



**SWISS  
TRANSPLANT  
COHORT  
STUDY**

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## Swiss Transplant Cohort Study Report (January 2008 - December 2021)

October 2022

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## **Disclaimer**

The STCS Annual Report covers all solid organ transplantation (SOT) activities on the Swiss national level since January 2008. The report is comprehensive and contains all combinations of simultaneous solid organ transplantations, consecutive transplantations, centre-specific activities and key outcomes of all transplantation programs including limited reporting of infectious disease and cancer occurrence. To serve the aim of comprehensive transplant outcome reporting, the report is based on unselected patient populations of the different transplant programs and transplant centres. **However, it is important to note that the report is not designed for and does not serve the purpose of center-specific outcomes comparison.**

The Swiss Transplant Cohort Study (STCS)

## List of Abbreviations

<b>STCS</b>	Swiss Transplant Cohort Study
<b>BE</b>	Inselspital Bern
<b>CHUV</b>	Centre Hospitalier Universitaire Vaudois Lausanne
<b>CI</b>	confidence interval
<b>CumInc</b>	cumulative incidence
<b>FUP</b>	follow-up
<b>GF</b>	graft failure
<b>HUG</b>	Hôpitaux Universitaires de Genève
<b>ID</b>	infectious disease
<b>SG</b>	Kantonsspital St. Gallen
<b>USZ</b>	Universitätsspital Zürich
<b>USB</b>	Universitätsspital Basel

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# **1 Comments from the centres**

## **1.1 Inselspital Bern**

Approves open publication.

## **1.2 Centre Hospitalier Universitaire Vaudois Lausanne**

Approves open publication.

## **1.3 Hôpitaux Universitaires de Genève**

Approves open publication.

## **1.4 Kantonsspital St. Gallen**

Approves open publication.

## **1.5 Universitätsspital Basel**

Approves open publication.

## **1.6 Universitätsspital Zürich**

Approves open publication.

## **2 News and updates**

Updates:

- The active cohort includes the number of patients who are still under follow-up with an ongoing organ Figure 2.

### **3 Patients, transplantations and transplanted organs**

#### **3.1 Definitions applied**

- Enrolment refers to the inclusion of all patients into the Swiss Transplant Cohort Study (STCS) from 1 January 2008 until 31 December 2021. From those patients, the follow-up information from the date of transplantation until end of follow-up is included in the report.
- First transplantation:
  - Patients with a first transplantation in their medical history at the time of STCS enrolment
- Re-transplantation:
  - Patients with a repetition of the same type of transplantation (Re-Tpx)
  - Example: Re-Tpx of a kidney allograft after failure of a previous kidney graft
- Second transplantation:
  - Patients with a second transplantation that differs from the preceding transplantation type
  - Example: Transplantation of a pancreas following a single Kidney transplantation
- Simultaneous transplantation:
  - Simultaneous (eg double or triple) transplantation refer to multiple organs that originate from the same donor (e.g. Kidney-Pancreas).
  - Simultaneous transplantation can be categorized as first, re- or second transplantation.
- Every transplant procedure can consist of a single or simultaneous transplantation.
- Knowledge on previous transplantation from the pre-STCS era (before May 2008) is considered. Patients may thus be enrolled within the STCS as a re- or a second transplantation.
- Sequences of previous Islets transplantations have been counted as one prior transplantation.
- Human stem cell transplantations are not considered in this report.

## 3.2 Overview and baseline demographic data

The following tables list the number of patients enrolled in the STCS, the number of transplantations performed, and organs transplanted. Table 1 and 2 show patients according to their first STCS transplantation.

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Table 1: Number of patients enrolled

	Patients	(%)
Total number	6844	100.0
Single Tpx at enrolment	6590	96.3
Double Tpx at enrolment	251	3.7
Triple Tpx at enrolment	3	0.0
1st Tpx at enrolment	6172	90.2
Re-Tpx at enrolment	562	8.2
2nd Tpx at enrolment	110	1.6
HSCT Tpx prior to enrolment	26	0.4

Table 2: Number of patients enrolled by Tpx type

	Total	First Tpx (%)	Re Tpx (%)	Second Tpx (%)
Total	6844	6172 90.2	562 8.2	110 1.6
Kidney	3920	3374 86.1	489 12.5	57 1.5
Liver	1508	1460 96.8	41 2.7	7 0.5
Lung	606	590 97.4	13 2.1	3 0.5
Heart	501	495 98.8	5 1.0	1 0.2
Islets	40	11 27.5	11 27.5	18 45.0
Pancreas	13	7 53.8	0 0.0	6 46.2
Small bowel	2	1 50.0	1 50.0	0 0.0
Kidney - Pancreas	143	136 95.1	1 0.7	6 4.2
Kidney - Liver	58	50 86.2	0 0.0	8 13.8
Kidney - Islets	23	22 95.7	0 0.0	1 4.3
Kidney - Heart	15	13 86.7	1 6.7	1 6.7
Kidney - Lung	2	1 50.0	0 0.0	1 50.0
Liver - Lung	4	4 100.0	0 0.0	0 0.0
Liver - Pancreas	1	1 100.0	0 0.0	0 0.0
Heart - Lung	1	1 100.0	0 0.0	0 0.0
Islets - Liver	1	1 100.0	0 0.0	0 0.0
Pancreas - Small bowel	3	3 100.0	0 0.0	0 0.0
Kidney - Islets - Liver	1	0 0.0	0 0.0	1 100.0
Liver - Pancreas - Small bowel	1	1 100.0	0 0.0	0 0.0
Islets - Liver - Lung	1	1 100.0	0 0.0	0 0.0

In contrast to Table 1 and 2, Table 3 and 4 list all transplantations performed and the number of transplanted organs.

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Table 3: Number of Tpx types

	Total	First Tpx (%)	Re Tpx (%)	Second Tpx (%)
Total	7246	6172 85.2	860 11.9	214 3.0
Kidney	4053	3374 83.2	594 14.7	85 2.1
Liver	1651	1460 88.4	174 10.5	17 1.0
Lung	625	590 94.4	31 5.0	4 0.6
Heart	506	495 97.8	10 2.0	1 0.2
Islets	119	11 9.2	45 37.8	63 52.9
Pancreas	25	7 28.0	1 4.0	17 68.0
Small bowel	2	1 50.0	1 50.0	0 0.0
Kidney - Pancreas	147	136 92.5	3 2.0	8 5.4
Kidney - Liver	60	50 83.3	0 0.0	10 16.7
Kidney - Islets	25	22 88.0	0 0.0	3 12.0
Kidney - Heart	15	13 86.7	1 6.7	1 6.7
Kidney - Lung	3	1 33.3	0 0.0	2 66.7
Liver - Lung	4	4 100.0	0 0.0	0 0.0
Liver - Pancreas	1	1 100.0	0 0.0	0 0.0
Heart - Lung	1	1 100.0	0 0.0	0 0.0
Islets - Liver	2	1 50.0	0 0.0	1 50.0
Pancreas - Small bowel	3	3 100.0	0 0.0	0 0.0
Kidney - Islets - Liver	1	0 0.0	0 0.0	1 100.0
Liver - Pancreas - Small bowel	2	1 50.0	0 0.0	1 50.0
Islets - Liver - Lung	1	1 100.0	0 0.0	0 0.0

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Table 4: Number of transplanted organs

	Total	First Tpx (%)	Re Tpx (%)	Second Tpx (%)
Total	7515	6408 85.3	934 12.4	173 2.3
Kidney	4304	3596 83.6	632 14.7	76 1.8
Liver	1722	1518 88.2	183 10.6	21 1.2
Lung	634	597 94.2	32 5.0	5 0.8
Heart	522	509 97.5	12 2.3	1 0.2
Pancreas	178	148 83.1	14 7.9	16 9.0
Islets	148	35 23.6	59 39.9	54 36.5
Small bowel	7	5 71.4	2 28.6	0 0.0

Table 5: Patients' characteristics for major Tpx types

	Total*	Kidney	Liver	Lung	Heart	Kidney - Pancreas
Total no. patients	6678	3920	1508	606	501	143
Age (yrs), median	54.5	54.6	56.3	54.8	51.2	44.8
- IQR	(42.6-62.3)	(42.9-63.4)	(46.4-62.4)	(39.3-60.6)	(36.8-59.2)	(37-51.7)
- min; max	0.05; 82.2	1.53; 82.2	0.05; 78	4.37; 70.3	0.07; 71.8	23.38; 64.6
Male gender, n (%)	4288 (64.2%)	2524 (64.4%)	1017 (67.4%)	309 (51%)	354 (70.7%)	84 (58.7%)
Pediatric, n (%)	331 (5%)	149 (3.8%)	115 (7.6%)	18 (3%)	49 (9.8%)	0 (0%)
Observation time (yrs), median	5.1	5.5	4.2	4.1	4.3	6.8
- IQR	(2.3-8.8)	(2.8-9.2)	(1.7-8.2)	(1.7-7.3)	(1.5-8.3)	(2.9-10.4)
No. deaths, n (%)	1247 (18.7%)	550 (14%)	332 (22%)	238 (39.3%)	113 (22.6%)	14 (9.8%)
No. patients with at least one GF, n (%)	746 (11.2%)	375 (9.6%)	180 (11.9%)	114 (18.8%)	52 (10.4%)	25 (17.5%)
- with GF, alive	360 (5.4%)	264 (6.7%)	71 (4.7%)	4 (0.7%)	3 (0.6%)	18 (12.6%)
- with GF -> death	206 (3.1%)	102 (2.6%)	58 (3.8%)	25 (4.1%)	14 (2.8%)	7 (4.9%)
- with GF - related death	180 (2.7%)	9 (0.2%)	51 (3.4%)	85 (14%)	35 (7%)	0 (0%)
Death without GF	861 (12.9%)	439 (11.2%)	223 (14.8%)	128 (21.1%)	64 (12.8%)	7 (4.9%)
No. patients with any ID	4641 (69.5 %)	2685 (68.5%)	1048 (69.5%)	417 (68.8%)	378 (75.4%)	113 (79%)
- any proven/viral ID event	3570 (53.5 %)	2048 (52.2%)	794 (52.7%)	355 (58.6%)	287 (57.3%)	86 (60.1%)
- any incident cancer other than skin	877 (13.1 %)	490 (12.5%)	264 (17.5%)	75 (12.4%)	37 (7.4%)	11 (7.7%)
- any incident skin cancer	1170 (17.5 %)	784 (20%)	201 (13.3%)	93 (15.3%)	73 (14.6%)	19 (13.3%)

(\*) "Total" refers to the total number of patients with Tpx presented in this table

Table 6: Donors' characteristics by donor types

	Total	Brain dead (DBD)	NHBD (DCD)	KPD	Living related	Living unrelated
Total no. donors	3378	1658	233	47	705	735
Donor age (yrs), median	54 (42.4-63.7)	53.0 (36-66)	58.8 (49.9-66)	51.4 (46.3-61.2)	53.0 (44-61)	54.7 (46.8-62.5)
- IQR	0; 88.4	0; 88.4	11.49; 87.4	24.5; 72.5	1.6; 81.2	23.5; 79.7
- min; max	1634 (48.4%)	921 (55.5%)	162 (69.5%)	21 (44.7%)	282 (40.8%)	248 (34.2%)
Male gender, n (%)						
No. organs donated, median	1	3	2	2	1	1
- min; max	1; 602	1; 602	1; 5	1; 1	1; 1	1; 1

### 3.3 STCS patient enrolment by calendar time

Figure 1 shows the patient enrolment activity by quarter from January 2008 till December 2021.

Figure 1: Quarterly patient enrolment by donor type

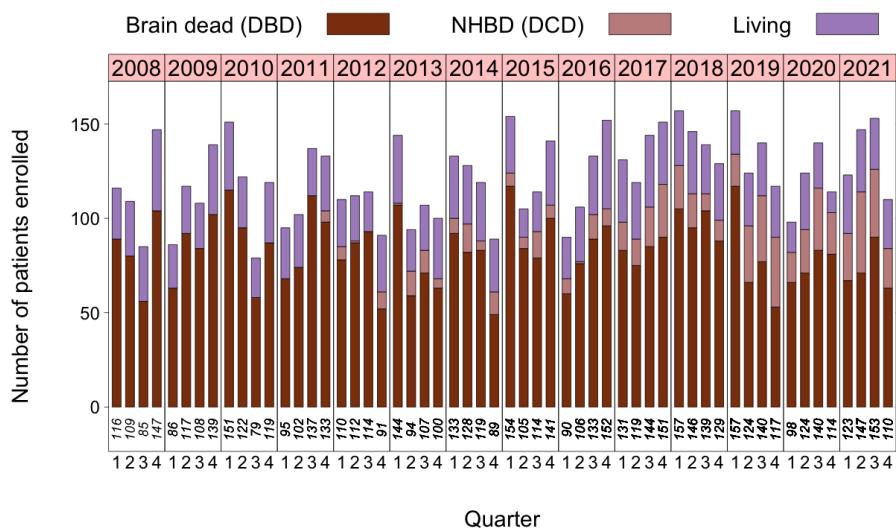
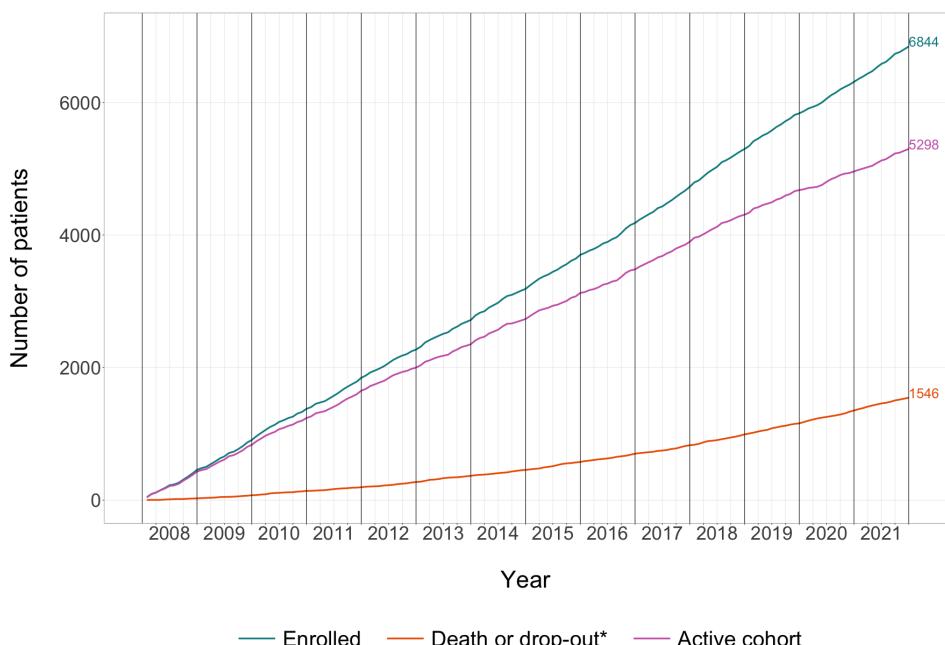
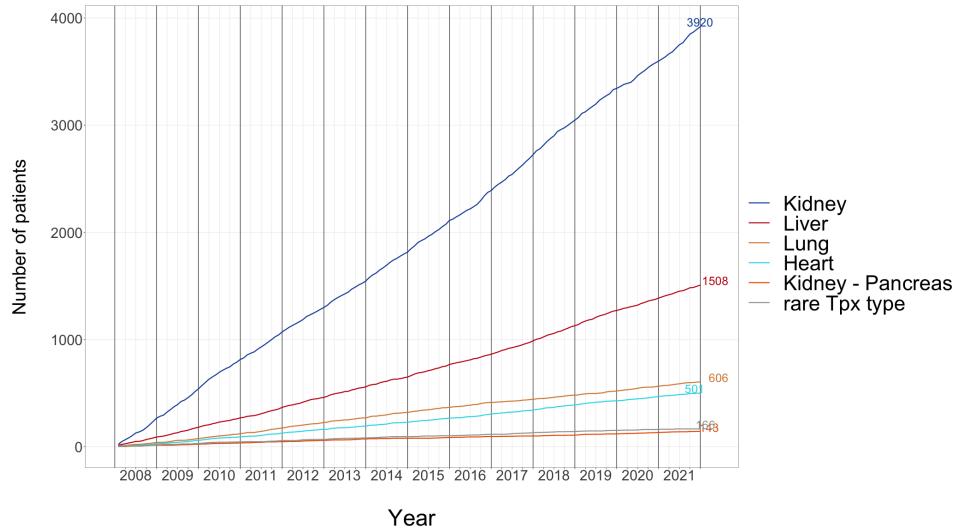


Figure 2: Cumulative patient enrolment



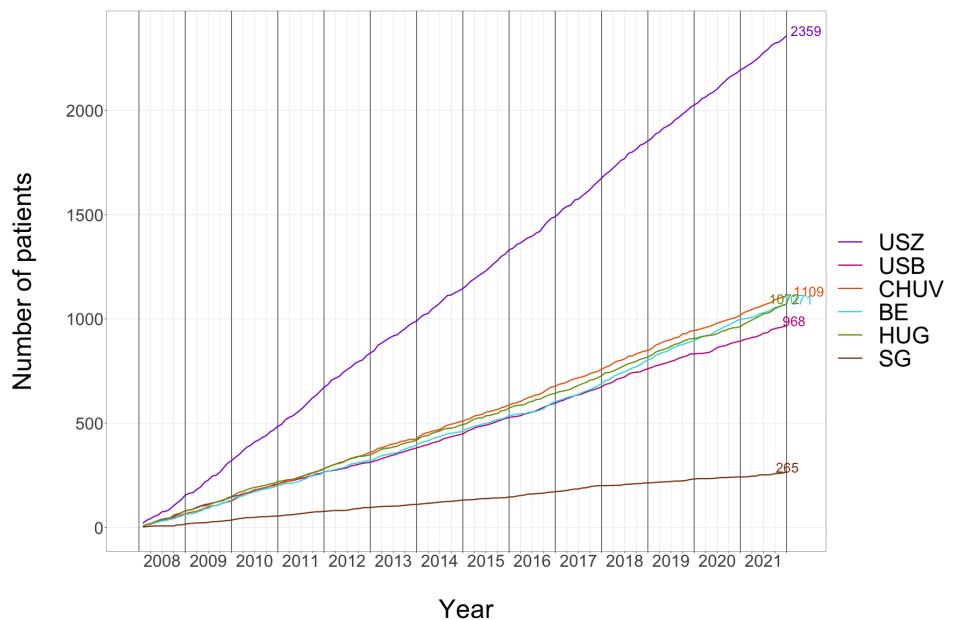
\*including patients with renal TX failure who are no longer candidates for retransplantation

Figure 3: Cumulative patient enrolment by Tpx type



'Rare Tpx type' includes: Islets, Pancreas, Small bowel, Kidney - Liver, Kidney - Islets, Kidney - Heart, Kidney - Lung, Liver - Lung, Liver - Pancreas, Heart - Lung, Islets - Liver, Pancreas - Small bowel, Kidney - Islets - Liver, Liver - Pancreas - Small bowel, Islets - Liver - Lung.

