



## SECTION 6

# Deceased Donor Liver Donation

This section summarises liver donation activity from deceased donors in 2017, compared with previous years. The rate of liver transplant procedures in 2017, was 11.4 pmp in Australia and 10.6 pmp in New Zealand.

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## Suggested citation

ANZOD Registry. 2018 Annual Report, Section 6: Deceased Donor Liver and Intestine Donation. Australia and New Zealand Dialysis and Transplant Registry, Adelaide, Australia. 2018. Available at: <http://www.anzdata.org.au>

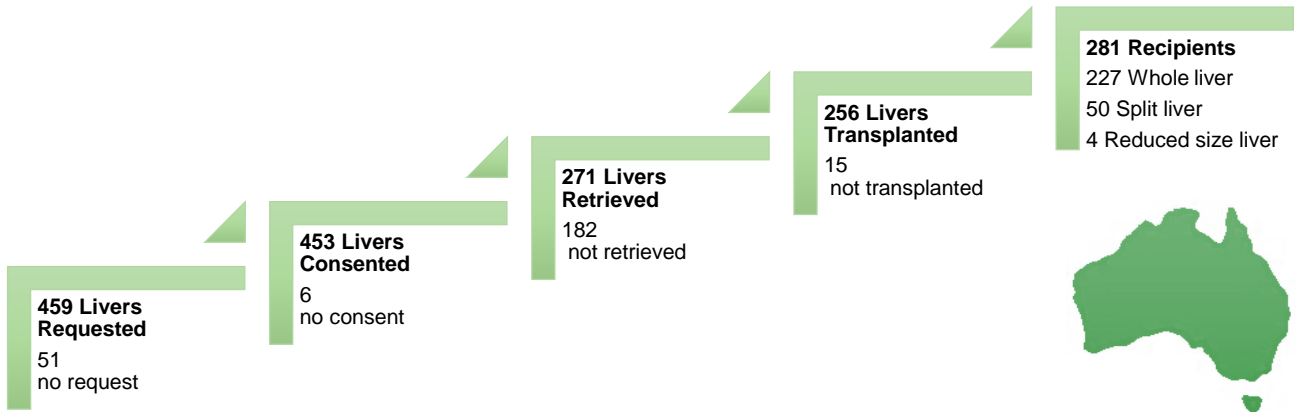
## Liver Donation

Of the 510 deceased organ donors in Australia in 2017, 271 (53.1%) had liver retrieved. From these liver donors, there were 281 recipients in Australia. Eight recipients received a combined liver/kidney transplant, two received a combined liver/double lung and one a liver/kidney/pancreas/intestine transplant.

Fifty partial liver transplants were performed in Australia using 25 livers and the “split” liver technique (transplanting one liver into two recipients) and four recipients received a ‘reduced size’ liver.

The rate of liver transplants in Australia for 2017 was 11.4 per million population (pmp). Figure 6.1.1 shows the outcomes of requests for liver donation in Australia.

**Figure 6.1.1 Outcomes of Request for Liver Donation in Australia 2017**



In New Zealand there were 49 livers retrieved, and 48 utilised for transplantation into 51 liver recipients. Of these, there were six split liver transplants performed and 3 reduced size livers transplanted. One recipient received a combined liver/kidney transplant.

In 2017 in New Zealand, there was a rate of 10.6 liver transplant procedures per million of population (pmp). Figure 6.1.2 shows the outcomes of requests for liver donation in New Zealand.

**Figure 6.1.2 Outcomes of Request for Liver Donation in New Zealand 2017**

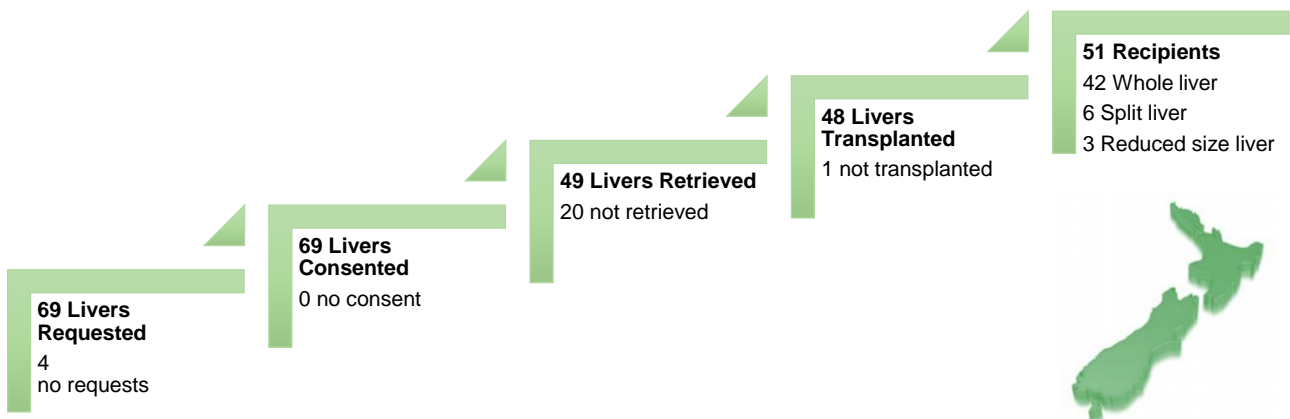
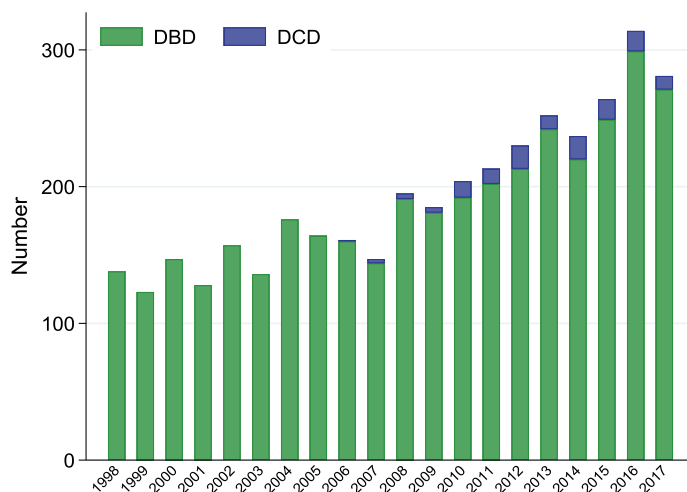
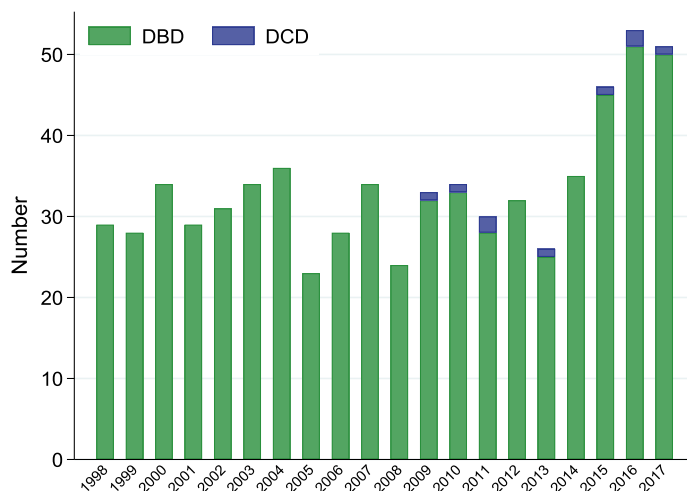


Figure 6.2 shows the number of recipients of liver transplants by donation pathway in Australia and New Zealand from 1998 to 2017. Figure 6.3 compares the number of deceased donor liver recipients by transplant region for 2016 and 2017.

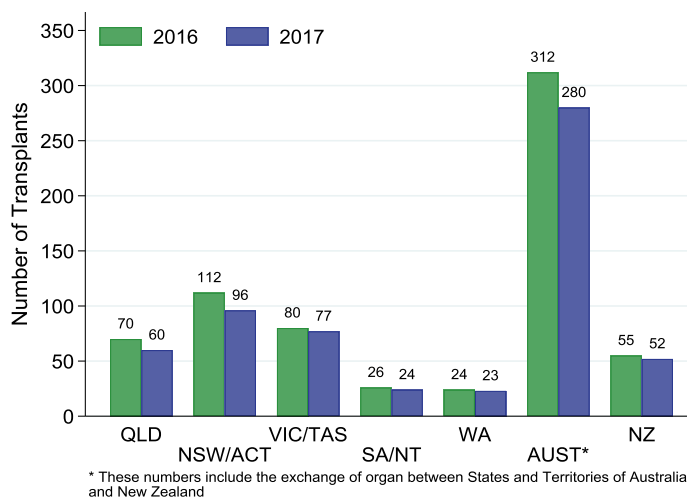
**Figure 6.2.1 - Recipients of Liver Transplantation by Donation Pathway Australia 1998-2017**



**Figure 6.2.2 - Recipients of Liver Transplantation by Donation Pathway New Zealand 1998-2017**



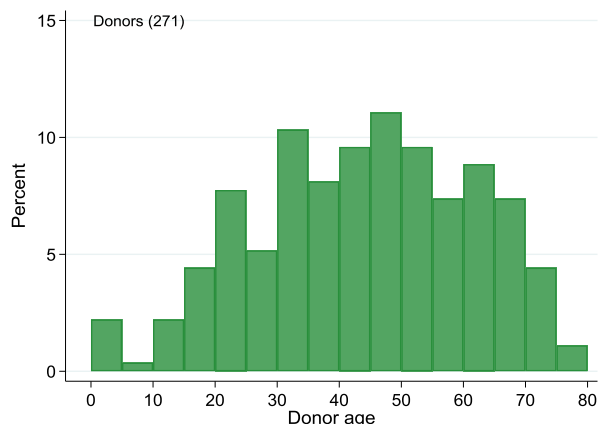
**Figure 6.3 - Deceased Donor Liver Transplant Recipients\* by Transplant State, Australia and New Zealand, 2016-2017**



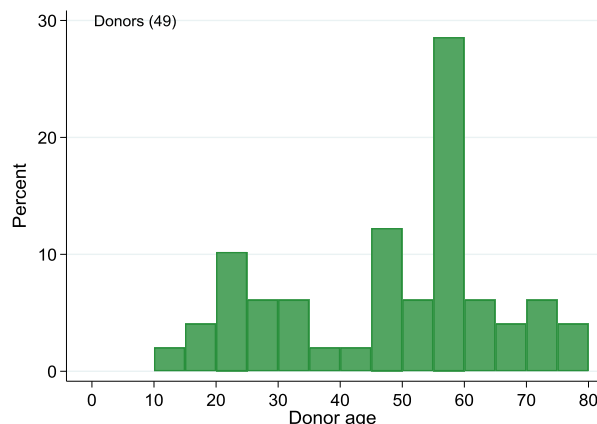
## Age of Liver Donors

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

**Figure 6.4.1 - Age of Donors Providing Retrieved Livers Australia 2017**



**Figure 6.4.2 - Age of Donors Providing Retrieved Livers New Zealand 2017**



## Donor Liver Function

Table 6.1 shows the number of donors whose liver function was above the normal range prior to donation.

**Table 6.1 Number of Donors with Liver Function Tests above Normal 2017**

Liver Function Tests	Australia		New Zealand	
	Donors with value recorded*	Above Normal	Donors with value recorded*	Above Normal
Alanine Transaminase ALT > 40 µ/L	271	135	40	16
Aspartate Transaminase AST > µ/L	257	161	42	24
Gamma Glutamol Tranferase GGT > 60 µ/L	270	80	42	9
Alkaline Phosphatase > 116 {µ}/L	271	35	48	2
Total Bilirubin > 20 {µ}mol/L	271	30	49	1
All 5 tests completed	257	-	31	-
At least 1 test completed	271	-	49	-

\*Not all donors have all tests

## Livers Not Retrieved

Table 6.2 provides a breakdown of the reasons why livers were consented and not retrieved.

**Table 6.2 Reasons for Liver Not Retrieved 2017**

Reason	Australia	New Zealand
Logistics	4	0
Not Medically Suitable	127	18
Surgically Unsuitable	0	0
Trauma to Organ	2	1
No Suitable Recipients	9	0
Age of Donor	30	1
DCD Donor	9	0
Consent Withdrawn	1	0
Others	0	0
<b>Total</b>	<b>182</b>	<b>20</b>

## Livers Retrieved and Not Utilised for Transplantation

Table 6.3 tabulates the reasons livers were not used after retrieval for the purpose of transplantation since 2013.

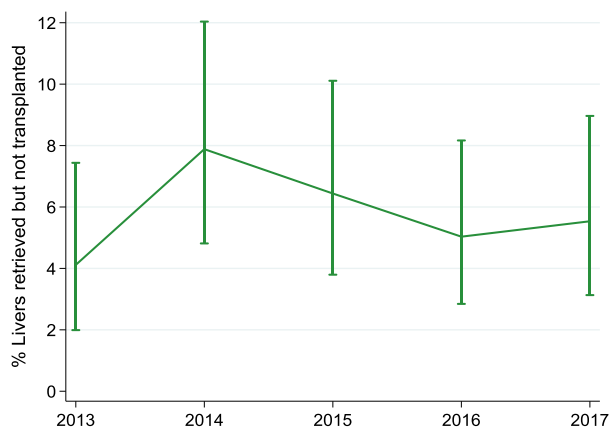
Of the reduced size liver transplants since 2013, 8 were orphaned split liver procedures due to the other split liver having no suitable recipients (4), trauma to the organ (1) or not being medically suitable (3).

**Table 6.3 Reasons Liver Retrieved & Not Utilised for Transplantation, Australia (New Zealand) 2013 – 2017**

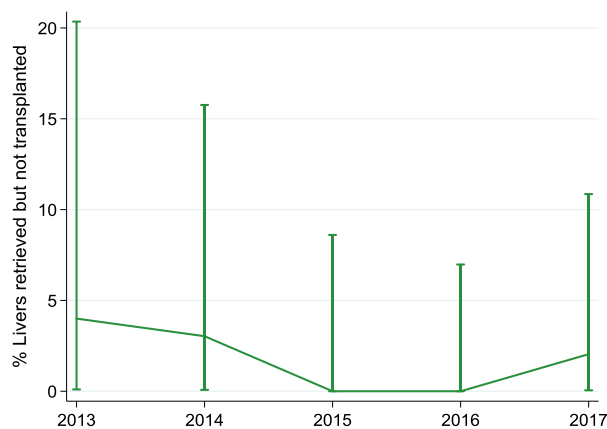
Reason	2013	2014	2015	2016	2017
Logistics	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Not Medically Suitable	6 (1)	6 (1)	13 (0)	12 (0)	13 (1)
Not Surgically Suitable	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Trauma to Organ	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
No Suitable Recipients	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Recipient Issue	0 (0)	1 (0)	0 (0)	2 (0)	2 (0)
Research	4 (0)	12 (0)	4 (0)	1 (0)	0 (0)
Other	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
<b>Total</b>	<b>10 (1)</b>	<b>19 (1)</b>	<b>17 (0)</b>	<b>15 (0)</b>	<b>15 (1)</b>

Figure 6.5 shows the non-utilisation rate of retrieved livers – 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).

**Figure 6.5.1 - Non-utilisation Rate of Retrieved Livers - Australia 2013-2017**



**Figure 6.5.2 - Non-utilisation Rate of Retrieved Livers - New Zealand 2013-2017**



## Outcome of Liver Donation

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

*Table 6.4.1 Outcome of Request for Liver Donation in Australia, 2013-2017*

Outcome of Request	2013	2014	2015	2016	2017
<b>Total Donors</b>	<b>391</b>	<b>378</b>	<b>435</b>	<b>503</b>	<b>510</b>
Liver Requested for Donation	360	354	389	464	459
Liver Not Requested for Donation	31	24	46	39	51
Liver Consent Given	357	347	377	456	453
Liver Consent Not Given	3	7	12	8	6
<b>Liver Retrieved</b>	<b>243</b>	<b>241</b>	<b>264</b>	<b>298</b>	<b>271</b>
Liver Not Retrieved	112	106	113	158	182
<b>Total Livers Transplanted</b>	<b>233</b>	<b>222</b>	<b>247</b>	<b>283</b>	<b>256</b>
Whole Liver Not Used for Transplantation	10	19	17	15	15
Intended Split Liver (L) Not Used for Transplantation	0	0	0	0	1
Intended Split Liver (R) Not Used for Transplantation	1	0	0	2	2
<b>Recipients Transplanted</b>	<b>252</b>	<b>237</b>	<b>264</b>	<b>314</b>	<b>281</b>
Whole Liver Transplants	207	207	229	246	227
Split Liver Transplants	38	30	34	62	50
Reduced Size Liver Transplants	7	0	1	6	4
<b>Liver Non-Utilisation Rate</b>	<b>4.12%</b>	<b>7.88%</b>	<b>6.44%</b>	<b>5.03%</b>	<b>5.54%</b>
<b>Liver Utilised Rate</b>	<b>95.88%</b>	<b>92.12%</b>	<b>93.56%</b>	<b>94.97%</b>	<b>94.46%</b>

*Table 6.4.2 Outcome of Request for Liver Donation in New Zealand, 2013-2017*

Outcome of Request	2013	2014	2015	2016	2017
<b>Total Donors</b>	<b>36</b>	<b>46</b>	<b>53</b>	<b>61</b>	<b>73</b>
Liver Requested for Donation	35	41	50	60	69
Liver Not Requested for Donation	1	5	3	1	4
Liver Consent Given	35	41	50	60	69
Liver Consent Not Given	0	0	0	0	0
<b>Liver Retrieved</b>	<b>25</b>	<b>33</b>	<b>41</b>	<b>51</b>	<b>49</b>
Liver Not Retrieved	10	8	9	9	20
<b>Total Livers Transplanted</b>	<b>24</b>	<b>32</b>	<b>41</b>	<b>51</b>	<b>48</b>
Whole Liver Not Used for Transplantation	1	1	0	0	1
Intended Split Liver (L) Not Used for Transplantation	0	0	0	0	0
Intended Split Liver (R) Not Used for Transplantation	1	0	0	0	1
<b>Recipients Transplanted</b>	<b>26</b>	<b>35</b>	<b>46</b>	<b>53</b>	<b>51</b>
Whole Liver Transplants	21	29	36	49	42
Split Liver Transplants	4	6	10	4	6
Reduced Size Liver Transplants	1	0	0	0	3
<b>Liver Non-Utilisation Rate</b>	<b>4.00%</b>	<b>3.03%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>2.04%</b>
<b>Liver Utilised Rate</b>	<b>96.00%</b>	<b>96.97%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>97.96%</b>

## Intestine Donation

Adult and paediatric patients with irreversible intestinal failure and developing severe complications from parenteral nutrition can benefit from intestinal transplantation. Only six intestinal transplants have been performed in Australia; Figure 6.6 shows intestine transplants since 2013. There has not been any intestine retrieved but not utilised for transplantation.

**Figure 6.6 - Intestine Transplants Australia 2013-2017**

