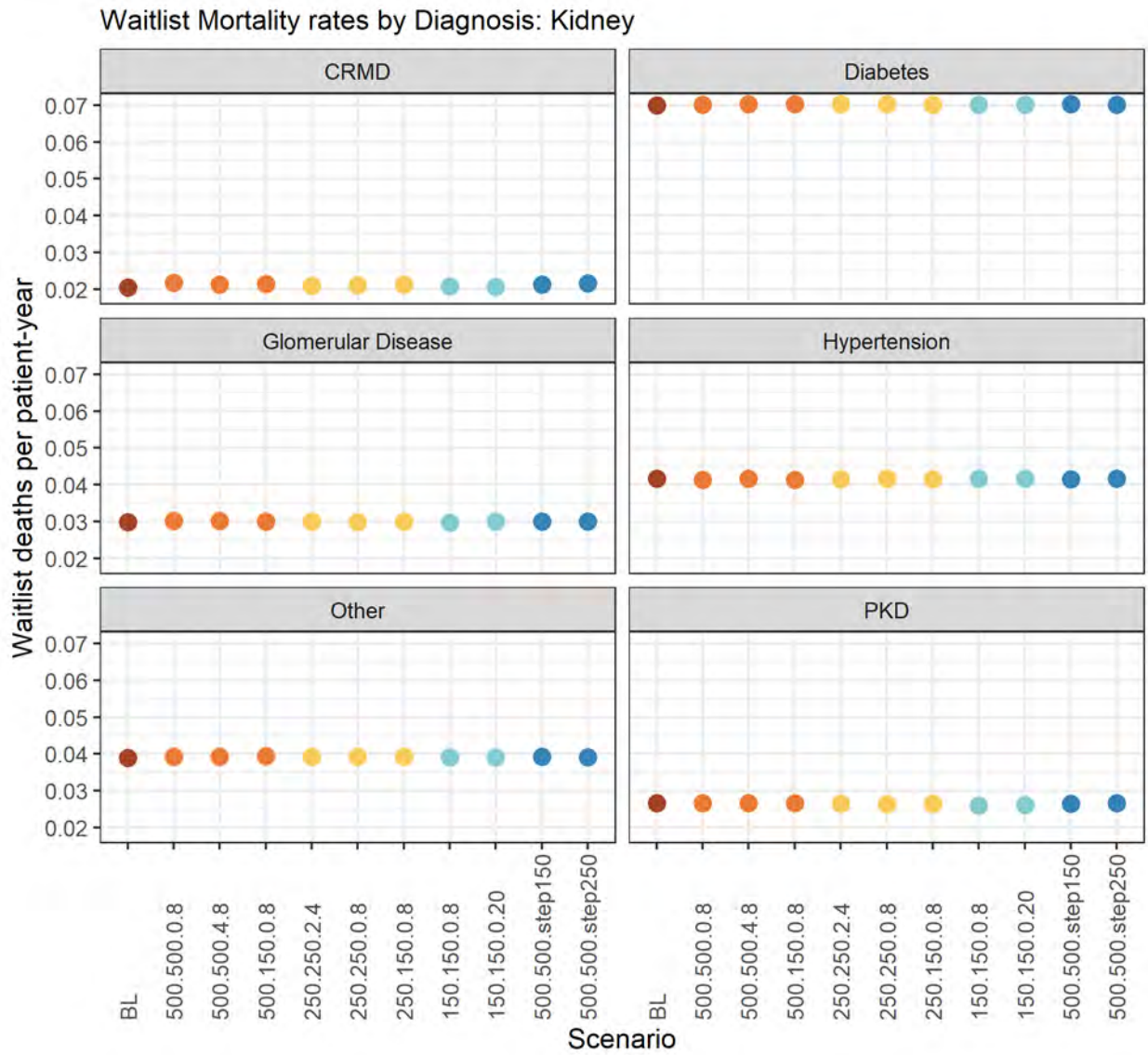


Waitlist Mortality rates by ABO Group: Kidney-Pancreas

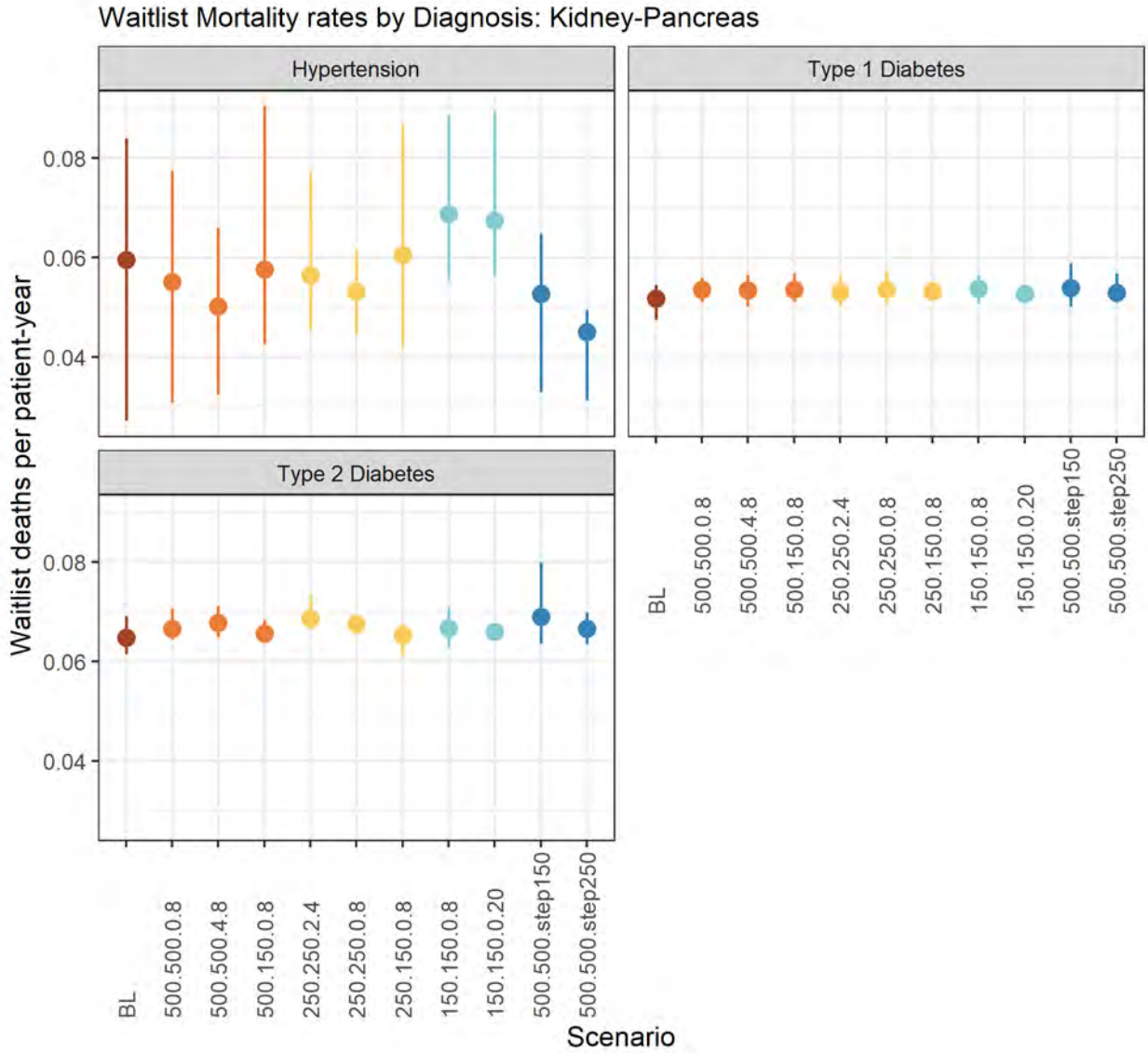


Waitlist Mortality rates by ABO Group: Pancreas

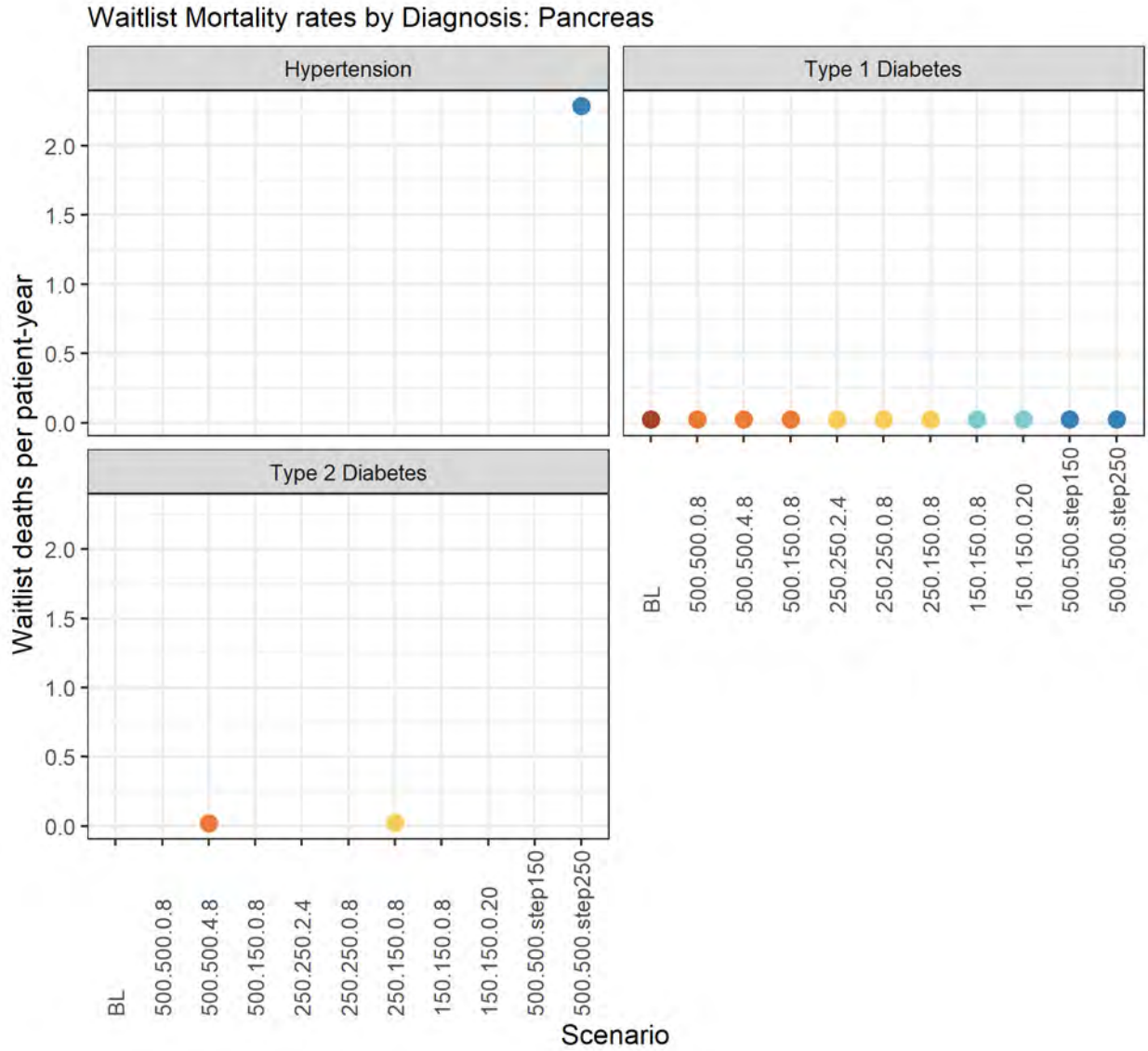
Waitlist Mortality Rates: Diagnosis



Waitlist Mortality rates by Diagnosis: Kidney

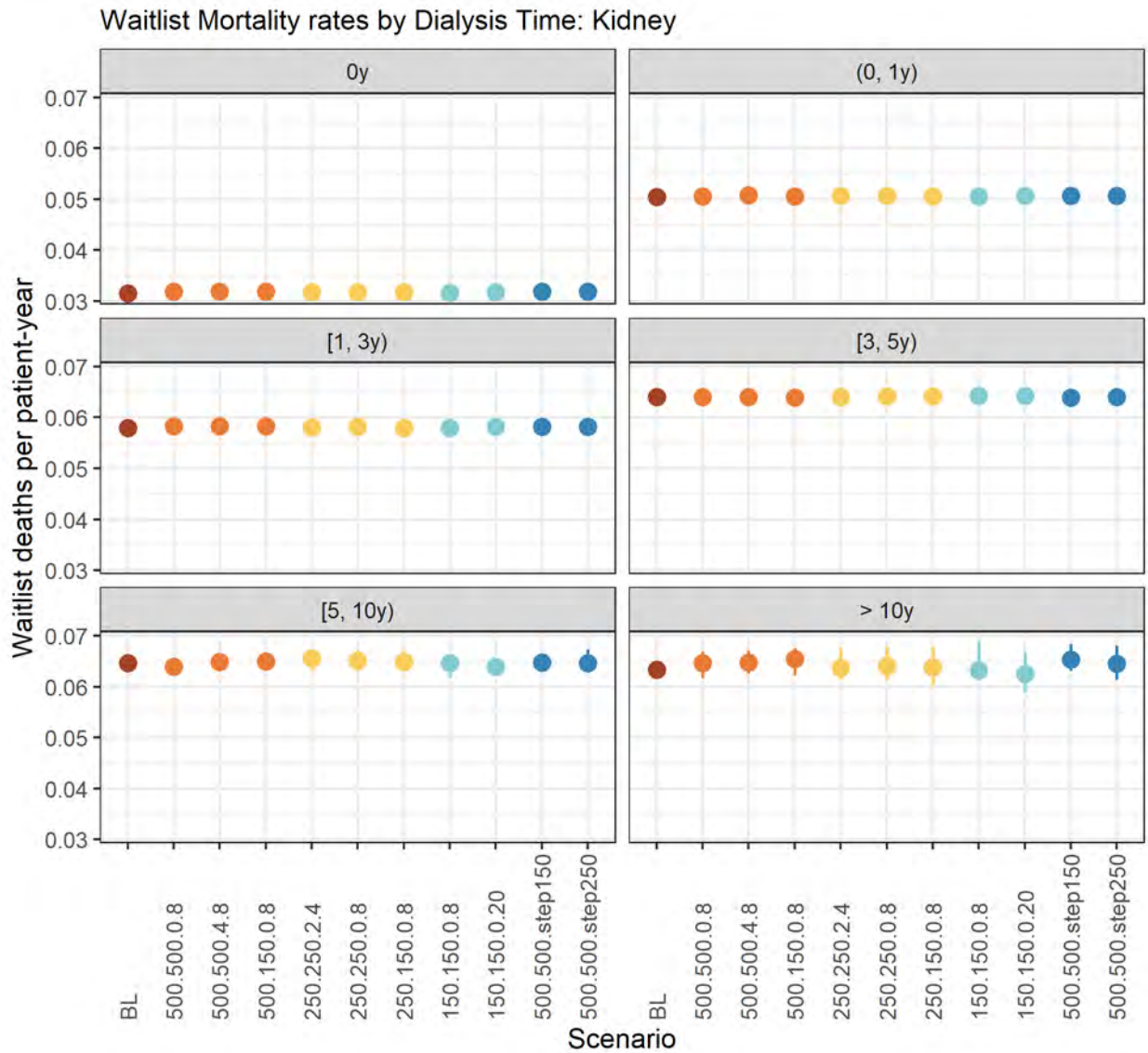


Waitlist Mortality rates by Diagnosis: Kidney-Pancreas



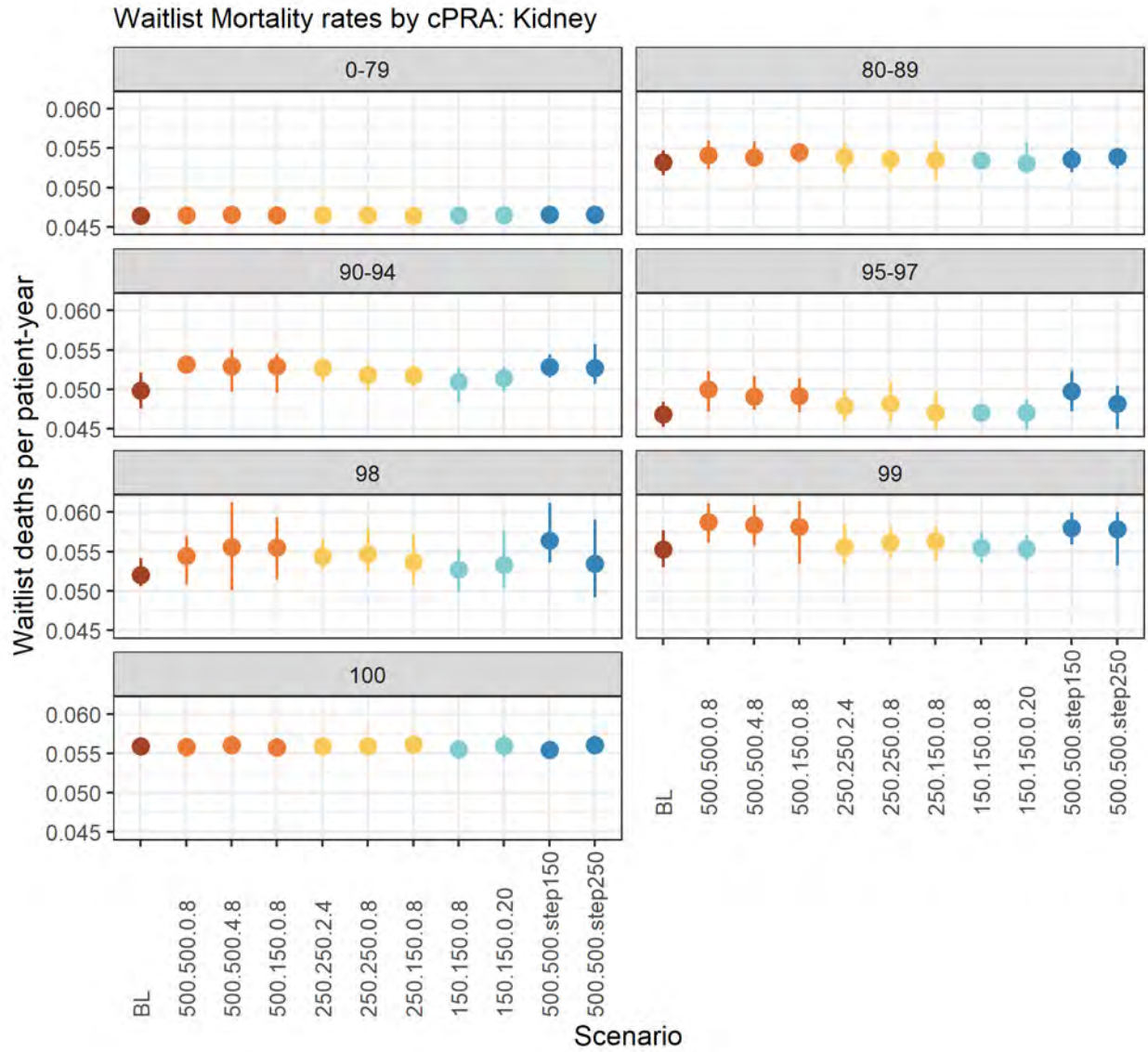
Waitlist Mortality rates by Diagnosis: Pancreas

Waitlist Mortality Rates: Dialysis Time

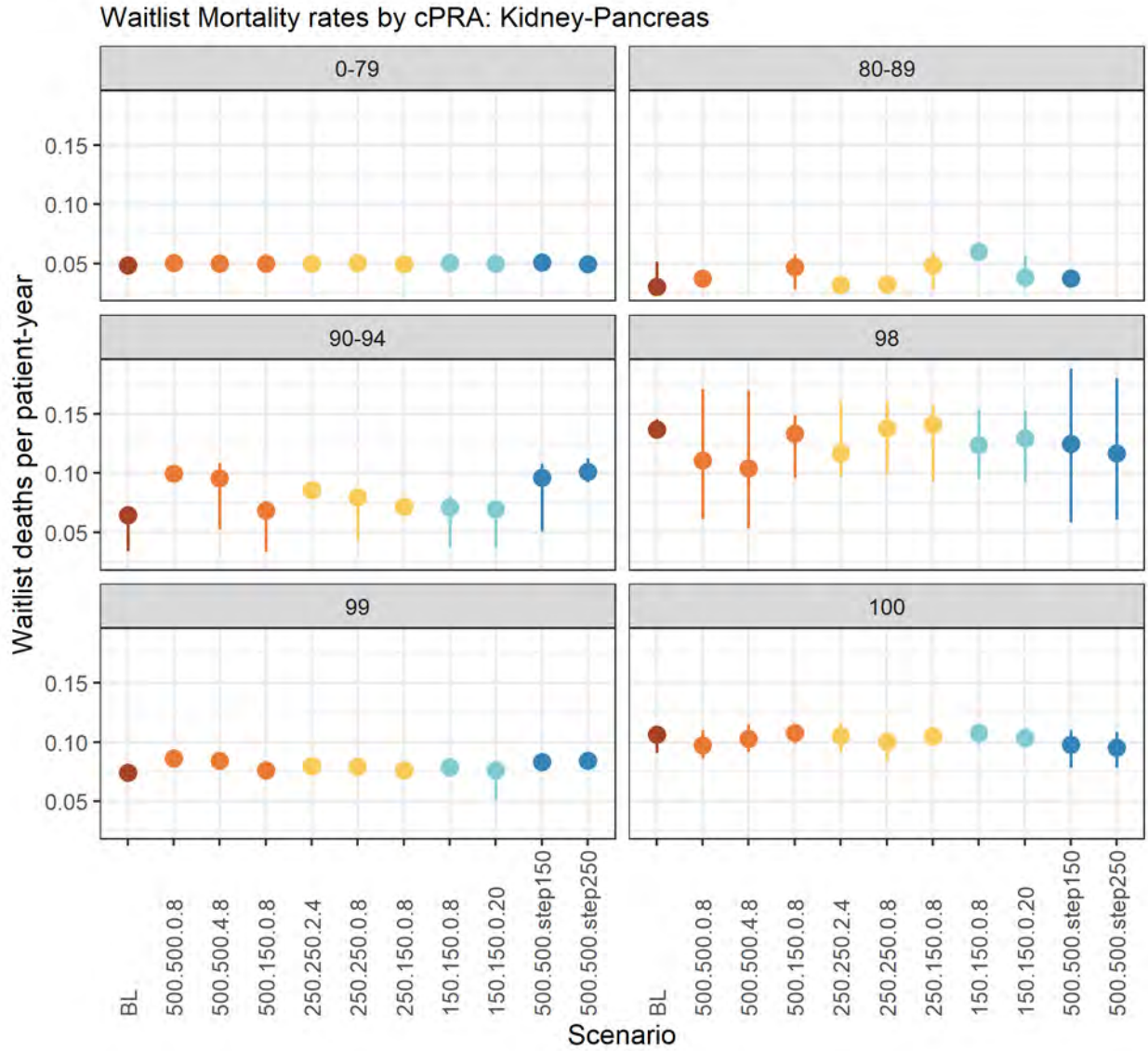


Waitlist Mortality rates by Dialysis Time: Kidney

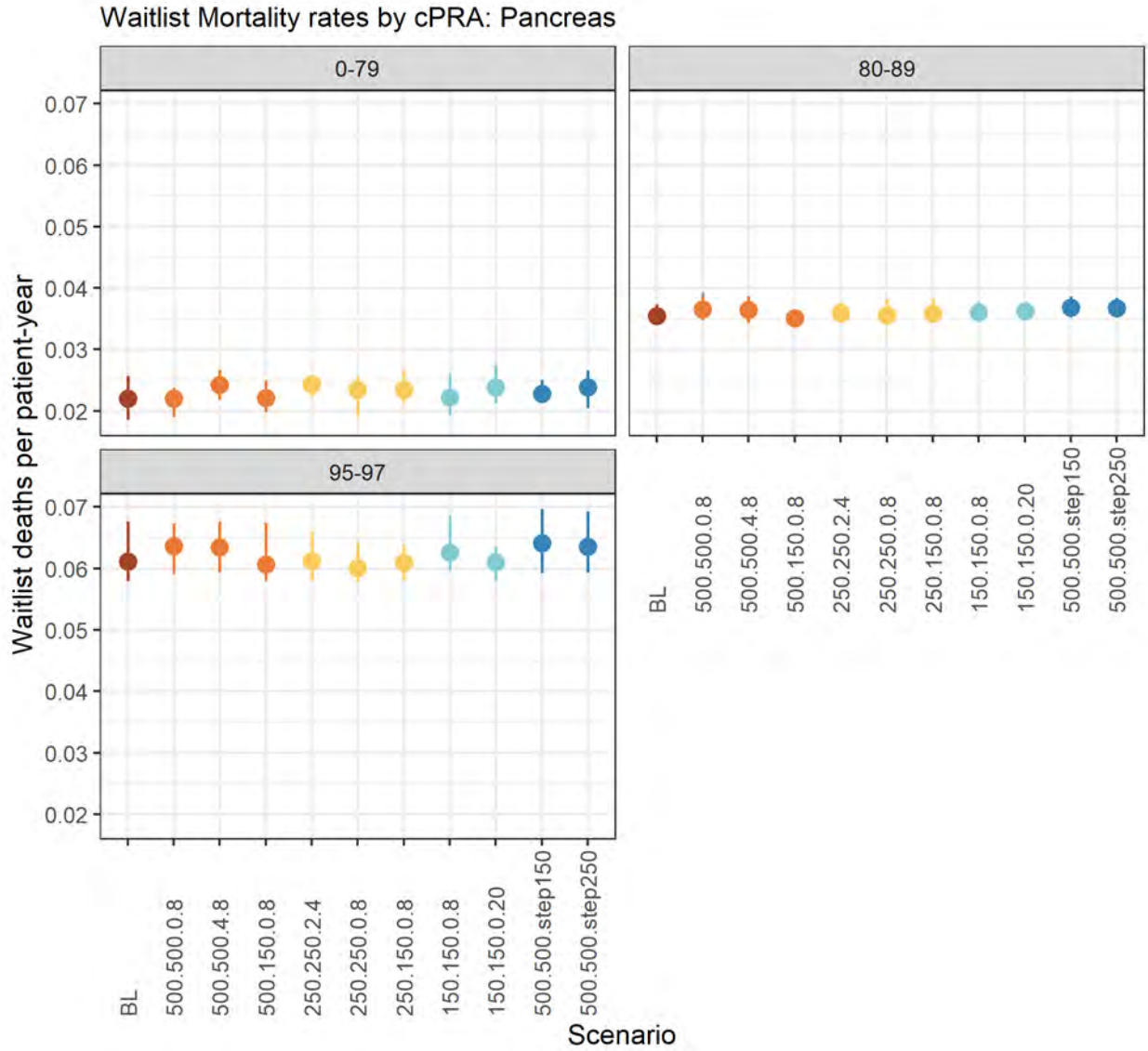
Waitlist Mortality Rates: cPRA



Waitlist Mortality rates by cPRA: Kidney

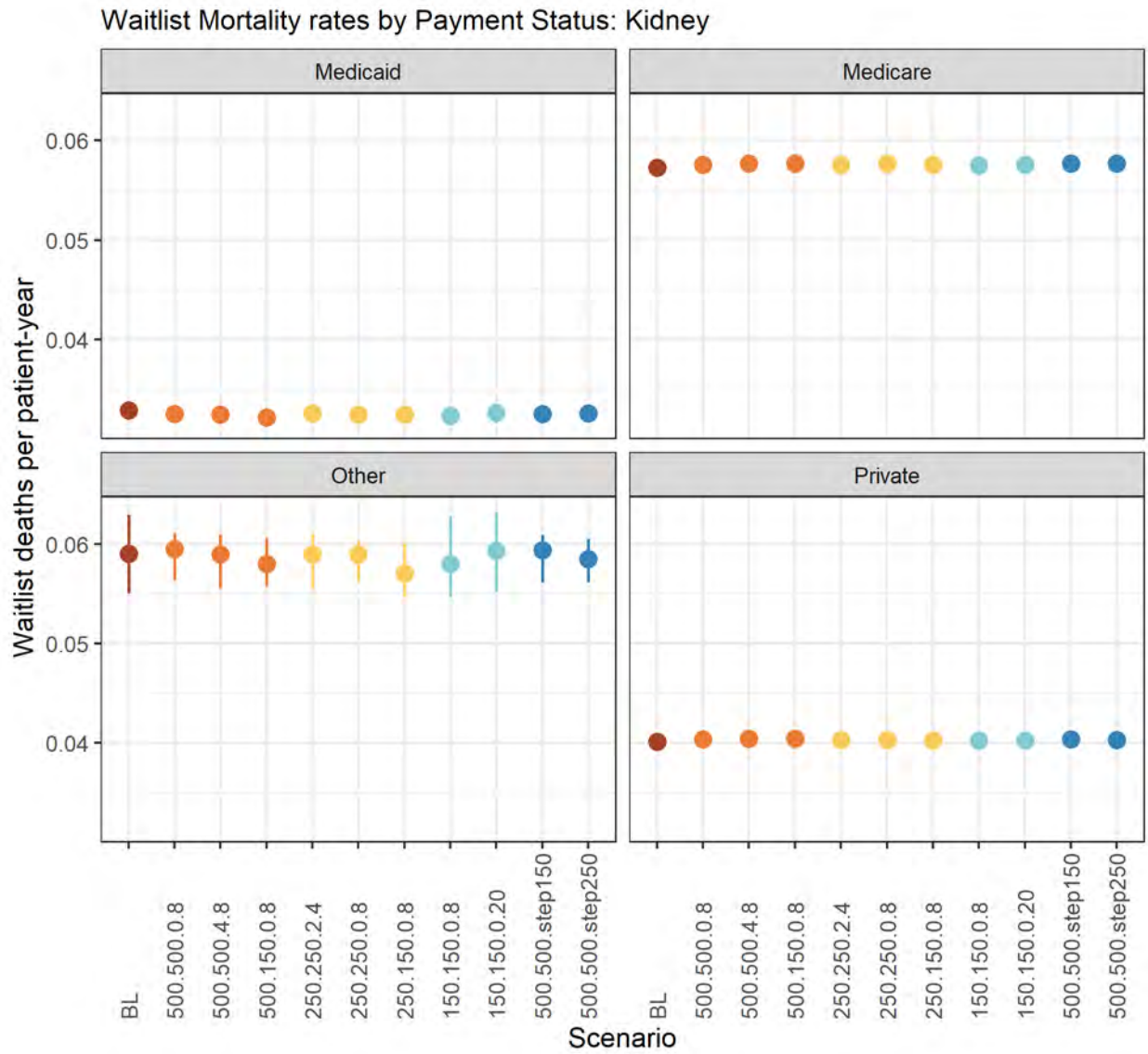


Waitlist Mortality rates by cPRA: Kidney-Pancreas



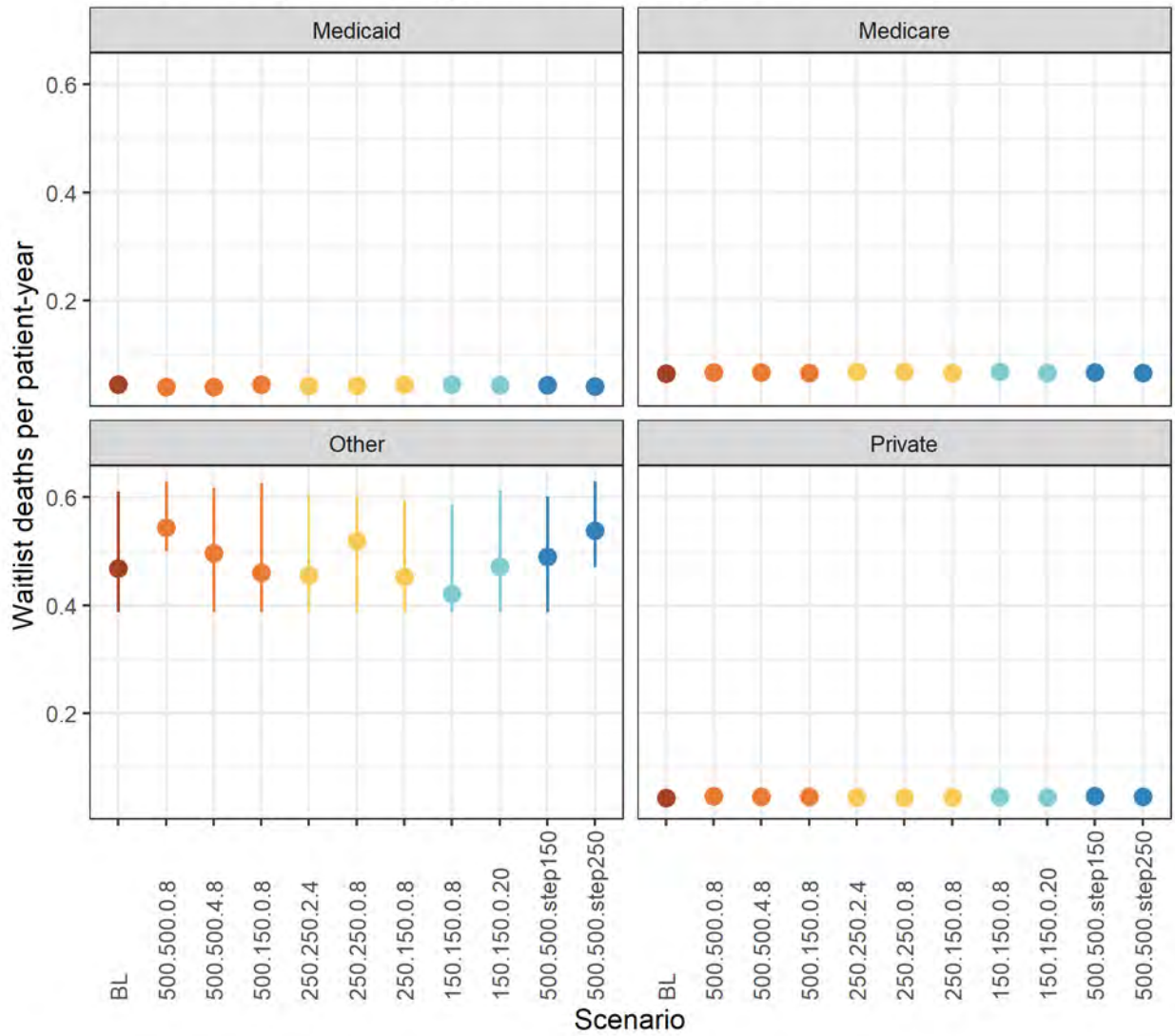
Waitlist Mortality rates by cPRA: Pancreas

Waitlist Mortality Rates: Payment Status



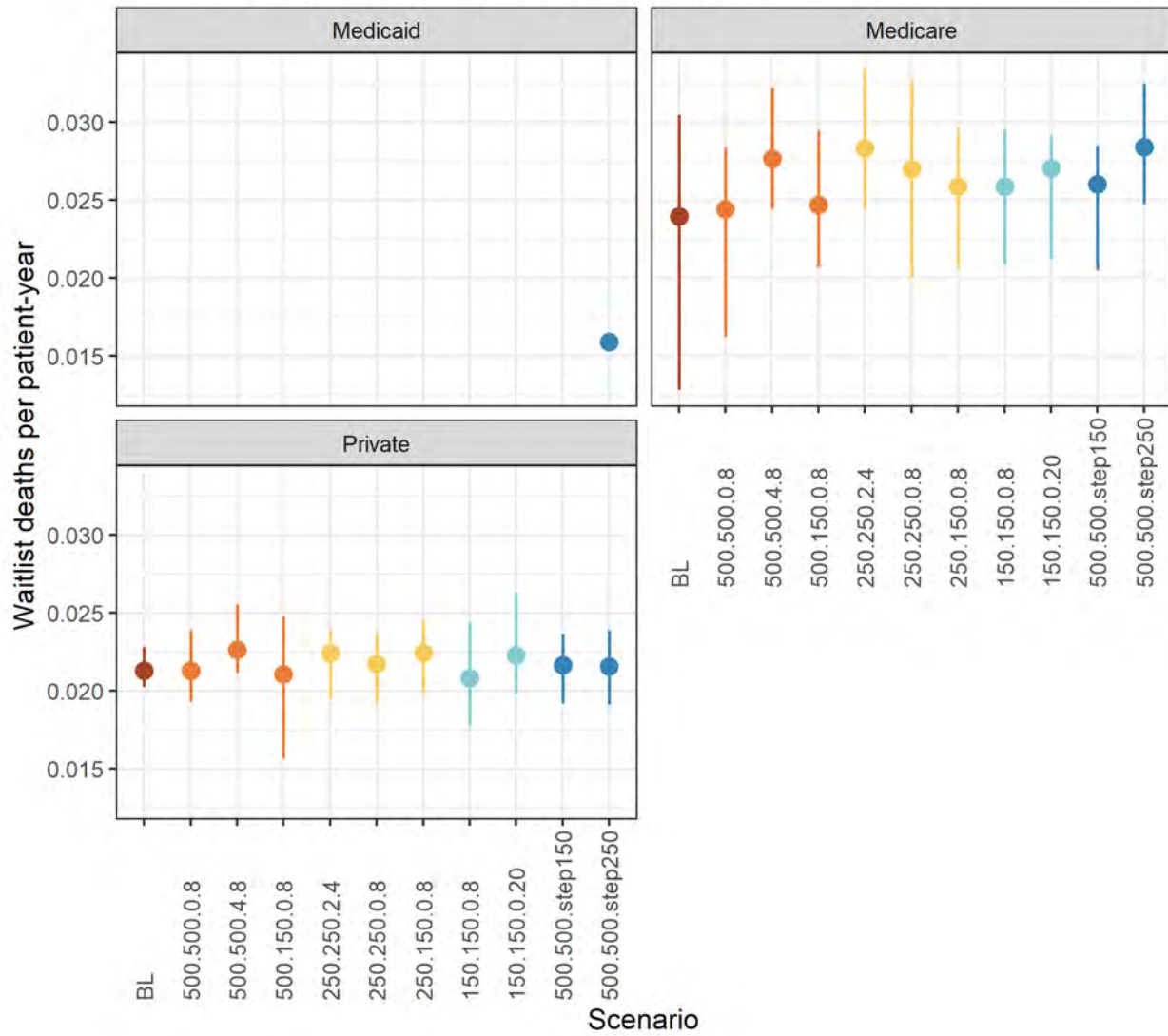
Waitlist Mortality rates by Payment Status: Kidney

Waitlist Mortality rates by Payment Status: Kidney-Pancreas



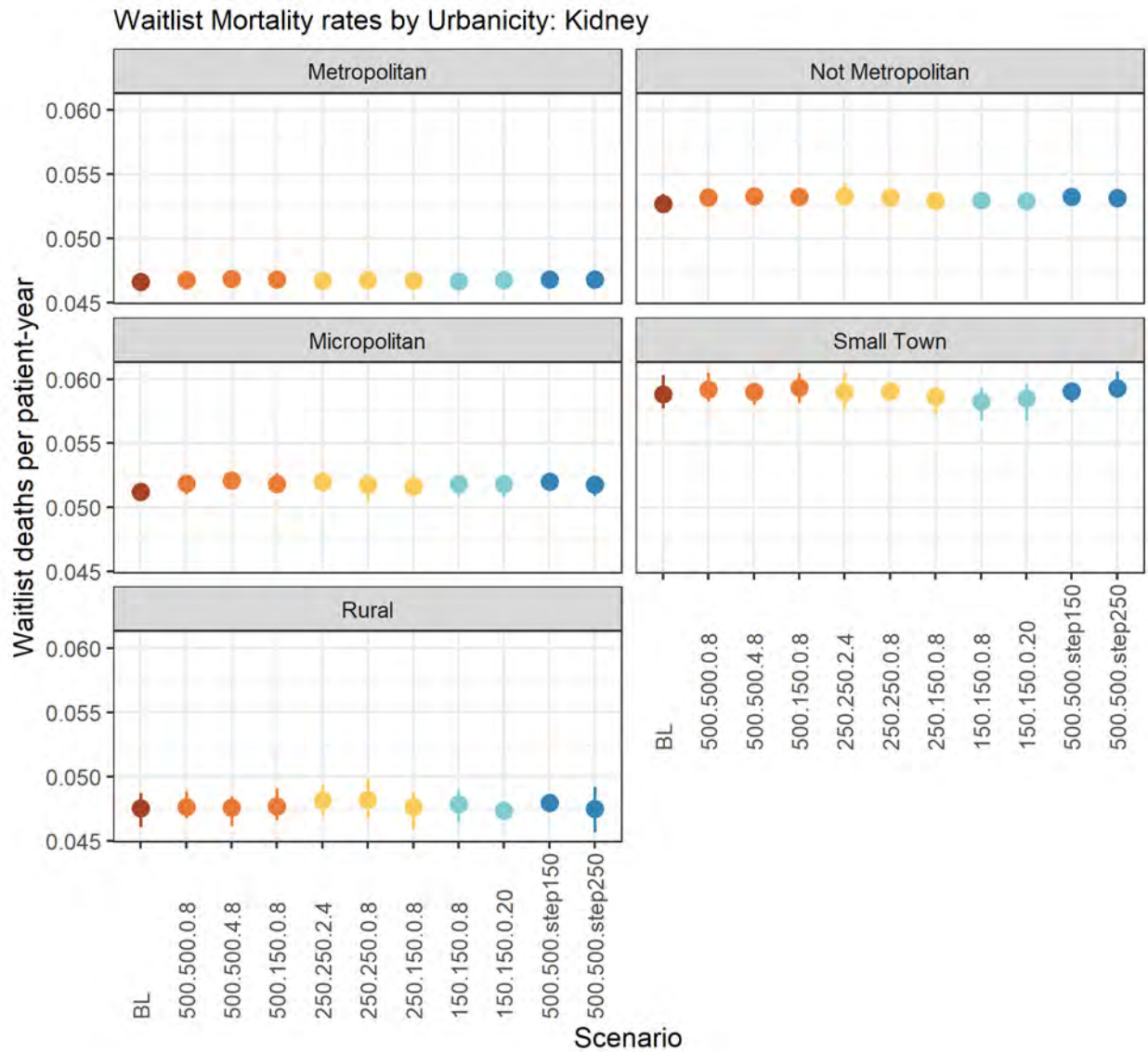
Waitlist Mortality rates by Payment Status: Kidney-Pancreas

