



**SWISS
TRANSPLANT
COHORT
STUDY**

Swiss Transplant Cohort Study report (May 2008 - December 2013)

July 2014

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Disclaimer

This report covering solid organ transplantation on a national scale is very unique worldwide in its completeness and comprehensiveness. Transplanted organs and organ combinations included in this report are: heart, kidney (including kidney-kidney), kidney-liver, kidney-pancreas, kidney-lung, kidney-islets, liver, pancreas, islets, lung, lung-liver, and small bowel. These outcome data reflect very well the transplant activity in Switzerland as a whole but do not allow firm comparisons between the various transplant centers. Importantly, the individual transplant centers are responsible for patient selection (wait listing) and for the acceptance of a given organ allocated by Swisstransplant. As a consequence, there may be outcome differences! Furthermore, patient numbers per center, such as for instance in heart and pancreas transplantation, are relatively small. Nevertheless, one may not expect major differences with respect to patient and graft survival between our transplant centers. The survival data are completed by prevalent and incident (skin) cancer reports.

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(s)
FUP	follow-up
GF	graft failure
HUG	Hôpitaux Universitaires de Genève
ID	infectious disease
IQR	interquartile range
SG	Kantonsspital St. Gallen
USZ	Universitätsspital Zürich
USB	Universitätsspital Basel
Tpx	transplantation(s)

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1 Comments from the centers

1.1 Inselspital Bern

Approves open publication.

1.2 Centre Hospitalier Universitaire Vaudois Lausanne

Approves open publication.

1.3 Hôpitaux Universitaires de Genève

Nos seuls commentaires ont trait à la granularité des informations récoltées. Ce document, en l'état, ne peut pas servir pour un éventuel benchmark jugeant de la performance des centres individuels.

1.4 Kantonsspital St. Gallen

Approves open publication.

1.5 Universitätsspital Basel

Approves open publication.

1.6 Universitätsspital Zürich

Das USZ unterstützt die Publikation der Daten der Transplantationskohorte. Wir möchten aber nochmals nachhaltig darauf hinweisen, dass ein Vergleich der Überlebenskurven nach Herz-, Lungen- oder Lebertransplantation ohne Berücksichtigung des Risikoprofils der Empfänger und partiell auch Spender nicht statthaft ist und zu gefährlichen Konsequenzen führen kann zum Nachteil potentieller Organempfänger auf der Warteliste.

2 Patients, transplantations and transplanted organs

Definitions applied:

- Enrolment refers to inclusion of all patient into the Swiss Transplant Cohort Study (STCS) from 1st of May 2008 until 31th of December 2013.
 - From those patients, all information until the date of extraction (14th of May 2014) is included in the report.
- First transplantation(s):
 - Patients with a first transplantation(s) (Tpx) in their medical history at the time of STCS enrolment
- Re-transplantation(s):
 - Patients with a repetition of the same Tpx type
 - Example: Re-Tpx of a kidney allograft after failure of a prior kidney graft
- Second transplantation(s):
 - Patients with a second Tpx different from the previous Tpx either before STCS enrolment or during STCS follow-up
 - Example: Tpx of a pancreas following a (successful) single kidney Tpx
 - Double/triple Tpx can qualify for both, re- and second Tpx
- Every Tpx can consist of a single, double or triple transplant(s). The terms 'double' and 'triple' refer to Tpxs in which multiple organs originating from the same donor are transplanted in a recipient (e. g. kidney-pancreas double transplant).
- Tpx prior to STCS enrolment have also been considered. Patients may thus start with a re- or a 2nd Tpx in STCS.
- Sequences of previous islet Tpx have been counted as one prior Tpx and bone marrow Tpx are excluded from the report.

2.1 Overview

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

Table 1: Number of patients enrolled

	Patients	(%)
Total number	2560	100.0
Single Tpx at enrolment	2428	94.8
Double Tpx at enrolment	129	5.0
Triple Tpx at enrolment	3	0.1
1st Tpx at enrolment	2238	87.4
Re-Tpx at enrolment	256	10.0
2nd Tpx at enrolment	66	2.6

Table 2: Number of patients enrolled by Tpx type

	Total	First Tpx (%)	Re Tpx (%)	Second Tpx (%)
Total	2560	2238 87.4	256 10.0	66 2.6
Kidney	1433	1185 82.7	221 15.4	27 1.9
Liver	522	498 95.4	18 3.4	6 1.1
Lung	252	242 96.0	7 2.8	3 1.2
Heart	184	183 99.5	1 0.5	0 0.0
Islets	27	6 22.2	8 29.6	13 48.1
Pancreas	9	5 55.6	0 0.0	4 44.4
Small bowel	1	0 0.0	1 100.0	0 0.0
Kidney - Pancreas	66	62 93.9	0 0.0	4 6.1
Kidney - Kidney	25	24 96.0	0 0.0	1 4.0
Kidney - Liver	21	16 76.2	0 0.0	5 23.8
Kidney - Islets	9	9 100.0	0 0.0	0 0.0
Kidney - Heart	4	4 100.0	0 0.0	0 0.0
Kidney - Lung	1	0 0.0	0 0.0	1 100.0
Liver - Lung	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

In contrast to Tables 1 and 2, Tables 3 and 4 list all Tpx performed and the number of implanted organs in patients enrolled until the end of 2013.

Table 3: Number of Tpx types

	Total	First Tpx	(%)	Re Tpx	(%)	Second Tpx	(%)
Total	2652	2239	84.4	330	12.4	83	3.1
Kidney	1458	1185	81.3	243	16.7	30	2.1
Liver	557	498	89.4	52	9.3	7	1.3
Lung	262	242	92.4	16	6.1	4	1.5
Heart	185	183	98.9	2	1.1	0	0.0
Islets	40	6	15.0	15	37.5	19	47.5
Pancreas	14	5	35.7	1	7.1	8	57.1
Small bowel	1	0	0.0	1	100.0	0	0.0
Kidney - Pancreas	66	62	93.9	0	0.0	4	6.1
Kidney - Kidney	25	24	96.0	0	0.0	1	4.0
Kidney - Liver	21	16	76.2	0	0.0	5	23.8
Kidney - Islets	10	9	90.0	0	0.0	1	10.0
Kidney - Heart	4	4	100.0	0	0.0	0	0.0
Kidney - Lung	2	0	0.0	0	0.0	2	100.0
Liver - Lung	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
Liver - Pancreas - Small bowel	1	1	100.0	0	0.0	0	0.0

Table 4: Number of transplanted organs

	Total	First Tpx	(%)	Re Tpx	(%)	Second Tpx	(%)
Total	2791	2361	84.6	361	12.9	69	2.5
Kidney	1616	1326	82.1	264	16.3	26	1.6
Liver	581	516	88.8	54	9.3	11	1.9
Lung	265	243	91.7	17	6.4	5	1.9
Heart	189	187	98.9	2	1.1	0	0.0
Pancreas	85	71	83.5	4	4.7	10	11.8
Islets	51	15	29.4	19	37.3	17	33.3
Small bowel	4	3	75.0	1	25.0	0	0.0

Table 5: Patients' characteristics for major Tx types

	Total	Kidney	Liver	Lung	Heart	Islets	Kidney - Pancreas
Total no. patients	2484	1433	522	252	184	27	66
Age (yrs), median	53.3 (41.3,61.7)	53.6 (41.6,62.7)	54.2 (43.6,61.2)	54.7 (37,60.5)	51.6 (37.1,59.8)	51.9 (45.7,56.8)	45.0 (37.3,51.6)
- IQR*					135 (73.4%)	15 (55.6%)	35 (53%)
Male gender, n (%)	1566 (63%)	925 (64.5%)	333 (63.8%)	123 (48.8%)	18 (9.8%)	0 (0%)	0 (0%)
Pediatric, n (%)	132 (5.3%)	61 (4.3%)	42 (8%)	11 (4.4%)			
Observation time (yrs), median	2.8	3.2	2.5	2.4			
- IQR					3.9		2.8
No. deaths, n (%)	283 (11.4%)	86 (6%)	88 (16.9%)	64 (25.4%)	40 (21.7%)	3 (11.1%)	2 (3%)
No. patients with							
- at least one GF**, n (%)	161 (6.5%)	79 (5.5%)	31 (5.9%)	22 (8.7%)	12 (6.5%)	6 (22.2%)	11 (16.7%)
- GF, alive	89 (3.6%)	59 (4.1%)	8 (1.5%)	5 (2%)	1 (0.5%)	6 (22.2%)	10 (15.2%)
- GF -> death	41 (1.7%)	19 (1.3%)	15 (2.9%)	6 (2.4%)	0 (0%)	0 (0%)	1 (1.5%)
- GF - related death	31 (1.2%)	1 (0.1%)	8 (1.5%)	11 (4.4%)	11 (6%)	0 (0%)	0 (0%)
- death without GF	211 (8.5%)	66 (4.6%)	65 (12.5%)	47 (18.7%)	29 (15.8%)	3 (11.1%)	1 (1.5%)
No. patients with							
- any ID***	1879 (75.6 %)	138 (75%)	15 (55.6%)	1125 (78.5%)	55 (83.3%)	385 (73.8%)	161 (63.9%)
- any proven/viral ID	1304 (52.5 %)	105 (57.1%)	9 (33.3%)	755 (52.7%)	37 (56.1%)	267 (51.1%)	131 (52%)
- any incident cancer other than skin	141 (5.7 %)	7 (3.8%)	2 (7.4%)	73 (5.1%)	3 (4.5%)	43 (8.2%)	13 (5.2%)
- any incident skin cancer	183 (7.4 %)	10 (5.4%)	4 (14.8%)	122 (8.5%)	2 (3%)	23 (4.4%)	22 (8.7%)

* IQR: interquartile range

** GF: graft failure

*** ID: infectious disease event

2.2 STCS patient enrolment over time

For the recruitment activity over time, patient enrolment in STCS from May 2008 till December 2013 is depicted quarterly.

