Intestinal Rehabilitation and Transplant Association
A section of the Transplantation Society

International Intestinal Transplant Registry: 2023 Update

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On Behalf of the IRTA Scientific Committee

IITR Mission

- The International Intestinal Transplant Registry (ITR) collects data on worldwide activity & results of intestinal transplantation (ITx)
- IITR Mission: to provide data on ITx outcomes to the international community in order to help improve patient care, and optimize decision making.

IITR Database Description

- Data collection started in 1985 (Dr. David Grant)
- Data collection & analyses are performed by Eric Pahl, under the direction of the Scientific Committee of the IRTA
- A simple core data set is collected to promote reporting
- Additional data is collected for specific projects

IITR Website

- Data is entered via RedCap
- Center data is confidential and accessible in real time
- Aggregate outcomes are reported in the overall IITR report

Intestinal Rehabilitation & Transplant ASSOCIATION

a section The Transplantation Society

Intestinal Transplant Registry "How To" Guide

1. Access the ITR Log-in page at https://intestinalregistry.org/redcap
2. Sign into the Intestinal Transplant Registry with your REDCap username and password

Intestinal Transplant Association

Definitions and Analyses

- Definitions:

Transplant Type	Intestine	Liver	Stomach
Small Bowel (SBT)	✓		
Liver/SBT	✓	✓	
Modified MVT	✓		✓
MVT	✓	✓	✓

- Pediatric cases defined as < 18 years.

2022-2023 IITR Updates

- August 2022 SRTR data import was performed:
  456 *new* transplant baseline records were added into ITR
- Fall 2022-June 2023: **85** *new* transplants were added into ITR
- IITR data was accessed June 2023 for this report

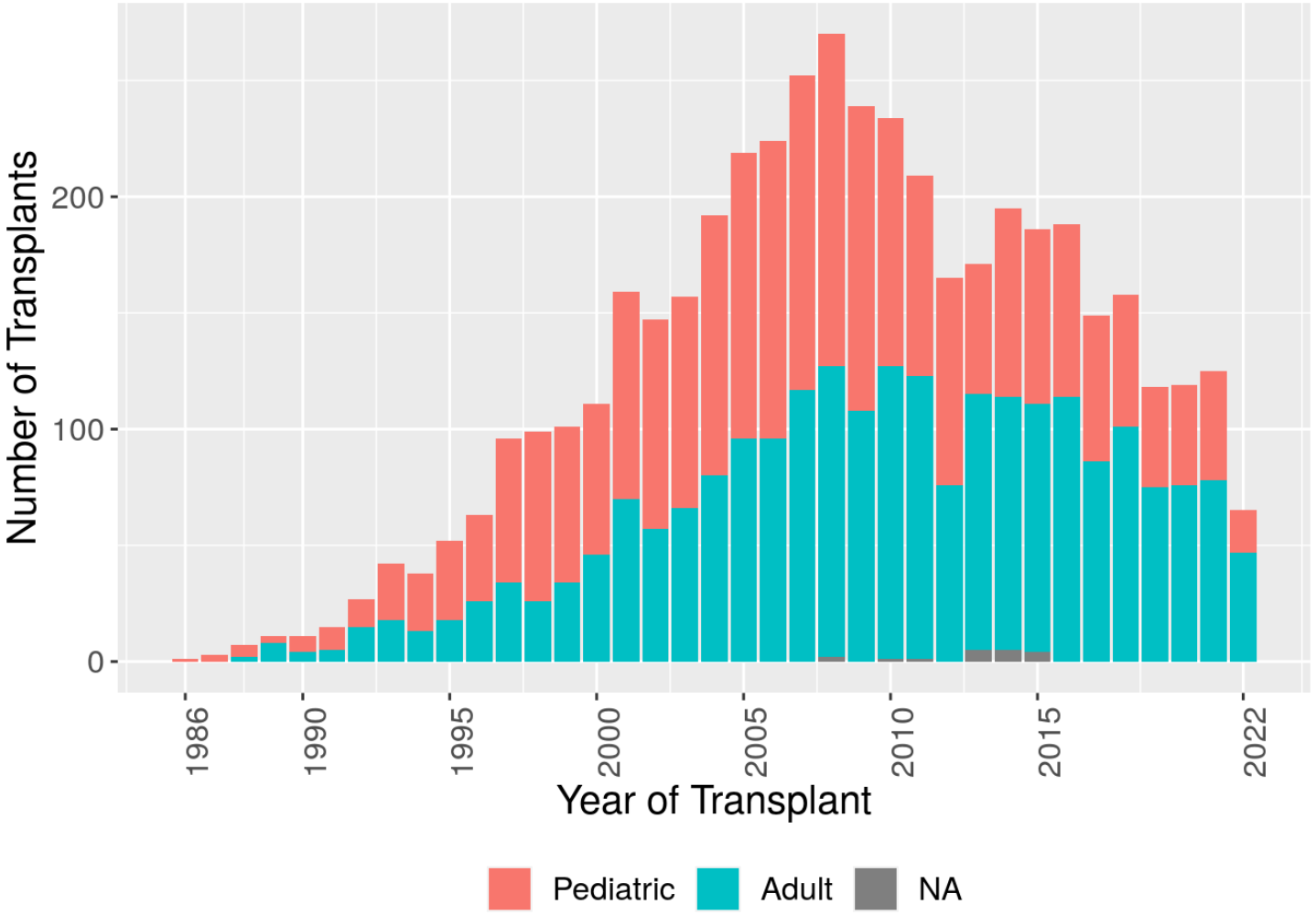
Global Intestinal Tx Experience

January 1985 - June 2023

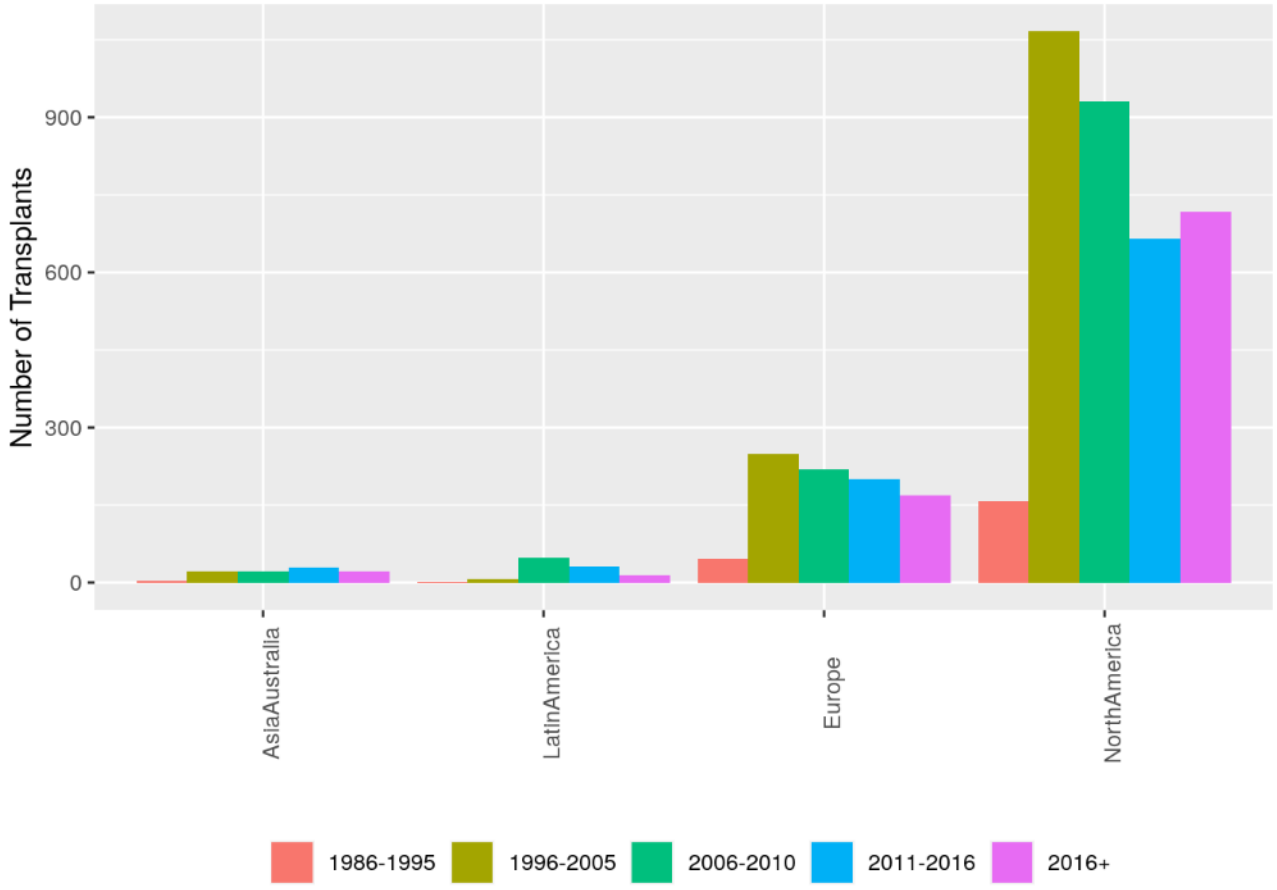
	Total	Pediatric	Adult
ITx (n=)	4,709	2,350	2,359
Reporting Centers	98	73	80
Active Centers	50	35	40
Actively Followed	2,121 (45%)	1,001 (43%)	1,120 (47%)

