



SWISS
TRANSPLANT
COHORT
STUDY

Swiss Transplant Cohort Study Report (May 2008 - December 2019)

June 2020

Sanda Branca-Dragan, Michael Koller, Susanne Stampf, Juliane Rick, Katell Mellac, Simona Rossi, Dimitri Hauri, Brian Lang, and Jürg Steiger on behalf of all members of the STCS

Contact information:

Michael Koller and Jürg Steiger

Petersgraben 4

CH-4031 Basel

Phone +41 61 26 52525

Fax +41 61 26 52410

Direct calling +41 61 32 86404 or +41 61 32 86737

michael.koller@usb.ch, juerg.steiger@usb.ch

Disclaimer

The STCS Annual Report covers all solid organ transplantation (SOT) activities on the Swiss national level since May 2008 (and to a reduced extent also 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

STCS	Swiss Transplant Cohort Study
BE	Inselspital Bern
CHUV	Centre Hospitalier Universitaire Vaudois Lausanne
CI	confidence interval
CumInc	cumulative incidence
FUP	follow-up
GF	graft failure
HUG	Hôpitaux Universitaires de Genève
ID	infectious disease
KPD	Kidney Paired Donation (Cross-over Living Donation)
NHBD	non-heart-beating donor (Donation after Cardiac Death, DCD)
DBD	Donation after Brain Death
SG	Kantonsspital St. Gallen
USZ	Universitätsspital Zürich
USB	Universitätsspital Basel

List of Figures

1	Quarterly patient enrolment by donor type	7
2	Cumulative patient enrolment	7
3	Cumulative patient enrolment by Tpx type	8
4	Cumulative patient enrolment by center	8
5	Number of patients enrolled and organs transplanted	9
6	Number of patients enrolled by Tpx type	10
7	Number of patients with first single Kidney Tpx	10
8	Number of patients with first STCS Liver, Lung, Heart, Pancreas or Islets Tpx	11
9	Number of single Kidney Tpx	12
10	Number of single Liver Tpx	12
11	Distribution of donor types in all single Kidney Tpx	13
12	Cumulative KPD patient enrolment by centre	13
13	Distribution of donor types in all single Liver Tpx	14
14	Patients current consent status	15
15	Current patients' consent status by centre	16
16	Number of bio-samples in STCS	17
17	Distribution of number of aliquots by sample type	18
18	Number of samples by follow-up period	18
19	Distribution of sampling time	19
20	Rate of infectious disease events by pathogen and Tpx type	21
21	Number of Tpx with 6 month FUP	22
22	Number of Tpx with 12 month FUP	22
23	Overall survival	24
24	Overall survival for frequent Tpx types	25
25	Overall survival for frequent Tpx	27
26	Overall survival for patients with first STCS single Kidney Tpx by donor type	32
27	Overall survival for patients with first STCS single Kidney Tpx by donor type stratified by ABO compatibility	32
28	Graft failure free survival by major Tpx	36
29	Graft failure free survival by major Tpx and centre	37
30	Graft failure free survival in patients with first STCS single Kidney Tpx by donor type (stratified by ABO compatibility)	38
31	Cumulative incidence of graft failure	39
32	Cumulative incidence of graft failure for single Kidney Tpx by donor type .	40
33	Cumulative incidence of graft failure for kidneys in single Tpx stratified by ABO compatibility	40
34	Cumulative incidence of graft failure in Kidney or Kidney-Kidney Tpx recip- ients by HLA mismatches	48
35	Cumulative incidence of graft failure in Liver Tpx recipients by HLA mis- matches	49
36	Cumulative incidence of graft failure in Lung Tpx recipients by HLA mis- matches	50
37	Cumulative incidence of graft failure in Heart Tpx recipients by HLA mis- matches	51

38	Cumulative Kidney DCD patient enrolment by centre	56
39	Graft failure free survival in patients with first STCS Kidney (and Kidney-Kidney) Tpx by donor type	57
40	Cumulative incidence of graft failure for Kidney and Kidney-Kidney Tpx by donor type	57
41	Cumulative Liver DCD patient enrolment by centre	58
42	Overall survival in patients with first STCS Liver Tpx by donor type	59
43	Overall survival since January 2008 for frequent transplantation types . . .	62
44	Graft failure free survival since January 2008 by major transplantation type	63

List of Tables

1	Number of patients enrolled	4
2	Number of patients enrolled by Tpx type	4
3	Number of Tpx types	5
4	Number of transplanted organs	5
5	Patients' characteristics for major Tpx types	6
6	Patients' current consent against consent status at enrolment	15
7	Number of patients with bio-samples	17
8	Patients with infectious disease events	20
9	Summary of infectious disease events	20
10	Follow-up information of patients	23
11	Number of patients who dropped out by Tpx type	23
12	Overall mortality	24
13	Overall mortality by Tpx type	26
14	Overall mortality by frequent Tpx type and centre	28
15	Overall mortality in (single) kidney recipients by donor type	33
16	Summary for graft failures	34
17	Graft failures in double Tpx	34
18	Graft failure and related patients' death	35
19	Number of organs with primary non-function	35
20	Graft failure by organ	41
21	Graft failure by organ and centre	43
22	Graft failure of kidneys (in first STCS single Tpx) by donor type	47
23	Overview of patients with incident cancer	52
24	Patients with incident cancer	52
25	Overview of incident cancer occurrence	53
26	Overview of patients with incident skin cancer	54
27	Patients with incident skin cancer	54
28	Overview of incident skin cancer occurrence	54
29	Kidney patients' characteristics by donor type	55
30	Liver patients' characteristics by donor type	58
31	Number of pediatric patients (under 18) by first Tpx type	60
32	Number of Tpx in pediatric patients by organ and centre	60
33	Number of patients enrolled by Tpx type (January 2008 - April 2008) . . .	61
34	Overall mortality by rare Tpx scenarios	64
35	Overall mortality by rare Tpx scenarios and centre	65

Contents

1	Comments from the centres	1
1.1	Inselspital Bern	1
1.2	Centre Hospitalier Universitaire Vaudois Lausanne	1
1.3	Hôpitaux Universitaires de Genève	1
1.4	Kantonsspital St. Gallen	1
1.5	Universitätsspital Basel	1
1.6	Universitätsspital Zürich	1
2	News and updates	2
3	Patients, transplantations and transplanted organs	3
3.1	Definitions applied	3
3.2	Overview and baseline demographic data	4
3.3	STCS patient enrolment by calendar time	7
3.4	Transplantation activities by centre	9
3.5	Kidney transplantations by centre	10
3.6	Transplantations other than Kidney by centre	11
3.7	Single Kidney and Liver transplantation by donor type	12
4	Consent status	15
5	Bio-samples	17
6	Infectious disease events	20
7	Follow-up	22
8	Mortality	23
8.1	Overall	23
8.2	Mortality by transplantation	25
8.3	Mortality by Tpx and centre	27
8.4	Mortality in first single Kidney transplantation	32
9	Graft failure and primary non-function	34
9.1	Graft failure	34
9.2	Graft failure free survival	36
9.3	Cumulative incidence of graft failure	39
9.4	Graft failure and number of HLA mismatches	48
10	Cancer	52
10.1	Cancer other than skin	52
10.2	Skin cancer	54

11 Specific Populations	55
11.1 DCD Donor Kidney Recipients	55
11.2 DCD Donor Liver Recipients	58
11.3 Pediatric patients	60
A Cohort of all solid organ recipients transplanted since January 2008	61
A.1 Overview	61
A.2 Mortality by transplantation	62
A.3 Graft failure free survival	63
B Mortality in patients with rare Tpx scenarios	64
C Technical summary	66

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

News:

- Transplantations from Kidney Paired Donation (Cross-over Living Donation) (KPD) are newly reported in Chapter 3.7.
- A short description of the specific population of DCD Donor Liver Recipients is included in Chapter 11.2.

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 May 2008 until 31 December 2019. From those patients, the follow-up information from the date of transplantation until end of follow-up (date of death or censoring) 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.

Table 1: Number of patients enrolled

	Patients	(%)
Total number	5672	100.0
Single Tpx at enrolment	5404	95.3
Double Tpx at enrolment	264	4.7
Triple Tpx at enrolment	4	0.1
1st Tpx at enrolment	5094	89.8
Re-Tpx at enrolment	484	8.5
2nd Tpx at enrolment	94	1.7

Table 2: Number of patients enrolled by Tpx type

	Total	First Tpx	(%)	Re Tpx	(%)	Second Tpx	(%)
Total	5672	5094	89.8	484	8.5	94	1.7
Kidney	3196	2739	85.7	418	13.1	39	1.2
Liver	1236	1193	96.5	37	3.0	6	0.5
Lung	501	486	97.0	12	2.4	3	0.6
Heart	420	416	99.0	4	1.0	0	0.0
Islets	37	10	27.0	10	27.0	17	45.9
Pancreas	13	7	53.8	0	0.0	6	46.2
Small bowel	1	0	0.0	1	100.0	0	0.0
Kidney - Pancreas	114	108	94.7	1	0.9	5	4.4
Kidney - Kidney	56	51	91.1	0	0.0	5	8.9
Kidney - Liver	50	42	84.0	0	0.0	8	16.0
Kidney - Islets	23	22	95.7	0	0.0	1	4.3
Kidney - Heart	10	8	80.0	1	10.0	1	10.0
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	2	2	100.0	0	0.0	0	0.0
Kidney - Kidney - Pancreas	2	1	50.0	0	0.0	1	50.0
Kidney - Islets - Liver	1	0	0.0	0	0.0	1	100.0
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.

Table 3: Number of Tpx types

	Total	First Tpx	(%)	Re Tpx	(%)	Second Tpx	(%)
Total	5918	5094	86.1	679	11.5	145	2.5
Kidney	3283	2739	83.4	484	14.7	60	1.8
Liver	1339	1193	89.1	135	10.1	11	0.8
Lung	520	486	93.5	30	5.8	4	0.8
Heart	424	416	98.1	8	1.9	0	0.0
Islets	54	10	18.5	17	31.5	27	50.0
Pancreas	23	7	30.4	1	4.3	15	65.2
Small bowel	1	0	0.0	1	100.0	0	0.0
Kidney - Pancreas	115	108	93.9	2	1.7	5	4.3
Kidney - Kidney	56	51	91.1	0	0.0	5	8.9
Kidney - Liver	51	42	82.4	0	0.0	9	17.6
Kidney - Islets	24	22	91.7	0	0.0	2	8.3
Kidney - Heart	10	8	80.0	1	10.0	1	10.0
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	2	2	100.0	0	0.0	0	0.0
Kidney - Kidney - Pancreas	2	1	50.0	0	0.0	1	50.0
Kidney - Islets - Liver	1	0	0.0	0	0.0	1	100.0
Liver - Pancreas - Small bowel	1	0	0.0	0	0.0	1	100.0
Islets - Liver - Lung	1	1	100.0	0	0.0	0	0.0

'Liver - Pancreas - Small bowel' Tpx type was not performed as first STCS Tpx.

Table 4: Number of transplanted organs

	Total	First Tpx	(%)	Re Tpx	(%)	Second Tpx	(%)
Total	6197	5339	86.2	733	11.8	125	2.0
Kidney	3603	3024	83.9	518	14.4	61	1.7
Liver	1400	1242	88.7	141	10.1	17	1.2
Lung	529	493	93.2	31	5.9	5	0.9
Heart	435	425	97.7	10	2.3	0	0.0
Pancreas	144	119	82.6	10	6.9	15	10.4
Islets	82	34	41.5	21	25.6	27	32.9
Small bowel	4	2	50.0	2	50.0	0	0.0

Table 5: Patients' characteristics for major Tpx types

	Total*	Kidney	Liver	Lung	Heart	Kidney - Pancreas
Total no. patients	5467	3196	1236	501	420	114
Age (yrs), median	54.3	54.4	56.0	54.0	51.4	44.4
- IQR	(42-62.2)	(42.8-63.2)	(46-62.2)	(36.8-60.4)	(36.4-59.5)	(36.6-50.7)
- min; max	0.05; 82.2	1.53; 82.2	0.05; 78	4.37; 70.3	0.07; 71.3	23.38; 64.6
Male gender, n (%)	3489 (63.8%)	2030 (63.5%)	836 (67.6%)	257 (51.3%)	302 (71.9%)	64 (56.1%)
Pediatric, n (%)	284 (5.2%)	128 (4%)	99 (8%)	16 (3.2%)	41 (9.8%)	0 (0%)
Observation time (yrs), median	4.3	4.8	3.6	3.7	3.6	6.1
- IQR	(1.9-7.6)	(2.2-8)	(1.4-6.9)	(1.5-6.4)	(1.3-7.2)	(2.9-8.5)
No. deaths, n (%)	845 (15.5%)	331 (10.4%)	232 (18.8%)	188 (37.5%)	87 (20.7%)	7 (6.1%)
No. patients with at least one GF, n (%)	552 (10.1%)	269 (8.4%)	135 (10.9%)	89 (17.8%)	39 (9.3%)	20 (17.5%)
- with GF, alive	271 (5%)	193 (6%)	56 (4.5%)	5 (1%)	2 (0.5%)	15 (13.2%)
- with GF -> death	155 (2.8%)	68 (2.1%)	46 (3.7%)	23 (4.6%)	13 (3.1%)	5 (4.4%)
- with GF - related death	126 (2.3%)	8 (0.3%)	33 (2.7%)	61 (12.2%)	24 (5.7%)	0 (0%)
Death without GF	564 (10.3%)	255 (8%)	153 (12.4%)	104 (20.8%)	50 (11.9%)	2 (1.8%)
No. patients with any ID	3752 (68.6 %)	2199 (68.8%)	801 (64.8%)	343 (68.5%)	312 (74.3%)	97 (85.1%)
- any proven/viral ID event	2826 (51.7 %)	1643 (51.4%)	589 (47.7%)	284 (56.7%)	235 (56%)	75 (65.8%)
- any incident cancer other than skin	476 (8.7 %)	241 (7.5%)	159 (12.9%)	55 (11%)	17 (4%)	4 (3.5%)
- any incident skin cancer	692 (12.7 %)	467 (14.6%)	92 (7.4%)	66 (13.2%)	57 (13.6%)	10 (8.8%)

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

3.3 STCS patient enrolment by calendar time

Figure 1 shows the patient enrolment activity by quarter from May 2008 till December 2019.

Figure 1: Quarterly patient enrolment by donor type

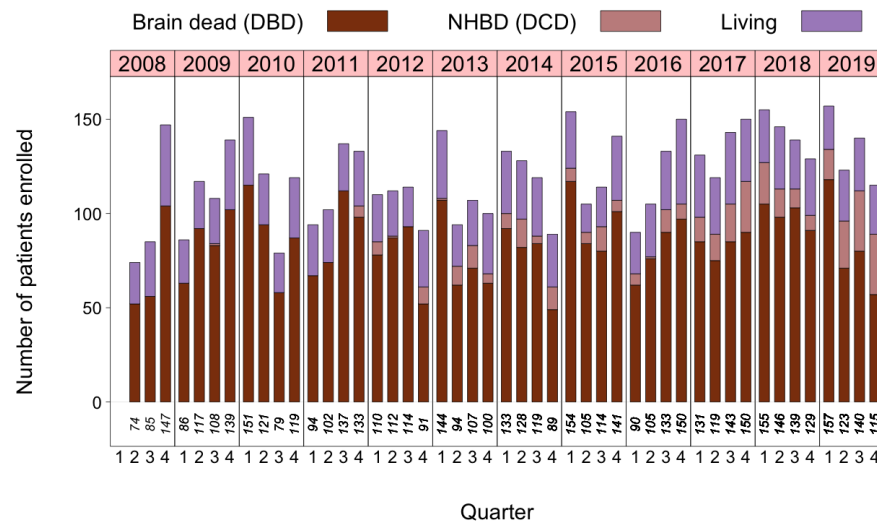


Figure 2: Cumulative patient enrolment

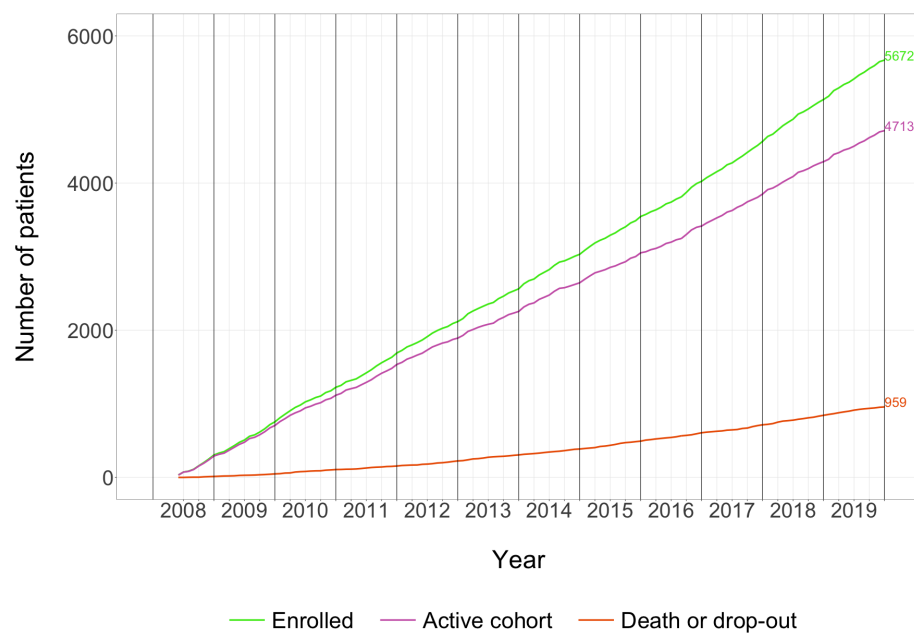
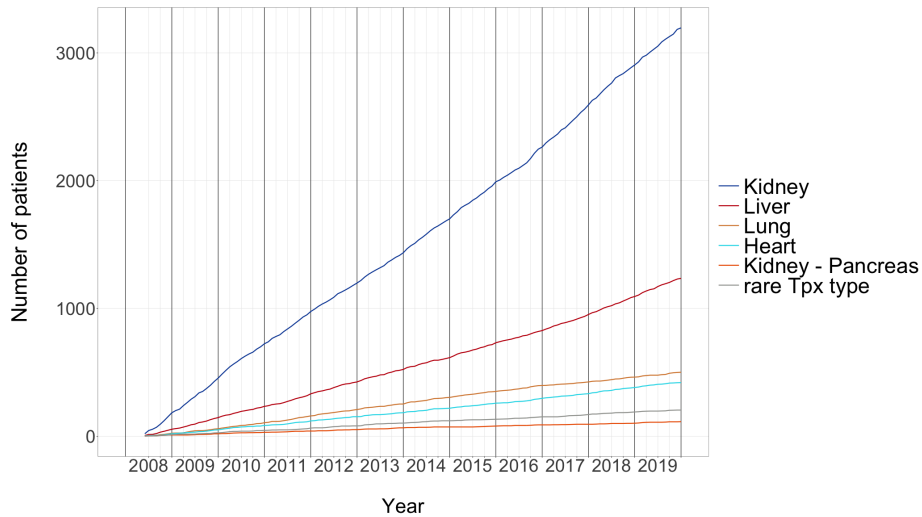
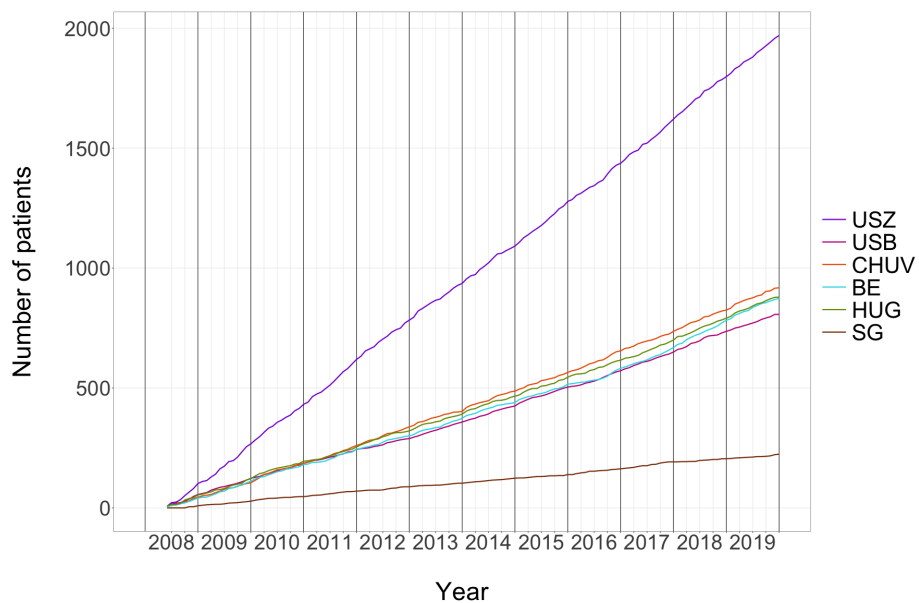