Figure 1: Quarterly overall patient enrolment

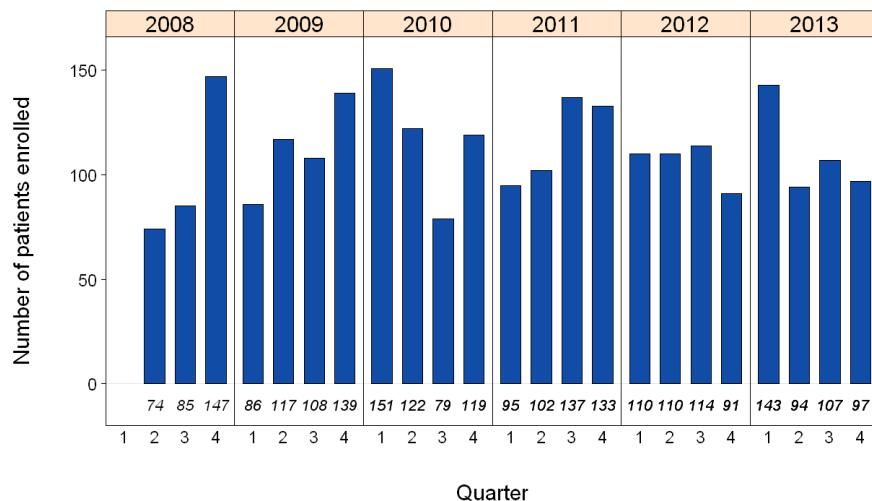


Figure 2: Quarterly patient enrolment by donor type

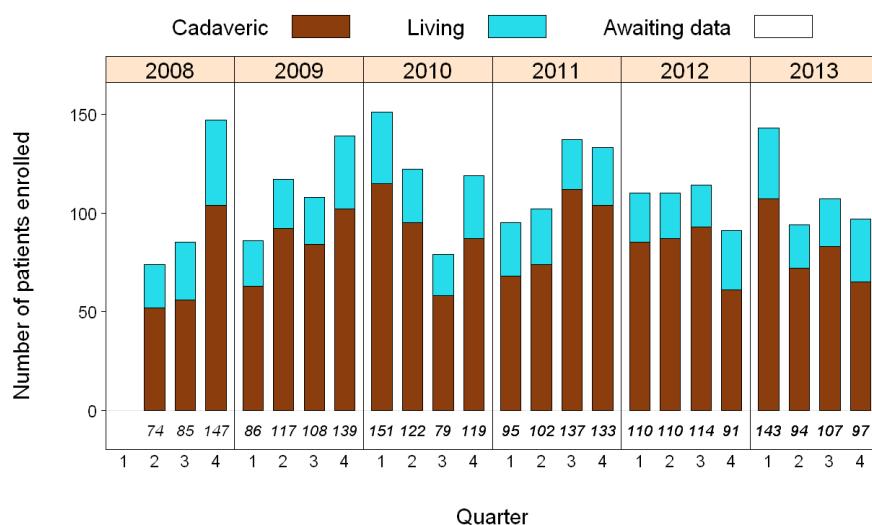


Figure 3: Cumulative overall patient enrolment

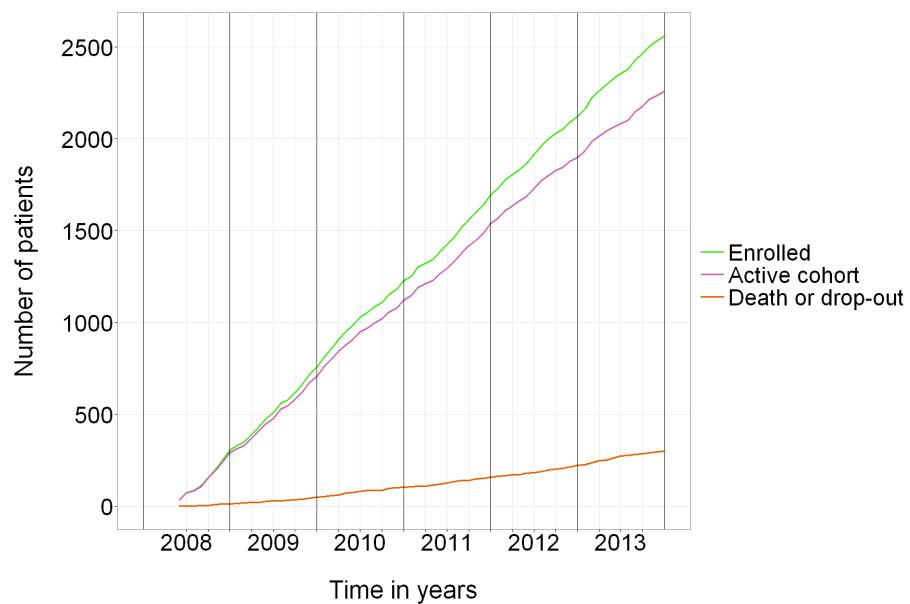


Figure 4: Cumulative overall patient enrolment by Tx type

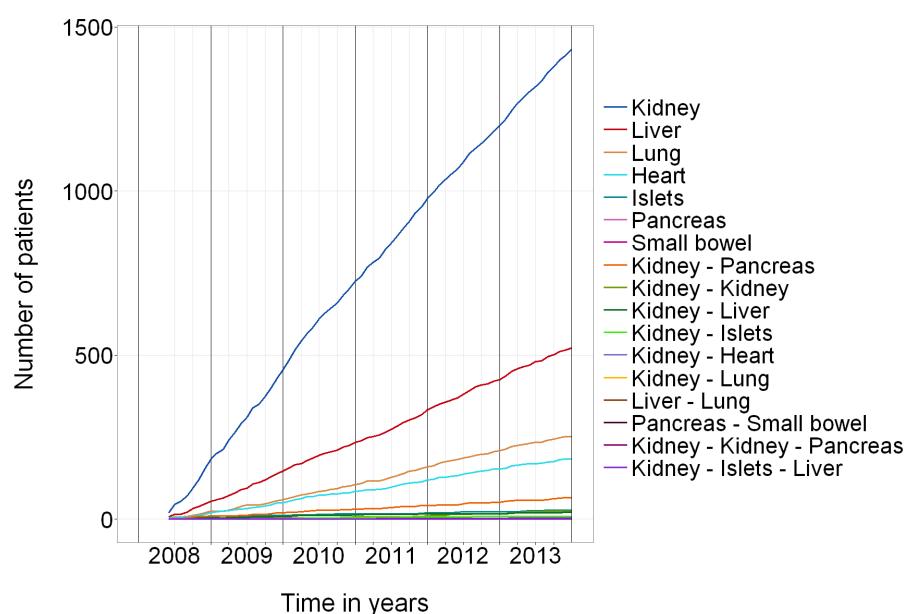
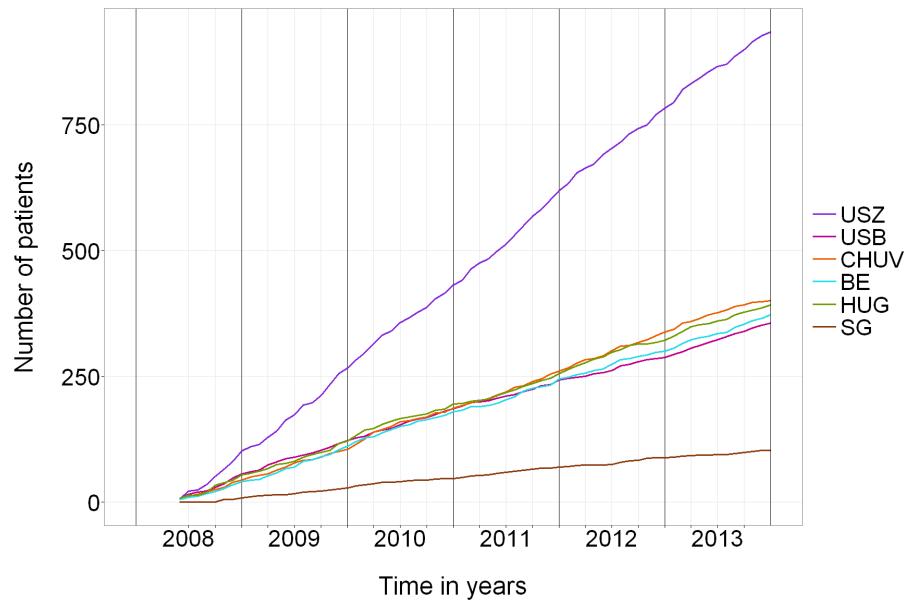


Figure 5: Cumulative overall patient enrolment by centre



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)

2.3 Transplantation activities by centre

Figure 6: Number of patients enrolled

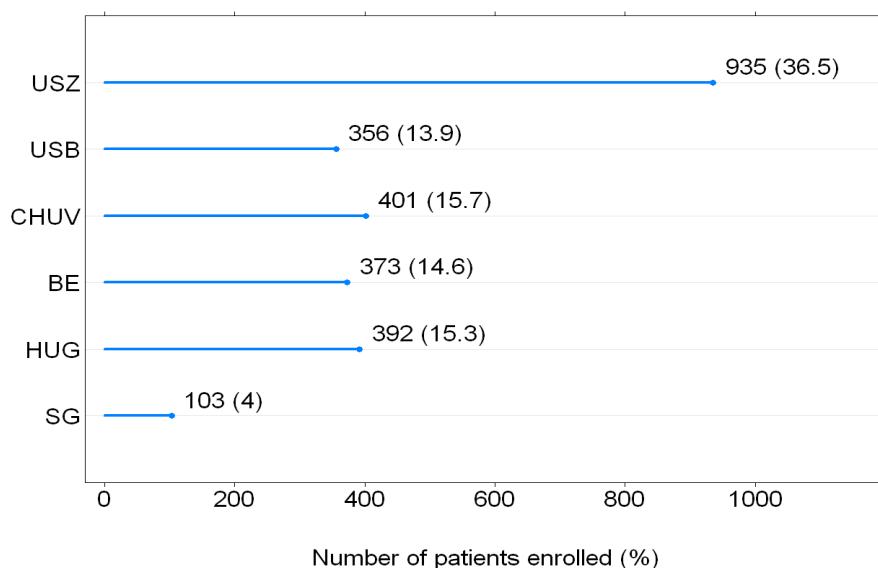


Figure 7: Number of transplanted organs

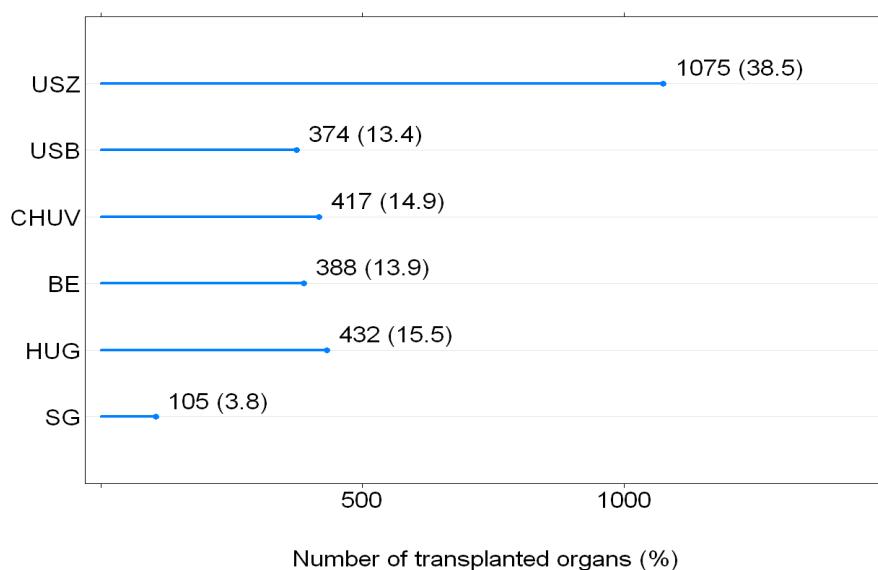
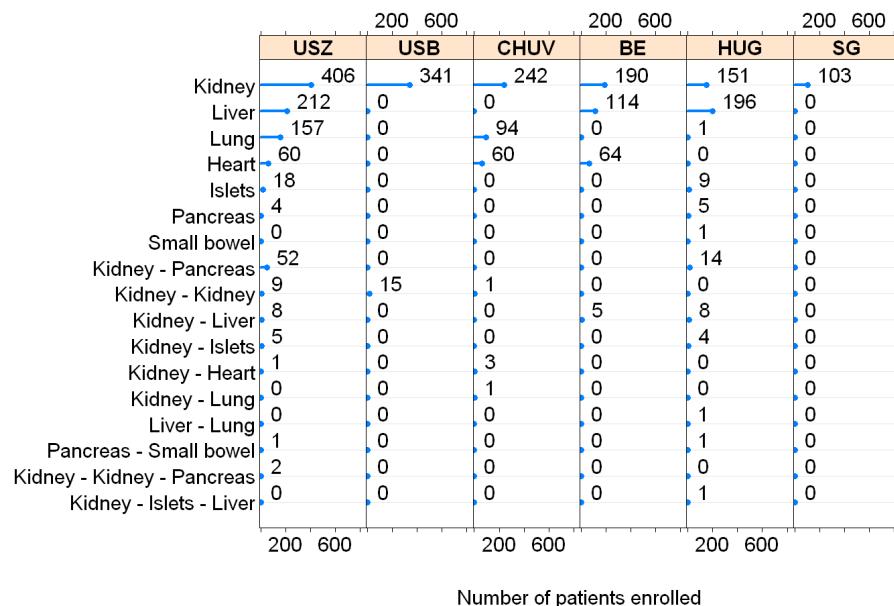


Figure 8: Number of patients enrolled by Tpx type



2.4 Kidney transplantations by centre

Figure 9: Number of patients with first STCS kidney Tpx

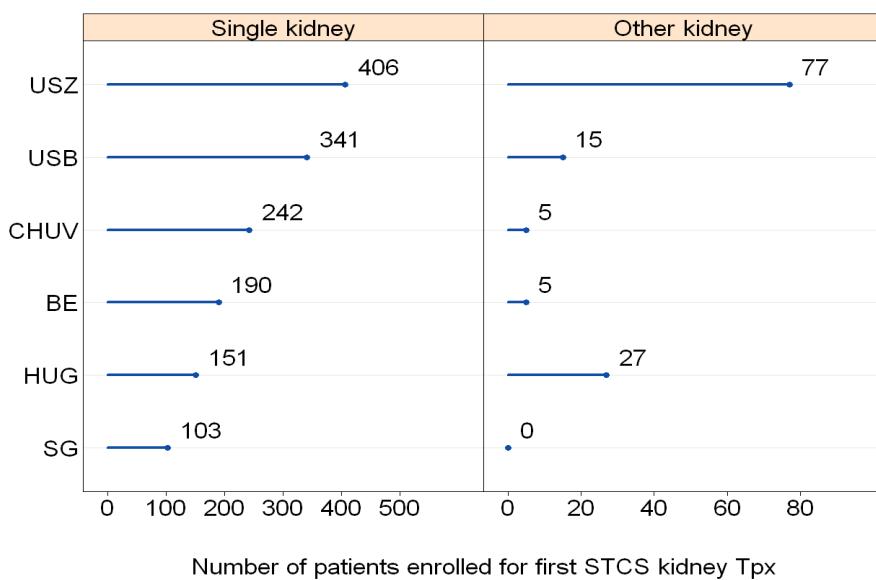


Figure 10: Number of patients with first single kidney Tpx

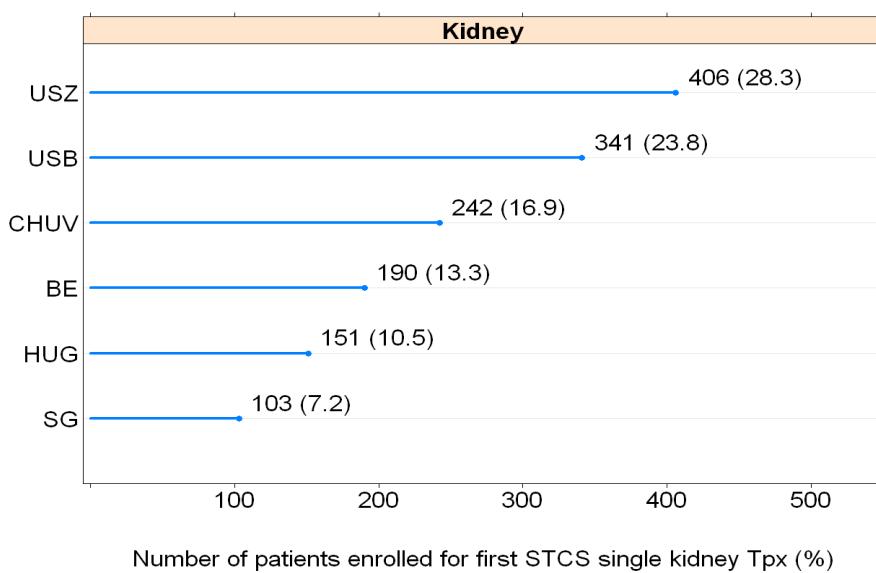
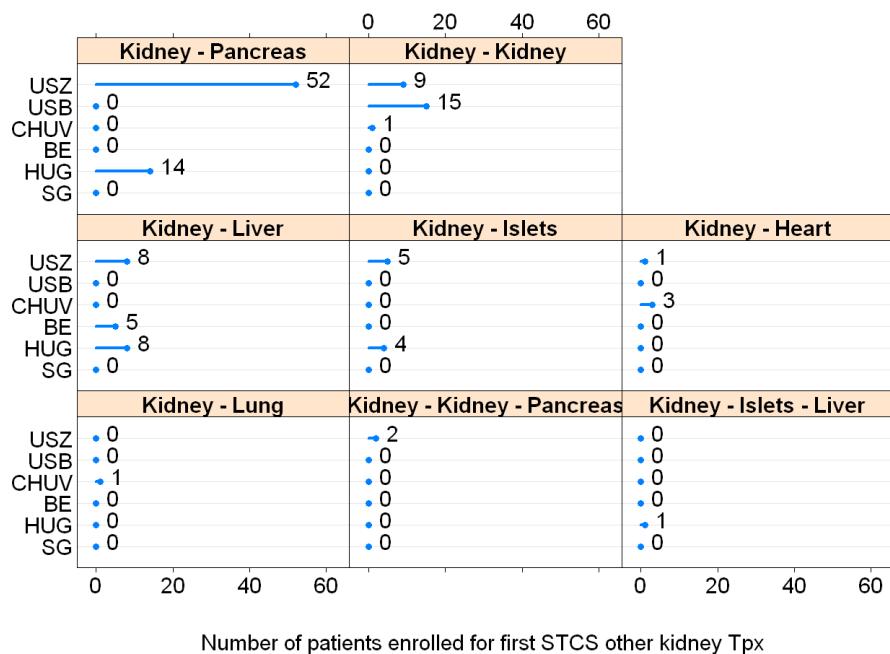


