

Chapter 1

Organ Donation



in Australia and New Zealand



Overview of Organ Donation

The deceased organ donor per million population (hereinafter “dpmp”) figures in Australia rose to 15.6 (dpmp) in 2012, from 15.1 (dpmp) in 2011 and 14 (dpmp) in 2010. In New Zealand, the rate remained stable at 8.6 dpmp.

Australian and New Zealand donor figures include all donors consented for organ and tissue donation who went to the operating theatre for the purpose of organ or tissue retrieval for transplantation. Of the 354 donors for 2012 for Australia, there were twelve who did not donate any organs although five of these donors still proceeded to donate tissue or eyes. In Australia, 342 actual donors in 2012 had at least one of their organs successfully transplanted (“utilised donors”). Of the twelve donors where no organs were transplanted, in six this reflects disease in organ found at the time of

surgery; three donors were discovered to have malignancies previously undiagnosed; two donors had underlying infection in their organs and one donor had organs not anatomically suitable for transplantation.

In New Zealand, four donors (of the 38 for 2012) did not have organs transplanted; three due to disease in organs and one donor with no suitable recipient. Corneas were donated from two of these donors.

In Australia, there remains considerable variation in organ donor rates between jurisdictions. In 2012, rates varied from 12 dpmp in New South Wales to 34 dpmp in the Northern Territory. The rate in the ACT was 32 dpmp when the NSW Southern Area Health Service population was excluded, but 20 dpmp when this area was included.

Figure 1.1

Number of Donors** by Retrieval State / Country ^(x) 2008 - 2012					
() Donors Per Million Population					
	2008	2009	2010	2011	2012
Queensland	48 (11)	47 (11)	49 (11)	67 (15)	78 (17)
New South Wales + *	57 (8+) (8*)	68 (10+) (10*)	87 (12+) (13*)	77 (11+)	88 (12+) (12*)
ACT + *	5 (9+) (14*)	8 (14+) (23*)	10 (17+) (28*)	8 (14+) (22*)	12 (20+) (32*)
Victoria	67 (13)	65 (12)	98 (18)	107 (19)	92 (16)
Tasmania	8 (16)	5 (10)	10 (20)	6 (12)	15 (29)
South Australia	43 (27)	33 (20)	31 (19)	35 (21)	29 (18)
Northern Territory	3 (14)	2 (9)	2 (9)	4 (17)	8 (34)
Western Australia	28 (13)	19 (8)	22 (10)	33 (14)	32 (13)
Australia	259 (12.1)	247 (11.3)	309 (14)	337 (15.1)	354 (15.6)
New Zealand	31 (7.3)	43 (10)	41 (9.4)	38 (8.6)	38 (8.6)
(x) refers to donors retrieved by retrieval State (ie, Albury-NSW donors retrieved by Victoria) + NSW population excludes residents of the NSW Southern Area Health Service (included in ACT population) * NSW population includes residents of the NSW Southern Area Health Service (excluded from ACT population) Medical services from the ACT service the NSW Southern Area Health Region. Population data - June ABS 3101.0					
** This figure 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.					



