



SWISS
TRANSPLANT
COHORT
STUDY

Swiss Transplant Cohort Study report (May 2008 - December 2016)

June 2017

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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.** This analysis is currently underway in the “STCS Benchmarking project”.

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
IQR	interquartile range
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
Tpx	transplantation

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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

News:

- A summary of all used software is given in the Appendix D.

3 Patients, transplantations and transplanted organs

Definitions applied:

- Enrolment refers to the inclusion of all patients into the Swiss Transplant Cohort Study (STCS) from 1st of May 2008 until 31st of December 2016. From those patients, the follow-up information until the date of data extraction (7th of March 2017) is included in the report.
- First transplantation:
 - Patients who have a first transplantation (Tpx) 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 who have a second Tpx type that differs from the preceding Tpx type
 - Example: Tpx of a pancreas following a single kidney Tpx
 - Simultaneous (eg double or triple) Tpx can be categorized as first, re- or second Tpx
- Every Tpx can consist of a single or simultaneous double or triple Tpx. Simultaneous (eg double or triple) Tpx refer to multiple organs that originate from the same donor (e.g. kidney-pancreas).
- Knowledge on previous Tpx from the pre-STCS era (before May 2008) is considered. Patients may thus be enrolled within the STCS as a re- or a second Tpx.
- Sequences of previous islet Tpx have been counted as one prior Tpx.
- Human stem cell transplantations are not considered in this report.

3.1 Overview

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

Table 1: Number of patients enrolled

	Patients	(%)
Total number	4023	100.0
Single Tpx at enrolment	3828	95.2
Double Tpx at enrolment	191	4.7
Triple Tpx at enrolment	4	0.1
1st Tpx at enrolment	3560	88.5
Re-Tpx at enrolment	375	9.3
2nd Tpx at enrolment	88	2.2

Table 2: Number of patients enrolled by Tpx type

	Total	First Tpx	(%)	Re Tpx	(%)	Second Tpx	(%)
Total	4023	3560	88.5	375	9.3	88	2.2
Kidney	2267	1906	84.1	322	14.2	39	1.7
Liver	824	789	95.8	29	3.5	6	0.7
Lung	395	381	96.5	11	2.8	3	0.8
Heart	297	296	99.7	1	0.3	0	0.0
Islets	33	7	21.2	9	27.3	17	51.5
Pancreas	11	6	54.5	0	0.0	5	45.5
Small bowel	1	0	0.0	1	100.0	0	0.0
Kidney - Pancreas	89	83	93.3	1	1.1	5	5.6
Kidney - Kidney	39	36	92.3	0	0.0	3	7.7
Kidney - Liver	35	28	80.0	0	0.0	7	20.0
Kidney - Islets	14	14	100.0	0	0.0	0	0.0
Kidney - Heart	5	4	80.0	1	20.0	0	0.0
Kidney - Lung	1	0	0.0	0	0.0	1	100.0
Liver - Lung	3	3	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 Tpx performed and the number of implanted organs.

Table 3: Number of Tpx types

	Total	First Tpx	(%)	Re Tpx	(%)	Second Tpx	(%)
Total	4187	3560	85.0	503	12.0	124	3.0
Kidney	2322	1906	82.1	365	15.7	51	2.2
Liver	885	789	89.2	88	9.9	8	0.9
Lung	410	381	92.9	25	6.1	4	1.0
Heart	300	296	98.7	4	1.3	0	0.0
Islets	49	7	14.3	16	32.7	26	53.1
Pancreas	18	6	33.3	1	5.6	11	61.1
Small bowel	1	0	0.0	1	100.0	0	0.0
Kidney - Pancreas	90	83	92.2	2	2.2	5	5.6
Kidney - Kidney	39	36	92.3	0	0.0	3	7.7
Kidney - Liver	36	28	77.8	0	0.0	8	22.2
Kidney - Islets	15	14	93.3	0	0.0	1	6.7
Kidney - Heart	5	4	80.0	1	20.0	0	0.0
Kidney - Lung	2	0	0.0	0	0.0	2	100.0
Liver - Lung	3	3	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	2	0	0.0	0	0.0	2	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

Remark: '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	4392	3737	85.1	555	12.6	100	2.3
Kidney	2553	2109	82.6	400	15.7	44	1.7
Liver	930	823	88.5	93	10.0	14	1.5
Lung	417	386	92.6	26	6.2	5	1.2
Heart	306	301	98.4	5	1.6	0	0.0
Pancreas	114	93	81.6	9	7.9	12	10.5
Islets	68	23	33.8	20	29.4	25	36.8
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	3872	2267	824	395	297	89
Age (yrs), median - IQR*	53.6 (41.3,61.8)	53.7 (41.9,62.8)	55.3 (45.1,61.8)	53.2 (34.5,60.1)	51.7 (36.8,59.3)	44.4 (36.9,51)
Male gender, n (%)	2444 (63.1%)	1441 (63.6%)	549 (66.6%)	193 (48.9%)	214 (72.1%)	47 (52.8%)
Pediatric, n (%)	201 (5.2%)	92 (4.1%)	68 (8.3%)	13 (3.3%)	28 (9.4%)	0 (0%)
Observation time (yrs), median - IQR	3.5 (1.5,5.9)	3.9 (1.8,6.3)	3.4 (1.4,5.7)	2.9 (1.3,5)	3.1 (0.9,5.5)	4.6 (2.7,6.9)
No. deaths, n (%)	520 (13.4%)	181 (8%)	143 (17.4%)	129 (32.7%)	62 (20.9%)	5 (5.6%)
No. patients with at least one GF**, n (%)	352 (9.1%)	172 (7.6%)	81 (9.8%)	57 (14.4%)	27 (9.1%)	15 (16.9%)
- with GF, alive	176 (4.5%)	123 (5.4%)	32 (3.9%)	7 (1.8%)	3 (1%)	11 (12.4%)
- with GF -> death	102 (2.6%)	48 (2.1%)#	28 (3.4%)	15 (3.8%)	7 (2.4%)	4 (4.5%)
- with GF - related death	74 (1.9%)	1 (0%)	21 (2.5%)	35 (8.9%)	17 (5.7%)	0 (0%)
Death without GF	344 (8.9%)	132 (5.8%)	94 (11.4%)	79 (20%)	38 (12.8%)	1 (1.1%)
No. patients with any ID***	2783 (71.9 %)	1650 (72.8%)	600 (72.8%)	250 (63.3%)	210 (70.7%)	73 (82%)
- any proven/viral ID event	2055 (53.1 %)	1190 (52.5%)	453 (55%)	201 (50.9%)	155 (52.2%)	56 (62.9%)
- any incident cancer other than skin	280 (7.2 %)	143 (6.3%)	94 (11.4%)	26 (6.6%)	14 (4.7%)	3 (3.4%)
- any incident skin cancer	386 (10 %)	261 (11.5%)	46 (5.6%)	44 (11.1%)	31 (10.4%)	4 (4.5%)

* IQR: interquartile range

** GF: graft failure

*** ID: infectious disease event

Out of 48 patients that had a Kidney Tpx and a GF, 9 patients had a re or second Tpx and died later on and 39 patients died after GF without a re or second Tpx. In Chapter "Mortality", patients with GF but without re or second Tpx are censored for mortality at the time point of GF.

Remark: 'Total' refers to the total number of patients with Tpx presented in this table.

3.2 STCS patient enrolment by calendar time

Figure 1 and 2 shows the patient enrolment activity by quarter from May 2008 till December 2016.

Figure 1: Quarterly overall patient enrolment

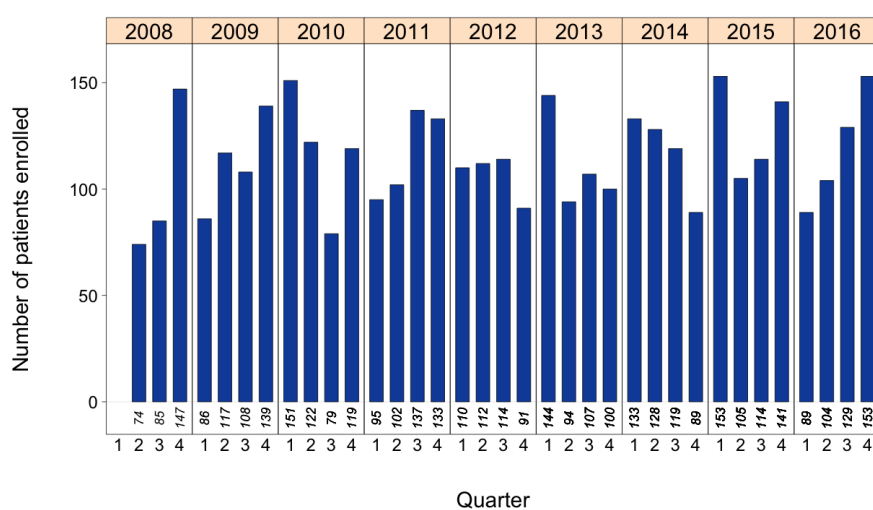


Figure 2: Quarterly patient enrolment by donor type

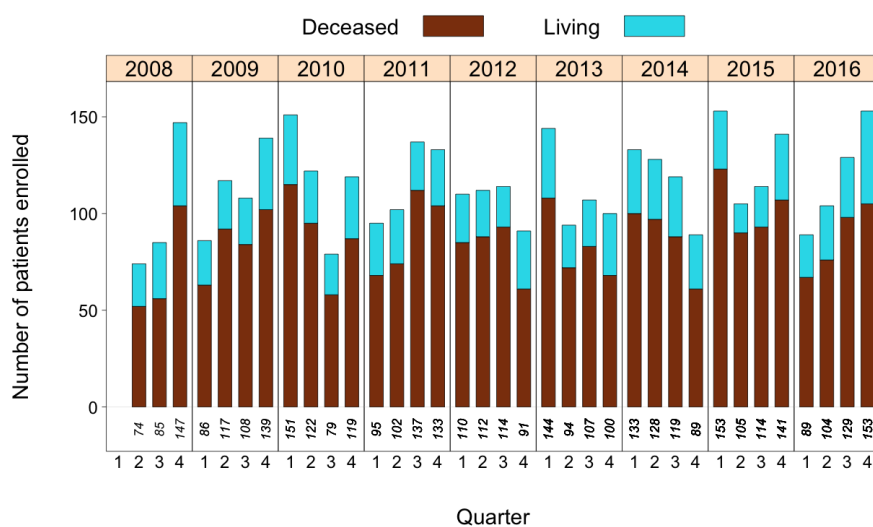


Figure 3: Cumulative overall patient enrolment

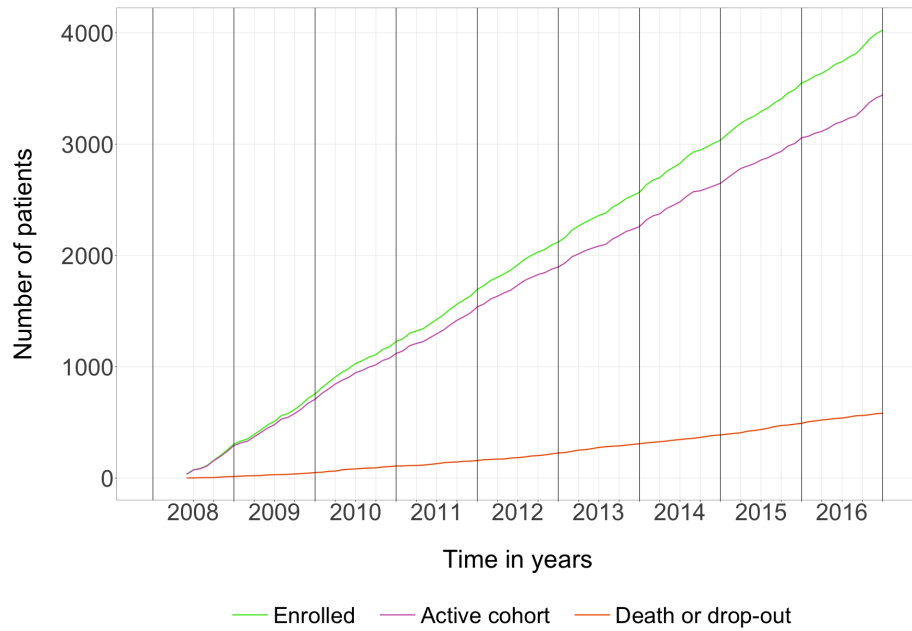


Figure 4: Cumulative overall patient enrolment by Tpx type

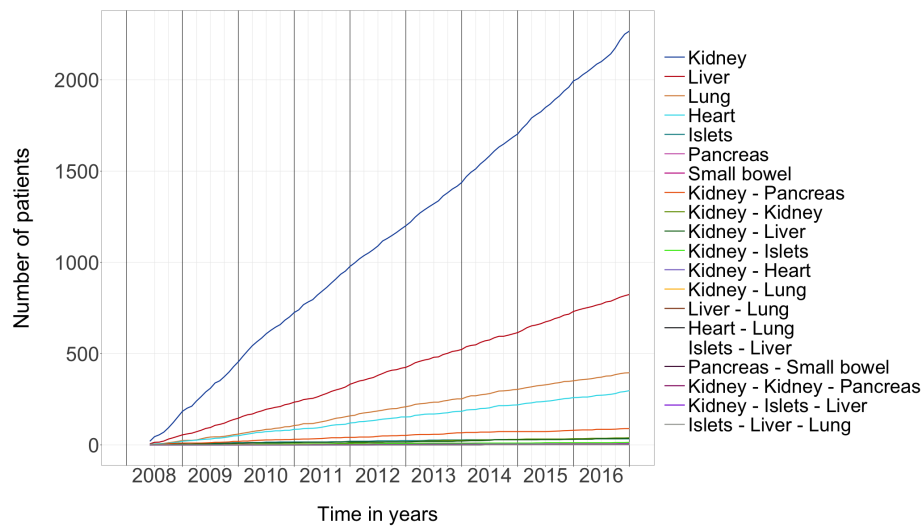
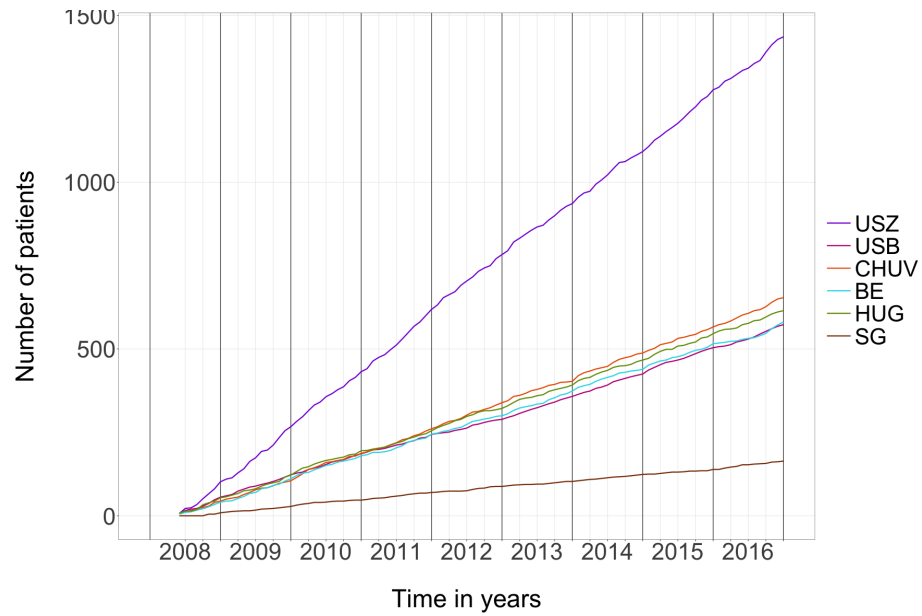


Figure 5: Cumulative overall patient enrolment by centre



Remark: Universitätsspital Zürich (USZ), Universitätsspital Basel (USB), Centre Hospitalier Universitaire Vaudois Lausanne (CHUV), Inselspital Bern (BE), Hôpitaux Universitaires de Genève (HUG), Kantonsspital St. Gallen (SG)

3.3 Transplantation activities by centre

Figure 6: Number of patients enrolled

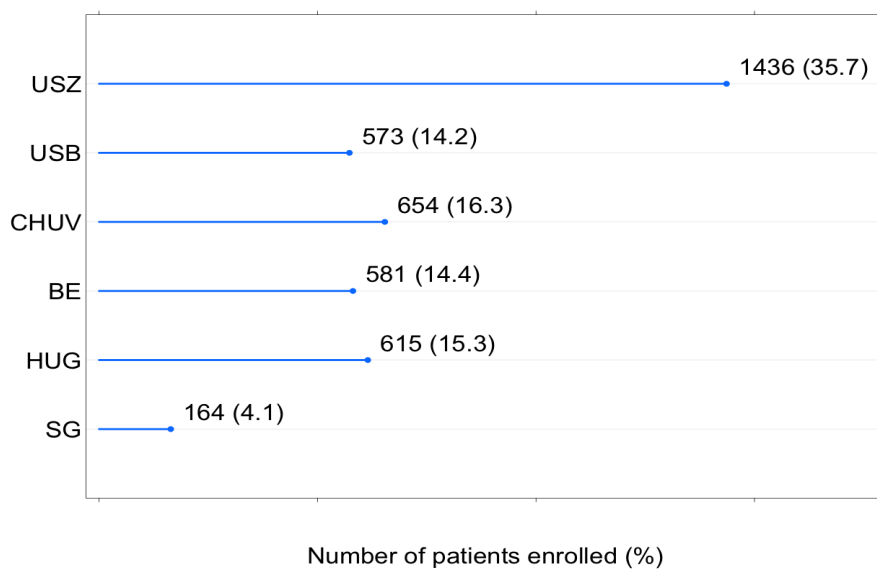


Figure 7: Number of transplanted organs

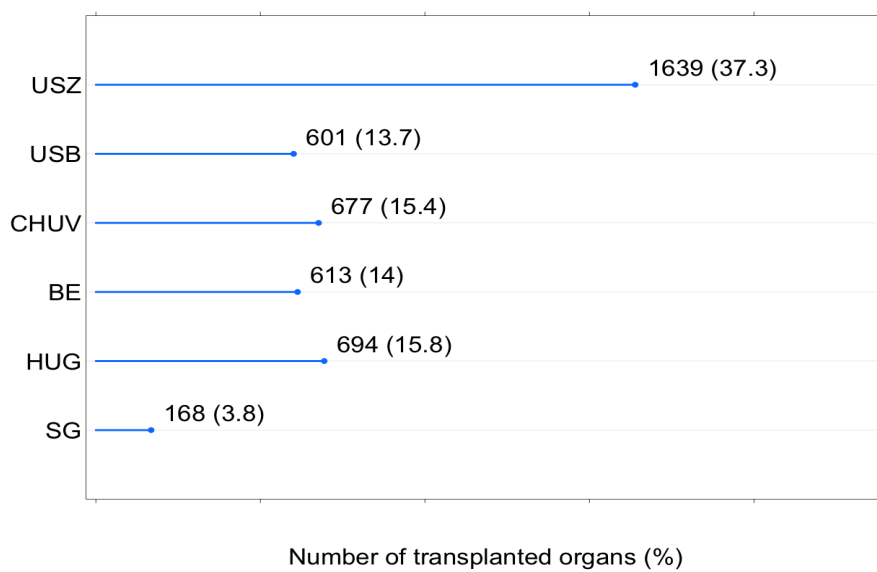
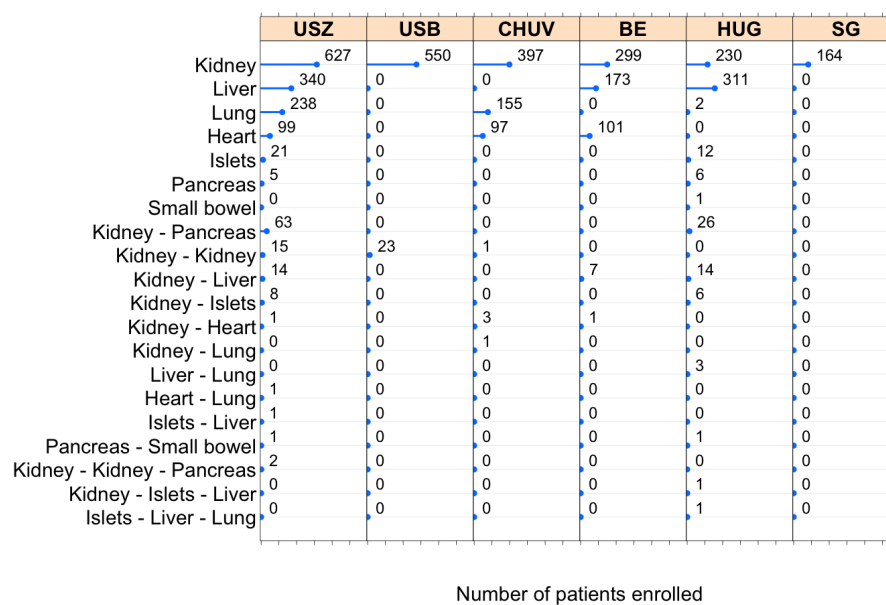


