

SUMMARY - AUSTRALIA

1. In 2001 there were: 185 donors (10 dpmp) with 350 kidneys, 142 livers, 59 hearts, 155 lungs and 26 pancreas transplanted into recipients.
2. In 2001 the highest donor rate was in the Australian Capital Territory (22 dpmp), and South Australia (17 dpmp), the lowest was in Tasmania (6 dpmp).
3. The mean age of donors in 2001 was 40.0 years, with an age range of 6.4 - 77.4 years. The male to female ratio is 3:2 over the reporting years, 1989-2001.
4. In 2001, 55% of donors with a known occupation were classified as student, blue collar and white collar workers. The majority of donors were Caucasoid and their religion was recorded as Christian.
5. In 2001, the major cause of death in 51% of donors was cerebrovascular accident (CVA). Road trauma caused 22% of all deaths.
6. In 2001, consent for organ donation was sought in 57% of cases by the Intensive Care Unit Clinician, volunteered by the family in 24% of cases and sought by the Donor Coordinator in 17% of cases. Coronial inquiries were required in 47% of all donors in 2001.
7. The donation of more than one organ occurred in 81% of donors in 2001.
8. The consent rates for specific organs were: kidneys 100%, liver 98%, heart 96%, lungs 96% and pancreas 93%.
9. In 2001, from donors where organs had been retrieved, 96% of kidneys, 95% of livers, 96% of hearts, 86% of lungs and 62% of pancreas were actually transplanted.
10. The average number of organs transplanted from each donor was 3.4.

SUMMARY - NEW ZEALAND

1. In 2001 there were: 37 donors (10 dpmp), which resulted in 75 kidneys, 34 livers, 13 hearts, 26 lungs and 3 pancreas being transplanted into recipients.
2. The mean age of donors was 41.1 years in 2001, with an age range of 16.6 - 68.9 years. The male to female ratio is 3:2 over the last eight years.
3. The major cause of death in 2001 was cerebrovascular accident in 59%, followed by road trauma in 24%.
4. In 2001, 41% of donors with a known occupation were classified as home duties and professional. The majority of donors were Caucasoid and their religion was recorded as Christian.
5. Consent for organ donation was sought in 45% of cases in 2001 by the Intensive Care Unit Clinician. There were no cases whereby consent was volunteered by the family. Coronial inquiries were required in 46% of all donors.
6. The donation of more than one organ occurred in 81% of donors in 2001.
7. The consent rate for specific organs were 100% of kidneys, 97% livers, 100% hearts, 97% lung and 93% pancreas.
8. In 2001, from donors where organs had been retrieved, 99% of kidneys, 93% of livers, 100% of hearts, 100% of lungs and 100% of pancreas were actually transplanted.
9. The average number of organs transplanted per donor was 3.4.
10. New Zealand has provided 16 kidneys, 178 livers, 12 hearts and 35 lungs (a total of 314 organs) to the Australian Transplant Programs since 1989.

In 2001, 2 livers and 4 lungs were sent from New Zealand to Australia, and 9 livers were sent from Australia to New Zealand.

ORGAN DONORS IN AUSTRALIA AND NEW ZEALAND

Figure 1

Number of Donors 1997 - 2001 *					
	1997	1998	1999	2000	2001
Queensland	37 (11)	40 (12)	20 (6)	37 (10)	48 (13)
New South Wales	65 (10)	63 (10)	48 (7)	55 (9)	47 (7)
ACT	4 (13)	2 (6)	2 (6)	5 (16)	7 (22)
Victoria	42 (9)	40 (9)	42 (9)	44 (9)	40 (8)
Tasmania	5 (11)	0 (0)	6 (13)	1 (2)	3 (6)
South Australia	25 (17)	35 (24)	30 (20)	30 (20)	25 (17)
Northern Territory	4 (21)	3 (16)	3 (16)	2 (10)	2 (10)
Western Australia	8 (4)	13 (7)	13 (7)	22 (12)	13 (7)
Australia	190 (10)	196 (10)	164 (9)	196 (10)	185 (10)
New Zealand	42 (11)	46 (12)	39 (10)	41 (11)	37 (10)

() Donors Per Million of Population

Refer to Appendix for the number of donors by State and Hospital and population

* This figure relates to the number of donors for whom the retrieval operation commenced for the purpose of transplantation. This includes donors who may be deemed medically unsuitable at time of surgery or after removal of organs.

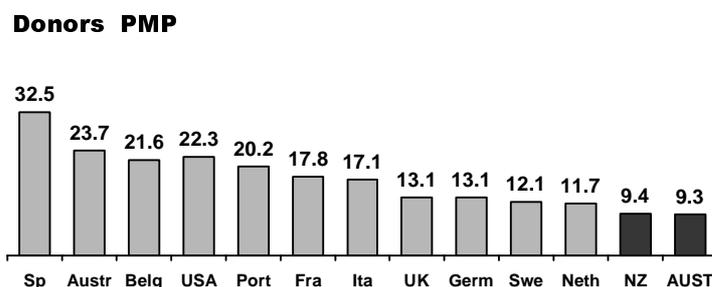
In 2001 donor figures include five donors from Australia (two Queensland, and three South Australia) who went to the operating room, but organs were not retrieved. The reasons were; three presence of infection, one biopsy results, one cancer detected.

In 2001, there was a range between mainland States of 7 dpmp in New South Wales and Western Australia, to 17 dpmp in South Australia.

Included in New Zealand donor figures is one donor who went to the operating theatre, however organs were not transplanted due to the presence of infection.

Figure 2

International Donor Statistics 2001



Source: Council of Europe Newsletter Transplant 2002
Provisional data May 2002

Figure 2 shows the number of donors pmp of Australia and New Zealand compared to other Countries. Note that the international definition of an organ donor is used for these comparisons (i.e. at least one organ is transplanted from that donor). This definition differs to that used in Figure 1 above.

Historically the comparison of organ donation rates between states and countries has been based upon donors per million population (dpmp) (fig 2).

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 (fig 3 and 4).

Australian data on deaths for 2001 are not available until August of 2002. New Zealand data include 2001.

Figure 3

Donors per Thousand Deaths 1996 - 2001

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	1.7	1.2	3.9	1.4	0.3	2.5	2.2	2.1	1.5	1.5
2001	-	-	-	-	-	-	-	-	-	1.3

Figure 4

**Australian States
Comparison Between Donors per Million Population and Donors per
Thousand Deaths () 1996 - 2000**

Year	Qld	NSW	ACT	Vic.	Tas.	SA	NT	WA
1996	10 (1.6)	10 (1.4)	20 (4.8)	11 (1.5)	2 (0.3)	17 (2.2)	17 (3.9)	7 (1.1)
1997	11 (1.7)	10 (1.4)	13 (3.0)	9 (1.3)	11 (1.3)	17 (2.2)	21 (4.5)	4 (0.7)
1998	12 (1.8)	10 (1.4)	6 (1.6)	9 (1.2)	0 (0.0)	24 (3.0)	16 (3.6)	7 (1.2)
1999	6 (0.9)	7 (1.0)	6 (1.5)	9 (1.3)	13 (1.6)	20 (2.7)	16 (3.5)	7 (1.2)
2000	10 (1.7)	9 (1.2)	16 (3.9)	9 (1.4)	2 (0.3)	20 (2.5)	10 (2.2)	12 (2.1)

Figure 5

**Organ Donation Rate for Selected Countries
2000**

Country or Regional Organisation	Donor number (a)	Donation Rate	
		per million Population (a)	per 1,000 deaths (b)
Spain	1,345	33.9	3.9
Belgium	256	25.6	2.5
Austria	194	24.3	2.5
United States	5,984	22.3	2.5
Portugal	194	19.5	1.8
France	1,016	17.0	1.8
Italy	860	15.3	1.4
United Kingdom & Ireland (c)	845	13.4	1.3
Netherlands	202	12.6	1.3
Germany	1,026	12.5	1.2
New Zealand	41	11.0	1.4
Sweden	97	10.9	1.0
Australia	196	10.2	1.5

(a) Donors, and donation rates per million population, as published by the Council of Europe for 2000.

(b) Rates per 1,000 deaths have been calculated using the number of donors in 2000 as the numerator and the number of deaths, latest year available, as the denominator. The deaths data for countries other than Australia are as published by the World Health Organisations, and reference years range from 1995 to 1998. The numerator and denominator for these countries are therefore for different years, and the rates per 1,000 deaths are approximate.

(c) Combined data are produced for the United Kingdom and Ireland by a transplant organisation.

Source: (a) Council of Europe, Newsletter Transplant, September 2001:
(b) World Health Organisation World Health Statistics Annual
<URL:http://www.WHO.int./WHOSIS/whsa/whsa_table>accessed February 2000.
(information on number of deaths, used in calculating rate).

Reference: Australian Bureau of Statistics 2002, Australian Social Trends 2002, Catalogue Number 4102.0 ABS, Canberra.

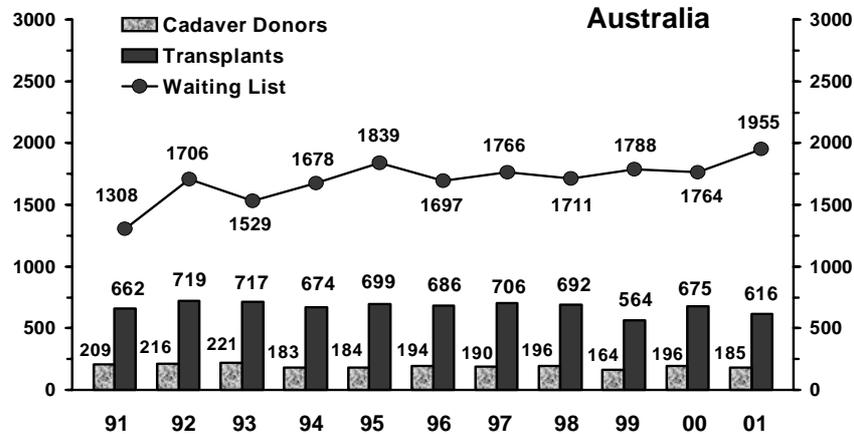
Figure 6**Number of Cadaveric Donors and Solid Organ Transplants and Patients on the Waiting List 1991 - 2001**

Figure 6 shows the number of donors, transplants, and patients on the waiting list from 1991 to 2001.

DONOR POSTCODES

The Registry commenced the collection of donor residential postcodes in 1998.

In the last three years (1999-2001) there have been six donors from overseas.

In 2001, Queensland had one donor from Western Australia, South Australia one from Victoria, and Victoria one from Queensland and one from Tasmania.

DONOR PROFILE**Age and Gender Distribution**

The mean age for donors has remained similar for the past five years. In Australia in 2001 there were 16 donors (9%) 65 years or older. This is an increase from 12 in 2000. The oldest donor was 77.4 years (fig 7).

When comparing Australian mainland States, the mean age ranged from the highest in South Australia of 43 years to the lowest 31.5 years in Western Australia (fig 8).

The gender distribution by Australian States and New Zealand is shown in Figure 9.

See Figures 8-11 for a breakdown of donors according to age and gender in Australia and New Zealand for the years 1999-2001.

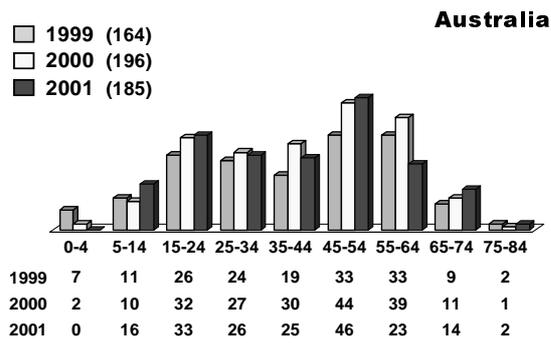
Figure 7								
Age of Male and Female Donors 1997 - 2001								
	Year	Mean (years)			Median (years)			Range in Years
		All	Female	Male	All	Female	Male	
Aust.	1997	40.4	42.4	39.3	43.1	41.9	43.6	2.5 - 76.1
	1998	40.4	43.8	37.7	43.2	46.2	37.2	0.94 - 73.7
	1999	39.3	43.2	36.4	42.5	47.5	36.2	0.21 - 77.1
	2000	41.1	42.6	40.0	44.1	45.1	43.0	0.4 - 77.9
	2001	40.0	43.1	38.3	42.9	47.3	39.9	6.4 - 77.4
N.Z.	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
	2001	41.1	44.7	37.7	42.6	48.1	35.2	16.6 - 68.9

Figure 8									
Australian States Mean Age of Donors 1997 - 2001									
	Qld	NSW	ACT	Vic.	Tas.	SA	NT	WA	Aust.
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	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
2001	40.3	40.8	35.1	41.4	30.8	43.0	33.4	31.5	40.0

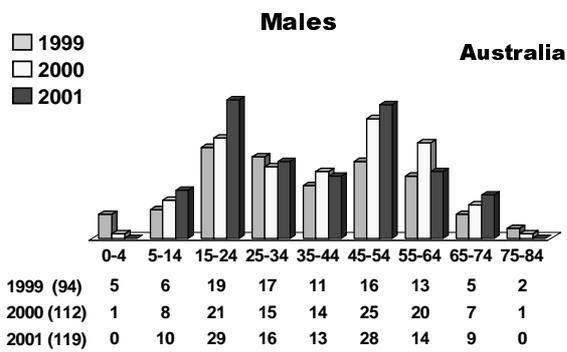
Figure 9						
Gender of Donors 1989 - 2001						
	Female		Male		Total	
Queensland	178	(34%)	342	(66%)	520	
New South Wales	347	(41%)	495	(59%)	842	
ACT	18	(34%)	35	(66%)	53	
Victoria	250	(44%)	320	(56%)	570	
Tasmania	12	(29%)	30	(71%)	42	
South Australia	132	(41%)	188	(59%)	320	
Northern Territory	3	(11%)	24	(89%)	27	
Western Australia	85	(43%)	113	(57%)	198	
Australia	1025	(40%)	1547	(60%)	2572	
New Zealand 1993-2001	150	(43%)	195	(57%)	345	

Figure 10

Age Group of Cadaver Donors



Age and Gender Distribution of Donors



Age and Gender Distribution of Donors

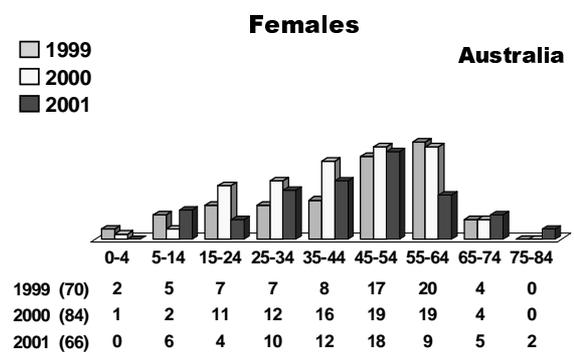
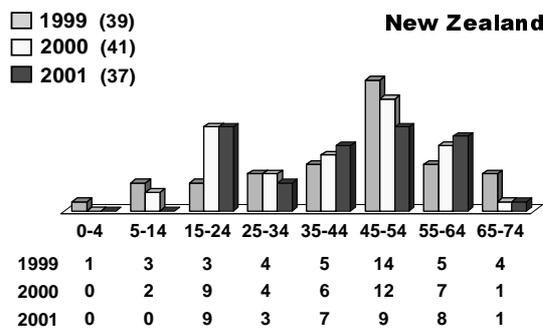
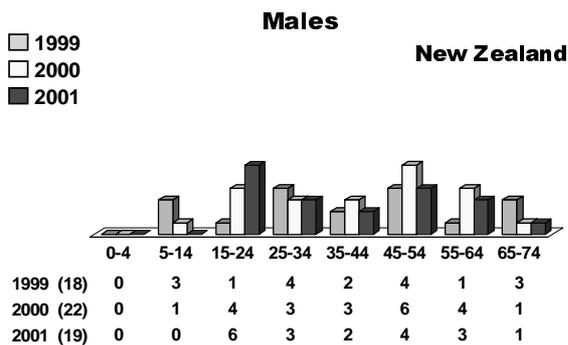


Figure 11

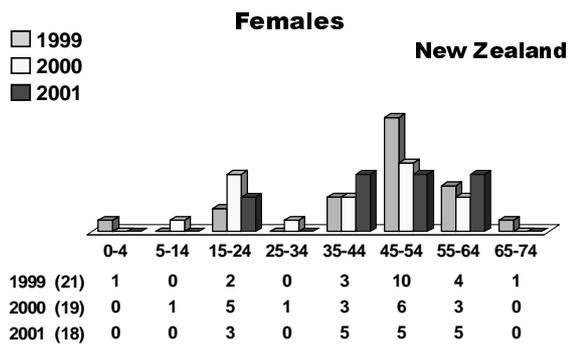
Age Group of Cadaver Donors



Age and Gender Distribution of Donors



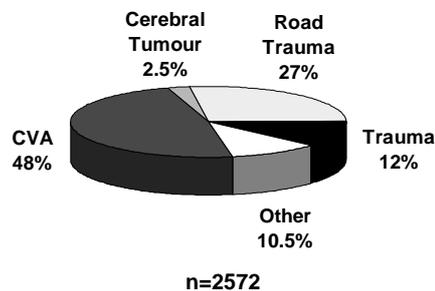
Age and Gender Distribution of Donors



CAUSE OF DEATH - ALL DONORS

Figure 12

Cause of Donor Death Australia 1989 - 2001



Cause of Donor Death New Zealand 1993 - 2001

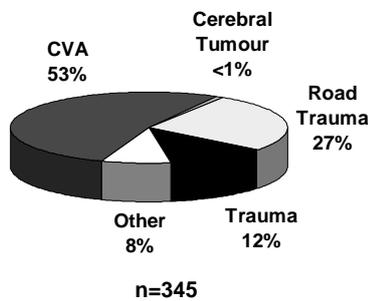


Figure 12 shows the cause of death for all organ donors in Australia since 1989 and for New Zealand since 1993. The primary cause of death was cerebrovascular accident (CVA) (48% of all Australian donors and 53% of all New Zealand donors).

Figure 13 shows detailed cause of death by each gender for 2001.

Figure 14 shows that CVA is responsible for 92% of all deaths in donors 55 years and older, whereas in the 15-34 year age group, trauma accounted for 61% of all deaths, compared to 59% in 2000.

Figures 18-20 show the occupation, ethnic origin and religious denomination of donors in Australia and New Zealand for 1997-2001.

Figure 13		Cause of Donor Death 2001						
Causes of Death		Australia			New Zealand			
		Male	Female	Total	Male	Female	Total	
CVA	Cerebral Infarct	9	6	15	2	1	3	
	Intracranial Haemorrhage	49	31	80	6	13	19	
Road Trauma	Cyclist	2	0	2	0	0	0	
	Motor Bike Accident	6	0	6	1	0	1	
	Motor Vehicle Accident	13	7	20	6	1	7	
	Pedestrian	8	2	10	0	1	1	
	Other Road Accident	3	0	3	0	0	0	
Other Trauma	Fall	6	1	7	1	1	2	
	Felony / Crime - Assault	1	0	1	1	0	1	
	Gunshot	4	0	4	1	0	1	
	Other Trauma	1	1	2	0	0	0	
Hypoxia Anoxia	Airway Obstruction	1	0	1	0	0	0	
	Asphyxiation	2	0	2	0	0	0	
	Asthma	1	2	3	0	0	0	
	Carbon Monoxide	0	1	1	0	0	0	
	Cardiac Arrest	5	6	11	0	0	0	
	Cyanide Poisoning	1	0	1	0	0	0	
	Hanging	2	0	2	0	0	0	
	Seizure	1	0	1	0	0	0	
	Smoke Inhalation	1	0	1	0	0	0	
	Pulmonary Embolism	0	1	1	0	0	0	
	Thoracic Aortic Aneurysm	1	0	1	0	0	0	
	Ventricular Fibrillation	0	1	1	0	0	0	
	Other	Carotid Artery Dissection	0	1	1	0	0	0
Cerebral Arteritis		0	1	1	0	0	0	
Cerebral Oedema		1	3	4	0	0	0	
Meningitis (Meningococcal)		0	1	1	1	0	1	
Meningitis (Strep.pneumoniae)		0	1	1	0	0	0	
Meningitis (Viral)		0	0	0	0	1	1	
Water Intoxication		1	0	1	0	0	0	
Total		119	66	185	19	18	37	

Figure 14

Cause of Donor Death Related to Age Group 2001

	Australia					New Zealand				
	0-14	15-34	35-54	55 on	Total	0-14	15-34	35-54	55 on	Total
CVA	4	12	43	36	95	0	2	12	8	22
Trauma (road)	5	31	5	0	41	0	5	4	0	9
Trauma (non-road)	2	5	5	2	14	0	3	0	1	4
Other	5	11	18	1	35	0	2	0	0	2
Total	16	59	71	39	185	0	12	16	9	37

Figure 15

Australian States
Cause of Donor Death Related to Age Group 2001

		0-14	15-34	35-54	55 on	Total
Queensland	CVA	0	2	13	10	25
	Trauma (road)	2	10	0	0	12
	Trauma (non-road)	0	2	4	0	6
	Other	0	3	2	0	5
	Total	2	17	19	10	48
NSW	CVA	1	3	9	11	24
	Trauma (road)	1	4	2	0	7
	Trauma (non-road)	1	1	0	1	3
	Other	4	4	5	0	13
	Total	7	12	16	12	47
ACT	CVA	0	1	2	0	3
	Trauma (road)	0	2	0	0	2
	Trauma (non-road)	0	0	0	0	0
	Other	0	1	1	0	2
	Total	0	4	3	0	7
Victoria	CVA	2	3	10	7	22
	Trauma (road)	0	5	2	0	7
	Trauma (non-road)	0	0	1	0	1
	Other	1	1	7	1	10
	Total	3	9	20	8	40
Tasmania	CVA	0	1	1	0	2
	Trauma (road)	0	0	0	0	0
	Trauma (non-road)	0	1	0	0	1
	Other	0	0	0	0	0
	Total	0	2	1	0	3
South Australia	CVA	0	1	3	8	12
	Trauma (road)	2	5	0	0	7
	Trauma (non-road)	1	0	0	1	2
	Other	0	1	3	0	4
	Total	3	7	6	9	25
Northern Territory	CVA	0	0	1	0	1
	Trauma (road)	0	1	0	0	1
	Trauma (non-road)	0	0	0	0	0
	Other	0	0	0	0	0
	Total	0	1	1	0	2
Western Australia	CVA	1	1	4	0	6
	Trauma (road)	0	4	1	0	5
	Trauma (non-road)	0	1	0	0	1
	Other	0	1	0	0	1
	Total	1	7	5	0	13

Figure 16

Cause of Donor Death 1989 - 2001

	Qld	NSW	ACT	Vic.	Tas.	SA	NT	WA	Aust.	N.Z. *
CVA	42%	51%	47%	52%	48%	45%	22%	47%	48%	53%
Trauma (road)	30%	25%	19%	25%	26%	24%	40%	37%	27%	27%
Trauma (non-road)	16%	12%	17%	8%	19%	13%	19%	7%	12%	12%
Other	12%	12%	17%	15%	7%	18%	19%	9%	13%	8%

* N.Z. 1993 -2001

Figure 17

Cause of Donor Death 1997 - 2001

		1997	1998	1999	2000	2001
Queensland	CVA	23	20	12	17	25
	Trauma (road)	6	9	5	9	12
	Trauma (non-road)	4	5	1	5	6
	Other	4	6	2	6	5
	Total	37	40	20	37	48
NSW	CVA	37	32	25	27	24
	Trauma (road)	14	15	8	12	7
	Trauma (non-road)	6	8	9	9	3
	Other	8	8	6	7	13
	Total	65	63	48	55	47
ACT	CVA	2	2	1	2	3
	Trauma (road)	2	0	0	2	2
	Trauma (non-road)	0	0	1	1	0
	Other	0	0	0	0	2
	Total	4	2	2	5	7
Victoria	CVA	30	23	29	27	22
	Trauma (road)	3	6	7	8	7
	Trauma (non-road)	4	2	1	2	1
	Other	5	9	5	7	10
	Total	42	40	42	44	40
Tasmania	CVA	3	0	4	1	2
	Trauma (road)	1	0	2	0	0
	Trauma (non-road)	1	0	0	0	1
	Other	0	0	0	0	0
	Total	5	0	6	1	3
South Australia	CVA	14	17	13	14	12
	Trauma (road)	3	6	7	5	7
	Trauma (non-road)	3	2	3	4	2
	Other	5	10	7	7	4
	Total	25	35	30	30	25
Northern Territory	CVA	1	1	0	1	1
	Trauma (road)	1	0	2	1	1
	Trauma (non-road)	1	1	0	0	0
	Other	1	1	1	0	0
	Total	4	3	3	2	2
Western Australia	CVA	2	6	4	13	6
	Trauma (road)	5	5	6	4	5
	Trauma (non-road)	1	1	3	1	1
	Other	0	1	0	4	1
	Total	8	13	13	22	13
New Zealand	CVA	13	22	24	24	22
	Trauma (road)	18	11	8	6	9
	Trauma (non-road)	9	6	4	5	3
	Other	2	7	3	6	3
	Total	42	46	39	41	37

Figure 18

Occupation of Donors 1997 - 2001

	Australia					New Zealand				
	1997	1998	1999	2000	2001	1997	1998	1999	2000	2001
Blue collar	30	28	28	39	38	3	5	1	3	1
Home duties	30	29	21	17	11	1	5	5	3	5
Invalid pensioner	7	8	5	4	6	1	0	0	0	0
Management	2	2	3	4	0	1	0	1	1	2
Other	1	4	1	2	3	0	0	0	0	0
Pre-school	3	4	7	4	0	0	1	1	0	0
Primary industry	5	1	4	7	3	2	2	3	3	2
Professional	8	7	13	9	9	3	2	3	0	4
Retired	15	17	13	23	16	1	1	3	2	0
Small business owner	5	0	0	2	1	0	0	0	1	0
Student	19	23	25	21	27	6	9	4	7	3
Tradesperson	8	7	6	8	13	9	4	3	2	0
Unemployed	9	5	3	6	11	3	1	0	1	0
Unknown	35	46	25	40	24	8	13	11	14	15
White collar	13	15	10	10	23	4	3	4	4	5
Total	190	196	164	196	185	42	46	39	41	37

Figure 19

Ethnic Origin of Donors 1997 - 2001

	Australia					New Zealand				
	1997	1998	1999	2000	2001	1997	1998	1999	2000	2001
Aboriginal	0	1	0	1	2	0	0	0	0	0
Arab	1	0	0	0	0	0	0	0	0	0
Caucasoid	184	189	154	184	172	40	43	36	38	34
Greek	(2)	(3)	(3)	(0)	(1)	0	0	0	0	0
Italian	(0)	(2)	(3)	(3)	(0)	0	0	0	0	0
Chinese	1	1	3	2	2	0	0	0	0	2
Filipino	0	1	0	2	1	1	0	1	0	0
Indian	0	1	0	2	2	0	0	0	0	0
Japanese	0	0	1	1	0	0	0	0	0	0
Korean	0	1	0	1	0	0	0	0	0	0
Malay	0	0	0	0	2	0	0	0	0	0
Maori	1	0	1	0	1	0	2	2	3	1
Mauritian	0	2	0	0	1	0	0	0	0	0
Pacific Islander	1	0	2	1	0	0	1	0	0	0
Sri Lankan	0	0	1	1	2	1	0	0	0	0
Vietnamese	2	0	2	1	0	0	0	0	0	0
Total	190	196	164	196	185	42	46	39	41	37

Figure 20

Religious Denomination of Donors 1997 - 2001

	Australia					New Zealand				
	1997	1998	1999	2000	2001	1997	1998	1999	2000	2001
Buddhist	2	2	3	2	1	1	0	0	0	0
Christian	106	93	87	110	89	8	7	11	9	2
Hindu	0	0	0	1	0	0	0	0	0	0
Jehovahs Witness	0	0	0	1	0	0	0	0	0	0
Jewish	0	0	0	0	0	0	0	0	0	0
Muslim	1	0	1	0	0	0	0	0	0	0
Ratna	0	0	0	0	0	0	0	0	1	0
Shinto	0	0	0	1	0	0	0	0	0	0
No religion	7	25	20	20	20	4	5	2	2	4
Unknown	74	76	53	61	75	29	34	26	29	31
Total	190	196	164	196	185	42	46	39	41	37

INTENDED DONORS

An intended donor is a person for whom consent has been given or volunteered, but for various reasons organ donation does not proceed.

(These numbers are **not** included in the donor numbers in Figure 1).

Figure 21										
Intended Donors 1998 - 2001										
	Qld	NSW	ACT	Vic.	Tas.	SA	NT	WA	Aust.	N.Z.
1998	0	3	0	0	0	2	0	0	5	2
1999	1	4	0	0	0	0	0	0	5	1
2000	0	1	0	0	0	0	1	0	2	1
2001	1	6	1	0	0	2	0	0	10	0

Reasons why donation did not proceed:

In 1998

Australia

- Hepatitis C antibody positive (two)
- Hepatitis B surface antigen and core antibody positive
- History of melanoma
- Reassessment of medical history, then deemed medically unsuitable

New Zealand

- Hepatitis C antibody positive
- Coroner withdrew permission

In 1999

Australia

- Cardiac Arrest
- Hepatitis C antibody positive
- Hepatitis B surface antigen and core antibody positive
- Hepatitis B core antibody positive and other risk factors
- Infection detected in operating room

New Zealand

- Permission withdrawn

In 2000

Australia

- Late decline of offer by Transplant Unit
- Malignant cerebral tumour detected

New Zealand

- unstable donor

In 2001

- Cardiac Arrest
- Hepatitis C antibody positive (3)
- HTLV1 positive
- Disease of organ
- Rapid rise in creatinine
- Coronial refusal
- Hepatitis B core antibody
- Late withdrawal by Transplant Unit

HEART-BEATING DONORS

The majority of organs are donated by heart-beating brain dead patients.

In 2001 there were two non-heart beating donors in Australia (one in New South Wales and one in Victoria) (fig 22). Cardiopulmonary resuscitation is recorded for events leading up to the admission and hospital stay for the patient, prior to organ donation (fig 23 and 24).