Overview of Organ Donation

Figure 1.2

**Number of Donors
Australian States 1998-2012**

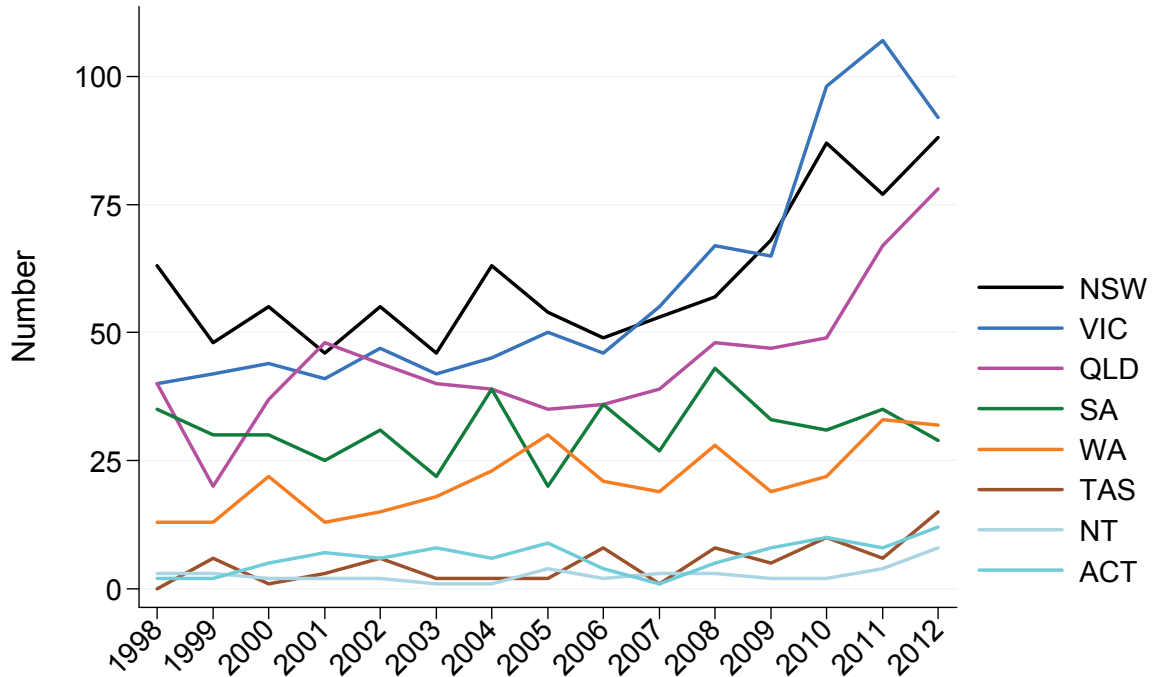
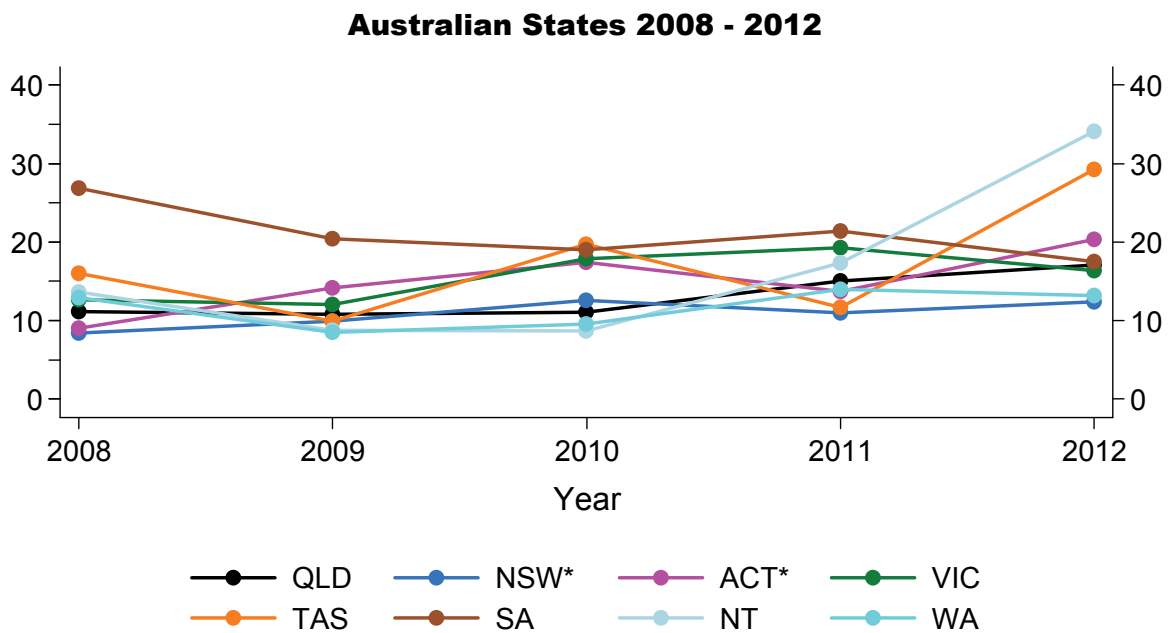


Figure 1.3

**Number of Donors Per Million Population
Australian States 2008 - 2012**



* NSW population excludes residents of the NSW Southern Area Health Service.