Intestinal Transplants Performed

(All recipients transplanted between Jan 1985- June 2023)



Global Trends In Clinical Activity



Graft Type

Type of Transplant	Pediatric (n=2,350)	Adult (n=2,359)	Overall Peds+ Adults
SBT	35%	55%	45%
Liver/SBT	45%	13%	29%
Modified MVT	2%	8%	5%
MVT	18%	24%	21%

The type of transplants have remained proportionally relatively constant over time

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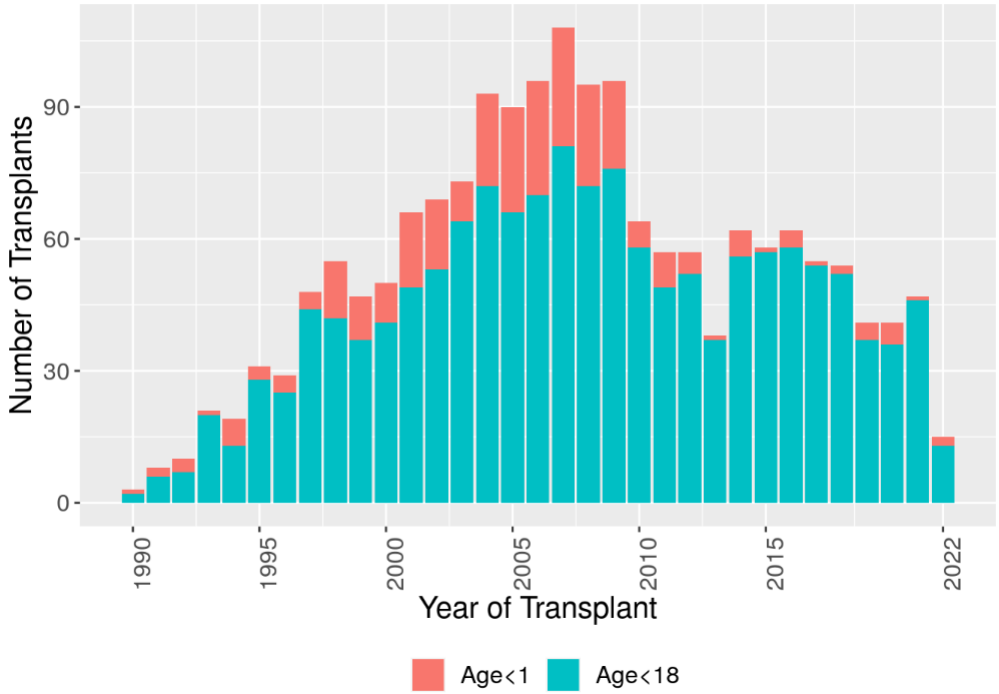
Demographics of ITx

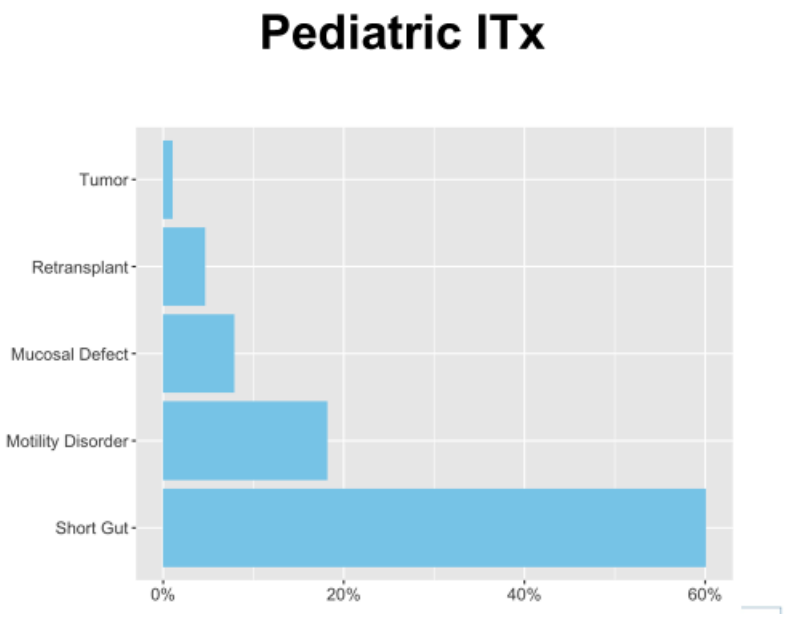
	Pediatric	Adult
Median Age at ITx	2.8 y/o (1.2, 6.9)	41 y/o (30, 52)
Female	43%	51%