Figure 8: Number of patients enrolled by Tpx type



3.4 Kidney transplantations by centre

Figure 9: Number of patients with first single kidney Tpx

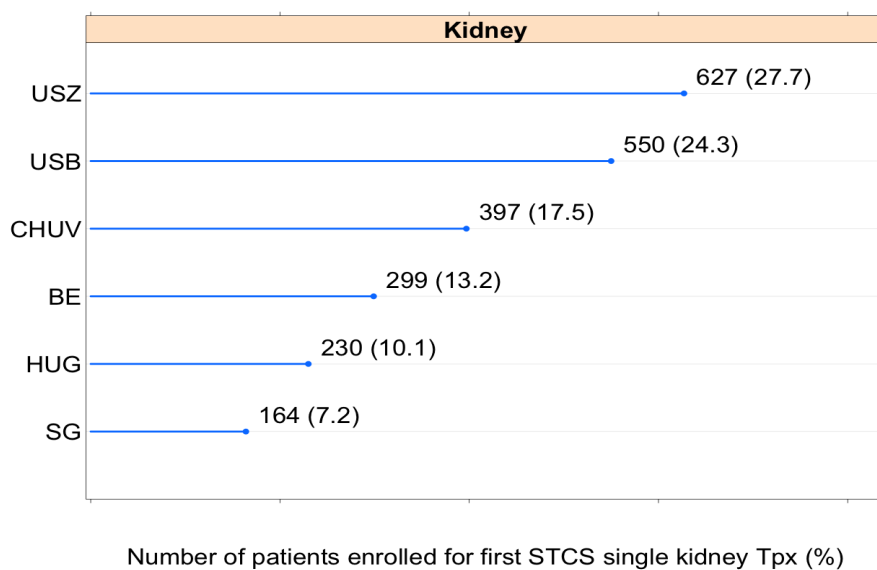
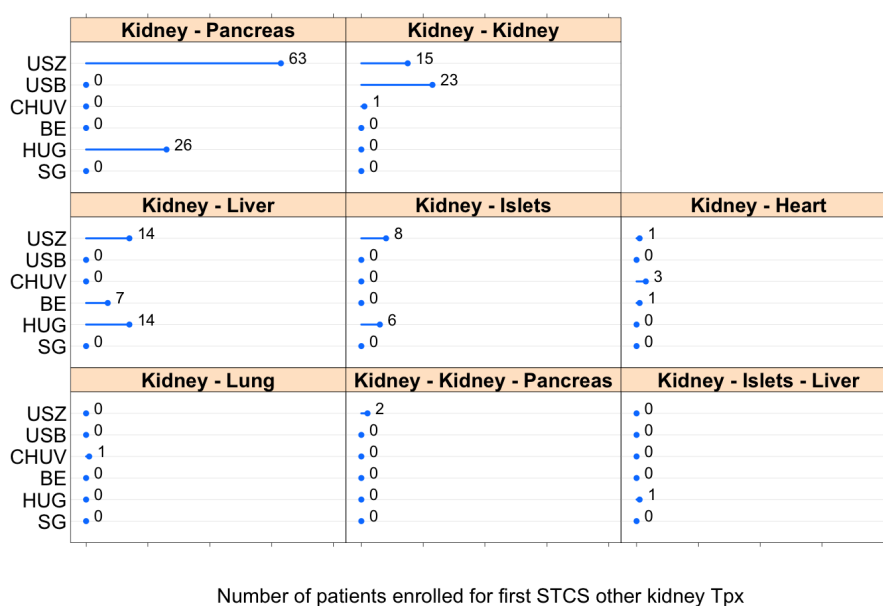


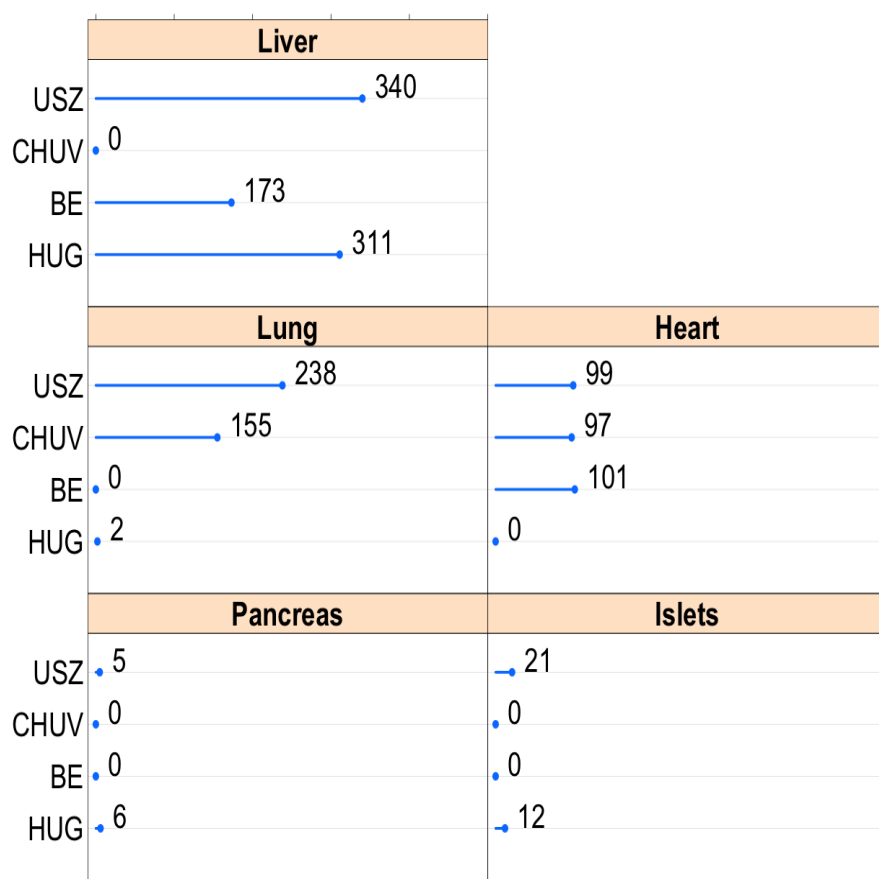
Figure 10: Number of patients with other kidney Tpx



3.5 Transplantations other than kidney by centre

Data from following rare Tpx are not shown: Small bowel (1, HUG), Liver - Lung (3, 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 11: 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

3.6 Single Kidney and Liver Tpx by donor type

Figures 12 and 13 show all STCS single kidney and liver Tpx by donor type (Donation after Brain Death (DBD), Non heart beating donor (Donation after Cardiac Death, DCD) (NHBD), Living). Figures 14 and 15 present proportions of donor types in all single kidney and liver Tpx within centres.

Figure 12: Number of single kidney Tpx

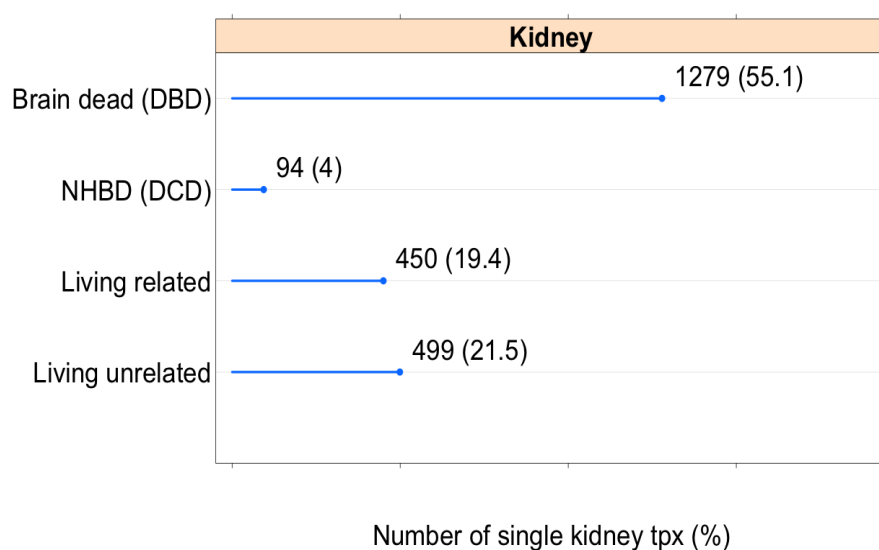


Figure 13: Number of single liver Tpx

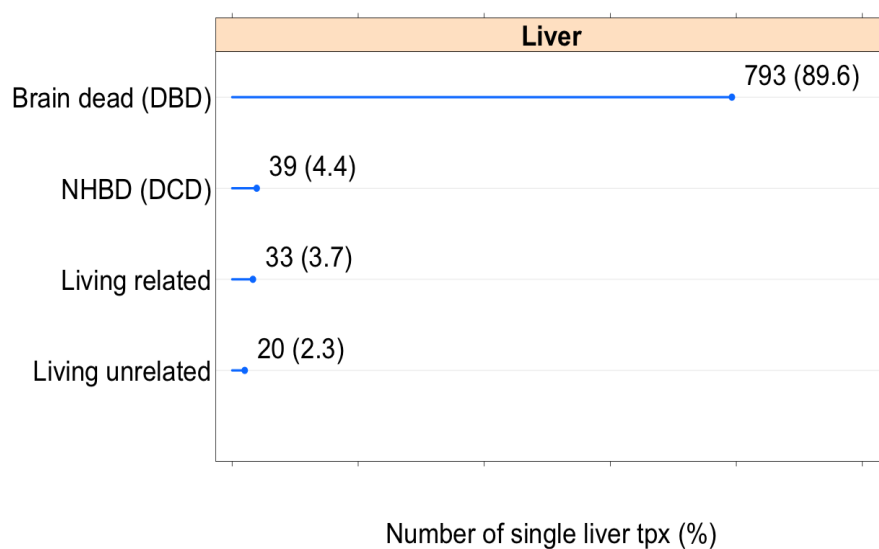


Figure 14: Distribution of donor types in all single kidney Tpx

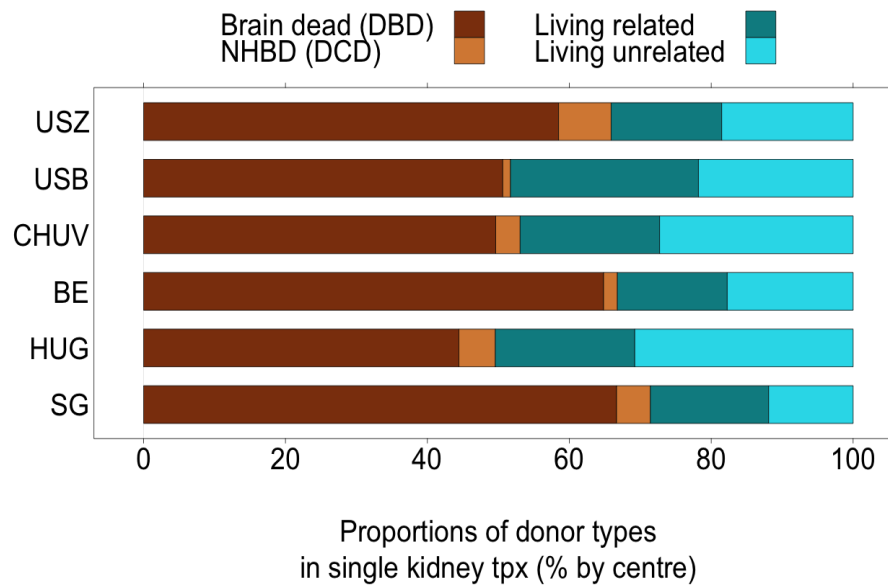
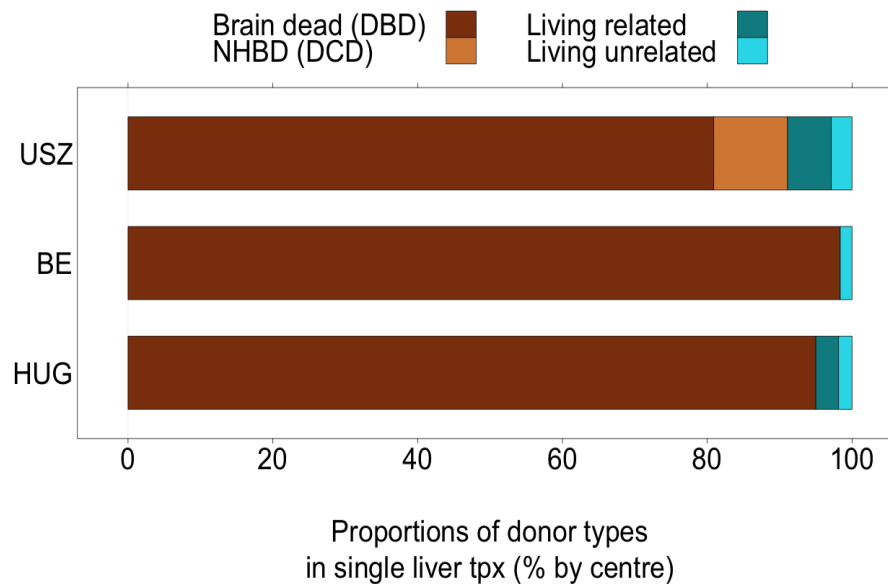


Figure 15: Distribution of donor types in all single liver Tpx



4 Consent status

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

Figure 16: Patients current consent status

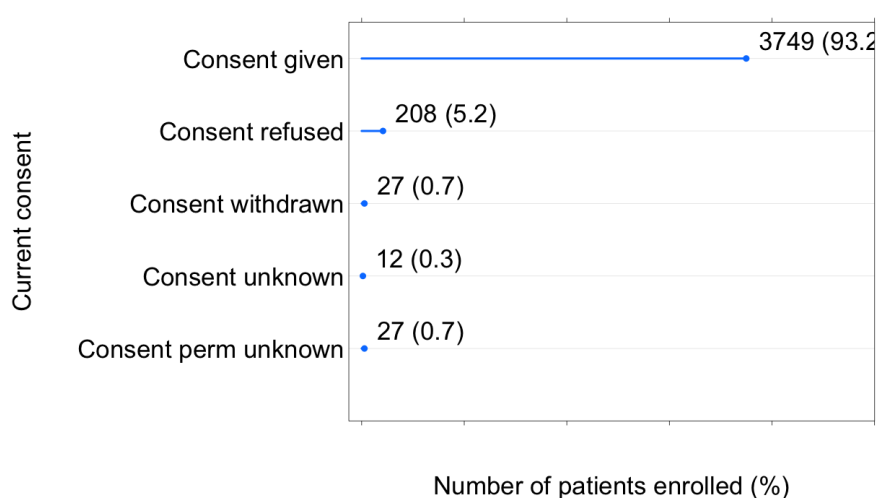


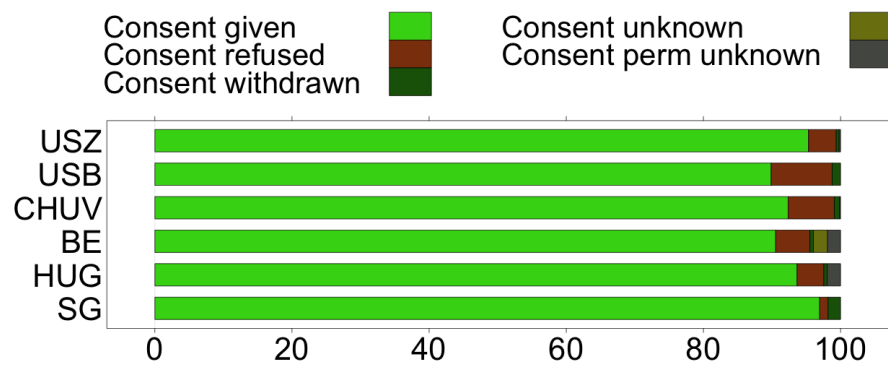
Table 6: Patients' current consent against consent status at enrolment

	Total	C-Given	C-Refused	C-Withdrawn	C-Unknown	C-Perm unknown
Total	4023	3749	208	27	12	27
E-Given	3746	3719	0	27	0	0
E-Refused	210	4	205	0	1	0
E-Withdrawn	0	0	0	0	0	0
E-Unknown	40	26	2	0	11	1
E-Perm unknown	27	0	1	0	0	26

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

In Figure 17, current patients' status (i. e. last known consent status) is given proportionally within each centre.

