

**LETTER TO THE EDITOR**

# Approach to pancreas transplant during the COVID-19 pandemic

To the Editor:

The COVID-19 pandemic has disrupted many aspects of vital medical care, including transplantation—with another surge in progress. In March 2020, faced with potential shortages of ventilators, dialysis machines, and personal protective equipment, hospital systems drastically scaled back or halted vital activities—including new transplants—in effort to mobilize resources for anticipated or realized COVID-19 admissions. As for all solid organ transplant,<sup>1,2</sup> pancreas transplant has been impacted by the pandemic, but has received less attention. As of October 26, 2020, only 781 total pancreas transplants had been performed in the United States,<sup>2</sup> which is a drop of ~10% from the corresponding date last year (Figure 1A). Based on historical volume, we would have projected 1038 total pancreas transplants in the United States during 2020, including simultaneous pancreas-kidney transplant (SPKT), pancreas after kidney transplant (PAKT), and pancreas transplant alone (PTA). While pancreas transplant activity has increased since June 2020, we estimate the actual number of pancreas transplants may reach about 900. Based on SRTR data (Figure 1B), pancreas transplant volume changes did not seem to be related to historic pancreas transplant center volume,<sup>3</sup> suggesting that local pandemic conditions may be the dominant factor.

Transplants occur in the context of the larger healthcare system that has additional global constraints. Ethical and logistical balancing of transplant activity during the pandemic must take those constraints into account,<sup>4-6</sup> many of which are beyond the influence of the transplant center. Regional hospitals may not have intensive care resources to maintain potential deceased donors. Transplant providers may be reassigned to pandemic-related

patient care. Within that context, pancreas transplantation has some unique considerations. While fully acknowledging that pancreas transplantation requires additional resources, it is important to note that pancreas transplants are both lifesaving and of similar priority to kidney transplants. Hence, surge and steady state risk-benefit considerations can be somewhat different (Figure 1C). Similar to kidney recipients, pancreas transplant recipients are typically extubated in the operating room and usually do not require ICU care, although having the possibility of ICU backup is perhaps more relevant for pancreas transplant recipients. For SPKT candidates at risk of dialysis center COVID-19 exposure,<sup>7</sup> it is intuitive to proceed as for kidney transplant candidates who require similar immunosuppression (eg, cytoreductive induction immunosuppression), albeit with somewhat longer lengths of stay and possible readmission need. There are additional issues that may differentially impact pre-dialysis patients listed for SPKT or those listed for PAKT, as they are not exposed to in-center dialysis COVID-19 risk. Similarly, PTA benefits are not as clearly defined as PAK or SPK and should be individually scrutinized in the context of local pandemic conditions.

Fundamentally, the decision-making process for pancreas transplantation is similar to other transplanted organs—there is investment in resources around the time of engraftment that both extends life and reduces resource utilization long-term. There may be specific short-term surge conditions that reasonably limit transplant activity, but these considerations should be properly contextualized with donor organ scarcity, expected wait-times, avoidance of downstream diabetic morbidity and mortality, local hospital resources, and concurrent pandemic conditions.

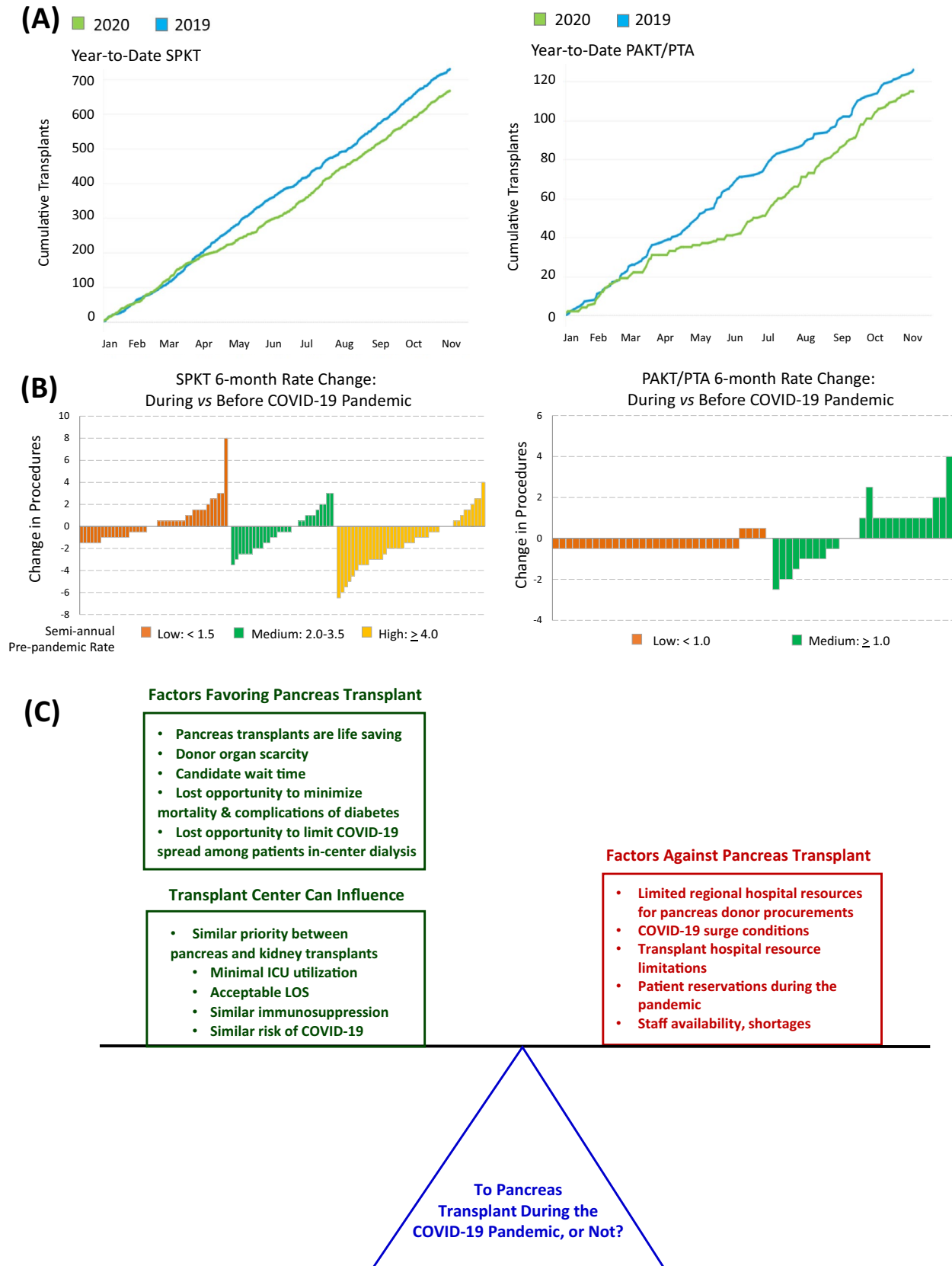


FIGURE 1 (A) Impact of the COVID-19 pandemic on US pancreas and kidney-pancreas transplantation, 2020 vs 2019, based on OPTN/ UNOS data as of 10/26/2020. (B) Change in SPKT and PAKT/PTA volume from April-September 2020, compared to the mean of the previous two 6 month cycles, by center. (C) Decision-making balance of pancreas transplant considerations during the COVID-19 pandemic

## CONFLICT OF INTEREST

The authors have no relevant conflicts of interest or other relevant financial disclosures. All authors approved and agreed to be accountable for ensuring the accuracy and integrity of the final manuscript.

## AUTHOR CONTRIBUTIONS

KJW, NS, KLL, and RFP were responsible for drafting the manuscript. NS and KLL were responsible for data collection and analysis. All authors were responsible for study design, data interpretation, and critical revision of the manuscript.

## DATA AVAILABILITY STATEMENT

The data reported here have been supplied by the Hennepin Healthcare Research Institute (HHRI) as the contractor for the Scientific Registry of Transplant Recipients (SRTR). The interpretation and reporting of these data are the responsibility of the authors and in no way should be seen as an official policy of or interpretation by the SRTR or the US Government. SRTR registry data can be obtained from the SRTR.