Figure 11: Number of patients with other kidney Tpx



2.5 Transplantations other than kidney by centre

Figure 12: Number of patients with first STCS liver, lung or heart Tpx

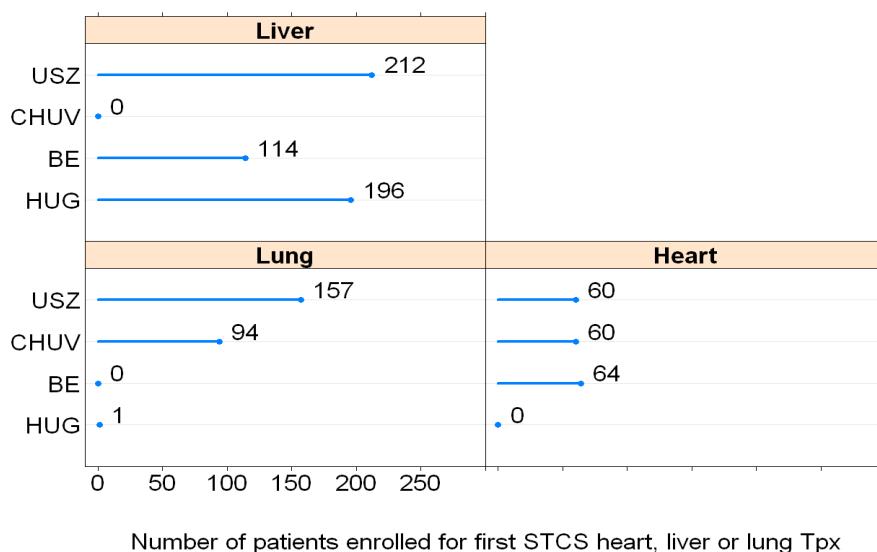


Figure 13: Number of patients with first STCS islets or pancreas Tpx

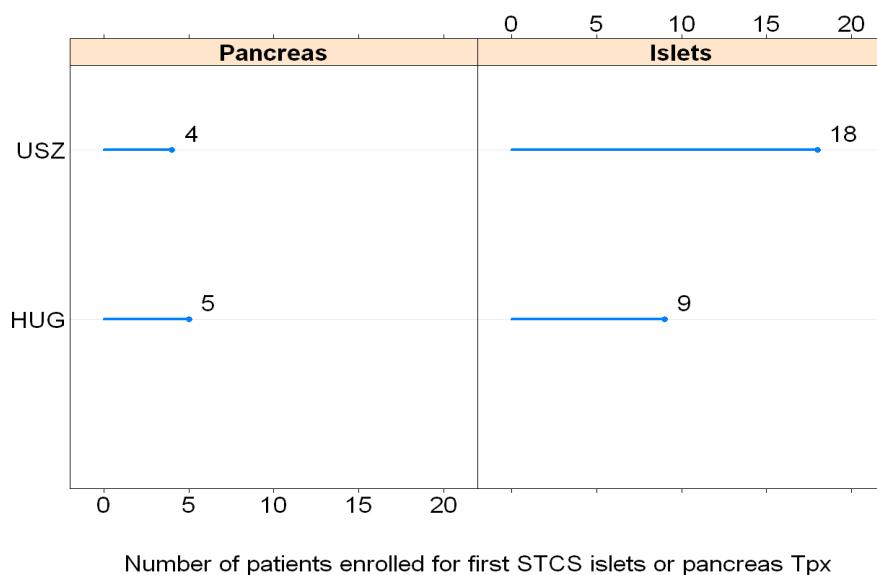
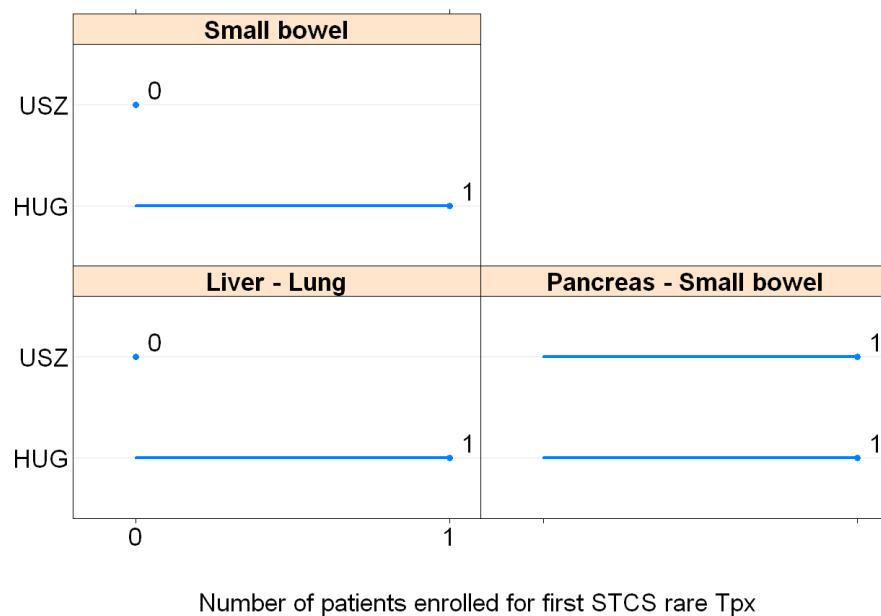


Figure 14: Number of patients with rare Tpx scenarios



3 Consent status

Patients in STCS may change their consent status. Figures 15 and 16 show patients' current consent (by centre). Consent changes from enrolment (row, 'E-') to current consent (column, 'C-') are given in Table 6

Figure 15: Current patients' consent by centre

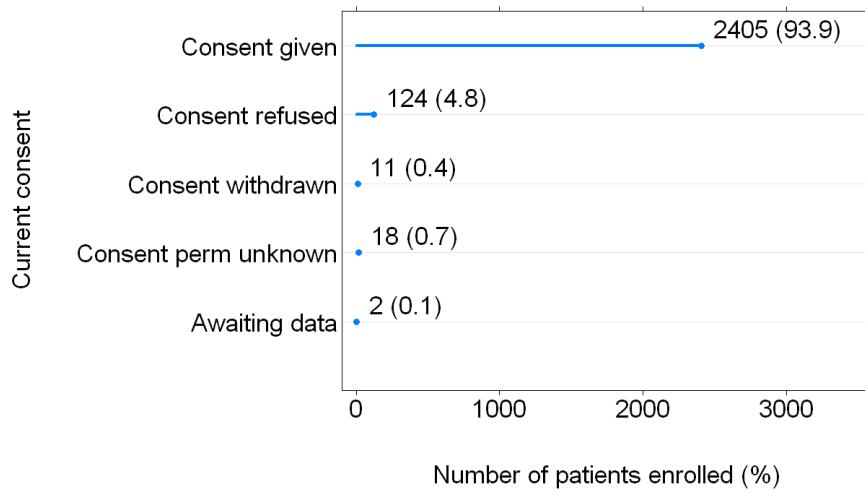
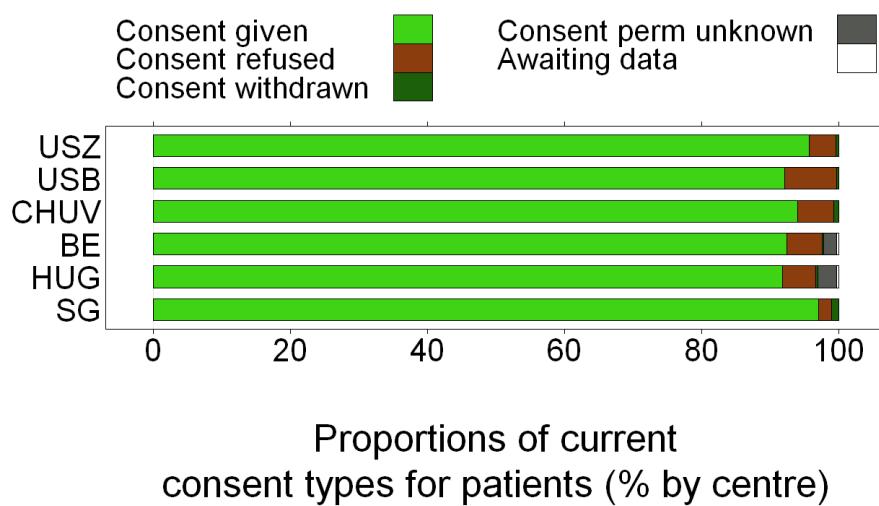


Table 6: Patients' current consent (columns) against consent status at enrolment (rows)

	Total	C-Given	C-Refused	C-Withdrawn	C-Unknown	C-Perm unknown
Total	2560	2405	124	11	2	18
E-Given	2393	2382	0	11	0	0
E-Refused	125	2	123	0	0	0
E-Withdrawn	0	0	0	0	0	0
E-Unknown	33	21	1	0	2	9
E-Perm unknown	9	0	0	0	0	9

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

Figure 16: Current patients' consent status by centre



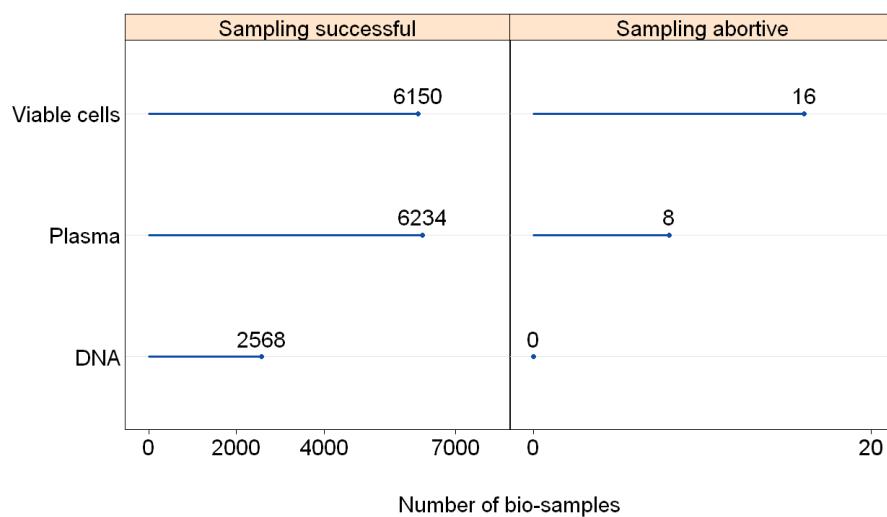
4 Bio-samples

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

Table 7: Number of STCS patients with bio-samples

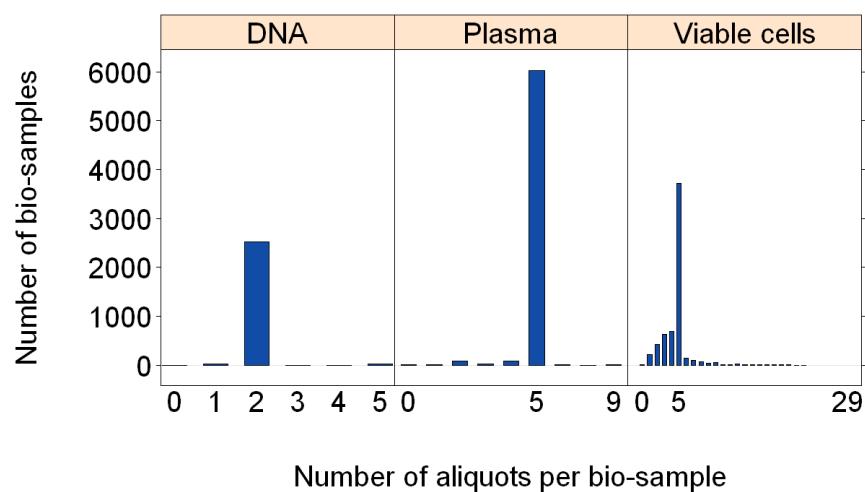
	Total	Sample (%)	No sample (%)
Total	2560	2389 93.3	171 6.7
Consent given	2401	2370 98.7	31 1.3
Consent refused	124	0 0.0	124 100.0
Consent unknown	26	18 69.2	8 30.8
Consent perm unknown	9	1 11.1	8 88.9

Figure 17: Number of bio-samples in STCS



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

Figure 18: Distribution of numbers of aliquots by sample type



5 Infectious disease events

Table 8: Summary of infectious disease events

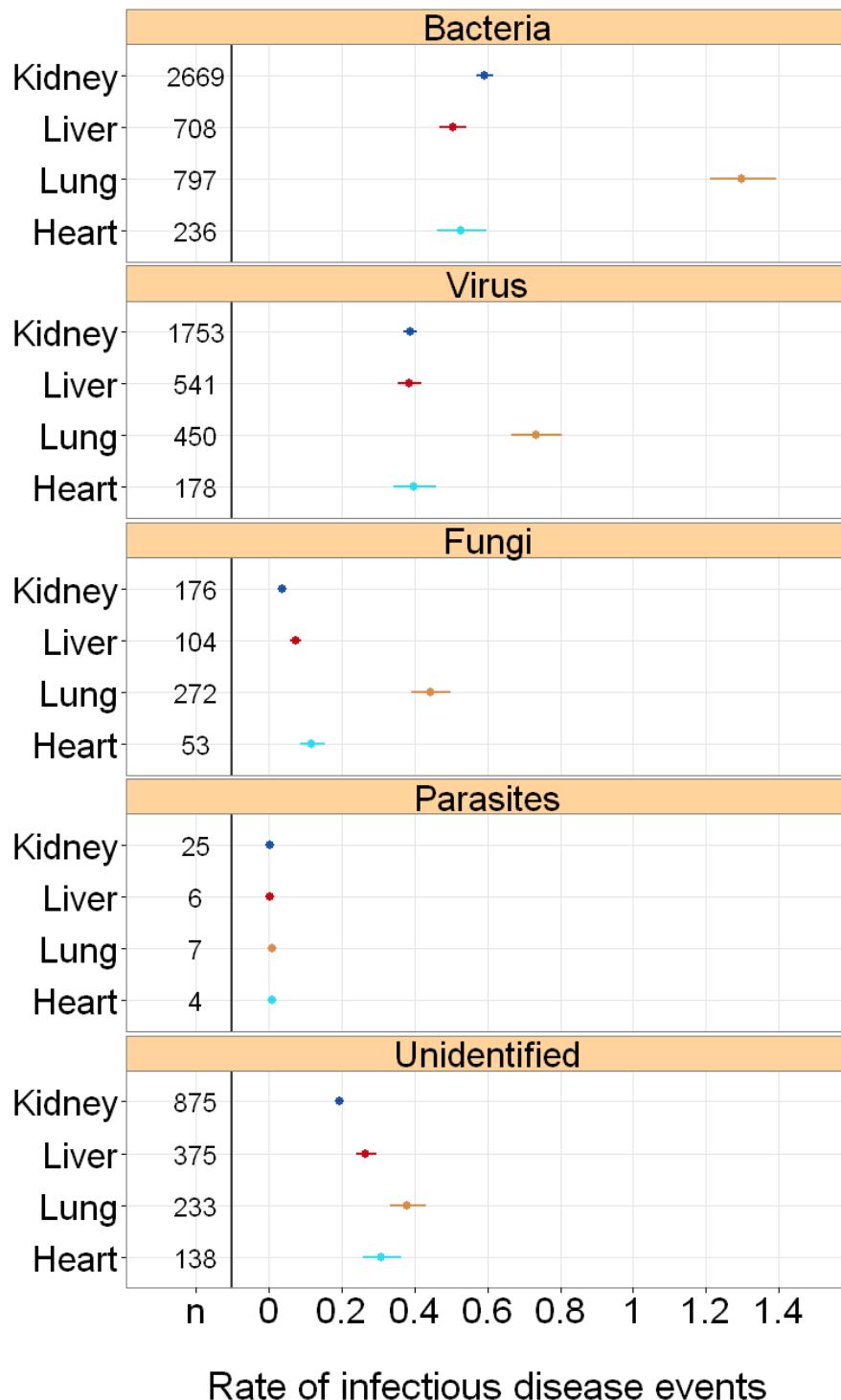
	N	(%)
Total number of ID*	10295	100.0
Proven disease	3686	35.8
Viral syndrome	95	0.9
Primary infection	44	0.4
Probable disease	2183	21.2
Asymptomatic	1808	17.6
Colonization	2163	21.0
Possible disease	29	0.3
Fever neutropenia	14	0.1
Information missing	273	2.7

