Wits Donald Gordon Medical Centre Transplant Programme

Registry of Transplant Recipients Annual Report:

Paediatric Liver Transplantation

Mid-year Interim Report: June 2018

Wits University Donald Gordon Medical Centre
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Figure 1: Number of transplants per year

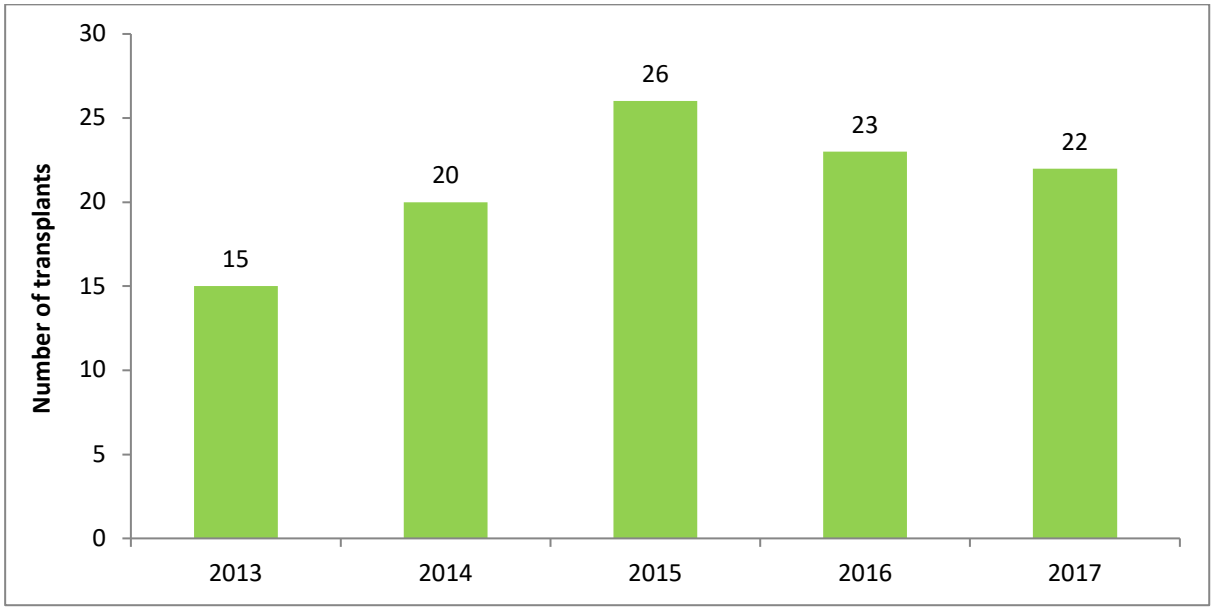


Table 1: Overview of transplants

	2013	2014	2015	2016	2017
Number of transplants	15	20	26	23	22
Donor type (n)					
Living donor transplants	8	8	13	14	8
Deceased donor transplants	7	12	13	9	14
Whole liver	*2*	*3*	*9*	*7*	*8*
Split liver	*5*	*8*	*3*	*2*	*5*
Reduced liver	*0*	*1*	*1*	*0*	*1*

Table 2: Recipient characteristics

	2013	2014	2015	2016	2017
Number of transplants	*15*	*20*	*26*	*23*	*22*
Age (%)					
<1 year	13	10	15	13	9
1-5 years	73	75	54	57	68
6-10 years	7	0	8	17	9
11-17 years	7	15	23	13	14
Gender (%)					
Male	40	35	38	26	41
Female	60	65	62	74	59
Ethnicity (%)					
Black	33	70	62	57	68
White	33	20	23	39	18
Indian	13	10	4	4	0
Mixed	20	0	12	0	14
Primary Disease (%)					
Acute liver failure	13	5	23	9	14
Choleostatic disease	53	45	58	57	64
Budd-Chiari/Veno-occlusive disease	0	25	0	4	9
Metabolic disease	13	0	12	4	5
Malignancy	0	10	0	4	0
Other	20	15	4	22	9
Transplant history (%)					
First	100	90	92	91	95
Re-transplant	0	10	8	9	5
Blood type (%)					
A	47	35	15	48	45
B	7	25	23	9	9
AB	7	0	0	9	5
O	40	40	62	35	41
Health Care Sector (%)					
Funded	87	85	92	65	41
State	13	15	8	35	59
Wait time (%)					
< 31 days	80	30	35	17	27
31-60 days	0	10	0	4	5
61-90 days	0	10	23	13	9
3-< 6 months	20	30	19	39	32
6-< 12 months	0	15	15	13	18
1-< 2 years	0	5	8	13	9