Figure 17: Current patients' consent status by centre



Proportions of current
consent types for patients (% by centre)

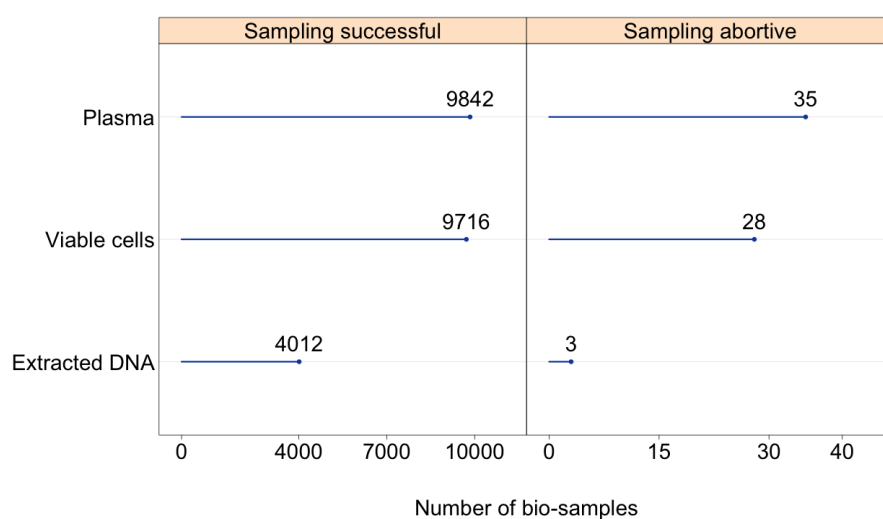
5 Bio-samples

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

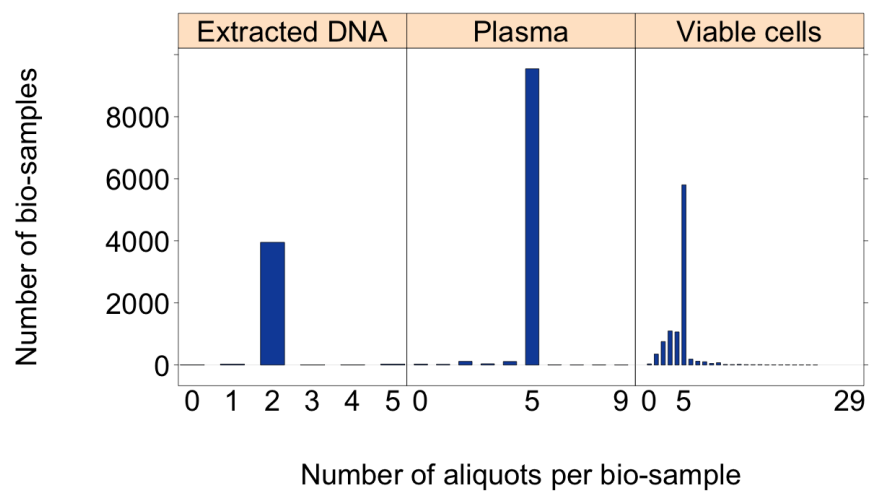
	Total	Sample (%)	No sample (%)
Total	4023	3742 93.0	281 7.0
Consent given	3760	3723 99.0	37 1.0
Consent refused	209	0 0.0	209 100.0
Consent unknown	27	12 44.4	15 55.6
Consent perm unknown	27	7 25.9	20 74.1

Figure 18: Number of bio-samples in STCS



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

Figure 19: Distribution of number of aliquots by sample type



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. Table 10 and Figure 20 give ID event rates by Tpx and pathogen type.

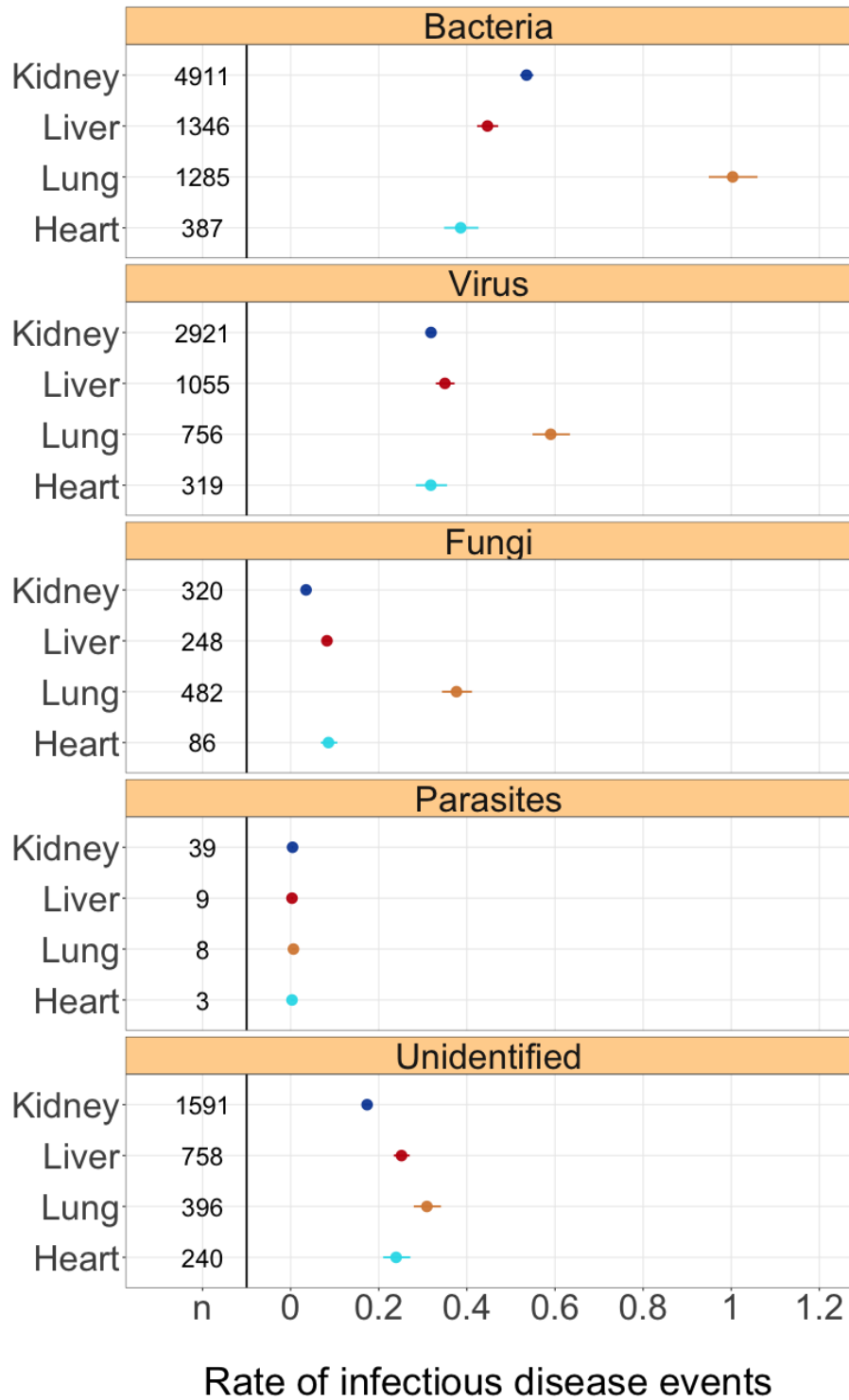
Table 8: Patients with infectious disease events

	N	% (sd)
Total number of patients	4023	
Patients with at least one ID event	2896	72%
- Number of ID events, mean (sd)	6.4	(6)
Patients with at least one proven/viral ID event	2143	53.3%
- Number of proven/viral ID events, mean (sd)	3.2	(3.1)

Table 9: Summary of infectious disease events

	N	(%)
Total number of ID events	18675	100.0
Proven disease	6653	35.6
Viral syndrome	118	0.6
Primary infection	44	0.2
Probable disease	4036	21.6
Asymptomatic	2978	15.9
Colonization	4312	23.1
Possible disease	55	0.3
Fever neutropenia	22	0.1
Information missing	457	2.4

Figure 20: Rate of infectious disease events by pathogen and Tpx type



Remark: The rate of ID events is defined as the number of ID events per year of observation time. It is calculated as number of ID events divided by the total observation time of patients at risk. Some backlog in the reporting of ID events cannot be excluded.

Table 10: Rate of infectious disease events by pathogen and Tpx type

Tpx	Pathogen	ID events	ID event rate	(95% CI)
Kidney	Bacteria	4911	0.54	(0.52, 0.55)
	Virus	2921	0.32	(0.31, 0.33)
	Fungi	320	0.03	(0.03, 0.04)
	Parasites	39	0	(0, 0.01)
	Unidentified	1591	0.17	(0.17, 0.18)
	Total	9782	1.07	(1.05, 1.09)
Liver	Bacteria	1346	0.45	(0.42, 0.47)
	Virus	1055	0.35	(0.33, 0.37)
	Fungi	248	0.08	(0.07, 0.09)
	Parasites	9	0	(0, 0.01)
	Unidentified	758	0.25	(0.23, 0.27)
	Total	3416	1.13	(1.1, 1.17)
Lung	Bacteria	1285	1	(0.95, 1.06)
	Virus	756	0.59	(0.55, 0.63)
	Fungi	482	0.38	(0.34, 0.41)
	Parasites	8	0.01	(0, 0.01)
	Unidentified	396	0.31	(0.28, 0.34)
	Total	2927	2.29	(2.2, 2.37)
Heart	Bacteria	387	0.39	(0.35, 0.43)
	Virus	319	0.32	(0.28, 0.35)
	Fungi	86	0.09	(0.07, 0.11)
	Parasites	3	0	(0, 0.01)
	Unidentified	240	0.24	(0.21, 0.27)
	Total	1035	1.03	(0.97, 1.1)

7 Follow-up

Percentages in Figures 21 and 22 have to be read as proportions of Tpx for which at least the 6 month or the 12 month FUP visit was performed.

Figure 21: Number of Tpx with 6 month FUP

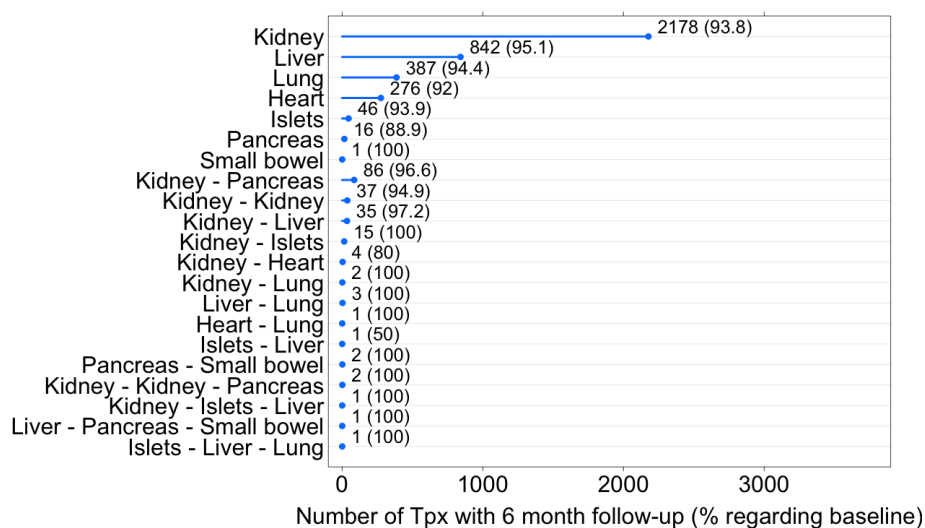
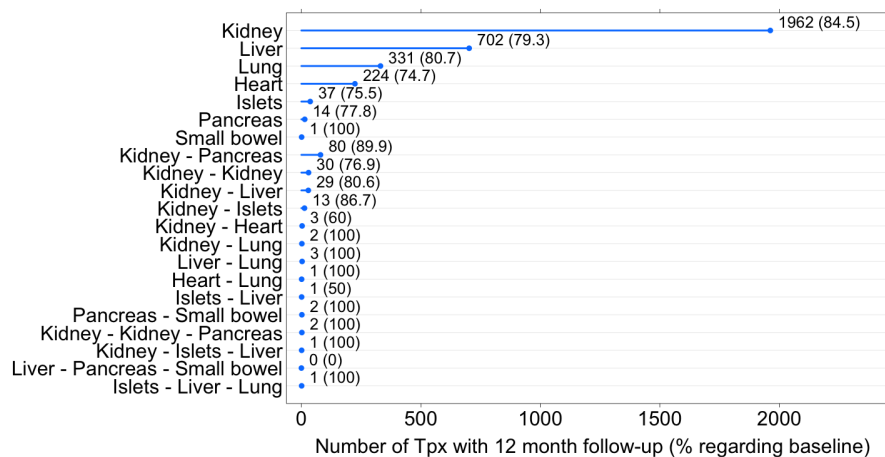


Figure 22: Number of Tpx with 12 month FUP



8 Mortality

In the following, survival rate 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 rate estimates are not adjusted for potential risk factors (in Figures and Tables).

8.1 Overall

Table 11: Follow-up information of patients

	Follow-up
Median follow-up duration (years)	3.56
IQR (years)	1.54 - 5.94
Maximum follow-up (years)*	8.85
Number of deaths**	545
Patients with (at least one) graft failure	366
Patients lost to follow-up***	42

* Time period from 2nd of May 2008 to 7th of March 2017

** 39 deaths were observed in Kidney patients with GF and no re or second Tpx following GF. Due to inconsistencies in data collection for death after GF in renal TPX recipients across centres, those death cases are removed for mortality shown in Table 13 and Figures 23.

*** More details in Table 12.

Table 12: Number of patients who dropped out by Tpx type

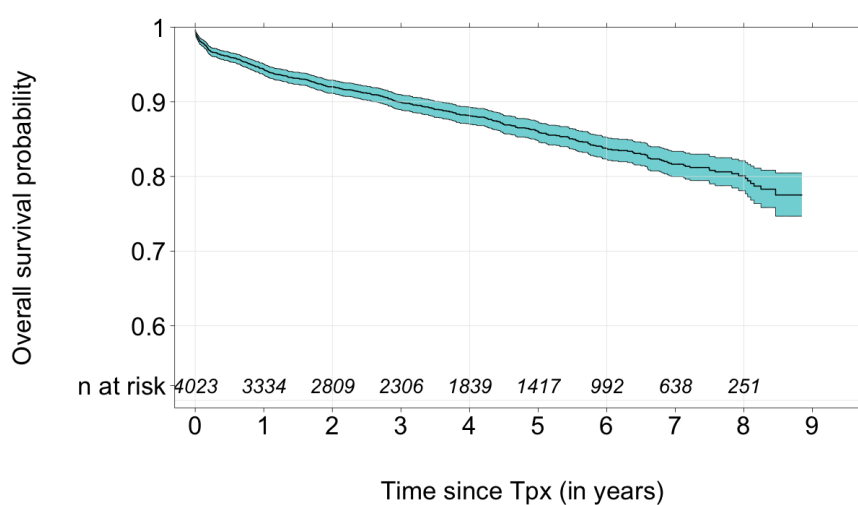
	BE	CHUV	HUG	SG	USB	USZ	Sum
Enrolled, N	581	654	615	164	573	1436	4023
Dropped out, N (%)	5 (0.9%)	6 (0.9%)	9 (1.5%)	0 (0%)	2 (0.3%)	20 (1.4%)	42 (1%)
- Heart	-	-	-	-	-	2	2
- Islets	-	-	-	-	-	2	2
- Kidney	5	4	4	-	2	9	24
- Kidney - Pancreas	-	-	1	-	-	2	3
- Liver	-	-	4	-	-	5	9
- Lung	-	2	-	-	-	-	2

Table 13: Overall mortality

Time	Mortality (%)	95% CI	No at risk	Cum. deaths
Baseline	0.0	-	4023	0
1 month	1.9	(1.5, 2.4)	3914	78
6 months	4.0	(3.4, 4.6)	3605	159
1 year(s)	5.7	(4.9, 6.4)	3334	219
2 year(s)	8.0	(7.1, 8.8)	2809	296
3 year(s)	10.1	(9.1, 11.1)	2306	354
4 year(s)	11.9	(10.8, 13)	1839	396
5 year(s)	14.0	(12.7, 15.2)	1417	434
6 year(s)	16.3	(14.8, 17.7)	992	466
7 year(s)	18.4	(16.6, 20)	638	486
8 year(s)	19.9	(17.9, 21.9)	251	494
Overall	22.5	(19.5, 25.3)	-	500

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 2nd of May in 2008 to 7th of March 2017). Patients that had a Kidney or Kidney-Kidney Tpx and have a GF and no re or second Tpx are censored for mortality at the time point of GF.

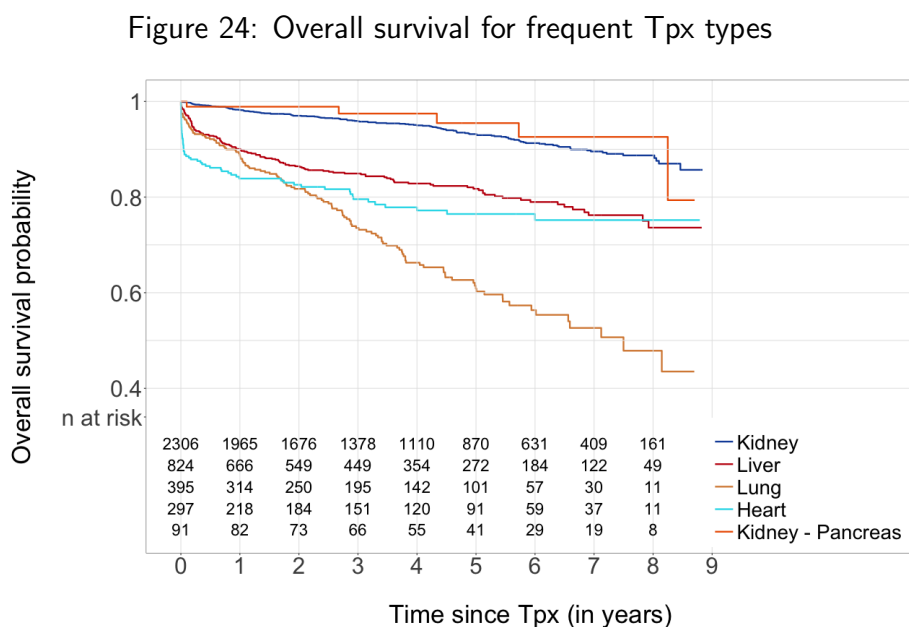
Figure 23: Overall survival



8.2 Mortality by Tpx

For the issue of clarity, Tpx types performed in STCS are separated in frequent and rare Tpx scenarios regarding their frequency of occurrence. Rare Tpx include STCS Tpx types that are performed less than 50 times in the defined period. Figures and Tables are thus potentially given per frequent and rare Tpx (see Appendix C).

Patients that had a Kidney or Kidney-Kidney Tpx and have a GF and no re or second Tpx are censored for mortality at the time point of GF.



Remark: 39 Kidney-Kidney Tpx are included in Kidney Tpx. 2 Kidney-Kidney-Pancreas Tpx are included in Kidney-Pancreas Tpx.

