



## SECTION 2

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

#### SUMMARY

*This section summaries organ donation in Australia and New Zealand. Figures reported here include the number of donors per million population; and the number of transplant recipients and organs transplanted during 2022 in comparison to previous years.*

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## Executive Summary

Since its inception in 1989 in Australia, and 1993 in New Zealand, the Australian and New Zealand Organ Donation Registry (ANZOD) continues to record and report on organ donation within Australia and New Zealand.

Data related to organ donation and transplantation activity are essential in identifying opportunities for improving the care of donors, informing on the quality of transplant organs and improving transplant recipient outcomes.

One organ donor can benefit several recipients suffering from organ failure. One donor could donate up to nine organs including, kidneys (left and right), liver (split left and right), heart, lungs (left and right), pancreas and intestine, improving the lives of people wait-listed for an organ transplant.

The impact of the COVID-19 pandemic continued to be felt across the health sector in 2022, causing a decrease in organ and tissue donation activity across the last 3 years. However, a small increase in organ donors and the number of people receiving transplants in 2022 points to early signs of recovery from the impacts of COVID-19.

## Suggested Citation

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## Actual Deceased Organ Donors

The following figures include all donors who consented to organ and tissue donation and who went to the operating theatre for organ or tissue retrieval for transplantation. These are termed “actual donors”. 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 actual deceased organ donors per million population (dpmp) rose in Australia to 17.5 dpmp in 2022, from 16.4 in 2021. In New Zealand, the rate fell to 12.3 dpmp in 2022, from 12.9 dpmp in 2021.

**Figure 2.1 - Number of Actual Deceased Donors Per Million Population - Australia and New Zealand, 2018–2022**



In Australia, there remains variations in organ donation rates between jurisdictions (Table 2.1). In 2022, rates varied from 4.0 dpmp in NT to 31.5 dpmp in TAS.

**Table 2.1 Number of Actual Deceased Donors (Per Million Population) 2018–2022**

State*/Country	2018 (dpmp)		2019 (dpmp)		2020 (dpmp)		2021 (dpmp)		2022 (dpmp)	
<b>NSW**</b>	151	(19.5)	144	(18.3)	122	(15.4)	109	(13.7)	122	(15.4)
<b>VIC***</b>	193	(29.9)	162	(24.6)	131	(19.6)	110	(16.5)	144	(21.8)
<b>QLD</b>	94	(18.8)	106	(20.8)	86	(16.6)	91	(17.4)	77	(14.5)
<b>SA</b>	36	(20.7)	52	(29.7)	46	(26.0)	50	(28.2)	39	(21.4)
<b>WA</b>	41	(15.8)	52	(19.8)	49	(18.4)	44	(16.4)	43	(15.4)
<b>TAS</b>	14	(26.5)	18	(33.7)	13	(24.0)	7	(12.9)	18	(31.5)
<b>NT</b>	4	(16.2)	4	(16.3)	3	(12.2)	2	(8.1)	1	(4.0)
<b>ACT**</b>	21	(32.4)	10	(15.2)	13	(19.6)	8	(12.0)	10	(14.3)
<b>AUS</b>	<b>554</b>	<b>(22.2)</b>	<b>548</b>	<b>(21.6)</b>	<b>463</b>	<b>(18.0)</b>	<b>421</b>	<b>(16.4)</b>	<b>454</b>	<b>(17.5)</b>
<b>NZ</b>	<b>62</b>	<b>(12.7)</b>	<b>74</b>	<b>(14.9)</b>	<b>64</b>	<b>(12.6)</b>	<b>66</b>	<b>(12.8)</b>	<b>63</b>	<b>(12.3)</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 the removal of organs.*

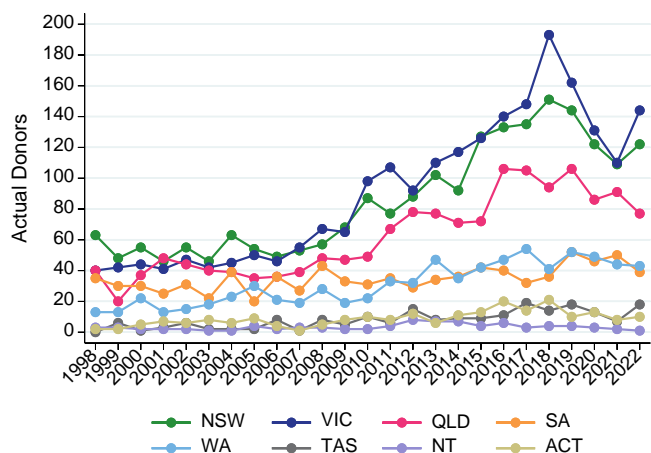
*\* Refers to retrieval State (i.e. Albury-NSW donors are retrieved by Victoria)*

*\*\* NSW population excludes residents of the NSW Southern Area Health Service (included in ACT population). Population Data - June 2022. Please refer to the methodology section of this report for detail.*

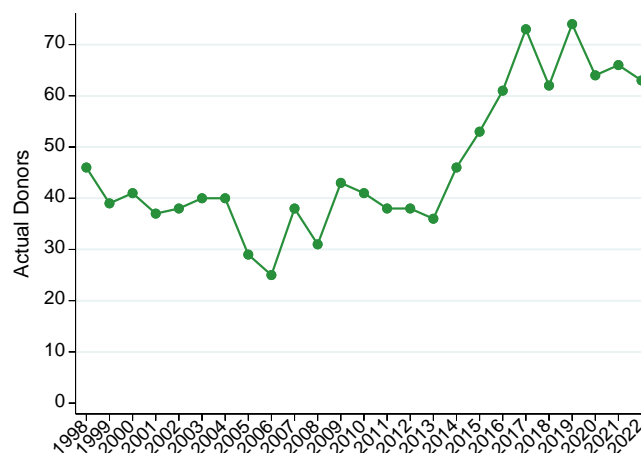
*\*\*\* In 2019, death registrations increased in Victoria as a result of deaths from 2017 and 2018 that had previously not been reported.*

The variation, since 1998, in the number of actual deceased donors by Australian state/territory and for New Zealand are shown in Figure 2.2.

**Figure 2.2.1 - Number of Actual Deceased Donors Australian States and Territories 1998–2022**

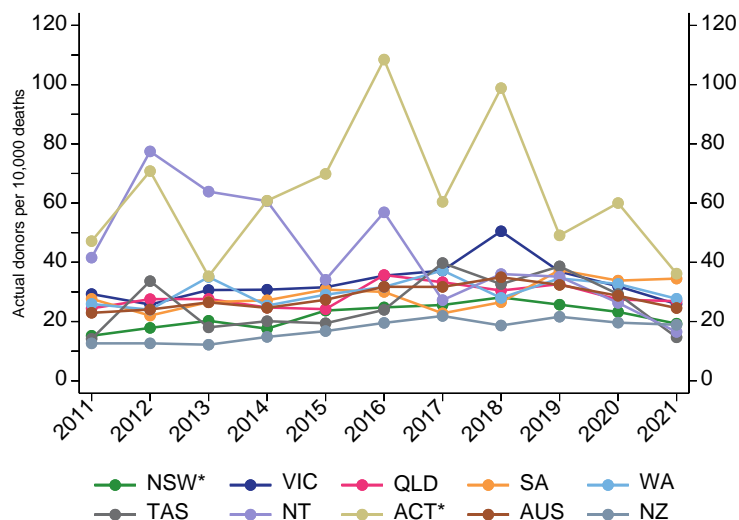


**Figure 2.2.2 - Number of Actual Deceased Donors New Zealand, 1998–2022**



There is a steady decline in the overall death rates amongst most age groups in Australia over recent years. In many respects, using the number of deaths as the denominator to illustrate organ donation outcomes may be a more meaningful comparator. Rates for various jurisdictions using this metric are shown in Figure 2.3 and Table 2.2.

**Figure 2.3 - Number of Actual Deceased Donors Per 10,000 Deaths Australian States/Territories and New Zealand, 2011–2021**



\* NSW and ACT values are not adjusted for the NSW Southern Area Health Service, as death data were not available. Australian data on deaths in 2021 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, 2017–2021.**  
( ) is the % deaths < 75 years as a proportion of all deaths\*

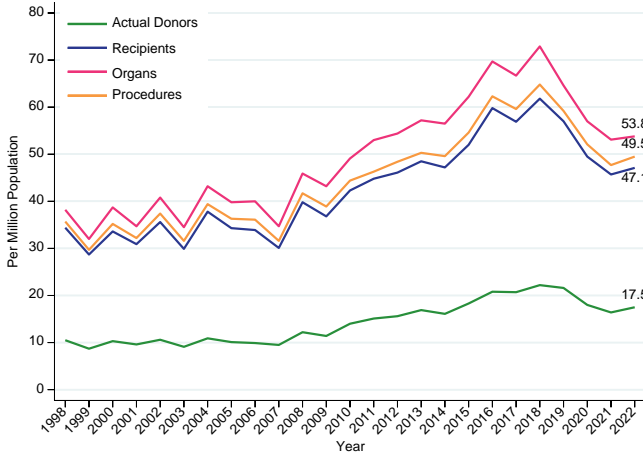
Year	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	AUSTRALIA	NEW ZEALAND
2017	79 (32%)	120 (31%)	90 (37%)	72 (32%)	100 (37%)	113 (35%)	38 (73%)	180 (34%)	94 (34%)	61 (36%)
2018	85 (33%)	160 (32%)	81 (37%)	83 (32%)	74 (38%)	94 (35%)	53 (68%)	291 (34%)	102 (34%)	51 (37%)
2019	78 (33%)	111 (33%)	88 (37%)	118 (32%)	95 (36%)	109 (35%)	52 (68%)	150 (33%)	94 (34%)	59 (37%)
2020	71 (33%)	100 (32%)	74 (37%)	107 (32%)	88 (37%)	82 (36%)	38 (69%)	175 (34%)	84 (34%)	53 (37%)
2021	61 (32%)	82 (32%)	75 (36%)	111 (31%)	79 (35%)	43 (34%)	25 (65%)	105 (35%)	74 (33%)	52 (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 2021 was the latest release at the time of this publication.

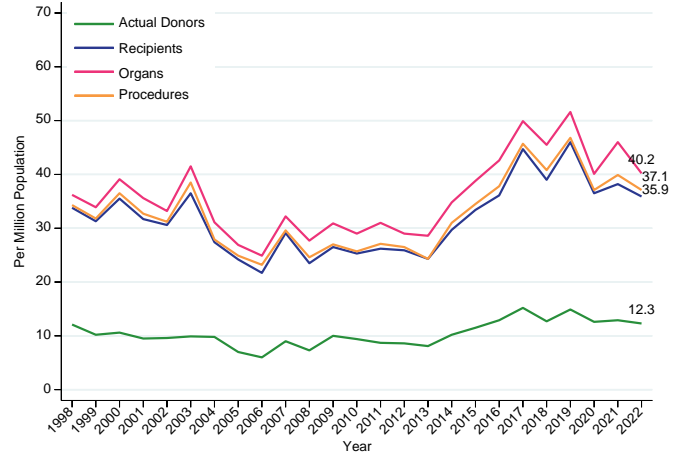
## Organ Donation Activity

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

**Figure 2.4.1 - Total Number of Actual Deceased Organ Donors, Procedures, Recipients and Organ Transplanted pmp, Australia, 1998–2022**



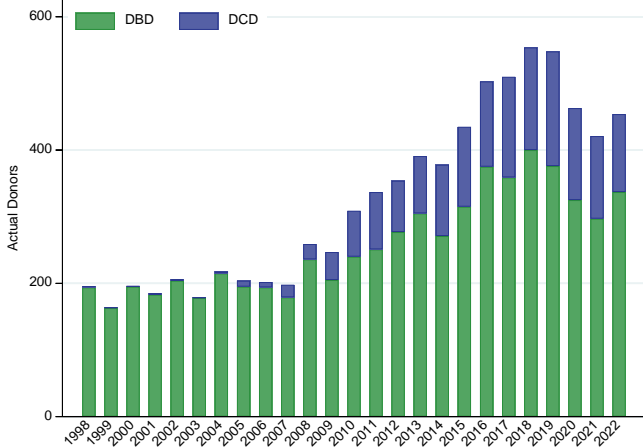
**Figure 2.4.2 - Total Number of Actual Deceased Organ Donors, Procedures, Recipients and Organ Transplanted pmp, New Zealand, 1998–2022**



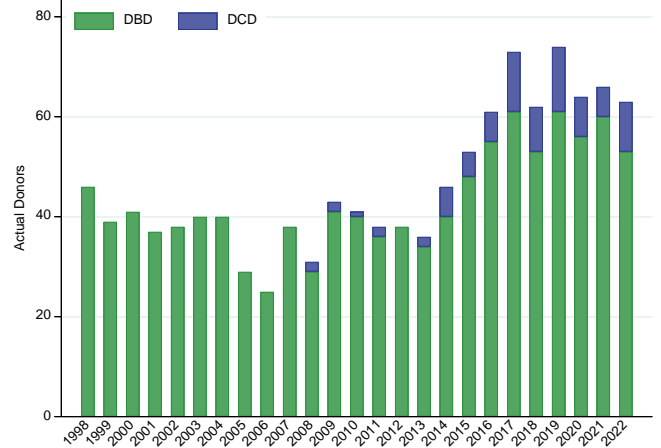
## Organ Donation Pathway

Much of the increase in donor numbers has arisen from changes in rates of donors after circulatory death (DCD), though the rates of donation after brain death (DBD) have also increased as demonstrated in Figure 2.5.

**Figure 2.5.1 - Organ Donation Pathway Australia 1998–2022**



**Figure 2.5.2 - Organ Donation Pathway New Zealand 1998–2022**



## Organ Donation Overview

Tables 2.3 and 2.4 show the number (and rate) of recipients who received various organs from donors in 2022.

**Table 2.3 Australia Overview - 2022 (pmp) per million population\***

<b>Population (million)</b>	<b>26.0</b>	
<b>Actual Deceased Organ Donors - both DBD &amp; DCD included (pmp)</b>	<b>454</b>	<b>(17.5)</b>
Kidney Transplant Recipients from deceased donors	715	(27.5)
Liver Transplant Recipients from deceased donors	264	(10.2)
Heart Transplant Recipients from deceased donors	116	(4.5)
Lung Transplant Recipients from deceased donors	142	(5.5)
Pancreas Transplant Recipients from deceased donors	47	(1.8)
Intestine Transplant Recipients from deceased donors-	2	(0.1)
<b>Total Number of Transplanted Recipients (pmp)**</b>	<b>1224</b>	<b>(47.1)</b>
<b>Total Number of Organs Transplanted (pmp)***</b>	<b>1397</b>	<b>(53.8)</b>

\*By donor country, recipients/organs from Australian donors.

\*\*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 the total number of transplant recipients as each organ is counted as a single organ transplant.

**Table 2.4 New Zealand Overview - 2022 (pmp) per million population\***

<b>Population (million)</b>	<b>5.1</b>	
<b>Actual Deceased Organ Donors - both DBD &amp; DCD included (pmp)</b>	<b>63</b>	<b>(12.3)</b>
Kidney Transplant Recipients from deceased donors	104	(20.3)
Liver Transplant Recipients from deceased donors	49	(9.6)
Heart Transplant Recipients from deceased donors	16	(3.1)
Lung Transplant Recipients from deceased donors	16	(3.1)
Pancreas Transplant Recipients from deceased donors	5	(1.0)
<b>Total Number of Transplanted Recipients (pmp)*</b>	<b>184</b>	<b>(35.9)</b>
<b>Total Number of Organs Transplanted (pmp)**</b>	<b>206</b>	<b>(40.2)</b>

\*By donor country, recipients/organs from New Zealand donors.

\*\*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 the 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 the jurisdiction of donation.

**Table 2.5 Number of Organs Transplanted in 2022 by State & Country (pmp) in Australia and New Zealand**

Organs	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	AUSTRALIA	NEW ZEALAND
Kidney	209	214	118	62	76	30	2	18	729 <sup>1</sup> (28.1)	109 <sup>2</sup> (21.3)
Liver	62	71	46	17	32	10	0	5	243 <sup>3</sup> (9.4)	45 <sup>4</sup> (8.8)
Heart	27	34	17	9	19	7	0	3	116 (4.5)	16 (3.1)
Lung	46	85	46	24	35	18	0	6	260 <sup>5</sup> (10.0)	31 <sup>6</sup> (6.1)
Pancreas	14	11	7	4	7	2	0	2	47 (1.8)	5 (1.0)
Intestine	1	0	0	1	0	0	0	0	2 (0.1)	0 (0.0)
<b>Total</b>	<b>359</b>	<b>415</b>	<b>234</b>	<b>117</b>	<b>169</b>	<b>67</b>	<b>2</b>	<b>34</b>	<b>1,397 (53.8)</b>	<b>206 (40.2)</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 701 single kidney, 12 double adult kidney and 2 en-bloc kidney transplant procedures in Australia.

<sup>2</sup> Includes 99 single kidney, 4 double adult kidney and 1 en-bloc kidney transplant procedures in New Zealand.

<sup>3</sup> Includes 219 whole liver, 42 split liver and 3 reduced-size liver transplant procedures in Australia.

<sup>4</sup> Includes 41 whole liver, 8 split liver and 0 reduced size liver transplant procedures in New Zealand.

<sup>5</sup> Includes 118 double lung and 24 single lung transplant procedures in Australia.

<sup>6</sup> Includes 15 double lung and 1 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 2004-2022 in Australia and New Zealand is shown in Figure 2.6. The mean number of transplant organs per deceased donor across Australian states ranged from 2.0 in NT to 3.9 in WA.

**Figure 2.6 - Number of Organs Transplanted per Donor 2004–2022**

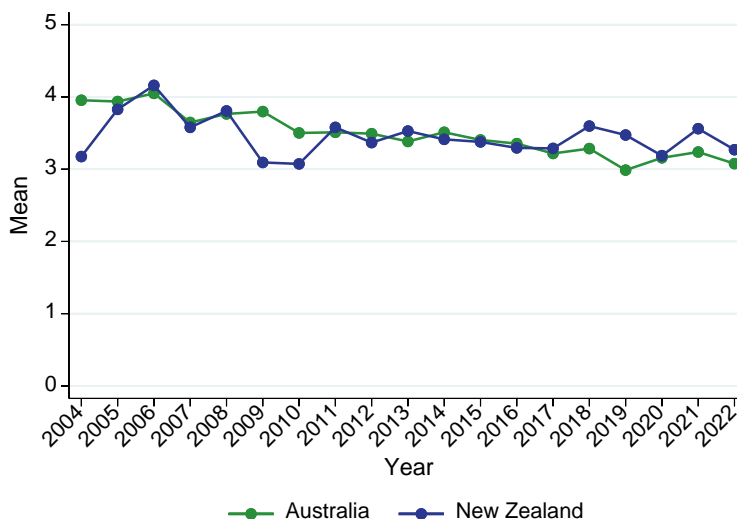
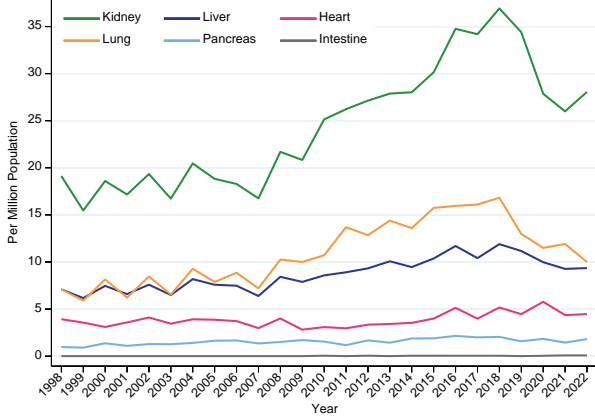


Figure 2.7 shows the organ-specific transplant rates for Australia and New Zealand over the period 1998–2022 (rates are of organ transplants pmp).

**Figure 2.7.1 - Organs Transplanted 1998–2022 pmp, Australia**



**Figure 2.7.2 - Organs Transplanted 1998–2022 pmp, New Zealand**

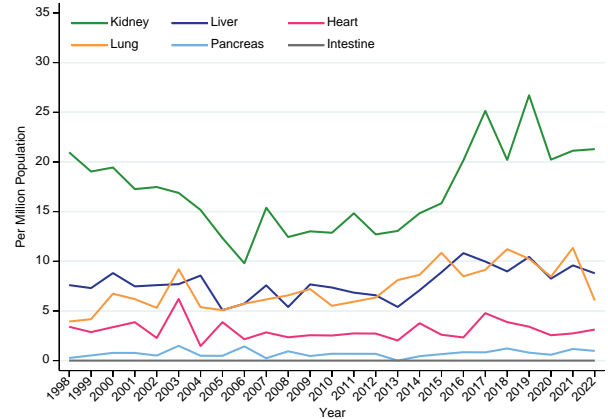
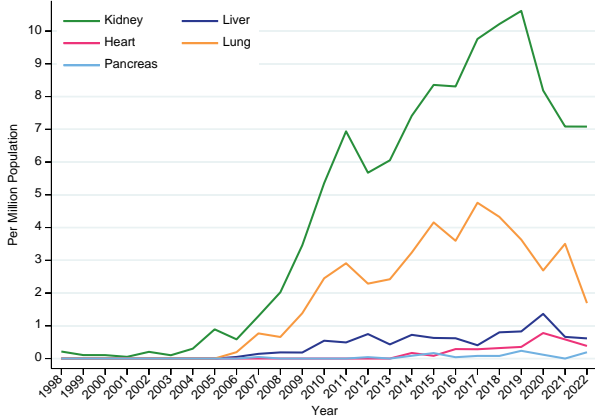


Figure 2.8 shows the rates for DCD donors in Australia and New Zealand. Transplantation of DCD organs has contributed to a significant increase in the rate of kidney transplantation and, in Australia, lung transplantation.

**Figure 2.8.1 - Organs Transplanted from DCD Donors, 1998–2022 Per Million Population, Australia**



**Figure 2.8.2 - Organs Transplanted from DCD Donors, 1998–2022 Per Million Population, New Zealand**

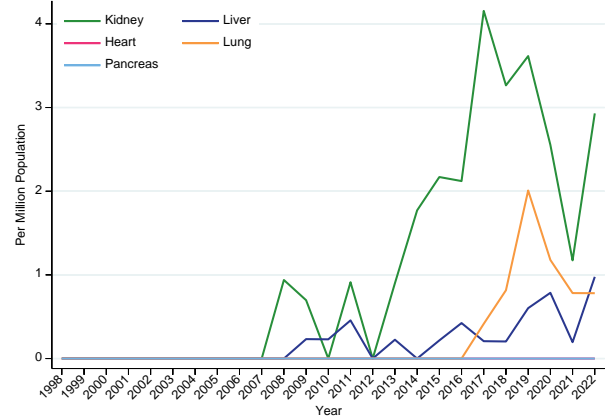
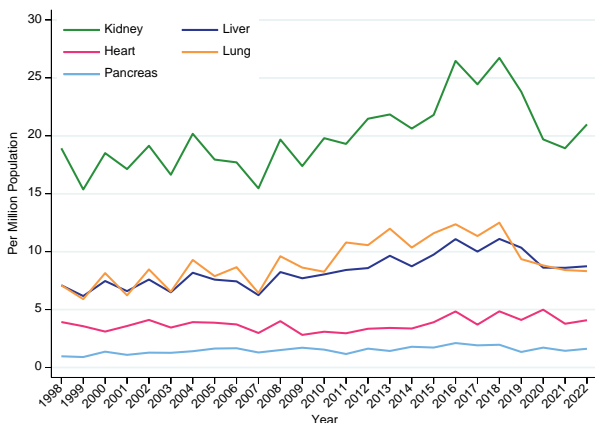
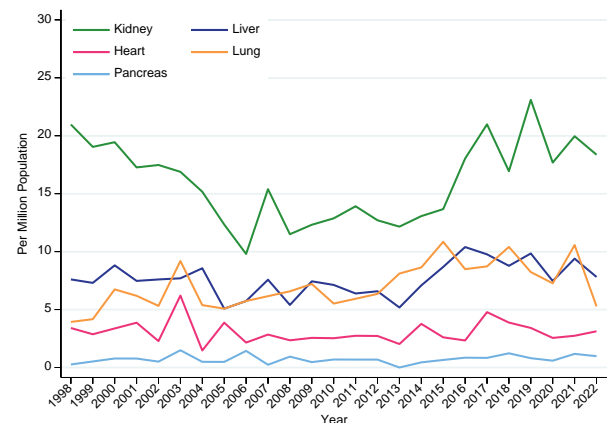


Figure 2.9 shows the corresponding rates for DBD donors in Australia and New Zealand.

**Figure 2.9.1 - Organs Transplanted from DBD Donors, 1998–2022 Per Million Population, Australia**



**Figure 2.9.2 - Organs Transplanted from DBD Donors, 1998–2022 Per Million Population, New Zealand**





## Deceased Organ Donation Location

The number of deceased donors reported is 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 2018–2022 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>). Postcode was allocated to the remoteness area based on the population-weighted correspondence '2017 Postcode to 2016 Remoteness Area'. This is from 1270.0.55.005 - Australian Statistical Geography Standard (ASGS): Volume 5 - Remoteness Structure, July 2016.

In 2022, 4 deceased donors in Australia 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 in Australia of Deceased Donors 2018–2022 (%)**

Remoteness Area of Postcode	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	AUSTRALIA
Major Cities	461 (72%)	513 (70%)	260 (57%)	155 (70%)	185 (81%)	1 (1%)	0 (0%)	46 (74%)	<b>1,621 (67%)</b>
Inner Regional	143 (22%)	177 (24%)	120 (26%)	39 (18%)	15 (7%)	46 (67%)	1 (7%)	12 (19%)	<b>553 (23%)</b>
Outer Regional	35 (5%)	36 (5%)	61 (13%)	21 (9%)	12 (5%)	17 (25%)	10 (71%)	3 (5%)	<b>195 (8%)</b>
Remote	1 (<1%)	1 (<1%)	5 (1%)	4 (2%)	6 (3%)	4 (6%)	1 (7%)	1 (2%)	<b>23 (1%)</b>
Very Remote	0 (0%)	0 (0%)	3 (1%)	1 (<1%)	7 (3%)	1 (1%)	2 (14%)	0 (0%)	<b>14 (1%)</b>
Overseas	3 (<1%)	8 (1%)	4 (1%)	2 (1%)	3 (1%)	0 (0%)	0 (0%)	0 (0%)	<b>20 (1%)</b>
<b>Total</b>	<b>643</b>	<b>735</b>	<b>453</b>	<b>222</b>	<b>228</b>	<b>69</b>	<b>14</b>	<b>62</b>	<b>2,426</b>