Table 3: Recipient Medical Urgency

	2013	2014	2015	2016	2017
Medical urgency (%)					
MELD/PELD ≥ 35	7	5	15	9	14
MELD/PELD 30-34	7	5	15	9	0
MELD/PELD 15-29	40	30	54	57	45
MELD/PELD < 15	47	55	8	26	41
Unknown	0	5	8	0	0

Table 4: Recipient medical characteristics (age 0-5 years)

	2013	2014	2015	2016	2017
Number of transplants	*12*	*17*	*17*	*16*	*17*
Height z-score (%)					
-3 to <-2	25	29	35	38	41
-2 to <-1	25	47	12	38	24
-1 to <0	17	6	6	6	12
0 to <1	8	6	18	13	12
1 or more	17	6	12	6	0
Unknown	8	6	18	0	12
Weight z-score (%)					
-3 to <-2	17	18	29	13	0
-2 to <-1	17	24	12	31	47
-1 to <0	17	24	12	31	29
0 to <1	25	29	29	6	6
1 or more	17	6	6	19	18
Unknown	8	0	12	0	0
Mid Upper Arm Circumference z-score (%)					
-3 to <-2	25	24	41	13	6
-2 to <-1	17	35	18	19	18
-1 to <0	33	12	6	25	29
0 to <1	0	0	0	12	6
1 or more	8	18	6	12	6
Unknown	17	12	29	19	35

Figure 2: Distribution of MUAC z-scores for recipients under the age of 5

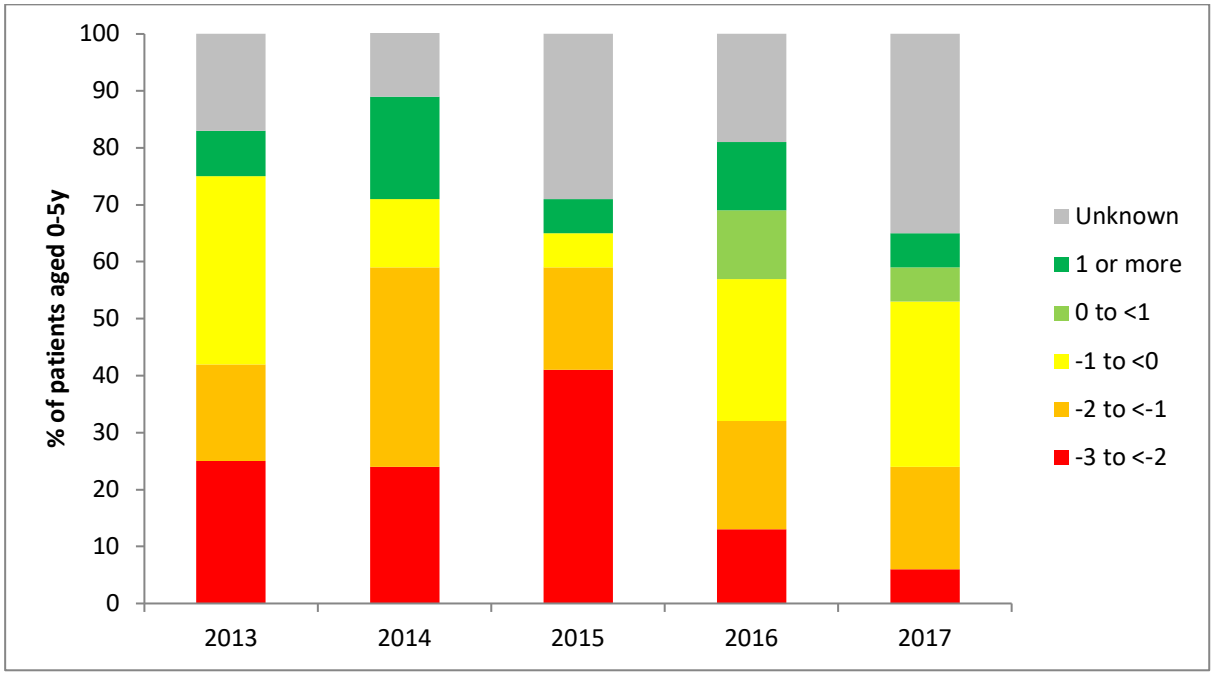


Table 5: Donor characteristics

	2013	2014	2015	2016	2017
Number of transplants	*15*	*20*	*26*	*23*	*22*
Blood type (%)					
A	20	25	8	35	36
B	7	15	19	4	9
AB	0	0	0	9	5
O	73	60	73	52	50