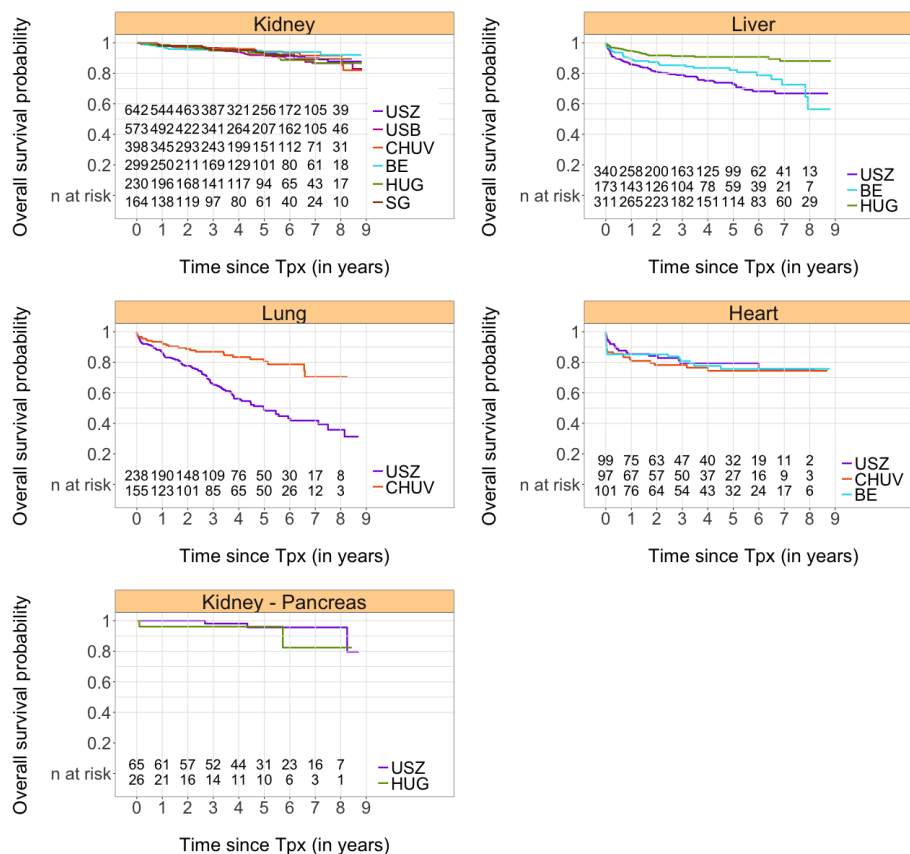
Table 14: Overall mortality by Tpx type

Tpx	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
Kidney	Baseline	0.0	-	2306	0
-	1 month	0.1	(0, 0.3)	2272	3
-	6 months	0.9	(0.5, 1.3)	2110	20
-	1 year(s)	1.8	(1.2, 2.3)	1965	38
-	2 year(s)	3.0	(2.2, 3.7)	1676	61
-	3 year(s)	4.1	(3.2, 5)	1378	79
-	4 year(s)	5.0	(4, 6)	1110	90
-	5 year(s)	6.8	(5.5, 8.1)	870	109
-	6 year(s)	8.7	(7.1, 10.3)	631	124
-	7 year(s)	10.5	(8.5, 12.3)	409	134
-	8 year(s)	11.3	(9.2, 13.4)	161	137
-	Overall	14.3	(10.5, 18)	-	141
Liver	Baseline	0.0	-	824	0
-	1 month	2.8	(1.7, 3.9)	801	23
-	6 months	7.2	(5.4, 8.9)	729	59
-	1 year(s)	9.9	(7.8, 12)	666	80
-	2 year(s)	13.6	(11.1, 16)	549	105
-	3 year(s)	15.1	(12.5, 17.6)	449	114
-	4 year(s)	17.2	(14.3, 19.9)	354	124
-	5 year(s)	18.3	(15.2, 21.2)	272	128
-	6 year(s)	21.0	(17.5, 24.4)	184	136
-	7 year(s)	23.8	(19.6, 27.8)	122	141
-	8 year(s)	26.4	(20.9, 31.5)	49	143
-	Overall	26.4	(20.9, 31.5)	-	143
Lung	Baseline	0.0	-	395	0
-	1 month	3.8	(1.9, 5.7)	380	15
-	6 months	7.9	(5.2, 10.5)	348	31
-	1 year(s)	11.4	(8.2, 14.6)	314	44
-	2 year(s)	18.3	(14.2, 22.2)	250	67
-	3 year(s)	26.4	(21.5, 31.1)	195	90
-	4 year(s)	33.7	(28.1, 38.9)	142	107
-	5 year(s)	39.1	(32.9, 44.8)	101	117
-	6 year(s)	43.6	(36.7, 49.8)	57	123
-	7 year(s)	47.4	(39.5, 54.2)	30	126
-	8 year(s)	52.1	(41.9, 60.6)	11	128
-	Overall	56.5	(43, 66.8)	-	129
Heart	Baseline	0.0	-	297	0
-	1 month	11.1	(7.5, 14.6)	264	33
-	6 months	13.9	(9.8, 17.7)	238	41
-	1 year(s)	16.1	(11.8, 20.3)	218	47
-	2 year(s)	17.4	(12.9, 21.7)	184	50
-	3 year(s)	20.4	(15.4, 25.2)	151	56
-	4 year(s)	22.8	(17.4, 27.9)	120	60
-	5 year(s)	23.5	(17.9, 28.7)	91	61
-	6 year(s)	24.8	(18.7, 30.4)	59	62
-	7 year(s)	24.8	(18.7, 30.4)	37	62
-	8 year(s)	24.8	(18.7, 30.4)	11	62
-	Overall	24.8	(18.7, 30.4)	-	62
Kidney - Pancreas	Baseline	0.0	-	91	0
-	1 month	0.0	-	91	0

Tpx	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
-	6 months	1.1	(0, 3.2)	85	1
-	1 year(s)	1.1	(0, 3.2)	82	1
-	2 year(s)	1.1	(0, 3.2)	73	1
-	3 year(s)	2.5	(0, 6)	66	2
-	4 year(s)	2.5	(0, 6)	55	2
-	5 year(s)	4.5	(0, 9.5)	41	3
-	6 year(s)	7.4	(0, 14.6)	29	4
-	7 year(s)	7.4	(0, 14.6)	19	4
-	8 year(s)	7.4	(0, 14.6)	8	4
-	Overall	20.6	(0, 42)	-	5

8.3 Mortality by Tpx and centre

Figure 25: Overall survival for frequent Tpx



Remarks:

39 Kidney-Kidney Tpx (15 (USZ), 23 (USB) and 1 (CHUV)) are included in Kidney Tpx. 2 Kidney-Kidney-Pancreas Tpx (USZ) are included in Kidney-Pancreas Tpx. 2 Lung tpx in HUG are not included in this graph.

Patients that had a Kidney or Kidney-Kidney Tpx and have a GF and no re or second Tpx are censored for mortality at the time point of GF.

Table 15: Overall mortality by frequent Tpx type and centre

Tpx - centre	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
Kidney - USZ	Baseline	0.0	-	642	0
-	1 month	0.2	(0, 0.5)	628	1
-	6 months	1.1	(0.3, 1.9)	575	7
-	1 year(s)	1.7	(0.6, 2.7)	544	10
-	2 year(s)	2.6	(1.3, 4)	463	15
-	3 year(s)	3.3	(1.8, 4.9)	387	18
-	4 year(s)	4.4	(2.6, 6.3)	321	22
-	5 year(s)	6.5	(4, 8.8)	256	28
-	6 year(s)	8.7	(5.6, 11.7)	172	33
-	7 year(s)	10.0	(6.4, 13.5)	105	35
-	8 year(s)	12.3	(7.5, 16.8)	39	37
-	Overall	12.3	(7.5, 16.8)	-	37
Kidney - USB	Baseline	0.0	-	573	0
-	1 month	0.2	(0, 0.5)	567	1
-	6 months	1.1	(0.2, 1.9)	533	6
-	1 year(s)	1.9	(0.7, 3)	492	10
-	2 year(s)	3.1	(1.6, 4.6)	422	16
-	3 year(s)	4.4	(2.5, 6.2)	341	21
-	4 year(s)	6.2	(3.9, 8.5)	264	27
-	5 year(s)	8.1	(5.3, 10.9)	207	32
-	6 year(s)	10.6	(7.1, 14)	162	37
-	7 year(s)	13.3	(8.9, 17.5)	105	41
-	8 year(s)	13.3	(8.9, 17.5)	46	41
-	Overall	17.1	(8.3, 25)	-	42
Kidney - CHUV	Baseline	0.0	-	398	0
-	1 month	0.2	(0, 0.7)	395	1
-	6 months	0.5	(0, 1.2)	374	2
-	1 year(s)	1.3	(0.2, 2.5)	345	5
-	2 year(s)	2.8	(1.1, 4.6)	293	10
-	3 year(s)	3.6	(1.6, 5.6)	243	12
-	4 year(s)	4.1	(1.8, 6.3)	199	13
-	5 year(s)	5.8	(2.8, 8.6)	151	16
-	6 year(s)	6.5	(3.2, 9.7)	112	17
-	7 year(s)	8.4	(4.2, 12.4)	71	19
-	8 year(s)	8.4	(4.2, 12.4)	31	19
-	Overall	18.0	(6.3, 28.2)	-	22
Kidney - BE	Baseline	0.0	-	299	0
-	1 month	0.0	-	295	0
-	6 months	1.4	(0, 2.7)	265	4
-	1 year(s)	2.5	(0.7, 4.4)	250	7
-	2 year(s)	4.6	(2, 7.1)	211	12
-	3 year(s)	5.1	(2.3, 7.8)	169	13
-	4 year(s)	5.1	(2.3, 7.8)	129	13
-	5 year(s)	6.1	(2.7, 9.3)	101	14
-	6 year(s)	6.1	(2.7, 9.3)	80	14
-	7 year(s)	6.1	(2.7, 9.3)	61	14
-	8 year(s)	8.0	(2.9, 12.8)	18	15
-	Overall	8.0	(2.9, 12.8)	-	15
Kidney - HUG	Baseline	0.0	-	230	0
-	1 month	0.0	-	224	0

Tpx - centre	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
-	6 months	0.5	(0, 1.3)	208	1
-	1 year(s)	1.4	(0, 3)	196	3
-	2 year(s)	2.5	(0.3, 4.7)	168	5
-	3 year(s)	5.0	(1.7, 8.1)	141	9
-	4 year(s)	5.0	(1.7, 8.1)	117	9
-	5 year(s)	7.7	(3.2, 11.9)	94	12
-	6 year(s)	11.3	(5.3, 17)	65	15
-	7 year(s)	13.4	(6.2, 20)	43	16
-	8 year(s)	13.4	(6.2, 20)	17	16
-	Overall	13.4	(6.2, 20)	-	16
Kidney - SG	Baseline	0.0	-	164	0
-	1 month	0.0	-	163	0
-	6 months	0.0	-	155	0
-	1 year(s)	2.0	(0, 4.3)	138	3
-	2 year(s)	2.0	(0, 4.3)	119	3
-	3 year(s)	4.9	(0.9, 8.7)	97	6
-	4 year(s)	4.9	(0.9, 8.7)	80	6
-	5 year(s)	6.4	(1.5, 11)	61	7
-	6 year(s)	7.9	(2.2, 13.3)	40	8
-	7 year(s)	10.5	(2.8, 17.5)	24	9
-	8 year(s)	10.5	(2.8, 17.5)	10	9
-	Overall	10.5	(2.8, 17.5)	-	9
Liver - USZ	Baseline	0.0	-	340	0
-	1 month	3.8	(1.8, 5.8)	327	13
-	6 months	10.6	(7.3, 13.9)	286	36
-	1 year(s)	14.2	(10.3, 17.9)	258	47
-	2 year(s)	19.0	(14.5, 23.2)	200	60
-	3 year(s)	21.1	(16.4, 25.7)	163	65
-	4 year(s)	24.9	(19.5, 29.9)	125	72
-	5 year(s)	26.9	(21.1, 32.2)	99	75
-	6 year(s)	31.8	(25.1, 38)	62	81
-	7 year(s)	33.2	(26, 39.7)	41	82
-	8 year(s)	33.2	(26, 39.7)	13	82
-	Overall	33.2	(26, 39.7)	-	82
Liver - BE	Baseline	0.0	-	173	0
-	1 month	2.9	(0.4, 5.4)	168	5
-	6 months	6.4	(2.7, 9.9)	155	11
-	1 year(s)	10.1	(5.4, 14.5)	143	17
-	2 year(s)	12.6	(7.4, 17.6)	126	21
-	3 year(s)	14.8	(9.1, 20.1)	104	24
-	4 year(s)	16.5	(10.4, 22.2)	78	26
-	5 year(s)	17.9	(11.2, 24)	59	27
-	6 year(s)	21.4	(13.2, 28.7)	39	29
-	7 year(s)	27.4	(15.7, 37.5)	21	31
-	8 year(s)	43.6	(17.5, 61.4)	7	33
-	Overall	43.6	(17.5, 61.4)	-	33
Liver - HUG	Baseline	0.0	-	311	0
-	1 month	1.6	(0.2, 3)	306	5
-	6 months	3.9	(1.7, 6)	288	12
-	1 year(s)	5.2	(2.7, 7.7)	265	16
-	2 year(s)	8.3	(5, 11.4)	223	24
-	3 year(s)	8.8	(5.4, 12)	182	25

Tpx - centre	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
-	4 year(s)	9.3	(5.8, 12.7)	151	26
-	5 year(s)	9.3	(5.8, 12.7)	114	26
-	6 year(s)	9.3	(5.8, 12.7)	83	26
-	7 year(s)	12.0	(6.9, 16.8)	60	28
-	8 year(s)	12.0	(6.9, 16.8)	29	28
-	Overall	12.0	(6.9, 16.8)	-	28
Lung - USZ	Baseline	0.0	-	238	0
-	1 month	3.8	(1.3, 6.2)	229	9
-	6 months	8.8	(5.2, 12.4)	212	21
-	1 year(s)	13.7	(9.2, 18)	190	32
-	2 year(s)	22.3	(16.6, 27.6)	148	50
-	3 year(s)	34.3	(27.3, 40.6)	109	71
-	4 year(s)	43.9	(36, 50.7)	76	85
-	5 year(s)	50.7	(42.2, 58)	50	93
-	6 year(s)	56.7	(47.3, 64.5)	30	98
-	7 year(s)	58.2	(48.5, 66)	17	99
-	8 year(s)	64.2	(51.5, 73.6)	8	101
-	Overall	68.7	(53.2, 79)	-	102
Lung - CHUV	Baseline	0.0	-	155	0
-	1 month	3.2	(0.4, 6)	150	5
-	6 months	5.9	(2.1, 9.5)	135	9
-	1 year(s)	7.3	(3, 11.4)	123	11
-	2 year(s)	11.3	(5.9, 16.4)	101	16
-	3 year(s)	13.1	(7.2, 18.6)	85	18
-	4 year(s)	16.6	(9.6, 23.1)	65	21
-	5 year(s)	19.6	(11.6, 27)	50	23
-	6 year(s)	21.4	(12.7, 29.2)	26	24
-	7 year(s)	29.6	(15.2, 41.6)	12	26
-	8 year(s)	29.6	(15.2, 41.6)	3	26
-	Overall	29.6	(15.2, 41.6)	-	26
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(s)	50.0	(0, 87.5)	1	1
-	2 year(s)	50.0	(0, 87.5)	1	1
-	3 year(s)	50.0	(0, 87.5)	1	1
-	4 year(s)	50.0	(0, 87.5)	1	1
-	5 year(s)	50.0	(0, 87.5)	1	1
-	6 year(s)	50.0	(0, 87.5)	1	1
-	7 year(s)	50.0	(0, 87.5)	1	1
-	8 year(s)	50.0	(0, 87.5)	-	1
-	Overall	50.0	(0, 87.5)	-	1
Heart - USZ	Baseline	0.0	-	99	0
-	1 month	5.0	(0.6, 9.3)	94	5
-	6 months	12.4	(5.6, 18.7)	80	12
-	1 year(s)	14.6	(7.2, 21.4)	75	14
-	2 year(s)	15.8	(8.1, 22.9)	63	15
-	3 year(s)	20.5	(11.3, 28.7)	47	18
-	4 year(s)	20.5	(11.3, 28.7)	40	18
-	5 year(s)	20.5	(11.3, 28.7)	32	18
-	6 year(s)	24.5	(12.4, 34.9)	19	19
-	7 year(s)	24.5	(12.4, 34.9)	11	19

Tpx - centre	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
-	8 year(s)	24.5	(12.4, 34.9)	2	19
-	Overall	24.5	(12.4, 34.9)	-	19
Heart - CHUV	Baseline	0.0	-	97	0
-	1 month	13.4	(6.4, 19.9)	84	13
-	6 months	14.4	(7.2, 21.2)	77	14
-	1 year(s)	19.1	(10.7, 26.7)	67	18
-	2 year(s)	21.8	(12.8, 29.9)	57	20
-	3 year(s)	21.8	(12.8, 29.9)	50	20
-	4 year(s)	25.6	(15.3, 34.6)	37	22
-	5 year(s)	25.6	(15.3, 34.6)	27	22
-	6 year(s)	25.6	(15.3, 34.6)	16	22
-	7 year(s)	25.6	(15.3, 34.6)	9	22
-	8 year(s)	25.6	(15.3, 34.6)	3	22
-	Overall	25.6	(15.3, 34.6)	-	22
Heart - BE	Baseline	0.0	-	101	0
-	1 month	14.8	(7.6, 21.5)	86	15
-	6 months	14.8	(7.6, 21.5)	81	15
-	1 year(s)	14.8	(7.6, 21.5)	76	15
-	2 year(s)	14.8	(7.6, 21.5)	64	15
-	3 year(s)	19.2	(10.6, 26.9)	54	18
-	4 year(s)	22.4	(12.9, 30.9)	43	20
-	5 year(s)	24.4	(14.2, 33.3)	32	21
-	6 year(s)	24.4	(14.2, 33.3)	24	21
-	7 year(s)	24.4	(14.2, 33.3)	17	21
-	8 year(s)	24.4	(14.2, 33.3)	6	21
-	Overall	24.4	(14.2, 33.3)	-	21
Kidney - Pancreas - USZ	Baseline	0.0	-	65	0
-	1 month	0.0	-	65	0
-	6 months	0.0	-	63	0
-	1 year(s)	0.0	-	61	0
-	2 year(s)	0.0	-	57	0
-	3 year(s)	1.9	(0, 5.4)	52	1
-	4 year(s)	1.9	(0, 5.4)	44	1
-	5 year(s)	4.4	(0, 10.2)	31	2
-	6 year(s)	4.4	(0, 10.2)	23	2
-	7 year(s)	4.4	(0, 10.2)	16	2
-	8 year(s)	4.4	(0, 10.2)	7	2
-	Overall	20.3	(0, 44.6)	-	3
Kidney - Pancreas - HUG	Baseline	0.0	-	26	0
-	1 month	0.0	-	26	0
-	6 months	3.9	(0, 11)	22	1
-	1 year(s)	3.9	(0, 11)	21	1
-	2 year(s)	3.9	(0, 11)	16	1
-	3 year(s)	3.9	(0, 11)	14	1
-	4 year(s)	3.9	(0, 11)	11	1
-	5 year(s)	3.9	(0, 11)	10	1
-	6 year(s)	17.6	(0, 39.7)	6	2
-	7 year(s)	17.6	(0, 39.7)	3	2
-	8 year(s)	17.6	(0, 39.7)	1	2
-	Overall	17.6	(0, 39.7)	-	2

8.4 Mortality in first single kidney Tpx

Overall survival for patients with single kidney Tpx as first STCS Tpx 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'.

Patients that had a Kidney or Kidney-Kidney Tpx and have a GF and no re or second Tpx are censored for mortality at the time point of GF.

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

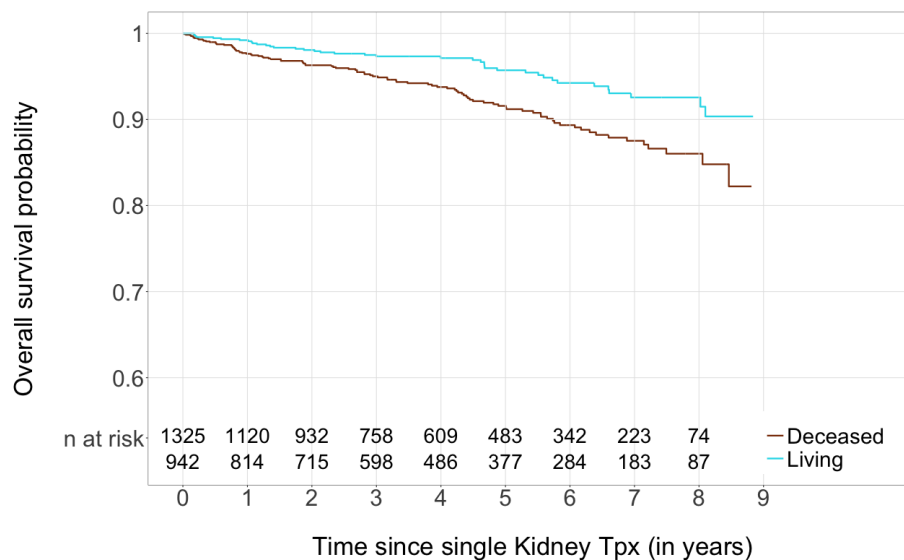


Figure 27: Overall survival for patients with first STCS single kidney Tpx by donor type combined with AB0 compatibility

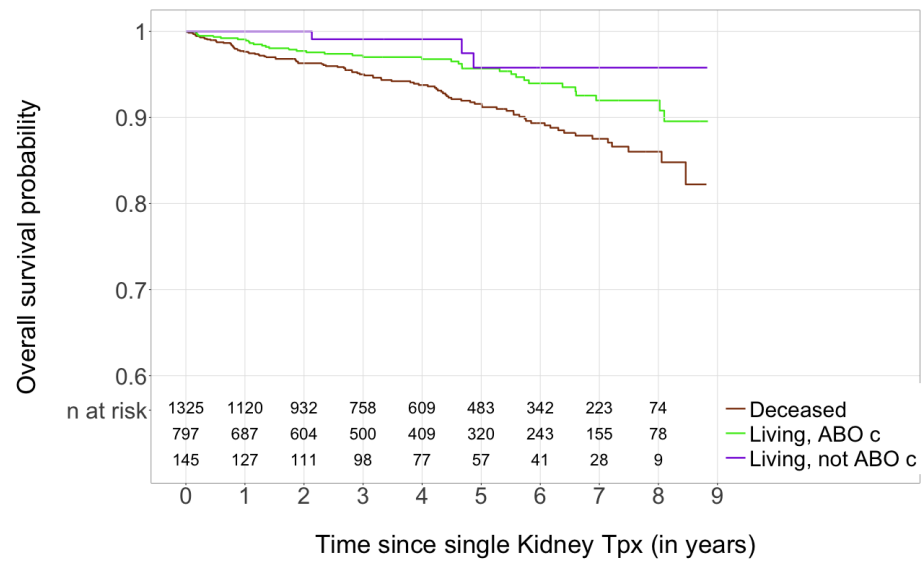


Table 16: Overall mortality in (single) kidney recipients by donor type

Donor type	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
Deceased	Baseline	0.0	-	1325	0
-	1 month	0.1	(0, 0.4)	1301	2
-	6 months	1.0	(0.5, 1.6)	1206	13
-	1 years	2.4	(1.5, 3.2)	1120	29
-	2 years	3.7	(2.6, 4.8)	932	43
-	3 years	5.0	(3.7, 6.3)	758	54
-	4 years	6.2	(4.7, 7.7)	609	63
-	5 years	8.4	(6.5, 10.3)	483	76
-	6 years	10.7	(8.3, 12.9)	342	86
-	7 years	12.5	(9.7, 15.1)	223	92
-	8 years	14.0	(10.8, 17.1)	74	95
-	Overall	17.8	(11.3, 23.8)	-	97
Living	Baseline	0.0	-	942	0
-	1 month	0.0	-	934	0
-	6 months	0.5	(0.1, 1)	870	5
-	1 years	0.8	(0.2, 1.4)	814	7
-	2 years	1.9	(1, 2.9)	715	16
-	3 years	2.7	(1.5, 3.8)	598	21
-	4 years	2.9	(1.7, 4.1)	486	22
-	5 years	4.3	(2.6, 5.9)	377	28
-	6 years	5.8	(3.7, 7.8)	284	33
-	7 years	7.4	(4.8, 10)	183	37
-	8 years	7.4	(4.8, 10)	87	37
-	Overall	9.6	(5.6, 13.5)	-	39

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 18 and 19). Table 17 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 20.

Table 17: Summary for graft failures

	N	(%)
Graft failure - total	402	100.0
- in single Tpx	367	91.3
- in double Tpx	34	8.5
- in triple Tpx	1	0.2
Patients with at least one graft failure	366	
Patients with graft failure or death	727	100.0
- graft failure and alive at end of follow-up	182	25
- graft failure followed by late death	108	14.9
- graft failure related death (at same day)	76	10.5
- death without any graft failure	361	49.7

Table 18: Graft failures in double Tpx

	Total	Kidney	Heart	Liver	Lung	Pancreas
Total	34	10	2	4	1	17
Kidney - Heart	1	0	1	0	0	0
Kidney - Islets	1	1	0	0	0	0
Kidney - Kidney	4	4	0	0	0	0
Kidney - Liver	7	3	0	4	0	0
Kidney - Pancreas	17	2	0	0	0	15
Heart - Lung	2	0	1	0	1	0
Pancreas - Small bowel	2	0	0	0	0	2

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

Table 19: Graft failure and related patients' death

	Total	All GF*	(%)	GF, late death	(%)	GF related death	(%)
Total	4320	402	9.3	126	31.3	85	21.1
Kidney	2553	185	7.2	54	29.2	1	0.5
Liver	930	104	11.2	42	40.4	26	25
Lung	417	63	15.1	17	27	39	61.9
Heart	306	29	9.5	7	24.1	19	65.5
Pancreas	114	21	18.4	6	28.6	0	0

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

Remark: Islet and small bowel graft failures are disregarded.

Table 20: Number of organs with primary non-function

	Total	USZ	USB	CHUV	BE	HUG	SG
Total	59	27	2	5	12	12	1
Kidney	21	10	2	1	0	7	1
Liver	27	13	0	0	9	5	0
Lung	2	2	0	0	0	0	0
Heart	8	2	0	3	3	0	0
Pancreas	1	0	0	1	0	0	0

9.2 Graft failure free survival

In the following, estimates of graft failure free survival are not adjusted for potential risk factors. In Figure 28 and 29, both single kidney and double kidney Tpx are included as mentioned previously. Also 2 Kidney-Kidney-Pancreas Tpx (USZ) are included in Kidney-Pancreas Tpx. In contrast, Figure 30 shows graft failure free survival only for patients with first STCS single kidney Tpx.

Figure 28: Graft failure free survival by major Tpx

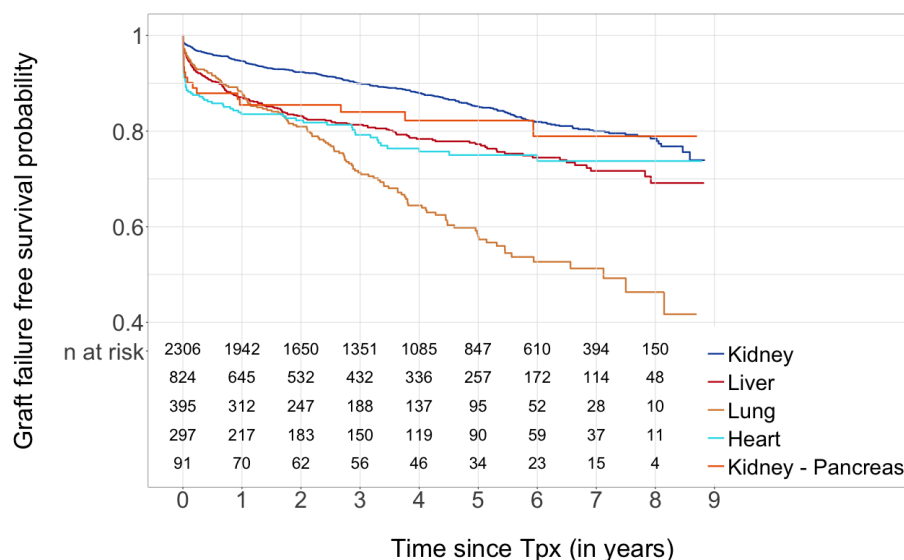


Figure 29: Graft failure free survival by major Tpx and centre

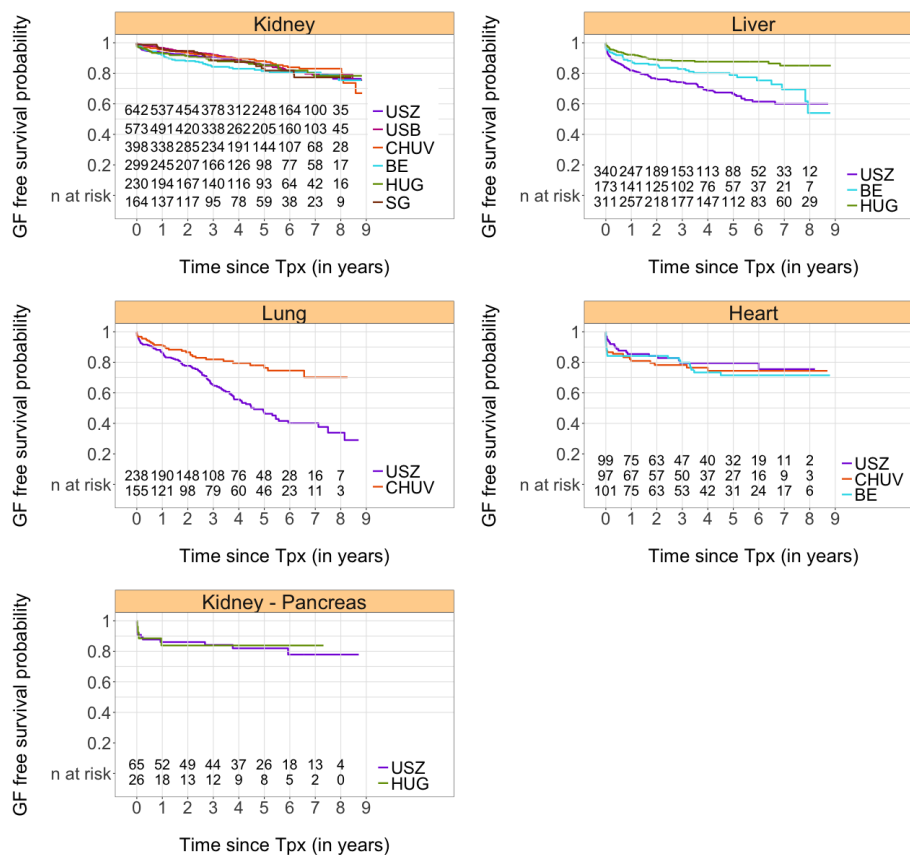
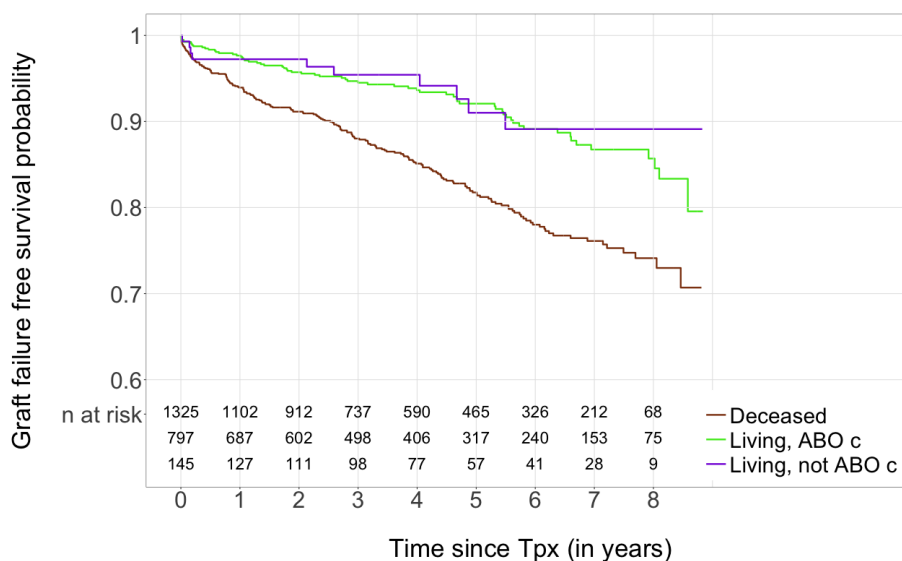


Figure 30: Graft failure free survival in patients with first STCS single kidney Tpx by donor type (combined with ABO compatibility)



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).

Figure 31: Cumulative incidence of graft failure for organs with at least one graft failure

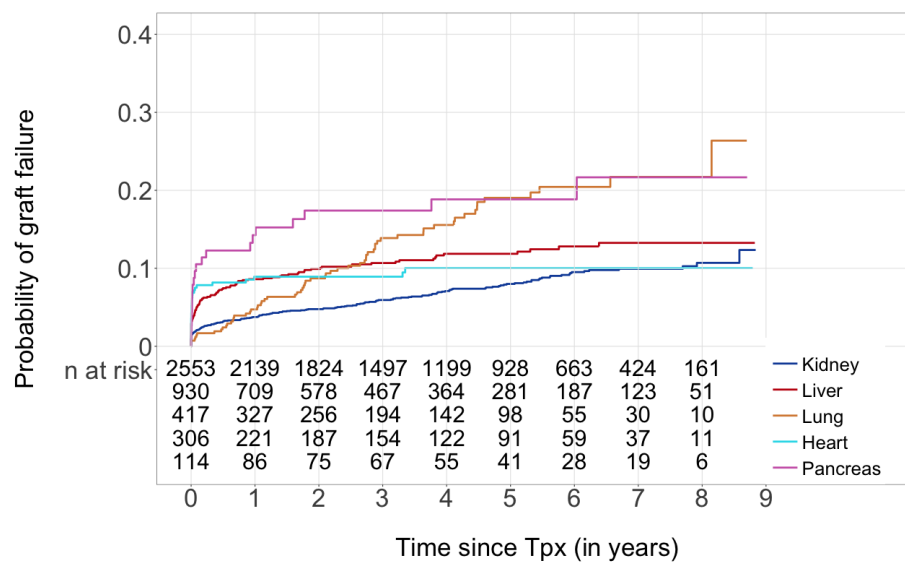


Figure 32: Cumulative incidence of graft failure for kidneys in single Tpx by donor type

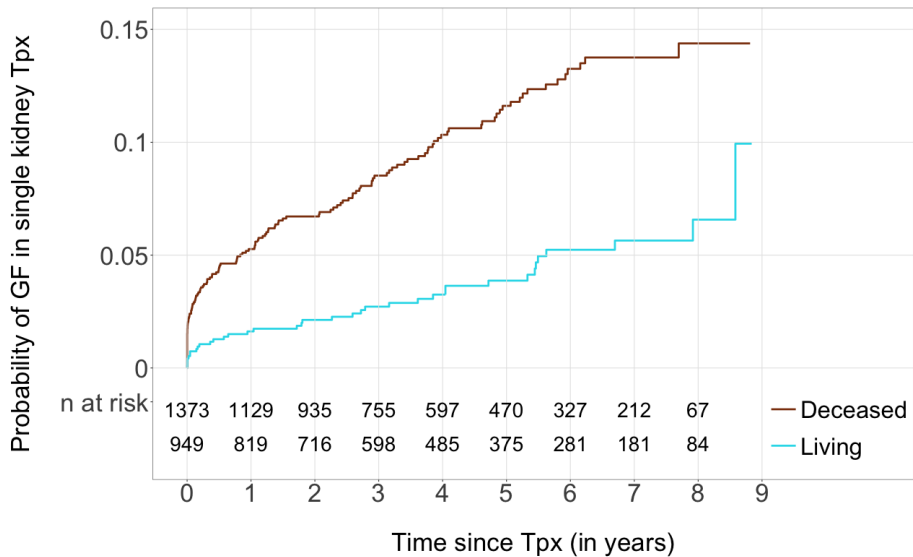


Figure 33: Cumulative incidence of graft failure for kidneys in single Tpx by ABO compatibility

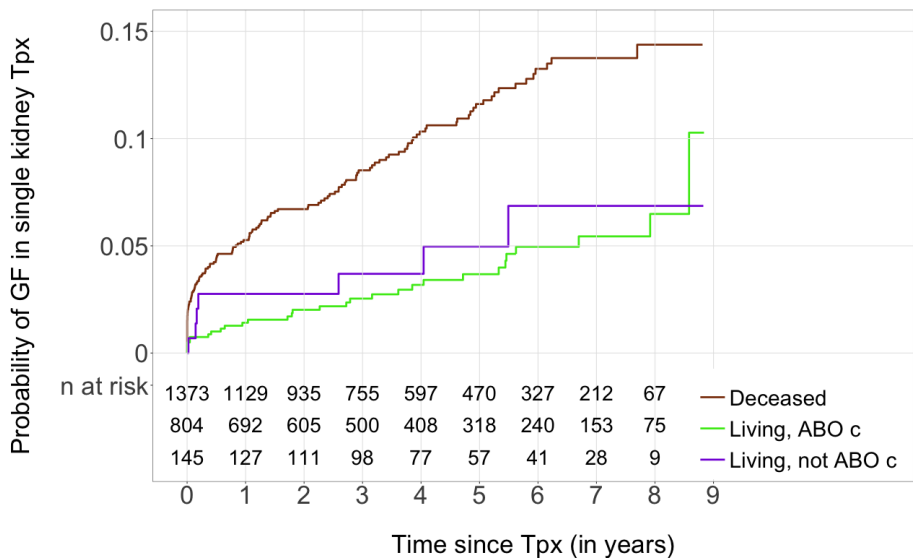


Table 21: Graft failure by organ

Organ	Time	CumInc (%)	95% CI	No at risk	Cum. GF	Cum. deaths
Kidney	Baseline	-	-	2553	0	0
-	1 month	2	(1.5,2.6)	2495	52	5
-	6 months	3.2	(2.5,3.9)	2301	80	26
-	1 year(s)	3.7	(3.1,4.5)	2139	94	45
-	2 year(s)	4.8	(4,5.7)	1824	116	69
-	3 year(s)	5.9	(5,7)	1497	137	90
-	4 year(s)	7.1	(6,8.2)	1199	154	101
-	5 year(s)	8	(6.8,9.3)	928	165	122
-	6 year(s)	9.5	(8.1,11)	663	179	139
-	7 year(s)	9.9	(8.5,11.5)	424	182	149
-	8 year(s)	10.7	(9,12.6)	161	184	152
-	Overall	12.4	(8.9,16.3)	0	185	156
Liver	Baseline	-	-	930	0	0
-	1 month	4.9	(3.7,6.5)	869	46	15
-	6 months	7.5	(5.9,9.3)	780	69	41
-	1 year(s)	8.6	(6.9,10.5)	709	79	57
-	2 year(s)	9.9	(8.1,12)	578	89	77
-	3 year(s)	10.7	(8.7,12.8)	467	94	83
-	4 year(s)	11.9	(9.7,14.2)	364	100	92
-	5 year(s)	11.9	(9.7,14.2)	281	100	97
-	6 year(s)	12.8	(10.5,15.4)	187	103	104
-	7 year(s)	13.3	(10.8,16)	123	104	108
-	8 year(s)	13.3	(10.8,16)	51	104	110
-	Overall	13.3	(10.8,16)	0	104	110
Lung	Baseline	-	-	417	0	0
-	1 month	1.4	(0.6,3)	398	6	13
-	6 months	2.4	(1.2,4.3)	363	10	27
-	1 year(s)	4.7	(2.9,7.1)	327	19	33
-	2 year(s)	8.7	(6.1,11.8)	256	33	46
-	3 year(s)	13.9	(10.4,17.8)	194	48	58
-	4 year(s)	15.6	(11.8,19.8)	142	52	70
-	5 year(s)	19	(14.7,23.8)	98	59	75
-	6 year(s)	20.4	(15.8,25.5)	55	61	80
-	7 year(s)	21.7	(16.6,27.4)	30	62	80
-	8 year(s)	21.7	(16.6,27.4)	10	62	82
-	Overall	26.4	(16.6,37.2)	0	63	82
Heart	Baseline	-	-	306	0	0
-	1 month	7.5	(4.9,10.8)	271	23	12
-	6 months	8.2	(5.4,11.6)	243	25	18
-	1 year(s)	8.9	(6,12.5)	221	27	23
-	2 year(s)	8.9	(6,12.5)	187	27	26
-	3 year(s)	8.9	(6,12.5)	154	27	32
-	4 year(s)	10	(6.9,13.9)	122	29	36
-	5 year(s)	10	(6.9,13.9)	91	29	37

