

Chapter 1

Organ Donation



in Australia and New Zealand

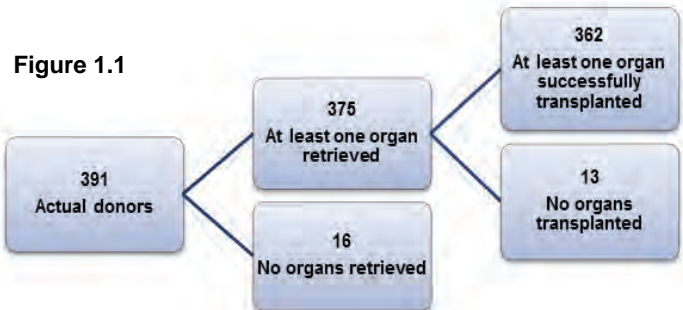


Overview of Organ Donation

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. This is consistent with international reporting. Refer to World Health Organisation - Human Organ and Tissue Transplantation. http://www.who.int/ethics/topics/human_transplant/en/

The deceased organ donor per million population (hereinafter "dpmp") figures in Australia rose to 16.9 (dpmp) in 2013, from 15.6 (dpmp) in 2012 and 15.1 (dpmp) in 2011. In New Zealand, the rate decreased to 8.1 (dpmp) in 2013 from 8.6 (dpmp) in 2012 and by 1.9 (dpmp) since 2009.

Of the 391 actual donors in 2013 for Australia, 375 donors had at least one organ successfully retrieved. From 375, only 362 donors had at least one organ successfully transplanted.



Sixteen actual donors had no organs retrieved. This number has more than doubled over the past five year from 6 in 2009 to 16 in 2013. The reason these donors had no organs retrieved is a result of six with disease in organ (found at time of surgery); three donors had organs not medically suitable for transplantation; three donors had underlying infection in their organs; for three donors there were no suitable recipient and one donor was discovered to have malignancy previously undiagnosed. Out of these 16, twelve donors proceeded to donate eyes and/or tissue.

Figure 1.2

Number of Donors** by Retrieval State / Country ^(x) 2009 - 2013					
() Donors Per Million Population					
	2009	2010	2011	2012	2013
Queensland	47 (11)	49 (11)	67 (15)	78 (17)	77 (17)
New South Wales + *	68 (10+) (10*)	87 (12+) (13*)	77 (11+) (11*)	88 (12+) (12*)	102 (14+) (14*)
ACT + *	8 (14+) (23*)	10 (17+) (28*)	8 (14+) (22*)	12 (20+) (32*)	6 (10+) (16*)
Victoria	65 (12)	98 (18)	107 (19)	92 (16)	110 (19)
Tasmania	5 (10)	10 (20)	6 (12)	15 (29)	8 (16)
South Australia	33 (21)	31 (19)	35 (21)	29 (18)	34 (20)
Northern Territory	2 (9)	2 (9)	4 (17)	8 (34)	7 (29)
Western Australia	19 (8)	22 (10)	33 (14)	32 (13)	47 (19)
Australia	247 (11.3)	309 (14)	337 (15.1)	354 (15.6)	391 (16.9)
New Zealand	43 (10)	41 (9.4)	38 (8.6)	38 (8.6)	36 (8.1)

(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

From the **375** donors, in Australia only **362** were utilised donors (that is at least one organ was successfully transplanted). In New Zealand all 36 donors had at least one successfully transplanted organ in comparison to 2012 were only two donors were not utilised.

In Australia, there remains considerable variation in organ donor rates between jurisdictions (Figure 1.2)

In 2013, rates varied from 14 dpmp in New South Wales to 29 dpmp in the Northern Territory. The rate in the ACT was 16 dpmp when the NSW Southern Area Health Service population was excluded, but 10 dpmp when this area was included.

Figure 1.3

Number of Donors Australian States 1998 - 2013

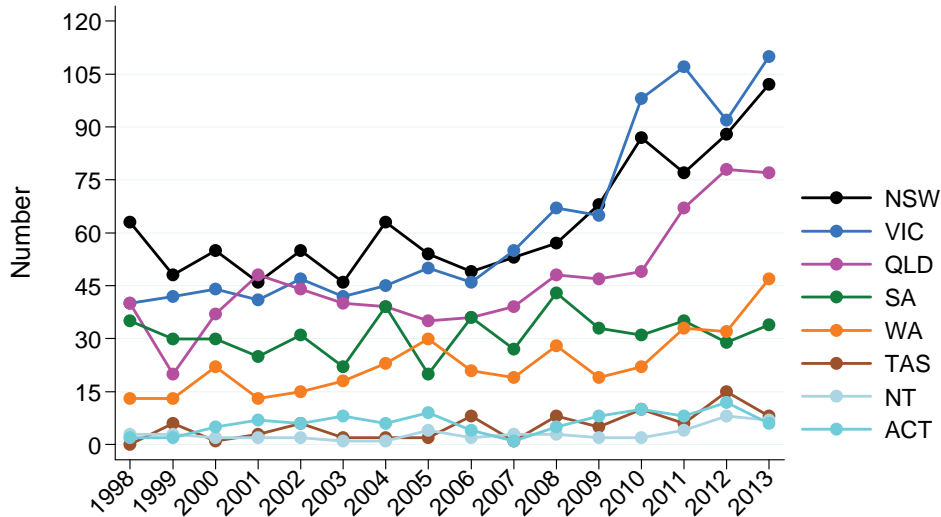
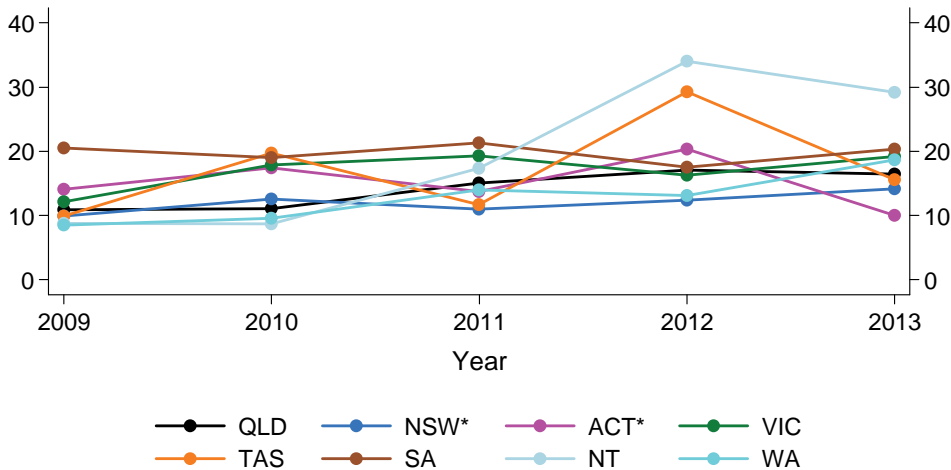


Figure 1.4

Number of Donors Per Million Population Australian States 2009 - 2013



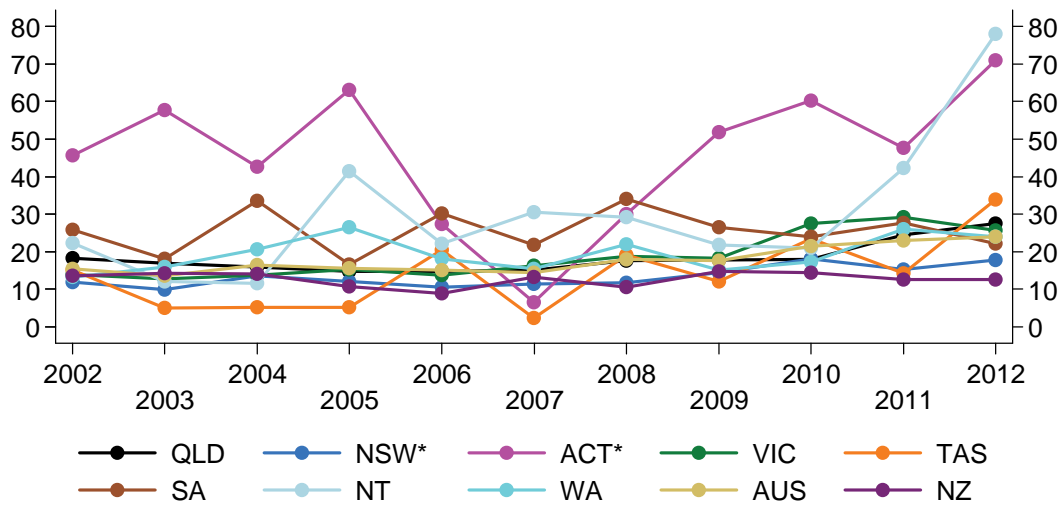
* NSW population excludes residents of the NSW Southern Area Health Service.
 * ACT population includes residents of the NSW Southern Area Health Service.



