



## SECTION 2

### Overview of Organ Donation Activity in Australia and New Zealand

#### SUMMARY

*This section summarises organ donation in Australia and New Zealand. Figures reported here include the number of donors per million population; and number of transplant recipients and organs transplanted during 2018 in comparison to previous years.*

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## Suggested Citation

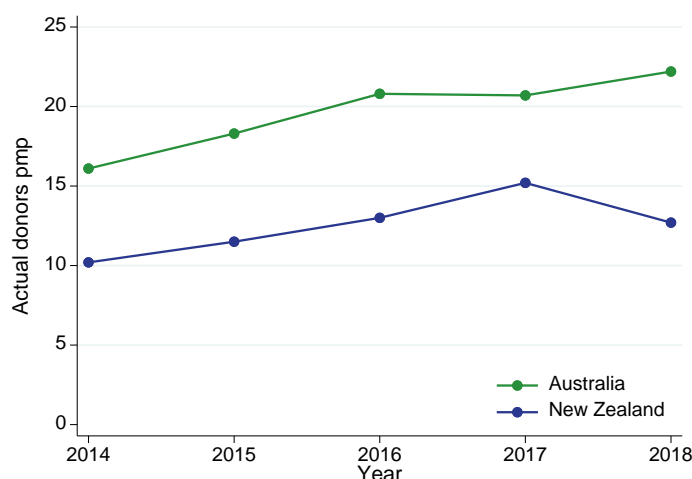
ANZOD Registry. 2019 Annual Report, Section 2: Overview of Organ Donation Activity in Australia and New Zealand. Australia and New Zealand Dialysis and Transplant Registry, Adelaide, Australia. 2019. Available at: <https://www.anzdata.org.au/report/anzod-annual-report-2019/>

## Actual Deceased Organ Donors

Australian and New Zealand donor figures include all donors consented for organ and tissue donation, who went to the operating theatre where the operation commenced ('skin incision') for the purpose of organ or tissue retrieval for transplantation. These donors are termed "actual donors" and this is consistent with international reporting. (World Health Organisation - Human Organ and Tissue Transplantation. [http://www.who.int/ethics/topics/human\\_transplant/en/](http://www.who.int/ethics/topics/human_transplant/en/)).

The rate of deceased organ donors per million population (dpmp) rose in Australia to 22.2 dpmp in 2018, from 20.7 in 2017. In New Zealand, the rate fell to 12.7 dpmp in 2018, from 15.2 dpmp in 2017.

**Figure 2.1 - Number of Actual Deceased Donors Per Million Population - Australia and New Zealand, 2014 - 2018**



In Australia, there remains variation in organ donation rates between jurisdictions (Table 2.1). In 2018, rates varied from 15.8 dpmp in WA to 32.4 dpmp in ACT.

**Table 2.1 Number of Actual Deceased Donors (Rate Per Million Population) 2014 - 2018**

State*/Country	2014	2015	2016	2017	2018
QLD	71 (15.0)	72 (15.1)	106 (21.9)	105 (21.3)	94 (18.8)
NSW**	92 (12.6)	127 (17.2)	133 (17.7)	135 (17.7)	151 (19.5)
ACT**	11 (18.1)	13 (21.0)	20 (31.9)	14 (22.0)	21 (32.4)
VIC	117 (19.8)	126 (20.9)	140 (22.7)	148 (23.4)	193 (29.9)
TAS	9 (17.5)	9 (17.5)	11 (21.3)	19 (36.4)	14 (26.5)
SA	36 (21.3)	42 (24.7)	40 (23.4)	32 (18.6)	36 (20.7)
NT	7 (28.8)	4 (16.3)	6 (24.4)	3 (12.1)	4 (16.2)
WA	35 (13.9)	42 (16.5)	47 (18.4)	54 (21.0)	41 (15.8)
<b>AUS</b>	<b>378 (16.1)</b>	<b>435 (18.3)</b>	<b>503 (20.8)</b>	<b>510 (20.7)</b>	<b>554 (22.2)</b>
<b>NZ</b>	<b>46 (10.2)</b>	<b>53 (11.5)</b>	<b>61 (13.0)</b>	<b>73 (15.2)</b>	<b>62 (12.7)</b>

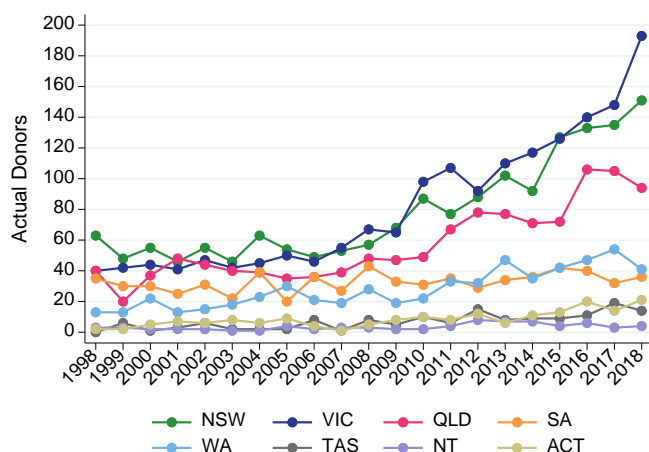
*This table relates to the number of donors for whom the retrieval operation commenced for the purpose of transplantation. It includes donors who may have been deemed medically unsuitable at the time of the surgery or after removal of organs.*

*\* Refers to retrieval State (i.e. Albany-NSW donors are retrieved by Victoria)*

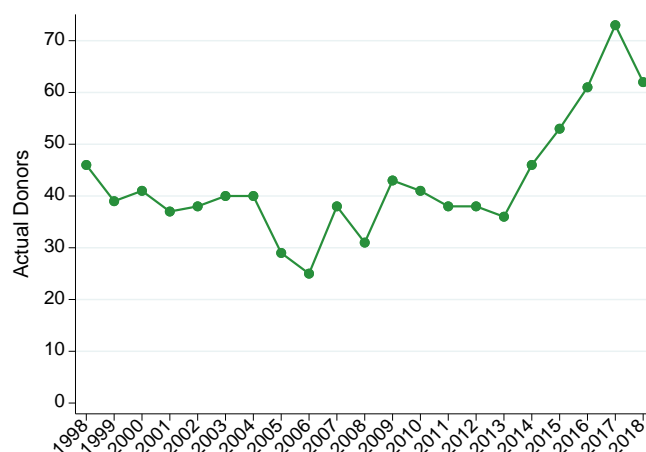
*\*\* NSW population excludes residents of the NSW Southern Area Health Service (included in ACT population). Population Data - June 2018. Please refer to methodology section of this report for detail.*

The variation since 1998 in the number of actual deceased donors by Australian jurisdiction and for New Zealand is shown in Figure 2.2.

**Figure 2.2.1 - Number of Actual Deceased Donors Australian States and Territories 1998 - 2018**

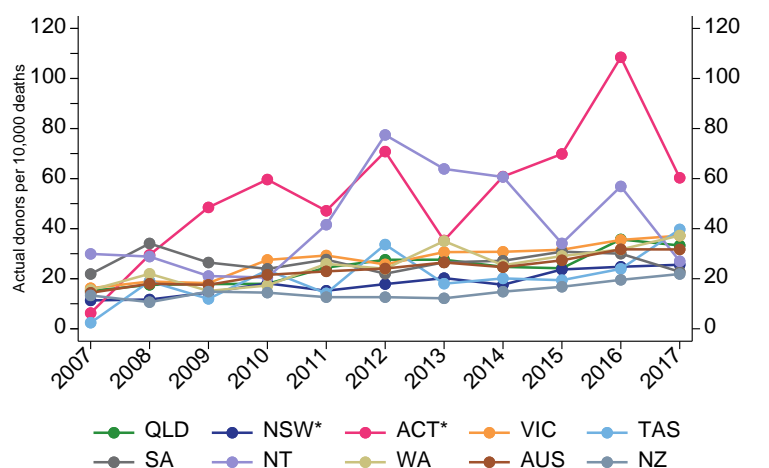


**Figure 2.2.2 - Number of Actual Deceased Donors New Zealand, 1998 - 2018**



There has been a steady decline in overall death rates among most ages in Australia over recent years. In some respects, using the number of deaths as the denominator to illustrate organ donation outcomes may be a better comparator. Rates for various jurisdictions using this metric are shown in Figure 2.3 and Table 2.2 includes deaths aged < 75 years as the denominator.

**Figure 2.3 - Number of Actual Deceased Donors Per 10,000 Deaths - Australian States/Territories and New Zealand, 2007 - 2017**



\* NSW and ACT values are not adjusted for the NSW Southern Area Health Service, as death data were not available. Australian data on deaths 2017 was the latest release at the time of this publication. Australian Bureau of Statistics - Deaths 3302.0 and Statistics New Zealand

**Table 2.2 Actual Deceased Donors per 10,000 Deaths Aged < 75 Years, 2013 - 2017**  
( ) is the % Deaths < 75 years as a proportion of all deaths\*

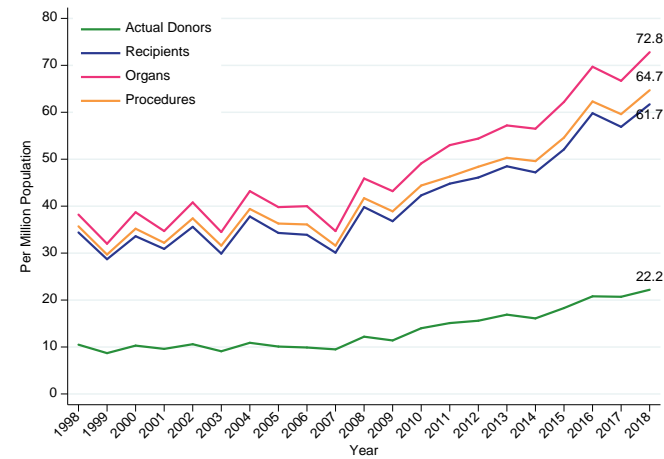
Year	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	AUS	NZ
2013	72 (38%)	61 (33%)	91 (39%)	98 (31%)	51 (36%)	84 (32%)	88 (73%)	93 (38%)	77 (34%)	33 (37%)
2014	67 (37%)	53 (33%)	171 (36%)	95 (32%)	56 (36%)	89 (31%)	82 (74%)	67 (38%)	72 (34%)	41 (36%)
2015	65 (37%)	72 (33%)	190 (37%)	102 (31%)	56 (35%)	99 (31%)	47 (72%)	77 (38%)	81 (34%)	46 (36%)
2016	95 (37%)	76 (32%)	313 (35%)	113 (31%)	65 (37%)	96 (31%)	80 (71%)	88 (36%)	94 (34%)	53 (37%)
2017	90 (37%)	79 (32%)	179 (34%)	120 (31%)	112 (35%)	72 (32%)	37 (72%)	100 (37%)	94 (34%)	61 (36%)

\*The number of actual donors is compared to the number of deaths that are aged less than 75 years.  
Australian Bureau of Statistics - Deaths 3302.0 and Statistics New Zealand.  
Australian data on deaths in 2017 was the latest release at the time of this publication.

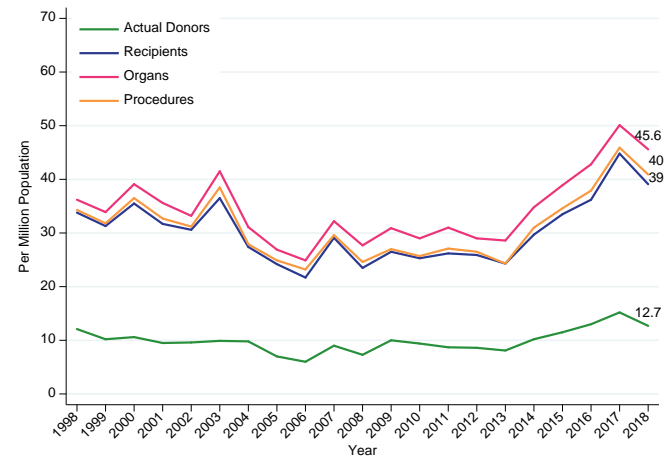
# Organ Donation Activity

Figure 2.4 shows the number of actual deceased organ donors, organs transplanted, transplant recipients and transplantation procedures as per million population over time for Australia and New Zealand.

**Figure 2.4.1 - Total Number of Actual Deceased Organ Donors, Procedures, Recipients and Organ Transplanted Per Million Population, Australia, 1998 - 2018**



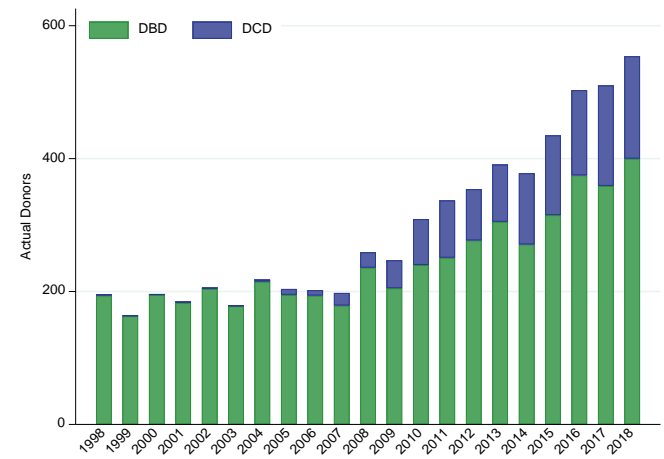
**Figure 2.4.2 - Total Number of Actual Deceased Organ Donors, Procedures, Recipients and Organ Transplanted Per Million Population, New Zealand, 1998 - 2018**



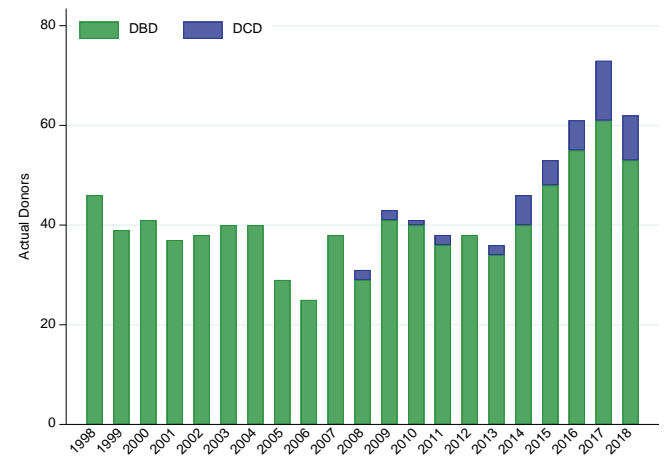
# Organ Donation Pathway

Much of the increase in donor numbers has arisen from changes in rates of donors after circulatory death (DCD), demonstrated in Figure 2.5.

**Figure 2.5.1 - Organ Donation Pathway Australia 1998 - 2018**



**Figure 2.5.2 - Organ Donation Pathway New Zealand 1998 - 2018**



## Organ Donation Overview

Tables 2.3 and 2.4 show the number (and rate) of recipients who received various organs from donors in 2018.

**Table 2.3 Australia Overview - 2018 (pmp) per million population**

<b>Population (million)</b>	<b>25.0</b>
<b>Actual Deceased Organ Donors - both DBD &amp; DCD included (pmp)</b>	<b>554 (22.2)</b>
Kidney Transplant Recipients from deceased donors- includes all combinations (pmp)	<b>897 (35.9)</b>
Liver Transplant Recipients from deceased donors- includes all combinations (pmp)	<b>318 (12.7)</b>
Heart Transplant Recipients from deceased donors- includes all combinations (pmp)	<b>129 (5.2)</b>
Lung Transplant Recipients from deceased donors- includes all combinations (pmp)	<b>222 (8.9)</b>
Pancreas Transplant Recipients from deceased donors- includes all combinations (pmp)	<b>51 (2.0)</b>
Intestine Transplant Recipients from deceased donors- includes all combinations (pmp)	<b>1 (0.0)</b>
<b>Total Number of Transplanted Recipients (pmp)*</b>	<b>1,543 (61.8)</b>
<b>Total Number of Organs Transplanted (pmp)**</b>	<b>1,820 (72.9)</b>

**Table 2.4 New Zealand Overview - 2018 (pmp) per million population**

<b>Population (million)</b>	<b>4.9</b>
<b>Actual Deceased Organ Donors - both DBD &amp; DCD included (pmp)</b>	<b>62 (12.7)</b>
Kidney Transplant Recipients from deceased donors- includes all combinations (pmp)	<b>98 (20.1)</b>
Liver Transplant Recipients from deceased donors- includes all combinations (pmp)	<b>49 (10.0)</b>
Heart Transplant Recipients from deceased donors- includes all combinations (pmp)	<b>19 (3.9)</b>
Lung Transplant Recipients from deceased donors- includes all combinations (pmp)	<b>28 (5.7)</b>
Pancreas Transplant Recipients from deceased donors- includes all combinations (pmp)	<b>6 (1.2)</b>
<b>Total Number of Transplanted Recipients (pmp)*</b>	<b>191 (39.1)</b>
<b>Total Number of Organs Transplanted (pmp)**</b>	<b>223 (45.6)</b>

\*The total number of recipients includes all combinations of multi-organ transplants as a single count of transplantation.

\*\*The total number of transplanted organs differs from total number of transplant recipients as each organ is counted as a single organ transplant.

## Organ Transplants

Table 2.5 shows the number (and rate) of various organs transplanted by jurisdiction of donation.

**Table 2.5 Number of Organs Transplanted in 2018 by State & Country (pmp) in Australia and New Zealand**

<b>Organs</b>	<b>QLD</b>	<b>NSW</b>	<b>ACT</b>	<b>VIC</b>	<b>TAS</b>	<b>SA</b>	<b>NT</b>	<b>WA</b>	<b>AUS</b>	<b>NZ</b>
<b>Kidney</b>	158	253	36	314	26	57	6	72	<b>922<sup>1</sup> (36.9)</b>	<b>99<sup>2</sup> (20.3)</b>
<b>Liver</b>	58	75	13	96	8	20	1	26	<b>297<sup>3</sup> (11.9)</b>	<b>44<sup>4</sup> (9.0)</b>
<b>Heart</b>	28	30	8	42	2	6	0	13	<b>129 (5.2)</b>	<b>19 (3.9)</b>
<b>Lung</b>	89	82	15	152	10	27	6	39	<b>420<sup>5</sup> (16.8)</b>	<b>55<sup>6</sup> (11.3)</b>
<b>Pancreas</b>	6	14	4	19	0	4	1	3	<b>51 (2.0)</b>	<b>6 (1.2)</b>
<b>Intestine</b>	0	0	0	1	0	0	0	0	<b>1 (0.0)</b>	<b>0 (0.0)</b>
<b>Total</b>	<b>339</b>	<b>454</b>	<b>76</b>	<b>624</b>	<b>46</b>	<b>114</b>	<b>14</b>	<b>153</b>	<b>1820 (72.8)</b>	<b>223 (45.6)</b>

The kidneys and lungs are counted as two separate organs (i.e. left and right kidney; left and right lung).

<sup>1</sup> Includes 872 single kidney, 20 double adult kidney and five en-bloc kidney transplant procedures in Australia.

<sup>2</sup> Includes 97 single kidney, one double adult kidney and zero en-bloc kidney transplant procedures in New Zealand.

<sup>3</sup> Includes 270 whole liver, 42 split liver and six reduced size liver transplant procedures in Australia.

<sup>4</sup> Includes 39 whole liver, 10 split liver and zero reduced size liver transplant procedures in New Zealand.

<sup>5</sup> Includes 198 double lung and 24 single lung transplant procedures in Australia.

<sup>6</sup> Includes 27 double lung and one single lung transplant procedures in New Zealand.

The mean number of organs transplanted per donor is calculated from the number of organs retrieved from actual donors for the purpose of transplantation and subsequently transplanted, divided by the number of actual donors. The number of organs transplanted per donor each year from 2004-2018 in Australia and New Zealand is shown in Figure 2.6. The mean number of transplant organs per deceased donor across Australia ranged from 3.0 in NSW to 3.7 in WA.

Figure 2.6 - Number of Organs Transplanted per Donor 2004 - 2018

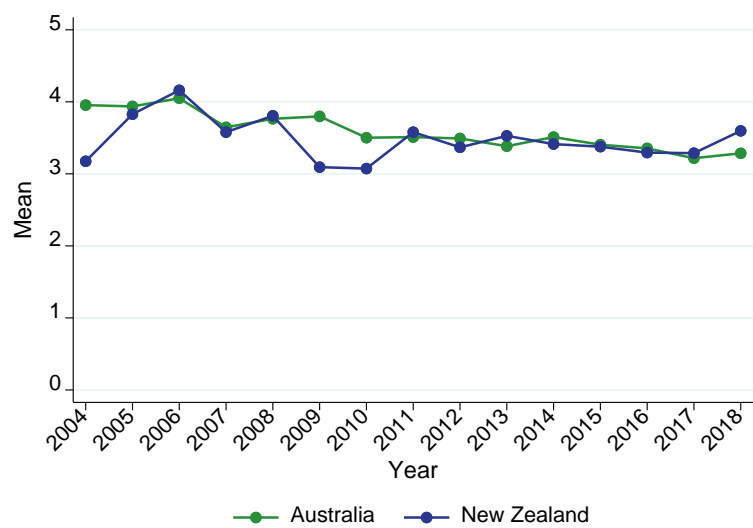


Figure 2.7 shows the organ-specific transplant rates for Australia and New Zealand over the period 1998 - 2018 (rates are of organ transplants per million population).

Figure 2.7.1 - Organs Transplanted 1998-2018 Per Million Population, Australia

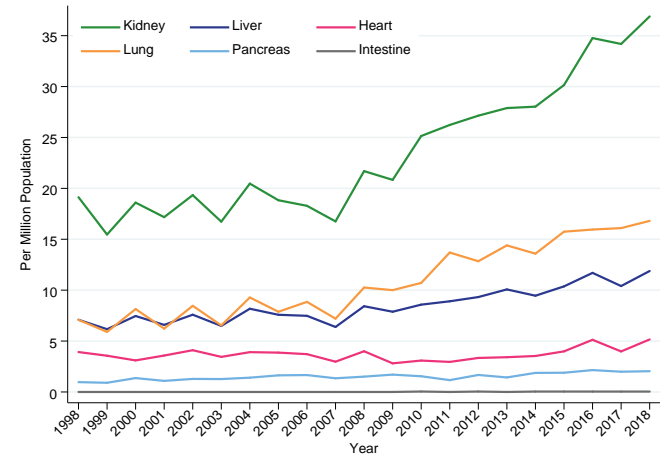


Figure 2.7.2 - Organs Transplanted 1998-2018 Per Million Population, New Zealand

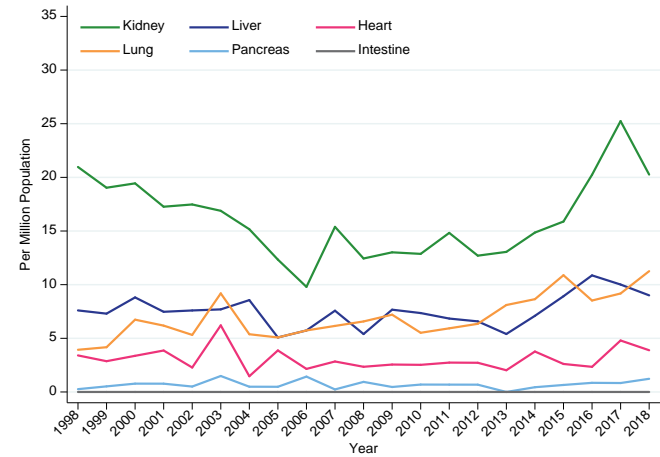
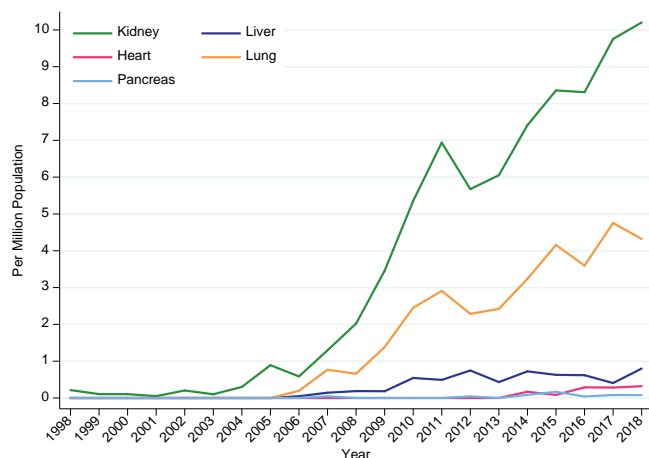
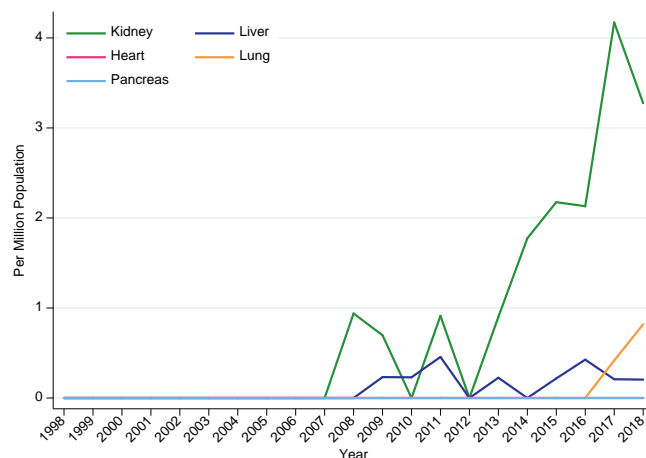


Figure 2.8 shows the corresponding rates for donation after circulatory death for Australia and New Zealand. Transplantation of organs from DCD has contributed to a significant increase in the rate of kidney transplantation and, in Australia, lung transplantation.

**Figure 2.8.1 - Organs Transplanted from DCD Donors, 1998-2018 Per Million Population, Australia**



**Figure 2.8.2 - Organs Transplanted from DCD Donors, 1998-2018 Per Million Population, New Zealand**



## Deceased Organ Donation Location

The number of deceased donors reported are based on the State/Territory/Country in which the donor died. Appendix 1 shows a more detailed breakdown of the number of donors by retrieval hospital.

Table 2.6 details the number and proportion of donors in Australia for 2014 - 2018 by the remoteness category of their postcode of residence. "Overseas" refers to donors who usually reside outside of Australia. The ABS standardised remoteness structure, known as the Accessibility/Remoteness Index of Australia (ARIA), is used (<http://www.abs.gov.au/websitedbs/D3310114.nsf/home/remoteness+structure>).

In 2018, there were five seven deceased donors in Australia who were considered overseas visitors.

Postcode information was not collected for deceased donors in New Zealand as of the end of 2017.

**Table 2.6 Location of Postcodes of Deceased Donors 2014 - 2018**

Remoteness Area of Postcode	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	AUS
<b>Major Cities of Australia</b>	252 (56%)	461 (72%)	48 (62%)	496 (69%)	1 (2%)	127 (68%)	1 (4%)	170 (78%)	<b>1556 (66%)</b>
<b>Inner Regional Australia</b>	101 (23%)	131 (21%)	24 (31%)	185 (26%)	40 (65%)	29 (16%)	0 (0%)	18 (8%)	<b>528 (22%)</b>
<b>Outer Regional Australia</b>	75 (17%)	31 (5%)	5 (6%)	34 (5%)	19 (31%)	22 (12%)	17 (71%)	16 (7%)	<b>219 (9%)</b>
<b>Remote Australia</b>	4 (1%)	2 (<1%)	0 (0%)	0 (0%)	1 (2%)	4 (2%)	3 (13%)	5 (2%)	<b>19 (1%)</b>
<b>Very Remote Australia</b>	6 (1%)	0 (0%)	0 (0%)	0 (0%)	1 (2%)	0 (0%)	1 (4%)	4 (2%)	<b>12 (1%)</b>
<b>Overseas</b>	9 (2%)	12 (2%)	1 (1%)	6 (1%)	0 (0%)	4 (2%)	2 (8%)	6 (3%)	<b>40 (2%)</b>
<b>Total</b>	<b>447</b>	<b>637</b>	<b>78</b>	<b>721</b>	<b>62</b>	<b>186</b>	<b>24</b>	<b>219</b>	<b>2374</b>