Table 6: Transplant characteristics

	2013	2014	2015	2016	2017
Number of transplants	*15*	*20*	*26*	*23*	*22*
Procedure Type (%)					
Liver alone	100	100	92	96	91
Liver and another organ	0	0	8	4	9
Median days in hospital after transplant (Liver alone transplants)	23 days	26 days	36 days	34 days	32 days

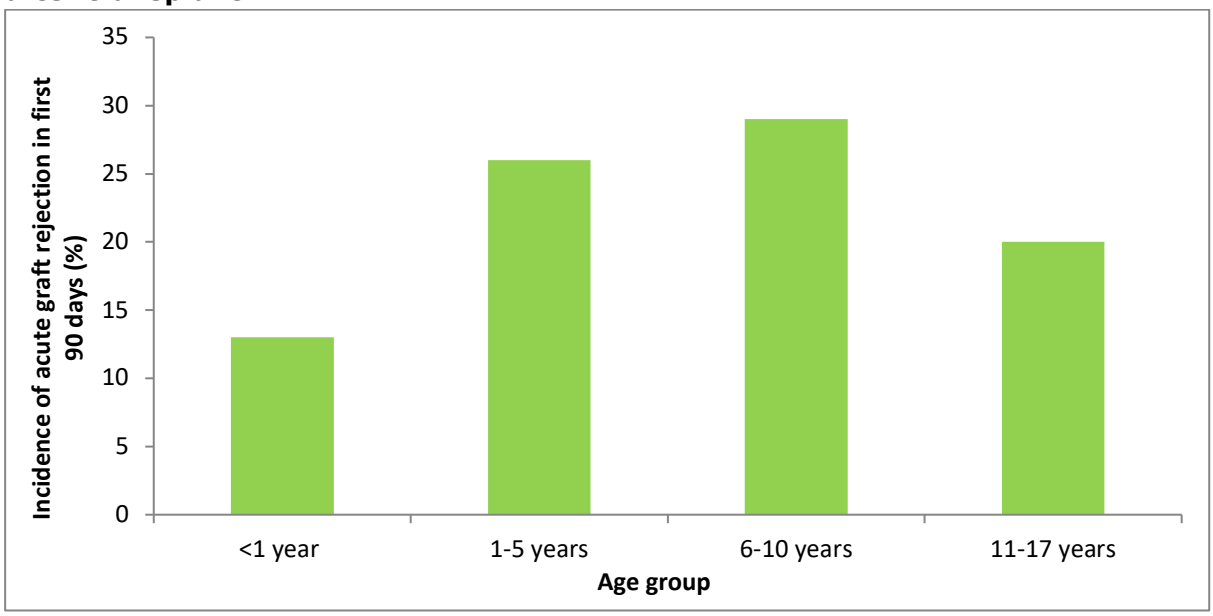
Table 7: Paediatric Liver Transplant Candidates on the Waiting List

	2017
Patients at start of year	18
Patients added during year	44
Patients removed during year	41
Patients at end of year	21
Reason for removal from waiting list	
Transferred to another centre	
Moved into adult transplant category	
Deceased donor transplant	14
Living donor transplant	8
Patient died	14
Transplanted at another centre	
Too sick for transplant	
Improved, transplant not needed	
Nutritional failure	2
Other	3

Table 8: Characteristics of Paediatric Liver Transplant Candidates on the Waiting List on 31 December

	2017
Number of patients	*21*
Age (%)	
<1 year	19
1-5 years	57
6-10 years	10
11-17 years	10
Unknown	5
Gender (%)	
Male	43
Female	52
Unknown	5
Ethnicity (%)	
Black	90
White	
Indian	5
Mixed	
Unknown	5
Diagnosis of liver failure (%)	
Acute liver failure	5
Cholestatic disease	67
Budd-Chiari/Veno-occlusive disease	5
Metabolic disease	0
Malignancy	5
Other	19
Medical urgency (%)	
MELD/PELD ≥ 35	0
MELD/PELD 30-34	0
MELD/PELD 15-29	43
MELD/PELD < 15	52
Unknown	5
Wait time (%)	
< 1 year	71
1-< 2 years	19
2-< 3 years	5
3-< 4 years	5
4-< 5 years	0
≥ 5 years	0