Figure 22

Heart-Beating Donors 1997 - 2001										
	Australia					New Zealand				
	1997	1998	1999	2000	2001	1997	1998	1999	2000	2001
Yes	187	194	163	195	183	41	46	39	41	37
No	3	2	1	1	2	1	0	0	0	0
Total	190	196	164	196	185	42	46	39	41	37

Figure 23

Cardiopulmonary Resuscitation 1997 - 2001										
	Australia					New Zealand				
	1997	1998	1999	2000	2001	1997	1998	1999	2000	2001
Yes	32	39	34	44	44	2	6	10	6	4
No	153	156	129	152	140	40	39	29	35	33
Unknown	5	1	1	0	1	0	1	0	0	0
Total	190	196	164	196	185	42	46	39	41	37

Figure 24

Australian States Cardiopulmonary Resuscitation 2001 (2000)								
	Qld	NSW	ACT	Vic.	Tas.	SA	NT	WA
Yes	7 (12)	11 (10)	3 (0)	13 (12)	0 (0)	8 (6)	1 (0)	1 (4)
No	41 (25)	35 (45)	4 (5)	27 (32)	3 (1)	17 (24)	1 (2)	12 (18)
Unknown	0 (0)	1 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Total	48 (37)	47 (55)	7 (5)	40 (44)	3 (1)	25 (30)	2 (2)	13 (22)

VIROLOGY SCREENING

Figure 25

Cytomegalovirus (CMV) Status of Donors 1997 - 2001										
	Australia					New Zealand				
	1997	1998	1999	2000	2001	1997	1998	1999	2000	2001
Positive	140	129	111	128	132	27	20	23	24	19
Negative	49	67	53	68	53	15	21	14	17	18
Not done	1	0	0	0	0	0	5	2	0	0
Total	190	196	164	196	185	42	46	39	41	37

EPSTEIN-BARR VIRUS (EBV) STATUS OF DONORS

There are no Australian guidelines requiring organ donors to be tested for EBV. However, in 2001, 48% (89) of donors were tested, with 69% recording a positive result. One New Zealand donor was tested.

HEPATITIS B AND HEPATITIS C STATUS OF DONORS

Since 1993, all donors in Australia and New Zealand have been negative for Hepatitis B surface antigen.

In 1998, the Registry commenced collection of Hepatitis B core antibody results.

A positive result was recorded for 12 (6.5%) of Australian donors and five (14%) of New Zealand donors in 2001.

In 2001, there was one Hepatitis C antibody positive donor in Australia and New Zealand. Both donated only livers for transplantation.

BLOOD GROUP OF DONORS

The distribution of blood groups in the general population is O: (49%), A: (39%), B: (9%), AB: (3%) (data from the Australian Red Cross Blood Bank), and for New Zealand O: (46%), A: (40%), B: (10%) and AB: (4%) (Auckland Regional Blood Centre).

The distribution of donors for the total reporting period for each country is similar to population distribution (fig 26, 27).

Figure 26

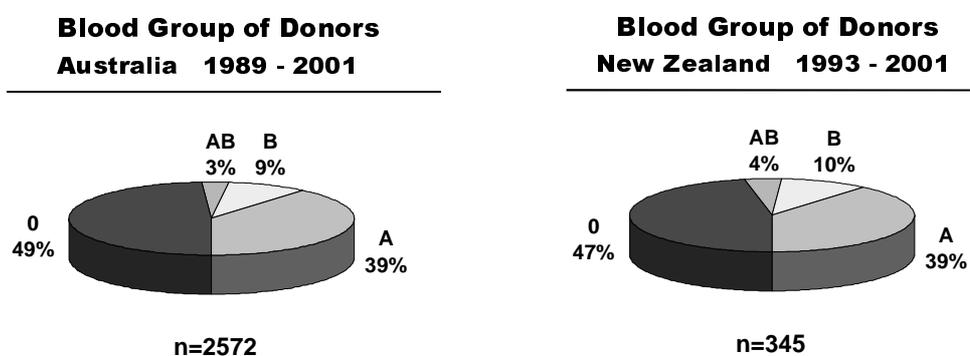


Figure 27

		Blood Group of Donors 1997 - 2001									
		1997		1998		1999		2000		2001	
Australia	O	84	44%	102	52%	93	57%	90	46%	89	48%
	A	80	42%	70	36%	50	30%	89	45%	66	36%
	B	22	12%	18	9%	17	10%	12	6%	23	12%
	AB	4	2%	6	3%	4	3%	5	3%	7	4%
	Total	190	100%	196	100%	164	100%	196	100%	185	100%
New Zealand	O	23	55%	22	48%	15	39%	19	46%	23	62%
	A	11	26%	14	30%	18	46%	20	49%	9	24%
	B	5	12%	6	13%	4	10%	2	5%	4	11%
	AB	3	7%	4	9%	2	5%	0	0%	1	3%
	Total	42	100%	46	100%	39	100%	41	100%	37	100%

MEDICAL CONDITION OF DONORS

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

Diabetes

There were four Type 1 diabetic (insulin dependent) and seven Type 2 (non-insulin requiring) accepted as donors in Australia in 2001. There were no diabetic donors in New Zealand in 2001.

Type 1 diabetic donors provided 5 kidneys, 1 heart and 1 liver for transplantation. A poor biopsy result was the reason that organs of one donor were not transplanted.

Type 2 diabetic donors provided 8 kidneys and 2 livers for transplantation. Malignancy detected in the operating room and poor biopsy results were the reason that the organs were not transplanted from 2 donors.

Hypertension

In 2001, 31 (17%) of Australian donors had a past history of chronic hypertension. New Zealand recorded three donors (8%) with a past history of chronic hypertension (fig 28, 29).

Donors with a history of chronic hypertension provided Australia with 41 kidneys, 15 livers, 6 hearts, 3 double lungs, 6 single lungs and 1 pancreas for transplantation.

In New Zealand there were 6 kidneys, 2 livers, 2 hearts and 2 double lungs transplanted.

Smoking

In 2001, 71 (38%) of Australian donors were recorded as being current smokers, and 21 (11%) were recorded as being former smokers. In New Zealand, 10 (27%) of donors were reported as current smokers and four (11%) recorded as being former smokers (fig 28, 29).

Alcohol

In 2001, 23% of Australian donors were recorded as having an alcohol intake of >40 grams per day. However, for the same year in New Zealand it was 3% (fig 28, 29).

Donor weight

The allocation of heart, lungs and livers are based on the matching of recipient and donor weight. In 2001 there were eight donors in Australia and none in New Zealand who weighed less than 40 kilograms (fig 30).

Figure 28

		Donor Diabetes, Hypertension, Smoking and Alcohol 1997 - 2001				
		1997	1998	1999	2000	2001
Australia		(n=190)	(n=196)	(n=164)	(n=196)	(n=185)
	Diabetes Type 1	2 (1%)	2 (1%)	1 (<1%)	2 (1%)	4 (2%)
	Diabetes Type 2	2 (1%)	3 (1.5%)	3 (2%)	3 (1.5%)	7 (4%)
	Hypertension	28 (15%)	31 (16%)	24 (15%)	42 (21%)	31 (17%)
	Unknown	15 (8%)	9 (5%)	2 (1%)	4 (2%)	5 (3%)
	Smoking					
	Current	66 (35%)	66 (34%)	54 (33%)	73 (37%)	71 (38%)
	Former	15 (8%)	10 (5%)	17 (10%)	26 (13%)	21 (11%)
	Unknown	17 (9%)	12 (6%)	10 (6%)	2 (1%)	3 (2%)
	Alcohol					
	Current	63 (33%)	45 (23%)	40 (24%)	47 (24%)	43 (23%)
Former	2 (1%)	4 (1%)	0 (0%)	7 (4%)	8 (4%)	
Unknown	28 (15%)	37 (19%)	27 (16%)	15 (8%)	6 (3%)	
New Zealand		(n=42)	(n=46)	(n=39)	(n=41)	(n=37)
	Diabetes Type 1	0 (0%)	2 (0%)	0 (0%)	1 (2%)	0 (0%)
	Diabetes Type 2	0 (0%)	1 (0%)	0 (0%)	0 (0%)	0 (0%)
	Hypertension	8 (19%)	4 (9%)	8 (21%)	3 (7%)	3 (8%)
	Unknown	1 (2%)	1 (2%)	0 (0%)	0 (0%)	0 (0%)
	Smoking					
	Current	15 (36%)	11 (24%)	14 (36%)	19 (46%)	10 (27%)
	Former	2 (5%)	1 (2%)	1 (2.5%)	2 (5%)	4 (11%)
	Unknown	3 (7%)	3 (7%)	2 (5%)	0 (0%)	1 (3%)
	Alcohol					
	Current	4 (10%)	2 (4%)	1 (2.5%)	4 (10%)	1 (3%)
Former	2 (5%)	1 (2%)	0 (0%)	1 (2%)	1 (3%)	
Unknown	4 (10%)	4 (9%)	3 (4%)	0 (0%)	0 (0%)	

Figure 29

Medical Condition of Donors by Australian States 2001 (2000)								
	Qld	NSW	ACT	Vic.	Tas.	SA	NT	WA
Diabetes Type 1	1 (0)	3 (1)	0 (1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Diabetes Type 2	1 (0)	2 (0)	0 (0)	2 (0)	0 (1)	2 (1)	0 (0)	0 (1)
Hypertension	8 (4)	10 (12)	0 (1)	6 (11)	0 (1)	6 (8)	0 (0)	1 (5)
Smoking Current	21 (12)	14 (18)	5 (0)	16 (20)	3 (1)	7 (9)	1 (0)	4 (13)
Alcohol intake >40 gms/day	9 (8)	8 (9)	2 (0)	13 (16)	2 (1)	6 (7)	1 (0)	2 (6)

Figure 30

Donor Weight 1997 - 2001

	Years	Kilograms									Total
		0-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90 +	
Australia	1997	3	1	2	2	17	28	52	43	38	186
	1998	4	2	4	6	22	34	60	36	26	194
	1999	7	4	3	2	10	27	49	40	22	164
	2000	3	4	2	6	23	34	51	41	32	196
	2001	0	5	3	6	18	27	47	43	36	185
New Zealand	1997	0	0	3	1	3	7	15	10	2	41
	1998	1	0	0	1	3	12	12	15	2	46
	1999	0	4	0	0	2	11	8	9	4	38
	2000	1	0	0	0	2	11	16	8	3	41
	2001	0	0	0	0	2	10	8	9	7	36

DONOR INTENTION

Figures 31 and 32 show whether the donor had recorded an intention to donate through a signed driver's licence or a donor card.

In 2001, 26% of Australian and 24% of New Zealand organ donors had a signed driver's licence. There was a large variation between the Australian States, with the highest recordings in

Queensland 40%, NSW 30%, and the lowest in Victoria 8% and Tasmania and Northern Territory 0%. There are a large number of donors in the "unknown" category.

In 2001, only six Australian (3%) and no New Zealand donors had a signed donor card.

Figure 31

Driver's Licence Status 1997 - 2001

	Australia					New Zealand				
	1997	1998	1999	2000	2001	1997	1998	1999	2000	2001
Yes	46 (24%)	54 (28%)	34 (21%)	67 (34%)	48 (26%)	11 (26%)	10 (22%)	6 (15%)	9 (22%)	9 (24%)
No	53	60	55	59	38	2	1	3	0	0
Student / Not Applicable	18	18	23	21	23	3	9	4	5	1
Unknown	73	64	52	49	76	26	26	26	27	27
Total	190	196	164	196	185	42	46	39	41	37

Donor Card Status 1997 - 2001

Yes	5	7	6	6	6	1	0	0	0	0
No	77	92	71	107	61	33	39	26	23	21
Student / Not Applicable	18	21	24	19	26	3	7	13	18	14
Unknown	90	76	63	64	92	5	0	0	0	2
Total	190	196	164	196	185	42	46	39	41	37

Figure 32

Australian States 2001 (2000)

Driver's Licence Status

	Qld	NSW	ACT	Vic.	Tas.	SA	NT	WA
Yes	19 (20)	14 (26)	0 (2)	3 (1)	0 (0)	7 (12)	0 (0)	5 (6)
No	3 (3)	2 (2)	1 (0)	13 (35)	3 (1)	10 (7)	0 (1)	6 (10)
Student / Not Applicable	1 (5)	9 (3)	0 (1)	5 (3)	0 (0)	6 (5)	0 (0)	2 (4)
Unknown	25 (9)	22 (24)	6 (2)	19 (5)	0 (0)	2 (6)	2 (1)	0 (2)
Total	48 (37)	47 (55)	7 (5)	40 (44)	3 (1)	25 (30)	2 (2)	13 (22)

Donor Card Status

Yes	1 (0)	1 (1)	0 (1)	3 (3)	0 (0)	0 (1)	0 (0)	1 (0)
No	11 (24)	6 (10)	1 (1)	14 (32)	3 (1)	18 (21)	0 (1)	8 (17)
Student / Not Applicable	2 (4)	9 (3)	0 (0)	5 (2)	0 (0)	6 (5)	0 (0)	4 (5)
Unknown	34 (9)	31 (41)	6 (3)	18 (7)	0 (0)	1 (3)	2 (1)	0 (0)
Total	48 (37)	47 (55)	7 (5)	40 (44)	3 (1)	25 (30)	2 (2)	13 (22)

AUSTRALIAN ORGAN DONOR REGISTER

This Register commenced recording donor enrolment in 2001.

Figure 33

Donors for 2001 Enrolled in the Australian Organ Donor Register

	Qld	NSW	ACT	Vic.	Tas.	SA	NT	WA	Total
Yes	0	0	0	2	0	4	0	4	10
Not Registered	6	6	0	16	2	11	0	9	50
Not accessed	42	41	7	22	1	10	2	0	125
Total	48	47	7	40	3	25	2	13	185

CONSENT FOR ORGAN DONATION

Figure 34 shows that Intensive Care Clinicians and Registrars played the predominant role in requesting consent for organ donation in both Australia (57%) and New Zealand (84%) in 2001.

There is a large difference between the Australian States in the role of the Donor Coordinator in seeking consent. In 2001, consent was sought by the Donor Coordinator in Queensland 29%, South Australia 24%, ACT 14%, New South Wales 13%, Victoria 8% and Western Australia none (fig 35).

Twenty four percent of families volunteered consent for organ donation in Australia (19% in 2000) and none in New Zealand. Western Australia had the highest number of donor families who volunteered consent, 77% in 2001, followed by ACT 43%, Queensland 29%, Victoria 23%, South Australia 12%, New South Wales 11%, and Tasmania and Northern Territory 0%.

Figure 34

Consent 1997 - 2001										
	Australia					New Zealand				
	1997	1998	1999	2000	2001	1997	1998	1999	2000	2001
ICU Clinician/Registrar	108	118	101	112	106	27	41	33	35	31
Renal Physician/Registrar	3	0	0	0	0	1	1	2	1	4
Emergency Consultant	0	1	1	0	1	6	4	1	0	0
Donor Coordinator	24	28	30	44	31	0	0	1	0	0
Volunteered	54	45	30	37	44	7	0	2	2	0
Nursing Staff	1	2	2	3	2	1	0	0	0	1
Social Worker	0	1	0	0	0	0	0	0	0	0
Others	0	1	0	0	1	0	0	0	3	1
Total	190	196	164	196	185	42	46	39	41	37

Figure 35

Consent 2001 (2000)								
	Qld	NSW	ACT	Vic.	Tas.	SA	NT	WA
ICU Clinician/Registrar	17 (12)	36 (36)	3 (2)	27 (34)	3 (1)	16 (19)	1 (0)	3 (8)
Renal Phys/Registrar	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Donor Coordinator	14 (18)	6 (10)	1 (0)	3 (1)	0 (0)	6 (7)	1 (1)	0 (7)
Volunteered	14 (4)	5 (9)	3 (3)	9 (9)	0 (0)	3 (4)	0 (1)	10 (7)
Nursing Staff	2 (3)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Other	1 (0)	0 (0)	0 (0)	1 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Total	48 (37)	47 (55)	7 (5)	40 (44)	3 (1)	25 (30)	2 (2)	13 (22)

DIRECT CONTACT WITH DONOR COORDINATOR

There were ten families (5%) in Australia with which the Donor Coordinator had no contact, compared to 29 families (78%) in New Zealand.