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 1.5 and 1.6.

Figure 1.5 Number of Donors Per 10,000 Deaths Australian States 2002 - 2012



* NSW and ACT values not adjusted for the the NSW Southern Area Health Service, as death data were not available
 Australian data on deaths 2012 was the latest release at the time of this publication.
 Australian Bureau of Statistics - Deaths 3303.0 and Statistics New Zealand

Figure 1.6

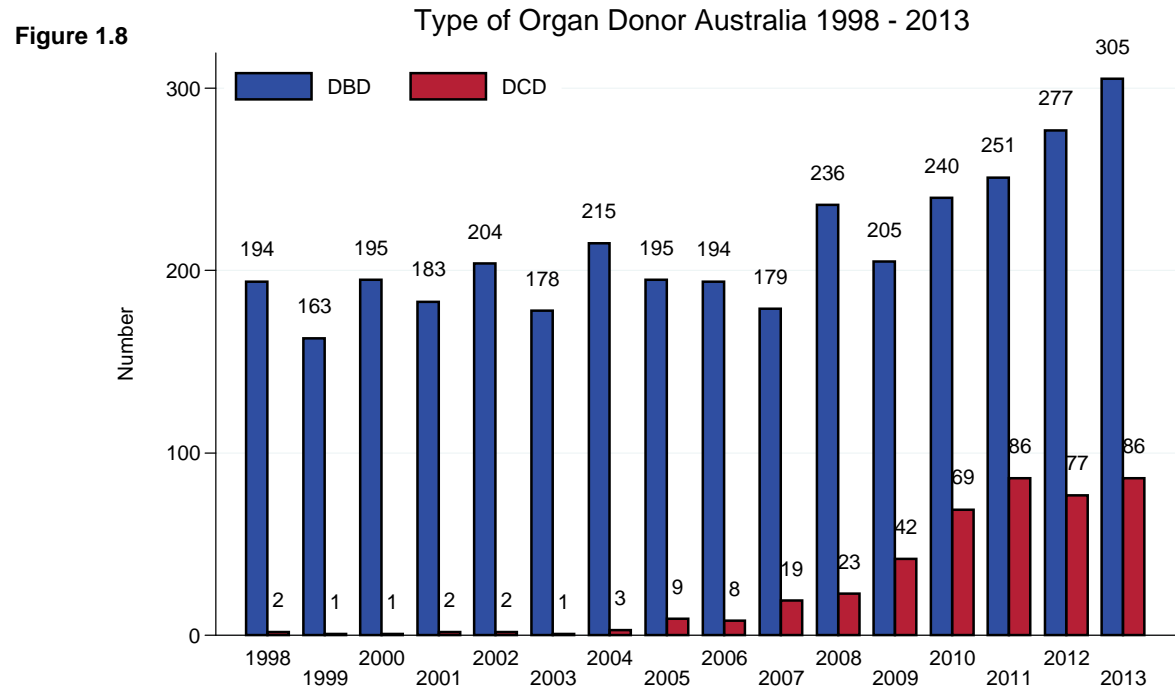
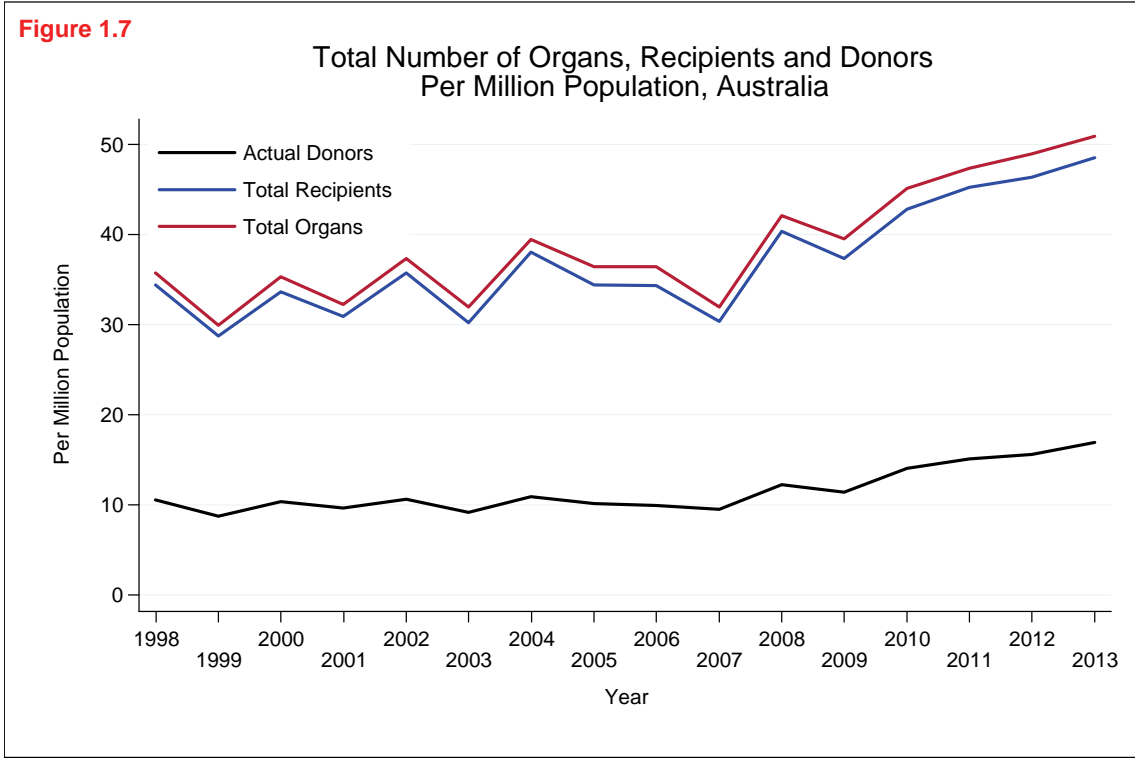
Donors per 10,000 Deaths Aged < 75 years 2008 - 2012										
() is the % Deaths < 75 years as a Proportion of all Deaths*										
Year	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	AUST	NZ
2008	47 (38%)	35 (33%)	83 (36%)	58 (33%)	56 (34%)	110 (31%)	40 (74%)	58 (38%)	52 (34%)	28 (38%)
2009	46 (39%)	42 (34%)	134 (39%)	55 (33%)	33 (36%)	82 (32%)	28 (77%)	39 (39%)	50 (35%)	39 (38%)
2010	47 (39%)	54 (34%)	166 (36%)	86 (32%)	67 (35%)	76 (32%)	28 (75%)	45 (38%)	62 (35%)	38 (38%)
2011	65 (38%)	46 (33%)	132 (36%)	91 (32%)	40 (35%)	89 (31%)	57 (75%)	68 (38%)	67 (34%)	34 (37%)
2012	74 (37%)	54 (33%)	213 (33%)	84 (31%)	101 (34%)	73 (30%)	103 (76%)	64 (37%)	71 (34%)	34 (37%)

* The number of actual donors is compared to the number of deaths that are aged less than 75 years (Figure 1.6)
 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 1.7. Much of the increase in donor numbers has arisen from changes in rates of donors after circulatory death (DCD), demonstrated in Figure 1.8.





Overview of Organ Donation

Figure 1.9

Australia Overview

Population (million)	23.1
Actual Deceased Organ Donors - both DBD & DCD included (pmp)	391 (16.9)
Kidney Tx Recipients from deceased donors - includes all combinations (pmp)	630 (27.2)
Liver Tx Recipients from deceased donors - includes all combinations (pmp)	252 (10.9)
Heart Tx Recipients from deceased donors - includes all combinations (pmp)	77 (3.3)
Heart-Lung Tx Recipients from deceased donors - includes all combinations (pmp)	2 (.1)
Lung Tx Recipients from deceased donors - includes all combinations (pmp)	167 (7.2)
Pancreas Tx Recipients from deceased donors - includes all combinations (pmp)	33 (1.4)
Pancreas Islet Tx Recipients from deceased donors - includes all combinations (pmp)	1 (0)
Total number of Transplant Organs (pmp)*	1177 (50.9)
Total number of Transplant Recipients (pmp)^	1122 (48.5)
(pmp) per million population	

Figure 1.10

New Zealand Overview

Population (million)	4.5
Actual Deceased Organ Donors - both DBD & DCD included (pmp)	36 (8.1)
Kidney Tx Recipients from deceased donors - includes all combinations (pmp)	55 (12.3)
Liver Tx Recipients from deceased donors - includes all combinations (pmp)	26 (5.8)
Heart Tx Recipients from deceased donors - includes all combinations (pmp)	9 (2)
Lung Tx Recipients from deceased donors - includes all combinations (pmp)	18 (4)
Total number of Transplant Organs (pmp)*	111 (24.9)
Total number of Transplant Recipients (pmp)^	108 (24.2)
(pmp) per million population	

* The total number of transplant organs differs from total number of Transplant Recipients as each organ, with the exception of double-lung, is counted as a single organ transplant.

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

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



Overview of Organ Donation

Figure 1.11

Number of Transplant Organs in 2013 by State & Country of Donation (pmp) in Australia and New Zealand											
Organs	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	AU	NZ	
Kidney	128	167	11	167	15	55	14	88	645 [^] (27.9)	58 [*] (13.0)	
Liver	45	74	7	57	7	24	5	33	252 ⁺ (10.9)	26 ⁺⁺ (5.8)	
Heart	15	21	2	17	0	10	1	11	77 (3.3)	9 (2.0)	
Heart/Lung	0	2	0	0	0	0	0	0	2 (0.1)	0 (0.0)	
Lung	36	40	3	47	4	12	3	22	167 [#] (7.2)	18 (4.0)	
Pancreas	2	13	2	6	1	5	0	4	33 (1.4)	0 (0.0)	
Pancreas Islets	0	0	0	0	0	1	0	0	1 (0.0)	0 (0.0)	
Intestine	0	0	0	0	0	0	0	0	0 (0.0)	0 (0.0)	
Total	226	317	25	294	27	107	23	158	1177 (50.9)	111 (24.9)	

[^] includes 615 single kidneys, 9 double adult kidneys and 6 enbloc kidneys in Australia
^{*} includes 52 single kidneys, 2 double adult kidneys and 1 en-bloc kidneys in New Zealand
⁺ includes 207 whole liver, 38 split liver and 7 cut down liver in Australia
⁺⁺ includes 21 whole liver, 4 split liver and 1 cut down liver in New Zealand
[#] includes 162 double lung and 5 single lung in Australia

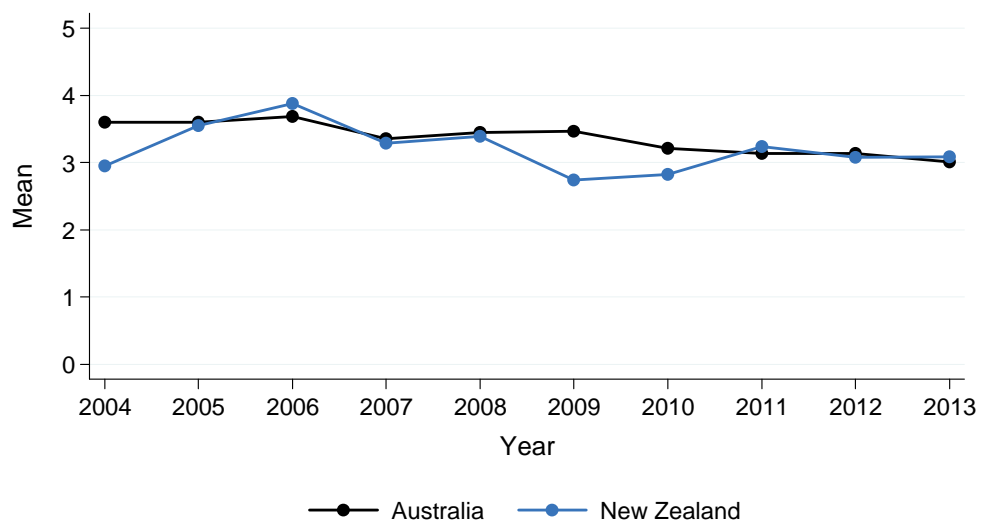
Figure 1.12

The number of transplant organs per donor is calculated by the number of organs retrieved from actual donors for the purpose of transplantation divided by the number of actual donors.

The number of transplant organs per donor each year from 2004 - 2013 in Australia and New Zealand is shown in Figure 1.12.

The number of transplant organs per donor across the Australian states and territories ranged from 4.2 from the ACT to 2.6 organs per donor from Victoria.

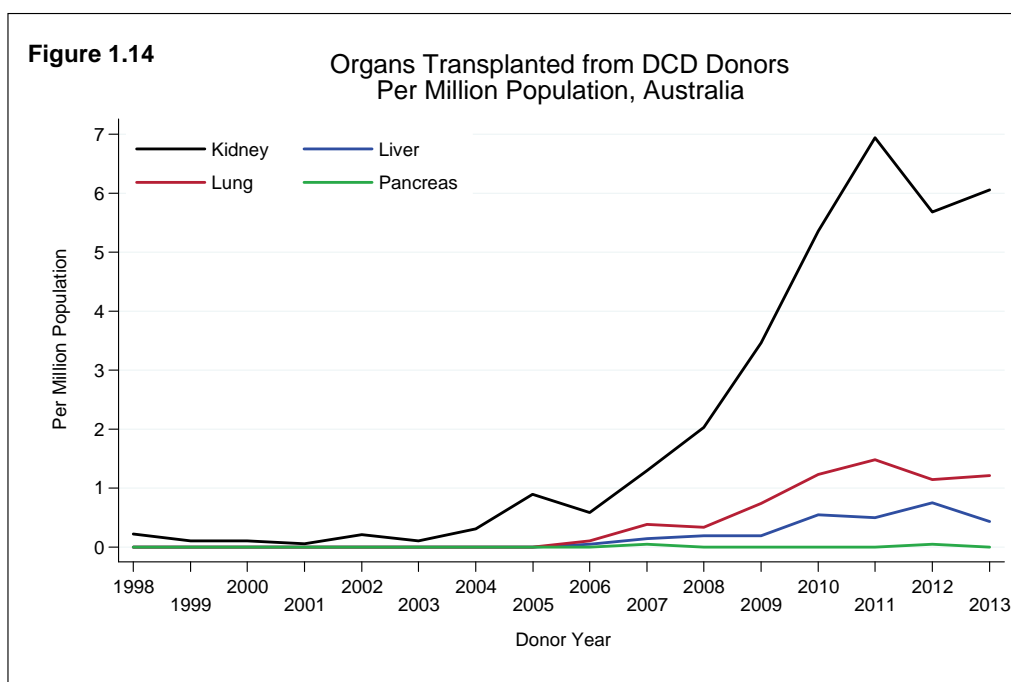
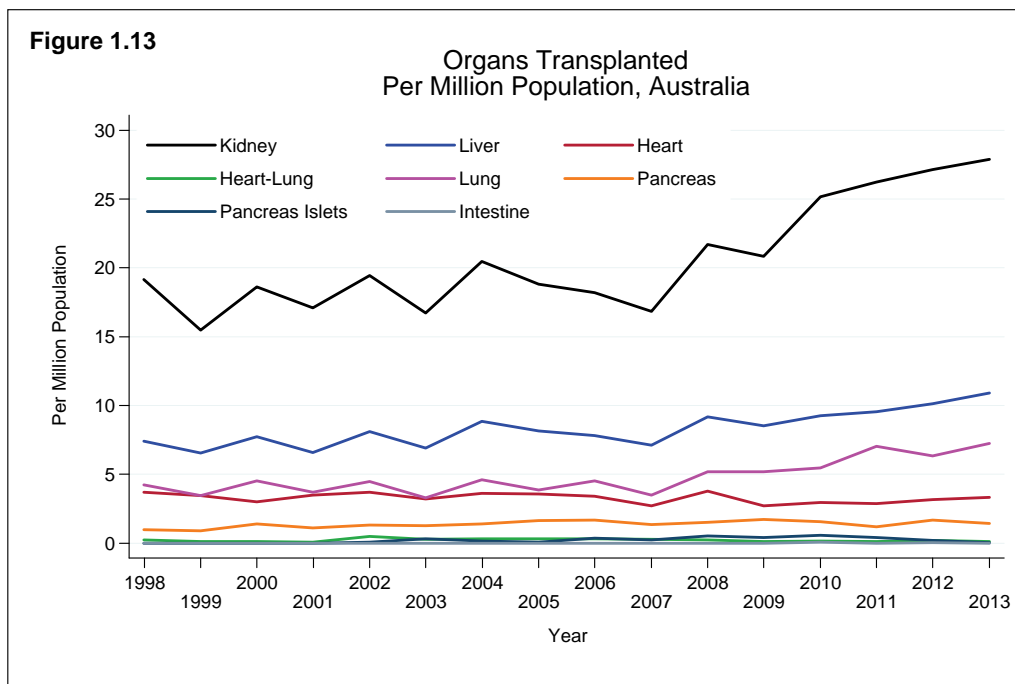
Number of Transplant Organs per Donor
2004 - 2013