Figure 3: Cumulative patient enrolment by Tpx type



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

Figure 4: Cumulative patient enrolment by center



3.4 Transplantation activities by centre

Figure 5: Number of patients enrolled and organs transplanted

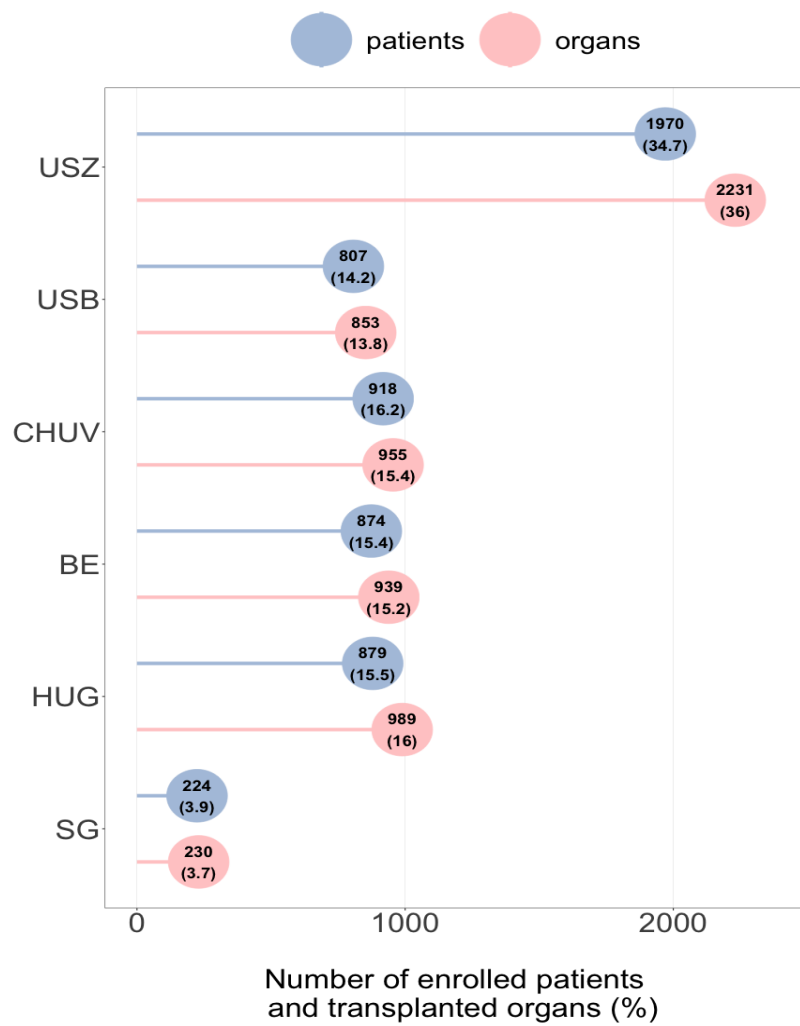
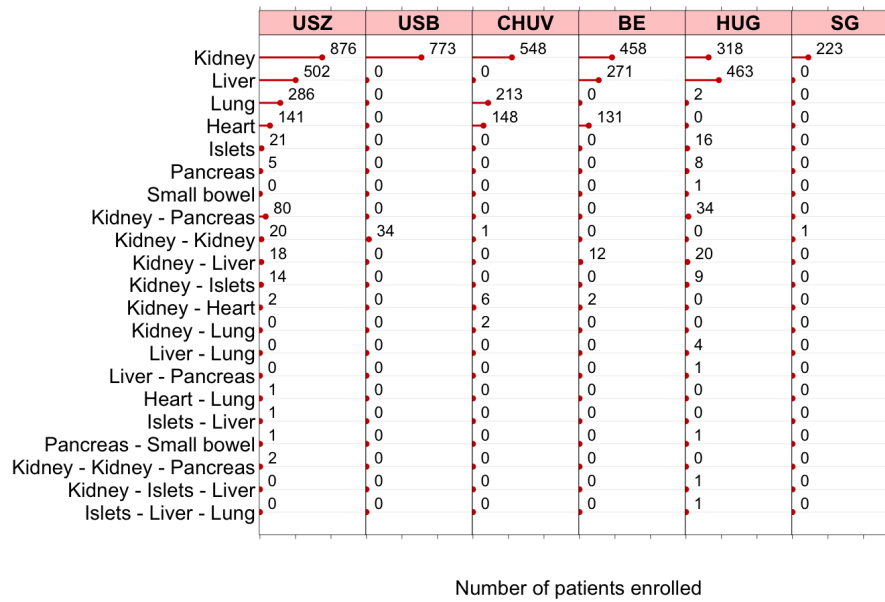
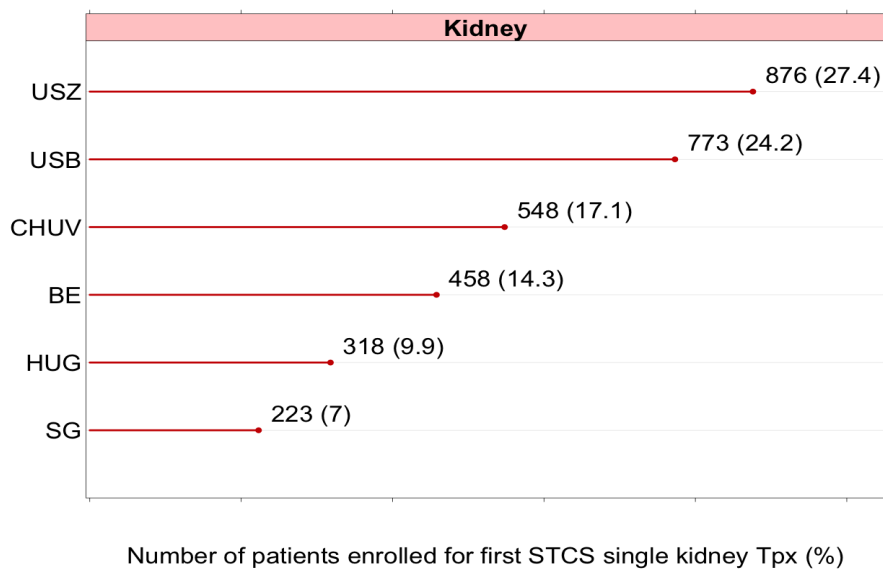


Figure 6: Number of patients enrolled by Tpx type



3.5 Kidney transplantations by centre

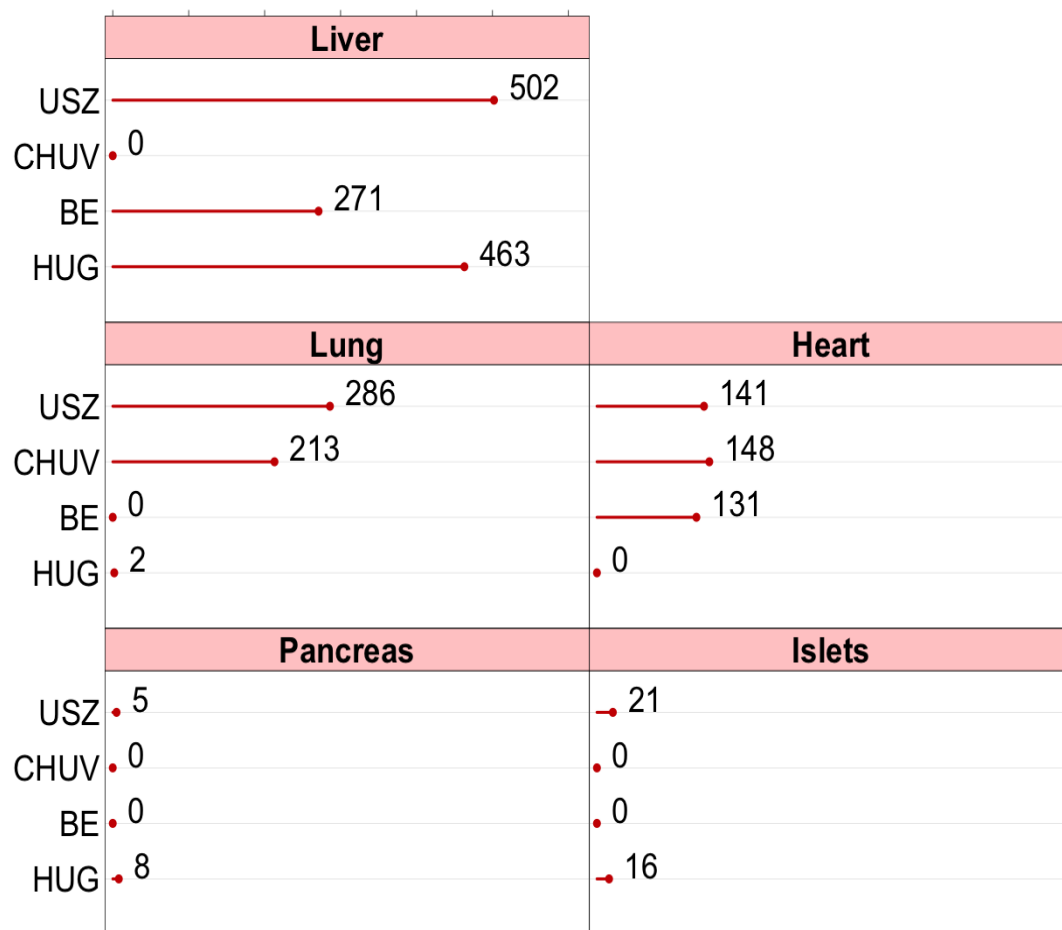
Figure 7: Number of patients with first single Kidney Tpx



3.6 Transplantations other than Kidney by centre

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

Figure 8: Number of patients with first STCS Liver, Lung, Heart, Pancreas or Islets Tpx



Number of patients enrolled for first
STCS heart, liver, lung, pancreas or islets Tpx

3.7 Single Kidney and Liver transplantation by donor type

Figures 9 and 10 show all STCS single Kidney and Liver transplantation by donor type (Donation after Brain Death (DBD), non-heart-beating donor (Donation after Cardiac Death, DCD) (NHBD), Living). Figures 11 and 13 present proportions of donor types in all single Kidney and Liver transplantation within centres.

Figure 9: Number of single Kidney Tpx

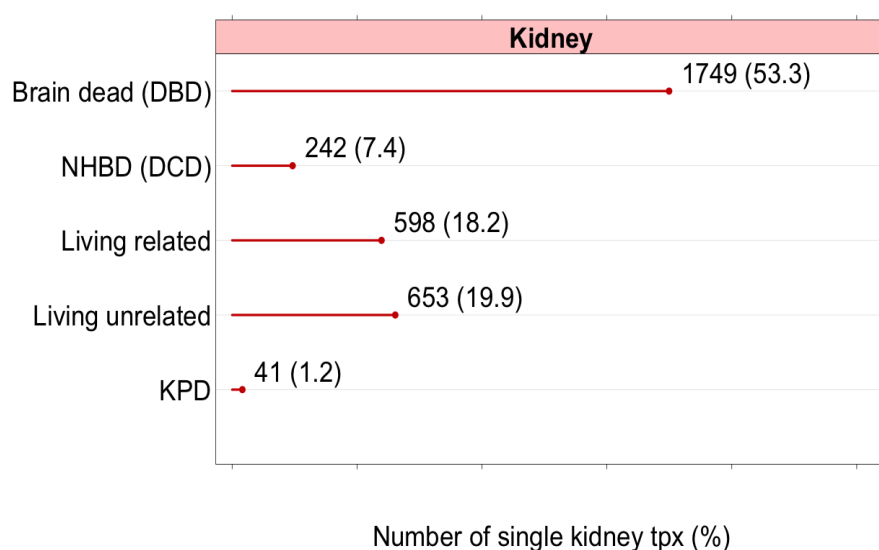


Figure 10: Number of single Liver Tpx

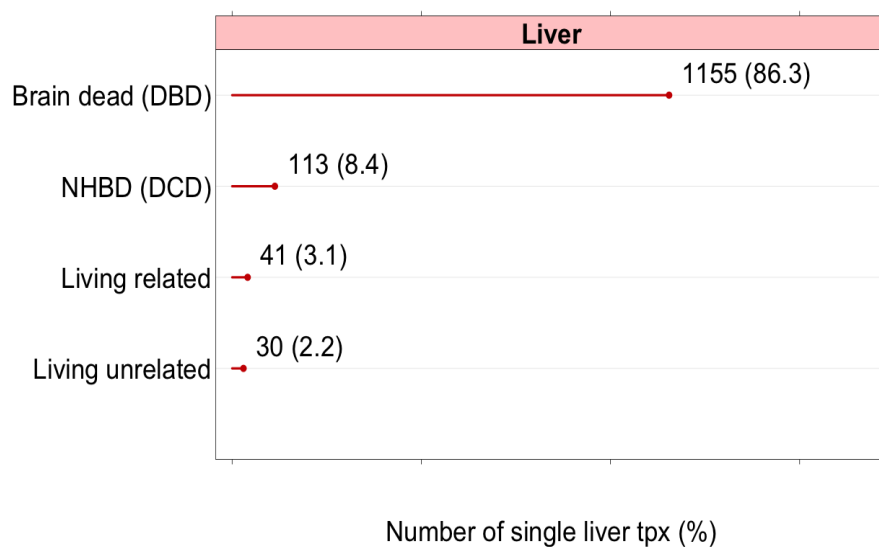


Figure 11: Distribution of donor types in all single Kidney Tpx

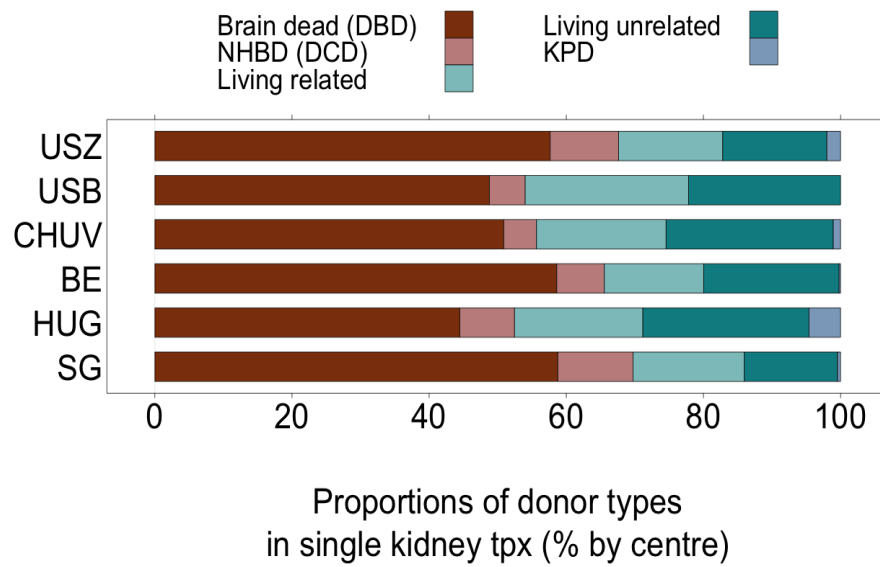


Figure 12: Cumulative KPD patient enrolment by centre

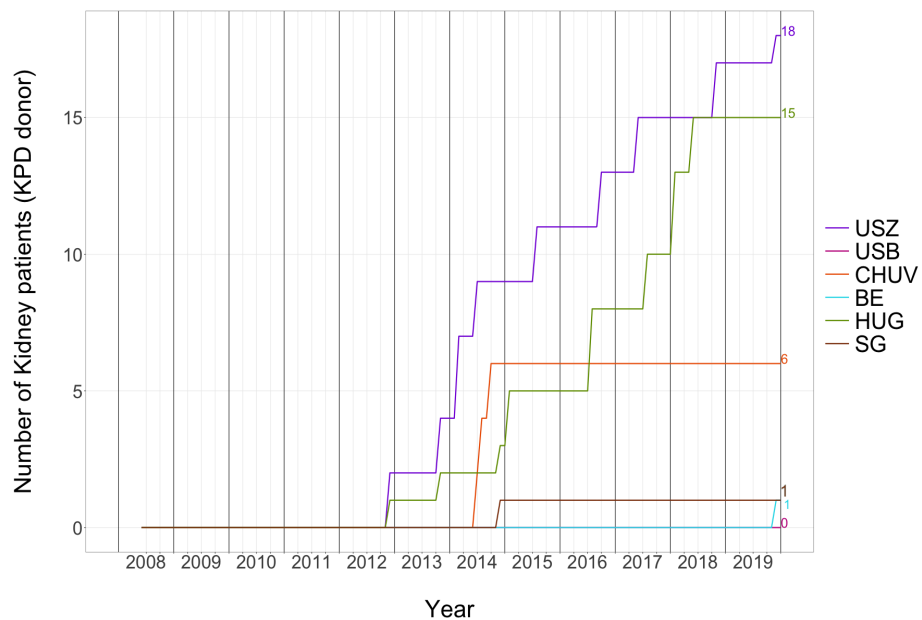
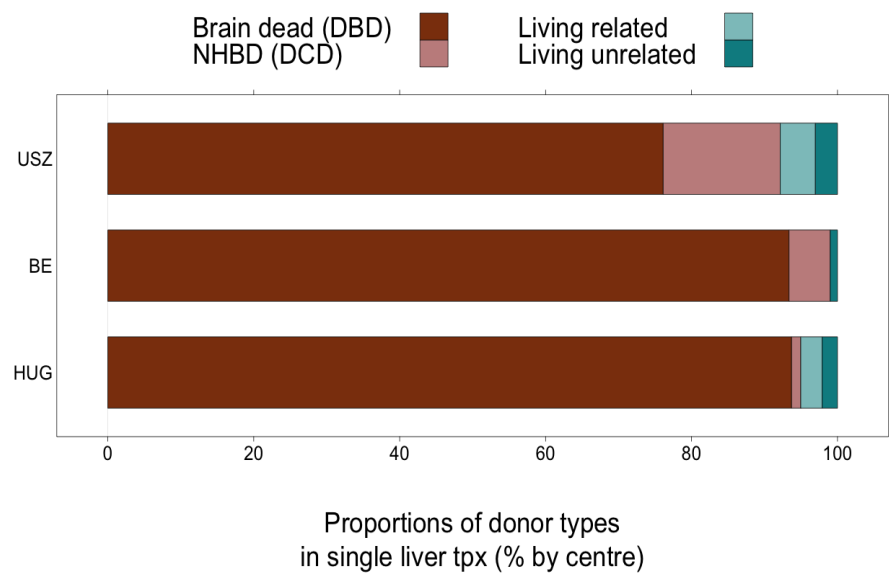


Figure 13: Distribution of donor types in all single Liver Tpx



4 Consent status

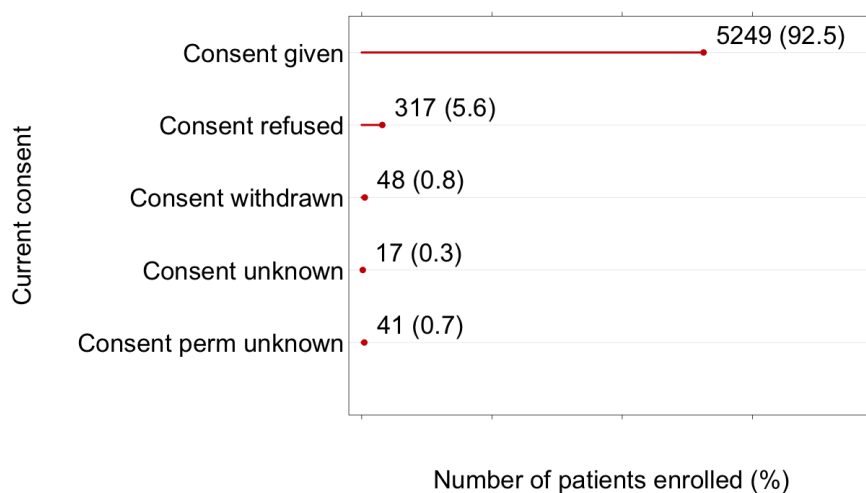
Table 6 shows patients' consent status change over time from enrolment to the current date.

Table 6: Patients' current consent against consent status at enrolment

	Total	C-Given	C-Refused	C-Withdrawn	C-Unknown	C-Perm unknown
Total	5672	5249	317	48	17	41
E-Given	5257	5209	-	48	-	-
E-Refused	321	10	311	-	-	-
E-Unknown	55	30	6	-	17	2
E-Perm unknown	39	-	-	-	-	39

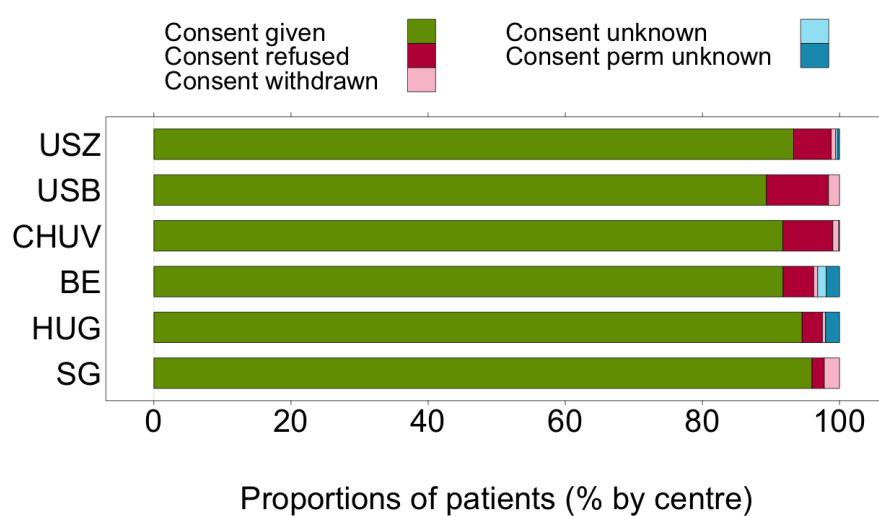
Remark: 'C' stands for 'current consent status' and 'E' denotes the consent status at enrolment.

Figure 14: Patients current consent status



In Figure 15, current patients' status (i. e. last known consent status) is given proportionally within each centre.

Figure 15: Current patients' consent status by centre



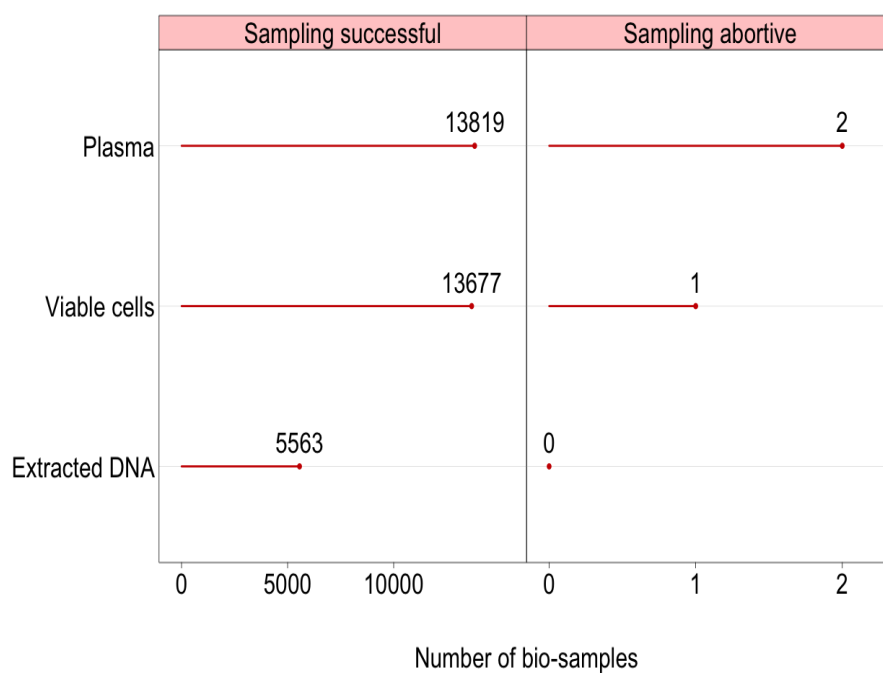
5 Bio-samples

Table 7 presents the number of patients with and without bio-samples. The consent status for patients with at least one bio-sample is at the time point of the first drawn bio-sample. Consent status at enrolment is taken for patients without any bio-samples.

Table 7: Number of patients with bio-samples

	Total	Sample (%)	No sample (%)
Total	5672	5236 92.3	436 7.7
Consent given	5275	5214 98.8	61 1.2
Consent refused	320	0 0.0	320 100.0
Consent unknown	38	15 39.5	23 60.5
Consent perm unknown	39	7 17.9	32 82.1

Figure 16: Number of bio-samples in STCS



Remark: Sampling is defined as abortive if no aliquots were stored.

Figure 17: Distribution of number of aliquots by sample type

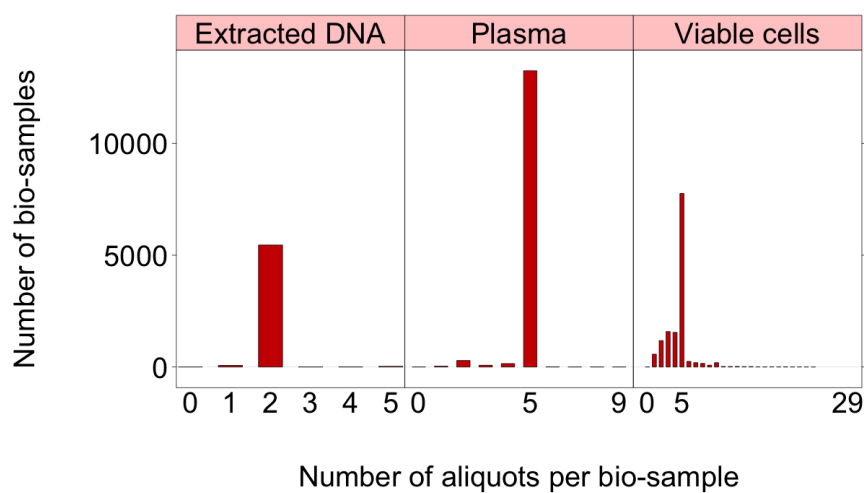


Figure 18: Number of samples by follow-up period

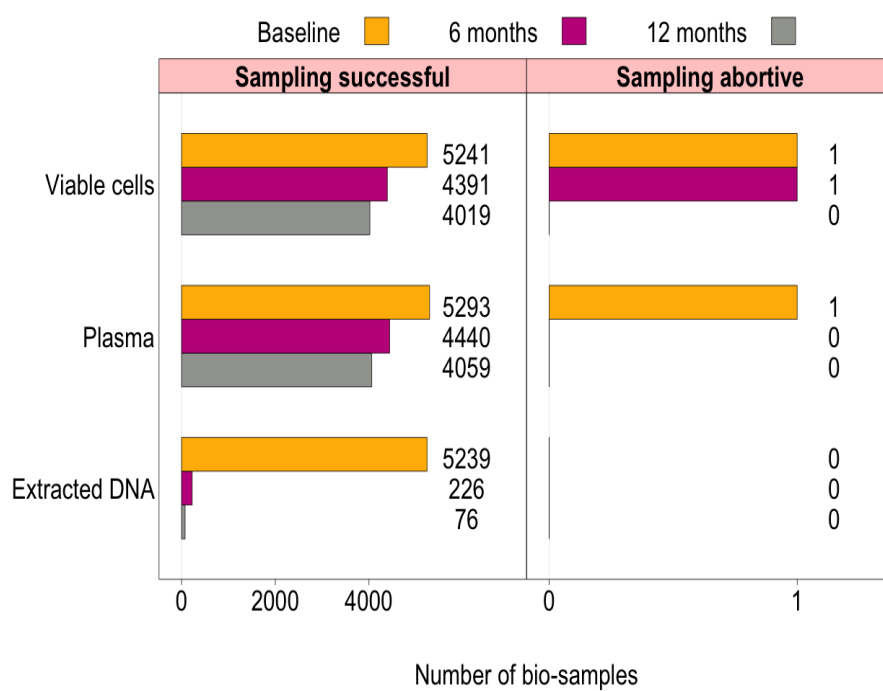
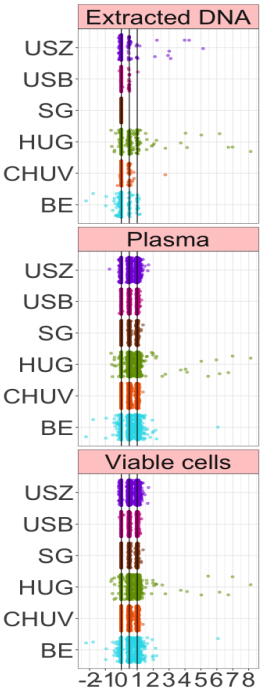


Figure 19: Distribution of sampling time



Time from transplantation to sample date (years)

6 Infectious disease events

In Tables 8 and 9, descriptive information about patients with infectious disease (ID) events and types of ID events are given. Figure 20 gives ID event rates by transplantation and pathogen type.

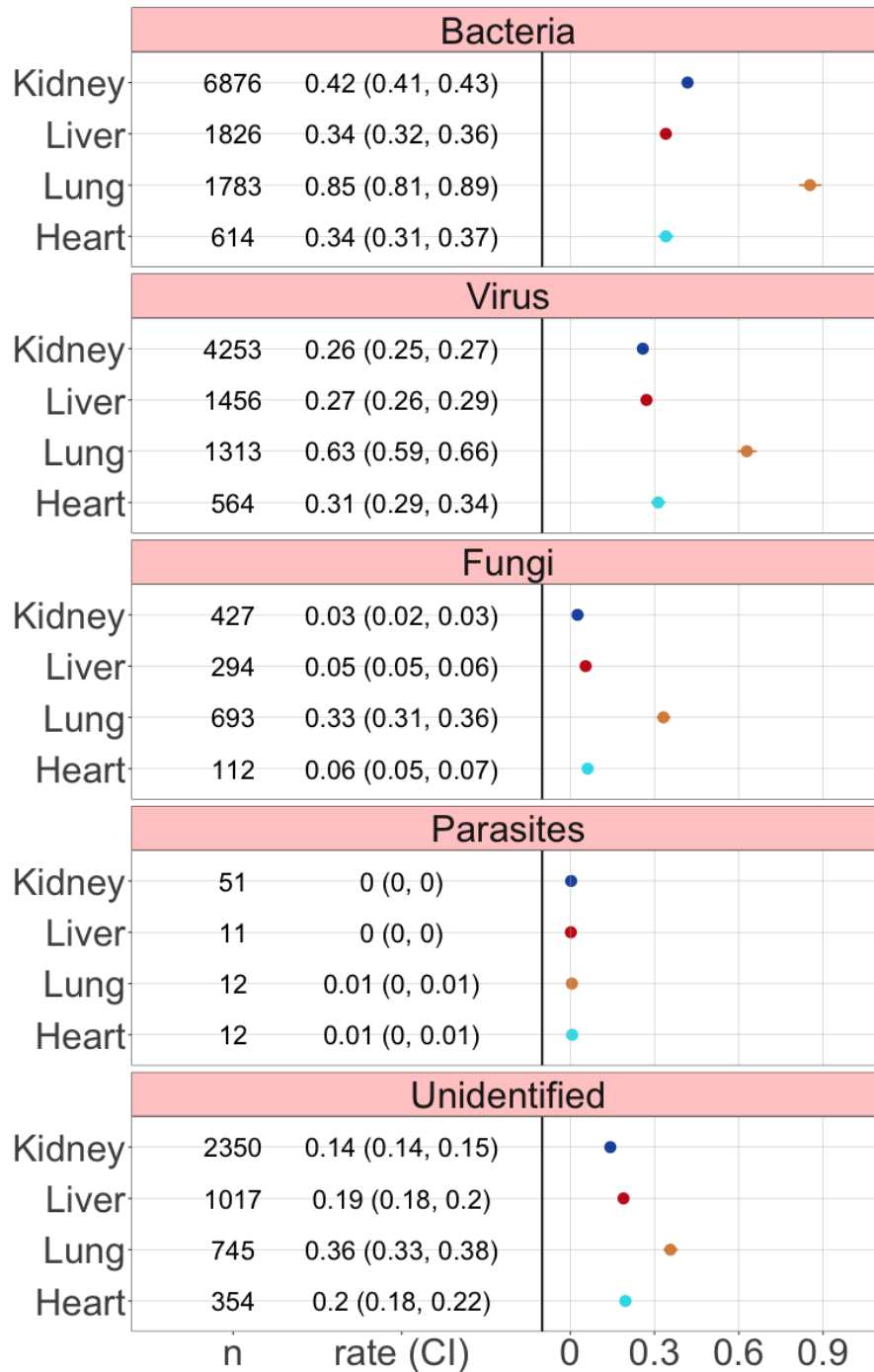
Table 8: Patients with infectious disease events

	N	% (sd)
Total number of patients	5672	
Patients with at least one ID event	3903	68.8%
- Number of ID events, mean (sd)	6.9	(6.9)
Patients with at least one proven/viral ID event	2945	51.9%
- Number of proven/viral ID events, mean (sd)	3.3	(3.4)

Table 9: Summary of infectious disease events

	N	(%)
Total number of ID events	27036	100.0
Proven disease	9696	35.9
Viral syndrome	163	0.6
Primary infection	44	0.2
Probable disease	6150	22.7
Asymptomatic	4146	15.3
Colonization	5728	21.2
Possible disease	75	0.3
Fever neutropenia	28	0.1
Information missing	1006	3.7

Figure 20: 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 21 and 22 have to be read as proportions of transplantation for which at least the 6 month or the 12 month FUP visit was performed.

Figure 21: Number of Tpx with 6 month FUP

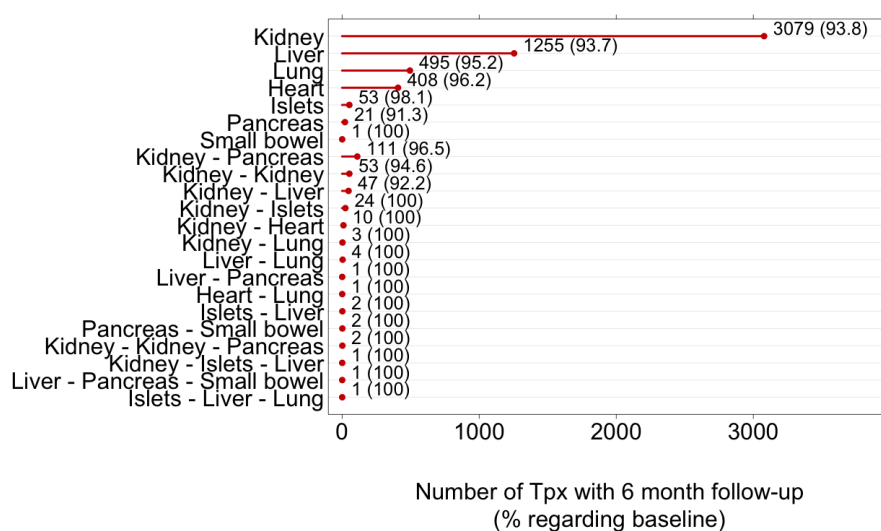
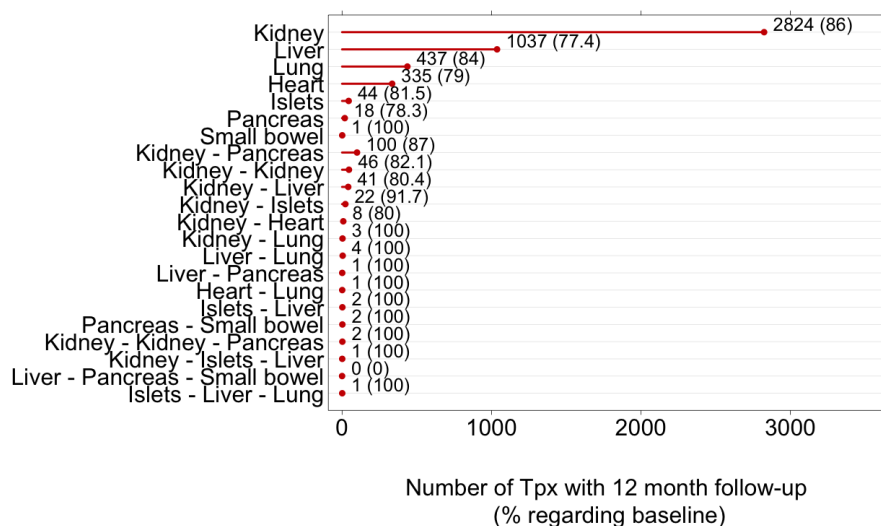


Figure 22: Number of Tpx with 12 month FUP



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 23, 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 10: Follow-up information of patients

	Follow-up
Median follow-up duration (years)	4.34
IQR (years)	1.88 - 7.58
Maximum follow-up (years)*	11.66
Number of deaths	883
Patients with (at least one) graft failure	589
Patients lost to follow-up**	76

* Time period from 1 May 2008 to 31 December 2019

** More details in Table 11.

Table 11: Number of patients who dropped out by Tpx type

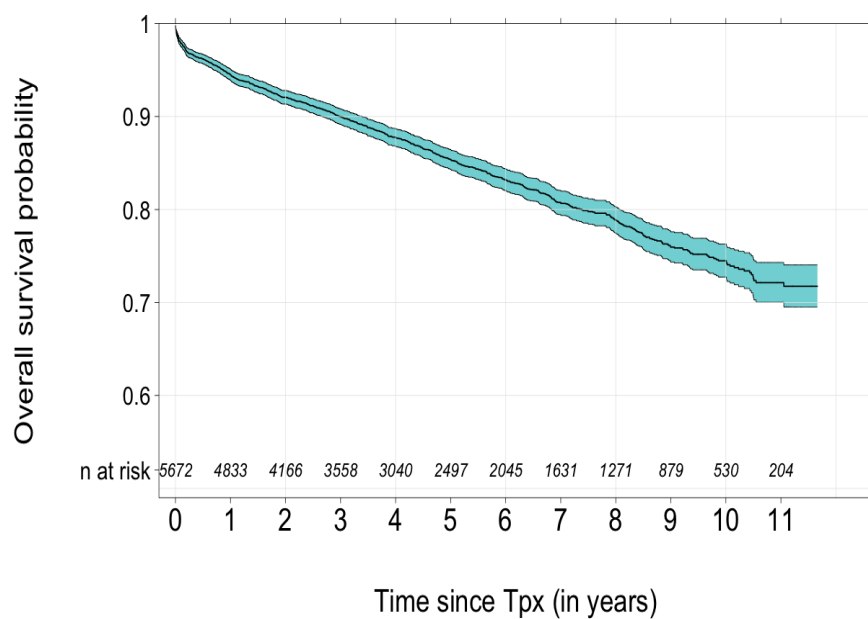
	BE	CHUV	HUG	SG	USB	USZ	Sum
Enrolled, N	874	918	879	224	807	1970	5672
Dropped out, N (%)	10 (1.1%)	14 (1.5%)	12 (1.4%)	0 (0%)	5 (0.6%)	35 (1.8%)	76 (1.3%)
- Heart	1	1	-	-	-	4	6
- Islets	-	-	-	-	-	2	2
- Kidney	8	10	3	-	5	16	42
- Kidney - Liver	1	-	-	-	-	-	1
- Kidney - Pancreas	-	-	1	-	-	2	3
- Liver	-	-	8	-	-	11	19
- Lung	-	3	-	-	-	-	3

Table 12: Overall mortality

Time	Mortality (%)	95% CI	No at risk	Cum. deaths
Baseline	0.0	-	5672	0
1 month	1.9	(1.6, 2.3)	5539	110
6 months	3.8	(3.3, 4.3)	5201	215
1 year	5.5	(4.9, 6.1)	4833	303
2 year(s)	7.9	(7.2, 8.7)	4166	421
4 year(s)	12.3	(11.3, 13.2)	3040	592
6 year(s)	16.8	(15.7, 18)	2045	727
8 year(s)	21.1	(19.7, 22.5)	1271	815
10 year(s)	25.5	(23.7, 27.3)	530	869
Overall	28.3	(26, 30.5)	-	883

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 1 May 2008 to 31 December 2019).

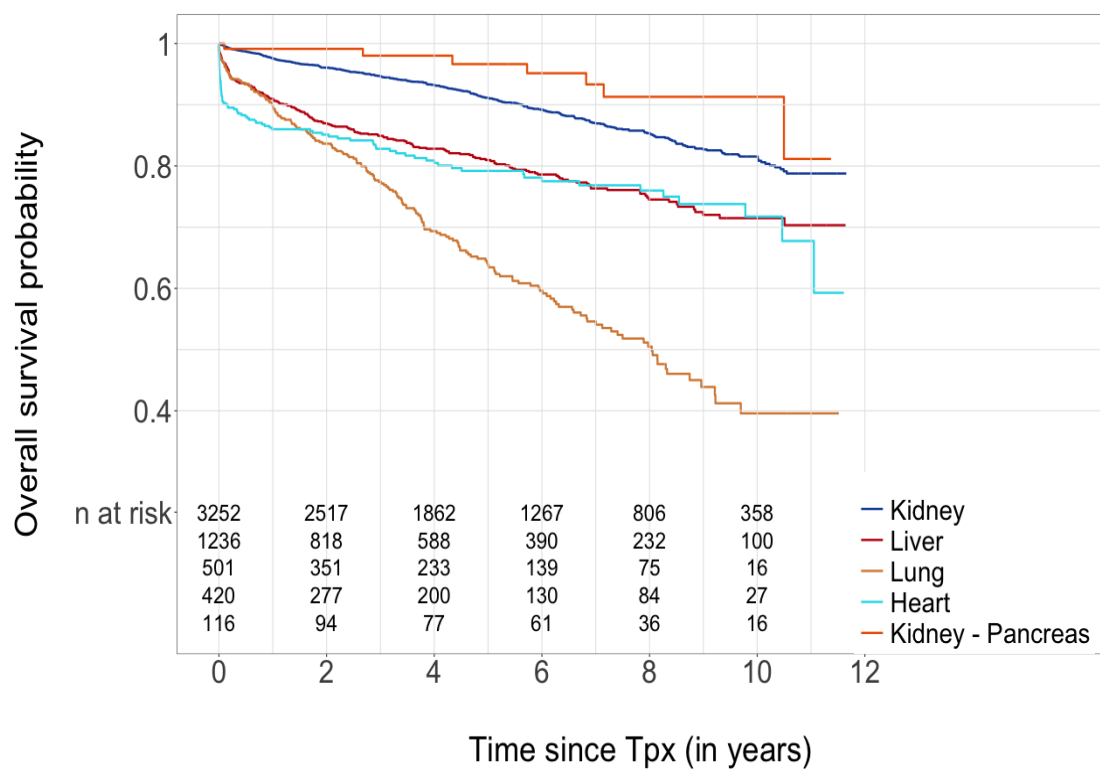
Figure 23: Overall survival



8.2 Mortality by transplantation

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

Figure 24: Overall survival for frequent Tpx types



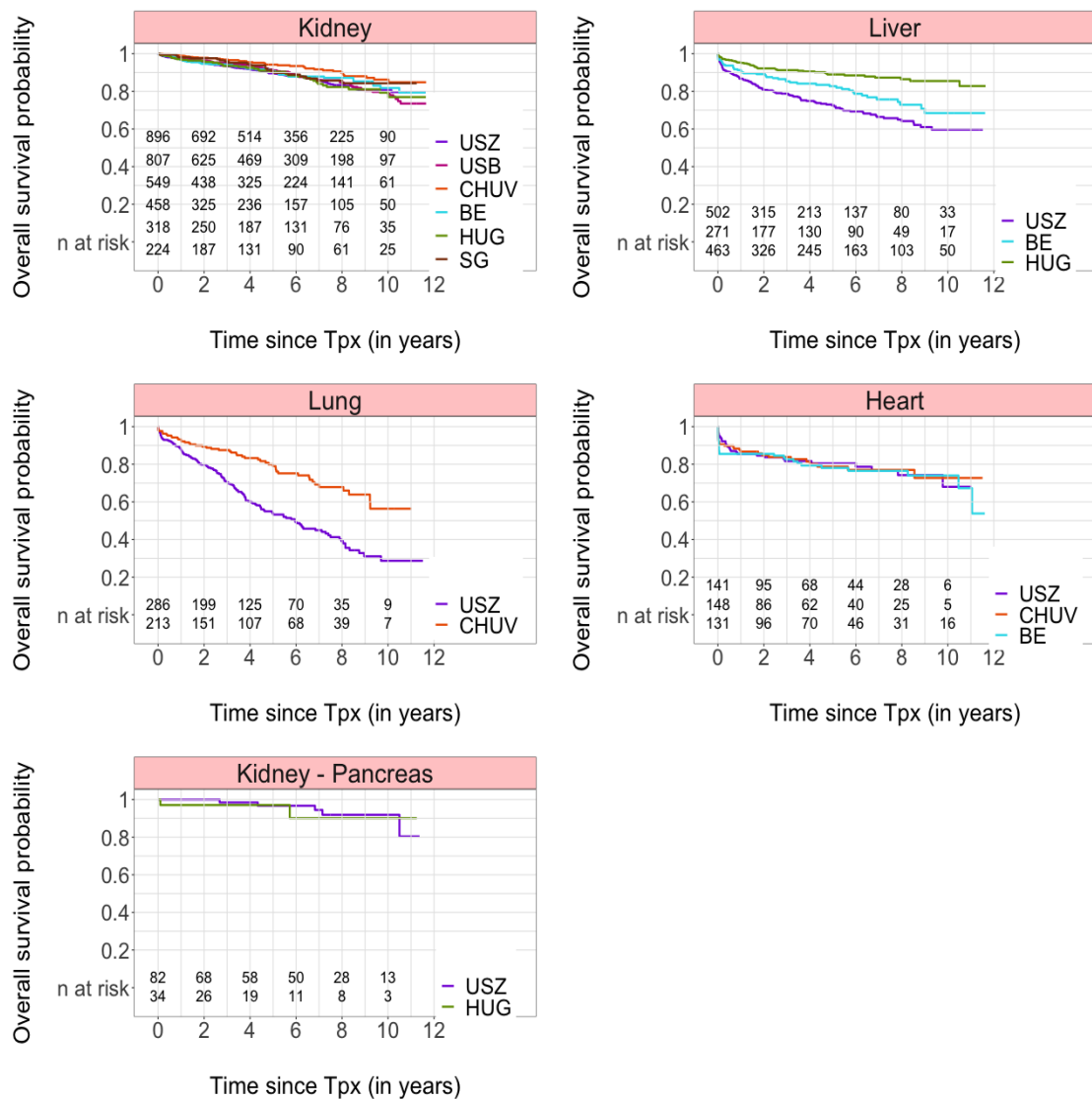
56 Kidney-Kidney Tpx are included in Kidney Tpx. 2 Kidney-Kidney-Pancreas Tpx are included in Kidney-Pancreas Tpx.

Table 13: Overall mortality by Tpx type

Tpx	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
Kidney	Baseline	0.0	-	3252	0
-	1 month	0.3	(0.1, 0.5)	3229	10
-	6 months	1.3	(0.9, 1.7)	3063	41
-	1 year	2.4	(1.9, 2.9)	2877	75
-	2 year(s)	3.9	(3.2, 4.6)	2517	118
-	4 year(s)	6.8	(5.8, 7.7)	1862	183
-	6 year(s)	10.8	(9.5, 12.1)	1267	252
-	8 year(s)	14.7	(13, 16.3)	806	298
-	10 year(s)	18.5	(16.3, 20.5)	358	327
-	Overall	21.2	(18.5, 23.8)	-	337
Liver	Baseline	0.0	-	1236	0
-	1 month	3.2	(2.2, 4.1)	1191	39
-	6 months	6.6	(5.2, 8)	1094	81
-	1 year	9.0	(7.4, 10.6)	989	108
-	2 year(s)	13.0	(11.1, 15)	818	149
-	4 year(s)	17.2	(14.8, 19.5)	588	183
-	6 year(s)	21.4	(18.6, 24.1)	390	208
-	8 year(s)	25.5	(22.2, 28.7)	232	224
-	10 year(s)	28.5	(24.6, 32.3)	100	231
-	Overall	29.7	(25.1, 33.9)	-	232
Lung	Baseline	0.0	-	501	0
-	1 month	3.0	(1.5, 4.5)	484	15
-	6 months	6.7	(4.4, 8.8)	445	33
-	1 year	10.3	(7.5, 12.9)	412	50
-	2 year(s)	16.4	(12.9, 19.7)	351	77
-	4 year(s)	30.6	(26, 35)	233	131
-	6 year(s)	40.4	(35.1, 45.3)	139	159
-	8 year(s)	49.5	(43.3, 55)	75	177
-	10 year(s)	60.4	(52, 67.4)	16	188
-	Overall	60.4	(52, 67.4)	-	188
Heart	Baseline	0.0	-	420	0
-	1 month	9.5	(6.7, 12.3)	379	40
-	6 months	11.9	(8.8, 15)	356	50
-	1 year	14.0	(10.6, 17.3)	326	58
-	2 year(s)	14.9	(11.4, 18.3)	277	61
-	4 year(s)	19.5	(15.3, 23.5)	200	74
-	6 year(s)	22.5	(17.8, 27)	130	80
-	8 year(s)	24.0	(18.9, 28.8)	84	82
-	10 year(s)	28.3	(21.1, 34.8)	27	85
-	Overall	40.7	(20, 56.1)	-	87
Kidney - Pancreas	Baseline	0.0	-	116	0
-	1 month	0.0	-	115	0
-	6 months	0.9	(0, 2.6)	111	1
-	1 year	0.9	(0, 2.6)	103	1
-	2 year(s)	0.9	(0, 2.6)	94	1
-	4 year(s)	2.0	(0, 4.7)	77	2
-	6 year(s)	4.8	(0, 9.5)	61	4
-	8 year(s)	8.7	(1.5, 15.4)	36	6
-	10 year(s)	8.7	(1.5, 15.4)	16	6
-	Overall	18.9	(0, 36.4)	-	7

8.3 Mortality by Tpx and centre

Figure 25: Overall survival for frequent Tpx



56 Kidney-Kidney Tpx (USZ-20, USB-34, CHUV-1, SG-1) are included in Kidney Tpx. 2 Kidney-Kidney-Pancreas Tpx (USZ-2) are included in Kidney-Pancreas Tpx. 2 Lung tpx in HUG are not included in this graph.

Table 14: Overall mortality by frequent Tpx type and centre

Tpx - centre	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
Kidney - USZ	Baseline	0.0	-	896	0
-	1 month	0.3	(0, 0.7)	888	3
-	6 months	1.9	(1, 2.8)	837	17
-	1 year	3.0	(1.9, 4.1)	790	26
-	2 year(s)	5.0	(3.5, 6.4)	692	41
-	4 year(s)	8.2	(6.2, 10.2)	514	62
-	6 year(s)	12.2	(9.6, 14.7)	356	81
-	8 year(s)	16.6	(13.3, 19.8)	225	96
-	10 year(s)	19.3	(15.4, 23.1)	90	102
-	Overall	20.4	(16, 24.5)	-	103
Kidney - USB	Baseline	0.0	-	807	0
-	1 month	0.4	(0, 0.8)	804	3
-	6 months	1.4	(0.6, 2.2)	762	11
-	1 year	2.2	(1.2, 3.2)	719	17
-	2 year(s)	3.6	(2.3, 4.9)	625	27
-	4 year(s)	6.2	(4.3, 8)	469	42
-	6 year(s)	11.2	(8.4, 13.9)	309	63
-	8 year(s)	15.3	(11.8, 18.7)	198	75
-	10 year(s)	20.3	(15.7, 24.6)	97	85
-	Overall	26.5	(19.9, 32.6)	-	91
Kidney - CHUV	Baseline	0.0	-	549	0
-	1 month	0.2	(0, 0.5)	547	1
-	6 months	0.4	(0, 0.9)	525	2
-	1 year	0.9	(0.1, 1.8)	492	5
-	2 year(s)	2.2	(0.9, 3.5)	438	11
-	4 year(s)	4.5	(2.5, 6.5)	325	20
-	6 year(s)	6.5	(4, 9)	224	26
-	8 year(s)	10.0	(6.4, 13.5)	141	33
-	10 year(s)	13.8	(8.9, 18.3)	61	38
-	Overall	15.2	(9.6, 20.4)	-	39
Kidney - BE	Baseline	0.0	-	458	0
-	1 month	0.2	(0, 0.6)	453	1
-	6 months	1.3	(0.3, 2.4)	427	6
-	1 year	3.2	(1.6, 4.9)	393	14
-	2 year(s)	5.4	(3.2, 7.6)	325	22
-	4 year(s)	7.9	(5, 10.7)	236	29
-	6 year(s)	12.1	(8.2, 15.8)	157	38
-	8 year(s)	12.8	(8.7, 16.7)	105	39
-	10 year(s)	18.2	(12, 24)	50	44
-	Overall	20.6	(12.8, 27.7)	-	45
Kidney - HUG	Baseline	0.0	-	318	0
-	1 month	0.3	(0, 0.9)	316	1
-	6 months	1.3	(0, 2.5)	301	4
-	1 year	2.9	(1, 4.8)	282	9
-	2 year(s)	4.0	(1.8, 6.2)	250	12
-	4 year(s)	7.5	(4.2, 10.6)	187	20
-	6 year(s)	11.5	(7.1, 15.6)	131	27
-	8 year(s)	17.7	(11.8, 23.2)	76	35
-	10 year(s)	20.7	(13.5, 27.3)	35	37
-	Overall	23.0	(14.5, 30.7)	-	38
Kidney - SG	Baseline	0.0	-	224	0

Tpx - centre	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
-	1 month	0.5	(0, 1.3)	221	1
-	6 months	0.5	(0, 1.3)	211	1
-	1 year	1.9	(0, 3.7)	201	4
-	2 year(s)	2.4	(0.3, 4.5)	187	5
-	4 year(s)	5.5	(2.1, 8.8)	131	10
-	6 year(s)	11.1	(5.8, 16.1)	90	17
-	8 year(s)	14.3	(8, 20.2)	61	20
-	10 year(s)	15.7	(8.9, 22)	25	21
-	Overall	15.7	(8.9, 22)	-	21
Liver - USZ	Baseline	0.0	-	502	0
-	1 month	4.4	(2.6, 6.2)	475	22
-	6 months	9.7	(7.1, 12.3)	426	48
-	1 year	13.2	(10.2, 16.2)	383	64
-	2 year(s)	19.0	(15.3, 22.5)	315	88
-	4 year(s)	25.1	(20.8, 29.2)	213	108
-	6 year(s)	30.7	(25.6, 35.4)	137	121
-	8 year(s)	35.8	(29.9, 41.3)	80	129
-	10 year(s)	40.4	(33.1, 46.8)	33	133
-	Overall	40.4	(33.1, 46.8)	-	133
Liver - BE	Baseline	0.0	-	271	0
-	1 month	3.3	(1.2, 5.4)	261	9
-	6 months	6.3	(3.4, 9.2)	242	17
-	1 year	8.7	(5.2, 12)	218	23
-	2 year(s)	10.9	(7, 14.6)	177	28
-	4 year(s)	15.9	(10.9, 20.6)	130	37
-	6 year(s)	21.3	(15.1, 27)	90	44
-	8 year(s)	27.1	(19.3, 34.2)	49	49
-	10 year(s)	31.6	(21.7, 40.2)	17	51
-	Overall	31.6	(21.7, 40.2)	-	51
Liver - HUG	Baseline	0.0	-	463	0
-	1 month	1.7	(0.5, 2.9)	455	8
-	6 months	3.5	(1.8, 5.2)	426	16
-	1 year	4.7	(2.7, 6.6)	388	21
-	2 year(s)	7.8	(5.2, 10.3)	326	33
-	4 year(s)	9.4	(6.5, 12.3)	245	38
-	6 year(s)	11.5	(8.1, 14.8)	163	43
-	8 year(s)	13.5	(9.4, 17.4)	103	46
-	10 year(s)	14.5	(10, 18.8)	50	47
-	Overall	17.2	(10.2, 23.6)	-	48
Lung - USZ	Baseline	0.0	-	286	0
-	1 month	3.2	(1.1, 5.2)	275	9
-	6 months	7.8	(4.6, 10.8)	254	22
-	1 year	12.2	(8.3, 15.9)	236	34
-	2 year(s)	20.2	(15.3, 24.9)	199	55
-	4 year(s)	39.9	(33.3, 45.7)	125	100
-	6 year(s)	50.6	(43.4, 56.9)	70	119
-	8 year(s)	60.9	(52.6, 67.8)	35	131
-	10 year(s)	71.3	(60.8, 79)	9	138
-	Overall	71.3	(60.8, 79)	-	138
Lung - CHUV	Baseline	0.0	-	213	0
-	1 month	2.4	(0.3, 4.4)	208	5
-	6 months	4.8	(1.8, 7.6)	190	10
-	1 year	7.3	(3.7, 10.8)	175	15

Tpx - centre	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
-	2 year(s)	10.6	(6.2, 14.9)	151	21
-	4 year(s)	16.7	(11, 22.1)	107	30
-	6 year(s)	24.8	(17.4, 31.6)	68	39
-	8 year(s)	32.1	(23.1, 40.1)	39	45
-	10 year(s)	43.6	(29, 55.2)	7	49
-	Overall	43.6	(29, 55.2)	-	49
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
-	Overall	50.0	(0, 87.5)	-	1
Heart - USZ	Baseline	0.0	-	141	0
-	1 month	5.0	(1.3, 8.5)	134	7
-	6 months	11.5	(6, 16.6)	118	16
-	1 year	14.5	(8.4, 20.2)	109	20
-	2 year(s)	15.4	(9.1, 21.2)	95	21
-	4 year(s)	18.3	(11.3, 24.8)	68	24
-	6 year(s)	21.4	(13.3, 28.7)	44	26
-	8 year(s)	25.8	(15.7, 34.7)	28	28
-	10 year(s)	32.0	(15.8, 45)	6	29
-	Overall	32.0	(15.8, 45)	-	29
Heart - CHUV	Baseline	0.0	-	148	0
-	1 month	9.5	(4.6, 14.1)	133	14
-	6 months	10.2	(5.2, 14.9)	126	15
-	1 year	13.3	(7.5, 18.7)	109	19
-	2 year(s)	15.2	(8.9, 21)	86	21
-	4 year(s)	19.9	(12.3, 26.9)	62	25
-	6 year(s)	23.0	(14.4, 30.8)	40	27
-	8 year(s)	23.0	(14.4, 30.8)	25	27
-	10 year(s)	27.3	(15.1, 37.7)	5	28
-	Overall	27.3	(15.1, 37.7)	-	28
Heart - BE	Baseline	0.0	-	131	0
-	1 month	14.5	(8.3, 20.3)	112	19
-	6 months	14.5	(8.3, 20.3)	112	19
-	1 year	14.5	(8.3, 20.3)	108	19
-	2 year(s)	14.5	(8.3, 20.3)	96	19
-	4 year(s)	20.7	(13, 27.7)	70	25
-	6 year(s)	23.5	(15, 31.2)	46	27
-	8 year(s)	23.5	(15, 31.2)	31	27
-	10 year(s)	26.0	(16.2, 34.6)	16	28
-	Overall	46.2	(11.9, 67.1)	-	30
Kidney - Pancreas - USZ	Baseline	0.0	-	82	0
-	1 month	0.0	-	81	0
-	6 months	0.0	-	78	0
-	1 year	0.0	-	74	0
-	2 year(s)	0.0	-	68	0
-	4 year(s)	1.6	(0, 4.6)	58	1
-	6 year(s)	3.3	(0, 7.8)	50	2

Tpx - centre	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
-	8 year(s)	8.1	(0, 15.6)	28	4
-	10 year(s)	8.1	(0, 15.6)	13	4
-	Overall	19.6	(0, 39)	-	5
Kidney - Pancreas - HUG	Baseline	0.0	-	34	0
-	1 month	0.0	-	34	0
-	6 months	2.9	(0, 8.5)	33	1
-	1 year	2.9	(0, 8.5)	29	1
-	2 year(s)	2.9	(0, 8.5)	26	1
-	4 year(s)	2.9	(0, 8.5)	19	1
-	6 year(s)	9.9	(0, 22.9)	11	2
-	8 year(s)	9.9	(0, 22.9)	8	2
-	10 year(s)	9.9	(0, 22.9)	3	2
-	Overall	9.9	(0, 22.9)	-	2

8.4 Mortality in first single Kidney transplantation

Overall survival for patients with single Kidney transplantation as first STCS transplantation is presented separated by the donor type. In Figure 27, category 'Living' is separated in 'Living, ABO c' and 'Living, not ABO c'. The letter 'c' stands for 'compatible'.