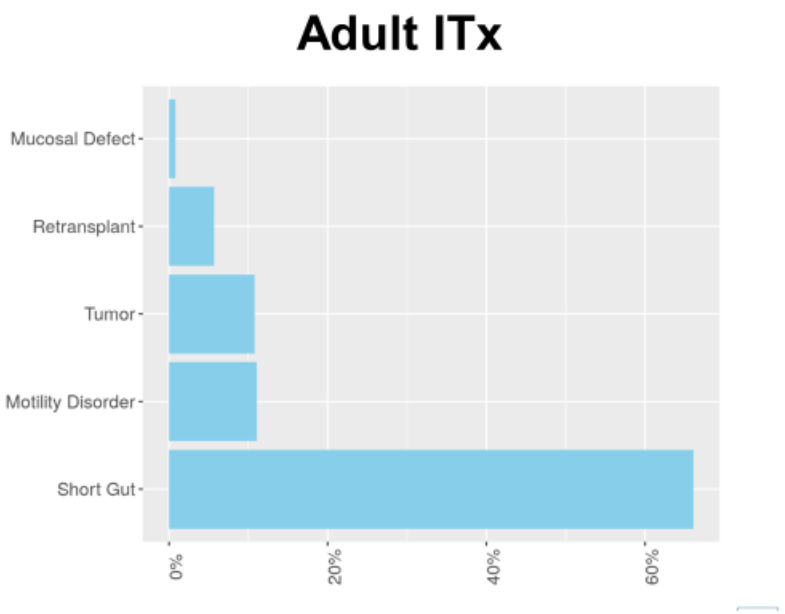
Age at Time of ITx

	Pediatric	Adult
Median Age at ITx	**2.8 y/o (1.2, 6.9)**	**41 y/o (30, 52)**



Indications for ITx

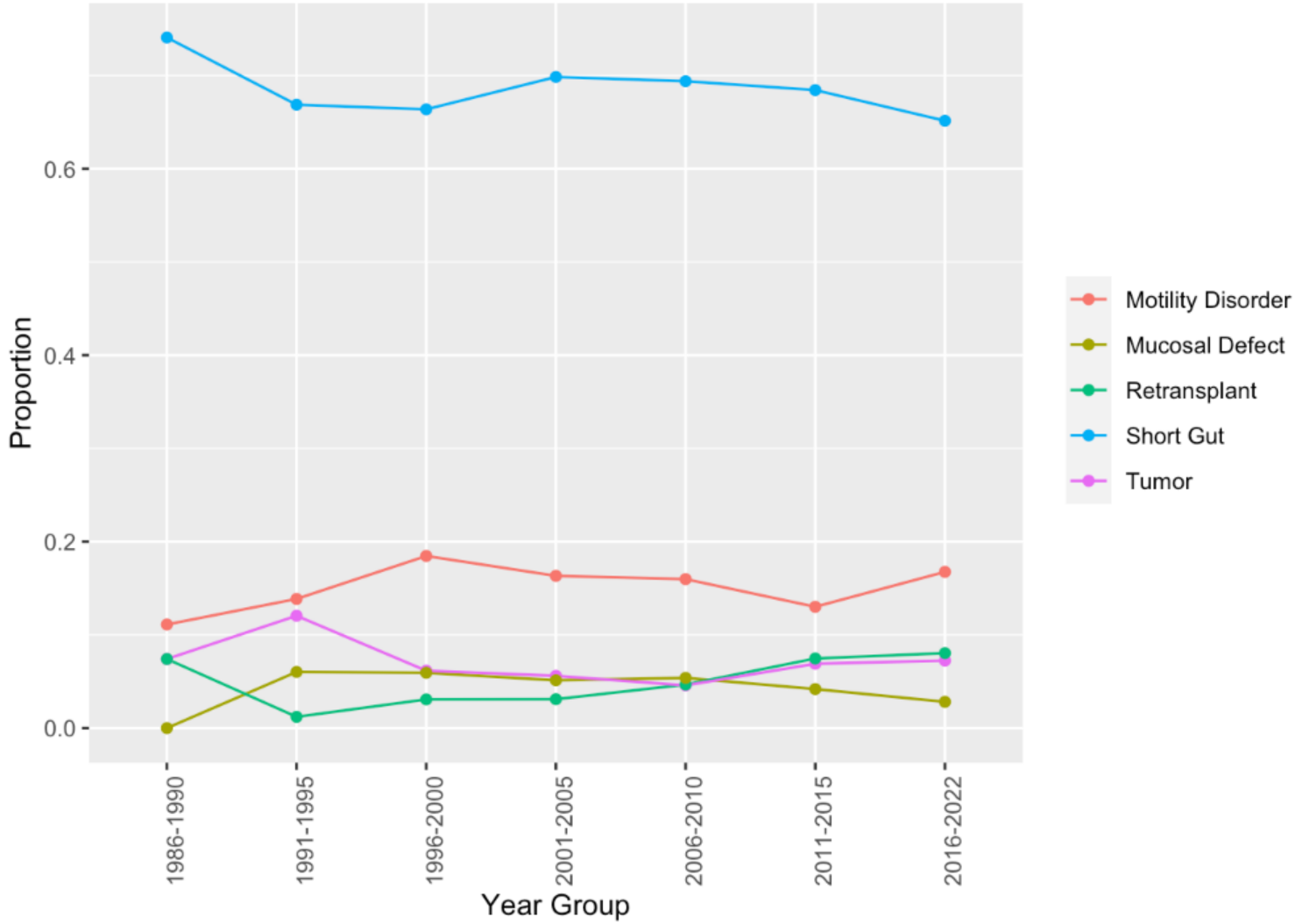




<u>Leading causes of peds SBS:</u>
Gastroschisis
Volvulus
NEC
Intestinal atresia

<u>Leading causes of adult SBS:</u>
Ischemia
Crohn's disease
Volvulus
Trauma

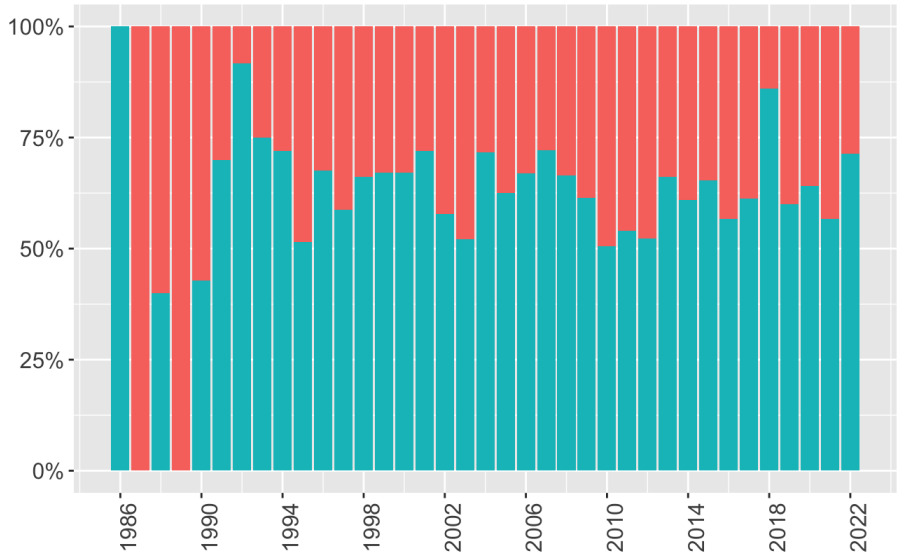
Indications for Transplant Over Time



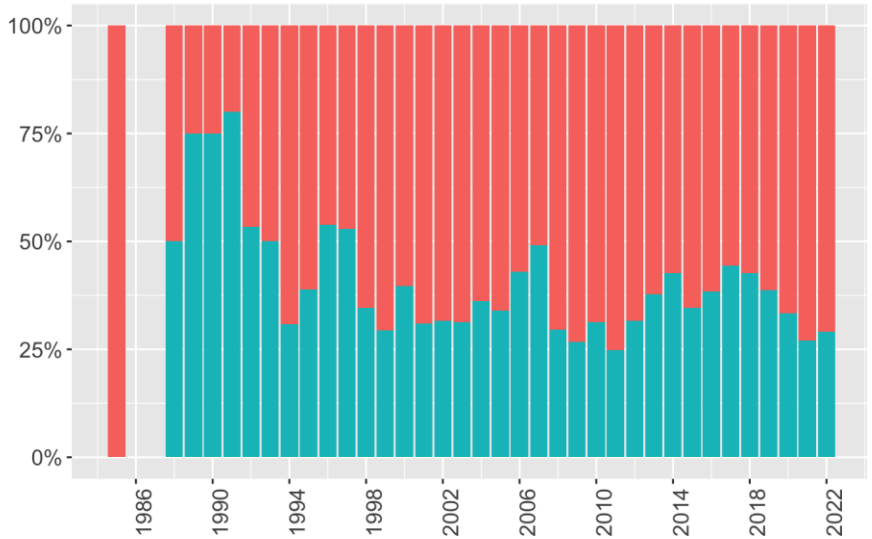
Trends In Graft Type

Transplant Type Over Time

Pediatric, n=2350

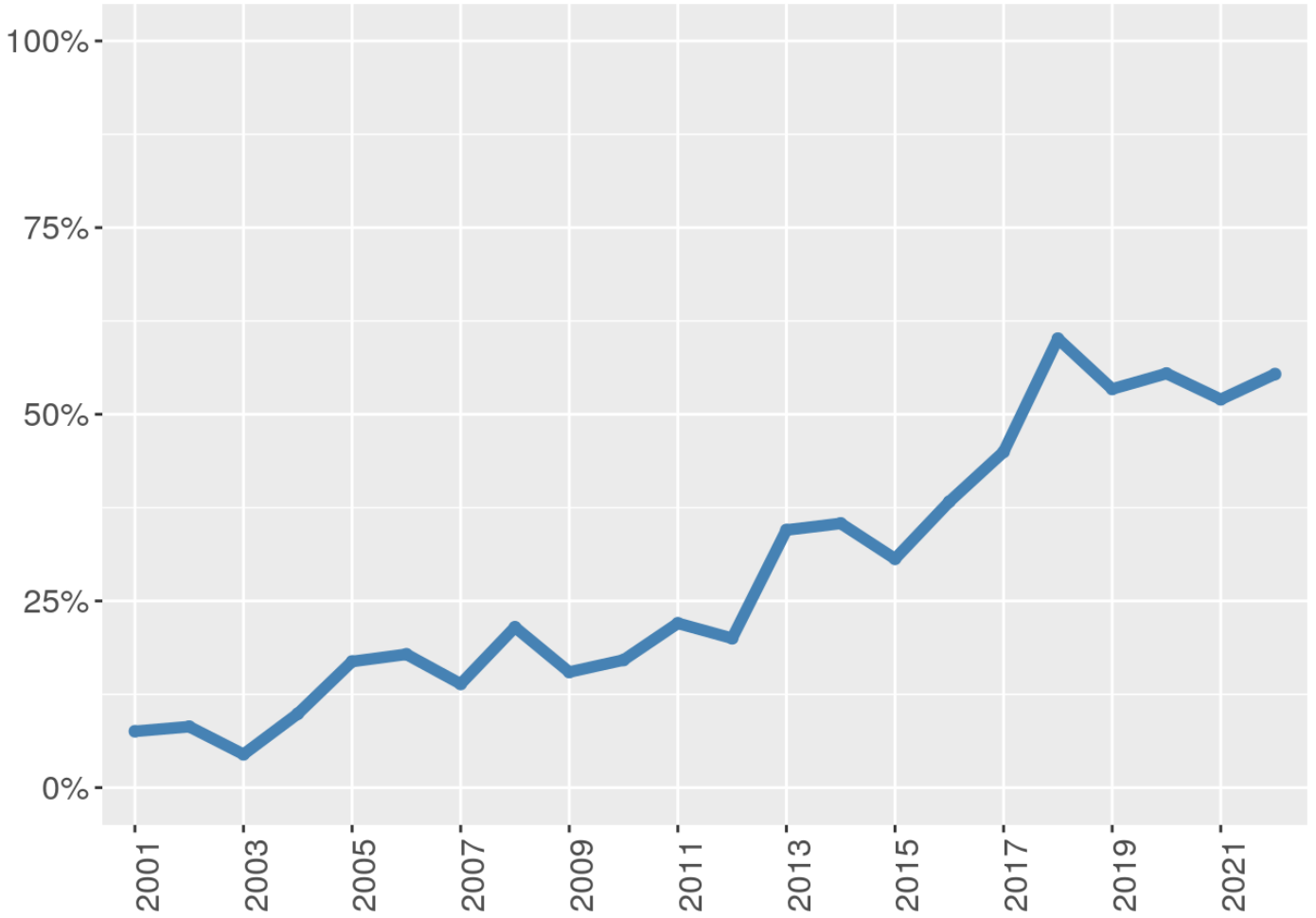


Adults, n=2359

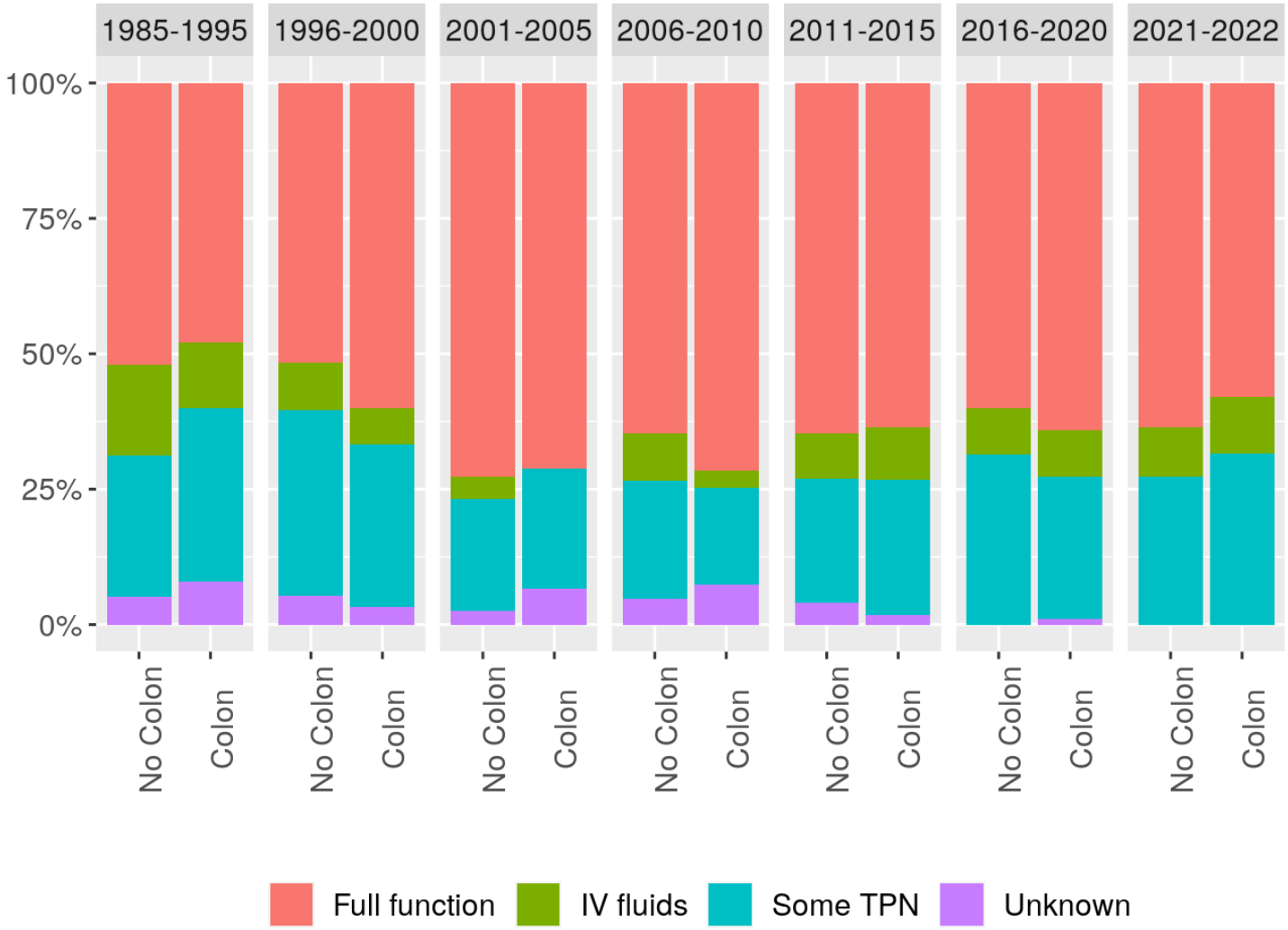


No Liver Liver Component

Colon Inclusion Over Time



Functional Status of Transplant Recipients by Era