Figure 4: Cumulative patient enrolment by center



### 3.4 Transplantation activities by centre and year

Table 7: Number of enrolled patients by year and centre

	Total	USZ	%	USB	%	CHUV	%	BE	%	HUG	%	SG	%
Total	6844	2359	34.5	968	14.1	1109	16.2	1071	15.6	1072	15.7	265	3.9
2021	533	164	30.8	75	14.1	90	16.9	73	13.7	108	20.3	23	4.3
2020	476	169	35.5	61	12.8	75	15.8	103	21.6	58	12.2	10	2.1
2019	538	173	32.2	71	13.2	95	17.7	92	17.1	88	16.4	19	3.5
2018	571	178	31.2	86	15.1	90	15.8	113	19.8	91	15.9	13	2.3
2017	545	184	33.8	79	14.5	82	15	87	16	84	15.4	29	5.3
2016	481	160	33.3	69	14.3	90	18.7	66	13.7	71	14.8	25	5.2
2015	514	186	36.2	79	15.4	78	15.2	77	15	79	15.4	15	2.9
2014	469	156	33.3	67	14.3	85	18.1	65	13.9	75	16	21	4.5
2013	445	153	34.4	69	15.5	64	14.4	74	16.6	70	15.7	15	3.4
2012	427	164	38.4	45	10.5	78	18.3	55	12.9	67	15.7	18	4.2
2011	467	187	40	58	12.4	74	15.8	65	13.9	60	12.8	23	4.9
2010	471	165	35	63	13.4	82	17.4	69	14.6	73	15.5	19	4
2009	450	165	36.7	67	14.9	61	13.6	70	15.6	68	15.1	19	4.2
2008	457	155	33.9	79	17.3	65	14.2	62	13.6	80	17.5	16	3.5

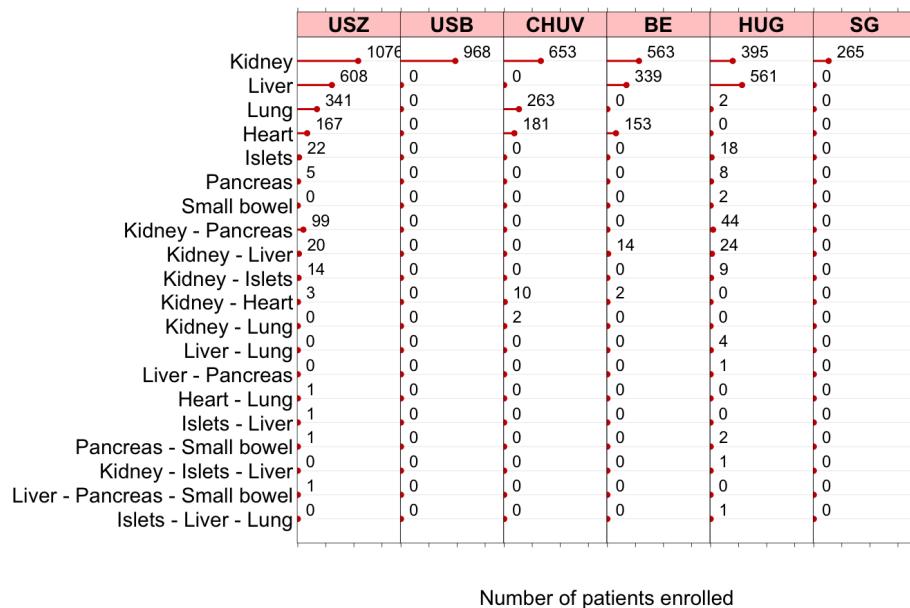
Table 8: Number of Tpx by year and centre

	Total	USZ	%	USB	%	CHUV	%	BE	%	HUG	%	SG	%
Total	7246	2512	34.7	986	13.6	1146	15.8	1150	15.9	1181	16.3	271	3.7
2021	583	180	30.9	77	13.2	93	16	89	15.3	121	20.8	23	3.9
2020	519	182	35.1	65	12.5	79	15.2	112	21.6	70	13.5	11	2.1
2019	582	179	30.8	73	12.5	101	17.4	108	18.6	102	17.5	19	3.3
2018	599	186	31.1	91	15.2	90	15	121	20.2	98	16.4	13	2.2
2017	578	197	34.1	79	13.7	86	14.9	93	16.1	93	16.1	30	5.2
2016	503	171	34	69	13.7	91	18.1	72	14.3	74	14.7	26	5.2
2015	555	199	35.9	81	14.6	83	15	82	14.8	94	16.9	16	2.9
2014	504	178	35.3	68	13.5	88	17.5	67	13.3	81	16.1	22	4.4
2013	471	167	35.5	69	14.6	66	14	78	16.6	76	16.1	15	3.2
2012	448	173	38.6	45	10	81	18.1	56	12.5	75	16.7	18	4
2011	492	197	40	60	12.2	76	15.4	71	14.4	64	13	24	4.9
2010	487	174	35.7	63	12.9	83	17	69	14.2	79	16.2	19	3.9
2009	466	173	37.1	67	14.4	64	13.7	70	15	73	15.7	19	4.1
2008	459	156	34	79	17.2	65	14.2	62	13.5	81	17.6	16	3.5

Table 9: Number of organs by year and centre

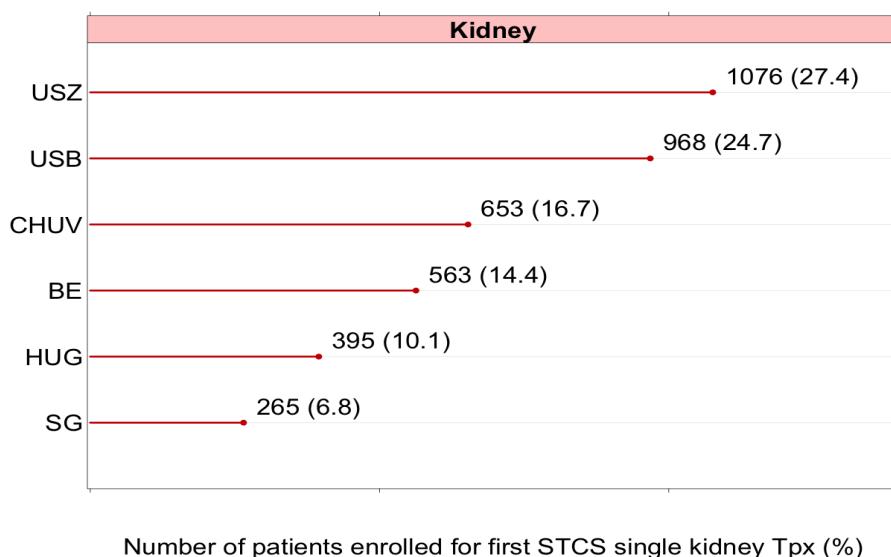
	Total	USZ	%	USB	%	CHUV	%	BE	%	HUG	%	SG	%
Total	7515	2657	35.4	986	13.1	1159	15.4	1167	15.5	1275	17	271	3.6
2021	602	189	31.4	77	12.8	94	15.6	90	15	129	21.4	23	3.8
2020	542	192	35.4	65	12	82	15.1	113	20.8	79	14.6	11	2
2019	603	190	31.5	73	12.1	101	16.7	110	18.2	110	18.2	19	3.2
2018	617	194	31.4	91	14.7	92	14.9	123	19.9	104	16.9	13	2.1
2017	595	206	34.6	79	13.3	88	14.8	95	16	97	16.3	30	5
2016	522	181	34.7	69	13.2	91	17.4	73	14	82	15.7	26	5
2015	570	204	35.8	81	14.2	83	14.6	82	14.4	104	18.2	16	2.8
2014	523	186	35.6	68	13	88	16.8	69	13.2	90	17.2	22	4.2
2013	495	184	37.2	69	13.9	67	13.5	79	16	81	16.4	15	3
2012	468	184	39.3	45	9.6	84	17.9	56	12	81	17.3	18	3.8
2011	510	209	41	60	11.8	76	14.9	72	14.1	69	13.5	24	4.7
2010	508	188	37	63	12.4	83	16.3	70	13.8	85	16.7	19	3.7
2009	482	182	37.8	67	13.9	65	13.5	72	14.9	77	16	19	3.9
2008	478	168	35.1	79	16.5	65	13.6	63	13.2	87	18.2	16	3.3

Figure 5: Number of patients enrolled by Tpx type



### 3.5 Kidney transplantations by centre

Figure 6: Number of patients with first single Kidney Tpx

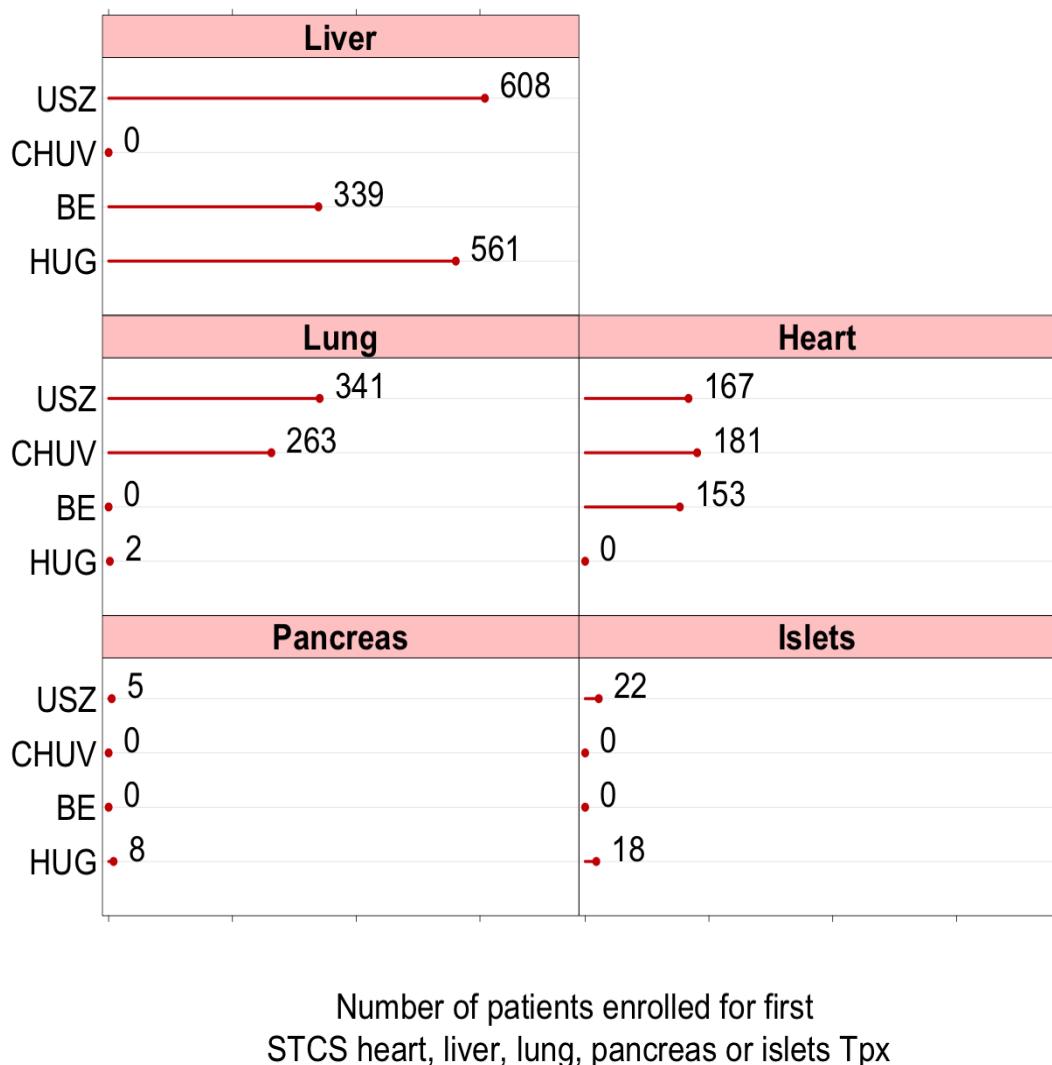


### 3.6 Transplantations other than Kidney by centre

Data from following rare transplantations are not shown: Small bowel (2, HUG), Liver - Lung (4, HUG), Liver - Pancreas (1, HUG), Heart - Lung (1, USZ), Islets - Liver (1, USZ; 1, HUG), Pancreas - Small bowel (2, HUG; 1, USZ), Islets - Liver - Lung (1, HUG) and Liver - Pancreas - Small bowel(2, USZ).

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Figure 7: Number of patients with first STCS Liver, Lung, Heart, Pancreas or Islets Tpx



### 3.7 Single Kidney and Liver transplantation by donor type

Figures 8 and 9 show all STCS single Kidney and Liver transplantation by donor type. Figures 10 and 12 present proportions of donor types in all single Kidney and Liver transplantation within centres.

Figure 8: Number of single Kidney Tpx

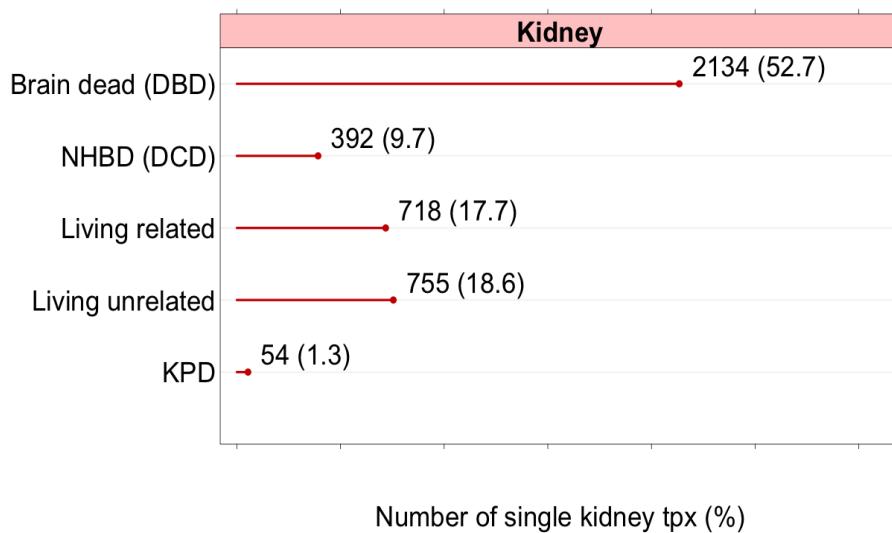


Figure 9: Number of single Liver Tpx

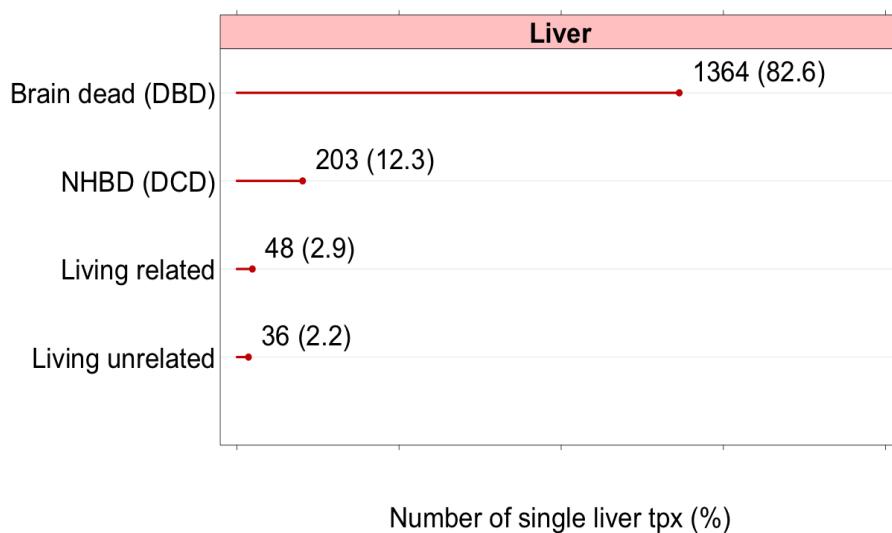


Figure 10: Distribution of donor types in all single Kidney Tpx

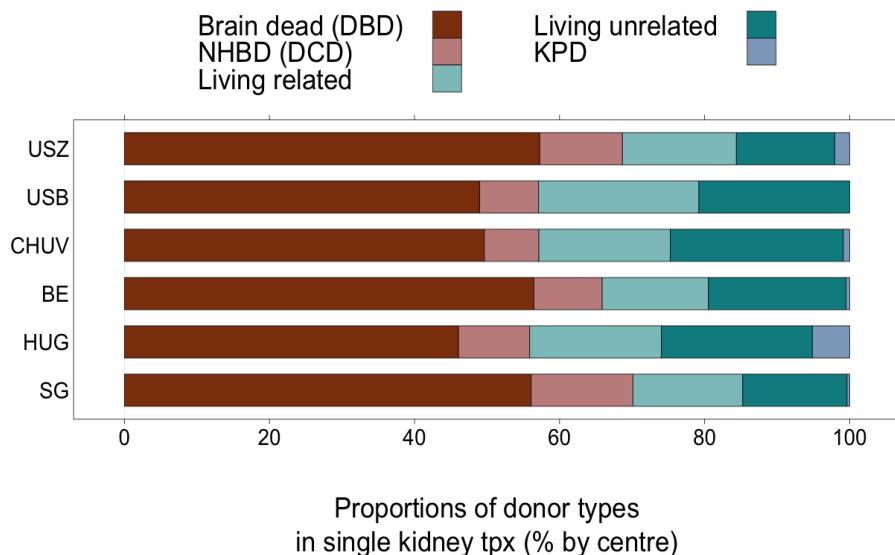


Figure 11: Cumulative KPD patient enrolment by centre

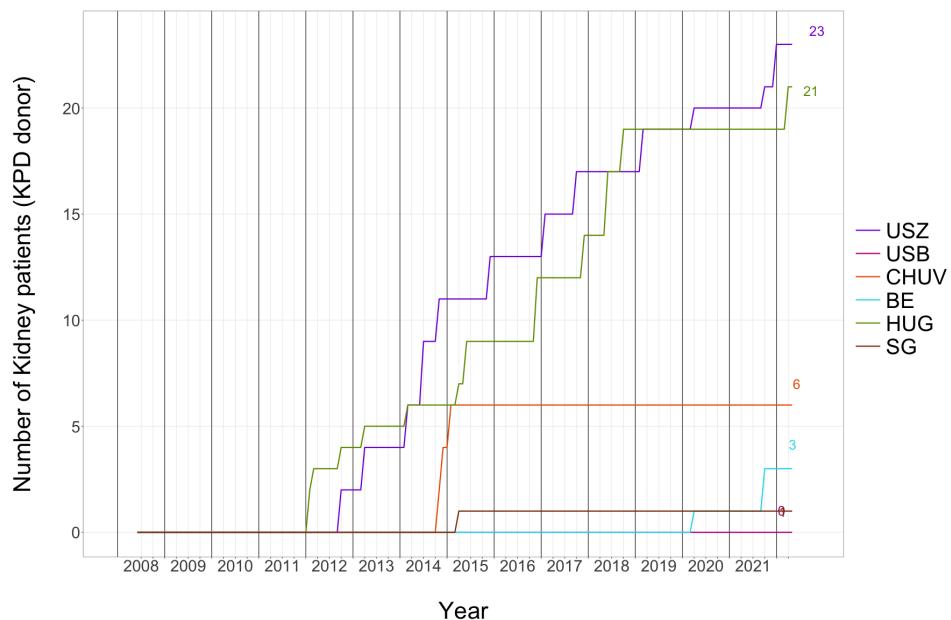
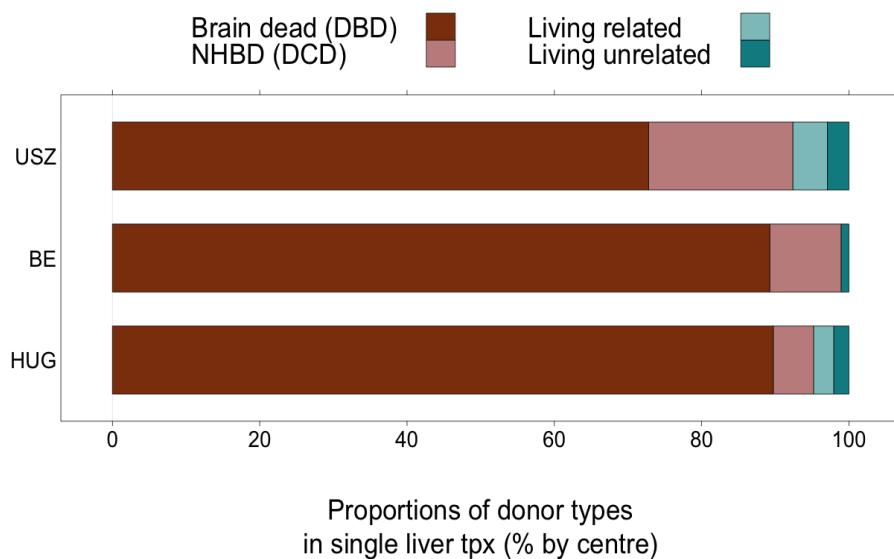


Figure 12: Distribution of donor types in all single Liver Tpx



## 4 Consent status

Figure 13 presents the latest known consent status - current consent status. In Figure 14, current consent status is given proportionally within each centre. Table 10 shows patients' consent status change over time from enrolment to the current date.

