



UNIVERSITY OF THE
WITWATERSRAND,
JOHANNESBURG

**Registry of Transplant Recipients Annual Report:
Adult Liver Transplantation**

December 2022

**with contributions from the
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Unit and Wits Donald Gordon Medical Centre Transplant Unit**

Contents

Figure 1: Number of transplants per year.....	3
Table 1: Overview of transplants.....	3
Table 2: Recipient characteristics.....	4
Table 3: Donor characteristics.....	5
Table 4: Donor-Recipient serology matching (2022).....	6
Table 5: Transplant characteristics.....	6
Figure 2: Incidence of biopsy-proven acute graft rejection in the first 90 days after transplant.....	7
Table 6: Survival.....	8
Table 7: 1-year survival by selected groups.....	8
Table 8: Characteristics of adult liver transplant candidates on the waiting list on 31 December.....	9
Table 9: Outcome 1 year after listing, of liver transplant candidates.....	10

Figure 1: Number of transplants per year

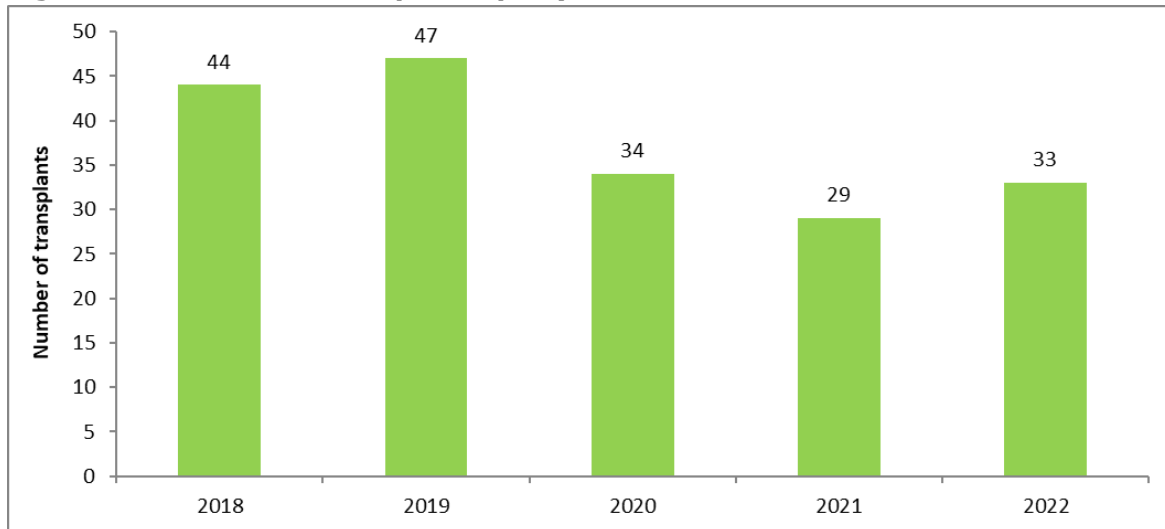


Table 1: Overview of transplants

	2018	2019	2020	2021	2022
Number of transplants	44	47	34	29	33
Donor type (n)					
Living donor transplants	0	1	7	12	7
Deceased donor transplants	44	46	27	17	26
<i>Whole liver</i>	43	44	26	17	25
<i>Split liver</i>	1	2	1	0	1

Table 2: Recipient characteristics

	2018	2019	2020	2021	2022
<i>Number of transplants</i>	44	47	34	29	33
Age (%)					
18-34 years	16	28	21	24	6
35-49 years	21	19	35	28	24
50-64 years	52	42	32	24	55
65 years or older	11	11	12	24	15
Gender (%)					
Male	57	45	59	59	42
Female	43	55	41	41	58
Ethnicity (%)					
Black	14	23	18	24	21
White	73	55	67	62	58
Indian	9	20	6	11	21
Mixed	4	2	9	3	0
Unknown	0	0	0	0	0
Primary Disease (%)					
Acute liver failure	16	13	9	10	9
ASH/NASH	25	21	15	24	39
Cholestatic	25	36	50	41	40
Hepatitis B	5	0	3	0	3
Hepatitis C	0	5	3	4	0
Metabolic	4	4	0	4	0
Malignancy	9	6	11	14	9
Other	16	15	9	3	0
Transplant history (%)					
First	98	93	97	100	88
Re-transplant	2	9	3	0	12
Blood type (%)					
A	32	26	23	28	46
B	25	15	21	17	12
AB	7	4	9	0	6
O	36	55	47	55	36
Wait time (%)					
< 31 days	45	45	35	34	34
31-60 days	21	21	12	7	12
61-90 days	11	6	3	10	12
3-< 6 months	9	13	29	21	18
6-< 12 months	7	4	18	7	15
1-< 2 years	7	11	3	21	9