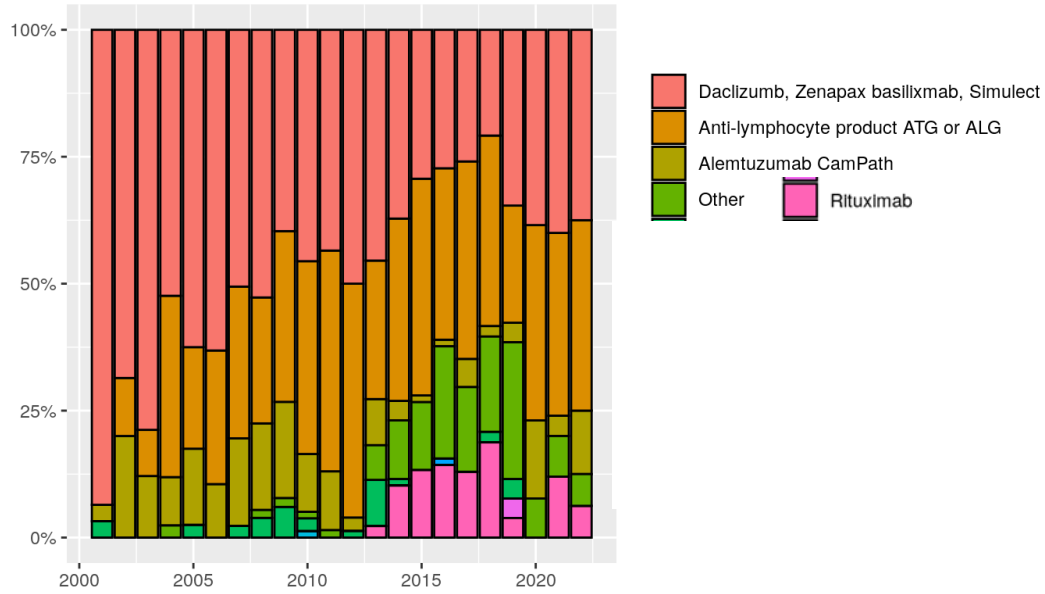
Initial Hospitalization

Length of Stay

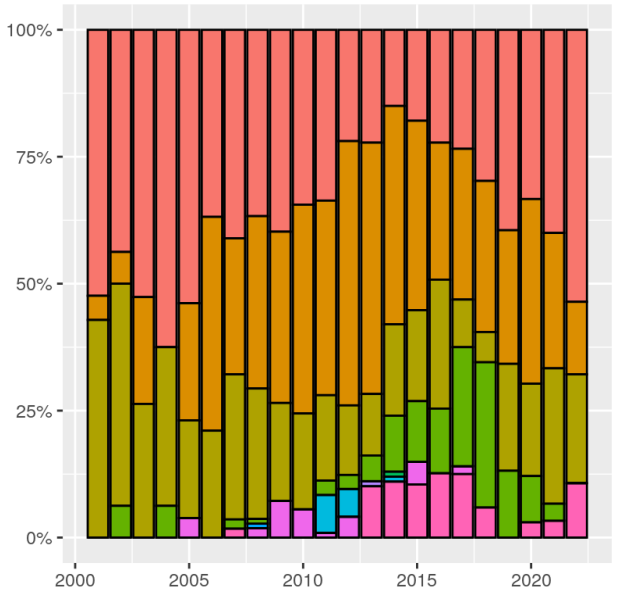
	Pediatric	Adult
Median Initial LOS (days)	53 (34, 92)	41 (25, 73)

Induction Immunosuppression

Pediatric induction immunosuppression changes over time



Adult induction immunosuppression changes over time



Rejection During Initial Hospitalization

	No Rejection	Mild ACR	Mod-Severe ACR
Pediatric	65%	22%	13%
Adult	79%	15%	6%

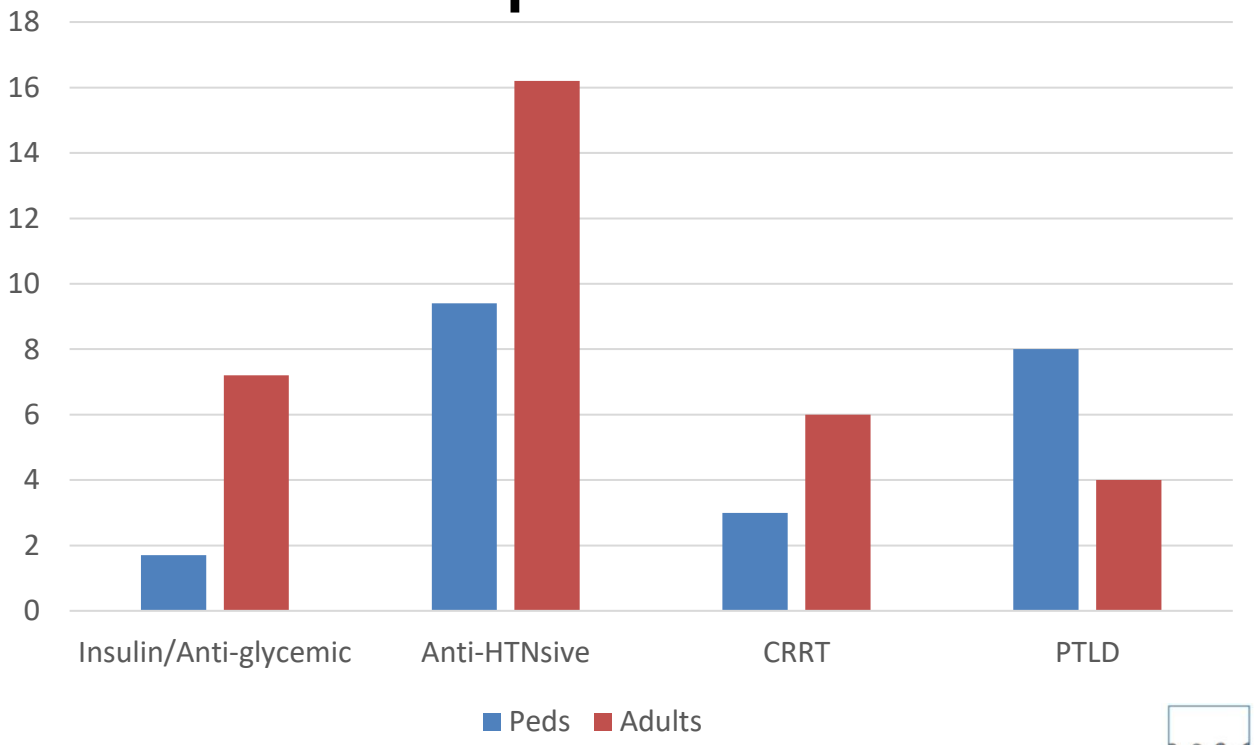
Long-Term Follow-Up

At Last Follow-Up

Immunosuppression

	Tac	CSa	MMF	Aza	Siro	Pred	Other
Ped+ Adults	91%	3%	12%	6%	16%	55%	4%

Complications



Trends in Graft & Patient Survival

Overall Graft & Patient Survival (1985-2022)