Figure 26: Overall survival for patients with first STCS single Kidney Tpx by donor type

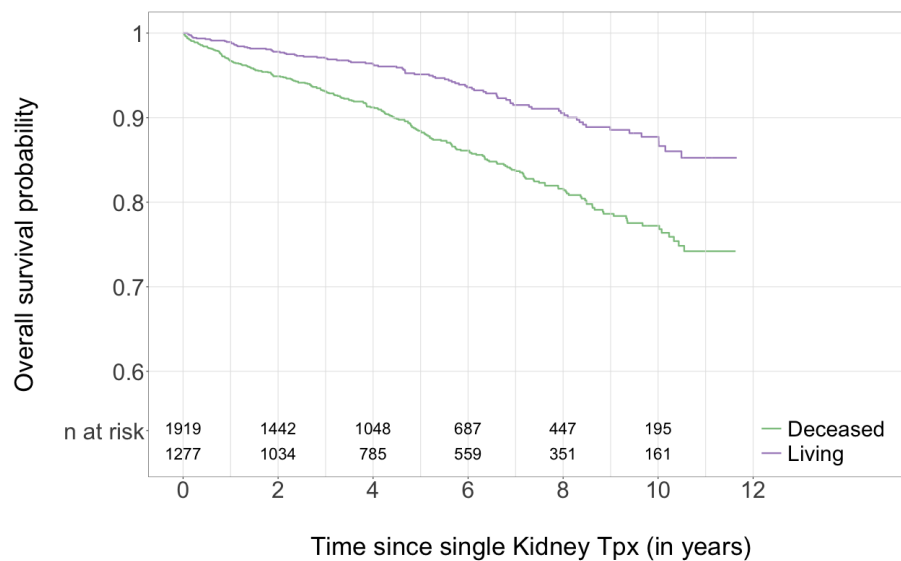


Figure 27: Overall survival for patients with first STCS single Kidney Tpx by donor type stratified by ABO compatibility

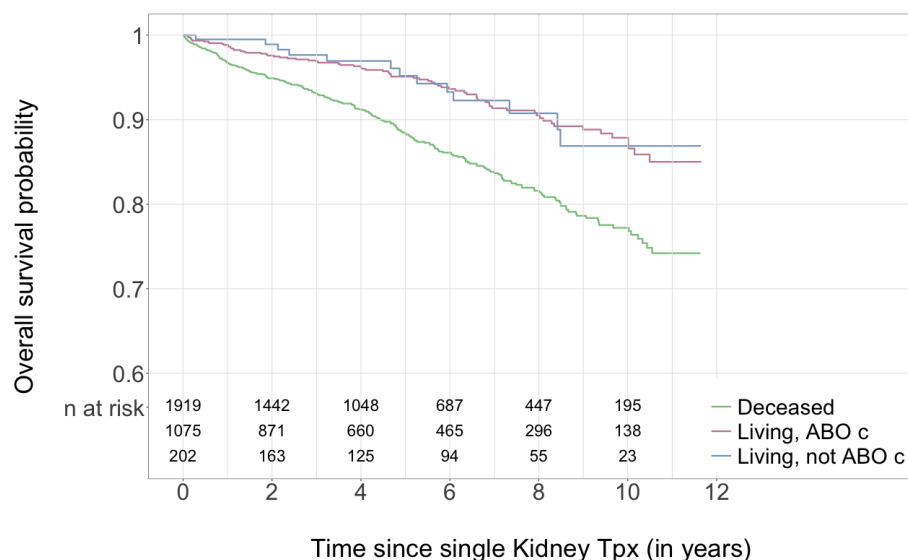


Table 15: Overall mortality in (single) kidney recipients by donor type

Donor type	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
Deceased	Baseline	0.0	-	1919	0
-	1 month	0.5	(0.2, 0.8)	1904	9
-	6 months	1.6	(1, 2.1)	1798	30
-	1 year	3.3	(2.5, 4.1)	1670	60
-	2 year(s)	5.1	(4.1, 6.1)	1442	90
-	4 year(s)	8.8	(7.3, 10.2)	1048	138
-	6 year(s)	13.9	(11.9, 15.8)	687	188
-	8 year(s)	18.4	(16, 20.8)	447	219
-	10 year(s)	22.8	(19.7, 25.7)	195	238
-	Overall	25.8	(22, 29.4)	-	244
Living	Baseline	0.0	-	1277	0
-	1 month	0.0	-	1270	0
-	6 months	0.7	(0.2, 1.2)	1214	9
-	1 year	1.1	(0.5, 1.6)	1158	13
-	2 year(s)	2.2	(1.4, 3)	1034	26
-	4 year(s)	3.7	(2.6, 4.8)	785	40
-	6 year(s)	6.4	(4.8, 8.1)	559	59
-	8 year(s)	9.5	(7.2, 11.6)	351	74
-	10 year(s)	12.3	(9.4, 15)	161	83
-	Overall	14.8	(11, 18.3)	-	87

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 17 and 18). Table 16 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 19.

Table 16: Summary for graft failures

	N	(%)
Graft failure - total	657	100.0
- in single Tpx	597	90.9
- in double Tpx	57	8.7
- in triple Tpx	3	0.5
Patients with at least one graft failure	594	
Patients with graft failure or death	1176	100.0
- graft failure and alive at end of follow-up	293	24.9
- graft failure followed by late death	167	14.2
- graft failure related death (at same day)	129	11
- death without any graft failure	587	49.9

Table 17: Graft failures in double Tpx

	Total	Kidney	Heart	Liver	Lung	Pancreas	Islets	Small bowel
Total	57	18	2	5	2	21	7	2
Kidney - Heart	1	-	1	-	-	-	-	-
Kidney - Islets	9	2	-	-	-	-	7	-
Kidney - Kidney	6	6	-	-	-	-	-	-
Kidney - Liver	9	4	-	5	-	-	-	-
Kidney - Lung	1	1	-	-	-	-	-	-
Kidney - Pancreas	24	5	-	-	-	19	-	-
Heart - Lung	2	-	1	-	1	-	-	-
Liver - Lung	1	-	-	-	1	-	-	-
Pancreas - Small bowel	4	-	-	-	-	2	-	2

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

Table 18: Graft failure and related patients' death

	Total	All GF*	(%)	GF, late death	(%)	GF related death	(%)
Total	6197	657	10.6	197	30	144	21.9
Kidney	3603	296	8.2	79	26.7	8	2.7
Liver	1400	166	11.9	63	38	40	24.1
Lung	529	99	18.7	25	25.3	69	69.7
Heart	435	42	9.7	12	28.6	27	64.3
Pancreas	144	26	18.1	7	26.9	-	-
Islets	82	24	29.3	7	29.2	-	-
Small bowel	4	4	100	4	100	-	-

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

Table 19: Number of organs with primary non-function

	Total	USZ	USB	CHUV	BE	HUG	SG
Total	87	36	4	6	23	17	1
Kidney	29	12	4	2	1	9	1
Liver	43	18	-	-	17	8	-
Lung	2	2	-	-	-	-	-
Heart	11	3	-	3	5	-	-
Pancreas	1	-	-	1	-	-	-
Islets	1	1	-	-	-	-	-
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. In Figure 28 and 29, both single Kidney and double Kidney transplantations are included as mentioned previously. Also the Kidney-Kidney-Pancreas transplantation (USZ) are included in Kidney-Pancreas transplantation. In contrast, Figure 30 shows graft failure free survival only for patients with first STCS single Kidney transplantation.

Figure 28: Graft failure free survival by major Tpx

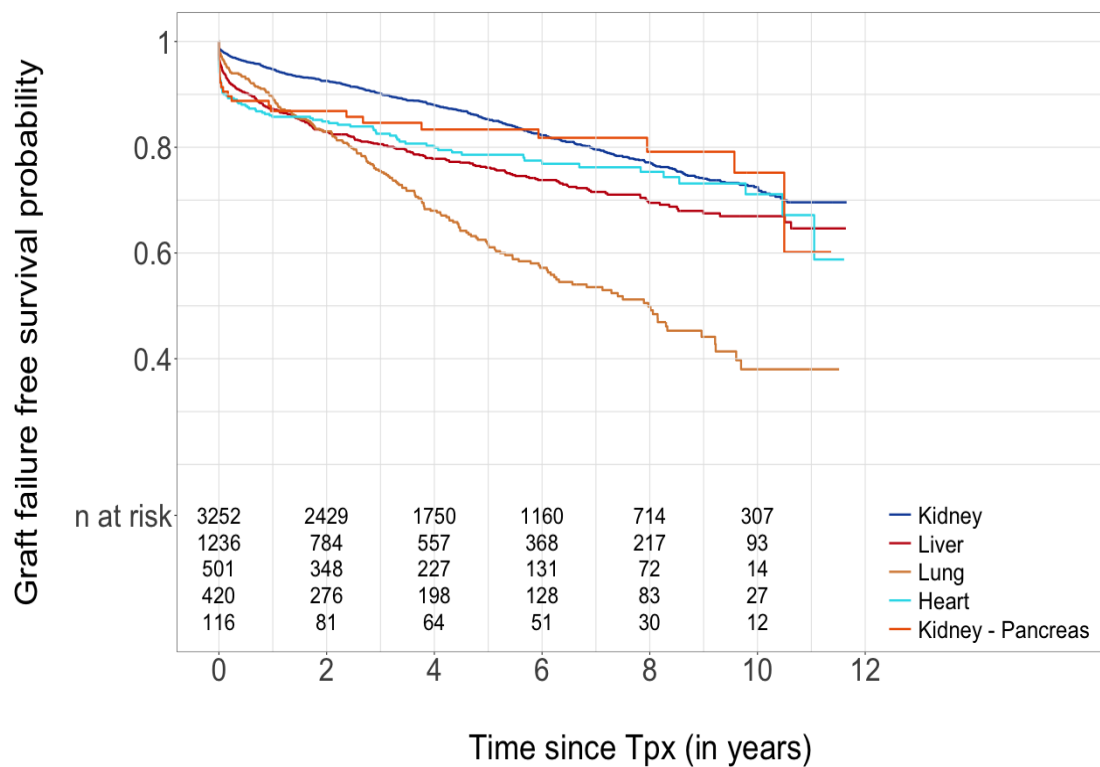


Figure 29: Graft failure free survival by major Tpx and centre

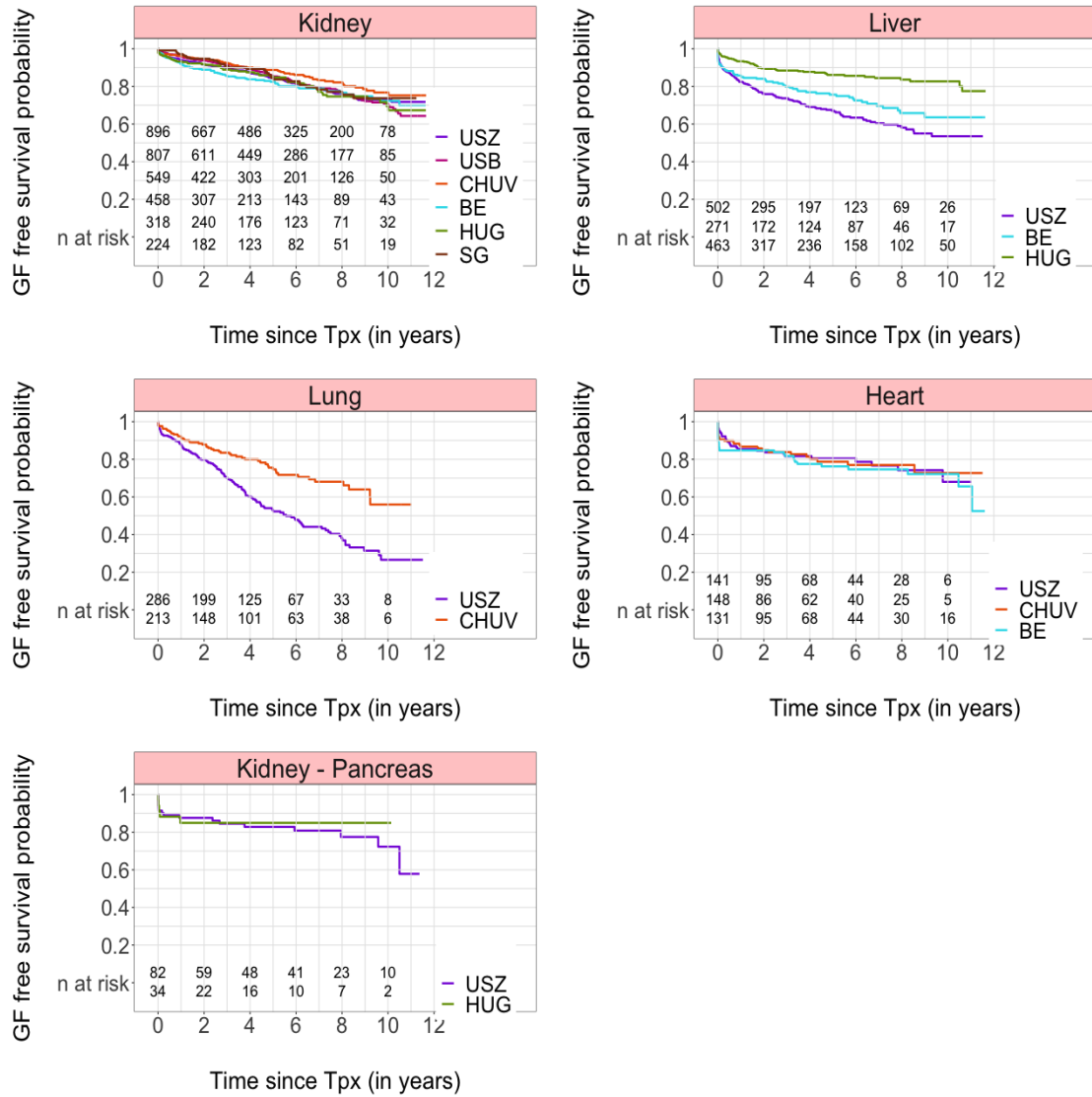
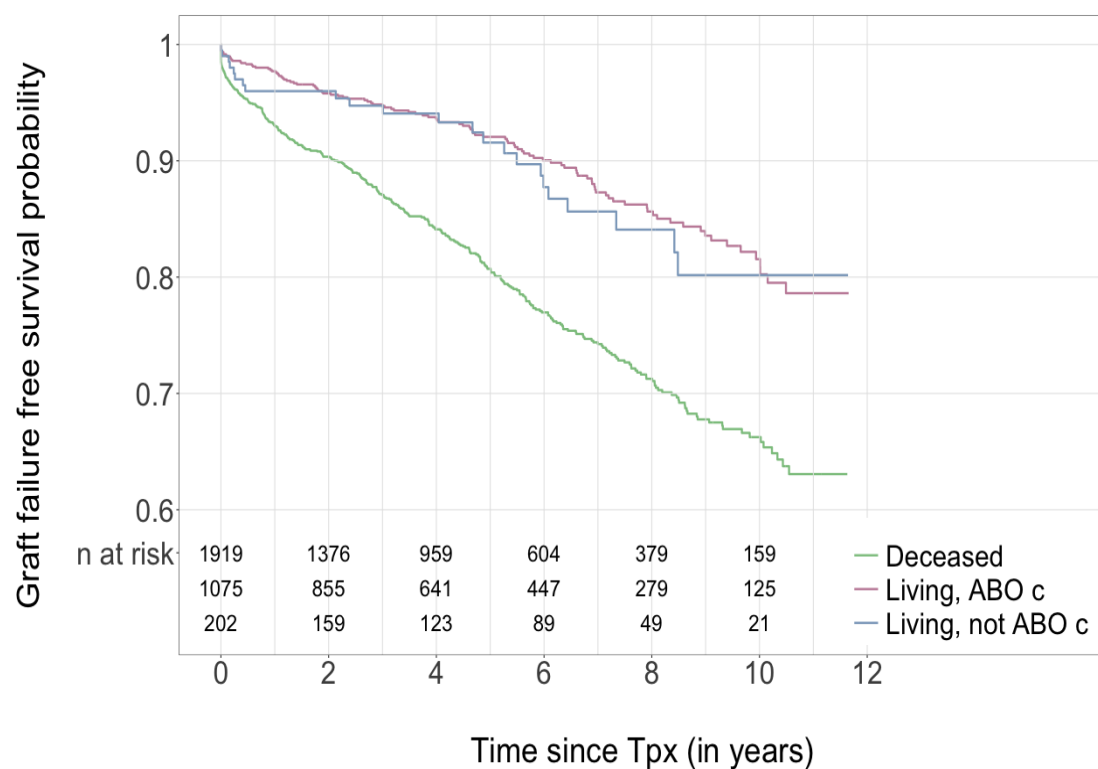


Figure 30: Graft failure free survival in patients with first STCS single Kidney Tpx by donor type (stratified by ABO compatibility)



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 31, Table 20 and Table 21 double kidneys are counted as one kidney.

Figure 31: Cumulative incidence of graft failure

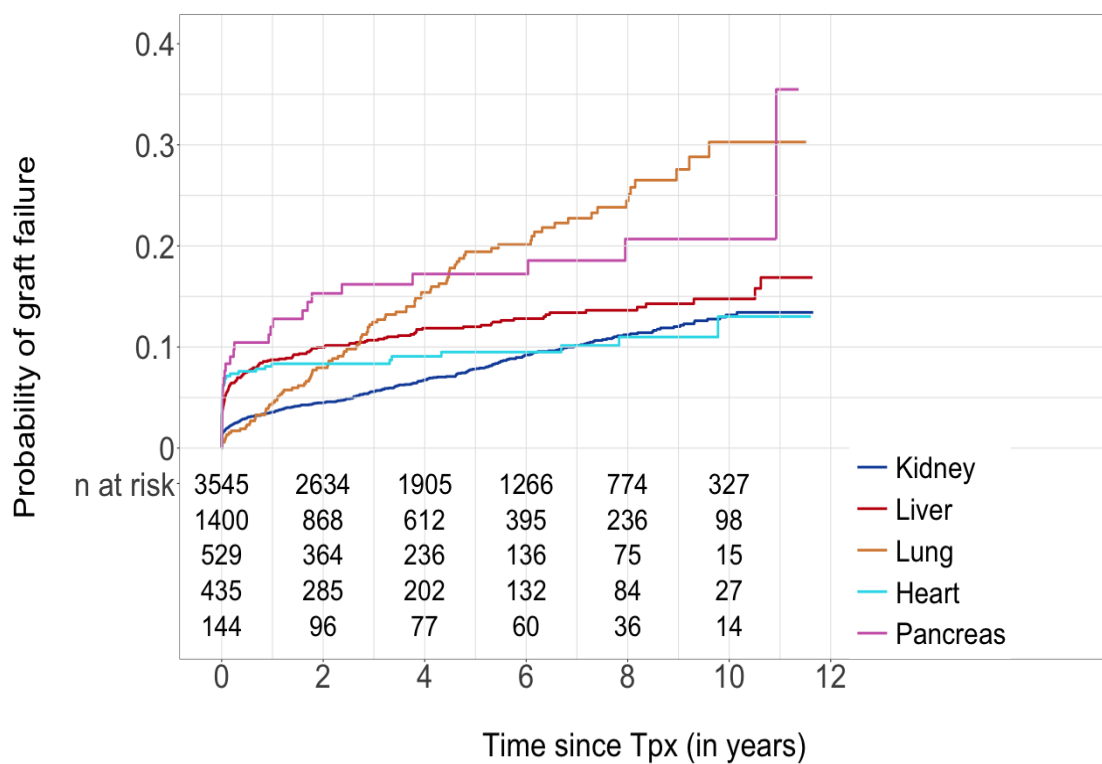


Figure 32: Cumulative incidence of graft failure for single Kidney Tpx by donor type

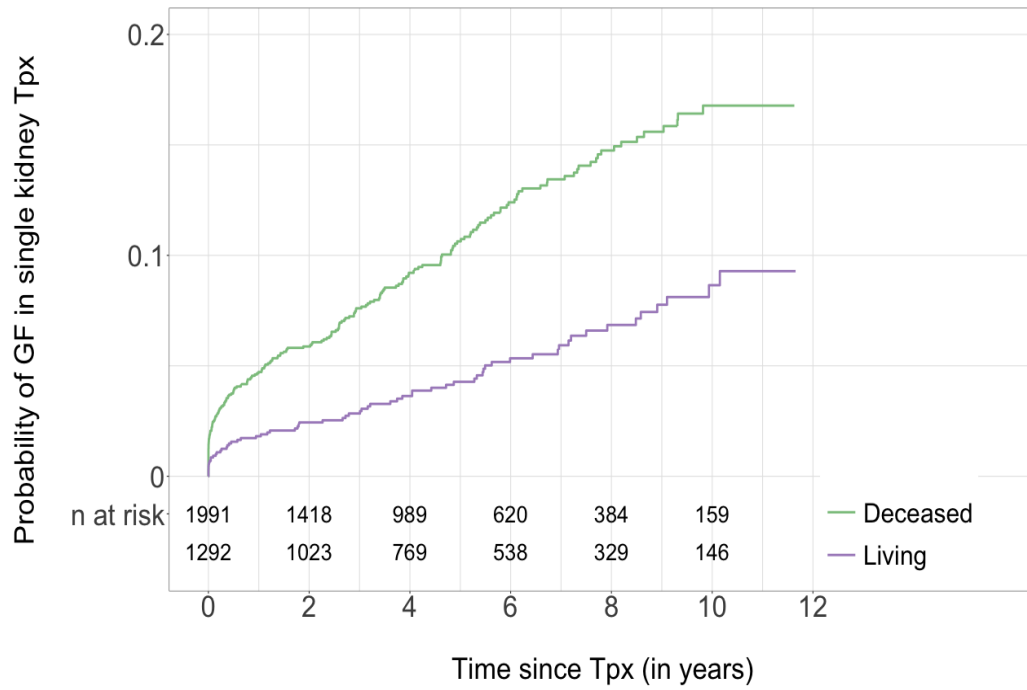


Figure 33: Cumulative incidence of graft failure for kidneys in single Tpx stratified by ABO compatibility