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Figure 13: Patients current consent status

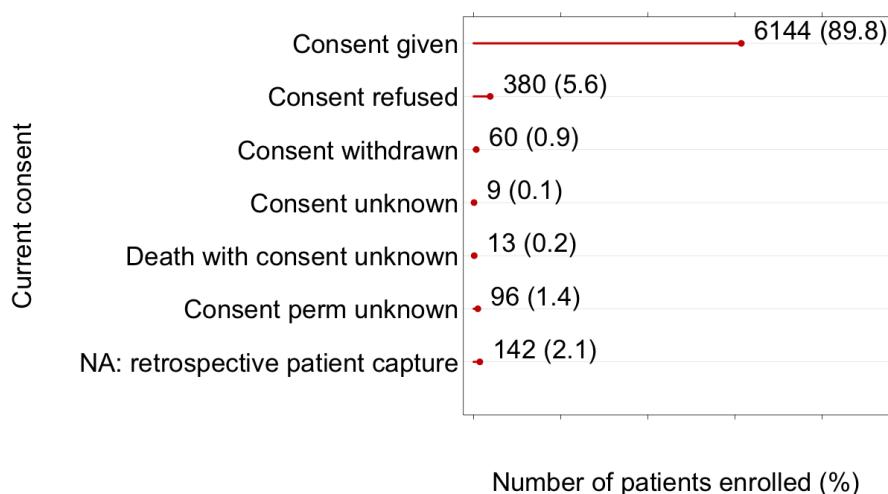


Figure 14: Current patients' consent status by centre

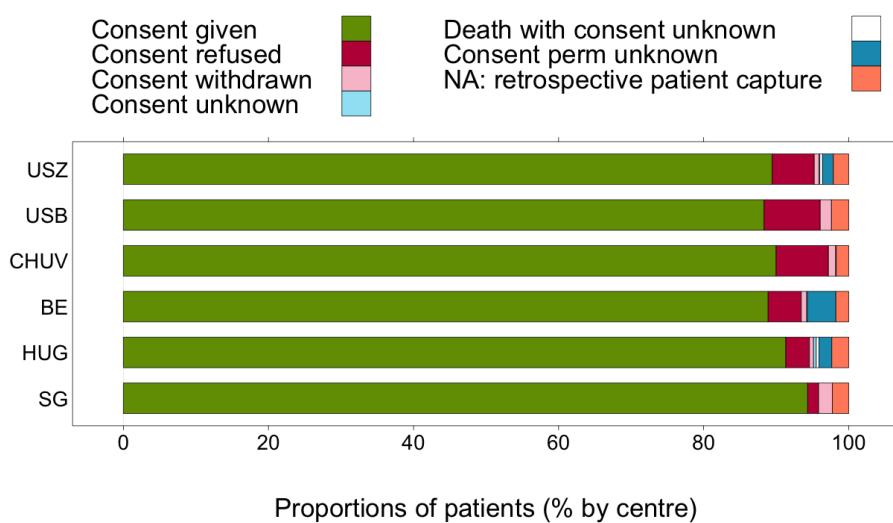


Table 10: Patients' current consent against consent status at enrolment

	Total	C-Given	C-Refused	C-Withdrawn	C-Unknown	C-Death with consent unknown	C-Perm unknown	C-NA: RCP
Total	6844	6144	380	60	9		13	96
E-Given	5682	5622	-	55	1	-	-	4
E-Refused	339	22	316	1	-	-	-	-
E-Unknown	659	493	64	4	7	12	79	-
E-Perm unknown	14	1	-	-	-	-	13	-
E-NA: RCP	150	6	-	-	1	1	-	142

Remarks: 'C' stands for 'current consent status' and 'E' denotes the consent status at enrolment.  
 'Perm unknown' - 'Permanently unknown'.  
 'NA: RCP' - 'NA consent - retrospectively captured patients'.

Patients changing consent status between 'E-Consent given' and 'C-Consent unknown' or 'C-Consent permanently unknown' were initially paediatric patients reconsented at age of majority.

All patients changing consent status between 'E-Consent refused' or 'E-Consent unknown' and 'C-Consent withdrawn' had also a 'Consent given' between enrolment and current date.

## 5 Bio-samples

Table 11 presents the number of patients with and without bio-samples.

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Table 11: Number of patients with bio-samples

Total	Sample (%)	No sample (%)
6844	6166 90.1	678 9.9

Figure 15: Number of bio-samples in STCS

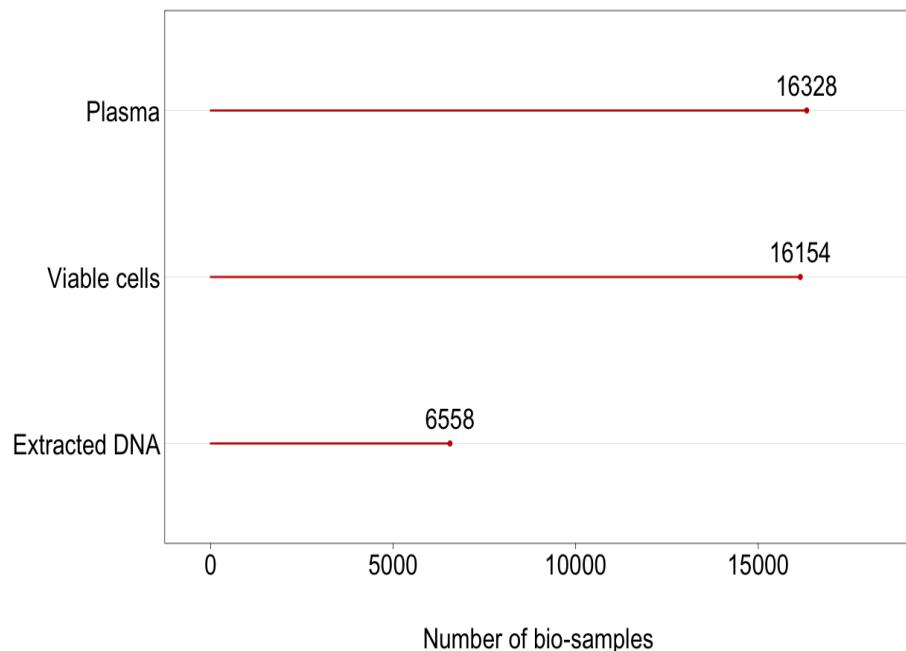


Figure 16: Distribution of number of aliquots by sample type

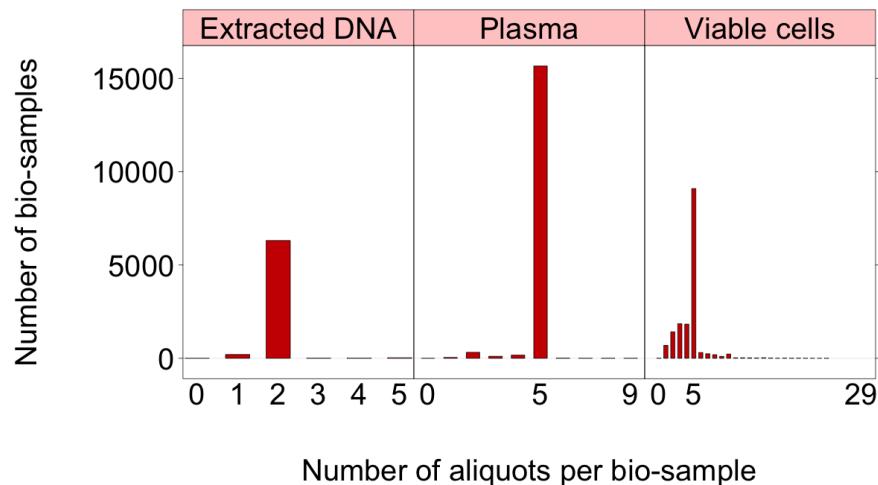
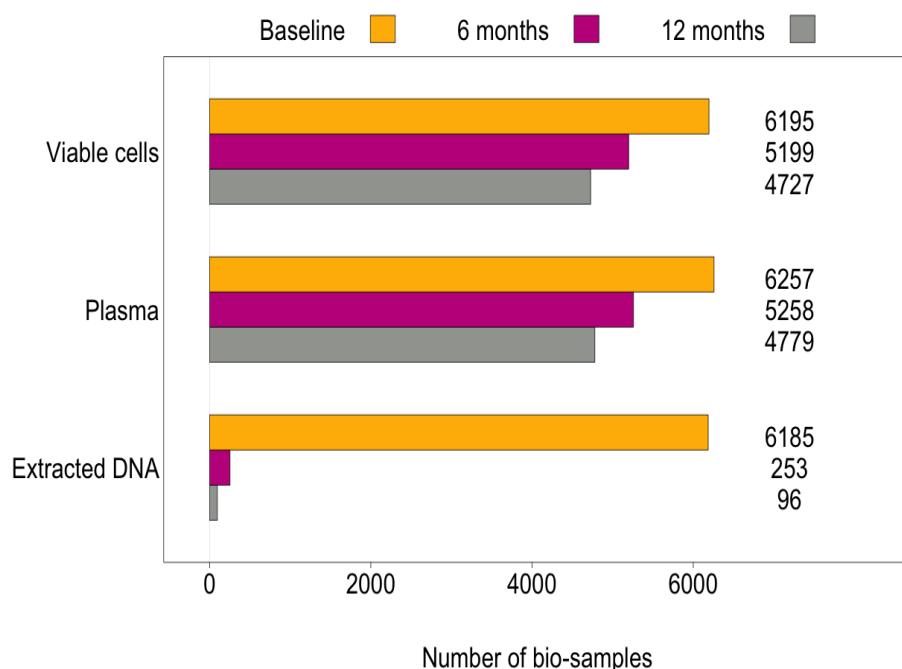


Figure 17: Number of samples by follow-up period



## 6 Infectious disease events

In Tables 12 and 13, descriptive information about patients with infectious disease (ID) events and types of ID events are given. Figure 18 gives ID event rates by transplantation and pathogen type.

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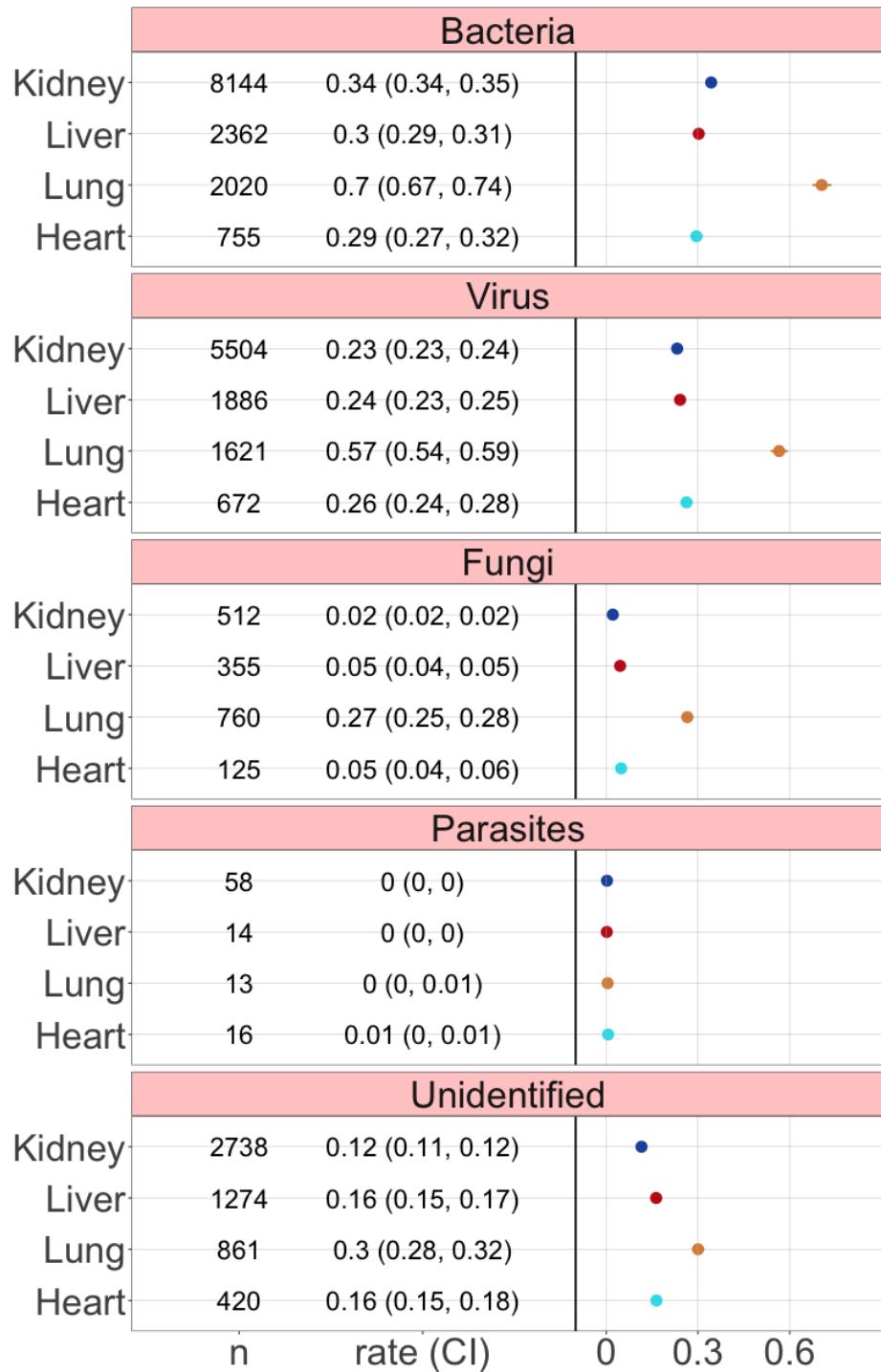
Table 12: Patients with infectious disease events

	N	% (sd)
Total number of patients	6844	
Patients with at least one ID event	4771	69.7%
- Number of ID events, mean (sd)	6.7	(7)
Patients with at least one proven/viral ID event	3678	53.7%
- Number of proven/viral ID events, mean (sd)	3.4	(3.5)

Table 13: Summary of infectious disease events

	N	(%)
Total number of ID events	32129	100.0
Proven disease	12318	38.3
Viral syndrome	192	0.6
Primary infection	44	0.1
Probable disease	7356	22.9
Asymptomatic	5073	15.8
Colonization	6154	19.2
Possible disease	84	0.3
Fever neutropenia	44	0.1
Information missing	864	2.7

Figure 18: Rate of infectious disease events by pathogen and Tpx type



### Rate of infectious disease events

Remark: The rate of ID events is defined as the number of ID events per year of observation time. It is calculated as the number of ID events divided by the total person-years of follow up according to transplantation program. Some backlog in the reporting of ID events cannot be excluded.

## 7 Follow-up

Percentages in Figures 19 and 20 have to be read as proportions of transplantation for which at least the 6 month or the 12 month FUP visit was performed.

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Figure 19: Number of Tpx with 6 month FUP

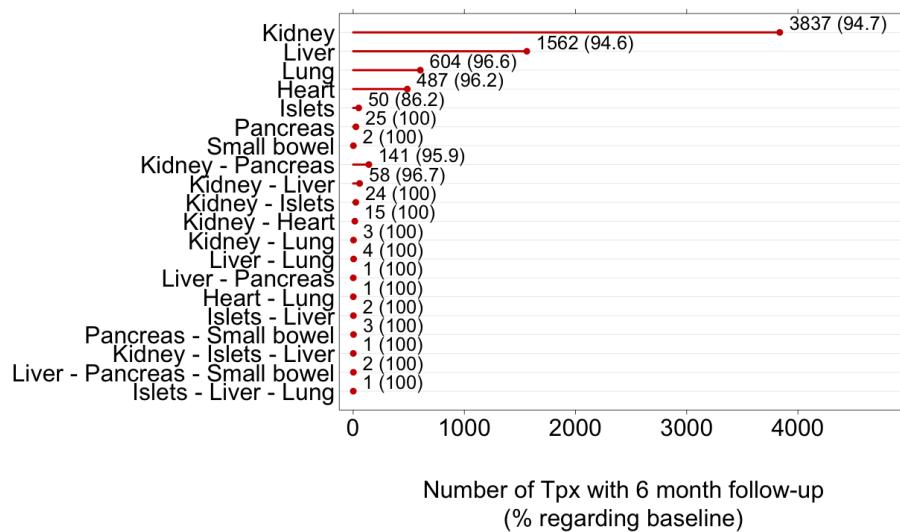
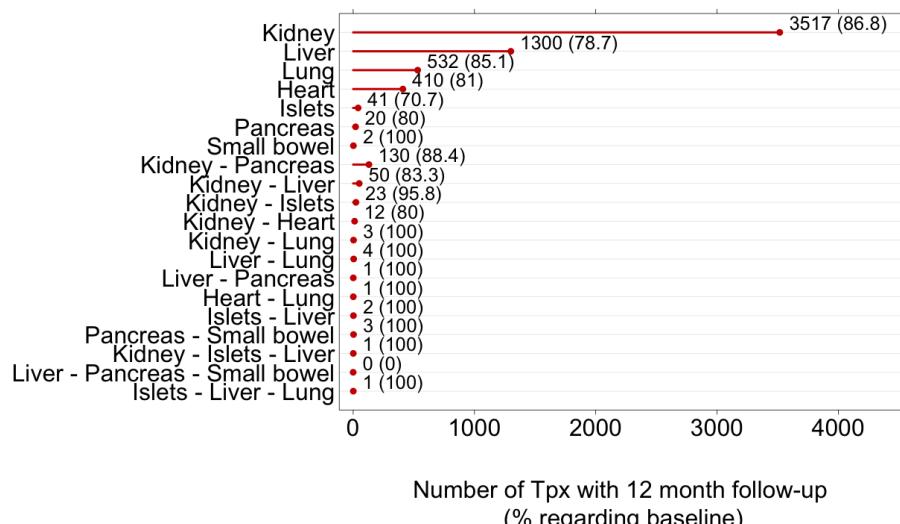


Figure 20: Number of Tpx with 12 month FUP



## 8 Mortality

In the following, survival probability estimates can only be descriptively interpreted since the precision is low due to the small number of patients at risk at the end of FUP. In Figure 21, the 95%-confidence interval (CI) is given. Furthermore, survival probability estimates are not adjusted for potential risk factors (in Figures and Tables).

### 8.1 Overall

Table 14: Follow-up information of patients

	Follow-up
Median follow-up duration (years)	5.1
IQR (years)	2.35 - 8.84
Maximum follow-up (years)*	13.99
Number of deaths	1291
Patients with (at least one) graft failure	786
Patients lost to follow-up**	112

\* Time period from 1 May 2008 to 31 December 2021

\*\* More details in Table 15.

Table 15: Number of patients who dropped out by Tpx type

	USZ	USB	CHUV	BE	HUG	SG	Sum
Enrolled, N	2359	968	1109	1071	1072	265	6844
Dropped out, N (%)	42 (15.8%)	9 (0.8%)	25 (2.3%)	14 (1.3%)	22 (2.3%)	0 (0%)	112 (1.6%)
- Kidney	19	9	18	10	9	-	65
- Liver	14	-	-	2	12	-	28
- Lung	-	-	5	-	-	-	5
- Heart	4	-	2	2	-	-	8
- Islets	2	-	-	-	-	-	2
- Kidney - Pancreas	3	-	-	-	1	-	4

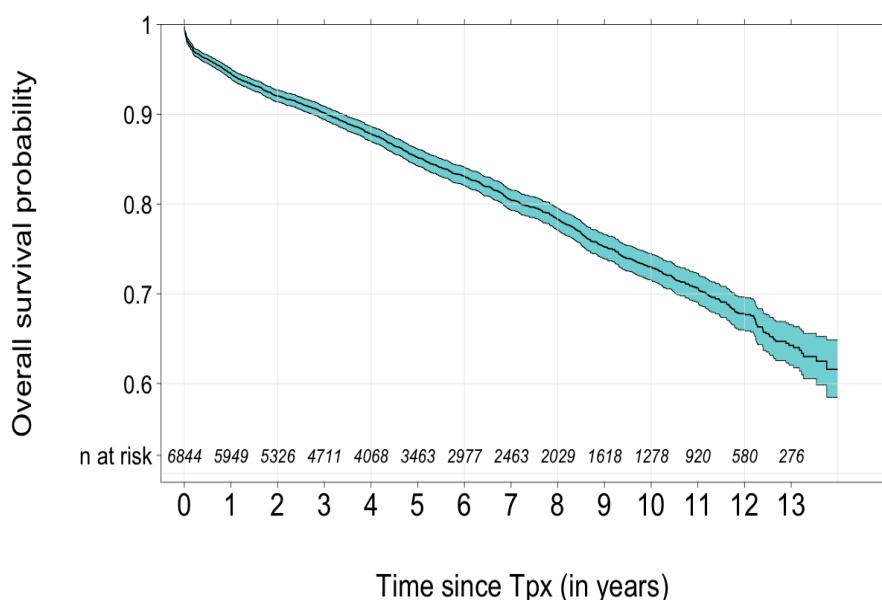
Table 16: Overall mortality

Time	Mortality (%)	95% CI	No at risk	Cum. deaths
Baseline	0.0	-	6844	0
1 month	1.9	(1.6, 2.3)	6667	133
6 months	3.9	(3.4, 4.3)	6316	262
1 year	5.5	(4.9, 6)	5949	366
2 year(s)	8.0	(7.3, 8.6)	5326	515
4 year(s)	12.2	(11.4, 13.1)	4068	737
6 year(s)	16.9	(15.9, 17.9)	2977	929
8 year(s)	21.7	(20.5, 22.9)	2029	1077
10 year(s)	27.0	(25.5, 28.4)	1278	1194
12 year(s)	32.2	(30.4, 34)	580	1262
14 year(s)	38.4	(35.1, 41.5)	-	1291
Overall	38.4	(35.1, 41.5)	-	1291

Remarks: 'Cum.' stands for 'Cumulative'. The 95%-CI is given for 'Mortality'. The time point 'Overall' refers to the maximal follow-up time in the STCS (from January 2008 to 31 December 2021).

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Figure 21: Overall survival



Time since Tpx (in years)

## 8.2 Mortality by transplantation

In the following section only frequent transplantation types are presented. In Appendix A a short summary of rare transplantation types are presented in two tables.