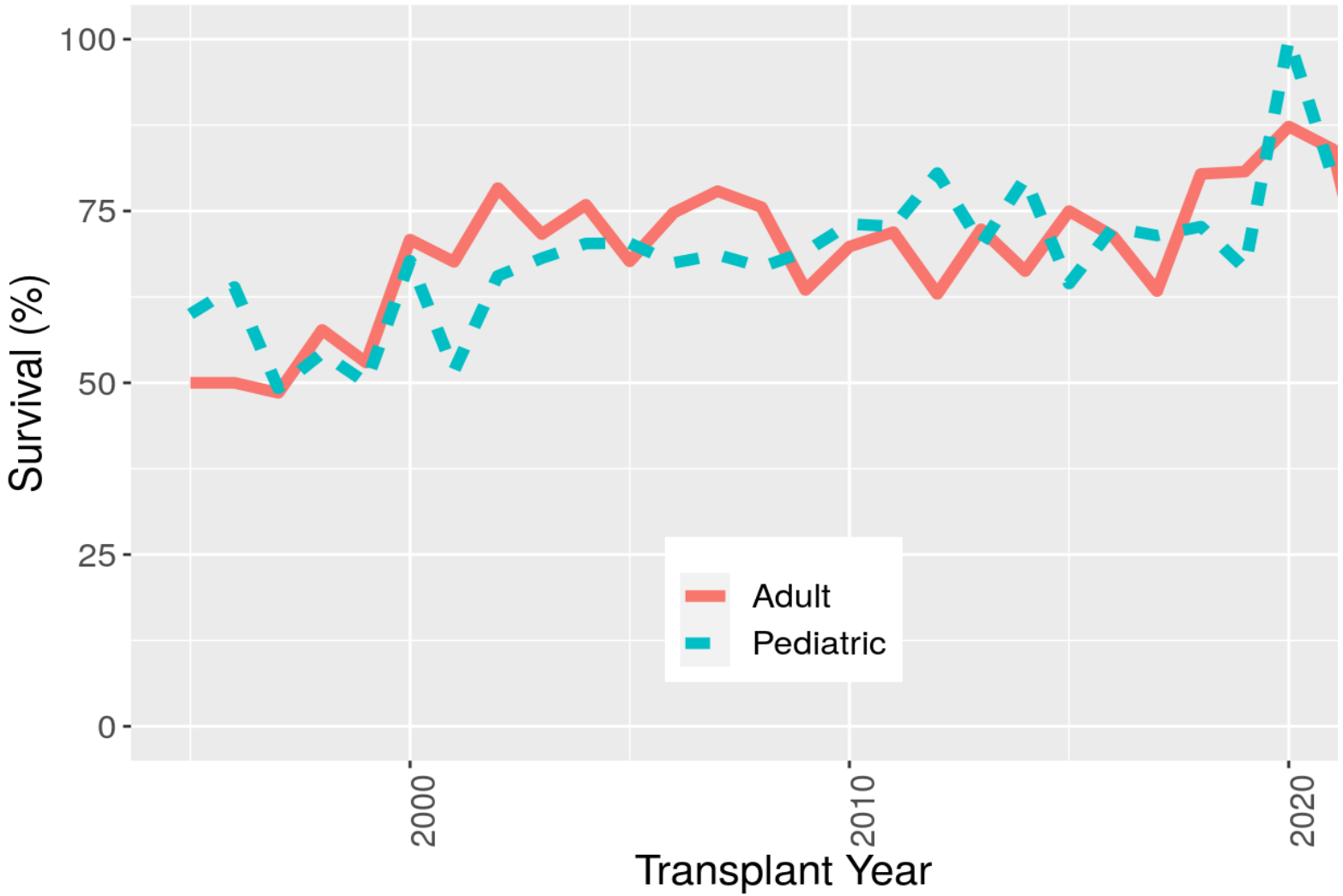
Pediatric

Survival	1- year	5-year
Graft	67%	50%
Patient	74%	59%

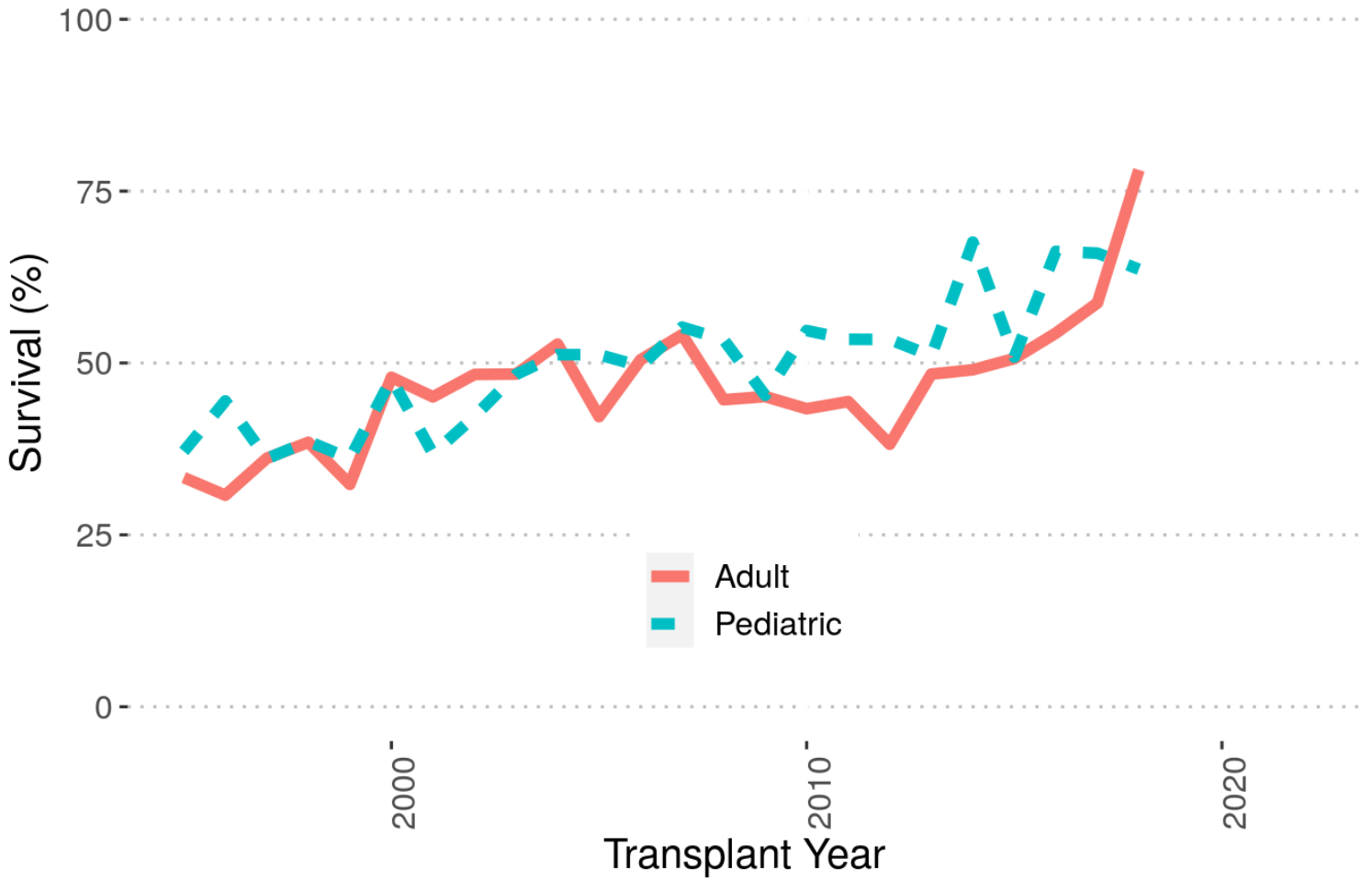
Adult

Survival	1- year	5-year
Graft	69%	44%
Patient	76%	50%