Waitlist Mortality rates by Payment Status: Pancreas

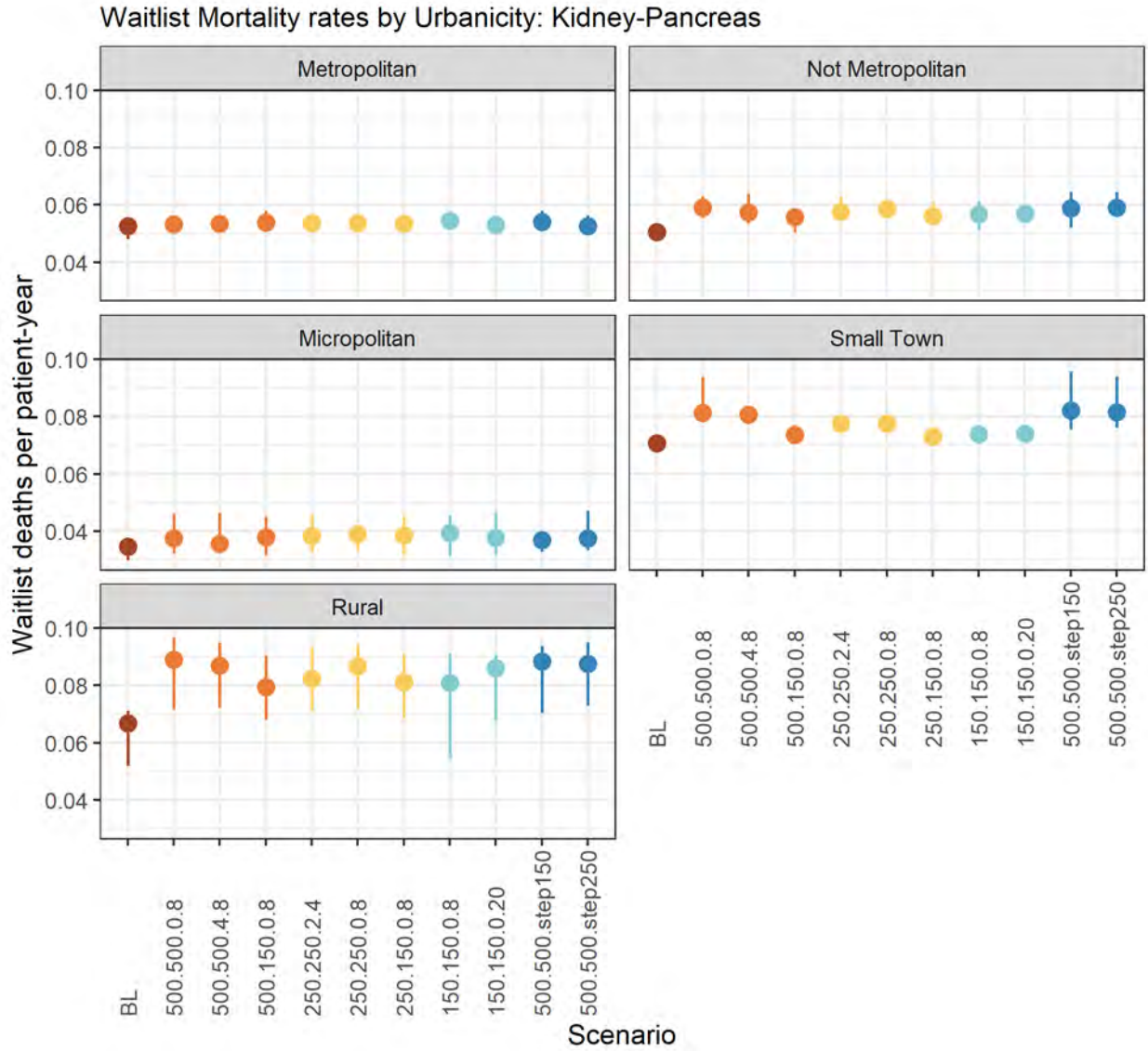


Waitlist Mortality rates by Payment Status: Pancreas

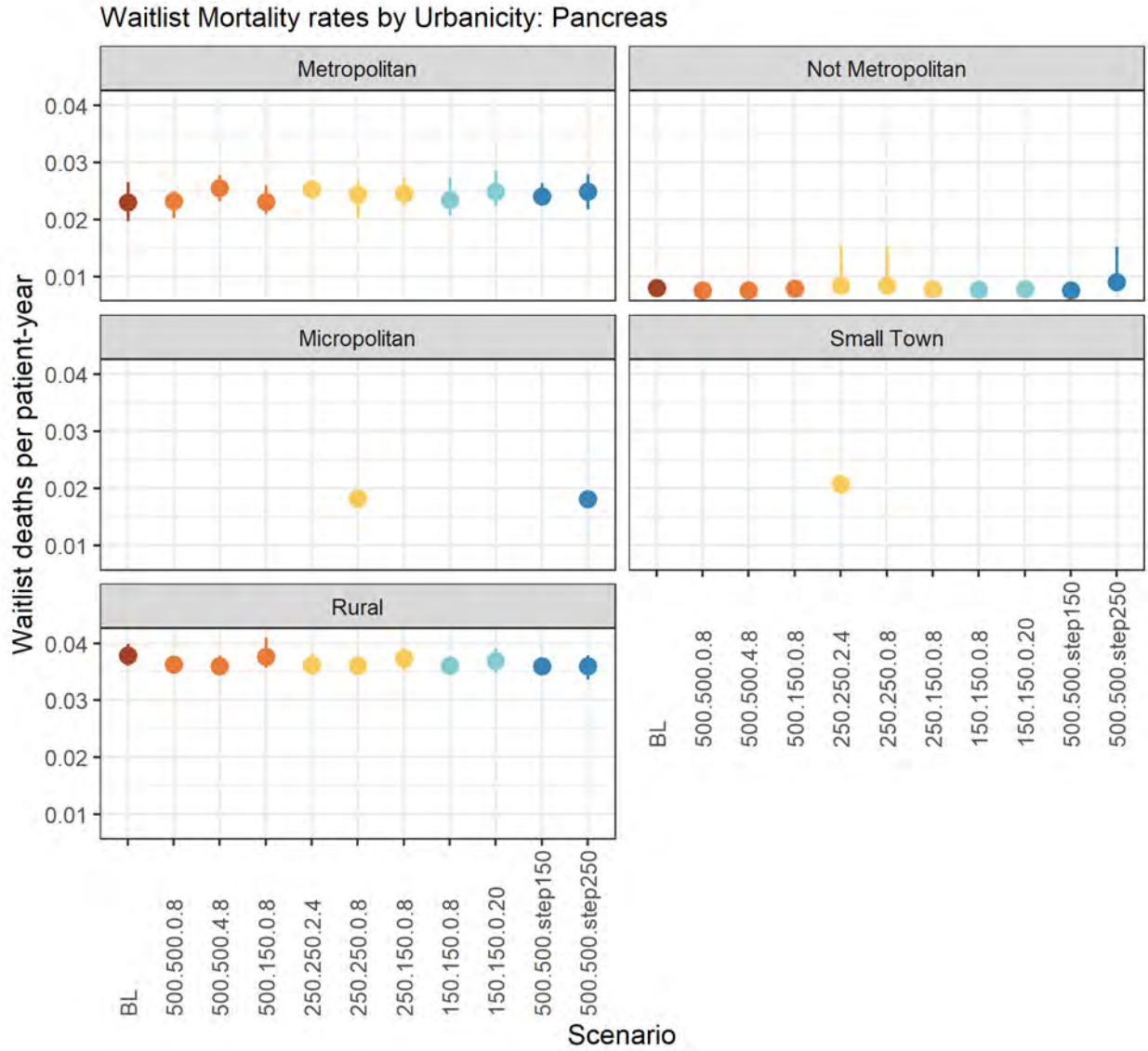
Waitlist Mortality Rates: Urbanicity



Waitlist Mortality rates by Urbanicity: Kidney

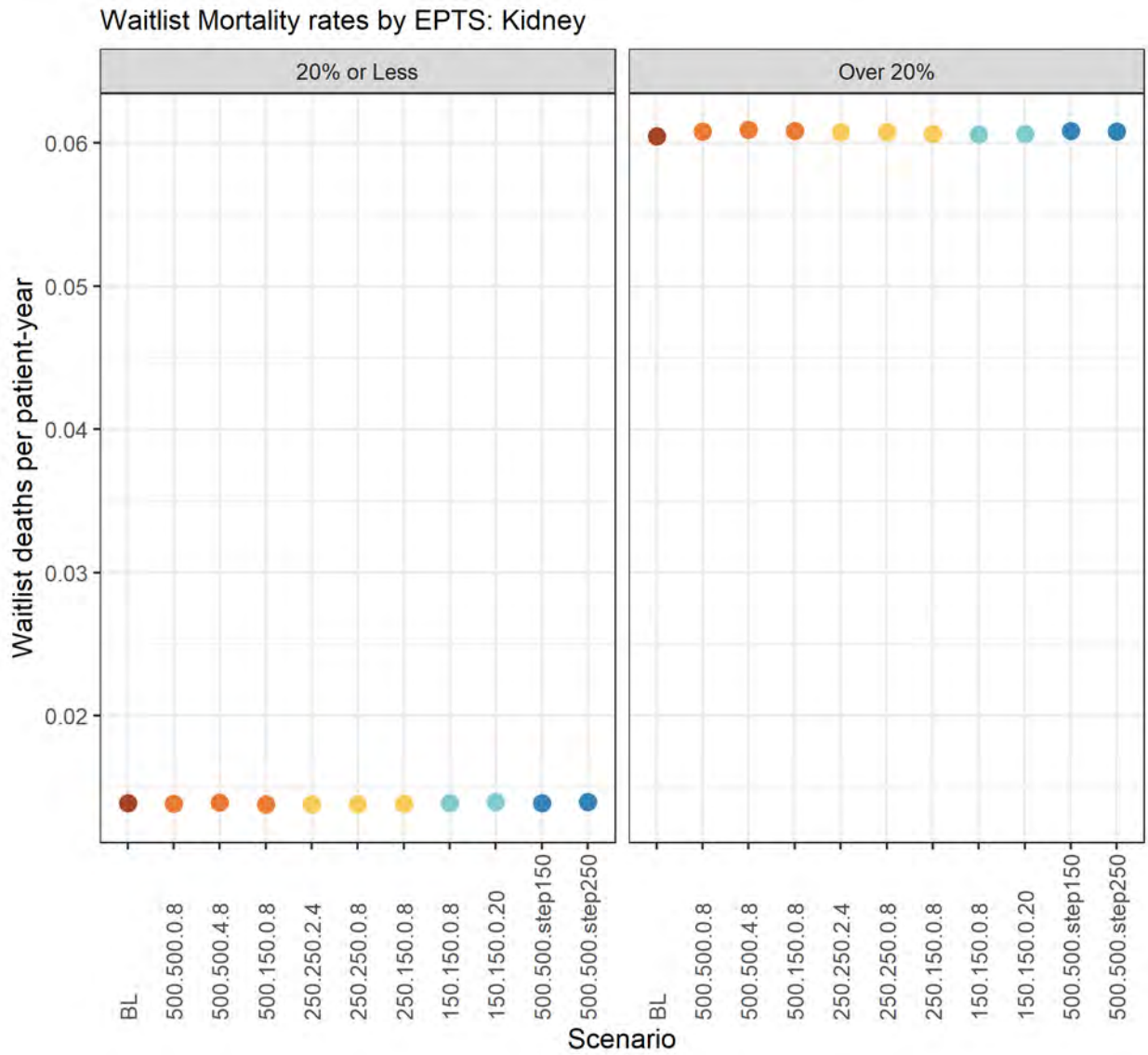


Waitlist Mortality rates by Urbanicity: Kidney-Pancreas



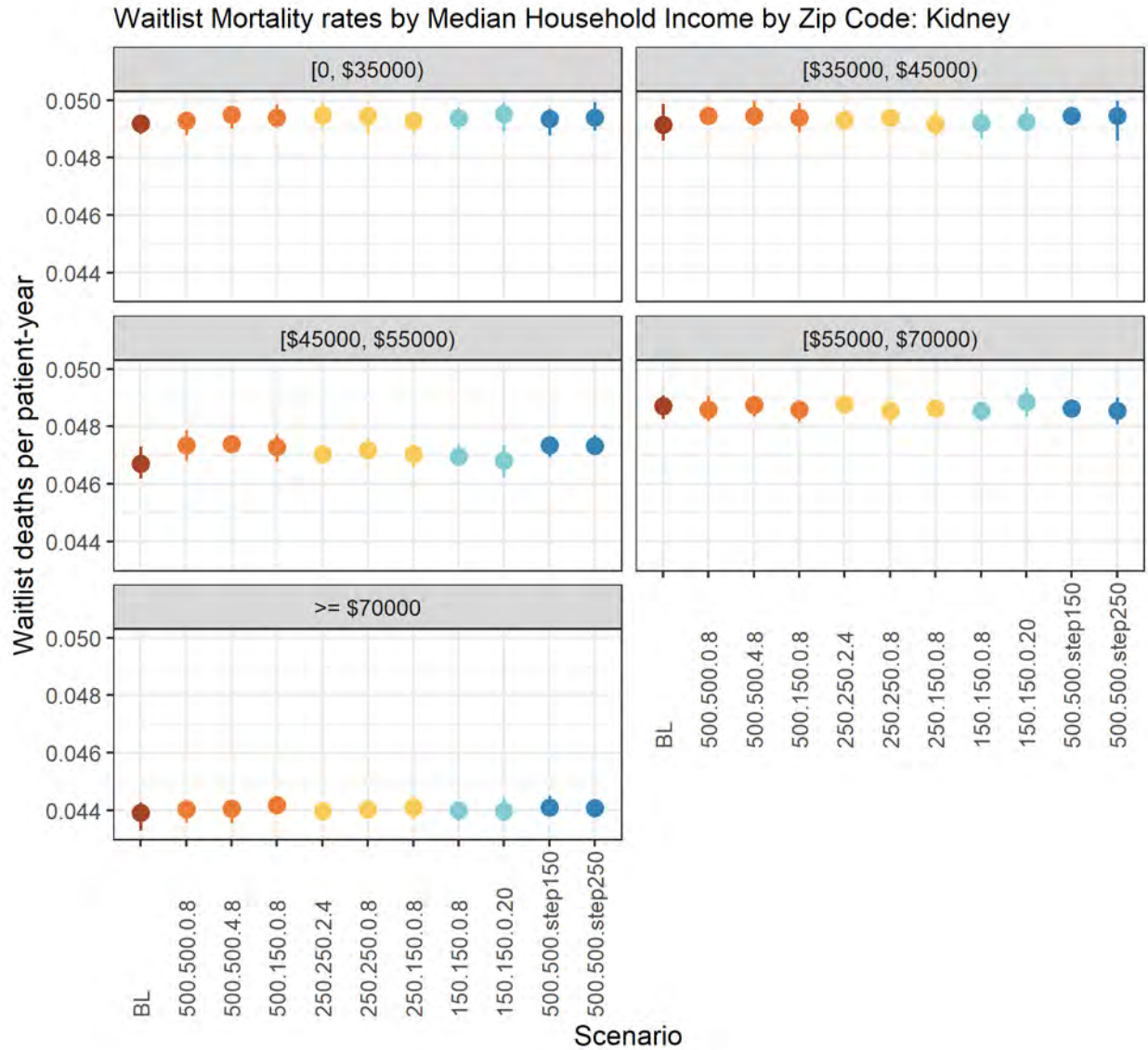
Waitlist Mortality rates by Urbanicity: Pancreas

Waitlist Mortality Rates: EPTS

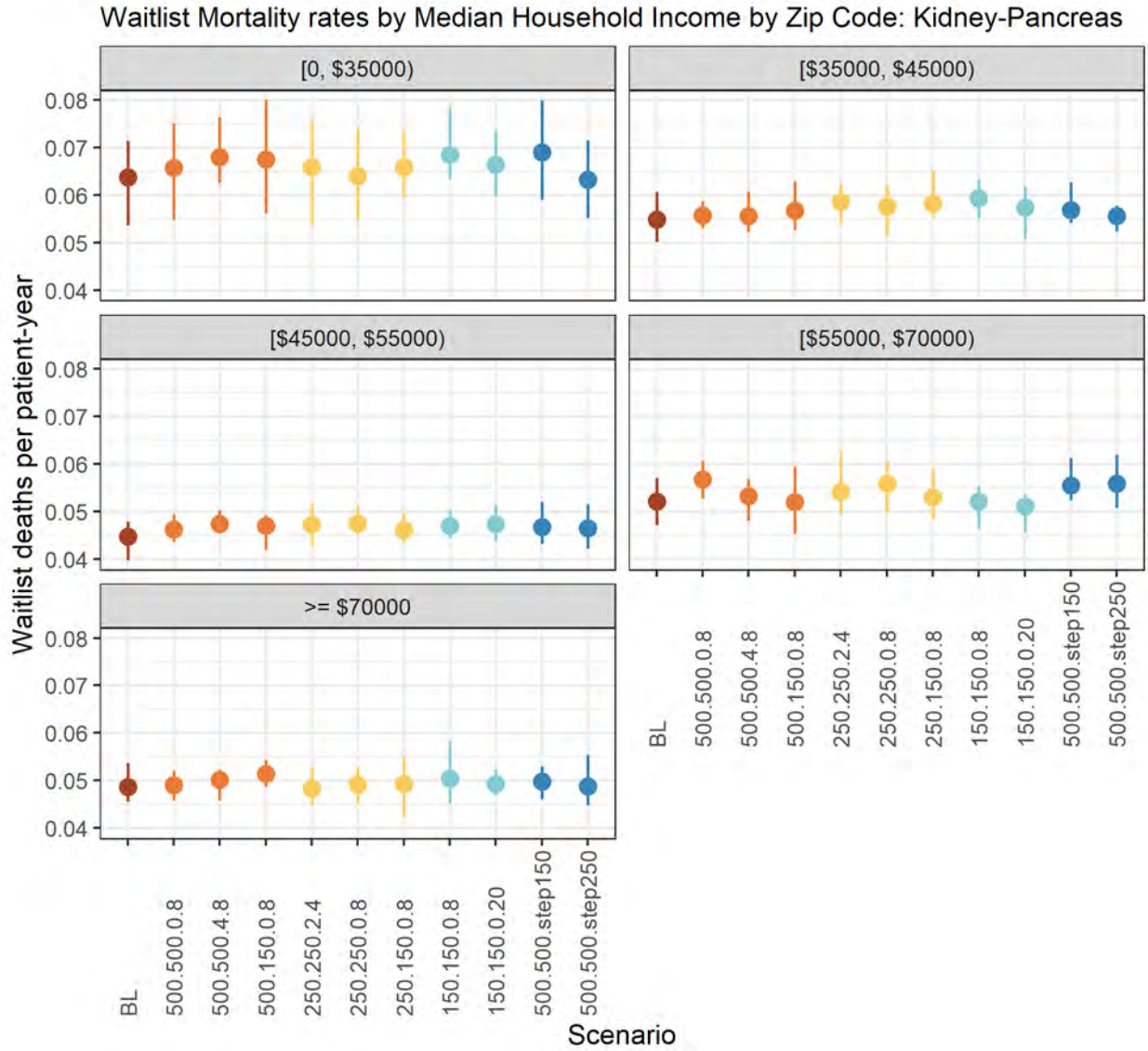


Waitlist Mortality rates by EPTS: Kidney

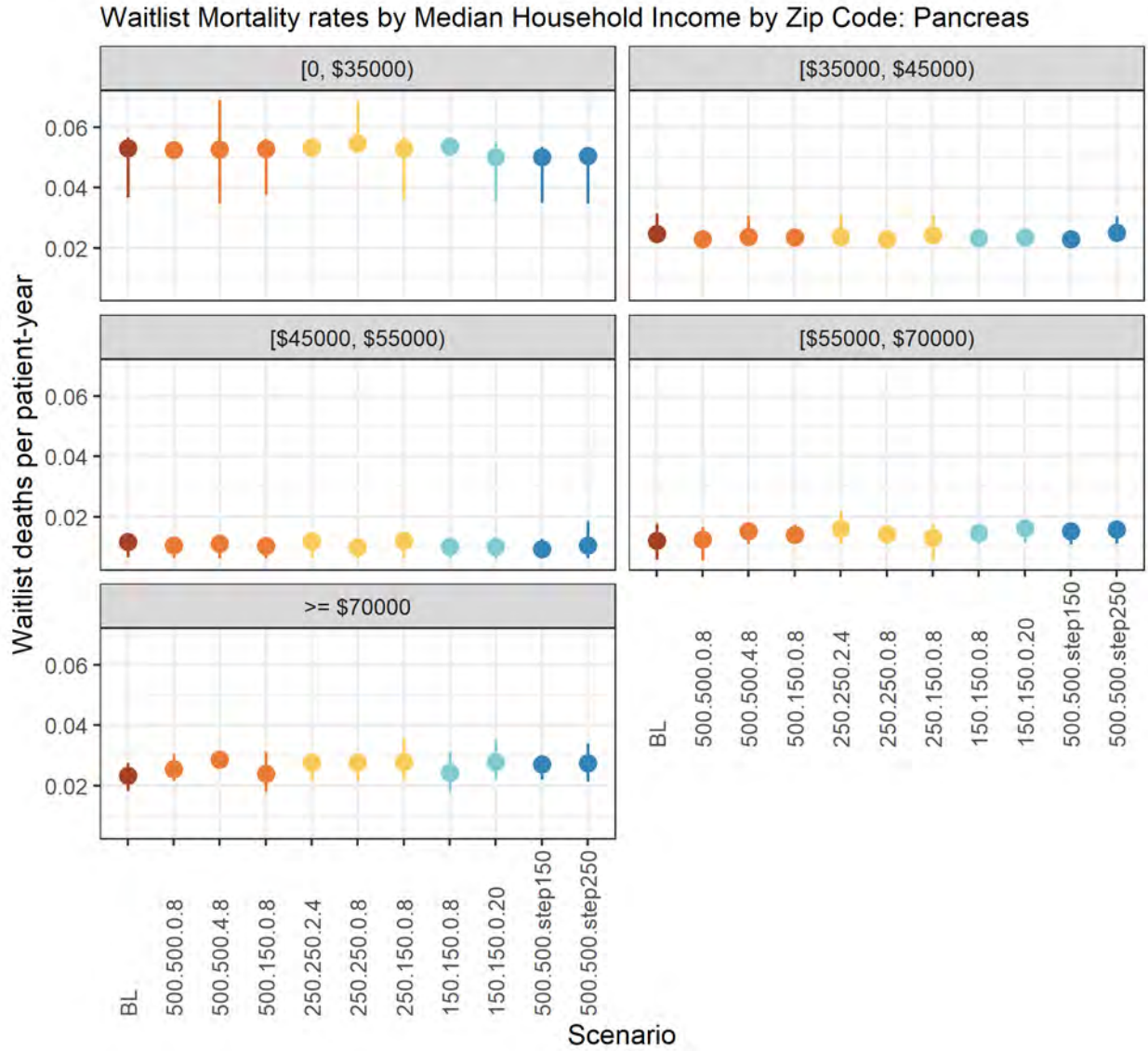
Waitlist Mortality Rates: Median Household Income by Zip Code



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



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

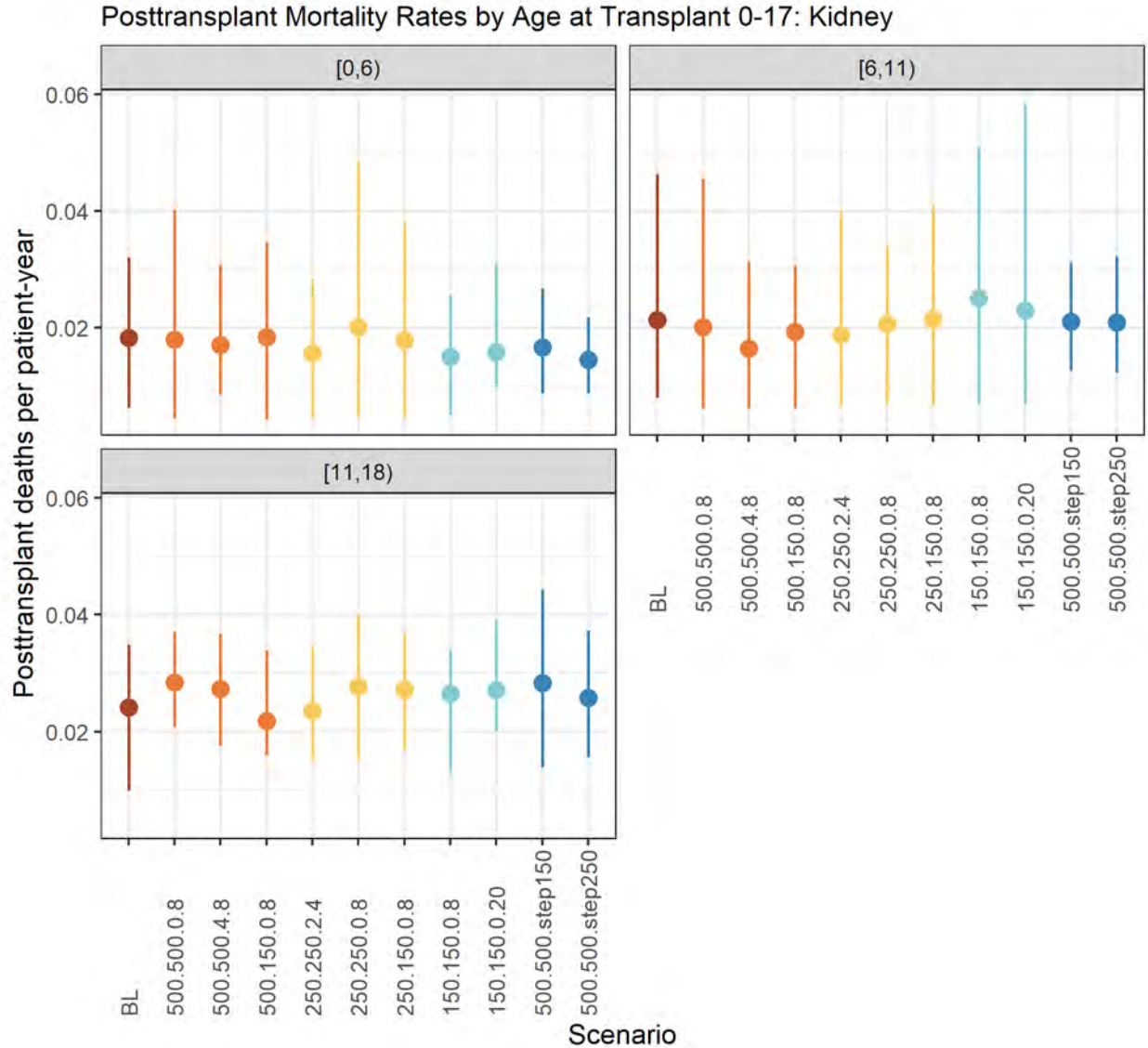


Waitlist Mortality rates by Median Household Income by Zip Code: Pancreas

Posttransplant Mortality

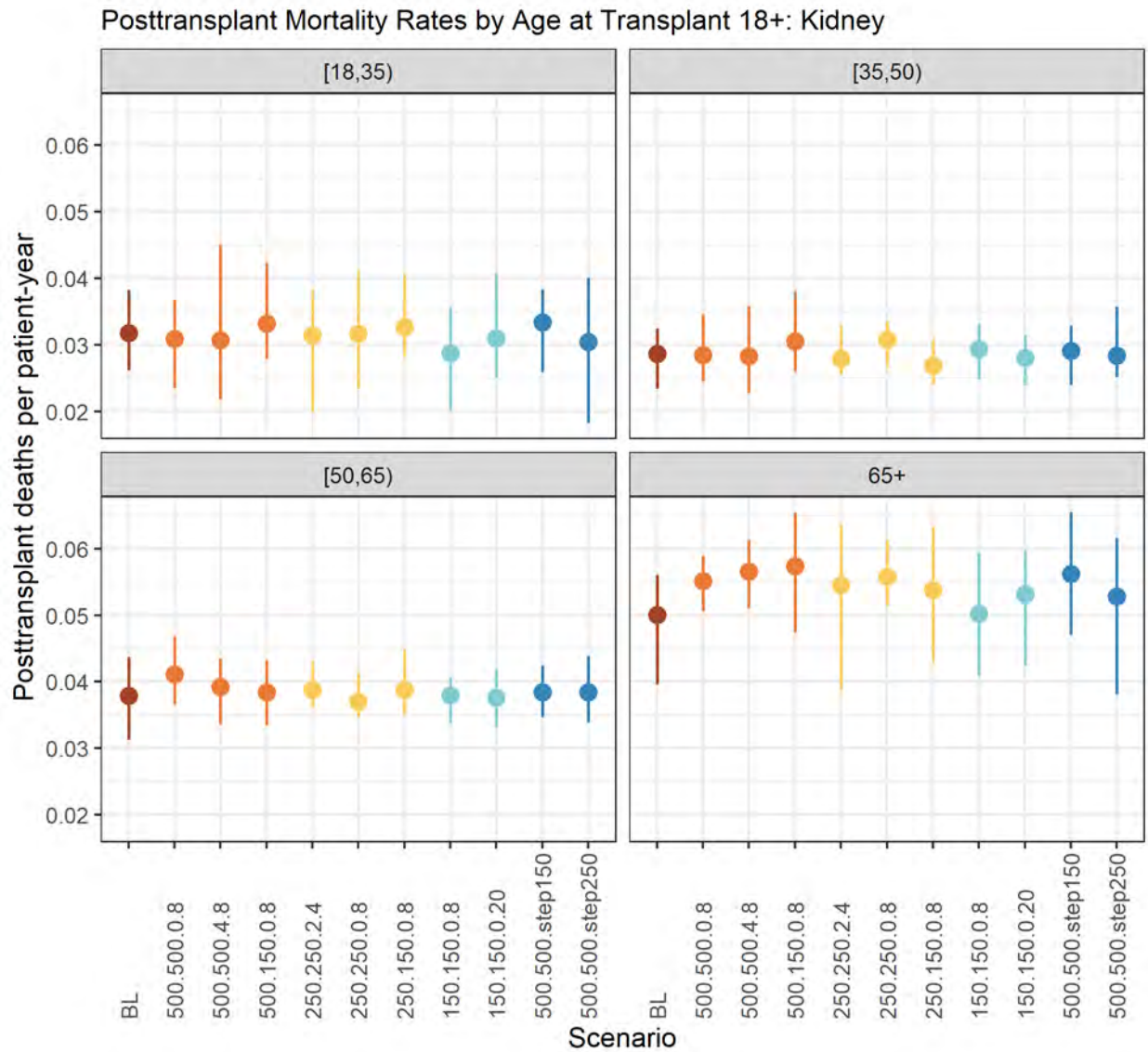
Posttransplant Mortality Rates at 1 Year

Posttransplant Mortality Rates at 1 Year: Age at Transplant 0-17



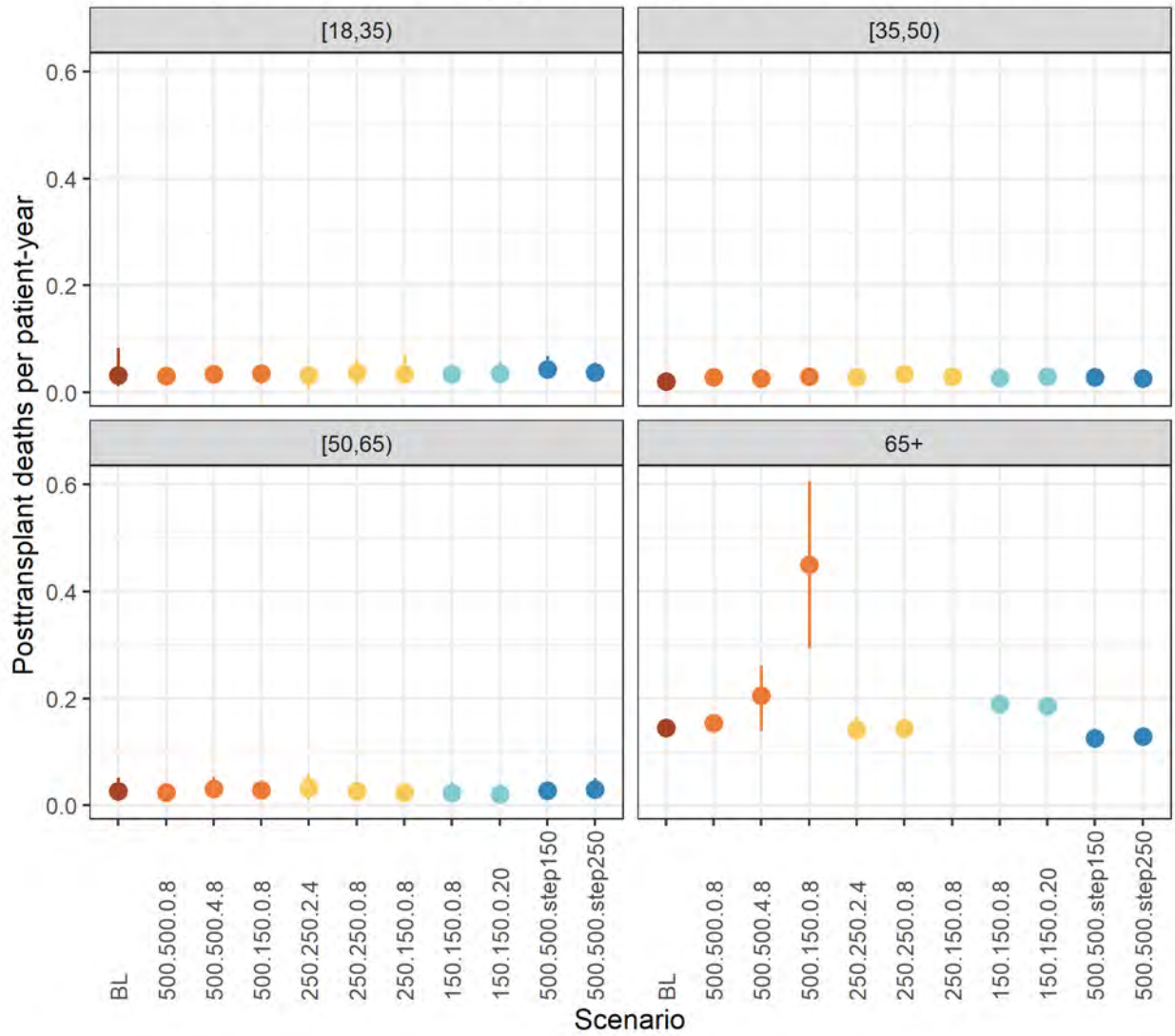
Posttransplant Mortality Rates by Age at Transplant 0-17: Kidney

Posttransplant Mortality Rates at 1 Year: Age at Transplant 18+



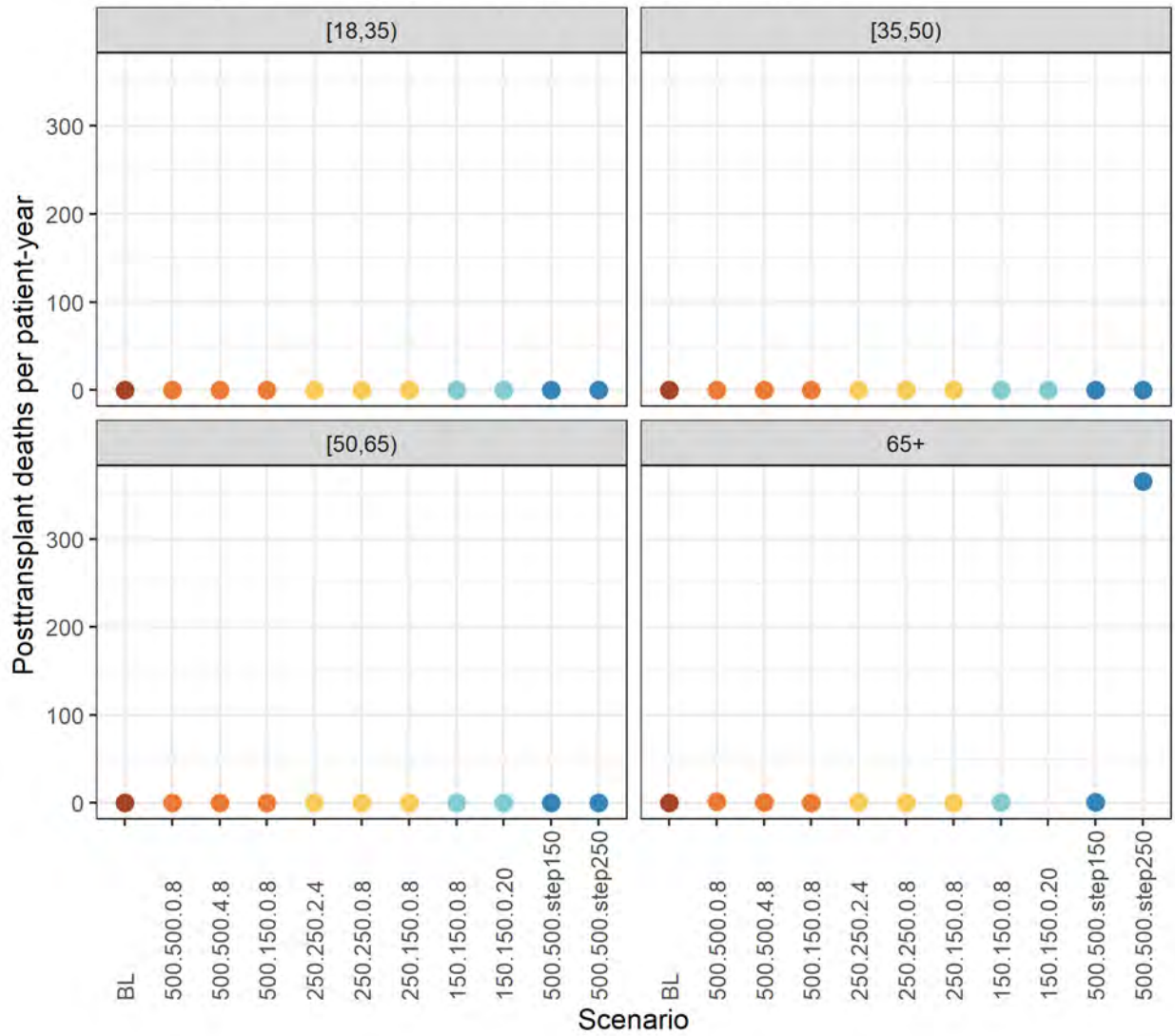
Posttransplant Mortality Rates by Age at Transplant 18+: Kidney

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



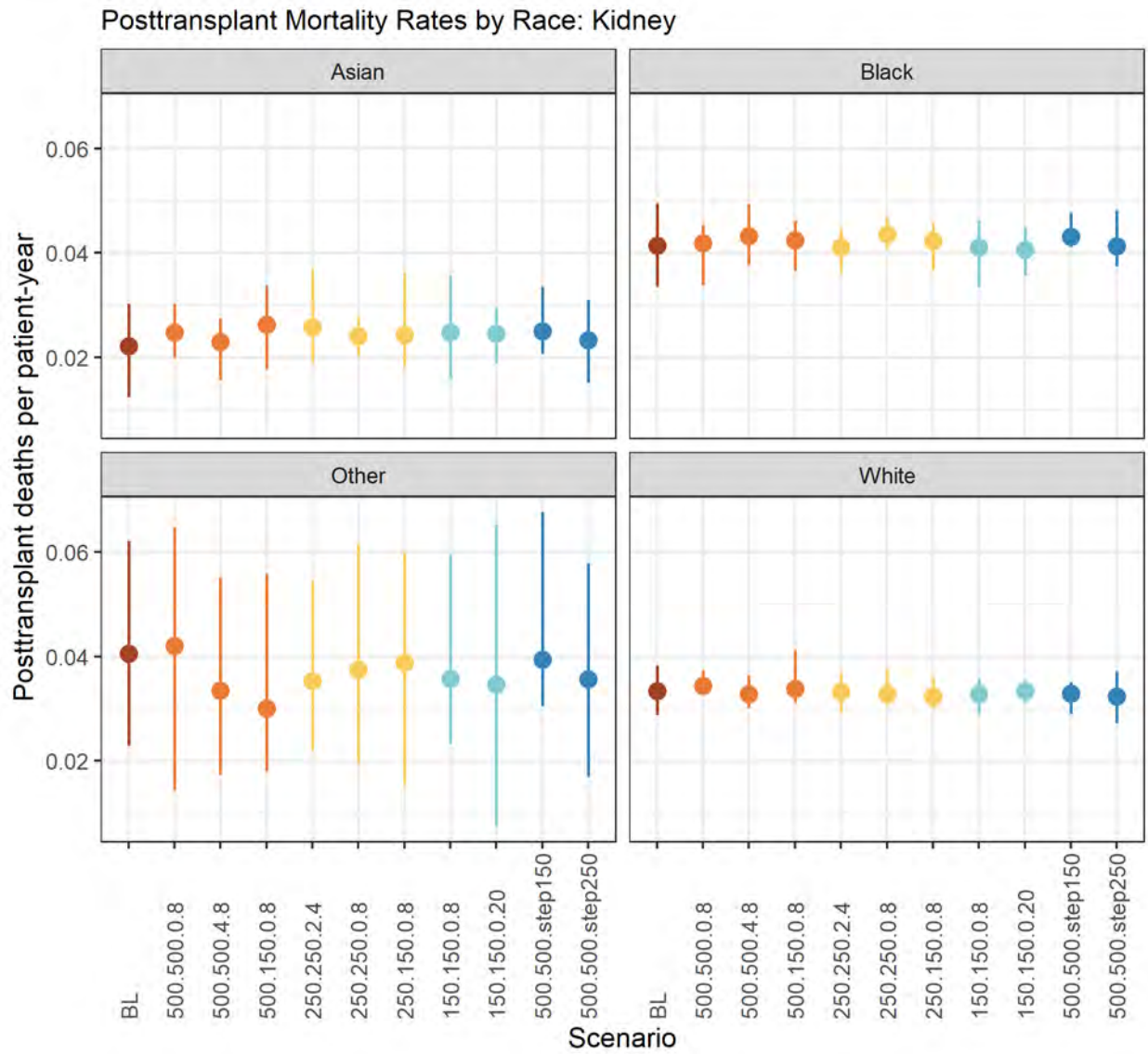
Posttransplant Mortality Rates by Age at Transplant 18+: Kidney-Pancreas

Posttransplant Mortality Rates by Age at Transplant 18+: Pancreas



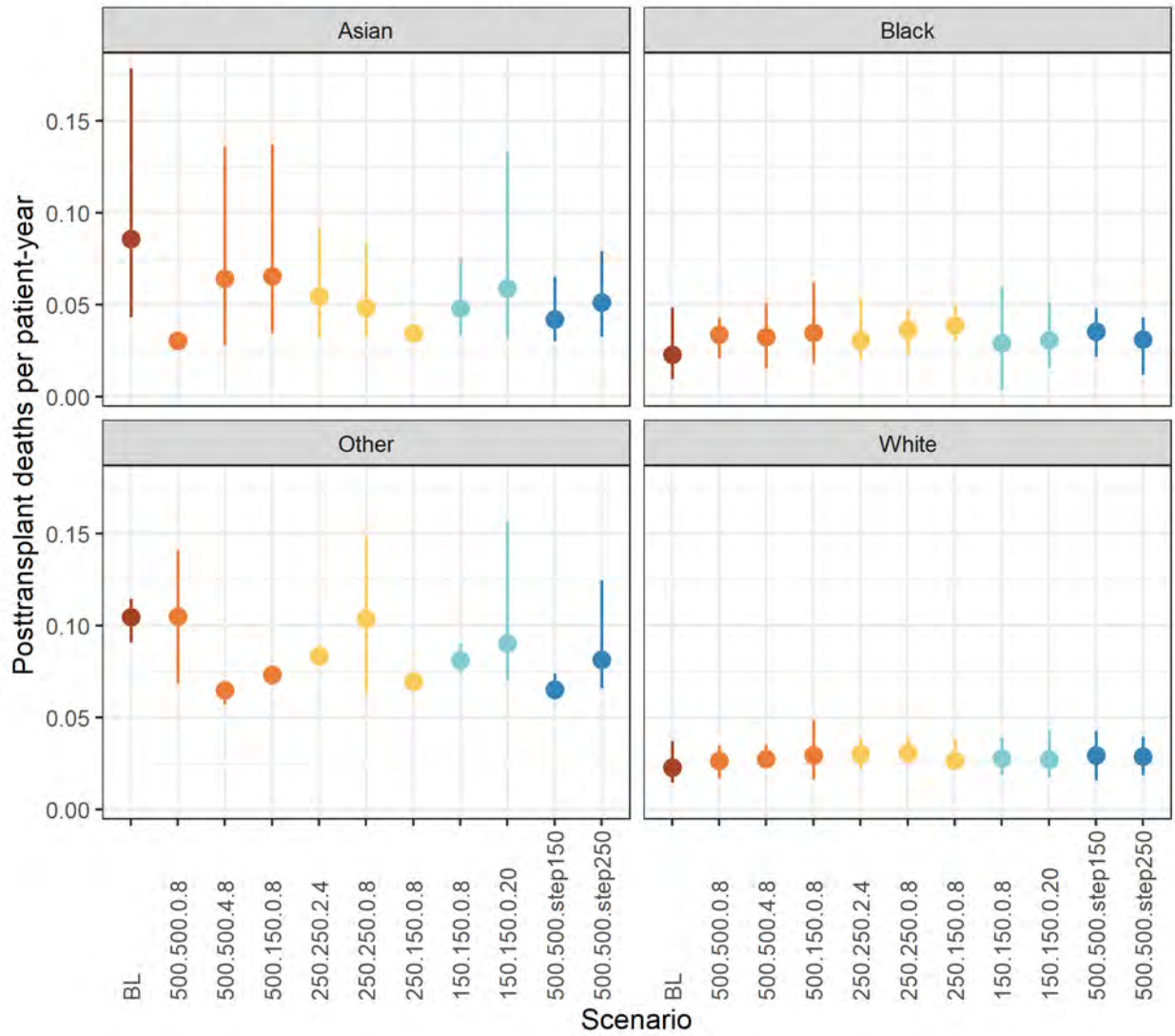
Posttransplant Mortality Rates by Age at Transplant 18+: Pancreas

Posttransplant Mortality Rates at 1 Year: Race

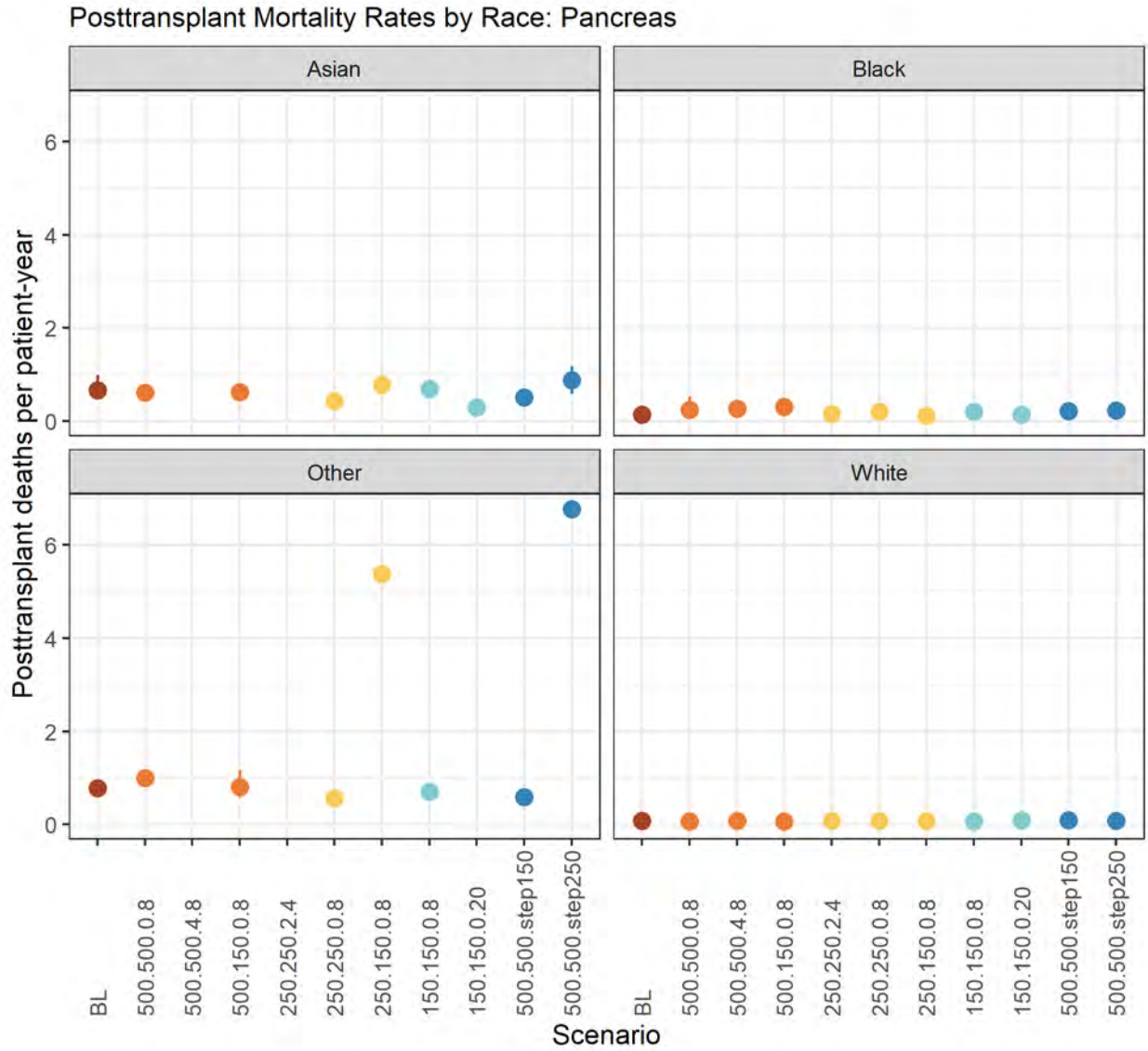


Posttransplant Mortality Rates by Race: Kidney

Posttransplant Mortality Rates by Race: Kidney-Pancreas



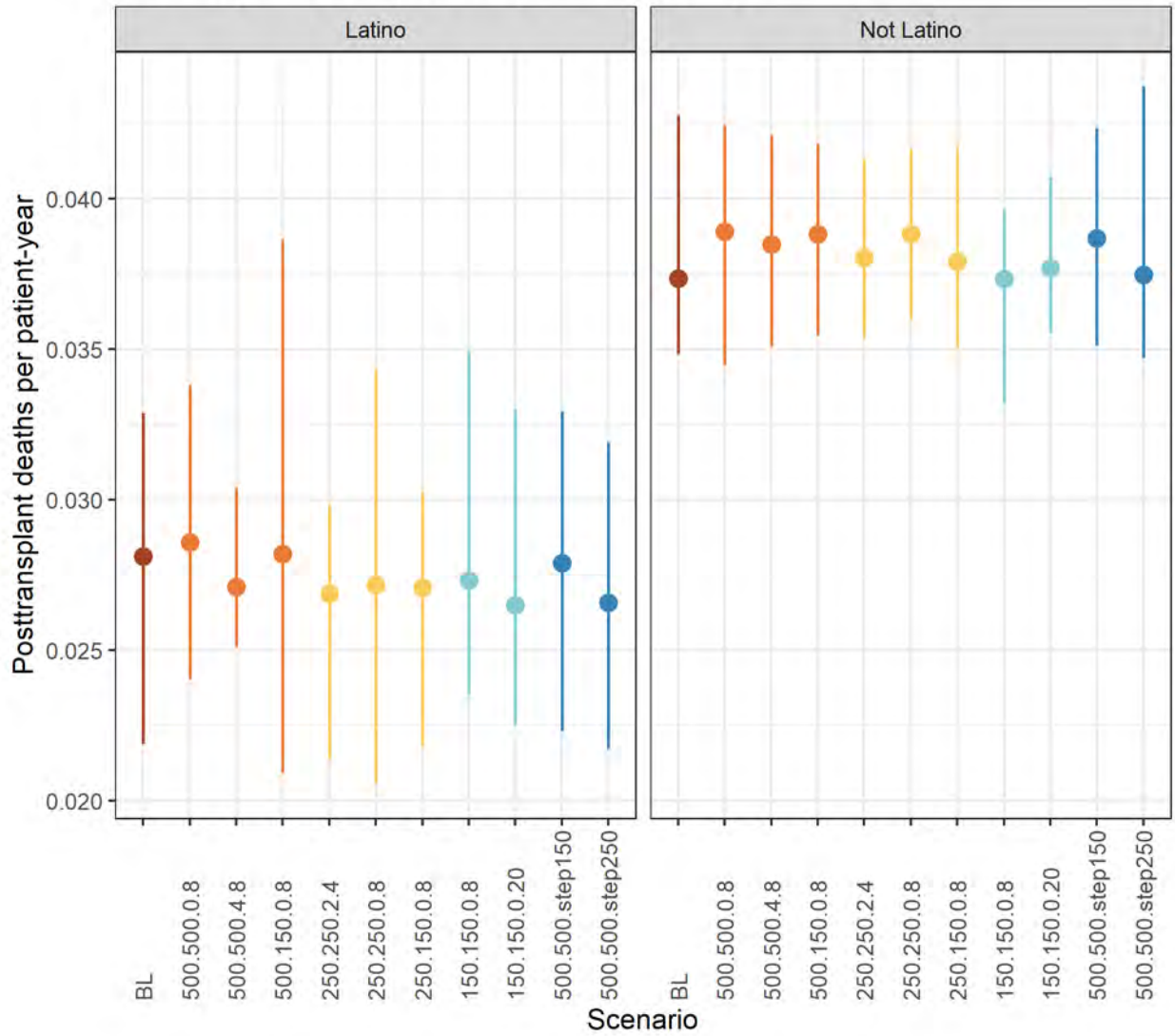
Posttransplant Mortality Rates by Race: Kidney-Pancreas



