

CHAPTER 15

ORGAN DONOR PROCUREMENT

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ORGAN DONORS IN AUSTRALIA AND NEW ZEALAND

(Summarised from the Australia and New Zealand Organ Donation Registry Report 2001)

For more detail please refer to Website: www.anzdata.org.au

Figure 15.1

Number of Donors 1996 - 2000					
	1996	1997	1998	1999	2000
Queensland	35 (10)	37 (11)	40 (12)	20 (6)	37 (10)
New South Wales	63 (10)	65 (10)	63 (10)	48 (7)	55 (9)
Aust. Capital Territory	6 (20)	4 (13)	2 (6)	2 (6)	5 (16)
Victoria	49 (11)	42 (9)	40 (9)	42 (9)	44 (9)
Tasmania	1 (2)	5 (11)	0 (0)	6 (13)	1 (2)
South Australia	25 (17)	25 (17)	35 (24)	30 (20)	30 (20)
Northern Territory	3 (17)	4 (21)	3 (16)	3 (16)	2 (10)
Western Australia	12 (7)	8 (4)	13 (7)	13 (7)	22 (12)
Australia	194 (11)	190 (10)	196 (10)	164 (9)	196 (10)
New Zealand	36 (10)	42 (11)	46 (12)	39 (10)	41 (11)

() Donors Per Million of Population
Refer to Appendix for the number of donors by State and Hospital and population

In 2000 donor figures include four donors from Australia (one Victoria, one Queensland, and two South Australia) who went to the operating room, but, the decision was made not to retrieve organs. The reasons were; two biopsy results (kidneys unuseable), cancer detected, cirrhosis detected.

The donor rate in both Australia and New Zealand has not changed appreciably over the last five years.

Historically the comparison of organ donation rates between States and Countries has been based upon donors per million population (dpmp).

However, the number of deaths that occur and therefore the ability of a deceased person to be a donor may be a more valuable way of comparing donation rates. These are shown for Australian States and New Zealand in Figure 15.2.

Australian data on deaths for 2000 are not available until August of 2001. New Zealand data include 2000.

DONOR PROFILE

Age and Gender Distribution

The mean age for donors has increased from 38.3 to 41.1 years since 1996. In 2000 there were 12 donors (6%) older than 65 years. This is similar to last year. The oldest donor was 77.9 years.

When comparing Australian States, the mean age ranged from the highest in Victoria of 45.1 years to the lowest of 30.3 years in the ACT.

Figure 15.2

Donors per Thousand Deaths 1996 - 2000										
Year	Qld	NSW	ACT	Vic.	Tas.	SA	NT	WA	Aust.	N.Z.
1996	1.6	1.5	4.8	1.5	0.3	2.2	3.9	1.1	1.5	1.3
1997	1.7	1.5	3.0	1.3	1.3	2.2	4.5	0.7	1.5	1.5
1998	1.8	1.4	1.6	1.2	0.0	3.0	3.6	1.2	1.5	1.8
1999	0.9	1.0	1.5	1.3	1.6	2.7	3.5	1.2	1.3	1.4
2000	-	-	-	-	-	-	-	-	-	1.5

Figure 15.3

Australian States Mean Age of Donors 1996 - 2000									
Year	Qld	NSW	ACT	Vic.	Tas.	SA	NT	WA	Aust.
1996	30.5	38.8	45.8	43.0	47.1	38.5	36.8	35.0	38.3
1997	37.5	39.6	48.3	43.8	38.3	45.3	33.5	28.7	40.4
1998	35.7	42.7	42.1	43.4	00.0	40.3	44.7	33.9	40.4
1999	40.0	42.4	49.9	40.1	35.8	35.4	24.3	36.5	39.3
2000	40.3	40.5	30.3	45.1	63.1	39.0	44.3	39.7	41.1

Figure 15.4

Age of Male and Female Donors 1996 - 2000

Country	Year	Mean (years)			Median (years)			Range in Years
		All	Female	Male	All	Female	Male	
Australia	1996	38.3	40.3	36.9	38.5	46.1	36.2	1.45 - 74.2
	1997	40.4	42.4	39.3	43.1	41.9	43.6	2.5 - 76.1
	1998	40.4	43.8	37.7	43.2	46.2	37.2	0.94 - 73.7
	1999	39.3	43.2	36.4	42.5	47.5	36.2	0.21 - 77.1
	2000	41.1	42.6	40.0	44.1	45.1	43.0	0.4 - 77.9
New Zealand	1996	36.6	37.9	35.1	35.2	42.7	29.9	9.6 - 72.5
	1997	34.8	37.3	33.2	26.4	46.0	23.7	7.1 - 71.6
	1998	38.0	45.0	34.5	35.9	50.1	32.5	2.8 - 69.7
	1999	42.7	45.5	39.3	49.0	50.4	40.3	3.1 - 73.2
	2000	39.7	38.3	40.9	42.7	42.7	43.9	5.5 - 68.5

The age difference between male and female donors appears to be less in 2000 in both Australia and New Zealand compared to previous years (fig 13.4).

Figure 15.5

Gender of Donors 1989 - 2000

	Female	Male	Total
Queensland	166 (35%)	306 (65%)	472
New South Wales	327 (41%)	468 (59%)	795
ACT	16 (35%)	30 (65%)	46
Victoria	234 (44%)	296 (56%)	530
Tasmania	12 (31%)	27 (69%)	39
South Australia	122 (41%)	173 (59%)	295
Northern Territory	3 (12%)	22 (88%)	25
Western Australia	79 (43%)	106 (57%)	185
Australia	959 (40%)	1428 (60%)	2387
New Zealand 1993-2000	132 (43%)	176 (57%)	308

In all States and in New Zealand, male donors out number female donors (fig 13.5).

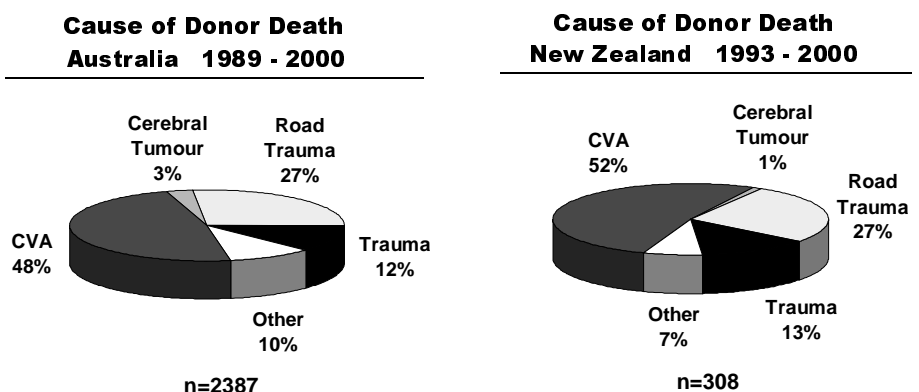
CAUSE OF DONOR DEATH

Figure 13.6 shows the cause of death for all organ donors in Australia since 1989 and for New Zealand since 1993. The primary cause of death was cerebrovascular accident (CVA) (48% of all Australian donors and 52% of all New Zealand donors).

Figure 13.7 shows CVA is responsible for 78% of all deaths in donors 55 years and older, whereas in the 15-34 year age group, trauma accounted for 64% of all deaths, compared to 59% in 2000.

Figure 13.8 shows detailed cause of death by gender for 2000.

Figure 15.6





CAUSE OF DONOR DEATH

Figure 15.7

Cause of Donor Death Related to Age Group 2000

Cause of Death	Australia					New Zealand				
	0-14	15-34	35-54	55 on	Total	0-14	15-34	35-54	55 on	Total
CVA	1	9	52	40	102	0	2	15	7	24
Trauma (road)	3	30	7	1	41	0	5	1	0	6
Trauma (non-road)	1	8	8	5	22	0	3	1	1	5
Other	7	12	7	5	31	2	3	1	0	6
Total	12	59	74	51	196	2	13	18	8	41

Figure 15.8

Cause of Donor Death 2000

Cause of Death	Australia			New Zealand			
	Male	Female	Total	Male	Female	Total	
CVA	Cerebral Infarct	7	7	14	0	0	0
	Intracranial Haemorrhage	38	50	88	12	12	24
Road Trauma	Cyclist	2	0	2	0	0	0
	Motor Bike Accident	4	0	4	1	0	1
	Motor Vehicle Accident	19	10	29	1	3	4
	Pedestrian	4	1	5	1	0	1
	Other Road Accident	0	1	1	0	0	0
Other Trauma	Fall	13	2	15	2	0	2
	Felony / Crime - Assault	1	0	1	1	0	1
	Gunshot	2	0	2	2	0	2
	Other Trauma	4	0	4	0	0	0
Hypoxia Anoxia	Anaphylaxis	0	0	0	0	1	1
	Carbon Monoxide	1	1	2	0	0	0
	Cardiac Arrest	3	2	5	1	0	1
	Cardio-respiratory Arrest	0	1	1	0	0	0
	Drowning	1	0	1	0	0	0
	Epilepsy	1	0	1	0	1	1
	Fat Embolus	1	0	1	0	0	0
	Hanging	2	1	3	0	0	0
	Hypoglycaemia	0	0	0	0	1	1
	Overdose	0	2	2	0	0	0
	Phenytoin Overdose	0	1	1	0	0	0
Post Accident	0	1	1	0	0	0	
Seizure - Respiratory Arrest	1	0	1	0	0	0	
Ventricular Fibrillation	1	0	1	0	0	0	
Cerebral Tumour	Ependymoma (Benign)	1	0	1	0	0	0
	Glioblastoma (Malignant)	0	2	2	0	0	0
	Medulloblastoma (Malignant)	0	1	1	0	0	0
	Pineal Teratoma (Malignant)	1	0	1	0	0	0
Other	Cardiomyopathy	1	0	1	0	0	0
	Cerebral Oedema	1	0	1	0	1	1
	Hydrocephalus	0	0	0	1	0	1
	Meningitis (Meningococcal)	2	0	2	0	0	0
	Methanol	0	1	1	0	0	0
	SIDS	1	0	1	0	0	0
Total	112	84	196	22	19	41	

ORGANS REQUESTED

From the 196 Australian organ donors in 2000, the requests for specific organs were: kidneys 98%, liver 96%, heart 86%, lungs 85% and pancreas 61%.

From the 41 New Zealand donors in 2000, the requests for specific organs were: kidneys 100%, liver 98%, heart 83%, lungs 83% and pancreas 68%.

Figure 15.9

Trend to Multiple Organ Retrieval 1996 - 2000										
No. of Organs	Australia					New Zealand				
	1996	1997	1998	1999	2000	1996	1997	1998	1999	2000
Single	27%	24%	23%	17%	21%	17%	33%	20%	21%	7%
Two	24%	23%	32%	30%	29%	44%	31%	50%	44%	42%
Three	25%	23%	19%	27%	24%	25%	33%	16%	23%	34%
Four	18%	24%	20%	23%	20%	14%	3%	12%	10%	15%
Five	6%	6%	6%	3%	6%	0%	0%	2%	2%	2%

Figure 15.10

State by State Comparison of Multiple Organ Retrieval 2000										
No. of Organs	Qld	NSW	ACT	Vic.	Tas.	SA	NT	WA	Aust.	N.Z.
Single	8 (22%)	5 (9%)	0 (0%)	10 (23%)	1 (100%)	7 (24%)	1 (50%)	8 (36%)	40 (21%)	3 (7%)
Two	13 (34%)	17 (31%)	2 (40%)	8 (18%)	0 (0%)	11 (38%)	1 (50%)	4 (18%)	56 (29%)	17 (42%)
Three	8 (22%)	12 (22%)	1 (20%)	12 (30%)	0 (0%)	7 (24%)	0 (0%)	6 (27%)	47 (24%)	14 (34%)
Four	8 (22%)	13 (24%)	1 (20%)	12 (27%)	0 (0%)	2 (7%)	0 (0%)	3 (14%)	39 (20%)	6 (15%)
Five	0 (0%)	8 (14%)	1 (20%)	1 (2%)	0 (0%)	2 (7%)	0 (0%)	1 (5%)	13 (6%)	1 (2%)
Total	37 (100%)	55 (100%)	5 (100%)	44 (100%)	1 (100%)	29 (100%)	2 (100%)	22 (100%)	195 (100%)	41 (100%)

NB: 2 kidneys = 1 organ, 2 lungs = 1 organ
On occasions when only one kidney is retrieved, this is also defined as one organ.

ORGAN RECIPIENTS TRANSPLANTED

Australia had a mean of 3.35 organs from each donor used for transplantation in 2000, similar to New Zealand at 3.4.

For the purpose of this calculation, the number of recipients transplanted is used, rather than the number of organs.

The ACT had the highest number of organs transplanted, 4 per donor, followed by New South Wales 3.75, Victoria 3.5 and Queensland 3.24. These figures exclude tissue transplantation.

Figure 15.11

Organ Recipients Transplanted per Donor 2000										
	Qld	NSW	ACT	Vic.	Tas.	SA	NT	WA	Aust.	N.Z.
No. Organs Transplanted	120	206	20	154	2	88	5	61	656	139
No. of Donors	37	55	5	44	1	30	2	22	196	41
Average per Donor	3.24	3.75	4	3.5	2	2.9	2.5	2.8	3.35	3.4

Double lungs = 1 organ (1 recipient)
Two kidneys = 2 organs



KIDNEY DONATION

Figure 15.12

Age of Kidney Donors 1996 - 2000

Country	Year	00-04	05-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	Total
Australia	1996	5 (3)	10	36	29	36	39	25	8	0	188
	1997	3 (2)	8	32	21	36	46	21	12	3	182
	1998	1 (1)	10	37	22	32	33	34 (1*)	14 (1x)	0	183
	1999	4 (3)	11 (2)	24	22	17	32	29	9 (1x)	2 (1x)	150
	2000	2 (3)	10	30	24	28	42	34 (1x)	11	1	182
New Zealand	1996	0	2	12	3	3	9	6	1	0	36
	1997	0	4	14	4	3	9	7	1	0	42
	1998	1 (1)	4	8	6	8	7	6	1	0	41
	1999	0	3 (1)	3	4	4	14	5	4	0	37
	2000	0	2	9	4	6	12	6	1	0	40

() En-Bloc Kidneys * Horseshoe Kidney (Adult) x Double Adult

Figure 15.13

Outcome of Request for Kidney Donation 2000