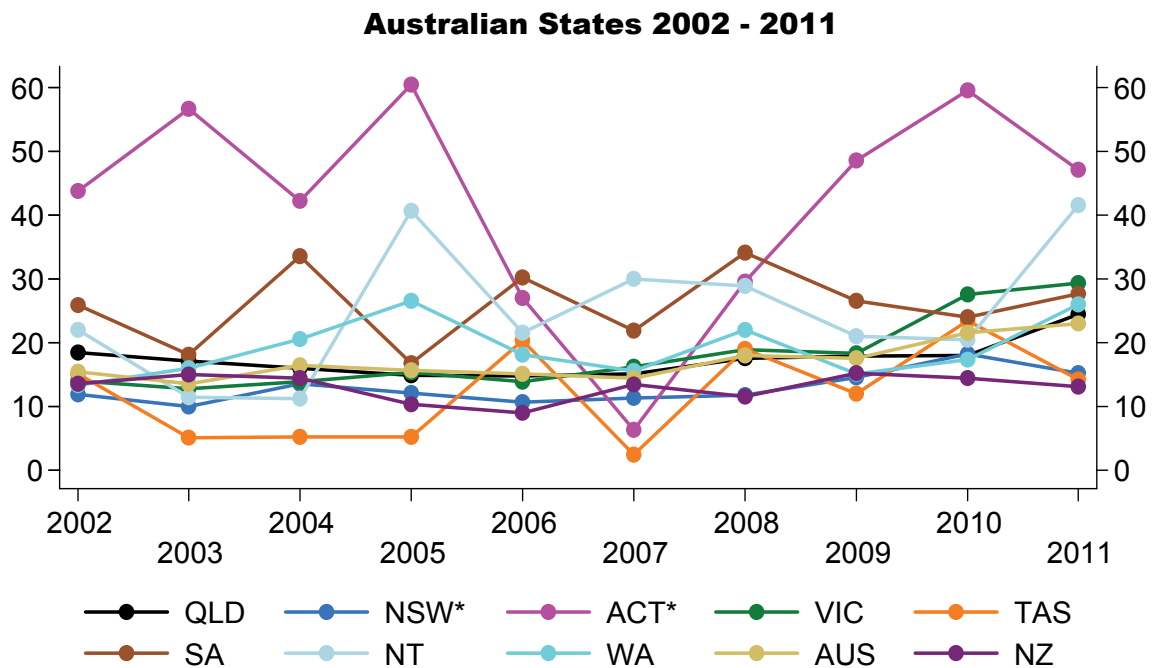
* ACT population includes residents of the NSW Southern Area Health Service.



Overview of Organ Donation

There has been a steady decline in overall death rates among most ages in Australia over recent years. In many respects, using the number of deaths as the denominator may be a more logical comparator; rates for various jurisdictions using this metric are shown in Figure 1.4 and 1.5.

Figure 1.4 Number of Donors Per 10,000 Deaths



* NSW and ACT values not adjusted for the the NSW Southern Area Health Service, as death data were not availab

Australian data on deaths 2011 was the latest release at time of this publication
 Australian Bureau of Statistics - Deaths 3303.0 and Statistics New Zealand