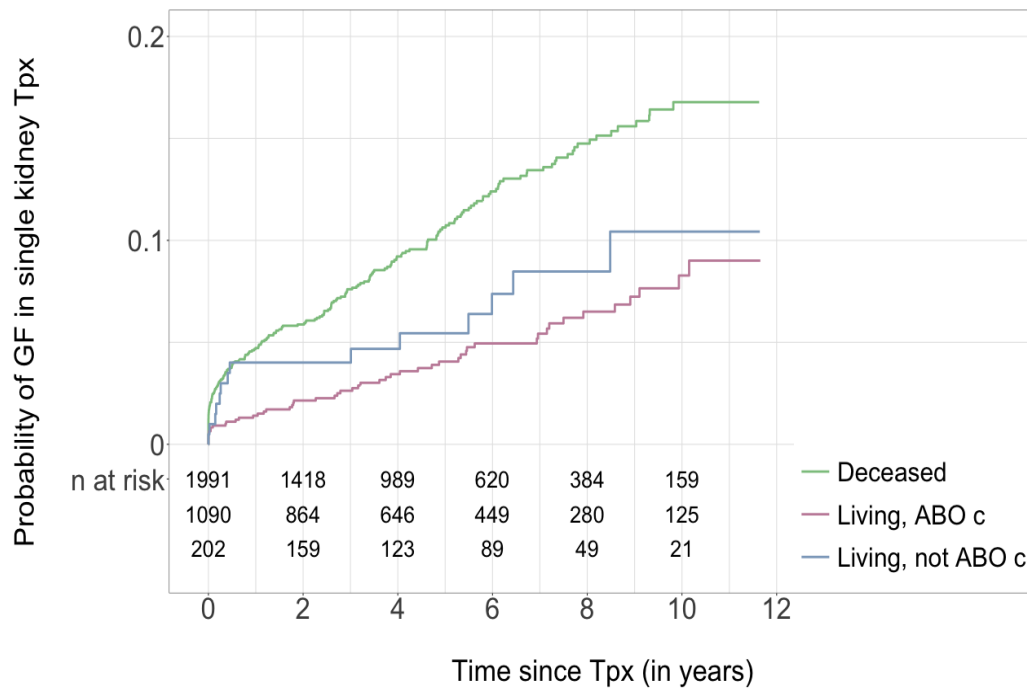


Table 20: Graft failure by organ

Organ	Time	CumInc (%)	95% CI	No at risk	Cum. GF	Cum. deaths
Kidney	Baseline	-	-	3545	0	0
-	1 month	1.9	(1.5,2.4)	3455	67	8
-	6 months	3	(2.5,3.6)	3247	105	32
-	1 year	3.6	(3.4,2)	3032	124	63
-	2 year(s)	4.5	(3.8,5.2)	2634	152	101
-	4 year(s)	6.7	(5.9,7.7)	1905	208	153
-	6 year(s)	9.2	(8.1,10.4)	1266	253	213
-	8 year(s)	11.2	(9.9,12.6)	774	278	251
-	10 year(s)	13.2	(11.5,14.9)	327	292	274
-	Overall	13.4	(11.7,15.2)	0	293	284
Liver	Baseline	-	-	1400	0	0
-	1 month	5.4	(4.3,6.6)	1296	75	21
-	6 months	7.6	(6.3,9)	1171	105	53
-	1 year	8.7	(7.3,10.3)	1052	120	74
-	2 year(s)	10	(8.4,11.6)	868	134	109
-	4 year(s)	11.9	(10.1,13.7)	612	151	139
-	6 year(s)	12.8	(10.9,14.8)	395	157	162
-	8 year(s)	13.6	(11.6,15.8)	236	161	177
-	10 year(s)	14.8	(12.4,17.3)	98	164	182
-	Overall	16.9	(13.3,20.8)	0	166	182
Lung	Baseline	-	-	529	0	0
-	1 month	1.1	(0.5,2.4)	508	6	13
-	6 months	2.3	(1.3,3.9)	466	12	28
-	1 year	4.5	(2.9,6.6)	430	23	37
-	2 year(s)	7.9	(5.8,10.6)	364	39	51
-	4 year(s)	15.4	(12.2,18.9)	236	69	82
-	6 year(s)	20.1	(16.3,24.2)	136	84	99
-	8 year(s)	24.5	(19.9,29.2)	75	93	105
-	10 year(s)	30.3	(24.1,36.7)	15	99	110
-	Overall	30.3	(24.1,36.7)	0	99	110
Heart	Baseline	-	-	435	0	0
-	1 month	6.9	(4.8,9.5)	390	30	14
-	6 months	7.6	(5.4,10.3)	366	33	22
-	1 year	8.3	(6,11.2)	335	36	28
-	2 year(s)	8.3	(6,11.2)	285	36	31
-	4 year(s)	9.1	(6.5,12.1)	202	38	43
-	6 year(s)	9.5	(6.9,12.6)	132	39	48
-	8 year(s)	11	(7.8,14.8)	84	41	48
-	10 year(s)	13	(8.3,18.8)	27	42	50
-	Overall	13	(8.3,18.8)	0	42	52
Pancreas	Baseline	-	-	144	0	0
-	1 month	8.3	(4.5,13.6)	130	12	1
-	6 months	10.4	(6.1,16.1)	123	15	1
-	1 year	12	(7.3,18)	111	17	1
-	2 year(s)	15.3	(9.8,21.9)	96	21	1

Organ	Time	CumInc (%)	95% CI	No at risk	Cum. GF	Cum. deaths
-	4 year(s)	17.2	(11.3,24.2)	77	23	2
-	6 year(s)	17.2	(11.3,24.2)	60	23	3
-	8 year(s)	20.7	(13.4,29.1)	36	25	3
-	10 year(s)	20.7	(13.4,29.1)	14	25	5
-	Overall	35.5	(9.5,63.4)	0	26	6

Table 21: Graft failure by organ and centre

Organ - Centre	Time	CumInc (%)	95% CI	No at risk	Cum. GF	Cum. deaths
Kidney-USZ	Baseline	0.0	-	1040	0	0
-	1 month	2.3	(1.5,3.4)	1008	24	2
-	6 months	3.7	(2.7,5)	946	38	9
-	1 year	4.0	(2.9,5.3)	893	41	16
-	2 year(s)	4.8	(3.6,6.2)	781	48	30
-	4 year(s)	6.2	(4.7,7.9)	576	58	48
-	6 year(s)	8.7	(6.8,10.8)	392	72	66
-	8 year(s)	10.5	(8.3,13)	238	79	79
-	10 year(s)	11.9	(9.2,14.9)	92	82	84
-	Overall	12.8	(9.7,16.3)	0	83	85
Kidney-USB	Baseline	0.0	-	819	0	0
-	1 month	1.0	(0.5,1.9)	808	8	2
-	6 months	1.7	(1,2.8)	760	14	10
-	1 year	2.3	(1.4,3.5)	711	18	17
-	2 year(s)	3.2	(2.2,4.7)	614	25	24
-	4 year(s)	5.7	(4.1,7.7)	451	39	37
-	6 year(s)	9.1	(6.8,11.7)	286	53	55
-	8 year(s)	10.6	(8,13.7)	177	57	65
-	10 year(s)	12.5	(9.2,16.2)	85	60	73
-	Overall	12.5	(9.2,16.2)	0	60	79
Kidney-CHUV	Baseline	0.0	-	576	0	0
-	1 month	2.1	(1.1,3.5)	562	12	1
-	6 months	2.4	(1.4,4)	533	14	3
-	1 year	2.6	(1.5,4.2)	497	15	6
-	2 year(s)	3.0	(1.8,4.7)	440	17	12
-	4 year(s)	6.5	(4.5,9)	316	31	16
-	6 year(s)	9.3	(6.6,12.4)	210	39	21
-	8 year(s)	11.6	(8.4,15.4)	129	44	24
-	10 year(s)	14.0	(10,18.6)	51	47	29
-	Overall	14.0	(10,18.6)	0	47	30
Kidney-BE	Baseline	0.0	-	490	0	0
-	1 month	1.8	(0.9,3.3)	475	9	2
-	6 months	4.4	(2.8,6.4)	438	21	6
-	1 year	5.7	(3.8,8)	396	27	13
-	2 year(s)	7.2	(5,9.8)	322	33	21
-	4 year(s)	10.6	(7.8,13.9)	223	44	25
-	6 year(s)	12.3	(9.2,16)	150	48	30
-	8 year(s)	15.0	(11,19.4)	93	52	31
-	10 year(s)	16.9	(12.3,22.2)	44	54	33
-	Overall	16.9	(12.3,22.2)	0	54	34
Kidney-HUG	Baseline	0.0	-	391	0	0
-	1 month	3.1	(1.7,5.1)	377	12	1
-	6 months	4.1	(2.5,6.4)	355	16	4
-	1 year	4.7	(2.9,7.1)	333	18	8
-	2 year(s)	5.2	(3.3,7.8)	292	20	10

Organ - Centre	Time	CumInc (%)	95% CI	No at risk	Cum. GF	Cum. deaths
-	4 year(s)	5.9	(3.8,8.7)	214	22	19
-	6 year(s)	7.0	(4.5,10.1)	145	24	28
-	8 year(s)	8.9	(5.8,12.9)	85	27	36
-	10 year(s)	11.9	(7.2,17.9)	36	29	38
-	Overall	11.9	(7.2,17.9)	0	29	39
Kidney-SG	Baseline	0.0	-	229	0	0
-	1 month	0.9	(0.2,2.9)	225	2	0
-	6 months	0.9	(0.2,2.9)	215	2	0
-	1 year	2.3	(0.9,4.9)	202	5	3
-	2 year(s)	4.2	(2.1,7.5)	185	9	4
-	4 year(s)	7.1	(4,11.3)	125	14	8
-	6 year(s)	9.5	(5.6,14.5)	83	17	13
-	8 year(s)	11.7	(7.1,17.7)	52	19	16
-	10 year(s)	13.6	(8,20.6)	19	20	17
-	Overall	13.6	(8,20.6)	0	20	17
Liver-USZ	Baseline	0.0	-	581	0	0
-	1 month	6.9	(5,9.2)	522	40	14
-	6 months	9.6	(7.3,12.1)	460	55	36
-	1 year	11.6	(9.2,14.4)	409	66	46
-	2 year(s)	13.1	(10.4,16.1)	334	73	68
-	4 year(s)	15.3	(12.3,18.5)	221	81	84
-	6 year(s)	16.9	(13.6,20.5)	136	85	96
-	8 year(s)	17.9	(14.4,21.7)	78	87	104
-	10 year(s)	19.9	(15.5,24.7)	29	89	106
-	Overall	19.9	(15.5,24.7)	0	89	106
Liver-BE	Baseline	0.0	-	313	0	0
-	1 month	7.4	(4.8,10.6)	284	23	4
-	6 months	9.6	(6.7,13.2)	258	30	10
-	1 year	10.0	(7,13.6)	230	31	17
-	2 year(s)	10.0	(7,13.6)	186	31	23
-	4 year(s)	13.1	(9.4,17.5)	132	37	31
-	6 year(s)	13.1	(9.4,17.5)	92	37	38
-	8 year(s)	14.2	(10,19)	50	38	43
-	10 year(s)	14.2	(10,19)	18	38	45
-	Overall	14.2	(10,19)	0	38	45
Liver-HUG	Baseline	0.0	-	506	0	0
-	1 month	2.4	(1.3,4)	490	12	3
-	6 months	4.0	(2.5,6)	453	20	7
-	1 year	4.6	(3,6.7)	413	23	11
-	2 year(s)	6.3	(4.4,8.8)	348	30	18
-	4 year(s)	7.2	(5.1,9.9)	259	33	24
-	6 year(s)	8.1	(5.7,11)	167	35	28
-	8 year(s)	8.6	(6,11.7)	108	36	30
-	10 year(s)	9.5	(6.5,13.1)	51	37	31
-	Overall	14.4	(8,22.5)	0	39	31
Lung-USZ	Baseline	0.0	-	297	0	0
-	1 month	1.7	(0.6,3.7)	282	5	8

Organ - Centre	Time	CumInc (%)	95% CI	No at risk	Cum. GF	Cum. deaths
-	6 months	2.4	(1.1,4.6)	260	7	20
-	1 year	4.8	(2.8,7.8)	240	14	27
-	2 year(s)	9.0	(6,12.7)	201	25	38
-	4 year(s)	18.6	(14.1,23.6)	126	48	61
-	6 year(s)	23.8	(18.6,29.5)	67	58	73
-	8 year(s)	28.9	(22.6,35.5)	33	64	78
-	10 year(s)	35.3	(26.9,43.8)	8	68	81
-	Overall	35.3	(26.9,43.8)	0	68	81
Lung-CHUV	Baseline	0.0	-	224	0	0
-	1 month	0.4	(0,2.3)	219	1	4
-	6 months	1.8	(0.6,4.4)	200	4	7
-	1 year	3.8	(1.8,7)	184	8	9
-	2 year(s)	6.4	(3.6,10.3)	157	13	12
-	4 year(s)	9.9	(6.2,14.7)	106	19	20
-	6 year(s)	14.0	(9.2,19.9)	67	24	25
-	8 year(s)	17.4	(11.5,24.2)	40	27	26
-	10 year(s)	22.6	(13.8,32.8)	7	29	28
-	Overall	22.6	(13.8,32.8)	0	29	28
Lung-HUG	Baseline	0.0	-	8	0	0
-	1 month	0.0	-	7	0	1
-	6 months	12.5	(0.5,44.8)	6	1	1
-	1 year	12.5	(0.5,44.8)	6	1	1
-	2 year(s)	12.5	(0.5,44.8)	6	1	1
-	4 year(s)	27.5	(2.8,62.7)	4	2	1
-	6 year(s)	27.5	(2.8,62.7)	2	2	1
-	8 year(s)	27.5	(2.8,62.7)	2	2	1
-	10 year(s)	-	-	0	2	1
-	Overall	27.5	(2.8,62.7)	0	2	1
Heart-USZ	Baseline	0.0	-	145	0	0
-	1 month	4.8	(2.1,9.2)	136	7	2
-	6 months	6.9	(3.5,11.8)	120	10	8
-	1 year	7.7	(4,12.8)	110	11	12
-	2 year(s)	7.7	(4,12.8)	96	11	13
-	4 year(s)	7.7	(4,12.8)	68	11	16
-	6 year(s)	7.7	(4,12.8)	44	11	18
-	8 year(s)	12.0	(5.9,20.4)	28	13	18
-	10 year(s)	18.1	(7,33.3)	6	14	18
-	Overall	18.1	(7,33.3)	0	14	18
Heart-CHUV	Baseline	0.0	-	154	0	0
-	1 month	7.2	(3.8,12)	139	11	3
-	6 months	7.2	(3.8,12)	132	11	4
-	1 year	8.6	(4.8,13.8)	115	13	6
-	2 year(s)	8.6	(4.8,13.8)	91	13	8
-	4 year(s)	8.6	(4.8,13.8)	65	13	12
-	6 year(s)	10.0	(5.6,15.8)	43	14	13
-	8 year(s)	10.0	(5.6,15.8)	25	14	13
-	10 year(s)	10.0	(5.6,15.8)	5	14	14

Organ - Centre	Time	CumInc (%)	95% CI	No at risk	Cum. GF	Cum. deaths
-	Overall	10.0	(5.6,15.8)	0	14	14
Heart-BE	Baseline	0.0	-	136	0	0
-	1 month	8.8	(4.8,14.3)	115	12	9
-	6 months	8.8	(4.8,14.3)	114	12	10
-	1 year	8.8	(4.8,14.3)	110	12	10
-	2 year(s)	8.8	(4.8,14.3)	98	12	10
-	4 year(s)	10.9	(6.2,17)	69	14	15
-	6 year(s)	10.9	(6.2,17)	45	14	17
-	8 year(s)	10.9	(6.2,17)	31	14	17
-	10 year(s)	10.9	(6.2,17)	16	14	18
-	Overall	10.9	(6.2,17)	0	14	20
Pancreas-USZ	Baseline	0.0	-	93	0	0
-	1 month	7.5	(3.3,14.1)	84	7	1
-	6 months	10.8	(5.5,18.1)	78	10	1
-	1 year	12.0	(6.3,19.6)	72	11	1
-	2 year(s)	14.5	(8.1,22.7)	65	13	1
-	4 year(s)	17.3	(10.1,26.1)	54	15	2
-	6 year(s)	17.3	(10.1,26.1)	44	15	3
-	8 year(s)	22.2	(12.9,33.1)	24	17	3
-	10 year(s)	22.2	(12.9,33.1)	11	17	3
-	Overall	42.6	(6.9,76.2)	0	18	4
Pancreas-HUG	Baseline	0.0	-	51	0	0
-	1 month	9.8	(3.6,19.9)	46	5	0
-	6 months	9.8	(3.6,19.9)	45	5	0
-	1 year	12.0	(4.8,22.7)	39	6	0
-	2 year(s)	16.9	(7.7,29)	31	8	0
-	4 year(s)	16.9	(7.7,29)	23	8	0
-	6 year(s)	16.9	(7.7,29)	16	8	0
-	8 year(s)	16.9	(7.7,29)	12	8	0
-	10 year(s)	16.9	(7.7,29)	3	8	2
-	Overall	16.9	(7.7,29)	0	8	2

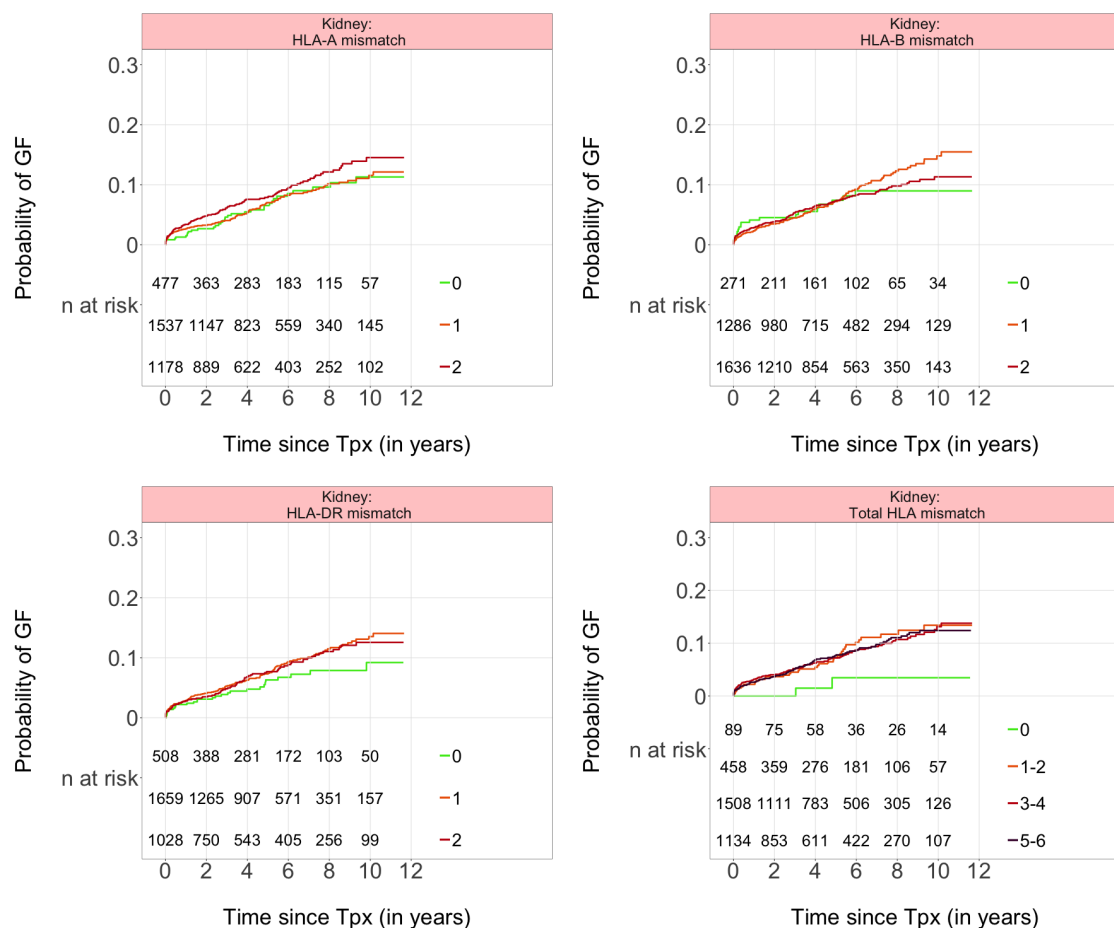
Table 22: Graft failure of kidneys (in first STCS single Tpx) by donor type

Donor type	Time	CumInc (%)	95% CI	No at risk	Cum. GF	Cum. deaths
Deceased	Baseline	-	-	1991	0	0
-	1 month	2.4	(1.8,3.2)	1933	48	3
-	6 months	3.9	(3.1,4.8)	1802	76	19
-	1 year	4.7	(3.8,5.7)	1659	92	47
-	2 year(s)	5.9	(4.9,7)	1418	112	72
-	4 year(s)	9.2	(7.9,10.7)	989	157	110
-	6 year(s)	12.4	(10.7,14.2)	620	188	150
-	8 year(s)	14.7	(12.8,16.9)	384	204	172
-	10 year(s)	16.8	(14.4,19.3)	159	212	186
-	Overall	16.8	(14.4,19.3)	0	212	192
Living	Baseline	-	-	1292	0	0
-	1 month	0.9	(0.5,1.5)	1274	11	0
-	6 months	1.6	(1,2.4)	1210	20	6
-	1 year	1.8	(1.2,2.7)	1151	23	9
-	2 year(s)	2.4	(1.7,3.4)	1023	30	20
-	4 year(s)	3.6	(2.6,4.9)	769	41	29
-	6 year(s)	5.3	(4,6.9)	538	53	45
-	8 year(s)	6.9	(5.2,8.8)	329	60	59
-	10 year(s)	8.6	(6.4,11.2)	146	65	66
-	Overall	9.3	(6.8,12.2)	0	66	69

9.4 Graft failure and number of HLA mismatches

Figures 34-37 show the cumulative incidence functions for graft failures separated by (major) transplantation and the number of HLA mismatches¹ 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.

Figure 34: Cumulative incidence of graft failure in Kidney or Kidney-Kidney Tpx recipients by HLA mismatches



¹The number of mismatches refers 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 35: Cumulative incidence of graft failure in Liver Tpx recipients by HLA mismatches

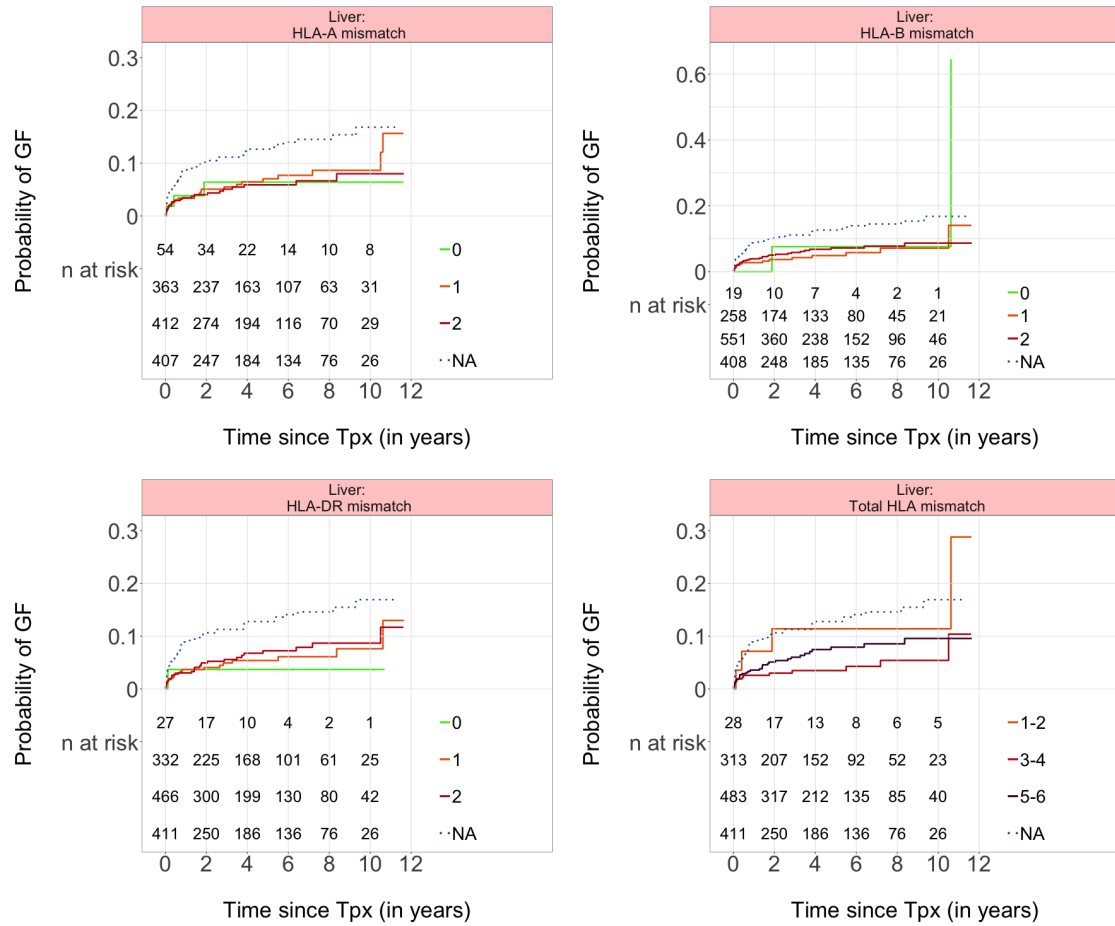


Figure 36: Cumulative incidence of graft failure in Lung Tpx recipients by HLA mismatches

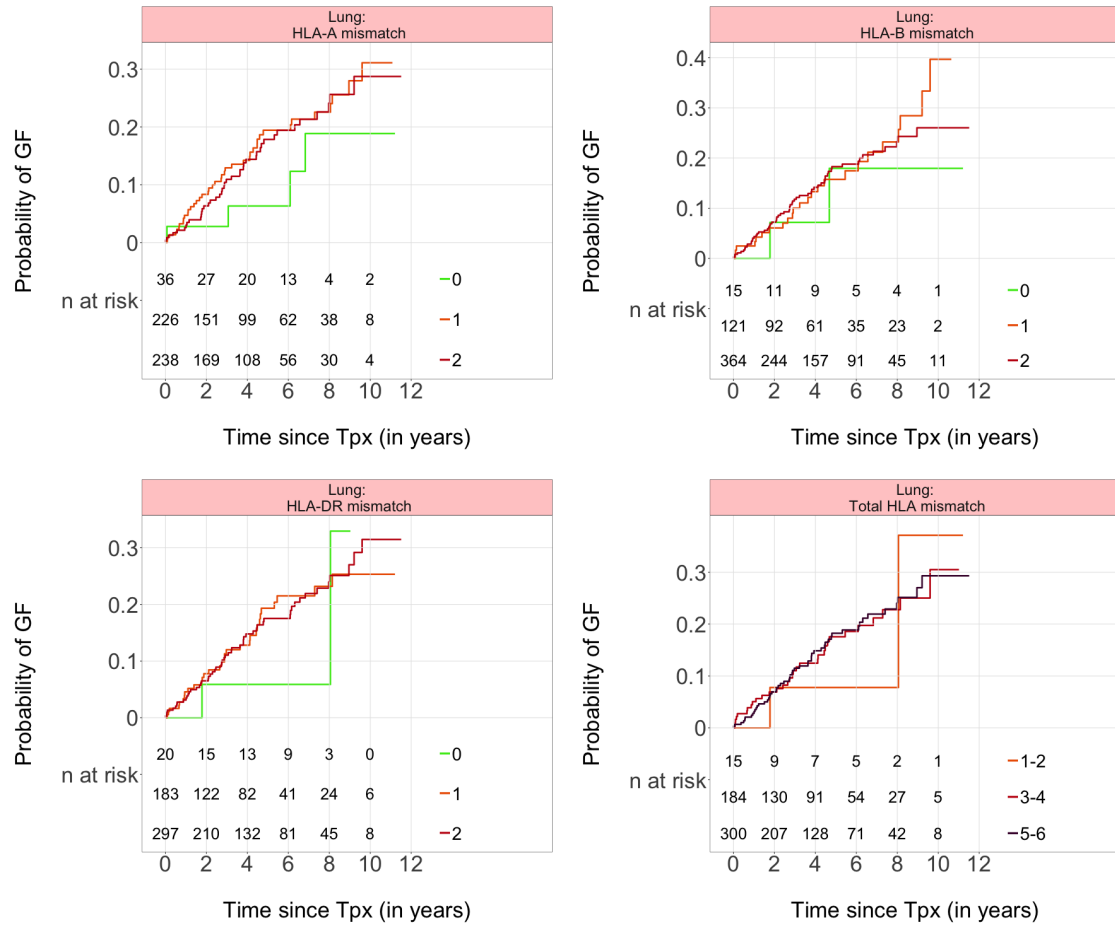
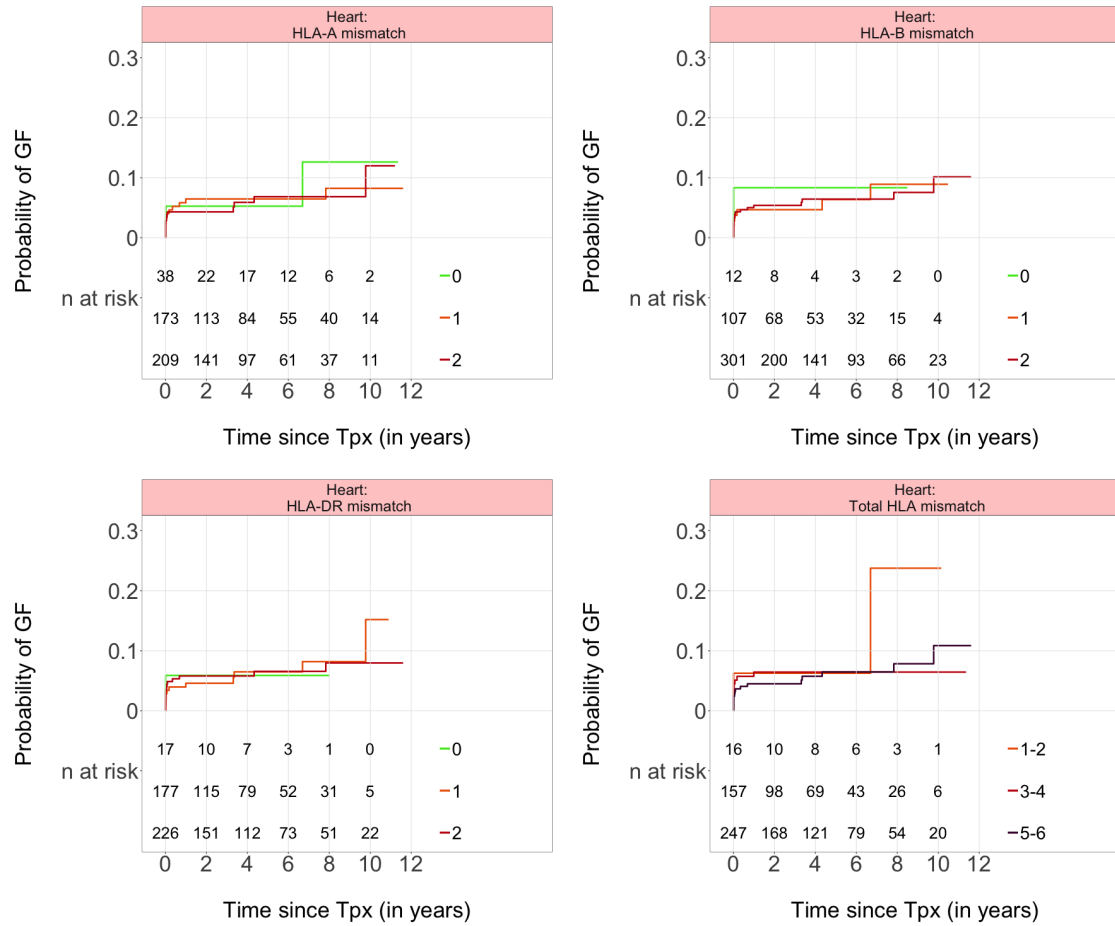


Figure 37: Cumulative incidence of graft failure in Heart Tpx recipients by HLA mismatches



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 23: Overview of patients with incident cancer

	N	%
Total number of patients	5672	
Patients with incident cancer (other than skin)	494	8.7
- single record (% of line 2)	313	63.4
- multiple records (% of line 2)	181	36.6

Table 24: Patients with incident cancer

	Patients	Episodes	Median time (in yrs)*
Total	494	839	3.10
Kidney	255	386	3.35
Liver	160	328	2.78
Lung	56	87	3.24
Heart	17	31	3.60
Pancreas	2	2	3.90
Islets	3	3	1.22
Small bowel	1	2	0.24

* 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 25: Overview of incident cancer occurrence

	N	%
Total	839	100
Brain	13	2
Breast	34	4
Cervix - Uterus - Adnex	7	1
Colon	25	3
Kaposi	10	1
Kidney	34	4
Leukemia	14	2
Liver	105	12
Lung	81	10
Multiple myeloma/Amyloidosis	5	1
Myeloproliferative disorder/Myelodysplastic syndrome	12	1
Neuroendocrine	8	1
Prostate	61	7
PTLD	88	10
Sarkoma	10	1
Testicular cancer	6	1
Thyroid	10	1
Urothel/Bladder	51	6
Cancer of unknown primary origin	4	0
Other	261	31

10.2 Skin cancer

Table 26: Overview of patients with incident skin cancer

	N	%
Total number of patients	5672	
Patients with incident skin cancer	728	12.8
- single record (% of line 2)	366	50.3
- multiple records (% of line 2)	362	49.7

Table 27: Patients with incident skin cancer

	Patients	Episodes	Median time (in yrs)*
Total	728	2013	3.75
Kidney	490	1425	3.70
Liver	97	202	3.45
Lung	67	220	3.83
Heart	59	127	5.05
Pancreas	6	27	4.35
Islets	9	12	3.12

* 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.

Table 28: Overview of incident skin cancer occurrence

	N	%
Total	2013	100
Basalioma	592	29
Melanoma	60	3
Spinalioma	896	44
Other	465	23

11 Specific Populations

11.1 DCD Donor Kidney Recipients

Table 29: Kidney patients' characteristics by donor type

	Total	Brain dead (DBD)	NHBD (DCD)	Living
Total no. kidney patients	3252	1730	245	1277
Age (yrs), median	54.5	56.7	57.2	50.9
- IQR	(42.8-63.4)	(45.6-64.8)	(48.2-63.7)	(38-60.4)
- min; max	1.53; 82.2	1.53; 82.2	5.77; 75.2	1.6; 79.3
Male gender, n (%)	2064 (63.5%)	1068 (61.7%)	149 (60.8%)	847 (66.3%)
Donor age (yrs), median	54.7	55.0	57.8	54.3
- IQR	(44.5-63.7)	(40.7-65.1)	(45.8-63.8)	(46.1-62)
- min; max	0; 88.1	0; 88.1	0.33; 81.9	0.93; 81.2
Cold ischemia time (yrs), median	6.5	9.3	8.6	1.5
- IQR	(1.8-10)	(7.2-12.3)	(6.8-10.6)	(1.3-2.1)
Pediatric, n (%)	130 (4%)	80 (4.6%)	5 (2%)	45 (3.5%)
Observation time (yrs), median	4.8	4.8	2.1	5.3
- IQR	(2.2-8)	(2.3-8.1)	(0.7-4.2)	(2.6-8.3)
No. DGF, n (%)	421 (12.9%)	282 (16.3%)	117 (47.8%)	22 (1.7%)
No. deaths, n (%)	337 (10.4%)	235 (13.6%)	15 (6.1%)	87 (6.8%)
No. patients with at least one GF, n (%)	272 (8.4%)	191 (11%)	15 (6.1%)	66 (5.2%)
- with GF, alive	196 (6%)	136 (7.9%)	12 (4.9%)	48 (3.8%)
- with GF -> death	68 (2.1%)	51 (2.9%)	3 (1.2%)	14 (1.1%)
- with GF - related death	8 (0.2%)	4 (0.2%)	0 (0%)	4 (0.3%)
Death without GF	261 (8%)	180 (10.4%)	12 (4.9%)	69 (5.4%)

Figure 38: Cumulative Kidney DCD patient enrolment by centre

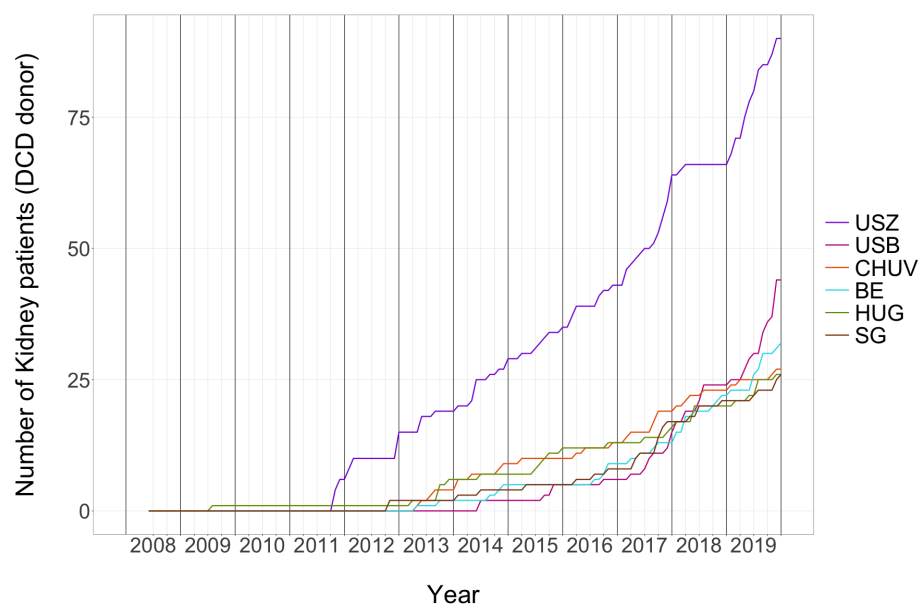


Figure 39: Graft failure free survival in patients with first STCS Kidney (and Kidney-Kidney) Tpx by donor type

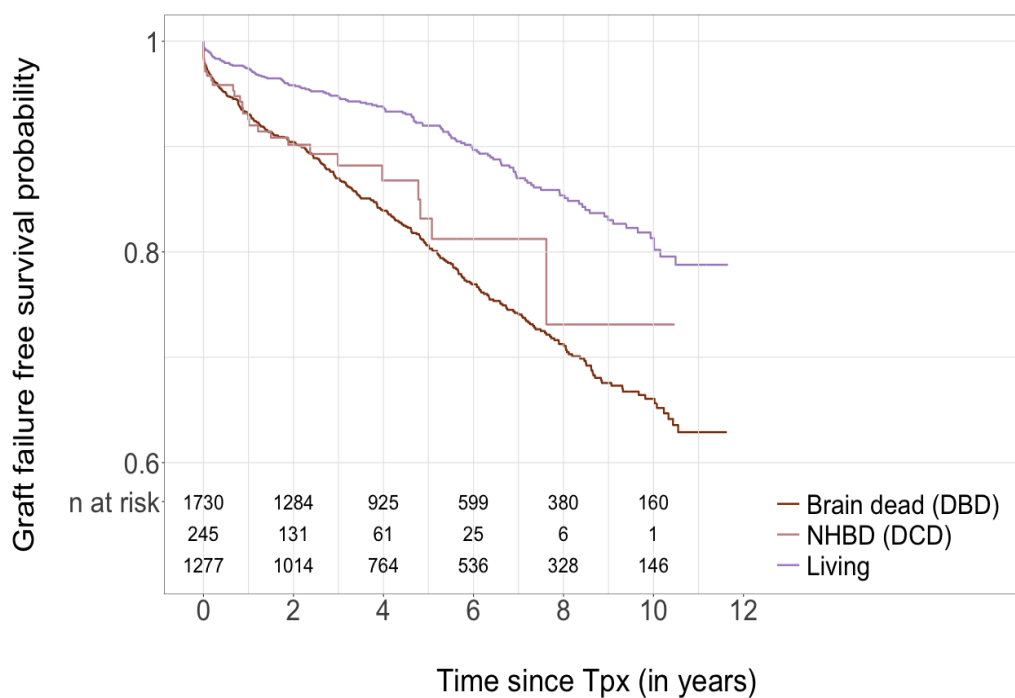
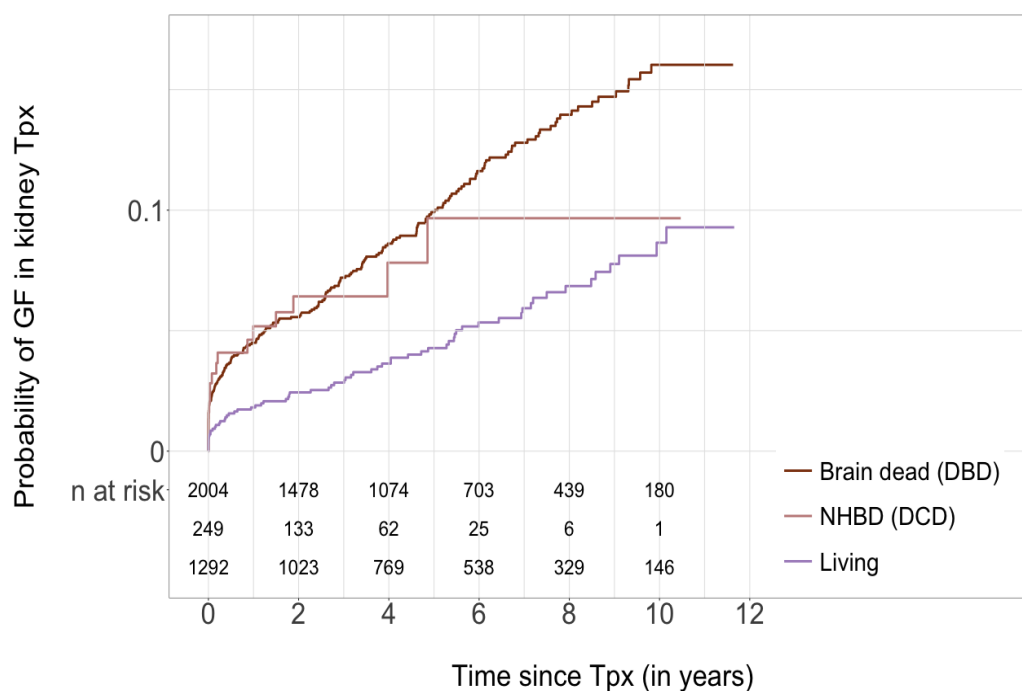


Figure 40: Cumulative incidence of graft failure for Kidney and Kidney-Kidney Tpx by donor type



11.2 DCD Donor Liver Recipients

Table 30: Liver patients' characteristics by donor type

	Total	Brain dead (DBD)	NHBD (DCD)	Living
Total no. liver patients	1236	1060	107	69
Age (yrs), median	56	55.6	60.1	52.3
- IQR	(46-62.2)	(44.5-62)	(54.6-64.5)	(39-59.9)
- min; max	0.05; 78	0.05; 78	22.85; 72.2	0.05; 70.1
Male gender, n (%)	836 (67.6%)	711 (67.1%)	89 (83.2%)	36 (52.2%)
Donor age (yrs), median	55	55.4	61.4	37.4
- IQR	(38.8-67.2)	(39-67.7)	(50.5-70.2)	(31.5-46.1)
- min; max	0; 88.4	0.17; 88.4	0; 87.4	16.18; 68.4
Cold ischemia time (yrs), median	6.4	6.5	6.7	2.0
- IQR	(5.2-7.9)	(5.3-8.1)	(5.9-7.6)	(1.5-2.5)
Pediatric, n (%)	99 (8%)	93 (8.8%)	0 (0%)	6 (8.7%)
Observation time (yrs), median	3.6	4.0	1.8	3.4
- IQR	(1.4-6.9)	(1.5-7.3)	(0.5-3.4)	(1.7-7)
No. DGF, n (%)	35 (2.8%)	27 (2.5%)	3 (2.8%)	5 (7.2%)
No. deaths, n (%)	232 (18.8%)	191 (18%)	19 (17.8%)	22 (31.9%)
No. patients with at least one GF, n (%)	135 (10.9%)	98 (9.2%)	19 (17.8%)	18 (26.1%)
- with GF, alive	56 (4.5%)	37 (3.5%)	10 (9.3%)	9 (13%)
- with GF -> death	46 (3.7%)	33 (3.1%)	7 (6.5%)	6 (8.7%)
- with GF - related death	33 (2.7%)	28 (2.6%)	2 (1.9%)	3 (4.3%)
Death without GF	153 (12.4%)	130 (12.3%)	10 (9.3%)	13 (18.8%)

Figure 41: Cumulative Liver DCD patient enrolment by centre

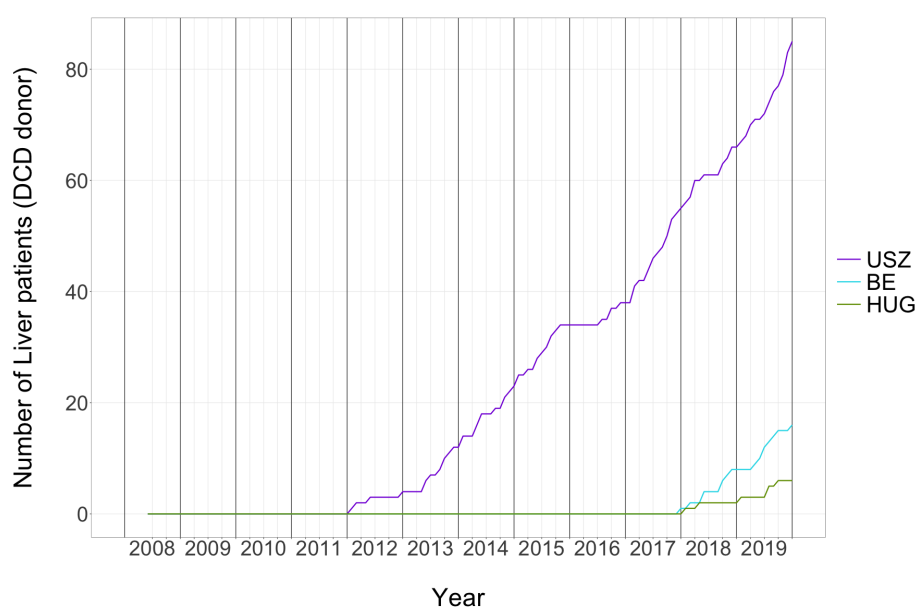
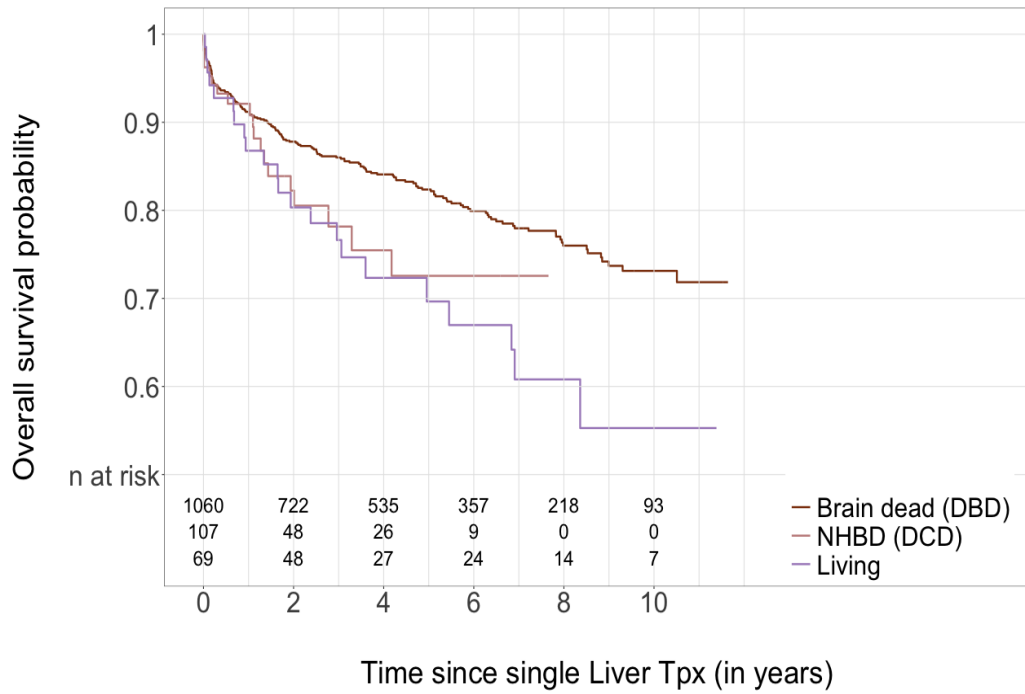


Figure 42: Overall survival in patients with first STCS Liver Tpx by donor type



11.3 Pediatric patients

Table 31: Number of pediatric patients (under 18) by first Tpx type

	Total	USZ	%	USB	%	CHUV	%	BE	%	HUG	%	SG	%
Total	290	104	35.9	5	1.7	32	11	40	13.8	106	36.6	3	1
Kidney	128	66	51.6	5	3.9	18	14.1	30	23.4	6	4.7	3	2.3
Liver	99	3	3	-	-	-	-	1	1	95	96	-	-
Lung	16	14	87.5	-	-	1	6.2	-	-	1	6.2	-	-
Heart	41	19	46.3	-	-	13	31.7	9	22	-	-	-	-
Kidney - Kidney	2	2	100	-	-	-	-	-	-	-	-	-	-
Kidney - Liver	3	-	-	-	-	-	-	-	-	3	100	-	-
Islets - Liver - Lung	1	-	-	-	-	-	-	-	-	1	100	-	-

Table 32: Number of Tpx in pediatric patients by organ and centre

	Total	USZ	%	USB	%	CHUV	%	BE	%	HUG	%	SG	%
Total	304	109	35.9	5	1.6	35	11.5	41	13.5	111	36.5	3	1
Kidney	132	68	51.5	5	3.8	20	15.2	30	22.7	6	4.5	3	2.3
Liver	104	4	3.8	-	-	-	-	1	1	99	95.2	-	-
Lung	19	16	84.2	-	-	2	10.5	-	-	1	5.3	-	-
Heart	42	19	45.2	-	-	13	31	10	23.8	-	-	-	-
Kidney - Kidney	2	2	100	-	-	-	-	-	-	-	-	-	-
Kidney - Liver	4	-	-	-	-	-	-	-	-	4	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 Cohort of all solid organ recipients transplanted since January 2008

The STCS officially started to enrol patients on 1 May 2008. By request from the Swiss Federal Office of Public Health, patients transplanted in the reporting period from 1 January 2008 until 30 April 2008 were retrospectively added to the STCS. The STCS authorities decided to capture and report only “mini-minimal” data for these patients. Therefore for the full reporting period (January 2008 to present) only data on the transplanted organ, overall mortality and failure-free survival can be presented.

A.1 Overview

The following table lists the number of patients enrolled and transplantations performed, it shows patients according to their first STCS transplantation in the period: January 2008 - April 2008.

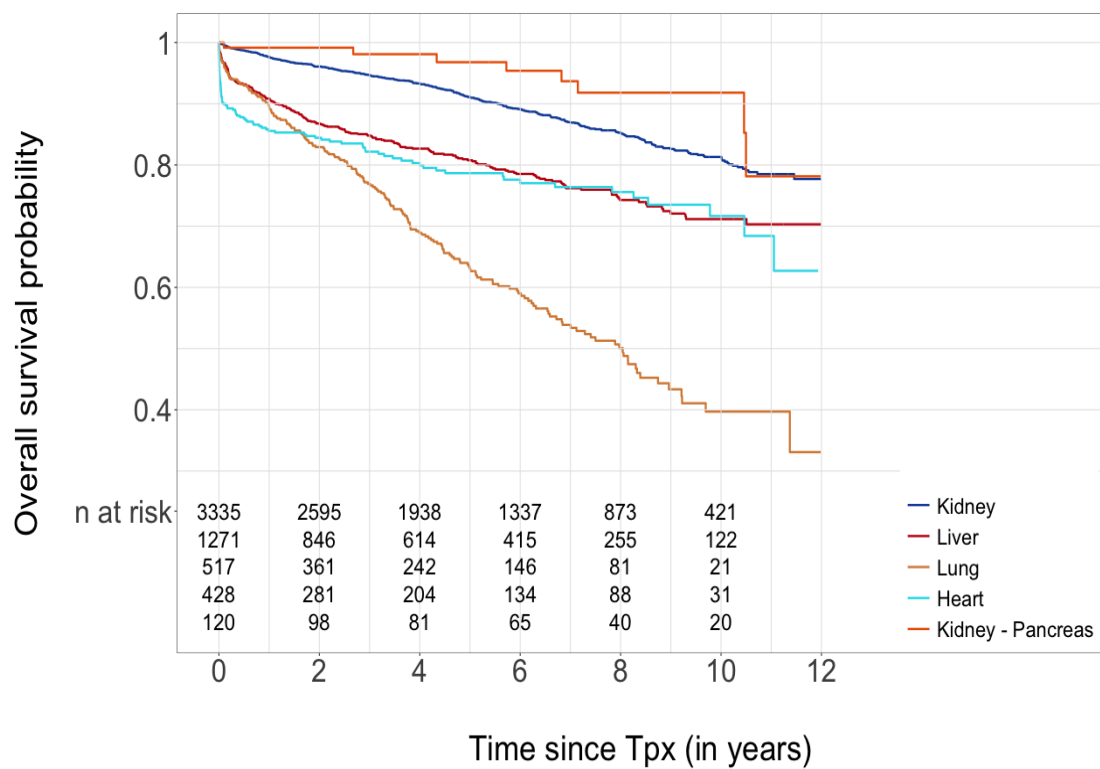
Table 33: Number of patients enrolled by Tpx type (January 2008 - April 2008)

	Total	First Tpx	(%)	Re Tpx	(%)	Second Tpx	(%)
Total	151	126	83.4	20	13.2	5	3.3
Kidney	83	62	74.7	17	20.5	4	4.8
Liver	35	34	97.1	1	2.9	0	0.0
Lung	16	15	93.8	1	6.2	0	0.0
Heart	8	8	100.0	0	0.0	0	0.0
Islets	2	0	0.0	1	50.0	1	50.0
Small bowel	1	1	100.0	0	0.0	0	0.0
Kidney - Pancreas	4	4	100.0	0	0.0	0	0.0
Kidney - Liver	1	1	100.0	0	0.0	0	0.0
Kidney - Heart	1	1	100.0	0	0.0	0	0.0

A.2 Mortality by transplantation

The following figure includes all the patients transplanted in the period: January 2008 - December 2019 and is analogous to Figure 24.

Figure 43: Overall survival since January 2008 for frequent transplantation types

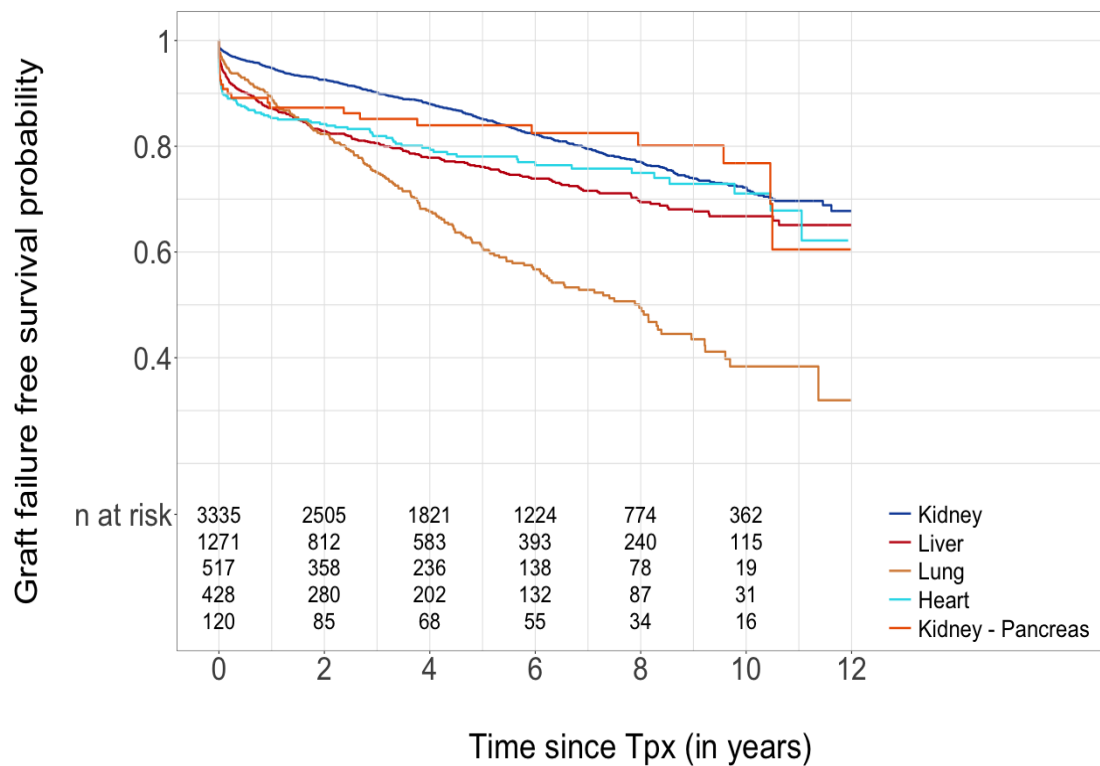


56 Kidney-Kidney Tpx are included in Kidney Tpx. 2 Kidney-Kidney-Pancreas Tpx are included in Kidney-Pancreas Tpx.

A.3 Graft failure free survival

The following figure includes all the patients transplanted in the period: January 2008 - December 2019 and is analogous to Figure 28. The rate estimates for graft failure free survival are not adjusted for potential risk factors. Only the first STCS transplantation of each patient is considered.

Figure 44: Graft failure free survival since January 2008 by major transplantation type



56 Kidney-Kidney Tpx are included in Kidney Tpx. 2 Kidney-Kidney-Pancreas Tpx are included in Kidney-Pancreas Tpx.

B Mortality in patients with rare Tpx scenarios

Kidney - Kidney transplantation and Kidney - Kidney - Pancreas transplantation are excluded from the following tables.

Table 34: Overall mortality by rare Tpx scenarios

Tpx	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
Islets	Baseline	0.00	-	37	0
-	Overall	38.23	(14, 55.6)	-	10
Pancreas	Baseline	0.00	-	13	0
-	Overall	62.50	(0, 91.6)	-	2
Small bowel	Baseline	0.00	-	1	0
-	Overall	100.00	-	-	1
Kidney - Liver	Baseline	0.00	-	50	0
-	Overall	37.65	(5.6, 58.8)	-	10
Kidney - Islets	Baseline	0.00	-	23	0
-	Overall	25.60	(0, 48.1)	-	3
Kidney - Heart	Baseline	0.00	-	10	0
-	Overall	20.00	(0, 41.3)	-	2
Kidney - Lung	Baseline	0.00	-	2	0
-	Overall	0.00	-	-	0
Liver - Lung	Baseline	0.00	-	4	0
-	Overall	33.33	(0, 70)	-	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	-	2	0
-	Overall	100.00	-	-	2
Kidney - Islets - Liver	Baseline	0.00	-	1	0
-	Overall	0.00	-	-	0
Islets - Liver - Lung	Baseline	0.00	-	1	0
-	Overall	0.00	-	-	0

Table 35: Overall mortality by rare Tpx scenarios and centre

Tpx - centre	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
Islets - USZ	Baseline	0.0	-	21	0
-	Overall	60.5	(24, 79.4)	-	10
Islets - HUG	Baseline	0.0	-	16	0
-	Overall	0.0	-	-	0
Pancreas - USZ	Baseline	0.0	-	5	0
-	Overall	0.0	-	-	0
Pancreas - HUG	Baseline	0.0	-	8	0
-	Overall	62.5	(0, 91.6)	-	2
Small bowel - HUG	Baseline	0.0	-	1	0
-	Overall	100.0	-	-	1
Kidney - Liver - USZ	Baseline	0.0	-	18	0
-	Overall	18.3	(0, 35.1)	-	3
Kidney - Liver - BE	Baseline	0.0	-	12	0
-	Overall	32.5	(0, 63)	-	2
Kidney - Liver - HUG	Baseline	0.0	-	20	0
-	Overall	62.9	(0, 91)	-	5
Kidney - Islets - USZ	Baseline	0.0	-	14	0
-	Overall	20.0	(0, 48.4)	-	1
Kidney - Islets - HUG	Baseline	0.0	-	9	0
-	Overall	33.3	(0, 63.8)	-	2
Kidney - Heart - USZ	Baseline	0.0	-	2	0
-	Overall	50.0	(0, 87.5)	-	1
Kidney - Heart - CHUV	Baseline	0.0	-	6	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	33.3	(0, 70)	-	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	-	1	0
-	Overall	100.0	-	-	1
Kidney - Islets - Liver - HUG	Baseline	0.0	-	1	0
-	Overall	0.0	-	-	0
Islets - Liver - Lung - HUG	Baseline	0.0	-	1	0
-	Overall	0.0	-	-	0

C Technical summary

All analyses were performed using the statistical software R - version 3.5.3 (2019-03-11). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL <https://www.R-project.org/>.