Kenneth J. Woodside<sup>1</sup>   
 Neeraj Singh<sup>2</sup>   
 Krista L. Lentine<sup>3</sup>   
 Martha Pavlakis<sup>4</sup>   
 Arpita Basu<sup>5</sup>   
 Franco H. Cabeza Rivera<sup>6</sup>   
 Clark D. Kensinger<sup>7</sup>   
 Sandesh Parajuli<sup>8</sup>   
 Samuel Sultan<sup>9</sup>   
 Ekamol Tantisattamo<sup>10</sup>   
 Ronald F. Parsons<sup>5</sup>   
 Matthew Cooper<sup>11</sup> 

<sup>1</sup>University of Michigan, Ann Arbor, MI, USA

<sup>2</sup>John C. McDonald Regional Transplant Center, Shreveport, LA, USA

<sup>3</sup>Saint Louis University, St. Louis, MO, USA

<sup>4</sup>Beth Israel Deaconess Medical Center, Boston, MA, USA

<sup>5</sup>Emory University, Atlanta, GA, USA

<sup>6</sup>University of Mississippi Medical Center, Jackson, MS, USA

<sup>7</sup>Piedmont Transplant Institute, Atlanta, GA, USA

<sup>8</sup>University of Wisconsin, Madison, WI, USA

<sup>9</sup>Weill Cornell Medicine, New York, NY, USA

<sup>10</sup>University of California Irvine, Orange, CA, USA

<sup>11</sup>Medstar Georgetown Transplant Institute, Washington, DC, USA

## Correspondence

Ronald F. Parsons, Division of Transplantation, Department of Surgery, Emory University School of Medicine, Atlanta, GA 30322, USA.

Email: ronald.parsons@emory.edu

## ORCID

Kenneth J. Woodside  <https://orcid.org/0000-0002-7495-3758>

Neeraj Singh  <https://orcid.org/0000-0002-0141-3371>

Krista L. Lentine  <https://orcid.org/0000-0002-9423-4849>

Martha Pavlakis  <https://orcid.org/0000-0003-1032-0801>

Arpita Basu  <https://orcid.org/0000-0002-0533-4582>

Franco H. Cabeza Rivera  <https://orcid.org/0000-0003-0476-7957>

Clark D. Kensinger  <https://orcid.org/0000-0003-1482-9533>

Sandesh Parajuli  <https://orcid.org/0000-0003-1667-7465>

Samuel Sultan  <https://orcid.org/0000-0002-5575-9693>

Ekamol Tantisattamo  <https://orcid.org/0000-0003-0883-6892>

Ronald F. Parsons  <https://orcid.org/0000-0002-9243-1582>

Matthew Cooper  <https://orcid.org/0000-0002-3438-9638>

## REFERENCES

1. Cholankeril G, Podboy A, Alshuwaykh OS, et al. Early impact of COVID-19 on solid organ transplantation in the United States. *Transplantation*. 2020;104:2221-2224.
2. COVID-19 and solid organ transplant. Available at: <https://unos.org/covid/>. Accessed on October 29, 2020.
3. Scientific Registry of Transplant Recipients. Kidney-pancreas transplant standard analytic file. Data through September 30, 2020.
4. Cravedi P, Schold JD, Safa K, et al. The COVID-19 pandemic: a community approach. *Clin Transplant*. 2020;34(11):e14058.
5. Stock PG, Wall A, Gardner J, et al. Ethical issues in the COVID era: doing the right thing depends on location, resources, and disease burden. *Transplantation*. 2020;104:1316-1320.
6. Wall AE, Pruett T, Stock P, Testa G. Coronavirus disease 2019: Utilizing an ethical framework for rationing absolutely scarce health-care resources in transplant allocation decisions. *Am J Transplant*. 2020;20:2332-2336.
7. Corbett RW, Blakey S, Nitsch D, et al. Epidemiology of COVID-19 in an urban dialysis center. *J Am Soc Nephrol*. 2020;31:1815-1823.