Figure 36

Direct Contact with Donor Coordinator 2001										
	Qld	NSW	ACT	Vic.	Tas.	SA	NT	WA	Aust.	N.Z.
Face to Face	42 (88%)	41 (87%)	6 (86%)	34 (85%)	1 (33%)	22 (88%)	0 (0%)	13 (100%)	159 (86%)	8 (22%)
Telephone	3 (6%)	4 (9%)	0 (0%)	4 (10%)	2 (67%)	2 (8%)	1 (50%)	0 (0%)	16 (9%)	0 (0%)
None	3 (6%)	2 (4%)	1 (14%)	2 (5%)	0 (0%)	1 (4%)	1 (50%)	0 (0%)	10 (5%)	29 (78%)
Total	48	47	7	40	3	25	2	13	185	37

CORONER'S CASES

Forty seven percent of all Australian donors were subject to Coronerial inquiry. This figure remains the same as in 2000.

In New Zealand it was 46% for 2001, an increase from 32% in 2000 but the same as for 1999.

Figure 37

Coroner's Cases 1997 - 2001										
	Australia					New Zealand				
	1997	1998	1999	2000	2001	1997	1998	1999	2000	2001
Yes	82	94	76	93	87	28	25	18	13	17
No	108	102	88	103	98	14	21	21	28	20
Total	190	196	164	196	185	42	46	39	41	37

Figure 38

Australian States Coroner's Cases 2001 (2000)								
	Qld	NSW	ACT	Vic.	Tas.	SA	NT	WA
Yes	22 (22)	26 (31)	3 (4)	14 (12)	1 (0)	12 (16)	2 (1)	7 (7)
No	26 (15)	21 (24)	4 (1)	26 (32)	2 (1)	13 (14)	0 (1)	6 (15)
Total	48 (37)	47 (55)	7 (5)	40 (44)	3 (1)	25 (30)	2 (2)	13 (22)

SUMMARY - ORGANS REQUESTED, CONSENT GIVEN, RETRIEVED AND TRANSPLANTED

The information relating to the request for organ donation refers only to those patients who become organ donors. If consent was sought and refused, the Registry has no record of these potential donors.

The difference between a request and a consent is a known objection by the donor or family refusal for

the specific organ. Reasons for not requesting organs, not retrieving and not transplanting are documented for all of the specific organs.

Figure 39 shows the outcome of organs requested in 2001 (2000).

Figure 39

Outcome Following Request for Organ Donation 2001 (2000)						
		Kidneys	Liver	Heart	Lungs	Pancreas
		Australia	Requested	366 (386)	178 (189)	160 (169)
	Consent Given	366 (386)	175 (187)	153 (160)	310 (314)	120 (110)
	Retrieved	344 (370)	133 (146)	72 (64)	141 (162)	34 (34)
	Transplanted	330 (350)	127 (142)	69 (59)	122 (155)	21 (26)
New Zealand	Requested	74 (82)	36 (40)	34 (34)	32 (34)	28 (28)
	Consent Given	74 (82)	35 (40)	34 (32)	31 (33)	26 (28)
	Retrieved	68 (82)	30 (36)	15 (13)	24 (28)	3 (3)
	Transplanted	67 (75)	29 (34)	15 (13)	24 (26)	3 (3)

* Split Liver (6) 2001, (5) 2000.
Kidneys and lungs are counted as separate organs.

ORGANS REQUESTED

From the 185 Australian organ donors in 2001, the requests for specific organs were: kidneys 99%, liver 96%, heart 86%, lungs 87% and pancreas 70%.

From the 37 New Zealand donors in 2001, the requests for specific organs were: kidneys 100%, liver 97%, heart 92%, lungs 86% and pancreas 76%.

Figure 40

Trend to Multiple Organ Retrieval 1997 - 2001										
No. of Organs	Australia					New Zealand				
	1997	1998	1999	2000	2001	1997	1998	1999	2000	2001
Single	24%	23%	17%	21%	19%	33%	20%	21%	7%	19%
Two	23%	32%	30%	29%	32%	31%	50%	44%	42%	31%
Three	23%	19%	27%	24%	21%	33%	16%	23%	34%	22%
Four	24%	20%	23%	20%	19%	3%	12%	10%	15%	25%
Five	6%	6%	3%	6%	9%	0%	2%	2%	2%	3%

Figure 41

State by State Comparison of Multiple Organ Retrieval 2001										
No. of Organs	Qld	NSW	ACT	Vic.	Tas.	SA	NT	WA	Aust.	N.Z.
Single	7 (15%)	14 (30%)	0 (0%)	8 (20%)	1 (33%)	4 (18%)	0 (0%)	0 (0%)	34 (19%)	7 (19%)
Two	18 (39%)	12 (26%)	3 (43%)	6 (15%)	0 (0%)	11 (50%)	1 (50%)	4 (31%)	57 (32%)	11 (31%)
Three	8 (17%)	11 (23%)	2 (29%)	11 (28%)	0 (0%)	2 (9%)	1 (50%)	5 (38%)	38 (21%)	8 (22%)
Four	11 (24%)	5 (10.5%)	1 (14%)	9 (22%)	1 (33%)	4 (18%)	0 (0%)	3 (23%)	34 (19%)	9 (25%)
Five	2 (5%)	5 (10.5%)	1 (14%)	6 (15%)	1 (33%)	1 (5%)	0 (0%)	1 (8%)	17 (9%)	1 (3%)
Total	46	47	7	40	3	22	2	13	180	36

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 3.4 organs per donor used for transplantation in 2001, 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.

Tasmania had the highest number of organs transplanted, 4.3 per donor, followed by Victoria 3.8, ACT 3.7, Western Australia 3.6, Queensland 3.4, New South Wales 3.1, Northern Territory 3.0 and South Australia 2.8. These figures exclude tissue transplantation.

Figure 42

Organ Recipients Transplanted per Donor 2001										
	Qld	NSW	ACT	Vic.	Tas.	SA	NT	WA	Aust.	N.Z.
No. Organs Transplanted	162	145	26	152	13	71	6	47	622	127
No. of Donors	48	47	7	40	3	25	2	13	185	37
Average per Donor	3.4	3.1	3.7	3.8	4.3	2.8	3.0	3.6	3.4	3.4
Double lungs = 1 organ (1 recipient)										
Two kidneys = 2 organs										

Figure 43

Waiting List by Transplant Centres January 2002					
	Kidney	Liver	Heart	Lung	Pancreas
Patients admitted to the waiting list during 2001	815	204	116	147	32
Patients awaiting a transplant at 31 December 2001	1595	121	67	113	59
Patients who died while on the waiting list during 2001	32	13	15	12	2
Data provided by the National Organ Matching Service (NOMS)					

Figure 44

Average Waiting Time in years, for Patients Transplanted with Cadaver Donor Organs in 2001					
() denotes number of patients					
Organ	Blood Group				
	A	AB	B	O	All
* Kidney	3.1 (129)	1.7 (22)	3.0 (33)	3.4 (146)	3.1 (931)
Heart	1.1 (24)	0.7 (4)	0.7 (9)	1.4 (34)	1.2 (71)
Liver	1.0 (31)	0.3 (9)	0.8 (19)	1.2 (50)	1.0 (111)
Pancreas	2.4 (8)	0.0 (0)	2.1 (2)	2.5 (11)	2.5 (21)
Lung	1.0 (33)	0.7 (5)	1.2 (6)	1.1 (34)	1.1 (79)
* Kidney - years calculated from dialysis for matching date to transplant date					
Other organs - years calculated from program entry date to transplant date					
Source of Data - National Organ Matching Service					

EXCHANGE OF ORGANS

Figure 45 shows the number of organs that were sent and received between Australian States and New Zealand. A balance is maintained between Australian Regions for the allocation of kidneys. For this purpose Victoria/Tasmania, South Australia/Northern Territory and New South Wales/Australian Capital Territory are considered Regions.

This is achieved by the National Organ Matching System (NOMS) in which all Australian States participate.

There is no monitoring of allocation for State balance for other organs.

Figure 45

Exchange of Organs Between States and New Zealand 2001 (2000)							
	Exchange	Kidneys	Liver	Heart	Lungs *	Pancreas	Total
Queensland	Sent	10 (9)	11 (3)	13 (5)	26 (7)	0 (2)	60 (26)
	Received	6 (10)	13 (+20)	1 (4)	2 (5)	0 (0)	22 (39)
New South Wales	Sent	15 (12)	7 (+13)	3 (5)	1 (10)	0 (0)	26 (40)
	Received	28 (30)	+10 (16)	7 (6)	36 (21)	5 (6)	87 (79)
ACT	Sent	14 (9)	+5 (5)	3 (2)	6 (6)	1 (1)	29 (23)
Victoria	Sent	10 (13)	4 (11)	0 (0)	1 (4)	1 (0)	16 (28)
	Received	18 (10)	12 (12)	20 (9)	32 (34)	0 (0)	82 (65)
Tasmania	Sent	6 (2)	2 (0)	2 (0)	4 (0)	1 (0)	15 (2)
South Australia	Sent	5 (6)	14 (+19)	6 (6)	14 (19)	2 (3)	41 (53)
	Received	9 (13)	2 (4)	0 (0)	0 (0)	0 (0)	11 (17)
Northern Territory	Sent	4 (4)	0 (1)	1 (0)	2 (0)	0 (0)	7 (5)
Western Australia	Sent	2 (12)	6 (5)	1 (1)	12 (10)	0 (0)	21 (28)
	Received	5 (4)	4 (6)	1 (0)	0 (0)	0 (0)	10 (10)
New Zealand	Sent	0 (0)	2 (7)	0 (0)	4 (4)	0 (0)	6 (11)
	Received	0 (0)	9 (6)	0 (0)	0 (0)	0 (0)	9 (6)

*Total number of lungs (not recipients)
+ Number of recipients of livers

Figure 46

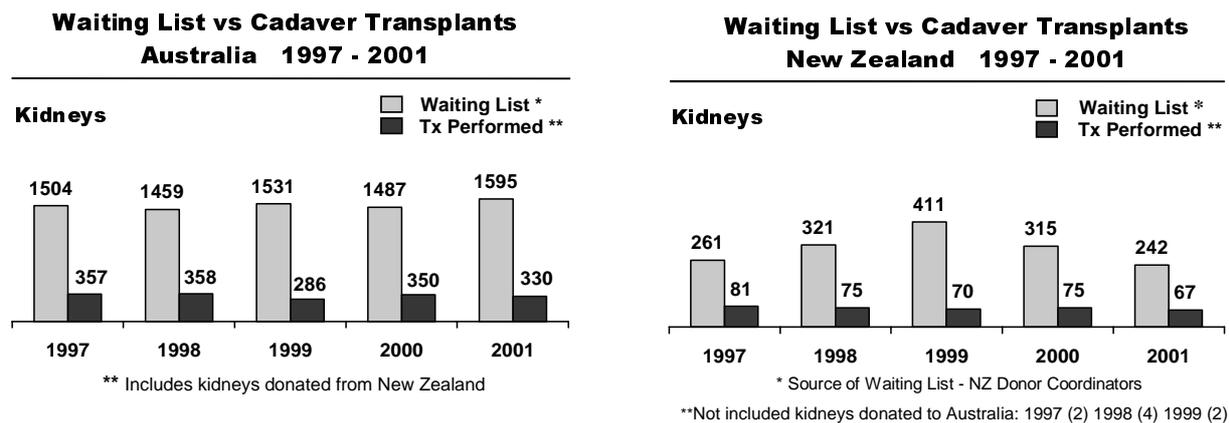
Summary of Organs from New Zealand Donors Transplanted in Australia 1989 - 2001					
Year	Kidneys	Liver +	Heart	Lungs *	Total
1989	0	1	0	0	1
1990	0	7	0	0	7
1991	0	11	0	0	11
1992	3	24	0	0	27
1993	0	16	0	0	16
1994	4	21	0	2	27
1995	0	21	5	9	35
1996	1	23	1	4	29
1997	2	22	2	2	28
1998	4	16	3	8	31
1999	2	7	1	2	12
2000	0	7	0	4	11
2001	0	2	0	4	6
Total	16	178	12	35	241

* Total number of lungs (not recipients)
+ Number of recipients of livers

KIDNEY DONATION

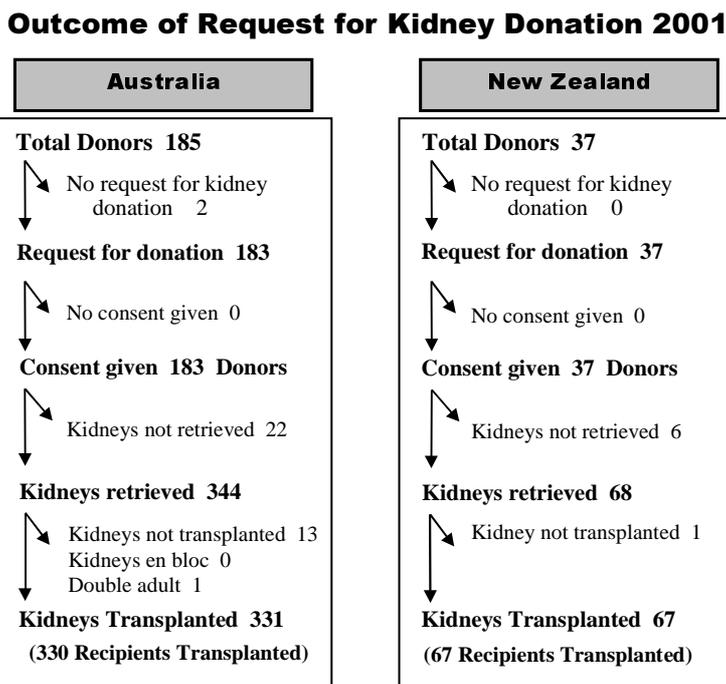
Figure 47 shows the number of Australian and New Zealand patients waiting for a kidney transplant and the number of cadaveric transplants performed for each year from 1997-2001.

Figure 47



* Data as at 30-Jun-1997 ACCORD Newsletter 17, published Aug-1997
 Data as at 31-Dec-1998 Australians Donate
 Data as at Feb-2000) Individual Transplant Units and the
 Jan-2001) National Organ Matching System
 Jan-2002)

Figure 48



Refer to Appendices for reasons kidneys were not requested, not retrieved and not transplanted.

Figure 49

Age of Donors Providing Transplanted Kidneys 1997 - 2001											
	Year	00-04	05-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	Total
Australia	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
	2001	0 (0)	16	32	25	22	44	19	11	1 (x)	170
New Zealand	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
	2001	0	0	9	2	7	7	8	1	0	34

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

Figure 50

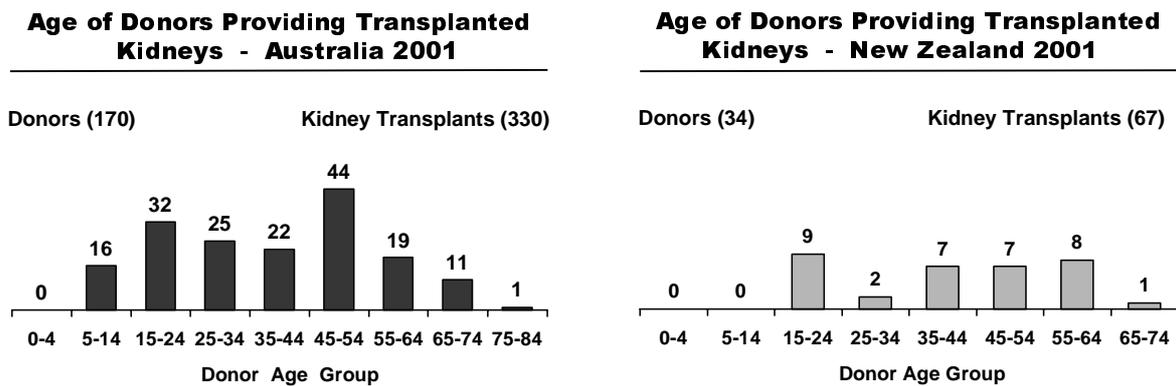
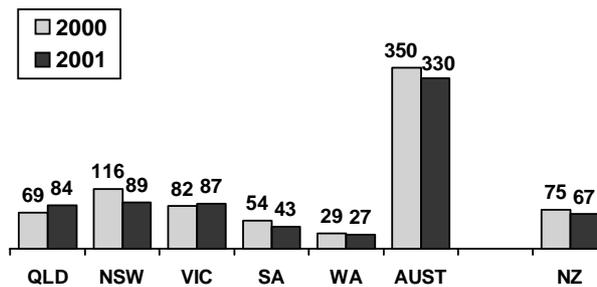


Figure 51

Cadaver Kidney Transplants by Transplant State Australia and New Zealand 2000 - 2001



KIDNEY PERFUSION METHODS

In Australia Ross continues to be the preservation solution of choice (81%) when only one solution is used. University of Wisconsin (UW) was used as the second perfusion solution in 82% of cases.

Figure 52

Kidney Perfusion with Only One Solution 1997 - 2001

	Australia					New Zealand				
	1997	1998	1999	2000	2001	1997	1998	1999	2000	2001
Ross	71	46	38	26	26	12	6	10	2	4
UW	34	16	12	8	4	14	71	66	78	64
Collins	6	8	0	0	2	2	2	0	0	0
Hartmans	0	0	0	0	0	0	2	0	0	0
Baxter's Fluid	0	0	0	0	0	0	0	0	2	0
Total	111	70	50	34	32	28	81	76	82	68

Figure 53

Second Perfusion Solution - Kidneys 1997 - 2001

	Australia					New Zealand				
	1997	1998	1999	2000	2001	1997	1998	1999	2000	2001
Ross	26	14	43	7	52	2	0	0	0	0
UW	195	253	195	313	256	54	6	2	0	0
Collins	34	28	10	16	4	0	0	0	0	0
Hartmans	0	0	2	0	0	0	0	0	0	0
Baxter's Fluid	0	0	0	0	0	0	0	0	0	0
Total	255	295	250	336	312	56	6	2	0	0

REASONS KIDNEYS WERE UNUSABLE

Kidney Biopsies were performed in 11% of Australian donors and 32% of New Zealand donors at the time of organ retrieval in 2001. As a result the kidneys from five donors were not transplanted.

Figure 54

		Reasons Kidneys were Unusable 1997 - 2001				
		1997	1998	1999	2000	2001
Australia	Renal disease in donor	4	7	3	10	8
	Infection in donor	1	0	0	0	0
	Cancer in donor	0	0	0	2	0
	Anatomical	3	1	1	0	1
	Surgical	1	0	2	2	3
	Trauma	0	0	1	2	0
	High Creatinine and Urea	0	0	2	0	0
	Courier Failure	0	0	0	0	1
	Total	9	8	9	16	13
New Zealand	Renal Disease in Donor	0	5	3	6	1
	Infection in Donor	0	2	0	0	0
	Surgical	1	0	0	1	0
	Trauma	0	0	1	0	0
	Donor Unstable	0	0	1	0	0
		Total	1	7	5	7

Figure 55

		Donor Age of Unusable Kidneys 1997 - 2001									
		Year	00-04	05-14	15-24	25-34	35-44	45-54	55-64	65-74	Total
Australia	1997	0	0	0	0	0	2	3	2	2	7
	1998	0	0	1	0	3	1	0	2	2	7
	1999	0	0	0	0	2	2	2	1	1	7
	2000	0	0	1	0	1	1	5	2	2	10
	2001	0	0	1	0	1	2	5	1	1	10
New Zealand	1997	0	0	0	0	0	1	0	0	0	1
	1998	0	0	0	1	0	1	2	0	0	4
	1999	1	0	0	0	1	1	0	0	0	3
	2000	0	1	0	1	1	0	3	0	0	6
	2001	0	0	0	0	0	0	0	0	1	1

DONOR KIDNEY FUNCTION

Terminal Levels of Serum Creatinine and Urea

In 2001, 9% of Australian donors had a terminal serum creatinine of $\geq 125 \mu\text{mol/L}$ and 11% had a terminal serum urea of $\geq 9 \text{ mmol/L}$.

New Zealand had 6% of donors with a terminal serum creatinine of $\geq 125 \mu\text{mol/L}$ and 3% with terminal serum urea of $\geq 9 \text{ mmol/L}$.

Figure 56

Terminal Serum Creatinine Levels 1997 - 2001										
Creatinine Levels	Australia					New Zealand				
	1997	1998	1999	2000	2001	1997	1998	1999	2000	2001
00-99	69%	72%	67%	77%	74%	67.5%	73%	76%	79%	78%
100-124	19%	19%	16%	11%	17%	22.5%	23%	19%	15%	16%
125-149	4%	6%	6%	3%	1%	5%	2%	0%	0%	3%
150-174	4%	2%	5%	4%	2%	2.5%	0%	5%	3%	0%
175-199	2%	<1%	3%	1%	2%	0%	2%	0%	3%	0%
200-224	1%	<1%	<1%	0%	1%	2.5%	0%	0%	0%	0%
225-249	<1%	0%	0%	<1%	<1%	0%	0%	0%	0%	0%
> 250	1%	0%	3%	3%	2%	0%	0%	0%	0%	3%

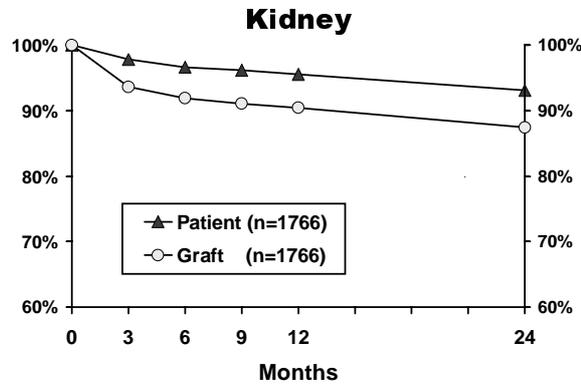
Figure 57

Terminal Serum Urea Levels 1997 - 2001										
Urea Levels	Australia					New Zealand				
	1997	1998	1999	2000	2001	1997	1998	1999	2000	2001
00-04	49%	48%	49%	54%	51%	39%	41%	54%	54%	59%
05-08	38%	46%	42%	34%	38%	53%	49%	35%	44%	38%
09-12	10%	5%	5%	7%	9%	5%	10%	11%	2%	3%
13-16	2%	1%	1%	3%	2%	0%	0%	0%	0%	0%
> 16	1%	0%	3%	2%	<1%	3%	0%	0%	0%	0%

KIDNEY TRANSPLANT OUTCOME

Figure 58

**Primary Cadaver Patient and Graft Survival
Australia 1995 - 2000**



**Primary Cadaver Patient and Graft Survival
New Zealand 1995 - 2000**

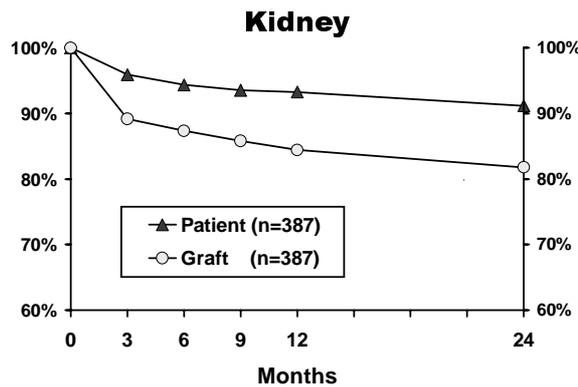
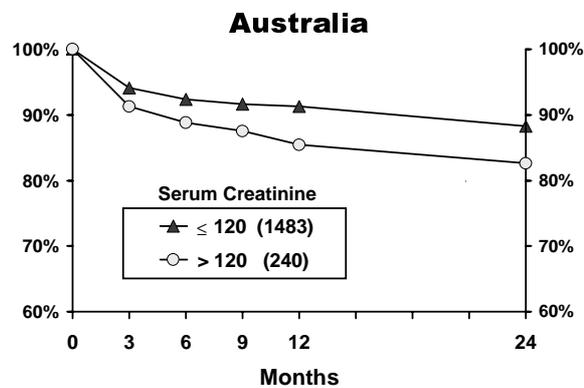


Figure 59

**Primary Cadaver Kidney Graft Survival
Terminal Serum Creatinine 1995 - 2000**



Further information on kidney transplant outcome is available on the Australia and New Zealand Dialysis and Transplant Registry Website - www.anzdata.org.au

LIVER DONATION

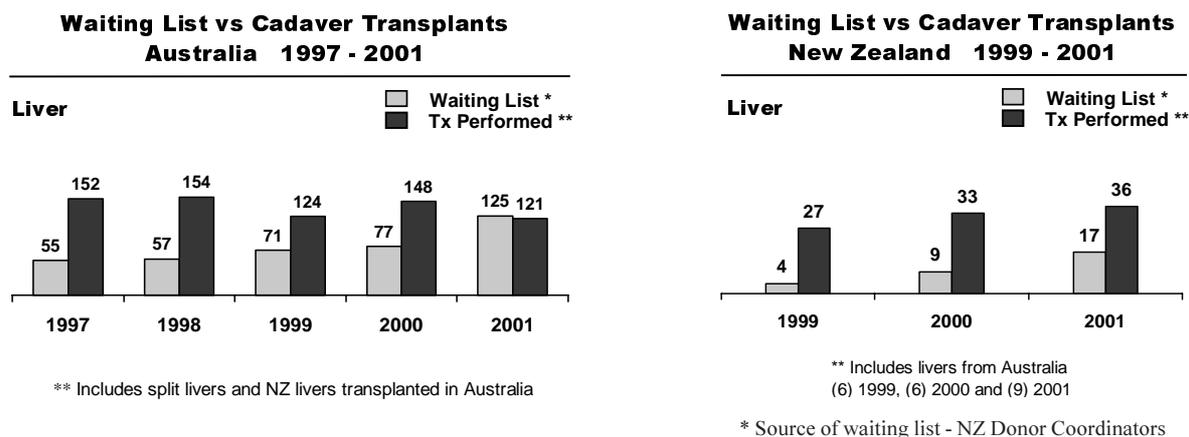
There were 157 liver transplants performed in 2001, 121 in Australia and 36 in New Zealand.

Nine livers were donated from Australia and transplanted into New Zealand recipients and two livers donated from New Zealand were transplanted into Australian recipients.

There were 127 Australian donors, who provided 128 recipients with transplanted livers and 29 New Zealand donors provided livers for 29 recipients.

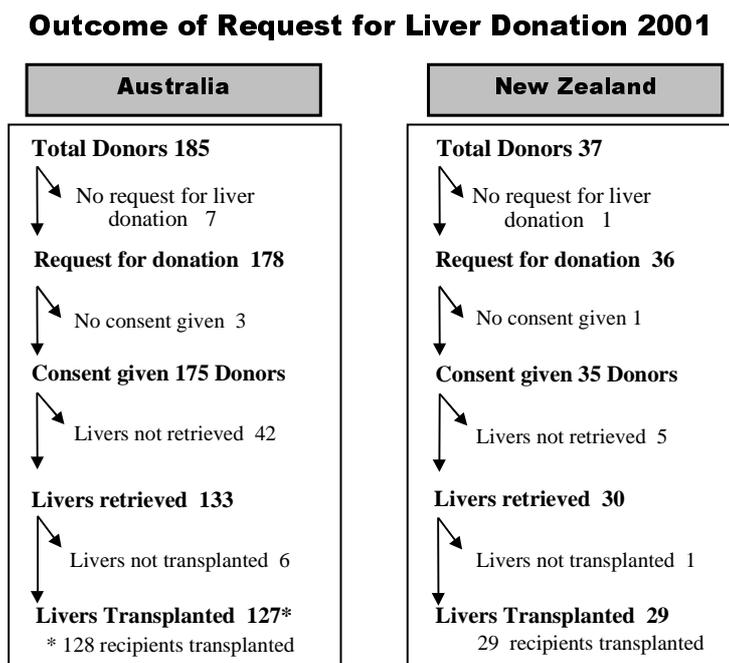
Two transplants were performed using the “split” liver technique [transplanting one liver into two recipients] (at the Princess Alexandra Hospital, Queensland).

Figure 60



* Data as at 30-Jun-1997 ACCORD Newsletter 17, published Aug-1997
 Data as at 31-Dec-1998 Australians Donate
 Data as at Feb-2000) Individual Transplant Units and the
 Jan- 2001) National Organ Matching System
 Jan- 2002)

Figure 61



* Includes split livers and number of recipients

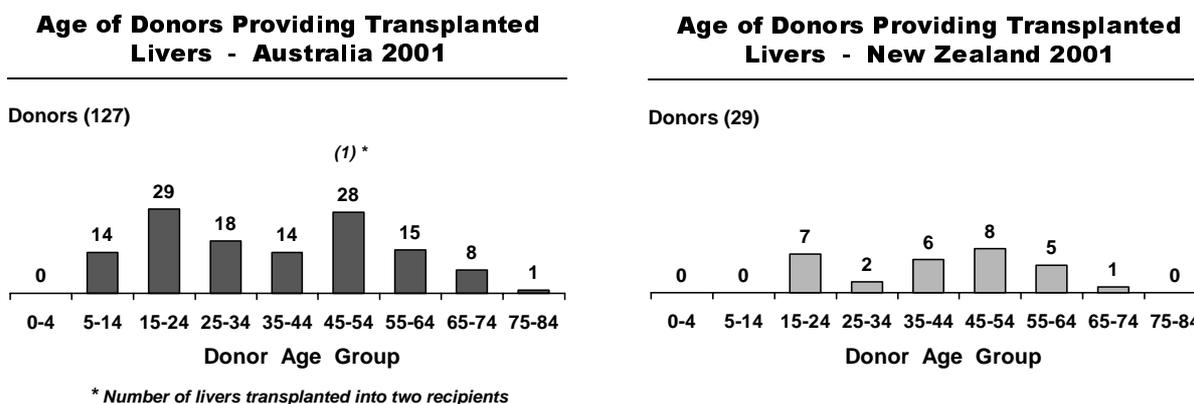
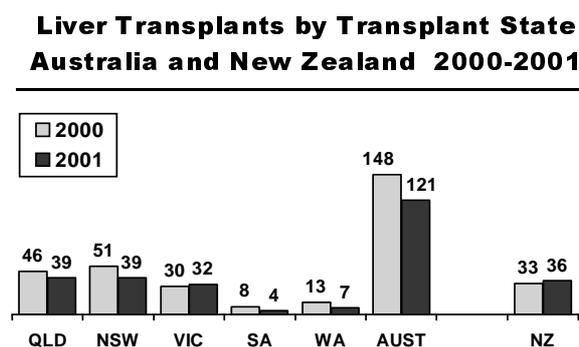
Recipients transplanted refers to outcome of livers donated in Australia or New Zealand

Refer to Appendices for reasons livers were not requested, not retrieved and not transplanted

Figure 62

Age of Donors Providing Transplanted Livers 1997 - 2001											
	Year	00-04	05-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	Total
Australia	1997	3	7	29(+)	15(+)	24(3+)	33	12	2	0	125
	1998	3	9	32 (3+)	15(+)	21(+)	23(+)	22(+)	7	0	132
	1999	6	10(+)	22(+)	16(+)	16 (2+)	22 (2+)*	20	4	0	116
	2000	2	7	26 (+)	22	25 (+)	31 (2+)	21	7 (+)	1	142
	2001	0	14	29(*)	18 (*)	14 (3*)	28 (+)	15	8	1	127
New Zealand	1997	0	4	8	3	1	3	3	0	0	22
	1998	1	2	5	5	7	6	4	0	0	30
	1999	0	2	2	4	4	10	3	3	0	28
	2000	0	1	8	4	5	11	4	1	0	34
	2001	0	0	7	2	6	8	5	1	0	29

+ One liver transplanted into two recipients
* One liver split and used for one patient only

Figure 63**Figure 64**

PERFUSION OF LIVERS

Australia

University of Wisconsin (UW) solution was used as the final perfusion for all livers. The initial flush solution was either Hartman's or Ross Solution. There were 10 livers solely perfused with UW.

New Zealand

University of Wisconsin solution was used for all livers retrieved.

Figure 65

Regional Outcome of Requests for Liver Donation 1989-2001										
	Qld	NSW	ACT	Vic.	Tas.	SA	NT	WA	Aust.	N.Z.**
Total Donors	520	842	53	570	42	320	27	198	2572	345
Requested	511	756	51	499	36	275	23	167	2318	289
Consented	503	735	48	479	33	265	23	160	2246	286
Retrieved	377	496	37	319	26	188	15	107	1565	234
Transplanted *	359	484	37	278	24	181	14	102	1479	223

* Refers to number of recipients - use of split livers
** New Zealand 1993 - 2001

REASONS LIVERS WERE UNUSABLE

Figure 66

Reasons Livers were Unusable 1999 - 2001

		1999	2000	2001
Australia	Biopsy - Fatty	4	3	4
	Disease	2	0	0
	Anatomical	0	0	1
	Research	0	0	1
	Cancer in Donor	0	1	0
	Recipient Issue	2	0	0
	Total	8	4	6
New Zealand	Biopsy - Fatty	1	2	1
	Recipient Issue	1	0	0
	Total	2	2	1

Figure 67

Donor Age of Unusable Livers 1999 - 2001

	Year	00-04	05-14	15-24	25-34	35-44	45-54	55-64	65-74	Total
Australia	1999	0	0	1	0	0	4	2	1	8
	2000	0	0	0	0	1	1	2	0	4
	2001	0	1	1	0	1	2	1	0	6
New Zealand	1999	1	0	0	0	0	1	0	0	2
	2000	0	0	0	0	1	0	1	0	2
	2001	0	0	0	0	0	0	0	1	1

DONOR LIVER FUNCTION

The results of the serum tests for liver function for 132 Australian and 30 New Zealand donors in 2001, who had livers retrieved, is shown below.

Seventy six percent of Australian and 30% of New Zealand donors had all five tests performed. Figure 68 shows the number of donors whose liver function was above the normal range.

Figure 68

Number of Donors with Liver Function Tests above Normal Range

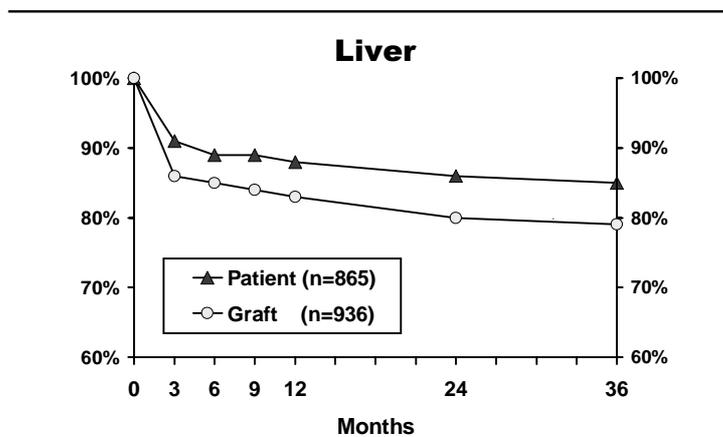
Liver Function Tests	Australia			New Zealand		
	Donors with value recorded *	Above Normal	Maximum recorded 1989-2001	Donors with value recorded *	Above Normal	Maximum recorded 1989-2001
Alanine Transaminase ALT > 40 u/L	132	40 (30%)	1194 (1090)x	24	9 (38%)	208 (89)
Aspartate Transaminase AST > 40 u/L	100	51 (51%)	1008 (353)	16	4 (25%)	428 (95)
Gamma Glutamol Transferase GGT > 60 u/L	130	19 (15%)	750 (395)	17	1 (6%)	106 (91)
Alkaline Phosphatase > 116 u/L	121	14 (12%)	309 (234)	30	1 (3%)	264 (121)
Total Bilirubin > 20 umol/L	131	15 (11%)	103 (62)	29	5 (17%)	57 (53)

* Not all donors have all tests
x (2001) Maximum

LIVER TRANSPLANT OUTCOME

Figure 69

**Cadaver Patient and Graft Survival
Australia 1995 - 2000**



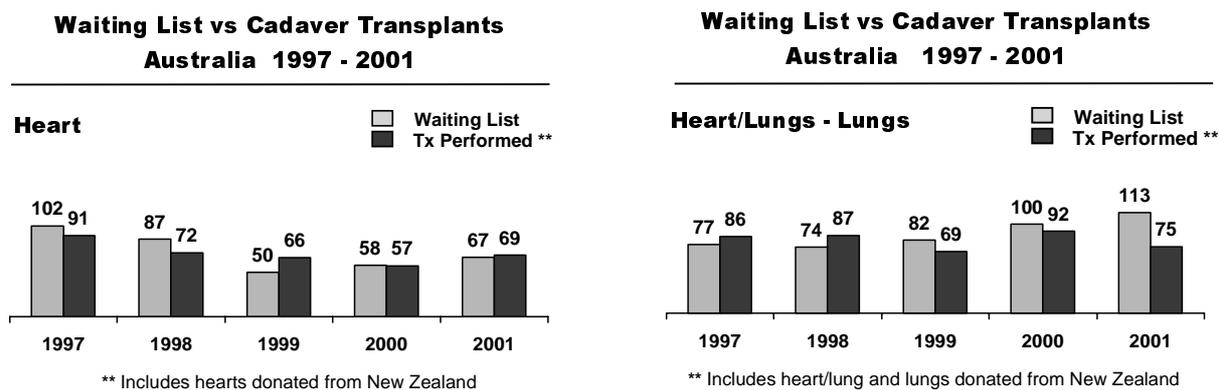
Further information on liver transplant outcome is available from the Australia and New Zealand Liver Transplant Registry Report Website: www.cs.nsw.gov.au/gastro/livertransplant/

THORACIC ORGAN DONATION

Australia performed 67 heart transplants, two heart/lung, 47 double and 26 single lung transplants.

New Zealand performed 15 heart transplants, nine double lung and two single lung transplants.

Figure 70



* Data as at 30-Jun-1997 ACCORD Newsletter 17, published Aug-1997
 Data as at 31-Dec-1998 Australians Donate
 Data as at Feb-2000) Individual Transplant Units and the
 Jan-2001) National Organ Matching System
 Jan-2002)

Figure 71

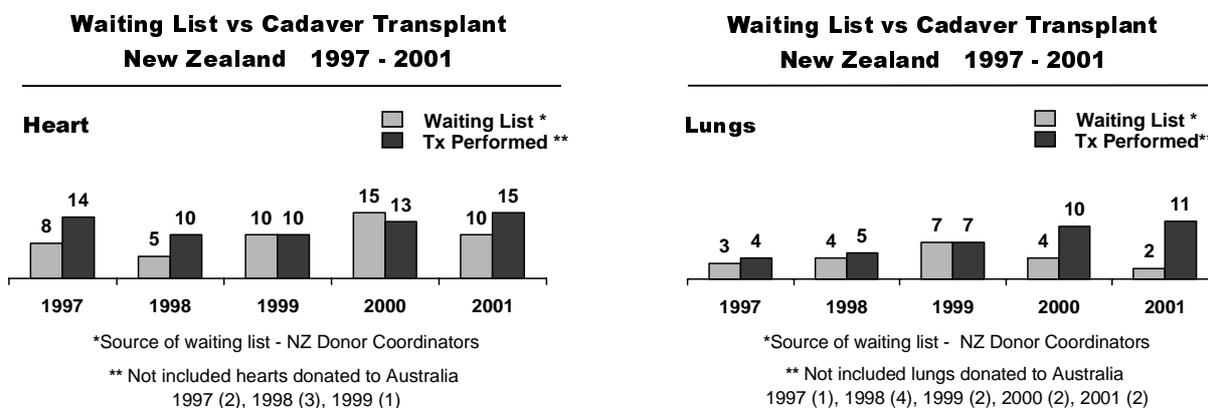
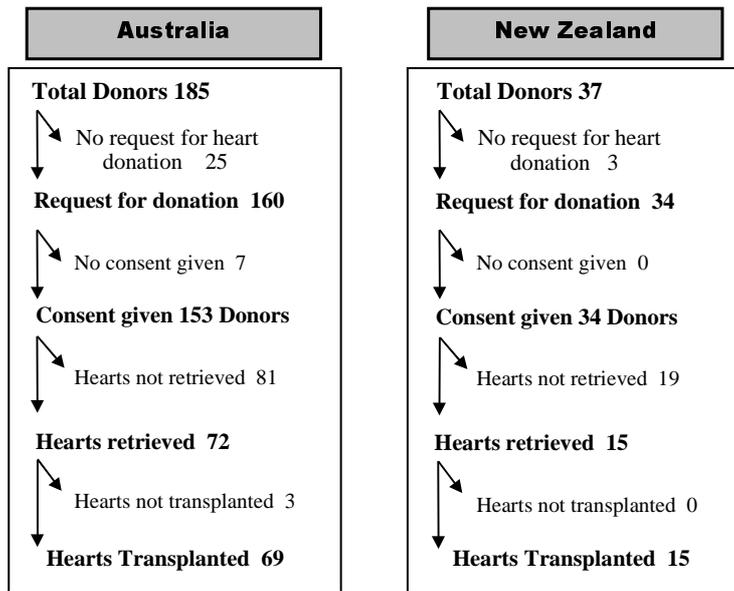


Figure 72

Outcome of Request for Heart Donation 2001



Refer to Appendices for reasons hearts were not requested, not retrieved and not transplanted.

Figure 73

Age of Donors Providing Transplanted Hearts 1997 - 2001

	Year	00-04	05-14	15-24	25-34	35-44	45-54	55-64	65-74	Total
Australia	1997	0	3	20	17	21	29	3	0	93
	1998	2	3	24	14	18	10	2	0	73
	1999	1	4	20	10	8	17	7	0	67
	2000	0	1	17	15	11	12	3	0	59
	2001	0	5	22	10	12	18	2	0	69
New Zealand	1997	0	0	10	3	0	3	0	0	16
	1998	0	0	2	3	5	2	1	0	13
	1999	0	0	1	3	1	6	0	0	11
	2000	0	0	4	4	2	3	0	0	13
	2001	0	0	5	2	3	3	2	0	15

Figure 74

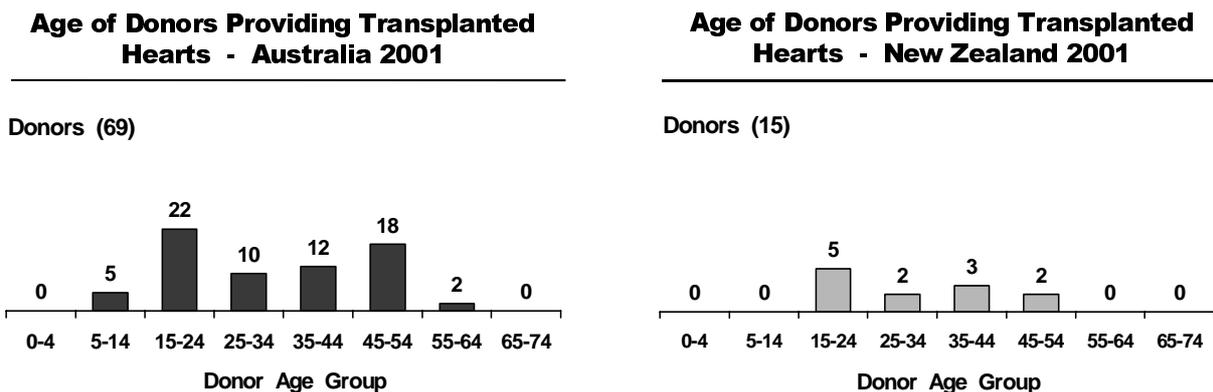
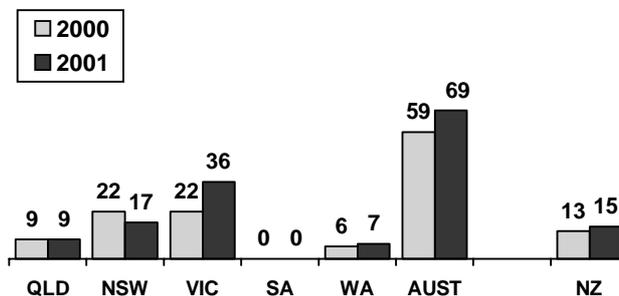


Figure 75**Heart Transplants by Transplant State
Australia and New Zealand 2000 - 2001****Figure 76****Heart and Lung Transplant Recipients
By Transplant Country 1997 - 2001**

Heart/Lung		1997	1998	1999	2000	2001
Australia	Heart	90	69	66	57	67
	Heart/lung	3	4	2	2	2
	Double lung	44	49	42	65	47
	Single left lung	20	17	13	12	10
	Single right lung	18	17	12	13	16
	Total	175	156	135	149	142
New Zealand	Heart	15	13	10	13	15
	Heart/lung	1	0	0	0	0
	Double lung	1	6	7	10	9
	Single left lung	1	1	0	0	1
	Single right lung	2	2	0	2	1
	Total	20	22	17	25	26

Figure 77**Regional Outcome of Requests for Heart Donation 1989 - 2001**

	Qld	NSW	ACT	Vic.	Tas.	SA	NT	WA	Aust.	N.Z. *
Total Donors	520	842	53	570	42	320	27	198	2572	345
Requested	491	705	50	480	36	251	23	150	2186	276
Consented	466	662	46	451	34	242	22	134	2057	267
Retrieved	261	405	33	284	26	134	11	77	1231	112
Transplanted	259	403	32	273	25	131	11	74	1208	112

* New Zealand 1993 - 2001

Heart Valve Donation

The aortic and pulmonary heart valves can often be transplanted when the whole heart is not suitable.

Figure 78

Outcome of Request for Heart Valve Donation 2001

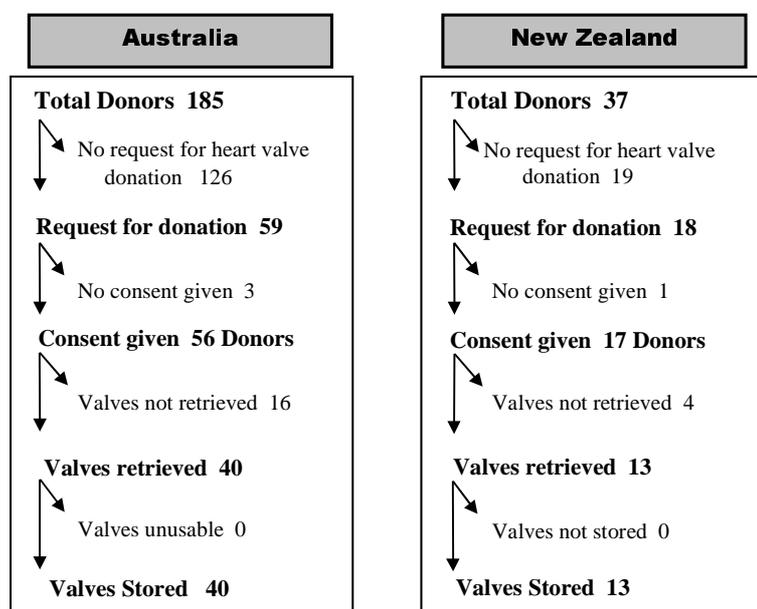


Figure 79

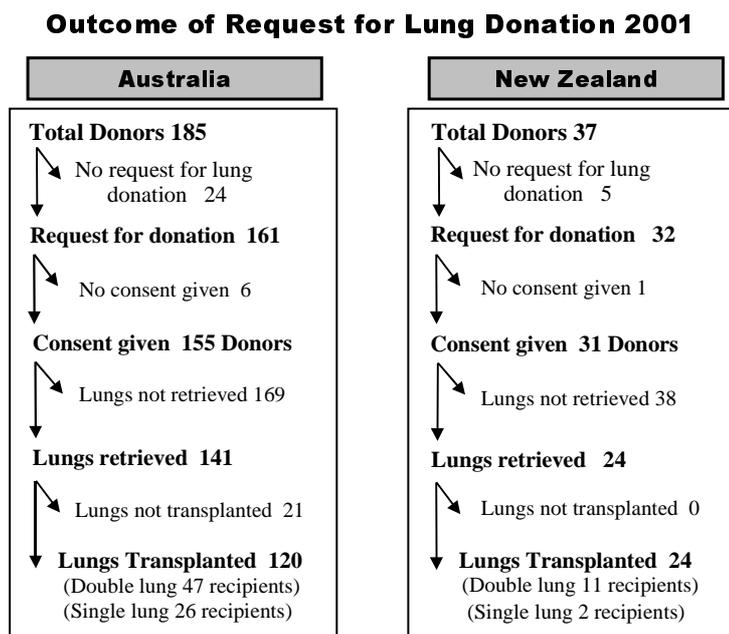
Age of Heart Valve Donors 1997 - 2001										
	Year	00-04	05-14	15-24	25-34	35-44	45-54	55-64	65-74	Total
Australia	1997	2	4	7	2	7	7	4	0	33
	1998	0	4	6	4	9	10	4	0	37
	1999	3	3	2	6	6	9	4	0	33
	2000	0	4	6	4	14	17	8	0	53
	2001	0	7	3	8	2	13	7	0	40
New Zealand	1997	0	3	3	0	3	4	4	0	17
	1998	1	2	5	1	2	4	3	0	18
	1999	1	3	2	1	3	5	4	0	19
	2000	0	1	3	0	3	8	4	0	19
	2001	0	0	2	1	3	4	3	0	13

Figure 80

Regional Outcome of Requests for Heart Valve Donation 1989 - 2001										
	Qld	NSW	ACT	Vic.	Tas.	SA	NT	WA	Aust.	N.Z. *
Total Donors	520	842	53	570	42	320	27	198	2572	345
Requested	171	138	10	55	2	55	2	44	477	150
Consented	169	138	9	54	2	55	2	43	472	147
Retrieved	155	123	9	47	2	49	1	40	426	141
Transplanted or Stored	154	116	9	46	2	48	1	40	416	140

* New Zealand 1993 - 2001

Figure 81



Refer to Appendices for reasons lungs were not requested, not retrieved and not transplanted.

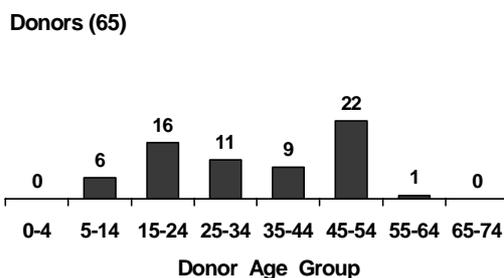
Figure 82

Age of Donors Providing Transplanted Lungs 1997 - 2001

		Year	00-04	05-14	15-24	25-34	35-44	45-54	55-64	65-74	Total
Australia	1997	0	3	18	9	12	23	4	0	0	69
	1998	0	2	19	13	19	15	2	0	0	70
	1999	0	2	10	12	7	18	11	0	0	60
	2000	0	2	19	14	16	17	11	0	0	79
	2001	0	6	16	11	9	22	1	0	0	65
New Zealand	1997	0	1	2	0	1	1	0	0	0	5
	1998	0	0	1	1	2	2	2	0	0	8
	1999	0	0	0	0	2	5	1	0	0	8
	2000	0	0	2	2	2	8	0	0	0	14
	2001	0	0	3	0	2	4	3	0	0	12

Figure 83

Age of Donors Providing Transplanted Lungs - Australia 2001



Age of Donors Providing Transplanted Lungs - New Zealand 2001

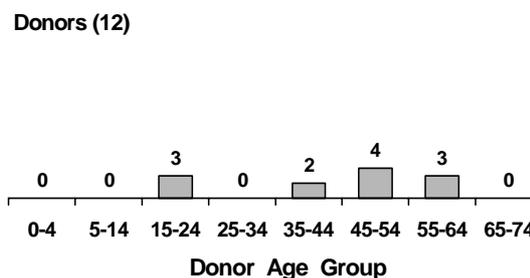
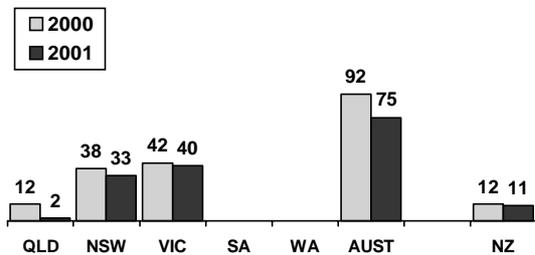
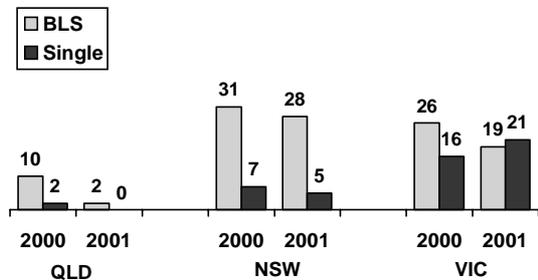


Figure 84**Lung Transplant Recipients 2000 - 2001
by Transplant State - Australia and NZ****Single and Bilateral Sequential (Double)
Lung Transplants by State 2000 - 2001****Figure 85****Regional Outcome of Requests for Lung Donation 1989 - 2001**

	Qld	NSW	ACT	Vic.	Tas.	SA	NT	WA	Aust.	N.Z.**
Total Donors	520	842	53	570	42	320	27	198	2572	345
Requested	461	668	50	430	32	210	21	119	1991	216
Consented	428	623	46	402	30	201	20	110	1860	211
Retrieved x	248	477	37	333	32	182	24	94	1427	140
Transplanted x	223	457	36	299	32	170	23	92	1332	127

x Number of Lungs
** New Zealand 1993 -2001

DONOR LUNG FUNCTION

There were ten lung donors who had chest trauma. This included five with chest drains, three pneumothorax and two with lung contusion.

Australia

The arterial blood gases were taken on 100% FiO₂ and PEEP of 5 cm. Two donors had a PEEP >5 cm. The results from 64 lung donors are available for 2001 and show 25% (16) to be acidotic (pH < 7.36) and 27% (17) to be alkalotic (pH > 7.44).

Oxygenation measured as PaO₂ ranged from 202-720 mmHg with a median of 507 mmHg.

PaCO₂ ranged from 26.0-73.6 mmHg with a median of 38.0 mmHg.

New Zealand

The arterial blood gas results from 11 lung donors in 2001 shows 18% (2) to be acidotic (pH < 7.36) and 18% (2) to be alkalotic (pH > 7.44).

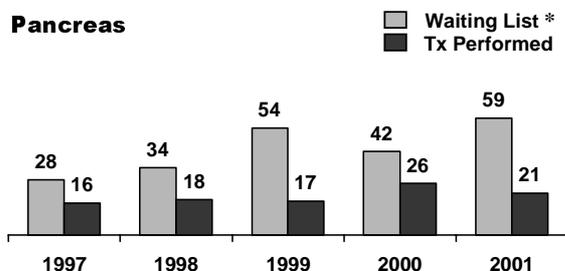
Oxygenation measured as PaO₂ ranged from 367-518 mmHg with a median of 464 mmHg.

PaCO₂ ranged from 25.6-46.0 mmHg with a median of 38.0 mmHg.

PANCREAS DONATION

Figure 86

Waiting List vs Cadaver Transplants Australia 1997 - 2001



There were 21 combined kidney/pancreas transplants performed in 2001, eleven at Westmead Hospital, NSW and ten at Monash Medical Centre in Victoria.

The first combined kidney/pancreas transplant was performed in New Zealand in August 1998, two in 1999 and three in 2000 and 2001.

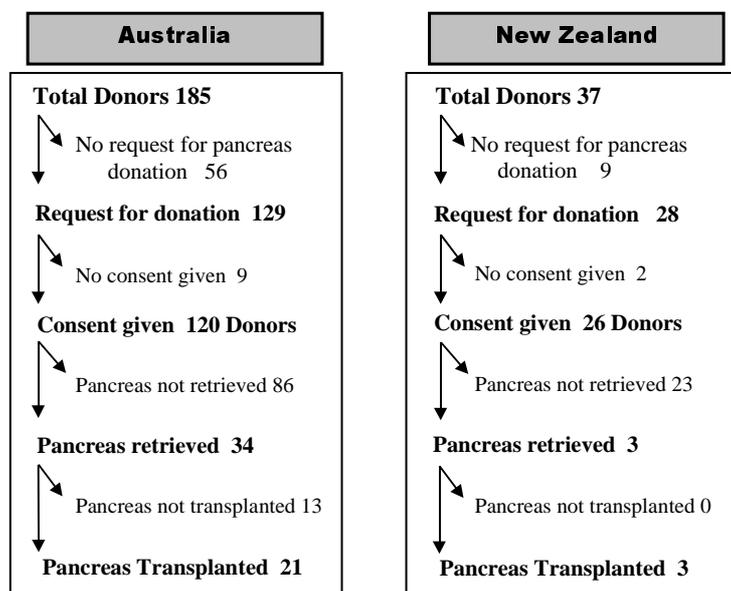
* Data as at 30-Jun-1997 ACCORD Newsletter 17, published Aug-1997
 Data as at 31-Dec-1998 Australians Donate
 Data as at Feb-2000) Individual Transplant Units
 Jan- 2001) and the National Organ
 Jan- 2002) Matching System

Waiting List September 2001		
Numbers of Patients on Waiting List	Aust.	N.Z.
* Number of Patients with Diabetes Type 1 on dialysis (Sept 2001)	219	50
Patient < 45 years of age	108	36
Patient < 55 years of age	181	44
Number of Patients on Kidney Transplant Waiting List	1595	242
Number of Patients on Kidney Pancreas Transplant Waiting List	59	7

Reference: * ANZDATA Registry

Figure 88

Outcome of Request for Pancreas Donation 2001



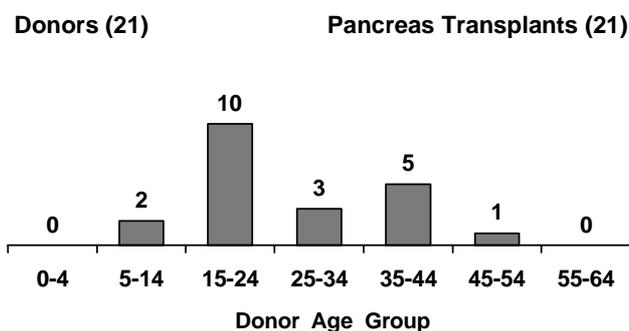
Refer to Appendices for reasons pancreas were not requested, not retrieved and not transplanted.

Figure 89

Age of Donors Providing Transplanted Pancreas 1997 - 2001									
	Year	00-04	05-14	15-24	25-34	35-44	45-54	55-64	Total
Australia	1997	0	2	8	5	1	0	0	16
	1998	0	2	9	5	2	0	0	18
	1999	0	2	8	3	3	1	0	17
	2000	0	0	9	9	6	2	0	26
	2001	0	2	10	3	5	1	0	21
New Zealand	1998	0	0	0	0	1	0	0	1
	1999	0	0	0	0	2	0	0	2
	2000	0	0	3	0	0	0	0	3
	2001	0	0	1	0	2	0	0	3

Figure 90

**Age of Donors Providing Transplanted
Pancreas - Australia 2001**

**Figure 91**

Regional Outcome of Requests for Pancreas Donation 1989 - 2001										
	Qld	NSW	ACT	Vic.	Tas.	SA	NT	WA	Aust.	N.Z.**
Total Donors	520	842	53	570	42	320	27	198	2572	345
Requested	422	636	50	281	14	86	6	46	1541	125
Consented	368	596	46	254	11	67	6	36	1384	118
Retrieved	13	150	12	91	3	17	0	28	314	18
Transplanted	9	109	7	45	3	10	0	0	183	9

** New Zealand 1993 -2001

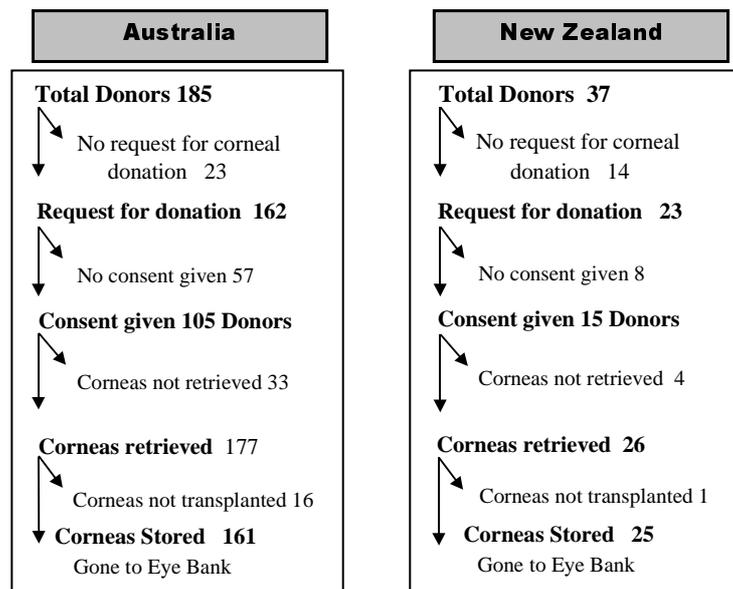
CORNEAL DONATION

This section refers only to corneas donated from solid organ donors. It does not include any cases of cornea only donation. Full data is available from

The Australian Corneal Graft Registry (Editors K.A. Williams, S.M. Muehlberg, C. Bartlett and D.J. Coster), Flinders Medical Centre, Bedford Park 5042, South Australia.

Figure 92

Outcome of Request for Corneal Donation 2001



Refer to Appendices for reasons cornea were not requested, not retrieved and not transplanted.

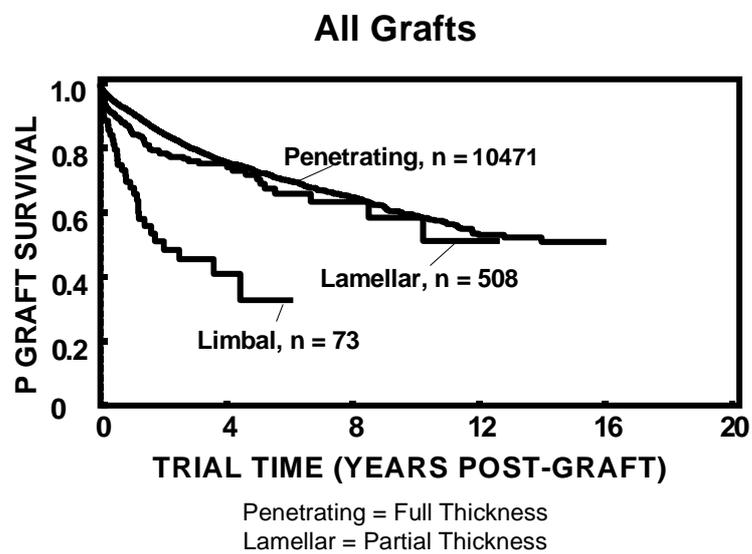
Figure 93

Age of Corneal Donors 1997 - 2001											
	Year	00-04	05-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	Total
Australia	1997	2	2	15	8	20	26	10	7	2	92
	1998	0	4	9	11	17	27	16	10	0	94
	1999	0	3	10	13	12	19	24	7	2	90
	2000	0	2	10	10	14	21	23	8	1	89
	2001	0	5	11	8	9	29	15	6	2	85
New Zealand	1997	0	2	4	4	0	4	2	0	0	16
	1998	0	2	1	3	3	3	2	0	0	14
	1999	0	0	0	1	2	2	2	1	0	8
	2000	0	0	1	0	1	8	0	1	0	11
	2001	0	0	3	1	1	3	4	1	0	13

Figure 94

Regional Outcome of Requests for Corneal Donation 1989 - 2001										
	Qld	NSW	ACT	Vic.	Tas.	SA	NT	WA	Aust.	N.Z.**
Total Donors	520	842	53	570	42	320	27	198	2572	345
Requested	481	743	48	512	27	226	9	160	2206	199
Consented	350	549	30	395	18	134	6	102	1584	145
Retrieved x	519	1040	53	772	35	245	2	196	2862	238
Gone to Eye Bank xx	509	801	42	753	32	237	2	186	2562	234

x Number of Corneas xx Gone to Eye Bank - Transplanted later
** New Zealand 1993 -2001

Figure 95

Source: Australian Corneal Graft Registry

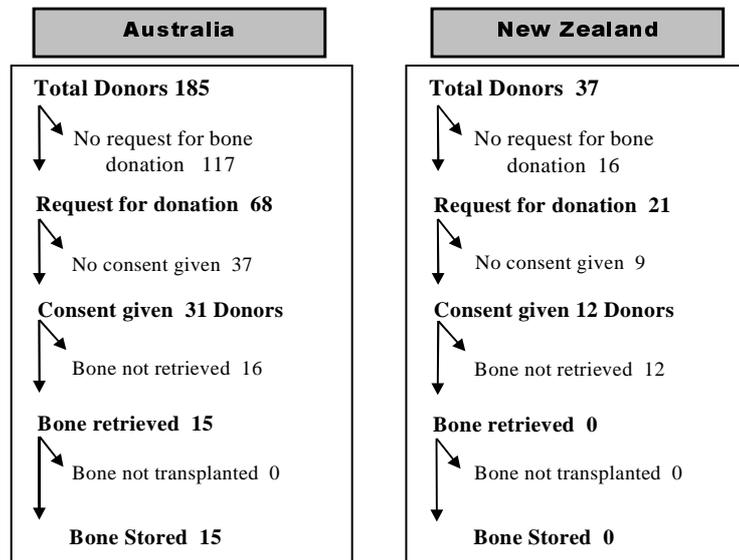
BONE DONATION

There were 15 bone donations from the solid organs in Australia and none from New Zealand in 2001.

Many states have logistical difficulties retrieving bone for transplantation.

Figure 96

Outcome of Request for Bone Donation 2001



Refer to Appendices for reasons bones were not requested, not retrieved and not transplanted.

Figure 97

Age of Bone Donors 1997 - 2001

	Year	00-04	05-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	Total
Australia	1997	0	1	1	2	4	6	1	1	0	16
	1998	0	0	5	2	3	6	3	1	0	20
	1999	0	0	2	2	2	4	4	1	0	15
	2000	0	0	0	1	3	8	3	0	1	16
	2001	0	0	0	2	1	7	4	1	0	15
New Zealand	1997	0	0	2	1	1	1	1	0	0	6
	1998	0	0	0	1	0	1	0	0	0	2
	1999	0	0	0	0	0	0	0	0	0	0
	2000	0	1	0	0	0	1	0	0	0	2
	2001	0	0	0	0	0	0	0	0	0	0

Figure 98

Regional Outcome of Bone Donation 1989 - 2001

	Qld	NSW	ACT	Vic.	Tas.	SA	NT	WA	Aust.	N.Z.**
Total Donors	520	842	53	570	42	320	27	198	2572	345
Requested	402	74	4	43	3	141	3	95	765	125
Consented	287	54	4	37	2	58	3	60	505	88
Retrieved	109	8	0	8	2	41	0	40	208	32
Transplanted or Stored	107	8	0	2	2	41	0	39	199	32

* New Zealand 1993 -2001

TERMINAL MANAGEMENT

Time from Admission to Brain Death

Australia

There has been a decrease in the median time from admission to brain death, from 43 hours in 2000 to 31 hours in 2001.

Thirteen percent of donors were in hospital for more than five days.

New Zealand

Fifty nine percent of donors were certified brain dead within 24 hours of hospital admission.

This was an increase from last year (42% in 2000). Three percent were in hospital for more than five days.

Figure 99

Time from Admission to Brain Death 1997 - 2001												
	Year	Hours								Unknown	Median (hours)	No. of Donors
		0-23	24-47	48-71	72-95	96-119	120-143	144-167	>168			
Australia	1997	38%	28%	13%	4%	3%	2%	1%	6%	5%	28	190
	1998	29%	25%	14%	10%	4%	3%	2%	9%	4%	39	196
	1999	38%	26%	13%	5%	6%	2%	2%	7%	1%	33	164
	2000	24%	31%	13%	11%	6%	4%	2%	9%	0%	43	196
	2001	36%	34%	9%	6%	2%	4%	2%	7%	0%	31	185
New Zealand	1997	55%	17%	9%	5%	2%	5%	0%	2%	5%	21	42
	1998	46%	33%	7%	4%	2%	0%	2%	6%	0%	25	46
	1999	41%	31%	8%	5%	2%	5%	0%	8%	0%	25	39
	2000	42%	24%	12%	10%	7%	0%	0%	5%	0%	28.5	41
	2001	59%	27%	5%	3%	3%	0%	0%	3%	0%	21	37

Figure 100

Australian States Time from Admission to Brain Death 2001										
States	Hours								Median (hours)	No. of Donors
	0-23	24-47	48-71	72-95	96-119	120-143	144-167	> 168		
Queensland	33%	38%	8%	4%	2%	2%	0%	13%	32	48
New South Wales	45%	26%	6%	6%	2%	4%	4%	6%	28	47
ACT	14%	72%	0%	0%	0%	0%	0%	14%	37	7
Victoria	30%	33%	20%	5%	2%	5%	0%	5%	42	40
Tasmania	67%	33%	0%	0%	0%	0%	0%	0%	21	3
South Australia	48%	20%	4%	16%	4%	4%	4%	0%	24	25
Northern Territory	0%	50%	0%	50%	0%	0%	0%	0%	59	2
Western Australia	23%	54%	8%	0%	0%	8%	0%	7%	45	13

Figure 101

Time from Ventilation to Brain Death 1997 - 2001												
	Year	Hours								Unknown	Median (hours)	No. of Donors
		0-23	24-47	48-71	72-95	96-119	120-143	144-167	> 168			
Australia	1997	43%	29%	12%	3%	3%	1%	<1%	5%	4%	26	190
	1998	36%	28%	11%	9%	3%	3%	1%	4%	5%	31	196
	1999	42%	28%	10%	6%	5%	2%	<1%	5%	1%	27.8	164
	2000	26%	35%	12%	11%	6%	4%	<1%	6%	0%	39.2	196
	2001	40%	32%	10%	7%	2%	3%	2%	4%	0%	28.5	185
New Zealand	1997	55%	17%	9%	5%	2%	5%	0%	2%	5%	21.7	42
	1998	52%	31%	9%	2%	0%	0%	2%	4%	0%	23.1	46
	1999	46%	33%	10%	5%	3%	0%	0%	3%	0%	24.5	39
	2000	49%	22%	10%	10%	7%	0%	0%	2%	0%	26	41
	2001	65%	24%	3%	3%	3%	0%	0%	2%	0%	17.4	37

Time from Brain Death to Aortic Cross Clamp

Australia

Fifty nine percent of donors had organs retrieved within 12 hours of the certification of brain death.

The median time was 12.1 hours.

New Zealand

Eighty four percent of donor organs were retrieved within 12 hours.

The median time was 9.5 hours.

Figure 102

Time from Brain Death to Aortic Cross Clamp 1997 - 2001											
Hours	Australia					New Zealand					
	1997	1998	1999	2000	2001	1997	1998	1999	2000	2001	
<= 6	12%	10%	9%	10%	6%	32%	24%	36%	34%	19%	
7 - 12	56%	59%	60%	53%	53%	46.5%	70%	54%	54%	65%	
13-18	26%	25%	26%	31%	32%	12%	6%	2.5%	5%	14%	
19-24	4%	2%	3%	2%	4%	7.5%	0	5%	2%	2%	
> 24	2%	4%	2%	4%	5%	2%	0	2.5%	5%	0%	
Median Hours	11.4	11.3	11.3	11.6	12.1	7.6	8.8	8.1	9.0	9.5	
Number of Donors	187	194	163	195	183	41	46	39	41	37	
Non-Heart Beating Donors	3	2	1	1	2	1	0	0	0	0	

Figure 103

Australian States Time from Brain Death to Aortic Cross Clamp 2001								
	Qld	NSW	ACT	Vic.	Tas	SA	NT	WA
<= 6 hours	5 (10%)	2 (4%)	0 (0%)	2 (5%)	0 (0%)	2 (8%)	0 (0%)	0 (0%)
7 - 12 hours	34 (71%)	21 (46%)	2 (29%)	16 (41%)	1 (33%)	12 (48%)	0 (0%)	11 (84%)
13-18 hours	7 (15%)	19 (41%)	4 (57%)	17 (44%)	1 (33%)	9 (36%)	1 (50%)	1 (8%)
19-24 hours	1 (2%)	1 (2%)	0 (0%)	1 (3%)	0 (0%)	2 (8%)	1 (50%)	0 (0%)
> 24 hours	1 (2%)	3 (7%)	1 (14%)	3 (7%)	1 (33%)	0 (0%)	0 (0%)	1 (8%)
Median Hours	10.9	12.8	15.1	13.4	13.7	12.4	19.3	10.7
Number of Donors	48	46	7	39	3	25	2	13

DONOR MAINTENANCE

Drugs for Maintenance of the Donor (given in the Intensive Care/Critical Care Unit)

Australia

In 2001 there were 16 (9%) donors who did not require inotropic support.

Antidiuretic agents (desmopressin/vasopressin) were prescribed to 123 donors, 66% of all donors.

New Zealand

In 2001 there were three (8%) donors who did not require inotropic support.

The main inotropic support agents were noradrenaline (70%) and dopamine (32%).

Antidiuretic agents were prescribed to 20 donors, 54% of all donors.

Figure 104

Donor Maintenance 1997 - 2001										
Drugs	Australia					New Zealand				
	1997	1998	1999	2000	2001	1997	1998	1999	2000	2001
Number of Donors	(190)	(196)	(164)	(196)	(185)	(42)	(46)	(39)	(41)	(37)
Dopamine	57	48	39	30	30	21	25	15	13	12
Adrenaline	55	71	47	52	42	6	3	7	2	4
Noradrenaline	75	70	80	126	121	16	18	26	23	26
Aramine	12	8	14	5	7	1	1	2	4	4
Dobutamine	9	4	3	5	3	1	0	0	0	0
Desmopressin/Vasopressin	117	142	118	116	123	32	34	26	17	20

NB: Donors may be given more than one drug

Figure 105

Australian States Donor Maintenance 2001 (2000)								
	Qld	NSW	ACT	Vic.	Tas.	SA	NT	WA
Number of Donors	48 (37)	47 (55)	7 (5)	40 (44)	3 (1)	25 (30)	2 (2)	13 (22)
Dopamine	10 (1)	9 (11)	0 (2)	9 (8)	0 (0)	1 (2)	0 (0)	1 (0)
Adrenaline	10 (15)	9 (6)	0 (2)	6 (6)	0 (0)	15 (20)	0 (0)	2 (3)
Noradrenaline	28 (20)	29 (37)	6 (4)	34 (35)	3 (0)	7 (10)	2 (1)	12 (19)
Aramine	0 (0)	2 (4)	2 (0)	3 (1)	0 (0)	0 (0)	0 (0)	0 (0)
Dobutamine	0 (1)	2 (0)	0 (0)	1 (1)	0 (0)	0 (0)	0 (0)	0 (3)
Desmopressin/Vasopressin	27 (25)	34 (36)	7 (2)	26 (26)	2 (1)	14 (15)	1 (1)	12 (10)

NB: Donors may be given more than one drug

TERMINAL TREATMENT

Terminal Treatment (provided in the Operating Theatres)

Australia

There were eight donors who received no heparin of which two donors received no form of terminal treatment.

New Zealand

One donor received no terminal treatment in 2001.

Methyl Prednisolone was not given to any New Zealand Donors compared to 166 (90%) of Australian Donors.

Figure 106

Terminal Treatment 1997 - 2001										
	Australia					New Zealand				
	1997	1998	1999	2000	2001	1997	1998	1999	2000	2001
Number of Donors	(190)	(196)	(164)	(196)	(185)	(42)	(46)	(39)	(41)	(37)
Heparin	188	194	158	192	177	38	42	37	41	36
Methyl Prednisolone	178	192	159	179	166	22	14	5	1	0
Chlorpromazine	33	40	29	34	34	12	0	1	0	0
Mannitol	28	40	20	23	16	3	2	0	0	0
Prostacyclin	67	74	61	82	68	5	8	4	7	12

NB: Donors may be given more than one drug

Figure 107

	Australian States Terminal Treatment 2001 (2000)							
	Qld	NSW	ACT	Vic.	Tas.	SA	NT	WA
Number of Donors	48 (37)	47 (55)	7 (5)	40 (44)	3 (1)	25 (30)	2 (2)	13 (22)
Heparin	46 (37)	46 (54)	7 (5)	39 (44)	3 (1)	21 (29)	2 (1)	13 (21)
Methyl Prednisolone	47 (37)	45 (54)	7 (5)	39 (44)	3 (1)	23 (28)	1 (2)	1 (8)
Chlorpromazine	26 (23)	1 (1)	0 (1)	3 (4)	0 (0)	4 (4)	0 (0)	0 (1)
Mannitol	7 (7)	0 (1)	0 (0)	0 (0)	0 (0)	9 (15)	0 (0)	0 (0)
Prostacyclin	17 (12)	14 (30)	3 (3)	17 (22)	2 (0)	7 (9)	1 (0)	7 (6)

NB: donors may be given more than one drug

