

2009

SUMMARY - AUSTRALIA

1. In 2009 there were: 247 donors, 11.3 donors per million population [dpmp] with 452 kidneys (including four double adult and two en bloc), (446 recipients), 171 livers (185 recipients), 61 hearts (including two heart/lungs), 217 lungs (101 double, two heart/lungs and eleven single lungs), 37 pancreas and nine pancreas islets transplanted into recipients. In addition there were 188 corneas, 45 sets of heart valves and 18 bone donations from these donors.
2. In 2009 there were 42 donations after cardiac death (DCD). Seventeen of these donations occurred in Victoria, fifteen in New South Wales, five in Queensland, three in South Australia and two in the Australian Capital Territory (ACT).
3. The highest donor rate was in South Australia [20 dpmp], followed by the Australian Capital Territory (ACT) [14 dpmp], Victoria [12 dpmp], Queensland [11 dpmp], New South Wales and Tasmania both [10 dpmp], the Northern Territory [9 dpmp] and Western Australia [8.5 dpmp].
4. The mean age of donors was 45.9 years, median 48.3 years with a range of 0.5 - 80.6 years.
5. In 2009, the major cause of death in 48% of donors was (CVA) cerebrovascular accident, while road trauma caused 13% of all donor deaths.
6. Donors with a known occupation (60%) were classified as students, pre-school, white and blue collar, management, professional, small business owner, primary industry and tradesperson. An additional 13% were retired, 5% home duties, 4% unemployed, 4% had a disability and 14% were unknown.
The majority of donors were Caucasoid and their religion was recorded as Christian.
7. Authority for organ donation was sought in 62% of cases by the Intensive Care Clinician or Registrar, volunteered by the family in 90 (36%) and by the Donor Coordinator (1%) and nursing staff (1%).
Coronial inquiries were required in 43% of all donors.
8. The donation of more than one organ occurred in 80% of donors. The average number of organs transplanted per donor was 3.4.
9. The consent rate for specific organs were 100% of kidneys, 100% livers, 95% hearts, 98% lungs and 99.5% pancreas.
10. In 2009, from donors where organs had been retrieved, 99% of kidneys, 98% of livers, 86% of hearts, 100% of lungs and 42% of pancreas (37 pancreas and nine pancreas islets) were actually transplanted.
11. Three livers were sent to New Zealand in 2009.

SUMMARY - NEW ZEALAND

1. In 2009 there were: 43 donors, 9.9 donors per million population [dpmp], which resulted in 56 kidneys (including two en bloc), (54 recipients), 33 livers (33 recipients), eleven hearts, 31 lungs (15 double lungs and one single lung) and two pancreas being transplanted into recipients. In addition 26 corneas and seven sets of heart valves were sent to the tissue bank. There was no bone donation.
2. There were two donation after cardiac death (DCD) donors.
3. The mean age of donors was 44.3 years and median 46.9 years, with an age range of 3.6 - 74.6 years.
4. Cerebrovascular accident (CVA) was the major cause of death in 49% of donors, while road trauma caused 21% of deaths in 2009.
5. Fifty one percent of donors with a known occupation were classified as students, white and blue collar workers, professional, primary industry, tradesperson, or management. An additional 35% were unknown and 14% (six donors) were home duties or retired.
Thirty five donors (81%) were Caucasoid, five (12%) were Maori and one donor each were Korean, Filipino and Coloured African.
The religion was unknown for 98% of donors.
6. Authority for organ donation was sought in 81% of cases by the Intensive Care Clinician, Registrar or other physician, volunteered in seven (16%) and by the nursing staff in 1% of cases.
Coronial inquiries were required in 44% of donors.
7. The donation of more than one organ occurred in 79% of donors. The average number of organs transplanted per donor was 2.7.
8. The consent rate for specific organs were 100% of kidneys, 100% of livers, 100% of hearts, 100% of lungs and 100% of pancreas.
9. In 2009, from donors where organs had been retrieved, 77% of kidneys, 100% of livers, 100% of hearts, 97% of lungs and 100% of pancreas were actually transplanted.
10. New Zealand has provided 21 kidneys, 223 livers, 28 hearts and 98 lungs to the Australian Transplant programs since 1989.
11. Five livers and sixteen lungs were sent from New Zealand to Australia in 2009.

ORGAN DONORS IN AUSTRALIA AND NEW ZEALAND

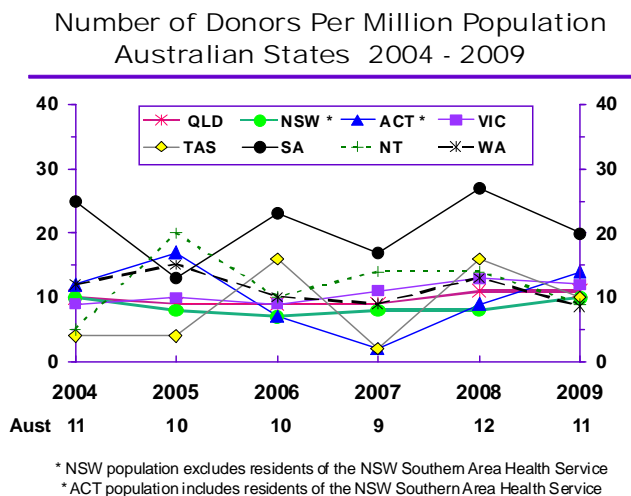
Figure 1

Number of Donors** by Retrieval State ^(x) 2005 - 2009					
() Donors Per Million					
	2005	2006	2007	2008	2009
Queensland	35 (9)	36 (9)	39 (9)	48 (11)	47 (11)
New South Wales + *	54 (8+) (8*)	49 (7+) (7*)	53 (8+) (8*)	57 (8+) (8*)	68 (10+) (10*)
ACT + *	9 (17+) (28*)	4 (7+) (12*)	1 (2+) (3*)	5 (9+) (14.5*)	8 (14+) (23*)
Victoria	50 (10)	46 ^(x) (9)	55 (11)	67 (13)	65 ^(x) (12)
Tasmania	2 (4)	8 (16)	1 (2)	8 (16)	5 (10)
South Australia	20 (13)	36 (23)	27 (17)	43 (27)	33 (20)
Northern Territory	4 (20)	2 (10)	3 (14)	3 (14)	2 (9)
Western Australia	30 (15)	21 (10)	19 (9)	28 (13)	19 (8.5)
Australia	204 (10)	202 (10)	198 (9)	259 (12)	247 (11)
New Zealand	29 (7)	25 (6)	38 (9)	31 (7)	43 (11)

^(x) Refers to donors retrieved by retrieval State (ie Albury-NSW donors retrieved by Victoria)
 + NSW population excludes residents of the NSW Southern Area Health Service (included in ACT population)
 * NSW population includes residents of the NSW Southern Area Health Service (excluded from ACT population)
 Medical services from the ACT service the NSW Southern Area Health Region. Population data—June 2008 ABS 3101.0

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

Figure 2



Donor figures for Australia for 2009 include six donors who went to the operating theatre but organs or tissues were not retrieved. Four donors had disease of organs, one donor a suspected malignancy and one a definite malignancy. Two were DCD donors. A further donor donated corneas only.

Donor (dpmp) figures in Australia improved from 9-10 (dpmp) between 2005 and 2007, to 12 (dpmp) in 2008 and 11 (dpmp) in 2009.

New Zealand had one donor whose organs or tissues were not retrieved due to disease. A further donor donated corneas only.

In 2009 there was a range between the States of 8.5 donors per million population (dpmp) in Western Australia to 20 dpmp in South Australia.

The ACT had 23 dpmp when the NSW Southern Area Health Service population was excluded.

Figure 3

International Donor Statistics 2009

Donors PMP

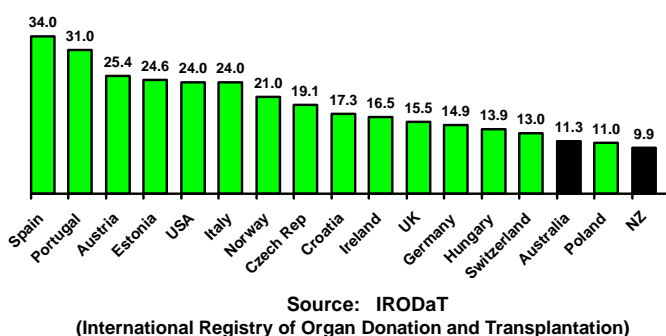


Figure 3 shows the number of donors per million population (dpmp) of Australia and New Zealand compared to other Countries.

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.

Data for 2009 was not available for Canada and some European countries at the time of publication.

Figure 4

Waiting List for Organs by Transplant Region 01-Jan-2010							
Organs	QLD	NSW/ACT	VIC/TAS	SA/NT	WA	AUST	NZ
Kidney	156	634	380	52	88	1310	449
Liver	24	54	46	16	8	148	16
Heart	-	20	19	-	2	41	7
Heart / Lung	-	-	4	-	2	6	-
Lung	7	33	49	-	7	96	6
Pancreas / Kidney	-	23	16	-	-	39	4
Pancreas Only	-	1	-	-	-	1	-
Pancreas Islets	-	4	1	4	-	9	-
Total	187	769	515	72	107	1650	482

Data provided by NOMS (National Organ Matching System), ANZ National Liver Transplant Registry, ANZ Cardiothoracic and the National Pancreas Registry (Westmead) A/Prof John Kanellis and A/Prof David Goodman (Pancreas-Victoria) A/Prof Toby Coates (Pancreas Islets-South Australia) New Zealand Donor Coordinators

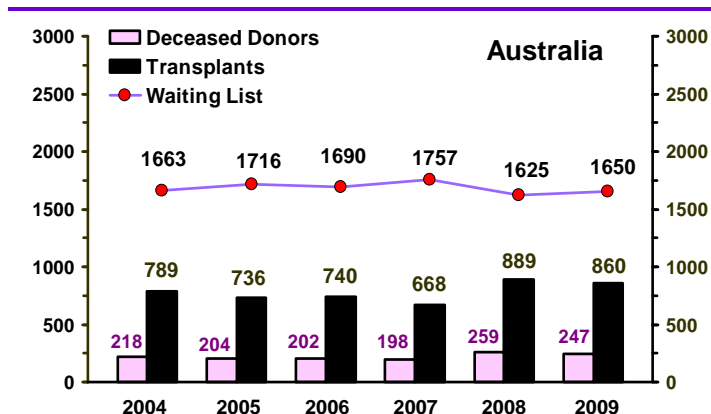
Figure 5

Transplanted Organs Donated in Australia and New Zealand by State of Transplantation 2009							
Organs	QLD	NSW	VIC	SA	WA	AUST	NZ
Kidneys (Total)	140	235	233	83	79	770	121
Deceased Donor	85	131	135	60	35	446	54
Live Donor * x Per Million []	55 (39%) [12]	104 (44%) [14]	98 (42%) [17]	23 (28%) [12]	44 (56%) [20]	324 (42%) [15]	67 (55%) [16]
Liver (Recipients)	37	57	52	22	19	187	31
Live Donor +	-	2	-	-	-	2	8
Heart	10	19	23	-	7	59	11
Domino #	-	-	1	-	-	1	-
Heart / Lung	2	-	-	-	-	2	-
Lung (Recipients)	17 double 1 single	38 double 2 single	50 double 6 single	-	4 double 2 single	109 double 11 single	7 double 1 single
Pancreas / Kidney	-	22	14	-	-	36	2
Pancreas Only	-	-	1	-	-	1	-
Pancreas Islets	-	5	4	-	-	9	-
Total	207	380	384	105	111	1187	181

* Living Kidney Donor Registry (ANZDATA) New Zealand Donor Coordinators
 x National Organ Matching System (NOMS)
 + Australia and New Zealand Liver Transplant Registry # Australia and New Zealand Cardiothoracic Registry

Figure 6

Number of Deceased Donors Solid Organ Transplants and Patients on the Waiting List 2004 - 2009



The number of donors, transplants, and patients on the waiting list from 2004 to 2009.

Transplants includes those from donor organs from Australia and New Zealand.

DONORS PER THOUSAND DEATHS

Historically the comparison of organ donation rates between states and countries has been based upon donors per million population (dpmp). However, using the number of deaths and therefore the ability of a deceased person to be a donor as the denominator may be a more reasonable way of comparing donation rates shown in Figures 7 and 8.

*Australian data on deaths for 2009 is not available until August of 2010.
New Zealand 2009 data was also not available.*

Figure 7

Donors per Million Population and Donors per Thousand Deaths () Australian States - Australia and New Zealand 2004 - 2008										
Year	QLD	NSW *	ACT *	VIC	TAS	SA	NT	WA	AUST	NZ
2004	10 (1.6)	9 (1.4)	19 (4.2)	9 (1.4)	4 (0.5)	25 (3.4)	5 (1.1)	12 (2.1)	11 (1.6)	10 (1.4)
2005	9 (1.5)	8 (1.2)	28 (6.0)	10 (1.5)	4 (0.5)	13 (1.7)	20 (4.1)	15 (2.6)	10 (1.6)	7 (1.1)
2006	9 (1.5)	7 (1.1)	12 (2.7)	9 (1.3)	16 (2.0)	23 (3.0)	10 (2.1)	10 (1.8)	10 (1.5)	9 (0.9)
2007	9 (1.5)	8 (1.1)	3 (0.6)	11 (1.6)	2 (0.2)	17 (2.1)	14 (3.0)	9 (1.5)	9 (1.4)	9 (1.3)
2008	11 (1.7)	8 (1.2)	14.5 (3.0)	13 (1.9)	16 (1.9)	27 (3.4)	14 (2.9)	13 (2.2)	12 (1.8)	7 (1.1)

* Donors per million population refers to the NSW and the ACT actual population
Data for deaths in the NSW Southern Area Health Service was not available

Figure 8

Donors per Thousand Deaths Aged < 75 years 2004 - 2008 () Represents % of Total Deaths Aged < 75 years *										
Year	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	AUST	NZ
2004	4.0 (39%)	3.7 (35%)	10.1 (42%)	3.7 (34%)	1.4 (36%)	9.8 (34%)	1.4 (78%)	4.8 (40%)	4.3 (37%)	3.4 (48%)
2005	3.6 (39%)	3.2 (36%)	16.5 (36%)	4.4 (35%)	1.3 (37%)	4.8 (34%)	5.1 (78%)	6.3 (39%)	4.1 (37%)	2.7 (40%)
2006	3.8 (38%)	2.9 (34%)	7.0 (38%)	4.0 (33%)	5.6 (36%)	9.0 (32%)	2.8 (76%)	4.6 (39%)	4.1 (36%)	2.3 (39%)
2007	3.9 (38%)	3.0 (34%)	1.6 (40%)	4.9 (33%)	0.6 (35%)	5.9 (32%)	3.9 (77%)	3.9 (39%)	4.0 (35%)	3.4 (38%)
2008	4.7 (38%)	3.4 (33%)	8.1 (36%)	5.6 (33%)	5.5 (35%)	10.4 (31%)	3.9 (74%)	5.4 (38%)	5.0 (34%)	2.9 (38%)

* The number of actual donors is compared to the number of deaths that are aged less than 75 years (Figure 8)
Australian Bureau of Statistics - Deaths 3302.0 and Statistics NZ

DONOR POSTCODES

In the last five years (2005-2009) there have been 15 deceased donors from overseas in Australia and three in New Zealand. There were three donors from overseas in 2009, two in Victoria and one in Queensland.. There was one donor in New Zealand.

Figure 9

Location of Postcodes of Deceased Donors 2005 - 2009									
Postcode	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	AUST
Metropolitan	89 (44%)	194 (69%)	20 (74%)	199 (71%)	0 (0%)	114 (72%)	0 (0%)	76 (65%)	690 (62%)
Inner Regional	59 (29%)	65 (23%)	5 (19%)	61 (22%)	11 (46%)	21 (13%)	0 (0%)	15 (13%)	237 (21%)
Outer Regional	44 (21%)	18 (6%)	2 (7%)	18 (6%)	10 (42%)	14 (9%)	7 (50%)	13 (11%)	126 (11%)
Rural	8 (4%)	3 (1%)	0 (0%)	1 (<1%)	3 (12%)	8 (5%)	6 (43%)	11 (9%)	40 (4%)
Overseas	5 (2%)	3 (1%)	0 (0%)	2 (1%)	0 (0%)	2 (1%)	1 (7%)	2 (2%)	15 (1%)
Total	205	283	27	281	24	159	14	117	1110

DONOR PROFILE

AGE AND GENDER DISTRIBUTION

In Australia in 2009, 13% (31 donors) were 65 years or older and 2% (four donors) were aged 75 years or older. The oldest donor was 80.6 years and the youngest 6.6 months (0.5 years) (Figure 11).

Donor gender in each State, Australia and New Zealand is shown in five year cohorts in Figure 10.

The mean age for donors in Australia in 2009, was 45.9 years, the highest since records began in 1989. The mean age in 1989 was 32.4 years and the age range was between 16.5 months and 69.5 years.

The mean age for Australian States in 2009 ranged from 31.5 years in Tasmania to 50.7 years in South Australia.

The median age for Australia in 2009 was 48.3 years, the highest since records began in 1989.

In Australian States the median age ranged from 40.7 years in Queensland to 54.7 years in Western Australia in 2009. If the smaller States and Territories are included, the range was 18.1 years in Tasmania to 44.6 years in the Northern Territory.

The mean and median age for donors from 1991 to 2009 for each State are shown in three year cohorts in Figures 12 and 13.

In New Zealand the mean age increased from 46.2 years in 2008 to 48.3 years in 2009. The median age also increased from 44.4 years to 46.9 years. Three donors were over 65 years of age and none over 75 years. The age range was between 3.6 years and 74.6 years.

Figure 14 shows donors according to age and gender in Australia and New Zealand for the years 2001-2003, 2004-2006 and 2007-2009.

Figure 10

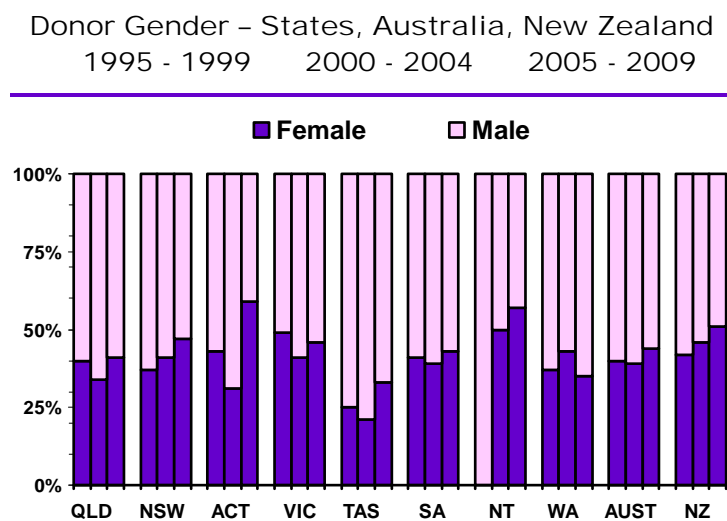


Figure 11

Age of Male and Female Donors 2000 - 2009								
	Year	Mean (years)			Median (years)			Range in Years
		All	Female	Male	All	Female	Male	
Aust	2000	41.1	42.6	40.0	44.1	45.1	44.0	0.4 - 77.9
	2001	40.0	43.1	38.3	42.9	47.3	39.9	6.4 - 77.4
	2002	38.7	39.4	38.3	40.8	42.1	40.2	0.01 - 78.8
	2003	42.7	46.4	40.1	45.5	48.4	42.5	0.96 - 85.3
	2004	43.2	44.0	42.7	46.6	47.4	44.1	1.12 - 80.5
	2005	42.8	46.8	39.3	45.3	50.0	40.5	0.6 - 79.5
	2006	43.3	45.5	41.3	45.3	48.0	44.1	1.3 - 78.2
	2007	43.4	46.0	41.3	45.2	49.6	42.0	0.7 - 80.4
	2008	44.8	47.6	43.0	46.2	48.3	44.0	1.7 - 82.3
	2009	45.9	48.5	44.1	48.3	51.3	46.7	0.5 - 80.6
NZ	2000	39.7	38.3	40.9	42.6	42.6	42.2	5.5 - 68.5
	2001	41.1	44.7	37.7	42.6	48.1	35.2	16.6 - 68.9
	2002	40.3	38.5	42.1	42.6	42.0	45.8	7.7 - 66.7
	2003	38.0	35.6	39.4	39.7	40.3	39.0	13.0 - 75.1
	2004	43.0	43.4	42.7	46.1	47.7	43.4	1.15 - 78.2
	2005	45.3	47.1	43.9	48.6	48.6	45.4	17.4 - 64.4
	2006	36.5	41.6	33.2	35.4	38.4	30.0	11.6 - 69.4
	2007	46.6	47.4	45.3	48.8	49.1	48.4	11.8 - 71.6
	2008	42.7	49.4	34.6	44.4	50.5	31.2	11.9 - 67.6
	2009	44.3	43.8	44.7	46.9	46.5	50.7	3.6 - 74.6

Figure 12

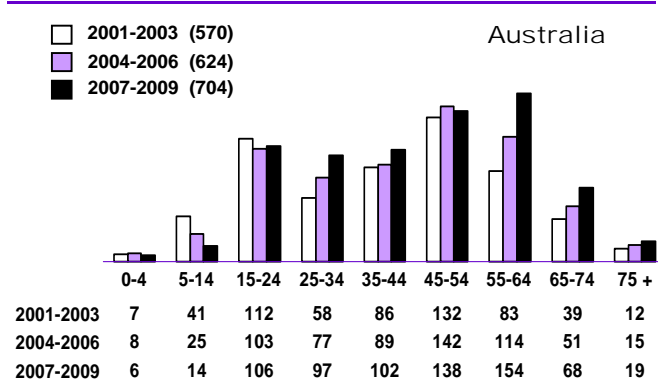
Australian States Mean Age of Donors								
Years	QLD	NSW	ACT	VIC	TAS	SA	NT	WA
1989 - 1991	31.2	37.1	29.8	32.4	20.1	30.8	35.9	29.2
1992 - 1994	31.9	38.2	35.3	39.8	27.4	38.2	29.3	35.0
1995 - 1997	34.2	38.5	44.2	42.0	33.2	41.4	36.0	36.9
1998 - 2000	38.4	41.9	37.2	42.9	39.7	38.3	37.0	37.3
2001 - 2003	38.6	41.4	40.0	43.8	34.3	41.2	44.7	32.5
2004 - 2006	39.9	46.5	40.4	42.6	33.4	43.6	38.9	43.2
2007 - 2009	39.1	45.7	38.9	45.5	34.2	49.4	51.5	47.7

Figure 13

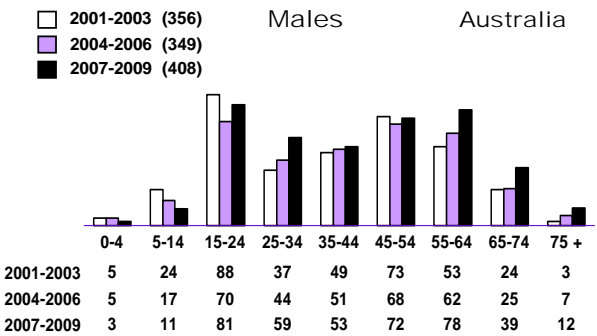
Australian States Median Age of Donors								
Years	QLD	NSW	ACT	VIC	TAS	SA	NT	WA
1989 - 1991	31.5	38.9	30.4	28.4	17.3	28.9	31.8	28.8
1992 - 1994	31.7	40.1	27.2	40.7	25.1	38.6	27.9	33.6
1995 - 1997	37.5	38.4	45.9	45.5	33.9	45.4	35.5	39.4
1998 - 2000	40.3	43.6	37.2	46.4	42.6	42.4	32.8	44.7
2001 - 2003	40.5	42.9	37.9	48.8	21.4	44.7	47.6	31.8
2004 - 2006	42.2	48.3	45.8	46.9	34.0	47.2	42.4	44.6
2007 - 2009	40.8	48.2	40.6	47.4	30.7	51.5	60.0	52.9

Figure 14

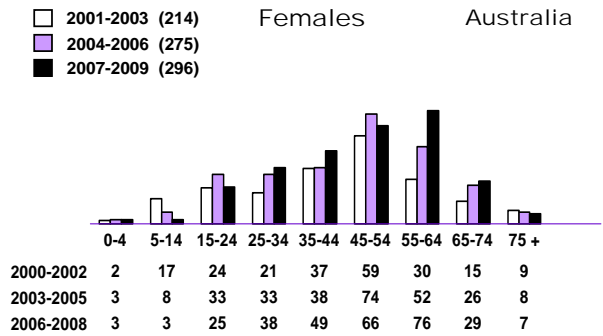
Age Group of Deceased Donors



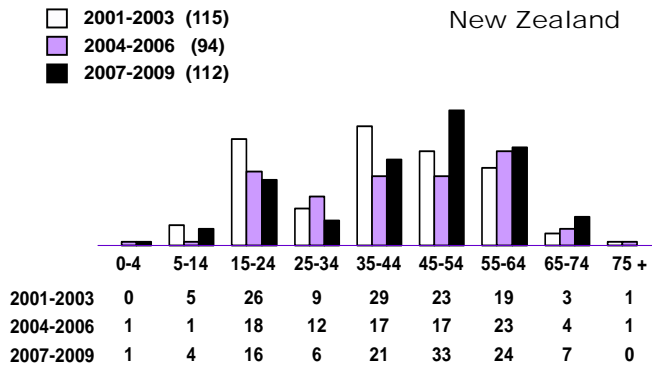
Age and Gender Distribution of Donors



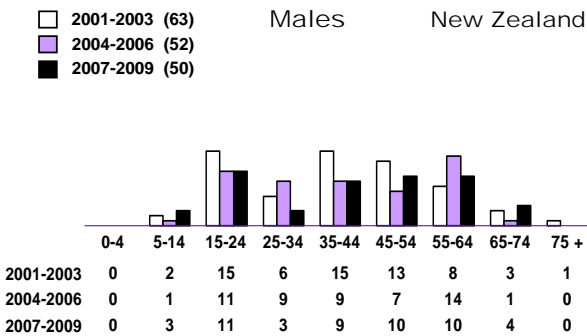
Age and Gender Distribution of Donors



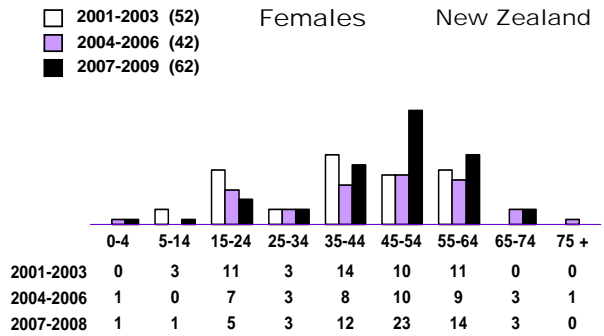
Age Group of Deceased Donors



Age and Gender Distribution of Donors



Age and Gender Distribution of Donors



CAUSE OF DEATH - ALL DONORS

The cause of death for all organ donors in Australia since 1989 and for New Zealand since 1995 is shown in Figure 15.

In Australia and New Zealand, road trauma continues to be a reducing cause of death while cerebrovascular accident (CVA) has been increasing in Australia since 1989, although in New Zealand figures have remained relatively steady.

In the period 2003-2009, CVA accounted for 52% of donor deaths and road trauma 15%.

Figure 16 shows the cause of death by percentage in Australia and each Australian State from 2003 to 2009, and New Zealand from 2005 to 2009.

Figure 17 shows detailed cause of death by gender in Australia and New Zealand for 2009.

Figure 18 shows that CVA is the main cause of death in donors 55 years and older, 69% in Australia and 77% in New Zealand, whereas in the 15-34 year age group, trauma accounted for 45% of all deaths in Australia and 75% in New Zealand in 2009.

The cause of death by age group is shown in Figure 19 for each Australian State for 2009.

Figure 20 shows the cause of donor death in each Australian State and New Zealand each year from 2001-2009.

Figures 21-23 show the occupation, ethnic origin and religious denomination of donors in Australia and New Zealand for 2004-2009.

Figure 15

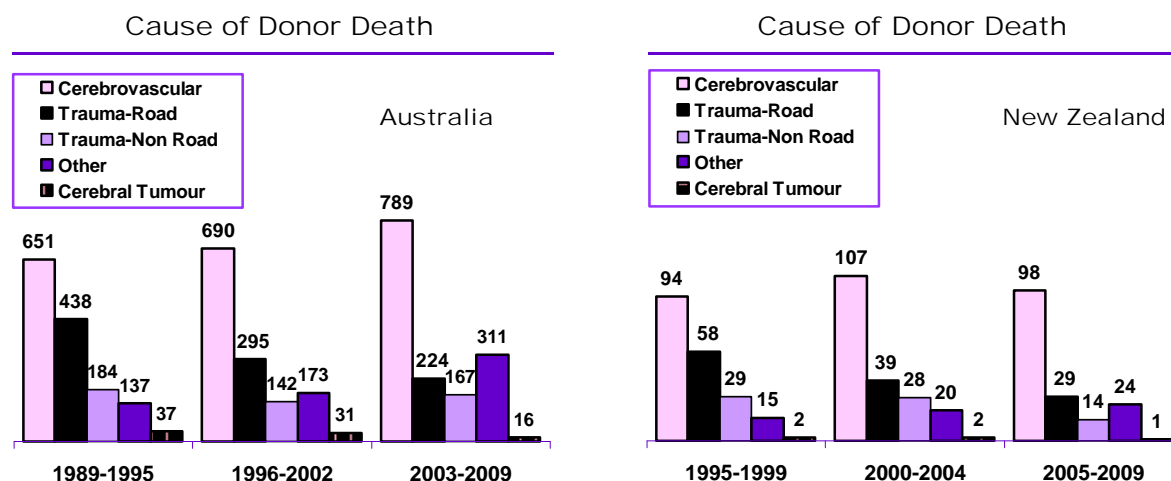


Figure 16

	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	AUST	NZ *
CVA	45%	55%	49%	57%	39%	52%	62.5%	51%	52%	59%
Trauma (road)	21%	15%	22%	10%	14%	10%	25%	20%	15%	17%
Trauma (non-road)	14%	8%	15%	9%	22%	10%	12.5%	16%	11%	8%
Hypoxia-Anoxia	17%	17%	12%	19%	25%	25%	0%	8%	18%	10%
Cerebral Tumour	1%	1%	0%	1%	0%	1%	0%	3%	1%	1%
Other	2%	4%	2%	4%	0%	2%	0%	2%	3%	5%

* NZ 2005 - 2009

Figure 17

Cause of Donor Death 2009							
Causes of Death		Australia			New Zealand		
		Male	Female	Total	Male	Female	Total
CVA	Cerebral Infarct	8	7	15	0	0	0
	Intracranial Haemorrhage	23	24	47	6	5	11
	Subarachnoid Haemorrhage	27	29	56	2	8	10
Road Trauma	Cyclist	0	0	0	1	0	1
	Motor Bike Accident	6	1	7	0	0	0
	Motor Vehicle Accident	10	2	12	2	3	5
	Pedestrian	5	4	9	3	0	3
	Other Road Accident	3	0	3	0	0	0
Other Trauma	Fall	11	2	13	4	0	4
	Felony / Crime - Assault	6	1	7	0	0	0
	Gunshot	4	1	5	0	0	0
	Other Accident	3	0	3	0	0	0
Hypoxia Anoxia	Anaphylaxis	0	1	1	0	0	0
	Asthma	1	2	3	0	0	0
	Brain Injury	0	1	1	0	0	0
	Carbon Monoxide	1	1	2	1	0	1
	Cardiac Arrest	18	11	29	1	2	3
	Choking	0	1	1	0	0	0
	Drowning	0	1	1	1	0	1
	Encephalopathy	0	1	1	0	0	0
	Hanging	4	3	7	0	2	2
	Overdose	5	1	6	0	1	1
	Post Epilepsy Fit	1	0	1	0	0	0
Strangulation	1	0	1	0	0	0	
Cerebral Tumour	Low Grade Glioma (Benign)	1	0	1	0	0	0
	Meningioma (Benign)	0	1	1	0	0	0
	Oligoastrocytoma (Malignant)	0	1	1	0	0	0
Other	Cerebral Abscess	0	1	1	0	0	0
	Cerebral Oedema	1	1	2	0	0	0
	Influenza	0	1	1	0	0	0
	Meningitis (Neisseria)	0	0	0	0	1	1
	Meningitis (Pneumococcal)	1	1	2	0	0	0
	Meningitis (Strep Pneumoniae)	1	0	1	0	0	0
	Meningitis (Streptococcal)	1	0	1	0	0	0
	Pulmonary Embolism	0	1	1	0	0	0
	Raised Intracranial Pressure	0	1	1	0	0	0
	Respiratory Failure	2	1	3	0	0	0
Total		144	103	247	21	22	43

Figure 18

Cause of Donor Death Related to Age Group 2009										
	Australia					New Zealand				
	Age Groups				Total	Age Groups				Total
	0-14	15-34	35-54	55 on		0-14	15-34	35-54	55 on	
CVA	1	11	46	60	118 (48%)	0	0	11	10	21 (49%)
Trauma (road)	3	18	4	6	31 (13%)	1	5	2	1	9 (21%)
Trauma (non-road)	0	11	9	8	28 (11%)	0	1	2	1	4 (9%)
Hypoxia-Anoxia	2	18	23	11	54 (22%)	2	1	4	1	8 (19%)
Cerebral Tumour	0	1	2	0	3 (1%)	0	0	0	0	0 (0%)
Other	0	6	5	2	13 (5%)	0	1	0	0	1 (2%)
Total	6	65	89	87	247	3	8	19	13	43

Figure 19

Australian States Cause of Death Related to Age Group 2009						
		Age Groups				Total
		0-14	15-34	35-54	55 on	
Queensland	CVA	0	1	8	9	18
	Trauma (road)	1	5	0	1	7
	Trauma (non-road)	0	4	2	1	7
	Other	1	6	8	0	15
	Total	2	16	18	11	47
NSW	CVA	1	3	13	16	33
	Trauma (road)	2	3	0	2	7
	Trauma (non-road)	0	3	2	2	7
	Other	1	4	14	3	22
	Total	4	13	29	23	69
ACT	CVA	0	1	2	0	3
	Trauma (road)	0	0	2	0	2
	Trauma (non-road)	0	0	0	0	0
	Other	0	3	0	0	3
	Total	0	4	4	0	8
Victoria	CVA	0	4	10	16	30
	Trauma (road)	0	4	1	2	7
	Trauma (non-road)	0	2	3	2	7
	Other	0	7	5	8	20
	Total	0	17	19	28	64
Tasmania	CVA	0	1	0	0	1
	Trauma (road)	0	1	0	0	1
	Trauma (non-road)	0	1	1	1	2
	Other	0	0	0	0	0
	Total	0	3	1	1	5
South Australia	CVA	0	1	9	11	21
	Trauma (road)	0	1	0	0	1
	Trauma (non-road)	0	0	1	1	2
	Other	0	5	2	2	9
	Total	0	7	12	14	33
Northern Territory	CVA	0	0	0	0	0
	Trauma (road)	0	1	0	0	1
	Trauma (non-road)	0	0	0	1	1
	Other	0	0	0	0	0
	Total	0	1	0	1	2
Western Australia	CVA	0	0	4	8	12
	Trauma (road)	0	3	1	1	5
	Trauma (non-road)	0	1	0	0	1
	Other	0	0	1	0	1
	Total	0	4	6	9	19

Figure 20

		Cause of Donor Death 2001 - 2009									
		2001	2002	2003	2004	2005	2006	2007	2008	2009	
Queensland	CVA	25	21	19	18	19	19	16	18	18	
	Trauma (road)	12	12	13	11	3	8	7	11	7	
	Trauma (non-road)	6	6	6	7	6	2	5	8	7	
	Hypoxia-Anoxia	4	3	2	2	6	6	9	11	11	
	Cerebral Tumour	0	1	0	0	1	0	0	0	2	
	Other	1	1	0	1	0	1	2	0	2	
	Total	48	44	40	39	35	36	39	48	47	
NSW	CVA	25	31	24	37	31	30	28	33	33	
	Trauma (road)	7	8	12	8	9	10	8	2	7	
	Trauma (non-road)	3	6	4	5	3	2	6	5	7	
	Hypoxia-Anoxia	8	7	4	12	8	5	8	15	16	
	Cerebral Tumour	0	1	0	1	2	0	1	0	1	
	Other	4	2	2	0	1	3	2	2	5	
	Total	47	55	46	63	54	50	53	57	69	
ACT	CVA	3	3	4	3	3	3	1	3	3	
	Trauma (road)	2	1	2	1	4	0	0	0	2	
	Trauma (non-road)	0	0	1	2	1	1	0	1	0	
	Hypoxia-Anoxia	2	2	1	0	1	0	0	1	2	
	Other	0	0	0	0	0	0	0	0	1	
	Total	7	6	8	6	9	4	1	5	8	
Victoria	CVA	22	30	28	27	30	25	31	38	30	
	Trauma (road)	7	10	1	4	3	8	10	5	7	
	Trauma (non-road)	1	1	4	5	5	1	5	6	7	
	Hypoxia-Anoxia	6	4	7	6	10	8	8	16	16	
	Cerebral Tumour	0	1	0	1	1	0	0	0	0	
	Other	4	1	2	2	1	3	1	2	4	
	Total	40	47	42	45	50	45	55	67	64	
Tasmania	CVA	2	4	0	1	1	5	1	2	1	
	Trauma (road)	0	1	1	0	0	0	0	2	1	
	Trauma (non-road)	1	1	1	0	1	0	0	1	3	
	Hypoxia-Anoxia	0	0	0	1	0	3	0	3	0	
	Total	3	6	2	2	2	8	1	8	5	
South Australia	CVA	12	13	11	17	11	19	17	19	21	
	Trauma (road)	7	8	4	3	5	3	3	3	1	
	Trauma (non-road)	2	1	2	3	2	1	3	8	2	
	Hypoxia-Anoxia	4	9	5	16	2	11	4	9	8	
	Cerebral Tumour	0	0	0	0	0	1	0	1	0	
	Other	0	0	0	0	0	1	0	3	1	
	Total	25	31	22	39	20	36	27	43	33	
Northern Territory	CVA	1	1	1	1	2	2	2	2	0	
	Trauma (road)	1	0	0	0	2	0	0	1	1	
	Trauma (non-road)	0	1	0	0	0	0	1	0	1	
	Total	2	2	1	1	4	2	3	3	2	
Western Australia	CVA	6	4	7	11	16	13	8	14	12	
	Trauma (road)	5	6	4	5	6	3	2	6	5	
	Trauma (non-road)	1	3	6	3	4	3	5	4	1	
	Hypoxia-Anoxia	1	1	1	3	0	1	4	3	1	
	Cerebral Tumour	0	0	0	1	2	1	0	0	0	
	Other	0	1	0	0	2	0	0	1	0	
	Total	13	15	18	23	30	21	19	28	19	
New Zealand	CVA	22	21	20	20	17	14	24	22	21	
	Trauma (road)	9	8	9	7	3	8	7	2	9	
	Trauma (non-road)	4	5	7	7	3	1	3	3	4	
	Hypoxia-Anoxia	0	4	2	5	0	2	2	4	8	
	Cerebral Tumour	0	0	2	0	1	0	0	0	0	
	Other	2	0	0	1	5	0	2	0	1	
	Total	37	38	40	40	29	25	38	31	43	

Please refer to Appendix I (pages 8-12) and Appendix II (pages 4 and 5) for further details of causes of donor death

Figure 21

Occupation of Donors 2004 - 2009												
	Australia						New Zealand					
	2004	2005	2006	2007	2008	2009	2004	2005	2006	2007	2008	2009
Blue collar	48	41	49	34	53	43	1	1	4	2	1	4
Home duties	15	17	16	14	13	14	1	0	2	1	2	2
Disability	8	10	5	5	8	9	0	1	1	0	3	0
Management	5	0	3	4	6	5	1	0	0	1	1	1
Other	2	2	2	1	1	0	0	0	0	0	0	0
Pre-school	1	7	0	2	1	3	1	0	0	0	0	1
Primary industry	6	2	2	3	6	4	2	0	0	3	1	1
Professional	16	15	15	13	20	21	3	5	1	4	1	5
Retired	25	18	20	24	29	31	4	0	2	1	0	4
Small business owner	1	1	2	4	5	5	1	1	1	0	0	1
Student	19	16	23	19	15	18	4	3	3	3	4	7
Tradesperson	20	8	6	16	19	20	2	0	1	2	1	1
Unemployed	6	6	5	18	17	10	0	0	0	1	0	0
Unknown	13	34	28	20	32	34	20	15	9	16	13	15
White collar	13	27	26	21	34	30	0	3	1	4	4	1
Total	218	204	202	198	259	247	40	29	25	38	31	43

Figure 22

Ethnic Origin of Donors 2004 - 2009												
	Australia						New Zealand					
	2004	2005	2006	2007	2008	2009	2004	2005	2006	2007	2008	2009
Aboriginal	2	1	2	1	4	1	0	0	0	0	0	0
Anglo/Aboriginal	0	0	0	0	0	1	0	0	0	0	0	0
Arab	0	0	0	0	1	0	0	0	0	0	0	0
Cambodian	0	0	0	0	1	0	0	0	0	0	0	0
Caucasoid	208	192	187	190	234	234	35	24	17	37	27	35
Greek	(2)	(1)	(1)	(1)	(0)	(3)	0	0	0	0	0	0
Italian	(0)	(1)	(1)	(1)	(0)	(4)	0	0	0	0	0	0
Lebanese	(0)	(0)	(0)	(0)	(0)	(2)	0	0	0	0	0	0
Chinese	2	2	2	1	3	3	0	0	0	0	0	0
Coloured African	0	0	0	0	0	0	0	0	0	0	0	1
Filipino	1	0	1	0	3	0	1	0	0	0	0	1
Indian	2	3	2	0	2	1	0	1	1	0	0	0
Japanese	0	0	1	0	0	0	0	0	0	0	0	0
Korean	0	0	0	1	1	0	0	2	0	1	0	1
Malay	0	0	3	0	4	0	0	1	0	0	0	0
Maori	0	0	0	1	0	2	3	0	7	0	3	5
Mauritian	0	1	1	0	0	0	0	0	0	0	0	0
Nigerian	0	0	0	1	0	0	0	0	0	0	0	0
Pacific People	0	1	0	2	0	1	1	0	0	0	1	0
Papua New Guinea	0	0	0	0	1	0	0	0	0	0	0	0
Peruvian	0	0	0	1	0	0	0	0	0	0	0	0
Sri Lankan	1	2	0	0	1	0	0	0	0	0	0	0
Thai	0	0	1	0	0	0	0	0	0	0	0	0
Turk	0	0	0	0	0	1	0	0	0	0	0	0
Unknown	0	0	1	0	0	0	0	1	0	0	0	0
Vietnamese	2	2	1	0	4	3	0	0	0	0	0	0
Total	218	204	202	198	259	247	40	29	25	38	31	43

Figure 23

Religious Denomination of Donors 2004 - 2009												
	Australia						New Zealand					
	2004	2005	2006	2007	2008	2009	2004	2005	2006	2007	2008	2009
Bahai	0	0	0	0	0	0	1	0	0	0	0	0
Buddhist	0	3	1	0	3	3	0	0	0	0	0	0
Christian	92	72	92	59	47	55	7	6	2	3	3	1
Coptic	0	0	0	0	0	1	0	0	0	0	0	0
Jehovah's Witness	2	0	0	0	0	3	0	0	0	0	0	0
Jewish	1	0	0	0	0	1	0	0	0	0	0	0
Hindu	3	3	2	0	2	0	0	1	1	0	0	0
Muslim	0	0	0	0	0	1	0	0	0	0	0	0
No religion	16	37	28	21	17	35	0	0	0	0	0	0
Orthodox	0	0	0	0	0	1	0	0	0	0	0	0
Sikh	0	0	0	0	1	0	0	0	0	0	0	0
Unknown	104	89	79	118	189	147	32	22	22	35	28	42
Total	218	204	202	198	259	247	40	29	25	38	31	43

INTENDED DONORS

An intended donor is a person for whom consent has been given or volunteered, but for various reasons the donor does not proceed to the operating theatre.

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

Figure 24

Intended Donors 2004 - 2009										
	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	AUST	NZ
2004	3	6	0	4	0	1	0	0	14	0
2005	3	2	0	0	1	1	0	0	7	0
2006	1	6	0	2	0	2	0	1	12	0
2007	0	6	1	5	0	3	0	0	15	0
2008	4	9	2	2	0	2	0	0	19	1
2009	2	8	1	7	1	2	0	1	22	0

Figure 25

Reasons Why Donation Did Not Proceed 2004 - 2009	
Year	Australia
2004	<ul style="list-style-type: none"> Cardiac arrest Coronial refusal Deterioration of renal function and unstable donor Family refusal prior to donation Hepatitis B surface antigen and core antibody positive Hepatitis C antibody positive (2) High risk behaviour (2)
2005	<ul style="list-style-type: none"> DCD potential donors - did not proceed to cardiac standstill (2) Disease of organs and infection Family refusal prior to donation Parainfluenza3 virus
2006	<ul style="list-style-type: none"> DCD potential donors - did not proceed to cardiac standstill (4) Disease of organs and infection (3) Past history of malignancy (2) Consent withdrawn
2007	<ul style="list-style-type: none"> DCD potential donors - did not proceed to cardiac standstill (3) DCD - Lung protocol only. Lungs medically unsuitable (3) DCD - Past history of malignancy DCD - Medically unsuitable Coronial refusal Found to have refused on driver's licence Hepatitis C positive - no suitable recipients High risk behaviour Organs medically unsuitable
2008	<ul style="list-style-type: none"> Authority not obtained Consent withdrawn DCD potential donors - did not proceed to cardiac standstill (10) DCD - Infection Disease of organs - No suitable recipient High risk behaviour (2) Hepatitis C positive - Medically unsuitable Positive serology (2) New Zealand No suitable recipients (AB blood group) (1)
2009	<ul style="list-style-type: none"> Authority not obtained Consent withdrawn (4) DCD potential donors - did not proceed to cardiac standstill (9) Disease of organs (3) High risk behaviour (2) Positive serology (2) Previous history of melanoma

DONATION AFTER CARDIAC DEATH DONORS

Australia

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

After a heart-beating donor is certified brain dead, they remain on the ventilator and the removal of organs may occur many hours later.

Donation after cardiac death (DCD) donors are defined as patients who are certified dead using the criterion of irreversible cessation of circulation.

As soon as cardiac death is confirmed the retrieval procedure is commenced in order to minimise warm ischaemic time.

Since 2005 there has been a steady increase in DCD donors each year, particularly in New South Wales, Victoria, Queensland and South Australia.

The total since 1989 is 131 donors for Australia and six donors for New Zealand, as shown in Figure 26.

The first multiorgan DCD was performed in South Australia in 2006.

In 2009 there were 42 DCD donors; 17 in Victoria, 15 in New South Wales, five in Queensland, three in South Australia and two in the Australian Capital Territory (ACT).

Mean age was 49.7 years and age range was 21 years to 70 years.

Causes of death in 2009 were hypoxia-anoxia (13), CVA (11), other trauma (8), road trauma (6), respiratory failure (3) and influenza (1).

Fifteen donors had two or more organs retrieved and transplanted, a further 22 donors had two kidneys transplanted, two donors had double lungs transplanted and one donor had a single kidney transplanted (two kidneys=one organ).

Only two of the 42 donors in 2009 did not have any organs transplanted or sent to the Tissue Bank due to disease of organs and malignancy found at retrieval.

The number and type of organs transplanted or sent to the Tissue Bank from 1989-2009 is shown for each State in Figure 27 and for Australia in Figure 28.

There were 14 intended DCD donors during 2009; nine did not proceed to cardiac standstill, two had consent withdrawn, two with positive serology and authority was not able to be obtained for one.

New Zealand

There were two DCD donors in New Zealand in 2009. Four kidneys and one liver were transplanted.

Figure 26

Donation after Cardiac Death Donors 1989 - 2009										
	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	Aust	NZ
1989	0	0	0	1	0	1	0	0	2	-
1990	0	2	0	0	0	1	0	0	3	-
1991	0	2	0	0	0	0	0	0	2	-
1992	0	1	0	0	0	0	0	0	1	-
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	1	0	0	1	1
1995	0	3	0	1	0	0	0	0	4	0
1996	1	1	0	0	0	0	0	0	2	0
1997	0	2	0	0	0	1	0	0	3	1
1998	0	0	0	0	0	2	0	0	2	0
1999	1	0	0	0	0	0	0	0	1	0
2000	0	0	0	0	0	0	1	0	1	0
2001	0	1	0	1	0	0	0	0	2	0
2002	0	0	0	0	0	1	1	0	2	0
2003	0	1	0	0	0	0	0	0	1	0
2004	0	2	0	0	0	0	0	1	3	0
2005	0	8	0	0	0	1	0	0	9	0
2006	0	4	0	1	0	3	0	0	8	0
2007	0	8	0	9	0	2	0	0	19	0
2008	5	10	2	3	0	3	0	0	23	2
2009	5	15	2	17	0	3	0	0	42	2
Total	12	60	4	33	0	19	2	1	131	6

Figure 27

Donation After Cardiac Death Donors 1989 - 2008 Organs Transplanted or Sent to Tissue Bank in Australia																						
Donor State	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	Total
Queensland																						
Kidneys	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	10	8	22
Lungs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Cornea	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Bone	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
Heart Valves	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	3	2	7
Total	0	0	0	0	0	0	0	5	0	0	3	0	0	0	0	0	0	0	0	15	12	35
New South Wales																						
Kidneys	0	4	3	2	0	0	5	2	4	0	0	0	0	0	2	4	16	8	13	18	27	108
Liver	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	4	7
Lungs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4	5	11
Cornea	0	2	0	0	0	0	0	2	0	0	0	0	2	0	0	4	10	2	8	8	4	42
Bone	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
Heart Valves	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	5	3	3	6	6	25
Total	0	6	3	2	0	0	5	5	5	0	0	0	2	0	2	8	31	13	27	39	47	195
ACT																						
Kidneys	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	8
Lungs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
Cornea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
Heart Valves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	4	14
Victoria																						
Kidneys	2	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	12	6	30	53
Liver	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3
Lungs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	1	7	14
(L) Lung	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
(R) Lung	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pancreas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Cornea	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	10	4	20	40
Bone	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	4
Heart Valves	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	4	1	2	8
Tissue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	3
Total	4	0	0	0	0	0	2	0	0	0	0	0	4	0	0	0	0	3	35	16	64	128
South Australia																						
Kidneys	2	0	0	0	0	0	0	0	1	4	0	0	0	2	0	0	2	4	2	5	6	28
Liver	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2
Lungs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2
Cornea	2	2	0	0	0	2	0	0	2	0	0	0	0	2	0	0	0	2	0	0	4	16
Bone	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3
Heart Valves	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3
Total	5	3	0	0	0	3	0	0	3	4	0	0	0	4	0	0	2	9	5	5	11	54
Northern Territory																						
Kidneys	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	4
Western Australia																						
Kidneys	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2
Australian Total	9	9	3	2	0	3	7	10	8	4	3	2	6	6	2	10	33	25	67	85	138	432

Figure 28

Donation after Cardiac Death Donors 1989 - 2008 Organs Transplanted or Sent to Tissue Bank in Australia																						
Organs	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	Total
Kidneys	4	4	3	2	0	0	7	4	5	4	2	2	1	4	2	6	18	12	27	43	75	225
Liver	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	4	4	12
Lungs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	8	7	14	31
(L) Lung	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
(R) Lung	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Pancreas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Cornea	4	4	0	0	0	2	0	4	2	0	0	0	4	2	0	4	10	6	18	14	28	102
Bone	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	4	3	11
Heart Valves	0	1	0	0	0	0	0	2	1	0	1	0	1	0	0	0	5	3	8	12	11	45
Tissue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	3
Total	9	9	3	2	0	3	7	10	8	4	3	2	6	6	2	10	33	25	67	85	138	432

CARDIOPULMONARY RESUSCITATION

Cardiopulmonary resuscitation is recorded for events leading up to the admission and hospital stay for the patient, prior to organ donation (Figures 29 and 30).

Figure 29

Cardiopulmonary Resuscitation 2004 - 2009												
	Australia						New Zealand					
	2004	2005	2006	2007	2008	2009	2004	2005	2006	2007	2008	2009
Yes	65	47	51	60	83	89	12	6	8	6	11	13
No	153	157	151	137	176	158	28	23	17	32	19	30
Unknown	0	0	0	1	0	0	0	0	0	0	1	0
Total	218	204	202	198	259	247	40	29	25	38	31	43

Figure 30

Australian States Cardiopulmonary Resuscitation 2009 (2008)								
	QLD	NSW	ACT	VIC	TAS	SA	NT	WA
Yes	11 (11)	33 (22)	3 (3)	22 (24)	1 (3)	15 (15)	0 (0)	4 (5)
No	36 (37)	36 (35)	5 (2)	42 (43)	4 (5)	18 (28)	2 (3)	15 (23)
Total	47 (48)	69 (57)	8 (5)	64 (67)	5 (8)	33 (43)	2 (3)	247 (28)

DONOR WEIGHT

The allocation of heart, lungs and livers are based on the matching of recipient and donor size and weight.

In 2009 there were FOUR donors in Australia and two donors in New Zealand who weighed less than 40 kilograms (Figure 31).

Figure 31

Donor Weight 2004 - 2009												
		Kilograms										Total
		0-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100 +	
Australia	2004	1	1	3	1	21	34	59	41	32	24	217
	2005	6	3	2	5	16	35	50	45	23	19	204
	2006	1	4	4	5	10	43	41	50	26	18	202
	2007	3	0	1	3	14	29	46	47	34	21	198
	2008	1	1	4	3	18	33	63	71	30	35	259
	2009	2	2	0	3	11	45	56	56	35	37	247
New Zealand	2004	1	0	0	1	1	12	8	12	3	2	40
	2005	0	0	0	1	0	8	10	4	1	4	28
	2006	0	1	0	0	2	5	6	4	4	3	25
	2007	0	0	1	0	2	8	12	8	5	2	38
	2008	0	0	0	2	2	4	11	6	4	2	31
	2009	0	2	0	1	7	7	11	6	8	1	43

VIROLOGY SCREENING

Figure 32

Cytomegalovirus (CMV) Status of Donors 2004 - 2009												
	Australia						New Zealand					
	2004	2005	2006	2007	2008	2009	2004	2005	2006	2007	2008	2009
Positive	151	152	137	105	167	144	26	16	15	24	15	19
Negative	66	52	65	93	92	103	14	13	10	14	16	24
Not done	1	0	0	0	0	0	0	0	0	0	0	0
Total	218	204	202	198	259	247	40	29	25	38	31	43

Figure 33

Epstein-Barr Virus (EBV) Status of Donors 2004 - 2009												
	Australia						New Zealand					
	2004	2005	2006	2007	2008	2009	2004	2005	2006	2007	2008	2009
Positive	128	118	123	132	177	157	19	19	24	33	28	37
Negative	20	21	26	12	20	14	3	2	1	5	3	3
Not done	70	65	53	54	62	76	18	8	0	0	0	3
Total	218	204	202	198	259	247	40	29	25	38	31	43

Not all Australian States require organ donors to be tested for EBV

Figure 34

Hepatitis C Antibody Status of Donors 2004 - 2009												
	Australia						New Zealand					
	2004	2005	2006	2007	2008	2009	2004	2005	2006	2007	2008	2009
Positive	3	4	1	4	5	5	0	2	1	1	1	0
Negative	214	200	201	194	254	242	40	27	24	37	30	43
Not done	1	0	0	0	0	0	0	0	0	0	0	0
Total	218	204	202	198	259	247	40	29	25	38	31	43

HEPATITIS C ANTIBODY

There were five positive Hepatitis C donors in Australia and none in New Zealand in 2009.

Four were beating heart donors and one a DCD. Three donated livers only and one DCD donor two kidneys. There were no suitable recipients for kidneys, heart, lungs or pancreas for another donor. The liver from this donor was retrieved but found to be fatty on biopsy.

One liver donor was also HBV core antibody positive.

Figure 35

Hepatitis B Core Antibody Status of Donors 2004 - 2009												
	Australia						New Zealand					
	2004	2005	2006	2007	2008	2009	2004	2005	2006	2007	2008	2009
Negative	207	193	191	191	243	234	37	27	21	33	29	38
Positive	10	11	11	7	16	13	3	2	4	5	2	5
Not Done	1	0	0	0	0	0	0	0	0	0	0	0
Total	218	204	202	198	259	247	40	29	25	38	31	43

HEPATITIS B CORE ANTIBODY

The Registry commenced collection of Hepatitis B core antibody results in 1998.

A positive result was recorded for 5% (13) of Australian donors and 12% (5) of New Zealand donors in 2009.

From the 13 Australian donors there were 21 kidneys, ten livers, eight double lungs, one pancreas and four corneas transplanted.

Three of the 13 were DCD donors (two donors donated four kidneys, one lung, and two corneas). One DCD donor had no organs retrieved due to disease of the kidneys.

From the five New Zealand donors, five kidneys, five livers, two hearts, two double lungs and two cornea were transplanted or sent to the Tissue Bank. All were beating heart donors.

HEPATITIS B SURFACE ANTIGEN

Since 1993, all donors in Australia and New Zealand have been negative for Hepatitis B surface antigen, excepting one donor in 2004 who was not tested as their condition deteriorated in theatre and no organs were retrieved.

MEDICAL CONDITION OF DONORS

DIABETES

There were seven Type 1 and 15 Type 2 diabetic donors in Australia in 2009. There were no Type 1 and only one Type 2 diabetic donor in New Zealand.

The seven diabetic Type 1 donors provided six kidneys, four livers, four double lungs, two hearts and two cornea. There were 15 Type 2 donors (including three DCD). These donors provided 26 kidneys, six liver, two double lungs, one heart, eight cornea and three heart valves.

The one diabetic Type 2 donor in New Zealand provided a single kidney.

HYPERTENSION

A past history of hypertension was recorded in 25% (63 donors) in Australia and 35% (15 donors) in New Zealand in 2009 (Figure 36). Included in the 63 donors for Australia were 11 DCD donors with a past history of hypertension.

These donors provided Australia with 101 kidneys, 34 livers, 13 double lungs, one single lung, four hearts, four pancreas islets, 52 corneas, five sets of heart valves, two arteries-homografts, one each bone, spleen and tissue for transplantation or sent to storage.

In New Zealand, ten kidneys, ten livers, six double lungs, one heart, twelve cornea, one set of heart valves, and one set of tissue were transplanted or sent to storage.

SMOKING

In 2009, 40% (98) Australian donors were recorded as current smokers and 20% (49 donors) as former smokers, while in New Zealand, 26% (eleven donors) were reported as current and 30% (13 donors) as former.

CANCER IN DONOR

Australia (nine donors)

- * three adenocarcinoma (two breast 1984 and 1999), (one prostate (2006) (one with breast cancer, also had SCC cervix 1984)
- * one oligoastrocytoma - frontal lobe brain (2000)
- * one renal cell carcinoma - kidney (2009)
- * one melanoma - foot (1995)
- * one lentigo maligna - nose and cheek (1990)
- * one lymphoma - abdominal aorta (2009)
- * one suspected bowel malignancy (found at retrieval)

Ten kidneys, five livers, one heart, one double lung, one pancreas islets and four corneas were transplanted from six of these donors.

Three donors had a malignancy diagnosed at retrieval and no organs were transplanted. One was a lymphoma, one a renal cell carcinoma and one a suspected bowel malignancy.

New Zealand (no donors in 2009)

Figure 36

Donor Diabetes, Smoking and Cancer 2004 - 2009							
		2004	2005	2006	2007	2008	2009
Australia	Diabetes Type 1	6 (3%)	1 (<1%)	7 (3%)	2 (1%)	5 (2%)	7 (3%)
	Diabetes Type 2	6 (3%)	13 (6%)	11 (5%)	12 (6%)	14 (5%)	15 (6%)
	Hypertension	50 (23%)	46 (23%)	44 (22%)	45 (23%)	58 (22%)	63 (25%)
	Unknown	7 (3%)	3 (1%)	2 (1%)	5 (3%)	3 (1%)	2 (1%)
	Smoking						
	Current	90 (41%)	67 (33%)	77 (38%)	77 (39%)	115 (44%)	98 (40%)
	Former	46 (21%)	34 (17%)	44 (22%)	39 (20%)	53 (20%)	49 (20%)
	Unknown	2 (<1%)	0 (0%)	0 (0%)	1 (1%)	2 (1%)	0 (0%)
	Cancer	6 (3%)	7 (3%)	3 (1%)	3 (2%)	6 (2%)	9 (4%)
	Total Donors	(n=218)	(n=204)	(n=202)	(n=198)	(n=259)	(n=247)
New Zealand	Diabetes Type 1	0 (0%)	0 (0%)	1 (4%)	1 (3%)	0 (0%)	0 (0%)
	Diabetes Type 2	1 (2.5%)	2 (7%)	1 (4%)	1 (3%)	1 (3%)	1 (2%)
	Hypertension	9 (22.5%)	7 (24%)	5 (20%)	9 (24%)	6 (19%)	15 (35%)
	Smoking						
	Current	13 (32.5%)	9 (31%)	8 (32%)	14 (37%)	8 (26%)	11 (26%)
	Former	3 (7.5%)	5 (17%)	3 (12%)	5 (13%)	5 (16%)	13 (30%)
	Unknown	0 (0%)	1 (3%)	0 (0%)	0 (0%)	1 (3%)	0 (0%)
	Cancer	0 (0%)	1 (3%)	0 (0%)	1 (3%)	1 (3%)	0 (0%)
	Total Donors	(n=40)	(n=29)	(n=25)	(n=38)	(n=31)	(n=43)

Figure 37

Medical Condition of Donors by Australian States 2009 (2008)								
	QLD	NSW	ACT	VIC	TAS	SA	NT	WA
Diabetes Type 1	2 (1)	4 (0)	0 (0)	0 (2)	0 (0)	1 (2)	0 (0)	0 (0)
Diabetes Type 2	0 (2)	8 (3)	2 (0)	2 (4)	0 (0)	2 (3)	0 (0)	1 (2)
Hypertension	10 (7)	17 (13)	3 (1)	16 (15)	0 (2)	10 (12)	0 (1)	7 (7)
Smoking - Current	17 (25)	26 (19)	7 (2)	24 (33)	2 (4)	11 (20)	1 (1)	10 (11)
Cancer	2 (0)	1 (1)	0 (0)	1 (1)	0 (0)	4 (2)	0 (0)	1 (2)

Figure 38

Expanded* Criteria for Kidney Donors 2009 (2008) States, Australia and New Zealand										
Donor Type	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	AUST	NZ
Expanded	8 (5)	23 (18)	1 (0)	24 (19)	1 (2)	14 (17)	1 (2)	9 (11)	81 (74)	15 (4)
Non Expanded	39 (43)	46 (38)	7 (5)	40 (48)	4 (6)	19 (25)	1 (1)	10 (16)	166 (182)	27 (27)
Total	47 (48)	69 (56)	8 (5)	64 (67)	5 (8)	33 (42)	2 (3)	19 (27)	247 (256)	42 (31)

*An expanded criteria kidney donor as defined in American Journal of Transplantation 2003; 3 (Suppl. 4): 114-125
i.e. any donor aged >=60 years, or any donor aged 50-59, with two of the following three criteria:
CVA death, or terminal creatinine >133, or hypertension

DONOR INTENTION

Figures 39 and 40 show whether the donor had recorded an intention to donate through a signed driver's licence. In 2009, 30% (73) Australian donors and 16% (seven) New Zealand organ donors had a signed driver's licence. Figure 41 shows the number of donors enrolled in the Australian Organ Donation Registry, which commenced in 2000.