Table 2: Recipient Characteristics (continued)

	2018	2019	2020	2021	2022
BMI (%)					
< 18.5 kg/m ²	0	0	0	4	6
18.5-< 25 kg/m ²	36	43	47	41	30
25-< 28 kg/m ²	21	23	23	17	34
28-< 30 kg/m ²	9	13	15	17	9
30-< 35 kg/m ²	25	13	6	21	18
>= 35 kg/m ²	9	8	9	0	3
Medical urgency (%)					
Status 1	16	13	9	10	10
MELD ≥ 35	0	0	3	0	0
MELD 30-34	2	2	3	0	0
MELD 15-29	36	53	38	55	45
MELD < 15	45	32	44	34	45
Unknown	0	0	3	0	0
Diabetes (%)	27	37	21	24	24

Table 3: Donor characteristics

	2018	2019	2020	2021	2022
<i>Number of transplants</i>	44	47	34	29	33
Blood type (%)					
A	36	34	35	14	42
B	27	13	15	17	12
AB	5	6	3	3	9
O	32	47	47	66	37
Donor Risk Index (cadaver donors) (%)					
<=1.00	0	0	0	0	0
1.01-1.40	23	28	26	18	12
1.41-1.60	20	11	18	18	4
1.61-1.80	14	22	15	12	11
1.81-2.00	14	11	11	23	23
>2.00	27	22	11	23	38
Unknown	2	6	19	6	12
Donor-recipient blood group compatibility (%)					
ABO incompatibility-major ¹	16	23	9	10	15

¹ A or B or AB to O; AB to A or B; A to B; B to A

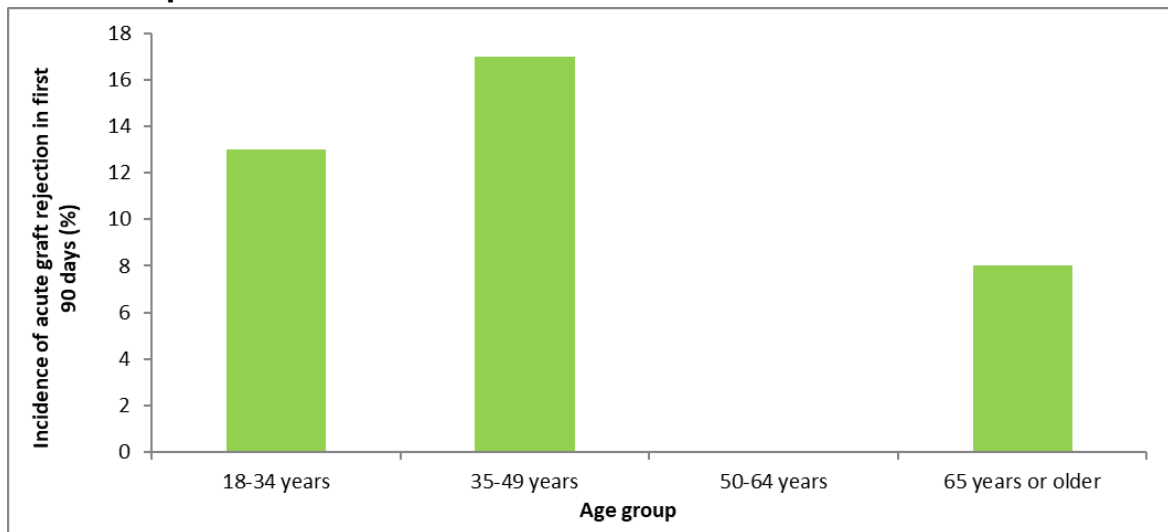
Table 4: Donor-Recipient serology matching (2022)