Figure 3: Incidence of biopsy-proven acute graft rejection in the first 90 days after transplant



These data are based on transplants carried out in the 2.5 years prior to the last 12 months of follow-up, i.e. patients transplanted between 1 Jan 2015 and 30 Jun 2017.

Table 9: Survival

	Patient		Graft	
	Unadjusted	**Risk-adjusted**	**Unadjusted**	**Risk-adjusted**
1-month survival				
Number of transplants		*56*		*56*
Survival estimate (%) (95% CI)	89 (78-95)	93 (83-99)	86 (73-93)	89 (76-97)
1-year survival				
Number of transplants		*56*		*56*
Survival estimate (%) (95% CI)	80 (67-89)	86 (72-96)	79 (65-87)	86 (70-94)
3-year survival:				
Number of transplants		*37*		*37*
Survival estimate (%) (95% CI)	70 (53-82)	74 (56-86)	65 (47-78)	65 (47-78)

All survival estimates are for first transplants and all causes of end-stage liver disease. One-month and one-year patient and graft survival estimates are based on transplants carried out in the 2.5 years prior to the last 12 months of follow-up, i.e. patients transplanted between 1 Jan 2015 and 30 Jun 2017. Three-year patient and graft survival estimates are based on transplants carried out in the 2.5 years prior to the last 3 years of follow-up, i.e. patients transplanted between 1 Jan 2013 and 30 Jun 2015. Risk-adjusted estimates are based on the observed vs estimated deaths (or graft failures) using a model based on transplant number, chronic vs acute liver failure, recipient age and gender.