* ID: infectious disease events

Table 9: Patients with infectious disease events

	N	% (sd)
Total number of patients	2560	
Patients with any ID	1940	75.8%
- Number of any ID, mean (sd)	5.3	(4.8)
Patients with proven/viral ID	1351	52.8%
- Number of proven/viral ID, mean (sd)	2.8	(2.6)

Figure 19: Rate of infectious disease events by pathogen and Tpx type



Remark: The rate of ID is defined as the number of ID divided by the total observation time of patients at risk.

6 Follow-up

Percentages have to be read as proportions of Tpx for which at least the 6 month or the 12 month follow-up (FUP) visit was performed.

Figure 20: Number of Tpx with 6 month FUP

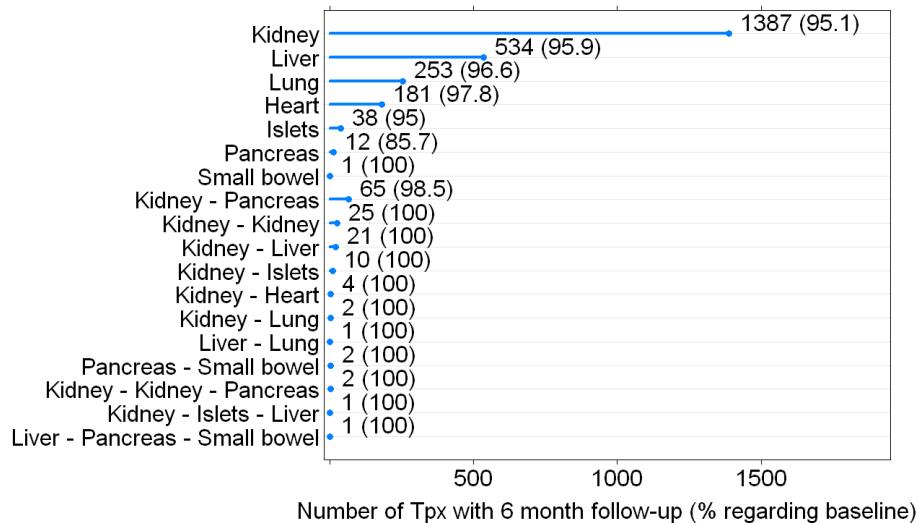
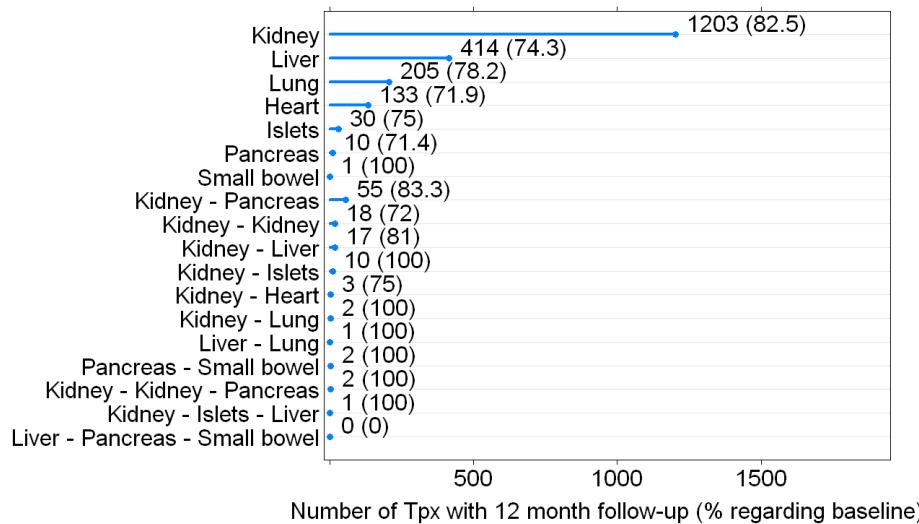


Figure 21: Number of Tpx with 12 month FUP



7 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 22, the 95%-confidence interval (CI) is given. Furthermore, survival rate estimates are not adjusted for potential risk factors (in Figures and Tables).

7.1 Overall

Table 10: Follow-up information of STCS patients

	Follow-up
Median follow-up duration (years)	2.81
IQR (years)	1.4 - 4.38
Maximal follow-up (years)	6.03
Number of deaths	294
Patients with (at least one) graft failure	163
Patients lost to follow-up*	20

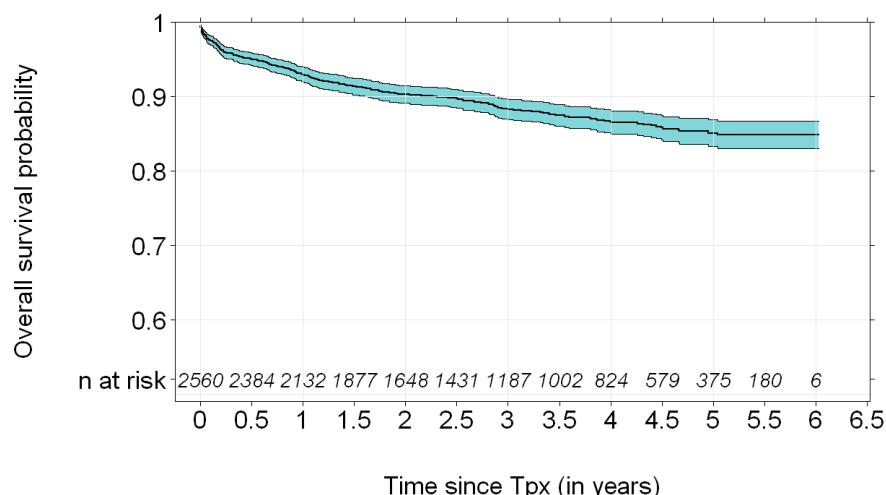
* Patients lost to follow up were treated in USZ (6), USB (5), CHUV (7), BE (1), HUG (1).

Table 11: Overall mortality

Time	Mortality (%)	95% CI	No at risk	Cum. deaths
Baseline	0.0	-	2560	0
1 month	2.3	(1.7, 2.9)	2500	59
6 months	5.0	(4.1, 5.8)	2384	127
1 year(s)	7.0	(6, 8.1)	2132	177
2 year(s)	9.7	(8.5, 10.9)	1648	233
3 year(s)	11.8	(10.4, 13.1)	1187	264
4 year(s)	13.5	(12, 15.1)	824	284
5 year(s)	14.9	(13.1, 16.7)	375	293
6 year(s)	15.2	(13.3, 17)	6	294
Overall	15.2	(13.3, 17)	-	294

Remark: 'Cum.' means '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 14th of May in 2014).

Figure 22: Overall survival



7.2 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 are performed less than 30 in STCS so far. Figures and tables are thus potentially given per major and rare Tpx.

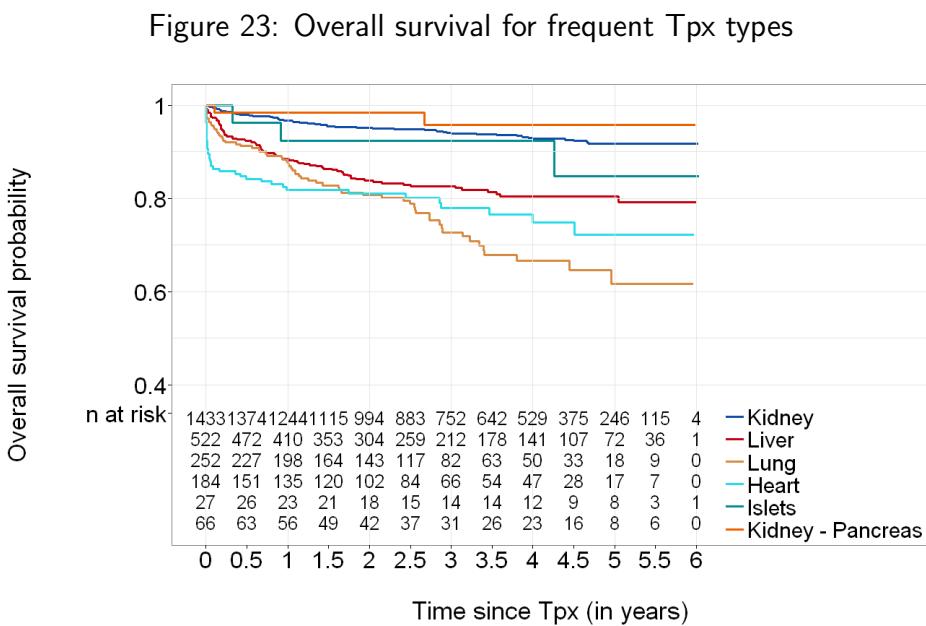


Table 12: Overall mortality by Tpx type

Tpx	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
Kidney	Baseline	0.0	-	1433	0
-	1 month	0.4	(0.1, 0.8)	1426	6
-	6 months	2.0	(1.3, 2.8)	1374	29
-	1 year(s)	3.2	(2.3, 4.1)	1244	45
-	2 year(s)	4.9	(3.7, 6.1)	994	65
-	3 year(s)	6.0	(4.7, 7.4)	752	75
-	4 year(s)	7.2	(5.6, 8.7)	529	82
-	5 year(s)	8.2	(6.3, 10)	246	86
-	6 year(s)	8.2	(6.3, 10)	4	86
-	Overall	8.2	(6.3, 10)	-	86
Liver	Baseline	0.0	-	522	0
-	1 month	2.7	(1.3, 4.1)	508	14
-	6 months	7.7	(5.4, 9.9)	472	40
-	1 year(s)	11.5	(8.7, 14.3)	410	59
-	2 year(s)	16.1	(12.8, 19.4)	304	78
-	3 year(s)	17.3	(13.8, 20.7)	212	82
-	4 year(s)	19.5	(15.6, 23.3)	141	87
-	5 year(s)	19.5	(15.6, 23.3)	72	87
-	6 year(s)	20.8	(16.1, 25.1)	1	88
-	Overall	20.8	(16.1, 25.1)	-	88
Lung	Baseline	0.0	-	252	0
-	1 month	4.4	(1.8, 6.9)	241	11
-	6 months	8.7	(5.2, 12.1)	227	22
-	1 year(s)	12.6	(8.3, 16.6)	198	31
-	2 year(s)	19.2	(14, 24.2)	143	45
-	3 year(s)	27.2	(20.5, 33.4)	82	56
-	4 year(s)	33.4	(25.4, 40.6)	50	62
-	5 year(s)	38.2	(27.8, 47.2)	18	64
-	6 year(s)	38.2	(27.8, 47.2)	-	64
-	Overall	38.2	(27.8, 47.2)	-	64
Heart	Baseline	0.0	-	184	0
-	1 month	13.0	(8, 17.8)	160	24
-	6 months	15.8	(10.3, 20.9)	151	29
-	1 year(s)	18.2	(12.3, 23.6)	135	33
-	2 year(s)	18.9	(12.9, 24.4)	102	34
-	3 year(s)	22.0	(15.2, 28.3)	66	37
-	4 year(s)	25.1	(17.2, 32.2)	47	39
-	5 year(s)	27.8	(18.3, 36.1)	17	40
-	6 year(s)	27.8	(18.3, 36.1)	-	40
-	Overall	27.8	(18.3, 36.1)	-	40
Islets	Baseline	0.0	-	27	0
-	1 month	0.0	-	27	0
-	6 months	3.7	(0, 10.6)	26	1
-	1 year(s)	7.6	(0, 17.1)	23	2
-	2 year(s)	7.6	(0, 17.1)	18	2
-	3 year(s)	7.6	(0, 17.1)	14	2
-	4 year(s)	7.6	(0, 17.1)	12	2
-	5 year(s)	15.3	(0, 30.8)	8	3
-	6 year(s)	15.3	(0, 30.8)	1	3

Table 12: Overall mortality by Tpx type

Tpx	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
-	Overall	15.3	(0, 30.8)	-	3
Kidney - Pancreas	Baseline	0.0	-	66	0
-	1 month	0.0	-	66	0
-	6 months	1.5	(0, 4.4)	63	1
-	1 year(s)	1.5	(0, 4.4)	56	1
-	2 year(s)	1.5	(0, 4.4)	42	1
-	3 year(s)	4.2	(0, 9.9)	31	2
-	4 year(s)	4.2	(0, 9.9)	23	2
-	5 year(s)	4.2	(0, 9.9)	8	2
-	6 year(s)	4.2	(0, 9.9)	-	2
-	Overall	4.2	(0, 9.9)	-	2

Table 13: Overall mortality by rare Tpx scenarios

Tpx	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
Pancreas	Baseline	0.00	-	9	0
-	1 month	0.00	-	9	0
-	6 months	0.00	-	9	0
-	1 year(s)	0.00	-	9	0
-	2 year(s)	0.00	-	6	0
-	3 year(s)	0.00	-	4	0
-	4 year(s)	0.00	-	4	0
-	5 year(s)	0.00	-	2	0
-	6 year(s)	0.00	-	-	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
-	Overall	100.00	-	-	1
Kidney - Kidney	Baseline	0.00	-	25	0
-	1 month	0.00	-	25	0
-	6 months	4.00	(0, 11.4)	24	1
-	1 year(s)	4.00	(0, 11.4)	21	1
-	2 year(s)	4.00	(0, 11.4)	14	1
-	3 year(s)	12.00	(0, 27.1)	5	2
-	4 year(s)	12.00	(0, 27.1)	3	2
-	5 year(s)	12.00	(0, 27.1)	-	2
-	6 year(s)	12.00	(0, 27.1)	-	2
-	Overall	12.00	(0, 27.1)	-	2
Kidney - Liver	Baseline	0.00	-	21	0
-	1 month	14.29	(0, 28)	18	3
-	6 months	14.29	(0, 28)	18	3
-	1 year(s)	19.05	(0.4, 34.2)	16	4
-	2 year(s)	19.05	(0.4, 34.2)	14	4
-	3 year(s)	19.05	(0.4, 34.2)	12	4
-	4 year(s)	19.05	(0.4, 34.2)	9	4
-	5 year(s)	30.61	(0, 51.9)	4	5
-	6 year(s)	30.61	(0, 51.9)	-	5
-	Overall	30.61	(0, 51.9)	-	5
Kidney - Islets	Baseline	0.00	-	9	0
-	1 month	0.00	-	9	0
-	6 months	0.00	-	9	0
-	1 year(s)	0.00	-	9	0
-	2 year(s)	0.00	-	6	0
-	3 year(s)	0.00	-	5	0
-	4 year(s)	0.00	-	4	0
-	5 year(s)	0.00	-	-	0
-	6 year(s)	0.00	-	-	0

Table 13: Overall mortality by rare Tpx scenarios

Tpx	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
-	Overall	0.00	-	-	0
Kidney - Heart	Baseline	0.00	-	4	0
-	1 month	25.00	(0, 57.4)	3	1
-	6 months	25.00	(0, 57.4)	3	1
-	1 year(s)	25.00	(0, 57.4)	3	1
-	2 year(s)	25.00	(0, 57.4)	-	1
-	3 year(s)	25.00	(0, 57.4)	-	1
-	4 year(s)	25.00	(0, 57.4)	-	1
-	5 year(s)	25.00	(0, 57.4)	-	1
-	6 year(s)	25.00	(0, 57.4)	-	1
-	Overall	25.00	(0, 57.4)	-	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	-	-	0
-	6 year(s)	0.00	-	-	0
-	Overall	0.00	-	-	0
Liver - 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	-	-	0
-	6 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
-	Overall	100.00	-	-	2
Kidney - Kidney - Pancreas	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)	0.00	-	2	0
-	3 year(s)	0.00	-	2	0
-	4 year(s)	0.00	-	-	0
-	5 year(s)	0.00	-	-	0

Table 13: Overall mortality by rare Tpx scenarios

Tpx	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
-	6 year(s)	0.00	-	-	0
-	Overall	0.00	-	-	0
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	-	-	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
-	Overall	0.00	-	-	0

7.3 Mortality by Tpx and centre

Figure 24: Overall survival for frequent Tpx

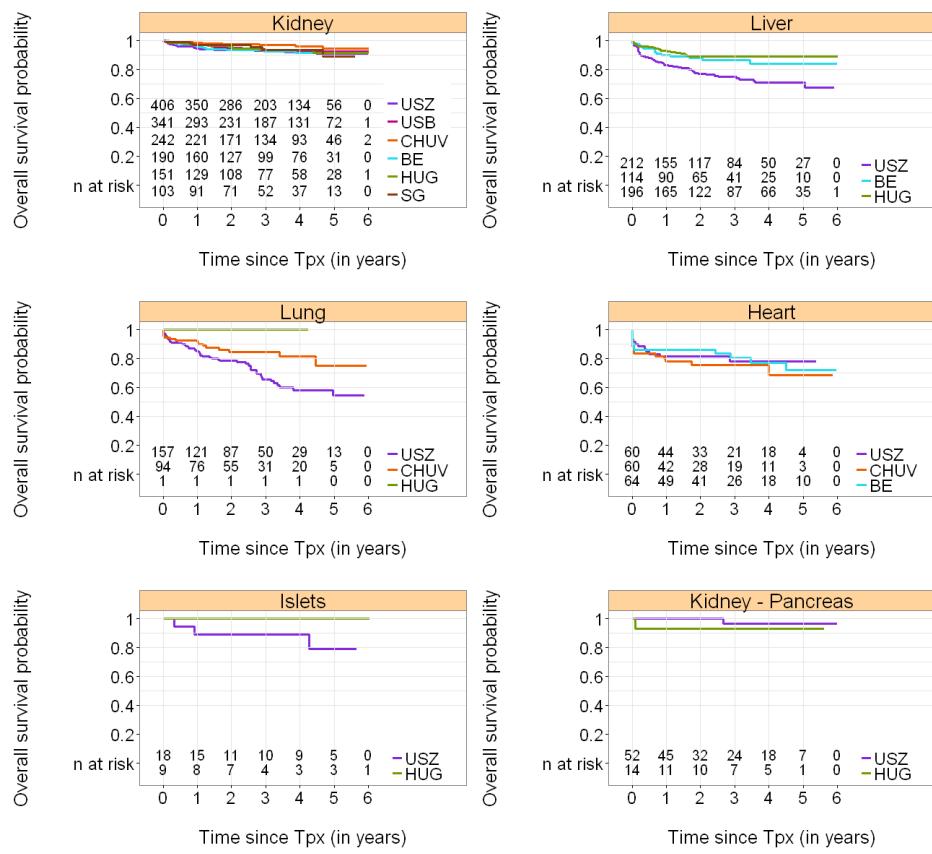


Table 14: Overall mortality by Tpx type and centre

Tpx - centre	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
Kidney - USZ	Baseline	0.0	-	406	0
	1 month	0.5	(0, 1.2)	403	2
	6 months	4.0	(2, 5.8)	383	16
	1 year(s)	5.3	(3, 7.4)	350	21
	2 year(s)	6.4	(3.9, 8.8)	286	25
	3 year(s)	6.8	(4.2, 9.3)	203	26
	4 year(s)	8.6	(5.3, 11.7)	134	29
	5 year(s)	9.4	(5.8, 13)	56	30
	6 year(s)	9.4	(5.8, 13)	-	30
	Overall	9.4	(5.8, 13)	-	30
Kidney - USB	Baseline	0.0	-	341	0
	1 month	0.3	(0, 0.9)	340	1
	6 months	1.5	(0.2, 2.7)	329	5
	1 year(s)	2.4	(0.7, 4.1)	293	8
	2 year(s)	5.0	(2.5, 7.4)	231	15
	3 year(s)	6.4	(3.4, 9.2)	187	18
	4 year(s)	7.7	(4.2, 11)	131	20
	5 year(s)	7.7	(4.2, 11)	72	20
	6 year(s)	7.7	(4.2, 11)	1	20
	Overall	7.7	(4.2, 11)	-	20
Kidney - CHUV	Baseline	0.0	-	242	0
	1 month	0.4	(0, 1.2)	241	1
	6 months	0.4	(0, 1.2)	240	1
	1 year(s)	1.3	(0, 2.7)	221	3
	2 year(s)	2.3	(0.3, 4.2)	171	5
	3 year(s)	2.9	(0.5, 5.3)	134	6
	4 year(s)	3.9	(0.9, 6.8)	93	7
	5 year(s)	5.5	(1.1, 9.8)	46	8
	6 year(s)	5.5	(1.1, 9.8)	2	8
	Overall	5.5	(1.1, 9.8)	-	8
Kidney - BE	Baseline	0.0	-	190	0
	1 month	0.0	-	190	0
	6 months	2.1	(0, 4.1)	178	4
	1 year(s)	3.2	(0.7, 5.8)	160	6
	2 year(s)	6.5	(2.7, 10.1)	127	11
	3 year(s)	7.4	(3.2, 11.3)	99	12
	4 year(s)	8.5	(3.8, 13)	76	13
	5 year(s)	8.5	(3.8, 13)	31	13
	6 year(s)	8.5	(3.8, 13)	-	13
	Overall	8.5	(3.8, 13)	-	13
Kidney - HUG	Baseline	0.0	-	151	0
	1 month	0.7	(0, 1.9)	150	1
	6 months	1.3	(0, 3.1)	144	2
	1 year(s)	2.7	(0.1, 5.3)	129	4
	2 year(s)	4.4	(0.9, 7.8)	108	6
	3 year(s)	6.4	(1.9, 10.8)	77	8
	4 year(s)	6.4	(1.9, 10.8)	58	8
	5 year(s)	8.6	(2.4, 14.5)	28	9
	6 year(s)	8.6	(2.4, 14.5)	1	9

Table 14: Overall mortality by Tpx type and centre

Tpx - centre	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
-	Overall	8.6	(2.4, 14.5)	-	9
Kidney - SG	Baseline	0.0	-	103	0
-	1 month	1.0	(0, 2.8)	102	1
-	6 months	1.0	(0, 2.8)	100	1
-	1 year(s)	3.1	(0, 6.5)	91	3
-	2 year(s)	3.1	(0, 6.5)	71	3
-	3 year(s)	6.3	(0.6, 11.6)	52	5
-	4 year(s)	6.3	(0.6, 11.6)	37	5
-	5 year(s)	11.0	(0, 20.8)	13	6
-	6 year(s)	11.0	(0, 20.8)	-	6
-	Overall	11.0	(0, 20.8)	-	6
Liver - USZ	Baseline	0.0	-	212	0
-	1 month	3.3	(0.9, 5.7)	205	7
-	6 months	11.8	(7.4, 16)	182	25
-	1 year(s)	16.9	(11.6, 21.8)	155	35
-	2 year(s)	22.9	(16.7, 28.6)	117	45
-	3 year(s)	25.0	(18.5, 31)	84	48
-	4 year(s)	29.1	(21.7, 35.9)	50	52
-	5 year(s)	29.1	(21.7, 35.9)	27	52
-	6 year(s)	32.5	(22.5, 41.3)	-	53
-	Overall	32.5	(22.5, 41.3)	-	53
Liver - BE	Baseline	0.0	-	114	0
-	1 month	1.8	(0, 4.1)	112	2
-	6 months	5.3	(1.1, 9.3)	106	6
-	1 year(s)	9.9	(4.2, 15.3)	90	11
-	2 year(s)	12.1	(5.7, 18.1)	65	13
-	3 year(s)	13.5	(6.5, 19.9)	41	14
-	4 year(s)	15.9	(7.5, 23.6)	25	15
-	5 year(s)	15.9	(7.5, 23.6)	10	15
-	6 year(s)	15.9	(7.5, 23.6)	-	15
-	Overall	15.9	(7.5, 23.6)	-	15
Liver - HUG	Baseline	0.0	-	196	0
-	1 month	2.5	(0.3, 4.7)	191	5
-	6 months	4.6	(1.6, 7.5)	184	9
-	1 year(s)	6.8	(3.1, 10.2)	165	13
-	2 year(s)	11.1	(6.3, 15.6)	122	20
-	3 year(s)	11.1	(6.3, 15.6)	87	20
-	4 year(s)	11.1	(6.3, 15.6)	66	20
-	5 year(s)	11.1	(6.3, 15.6)	35	20
-	6 year(s)	11.1	(6.3, 15.6)	1	20
-	Overall	11.1	(6.3, 15.6)	-	20
Lung - USZ	Baseline	0.0	-	157	0
-	1 month	3.8	(0.8, 6.8)	151	6
-	6 months	9.6	(4.8, 14)	139	15
-	1 year(s)	15.0	(9.1, 20.5)	121	23
-	2 year(s)	21.7	(14.7, 28.1)	87	32
-	3 year(s)	34.3	(24.8, 42.7)	50	43
-	4 year(s)	42.0	(31, 51.3)	29	48
-	5 year(s)	45.7	(32.6, 56.2)	13	49

Table 14: Overall mortality by Tpx type and centre

Tpx - centre	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
-	6 year(s)	45.7	(32.6, 56.2)	-	49
-	Overall	45.7	(32.6, 56.2)	-	49
Lung - CHUV	Baseline	0.0	-	94	0
-	1 month	5.3	(0.7, 9.7)	89	5
-	6 months	7.4	(2, 12.6)	87	7
-	1 year(s)	8.6	(2.7, 14.2)	76	8
-	2 year(s)	15.3	(7.2, 22.7)	55	13
-	3 year(s)	15.3	(7.2, 22.7)	31	13
-	4 year(s)	18.3	(8.3, 27.3)	20	14
-	5 year(s)	25.1	(8, 39.1)	5	15
-	6 year(s)	25.1	(8, 39.1)	-	15
-	Overall	25.1	(8, 39.1)	-	15
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	-	1	0
-	4 year(s)	0.0	-	1	0
-	5 year(s)	0.0	-	-	0
-	6 year(s)	0.0	-	-	0
-	Overall	0.0	-	-	0
Heart - USZ	Baseline	0.0	-	60	0
-	1 month	8.3	(1.1, 15.1)	55	5
-	6 months	16.8	(6.7, 25.8)	48	10
-	1 year(s)	18.6	(8.1, 28)	44	11
-	2 year(s)	18.6	(8.1, 28)	33	11
-	3 year(s)	22.2	(9.6, 33)	21	12
-	4 year(s)	22.2	(9.6, 33)	18	12
-	5 year(s)	22.2	(9.6, 33)	4	12
-	6 year(s)	22.2	(9.6, 33)	-	12
-	Overall	22.2	(9.6, 33)	-	12
Heart - CHUV	Baseline	0.0	-	60	0
-	1 month	16.7	(6.7, 25.6)	50	10
-	6 months	16.7	(6.7, 25.6)	49	10
-	1 year(s)	22.0	(10.7, 32)	42	13
-	2 year(s)	24.4	(12.3, 34.9)	28	14
-	3 year(s)	24.4	(12.3, 34.9)	19	14
-	4 year(s)	31.3	(12.7, 45.9)	11	15
-	5 year(s)	31.3	(12.7, 45.9)	3	15
-	6 year(s)	31.3	(12.7, 45.9)	-	15
-	Overall	31.3	(12.7, 45.9)	-	15
Heart - BE	Baseline	0.0	-	64	0
-	1 month	14.1	(5.1, 22.2)	55	9
-	6 months	14.1	(5.1, 22.2)	54	9
-	1 year(s)	14.1	(5.1, 22.2)	49	9
-	2 year(s)	14.1	(5.1, 22.2)	41	9
-	3 year(s)	19.3	(7.9, 29.4)	26	11
-	4 year(s)	22.8	(9.6, 34.2)	18	12
-	5 year(s)	28.0	(11.3, 41.5)	10	13

Table 14: Overall mortality by Tpx type and centre

Tpx - centre	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
-	6 year(s)	28.0	(11.3, 41.5)	-	13
-	Overall	28.0	(11.3, 41.5)	-	13
Islets - USZ	Baseline	0.0	-	18	0
-	1 month	0.0	-	18	0
-	6 months	5.6	(0, 15.6)	17	1
-	1 year(s)	11.1	(0, 24.5)	15	2
-	2 year(s)	11.1	(0, 24.5)	11	2
-	3 year(s)	11.1	(0, 24.5)	10	2
-	4 year(s)	11.1	(0, 24.5)	9	2
-	5 year(s)	21.0	(0, 40.5)	5	3
-	6 year(s)	21.0	(0, 40.5)	-	3
-	Overall	21.0	(0, 40.5)	-	3
Islets - HUG	Baseline	0.0	-	9	0
-	1 month	0.0	-	9	0
-	6 months	0.0	-	9	0
-	1 year(s)	0.0	-	8	0
-	2 year(s)	0.0	-	7	0
-	3 year(s)	0.0	-	4	0
-	4 year(s)	0.0	-	3	0
-	5 year(s)	0.0	-	3	0
-	6 year(s)	0.0	-	1	0
-	Overall	0.0	-	-	0
Kidney - Pancreas - USZ	Baseline	0.0	-	52	0
-	1 month	0.0	-	52	0
-	6 months	0.0	-	50	0
-	1 year(s)	0.0	-	45	0
-	2 year(s)	0.0	-	32	0
-	3 year(s)	3.6	(0, 10.2)	24	1
-	4 year(s)	3.6	(0, 10.2)	18	1
-	5 year(s)	3.6	(0, 10.2)	7	1
-	6 year(s)	3.6	(0, 10.2)	-	1
-	Overall	3.6	(0, 10.2)	-	1
Kidney - Pancreas - HUG	Baseline	0.0	-	14	0
-	1 month	0.0	-	14	0
-	6 months	7.1	(0, 19.7)	13	1
-	1 year(s)	7.1	(0, 19.7)	11	1
-	2 year(s)	7.1	(0, 19.7)	10	1
-	3 year(s)	7.1	(0, 19.7)	7	1
-	4 year(s)	7.1	(0, 19.7)	5	1
-	5 year(s)	7.1	(0, 19.7)	1	1
-	6 year(s)	7.1	(0, 19.7)	-	1
-	Overall	7.1	(0, 19.7)	-	1

Table 15: Overall mortality by rare Tpx scenarios and centre

Tpx - centre	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
Pancreas - USZ	Baseline	0.0	-	4	0
-	1 month	0.0	-	4	0
-	6 months	0.0	-	4	0
-	1 year(s)	0.0	-	4	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
-	Overall	0.0	-	-	0
Pancreas - HUG	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	-	4	0
-	4 year(s)	0.0	-	4	0
-	5 year(s)	0.0	-	2	0
-	6 year(s)	0.0	-	-	0
-	Overall	0.0	-	-	0
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)	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
-	Overall	100.0	-	-	1
Kidney - Kidney - USZ	Baseline	0.0	-	9	0
-	1 month	0.0	-	9	0
-	6 months	0.0	-	9	0
-	1 year(s)	0.0	-	8	0
-	2 year(s)	0.0	-	5	0
-	3 year(s)	0.0	-	1	0
-	4 year(s)	0.0	-	-	0
-	5 year(s)	0.0	-	-	0
-	6 year(s)	0.0	-	-	0
-	Overall	0.0	-	-	0
Kidney - Kidney - USB	Baseline	0.0	-	15	0
-	1 month	0.0	-	15	0
-	6 months	0.0	-	15	0
-	1 year(s)	0.0	-	13	0
-	2 year(s)	0.0	-	9	0
-	3 year(s)	11.1 (0, 29.4)	-	4	1
-	4 year(s)	11.1 (0, 29.4)	-	3	1
-	5 year(s)	11.1 (0, 29.4)	-	-	1
-	6 year(s)	11.1 (0, 29.4)	-	-	1

Table 15: Overall mortality by rare Tpx scenarios and centre

Tpx - centre	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
-	Overall	11.1	(0, 29.4)	-	1
Kidney - Kidney - CHUV	Baseline	0.0	-	1	0
-	1 month	0.0	-	1	0
-	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
-	Overall	100.0	-	-	1
Kidney - Liver - USZ	Baseline	0.0	-	8	0
-	1 month	12.5	(0, 32.7)	7	1
-	6 months	12.5	(0, 32.7)	7	1
-	1 year(s)	25.0	(0, 49.7)	6	2
-	2 year(s)	25.0	(0, 49.7)	5	2
-	3 year(s)	25.0	(0, 49.7)	4	2
-	4 year(s)	25.0	(0, 49.7)	3	2
-	5 year(s)	25.0	(0, 49.7)	2	2
-	6 year(s)	25.0	(0, 49.7)	-	2
-	Overall	25.0	(0, 49.7)	-	2
Kidney - Liver - BE	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	-	4	0
-	3 year(s)	0.0	-	3	0
-	4 year(s)	0.0	-	3	0
-	5 year(s)	0.0	-	1	0
-	6 year(s)	0.0	-	-	0
-	Overall	0.0	-	-	0
Kidney - Liver - HUG	Baseline	0.0	-	8	0
-	1 month	25.0	(0, 49.7)	6	2
-	6 months	25.0	(0, 49.7)	6	2
-	1 year(s)	25.0	(0, 49.7)	5	2
-	2 year(s)	25.0	(0, 49.7)	5	2
-	3 year(s)	25.0	(0, 49.7)	5	2
-	4 year(s)	25.0	(0, 49.7)	3	2
-	5 year(s)	50.0	(0, 79.6)	1	3
-	6 year(s)	50.0	(0, 79.6)	-	3
-	Overall	50.0	(0, 79.6)	-	3
Kidney - Islets - 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	-	4	0
-	3 year(s)	0.0	-	3	0
-	4 year(s)	0.0	-	3	0
-	5 year(s)	0.0	-	-	0

Table 15: Overall mortality by rare Tpx scenarios and centre

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

Table 15: Overall mortality by rare Tpx scenarios and centre

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

7.4 Mortality in kidney Tpx

In Figure 25, categories 'Living, ABO c' and 'Living, not ABO c' are combined to 'Living'. The letter 'c' means 'compatible'.

Figure 25: Overall survival for patients with first STCS single kidney Tpx by donor type

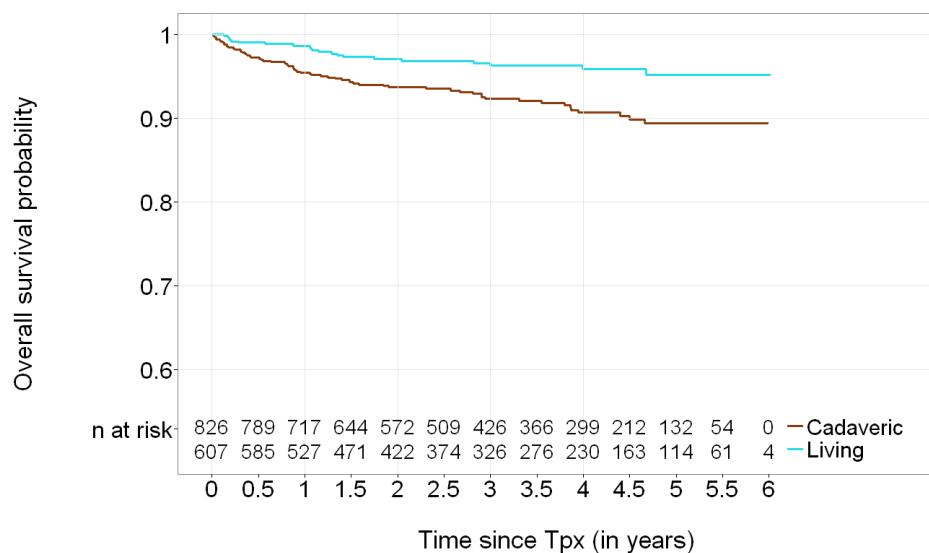


Figure 26: Overall survival for patients with first STCS single kidney Tpx by donor type (combined with AB0 compatibility)

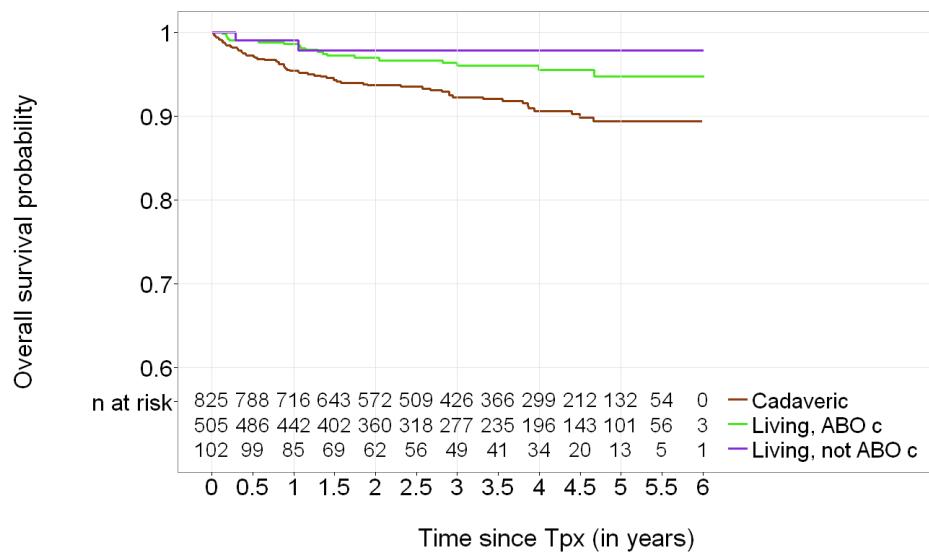


Table 16: Overall mortality in (single) kidney recipients by donor type

Donor type	Time	Mortality (%)	95% CI	No at risk	Cum. deaths
Cadaveric	Baseline	0.0	-	826	0
	1 month	0.7	(0.1, 1.3)	820	6
	6 months	2.8	(1.7, 3.9)	789	23
-	1 years	4.6	(3.1, 6)	717	37
	2 years	6.3	(4.6, 8)	572	49
	3 years	7.7	(5.7, 9.7)	426	56
	4 years	9.3	(7, 11.7)	299	62
	5 years	10.6	(7.9, 13.3)	132	65
	6 years	10.6	(7.9, 13.3)	-	65
	Overall	10.6	(7.9, 13.3)	-	65
Living	Baseline	0.0	-	607	0
	1 month	0.0	-	606	0
	6 months	1.0	(0.2, 1.8)	585	6
-	1 years	1.3	(0.4, 2.3)	527	8
	2 years	2.9	(1.5, 4.3)	422	16
	3 years	3.7	(2, 5.4)	326	19
	4 years	4.2	(2.3, 6)	230	20
	5 years	4.8	(2.5, 7.1)	114	21
	6 years	4.8	(2.5, 7.1)	4	21
	Overall	4.8	(2.5, 7.1)	-	21

8 Graft failure and primary non-function

Graft failure and primary non-function for organs are distinguished in the following section.

8.1 Primary non-function

Organs with observed primary non-function are not involved in the analysis of graft failure since a graft that never worked can't fail.

Table 17: Number of organs with primary non-function

	Total	USZ	USB	CHUV	BE	HUG	SG
Total	32	20	1	1	3	6	1
Kidney	13	8	1	0	0	3	1
Liver	14	9	0	0	2	3	0
Lung	1	1	0	0	0	0	0
Heart	3	1	0	1	1	0	0
Islets	1	1	0	0	0	0	0

8.2 Graft failure

Graft failures are counted on organ-level (Tables 19 and 20). In Table 20, islet and small bowel graft losses are disregarded. Table 18 gives numbers on patient- and organ-level. Figure 27 shows patient-level based graft failure free survival by major Tpx types.

Table 18: Summary for graft failures

	N	(%)
Graft failure - total	173	(100.0)
- in single Tpx	155	(89.6)
- in double Tpx	18	(10.4)
Patients with at least one graft failure	163	
Patients with graft failure or death	380	(100.0)
- graft failure and alive at end of follow-up	86	(22.6)
- graft failure followed by late death	43	(11.3)
- graft failure related death (at same day)	34	(8.9)
- death without any graft failure	217	(57.1)

Table 19: Graft failure in double Tpx

	Total	Kidney	Heart	Liver	Pancreas
Total	18	4	1	1	12
Kidney - Heart	1	0	1	0	0
Kidney - Islets	1	1	0	0	0
Kidney - Kidney	2	2	0	0	0
Kidney - Liver	2	1	0	1	0
Kidney - Pancreas	11	0	0	0	11
Pancreas - Small bowel	1	0	0	0	1

Table 20: Graft failures by organ

	Total	All GF* (%)	GF, late death (%)	GF related death (%)
Total	2736	173 (6.3)	47 (27.2)	39 (22.5)
Kidney	1616	83 (5.1)	20 (24.1)	3 (3.6)
Liver	581	38 (6.5)	18 (47.4)	12 (31.6)
Lung	265	24 (9.1)	7 (29.2)	12 (50)
Heart	189	13 (6.9)	0 (0)	12 (92.3)
Pancreas	85	15 (17.6)	2 (13.3)	0 (0)

* GF: graft failure

In the following, cumulative incidence functions for graft failure and rate estimates for graft free survival are not adjusted for potential risk factors (illustrated in Figures and Tables).

Figure 27: Graft failure free survival by major Tpx

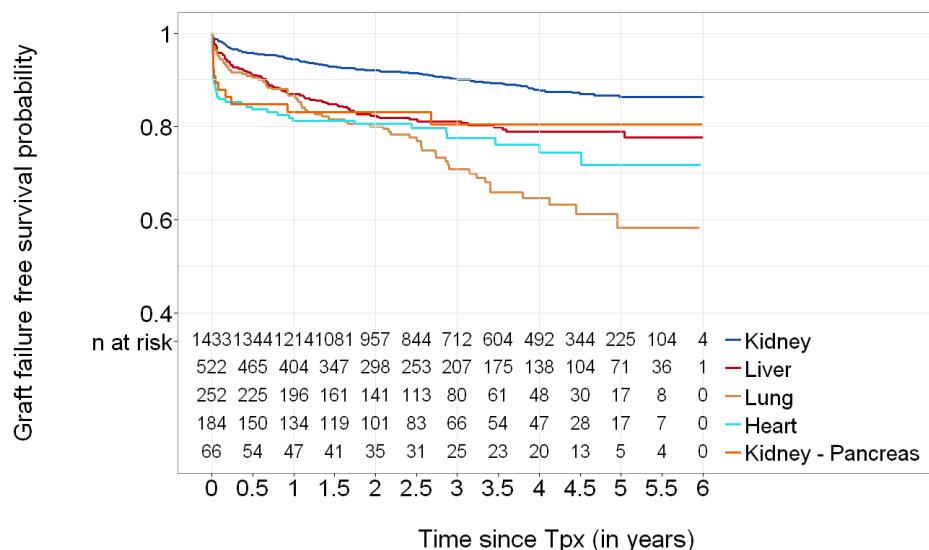


Figure 28: Graft failure free survival by major Tpx and centre

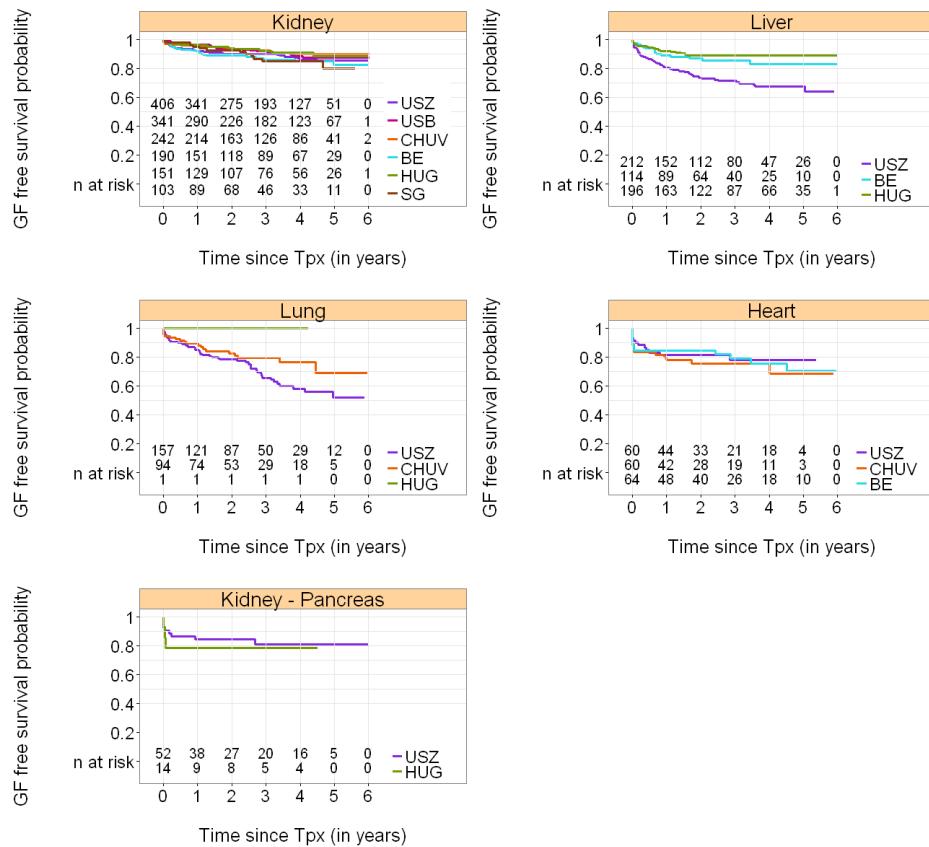
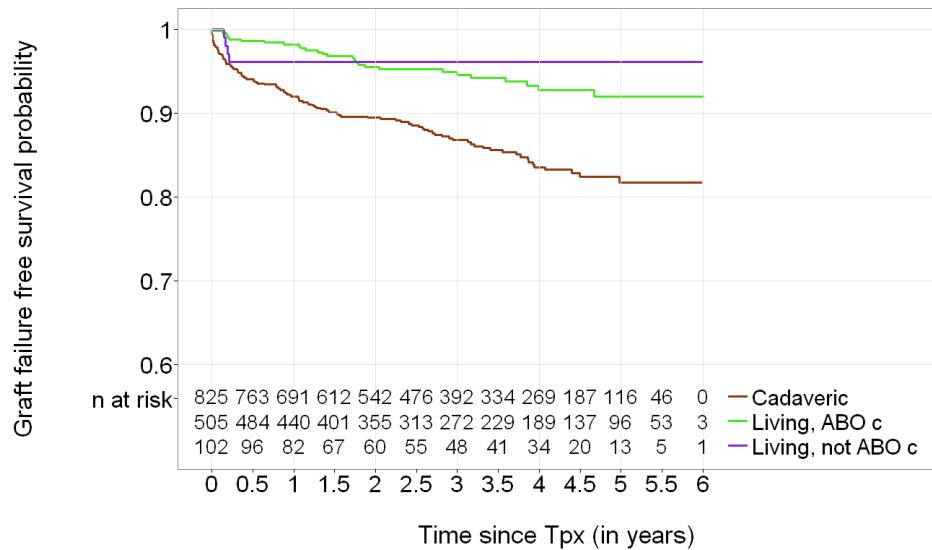


Figure 29: Graft failure free survival in patients with first STCS single kidney Tpx by donor type (combined with AB0 compatibility)



8.3 Cumulative incidence of graft failure

The cumulative incidence(s) (CumInc) of a graft failure is the probability for a graft failure within the reported time period.

Figure 30: Cumulative incidences of graft failure for organs with at least one graft failure

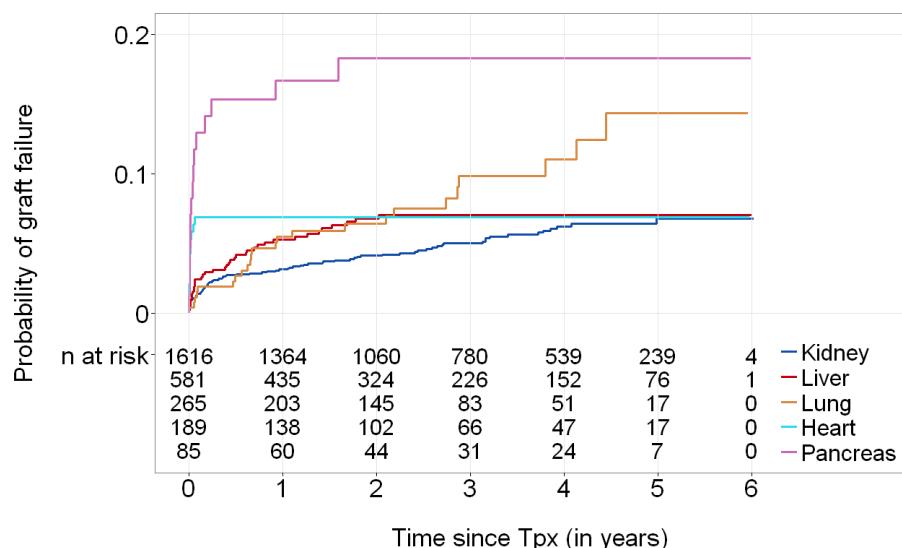


Figure 31: Cumulative incidences of graft failure for kidneys in single Tpx by donor type

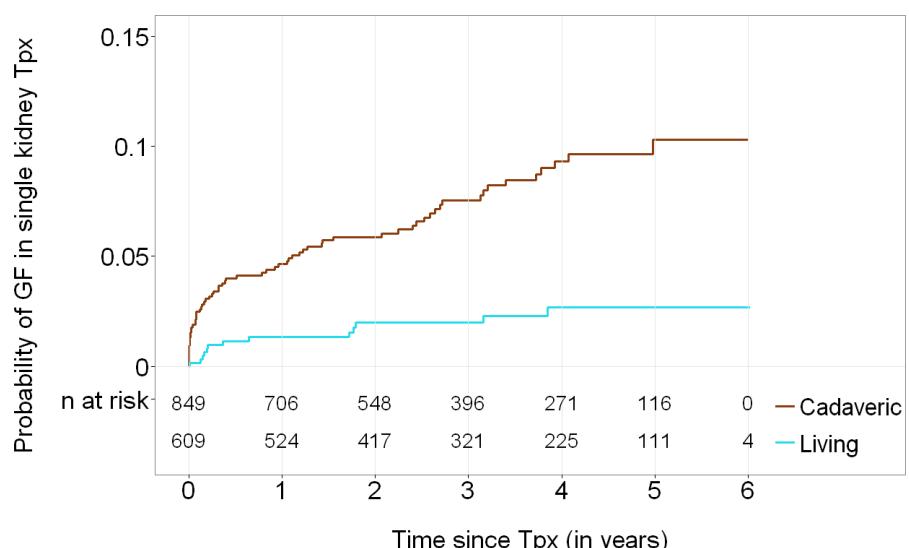


Figure 32: Cumulative incidences of graft failure for kidneys in single Tpx by AB0 compatibility

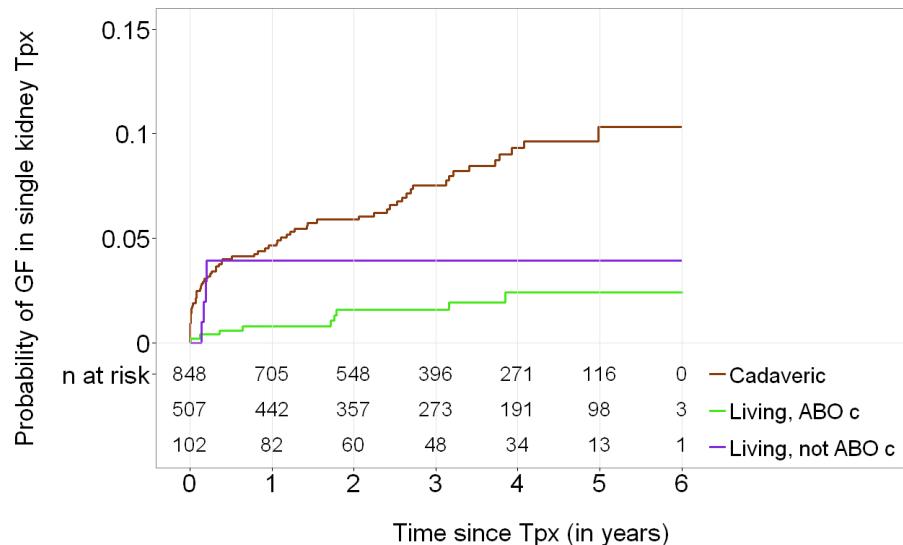


Table 21: Graft failure by organ

Organ	Time	CumInc (%)	95% CI	No at risk	Cum. GF	Cum. deaths
Kidney	Baseline	0.0	-	1616	0	0
	1 month	1.4	(0.9,2)	1586	22	7
	6 months	2.7	(2,3.6)	1513	44	25
-	1 year(s)	3.1	(2.4,4.1)	1364	50	39
	2 year(s)	4.1	(3.2,5.2)	1060	63	55
	3 year(s)	5.0	(3.9,6.2)	780	72	66
	4 year(s)	6.2	(4.9,7.7)	539	81	72
	5 year(s)	6.7	(5.3,8.4)	239	83	77
	6 year(s)	6.7	(5.3,8.4)	4	83	77
	Overall	6.7	(5.3,8.4)	0	83	77
Liver	Baseline	0.0	-	581	0	0
	1 month	2.4	(1.4,3.9)	549	14	17
	6 months	4.2	(2.7,6)	500	24	43
-	1 year(s)	5.3	(3.6,7.3)	435	30	58
	2 year(s)	6.8	(4.9,9.1)	324	37	71
	3 year(s)	7.0	(5.1,9.4)	226	38	74
	4 year(s)	7.0	(5.1,9.4)	152	38	79
	5 year(s)	7.0	(5.1,9.4)	76	38	80
	6 year(s)	7.0	(5.1,9.4)	1	38	81
	Overall	7.0	(5.1,9.4)	0	38	81
Lung	Baseline	0.0	-	265	0	0
	1 month	1.5	(0.5,3.6)	251	4	10
	6 months	2.7	(1.2,5.2)	233	7	20
-	1 year(s)	5.5	(3.1,8.7)	203	14	23
	2 year(s)	6.4	(3.8,9.9)	145	16	35
	3 year(s)	9.8	(6.1,14.5)	83	21	43
	4 year(s)	11.0	(6.8,16.3)	51	22	48
	5 year(s)	14.3	(8.6,21.5)	17	24	49
	6 year(s)		(NA,NA)	0	24	49
	Overall	14.3	(8.6,21.5)	0	24	49
Heart	Baseline	0.0	-	189	0	0
	1 month	6.9	(3.8,11.1)	163	13	13
	6 months	6.9	(3.8,11.1)	154	13	18
-	1 year(s)	6.9	(3.8,11.1)	138	13	22
	2 year(s)	6.9	(3.8,11.1)	102	13	23
	3 year(s)	6.9	(3.8,11.1)	66	13	26
	4 year(s)	6.9	(3.8,11.1)	47	13	28
	5 year(s)	6.9	(3.8,11.1)	17	13	29
	6 year(s)		(NA,NA)	0	13	29
	Overall	6.9	(3.8,11.1)	0	13	29
Pancreas	Baseline	0.0	-	85	0	0
	1 month	12.9	(6.8,21)	73	11	1
	6 months	15.3	(8.6,23.8)	68	13	1
	1 year(s)	16.7	(9.6,25.5)	60	14	1

Table 21: Graft failure by organ

Organ	Time	CumInc (%)	95% CI	No at risk	Cum. GF	Cum. deaths
-	2 year(s)	18.3	(10.7,27.4)	44	15	2
-	3 year(s)	18.3	(10.7,27.4)	31	15	3
-	4 year(s)	18.3	(10.7,27.4)	24	15	3
-	5 year(s)	18.3	(10.7,27.4)	7	15	3
-	6 year(s)		(NA,NA)	0	15	3
-	Overall	18.3	(10.7,27.4)	0	15	3