Donor / Recipient	CMV	Hep B core	Hep B surf. ant.	Hep C	HIV
D- / R-	-	76	64	97	91
D- / R+	18	6	12	-	-
D- / R unknown	6	-	-	-	-
D+ / R-	9	6	12	-	-
D+ / R+	52	-	-	-	-
D+ / R unknown	-	3	-	-	-
D unknown / R-	-	6	6	3	9
D unknown / R+	12	3	6	-	-
D unknown / R unknown	3	-	-	-	-

Table 5: Transplant characteristics

	2018	2019	2020	2021	2022
<i>Number of transplants</i>	44	47	34	29	33
Procedure Type (%)					
Liver alone	100	98	97	97	97
Liver and another organ	-	2	3	3	3
Median days in hospital after transplant (Liver alone transplants; excl. deaths pre discharge)	13	16	12	16	17

Figure 2: Incidence of biopsy-proven acute graft rejection in the first 90 days after transplant



These data are based on funded healthcare sector transplants carried out in the 2.5 years prior to the last 12 months of follow-up, i.e. patients transplanted between 1 Jul 2019 and 31 Dec 2021.

Table 6: Survival

	Patient		Graft	
	Unadjusted	Risk-adjusted	Unadjusted	Risk-adjusted
1-month survival				
<i>Number of transplants</i>		82		82
Survival estimate (%) (95% CI)	89 (80-94)	89 (80-94)	89 (80-94)	88 (79-83)
1-year survival				
<i>Number of transplants</i>		82		82
Survival estimate (%) (95% CI)	75 (65-83)	77 (67-86)	75 (65-83)	79 (68-83)
3-year survival:				
<i>Number of transplants</i>		108		108
Survival estimate (%) (95% CI)	74 (65-81)	70 (61-77)	73 (64-80)	70 (62-77)

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 Jul 2019 and 31 Dec 2021. 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 Jul 2017 and 31 Dec 2019. 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. The 3-year survival curves are shown in Appendix A.

Table 7: 1-year survival by selected groups

	Survival (%) (95%CI)	
	Patient	Graft
Age:		
18-34y	74 (48-88)	74 (48-88)
35-49y	83 (62-93)	83 (62-93)
50-64y	77 (56-89)	77 (56-89)
65y+	57 (25-80)	57 (25-80)
Acute rejection in the first 90 days:		
No	73 (62-82)	73 (62-82)
Yes	Not estimable (no deaths)	

All survival estimates are for are for first transplants and all causes of end-stage liver disease, 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 Jul 2019 and 31 Dec 2021. There were no statistically significant differences in survival between any of the groups. The survival curves are shown in Appendix B.

Table 8: Characteristics of adult liver transplant candidates on the waiting list on 31 December