Figure 39

Driver's Licence Intention Status 2004 - 2009												
Intention	Australia						New Zealand					
	2004	2005	2006	2007	2008	2009	2004	2005	2006	2007	2008	2009
Yes	53 (24%)	48 (24%)	57 (28%)	68 (34%)	67 (26%)	73 (30%)	10 (25%)	4 (14%)	5 (20%)	13 (34%)	2 (6%)	7 (16%)
No	36	31	23	50	55	42	0	1	0	0	1	0
Age/Not Applicable	24	35	38	35	56	49	6	1	1	2	2	3
Unknown	105	90	84	45	81	83	24	23	19	23	26	33
Total	218	204	202	198	259	247	40	29	25	38	31	43

Figure 40

Australian States 2009 (2008) Driver's Licence Intention Status									
Intention	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	
Yes	3 (8)	47 (37)	4 (0)	3 (7)	0 (0)	16 (13)	0 (0)	0 (2)	
No	4 (7)	12 (8)	3 (2)	8 (9)	1 (0)	11 (25)	0 (0)	3 (4)	
Age / Not Applicable	24 (18)	4 (10)	0 (2)	5 (3)	1 (3)	1 (3)	0 (1)	14 (16)	
Unknown	16 (15)	6 (2)	1 (1)	48 (48)	3 (5)	5 (2)	2 (2)	2 (6)	
Total	47 (48)	69 (57)	8 (5)	64 (67)	5 (8)	33 (43)	2 (3)	19 (28)	

Figure 41

Donors Enrolled in the Australian Organ Donor Registry 2009 (2008)									
	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	AUST
Yes	9 (11)	32 (22)	5 (0)	11 (12)	1 (1)	13 (13)	0 (2)	8 (13)	79 (74)
Not Registered	32 (30)	33 (30)	3 (4)	52 (53)	4 (6)	18 (28)	2 (0)	11 (14)	155 (165)
Not Accessed	1 (4)	1 (0)	0 (0)	1 (1)	0 (0)	1 (1)	0 (0)	0 (0)	4 (6)
Not Applicable	5 (3)	3 (5)	0 (1)	0 (0)	0 (1)	1 (1)	0 (1)	0 (1)	9 (14)
Total	47 (48)	69 (57)	8 (5)	64 (67)	5 (8)	33 (43)	2 (3)	19 (28)	247 (259)

AUTHORITY SOUGHT FOR ORGAN DONATION

The predominant group requesting authority for organ donation in 2008 were the Intensive Care Clinicians and Registrars, (63%) in Australia and (61%) in New Zealand shown in Figure 42.

In Australia authority for organ donation was sought by donor coordinators only 2%, similar to 2007 (Figure 42). See Figure 41 for individual State and Territory statistics.

Authority for organ donation was not sought by donor coordinators in New Zealand.

In 2008, 32% of families volunteered authority for organ donation in Australia, compared to 37% in 2007 (Figure 42).

In New Zealand, 26% volunteered authority in 2008 compared to 5% in 2007.

Figure 42

Authority to Donate 2004 - 2008													
	Australia						New Zealand						
	2004	2005	2006	2007	2008	2009	2004	2005	2006	2007	2008	2009	
ICU Clinician	121	101	117	107	152	147	29	23	16	33	19	31	
ICU Registrar	7	7	14	11	10	4	2	1	2	2	0	2	
Emergency Consultant/Registrar	2	1	4	1	6	2	0	0	0	0	0	0	
Other Physicians/Anaesthetist	0	2	4	2	1	0	0	1	1	1	2	2	
Donor Coordinator	45	25	17	4	4	2	0	0	0	0	0	0	
Volunteered by Family	43	66	45	73	84	90	8	4	6	2	8	7	
Nursing Staff	0	2	1	0	0	2	1	0	0	0	2	1	
Accident and Emergency Staff	0	0	0	0	2	0	0	0	0	0	0	0	
Total	218	204	202	198	259	247	40	29	25	38	31	43	

Figure 43

Authority to Donate 2009 (2008)									
	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	
ICU Clinician	21 (14)	47 (44)	8 (4)	34 (31)	2 (6)	29 (36)	2 (2)	4 (15)	
ICU Registrar	0 (0)	2 (0)	0 (0)	2 (5)	0 (0)	0 (3)	0 (0)	0 (2)	
Donor Coordinator	0 (4)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	2 (0)	
Volunteered by Family	26 (28)	20 (12)	0 (1)	26 (27)	3 (1)	4 (3)	0 (1)	11 (11)	
Emergency/Other Physician0	0 (0)	0 (1)	0 (0)	1 (4)	0 (1)	0 (0)	0 (0)	1 (0)	
Accident and Emergency Staff	0 (2)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	
Nursing Staff	0 (0)	0 (0)	0 (0)	1 (0)	0 (0)	0 (0)	0 (0)	1 (0)	
Total	47 (48)	69 (57)	8 (5)	64 (67)	5 (8)	33 (43)	2 (3)	19 (28)	

DIRECT CONTACT WITH DONOR COORDINATOR

There were no families in Australia with whom the Donor Coordinator had no contact, compared to 17 families (40%) in New Zealand in 2009.

Figure 44

Direct Contact with Donor Coordinator 2009 (During Organ Donation Process)											
	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	AUST	NZ	
Face to Face	45 (96%)	66 (96%)	7 (88%)	62 (97%)	5 (100%)	30 (91%)	2 (100%)	19 (100%)	236 (96%)	24 (56%)	
Telephone	2 (4%)	3 (4%)	1 (12%)	2 (3%)	0 (0%)	3 (7%)	0 (0%)	0 (0%)	11 (4%)	2 (4%)	
None	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	17 (40%)	
Total	47	69	8	64	5	33	2	19	247	43	

CORONER'S CASES

In Australia, 43% of donors in 2009 were subject to Coronerial inquiry, compared to 46% in 2008. In New Zealand it was 44% for 2009, compared to 39% in 2008 and 32% in 2007.

Figure 45

Coroner's Cases 2004 - 2009												
	Australia						New Zealand					
	2004	2005	2006	2007	2008	2009	2004	2005	2006	2007	2008	2009
Yes	108	97	80	96	120	106	17	9	15	12	12	19
No	110	107	122	102	139	141	23	20	10	26	19	24
Total	218	204	202	198	259	247	40	29	25	38	31	43

Figure 46

Australian States Coroner's Cases 2009 (2008)								
	QLD	NSW	ACT	VIC	TAS	SA	NT	WA
Yes	22 (28)	26 (21)	7 (3)	26 (29)	5 (3)	11 (20)	2 (1)	7 (15)
No	25 (20)	43 (36)	1 (2)	38 (38)	0 (5)	22 (23)	0 (2)	12 (13)
Total	47 (48)	69 (57)	8 (5)	64 (67)	5 (8)	33 (43)	2 (3)	19 (28)

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.

For further details see Appendix I for Australia and Appendix II for New Zealand.

Figure 47 shows the outcome of organs requested in 2009 (2008).

Figure 47

Outcome Following Request for Organ Donation 2009 (2008)							
		Kidneys	Liver	Heart	Lungs	Pancreas	Stomach/Intestines
Australia	Requested	480 (512)	234 (246)	201 (213)	406 (442)	211 (229)	35 (45)
	Consent Given	480 (510)	234 (244)	191 (204)	396 (434)	210 (225)	30 (35)
	Retrieved	457 (477)	174 (187)	71 (91)	217 (222)	110 (107)	0 (0)
	Recipients Transplanted	446 (459)	185 (195)	61 (85)	217 (218)	+46 (+43)	0 (0)
New Zealand	Requested	86 (62)	43 (29)	34 (29)	74 (52)	26 (22)	0 (0)
	Consent Given	86 (62)	43 (29)	34 (29)	74 (52)	26 (22)	0 (0)
	Retrieved	73 (59)	33 (23)	11 (10)	32 (28)	2 (4)	0 (0)
	Recipients Transplanted	54 (53)	33 (24)	11 (10)	31 (28)	2 (4)	0 (0)
Kidneys and lungs are counted as separate organs + Includes (11) 2008 and (9) 2009 pancreas islet transplants							