Posttransplant Mortality Rates by Race: Pancreas

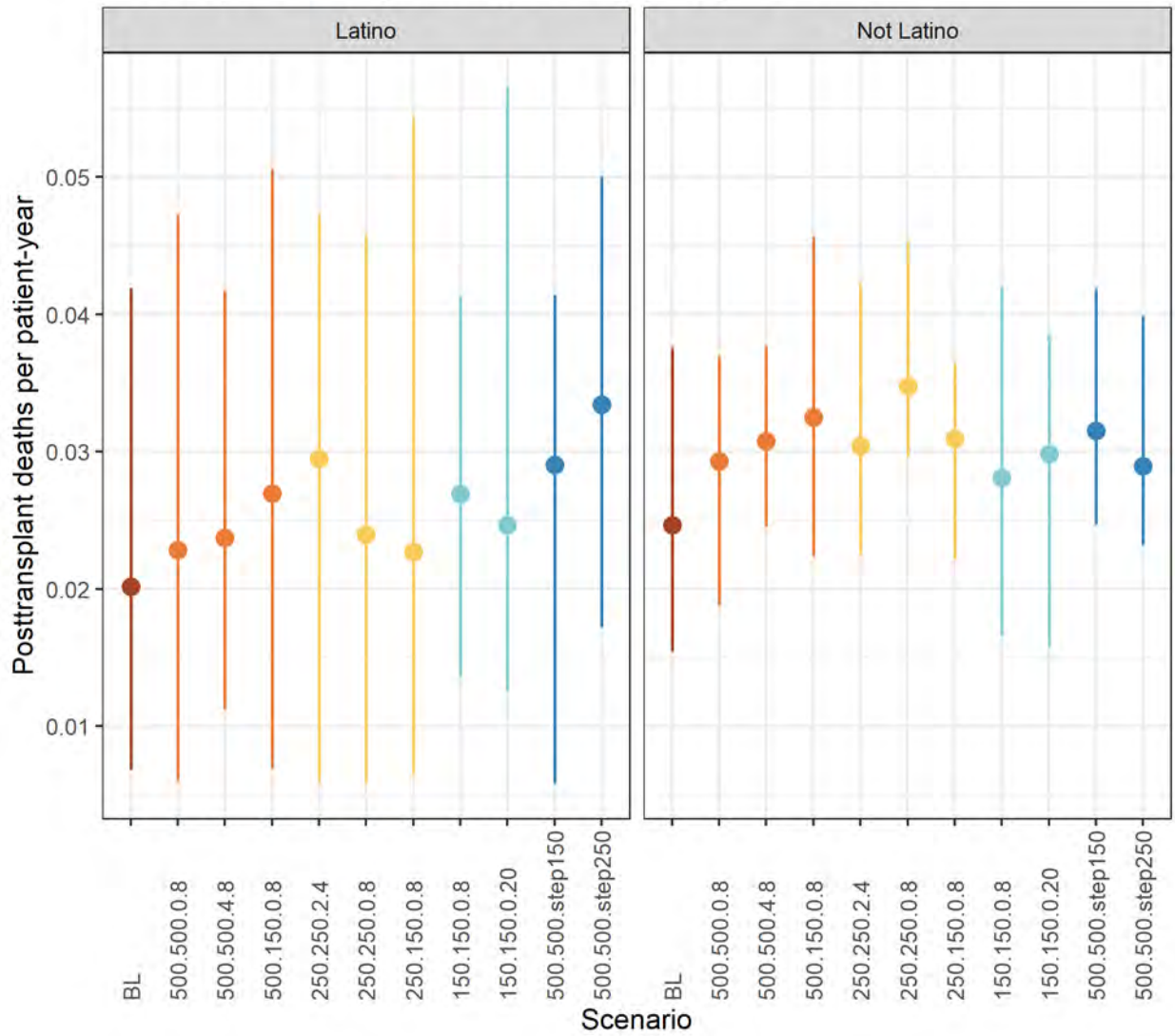
Posttransplant Mortality Rates at 1 Year: Ethnicity

Posttransplant Mortality Rates by Ethnicity: Kidney



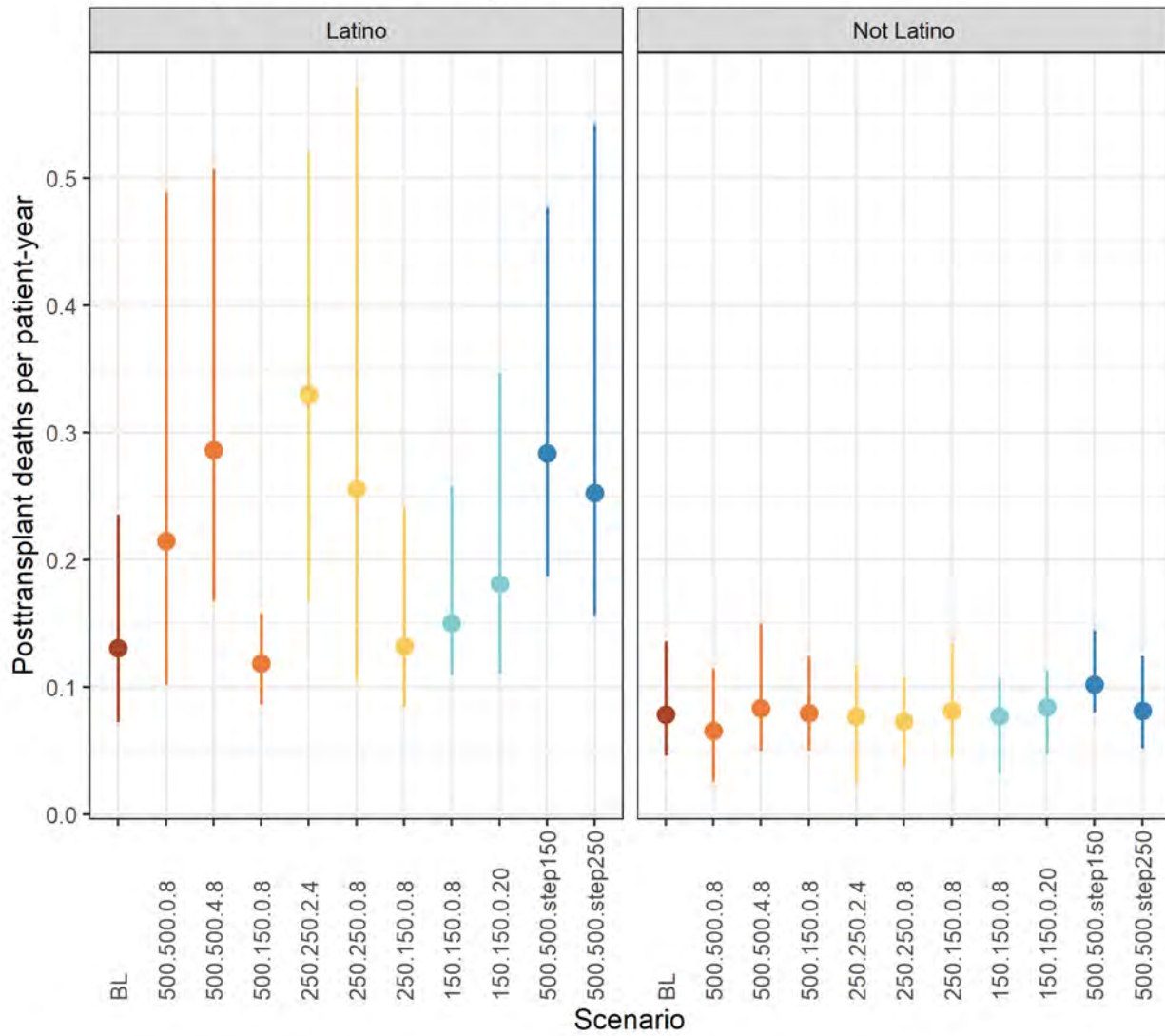
Posttransplant Mortality Rates by Ethnicity: Kidney

Posttransplant Mortality Rates by Ethnicity: Kidney-Pancreas



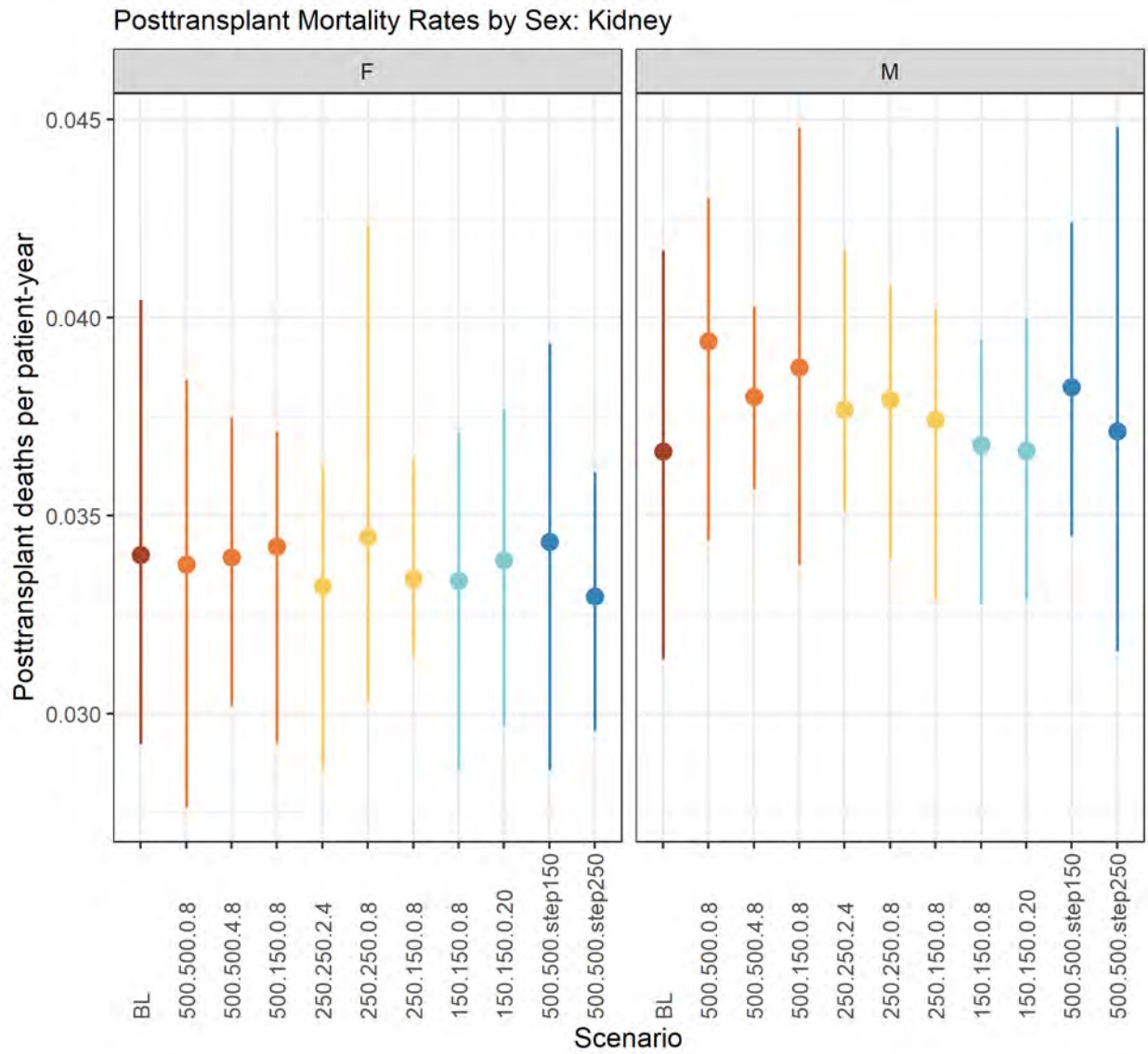
Posttransplant Mortality Rates by Ethnicity: Kidney-Pancreas

Posttransplant Mortality Rates by Ethnicity: Pancreas

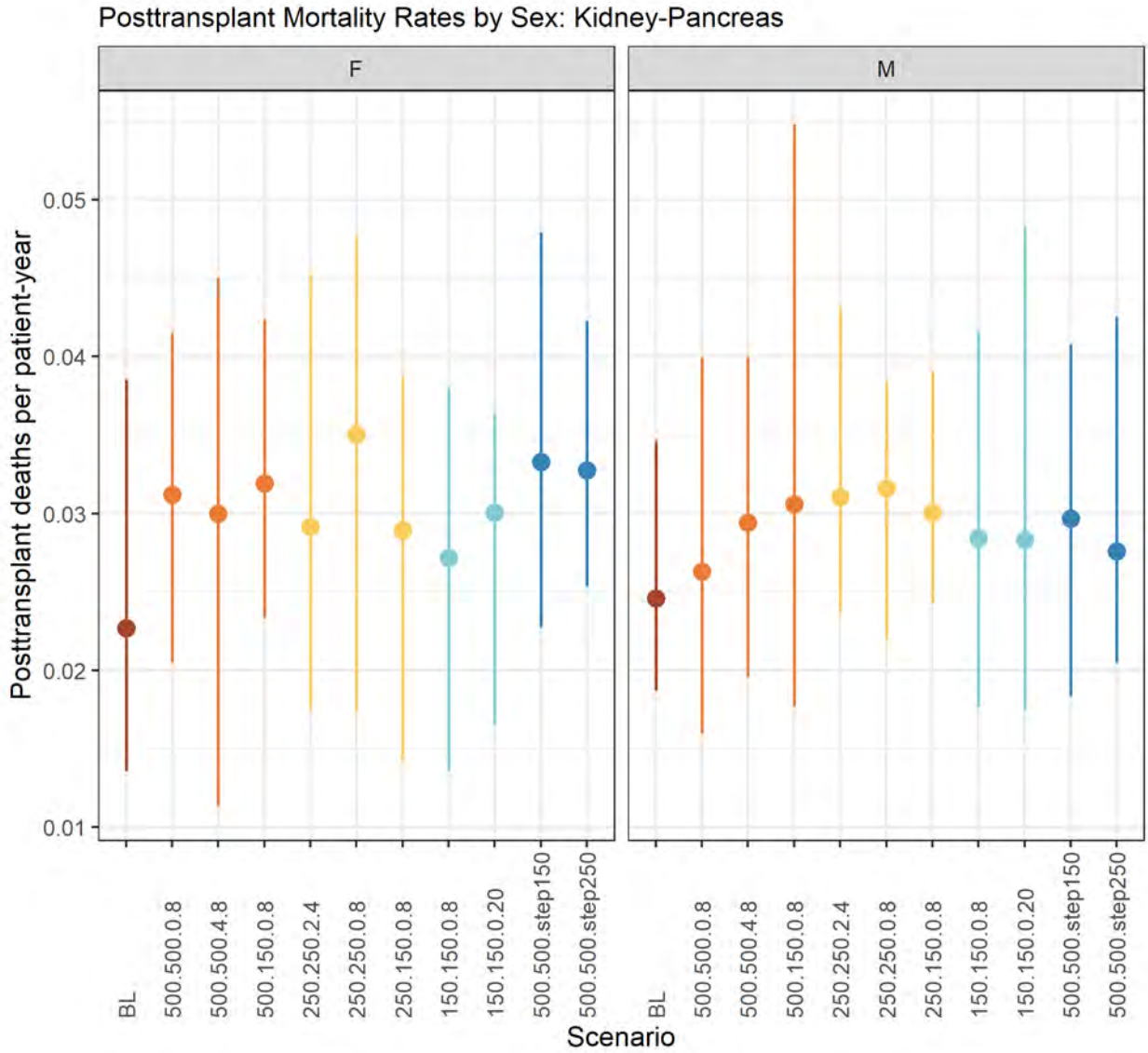


Posttransplant Mortality Rates by Ethnicity: Pancreas

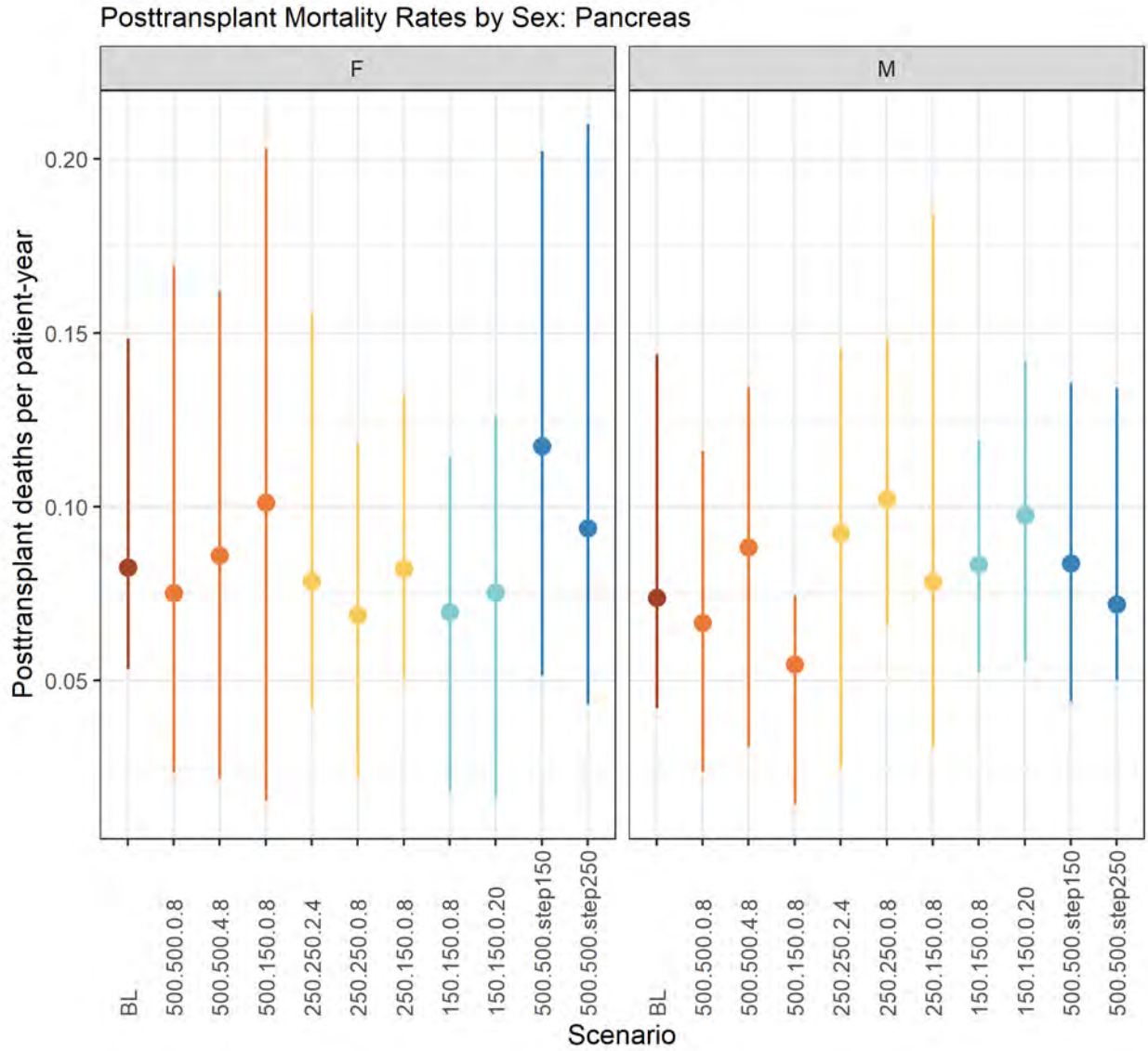
Posttransplant Mortality Rates at 1 Year: Sex



Posttransplant Mortality Rates by Sex: Kidney

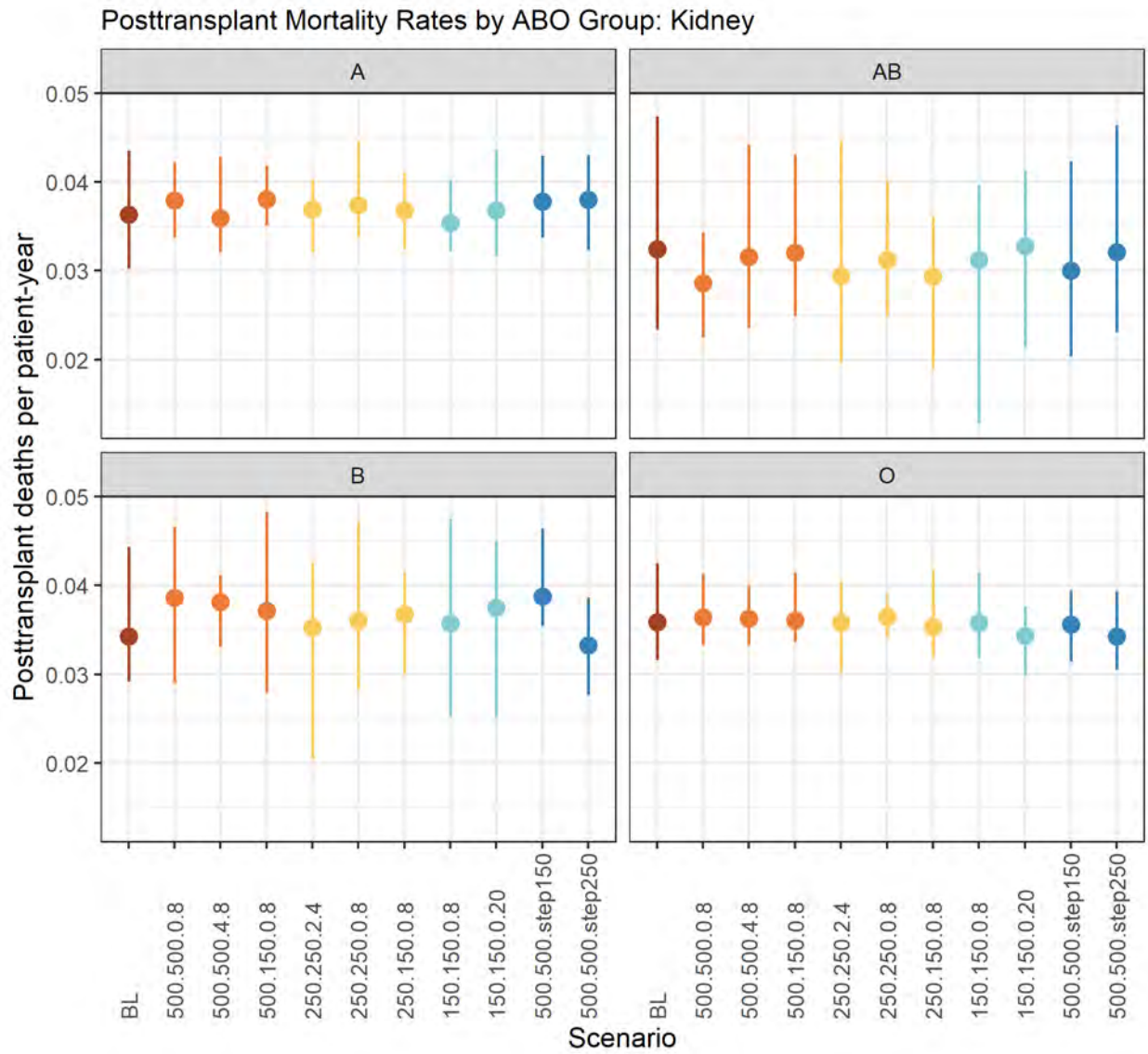


Posttransplant Mortality Rates by Sex: Kidney-Pancreas

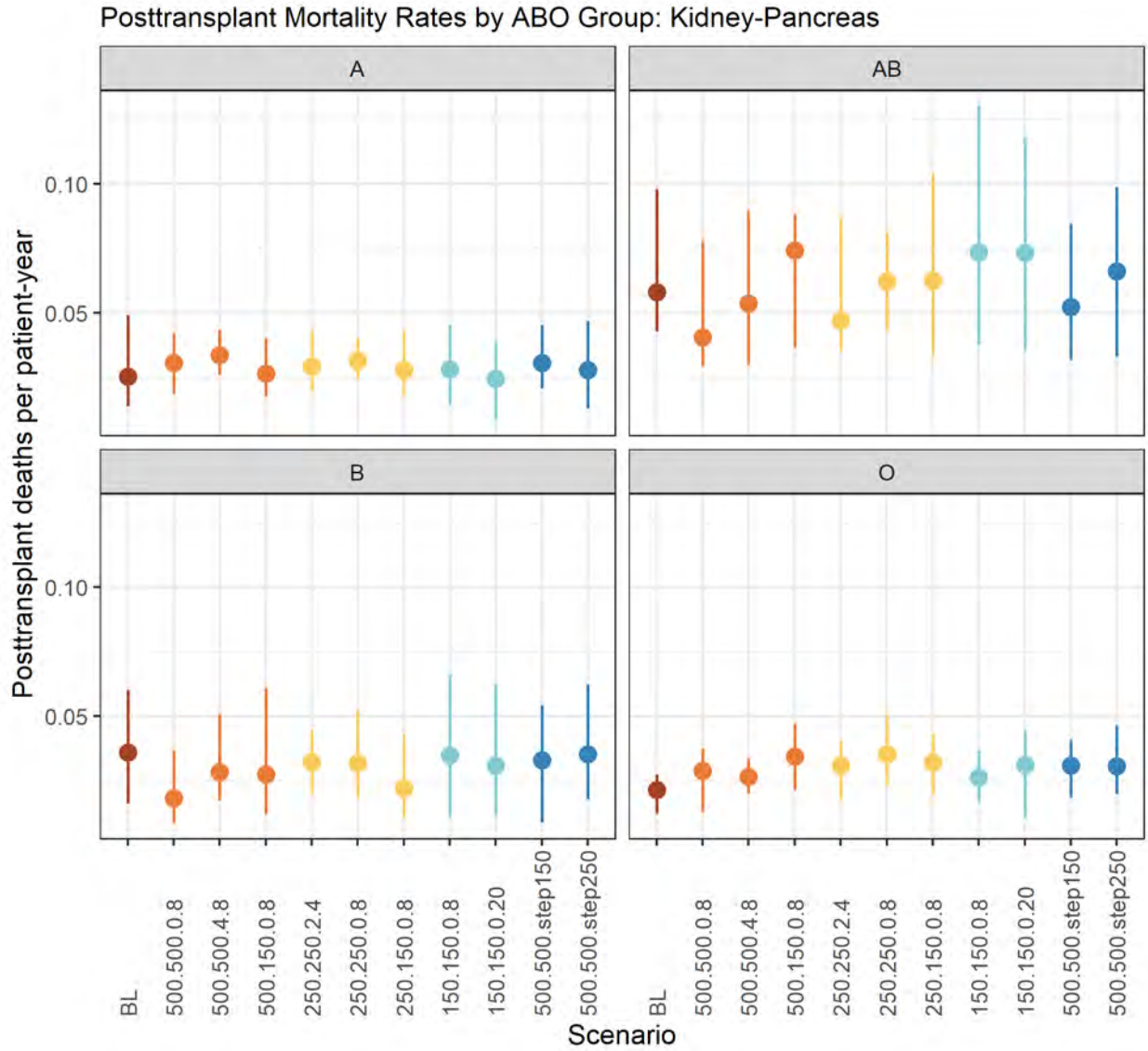


Posttransplant Mortality Rates by Sex: Pancreas

Posttransplant Mortality Rates at 1 Year: ABO Group

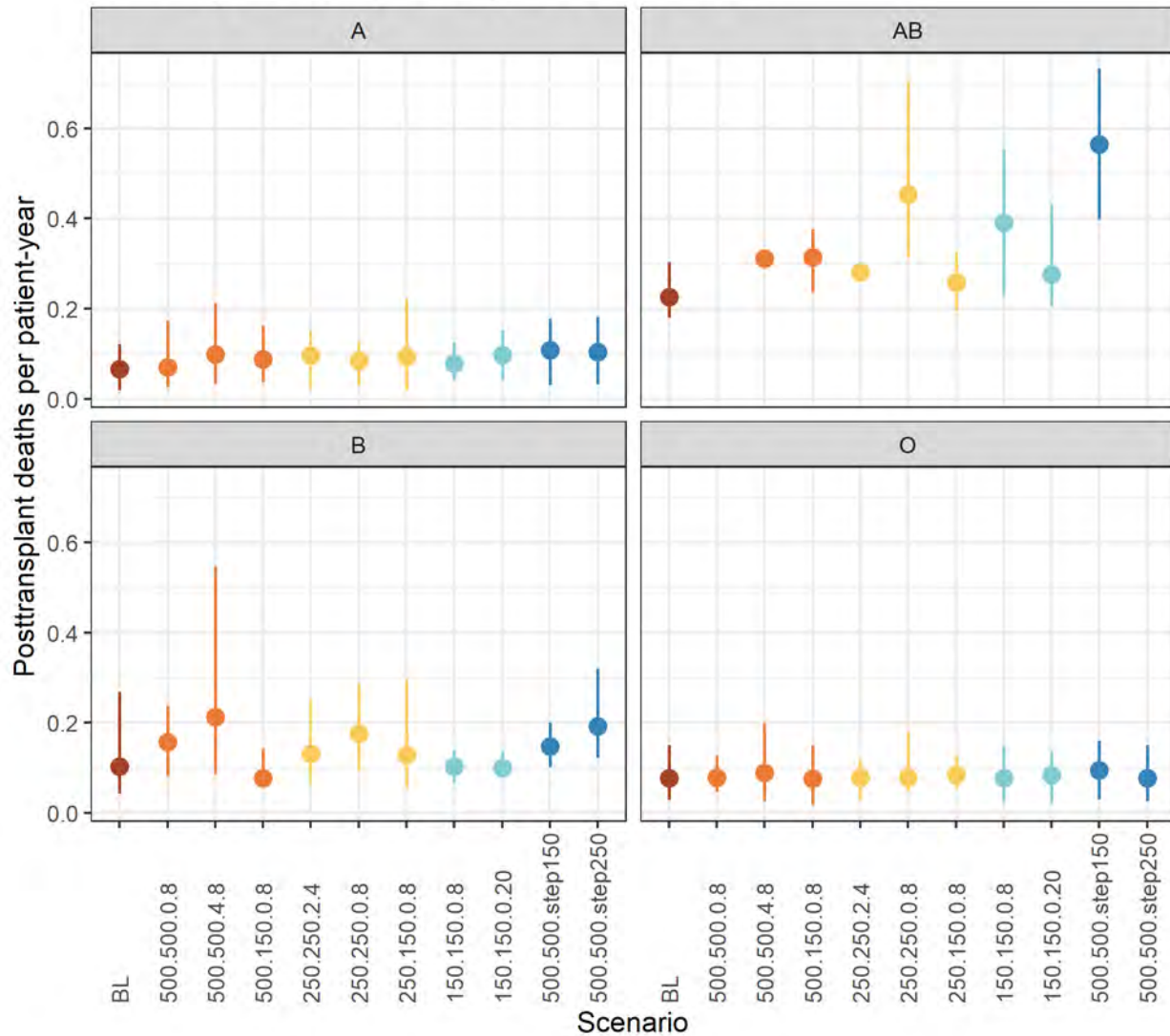


Posttransplant Mortality Rates by ABO Group: Kidney



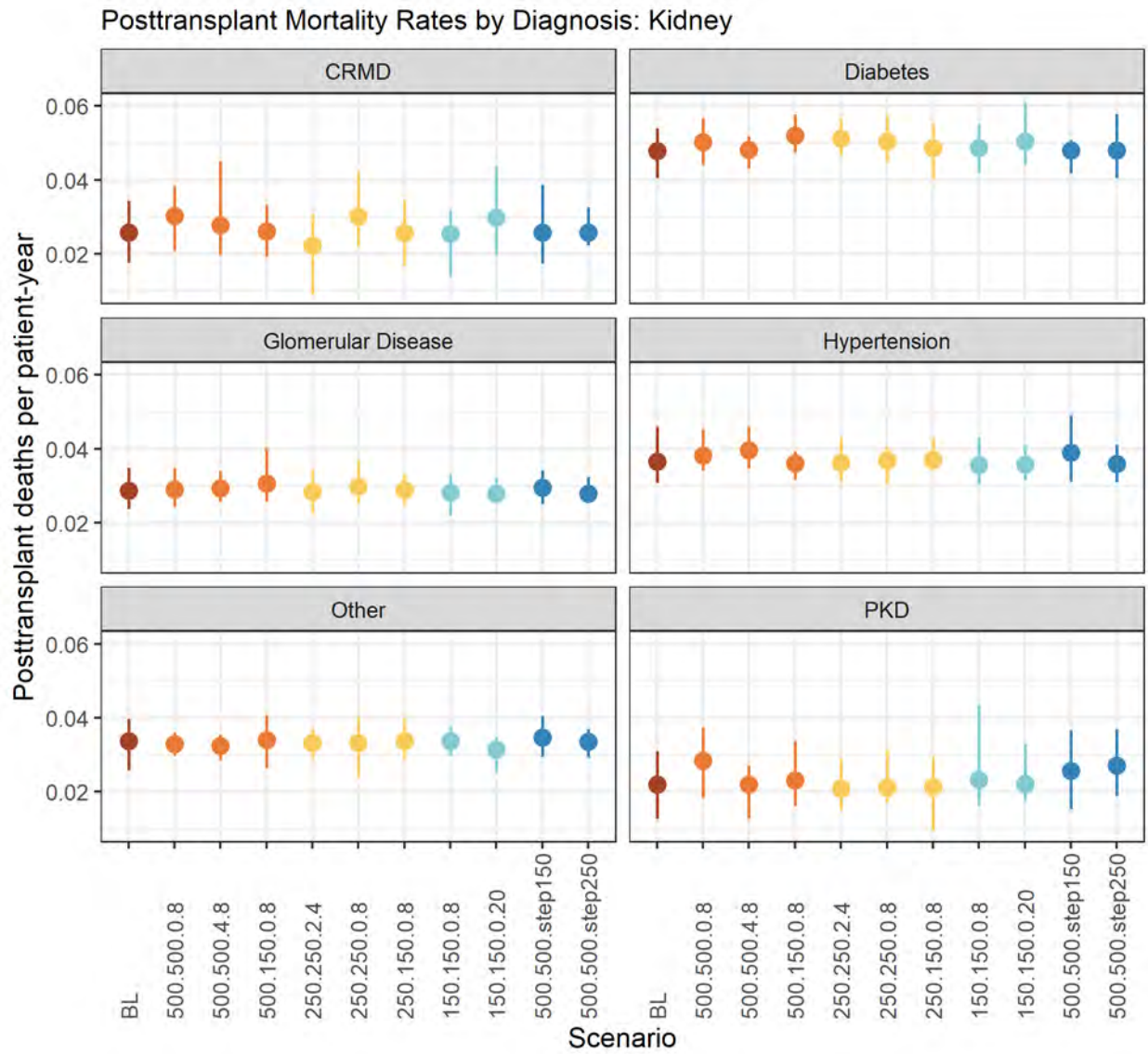
Posttransplant Mortality Rates by ABO Group: Kidney-Pancreas

Posttransplant Mortality Rates by ABO Group: Pancreas

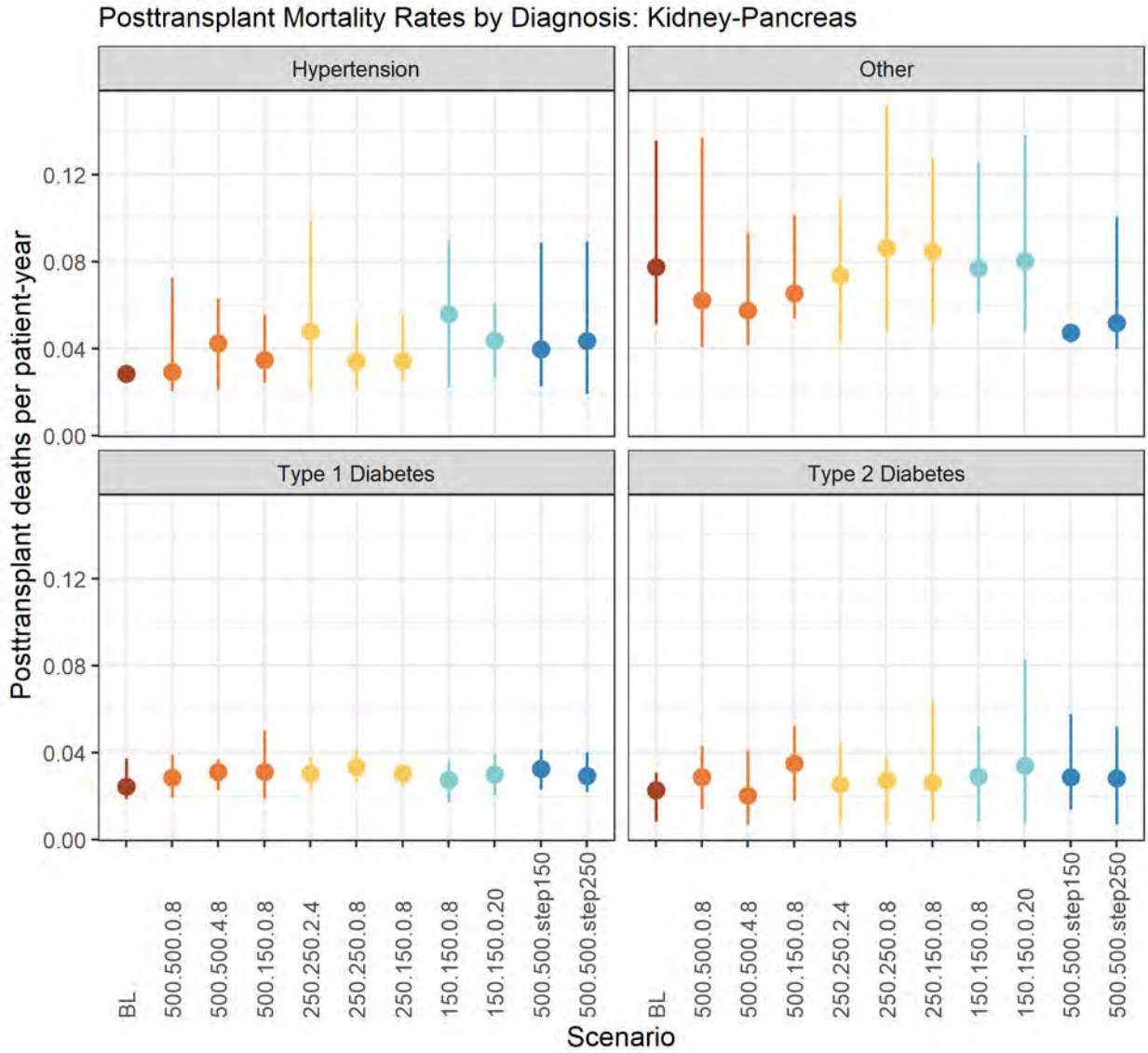


Posttransplant Mortality Rates by ABO Group: Pancreas

Posttransplant Mortality Rates at 1 Year: Diagnosis

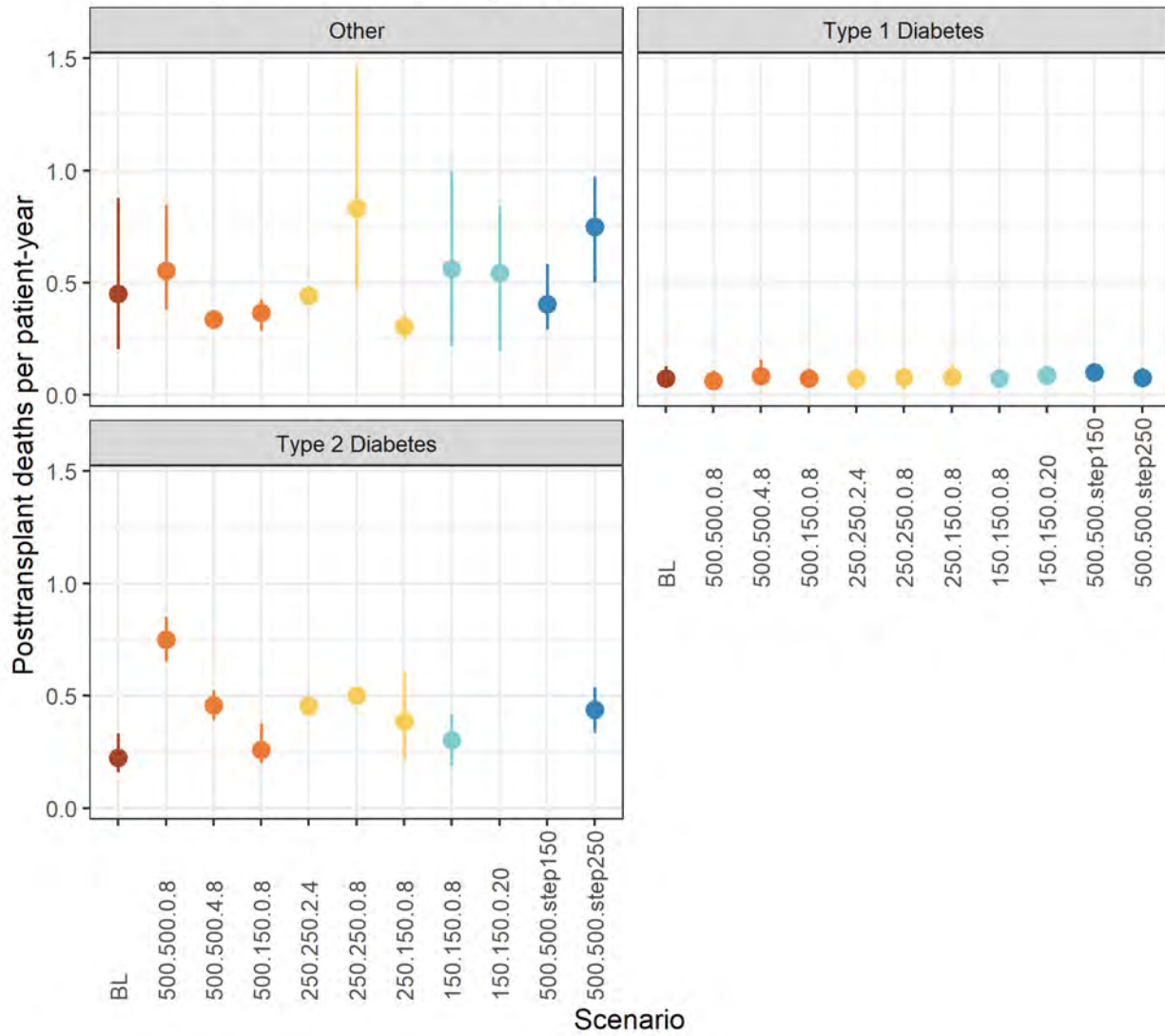


Posttransplant Mortality Rates by Diagnosis: Kidney



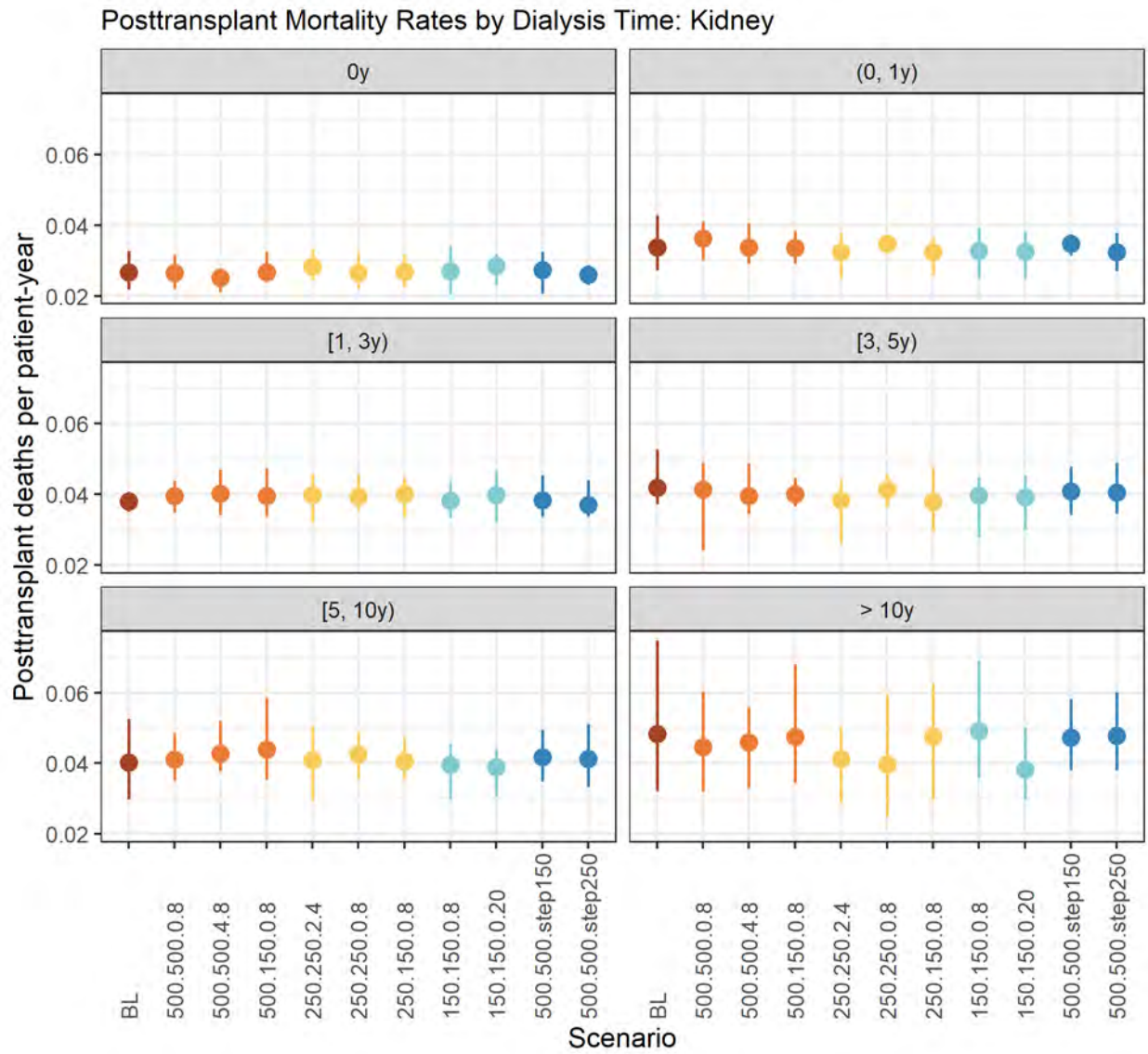
Posttransplant Mortality Rates by Diagnosis: Kidney-Pancreas

Posttransplant Mortality Rates by Diagnosis: Pancreas



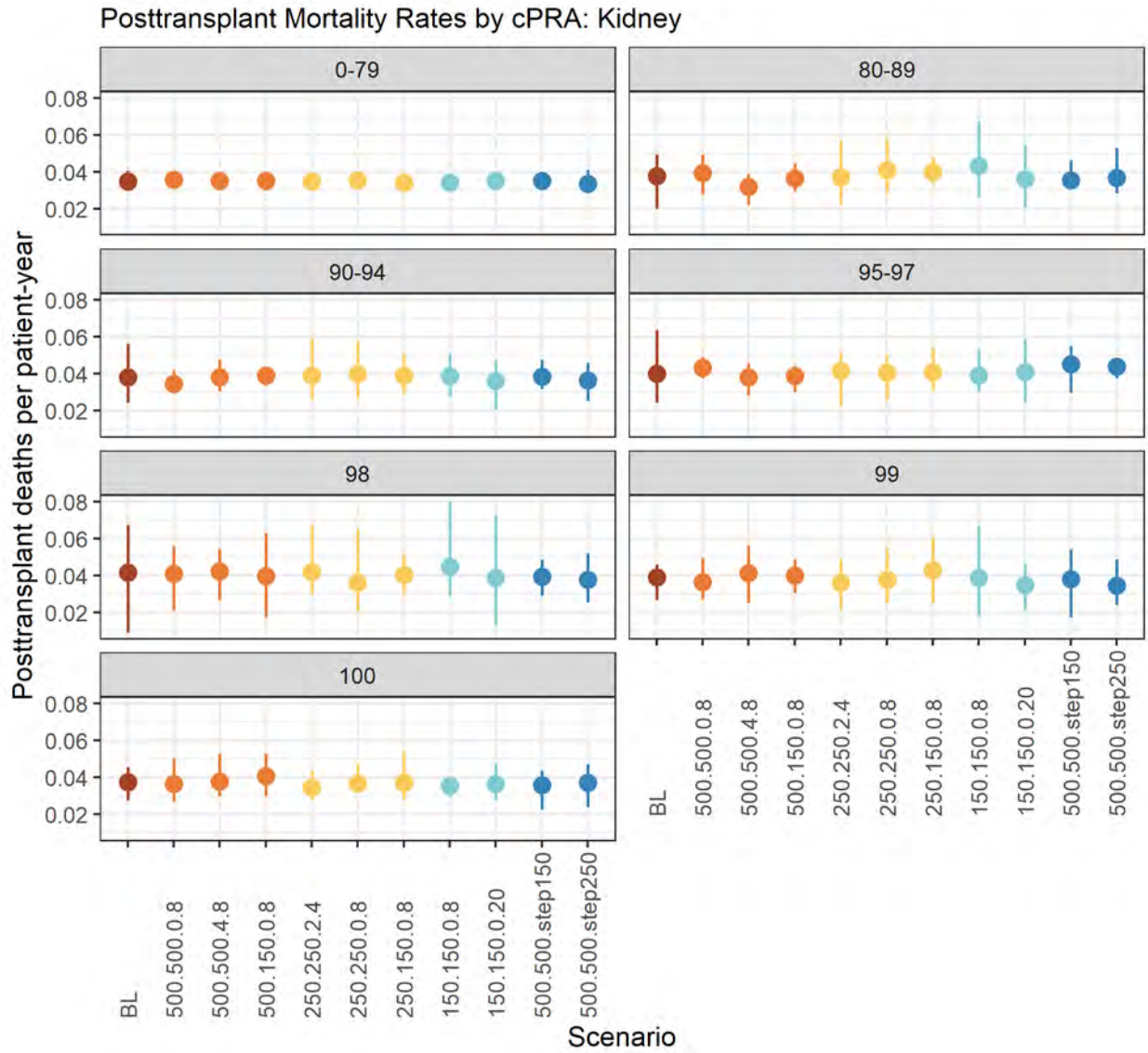
Posttransplant Mortality Rates by Diagnosis: Pancreas

Posttransplant Mortality Rates at 1 Year: Dialysis Time



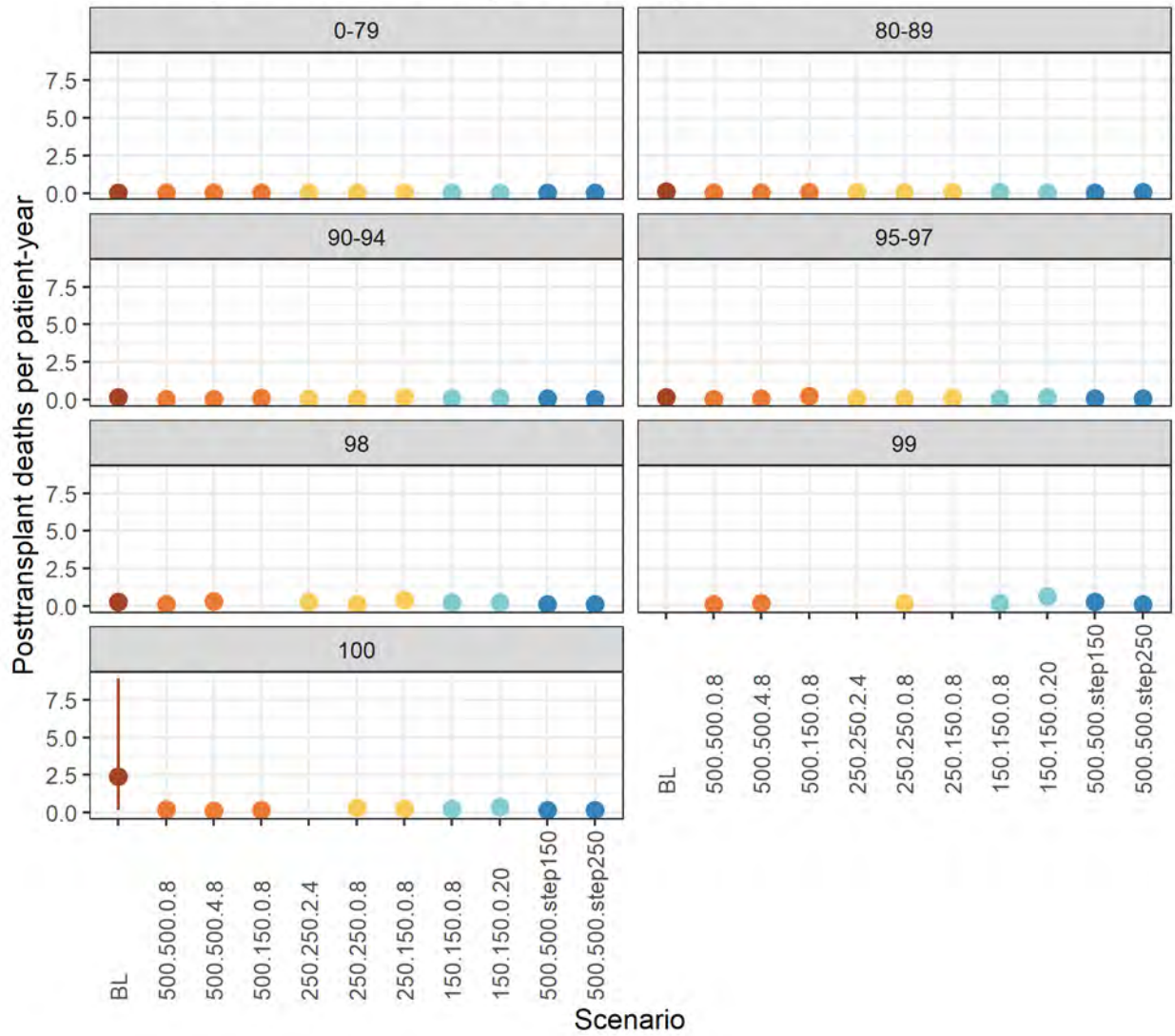
Posttransplant Mortality Rates by Dialysis Time: Kidney

Posttransplant Mortality Rates at 1 Year: cPRA

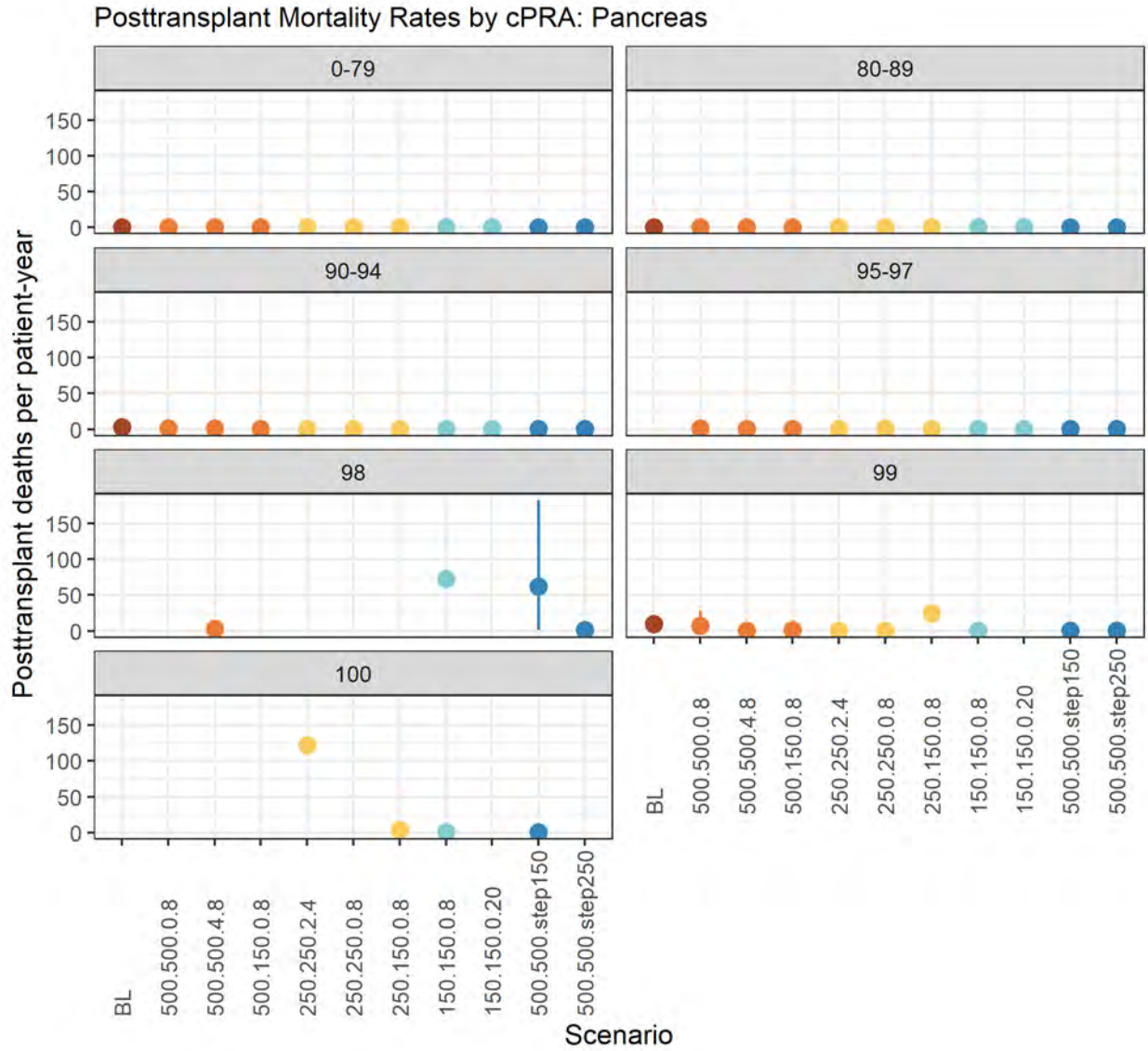


Posttransplant Mortality Rates by cPRA: Kidney

Posttransplant Mortality Rates by cPRA: Kidney-Pancreas



Posttransplant Mortality Rates by cPRA: Kidney-Pancreas



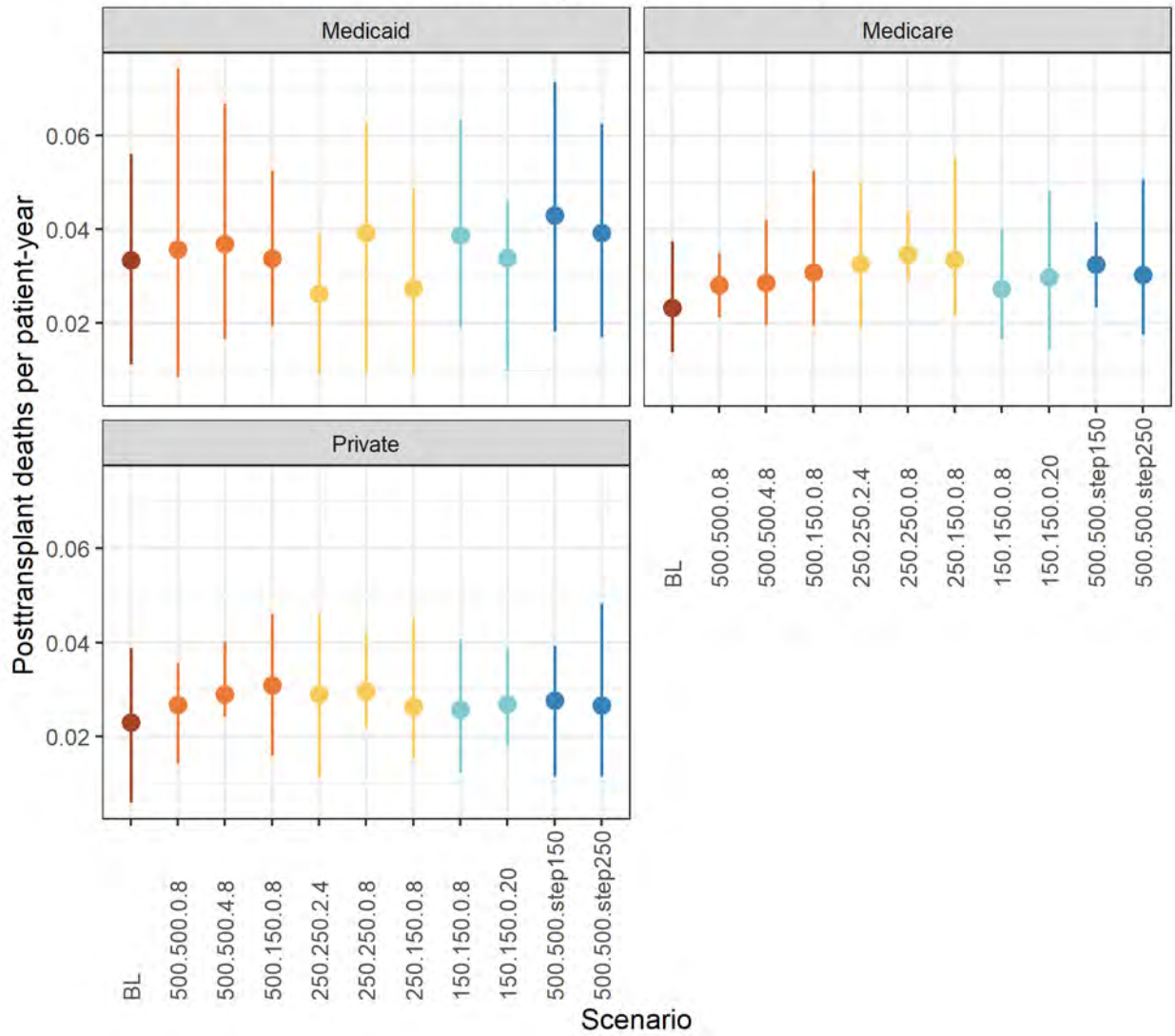
Posttransplant Mortality Rates by cPRA: Pancreas

Posttransplant Mortality Rates at 1 Year: Payment Status



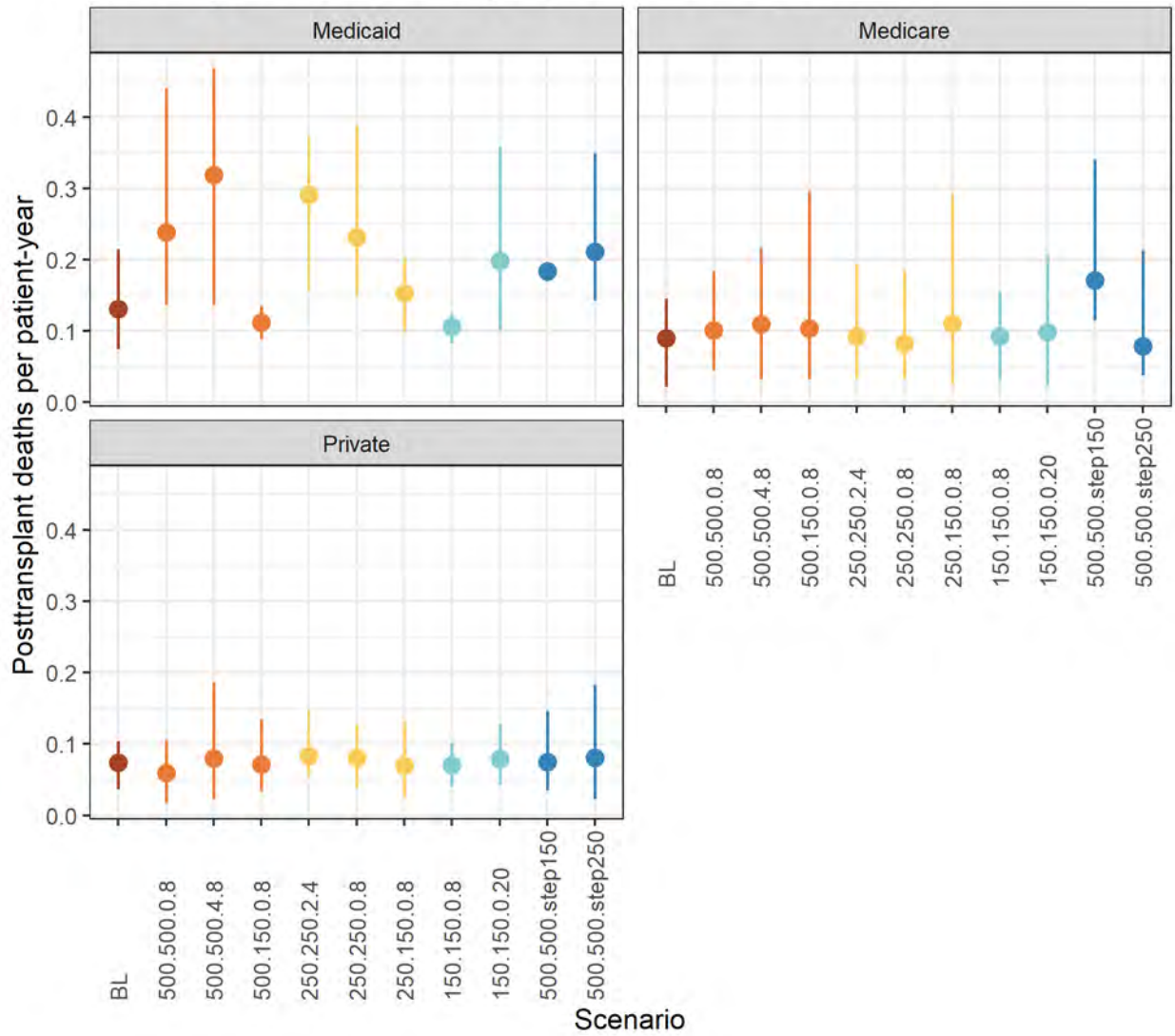
Posttransplant Mortality Rates by Payment Status: Kidney

Posttransplant Mortality Rates by Payment Status: Kidney-Pancreas



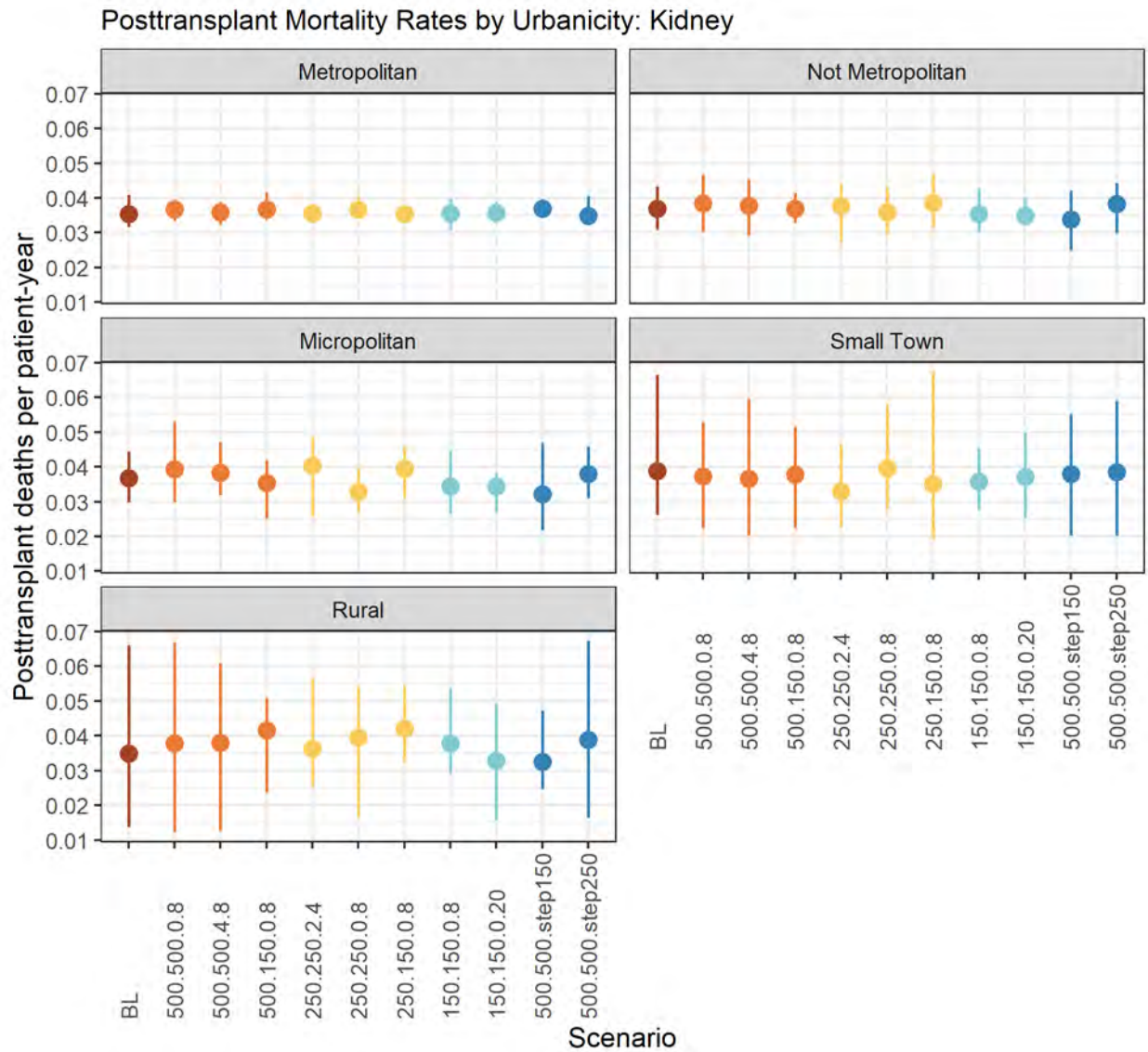
Posttransplant Mortality Rates by Payment Status: Kidney-Pancreas

Posttransplant Mortality Rates by Payment Status: Pancreas

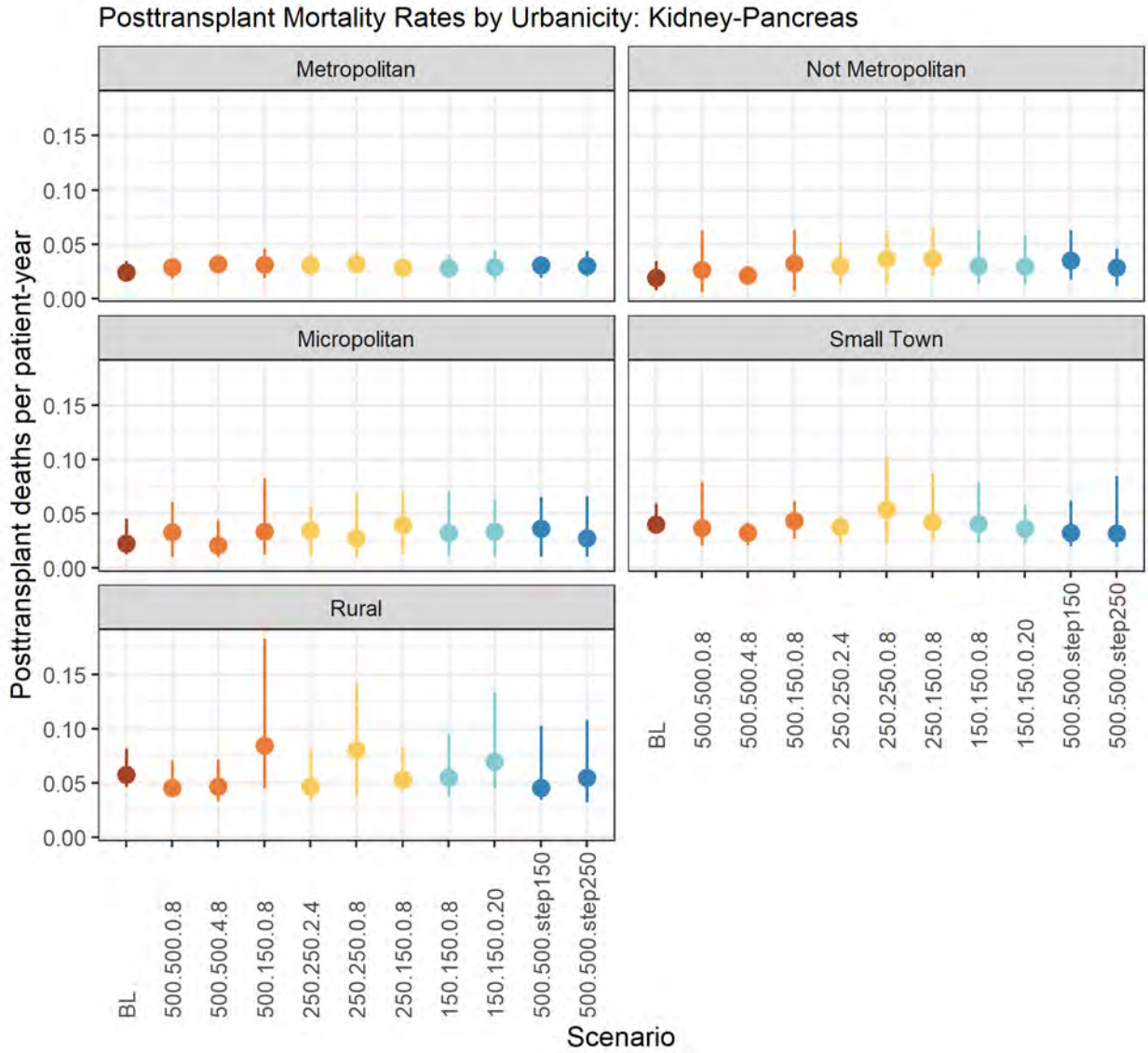


Posttransplant Mortality Rates by Payment Status: Pancreas

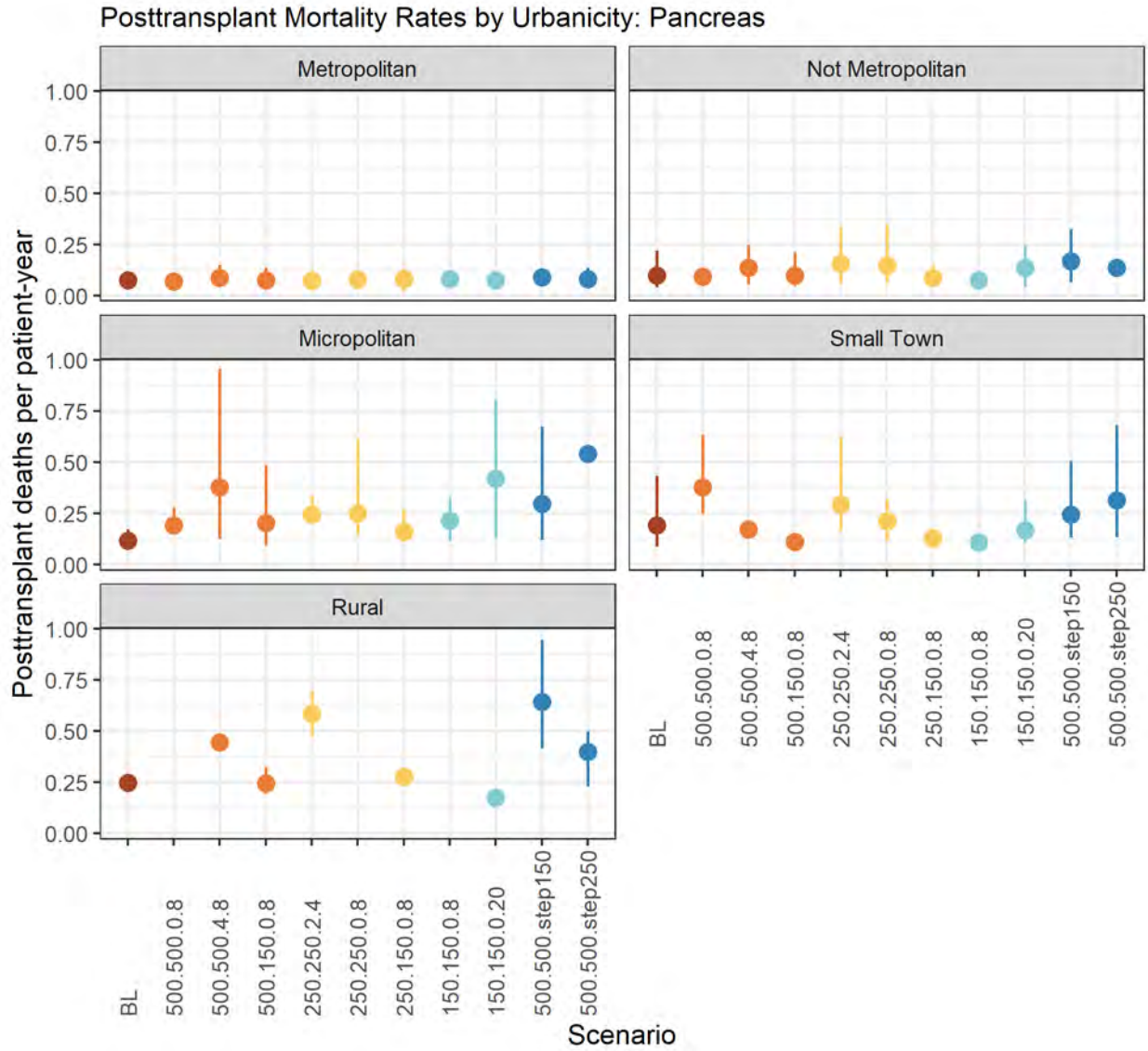
Posttransplant Mortality Rates at 1 Year: Urbanicity



Posttransplant Mortality Rates by Urbanicity: Kidney

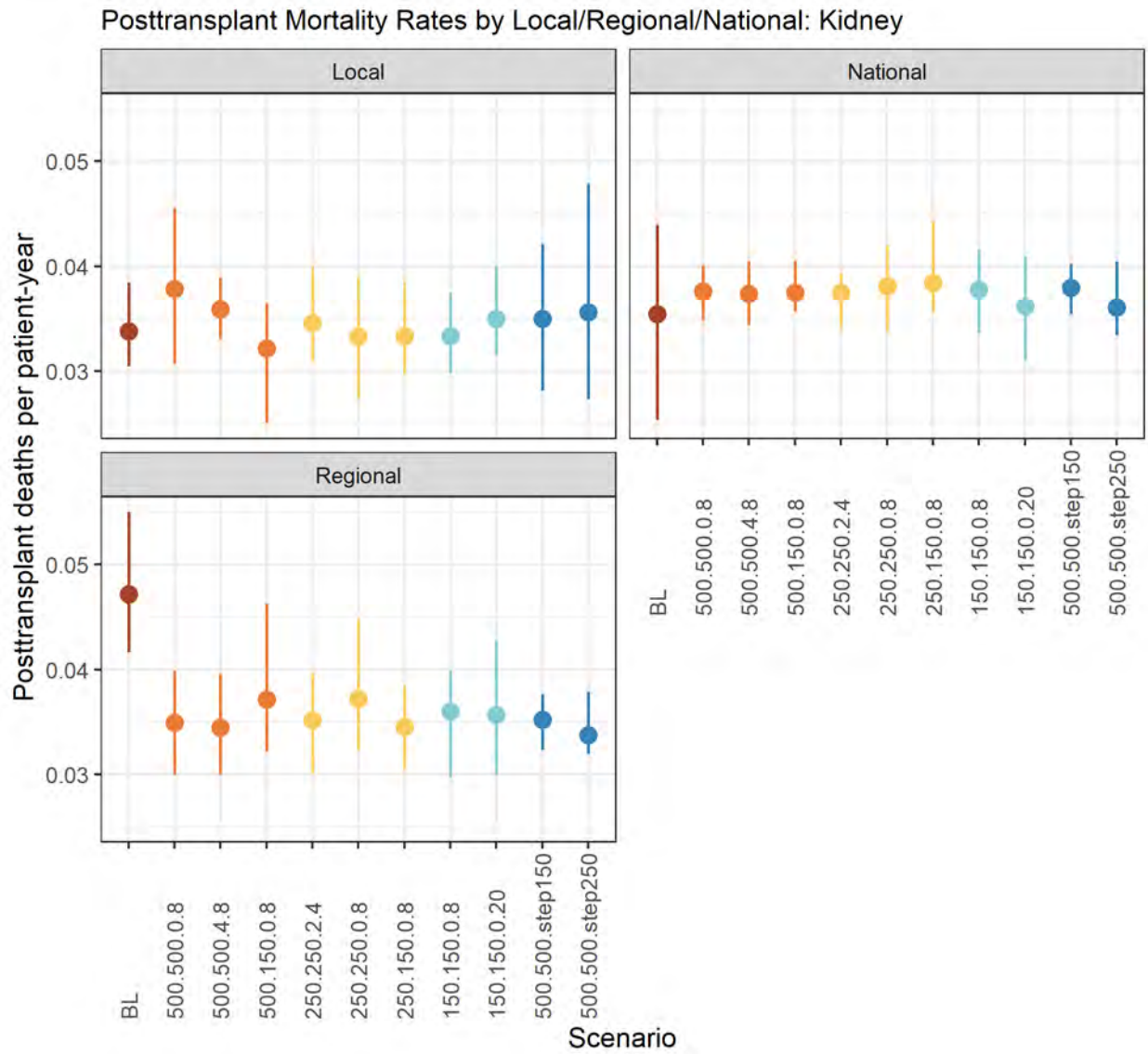


Posttransplant Mortality Rates by Urbanicity: Kidney-Pancreas

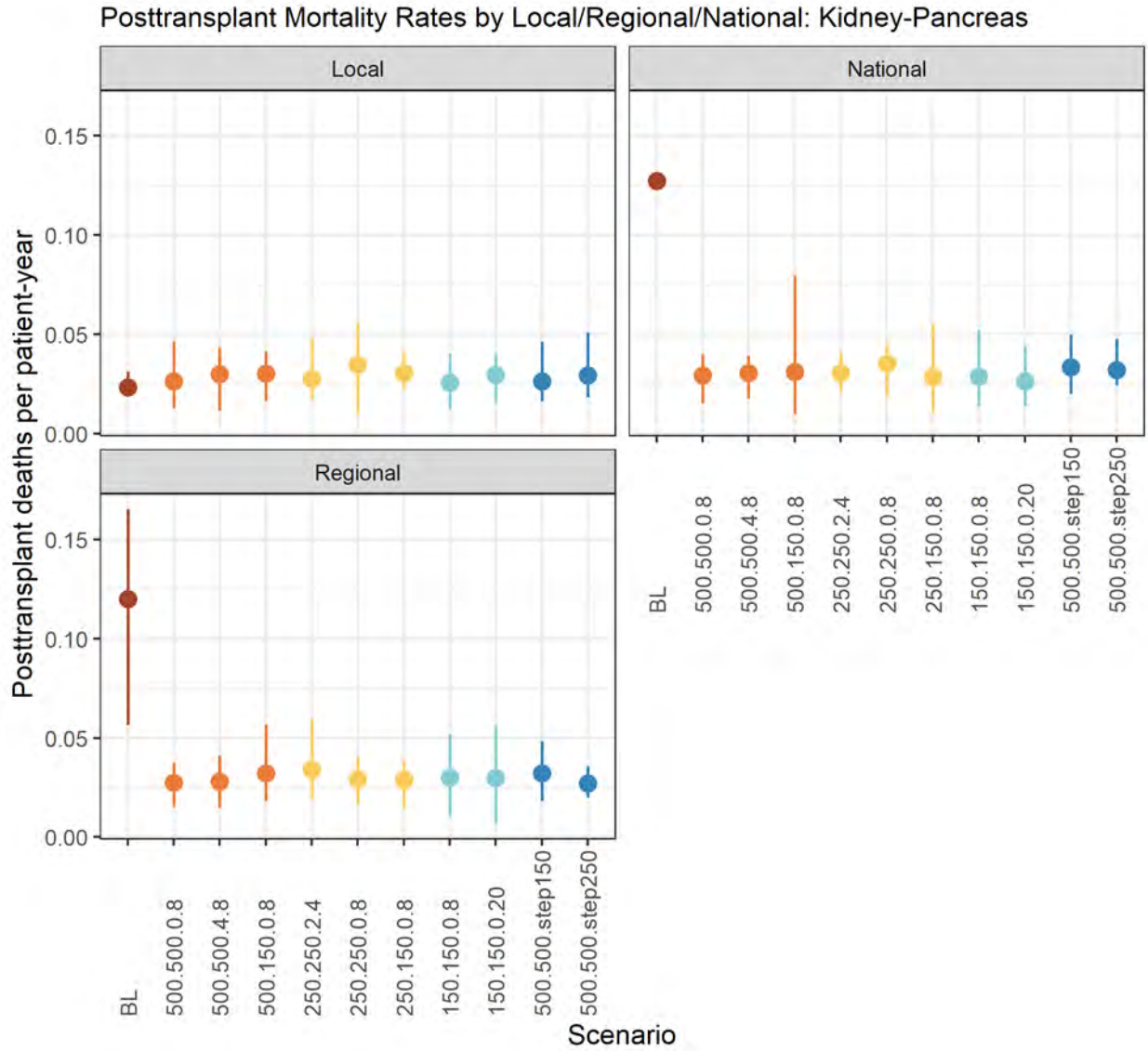


Posttransplant Mortality Rates by Urbanicity: Pancreas

Posttransplant Mortality Rates at 1 Year: Local/Regional/National

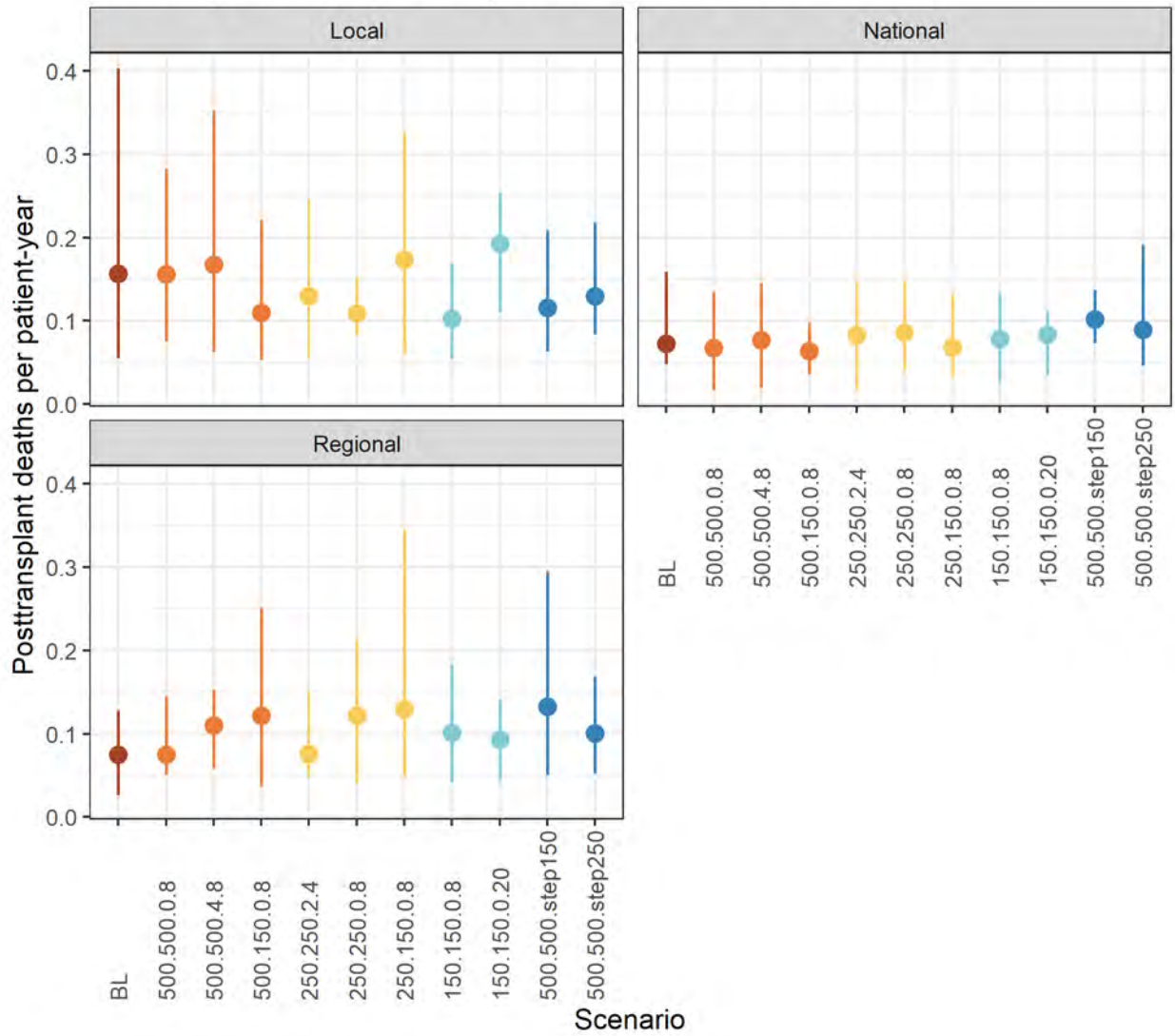


Posttransplant Mortality Rates by Local/Regional/National: Kidney



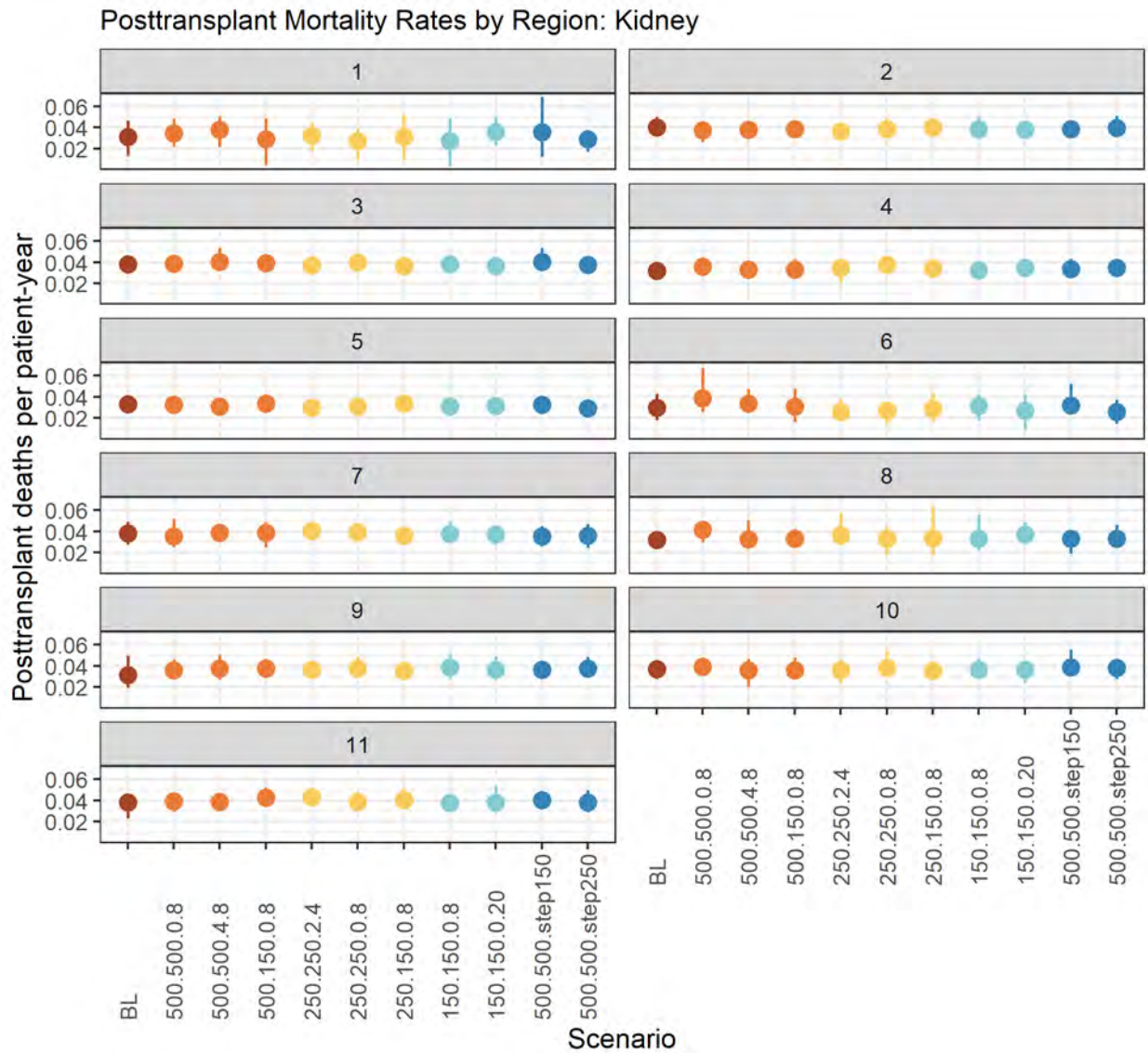
Posttransplant Mortality Rates by Local/Regional/National: Kidney-Pancreas

Posttransplant Mortality Rates by Local/Regional/National: Pancreas

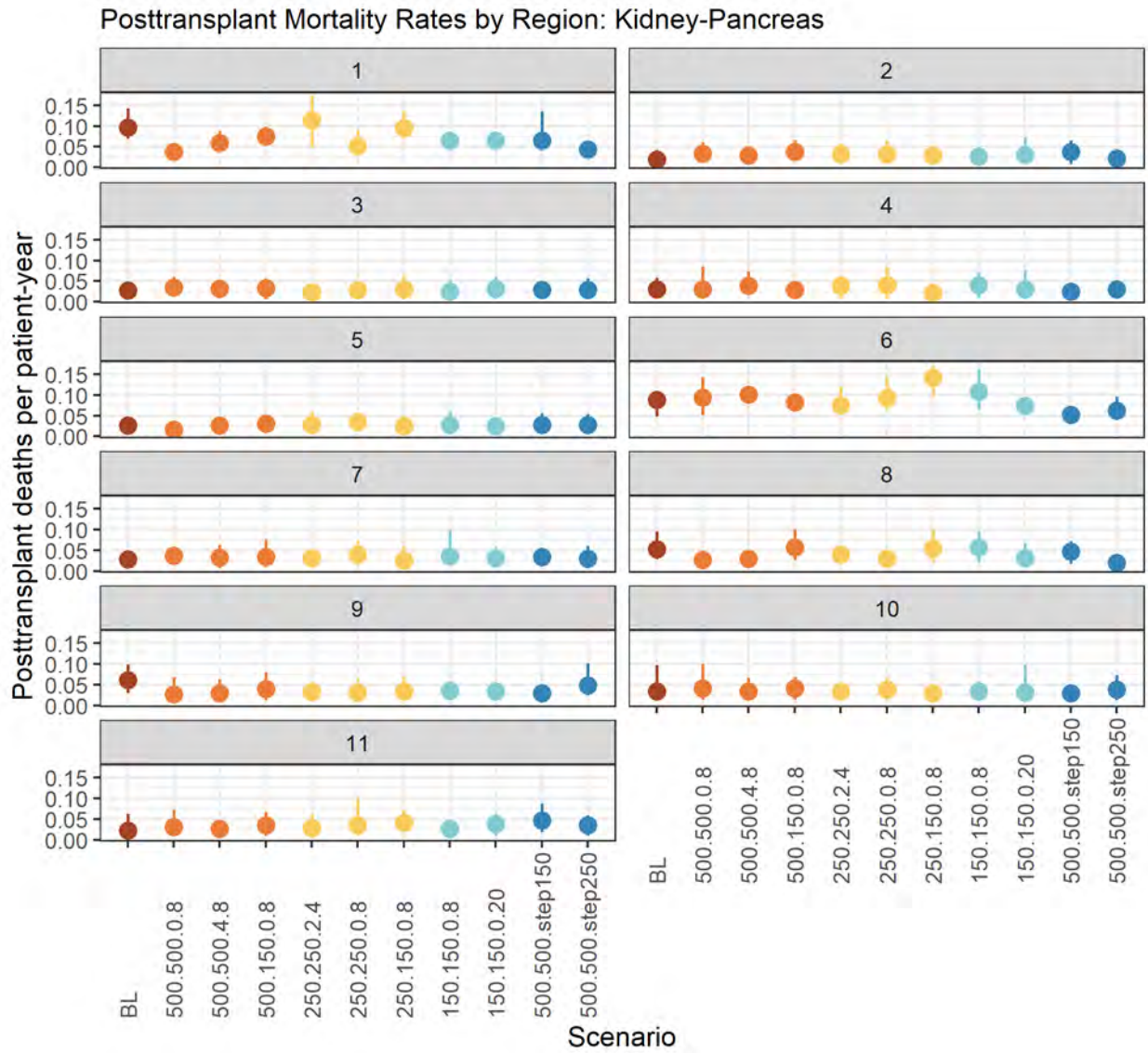


Posttransplant Mortality Rates by Local/Regional/National: Pancreas

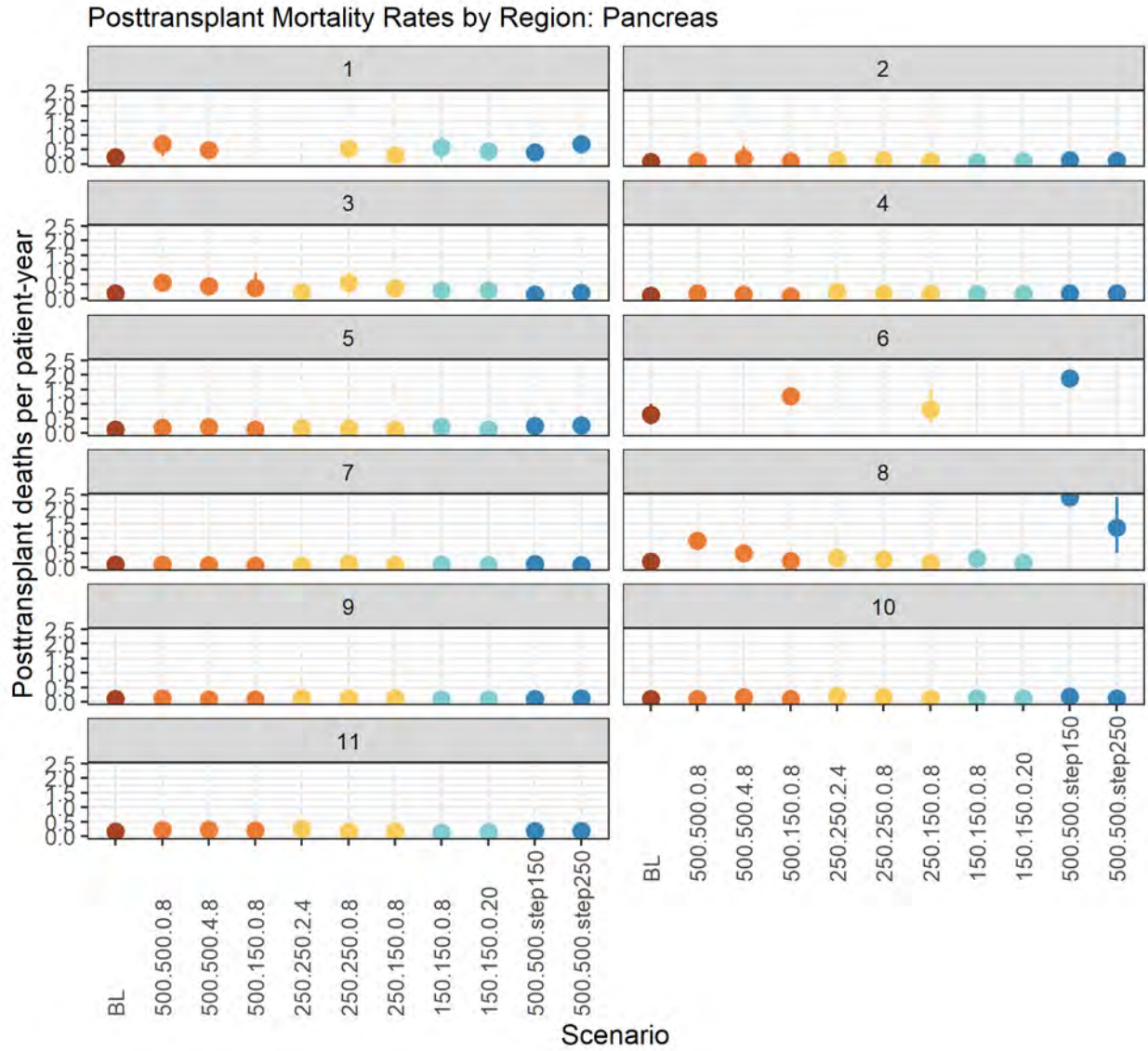
Posttransplant Mortality Rates at 1 Year: Region



Posttransplant Mortality Rates by Region: Kidney



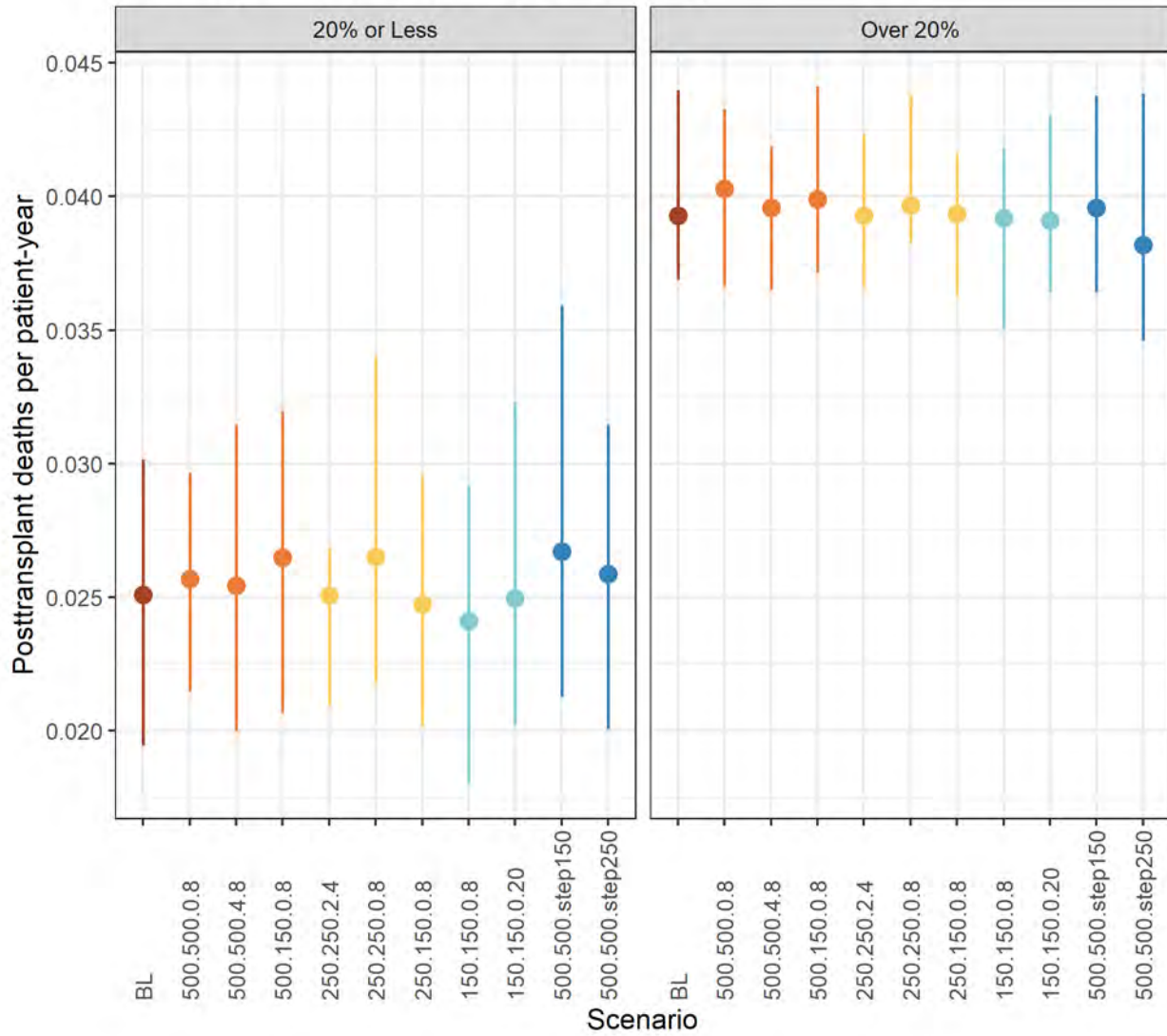
Posttransplant Mortality Rates by Region: Kidney-Pancreas



Posttransplant Mortality Rates by Region: Pancreas

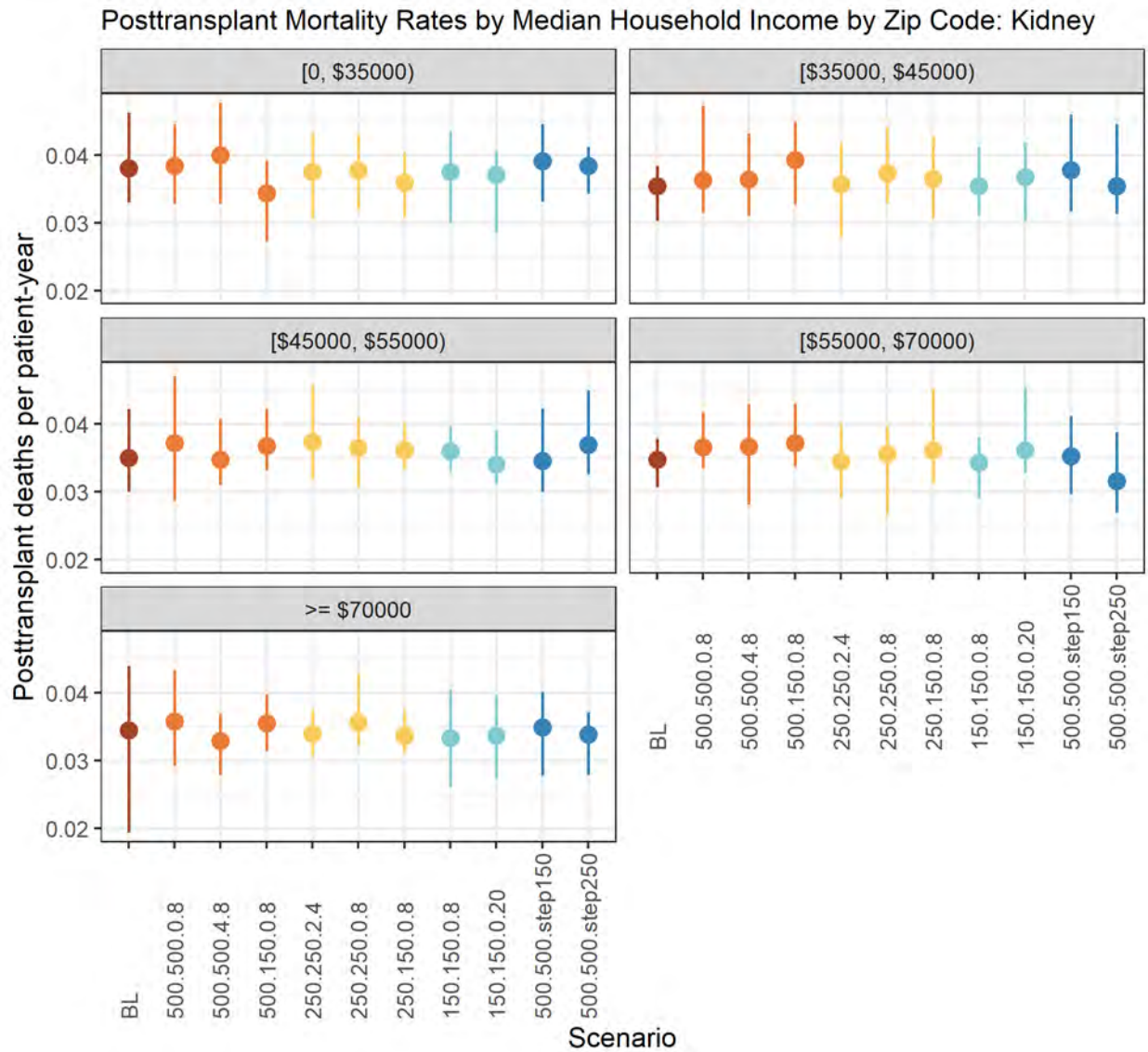
Posttransplant Mortality Rates at 1 Year: EPTS

Posttransplant Mortality Rates by EPTS: Kidney

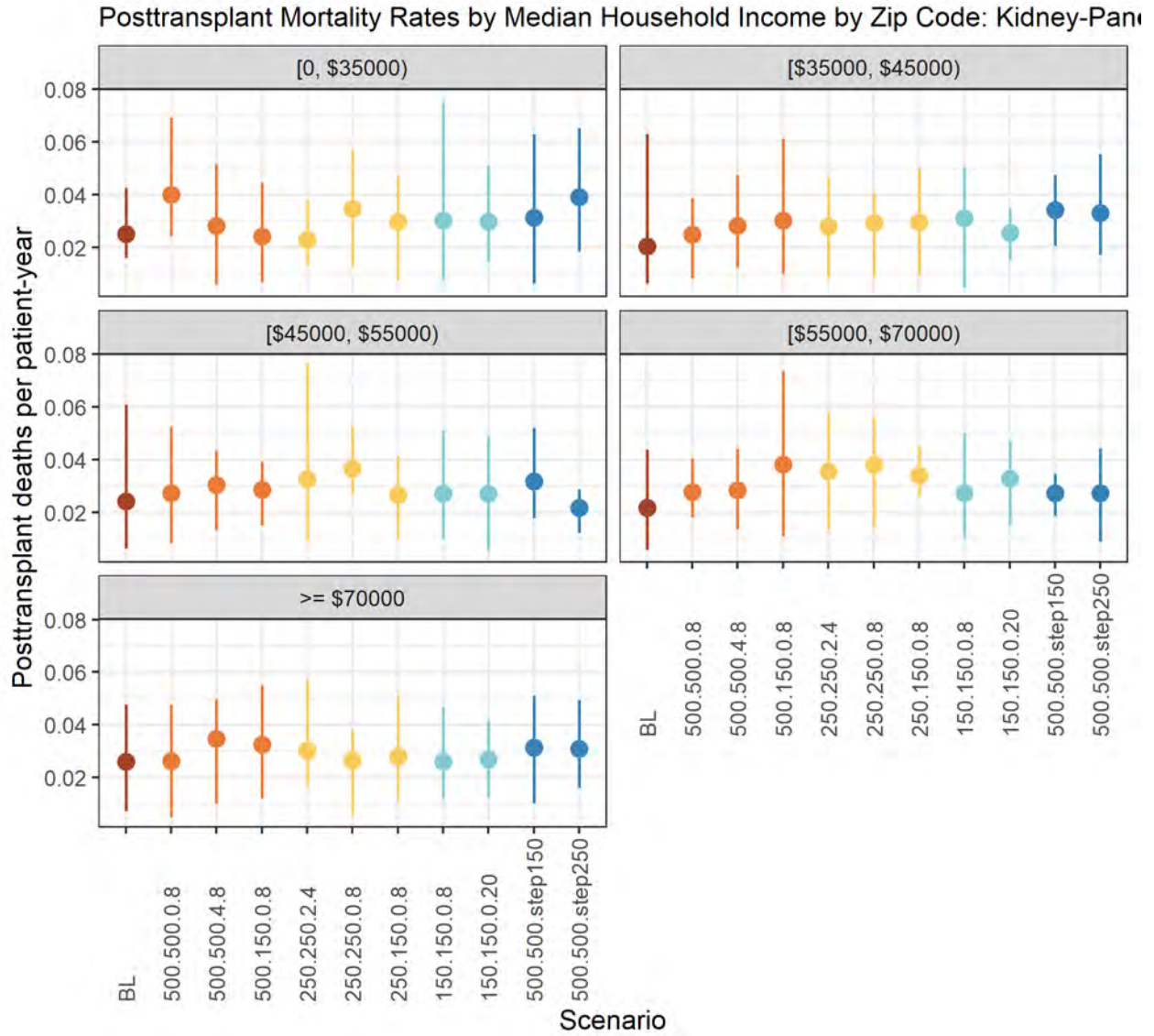


Posttransplant Mortality Rates by EPTS: Kidney

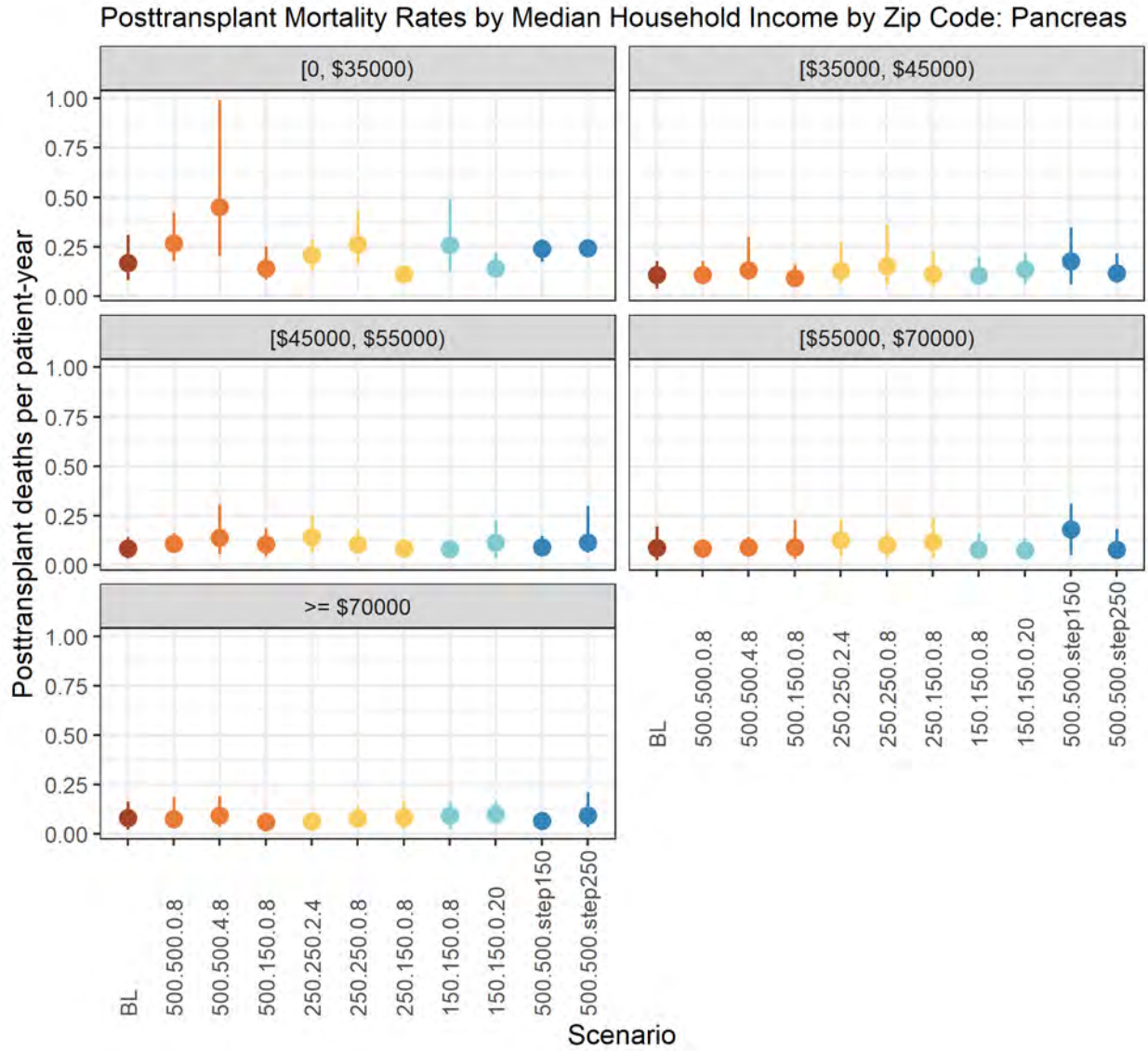
Posttransplant Mortality Rates at 1 Year: Median Household Income by Zip Code



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

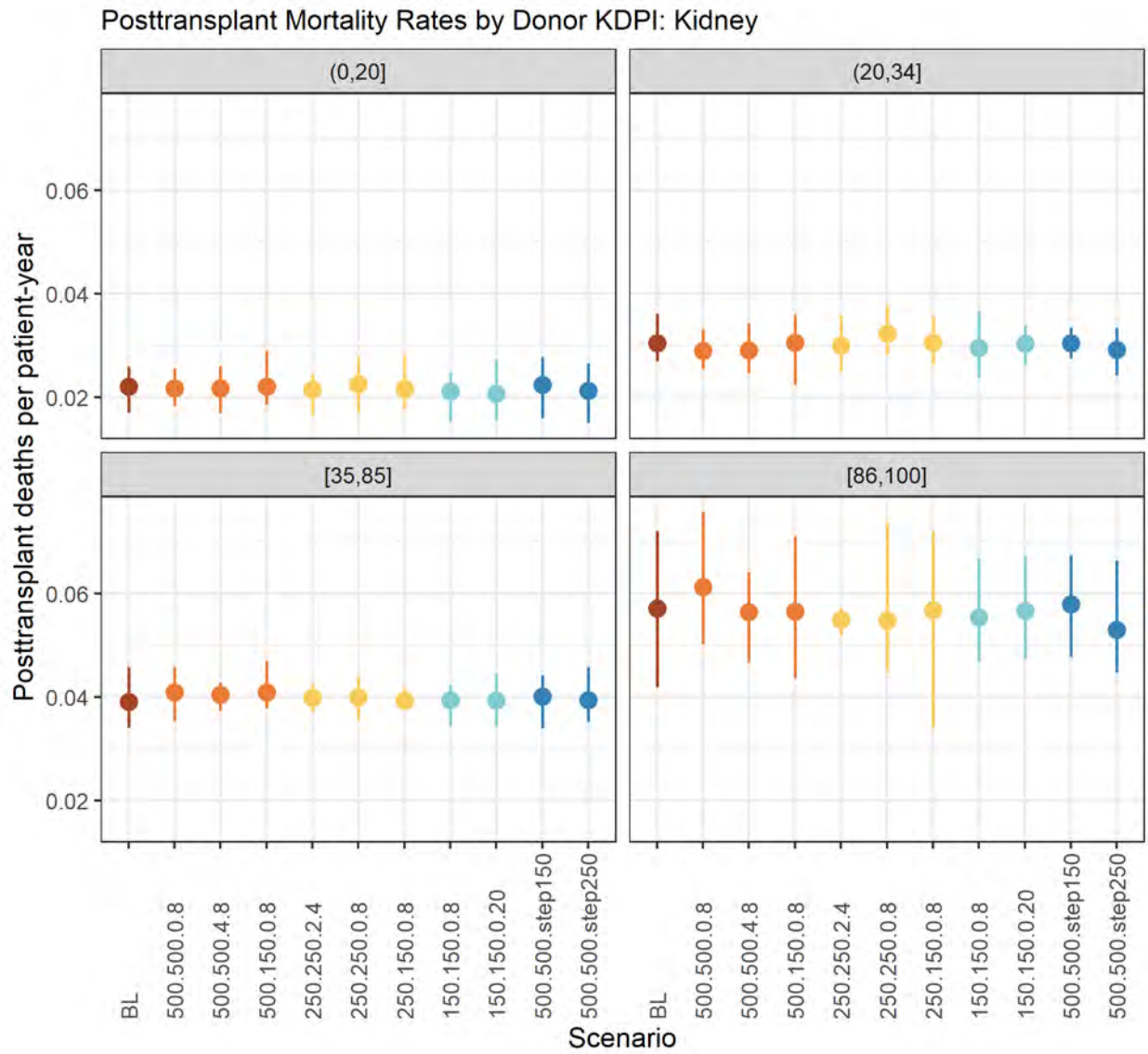


Posttransplant Mortality Rates by Median Household Income by Zip Code: Kidney-Pancreas



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

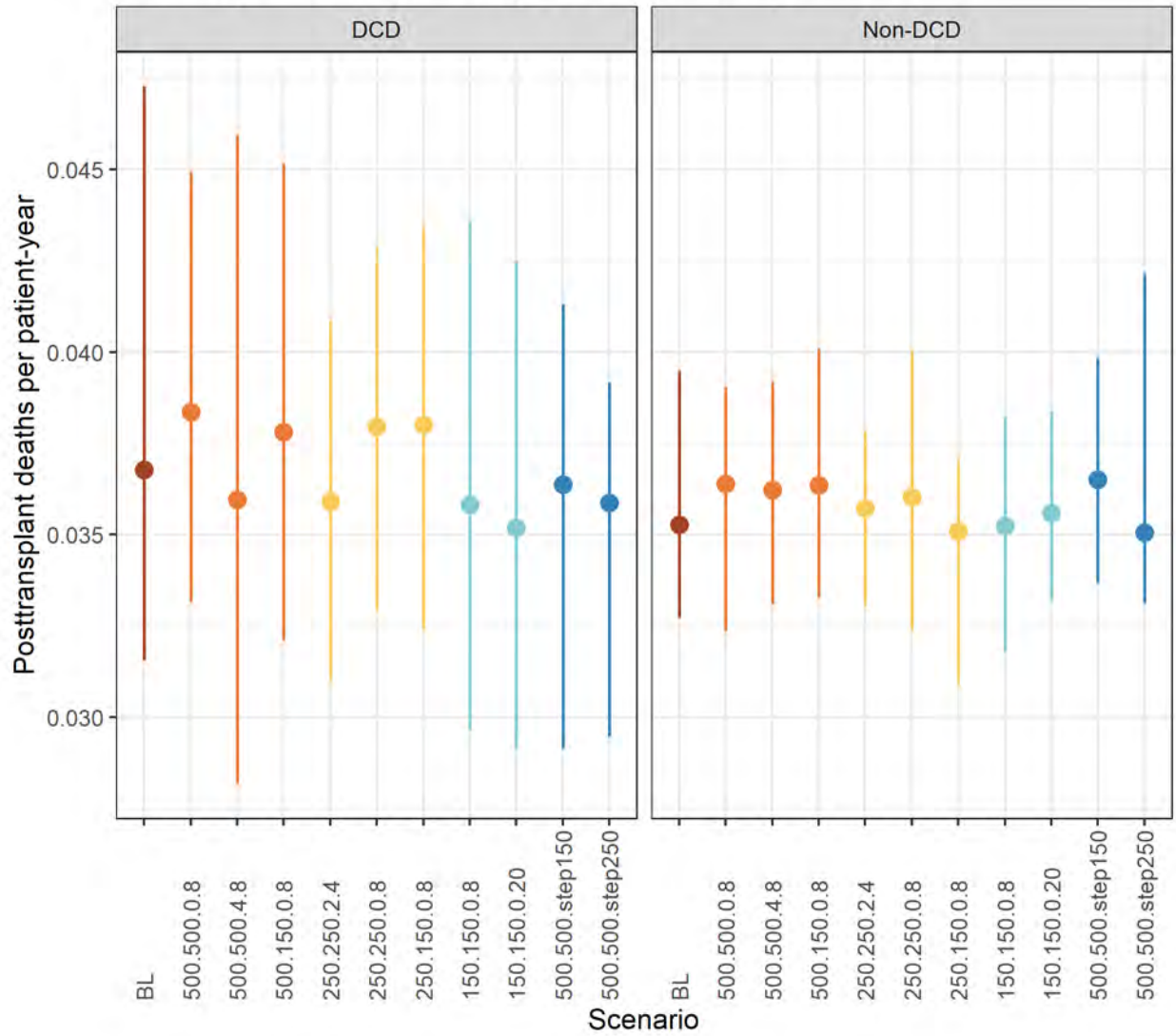
Posttransplant Mortality Rates at 1 Year: Donor KDPI



Posttransplant Mortality Rates by Donor KDPI: Kidney

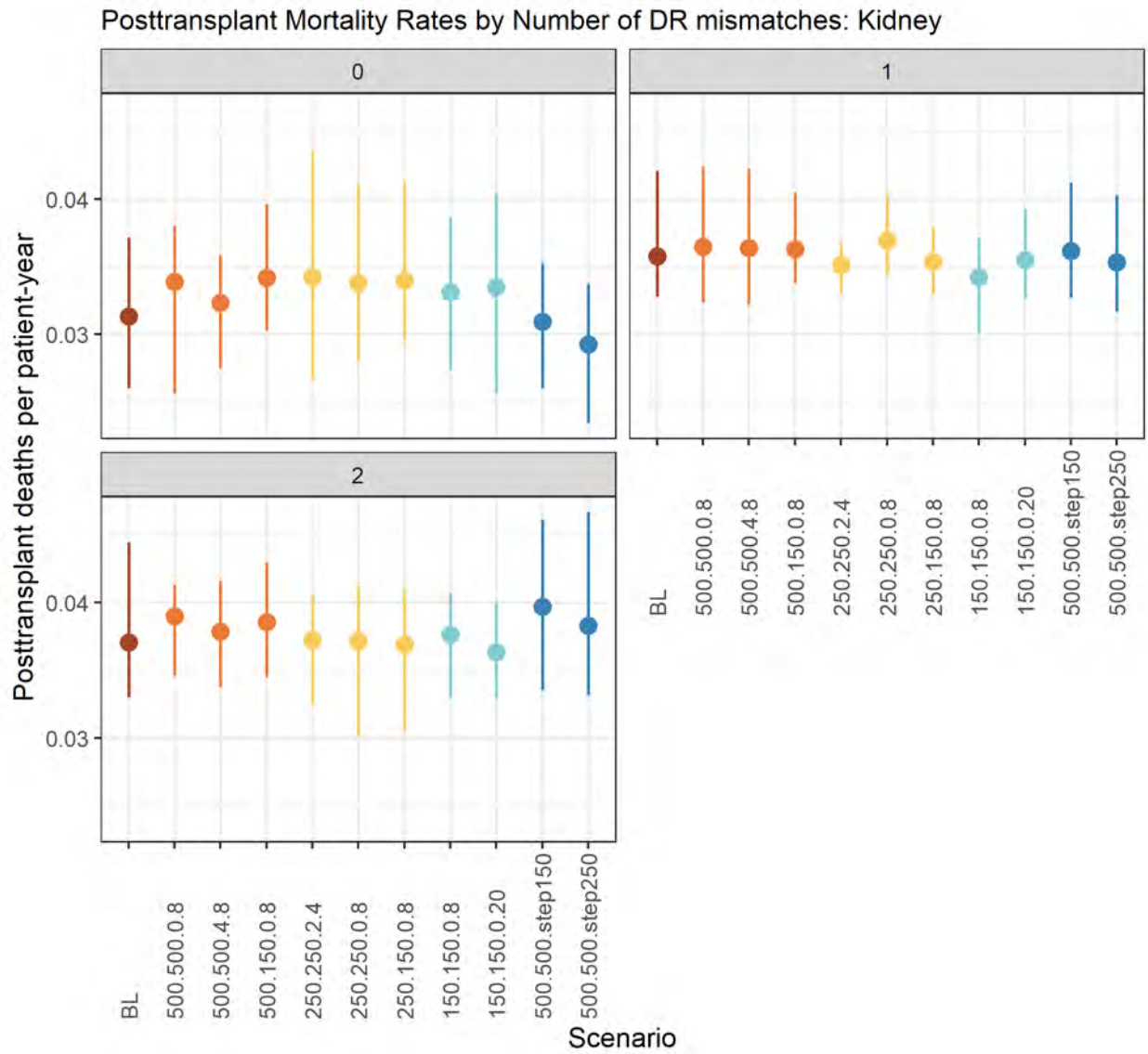
Posttransplant Mortality Rates at 1 Year: DCD Donor

Posttransplant Mortality Rates by DCD Donor: Kidney



Posttransplant Mortality Rates by DCD Donor: Kidney

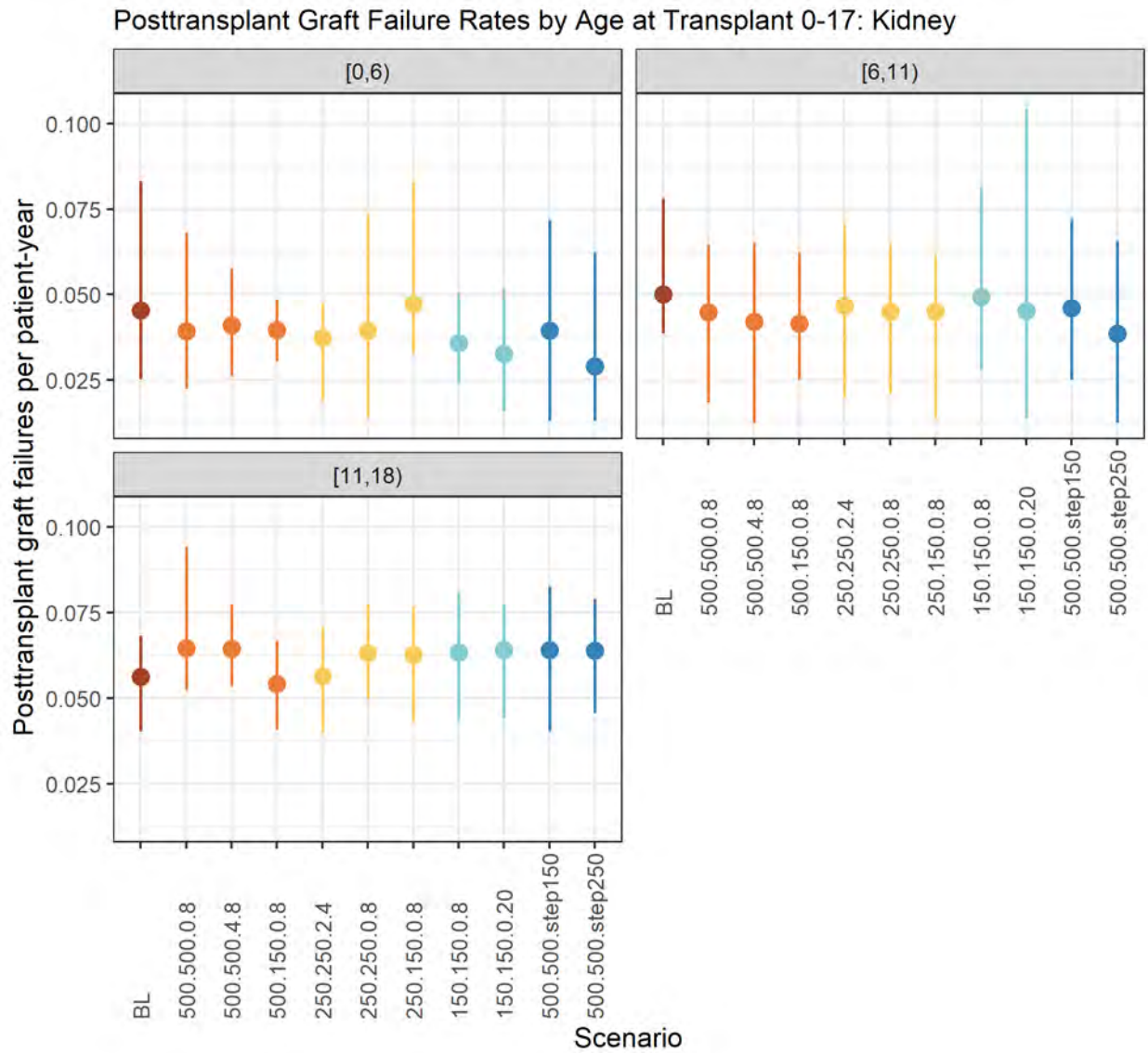
Posttransplant Mortality Rates at 1 Year: Number of DR mismatches



Posttransplant Mortality Rates by Number of DR mismatches: Kidney

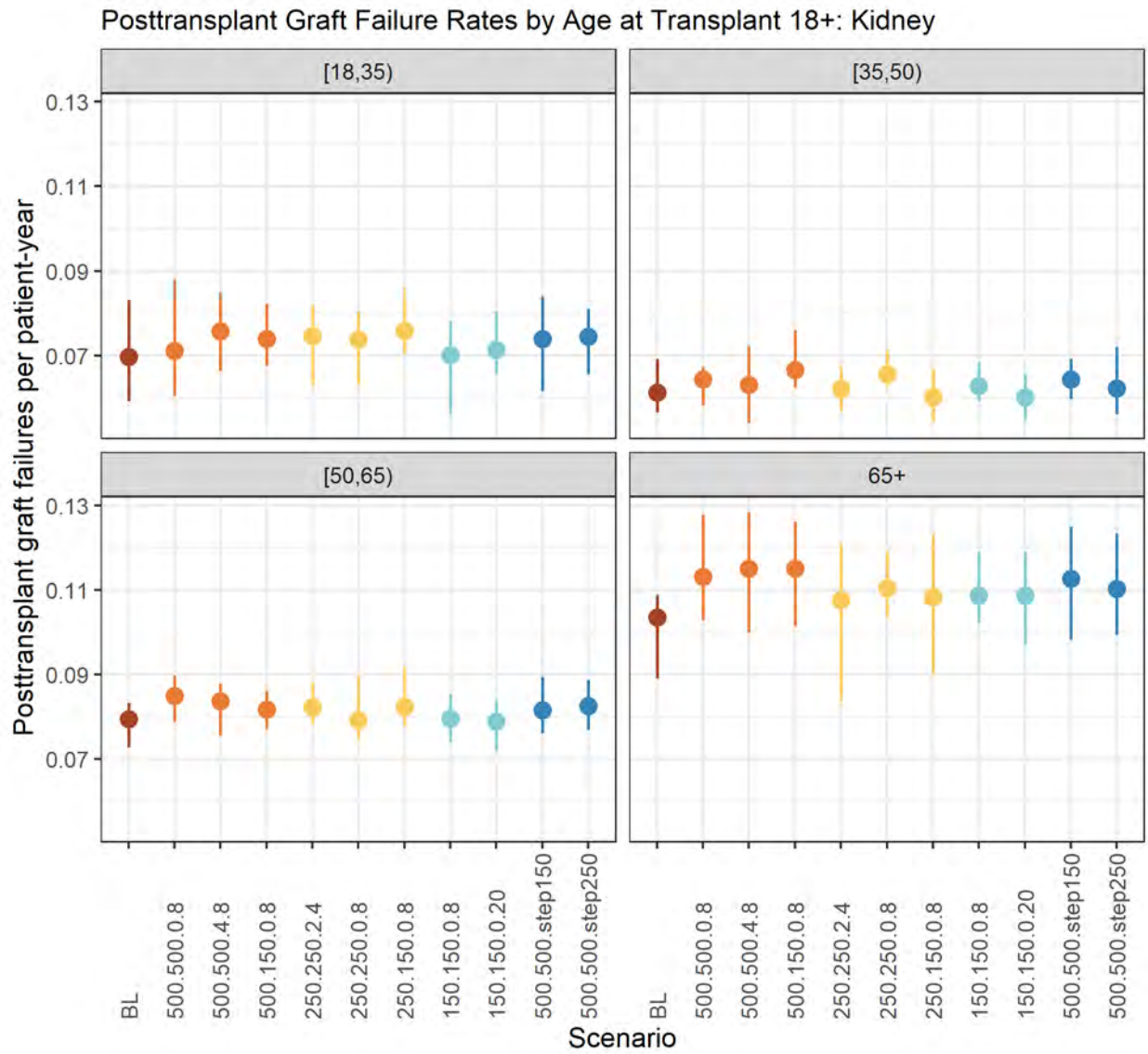
Posttransplant Graft Failure Rates at 1 Year

Posttransplant Graft Failure Rates at 1 Year: Age at Transplant 0-17

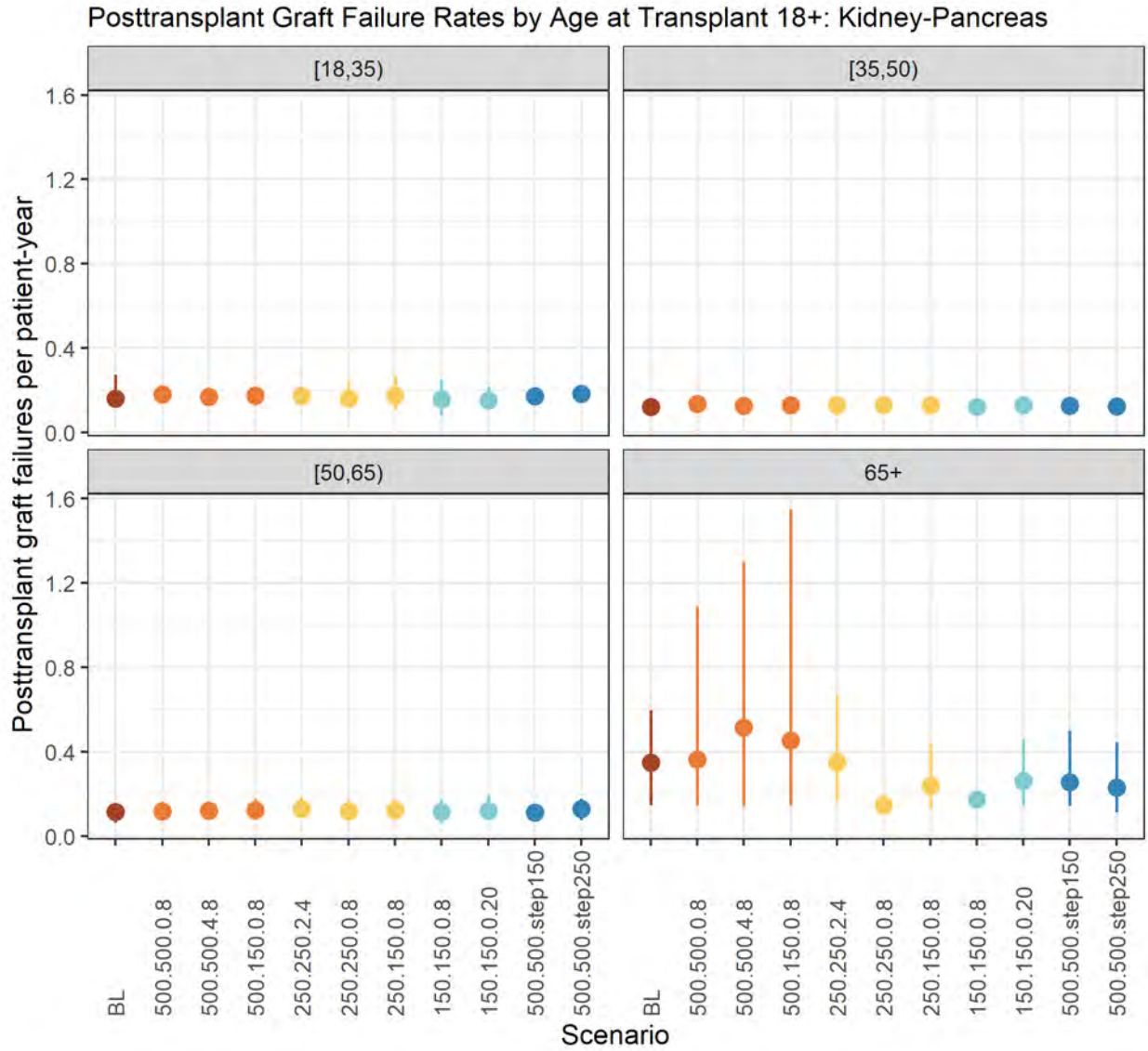


Posttransplant Graft Failure Rates by Age at Transplant 0-17: Kidney

Posttransplant Graft Failure Rates at 1 Year: Age at Transplant 18+

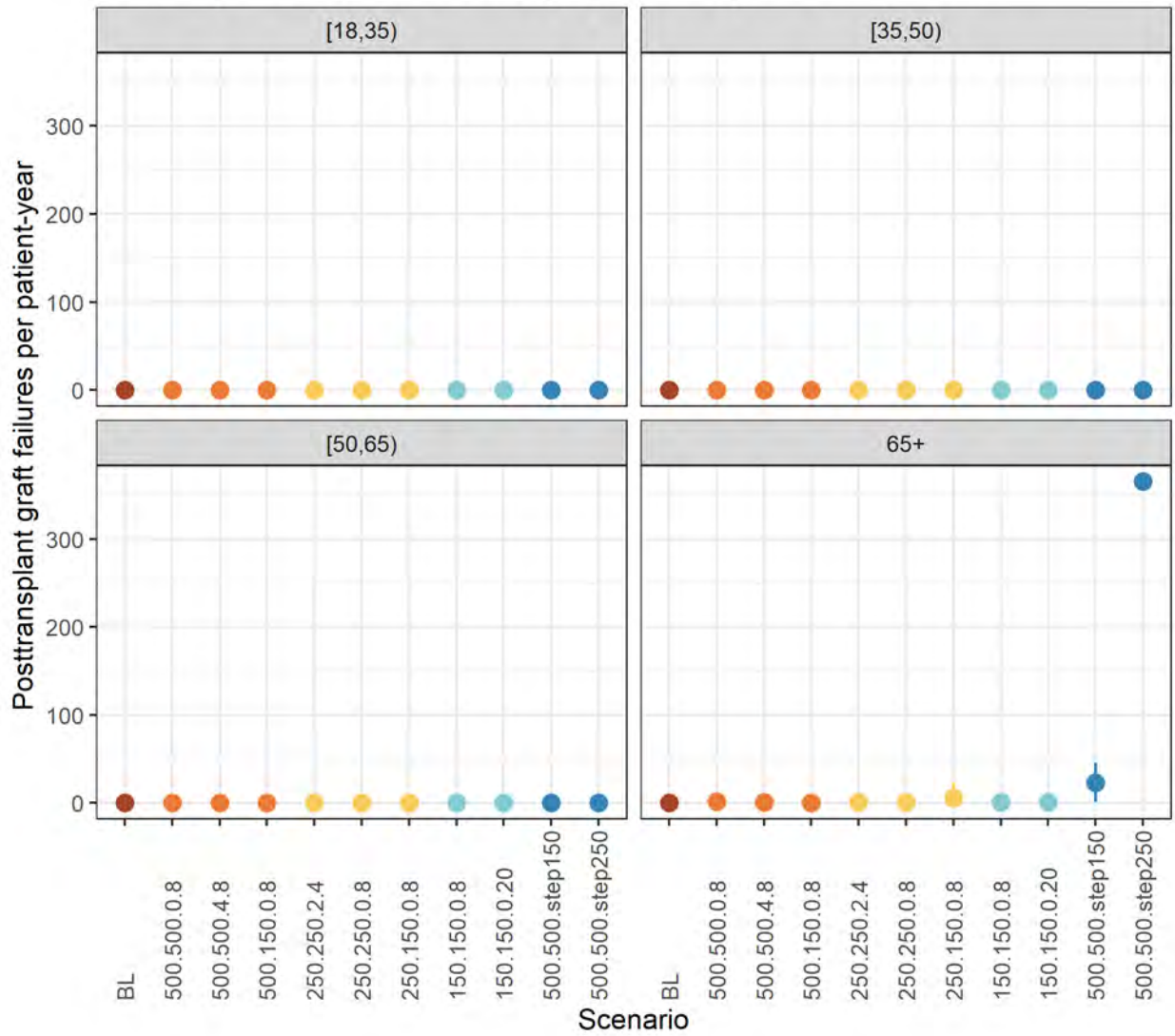


Posttransplant Graft Failure Rates by Age at Transplant 18+: Kidney



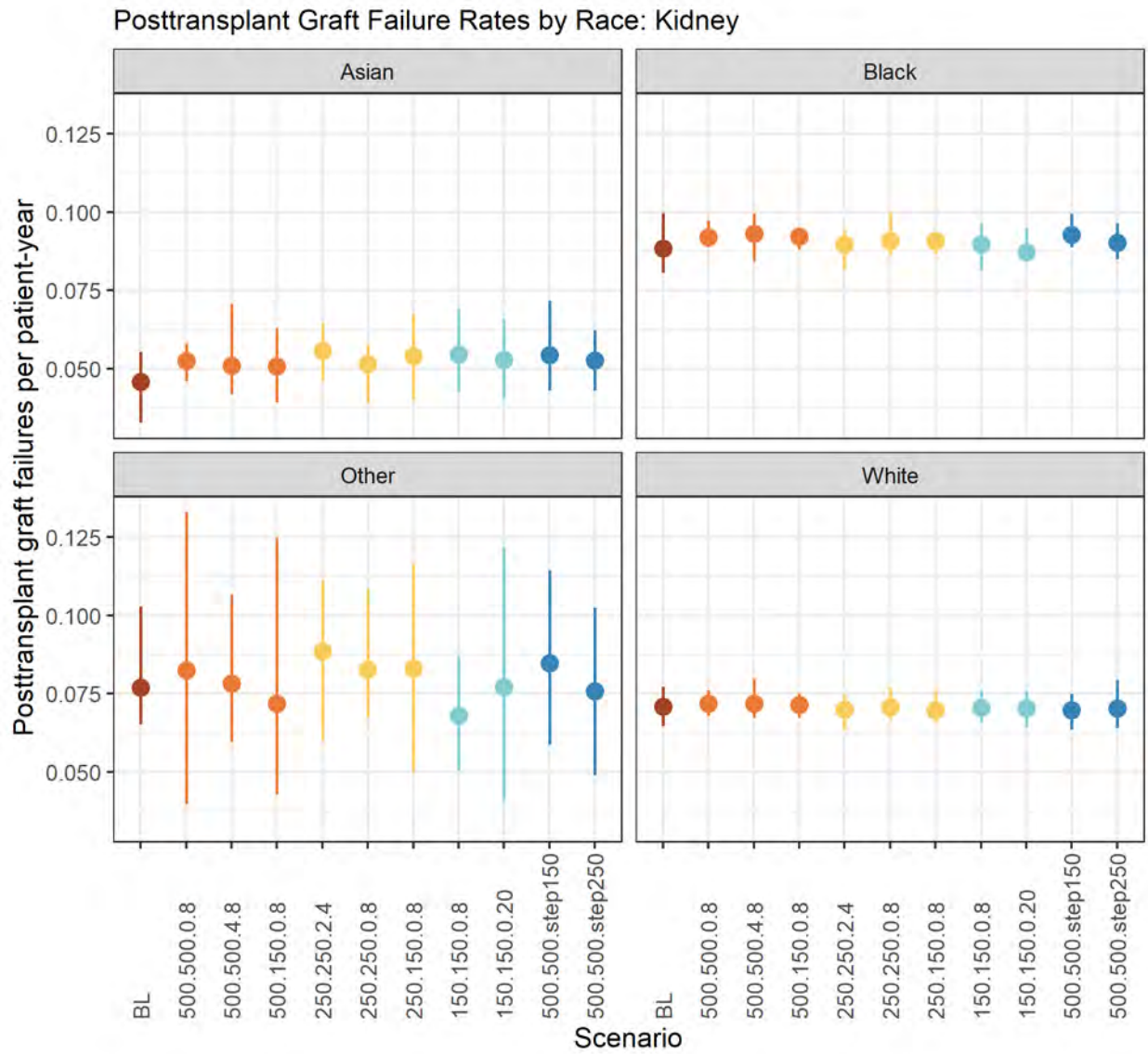
Posttransplant Graft Failure Rates by Age at Transplant 18+: Kidney-Pancreas

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



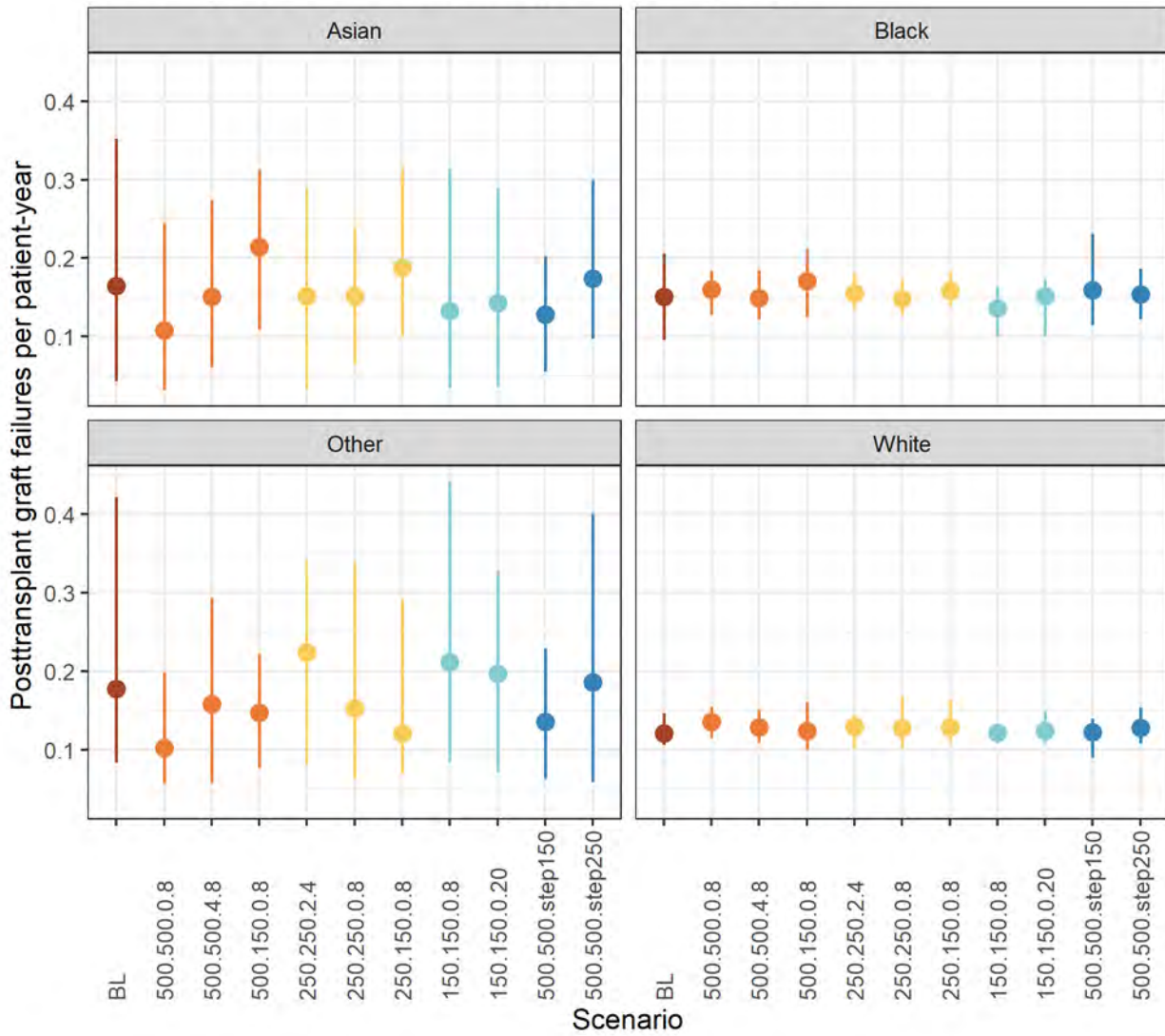
Posttransplant Graft Failure Rates by Age at Transplant 18+: Pancreas

Posttransplant Graft Failure Rates at 1 Year: Race



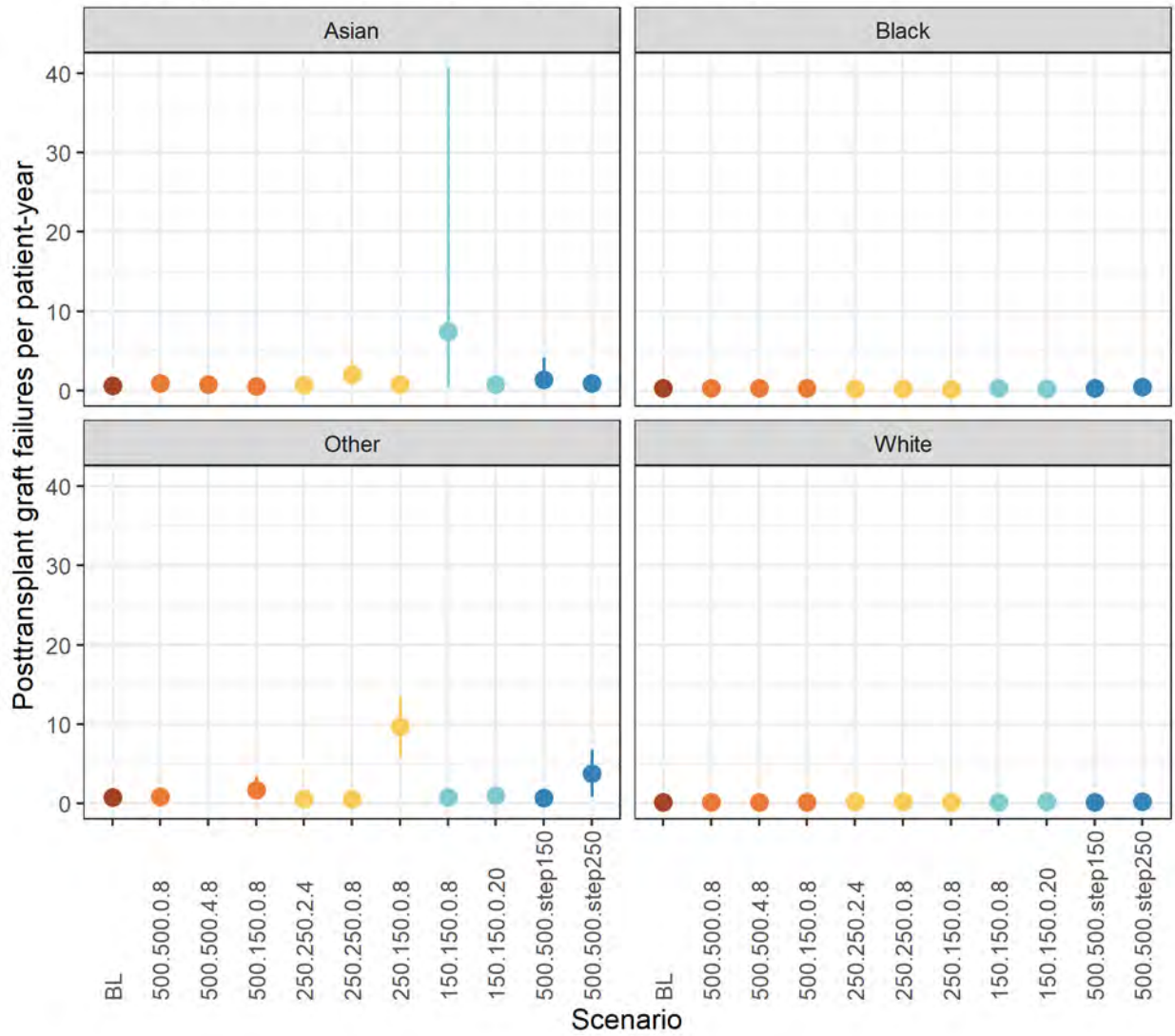
Posttransplant Graft Failure Rates by Race: Kidney

Posttransplant Graft Failure Rates by Race: Kidney-Pancreas



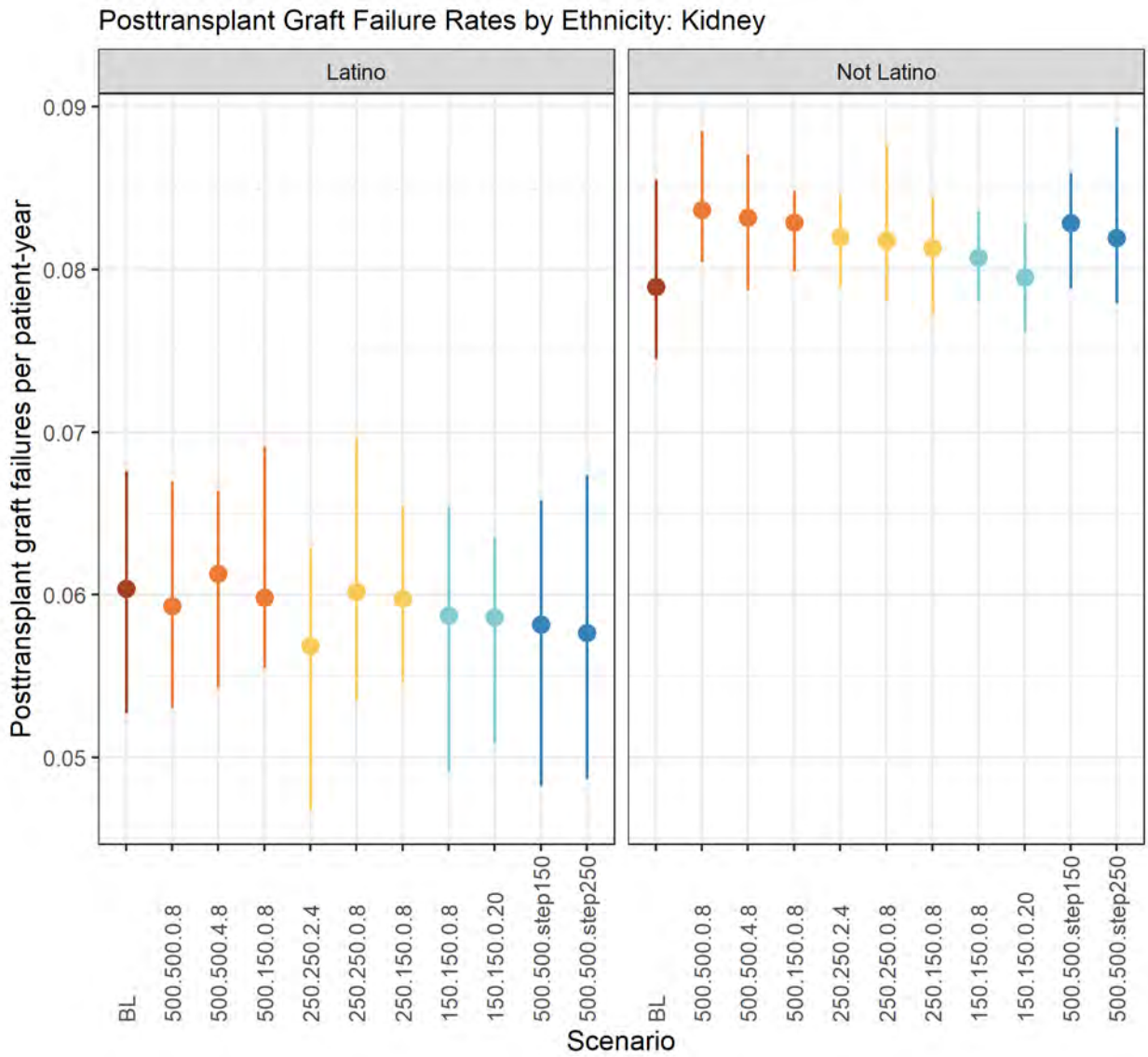
Posttransplant Graft Failure Rates by Race: Kidney-Pancreas

Posttransplant Graft Failure Rates by Race: Pancreas

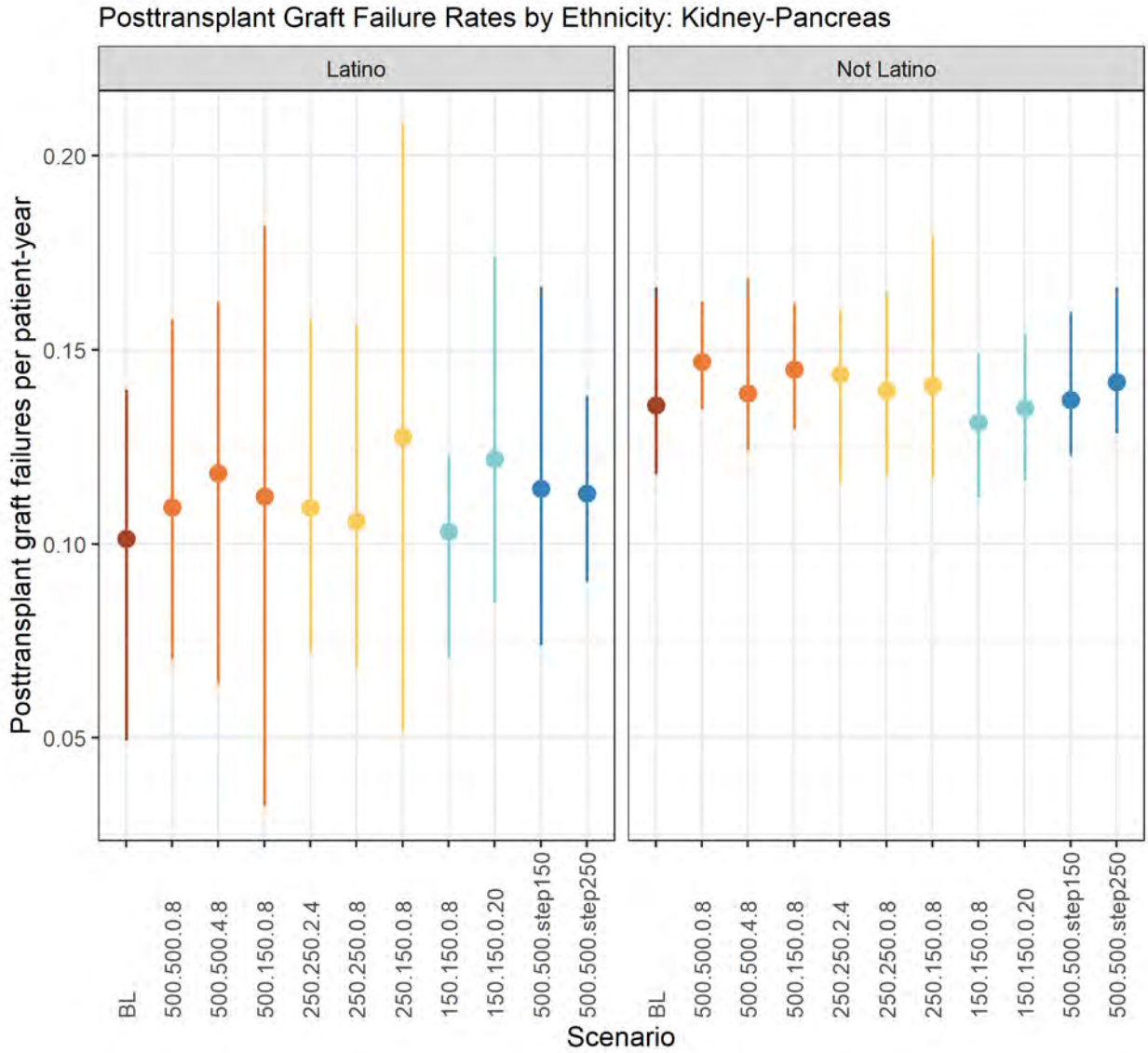


Posttransplant Graft Failure Rates by Race: Pancreas

Posttransplant Graft Failure Rates at 1 Year: Ethnicity

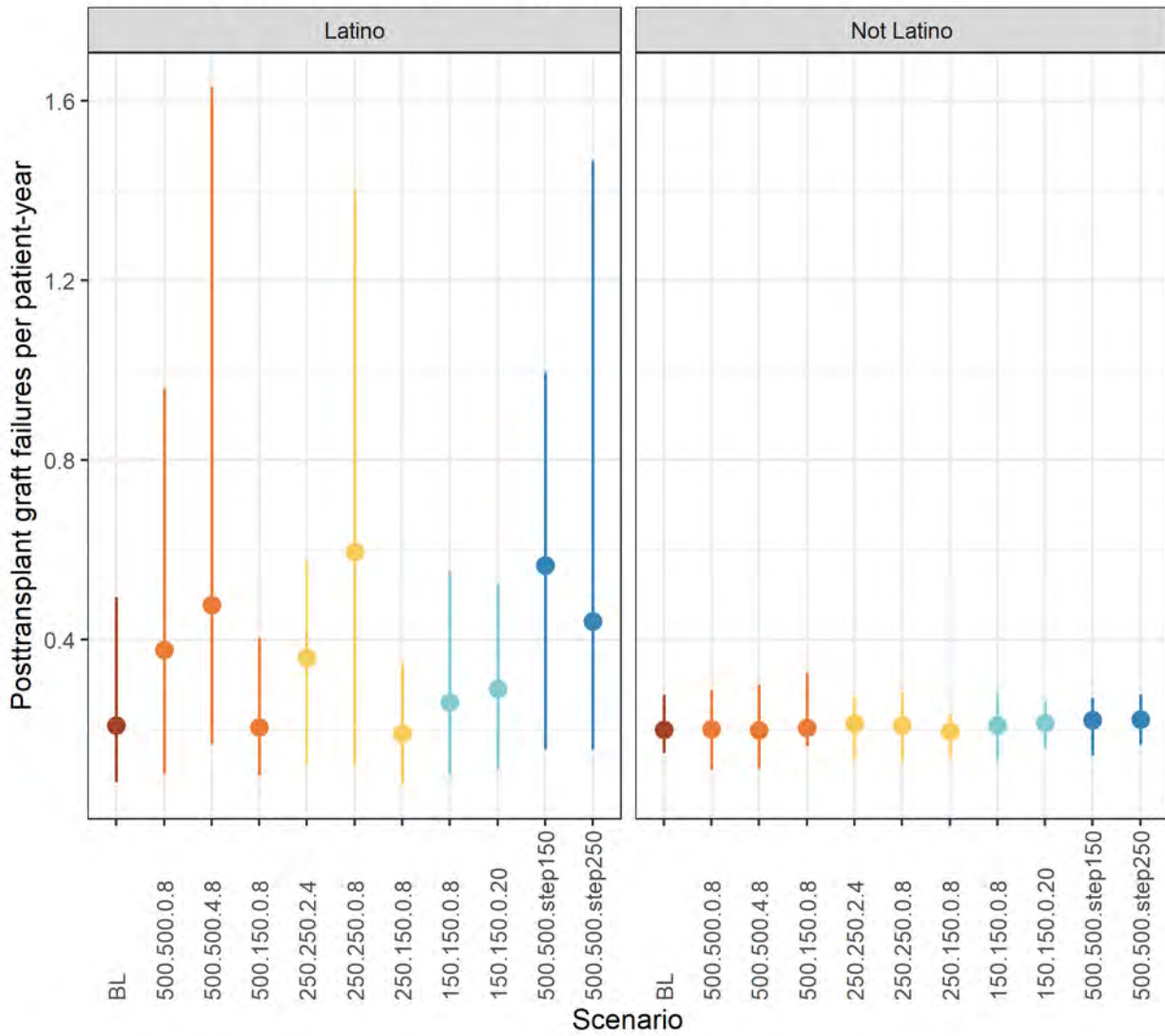


Posttransplant Graft Failure Rates by Ethnicity: Kidney



Posttransplant Graft Failure Rates by Ethnicity: Kidney-Pancreas

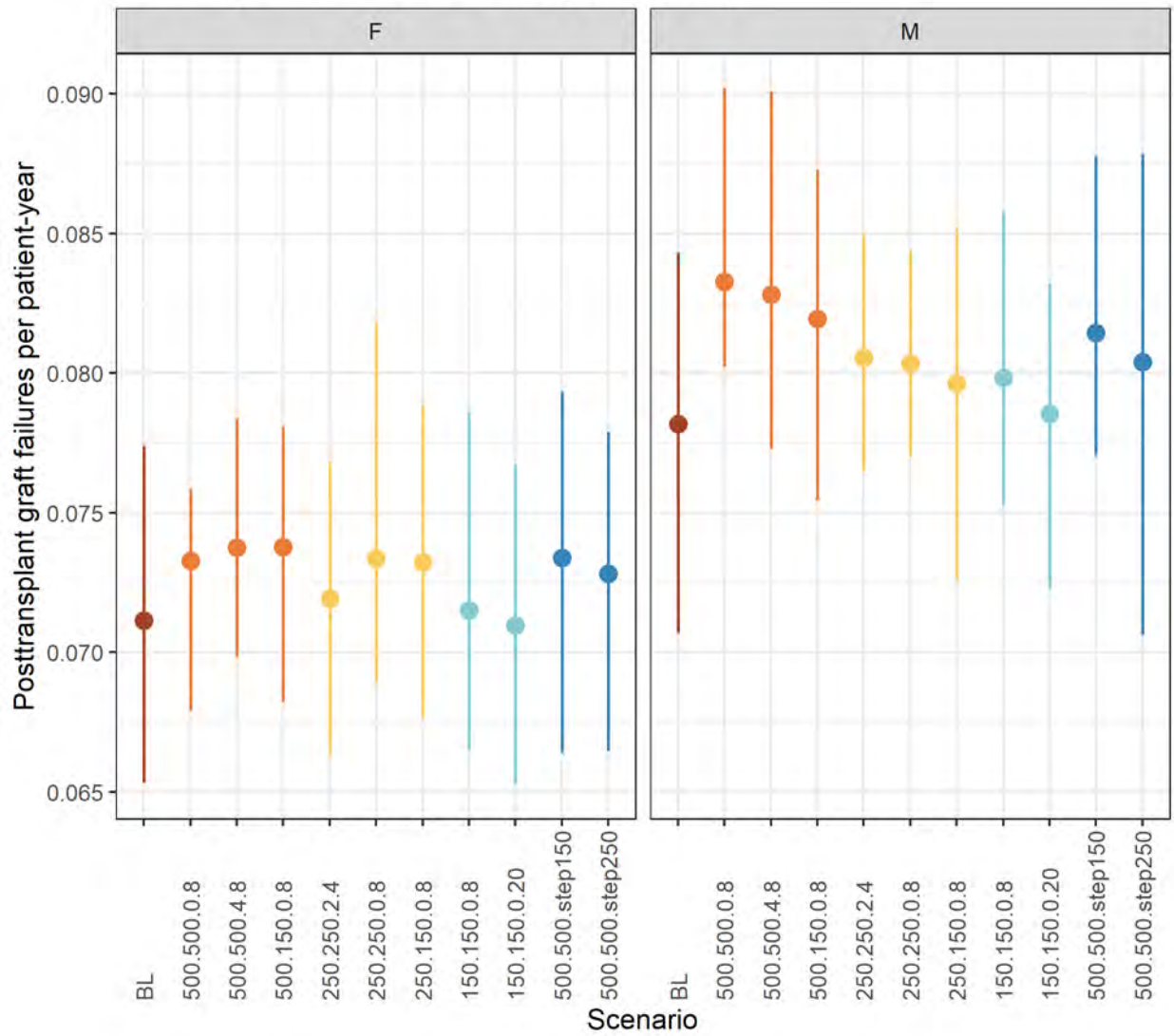
Posttransplant Graft Failure Rates by Ethnicity: Pancreas



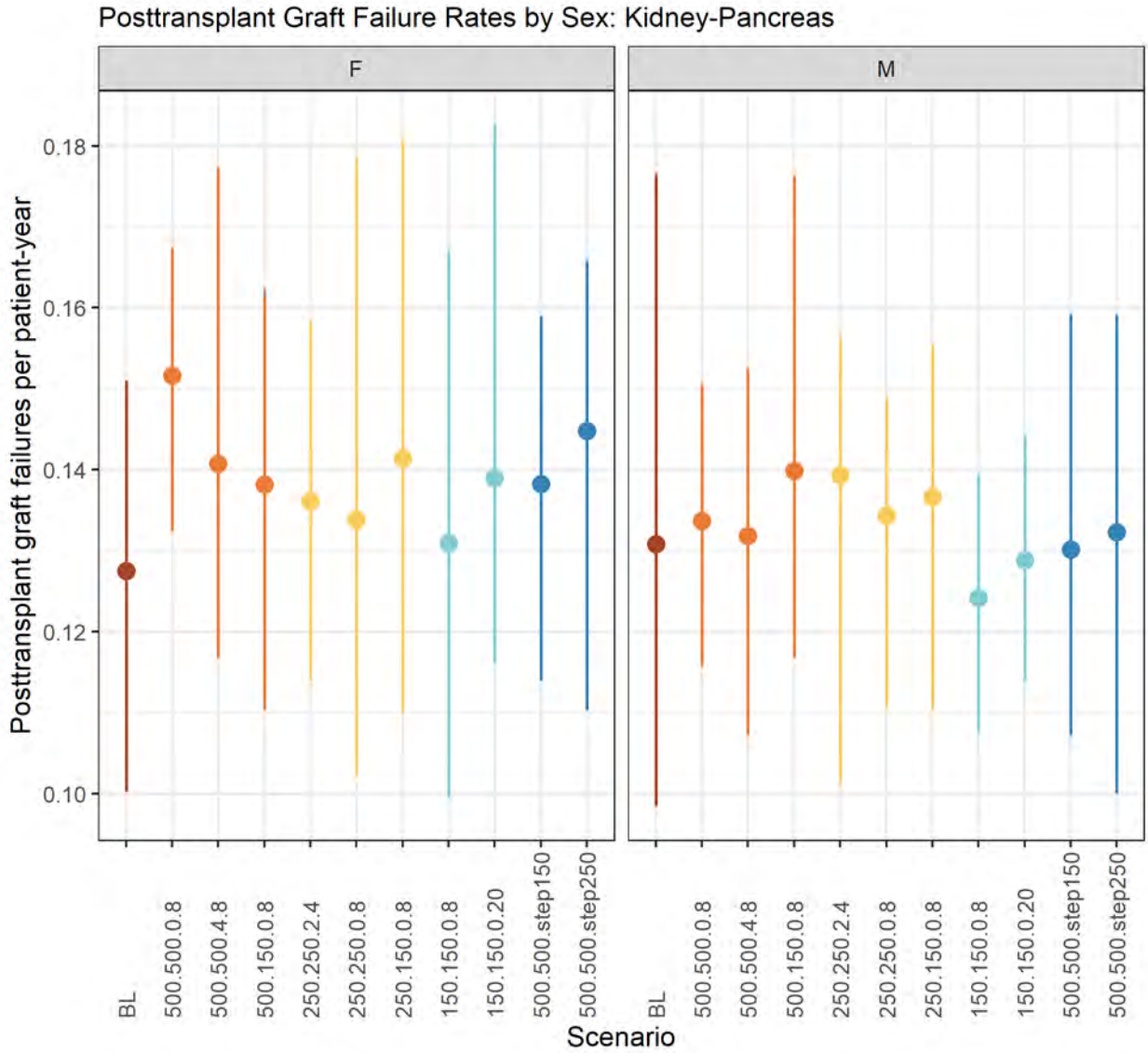
Posttransplant Graft Failure Rates by Ethnicity: Pancreas

Posttransplant Graft Failure Rates at 1 Year: Sex

Posttransplant Graft Failure Rates by Sex: Kidney

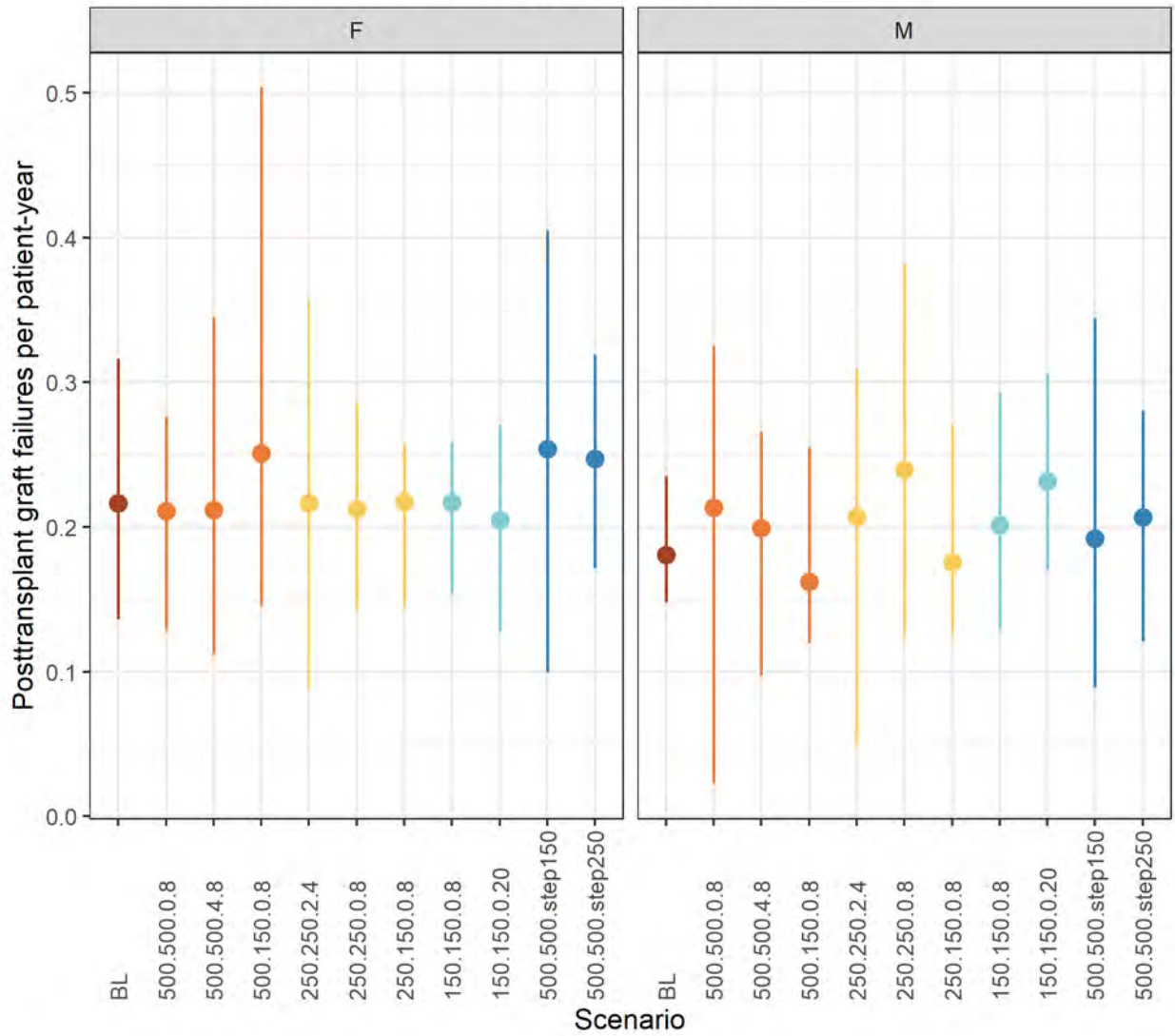


Posttransplant Graft Failure Rates by Sex: Kidney



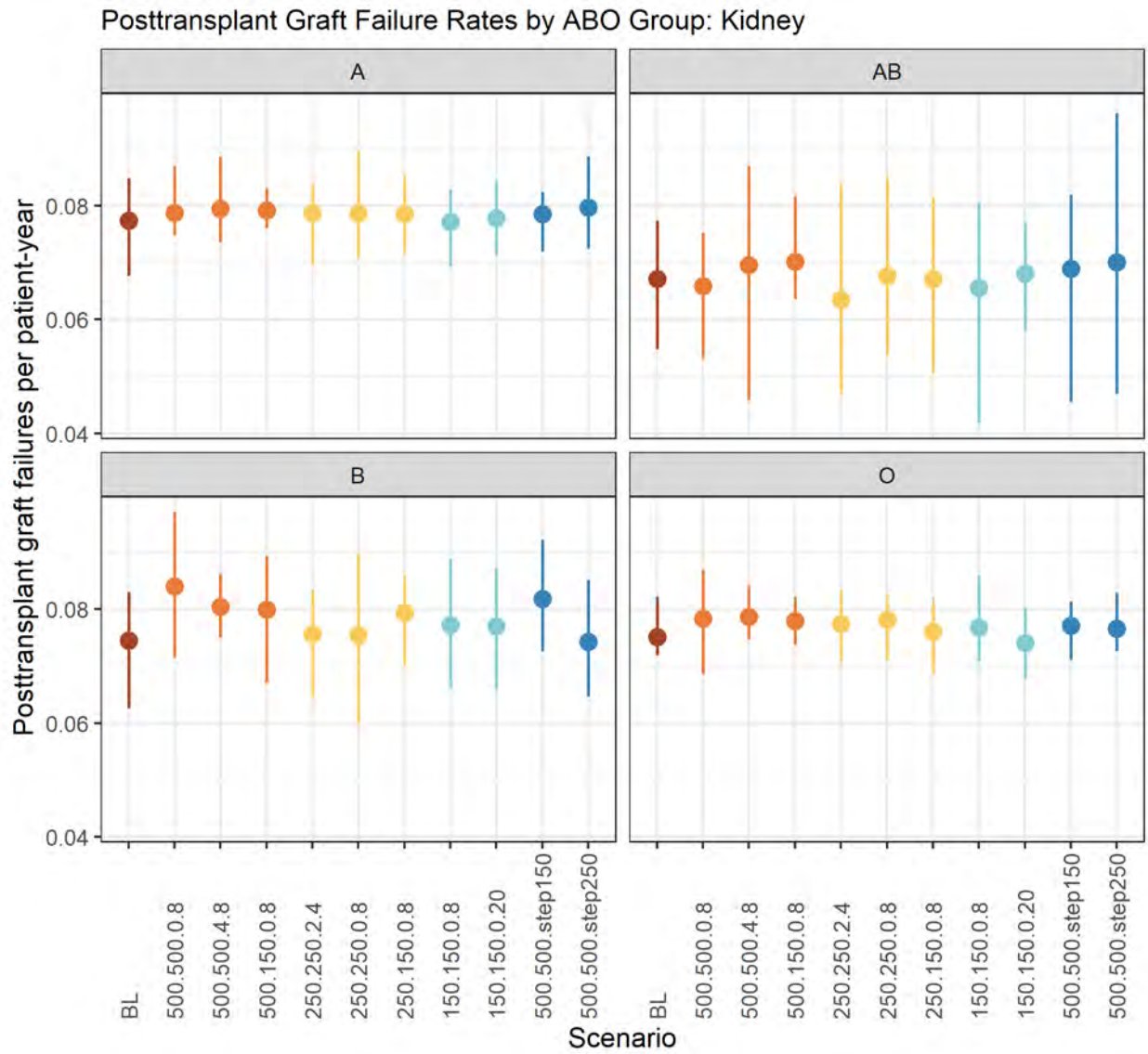
Posttransplant Graft Failure Rates by Sex: Kidney-Pancreas

Posttransplant Graft Failure Rates by Sex: Pancreas



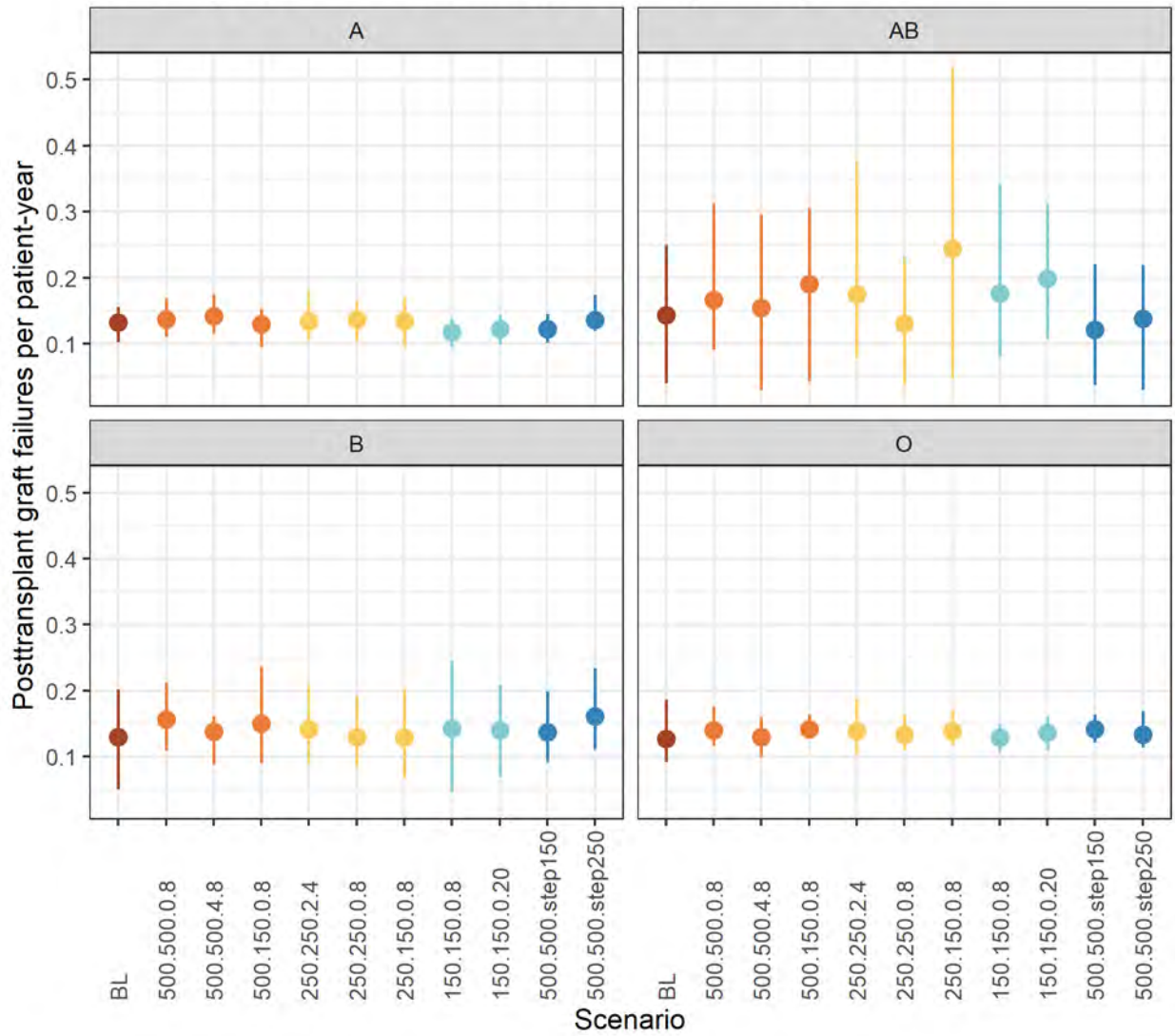
Posttransplant Graft Failure Rates by Sex: Pancreas

Posttransplant Graft Failure Rates at 1 Year: ABO Group



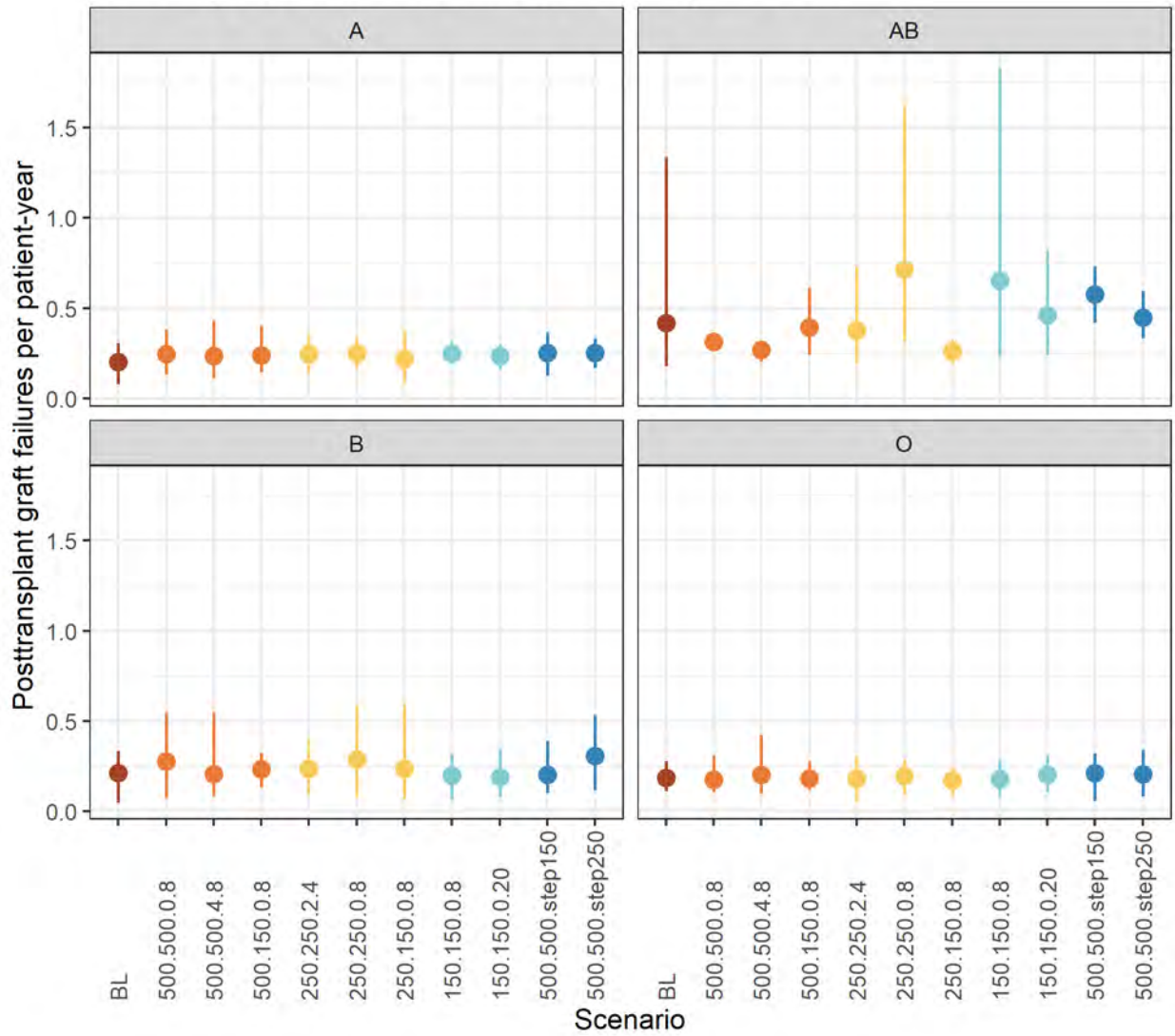
Posttransplant Graft Failure Rates by ABO Group: Kidney

Posttransplant Graft Failure Rates by ABO Group: Kidney-Pancreas



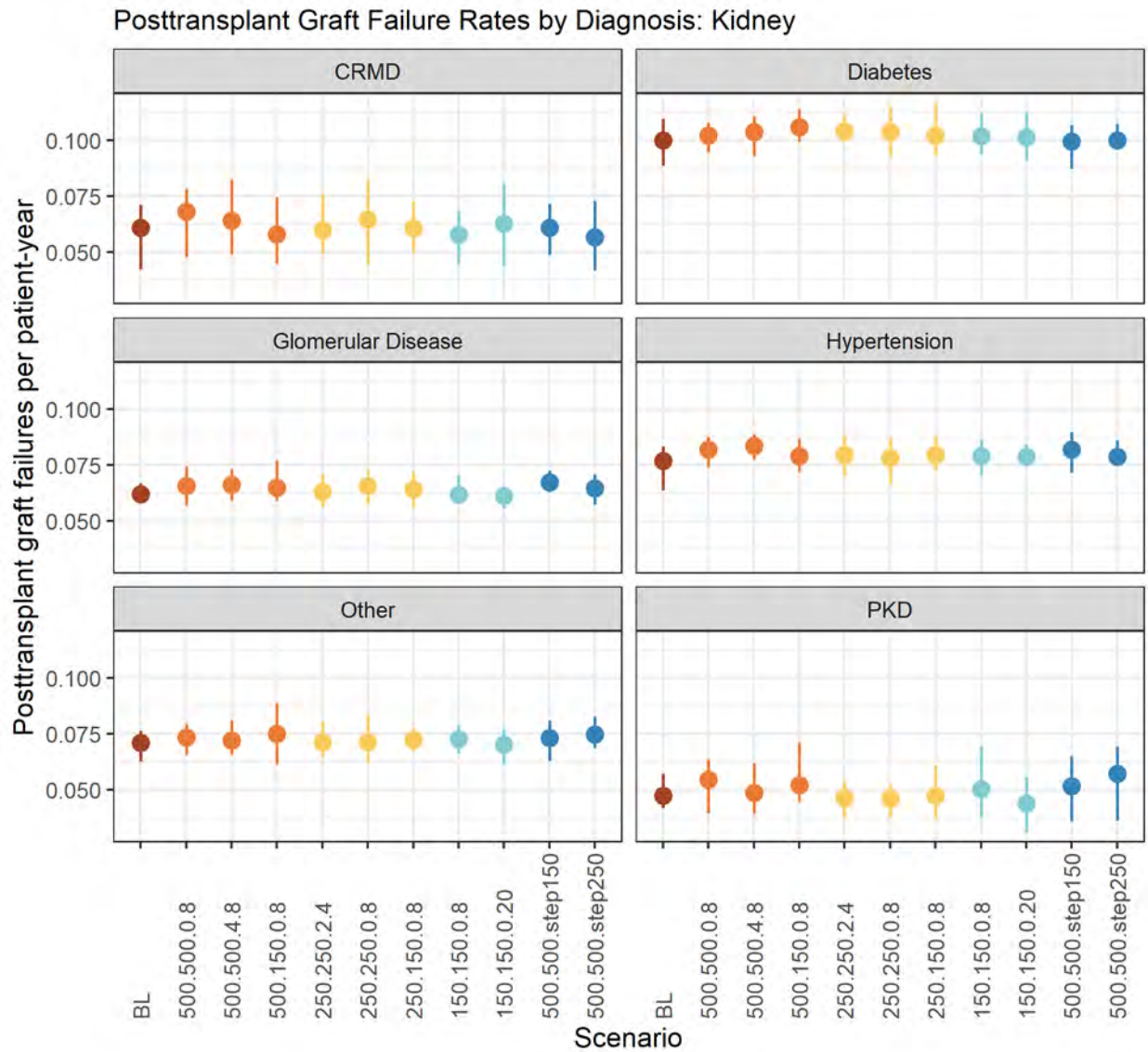
Posttransplant Graft Failure Rates by ABO Group: Kidney-Pancreas

Posttransplant Graft Failure Rates by ABO Group: Pancreas



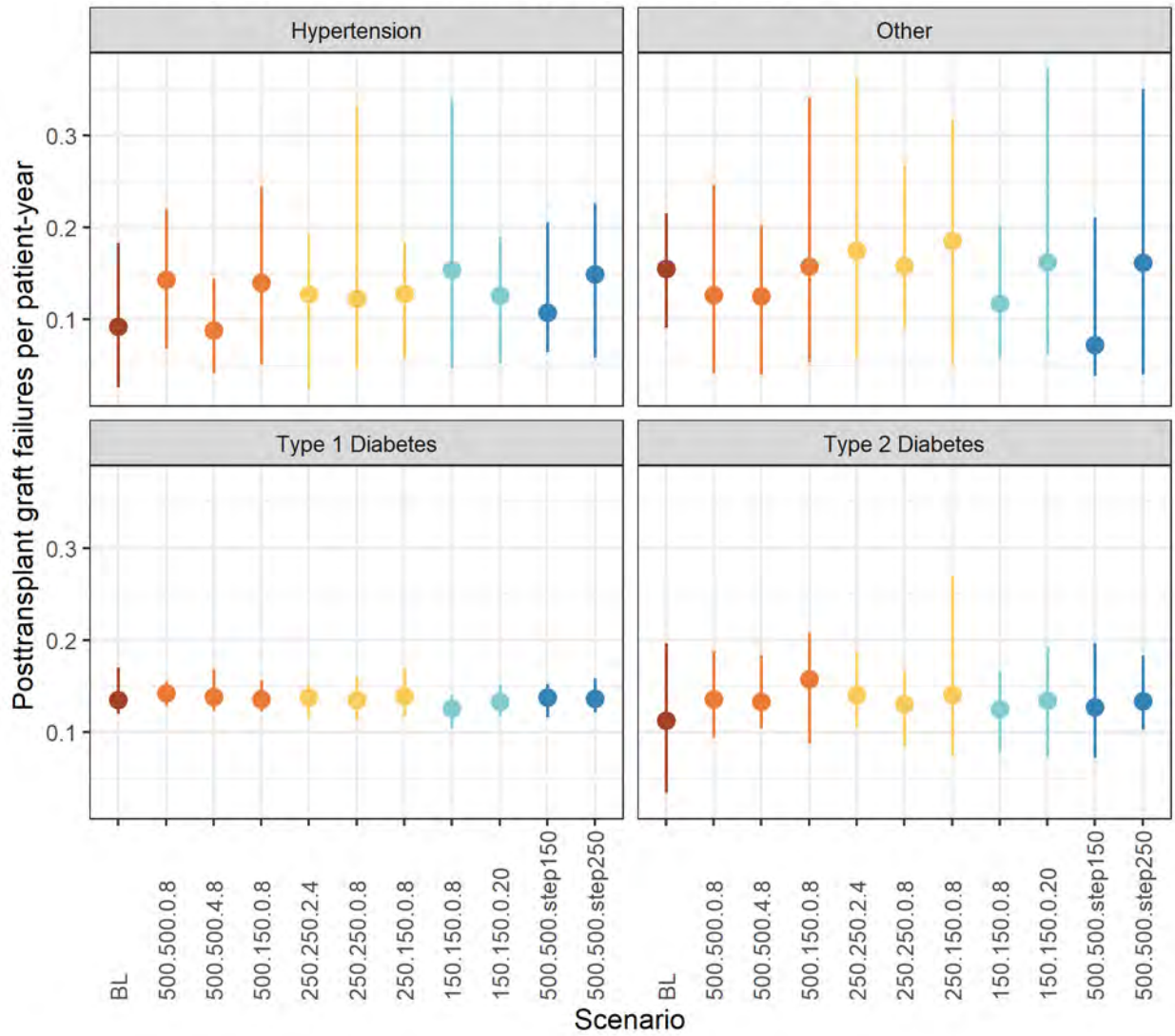
Posttransplant Graft Failure Rates by ABO Group: Pancreas

Posttransplant Graft Failure Rates at 1 Year: Diagnosis



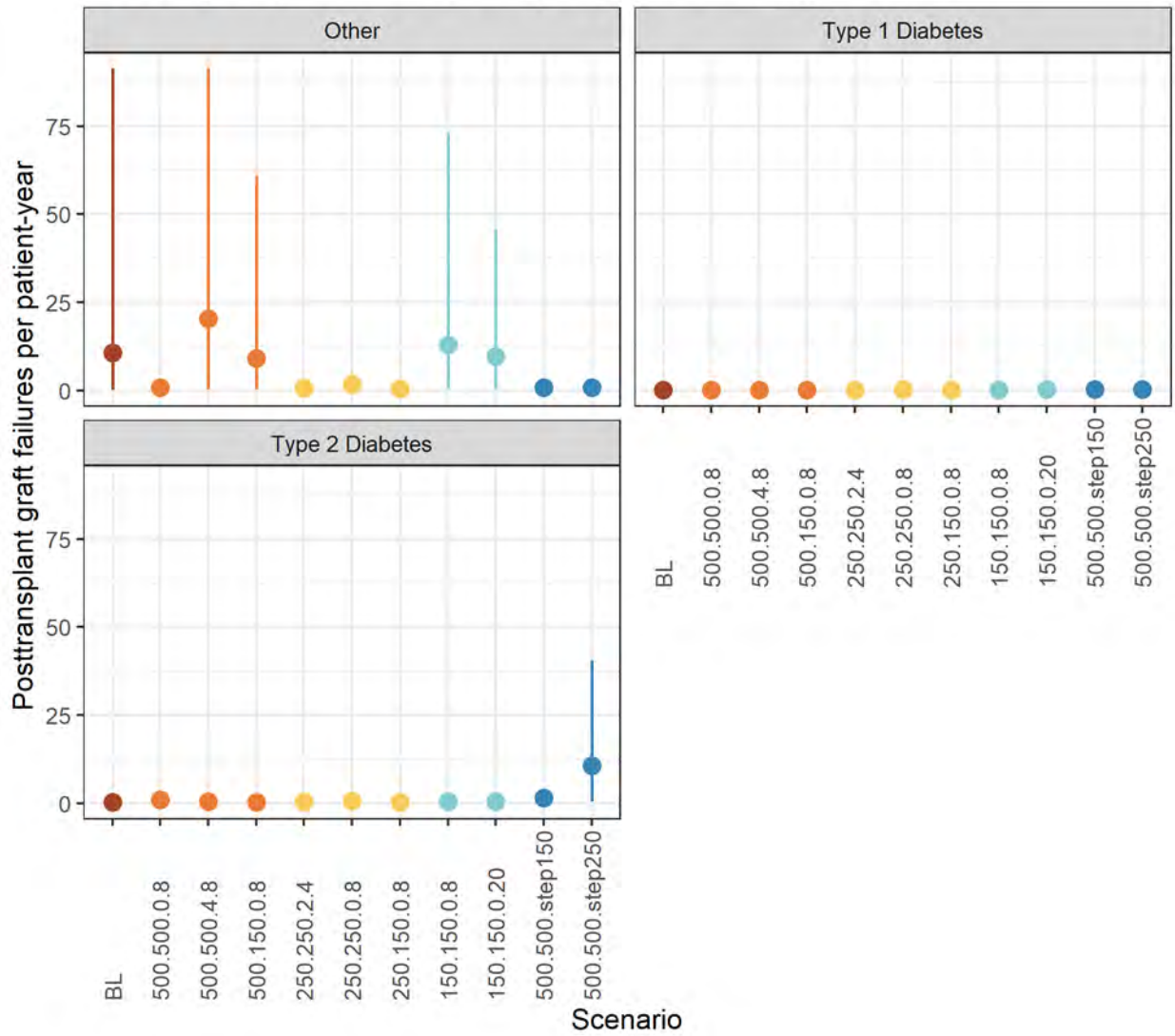
Posttransplant Graft Failure Rates by Diagnosis: Kidney

Posttransplant Graft Failure Rates by Diagnosis: Kidney-Pancreas



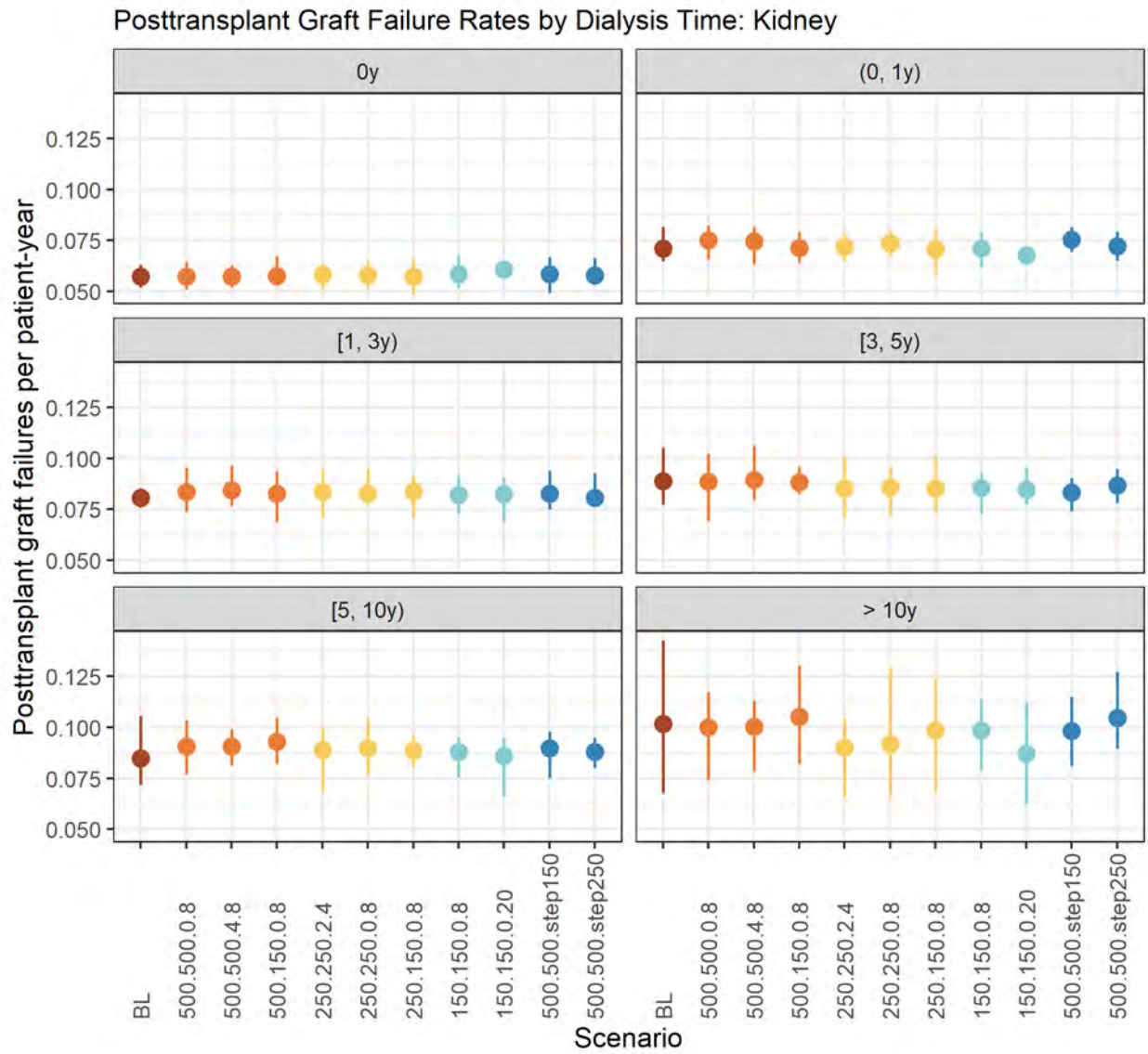
Posttransplant Graft Failure Rates by Diagnosis: Kidney-Pancreas

Posttransplant Graft Failure Rates by Diagnosis: Pancreas



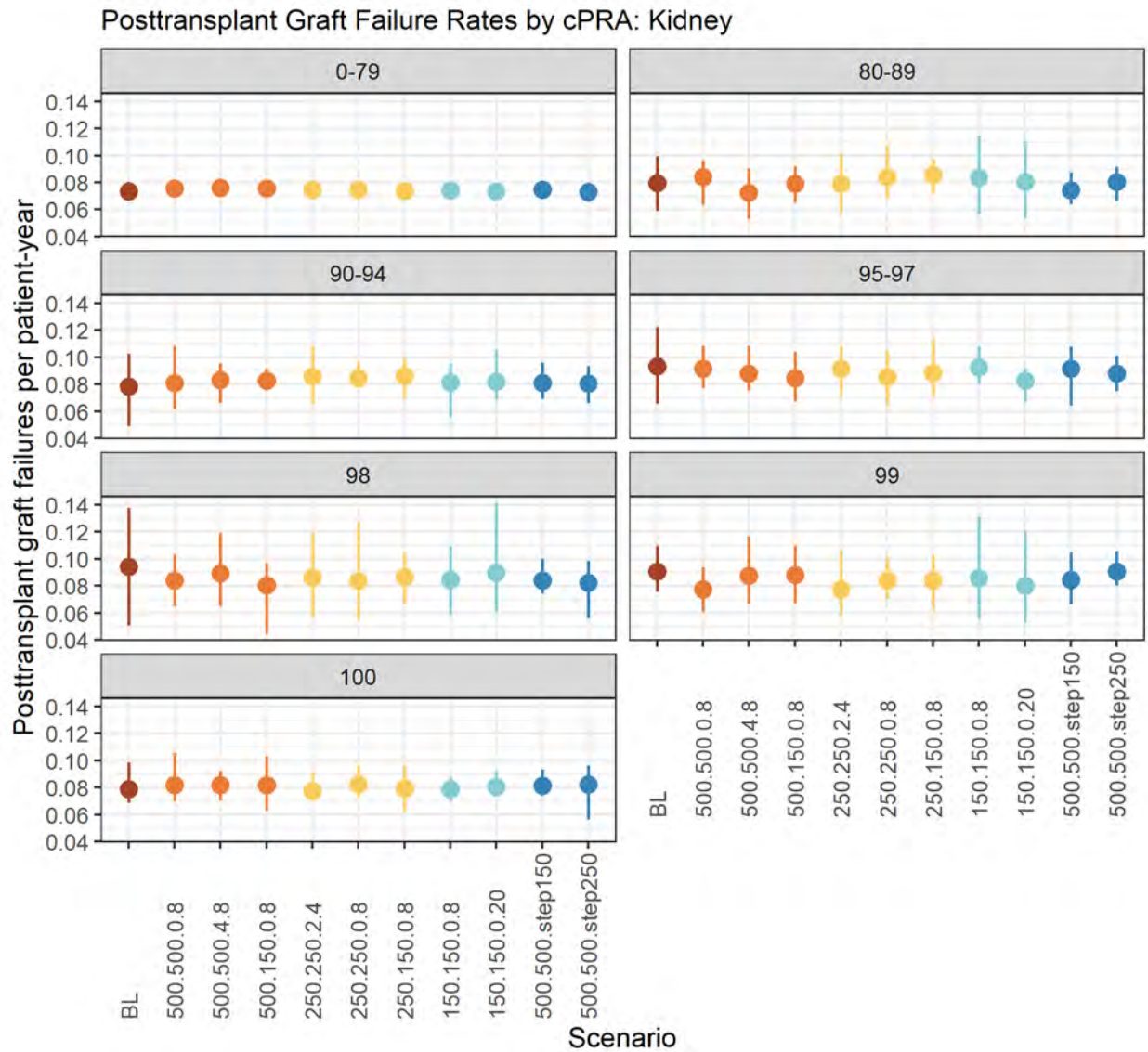
Posttransplant Graft Failure Rates by Diagnosis: Pancreas

Posttransplant Graft Failure Rates at 1 Year: Dialysis Time

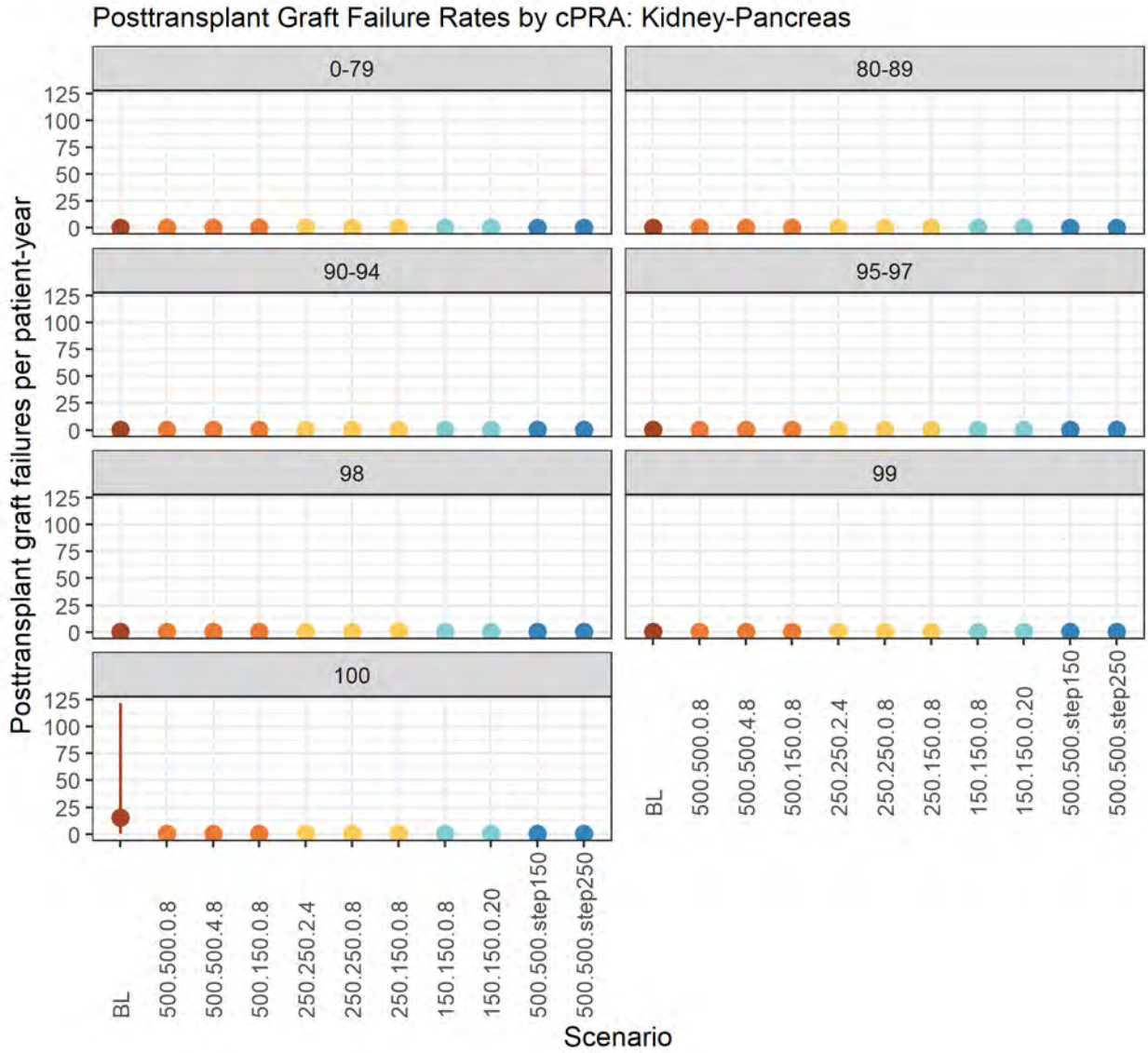


Posttransplant Graft Failure Rates by Dialysis Time: Kidney

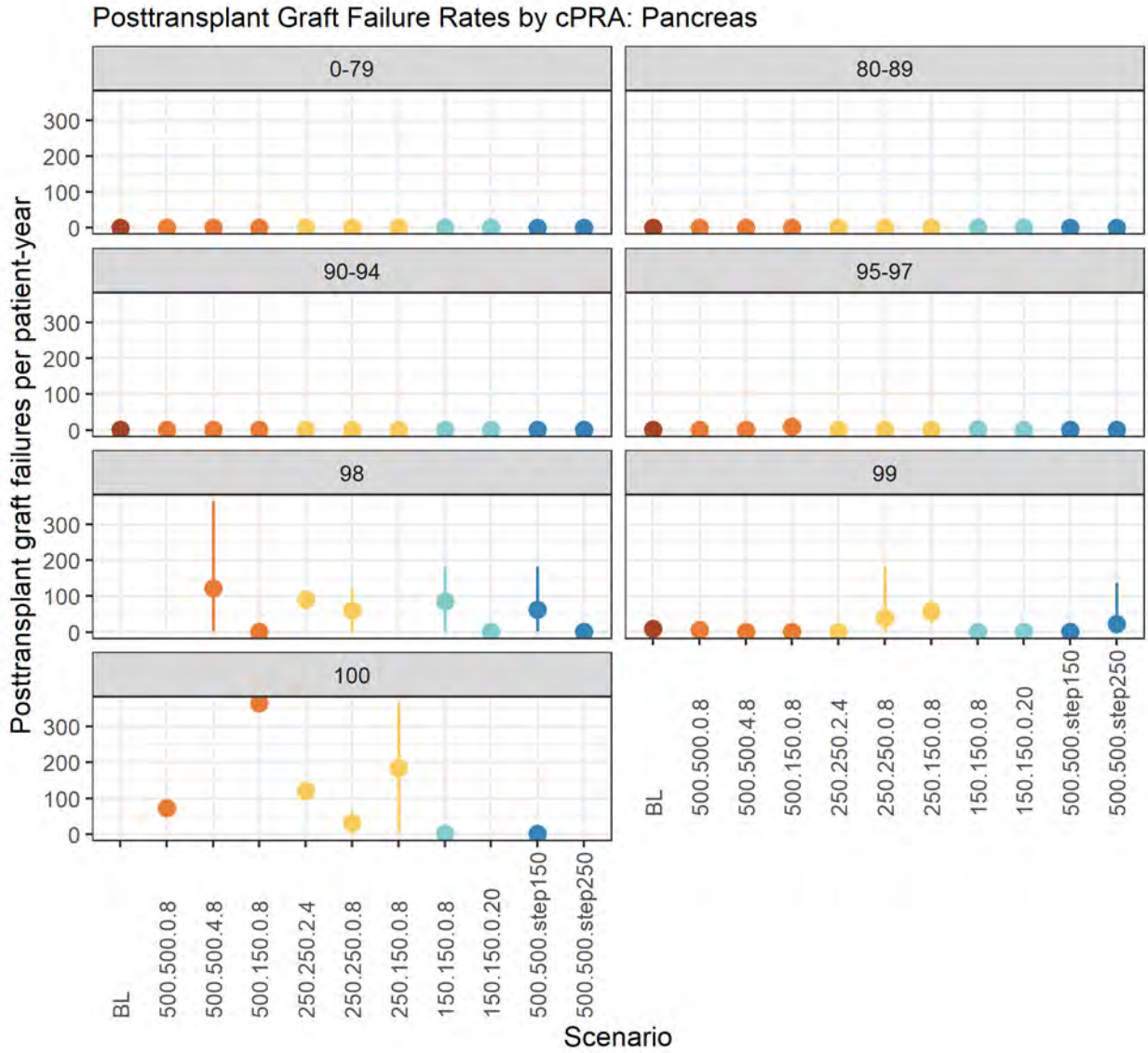
Posttransplant Graft Failure Rates at 1 Year: cPRA



Posttransplant Graft Failure Rates by cPRA: Kidney

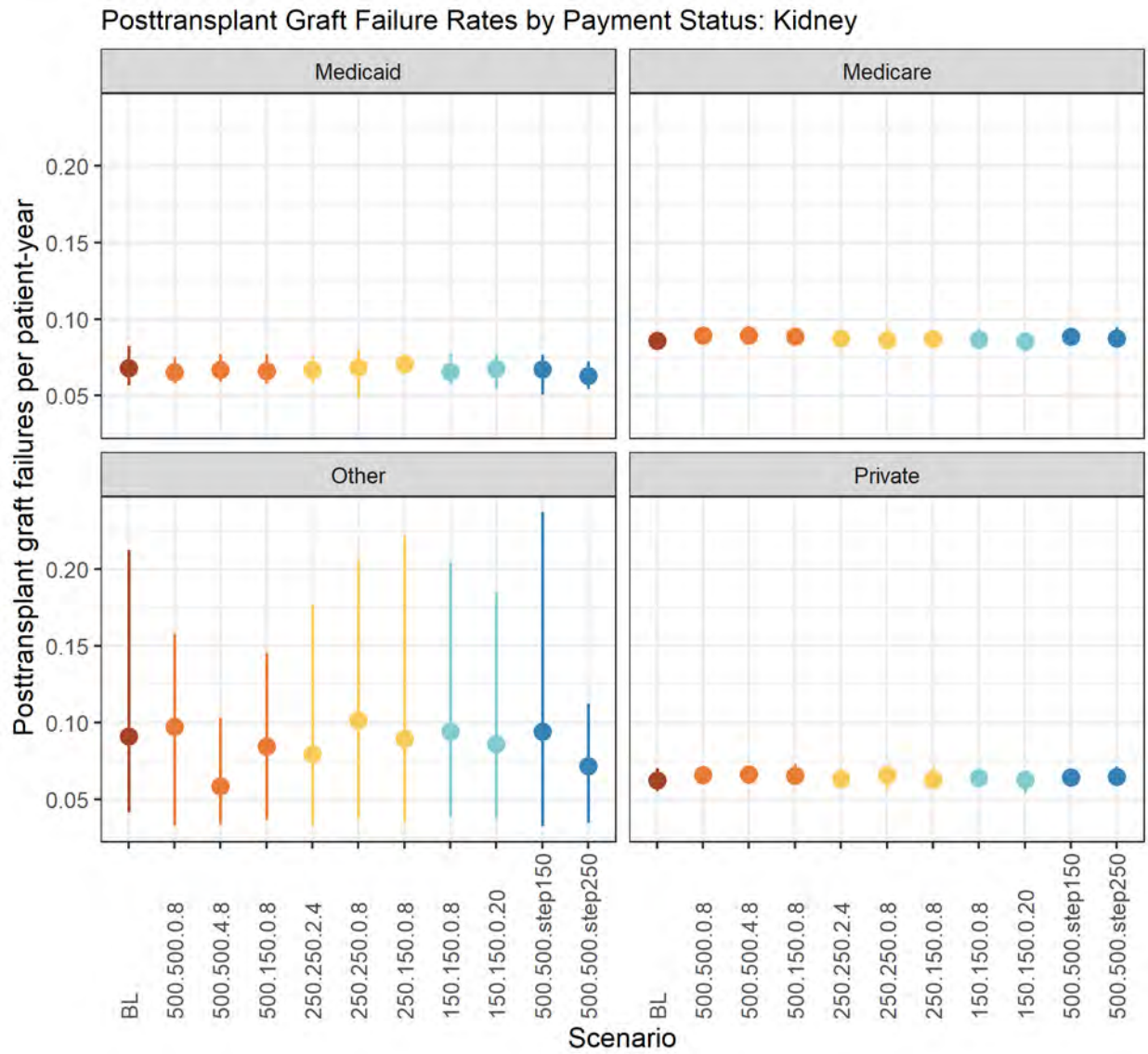


Posttransplant Graft Failure Rates by cPRA: Kidney-Pancreas



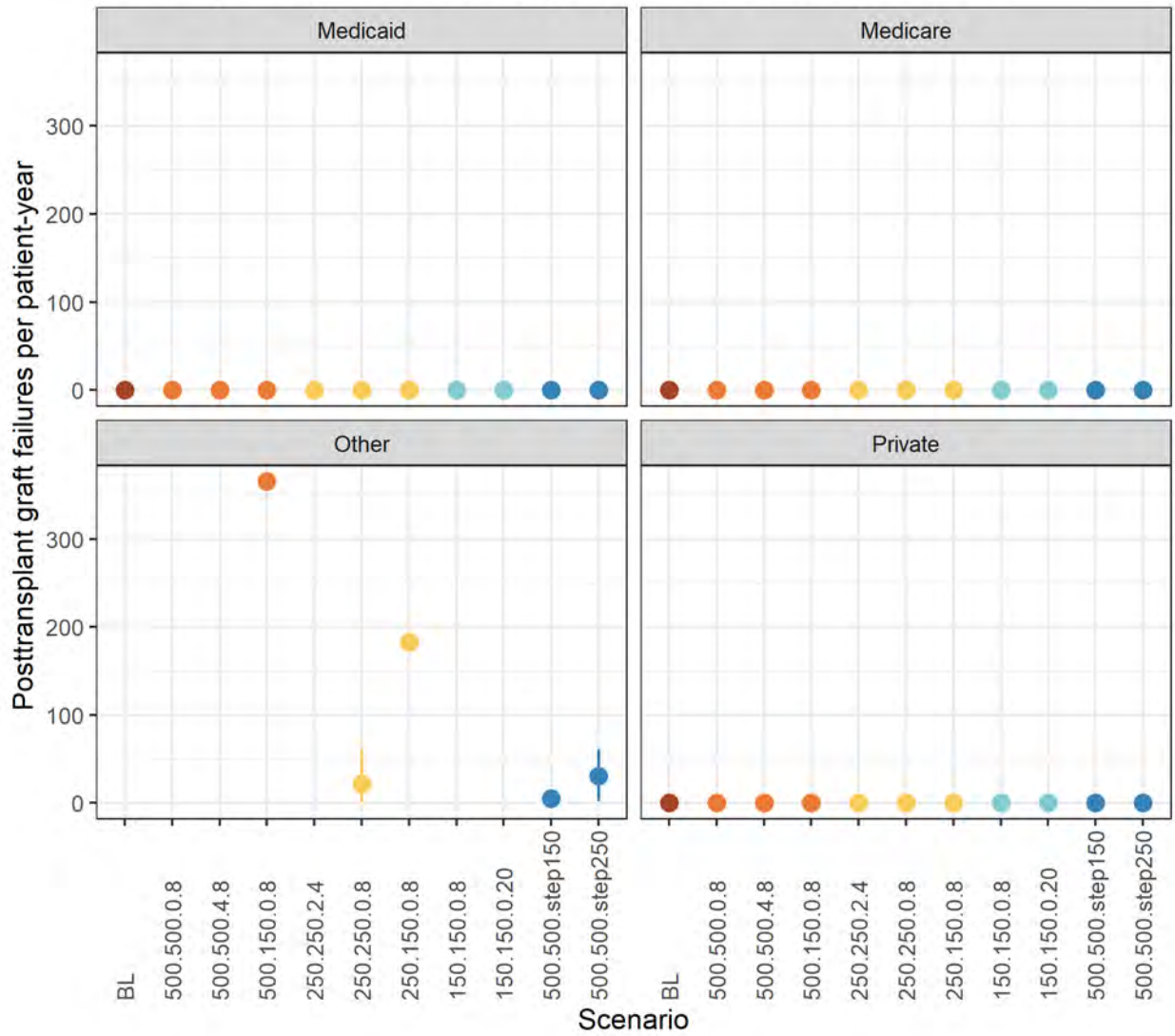
Posttransplant Graft Failure Rates by cPRA: Pancreas

Posttransplant Graft Failure Rates at 1 Year: Payment Status

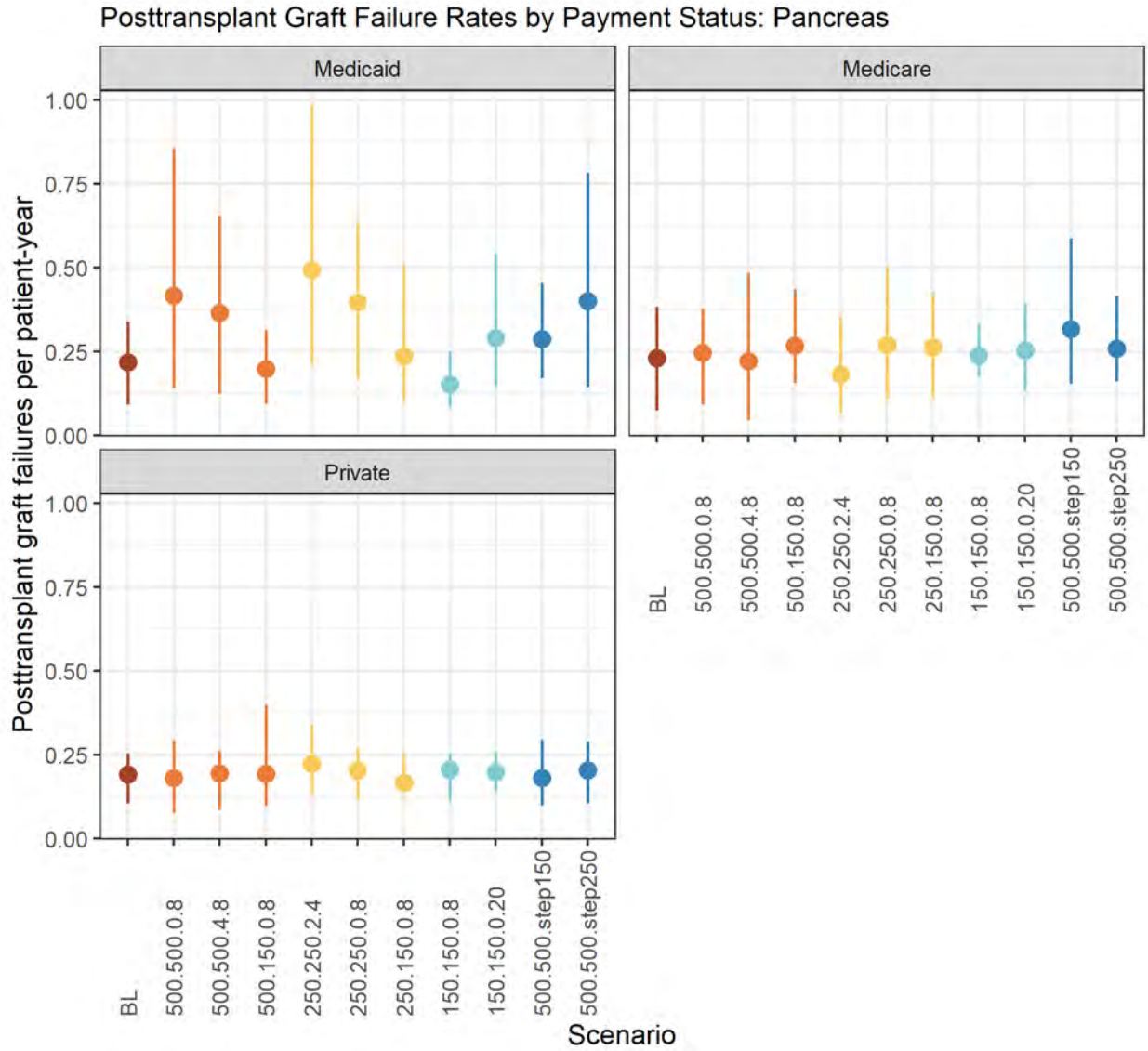


Posttransplant Graft Failure Rates by Payment Status: Kidney

Posttransplant Graft Failure Rates by Payment Status: Kidney-Pancreas

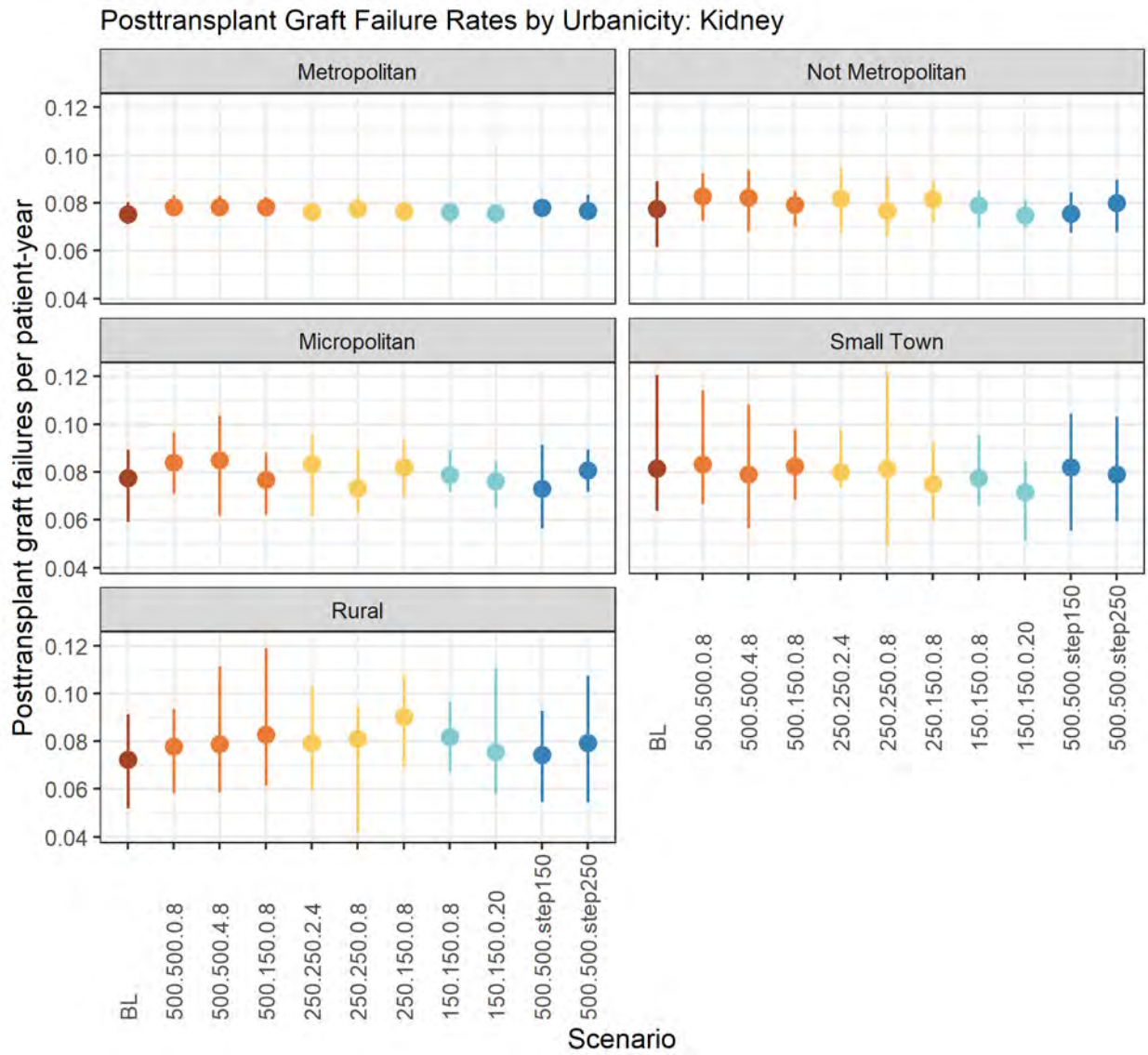


Posttransplant Graft Failure Rates by Payment Status: Kidney-Pancreas



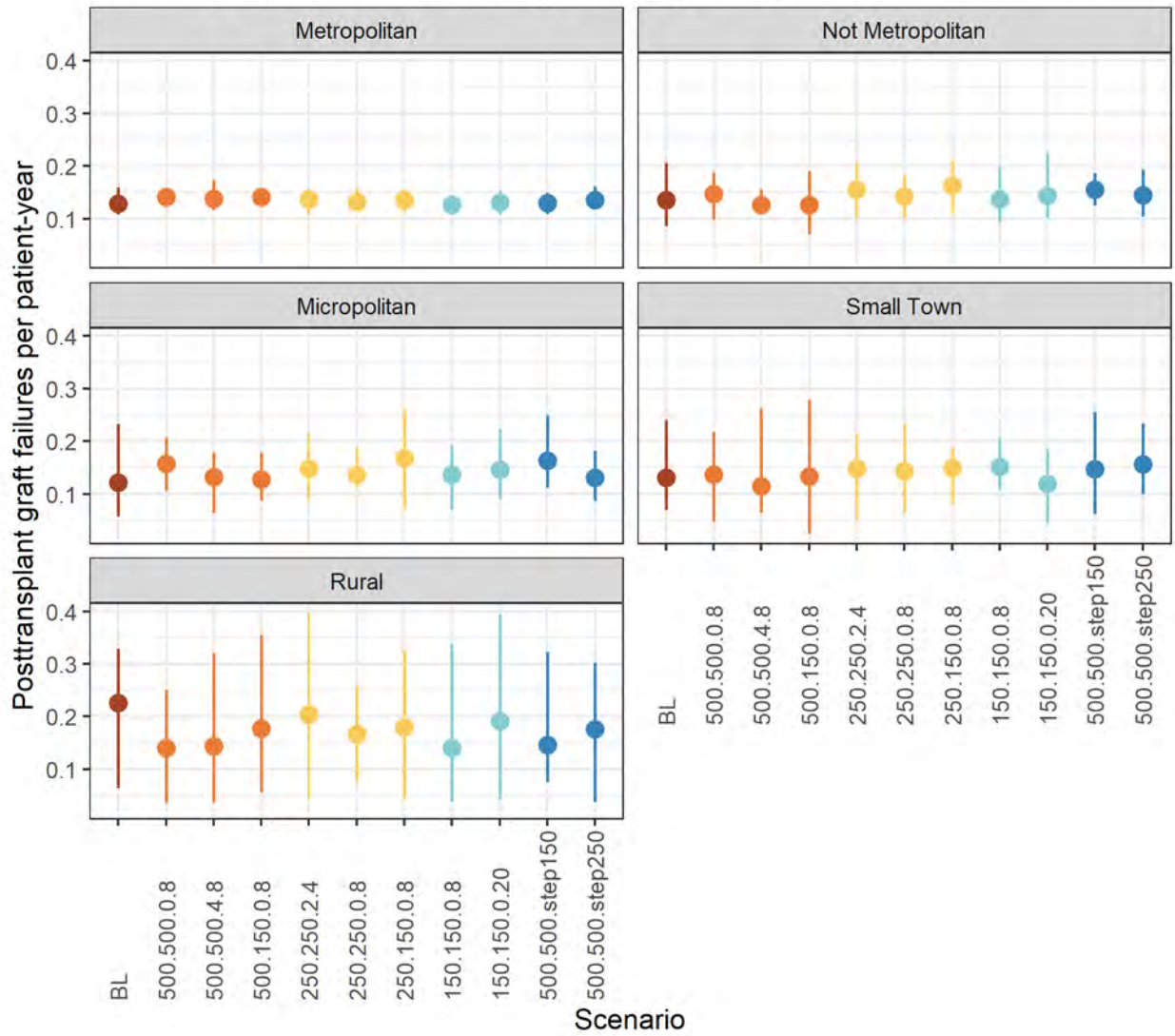
Posttransplant Graft Failure Rates by Payment Status: Pancreas

Posttransplant Graft Failure Rates at 1 Year: Urbanicity



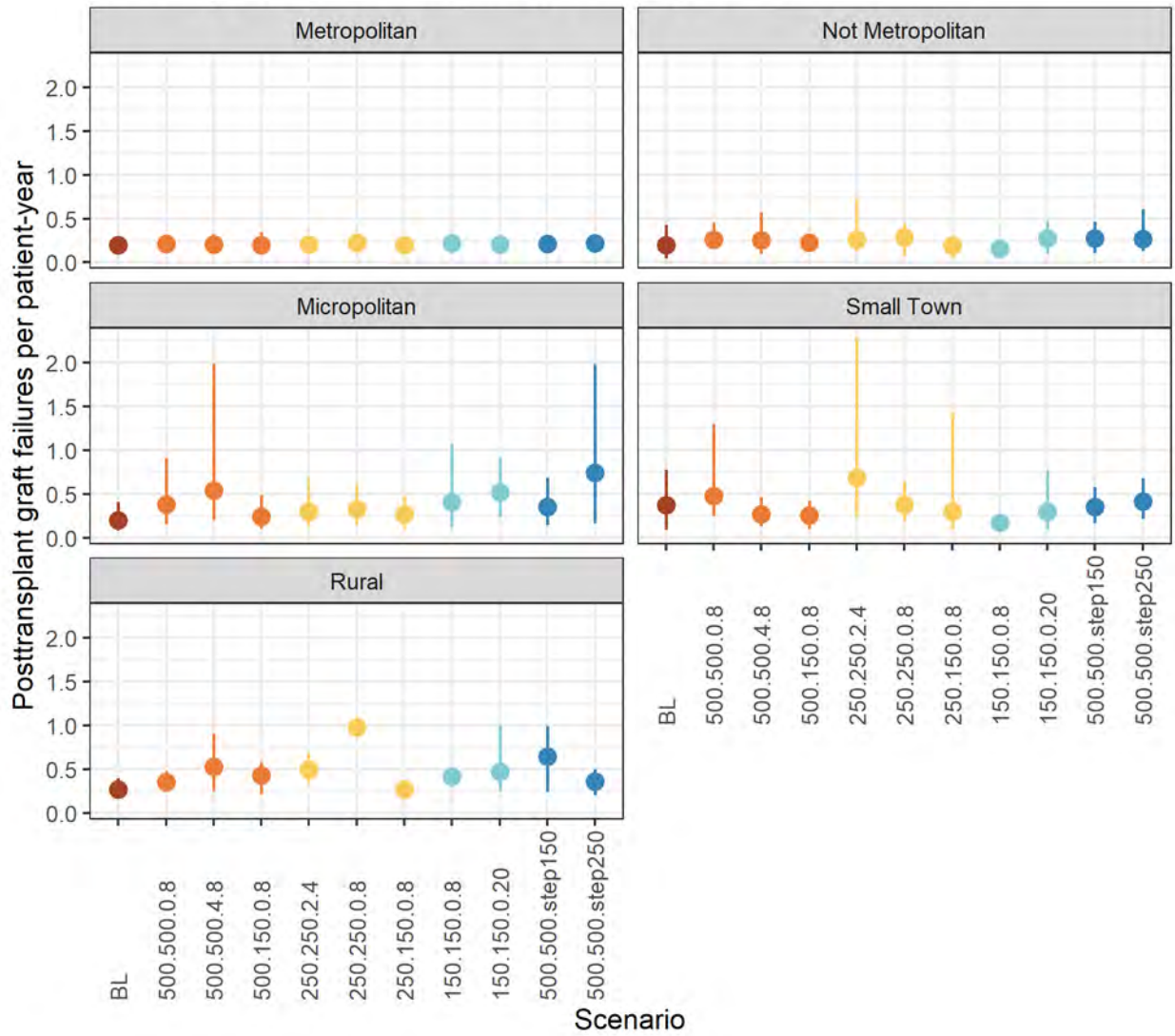
Posttransplant Graft Failure Rates by Urbanicity: Kidney

Posttransplant Graft Failure Rates by Urbanicity: Kidney-Pancreas



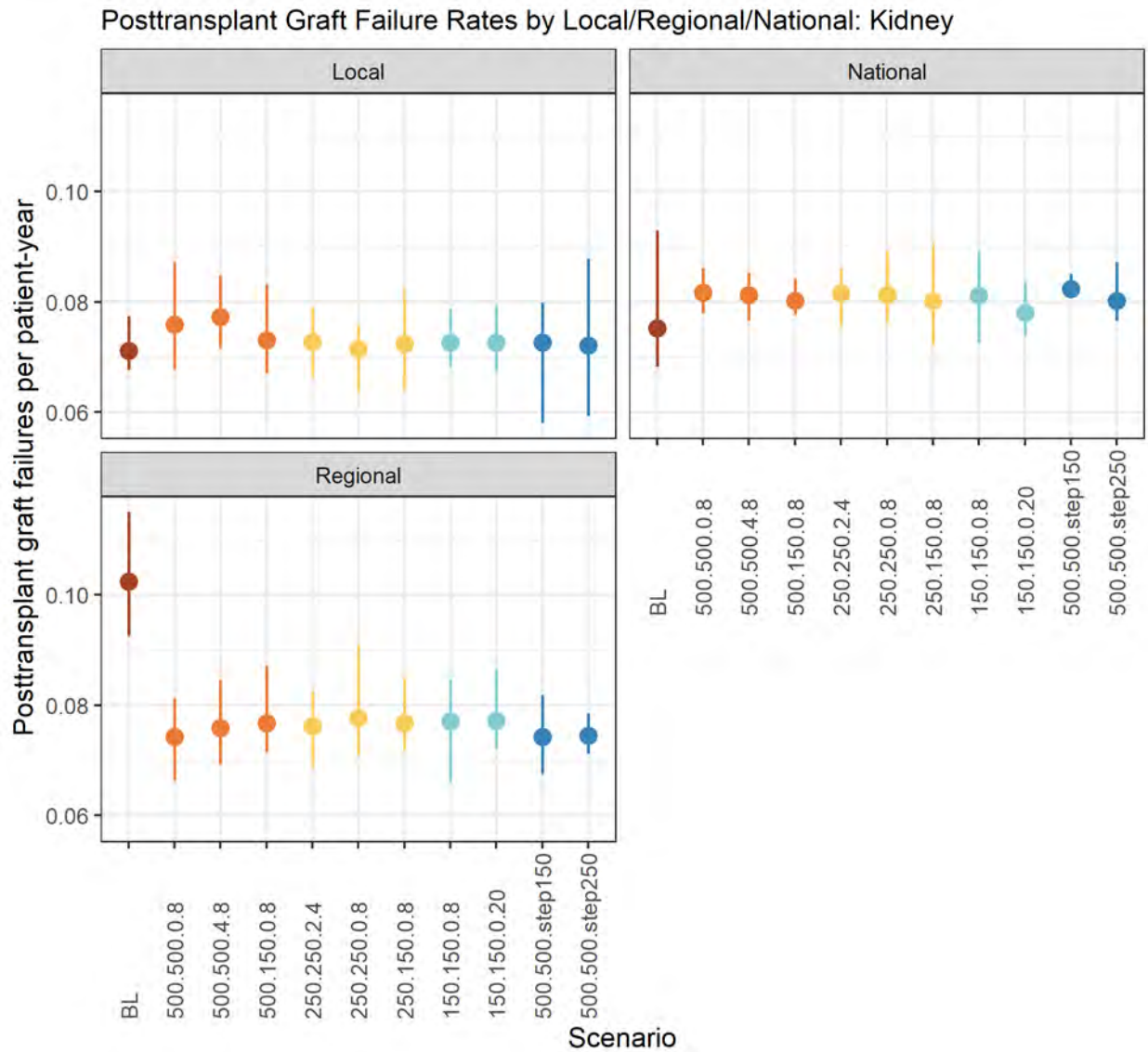
Posttransplant Graft Failure Rates by Urbanicity: Kidney-Pancreas

Posttransplant Graft Failure Rates by Urbanicity: Pancreas



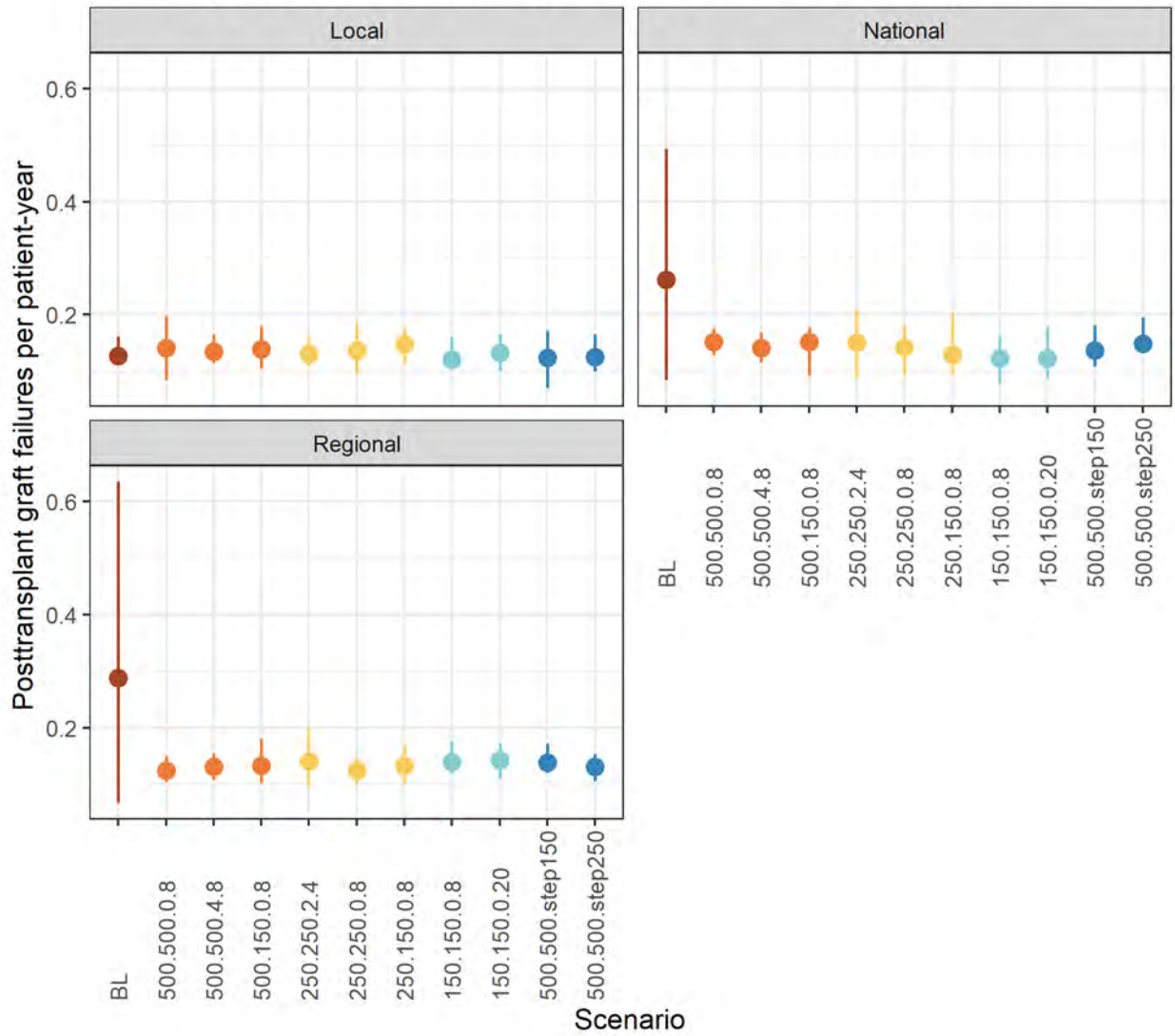
Posttransplant Graft Failure Rates by Urbanicity: Pancreas

Posttransplant Graft Failure Rates at 1 Year: Local/Regional/National



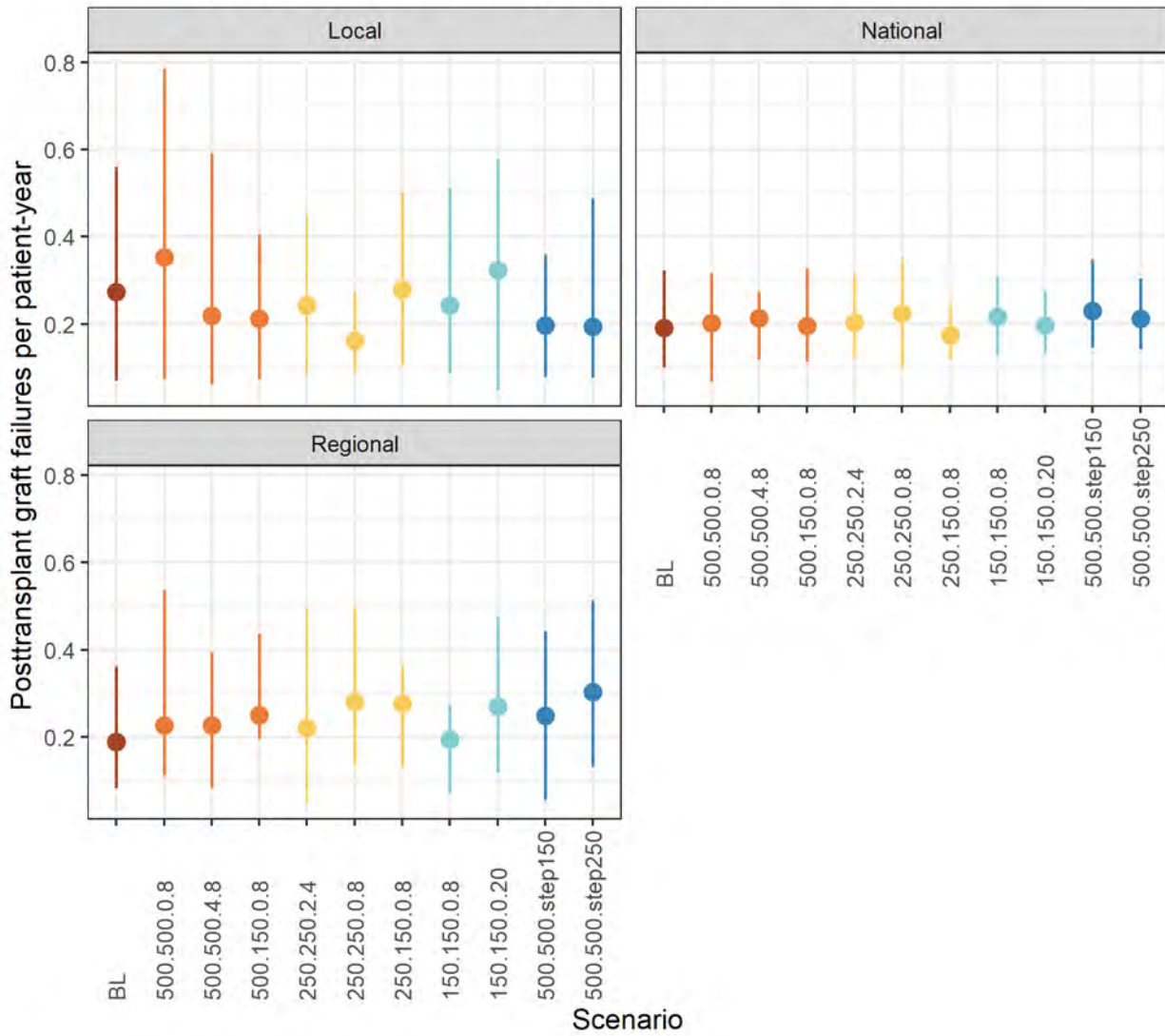
Posttransplant Graft Failure Rates by Local/Regional/National: Kidney

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



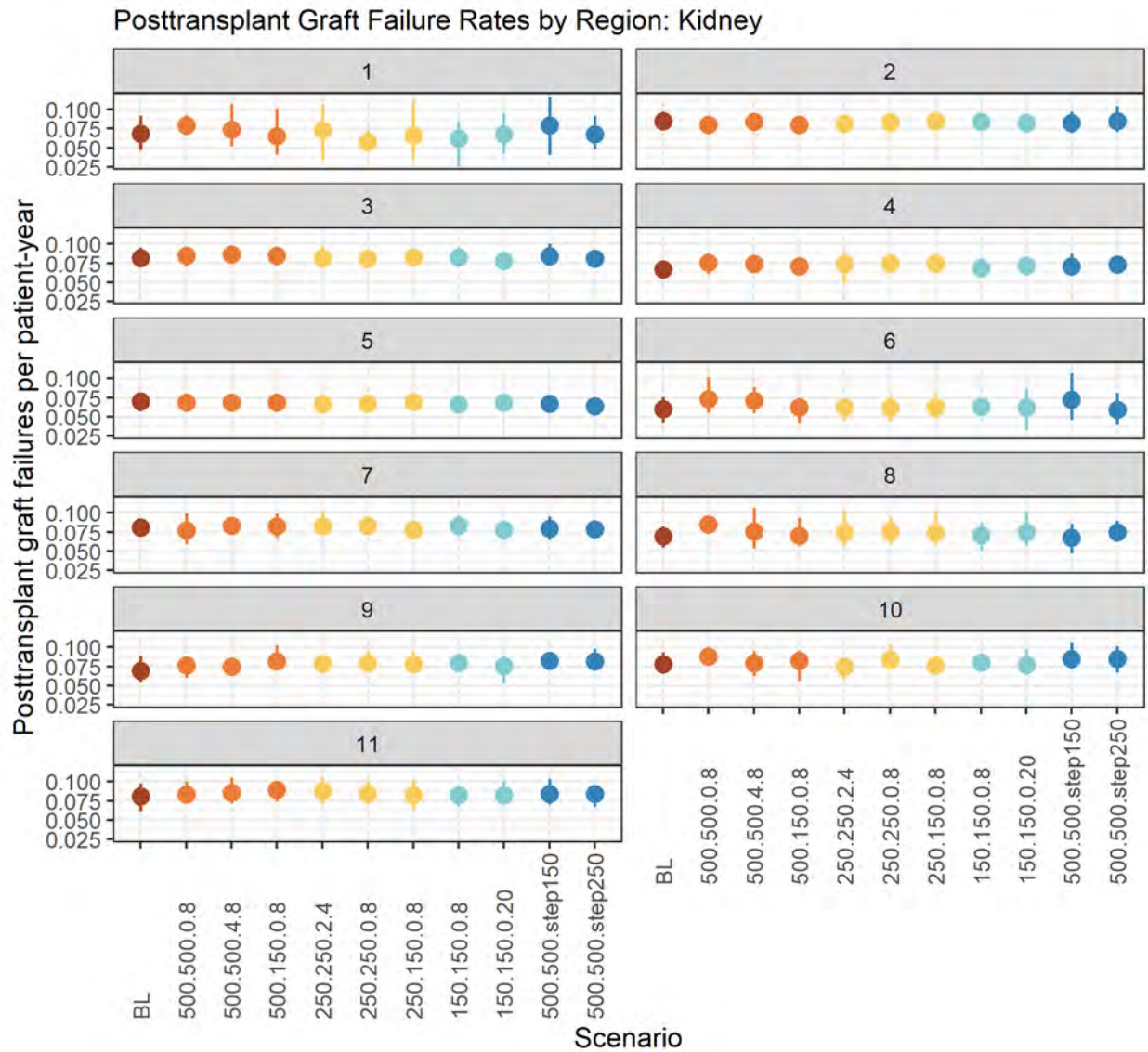
Posttransplant Graft Failure Rates by Local/Regional/National: Kidney-Pancreas

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

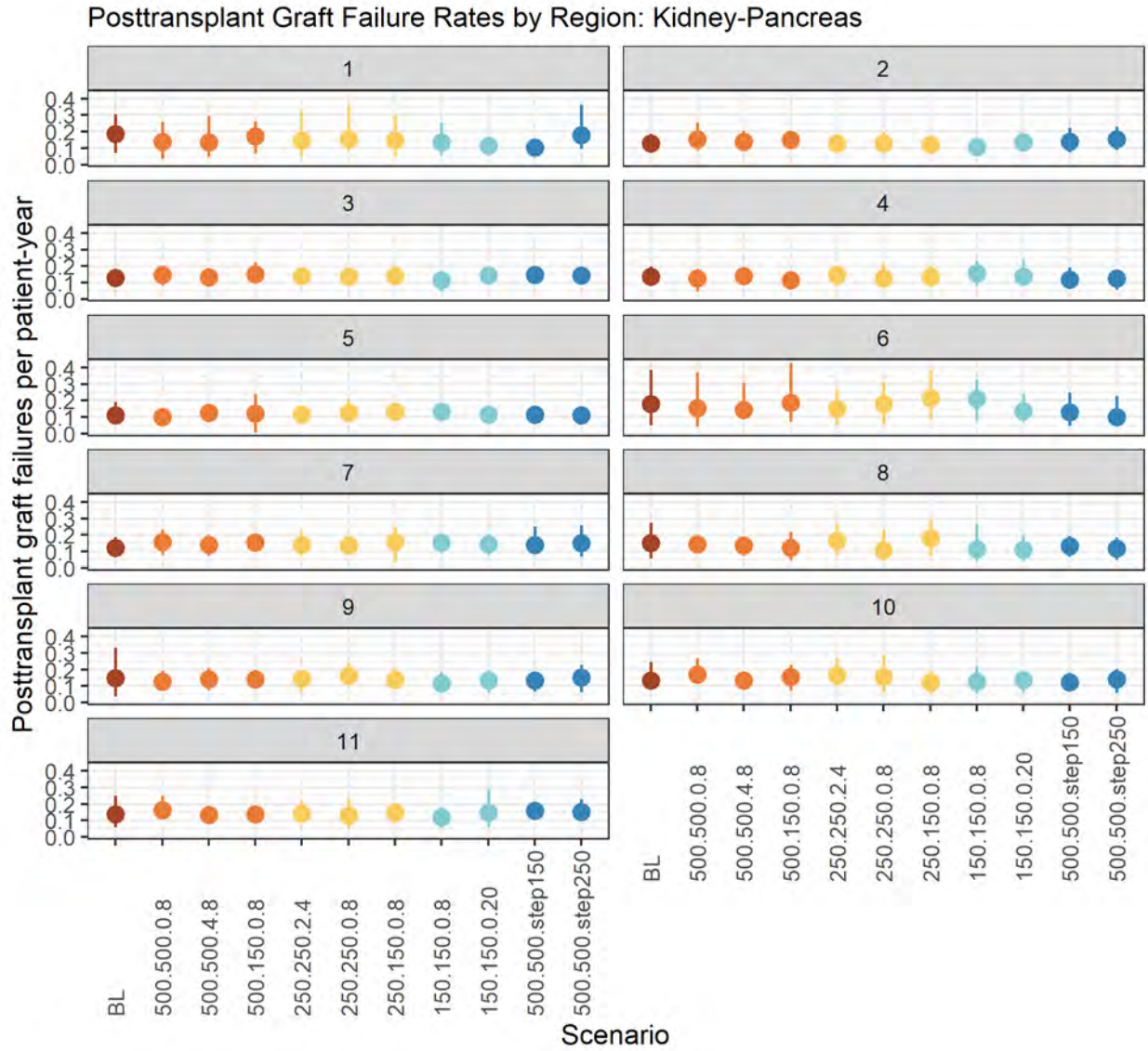


Posttransplant Graft Failure Rates by Local/Regional/National: Pancreas

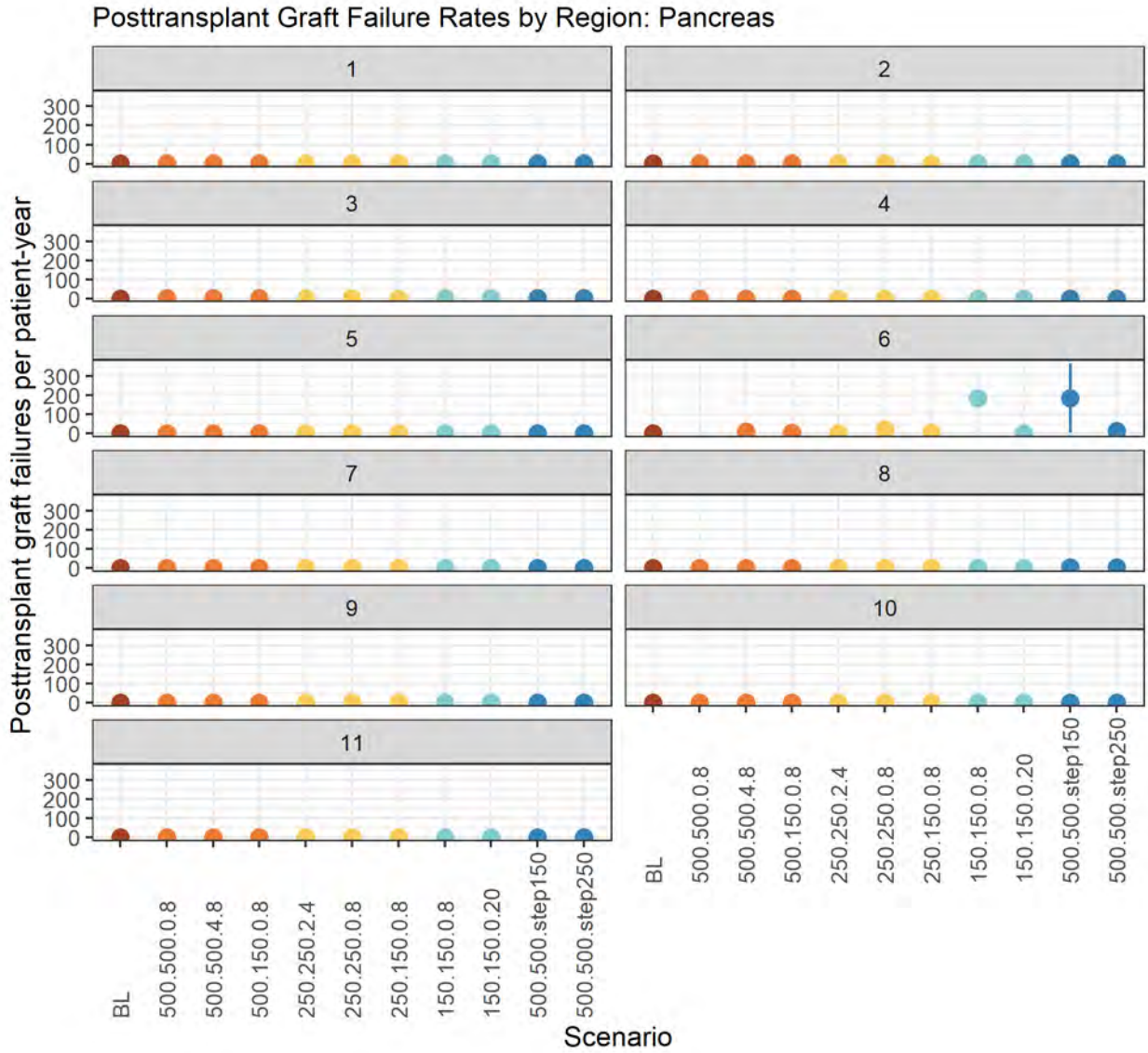
Posttransplant Graft Failure Rates at 1 Year: Region



Posttransplant Graft Failure Rates by Region: Kidney



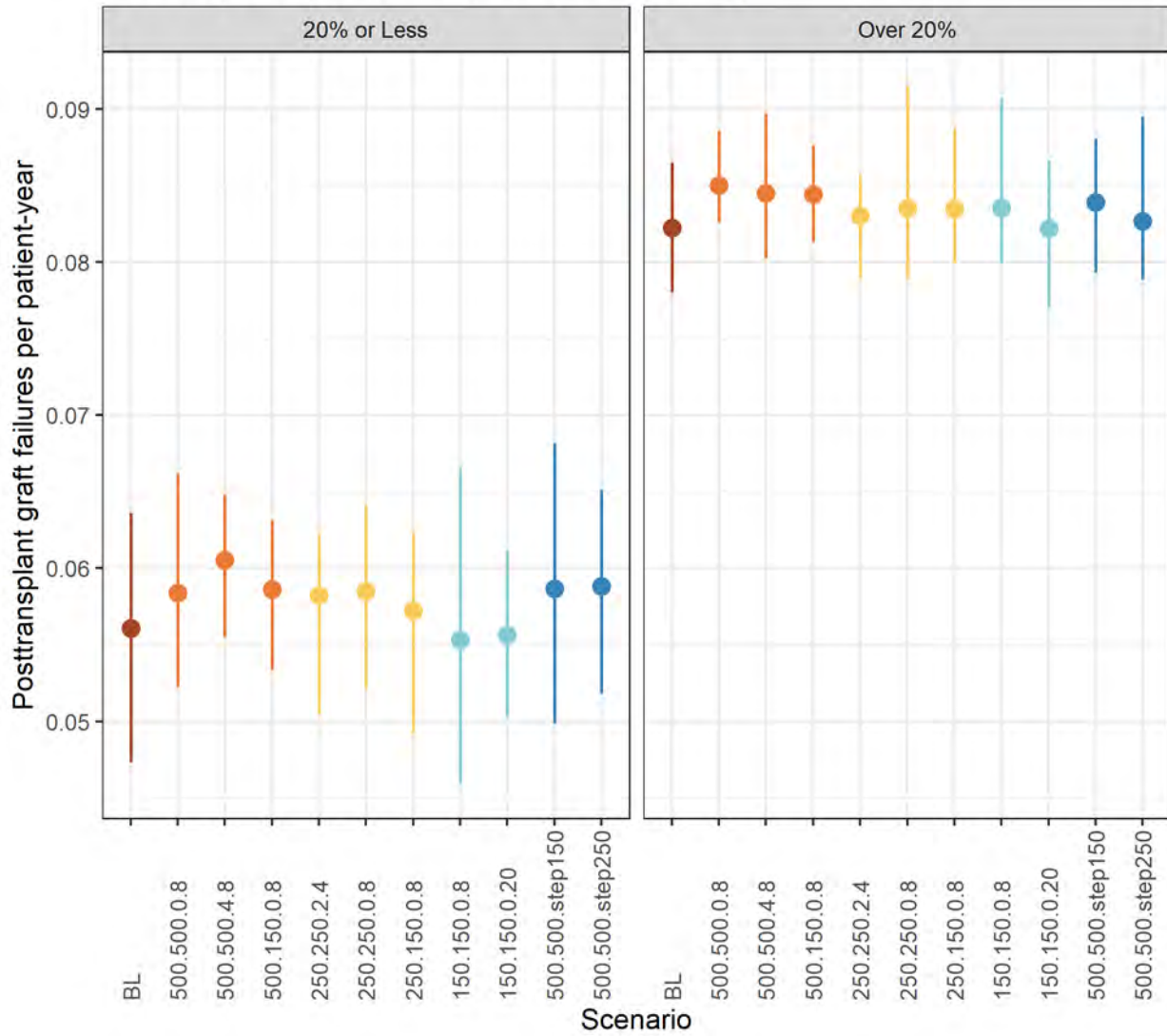
Posttransplant Graft Failure Rates by Region: Kidney-Pancreas



Posttransplant Graft Failure Rates by Region: Pancreas

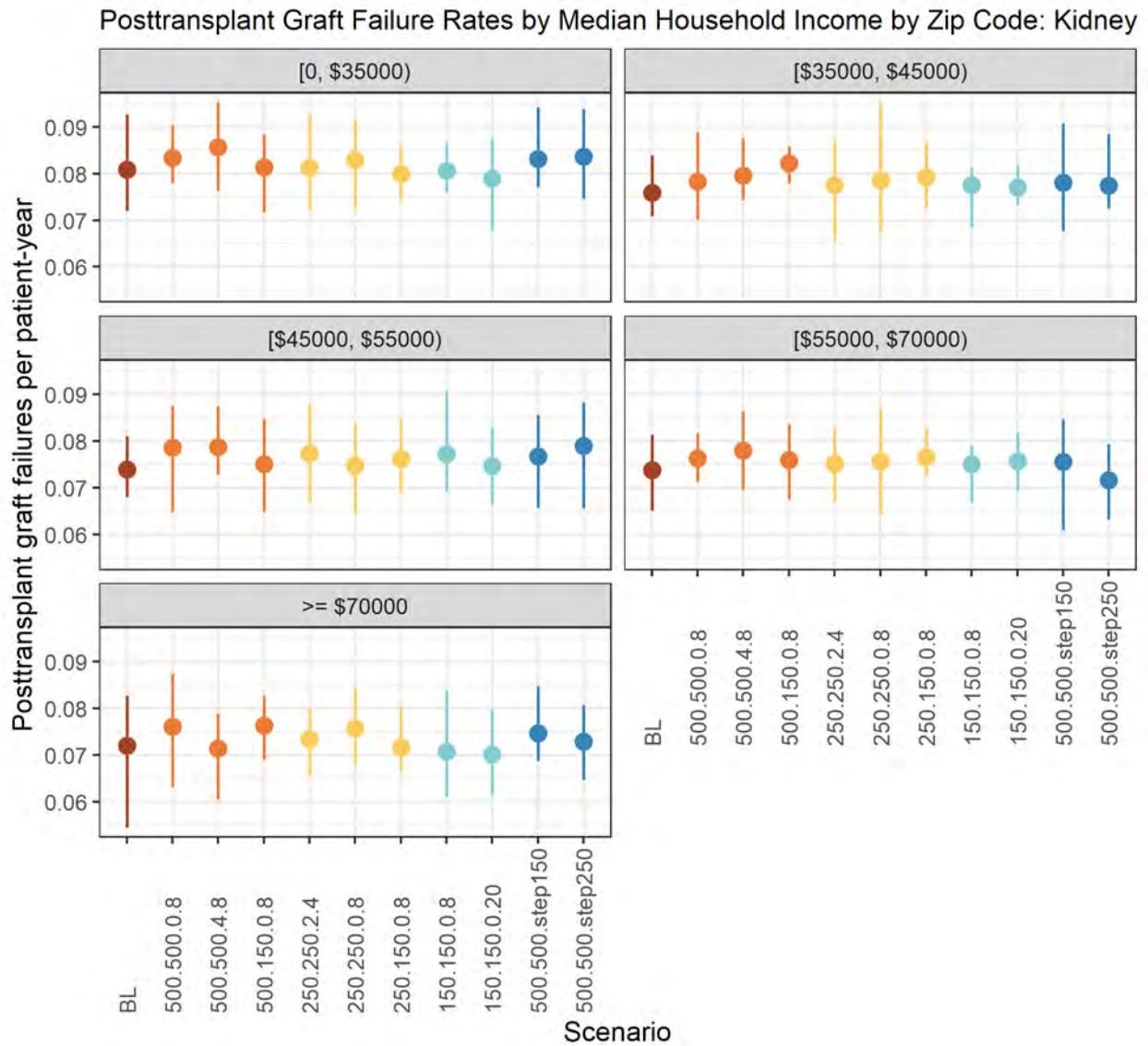
Posttransplant Graft Failure Rates at 1 Year: EPTS

Posttransplant Graft Failure Rates by EPTS: Kidney

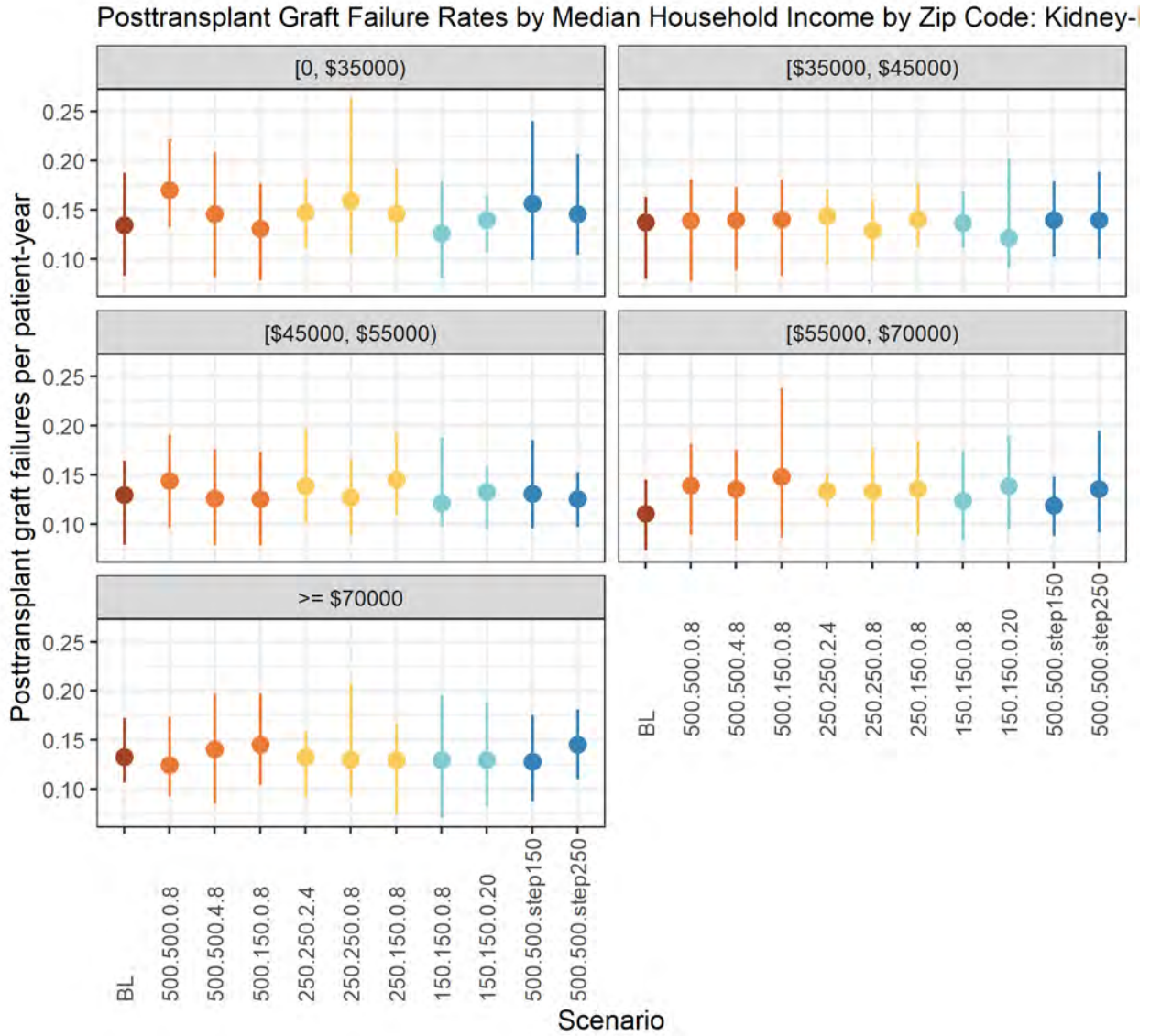


Posttransplant Graft Failure Rates by EPTS: Kidney

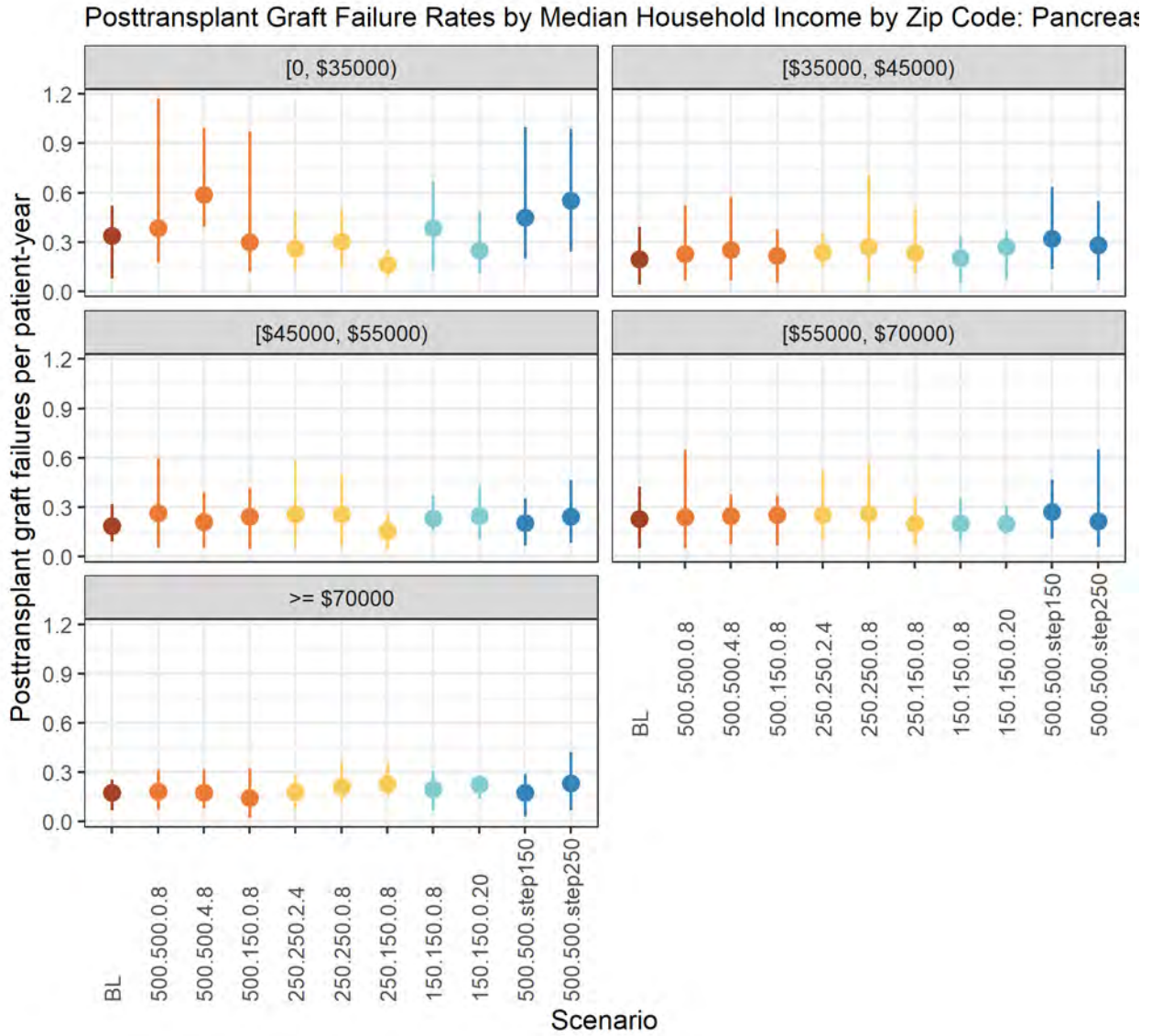
Posttransplant Graft Failure Rates at 1 Year: Median Household Income by Zip Code



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

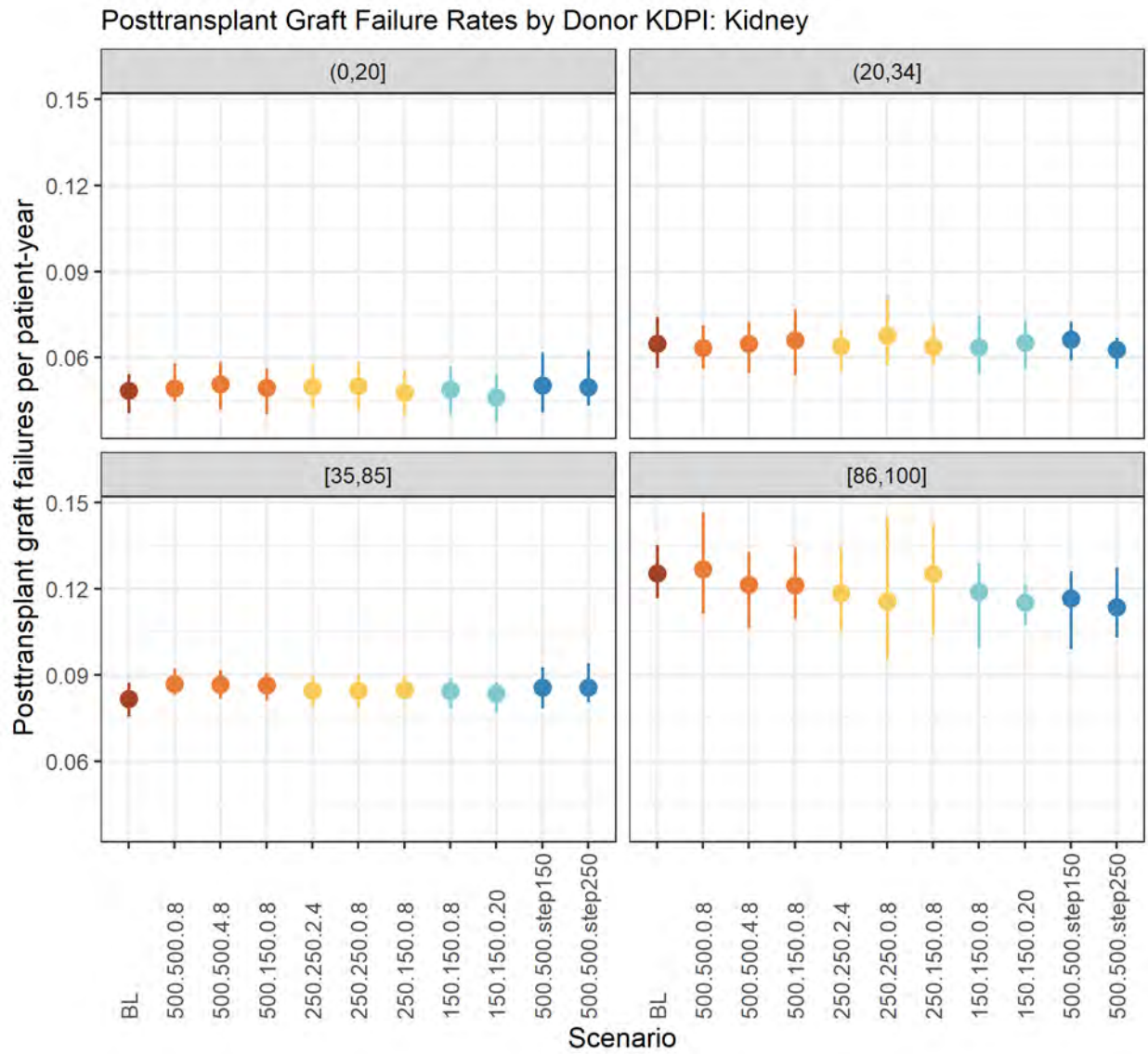


Posttransplant Graft Failure Rates by Median Household Income by Zip Code: Kidney-Pancreas



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

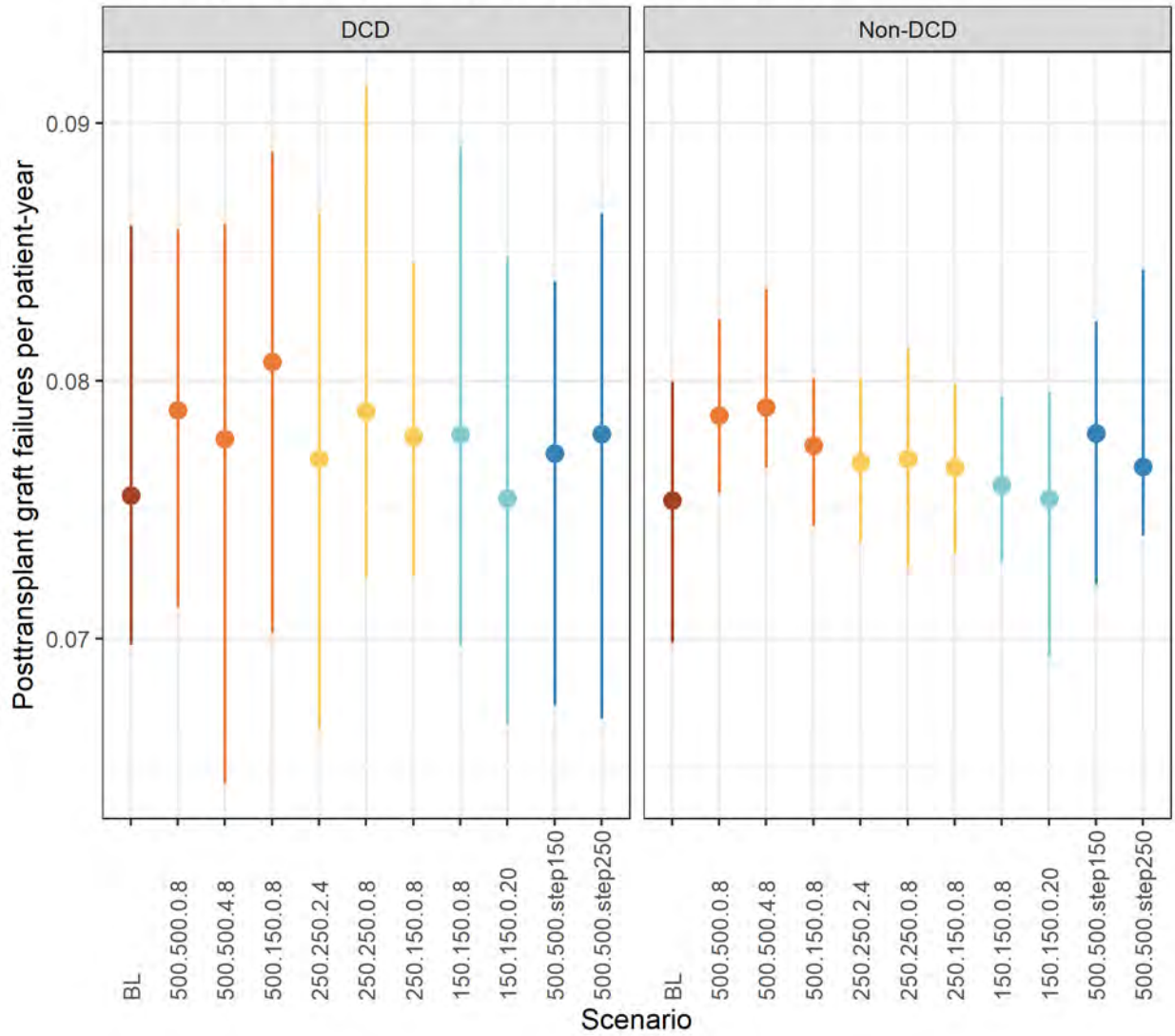
Posttransplant Graft Failure Rates at 1 Year: Donor KDPI



Posttransplant Graft Failure Rates by Donor KDPI: Kidney

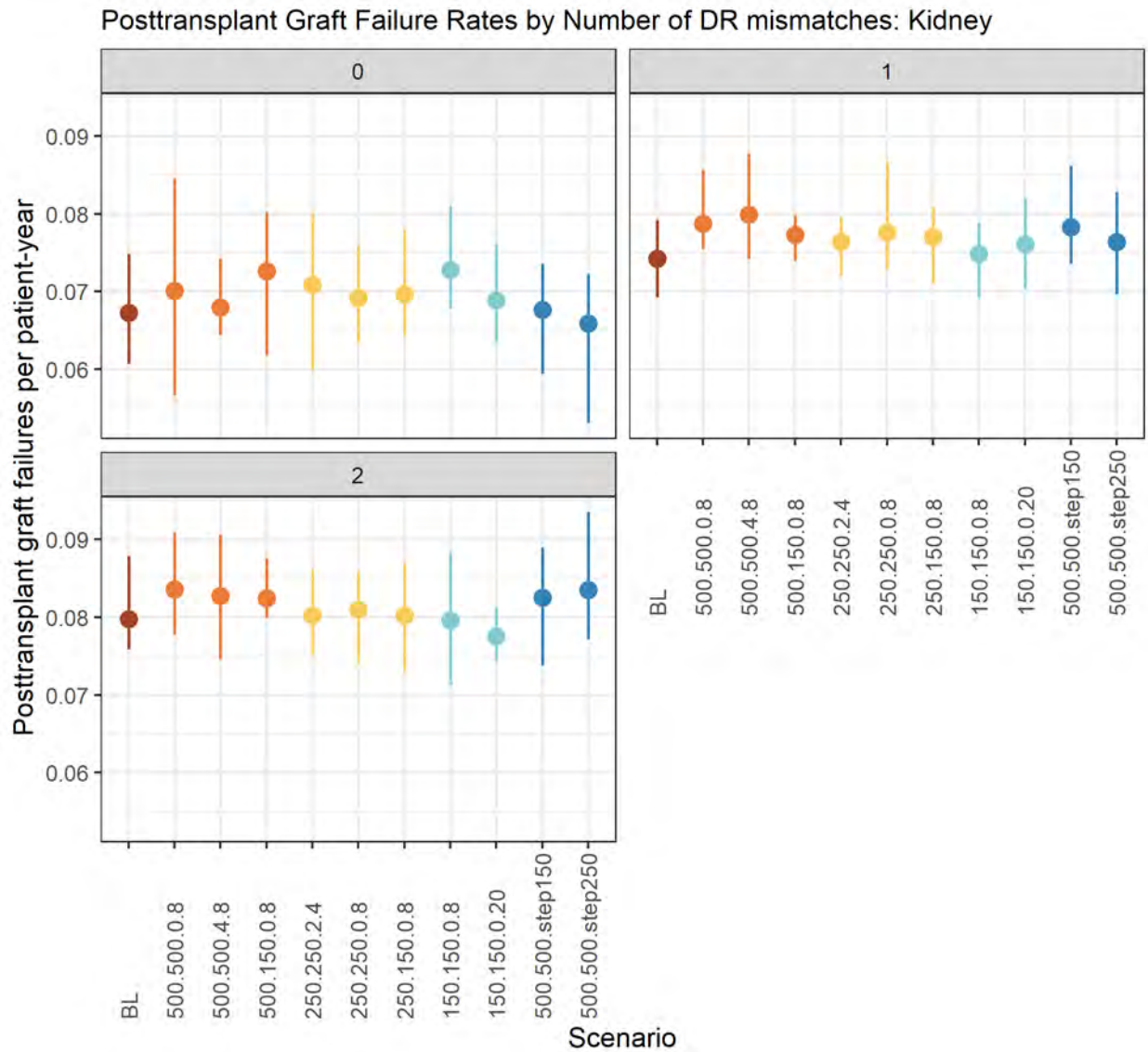
Posttransplant Graft Failure Rates at 1 Year: DCD Donor

Posttransplant Graft Failure Rates by DCD Donor: Kidney



Posttransplant Graft Failure Rates by DCD Donor: Kidney

Posttransplant Graft Failure Rates at 1 Year: Number of DR mismatches



Posttransplant Graft Failure Rates by Number of DR mismatches: Kidney