Figure 1.5

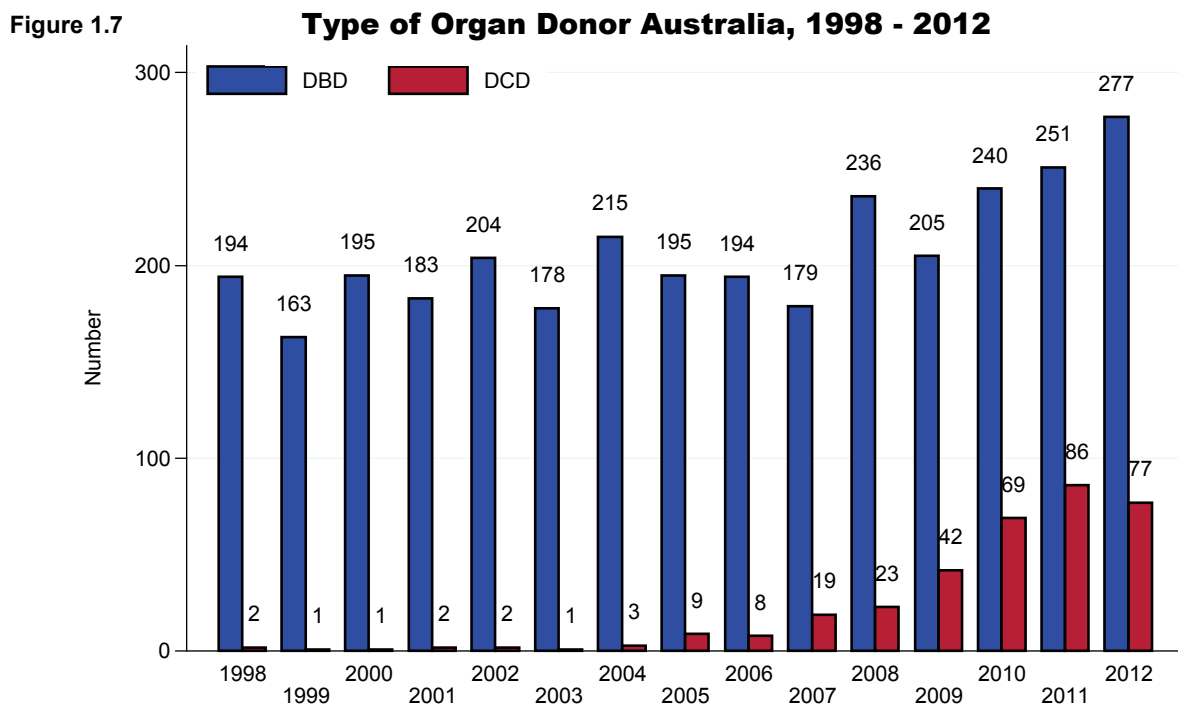
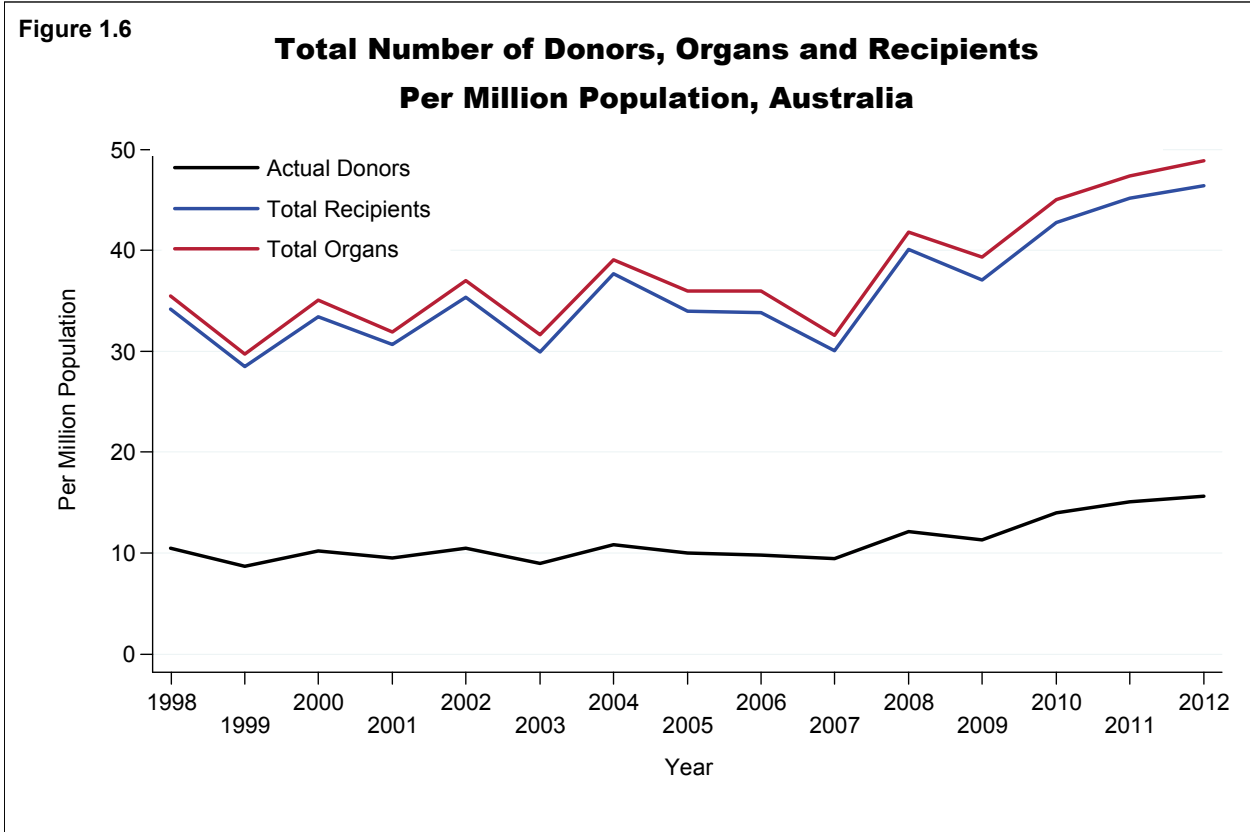
Donors per 10,000 Deaths Aged < 75 years 2007 - 2011										
() is the % Deaths < 75 years as a Proportion of all Deaths*										
Year	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	AUST	NZ
2007	40 (38%)	33 (34%)	16 (39%)	49 (33%)	7 (36%)	67 (32%)	39 (77%)	40 (39%)	41 (35%)	34 (39%)
2008	81 (22%)	35 (33%)	133 (22%)	103 (18%)	101 (19%)	197 (17%)	51 (57%)	96 (23%)	92 (20%)	28 (41%)
2009	46 (39%)	42 (34%)	129 (38%)	55 (33%)	33 (37%)	81 (33%)	27 (76%)	39 (39%)	50 (35%)	39 (39%)
2010	47 (39%)	54 (34%)	163 (37%)	86 (32%)	66 (35%)	76 (32%)	27 (76%)	45 (38%)	62 (35%)	92 (16%)
2011	65 (38%)	48 (32%)	131 (36%)	91 (32%)	40 (35%)	89 (31%)	55 (75%)	68 (38%)	67 (34%)	81 (16%)

* The number of actual donors is compared to the number of deaths that are aged less than 75 years (Figure 1.5)
 Australian Bureau of Statistics - Deaths 3303.0 and Statistics New Zealand



Overview of Organ Donation

The change of organ donor rates over time is shown in Figure 1.6. Much of the increase in donor numbers has arisen from changes in rates of donors after circulatory death (DCD), demonstrated in Figure 1.7.





Overview of Organ Donation

Figure 1.8 Australia Overview

Population (million)	22,7
Actual Deceased Organ Donors - both DBD & DCD included (pmp)	354 (15.6)
Kidney Tx Recipients from deceased donors - includes all combinations (pmp)	607 (26.8)
Liver Tx Recipients from deceased donors - includes all combinations (pmp)	230 (10.1)
Heart Tx Recipients from deceased donors - includes all combinations (pmp)	72 (3.2)
Heart-Lung Tx Recipients from deceased donors - includes all combinations (pmp)	4 (0.2)
Lung Tx Recipients from deceased donors - includes all combinations (pmp)	144 (6.3)
Pancreas Tx Recipients from deceased donors - includes all combinations (pmp)	38 (1.7)
Pancreas Islets Tx Recipients from deceased donors - includes all combinations (pmp)	4 (0.2)
Intestine Tx Recipients from deceased donors - includes all combinations (pmp)	1 (0.0)
TOTAL number of Organs Transplanted (pmp) ⁺	1110 (48.9)
TOTAL number of Transplant Recipients (pmp) [^]	1053 (46.4)
(pmp) per million population	

