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REGISTRY OF
TRANSPLANT
RECIPIENTS

The initial impact of COVID-19 on reported graft failure rates and potential confounding of SRTR PSRs

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I have no financial relationships to disclose within the past 12 months relevant to my presentation. The ACCME defines 'relevant' financial relationships as financial relationships in any amount occurring within the past 12 months that create a conflict of interest.

My presentation does not include discussion of off-label or investigational use.

I do not intend to reference unlabeled/unapproved uses of drugs or products in my presentation.

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Introduction

COVID-19 could bias the Scientific Registry of Transplant Recipients (SRTR) program-specific reports (PSRs), especially if its impact varied geographically.

To assess the risk of confounding, we estimated the overall and donation service area (DSA)-specific differences in graft failure rates from March 13, 2019, to March 12, 2020, compared with rates from March 13 to April 30, 2020, after adjusting for recipient and donor characteristics.



Data

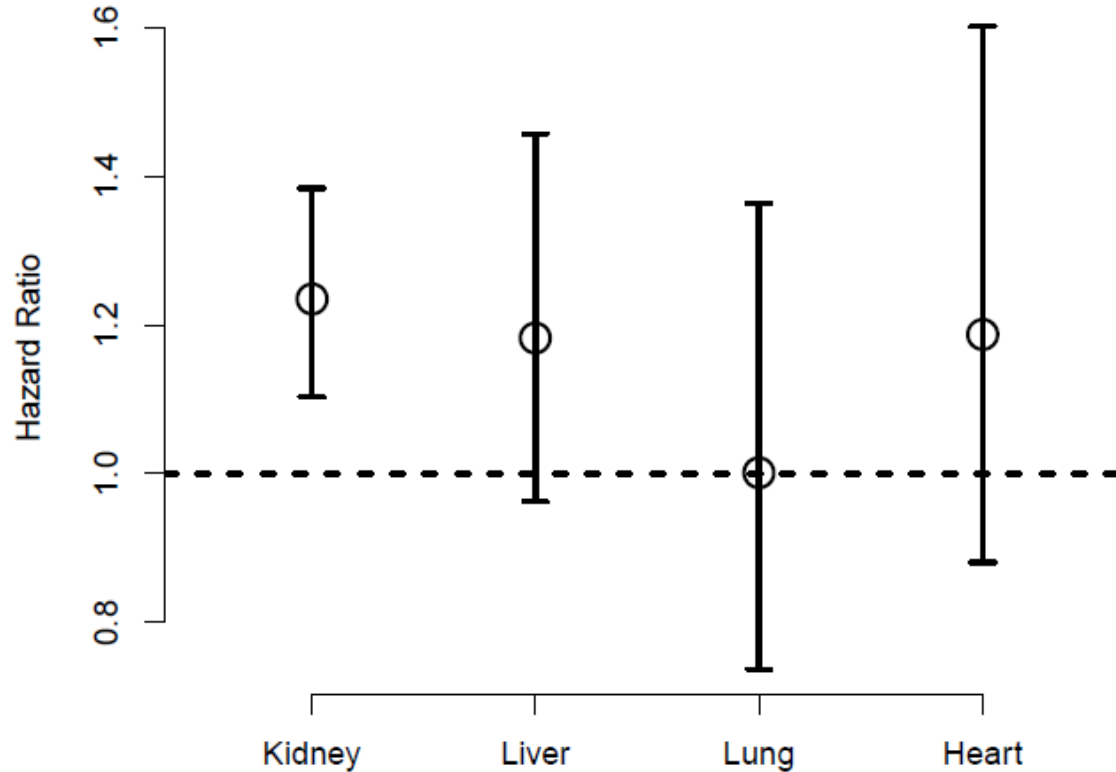
The analysis used period prevalent cohort between March 13, 2019, and April 30, 2020 for transplants performed on and after January 1, 2000.

Random effects models estimated DSA-level differences in all-cause graft failure rates before and after the emergence of COVID-19, and all models adjusted for recipient and donor characteristics.



Results: Overall differences

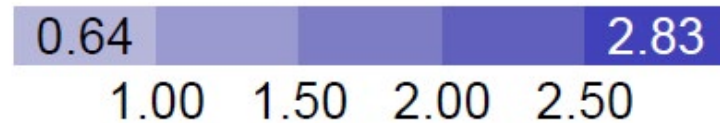
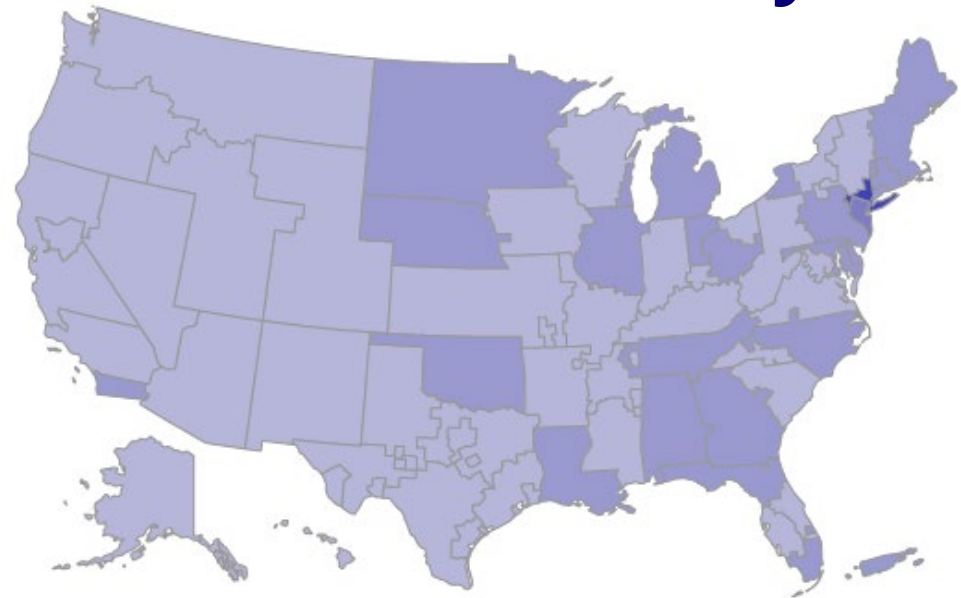
Graft failure rates during the first 6 weeks (March 13, 2020 – April 30, 2020) of the COVID-19 pandemic compared with those of the year before (March 13, 2019 – March 12, 2020).



Results: DSA-level hazard ratios in kidney transplant

The hazard ratio (HR) for the NYC DSA was 2.83, corresponding to an 183% increase in the graft failure rate during the first 6 weeks after the national emergency declaration compared with the year before.

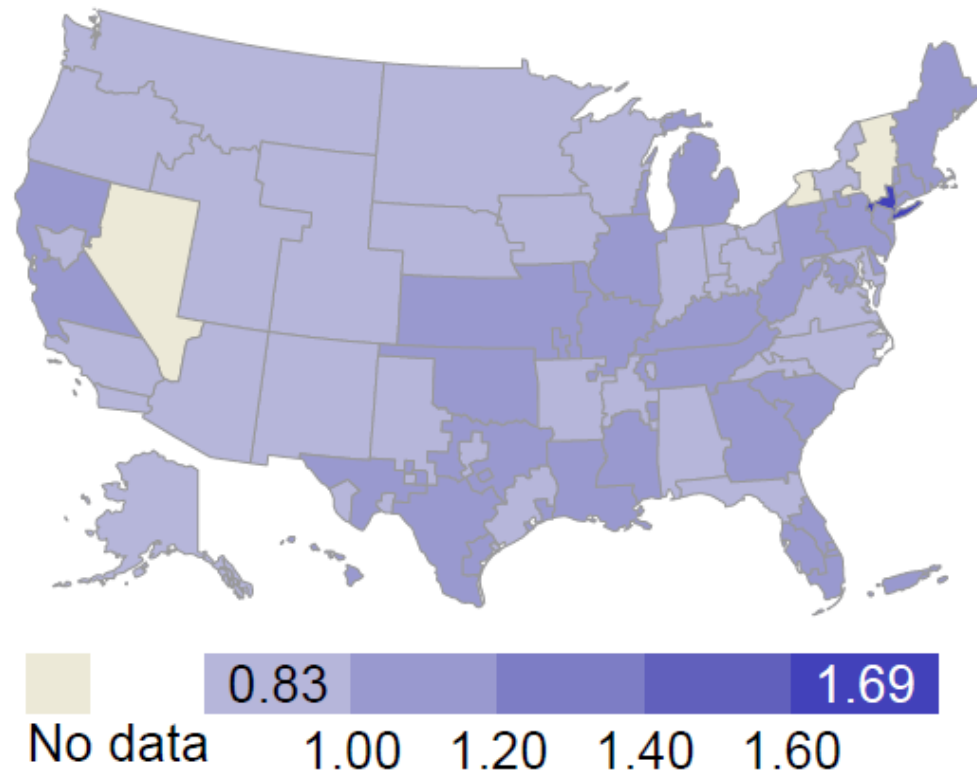
- **After:** March 13, 2020 – April 30, 2020
- **Before** March 13, 2019 – March 12, 2020



Results: DSA-level hazard ratios in liver transplant

The hazard ratio (HR) for the NYC DSA was 1.69, corresponding to a 69% increase in the graft failure rate during the first 6 weeks after the national emergency declaration compared with the year before.

- **After:** March 13, 2020 – April 30, 2020
- **Before** March 13, 2019 – March 12, 2020



Have these trends continued?

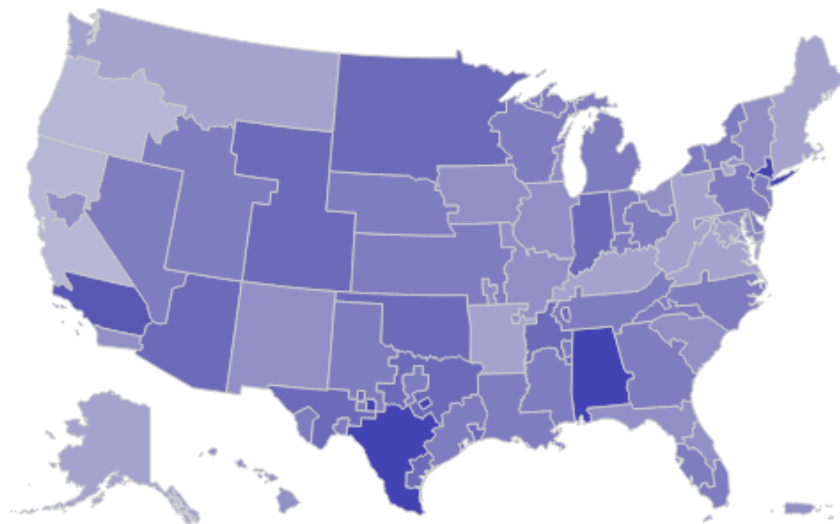
These were the trends very early in the pandemic (up to April 30, 2020). Did they continue after COVID-19 was prevalent throughout the United States?

We extended the analysis to include follow-up through December 31, 2020.



Results: DSA-level differences in kidney transplant (extended)

Hazard ratios for the change in graft failure before and after emergence of COVID-19



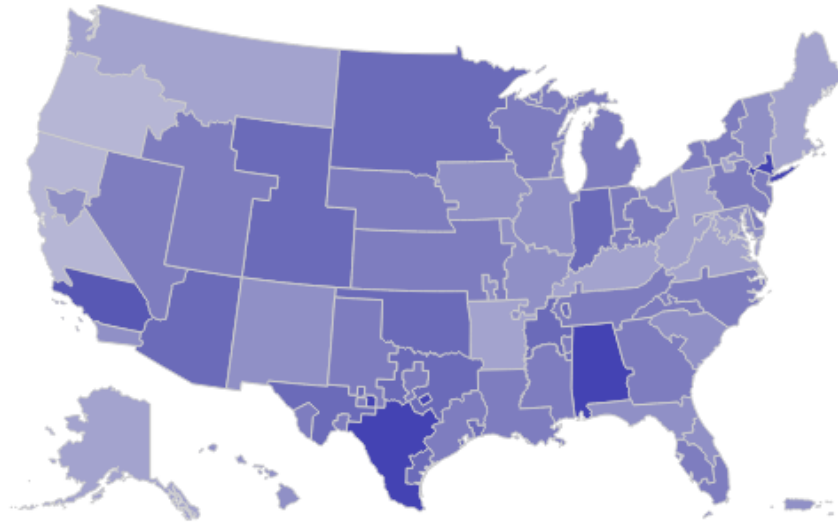
● 0.85 – 0.90 ● 0.90 – 0.95 ● 0.95 – 1.00 ● 1.00 – 1.05 ● 1.05 – 1.10 ● 1.10 – 1.15 ● 1.15 – 1.20



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Results: DSA-level differences in kidney transplant (extended)

Hazard ratios for the change in graft failure before and after emergence of COVID-19



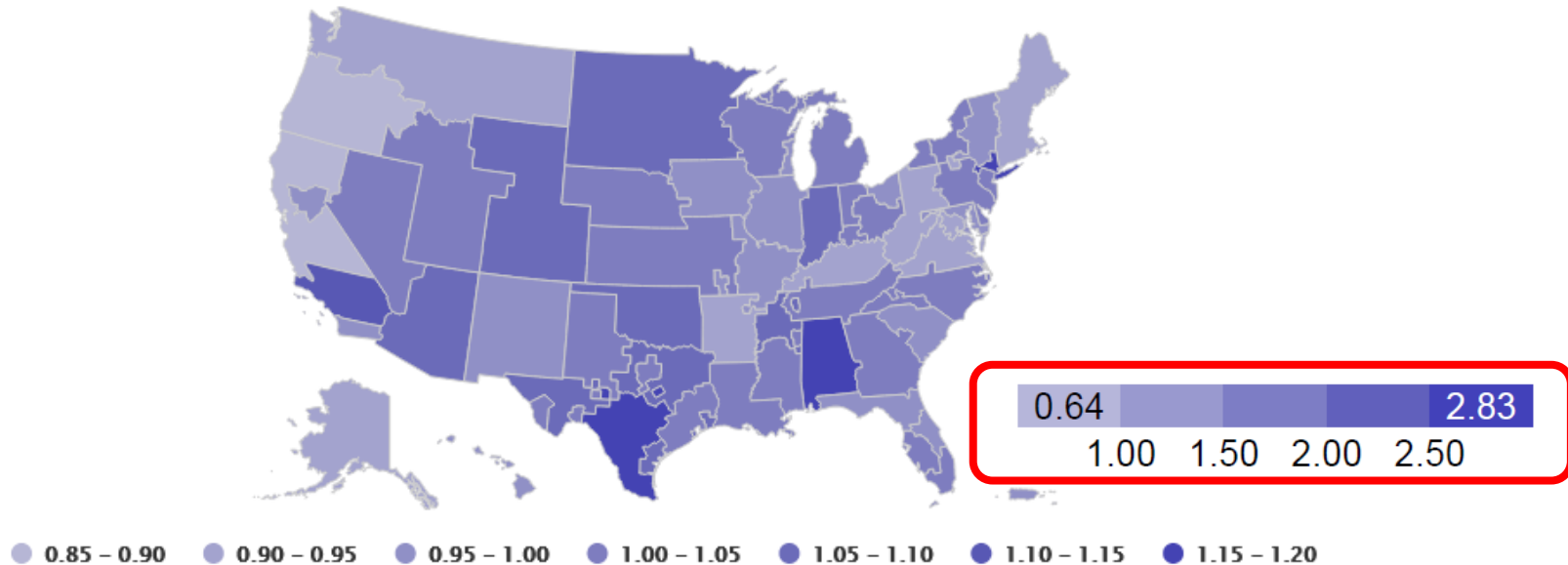
● 0.85 – 0.90 ● 0.90 – 0.95 ● 0.95 – 1.00 ● 1.00 – 1.05 ● 1.05 – 1.10 ● 1.10 – 1.15 ● 1.15 – 1.20



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Results: DSA-level differences in kidney transplant (extended)

Hazard ratios for the change in graft failure before and after emergence of COVID-19



Results: DSA-level differences in liver transplant (extended)

The random effects model had an estimated variance of 0, suggesting lower variance across DSAs (harder to distinguish from 0) than early in the pandemic.

Conclusion

There were significant differences in posttransplant graft survival for kidney and liver transplants. Also, early in the pandemic, the differences had significant variance across DSAs. However, the variation across DSAs was notably lower with additional follow-up, suggesting a lower risk of confounding related to COVID-19.

Lung and heart transplant did not have significant differences in graft failure rates before and after COVID-19, minimal DSA-level variation and, therefore, less risk of confounding.





Transplantation

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