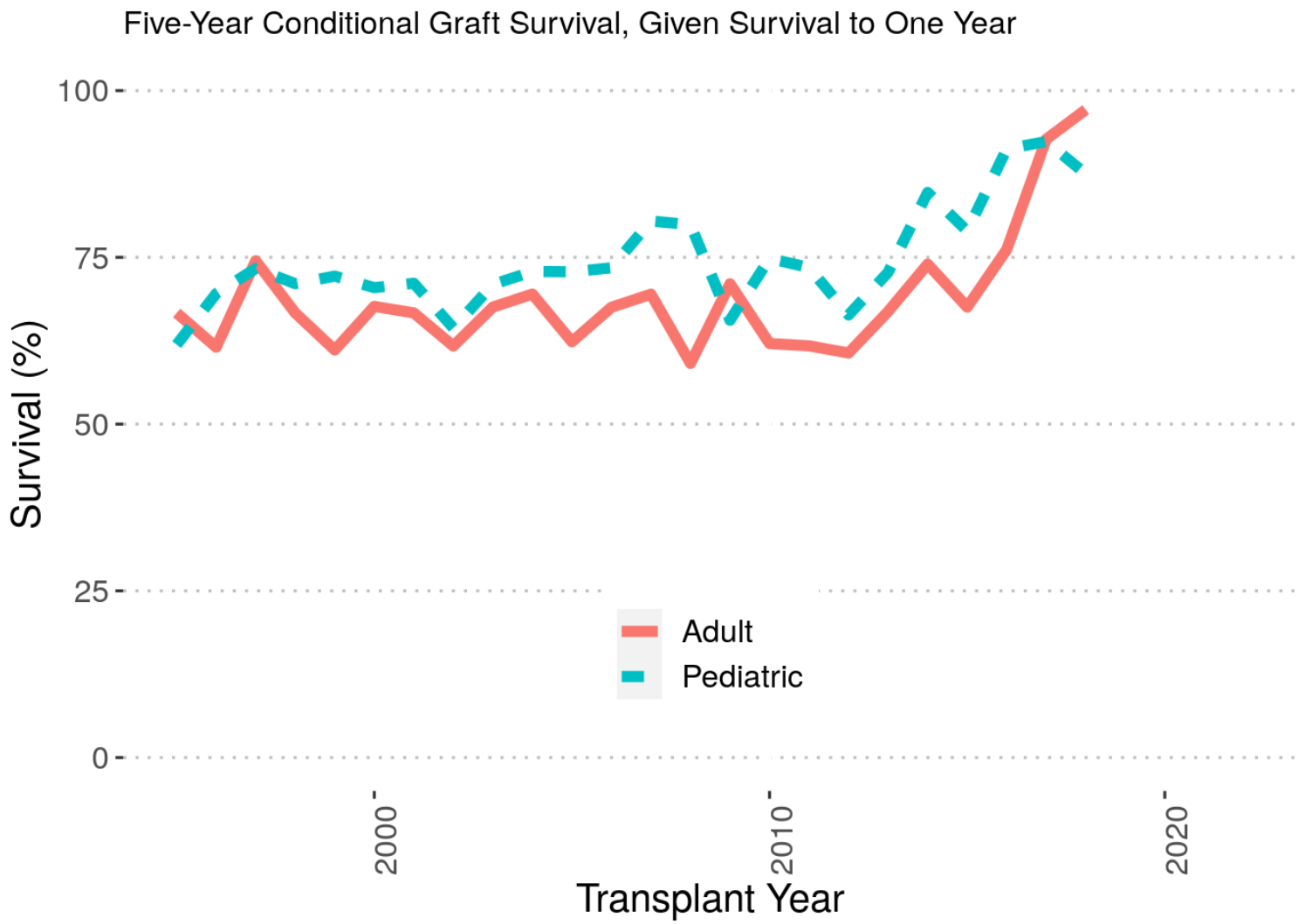
1-Year Graft Survival Over Time



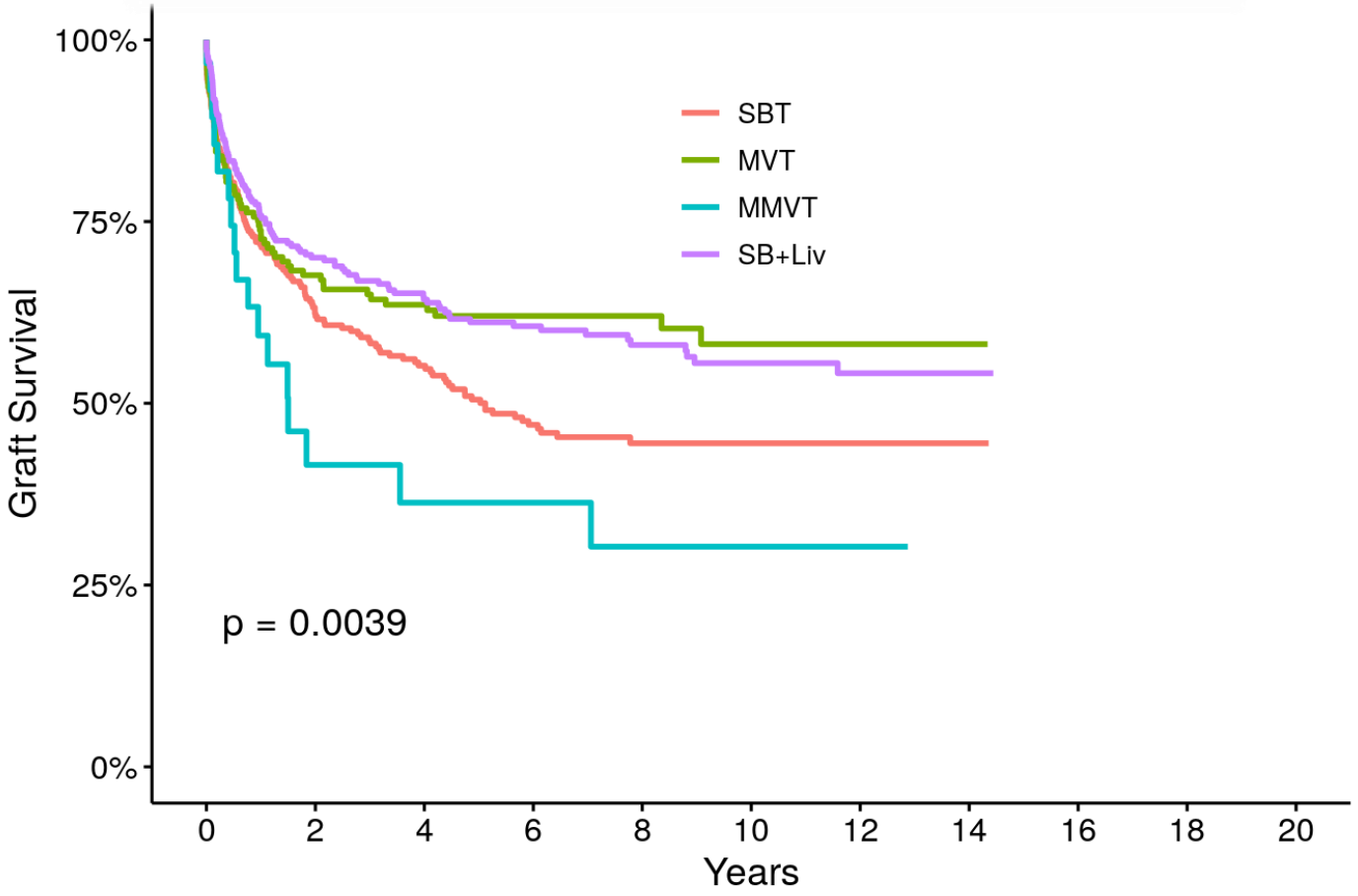
5-Year Graft Survival Over Time



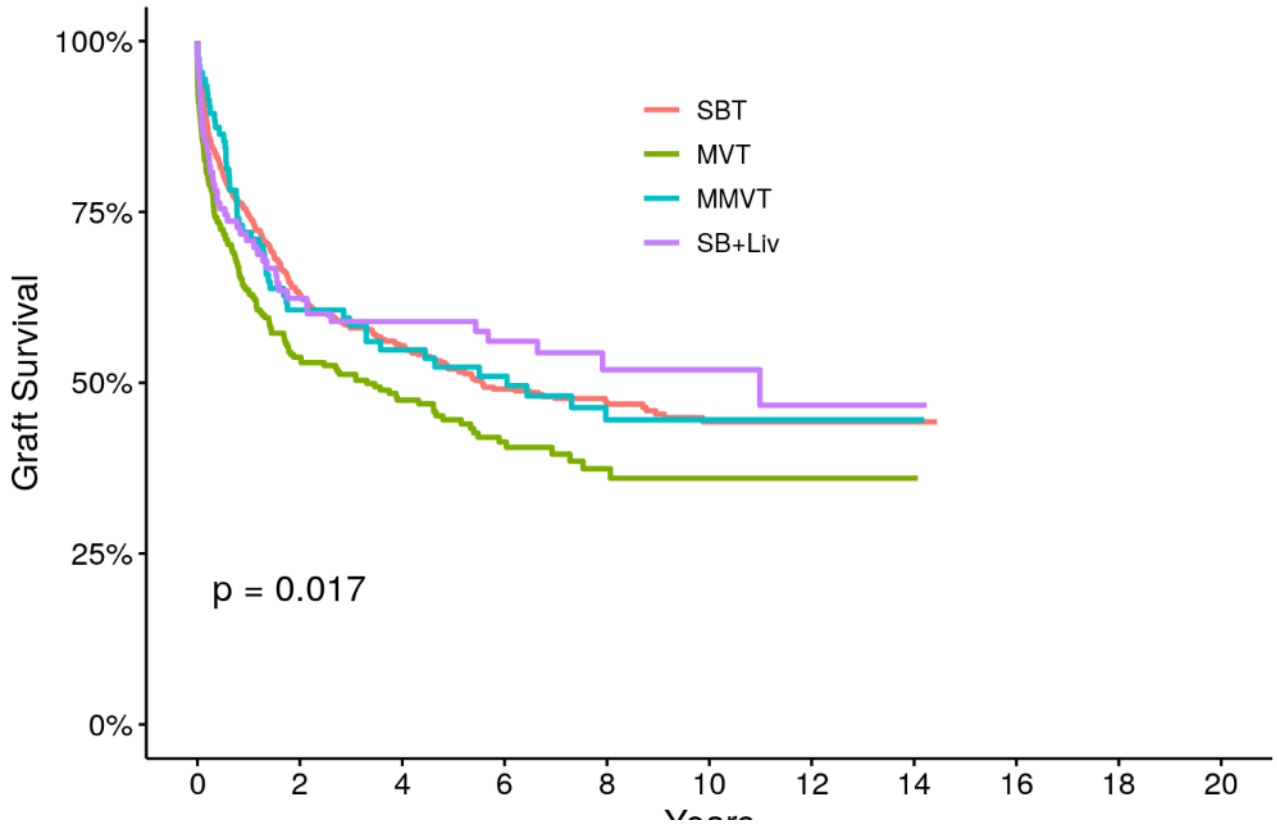
5-Year Conditional Graft Survival Over Time