Figure 1.9 New Zealand Overview

Population (million)	4,4
Actual deceased organ donors - both DBD & DCD included (pmp)	38 (8.6)
Kidney Tx Recipients from deceased donors (pmp)	54 (2.4)
Liver Tx Recipients from deceased donors - includes all combinations (pmp)	32 (1.4)
Heart Tx Recipients from deceased donors - includes all combinations (pmp)	12 (0.5)
Lung Tx Recipients from deceased donors - includes all combinations (pmp)	13 (0.6)
Pancreas Tx Recipients from deceased donors - includes all combinations (pmp)	2 (0.1)
Intestine Tx Recipients from deceased donors - includes all combinations (pmp)	0 (0)
TOTAL number of Organs Transplanted (pmp) ⁺	113 (25.7)
TOTAL number of Transplant Recipients (pmp) [^]	110 (25.0)
(pmp) per million population	

* The total number of Recipients include all combinations of multi-organ transplants as a single count of transplantation.

[^] The total number of Organs transplanted differs from total number of Recipients as each organ, with the exception of double-lung, is counted as a single organ transplant.

Note: Further information on organs transplanted can be found in Chapter 5 - Organ Data.



Overview of Organ Donation

Figure 1.10

Number of Transplanted Organs Donated by State & Country of Donation (pmp) in Australia and New Zealand											
Organs	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	AU	NZ	
Kidney	135	147	20	159	25	53	16	62	617 [^] (27.2)	54	(12.6)
Liver	52	57	8	54	10	23	6	20	230 ⁺ (10.1)	31 ⁺⁺	(6.3)
Heart	17	16	2	13	4	8	2	10	72 (3.2)	12	(2.7)
Heart/Lung	2	2	0	0	0	0	0	0	4 (0.2)	0	(0.0)
Lung	25	31	3	42	11	15	5	12	144 [#] (6.3)	13	(3.2)
Pancreas	4	14	1	8	3	5	0	3	38 (1.7)	2	(0.7)
Pancreas Islets	0	2	0	0	1	1	0	0	4 (0.2)	0	(0.0)
Intestine	0	0	0	0	1	0	0	0	1 (0.0)	0	(0.0)
Total	235	269	34	276	55	105	29	107	1110 (48.9)	112	(25.5)

[^] includes 597 single kidney, 8 double adult kidneys and 2 enbloc kidneys
⁺ includes 189 whole liver, 36 split liver and 5 cut down liver
⁺⁺ includes 26 whole liver, 6 split liver and 2 cut down liver
[#] includes 140 double lung and 4 single lung

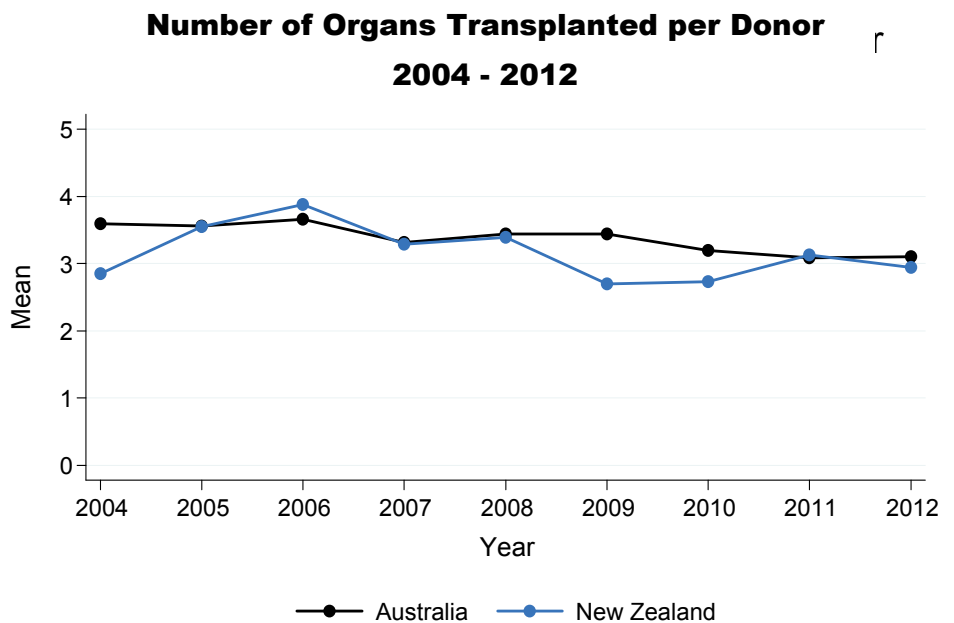
Australia had 3.1 organs, per donor in 2012, while NZ had 2.9 organs per donor.