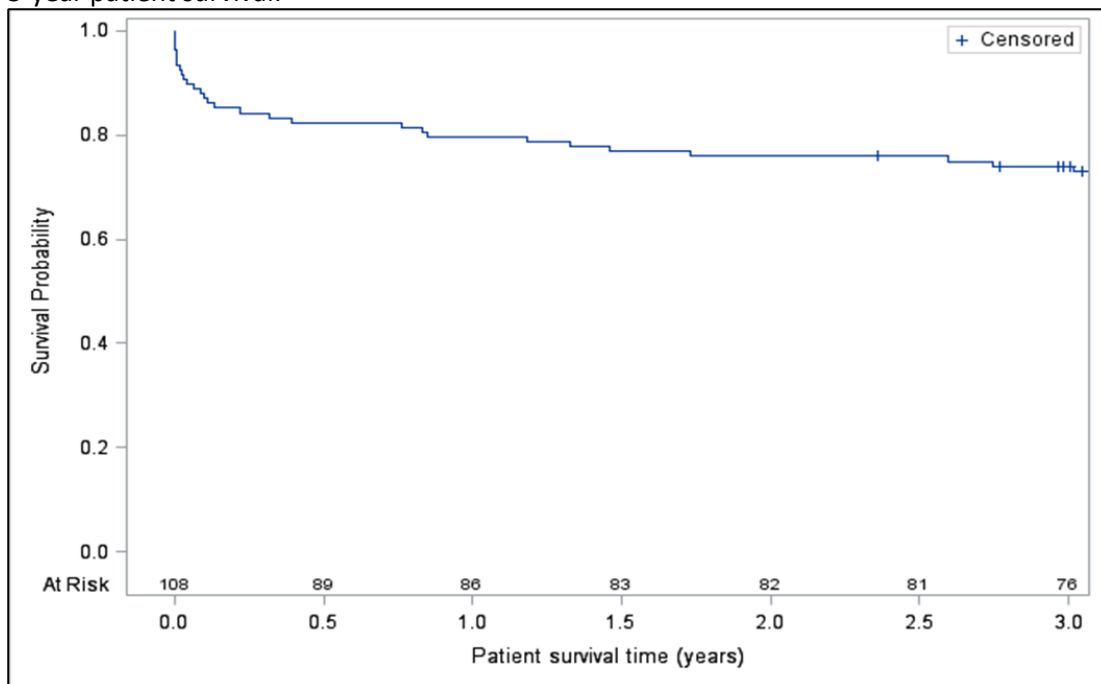
	2018	2019	2020	2021	2022
<i>Number of patients</i>	27	32	28	33	50
Age (%)					
18-34 years	15	28	11	21	16
35-49 years	33	28	25	30	28
50-64 years	41	38	43	43	46
65 years or older	11	6	21	6	10
Gender (%)					
Male	48	59	43	48	44
Female	52	41	57	52	56
Ethnicity (%)					
Black	33	28	36	39	36
White	45	47	50	46	52
Indian	22	13	14	12	8
Mixed	-	9	-	3	2
Unknown	-	3	-	-	2
Diagnosis of liver failure (%)					
Acute liver failure	4	-	7	6	4
ASH/NASH	33	22	39	36	36
Cholestatic	41	50	39	40	34
Hepatitis B	-	3	-	3	2
Hepatitis C	4	-	-	-	-
Metabolic	3	3	4	3	-
Malignancy	4	6	4	6	4
Other	11	13	7	6	18
Unknown chronic	-	3	-	-	2
Medical urgency (%)					
Status 1	nd	19	0	0	0
MELD ≥ 35	-	-	-	-	-
MELD 30-34	-	-	-	-	-
MELD 15-29	-	-	-	-	-
MELD < 15	100	81	100	100	100
Wait time (%)					
< 1 year	67	72	57	55	52
1-< 2 years	26	19	21	27	22
2-< 3 years	7	6	18	12	16
3-< 4 years	-	3	4	6	10
4-< 5 years	-	-	-	-	-
≥ 5 years	-	-	-	-	-

Table 9: Outcome 1 year after listing, of liver transplant candidates

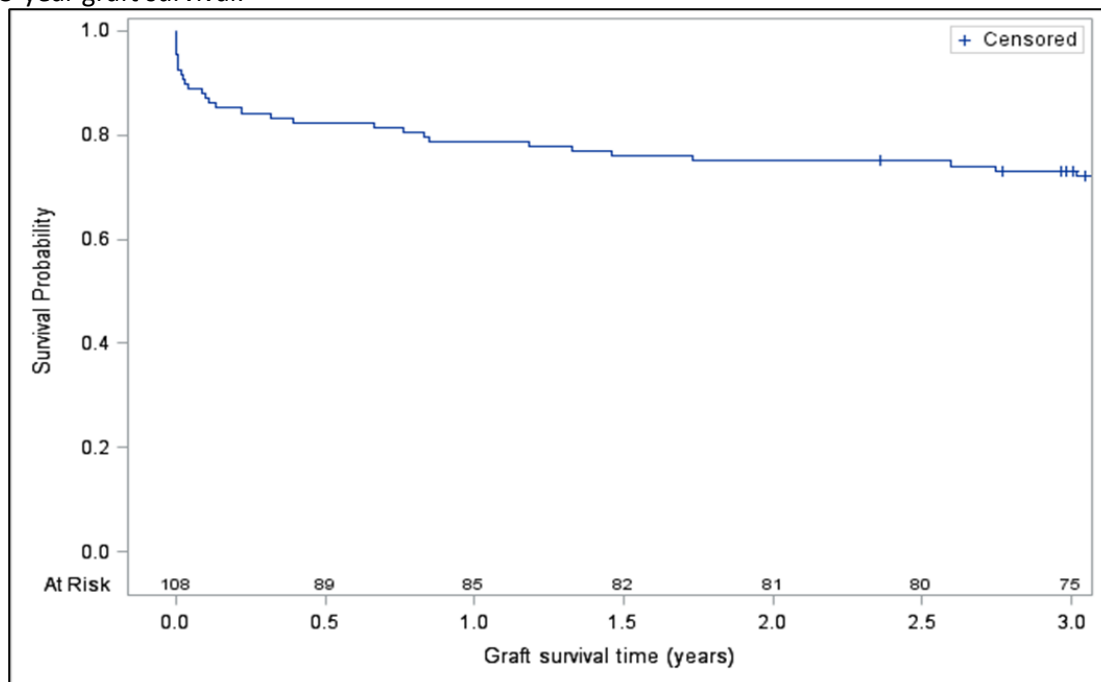
	2017	2018	2019	2020	2021
Patients listed during year	70	61	66	51	46
Status at 1 year after listing (%)					
Transplanted	66	62	73	49	65
Patient died	10	13	11	25	9
Removed from list (for reasons other than death or transplant)	11	10	8	2	0
Still waiting for transplant	13	15	9	24	26

Appendix A:

3-year patient survival:

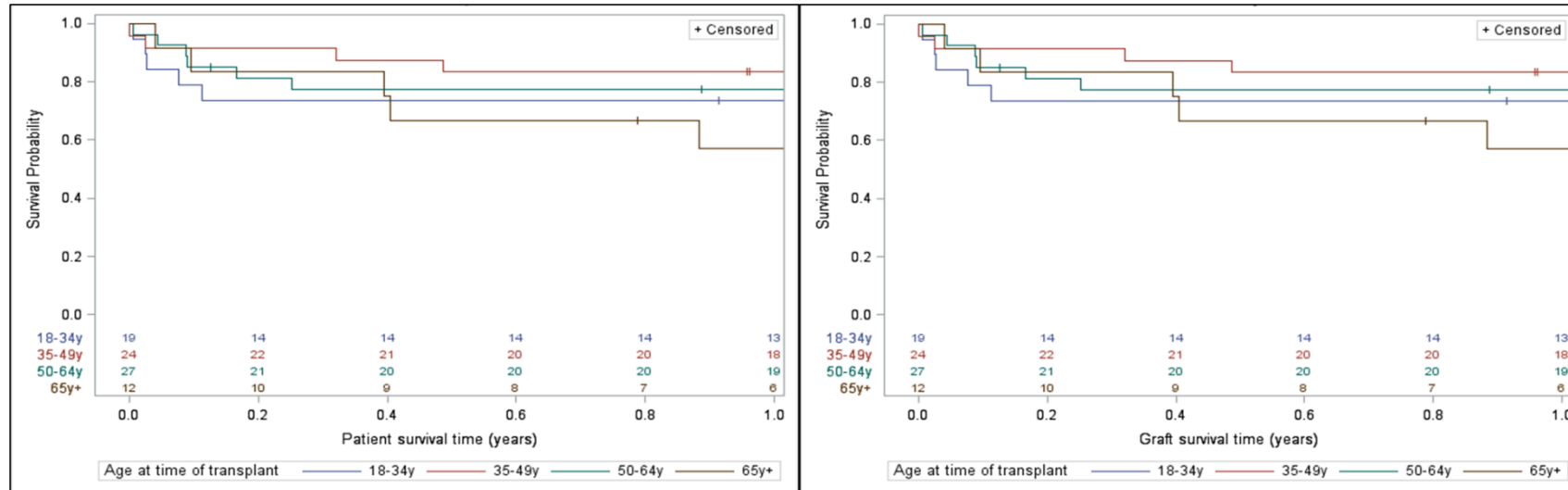


3-year graft survival:



Appendix B:

1-year patient and graft survival by age group:



1-year patient and graft survival by acute rejection in the first 90 days:

