ORGAN DONOR PROCUREMENT

Organ Donors in Australia and New Zealand 1997

(Summarised from the Australia and New Zealand Organ Donation Registry Report 1998)
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The Australian and New Zealand organ donation rate over the last four years has remained relatively unchanged at 10-11 donors per million of population (dpmp). In 1997, of the states with a sufficient population to make figures meaningful there was a range of 17 dpmp in South Australia to 4 dpmp in Western Australia. See Figure 261.

Previously the comparison between States and Countries has been based upon dpmp. However, the number of deaths that occur and therefore the ability of deceased to be donors may be a more valuable way of comparing donation rates. Australian data on deaths for 1997 is not available until August of 1998.

New Zealand data is from 1993 and includes 1997.

Data has been amended (since the last report) as more accurate figures have become available from the Australian Bureau of Statistics (June Quarter 1997 Report). See Figure 261 and 262.

Figure 261 **Australia and New Zealand**

Number of Donors 1993 - 1997

	1993		1994		1995		1996		1997	
Queensland	44	(14)	38	(12)	34	(10)	35	(10)	37	(11)
New South Wales/ACT	74	(12)	73	(11)	67	(10)	69	(11)	69	(10)
Victoria	52	(12)	26	(6)	38	(8)	49	(11)	42	(9)
Tasmania	6	(13)	6	(13)	4	(8)	1	(2)	5	(11)
South Australia	23	(16)	23	(16)	23	(16)	25	(17)	25	(17)
Northern Territory	3	(18)	1	(6)	1	(6)	3	(17)	4	(21)
Western Australia	19	(11)	16	(9)	17	(10)	12	(7)	8	(4)
Australia	**221**	**(13)**	**183**	**(10)**	**184**	**(10)**	**194**	**(11)**	**190**	**(10)**
New Zealand	**34**	**(10)**	**35**	**(10)**	**35**	**(10)**	**36**	**(10)**	**42**	**(11)**

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

Figure 262 **Australia and New Zealand**

Donors per Thousand Deaths 1991 - 1997

Year	Australia	New Zealand
1991	1.75	0
1992	1.75	0
1993	1.82	1.25
1994	1.44	1.29
1995	1.47	1.29
1996	1.51	1.27
1997	N/A	1.52

Donor Profile

Age and Gender Distribution

See Figure 263 to 265.

There has been a steady increase in the mean and median age for Australian donors over the last four years (mean 36.3 to 40.4 years and median 36.8 to 43.1 years). In 1997 there were 16 donors (8%) older than 65 years, with the oldest donor being 76.1 years.

In comparison, New Zealand has seen a decrease in mean and median ages over the last four years (mean 40.5 to 34.6 years and median 40.6 to 26.4 years). In 1997 there was one donor (3%) older than 65 years, being 71.6 years.

When comparing Australian States, the mean age ranged from the highest in South Australia 45.3 years to the lowest 28.7 years in Western Australia.

The gender distribution by Australian States and New Zealand is shown in Figure 265.

Figure 263 **Australia and New Zealand**

Age of Male and Female Donors 1994 - 1997

		Mean (years)			Median (years)			Range Years
		All	Female	Male	All	Female	Male	
Australia	1994	36.3	38.9	34.0	36.8	41.8	31.7	1.3 - 76.3
	1995	37.6	40.0	36.4	38.1	41.7	35.2	3.0 - 72.0
	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
New Zealand	1994	40.5	44.8	38.3	40.6	47.3	37.3	2.5 - 70.1
	1995	34.2	34.0	34.3	34.8	35.3	28.6	6.8 - 70.7
	1996	36.6	37.9	35.1	35.2	42.7	29.9	9.6 - 72.5
	1997	34.6	36.9	33.2	26.4	46.0	23.7	7.1 - 71.6

Figure 264 **Australian States**

Mean Age of Donors 1994 - 1997

	Qld	NSW/ACT	Vic.	Tas.	SA	NT	WA	Aust.
1994	31.6	39.0	37.3	35.0	34.1	29.9	38.2	**36.3**
1995	34.4	37.2	38.8	23.4	40.2	43.4	42.0	**37.6**
1996	30.5	39.4	43.0	47.1	38.5	36.8	35.0	**38.3**
1997	37.5	40.1	43.8	38.1	45.3	33.5	28.7	**40.4**

Figure 265 **Australia and New Zealand**

Gender of Donors 1989 - 1997

	Female		Male		Total
Queensland	127	34%	248	66%	**375**
New South Wales/ACT	269	40%	397	60%	**666**
Victoria	174	43%	230	57%	**404**
Tasmania	10	31%	22	69%	**32**
South Australia	78	39%	122	61%	**200**
Northern Territory	1	6%	16	94%	**17**
Western Australia	59	43%	78	57%	**137**
Australia	**718**	**39%**	**1113**	**61%**	**1831**
New Zealand 1993-97	**77**	**42%**	**105**	**58%**	**182**

Cause of Death - All Donors

Figures 266 to 268 show the cause of death for all organ donors in Australia since 1989 and for New Zealand since 1993. The primary cause of death is cerebrovascular accident (CVA) (46% of all Australian donors and 49% of all New Zealand donors).

Figure 266 shows CVA is responsible for 87% of all deaths in donors 55 years and older, whereas in the 15-34 year age group, trauma accounted for 57% of all deaths, compared to 71% in 1996.

Figure 266 **Australia and New Zealand**

Cause of Donor Death Related to Age Group 1997

	Australia					New Zealand				
	0-14	15-34	35-54	55 on	Total	0-14	15-34	35-54	55 on	Total
CVA	3	19	57	33	**112**	0	2	7	4	**13**
Road Trauma	4	23	8	0	**35**	2	12	2	2	**18**
Trauma (non road)	2	9	8	2	**21**	2	4	3	2	**11**
Other	2	5	12	3	**22**	0	0	0	0	**0**
Total	**11**	**56**	**85**	**38**	**190**	**4**	**18**	**12**	**8**	**42**

Figure 267 **Australia and New Zealand**

Cause of Donor Death 1989 - 1997

	Qld	NSW/ACT	Vic.	Tas.	SA	NT	WA	Aust.	N.Z.
CVA	39%	51%	48%	41%	44%	18%	47%	**46%**	**49%**
Road Trauma	32%	26%	28%	28%	26%	41%	39%	**29%**	**45%**
Trauma (non road)	17%	12%	10%	22%	15%	24%	5%	**13%**	**13%**
Other	12%	11%	14%	9%	15%	17%	9%	**12%**	**6%**

Figure 268

Cause of Donor Death

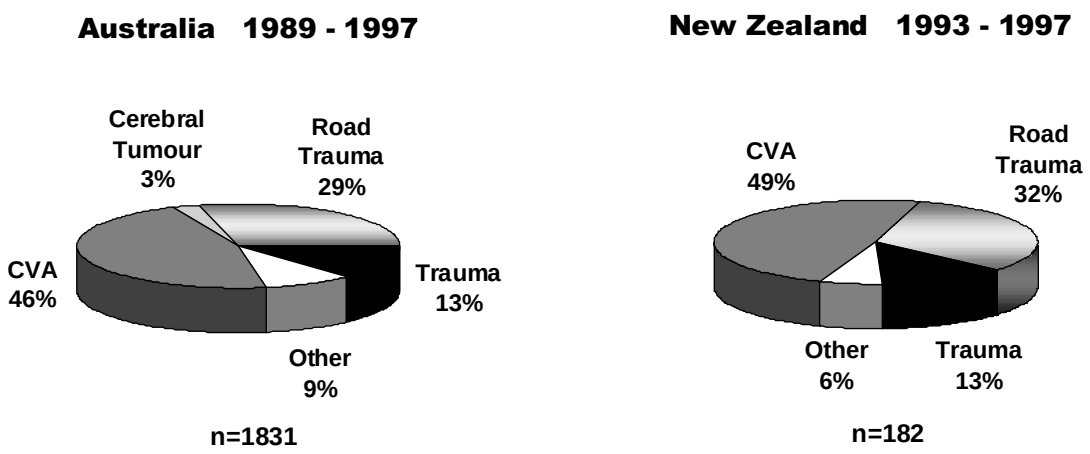


Figure 269 **Australia and New Zealand**

Cause of Donor Death 1997

Causes of Death		Australia			New Zealand		
		Male	Female	Total	Male	Female	Total
CVA	Intracranial Haemorrhage	60	46	**106**	4	9	**13**
	Cerebral Infarct	5	1	**6**	0	0	**0**
Road Trauma	Motor Vehicle Accident	13	4	**17**	8	1	**9**
	Motor Bike Accident	4	0	**4**	4	1	**5**
	Cyclist	3	0	**3**	0	2	**2**
	Pedestrian	6	2	**8**	1	0	**1**
	Other Road Accident						
	Fall from back of truck	1	0	**1**	0	0	**0**
	Fall from utility	1	0	**1**	0	0	**0**
	Head hit tree - back utility	1	0	**1**	0	0	**0**
	Hit by train	0	0	**0**	0	1	**1**
Other Trauma	Fall	7	3	**10**	5	0	**5**
	Other Accident						
	Hit tree on rope swing	1	0	**1**	0	0	**0**
	Pipe hit head	1	0	**1**	0	0	**0**
	Tree fell on head	1	0	**1**	0	0	**0**
	Branch fell on head	0	0	**0**	1	0	**1**
	Hit by wheel at Motorcross	0	0	**0**	0	1	**1**
	Gunshot	5	0	**5**	2	0	**2**
	Felony/Crime						
	Assault	1	0	**1**	0	0	**0**
	Head injury - fight	1	0	**1**	0	0	**0**
Hypoxia Anoxia	Carbon monoxide	2	0	**2**	0	0	**0**
	Cardiac arrest	0	5	**5**	0	0	**0**
	Cardiomyopathy - bronchospasm	0	1	**1**	0	0	**0**
	Respiratory arrest	1	0	**1**	0	0	**0**
	Hanging	1	0	**1**	0	1	**1**
	Asthma	0	1	**1**	0	0	**0**
Cerebral Tumour	Glioblastoma (malignant)	1	2	**3**	0	0	**0**
	Glioma (malignant)	1	0	**1**	0	0	**0**
Other	Cerebral abscess	1	0	**1**	0	0	**0**
	Diabetic ketoacidosis	0	1	**1**	0	0	**0**
	Meningitis - meningococcal	0	1	**1**	0	0	**0**
	Meningitis - pneumococcal	1	0	**1**	0	0	**0**
	Overdose	0	1	**1**	0	0	**0**
	Pulmonary embolus	0	1	**1**	0	0	**0**
	Respiratory failure	0	1	**1**	0	0	**0**
	Staphylococcal ventriculitis	1	0	**1**	0	0	**0**
	Suicide	0	0	**0**	1	0	**1**
Total		**120**	**70**	**190**	**26**	**16**	**42**

Figure 270 **Australia and New Zealand**

Heart Beating Donors 1994 - 1997

	Australia					New Zealand				
	1994	1995	1996	1997	Total	1994	1995	1996	1997	Total
Yes	182	180	192	187	**741**	34	35	35	41	**145**
No	1	4	2	3	**10**	1	0	1	1	**3**
Total	**183**	**184**	**194**	**190**	**751**	**35**	**35**	**36**	**42**	**148**

Australia 1995 - 1997

Figure 271

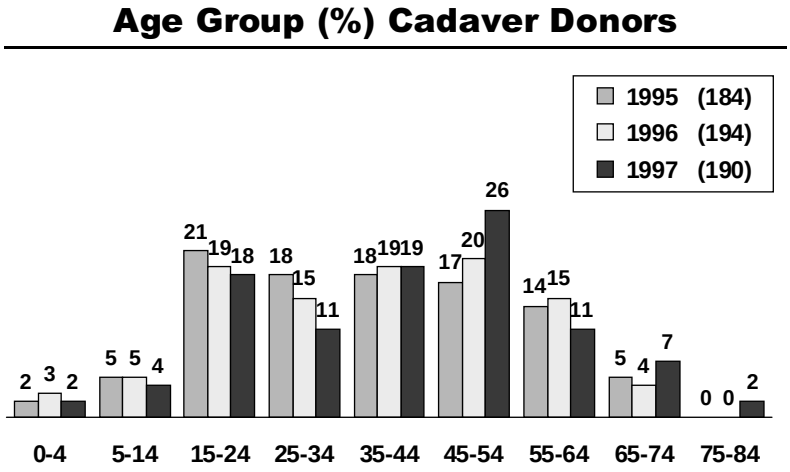
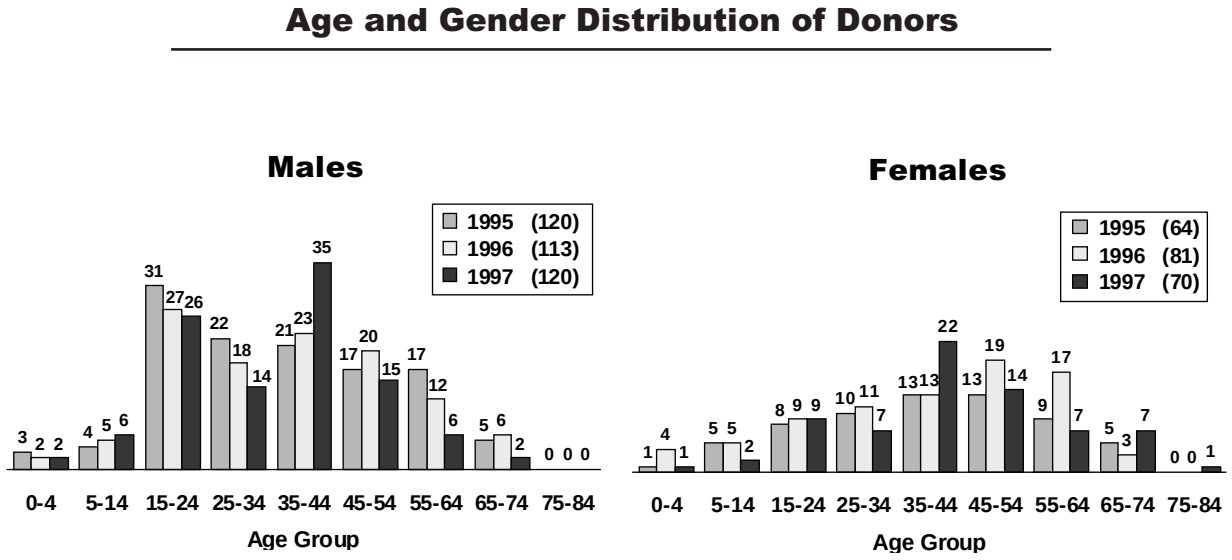


Figure 272



New Zealand 1995 - 1997

Figure 273

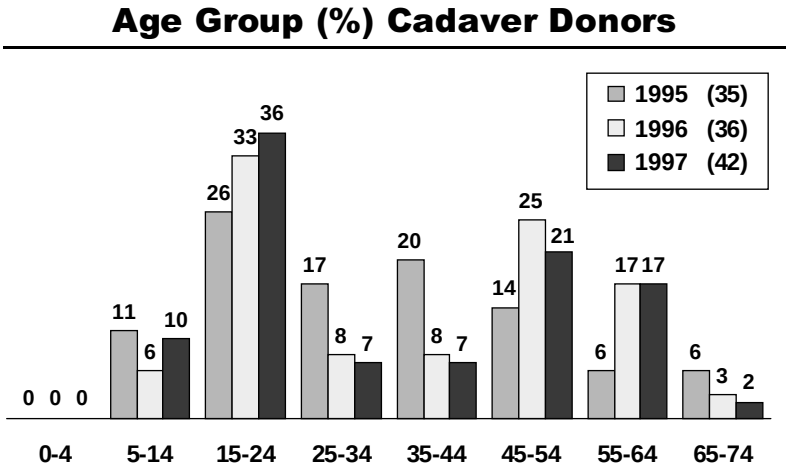
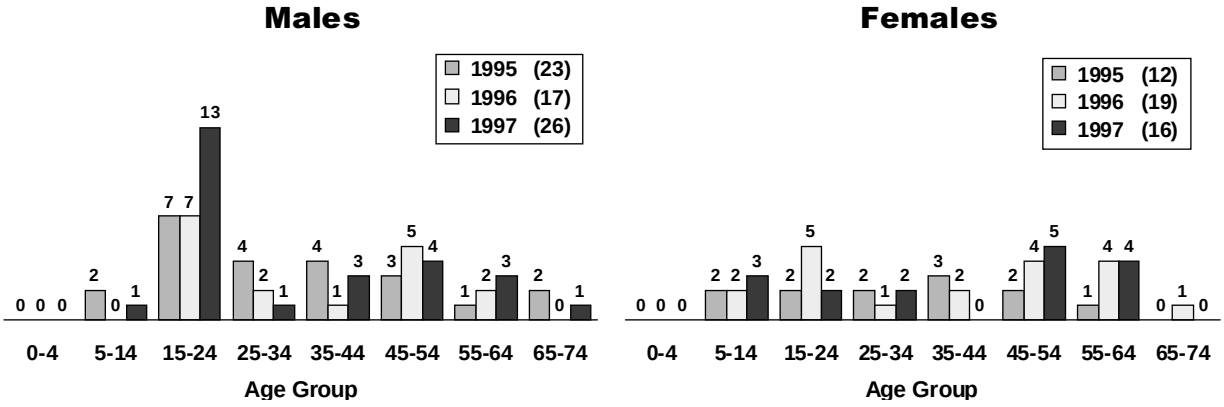


Figure 274



Medical Conditions of Donors

The following information relating to diabetes, hypertension, smoking and alcohol intake has been collected since 1993.

Diabetes

There were two type 1 diabetics (insulin dependent) and two type 2 (non-insulin requiring) accepted as donors in Australia in 1997. Since 1993 there have been a total of six type 1 and 13 type 2 diabetic donors. See Figure 275. New Zealand has not had any diabetic donors over the last five years.

Hypertension

In 1997, 15% (28) of Australian donors had a past history of chronic hypertension, 32% of this group had hypertension recorded between 5-10 years. See Figure 275. New Zealand recorded eight donors (19%) with a past history of chronic hypertension.

Smoking

In 1997, 35% of Australian organ donors were recorded as being current smokers, and 8% were recorded as being former smokers. See Figure 275. In New Zealand, 36% were reported as current smokers and 5% recorded as being former smokers.

Alcohol

In Australia (1997), 33% of donors were recorded as having an alcohol intake of > 40 grams per day. See Figure 2752. However, for the same year in New Zealand it was 10%.

Figure 275 **Australia**

Donor Diabetes, Hypertension, Smoking and Alcohol 1993 - 1997

	1993		1994		1995		1996		1997	
	(n=221)		(n=183)		(n=184)		(n=194)		(n=190)	
Diabetes Type 2	1	(<1%)	2	(1%)	6	(3%)	2	(1%)	2	(1%)
Hypertension	33	(15%)	21	(11%)	27	(15%)	21	(11%)	28	(15%)
Smoking										
Current	69	(31%)	59	(32%)	55	(30%)	77	(40%)	66	(35%)
Former	16	(7%)	13	(7%)	20	(11%)	16	(8%)	15	(8%)
Alcohol										
Current	61	(28%)	42	(23%)	57	(31%)	68	(35%)	63	(33%)
Former	8	(4%)	2	(1%)	6	(3%)	4	(2%)	2	(1%)

Figure 276 **Australian States**

Medical Conditions of Donor by Australian State 1997 (1996)

	Qld	NSW/ACT	Vic.	Tas.	SA	NT	WA	Total
Hypertension	2 (1)	11 (6)	9 (8)	1 (0)	4 (4)	0 (0)	1 (2)	**28 (21)**
Diabetes Type 1	0 (0)	1 (0)	0 (0)	0 (0)	0 (0)	1 (0)	0 (0)	**2 (0)**
Diabetes Type 2	0 (0)	2 (1)	0 (0)	0 (0)	0 (1)	0 (0)	0 (0)	**2 (2)**
Smoking Current	13 (9)	18 (29)	17 (19)	4 (0)	8 (13)	2 (3)	4 (4)	**66 (77)**
Alcohol intake >40 gms per day	9 (6)	12 (16)	21 (31)	4 (0)	10 (9)	4 (2)	3 (4)	**63 (68)**

Multiple Organ Donation

For those Australian organs in which consent had been given, the specific organ retrieval rates in 1997 were: kidneys 98%, liver 80%, heart 69%, lungs 47%, pancreas 29% and bone 64%.

Figure 277 shows the number of organs retrieved from each donor. In Australia in 1997, 76% of donors were multiple organ donors, compared to 67% in New Zealand.

For New Zealand in 1997, there were: kidneys 100%, liver 65%, heart 48%, lungs 17%, pancreas 25% and bone 55%.

Figure 277 **Australia and New Zealand**

Trend to Multiple Organ Retrieval 1994 - 1997

No. of Organs	Australia				New Zealand			
	1994	1995	1996	1997	1994	1995	1996	1997
Single	21%	18%	27%	24%	31%	29%	17%	33%
Two	27%	20%	24%	23%	43%	31%	44%	31%
Three	20%	33%	25%	23%	17%	20%	25%	33%
Four	26%	26%	18%	24%	9%	20%	14%	3%
Five	6%	3%	6%	6%	0	0	0	0

Organs Transplanted

The rate of transplantation from Australian organs that were retrieved in 1997 is as follows: kidneys 97%, liver 100% (including recipients of "split" livers), heart 95%, lungs 99%, pancreas 62%, bones were stored for later use.

Australia had 3.6 organs used for transplantation in 1997 compared to New Zealand at 3.0.

Western Australia had the highest number of organs transplanted, 4.5 per donor, followed by Queensland 4.1. These figures exclude tissue transplantation and relates to the number of recipients.

In 1997 for New Zealand, the transplantation rate was: kidneys 99%, liver 100%, heart 100%, lungs 70%, pancreas 0%, bones were stored for later use.

Figure 278 **Australia and New Zealand**

Organs Transplanted per Donor 1997 (1996)

	Qld		NSW/ACT		Vic./Tas.		SA/NT		WA		Aust.		N.Z.	
No. Organs Transplanted	150	(129)	240	(238)	160	(147)	93	(102)	36	(42)	679	(658)	126	(119)
No. of Donors	37	(35)	69	(69)	47	(50)	29	(28)	8	(12)	190	(194)	42	(36)
Average per Donor	4.1	(3.7)	3.5	(3.4)	3.4	(2.9)	3.2	(3.6)	4.5	(3.5)	3.6	(3.4)	3.0	(3.3)

Cadaveric Kidney Donors

A breakdown of the age of kidney donors from 1993-1997 is shown for Australia and New Zealand in Figure 279.

The outcome of requests for kidney donation in 1997 for Australia and New Zealand is shown in Figure 280.

Of the 366 kidneys retrieved, 9 were not transplanted. The reasons for these kidneys not being used is shown in Figure 281. The majority of kidneys not used were from donors aged more than 55 years of age. See Figure 282.

Figure 279 **Australia and New Zealand**

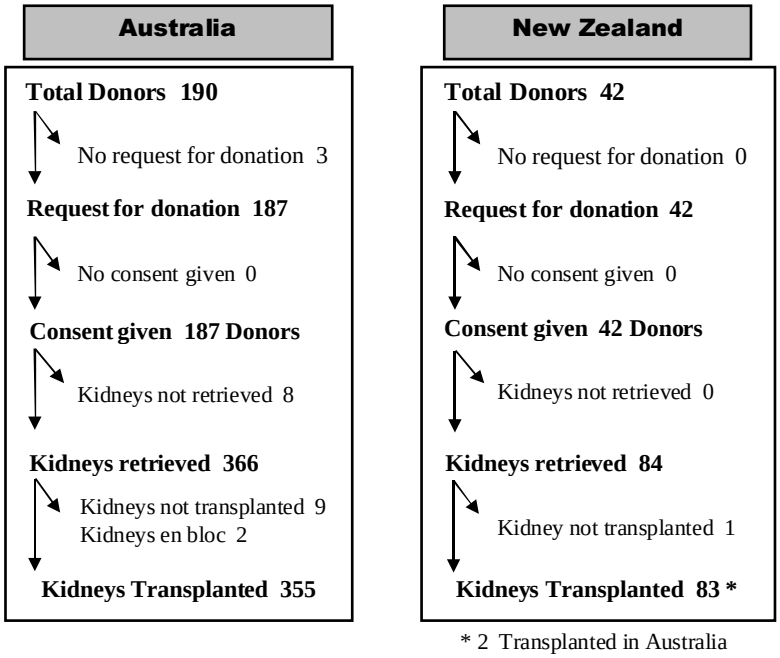
Age of Kidney Donors 1993 - 1997

	Year	00-04	05-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	Total
Australia	1993	3 (1)	17	46	34	33	39	26	7	0	**205**
	1994	5 (3)	10	46	23	27	32	17	10	1	**171**
	1995	4 (2)	9	39	31	33	29	23 (1)*	10	0	**178**
	1996	5 (3)	10	36	29	36	39	25	8	0	**188**
	1997	3 (2)	8	32	21	36	46	21	12	3	**182**
	Total	**20 (11)**	**54**	**199**	**138**	**165**	**185**	**112**	**47**	**4**	**924**
New Zealand	1993	1	0	6	3	6	14	2	1	0	**33**
	1994	1 (1)	0	4	8	7	10	4	1	0	**35**
	1995	0	4	9	6	7	5	2	2	0	**35**
	1996	0	2	12	3	3	9	6	1	0	**36**
	1997	0	4	15	3	3	9	7	1	0	**42**
	Total	**2 (1)**	**10**	**46**	**23**	**26**	**47**	**21**	**6**	**0**	**181**

( ) "En-Bloc" Kidneys
* Horseshoe Kidney (Adult)

Figure 280

Outcome of Request for Kidney Donation 1997



* 2 Transplanted in Australia

Figure 281 Australia and New Zealand

Reasons Kidneys were Unusable 1993 - 1997

		1993	1994	1995	1996	1997	Total
Australia	Renal disease in donor	17	2	5	9	4	**37**
	Infection in donor	2	2	0	3	1	**8**
	Cancer in donor	0	2	2	0	0	**4**
	Anatomical	1	0	0	6	3	**10**
	Surgical	2	2	5	1	1	**11**
	Trauma	2	0	0	0	0	**2**
	No suitable recipient	1	0	0	1	0	**2**
	Unknown	5	0	0	1	0	**6**
	Total	**30**	**8**	**12**	**21**	**9**	**80**
New Zealand	Surgical	0	0	0	1	1	**2**
	Unknown	4	0	0	0	0	**4**
	Total	**4**	**0**	**0**	**1**	**1**	**6**

Figure 282 Australia and New Zealand

Donor Age of Unusable Kidneys 1993 - 1997

	Year	00-04	05-14	15-24	25-34	35-44	45-54	55-64	65-74	Total
Australia	1993	0	1	2	0	1	7	10	9	**30**
	1994	1	0	0	2	0	0	3	2	**8**
	1995	0	0	0	0	4	0	8	0	**12**
	1996	3	0	0	0	1	0	11	6	**21**
	1997	0	0	0	0	0	2	4	3	**9**
	Total	**4**	**1**	**2**	**2**	**6**	**9**	**36**	**20**	**80**
New Zealand	1993	0	0	1	2	1	0	0	0	**4**
	1994	0	0	0	0	0	0	0	0	**0**
	1995	0	0	0	0	0	0	0	0	**0**
	1996	0	0	0	0	0	1	0	0	**1**
	1997	0	0	0	0	0	1	0	0	**1**
	Total	**0**	**0**	**1**	**2**	**1**	**2**	**0**	**0**	**6**

Kidney Perfusion Methods

Australia

In 1997, Ross solution was used predominantly (64%) as the single perfusion solution. See Figure 283.

However, University of Wisconsin (UW) was used as the final perfusion solution in 62% of cases when more than one solution was used. See Figure 284.

There has been a decrease since 1994 in the use of single solution perfusion and an increase in the addition of other solutions prior to the final use of UW solution over this period.

New Zealand

Collins and UW solution was predominantly used as the single perfusion solution.

UW was the final perfusion solution in 81% of kidneys.

Figure 283 **Australia and New Zealand**

Kidney Perfusion with Only One Solution 1994 - 1997

	Australia				New Zealand			
	1994	1995	1996	1997	1994	1995	1996	1997
Ross	97	84	114	71	6	0	8	12
UW	103	22	22	34	24	12	2	14
Collins	16	6	10	6	4	16	8	2
Hartmans	0	0	2	0	0	0	0	0
Total	**216**	**112**	**148**	**111**	**34**	**28**	**18**	**28**

Figure 284 **Australia and New Zealand**

Final Perfusion Solution - Kidneys 1994 - 1997

	Australia				New Zealand			
	1994	1995	1996	1997	1994	1995	1996	1997
Ross	125	130	130	99	10	2	12	14
UW	165	203	219	227	52	52	52	68
Collins	54	26	34	40	6	16	8	2
Hartmans	0	0	2	0	0	0	0	0
Total	**344**	**359**	**385**	**366**	**68**	**70**	**72**	**84**

Donor Kidney Function

Terminal Levels of Serum Creatinine and Urea

In 1997 in Australia, 88% of donors had a terminal serum creatinine of < 125 µmol/L and 87% had a terminal serum urea of < 9 mmol/L.

There has not been an appreciable change in donor terminal renal function from 1994 - 1997.

New Zealand had 90% of donors with a terminal serum creatinine of < 125 µmol/L and 92% with terminal serum urea of < 9 mmol/L.

Figure 285 **Australia and New Zealand**

Terminal Serum Creatinine Levels 1994 - 1997

Creatinine Levels	Australia				New Zealand			
	1994	1995	1996	1997	1994	1995	1996	1997
00-99	72%	56%	63%	69%	78%	56%	85%	67.5%
100-124	17%	26%	22%	19%	11%	35%	9%	22.5%
125-149	4%	12%	7%	4%	4.5%	9%	3%	5%
150-174	3%	5%	5%	4%	2%	0	0	2.5%
175-199	2%	0	1%	2%	0	0	3%	0
200-224	1%	1%	1%	1%	0	0	0	2.5%
225-249	1%	0	<1%	<1%	4.5%	0	0	0
> 250	0	<1%	0	1%	0	0	0	0
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Figure 286 **Australia and New Zealand**

Terminal Serum Urea Levels 1994 - 1997

Urea Levels	Australia				New Zealand			
	1994	1995	1996	1997	1994	1995	1996	1997
00-04	50%	35%	48%	49%	43%	46%	47%	39%
05-08	40%	55%	38%	38%	48%	44%	47%	53%
09-12	10%	9%	10%	10%	3%	5%	3%	5%
13-16	<1%	0	2%	2%	6%	5%	3%	0
> 16	0	1%	2%	1%	0	0	0	3%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Effect of Creatinine Level on Kidney Graft Survival

The kidney graft survival over five years was not significantly different (p=0.9448) when donors with a terminal serum creatinine of < 120 μmol/L were compared to those with higher levels.

The New Zealand data is presented for the first time in this Report.

The numbers are small and survival has been calculated for four years only.

Figure 287 **Australia and New Zealand**

Terminal Creatinine Levels in Kidney Donors
Primary Cadaver Graft Survival

	Creatinine Levels	1 Year	2 Years	3 Years	4 Years	5 Years
Australia 1989 to 30-Sep-97	Less than 120 μmol/L (n=2185)	87 ± 1	83 ± 1	80 ± 1	77 ± 1	74 ± 1
	Greater than or equal to 120 μmol/L (n=615)	85 ± 1	83 ± 2	79 ± 2	76 ± 2	73 ± 2
New Zealand 1993 to 30-Sep-97	Less than 120 μmol/L (n=234)	78 ± 3	75 ± 3	71 ± 4	67 ± 4	-
	Greater than or equal to 120 μmol/L (n=37)	84 ± 7	84 ± 7	84 ± 7	84 ± 7	-

[% survival ± S.E.]

Effect of Oliguria on Kidney Graft Survival

There was a significant reduction in kidney graft survival at one year (log rank p=0.0150) when comparing donors who had no oliguria and those who were oliguric. These differences became more obvious after two years.

In the terminal twelve hours oliguria was defined as urine output < 20 ml for any hour.

New Zealand data has been calculated for 4 years only.

Figure 288 **Australia and New Zealand**

Oliguria in Kidney Donors
Primary Cadaver Graft Survival

	Oliguria	1 Year	2 Years	3 Years	4 Years	5 Years
Australia 1989 to 30-Sep-97	No oliguria (n=2598)	87 ± 1	83 ± 1	80 ± 1	77 ± 1	75 ± 1
	Oliguria (n=299)	85 ± 2	81 ± 2	75 ± 3	71 ± 3	63 ± 3
New Zealand 1993 to 30-Sep-97	No oliguria (n=221)	76 ± 3	75 ± 3	71 ± 4	68 ± 4	-
	Oliguria (n=64)	79 ± 5	76 ± 6	76 ± 6	76 ± 6	-

[% survival ± S.E.]

Effect of Hypotension on Kidney Graft Survival

There was no significant difference (log rank p=0.2930) in kidney graft survival over five years between those donors with or without hypotension (defined as systolic blood pressure < 70 mmHg at any time), during their terminal care.

New Zealand data has been calculated for 4 years only.

Figure 289 **Australia and New Zealand**

Hypotension in Kidney Donors
Primary Cadaver Graft Survival

	Hypotension	1 Year	2 Years	3 Years	4 Years	5 Years
Australia 1989 to 30-Sep-97	No Hypotension (n=2124)	87 ± 1	83 ± 1	80 ± 1	77 ± 1	74 ± 1
	Hypotension (n=777)	86 ± 1	83 ± 1	79 ± 2	76 ± 2	72 ± 2
New Zealand 1993 to 30-Sep-97	No Hypotension (n=250)	77 ± 3	75 ± 3	71 ± 3	67 ± 4	-
	Hypotension (n=35)	85 ± 6	82 ± 7	78 ± 7	78 ± 7	-

[% survival ± S.E.]

Combined effect of Hypotension and Oliguria on Kidney Graft Survival

In donors without hypotension, the presence of oliguria was associated with a statistically significant difference in graft survival (log rank p=0.0087). Five year graft survival was 61% with oliguria and 75% without oliguria. In the presence of hypotension there was no significant difference (log rank p=0.5441) in the presence or absence of oliguria.

New Zealand data has been calculated for 4 years only.

Figure 290 **Australia and New Zealand**

Hypotension and Oliguria in Kidney Donors
Primary Cadaver Graft Survival

		1 Year	2 Years	3 Years	4 Years	5 Years
Australia 1989 to 30-Sep-97	**No Hypotension** (log rank p=0.0087)					
	Oliguria present (n=150)	86 ± 3	81 ± 3	71 ± 4	67 ± 4	61 ± 5
	Oliguria absent (n=1971)	87 ± 1	83 ± 1	80 ± 1	78 ± 1	75 ± 1
	Hypotension Present (log rank p=0.5441)					
	Oliguria present (n=149)	84 ± 3	81 ± 3	78 ± 4	73 ± 4	66 ± 4
	Oliguria absent (n=625)	86 ± 1	83 ± 2	79 ± 2	77 ± 2	74 ± 2
New Zealand 1993 to 30-Sep-97	**No Hypotension** (log rank p=0.3940)					
	Oliguria present (n=59)	78 ± 6	78 ± 6	78 ± 6	78 ± 6	-
	Oliguria absent (n=191)	76 ± 3	73 ± 4	69 ± 4	65 ± 5	-
	Hypotension Present (log rank p=0.3751)					
	Oliguria present (n=5)	80 ± 18	60 ± 22	60 ± 22	60 ± 22	-
	Oliguria absent (n=30)	86 ± 6	86 ± 6	82 ± 8	82 ± 8	-

[% survival ± S.E.]