The number of organs transplanted per donor each year from 2004 - 2012 in Australia and New Zealand is shown in Figure 1.11.

The number of recipients transplanted per donor in Australia in 2012 was 3.1 and in New Zealand was 3.0.

In 2012, Tasmania had the highest number of organs transplanted with 3.7 per donor. Followed by South Australia and Northern Territory with 3.6 per donor. Australian Capital Territory had the lowest with 2.9 per donor.

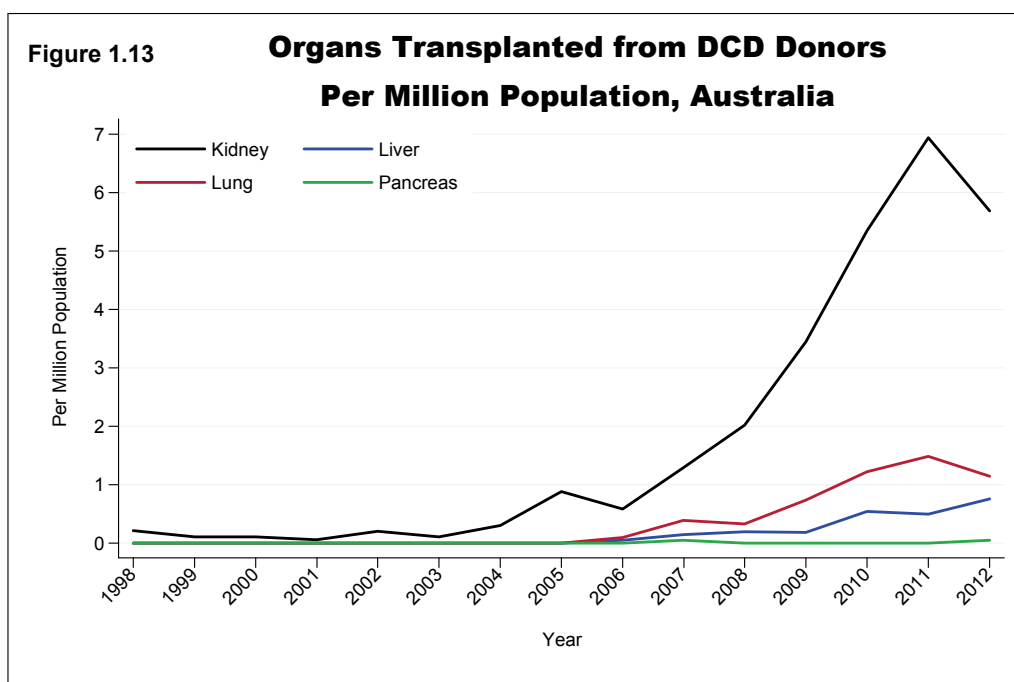
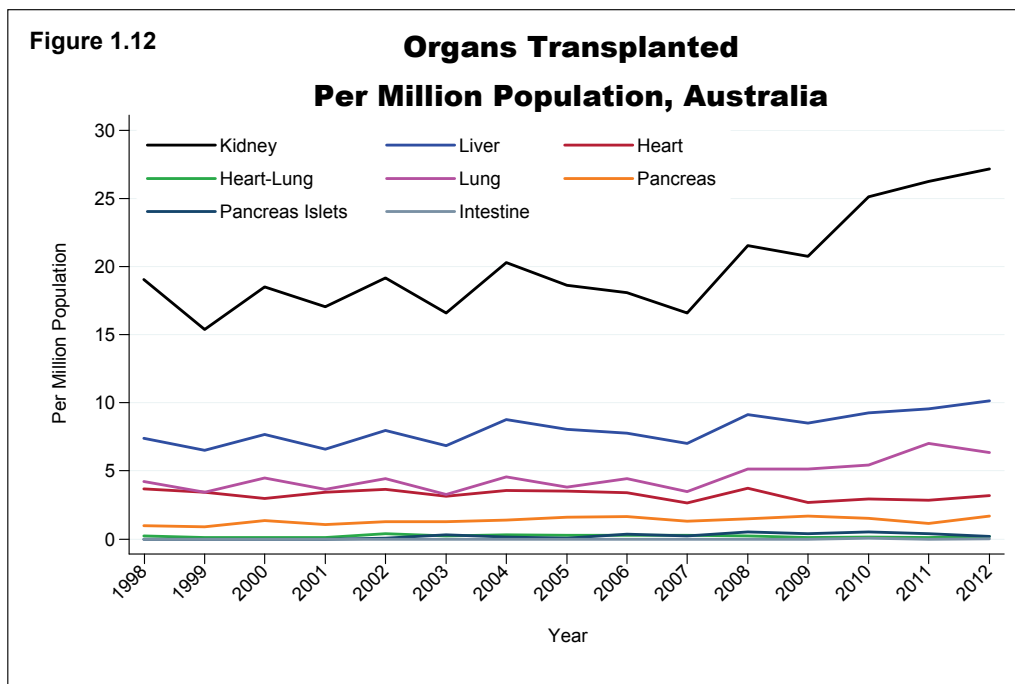
Figure 1.11





Overview of Organ Donation

Figure 1.12 shows the organ-specific donor rates for Australia over the period 1998 - 2012. Figure 1.13 shows the corresponding rates for donors after circulatory death. The dominant outcome of these donors is on rates of kidney donation. Effects on liver and lung numbers are lesser.





Overview of Organ Donation

Whilst the number of deceased donors are previously shown based on the state /territory and country location in which they died, Figure 1.14 shows a more detailed breakdown by number and the proportion of donors by remoteness category within the state/territory. “Overseas” refers to donors who usually reside outside of Australia and New Zealand. The Australian Bureau of Statistics has a standardised remoteness structure known as the Accessibility/Remoteness Index of Australia (ARIA). Details are at <http://www.abs.gov.au/websitedbs/D3310114.nsf/home/remoteness+structure#Anchor2b>.

Appendix 1 shows a more detailed breakdown of the number of donors from the donating hospitals.

Figure 1.14

Location of Postcodes of Deceased Donors 2008 - 2012									
Postcode	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	AUST
Metropolitan	132 (46%)	267 (70%)	30 (70%)	298 (70%)	1 (2%)	116 (68%)	1 (5%)	88 (62%)	943 (62%)
Inner Regional	88 (30%)	85 (22%)	9 (21%)	105 (25%)	23 (52%)	27 (16%)	1 (5%)	29 (22%)	367 (24%)
Outer Regional	51 (18%)	23 (6%)	3 (7%)	18 (4%)	18 (41%)	23 (13%)	9 (47%)	9 (7%)	154 (10%)
Rural	12 (4%)	1 (<1%)	0 (0%)	0 (0%)	1 (2%)	3 (2%)	7 (37%)	8 (6%)	32 (2%)
Overseas	6 (2%)	4 (1%)	1 (2%)	5 (1%)	1 (2%)	2 (1%)	1 (5%)	0 (0%)	20 (1%)
Total	289	380	43	426	44	171	19	134	1506

In the last five years (2008-2012) there have been 20 deceased donors who were visitors to Australia. In 2012, there were six donors from overseas in Australia, three donated from Victoria, two from Queensland and one in New South Wales.

There were no overseas donors in New Zealand in 2012.

The Registry does not consider organs donated in Australia and transplanted in New Zealand as an overseas donor for New Zealand, nor organs donated in New Zealand and transplanted in Australia as an overseas donor for Australia.





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