Organ	Time	CumInc (%)	95% CI	No at risk	Cum. GF	Cum. deaths
-	6 year(s)	10	(6.9,13.9)	59	29	38
-	7 year(s)	10	(6.9,13.9)	37	29	38
-	8 year(s)	10	(6.9,13.9)	11	29	38
-	Overall	10	(6.9,13.9)	0	29	38
Pancreas	Baseline	-	-	114	0	0
-	1 month	10.5	(5.7,17)	101	12	1
-	6 months	12.3	(7,19.1)	92	14	1
-	1 year(s)	14.3	(8.5,21.4)	86	16	1
-	2 year(s)	17.4	(10.9,25.2)	75	19	1
-	3 year(s)	17.4	(10.9,25.2)	67	19	2
-	4 year(s)	18.8	(11.9,27)	55	20	2
-	5 year(s)	18.8	(11.9,27)	41	20	2
-	6 year(s)	18.8	(11.9,27)	28	20	2
-	7 year(s)	21.7	(13.3,31.4)	19	21	2
-	8 year(s)	21.7	(13.3,31.4)	6	21	2
-	Overall	21.7	(13.3,31.4)	0	21	2

Table 22: Graft failure by organ and centre

Organ - Centre	Time	CumInc (%)	95% CI	No at risk	Cum. GF	Cum. deaths
Kidney-USZ	Baseline	0.0	-	770	0	0
-	1 month	2.7	(1.7,4.1)	746	21	2
-	6 months	4.4	(3.1,6.1)	684	34	9
-	1 year(s)	4.7	(3.4,6.4)	644	36	12
-	2 year(s)	5.7	(4.1,7.5)	551	42	17
-	3 year(s)	6.2	(4.6,8.2)	458	45	22
-	4 year(s)	6.9	(5.1,9)	378	48	27
-	5 year(s)	7.6	(5.7,9.9)	294	51	34
-	6 year(s)	9.5	(7.1,12.3)	195	56	39
-	7 year(s)	10.0	(7.4,12.9)	117	57	42
-	8 year(s)	11.2	(7.9,15.1)	43	58	44
-	Overall	11.2	(7.9,15.1)	0	58	44
Kidney-USB	Baseline	0.0	-	601	0	0
-	1 month	0.8	(0.3,1.8)	594	5	2
-	6 months	1.2	(0.5,2.3)	557	7	7
-	1 year(s)	1.5	(0.8,2.8)	513	9	12
-	2 year(s)	2.7	(1.6,4.3)	440	15	18
-	3 year(s)	3.4	(2.1,5.3)	354	18	24
-	4 year(s)	5.2	(3.4,7.6)	272	24	29
-	5 year(s)	7.1	(4.8,10)	213	29	34
-	6 year(s)	8.5	(5.8,11.8)	164	32	39
-	7 year(s)	8.5	(5.8,11.8)	106	32	43
-	8 year(s)	8.5	(5.8,11.8)	45	32	43
-	Overall	8.5	(5.8,11.8)	0	32	44
Kidney-CHUV	Baseline	0.0	-	414	0	0
-	1 month	2.2	(1.1,3.9)	404	9	1
-	6 months	2.4	(1.2,4.3)	380	10	4
-	1 year(s)	2.9	(1.6,4.9)	351	12	7
-	2 year(s)	3.2	(1.8,5.3)	297	13	12
-	3 year(s)	4.2	(2.5,6.5)	246	16	14
-	4 year(s)	5.8	(3.6,8.7)	200	20	15
-	5 year(s)	5.8	(3.6,8.7)	149	20	18
-	6 year(s)	9.1	(5.8,13.2)	110	25	19
-	7 year(s)	9.1	(5.8,13.2)	71	25	20
-	8 year(s)	9.1	(5.8,13.2)	29	25	20
-	Overall	15.8	(5.2,31.6)	0	26	23
Kidney-BE	Baseline	0.0	-	318	0	0
-	1 month	1.9	(0.8,3.9)	312	6	0
-	6 months	4.5	(2.6,7.2)	273	14	4
-	1 year(s)	6.3	(3.9,9.4)	256	19	7
-	2 year(s)	8.1	(5.3,11.6)	217	24	13
-	3 year(s)	11.2	(7.8,15.3)	175	31	14
-	4 year(s)	12.4	(8.7,16.8)	133	33	14
-	5 year(s)	13.1	(9.2,17.7)	103	34	15

Organ - Centre	Time	CumInc (%)	95% CI	No at risk	Cum. GF	Cum. deaths
-	6 year(s)	13.9	(9.8,18.8)	79	35	16
-	7 year(s)	13.9	(9.8,18.8)	60	35	16
-	8 year(s)	17.3	(10.3,25.9)	17	36	17
-	Overall	17.3	(10.3,25.9)	0	36	17
Kidney-HUG	Baseline	0.0	-	282	0	0
-	1 month	3.2	(1.6,5.7)	273	9	0
-	6 months	4.7	(2.6,7.6)	249	13	2
-	1 year(s)	5.0	(2.9,8.1)	236	14	4
-	2 year(s)	5.8	(3.5,9.1)	200	16	6
-	3 year(s)	6.4	(3.8,9.7)	167	17	10
-	4 year(s)	6.9	(4.2,10.5)	137	18	10
-	5 year(s)	6.9	(4.2,10.5)	109	18	14
-	6 year(s)	6.9	(4.2,10.5)	76	18	18
-	7 year(s)	8.3	(4.8,13)	47	19	19
-	8 year(s)	8.3	(4.8,13)	18	19	19
-	Overall	8.3	(4.8,13)	0	19	19
Kidney-SG	Baseline	0.0	-	168	0	0
-	1 month	1.2	(0.2,3.9)	166	2	0
-	6 months	1.2	(0.2,3.9)	158	2	0
-	1 year(s)	2.5	(0.8,5.8)	139	4	3
-	2 year(s)	3.9	(1.6,7.9)	119	6	3
-	3 year(s)	7.3	(3.7,12.6)	97	10	6
-	4 year(s)	8.4	(4.4,14.1)	79	11	6
-	5 year(s)	11.1	(6,17.9)	60	13	7
-	6 year(s)	11.1	(6,17.9)	39	13	8
-	7 year(s)	13.3	(7.1,21.4)	23	14	9
-	8 year(s)	13.3	(7.1,21.4)	9	14	9
-	Overall	13.3	(7.1,21.4)	0	14	9
Liver-USZ	Baseline	0.0	-	398	0	0
-	1 month	7.0	(4.8,9.8)	359	28	11
-	6 months	10.4	(7.6,13.6)	307	41	29
-	1 year(s)	12.3	(9.3,15.8)	274	48	36
-	2 year(s)	14.2	(10.9,17.9)	210	54	47
-	3 year(s)	15.3	(11.8,19.2)	169	57	49
-	4 year(s)	17.3	(13.4,21.6)	127	61	55
-	5 year(s)	17.3	(13.4,21.6)	100	61	58
-	6 year(s)	19.6	(15.1,24.5)	60	64	62
-	7 year(s)	19.6	(15.1,24.5)	37	64	63
-	8 year(s)	19.6	(15.1,24.5)	14	64	63
-	Overall	19.6	(15.1,24.5)	0	64	63
Liver-BE	Baseline	0.0	-	190	0	0
-	1 month	5.3	(2.7,9.1)	179	10	1
-	6 months	6.9	(3.8,11.1)	164	13	6
-	1 year(s)	6.9	(3.8,11.1)	151	13	12
-	2 year(s)	6.9	(3.8,11.1)	133	13	17
-	3 year(s)	7.6	(4.3,12)	109	14	20

Organ - Centre	Time	CumInc (%)	95% CI	No at risk	Cum. GF	Cum. deaths
-	4 year(s)	8.4	(4.9,13.1)	82	15	22
-	5 year(s)	8.4	(4.9,13.1)	62	15	23
-	6 year(s)	8.4	(4.9,13.1)	39	15	26
-	7 year(s)	8.4	(4.9,13.1)	23	15	28
-	8 year(s)	8.4	(4.9,13.1)	7	15	30
-	Overall	8.4	(4.9,13.1)	0	15	30
Liver-HUG	Baseline	0.0	-	342	0	0
-	1 month	2.3	(1.1,4.4)	331	8	3
-	6 months	4.4	(2.6,7)	309	15	6
-	1 year(s)	5.3	(3.3,8.1)	284	18	9
-	2 year(s)	6.8	(4.4,9.9)	235	22	13
-	3 year(s)	7.1	(4.7,10.3)	189	23	14
-	4 year(s)	7.6	(5,11)	155	24	15
-	5 year(s)	7.6	(5,11)	119	24	16
-	6 year(s)	7.6	(5,11)	88	24	16
-	7 year(s)	8.8	(5.5,12.9)	63	25	17
-	8 year(s)	8.8	(5.5,12.9)	30	25	17
-	Overall	8.8	(5.5,12.9)	0	25	17
Lung-USZ	Baseline	0.0	-	247	0	0
-	1 month	2.0	(0.8,4.4)	234	5	8
-	6 months	2.4	(1,5)	216	6	19
-	1 year(s)	5.0	(2.7,8.3)	193	12	25
-	2 year(s)	9.3	(5.9,13.5)	149	21	35
-	3 year(s)	16.0	(11.3,21.4)	109	33	45
-	4 year(s)	18.7	(13.5,24.6)	76	37	55
-	5 year(s)	23.4	(17.4,30.1)	48	43	59
-	6 year(s)	25.7	(19.1,32.8)	28	45	63
-	7 year(s)	25.7	(19.1,32.8)	16	45	63
-	8 year(s)	25.7	(19.1,32.8)	7	45	65
-	Overall	30.4	(19.6,41.9)	0	46	65
Lung-CHUV	Baseline	0.0	-	163	0	0
-	1 month	0.6	(0.1,3.1)	158	1	4
-	6 months	1.9	(0.5,5.1)	142	3	7
-	1 year(s)	3.9	(1.6,7.9)	129	6	7
-	2 year(s)	7.6	(4,12.7)	104	11	10
-	3 year(s)	10.3	(5.8,16.1)	83	14	12
-	4 year(s)	10.3	(5.8,16.1)	64	14	14
-	5 year(s)	11.7	(6.7,18.1)	48	15	15
-	6 year(s)	11.7	(6.7,18.1)	25	15	16
-	7 year(s)	15.6	(7.6,26.2)	12	16	16
-	8 year(s)	15.6	(7.6,26.2)	3	16	16
-	Overall	15.6	(7.6,26.2)	0	16	16
Lung-HUG	Baseline	0.0	-	7	0	0
-	1 month	0.0	-	6	0	1
-	6 months	14.3	(0.5,49.6)	5	1	1
-	1 year(s)	14.3	(0.5,49.6)	5	1	1

Organ - Centre	Time	CumInc (%)	95% CI	No at risk	Cum. GF	Cum. deaths
-	2 year(s)	14.3	(0.5,49.6)	3	1	1
-	3 year(s)	14.3	(0.5,49.6)	2	1	1
-	4 year(s)	14.3	(0.5,49.6)	2	1	1
-	5 year(s)	14.3	(0.5,49.6)	2	1	1
-	6 year(s)	14.3	(0.5,49.6)	2	1	1
-	7 year(s)	14.3	(0.5,49.6)	2	1	1
-	8 year(s)	-	-	0	1	1
-	Overall	14.3	(0.5,49.6)	0	1	1
Heart-USZ	Baseline	0.0	-	101	0	0
-	1 month	3.0	(0.8,7.8)	95	3	3
-	6 months	5.0	(1.8,10.5)	81	5	8
-	1 year(s)	6.1	(2.5,12)	75	6	10
-	2 year(s)	6.1	(2.5,12)	63	6	11
-	3 year(s)	6.1	(2.5,12)	47	6	14
-	4 year(s)	6.1	(2.5,12)	40	6	14
-	5 year(s)	6.1	(2.5,12)	32	6	14
-	6 year(s)	6.1	(2.5,12)	19	6	15
-	7 year(s)	6.1	(2.5,12)	11	6	15
-	8 year(s)	6.1	(2.5,12)	2	6	15
-	Overall	6.1	(2.5,12)	0	6	15
Heart-CHUV	Baseline	0.0	-	100	0	0
-	1 month	10.0	(5.1,16.8)	87	10	3
-	6 months	10.0	(5.1,16.8)	80	10	4
-	1 year(s)	11.2	(5.9,18.3)	70	11	7
-	2 year(s)	11.2	(5.9,18.3)	60	11	9
-	3 year(s)	11.2	(5.9,18.3)	53	11	9
-	4 year(s)	11.2	(5.9,18.3)	39	11	11
-	5 year(s)	11.2	(5.9,18.3)	27	11	11
-	6 year(s)	11.2	(5.9,18.3)	16	11	11
-	7 year(s)	11.2	(5.9,18.3)	9	11	11
-	8 year(s)	11.2	(5.9,18.3)	3	11	11
-	Overall	11.2	(5.9,18.3)	0	11	11
Heart-BE	Baseline	0.0	-	105	0	0
-	1 month	9.5	(4.9,16.1)	89	10	6
-	6 months	9.5	(4.9,16.1)	82	10	6
-	1 year(s)	9.5	(4.9,16.1)	76	10	6
-	2 year(s)	9.5	(4.9,16.1)	64	10	6
-	3 year(s)	9.5	(4.9,16.1)	54	10	9
-	4 year(s)	12.7	(6.8,20.5)	43	12	11
-	5 year(s)	12.7	(6.8,20.5)	32	12	12
-	6 year(s)	12.7	(6.8,20.5)	24	12	12
-	7 year(s)	12.7	(6.8,20.5)	17	12	12
-	8 year(s)	12.7	(6.8,20.5)	6	12	12
-	Overall	12.7	(6.8,20.5)	0	12	12
Pancreas-USZ	Baseline	0.0	-	76	0	0
-	1 month	9.2	(4,17)	68	7	1

Organ - Centre	Time	CumInc (%)	95% CI	No at risk	Cum. GF	Cum. deaths
-	6 months	11.8	(5.8,20.2)	64	9	1
-	1 year(s)	13.3	(6.8,22)	60	10	1
-	2 year(s)	16.2	(8.9,25.6)	55	12	1
-	3 year(s)	16.2	(8.9,25.6)	48	12	2
-	4 year(s)	18.2	(10.1,28.1)	40	13	2
-	5 year(s)	18.2	(10.1,28.1)	27	13	2
-	6 year(s)	18.2	(10.1,28.1)	19	13	2
-	7 year(s)	22.4	(11.8,35)	13	14	2
-	8 year(s)	22.4	(11.8,35)	4	14	2
-	Overall	22.4	(11.8,35)	0	14	2
Pancreas-HUG	Baseline	0.0	-	38	0	0
-	1 month	13.2	(4.7,26)	33	5	0
-	6 months	13.2	(4.7,26)	28	5	0
-	1 year(s)	16.4	(6.5,30.2)	26	6	0
-	2 year(s)	19.6	(8.4,34.2)	20	7	0
-	3 year(s)	19.6	(8.4,34.2)	19	7	0
-	4 year(s)	19.6	(8.4,34.2)	15	7	0
-	5 year(s)	19.6	(8.4,34.2)	14	7	0
-	6 year(s)	19.6	(8.4,34.2)	9	7	0
-	7 year(s)	19.6	(8.4,34.2)	6	7	0
-	8 year(s)	19.6	(8.4,34.2)	2	7	0
-	Overall	19.6	(8.4,34.2)	0	7	0

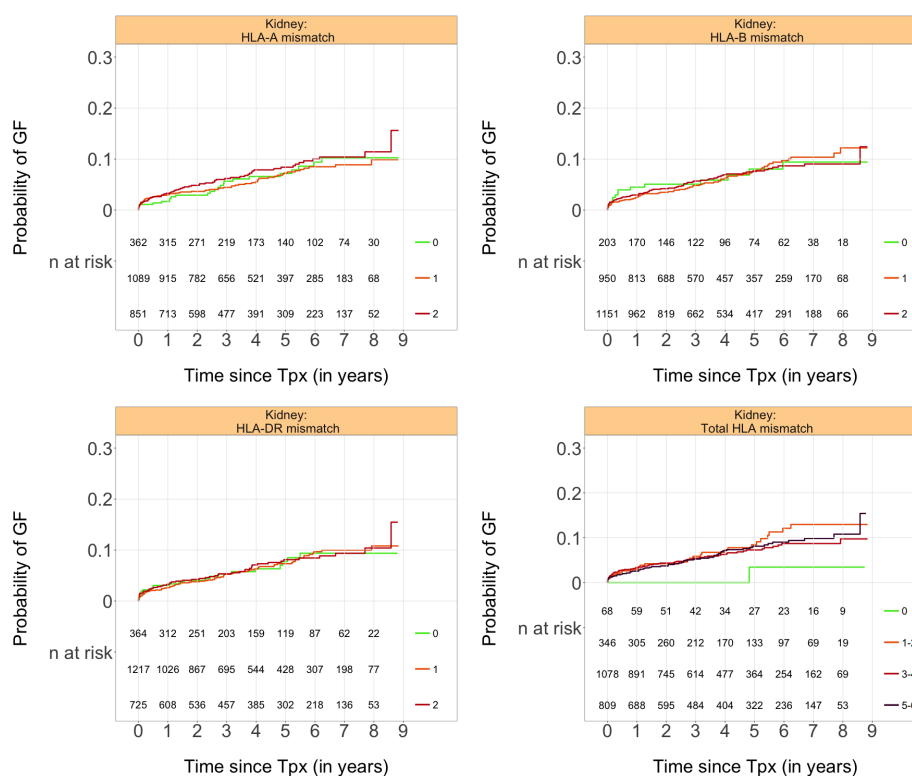
Table 23: Graft failure of kidneys (in first STCS single Tpx) by donor type

Donor type	Time	CumInc (%)	95% CI	No at risk	Cum. GF	Cum. deaths
Deceased	Baseline	-	-	1373	0	0
-	1 month	2.8	(2,3.7)	1334	38	1
-	6 months	4.4	(3.4,5.6)	1222	60	14
-	1 year(s)	5.3	(4.2,6.6)	1129	71	31
-	2 year(s)	6.7	(5.4,8.2)	935	88	45
-	3 year(s)	8.5	(7,10.2)	755	105	56
-	4 year(s)	10.3	(8.6,12.2)	597	119	64
-	5 year(s)	11.6	(9.7,13.7)	470	127	77
-	6 year(s)	13.3	(11.1,15.6)	327	135	87
-	7 year(s)	13.8	(11.5,16.2)	212	137	92
-	8 year(s)	14.4	(11.9,17.1)	67	138	95
-	Overall	14.4	(11.9,17.1)	0	138	97
Living	Baseline	-	-	949	0	0
-	1 month	0.7	(0.3,1.5)	941	7	0
-	6 months	1.3	(0.7,2.2)	876	12	5
-	1 year(s)	1.6	(0.9,2.6)	819	15	7
-	2 year(s)	2.1	(1.3,3.2)	716	19	16
-	3 year(s)	2.7	(1.8,4)	598	23	21
-	4 year(s)	3.3	(2.2,4.7)	485	26	22
-	5 year(s)	3.9	(2.6,5.5)	375	29	28
-	6 year(s)	5.2	(3.6,7.3)	281	34	33
-	7 year(s)	5.6	(3.9,7.9)	181	35	37
-	8 year(s)	6.6	(4.2,9.6)	84	36	37
-	Overall	9.9	(4.3,18.4)	0	37	39

9.4 Graft failure and number of HLA mismatches

Figures 34-37 show cumulative incidence functions for graft failures separated by (major) tpx and the number of HLA mismatches¹ between donor and recipient at baseline (i. e. at timepoint of first STCS tpx). It is distinguished between mismatches for HLA-A, HLA-B and HLA-DR and the total number of mismatches of these HLA classes.

Figure 34: Cumulative incidence of graft failure for kidney or kidney-kidney tpx by HLA mismatches



¹The number of mismatches are the number of HLA surface receptor classes of the donor not present in the recipient. If the surface receptors of the donor are homozygous, they are counted only once. Groups with less than 10 patients at time of tpx are not shown. 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 for liver tpx by HLA mismatches

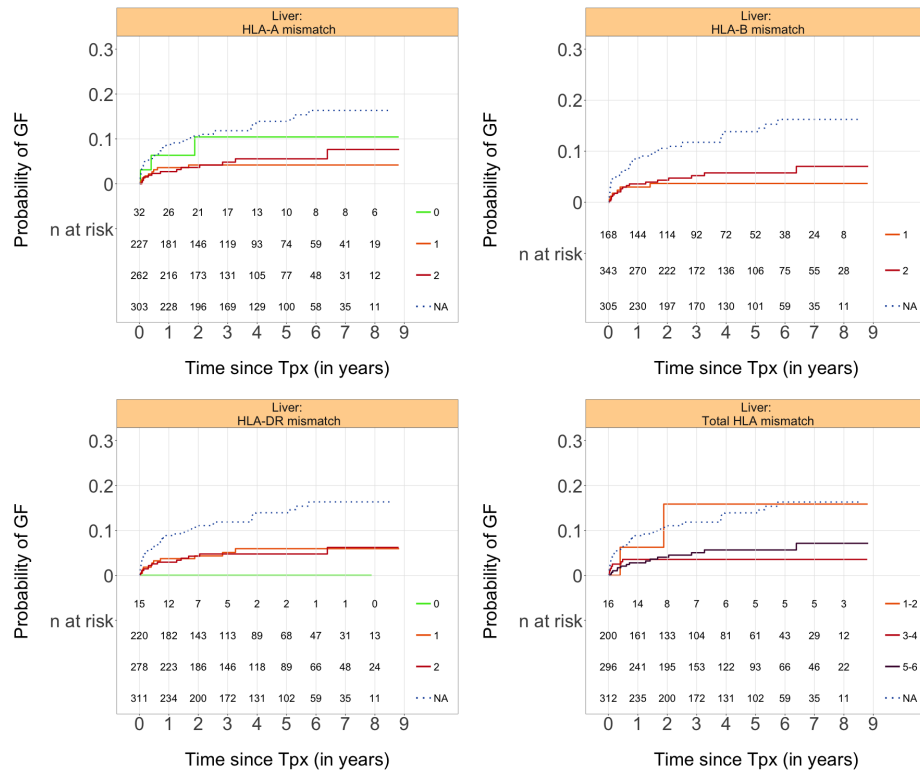


Figure 36: Cumulative incidence of graft failure for lung tpx by HLA mismatches

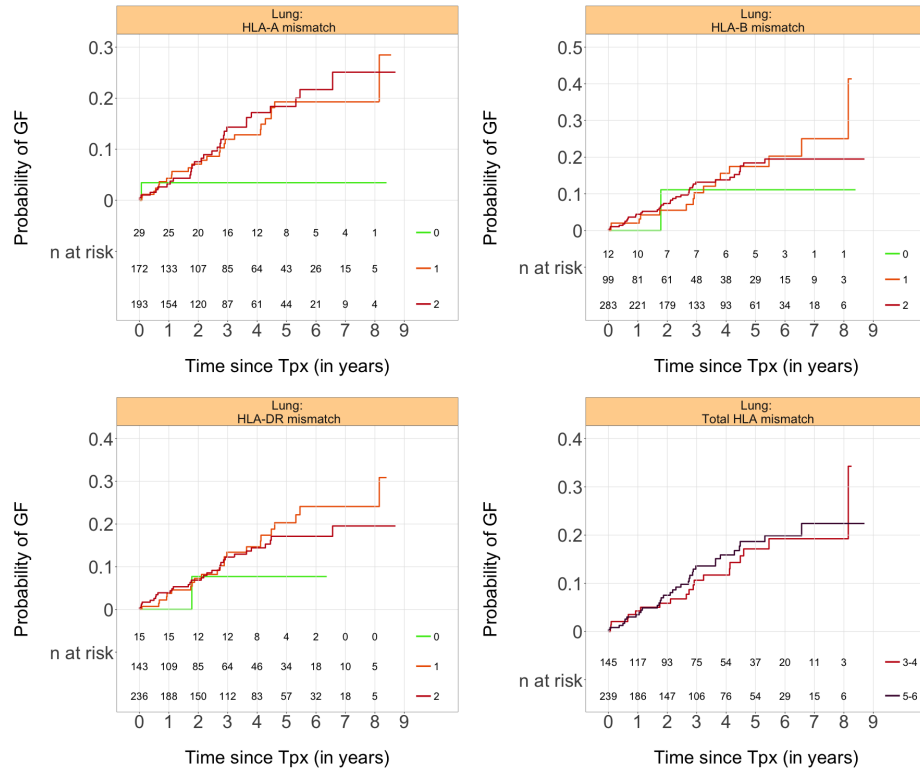
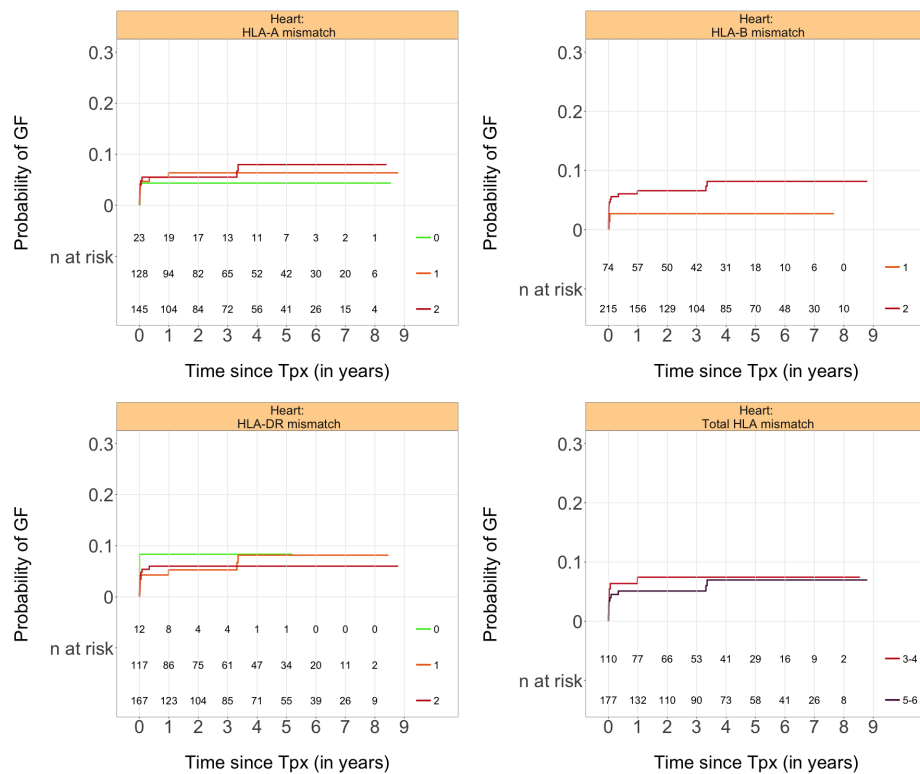


Figure 37: Cumulative incidence of graft failure for heart tpx by HLA mismatches



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 24: Overview of patients with incident cancer

	N	%
Total number of patients	4023	
Patients with incident cancer (other than skin)	291	7.2
- single record (% of line 2)	205	70.4
- multiple records (% of line 2)	86	29.6

Table 25: Patients with incident cancer

	Patients	Episodes	Median time (in yrs)*
Total	291	437	2.47
Kidney	153	212	2.57
Liver	94	156	2.41
Lung	26	42	1.77
Heart	14	22	2.54
Pancreas	1	2	0.24
Islets	3	3	3.02

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

Remark: Patients are listed regarding the organ implanted in the first STCS Tpx.

Table 26: Overview of incident cancer occurrence

	N	%
Total	437	100
Brain	10	2
Breast	11	2
CUP	2	0
Cervix_Uterus_Adnex	4	1
Colon	18	4
Kaposi	5	1
Kidney	17	4
Leukemia	6	1
Liver	53	12
Lung	43	10
MDS	5	1
MM	2	0
Neuroendocrine	5	1
PTLD	51	12
Prostate	36	8
Sarkoma	7	2
Testicular cancer	2	0
Thyroid	6	1
Uro_bladder	21	5
Other	133	30

10.2 Skin cancer

Table 27: Overview of patients with incident skin cancer

	N	%
Total number of patients	4023	
Patients with incident skin cancer	411	10.2
- single record (% of line 2)	213	51.8
- multiple records (% of line 2)	198	48.2

Table 28: Patients with incident skin cancer

	Patients	Episodes	Median time (in yrs)*
Total	411	1054	2.79
Kidney	277	767	2.82
Liver	47	96	2.56
Lung	44	122	2.64
Heart	32	49	2.98
Pancreas	4	10	4.17
Islets	7	10	3.12

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

Remark: Patients are listed regarding the organ implanted in the first STCS Tpx.

Table 29: Overview of incident skin cancer occurrence

	N	%
Total	1054	100
Basalioma	324	31
Melanoma	36	3
Spinalioma	456	43
Other	238	23

A Cohort of all solid organ recipients transplanted since January 2008

The STCS officially started to enrol patients 1st of May 2008. By request from the Swiss Federal Office of Public Health, patients transplanted in the reporting period from 1.1.2008 until 30.4.2008 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 and Tpx performed, it shows patients according to their first STCS Tpx in the period: January 2008 - April 2008.

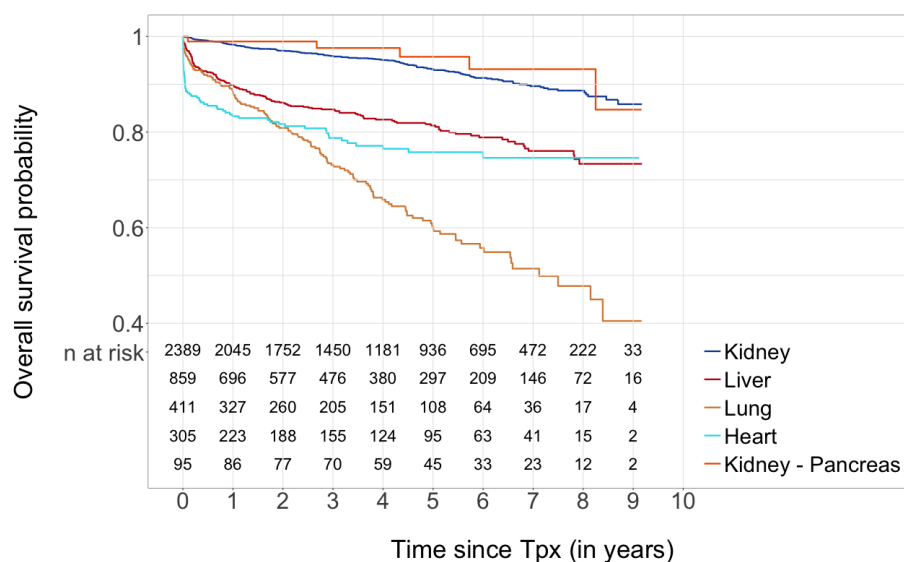
Table 30: Number of patients enrolled by Tpx type (January 2008 - April 2008)

	Total	First Tpx	(%)	Re Tpx	(%)	Second Tpx	(%)
Total	151	151	100.0	0	0.0	0	0.0
Kidney	83	83	100.0	0	0.0	0	0.0
Liver	35	35	100.0	0	0.0	0	0.0
Lung	16	16	100.0	0	0.0	0	0.0
Heart	8	8	100.0	0	0.0	0	0.0
Islets	2	2	100.0	0	0.0	0	0.0
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 Tpx

The following figure includes all the patients transplanted in the period: January 2008 - December 2016 and is analogous to Figure 24.

Figure 38: Overall survival since January 2008 for frequent Tpx types

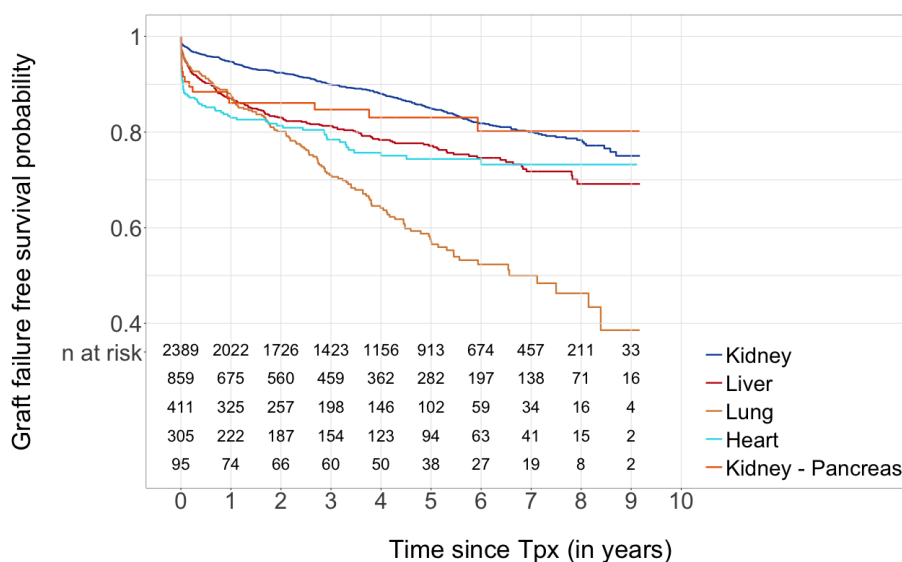


Remark: 34 Kidney-Kidney Tpx are included in Kidney Tpx. 2 Kidney-Kidney-Pancreas are included in Kidney-Pancreas. Patients that had a Kidney or Kidney-Kidney Tpx and have a GF and no re or second Tpx are censored for mortality at the time point of GF.

A.3 Graft failure free survival

The following figure includes all the patients transplanted in the period: January 2008 - December 2016 and is analogous to Figure 28. The rate estimates for graft failure free survival are not adjusted for potential risk factors.

Figure 39: Graft failure free survival since January 2008 by major Tpx



Remark: 34 Kidney-Kidney Tpx are included in Kidney Tpx. 2 Kidney-Kidney-Pancreas are included in Kidney-Pancreas.

B Pediatric patients

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

	Total	USZ	%	USB	%	CHUV	%	BE	%	HUG	%	SG	%
Total	207	78	37.7	4	1.9	20	9.7	30	14.5	73	35.3	2	1.0
Kidney	92	50	54.3	4	4.3	12	13.0	21	22.8	3	3.3	2	2.2
Liver	68	2	2.9	0	0.0	0	0.0	1	1.5	65	95.6	0	0.0
Lung	13	11	84.6	0	0.0	1	7.7	0	0.0	1	7.7	0	0.0
Heart	28	13	46.4	0	0.0	7	25.0	8	28.6	0	0.0	0	0.0
Kidney - Kidney	2	2	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Kidney - Liver	3	0	0.0	0	0.0	0	0.0	0	0.0	3	100.0	0	0.0
Islets - Liver - Lung	1	0	0.0	0	0.0	0	0.0	0	0.0	1	100.0	0	0.0

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

	Total	USZ	%	USB	%	CHUV	%	BE	%	HUG	%	SG	%
Total	218	82	37.6	4	1.8	22	10.1	31	14.2	77	35.3	2	0.9
Kidney	94	51	54.3	4	4.3	13	13.8	21	22.3	3	3.2	2	2.1
Liver	72	3	4.2	0	0.0	0	0.0	1	1.4	68	94.4	0	0.0
Lung	16	13	81.2	0	0.0	2	12.5	0	0.0	1	6.2	0	0.0
Heart	29	13	44.8	0	0.0	7	24.1	9	31.0	0	0.0	0	0.0
Kidney - Kidney	2	2	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Kidney - Liver	4	0	0.0	0	0.0	0	0.0	0	0.0	4	100.0	0	0.0
Islets - Liver - Lung	1	0	0.0	0	0.0	0	0.0	0	0.0	1	100.0	0	0.0

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

C Mortality in patients with rare Tpx scenarios

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

Table 33: Overall mortality by rare Tpx scenarios

Tpx	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
Islets	Baseline	0.00	-	33	0
-	1 month	0.00	-	33	0
-	6 months	6.16	(0, 14.1)	30	2
-	1 year(s)	9.29	(0, 18.8)	28	3
-	2 year(s)	9.29	(0, 18.8)	26	3
-	3 year(s)	9.29	(0, 18.8)	24	3
-	4 year(s)	9.29	(0, 18.8)	19	3
-	5 year(s)	18.84	(1.9, 32.9)	15	5
-	6 year(s)	18.84	(1.9, 32.9)	11	5
-	7 year(s)	26.95	(3.3, 44.8)	9	6
-	8 year(s)	36.08	(6.2, 56.5)	6	7
-	Overall	36.08	(6.2, 56.5)	-	7
Pancreas	Baseline	0.00	-	11	0
-	1 month	0.00	-	11	0
-	6 months	0.00	-	10	0
-	1 year(s)	0.00	-	10	0
-	2 year(s)	0.00	-	10	0
-	3 year(s)	0.00	-	10	0
-	4 year(s)	0.00	-	9	0
-	5 year(s)	0.00	-	6	0
-	6 year(s)	0.00	-	4	0
-	7 year(s)	0.00	-	4	0
-	8 year(s)	0.00	-	2	0
-	Overall	0.00	-	-	0
Small bowel	Baseline	0.00	-	1	0
-	1 month	0.00	-	1	0
-	6 months	0.00	-	1	0
-	1 year(s)	0.00	-	1	0
-	2 year(s)	0.00	-	1	0
-	3 year(s)	100.00	-	-	1
-	4 year(s)	100.00	-	-	1
-	5 year(s)	100.00	-	-	1
-	6 year(s)	100.00	-	-	1
-	7 year(s)	100.00	-	-	1
-	8 year(s)	100.00	-	-	1
-	Overall	100.00	-	-	1
Kidney - Liver	Baseline	0.00	-	35	0
-	1 month	8.57	(0, 17.4)	32	3
-	6 months	11.52	(0.2, 21.5)	30	4
-	1 year(s)	11.52	(0.2, 21.5)	27	4
-	2 year(s)	15.06	(1.9, 26.5)	23	5
-	3 year(s)	15.06	(1.9, 26.5)	18	5
-	4 year(s)	15.06	(1.9, 26.5)	16	5

Tpx	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
-	5 year(s)	21.13	(3.2, 35.7)	13	6
-	6 year(s)	28.30	(5.4, 45.7)	10	7
-	7 year(s)	28.30	(5.4, 45.7)	6	7
-	8 year(s)	28.30	(5.4, 45.7)	3	7
-	Overall	28.30	(5.4, 45.7)	-	7
Kidney - Islets	Baseline	0.00	-	14	0
-	1 month	0.00	-	14	0
-	6 months	0.00	-	12	0
-	1 year(s)	0.00	-	12	0
-	2 year(s)	0.00	-	10	0
-	3 year(s)	0.00	-	9	0
-	4 year(s)	0.00	-	9	0
-	5 year(s)	0.00	-	6	0
-	6 year(s)	0.00	-	5	0
-	7 year(s)	25.00	(0, 57.4)	-	1
-	8 year(s)	25.00	(0, 57.4)	-	1
-	Overall	25.00	(0, 57.4)	-	1
Kidney - Heart	Baseline	0.00	-	5	0
-	1 month	20.00	(0, 48.4)	4	1
-	6 months	20.00	(0, 48.4)	3	1
-	1 year(s)	20.00	(0, 48.4)	3	1
-	2 year(s)	20.00	(0, 48.4)	3	1
-	3 year(s)	20.00	(0, 48.4)	3	1
-	4 year(s)	20.00	(0, 48.4)	2	1
-	5 year(s)	20.00	(0, 48.4)	-	1
-	6 year(s)	20.00	(0, 48.4)	-	1
-	7 year(s)	20.00	(0, 48.4)	-	1
-	8 year(s)	20.00	(0, 48.4)	-	1
-	Overall	20.00	(0, 48.4)	-	1
Kidney - Lung	Baseline	0.00	-	1	0
-	1 month	0.00	-	1	0
-	6 months	0.00	-	1	0
-	1 year(s)	0.00	-	1	0
-	2 year(s)	0.00	-	1	0
-	3 year(s)	0.00	-	1	0
-	4 year(s)	0.00	-	1	0
-	5 year(s)	0.00	-	1	0
-	6 year(s)	0.00	-	1	0
-	7 year(s)	0.00	-	1	0
-	8 year(s)	0.00	-	-	0
-	Overall	0.00	-	-	0
Liver - Lung	Baseline	0.00	-	3	0
-	1 month	0.00	-	3	0
-	6 months	0.00	-	3	0
-	1 year(s)	0.00	-	3	0
-	2 year(s)	0.00	-	1	0
-	3 year(s)	0.00	-	1	0
-	4 year(s)	0.00	-	1	0
-	5 year(s)	0.00	-	1	0
-	6 year(s)	0.00	-	1	0
-	7 year(s)	0.00	-	1	0

Tpx	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
-	8 year(s)	0.00	-	-	0
-	Overall	0.00	-	-	0
Heart - Lung	Baseline	0.00	-	1	0
-	1 month	0.00	-	1	0
-	6 months	0.00	-	1	0
-	1 year(s)	100.00	-	-	1
-	2 year(s)	100.00	-	-	1
-	3 year(s)	100.00	-	-	1
-	4 year(s)	100.00	-	-	1
-	5 year(s)	100.00	-	-	1
-	6 year(s)	100.00	-	-	1
-	7 year(s)	100.00	-	-	1
-	8 year(s)	100.00	-	-	1
-	Overall	100.00	-	-	1
Islets - Liver	Baseline	0.00	-	1	0
-	1 month	0.00	-	1	0
-	6 months	0.00	-	-	0
-	1 year(s)	0.00	-	-	0
-	2 year(s)	0.00	-	-	0
-	3 year(s)	0.00	-	-	0
-	4 year(s)	0.00	-	-	0
-	5 year(s)	0.00	-	-	0
-	6 year(s)	0.00	-	-	0
-	7 year(s)	0.00	-	-	0
-	8 year(s)	0.00	-	-	0
-	Overall	0.00	-	-	0
Pancreas - Small bowel	Baseline	0.00	-	2	0
-	1 month	0.00	-	2	0
-	6 months	0.00	-	2	0
-	1 year(s)	0.00	-	2	0
-	2 year(s)	100.00	-	-	2
-	3 year(s)	100.00	-	-	2
-	4 year(s)	100.00	-	-	2
-	5 year(s)	100.00	-	-	2
-	6 year(s)	100.00	-	-	2
-	7 year(s)	100.00	-	-	2
-	8 year(s)	100.00	-	-	2
-	Overall	100.00	-	-	2
Kidney - Islets - Liver	Baseline	0.00	-	1	0
-	1 month	0.00	-	1	0
-	6 months	0.00	-	1	0
-	1 year(s)	0.00	-	1	0
-	2 year(s)	0.00	-	1	0
-	3 year(s)	0.00	-	1	0
-	4 year(s)	0.00	-	1	0
-	5 year(s)	0.00	-	-	0
-	6 year(s)	0.00	-	-	0
-	7 year(s)	0.00	-	-	0
-	8 year(s)	0.00	-	-	0
-	Overall	0.00	-	-	0
Islets - Liver - Lung	Baseline	0.00	-	1	0

Tpx	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
-	1 month	0.00	-	1	0
-	6 months	0.00	-	1	0
-	1 year(s)	0.00	-	1	0
-	2 year(s)	0.00	-	1	0
-	3 year(s)	0.00	-	-	0
-	4 year(s)	0.00	-	-	0
-	5 year(s)	0.00	-	-	0
-	6 year(s)	0.00	-	-	0
-	7 year(s)	0.00	-	-	0
-	8 year(s)	0.00	-	-	0
-	Overall	0.00	-	-	0

Table 34: 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
-	1 month	0.0	-	21	0
-	6 months	9.8	(0, 21.8)	18	2
-	1 year(s)	14.8	(0, 28.9)	16	3
-	2 year(s)	14.8	(0, 28.9)	15	3
-	3 year(s)	14.8	(0, 28.9)	14	3
-	4 year(s)	14.8	(0, 28.9)	12	3
-	5 year(s)	29.0	(3, 48)	8	5
-	6 year(s)	29.0	(3, 48)	7	5
-	7 year(s)	39.1	(6.1, 60.6)	6	6
-	8 year(s)	51.3	(9.8, 73.7)	3	7
-	Overall	51.3	(9.8, 73.7)	-	7
Islets - HUG	Baseline	0.0	-	12	0
-	1 month	0.0	-	12	0
-	6 months	0.0	-	12	0
-	1 year(s)	0.0	-	12	0
-	2 year(s)	0.0	-	11	0
-	3 year(s)	0.0	-	10	0
-	4 year(s)	0.0	-	7	0
-	5 year(s)	0.0	-	7	0
-	6 year(s)	0.0	-	4	0
-	7 year(s)	0.0	-	3	0
-	8 year(s)	0.0	-	3	0
-	Overall	0.0	-	-	0
Pancreas - USZ	Baseline	0.0	-	5	0
-	1 month	0.0	-	5	0
-	6 months	0.0	-	5	0
-	1 year(s)	0.0	-	5	0
-	2 year(s)	0.0	-	5	0
-	3 year(s)	0.0	-	5	0
-	4 year(s)	0.0	-	4	0
-	5 year(s)	0.0	-	1	0
-	6 year(s)	0.0	-	-	0
-	7 year(s)	0.0	-	-	0
-	8 year(s)	0.0	-	-	0
-	Overall	0.0	-	-	0
Pancreas - HUG	Baseline	0.0	-	6	0
-	1 month	0.0	-	6	0
-	6 months	0.0	-	5	0
-	1 year(s)	0.0	-	5	0
-	2 year(s)	0.0	-	5	0
-	3 year(s)	0.0	-	5	0
-	4 year(s)	0.0	-	5	0
-	5 year(s)	0.0	-	5	0
-	6 year(s)	0.0	-	4	0
-	7 year(s)	0.0	-	4	0
-	8 year(s)	0.0	-	2	0
-	Overall	0.0	-	-	0
Small bowel - HUG	Baseline	0.0	-	1	0
-	1 month	0.0	-	1	0

Tpx - centre	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
-	6 months	0.0	-	1	0
-	1 year(s)	0.0	-	1	0
-	2 year(s)	0.0	-	1	0
-	3 year(s)	100.0	-	-	1
-	4 year(s)	100.0	-	-	1
-	5 year(s)	100.0	-	-	1
-	6 year(s)	100.0	-	-	1
-	7 year(s)	100.0	-	-	1
-	8 year(s)	100.0	-	-	1
-	Overall	100.0	-	-	1
Kidney - Liver - USZ	Baseline	0.0	-	14	0
-	1 month	7.1	(0, 19.7)	13	1
-	6 months	14.9	(0, 32)	11	2
-	1 year(s)	14.9	(0, 32)	8	2
-	2 year(s)	14.9	(0, 32)	7	2
-	3 year(s)	14.9	(0, 32)	6	2
-	4 year(s)	14.9	(0, 32)	6	2
-	5 year(s)	14.9	(0, 32)	5	2
-	6 year(s)	14.9	(0, 32)	4	2
-	7 year(s)	14.9	(0, 32)	2	2
-	8 year(s)	14.9	(0, 32)	2	2
-	Overall	14.9	(0, 32)	-	2
Kidney - Liver - BE	Baseline	0.0	-	7	0
-	1 month	0.0	-	7	0
-	6 months	0.0	-	7	0
-	1 year(s)	0.0	-	7	0
-	2 year(s)	14.3	(0, 36.7)	6	1
-	3 year(s)	14.3	(0, 36.7)	5	1
-	4 year(s)	14.3	(0, 36.7)	5	1
-	5 year(s)	14.3	(0, 36.7)	4	1
-	6 year(s)	42.9	(0, 75.7)	2	2
-	7 year(s)	42.9	(0, 75.7)	2	2
-	8 year(s)	42.9	(0, 75.7)	-	2
-	Overall	42.9	(0, 75.7)	-	2
Kidney - Liver - HUG	Baseline	0.0	-	14	0
-	1 month	14.3	(0, 30.8)	12	2
-	6 months	14.3	(0, 30.8)	12	2
-	1 year(s)	14.3	(0, 30.8)	12	2
-	2 year(s)	14.3	(0, 30.8)	10	2
-	3 year(s)	14.3	(0, 30.8)	7	2
-	4 year(s)	14.3	(0, 30.8)	5	2
-	5 year(s)	31.4	(0, 57.9)	4	3
-	6 year(s)	31.4	(0, 57.9)	4	3
-	7 year(s)	31.4	(0, 57.9)	2	3
-	8 year(s)	31.4	(0, 57.9)	1	3
-	Overall	31.4	(0, 57.9)	-	3
Kidney - Islets - USZ	Baseline	0.0	-	8	0
-	1 month	0.0	-	8	0
-	6 months	0.0	-	7	0
-	1 year(s)	0.0	-	7	0
-	2 year(s)	0.0	-	6	0
-	3 year(s)	0.0	-	5	0

Tpx - centre	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
-	4 year(s)	0.0	-	5	0
-	5 year(s)	0.0	-	4	0
-	6 year(s)	0.0	-	3	0
-	7 year(s)	33.3	(0, 70)	-	1
-	8 year(s)	33.3	(0, 70)	-	1
-	Overall	33.3	(0, 70)	-	1
Kidney - Islets - HUG	Baseline	0.0	-	6	0
-	1 month	0.0	-	6	0
-	6 months	0.0	-	5	0
-	1 year(s)	0.0	-	5	0
-	2 year(s)	0.0	-	4	0
-	3 year(s)	0.0	-	4	0
-	4 year(s)	0.0	-	4	0
-	5 year(s)	0.0	-	2	0
-	6 year(s)	0.0	-	2	0
-	7 year(s)	0.0	-	-	0
-	8 year(s)	0.0	-	-	0
-	Overall	0.0	-	-	0
Kidney - Heart - USZ	Baseline	0.0	-	1	0
-	1 month	100.0	-	-	1
-	6 months	100.0	-	-	1
-	1 year(s)	100.0	-	-	1
-	2 year(s)	100.0	-	-	1
-	3 year(s)	100.0	-	-	1
-	4 year(s)	100.0	-	-	1
-	5 year(s)	100.0	-	-	1
-	6 year(s)	100.0	-	-	1
-	7 year(s)	100.0	-	-	1
-	8 year(s)	100.0	-	-	1
-	Overall	100.0	-	-	1
Kidney - Heart - CHUV	Baseline	0.0	-	3	0
-	1 month	0.0	-	3	0
-	6 months	0.0	-	3	0
-	1 year(s)	0.0	-	3	0
-	2 year(s)	0.0	-	3	0
-	3 year(s)	0.0	-	3	0
-	4 year(s)	0.0	-	2	0
-	5 year(s)	0.0	-	-	0
-	6 year(s)	0.0	-	-	0
-	7 year(s)	0.0	-	-	0
-	8 year(s)	0.0	-	-	0
-	Overall	0.0	-	-	0
Kidney - Heart - BE	Baseline	0.0	-	1	0
-	1 month	0.0	-	1	0
-	6 months	0.0	-	-	0
-	1 year(s)	0.0	-	-	0
-	2 year(s)	0.0	-	-	0
-	3 year(s)	0.0	-	-	0
-	4 year(s)	0.0	-	-	0
-	5 year(s)	0.0	-	-	0
-	6 year(s)	0.0	-	-	0
-	7 year(s)	0.0	-	-	0

Tpx - centre	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
-	8 year(s)	0.0	-	-	0
-	Overall	0.0	-	-	0
Kidney - Lung - CHUV	Baseline	0.0	-	1	0
-	1 month	0.0	-	1	0
-	6 months	0.0	-	1	0
-	1 year(s)	0.0	-	1	0
-	2 year(s)	0.0	-	1	0
-	3 year(s)	0.0	-	1	0
-	4 year(s)	0.0	-	1	0
-	5 year(s)	0.0	-	1	0
-	6 year(s)	0.0	-	1	0
-	7 year(s)	0.0	-	1	0
-	8 year(s)	0.0	-	-	0
-	Overall	0.0	-	-	0
Liver - Lung - HUG	Baseline	0.0	-	3	0
-	1 month	0.0	-	3	0
-	6 months	0.0	-	3	0
-	1 year(s)	0.0	-	3	0
-	2 year(s)	0.0	-	1	0
-	3 year(s)	0.0	-	1	0
-	4 year(s)	0.0	-	1	0
-	5 year(s)	0.0	-	1	0
-	6 year(s)	0.0	-	1	0
-	7 year(s)	0.0	-	1	0
-	8 year(s)	0.0	-	-	0
-	Overall	0.0	-	-	0
Heart - Lung - USZ	Baseline	0.0	-	1	0
-	1 month	0.0	-	1	0
-	6 months	0.0	-	1	0
-	1 year(s)	100.0	-	-	1
-	2 year(s)	100.0	-	-	1
-	3 year(s)	100.0	-	-	1
-	4 year(s)	100.0	-	-	1
-	5 year(s)	100.0	-	-	1
-	6 year(s)	100.0	-	-	1
-	7 year(s)	100.0	-	-	1
-	8 year(s)	100.0	-	-	1
-	Overall	100.0	-	-	1
Islets - Liver - USZ	Baseline	0.0	-	1	0
-	1 month	0.0	-	1	0
-	6 months	0.0	-	-	0
-	1 year(s)	0.0	-	-	0
-	2 year(s)	0.0	-	-	0
-	3 year(s)	0.0	-	-	0
-	4 year(s)	0.0	-	-	0
-	5 year(s)	0.0	-	-	0
-	6 year(s)	0.0	-	-	0
-	7 year(s)	0.0	-	-	0
-	8 year(s)	0.0	-	-	0
-	Overall	0.0	-	-	0
Pancreas - Small bowel - USZ	Baseline	0.0	-	1	0

Tpx - centre	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
-	1 month	0.0	-	1	0
-	6 months	0.0	-	1	0
-	1 year(s)	0.0	-	1	0
-	2 year(s)	100.0	-	-	1
-	3 year(s)	100.0	-	-	1
-	4 year(s)	100.0	-	-	1
-	5 year(s)	100.0	-	-	1
-	6 year(s)	100.0	-	-	1
-	7 year(s)	100.0	-	-	1
-	8 year(s)	100.0	-	-	1
-	Overall	100.0	-	-	1
Pancreas - Small bowel - HUG	Baseline	0.0	-	1	0
-	1 month	0.0	-	1	0
-	6 months	0.0	-	1	0
-	1 year(s)	0.0	-	1	0
-	2 year(s)	100.0	-	-	1
-	3 year(s)	100.0	-	-	1
-	4 year(s)	100.0	-	-	1
-	5 year(s)	100.0	-	-	1
-	6 year(s)	100.0	-	-	1
-	7 year(s)	100.0	-	-	1
-	8 year(s)	100.0	-	-	1
-	Overall	100.0	-	-	1
Kidney - Islets - Liver - HUG	Baseline	0.0	-	1	0
-	1 month	0.0	-	1	0
-	6 months	0.0	-	1	0
-	1 year(s)	0.0	-	1	0
-	2 year(s)	0.0	-	1	0
-	3 year(s)	0.0	-	1	0
-	4 year(s)	0.0	-	1	0
-	5 year(s)	0.0	-	-	0
-	6 year(s)	0.0	-	-	0
-	7 year(s)	0.0	-	-	0
-	8 year(s)	0.0	-	-	0
-	Overall	0.0	-	-	0
Islets - Liver - Lung - HUG	Baseline	0.0	-	1	0
-	1 month	0.0	-	1	0
-	6 months	0.0	-	1	0
-	1 year(s)	0.0	-	1	0
-	2 year(s)	0.0	-	1	0
-	3 year(s)	0.0	-	-	0
-	4 year(s)	0.0	-	-	0
-	5 year(s)	0.0	-	-	0
-	6 year(s)	0.0	-	-	0
-	7 year(s)	0.0	-	-	0
-	8 year(s)	0.0	-	-	0
-	Overall	0.0	-	-	0

D Technical summary

All analyses were performed using the statistical software R version 3.3.2 (2016-10-31).