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Figure 22: Overall survival for frequent Tpx types

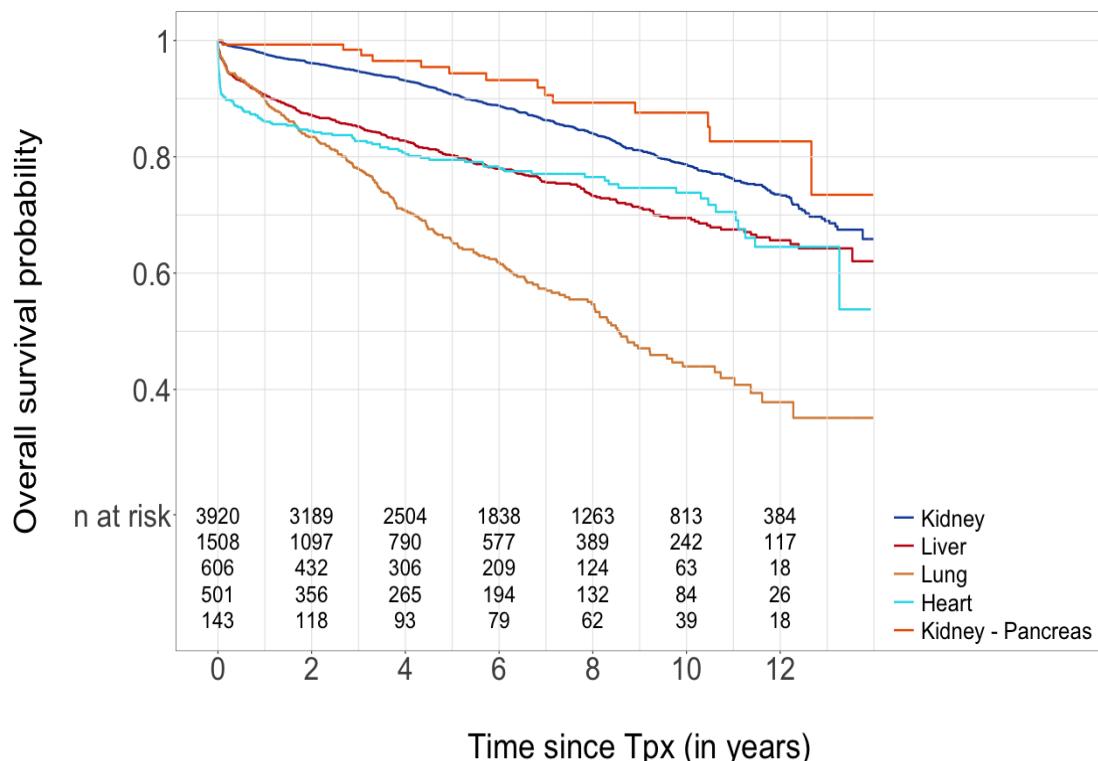


Table 17: Overall mortality by Tpx type

Tpx	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
Kidney	Baseline	0.0	-	3920	0
	1 month	0.3	(0.2, 0.5)	3881	13
	6 months	1.2	(0.9, 1.6)	3698	48
	1 year	2.3	(1.8, 2.8)	3507	86
	2 year(s)	3.9	(3.3, 4.5)	3189	142
	4 year(s)	6.9	(6, 7.8)	2504	232
	6 year(s)	11.2	(10, 12.3)	1838	333
	8 year(s)	16.0	(14.5, 17.4)	1263	419
	10 year(s)	21.2	(19.4, 23.1)	813	487
	12 year(s)	26.5	(24.1, 28.8)	384	528
	14 year(s)	34.1	(29.4, 38.5)	-	550
	Overall	34.1	(29.4, 38.5)	-	550
Liver	Baseline	0.0	-	1508	0
	1 month	3.3	(2.4, 4.1)	1448	49
	6 months	7.0	(5.7, 8.3)	1350	104
	1 year	9.2	(7.7, 10.7)	1255	136
	2 year(s)	12.8	(11, 14.5)	1097	183
	4 year(s)	17.3	(15.2, 19.3)	790	233
	6 year(s)	22.1	(19.6, 24.4)	577	273
	8 year(s)	26.7	(23.9, 29.5)	389	302
	10 year(s)	30.5	(27.3, 33.6)	242	319
	12 year(s)	34.4	(30.4, 38.1)	117	329
	14 year(s)	38.0	(31.8, 43.6)	-	332
	Overall	38.0	(31.8, 43.6)	-	332
Lung	Baseline	0.0	-	606	0
	1 month	3.0	(1.6, 4.3)	584	18
	6 months	6.7	(4.6, 8.6)	548	40
	1 year	10.1	(7.7, 12.5)	506	60
	2 year(s)	16.6	(13.5, 19.6)	432	95
	4 year(s)	29.3	(25.3, 33.2)	306	155
	6 year(s)	38.2	(33.6, 42.4)	209	190
	8 year(s)	45.4	(40.3, 50)	124	211
	10 year(s)	56.0	(49.9, 61.4)	63	232
	12 year(s)	62.2	(54.4, 68.7)	18	237
	14 year(s)	64.9	(55.5, 72.3)	-	238
	Overall	64.9	(55.5, 72.3)	-	238
Heart	Baseline	0.0	-	501	0
	1 month	9.2	(6.6, 11.7)	452	46
	6 months	11.6	(8.8, 14.4)	428	58
	1 year	14.0	(10.8, 17)	401	69
	2 year(s)	15.6	(12.3, 18.7)	356	76
	4 year(s)	19.6	(15.8, 23.1)	265	91
	6 year(s)	22.1	(18, 26)	194	98
	8 year(s)	23.5	(19.1, 27.6)	132	101
	10 year(s)	26.2	(21.2, 30.9)	84	105
	12 year(s)	35.5	(27.2, 42.8)	26	112
	14 year(s)	46.2	(21.6, 63.1)	-	113
	Overall	46.2	(21.6, 63.1)	-	113
Kidney - Pancreas	Baseline	0.0	-	143	0
	1 month	0.0	-	143	0
	6 months	0.7	(0, 2.1)	138	1
	1 year	0.7	(0, 2.1)	132	1
	2 year(s)	0.7	(0, 2.1)	118	1

Tpx	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
-	4 year(s)	3.5	(0, 6.9)	93	4
-	6 year(s)	6.8	(1.7, 11.6)	79	7
-	8 year(s)	10.7	(4.1, 16.9)	62	10
-	10 year(s)	12.4	(5, 19.2)	39	11
-	12 year(s)	17.3	(7.3, 26.3)	18	13
-	14 year(s)	26.5	(4.9, 43.2)	-	14
-	Overall	26.5	(4.9, 43.2)	-	14

### 8.3 Mortality by Tpx and centre

Figure 23: Overall survival for frequent Tpx

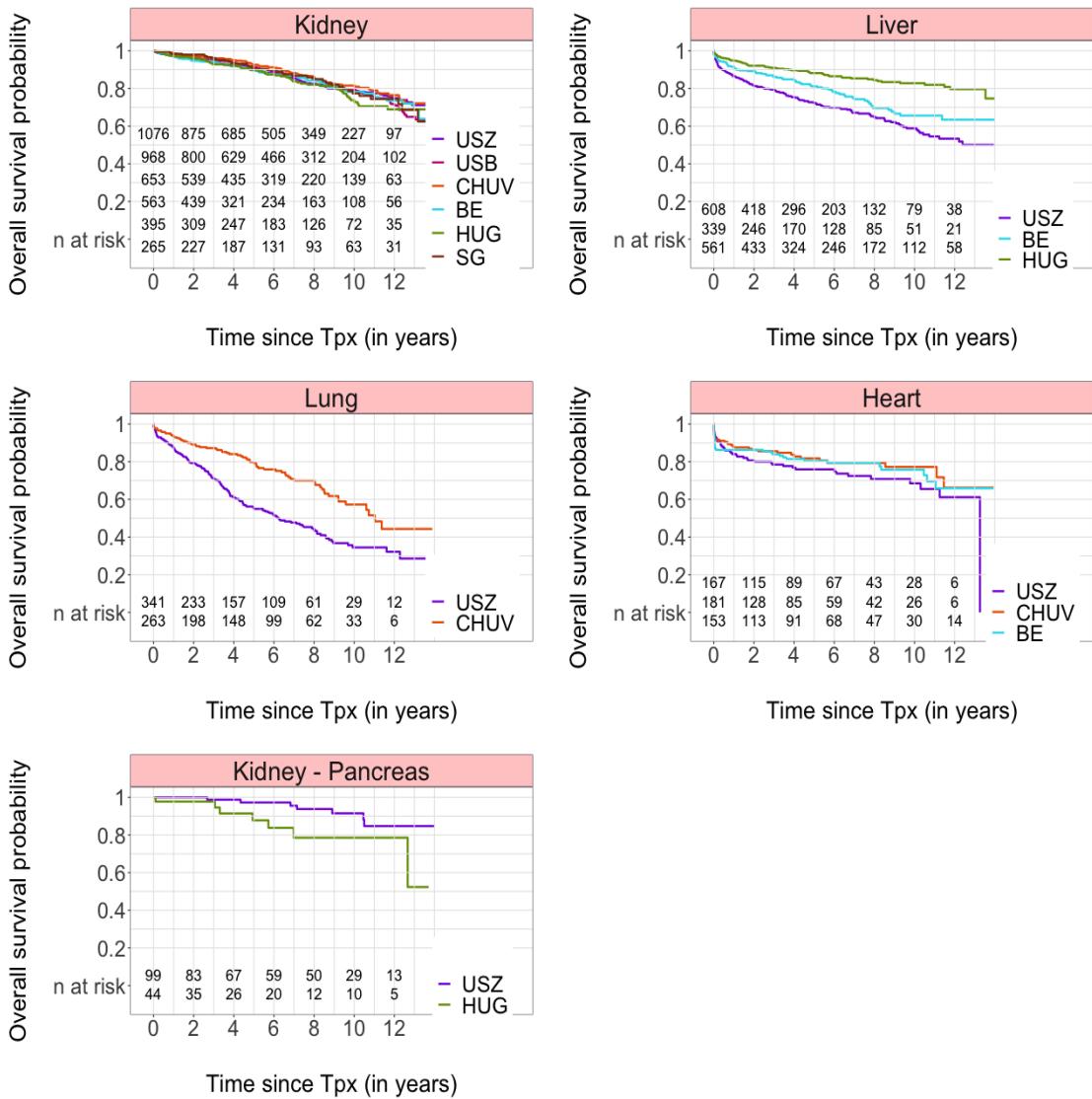


Table 18: Overall mortality by frequent Tpx type and centre

Tpx - centre	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
Kidney - USZ	Baseline	0.0	-	1076	0
	1 month	0.3	(0, 0.6)	1063	3
	6 months	1.7	(0.9, 2.5)	1016	18
	1 year	2.8	(1.8, 3.8)	973	29
	2 year(s)	4.6	(3.3, 5.8)	875	46
	4 year(s)	7.7	(5.9, 9.4)	685	72
	6 year(s)	12.1	(9.8, 14.3)	505	101
	8 year(s)	17.5	(14.5, 20.4)	349	128
	10 year(s)	21.3	(17.8, 24.6)	227	142
	12 year(s)	25.1	(20.7, 29.2)	97	149
	14 year(s)	28.8	(22.7, 34.4)	-	152
	Overall	28.8	(22.7, 34.4)	-	152
Kidney - USB	Baseline	0.0	-	968	0
	1 month	0.4	(0, 0.8)	958	4
	6 months	1.4	(0.6, 2.1)	918	13
	1 year	2.0	(1.1, 2.9)	875	19
	2 year(s)	3.5	(2.3, 4.7)	800	32
	4 year(s)	6.3	(4.7, 8)	629	53
	6 year(s)	10.9	(8.5, 13.2)	466	80
	8 year(s)	15.2	(12.2, 18.1)	312	99
	10 year(s)	20.3	(16.5, 23.9)	204	115
	12 year(s)	28.3	(23, 33.1)	102	131
	14 year(s)	36.5	(29.3, 43)	-	140
	Overall	36.5	(29.3, 43)	-	140
Kidney - CHUV	Baseline	0.0	-	653	0
	1 month	0.3	(0, 0.7)	650	2
	6 months	0.6	(0, 1.2)	619	4
	1 year	1.3	(0.4, 2.2)	588	8
	2 year(s)	2.8	(1.5, 4.2)	539	17
	4 year(s)	5.0	(3.2, 6.8)	435	28
	6 year(s)	8.8	(6.2, 11.3)	319	43
	8 year(s)	14.2	(10.7, 17.7)	220	60
	10 year(s)	18.5	(14.2, 22.5)	139	70
	12 year(s)	23.5	(17.9, 28.8)	63	77
	14 year(s)	27.9	(20.5, 34.6)	-	80
	Overall	27.9	(20.5, 34.6)	-	80
Kidney - BE	Baseline	0.0	-	563	0
	1 month	0.4	(0, 0.8)	557	2
	6 months	1.4	(0.4, 2.4)	528	8
	1 year	3.0	(1.5, 4.4)	506	16
	2 year(s)	5.4	(3.4, 7.3)	439	28
	4 year(s)	8.2	(5.7, 10.7)	321	39
	6 year(s)	12.2	(8.9, 15.5)	234	51
	8 year(s)	15.8	(11.7, 19.6)	163	59
	10 year(s)	21.8	(16.5, 26.8)	108	69
	12 year(s)	26.4	(19.9, 32.5)	56	74
	14 year(s)	36.1	(22.4, 47.4)	-	77
	Overall	36.1	(22.4, 47.4)	-	77
Kidney - HUG	Baseline	0.0	-	395	0
	1 month	0.2	(0, 0.7)	393	1
	6 months	1.0	(0, 2)	366	4
	1 year	2.7	(1, 4.3)	327	10
	2 year(s)	3.9	(1.9, 5.9)	309	14

Tpx - centre	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
-	4 year(s)	7.9	(4.9, 10.8)	247	26
	6 year(s)	12.6	(8.6, 16.4)	183	37
	8 year(s)	18.0	(13, 22.7)	126	47
	10 year(s)	26.2	(19.4, 32.5)	72	57
	12 year(s)	31.1	(22.9, 38.4)	35	61
	14 year(s)	31.1	(22.9, 38.4)	-	61
	Overall	31.1	(22.9, 38.4)	-	61
Kidney - SG	Baseline	0.0	-	265	0
	1 month	0.4	(0, 1.1)	260	1
	6 months	0.4	(0, 1.1)	251	1
	1 year	1.6	(0, 3.2)	238	4
	2 year(s)	2.0	(0.3, 3.8)	227	5
	4 year(s)	6.3	(3, 9.5)	187	14
	6 year(s)	10.3	(6, 14.5)	131	21
	8 year(s)	14.1	(8.7, 19.1)	93	26
	10 year(s)	22.6	(14.9, 29.6)	63	34
	12 year(s)	25.6	(17, 33.3)	31	36
	14 year(s)	50.1	(17.5, 69.8)	-	40
	Overall	50.1	(17.5, 69.8)	-	40
Liver - USZ	Baseline	0.0	-	608	0
	1 month	4.6	(2.9, 6.3)	577	28
	6 months	10.3	(7.9, 12.7)	525	62
	1 year	13.5	(10.7, 16.2)	482	80
	2 year(s)	18.3	(15.1, 21.5)	418	106
	4 year(s)	24.6	(20.8, 28.2)	296	134
	6 year(s)	30.1	(25.8, 34.2)	203	153
	8 year(s)	35.2	(30.3, 39.9)	132	165
	10 year(s)	41.2	(35.3, 46.5)	79	175
	12 year(s)	46.7	(39.6, 52.9)	38	181
	14 year(s)	49.9	(41.7, 56.9)	-	183
	Overall	49.9	(41.7, 56.9)	-	183
Liver - BE	Baseline	0.0	-	339	0
	1 month	3.2	(1.3, 5.1)	325	11
	6 months	6.0	(3.4, 8.5)	306	20
	1 year	8.5	(5.4, 11.4)	284	28
	2 year(s)	10.8	(7.3, 14.1)	246	35
	4 year(s)	15.7	(11.4, 19.7)	170	47
	6 year(s)	21.8	(16.4, 26.8)	128	58
	8 year(s)	30.4	(23.5, 36.6)	85	70
	10 year(s)	34.4	(26.7, 41.3)	51	74
	12 year(s)	36.6	(27.8, 44.3)	21	75
	14 year(s)	36.6	(27.8, 44.3)	-	75
	Overall	36.6	(27.8, 44.3)	-	75
Liver - HUG	Baseline	0.0	-	561	0
	1 month	1.8	(0.7, 2.9)	546	10
	6 months	4.0	(2.3, 5.6)	519	22
	1 year	5.1	(3.2, 6.9)	489	28
	2 year(s)	7.9	(5.6, 10.2)	433	42
	4 year(s)	10.3	(7.6, 13)	324	52
	6 year(s)	13.5	(10.2, 16.7)	246	62
	8 year(s)	15.6	(11.9, 19.1)	172	67
	10 year(s)	17.2	(13.1, 21.1)	112	70
	12 year(s)	20.3	(15, 25.4)	58	73
	14 year(s)	25.3	(13.9, 35.2)	-	74

Tpx - centre		Time	Mortality (%)	95% CI	No at risk	Cum. deaths
-	Overall		25.3	(13.9, 35.2)	-	74
Lung - USZ	Baseline		0.0	-	341	0
	1 month		3.2	(1.3, 5.1)	327	11
	6 months		8.3	(5.3, 11.2)	302	28
	1 year		12.7	(9, 16.2)	278	42
	2 year(s)		20.7	(16.2, 25)	233	67
	4 year(s)		39.0	(33.1, 44.4)	157	117
	6 year(s)		48.2	(41.9, 53.9)	109	139
	8 year(s)		56.1	(49.2, 62)	61	153
	10 year(s)		65.5	(57.6, 72)	29	164
	12 year(s)		67.8	(58.8, 74.9)	12	165
	14 year(s)		71.4	(59.9, 79.6)	-	166
-	Overall		71.4	(59.9, 79.6)	-	166
Lung - CHUV	Baseline		0.0	-	263	0
	1 month		2.3	(0.5, 4.1)	256	6
	6 months		4.2	(1.7, 6.6)	245	11
	1 year		6.6	(3.5, 9.6)	227	17
	2 year(s)		10.9	(6.9, 14.7)	198	27
	4 year(s)		15.9	(11, 20.6)	148	37
	6 year(s)		24.1	(17.8, 29.9)	99	50
	8 year(s)		30.1	(22.7, 36.7)	62	57
	10 year(s)		42.7	(32.7, 51.2)	33	67
	12 year(s)		55.7	(40, 67.3)	6	71
	14 year(s)		55.7	(40, 67.3)	-	71
-	Overall		55.7	(40, 67.3)	-	71
Lung - HUG	Baseline		0.0	-	2	0
	1 month		50.0	(0, 87.5)	1	1
	6 months		50.0	(0, 87.5)	1	1
	1 year		50.0	(0, 87.5)	1	1
	2 year(s)		50.0	(0, 87.5)	1	1
	4 year(s)		50.0	(0, 87.5)	1	1
	6 year(s)		50.0	(0, 87.5)	1	1
	8 year(s)		50.0	(0, 87.5)	1	1
	10 year(s)		50.0	(0, 87.5)	1	1
	12 year(s)		50.0	(0, 87.5)	-	1
	14 year(s)		50.0	(0, 87.5)	-	1
-	Overall		50.0	(0, 87.5)	-	1
Heart - USZ	Baseline		0.0	-	167	0
	1 month		6.6	(2.8, 10.3)	154	11
	6 months		12.8	(7.5, 17.7)	140	21
	1 year		15.9	(10.1, 21.4)	129	26
	2 year(s)		19.3	(13, 25.2)	115	31
	4 year(s)		23.2	(16.2, 29.6)	89	36
	6 year(s)		25.2	(17.7, 31.9)	67	38
	8 year(s)		29.2	(20.6, 36.9)	43	41
	10 year(s)		31.5	(21.9, 39.9)	28	42
	12 year(s)		38.8	(24.7, 50.3)	6	44
	14 year(s)		100.0	-	-	45
-	Overall		100.0	-	-	45
Heart - CHUV	Baseline		0.0	-	181	0
	1 month		8.3	(4.2, 12.3)	165	15
	6 months		8.9	(4.6, 12.9)	159	16
	1 year		12.4	(7.4, 17.1)	145	22
-	2 year(s)		13.7	(8.5, 18.7)	128	24

Tpx - centre	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
-	4 year(s)	17.2	(11, 22.9)	85	28
	6 year(s)	20.7	(13.5, 27.3)	59	31
	8 year(s)	20.7	(13.5, 27.3)	42	31
	10 year(s)	22.8	(14.5, 30.2)	26	32
	12 year(s)	33.8	(16.1, 47.8)	6	34
	14 year(s)	33.8	(16.1, 47.8)	-	34
	Overall	33.8	(16.1, 47.8)	-	34
Heart - BE	Baseline	0.0	-	153	0
	1 month	13.1	(7.6, 18.3)	133	20
	6 months	13.7	(8.1, 19)	129	21
	1 year	13.7	(8.1, 19)	127	21
	2 year(s)	13.7	(8.1, 19)	113	21
	4 year(s)	18.5	(11.9, 24.7)	91	27
	6 year(s)	20.6	(13.5, 27.2)	68	29
	8 year(s)	20.6	(13.5, 27.2)	47	29
	10 year(s)	24.3	(15.6, 32)	30	31
	12 year(s)	34.1	(20.2, 45.7)	14	34
	14 year(s)	34.1	(20.2, 45.7)	-	34
	Overall	34.1	(20.2, 45.7)	-	34
Kidney - Pancreas - USZ	Baseline	0.0	-	99	0
	1 month	0.0	-	99	0
	6 months	0.0	-	97	0
	1 year	0.0	-	92	0
	2 year(s)	0.0	-	83	0
	4 year(s)	1.3	(0, 3.7)	67	1
	6 year(s)	2.8	(0, 6.5)	59	2
	8 year(s)	6.2	(0.1, 12)	50	4
	10 year(s)	8.5	(0.9, 15.5)	29	5
	12 year(s)	15.3	(3.2, 25.9)	13	7
	14 year(s)	15.3	(3.2, 25.9)	-	7
	Overall	15.3	(3.2, 25.9)	-	7
Kidney - Pancreas - HUG	Baseline	0.0	-	44	0
	1 month	0.0	-	44	0
	6 months	2.3	(0, 6.6)	41	1
	1 year	2.3	(0, 6.6)	40	1
	2 year(s)	2.3	(0, 6.6)	35	1
	4 year(s)	8.6	(0, 17.5)	26	3
	6 year(s)	16.2	(1.8, 28.5)	20	5
	8 year(s)	21.5	(3.8, 35.9)	12	6
	10 year(s)	21.5	(3.8, 35.9)	10	6
	12 year(s)	21.5	(3.8, 35.9)	5	6
	14 year(s)	47.6	(0, 77.1)	-	7
	Overall	47.6	(0, 77.1)	-	7

## 8.4 Mortality in first single Kidney transplantation

Overall survival for patients with Kidney transplantation as first STCS transplantation is presented separated by the donor type. In Figure 25, category 'Living' is separated in 'Living, ABO c' and 'Living, not ABO c'. The letter 'c' stands for 'compatible'.

Figure 24: Overall survival for patients with first STCS Kidney Tpx by donor type

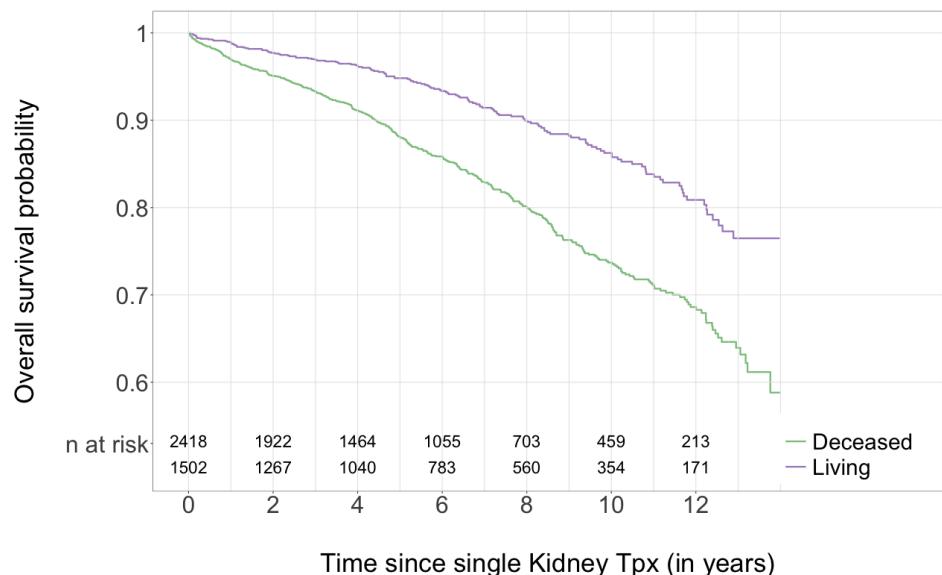


Figure 25: Overall survival for patients with first STCS Kidney Tpx by donor type stratified by ABO compatibility

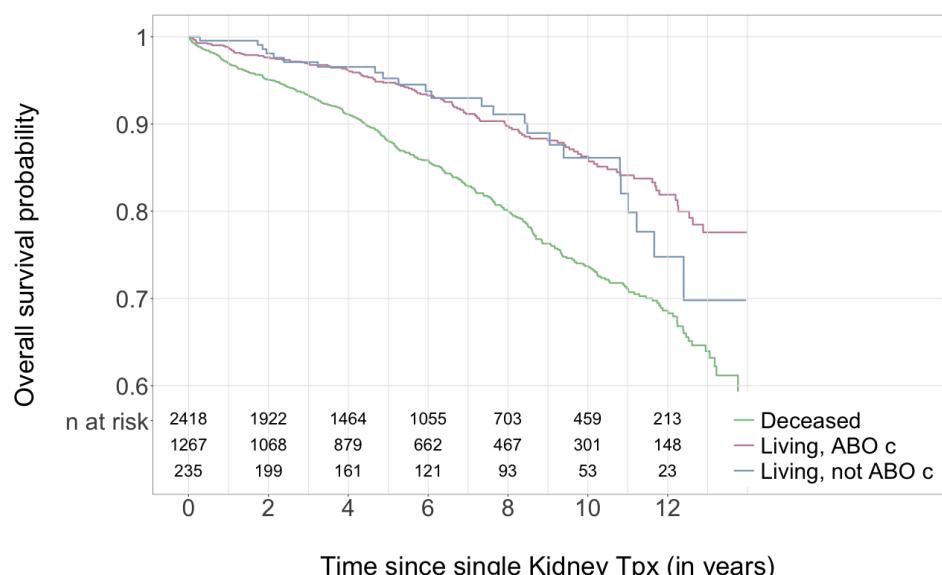


Table 19: Overall mortality in (single) kidney recipients by donor type

Donor type	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
Deceased	Baseline	0.0	-	2418	0
-	1 month	0.5	(0.2, 0.8)	2388	12
-	6 months	1.6	(1.1, 2.1)	2264	37
-	1 year	3.0	(2.3, 3.7)	2142	70
-	2 year(s)	4.9	(4, 5.8)	1922	110
-	4 year(s)	8.9	(7.6, 10.1)	1464	182
-	6 year(s)	14.1	(12.5, 15.8)	1055	256
-	8 year(s)	19.9	(17.8, 22)	703	317
-	10 year(s)	26.3	(23.7, 28.8)	459	366
-	12 year(s)	31.4	(28.2, 34.4)	213	390
-	14 year(s)	41.2	(34.3, 47.4)	-	405
-	Overall	41.2	(34.3, 47.4)	-	405
Living	Baseline	0.0	-	1502	0
-	1 month	0.1	(0, 0.2)	1493	1
-	6 months	0.7	(0.3, 1.2)	1434	11
-	1 year	1.1	(0.6, 1.6)	1365	16
-	2 year(s)	2.3	(1.5, 3.1)	1267	32
-	4 year(s)	3.8	(2.8, 4.8)	1040	50
-	6 year(s)	6.7	(5.2, 8.1)	783	77
-	8 year(s)	10.0	(8.1, 11.9)	560	102
-	10 year(s)	13.7	(11.2, 16.2)	354	121
-	12 year(s)	19.1	(15.6, 22.5)	171	138
-	14 year(s)	23.5	(18.8, 27.9)	-	145
-	Overall	23.5	(18.8, 27.9)	-	145

## 9 Graft failure and primary non-function

Failure and primary non-function in an allograft are considered as one, no distinction is therefore made in this section.

### 9.1 Graft failure

Graft failures (incl. grafts with primary non-function) are counted on organ-level (Tables 21 and 22). Table 20 gives a summary of numbers of graft failures on patient- and organ-level. In addition to, numbers of organs with primary non-function are given separately in Table 23.

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Table 20: Summary for graft failures

	N	(%)
Graft failure - total	882	100.0
- in single Tpx	814	92.3
- in double Tpx	63	7.1
- in triple Tpx	5	0.6
Patients with at least one graft failure	796	
Patients with graft failure or death	1671	100.0
- graft failure and alive at end of follow-up	380	22.7
- graft failure followed by late death	222	13.3
- graft failure related death (at same day)	184	11
- death without any graft failure	885	53

Table 21: Graft failures in double Tpx

	Total	Kidney	Heart	Liver	Lung	Pancreas	Islets	Small bowel
Total	63	20	3	5	2	24	7	2
Heart - Lung	2	-	1	-	1	-	-	-
Kidney - Heart	3	1	2	-	-	-	-	-
Kidney - Islets	12	5	-	-	-	-	7	-
Kidney - Liver	9	4	-	5	-	-	-	-
Kidney - Lung	1	1	-	-	-	-	-	-
Kidney - Pancreas	31	9	-	-	-	22	-	-
Liver - Lung	1	-	-	-	1	-	-	-
Pancreas - Small bowel	4	-	-	-	-	2	-	2

Remark: Only double tpx with at least one graft failure are listed.

Table 22: Graft failure and related patients' death

	Total	All GF*	(%)	GF, late death	(%)	GF related death	(%)
Total	7515	882	11.7	258	29.3	209	23.7
Kidney	4304	409	9.5	116	28.4	10	2.4
Liver	1722	225	13.1	79	35.1	64	28.4
Lung	634	126	19.9	25	19.8	96	76.2
Heart	522	56	10.7	14	25	39	69.6
Pancreas	178	32	18	10	31.2	-	-
Islets	148	29	19.6	9	31	-	-
Small bowel	7	5	71.4	5	100	-	-

\* GF: graft failure (incl. primary non-function)

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Table 23: Number of organs with primary non-function

	Total	USZ	USB	CHUV	BE	HUG	SG
Total	107	44	7	8	27	20	1
Kidney	36	14	7	4	1	9	1
Liver	51	21	-	-	19	11	-
Lung	3	3	-	-	-	-	-
Heart	13	3	-	3	7	-	-
Pancreas	2	1	-	1	-	-	-
Islets	2	2	-	-	-	-	-
Small bowel	-	-	-	-	-	-	-

## 9.2 Graft failure free survival

In the following, estimates of graft failure free survival are not adjusted for potential risk factors. Only the first STCS transplantation of each patient is considered. Figure 28 shows graft failure free survival only for patients with first STCS Kidney transplantation.

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Figure 26: Graft failure free survival by major Tpx

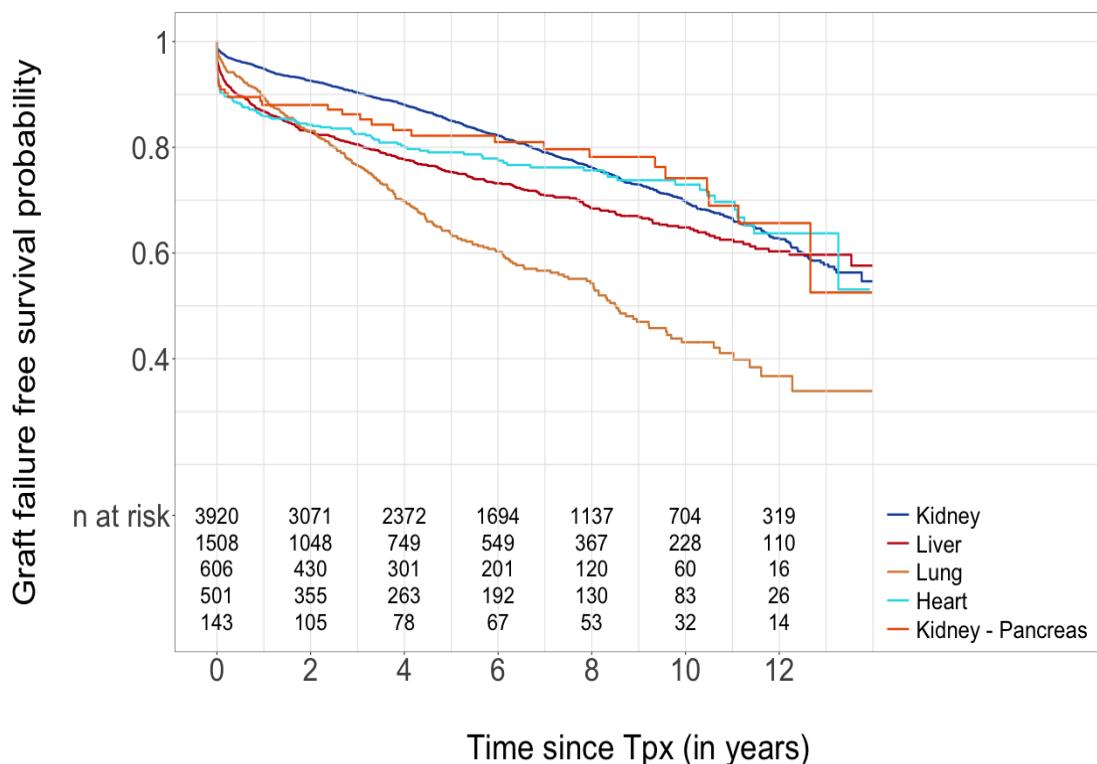


Figure 27: Graft failure free survival by major Tpx and centre

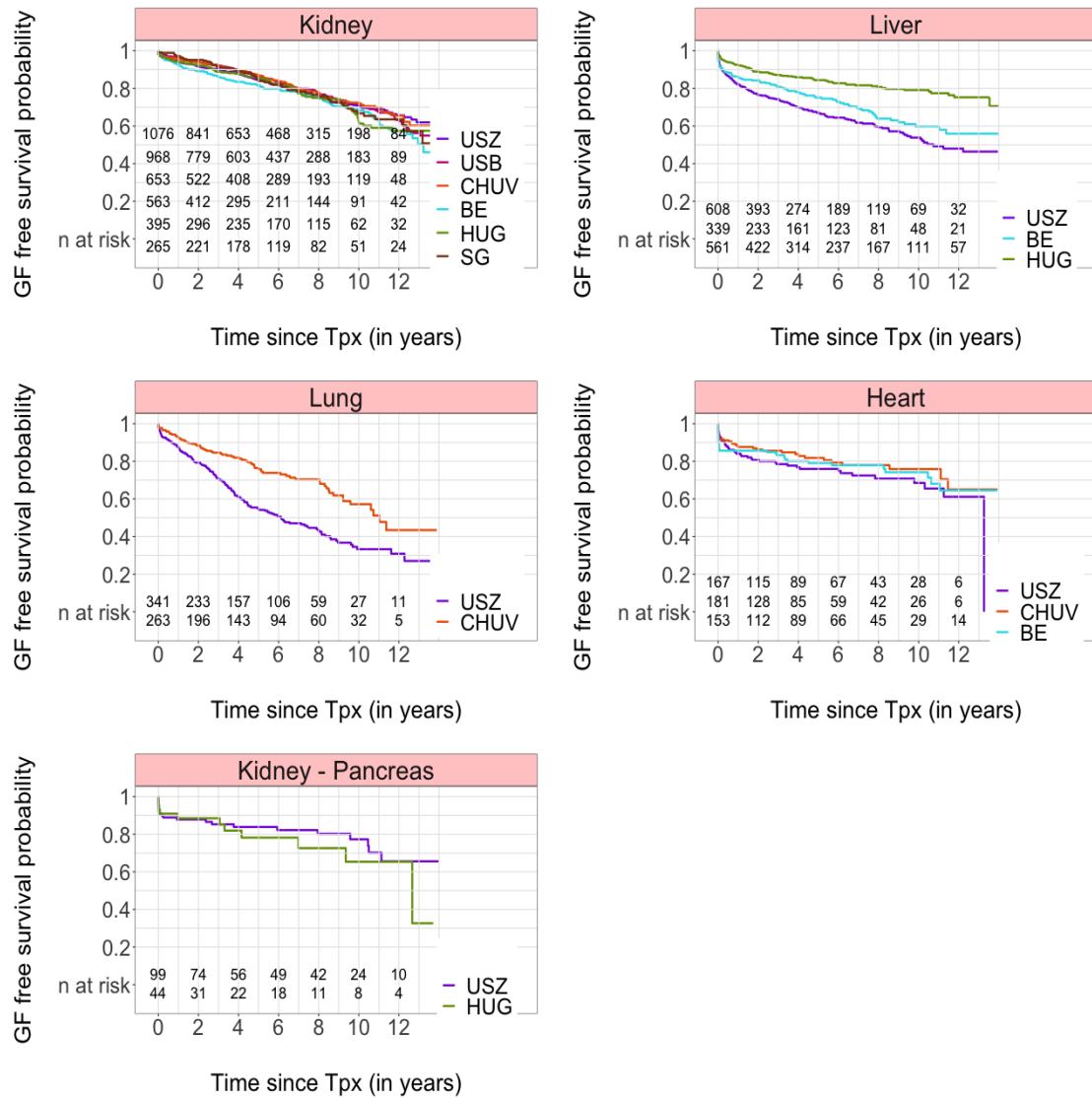
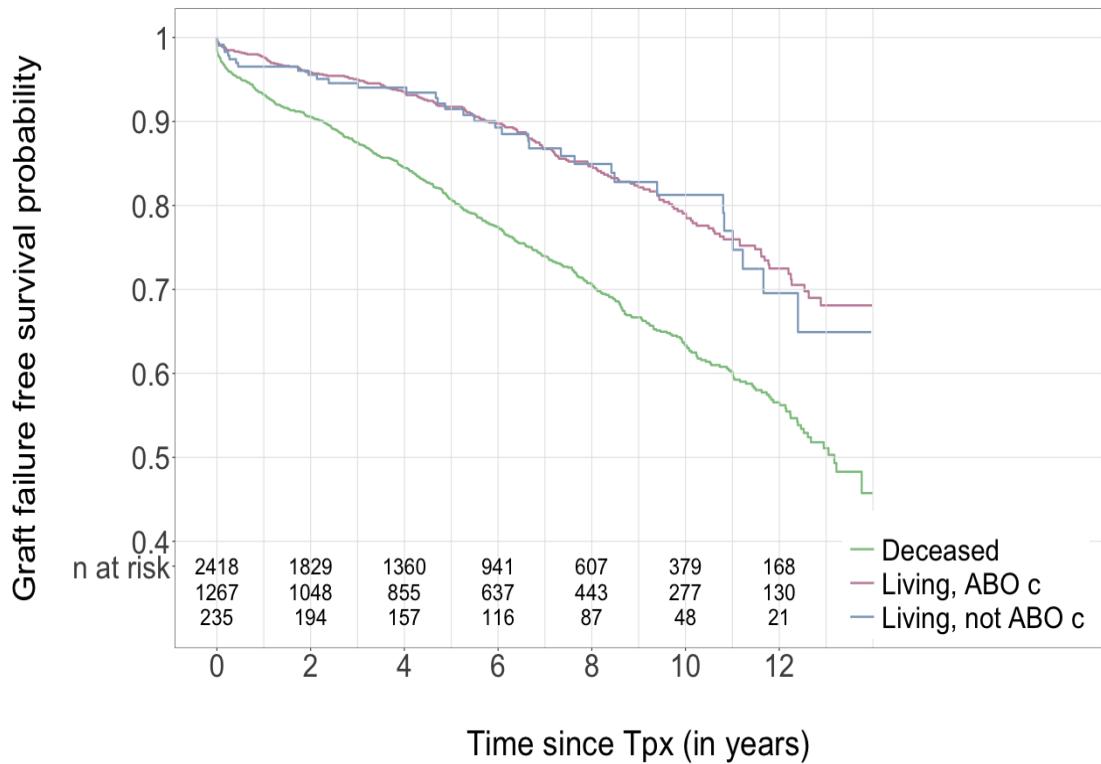


Figure 28: Graft failure free survival in patients with first STCS single Kidney Tpx by donor type (stratified by ABO compatibility)



### 9.3 Cumulative incidence of graft failure

The cumulative incidence (CumInc) of a graft failure is the probability for a graft failure within the reported time period. CumInc functions for graft failure are not adjusted for potential risk factors (illustrated in Figures and Tables). In Figure 29, Table 24 and Table 25 double kidneys are counted as one kidney.

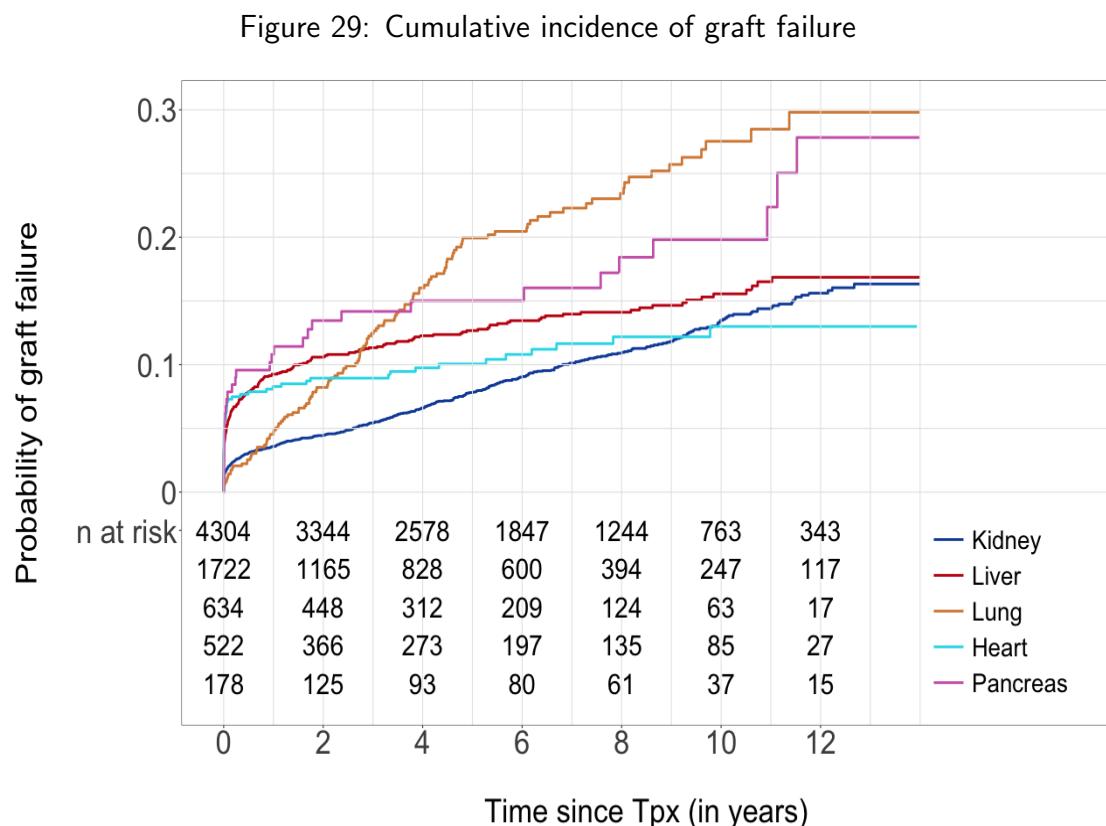


Figure 30: Cumulative incidence of graft failure for single Kidney Tpx by donor type

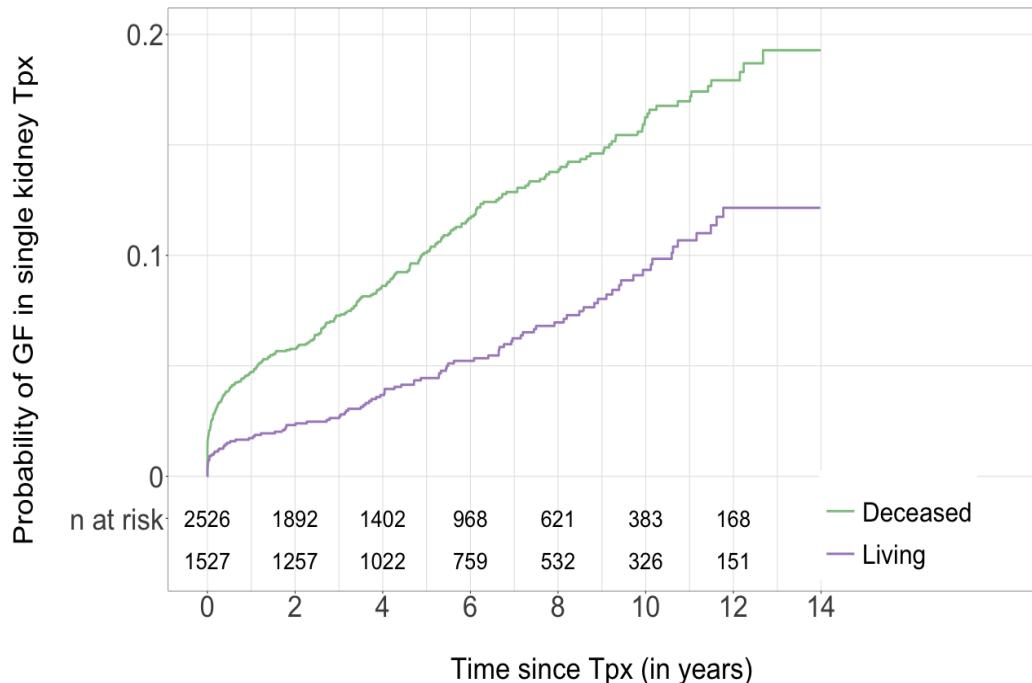


Figure 31: Cumulative incidence of graft failure for kidneys in single Tpx stratified by ABO compatibility

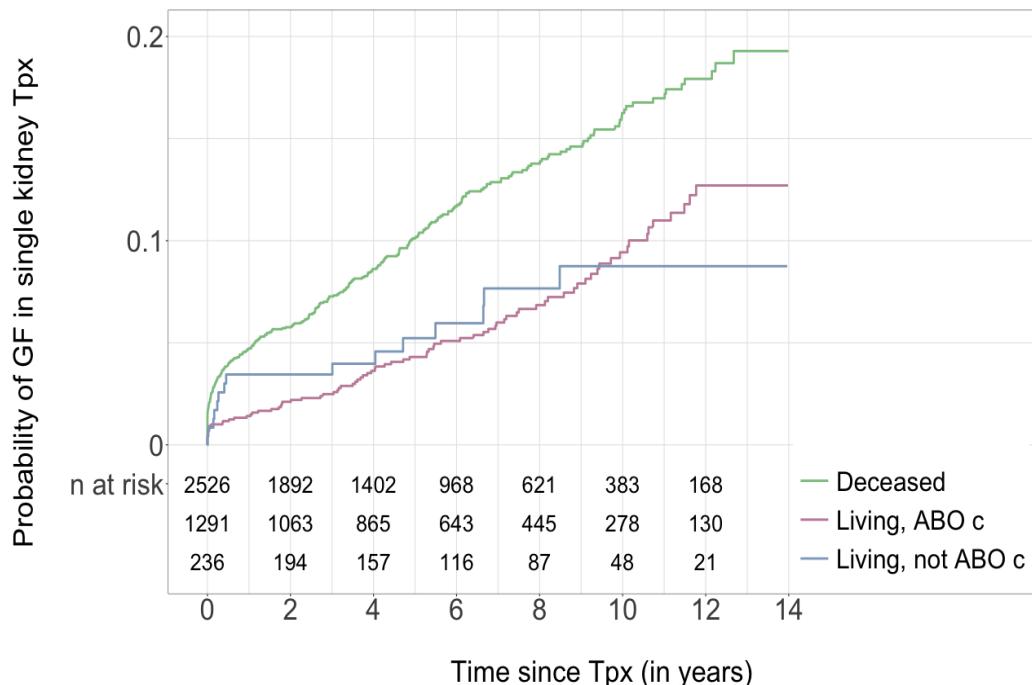


Table 24: Graft failure by organ

Organ	Time	CumInc (%)	95% CI	No at risk	Cum. GF	Cum. deaths
Kidney	Baseline	-	-	4304	0	0
	1 month	1.9	(1.6,2.4)	4181	83	10
	6 months	3	(2.6,3.6)	3951	130	38
	1 year	3.6	(3.1,4.2)	3719	152	74
	2 year(s)	4.4	(3.8,5.1)	3344	184	124
	4 year(s)	6.6	(5.8,7.4)	2578	255	199
	6 year(s)	9	(8.1,10)	1847	317	284
	8 year(s)	10.9	(9.8,12.1)	1244	354	361
	10 year(s)	13.5	(12.1,14.9)	763	388	417
	12 year(s)	15.6	(14,17.3)	343	406	457
	14 year(s)	-	-	0	409	479
	Overall	16.3	(14.5,18.2)	0	409	479
Liver	Baseline	-	-	1722	0	0
	1 month	5.5	(4.5,6.7)	1587	95	28
	6 months	7.9	(6.7,9.2)	1452	135	72
	1 year	9.3	(7.9,10.7)	1342	157	94
	2 year(s)	10.6	(9.2,12.1)	1165	177	132
	4 year(s)	12.3	(10.7,13.9)	828	198	177
	6 year(s)	13.5	(11.8,15.2)	600	209	211
	8 year(s)	14.1	(12.3,16)	394	214	240
	10 year(s)	15.6	(13.5,17.7)	247	221	251
	12 year(s)	16.9	(14.5,19.3)	117	225	260
	14 year(s)	-	-	0	225	263
	Overall	16.9	(14.5,19.3)	0	225	263
Lung	Baseline	-	-	634	0	0
	1 month	1.3	(0.6,2.4)	608	8	14
	6 months	2.5	(1.5,4)	570	16	30
	1 year	4.7	(3.2,6.6)	524	29	41
	2 year(s)	8.2	(6.2,10.6)	448	49	58
	4 year(s)	16	(13.1,19.3)	312	88	87
	6 year(s)	20.5	(17.1,24.1)	209	107	107
	8 year(s)	23.4	(19.6,27.4)	124	116	116
	10 year(s)	27.5	(23,32.2)	63	124	129
	12 year(s)	29.8	(24.4,35.3)	17	126	132
	14 year(s)	-	-	0	126	133
	Overall	29.8	(24.4,35.3)	0	126	133
Heart	Baseline	-	-	522	0	0
	1 month	7.1	(5.1,9.5)	468	37	14
	6 months	7.9	(5.8,10.4)	444	41	22
	1 year	8.3	(6.1,10.9)	415	43	32
	2 year(s)	8.9	(6.7,11.6)	366	46	36
	4 year(s)	9.7	(7.3,12.6)	273	49	49
	6 year(s)	10.8	(8.2,13.8)	197	52	53
	8 year(s)	12.2	(9.2,15.6)	135	55	54
	10 year(s)	13	(9.7,16.8)	85	56	57
	12 year(s)	13	(9.7,16.8)	27	56	64

Organ	Time	CumInc (%)	95% CI	No at risk	Cum. GF	Cum. deaths
-	14 year(s)	-	-	0	56	65
-	Overall	13	(9.7,16.8)	0	56	65
Pancreas	Baseline	-	-	178	0	0
-	1 month	7.9	(4.5,12.4)	162	14	1
-	6 months	9.6	(5.8,14.5)	154	17	1
-	1 year	10.8	(6.8,15.9)	143	19	1
-	2 year(s)	13.5	(8.8,19.1)	125	23	1
-	4 year(s)	15	(10,21)	93	25	4
-	6 year(s)	15	(10,21)	80	25	6
-	8 year(s)	18.4	(12.4,25.4)	61	28	7
-	10 year(s)	19.8	(13.4,27.2)	37	29	9
-	12 year(s)	27.8	(17.7,38.9)	15	32	11
-	14 year(s)	-	-	0	32	12
-	Overall	27.8	(17.7,38.9)	0	32	12

Table 25: Graft failure by organ and centre

Organ - Centre	Time	CumInc (%)	95% CI	No at risk	Cum. GF	Cum. deaths
Kidney-USZ	Baseline	0.0	-	1252	0	0
-	1 month	2.2	(1.5,3.2)	1211	28	2
-	6 months	3.7	(2.8,4.9)	1151	46	9
-	1 year	4.0	(3.5,5.2)	1097	50	18
-	2 year(s)	4.9	(3.7,6.2)	980	59	34
-	4 year(s)	6.2	(4.9,7.7)	767	72	57
-	6 year(s)	8.7	(7.1,10.6)	558	91	82
-	8 year(s)	10.2	(8.4,12.3)	383	100	106
-	10 year(s)	12.2	(9.9,14.7)	237	108	119
-	12 year(s)	14.1	(11.4,17.2)	99	113	128
-	14 year(s)	-	-	0	113	131
-	Overall	14.1	(11.4,17.2)	0	113	131
Kidney-USB	Baseline	0.0	-	986	0	0
-	1 month	1.1	(0.6,1.9)	967	11	2
-	6 months	1.7	(1.1,2.7)	920	17	11
-	1 year	2.3	(1.5,3.4)	870	22	18
-	2 year(s)	3.1	(2.1,4.3)	789	29	28
-	4 year(s)	5.4	(4.7)	605	46	45
-	6 year(s)	8.0	(6.2,10.1)	439	62	66
-	8 year(s)	10.2	(8,12.7)	288	72	83
-	10 year(s)	11.5	(9,14.3)	183	76	96
-	12 year(s)	12.1	(9.4,15.2)	89	77	112
-	14 year(s)	-	-	0	78	120
-	Overall	12.9	(9.9,16.4)	0	78	120
Kidney-CHUV	Baseline	0.0	-	692	0	0
-	1 month	2.2	(1.3,3.5)	674	15	2
-	6 months	2.9	(1.8,4.4)	638	20	4
-	1 year	3.1	(2,4.5)	605	21	8
-	2 year(s)	3.4	(2.2,4.9)	550	23	16
-	4 year(s)	6.6	(4.8,8.8)	428	40	22
-	6 year(s)	9.1	(6.8,11.7)	302	50	35
-	8 year(s)	11.3	(8.6,14.3)	201	57	48
-	10 year(s)	13.5	(10.3,17.2)	121	62	56
-	12 year(s)	16.9	(12.5,21.8)	49	66	61
-	14 year(s)	-	-	0	67	63
-	Overall	18.4	(13.3,24.2)	0	67	63
Kidney-BE	Baseline	0.0	-	612	0	0
-	1 month	2.3	(1.3,3.7)	591	14	2
-	6 months	4.5	(3,6.3)	548	27	8
-	1 year	5.9	(4.2,7.9)	512	35	16
-	2 year(s)	7.1	(5.2,9.4)	436	42	28
-	4 year(s)	10.5	(8.1,13.3)	312	57	36
-	6 year(s)	12.0	(9.3,15.1)	220	62	44
-	8 year(s)	14.0	(10.9,17.6)	152	67	50
-	10 year(s)	17.0	(13.1,21.2)	96	72	56
-	12 year(s)	22.9	(17.5,28.9)	44	79	61

Organ - Centre	Time	CumInc (%)	95% CI	No at risk	Cum. GF	Cum. deaths
-	14 year(s)		-	0	80	64
-	Overall	25.0	(18.4,32.1)	0	80	64
Kidney-HUG	Baseline	0.0	-	491	0	0
-	1 month	2.6	(1.5,4.4)	473	13	2
-	6 months	3.5	(2.1,5.4)	439	17	6
-	1 year	3.7	(2.3,5.7)	396	18	11
-	2 year(s)	4.5	(2.8,6.6)	365	21	14
-	4 year(s)	5.3	(3.5,7.6)	285	24	29
-	6 year(s)	6.7	(4.5,9.5)	208	28	41
-	8 year(s)	8.5	(5.8,11.8)	137	32	53
-	10 year(s)	15.5	(10.9,21)	74	42	62
-	12 year(s)	16.5	(11.6,22.2)	38	43	65
-	14 year(s)		-	0	43	67
-	Overall	16.5	(11.6,22.2)	0	43	67
Kidney-SG	Baseline	0.0	-	271	0	0
-	1 month	0.7	(0.1,2.5)	265	2	0
-	6 months	1.1	(0.3,3)	255	3	0
-	1 year	2.3	(0.9,4.7)	239	6	3
-	2 year(s)	3.9	(2.6,8)	224	10	4
-	4 year(s)	6.6	(3.9,10.3)	181	16	10
-	6 year(s)	11.1	(7.3,15.8)	120	24	16
-	8 year(s)	12.6	(8.4,17.7)	83	26	21
-	10 year(s)	14.6	(9.8,20.4)	52	28	28
-	12 year(s)	14.6	(9.8,20.4)	24	28	30
-	14 year(s)		-	0	28	34
-	Overall	14.6	(9.8,20.4)	0	28	34
Liver-USZ	Baseline	0.0	-	707	0	0
-	1 month	7.1	(5.3,9.1)	636	50	18
-	6 months	9.8	(7.8,12.2)	568	69	47
-	1 year	12.1	(9.8,14.6)	518	84	57
-	2 year(s)	13.8	(11.4,16.5)	441	95	79
-	4 year(s)	15.6	(12.9,18.5)	310	104	103
-	6 year(s)	17.2	(14.3,20.3)	209	110	120
-	8 year(s)	17.8	(14.8,21)	130	112	132
-	10 year(s)	20.0	(16.5,23.9)	78	116	137
-	12 year(s)	20.9	(17.25.1)	35	117	143
-	14 year(s)		-	0	117	144
-	Overall	20.9	(17.25.1)	0	117	144
Liver-BE	Baseline	0.0	-	397	0	0
-	1 month	7.3	(5,10.2)	359	29	5
-	6 months	9.9	(7.2,13.1)	328	39	12
-	1 year	10.2	(7.4,13.4)	304	40	21
-	2 year(s)	10.8	(7.9,14.1)	263	42	27
-	4 year(s)	13.0	(9.8,16.7)	175	48	38
-	6 year(s)	13.0	(9.8,16.7)	131	48	49
-	8 year(s)	14.2	(10.6,18.3)	87	50	61
-	10 year(s)	16.0	(11.8,20.9)	52	52	64
-	12 year(s)	17.6	(12.6,23.4)	23	53	65

Organ - Centre	Time	CumInc (%)	95% CI	No at risk	Cum. GF	Cum. deaths
-	14 year(s)		-	0	53	65
-	Overall	17.6	(12.6,23.4)	0	53	65
Liver-HUG	Baseline	0.0	-	618	0	0
-	1 month	2.6	(1.5,4.1)	592	16	5
-	6 months	4.4	(3.6,2)	556	27	13
-	1 year	5.4	(3.8,7.4)	520	33	16
-	2 year(s)	6.7	(4.9,8.9)	461	40	26
-	4 year(s)	8.0	(6,10.4)	343	46	36
-	6 year(s)	9.4	(7.1,12.2)	260	51	42
-	8 year(s)	9.8	(7.4,12.6)	177	52	47
-	10 year(s)	10.3	(7.7,13.2)	117	53	50
-	12 year(s)	11.8	(8.6,15.6)	59	55	52
-	14 year(s)		-	0	55	54
-	Overall	11.8	(8.6,15.6)	0	55	54
Lung-USZ	Baseline	0.0	-	352	0	0
-	1 month	1.7	(0.7,3.5)	334	6	9
-	6 months	3.2	(1.7,5.4)	308	11	22
-	1 year	5.6	(3.5,8.4)	282	19	30
-	2 year(s)	9.7	(6.8,13.2)	236	32	43
-	4 year(s)	20.6	(16.2,25.4)	158	63	63
-	6 year(s)	24.6	(19.8,29.6)	107	73	78
-	8 year(s)	27.9	(22.6,33.4)	59	79	85
-	10 year(s)	33.2	(26.8,39.7)	27	85	90
-	12 year(s)	33.2	(26.8,39.7)	11	85	91
-	14 year(s)		-	0	85	92
-	Overall	33.2	(26.8,39.7)	0	85	92
Lung-CHUV	Baseline	0.0	-	275	0	0
-	1 month	0.7	(0.1,2.4)	268	2	4
-	6 months	1.8	(0.7,4)	256	5	7
-	1 year	3.7	(1.9,6.5)	236	10	10
-	2 year(s)	6.6	(4,10.1)	206	17	14
-	4 year(s)	9.7	(6.4,13.9)	149	24	23
-	6 year(s)	14.9	(10.5,20.1)	98	33	28
-	8 year(s)	17.4	(12.4,23.2)	63	36	30
-	10 year(s)	19.9	(14,26.5)	34	38	38
-	12 year(s)	26.2	(16.4,37.1)	6	40	40
-	14 year(s)		-	0	40	40
-	Overall	26.2	(16.4,37.1)	0	40	40
Lung-HUG	Baseline	0.0	-	7	0	0
-	1 month	0.0	-	6	0	1
-	6 months	0.0	-	6	0	1
-	1 year	0.0	-	6	0	1
-	2 year(s)	0.0	-	6	0	1
-	4 year(s)	14.3	(0.5,49.6)	5	1	1
-	6 year(s)	14.3	(0.5,49.6)	4	1	1
-	8 year(s)	14.3	(0.5,49.6)	2	1	1
-	10 year(s)	14.3	(0.5,49.6)	2	1	1
-	12 year(s)		-	0	1	1

Organ - Centre	Time	CumInc (%)	95% CI	No at risk	Cum. GF	Cum. deaths
-	14 year(s)		-	0	1	1
-	Overall	14.3	(0.5,49.6)	0	1	1
Heart-USZ	Baseline	0.0	-	172	0	0
-	1 month	5.2	(2.6,9.3)	157	9	4
-	6 months	7.6	(4.3,12.2)	143	13	10
-	1 year	8.2	(4.7,13)	131	14	15
-	2 year(s)	9.6	(5.7,14.6)	117	16	18
-	4 year(s)	9.6	(5.7,14.6)	91	16	23
-	6 year(s)	9.6	(5.7,14.6)	68	16	25
-	8 year(s)	12.4	(7.3,18.8)	44	18	26
-	10 year(s)	14.5	(8.3,22.4)	29	19	26
-	12 year(s)	14.5	(8.3,22.4)	7	19	28
-	14 year(s)		-	0	19	29
-	Overall	14.5	(8.3,22.4)	0	19	29
Heart-CHUV	Baseline	0.0	-	192	0	0
-	1 month	5.7	(3,9.7)	176	11	4
-	6 months	5.7	(3,9.7)	170	11	5
-	1 year	6.3	(3.4,10.4)	155	12	10
-	2 year(s)	6.9	(3.9,11.2)	134	13	11
-	4 year(s)	7.9	(4.4,12.5)	90	14	14
-	6 year(s)	10.0	(5.8,15.6)	62	16	15
-	8 year(s)	11.4	(6.6,17.6)	45	17	15
-	10 year(s)	11.4	(6.6,17.6)	26	17	16
-	12 year(s)	11.4	(6.6,17.6)	6	17	18
-	14 year(s)		-	0	17	18
-	Overall	11.4	(6.6,17.6)	0	17	18
Heart-BE	Baseline	0.0	-	158	0	0
-	1 month	10.8	(6.5,16.2)	135	17	6
-	6 months	10.8	(6.5,16.2)	131	17	7
-	1 year	10.8	(6.5,16.2)	129	17	7
-	2 year(s)	10.8	(6.5,16.2)	115	17	7
-	4 year(s)	12.3	(7.7,18.1)	92	19	12
-	6 year(s)	13.5	(8.5,19.7)	67	20	13
-	8 year(s)	13.5	(8.5,19.7)	46	20	13
-	10 year(s)	13.5	(8.5,19.7)	30	20	15
-	12 year(s)	13.5	(8.5,19.7)	14	20	18
-	14 year(s)		-	0	20	18
-	Overall	13.5	(8.5,19.7)	0	20	18
Pancreas-USZ	Baseline	0.0	-	112	0	0
-	1 month	8.0	(3.9,14)	102	9	1
-	6 months	10.7	(5.8,17.3)	97	12	1
-	1 year	11.7	(6.5,18.5)	89	13	1
-	2 year(s)	13.8	(8.1,21)	80	15	1
-	4 year(s)	16.2	(9.8,23.9)	62	17	2
-	6 year(s)	16.2	(9.8,23.9)	55	17	3
-	8 year(s)	19.4	(12,28.1)	44	19	3
-	10 year(s)	19.4	(12,28.1)	26	19	3
-	12 year(s)	27.9	(15.4,42)	10	21	5

Organ - Centre	Time	CumInc (%)	95% CI	No at risk	Cum. GF	Cum. deaths
-	14 year(s)		-	0	21	5
-	Overall	27.9	(15.4,42)	0	21	5
Pancreas-HUG	Baseline	0.0	-	66	0	0
-	1 month	7.6	(2.8,15.6)	60	5	0
-	6 months	7.6	(2.8,15.6)	57	5	0
-	1 year	9.3	(3.7,17.9)	54	6	0
-	2 year(s)	12.9	(5.9,22.6)	45	8	0
-	4 year(s)	12.9	(5.9,22.6)	31	8	2
-	6 year(s)	12.9	(5.9,22.6)	25	8	3
-	8 year(s)	16.9	(7.5,29.5)	17	9	4
-	10 year(s)	21.4	(9.6,36.3)	11	10	6
-	12 year(s)	27.9	(12,46.3)	5	11	6
-	14 year(s)		-	0	11	7
-	Overall	27.9	(12,46.3)	0	11	7

Table 26: Graft failure of kidneys (in first STCS single Tpx) by donor type

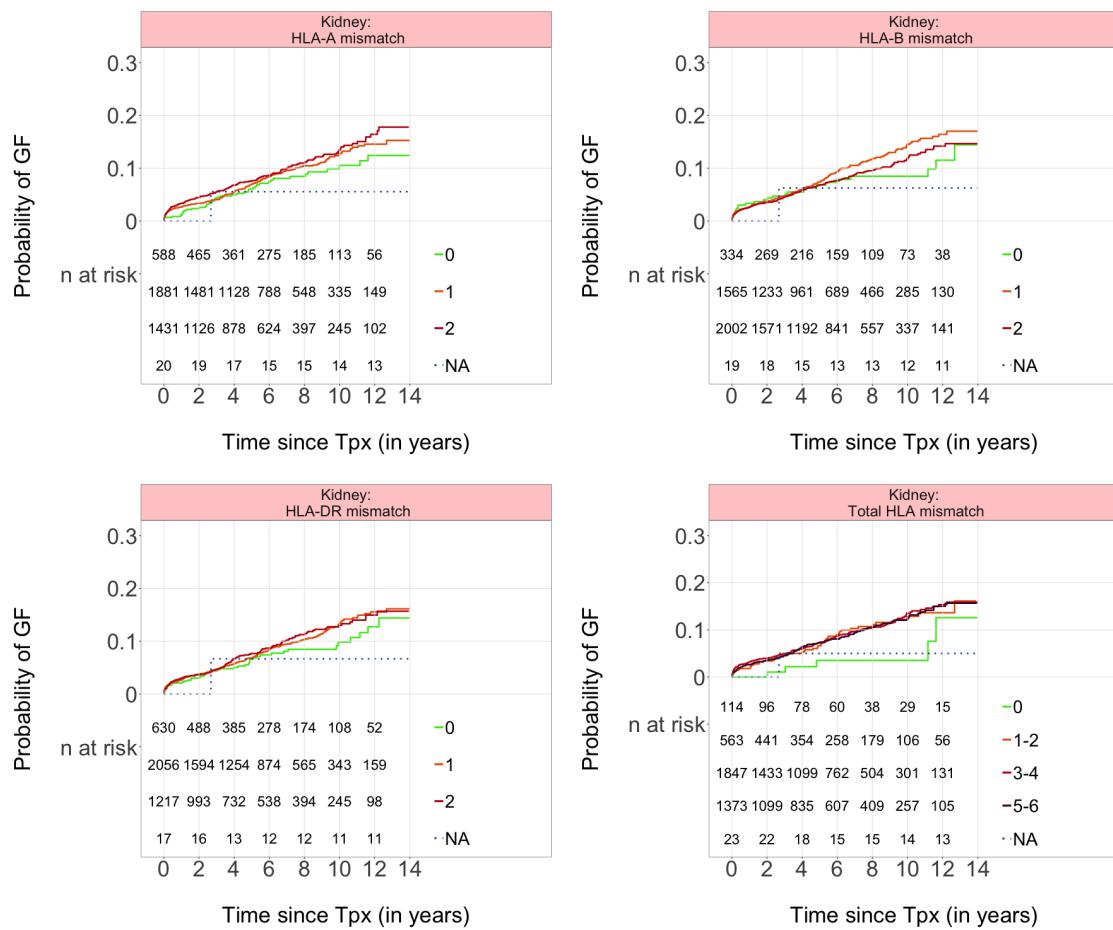
Donor type	Time	CumInc (%)	95% CI	No at risk	Cum. GF	Cum. deaths
Deceased	Baseline	-	-	2526	0	0
-	1 month	2.4	(1.9,3.1)	2439	61	5
-	6 months	3.9	(3.2,4.7)	2284	98	24
-	1 year	4.7	(3.9,5.6)	2137	117	56
-	2 year(s)	5.8	(4.9,6.7)	1892	140	90
-	4 year(s)	8.6	(7.5,9.8)	1402	194	150
-	6 year(s)	11.7	(10.3,13.2)	968	238	209
-	8 year(s)	13.8	(12.2,15.5)	621	261	258
-	10 year(s)	16.3	(14.3,18.3)	383	279	296
-	12 year(s)	17.9	(15.7,20.2)	168	287	319
-	14 year(s)	-	-	0	290	332
-	Overall	19.3	(16.7,22.1)	0	290	332
Living	Baseline	-	-	1527	0	0
-	1 month	0.9	(0.5,1.5)	1504	14	1
-	6 months	1.5	(1,2.2)	1437	23	8
-	1 year	1.7	(1.2,2.5)	1362	26	12
-	2 year(s)	2.3	(1.6,3.2)	1257	34	26
-	4 year(s)	3.7	(2.8,4.8)	1022	50	37
-	6 year(s)	5.2	(4.1,6.6)	759	65	59
-	8 year(s)	7	(5.5,8.6)	532	78	83
-	10 year(s)	9.3	(7.4,11.5)	326	90	98
-	12 year(s)	12.2	(9.6,15)	151	99	112
-	14 year(s)	-	-	0	99	119
-	Overall	12.2	(9.6,15)	0	99	119

## 9.4 Graft failure and number of HLA mismatches

Figures 32-35 show the cumulative incidence functions for graft failures separated by (major) transplantation and the number of HLA mismatches<sup>1</sup> between donor and recipient at STCS enrolment. It is distinguished between mismatches for HLA-A, HLA-B and HLA-DR and the total number of HLA mismatches.

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Figure 32: Cumulative incidence of graft failure in Kidney Tpx recipients by HLA mismatches



<sup>1</sup>The number of mismatches refers to the number of HLA antigens of the donor that are not expressed in the recipient. If the donor is homozygous for a certain HLA locus, only one mismatch was counted. Groups with less than 10 patients at time of tpx are not shown. NA stands for missing HLA information. The number of patients at risk for some tpx is lower compared to the number of tpx due to missing HLA information.

Figure 33: Cumulative incidence of graft failure in Liver Tpx recipients by HLA mismatches

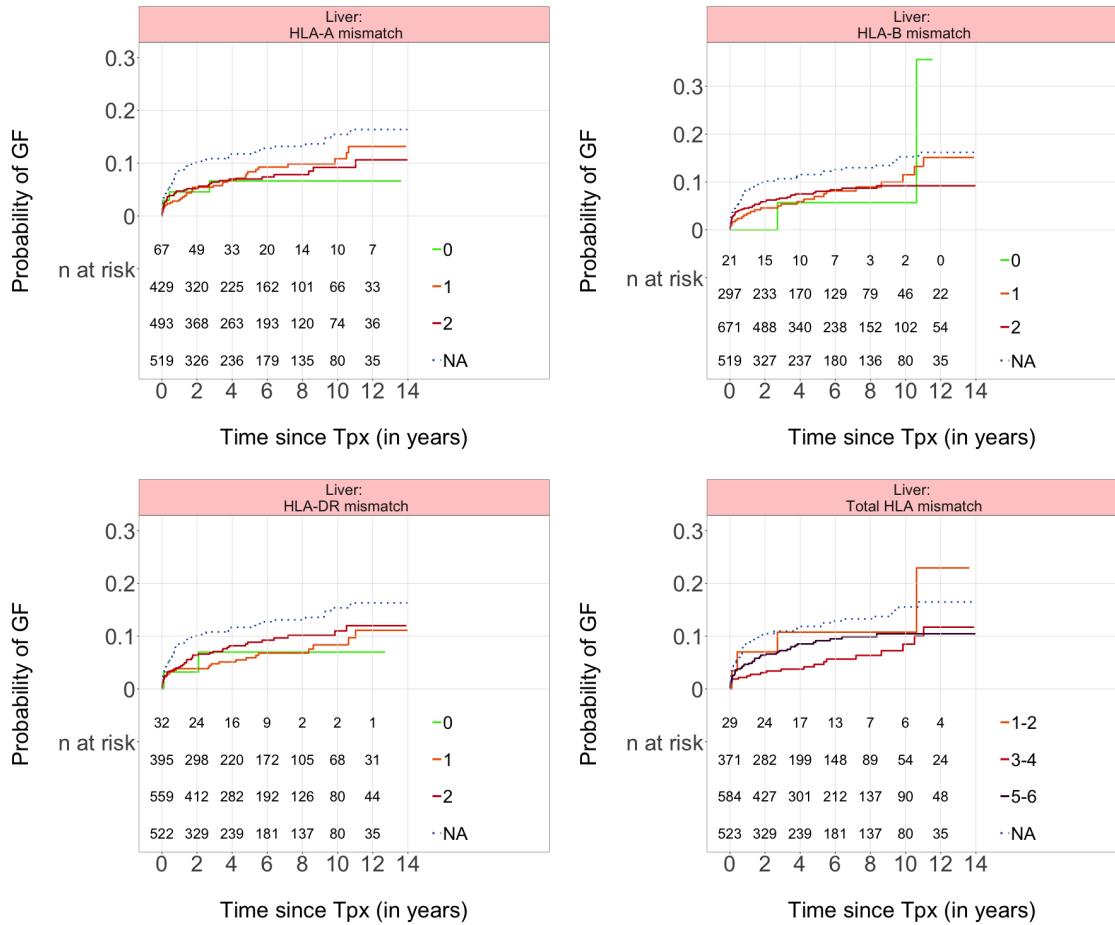


Figure 34: Cumulative incidence of graft failure in Lung Tpx recipients by HLA mismatches

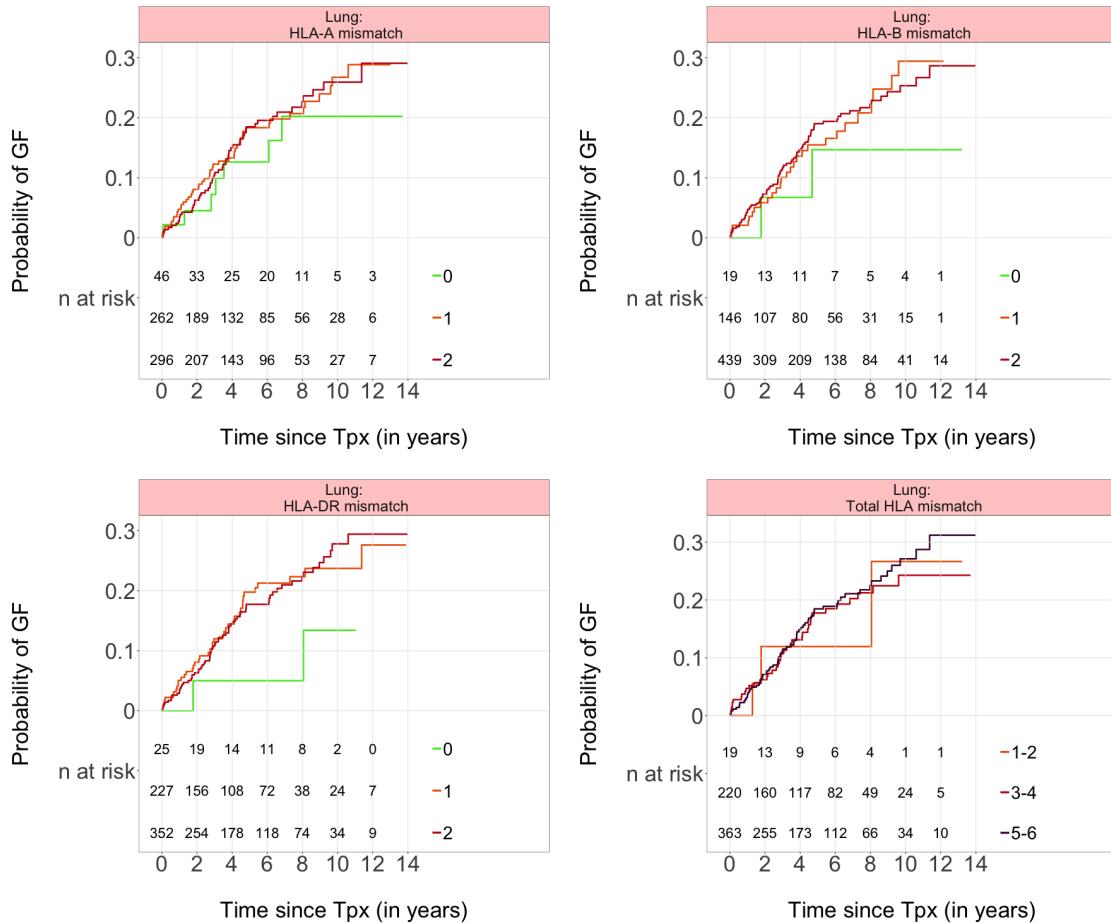
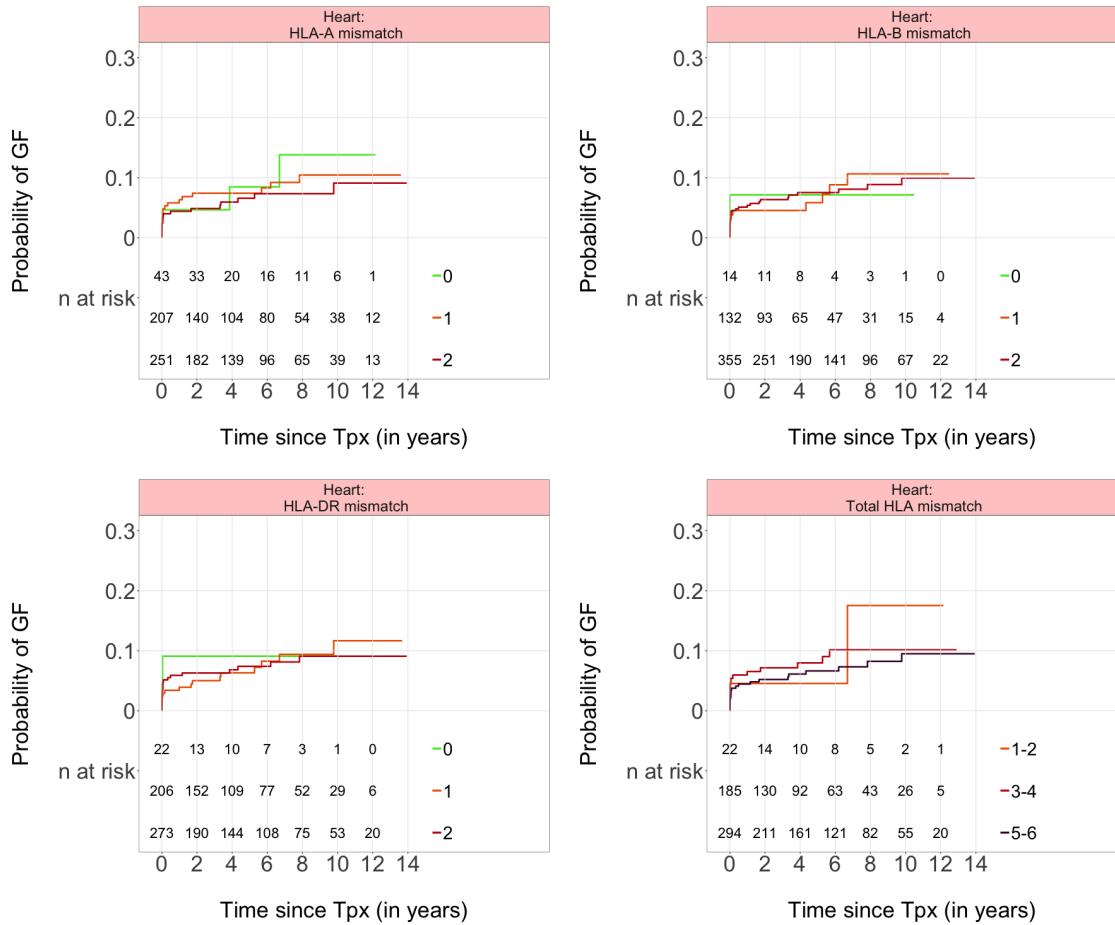


Figure 35: Cumulative incidence of graft failure in Heart Tpx recipients by HLA mismatches



# 10 Cancer

Results regarding the incidence of cancer and skin cancer have to be considered with caution as data may be incomplete at the moment.

## 10.1 Cancer other than skin

Table 27: Overview of patients with incident cancer

	N	%
Total number of patients	6844	
Patients with incident cancer (other than skin)	900	13.2
- single record (% of line 2)	616	68.4
- multiple records (% of line 2)	284	31.6

Table 28: Patients with incident cancer

	Patients	Episodes	Median time (in yrs)*
Total	900	1467	3.74
Kidney	512	763	4.22
Liver	264	493	3.06
Lung	75	130	3.34
Heart	38	63	6.00
Pancreas	4	10	3.84
Islets	7	8	6.56

\* Median time (in years) from first STCS transplantation to diagnosis of cancer

Remark: Patients are listed regarding the organ transplanted in the first STCS transplantation.

Table 29: Overview of incident cancer occurrence

	N	%
Total	1467	100
Brain	16	1
Breast	44	3
Cervix - Uterus - Adnex	14	1
Colon	37	2
Kaposi	12	1
Kidney	47	3
Leukemia	22	2
Liver	138	9
Lung	136	9
Multiple myeloma/Amyloidosis	10	1
Myeloproliferative disorder/Myelodysplastic syndrome	19	1
Neuroendocrine	15	1
Prostate	91	6
PTLD	145	10
Refused	1	0
Sarkoma	16	1
Testicular cancer	6	0
Thyroid	15	1
Unknown	218	15
Urothel/Bladder	84	6
Cancer of unknown primary origin	7	0
Other	374	26

## 10.2 Skin cancer

Table 30: Overview of patients with incident skin cancer

	N	%
Total number of patients	6844	
Patients with incident skin cancer	1208	17.7
- single record (% of line 2)	679	56.2
- multiple records (% of line 2)	529	43.8

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Table 31: Patients with incident skin cancer

	Patients	Episodes	Median time (in yrs)*
Total	1208	3234	4.60
Kidney	814	2303	4.52
Liver	202	362	3.75
Lung	93	317	4.89
Heart	79	198	5.90
Pancreas	5	25	4.35
Islets	14	28	4.38
Small bowel	1	1	

\* Median time (in years) from first STCS transplantation to diagnosis of skin cancer

Remark: Patients are listed regarding the organ transplanted in the first STCS transplantation.

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Table 32: Overview of incident skin cancer occurrence

	N	%
Total	3234	100
Basalioma	859	27
Melanoma	88	3
Refused	2	0
Spinalioma	1374	42
Unknown	237	7
Other	674	21

# 11 Specific Populations

## 11.1 DCD Donor Kidney Recipients

Table 33: Kidney patients' characteristics by donor type

	Total	Brain dead (DBD)	NHBD (DCD)	Living
Total no. kidney patients	3920	2038	380	1502
Age (yrs), median	54.6	56.9	57.6	50.4
- IQR	(42.9-63.4)	(45.8-65)	(48.2-64.3)	(37.9-60.4)
- min; max	1.53; 82.2	1.53; 82.2	5.77; 77.6	1.6; 79.3
Male gender, n (%)	2524 (64.4%)	1277 (62.7%)	241 (63.4%)	1006 (67%)
Donor age (yrs), median	55	55.0	56.7	54.6
- IQR	(45-63.8)	(41-65.4)	(47.3-63.9)	(46.8-62.3)
- min; max	0; 88.1	0; 88.1	11.49; 81.9	1.6; 81.2
Cold ischemia time (yrs), median	6.6	9.2	8.7	1.6
- IQR	(2-10)	(7.1-12.2)	(7.1-10.7)	(1.3-2.2)
Pediatric, n (%)	149 (3.8%)	95 (4.7%)	4 (1.1%)	50 (3.3%)
Observation time (yrs), median	5.5	5.7	2.6	6.3
- IQR	(2.8-9.2)	(3-9.5)	(1.3-4.7)	(3.2-9.7)
No. DGF, n (%)	540 (13.8%)	333 (16.3%)	179 (47.1%)	28 (1.9%)
No. deaths, n (%)	550 (14%)	375 (18.4%)	30 (7.9%)	145 (9.7%)
No. patients with at least one GF, n (%)	375 (9.6%)	252 (12.4%)	25 (6.6%)	98 (6.5%)
- with GF, alive	264 (6.7%)	174 (8.5%)	18 (4.7%)	72 (4.8%)
- with GF -> death	102 (2.6%)	73 (3.6%)	7 (1.8%)	22 (1.5%)
- with GF - related death	9 (0.2%)	5 (0.2%)	0 (0%)	4 (0.3%)
Death without GF	439 (11.2%)	297 (14.6%)	23 (6.1%)	119 (7.9%)

Figure 36: Cumulative Kidney DCD patient enrolment by centre

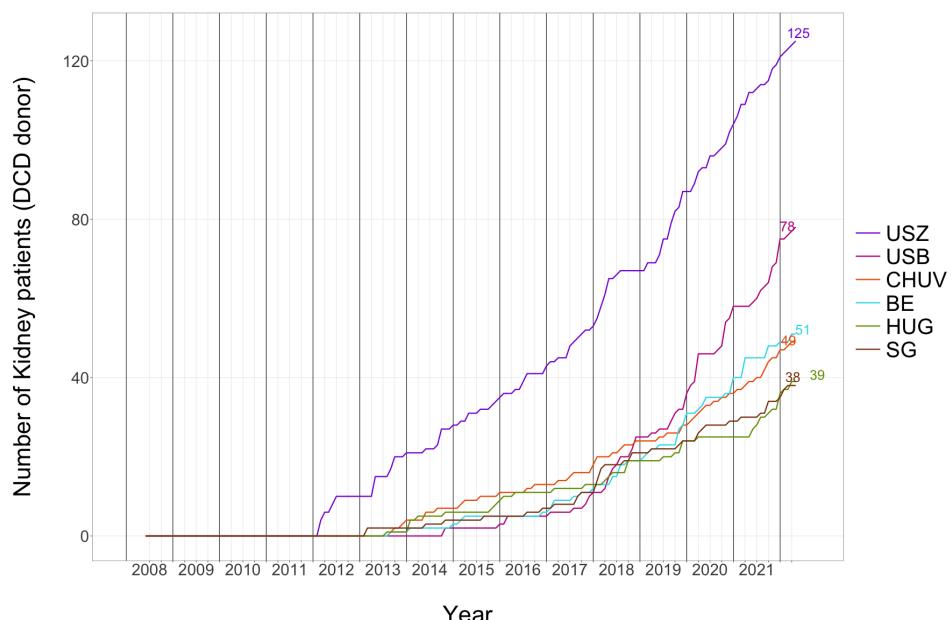


Figure 37: Graft failure free survival in patients with first STCS Kidney Tpx by donor type

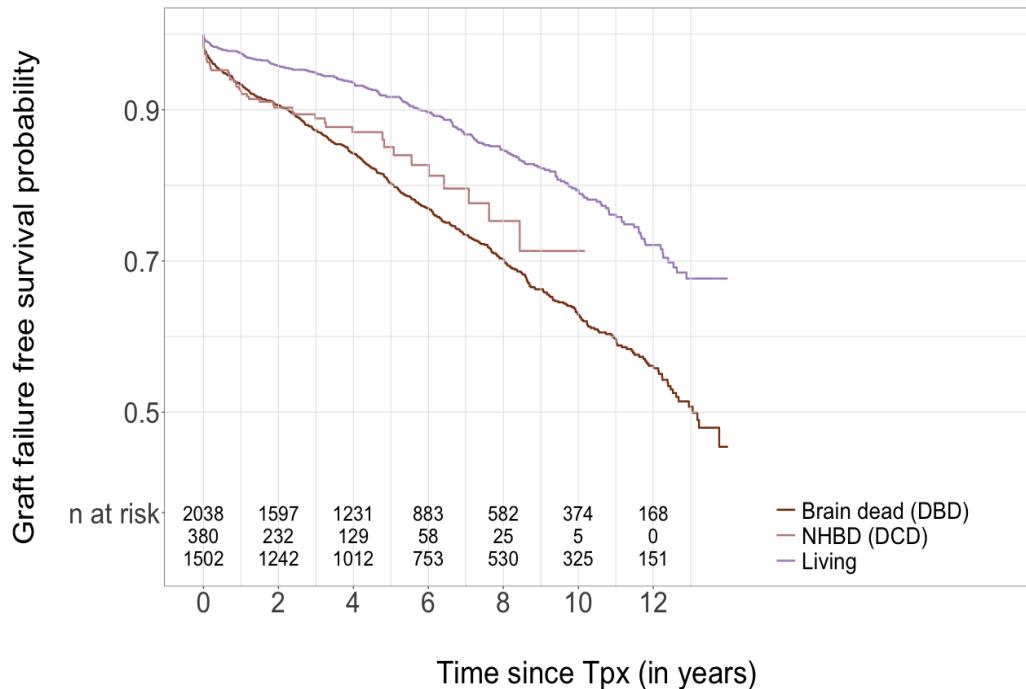
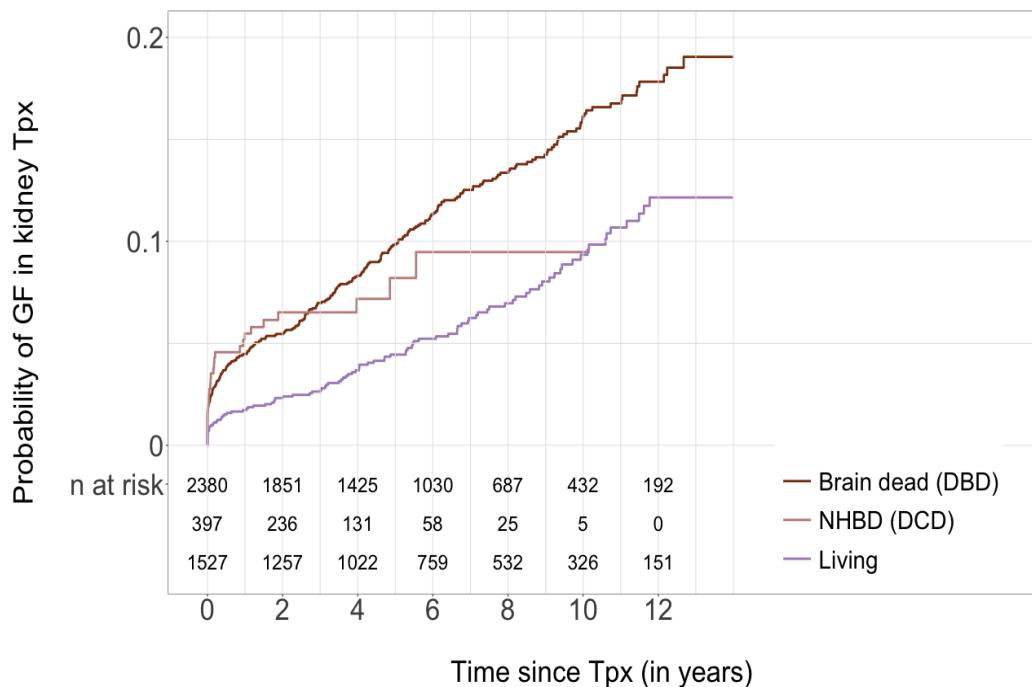


Figure 38: Cumulative incidence of graft failure for Kidney Tpx by donor type



## 11.2 DCD Donor Liver Recipients

Table 34: Liver patients' characteristics by donor type

	Total	Brain dead (DBD)	NHBD (DCD)	Living
Total no. liver patients	1508	1232	194	82
Age (yrs), median	56.3	55.7	60.3	52.3
- IQR	(46.4-62.4)	(44.9-62.1)	(54.2-65.2)	(39.2-60.9)
- min; max	0.05; 78	0.05; 78	22.85; 73.4	0.05; 70.1
Male gender, n (%)	1017 (67.4%)	819 (66.5%)	156 (80.4%)	42 (51.2%)
Donor age (yrs), median	55	55.1	60.2	37.3
- IQR	(38.9-67.6)	(38.9-68)	(50.7-69.8)	(31.3-45.7)
- min; max	1.23; 88.4	1.23; 88.4	5.88; 87.4	16.18; 68.4
Cold ischemia time (yrs), median	6.5	6.5	7.1	2.0
- IQR	(5.2-8)	(5.3-8)	(6-8.4)	(1.5-2.5)
Pediatric, n (%)	115 (7.6%)	107 (8.7%)	0 (0%)	8 (9.8%)
Observation time (yrs), median	4.2	4.8	2.1	4.9
- IQR	(1.7-8.2)	(2.1-8.8)	(0.9-4)	(2-9.2)
No. DGF, n (%)	43 (2.9%)	32 (2.6%)	6 (3.1%)	5 (6.1%)
No. deaths, n (%)	332 (22%)	269 (21.8%)	36 (18.6%)	27 (32.9%)
No. patients with at least one GF, n (%)	180 (11.9%)	122 (9.9%)	36 (18.6%)	22 (26.8%)
- with GF, alive	71 (4.7%)	41 (3.3%)	21 (10.8%)	9 (11%)
- with GF -> death	58 (3.8%)	40 (3.2%)	11 (5.7%)	7 (8.5%)
- with GF - related death	51 (3.4%)	41 (3.3%)	4 (2.1%)	6 (7.3%)
Death without GF	223 (14.8%)	188 (15.3%)	21 (10.8%)	14 (17.1%)

Figure 39: Cumulative Liver DCD patient enrolment by centre

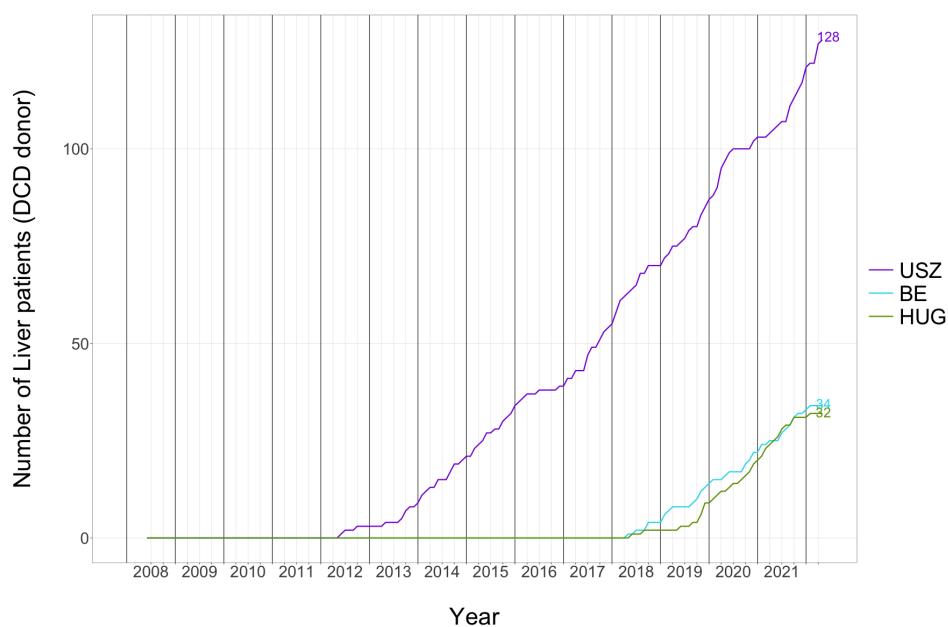
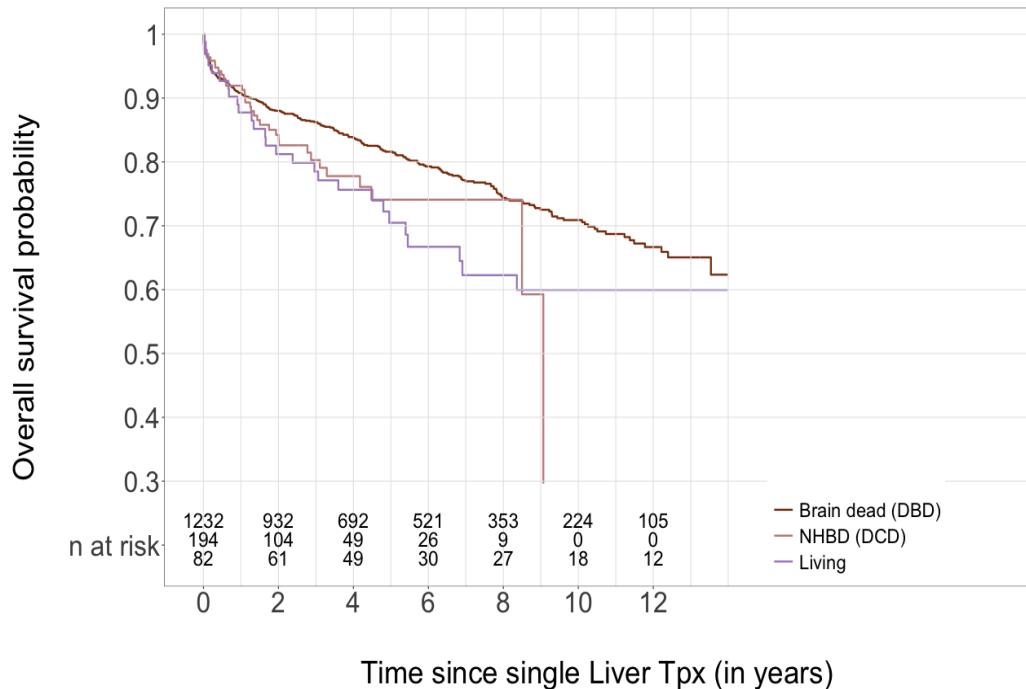


Figure 40: Overall survival in patients with first STCS Liver Tpx by donor type



## 11.3 Pediatric patients

Table 35: Number of pediatric patients (under 18) by first Tpx type

	Total	USZ	%	USB	%	CHUV	%	BE	%	HUG	%	SG	%
Total	336	111	33	8	2.4	39	11.6	48	14.3	126	37.5	4	1.2
Kidney	149	71	47.7	8	5.4	21	14.1	36	24.2	9	6	4	2.7
Liver	115	3	2.6	-	-	-	-	1	0.9	111	96.5	-	-
Lung	18	15	83.3	-	-	2	11.1	-	-	1	5.6	-	-
Heart	49	22	44.9	-	-	16	32.7	11	22.4	-	-	-	-
Kidney - Liver	4	-	-	-	-	-	-	-	-	4	100	-	-
Islets - Liver - Lung	1	-	-	-	-	-	-	-	-	1	100	-	-

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Table 36: Number of Tpx in pediatric patients by organ and centre

	Total	USZ	%	USB	%	CHUV	%	BE	%	HUG	%	SG	%
Total	352	116	33	8	2.3	42	11.9	49	13.9	133	37.8	4	1.1
Kidney	153	73	47.7	8	5.2	23	15	36	23.5	9	5.9	4	2.6
Liver	120	4	3.3	-	-	-	-	1	0.8	115	95.8	-	-
Lung	21	17	81	-	-	3	14.3	-	-	1	4.8	-	-
Heart	50	22	44	-	-	16	32	12	24	-	-	-	-
Kidney - Liver	5	-	-	-	-	-	-	-	-	5	100	-	-
Islets - Liver - Lung	1	-	-	-	-	-	-	-	-	1	100	-	-

Remark: Patients that are under 18 at baseline might be over 18 at the time of re or second transplantation.

## A Mortality in patients with rare Tpx scenarios

Table 37: Overall mortality by rare Tpx scenarios

Tpx	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
Islets	Baseline	0.00	-	40	0
	Overall	42.20	(19.6, 58.5)	-	13
Pancreas	Baseline	0.00	-	13	0
	Overall	43.75	(0, 71.9)	-	3
Small bowel	Baseline	0.00	-	2	0
	Overall	50.00	(0, 87.5)	-	1
Kidney - Liver	Baseline	0.00	-	58	0
	Overall	48.52	(4.9, 72.1)	-	14
Kidney - Islets	Baseline	0.00	-	23	0
	Overall	100.00	-	-	6
Kidney - Heart	Baseline	0.00	-	15	0
	Overall	13.33	(0, 28.9)	-	2
Kidney - Lung	Baseline	0.00	-	2	0
	Overall	0.00	-	-	0
Liver - Lung	Baseline	0.00	-	4	0
	Overall	25.00	(0, 57.4)	-	1
Liver - Pancreas	Baseline	0.00	-	1	0
	Overall	0.00	-	-	0
Heart - Lung	Baseline	0.00	-	1	0
	Overall	100.00	-	-	1
Islets - Liver	Baseline	0.00	-	1	0
	Overall	0.00	-	-	0
Pancreas - Small bowel	Baseline	0.00	-	3	0
	Overall	100.00	-	-	2
Kidney - Islets - Liver	Baseline	0.00	-	1	0
	Overall	0.00	-	-	0
Liver - Pancreas - Small bowel	Baseline	0.00	-	1	0
	Overall	100.00	-	-	1
Islets - Liver - Lung	Baseline	0.00	-	1	0
	Overall	0.00	-	-	0

Table 38: Overall mortality by rare Tpx scenarios and centre

Tpx - centre	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
Islets - USZ	Baseline	0.0	-	22	0
	Overall	67.7	(35.5, 83.8)	-	13
Islets - HUG	Baseline	0.0	-	18	0
	Overall	0.0	-	-	0
Pancreas - USZ	Baseline	0.0	-	5	0
	Overall	0.0	-	-	0
Pancreas - HUG	Baseline	0.0	-	8	0
	Overall	60.0	(0, 86.3)	-	3
Small bowel - HUG	Baseline	0.0	-	2	0
	Overall	50.0	(0, 87.5)	-	1
Kidney - Liver - USZ	Baseline	0.0	-	20	0
	Overall	15.3	(0, 29.8)	-	3
Kidney - Liver - BE	Baseline	0.0	-	14	0
	Overall	20.4	(0, 43.1)	-	2
Kidney - Liver - HUG	Baseline	0.0	-	24	0
	Overall	100.0	-	-	9
Kidney - Islets - USZ	Baseline	0.0	-	14	0
	Overall	100.0	-	-	3
Kidney - Islets - HUG	Baseline	0.0	-	9	0
	Overall	55.6	(0, 83.8)	-	3
Kidney - Heart - USZ	Baseline	0.0	-	3	0
	Overall	33.3	(0, 70)	-	1
Kidney - Heart - CHUV	Baseline	0.0	-	10	0
	Overall	0.0	-	-	0
Kidney - Heart - BE	Baseline	0.0	-	2	0
	Overall	50.0	(0, 87.5)	-	1
Kidney - Lung - CHUV	Baseline	0.0	-	2	0
	Overall	0.0	-	-	0
Liver - Lung - HUG	Baseline	0.0	-	4	0
	Overall	25.0	(0, 57.4)	-	1
Liver - Pancreas - HUG	Baseline	0.0	-	1	0
	Overall	0.0	-	-	0
Heart - Lung - USZ	Baseline	0.0	-	1	0
	Overall	100.0	-	-	1
Islets - Liver - USZ	Baseline	0.0	-	1	0
	Overall	0.0	-	-	0
Pancreas - Small bowel - USZ	Baseline	0.0	-	1	0
	Overall	100.0	-	-	1
Pancreas - Small bowel - HUG	Baseline	0.0	-	2	0
	Overall	50.0	(0, 87.5)	-	1
Kidney - Islets - Liver - HUG	Baseline	0.0	-	1	0
	Overall	0.0	-	-	0
Liver - Pancreas - Small bowel - USZ	Baseline	0.0	-	1	0
	Overall	100.0	-	-	1
Islets - Liver - Lung - HUG	Baseline	0.0	-	1	0
	Overall	0.0	-	-	0

## B Technical summary

All analyses were performed using the statistical software R version 4.1.2 (2021-11-01). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL <https://www.R-project.org/>.