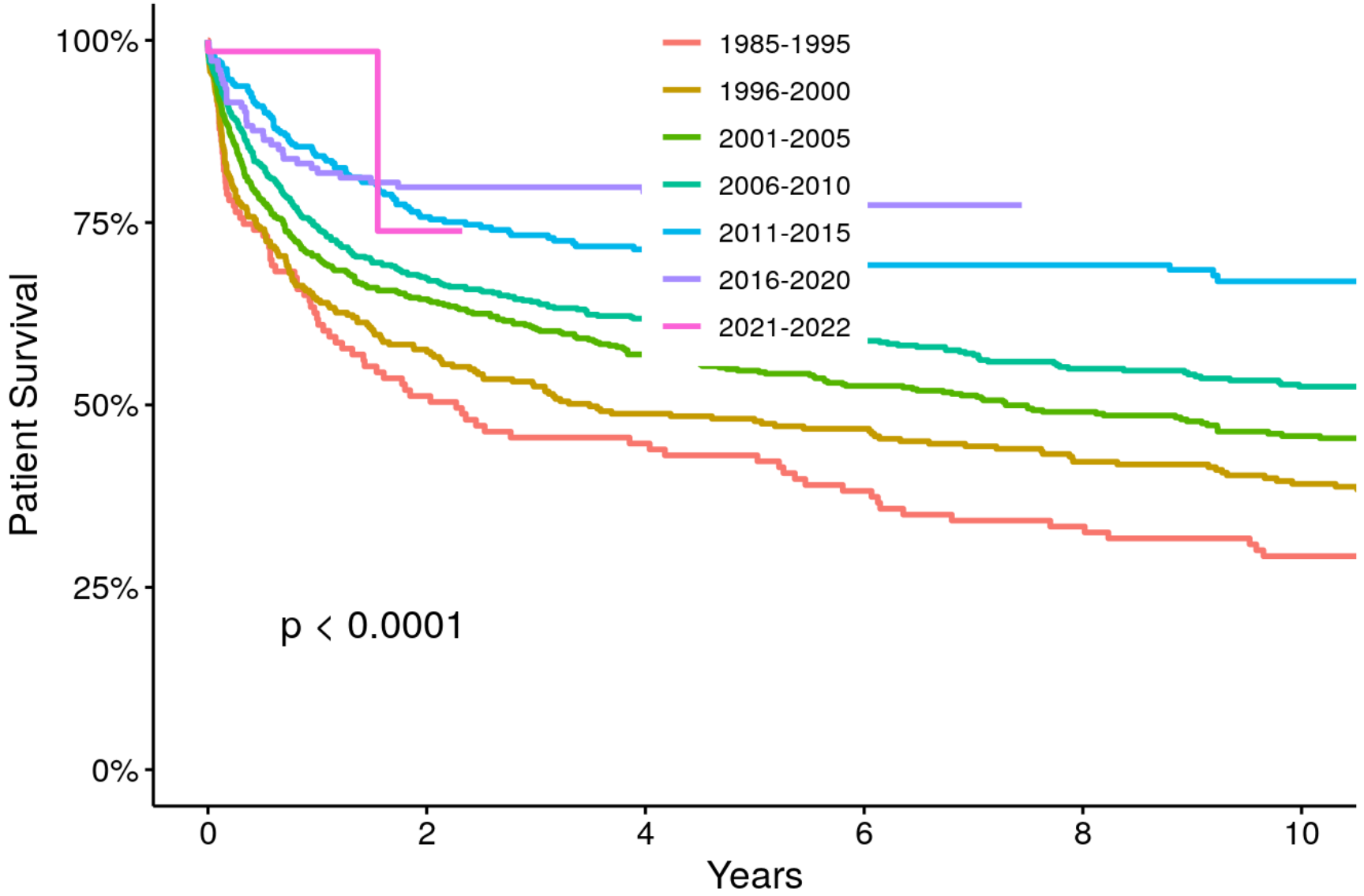
Pediatric Graft Survival By Transplant Type (2009-2022)

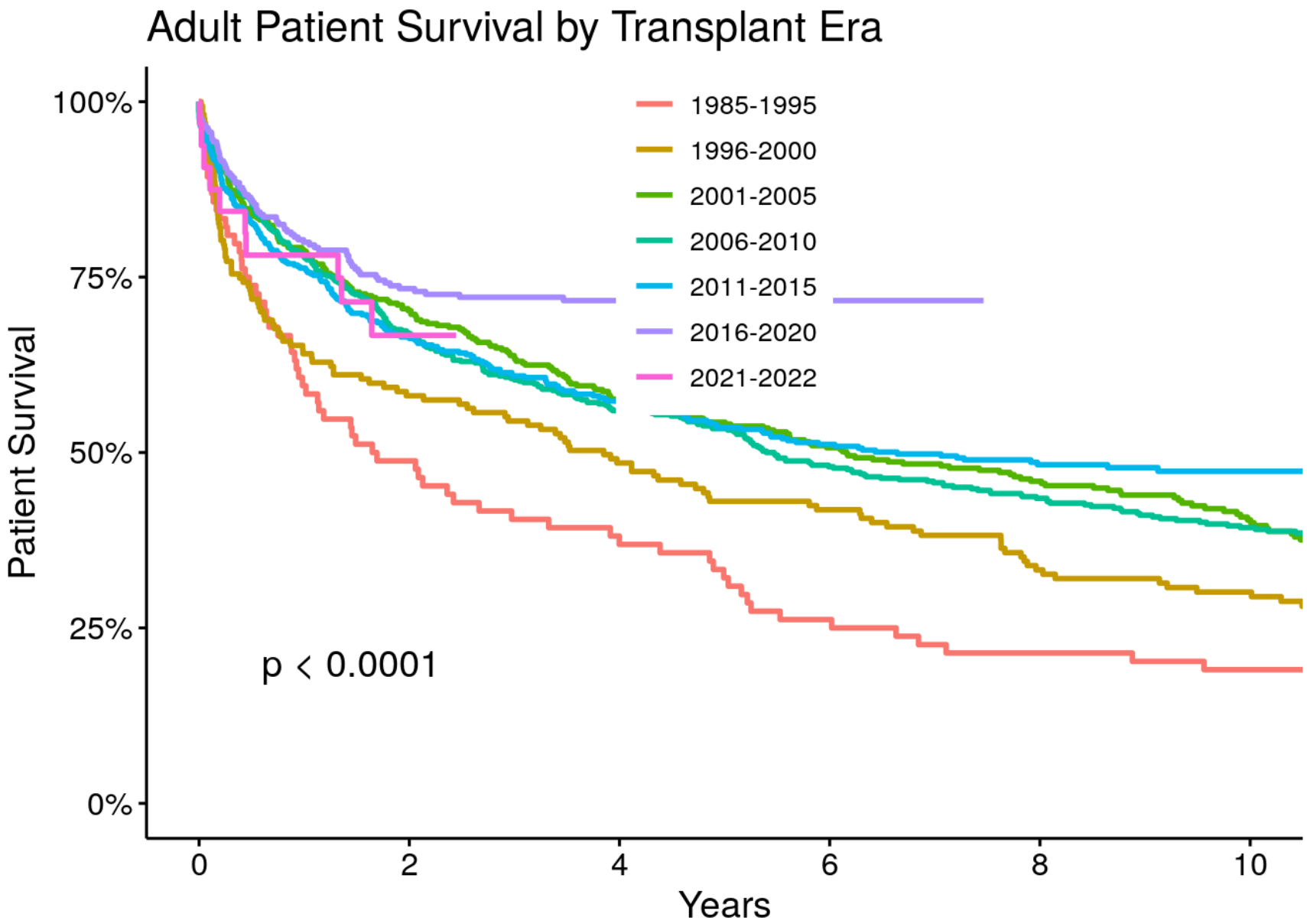


Adult Graft Survival By Transplant Type (2009-2022)



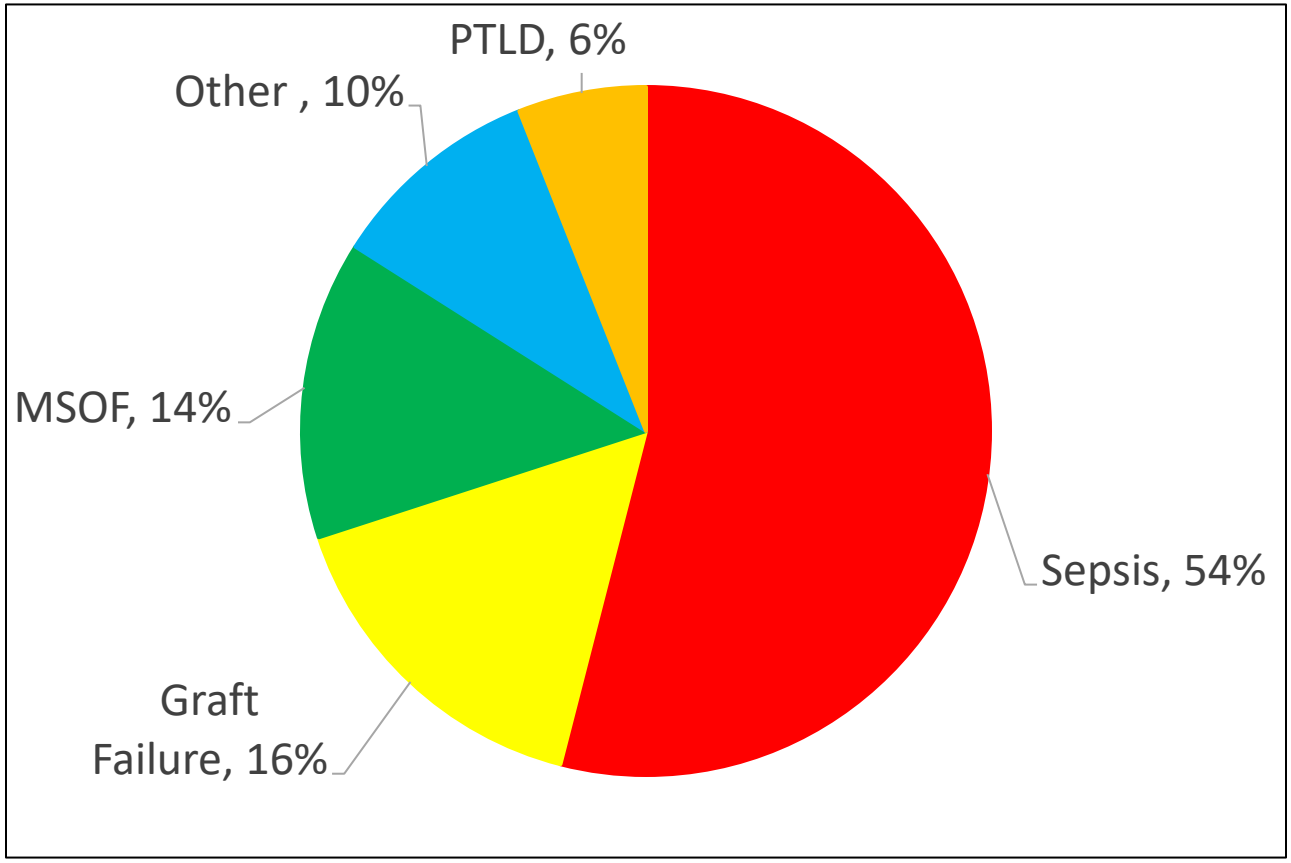
Pediatric Patient Survival by Transplant Era





Causes of Death

(1985-2023)



Multivariate Predictors of Graft Survival

Variable	Hazard Ratio	p-value
Called in from home for ITx	0.74	0.008
Liver-inclusive graft	0.67	<0.001
Primary Transplant	0.66	0.030
Rapamycin maintenance therapy	0.83	0.057

Multivariate Predictors of Patient Survival

Variable	Hazard Ratio	p-value
Called in from home for ITx	0.63	0.003
Pediatric Age	0.98	.06

Challenges, Benefits & The Future of IITR

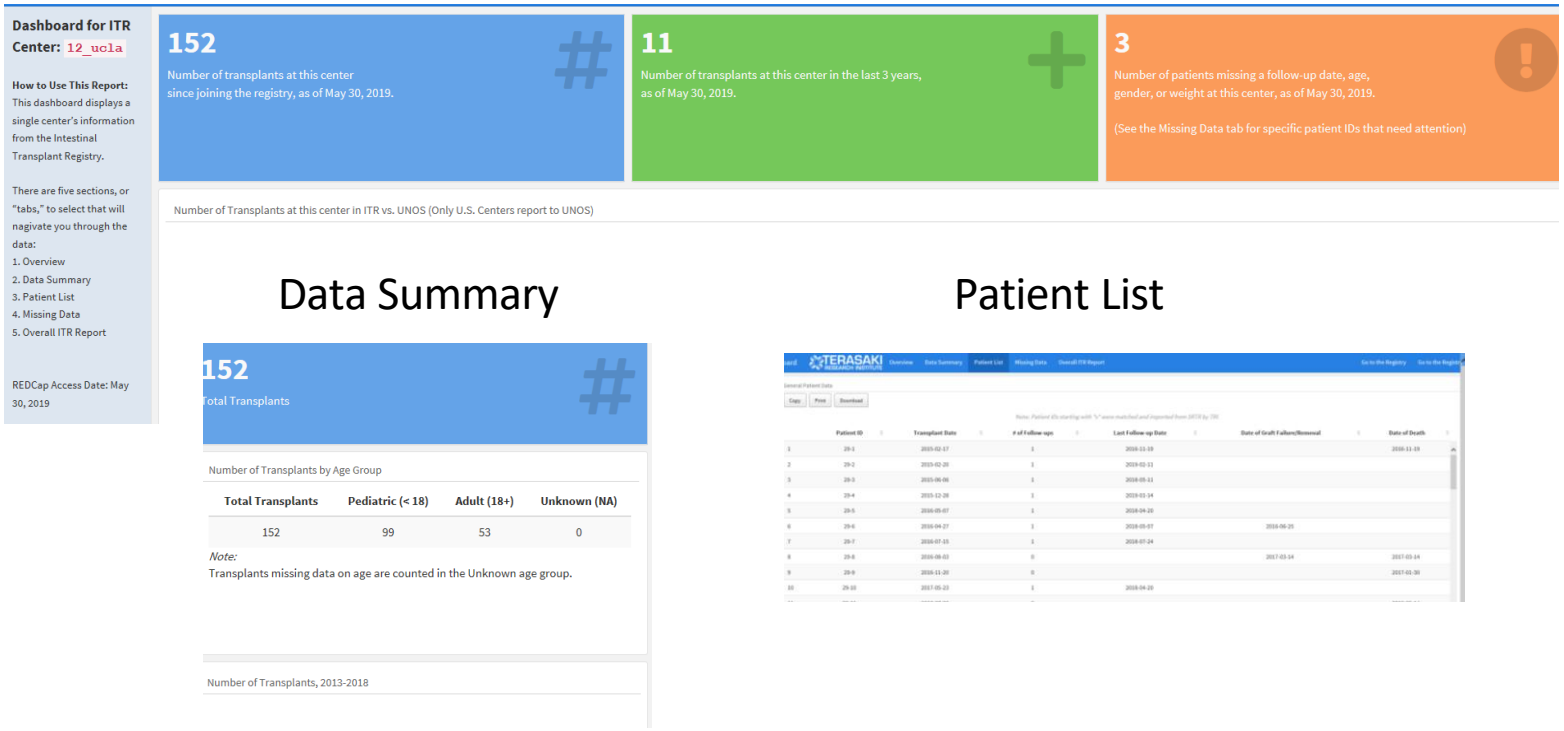
IITR Challenges

- Barriers to Data Entry:
  - IRB & DUA Challenges
  - Limited resources (unfunded registry)
  - Time to enter data
- Unpopulated Data Fields:

IITR Publications

- Publications:
  - Ceulemans L et al. Outcome after intestinal transplantation from living versus deceased donors: a propensity-matched cohort analysis of the IITR. *Annals of Surgery* 2023
  - Raghu V et al. Analysis of the intestinal transplant registry *Pediatric Transplantation* 2019
  - Grant D et al Intestinal Transplant Association. Intestinal transplant registry report: global activity and trends. *AJT* 2015

Individual Center Reports for IRTA Members



Value for benchmarking and QI

Future IITR Opportunities

- Streamline IRB & DUA process
- Explore linkage between existing registries & the ITR

  i.e.- UK NHS Bowel Transplant Registry, Eurotransplant, Argentina, IRTA Chapters
- Encourage continuous data entry
- Promote the use of center dashboards (QI)

Future of the IITR

- Utilize the IITR to address specific, targeted, contemporary knowledge deficits

  i.e. - DSA, PTLD, Long-term complications, Re-ITx

- IITR: Longitudinal follow-up of IFR patients who require ITx

Thank you