Overview of Organ Donation

Figure 1.13 shows the organ-specific transplant rates for Australia over the period 1998 - 2013. Figure 1.14 shows the corresponding rates for donors after circulatory death. The dominant outcome of these donors is on rates of kidney transplants. 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 1.15 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>.

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

Figure 1.15

Location of Postcodes of Deceased Donors 2009 - 2013									
Postcode	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	AUST
Major Cities of Australia	172 (54%)	306 (73%)	29 (66%)	335 (71%)	1 (2%)	110 (68%)	2 (9%)	103 (68%)	1058 (65%)
Inner Regional Australia	86 (27%)	87 (21%)	11 (25%)	114 (24%)	24 (56%)	24 (15%)	1 (4%)	30 (20%)	377 (23%)
Outer Regional Australia	49 (15%)	19 (5%)	3 (7%)	15 (3%)	15 (35%)	22 (14%)	13 (57%)	8 (5%)	144 (9%)
Remote Australia	4 (1%)	2 (<1%)	0 (0%)	0 (0%)	2 (5%)	3 (2%)	4 (17%)	7 (5%)	22 (1%)
Very Remote Australia	2 (1%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (1%)	3 (13%)	3 (2%)	10 (1%)
Overseas	4 (1%)	5 (1%)	1 (2%)	5 (1%)	1 (2%)	1 (1%)	0 (0%)	1 (1%)	18 (1%)
Total	317	419	44	469	43	162	23	152	1629

In the last five years (2009-2013) there have been 18 deceased donors who were visitors to Australia. In 2013, there were three donors from overseas in Australia, two donated from the state of New South Wales and one from Western Australia.

There were no overseas donors in New Zealand in 2013.

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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