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	-	504	0	0
	1 month	1.2	(0.5,2.5)	494	6	3
	6 months	3.4	(2.5,2)	466	17	11
	1 years	3.6	(2.2,5.5)	425	18	16
	2 years	5.1	(3.3,7.3)	332	24	18
	3 years	5.4	(3.6,7.7)	230	25	19
	4 years	7.0	(4.6,10)	151	28	22
	5 years	7.0	(4.6,10)	60	28	23
	6 years	-	-	0	28	23
	Overall	7.0	(4.6,10)	0	28	23
Kidney-USB	Baseline	0.0	-	374	0	0
	1 month	0.5	(0.1,1.8)	372	2	0
	6 months	1.1	(0.4,2.6)	358	4	4
	1 years	1.4	(0.5,3)	316	5	8
	2 years	2.4	(1.1,4.5)	244	8	14
	3 years	3.3	(1.7,5.8)	190	10	18
	4 years	5.0	(2.7,8.3)	130	13	19
	5 years	5.7	(3.1,9.4)	68	14	19
	6 years	5.7	(3.1,9.4)	1	14	19
	Overall	5.7	(3.1,9.4)	0	14	19
Kidney-CHUV	Baseline	0.0	-	254	0	0
	1 month	2.4	(1,4.8)	247	6	1
	6 months	3.5	(1.7,6.4)	243	9	1
	1 years	3.9	(2,6.9)	223	10	3
	2 years	3.9	(2,6.9)	168	10	5
	3 years	4.5	(2.4,7.7)	130	11	6
	4 years	6.0	(3.3,9.9)	90	13	7
	5 years	6.0	(3.3,9.9)	42	13	8
	6 years	6.0	(3.3,9.9)	2	13	8
	Overall	6.0	(3.3,9.9)	0	13	8
Kidney-BE	Baseline	0.0	-	200	0	0
	1 month	2.0	(0.7,4.7)	196	4	0
	6 months	4.5	(2.2,8)	179	9	4
	1 years	5.6	(3,9.5)	160	11	5
	2 years	6.2	(3.4,10.3)	123	12	9
	3 years	7.9	(4.4,12.6)	93	14	10
	4 years	7.9	(4.4,12.6)	70	14	11
	5 years	10.4	(5.2,17.9)	30	15	11
	6 years	-	-	0	15	11
	Overall	10.4	(5.2,17.9)	0	15	11
Kidney-HUG	Baseline	0.0	-	179	0	0
	1 month	1.7	(0.5,4.5)	174	3	2
	6 months	2.2	(0.7,5.3)	167	4	4
	1 years	2.2	(0.7,5.3)	150	4	4

Table 22: Graft failure by organ and centre

Organ - Centre	Time	CumInc (%)	95% CI	No at risk	Cum. GF	Cum. deaths
-	2 years	2.9	(1.1,6.2)	124	5	6
	3 years	2.9	(1.1,6.2)	90	5	8
	4 years	3.9	(1.5,8.1)	65	6	8
	5 years	3.9	(1.5,8.1)	28	6	10
	6 years	3.9	(1.5,8.1)	1	6	10
	Overall	3.9	(1.5,8.1)	0	6	10
Kidney-SG	Baseline	0.0	-	105	0	0
	1 month	1.0	(0.1,4.7)	103	1	1
	6 months	1.0	(0.1,4.7)	100	1	1
	1 years	2.0	(0.4,6.4)	90	2	3
	2 years	4.2	(1.3,9.6)	69	4	3
	3 years	8.5	(3.7,16)	47	7	5
-	4 years	8.5	(3.7,16)	33	7	5
	5 years	8.5	(3.7,16)	11	7	6
	6 years	-	-	0	7	6
	Overall	8.5	(3.7,16)	0	7	6
Liver-USZ	Baseline	0.0	-	249	0	0
	1 month	3.6	(1.8,6.5)	229	9	10
	6 months	6.1	(3.6,9.5)	194	15	31
	1 years	8.3	(5.2,12.2)	167	20	38
	2 years	10.8	(7.2,15.2)	124	25	46
	3 years	11.4	(7.6,15.9)	90	26	48
-	4 years	11.4	(7.6,15.9)	54	26	52
	5 years	11.4	(7.6,15.9)	29	26	52
	6 years	-	-	0	26	53
	Overall	11.4	(7.6,15.9)	0	26	53
Liver-BE	Baseline	0.0	-	123	0	0
	1 month	0.8	(0.1,4.1)	120	1	2
	6 months	1.6	(0.3,5.3)	113	2	6
	1 years	1.6	(0.3,5.3)	96	2	11
	2 years	1.6	(0.3,5.3)	70	2	13
	3 years	1.6	(0.3,5.3)	43	2	14
-	4 years	1.6	(0.3,5.3)	28	2	15
	5 years	1.6	(0.3,5.3)	11	2	15
	6 years	-	-	0	2	15
	Overall	1.6	(0.3,5.3)	0	2	15
Liver-HUG	Baseline	0.0	-	209	0	0
	1 month	1.9	(0.6,4.5)	200	4	5
	6 months	3.4	(1.5,6.5)	193	7	6
	1 years	3.8	(1.8,7.1)	172	8	9
	2 years	5.0	(2.6,8.7)	130	10	12
	3 years	5.0	(2.6,8.7)	93	10	12
-	4 years	5.0	(2.6,8.7)	70	10	12
	5 years	5.0	(2.6,8.7)	36	10	13

Table 22: Graft failure by organ and centre

Organ - Centre	Time	CumInc (%)	95% CI	No at risk	Cum. GF	Cum. deaths
-	6 years	5.0	(2.6,8.7)	1	10	13
-	Overall	5.0	(2.6,8.7)	0	10	13
Lung-USZ	Baseline	0.0	-	162	0	0
-	1 month	1.9	(0.5,4.9)	153	3	6
-	6 months	2.5	(0.8,5.8)	140	4	14
-	1 years	5.8	(2.8,10.2)	122	9	17
-	2 years	6.6	(3.3,11.3)	87	10	25
-	3 years	10.3	(5.5,16.7)	50	13	33
-	4 years	12.1	(6.5,19.6)	29	14	37
-	5 years	14.2	(7.7,22.7)	12	15	38
-	6 years	-	-	0	15	38
-	Overall	14.2	(7.7,22.7)	0	15	38
Lung-CHUV	Baseline	0.0	-	100	0	0
-	1 month	1.0	(0.1,4.9)	95	1	4
-	6 months	2.0	(0.4,6.4)	91	2	6
-	1 years	4.1	(1.3,9.4)	79	4	6
-	2 years	5.3	(1.9,11.1)	56	5	10
-	3 years	8.3	(3.6,15.6)	31	7	10
-	4 years	8.3	(3.6,15.6)	20	7	11
-	5 years	15.4	(4.3,32.8)	5	8	11
-	6 years	-	-	0	8	11
-	Overall	15.4	(4.3,32.8)	0	8	11
Lung-HUG	Baseline	0.0	-	3	0	0
-	1 month	0.0	-	3	0	0
-	6 months	33.3	(0.1,83.2)	2	1	0
-	1 years	33.3	(0.1,83.2)	2	1	0
-	2 years	33.3	(0.1,83.2)	2	1	0
-	3 years	33.3	(0.1,83.2)	2	1	0
-	4 years	33.3	(0.1,83.2)	2	1	0
-	5 years	-	-	0	1	0
-	6 years	-	-	0	1	0
-	Overall	33.3	(0.1,83.2)	0	1	0
Heart-USZ	Baseline	0.0	-	61	0	0
-	1 month	1.6	(0.1,7.8)	55	1	5
-	6 months	1.6	(0.1,7.8)	48	1	10
-	1 years	1.6	(0.1,7.8)	44	1	11
-	2 years	1.6	(0.1,7.8)	33	1	11
-	3 years	1.6	(0.1,7.8)	21	1	12
-	4 years	1.6	(0.1,7.8)	18	1	12
-	5 years	1.6	(0.1,7.8)	4	1	12
-	6 years	-	-	0	1	12
-	Overall	1.6	(0.1,7.8)	0	1	12
Heart-CHUV	Baseline	0.0	-	63	0	0
-	1 month	11.1	(4.8,20.3)	53	7	3

Table 22: Graft failure by organ and centre

Organ - Centre	Time	CumInc (%)	95% CI	No at risk	Cum. GF	Cum. deaths
-	6 months	11.1	(4.8,20.3)	52	7	3
-	1 years	11.1	(4.8,20.3)	45	7	6
-	2 years	11.1	(4.8,20.3)	28	7	7
-	3 years	11.1	(4.8,20.3)	19	7	7
-	4 years	11.1	(4.8,20.3)	11	7	8
-	5 years	11.1	(4.8,20.3)	3	7	8
-	6 years	-		0	7	8
-	Overall	11.1	(4.8,20.3)	0	7	8
Heart-BE	Baseline	0.0	-	65	0	0
-	1 month	7.7	(2.8,15.8)	55	5	5
-	6 months	7.7	(2.8,15.8)	54	5	5
-	1 years	7.7	(2.8,15.8)	49	5	5
-	2 years	7.7	(2.8,15.8)	41	5	5
-	3 years	7.7	(2.8,15.8)	26	5	7
-	4 years	7.7	(2.8,15.8)	18	5	8
-	5 years	7.7	(2.8,15.8)	10	5	9
-	6 years	-		0	5	9
-	Overall	7.7	(2.8,15.8)	0	5	9
Pancreas-USZ	Baseline	0.0	-	62	0	0
-	1 month	11.3	(4.9,20.6)	54	7	1
-	6 months	14.5	(7.1,24.5)	50	9	1
-	1 years	16.4	(8.3,26.8)	44	10	1
-	2 years	18.6	(9.8,29.6)	30	11	1
-	3 years	18.6	(9.8,29.6)	22	11	2
-	4 years	18.6	(9.8,29.6)	16	11	2
-	5 years	18.6	(9.8,29.6)	5	11	2
-	6 years	-		0	11	2
-	Overall	18.6	(9.8,29.6)	0	11	2
Pancreas-HUG	Baseline	0.0	-	23	0	0
-	1 month	17.4	(5.3,35.4)	19	4	0
-	6 months	17.4	(5.3,35.4)	18	4	0
-	1 years	17.4	(5.3,35.4)	16	4	0
-	2 years	17.4	(5.3,35.4)	14	4	1
-	3 years	17.4	(5.3,35.4)	9	4	1
-	4 years	17.4	(5.3,35.4)	8	4	1
-	5 years	17.4	(5.3,35.4)	2	4	1
-	6 years	-		0	4	1
-	Overall	17.4	(5.3,35.4)	0	4	1

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
Cadaveric	Baseline	0.0	-	849	0	0
-	1 month	2.5	(1.6,3.7)	825	21	3
-	6 months	4.0	(2.8,5.5)	783	34	16
-	1 years	4.6	(3.4,6.2)	706	39	29
-	2 years	5.9	(4.4,7.6)	548	48	38
-	3 years	7.5	(5.8,9.6)	396	57	43
-	4 years	9.3	(7.2,11.8)	271	64	48
-	5 years	10.3	(7.8,13.2)	116	66	51
-	6 years		(NA,NA)	0	66	51
-	Overall	10.3	(7.8,13.2)	0	66	51
Living	Baseline	0.0	-	609	0	0
-	1 month	0.2	(0,0.9)	607	1	0
-	6 months	1.2	(0.5,2.3)	582	7	4
-	1 years	1.3	(0.6,2.5)	524	8	5
-	2 years	2.0	(1,3.4)	417	11	12
-	3 years	2.0	(1,3.4)	321	11	15
-	4 years	2.7	(1.5,4.5)	225	13	16
-	5 years	2.7	(1.5,4.5)	111	13	17
-	6 years	2.7	(1.5,4.5)	4	13	17
-	Overall	2.7	(1.5,4.5)	0	13	17

9 Cancer

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

9.1 Cancer other than skin

Table 24: Overview of patients with incident cancer

	N	%
Total number of patients	2560	
Patients with incident cancer (other than skin)	146	(5.7)
- single record (% of line 2)	121	(82.9)
- multiple records (% of line 2)	25	(17.1)
Patients with no incident cancer (other than skin)	2414	(94.3)
- with missing information (% of line 5)	2078	(86.1)

Remark: Patients listed in line 5 have not reported any incident cancer (other than skin) or they have missing information (line 6).

Table 25: Patients with incident cancer

	No. patients	No. cancer episodes	Median time*
Total	146	184	1.41
Kidney	80	97	1.59
Liver	43	57	0.91
Lung	13	18	1.52
Heart	7	8	2.11
Pancreas	1	2	0.24
Islets	2	2	2.27

* 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	184	(100)
Brain	3	(1.6)
Breast	1	(0.5)
Cervix_Uterus_Adnex	3	(1.6)
Colon	7	(3.8)
Kaposi	2	(1.1)
Kidney	13	(7.1)
Leukemia	4	(2.2)
Liver	19	(10.3)
Lung	18	(9.8)
MDS	2	(1.1)
Neuroendocrine	1	(0.5)
Prostate	15	(8.2)
PTLD	21	(11.4)
Sarkoma	3	(1.6)
Testicular cancer	1	(0.5)
Thyroid	3	(1.6)
Uro_bladder	5	(2.7)
Other	63	(34.2)

9.2 Skin cancer

Table 27: Overview of patients with incident skin cancer

	N	%
Total number of patients	2560	
Patients with incident skin cancer	191	(7.5)
- single record (% of line 2)	109	(57.1)
- multiple records (% of line 2)	82	(42.9)
Patients with no incident skin cancer	2369	(92.5)
- with missing information (% of line 5)	2306	(97.3)

Remark: Patients listed in line 5 have not reported any incident skin cancer or they have missing information (line 6).

Table 28: Patients with incident skin cancer

	No. patients	No. cancer episodes	Median time*
Total	191	372	1.73
Kidney	129	249	1.61
Liver	23	48	1.86
Lung	22	52	1.79
Heart	11	15	1.72
Pancreas	2	2	1.91
Islets	4	6	2.48

* 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 29: Overview of incident skin cancer occurrence

	N	(%)
Total	372	(100)
Basalioma	124	(33.3)
Melanoma	15	(4)
Spinalioma	143	(38.4)
Other	90	(24.2)