Figure 4[a]: 1-year patient survival by age category

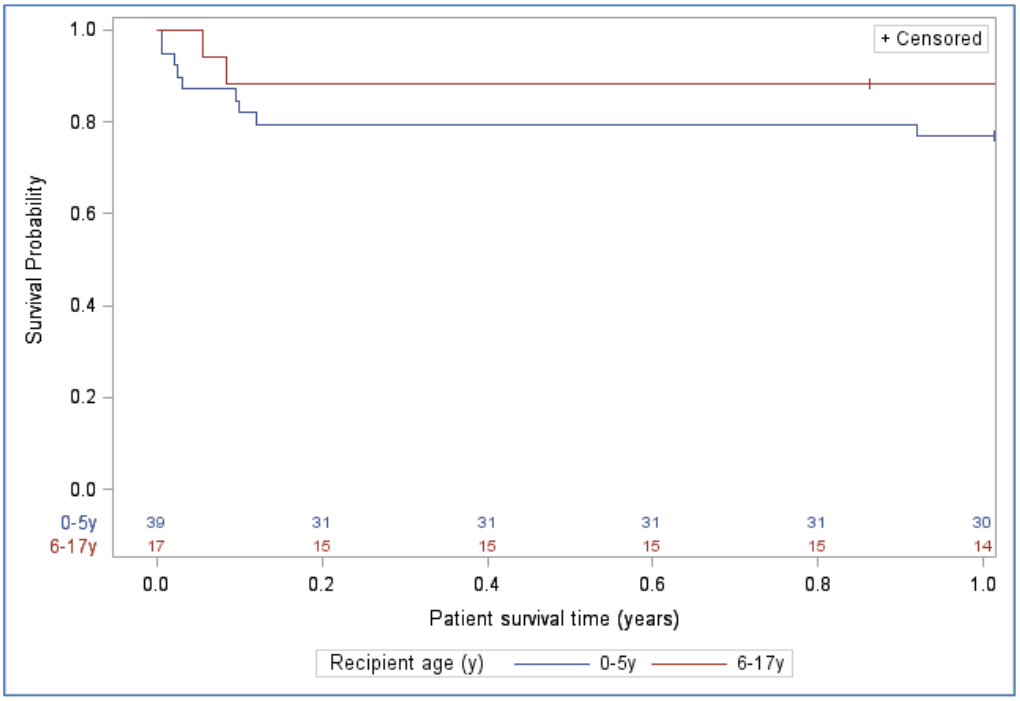
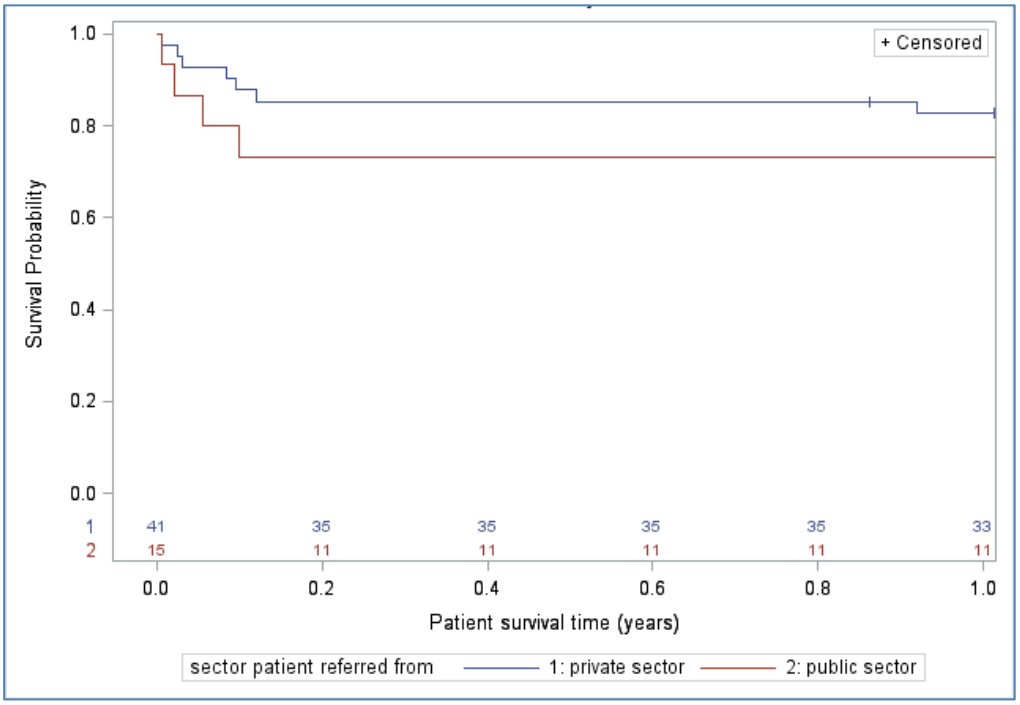


