



SECTION 6

Deceased Donor Liver and Intestine Donation

SUMMARY

This section summarises liver donation activity from deceased donors in 2019, compared with previous years. The rate of liver transplant procedures in 2019 was 12.1 pmp in Australia and 11.4 pmp in New Zealand.

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Suggested Citation

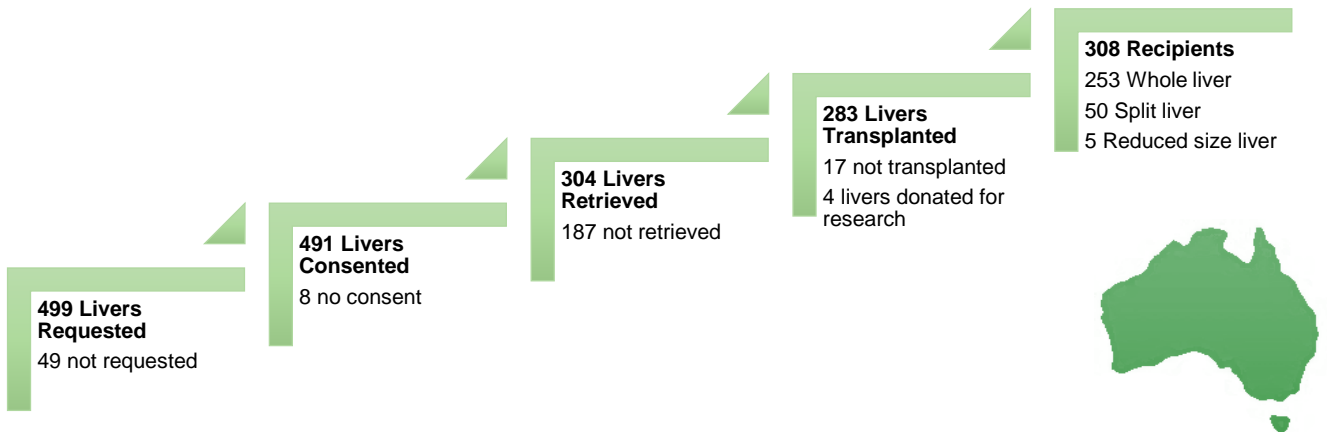
ANZOD Registry. 2020 Annual Report, Section 6: Deceased Donor Liver and Intestine Donation. Australia and New Zealand Dialysis and Transplant Registry, Adelaide, Australia. 2020. Available at: www.anzdata.org.au

Liver Donation

Of the 548 deceased organ donors in Australia in 2019, 304 (55.5%) had a liver retrieved. From these liver donors, there were 308 recipients in Australia. 10 recipients received a combined liver/kidney transplant, 1 received a combined liver/double lung, 1 received a double lung/heart/liver and 1 received a combined liver/pancreas/intestine. 50 partial liver transplants were performed in Australia using 25 livers and the 'split' liver technique (transplanting one liver into two recipients), and 5 recipients received a 'reduced size' liver.

The rate of liver transplants in Australia for 2019 was 12.1 per million population (pmp). Figure 6.1 below shows the outcomes of requests for liver donation in Australia and New Zealand.

Figure 6.1.1 Outcomes of Request for Liver Donation from Actual Donors in Australia 2019



In New Zealand there were 54 livers retrieved, and 52 utilised for transplantation into 56 liver recipients. Of these, there were 8 split liver transplants performed and 1 reduced size livers transplanted. There were no multiple organ liver transplants in New Zealand.

In 2019 in New Zealand there was a rate of 11.4 liver transplant procedures pmp.

Figure 6.1.2 Outcomes of Request for Liver Donation from Actual Donors in New Zealand 2019

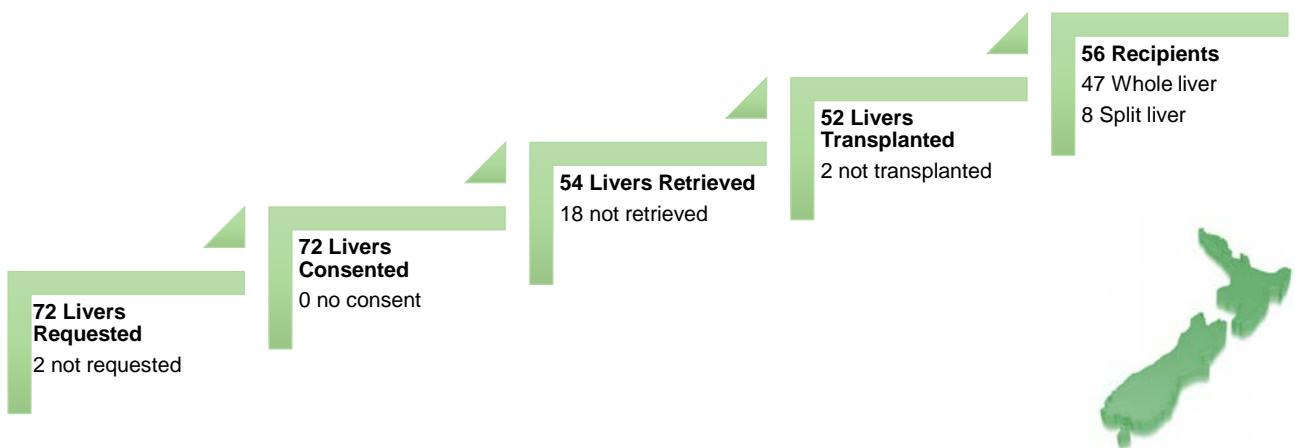


Figure 6.2 below show the number of recipients of liver transplants by donation pathway in Australia and New Zealand from 1998 to 2019.

Figure 6.2.1 - Recipients of Liver Transplantation by Donation Pathway Australia 1998-2019

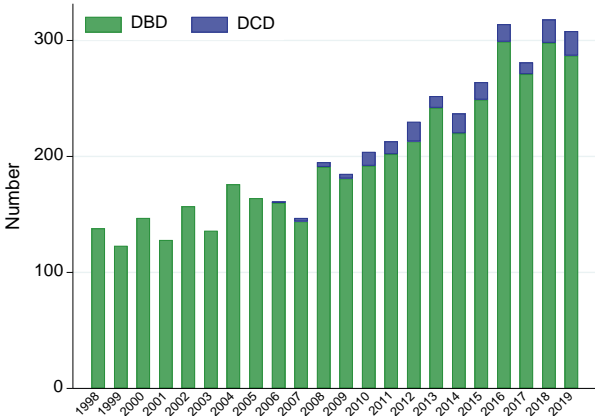


Figure 6.2.2 - Recipients of Liver Transplantation by Donation Pathway New Zealand 1998-2019

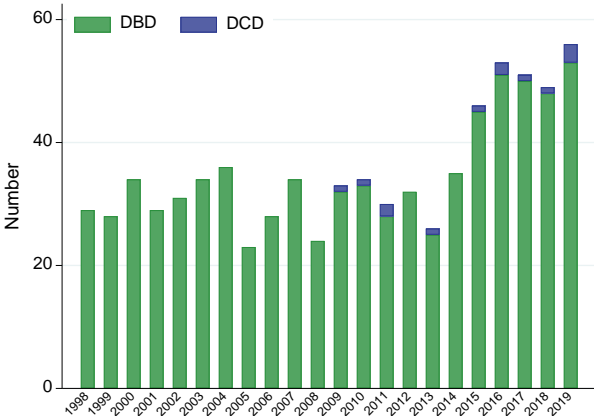
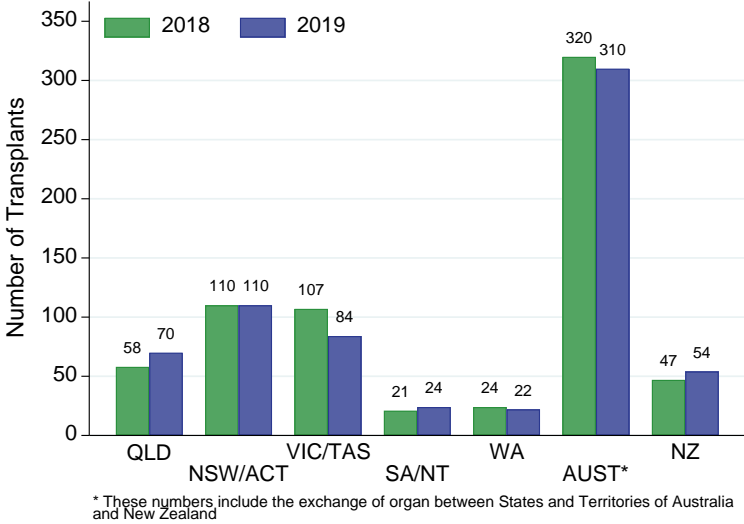


Figure 6.3 compares the number of deceased donor liver recipients in Australia and New Zealand for 2018 and 2019.

Figure 6.3 - Deceased Donor Liver Transplant Recipients* by Transplant Region, Australia and New Zealand, 2018-2019



Age of Liver Donors

The age distribution of donors providing retrieved livers for Australia and New Zealand is shown below in Figure 6.4.

Figure 6.4.1 - Age of Donors Providing Retrieved Livers Australia 2019

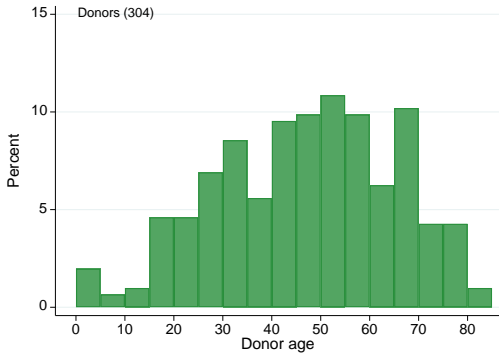
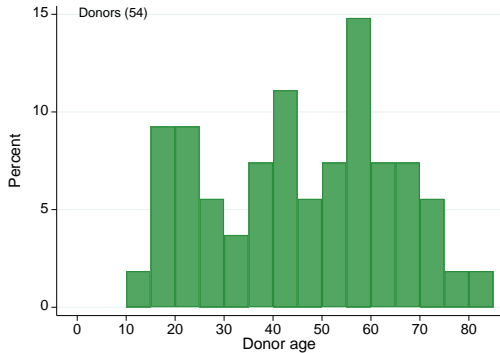


Figure 6.4.2 - Age of Donors Providing Retrieved Livers New Zealand 2019



Donor Liver Function

Table 6.1 shows the number of donors in Australia and New Zealand whose liver function was above the normal range prior to donation.

Table 6.1 Number of Donors with Liver Function Tests above Normal in Australia and New Zealand 2019

Liver Function Tests	Australia		New Zealand	
	Donors with value recorded*	Above Normal	Donors with value recorded*	Above Normal
Alanine Transaminase ALT > 40 µ/L	302	151	52	21
Aspartate Transaminase AST > µ/L	284	169	39	19
Gamma Glutamyl Transferase GGT > 60 µ/L	302	101	51	5
Alkaline Phosphatase > 116 µ/L	302	46	54	4
Total Bilirubin > 20 µmol/L	302	29	54	14
All 5 tests completed	284	.	34	.
At least 1 test completed	302	.	54	.

*Not all donors have all tests reported

Livers Not Retrieved

Table 6.2 provides a breakdown of the reasons why livers were not retrieved in Australia and New Zealand.

Table 6.2 Reasons for Liver Not Retrieved in Australia and New Zealand 2019

Reason	Australia	New Zealand
Logistics	1	1
Not Medically Suitable	112	16
Surgically Unsuitable	0	0
Trauma to Organ	4	0
No Suitable Recipients	22	0
Age of Donor	30	0
DCD Donor	18	1
Consent Withdrawn	0	0
Others	0	0
Total	187	18

Livers Retrieved and Not Utilised for Transplantation

Figure 6.5 shows the non-utilisation rate of retrieved livers in Australia and New Zealand— the proportion of livers that were retrieved for the purpose of solid organ transplantation, but not ultimately transplanted into a recipient (either due to an absence of suitable recipients, or the liver being found to be medically or surgically unsuitable after retrieval). Note: Organ donation for the purpose of research is excluded when calculating a specific organ's non-utilisation rate for transplantation.

Figure 6.5.1 - Non-utilisation Rate of Retrieved Livers - Australia 2015-2019

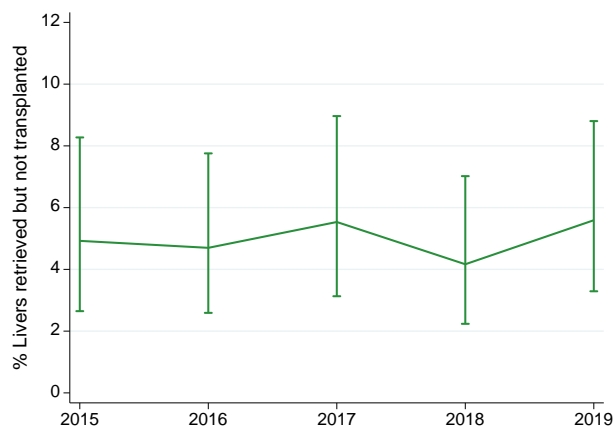


Figure 6.5.2 - Non-utilisation Rate of Retrieved Livers - New Zealand 2015-2019

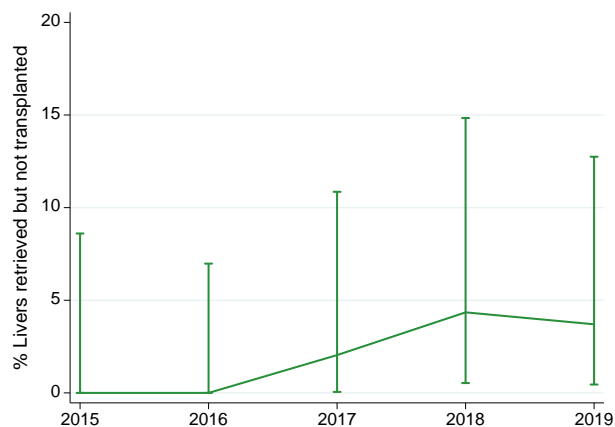


Table 6.3 tabulates the reasons livers were not used after retrieval for the purpose of transplantation in Australia and New Zealand since 2015.

Of the reduced size liver transplants since 2015, 10 were orphaned split liver procedures. This was due to the other split liver having no suitable recipients (5), not being medically suitable (4) or not being surgically suitable (1).

Table 6.3 Reasons Liver Retrieved & Not Utilised for Transplantation, Australia and New Zealand 2015 – 2019

Reason	2015	2016	2017	2018	2019
Logistics	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Not Medically Suitable	13 (0)	12 (0)	13 (1)	11 (1)	14 (2)
Not Surgically Suitable	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Trauma to Organ	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
No Suitable Recipients	0 (0)	0 (0)	0 (0)	1 (0)	0 (0)
Recipient Issue	0 (0)	2 (0)	2 (0)	1 (1)	3 (0)
Other	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Total	13 (0)	14 (0)	15 (1)	13 (2)	17 (2)

Outcome of Liver Donation

The outcome of liver donation activity in Australia and New Zealand through the donation pathway is shown below in table 6.4.

Table 6.4.1 Outcome of Request for Liver Donation in Australia 2015-2019

Outcome of Request	2015	2016	2017	2018	2019
Total Donors	435	503	510	554	548
Liver Requested for Donation	389	464	459	497	499
Liver Not Requested for Donation	46	39	51	57	49
Liver Consent Given	377	456	453	493	491
Liver Consent Not Given	12	8	6	4	8
Liver Retrieved	264	298	271	312	304
Liver Not Retrieved	113	158	182	181	187
Total Livers Transplanted	247	283	256	297	283
Whole Liver Not Used	13	14	15	13	17
Intended Split Liver (L) Not Used	0	0	1	2	0
Intended Split Liver (R) Not Used	0	2	2	1	1
Liver Retrieved for Research and Not for Transplantation	4	1	0	2	4
Recipients Transplanted	264	314	281	318	308
Whole Liver Transplants	229	246	227	270	253
Split Liver Transplants	34	62	50	42	50
Reduced Size Liver Transplants	1	6	4	6	5
Liver Non-Utilisation Rate	4.9%	4.7%	5.5%	4.2%	5.6%
Liver Utilisation Rate	93.6%	95.0%	94.5%	95.2%	93.1%

Table 6.4.2 Outcome of Request for Liver Donation in New Zealand 2015-2019

Outcome of Request	2015	2016	2017	2018	2019
Total Donors	53	61	73	62	74
Liver Requested for Donation	50	60	69	61	72
Liver Not Requested for Donation	3	1	4	1	2
Liver Consent Given	50	60	69	61	72
Liver Consent Not Given	0	0	0	0	0
Liver Retrieved	41	51	49	46	54
Liver Not Retrieved	9	9	20	15	18
Total Livers Transplanted	41	51	48	44	52
Whole Liver Not Used	0	0	1	2	2
Intended Split Liver (L) Not Used	0	0	0	0	0
Intended Split Liver (R) Not Used	0	0	1	0	0
Recipients Transplanted	46	53	51	49	56
Whole Liver Transplants	36	49	42	39	47
Split Liver Transplants	10	4	6	10	8
Reduced Size Liver Transplants	0	0	3	0	1
Liver Non-Utilisation Rate	0.0%	0.0%	2.0%	4.3%	3.7%
Liver Utilisation Rate	100.0%	100.0%	98.0%	95.7%	96.3%

Intestine Donation

Patients with irreversible intestinal failure who are developing severe complications from parenteral nutrition can benefit from intestinal transplantation. Only 7 intestinal transplants have been performed in Australia. Figure 6.6 shows intestine transplants in Australia since 2015, In 2019 there has not been any intestine retrievals utilised for transplantation.

Figure 6.6 - Intestine Transplants in Australia 2015-2019