Figure 5[a]: 1-year patient survival by health care sector

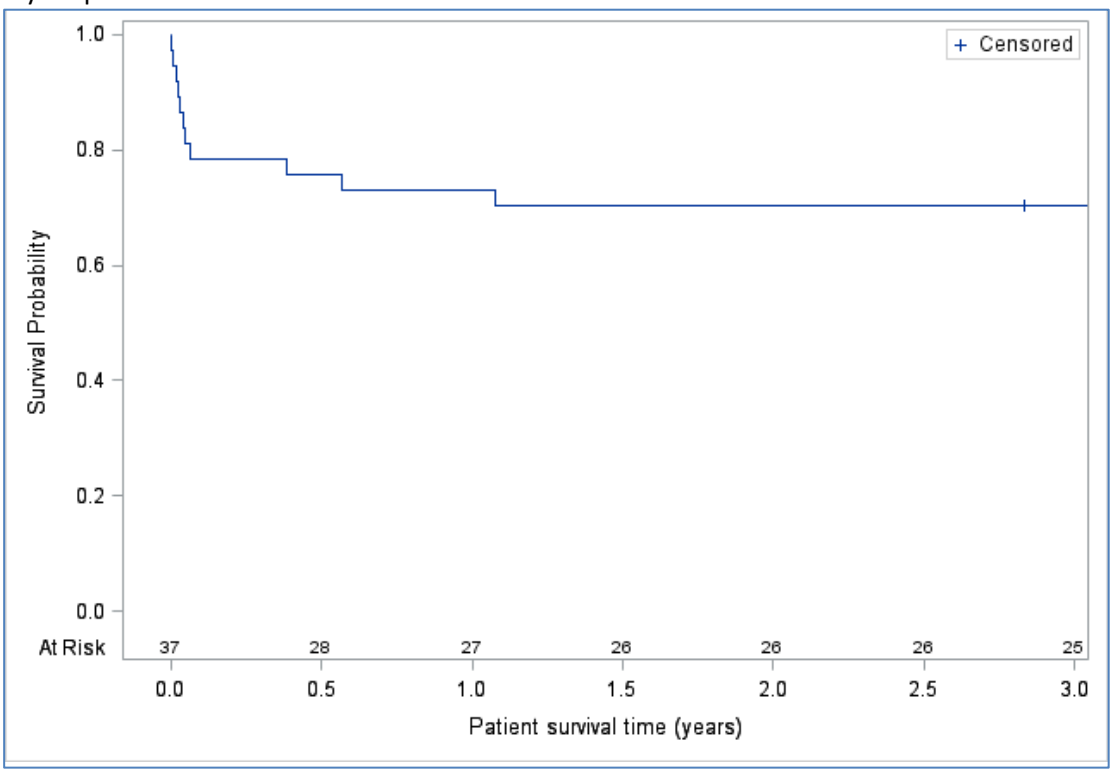
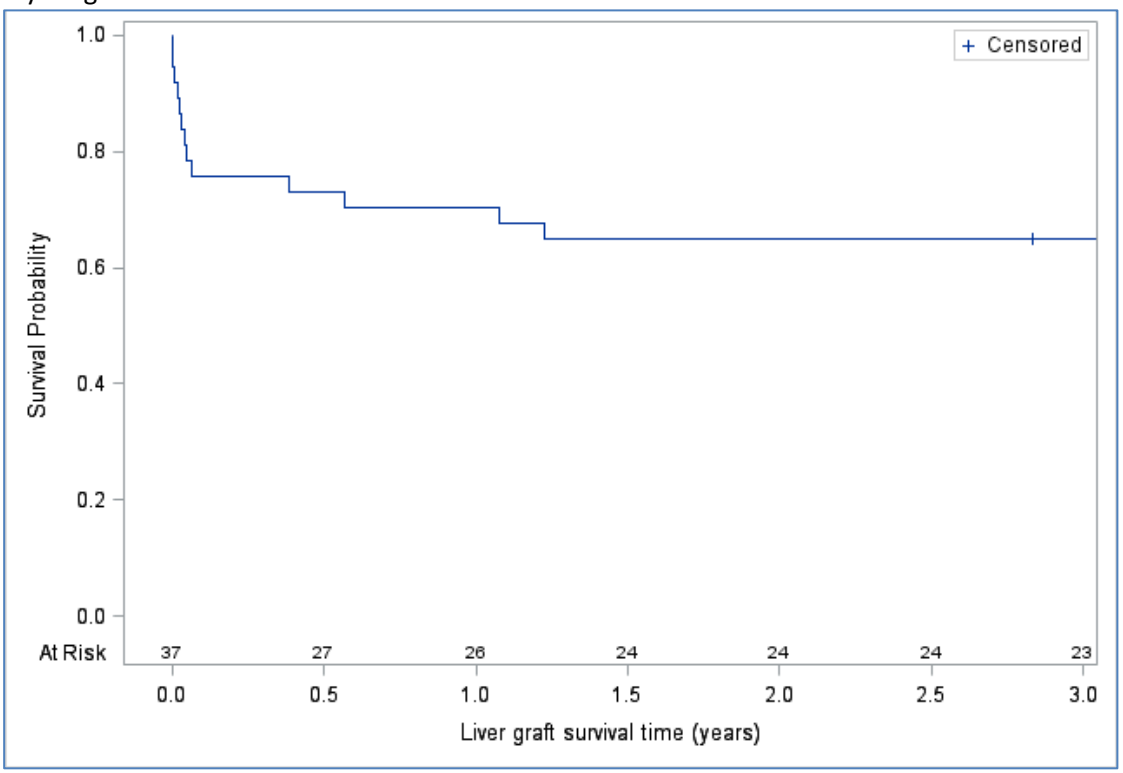


[a]These data are based on transplants carried out in the 2.5 years prior to the last 12 months of follow-up, i.e. patients transplanted between 1 Jan 2015 and 30 Jun 2017. Values above the x-axis show the number of patients at risk.

[a]Note that the difference in survival between the two groups is not statistically significant.

Appendix:

3-year patient survival:



3-year graft survival: