

CARDIO-THORACIC ORGAN DONATION

AUSTRALIA

In 2011 Australia performed 65 heart transplants, two heart/lung, 148 double and twelve single lung transplants. This number includes three double lungs and one heart donated from New Zealand.

The first perfusion fluid of choice for heart retrieval was crystalloid cardioplegia (68%) followed by celsior (23%).

Perfadex (70%) was the first perfusion fluid for lung retrieval followed by celsior and St Vincent's mix, both (10%), pneumoplegia and cardioplegia both (4%) and Papworth solution >1%.

ECG AND ECHOCARDIOGRAM

Fifty three heart donors (80%) had a normal ECG and 57 of the 66 heart donors (86%), had a normal echocardiogram.

NEW ZEALAND

New Zealand performed eleven heart and ten double lung transplants in 2011.

Three double lungs and one heart were sent for transplantation in Australia.

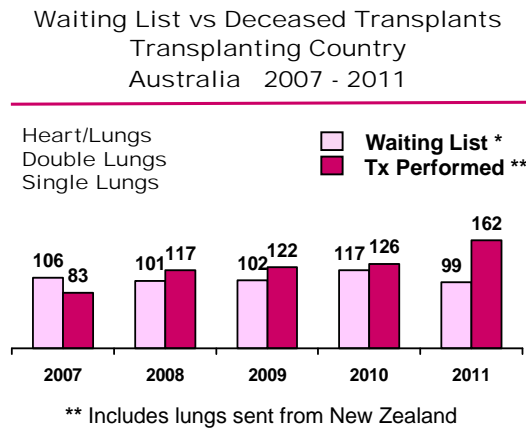
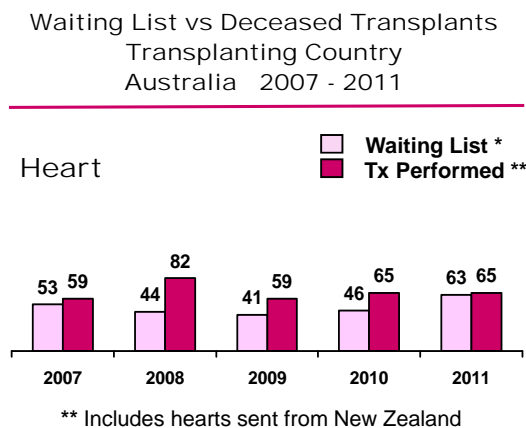
The first perfusion fluid for heart retrieval was crystalloid cardioplegia for all twelve donors.

Perfadex was the first perfusion fluid used for 69% of lung donors, followed by pneumoplegia 23% and crystalloid cardioplegia 8%.

ECG AND ECHOCARDIOGRAM

All twelve heart donors had a normal ECG and ten heart donors (83%) had a normal echocardiogram.

Figure 84



* The Australia and New Zealand Cardio-Thoracic Registry

Figure 85

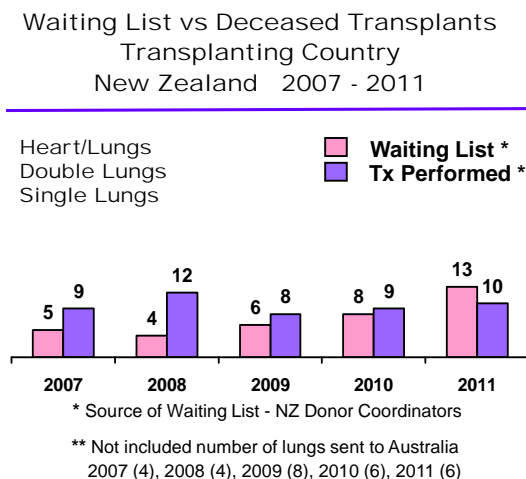
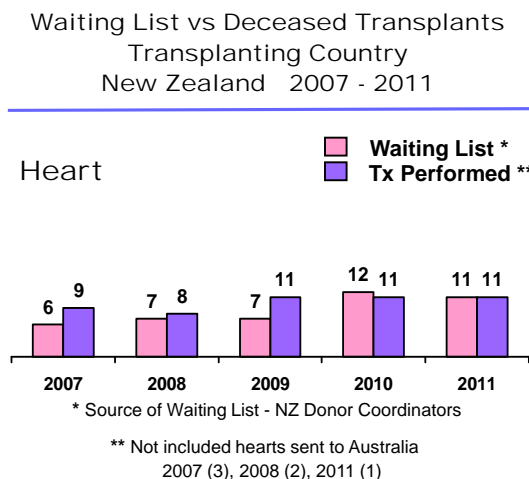
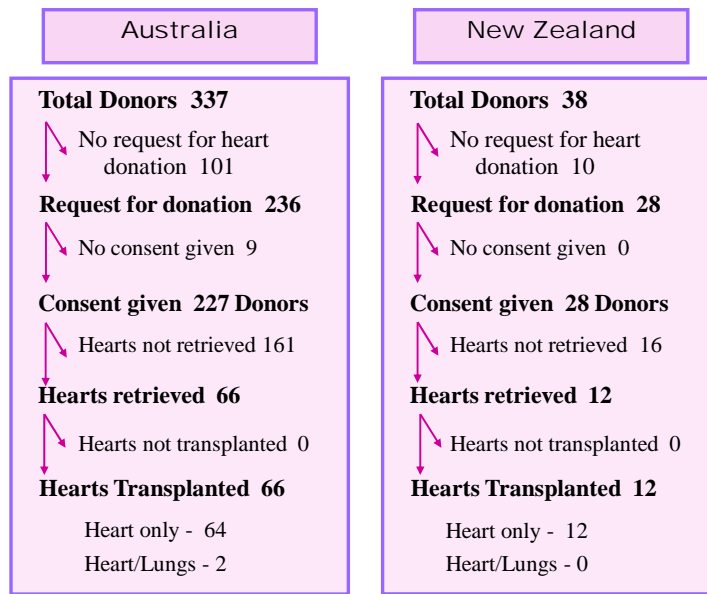


Figure 86

Outcome of Request for Heart Donation 2011



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

Figure 87

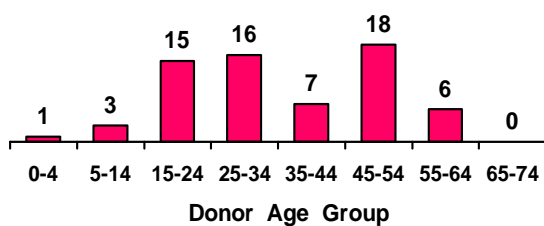
Age of Donors Providing Transplanted Hearts 2006 - 2011										
	Year	Age Groups								Total
		00-04	05-14	15-24	25-34	35-44	45-54	55-64	65-74	
Australia	2006	0	6	28	12	10	18	2	0	76
	2007	0	3	21	10	11	10	7	0	62
	2008	1	0	16	17	26	17	8	0	85
	2009	0	3	18	12	13	11	4	0	61
	2010	0	2	9	14	25	12	6	0	68
	2011	1	3	15	16	7	18	6	0	66
New Zealand	2006	0	0	3	3	2	1	0	0	9
	2007	0	1	1	1	2	6	1	0	12
	2008	0	0	3	1	2	2	2	0	10
	2009	0	0	4	1	3	2	1	0	11
	2010	0	0	1	2	4	3	1	0	11
	2011	0	0	3	2	1	4	2	0	12

Also includes hearts used for heart/lung transplants

Figure 88

Age of Donors Providing Transplanted Hearts - Australia 2011

Donors (66)



Age of Donors Providing Transplanted Hearts - New Zealand 2011

Donors (12)

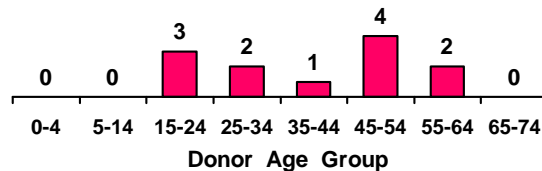


Figure 89

Heart Transplants by Transplant State
Australia and New Zealand 2010 - 2011

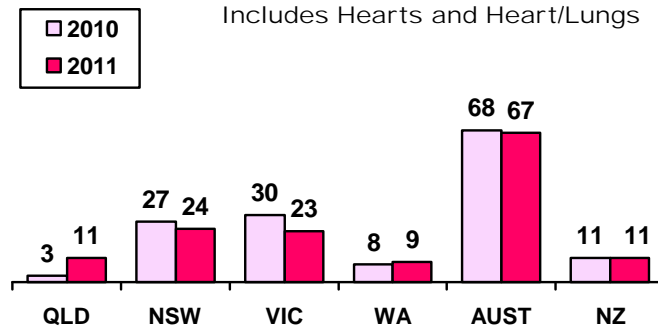


Figure 90

Heart and Lung Transplant Recipients By Transplant Country 2005 - 2011								
	Heart/Lung	2005	2006	2007	2008	2009	2010	2011
Australia	Heart	75	71	59	82	59	65	65
	Heart/Lung	6	6	6	5	2	3	2
	Double Lung	71	79	69	100	109	113	148
	Single (L) Lung	5	8	4	8	6	4	7
	Single (R) Lung	5	8	4	4	5	6	5
	Total		162	172	142	199	181	191
New Zealand	Heart	13	8	9	8	11	11	11
	Heart/Lung	0	0	0	0	0	0	0
	Double Lung	8	9	9	12	7	9	10
	Single (L) Lung	0	1	0	0	1	0	0
	Single (R) Lung	0	0	0	0	0	0	0
	Total		21	18	18	20	19	11

Figure 91

Regional Outcome of Requests for Heart Donation 1989 - 2011										
	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	AUST	NZ *
Total Donors	964	1454	118	1189	92	637	51	426	4931	708
Requested	904	1174	98	1012	81	459	42	330	4100	576
Consented	867	1105	91	959	78	440	41	305	3886	564
Retrieved	430	578	55	511	49	222	16	166	2027	234
Transplanted	426	561	52	454	44	215	16	162	1930	233

* New Zealand 1993 - 2011
Includes Hearts, Heart/Lungs and Heart / (L) Lung

HEART VALVE DONATION

The aortic and pulmonary heart valves can often be viable for transplantation when the whole heart is not suitable. Heart valves can be stored for up to five years.

This data relates only to heart valves retrieved from organ donors.

Figure 92

Outcome of Request for Heart Valve Donation 2011

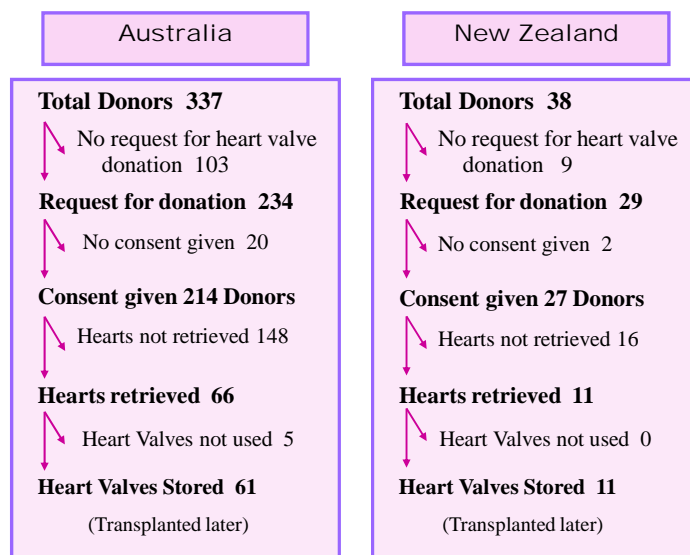


Figure 93

Age of Heart Valve Donors 2006 - 2011											
		Age Groups									
	Year	00-04	05-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	Total
Australia	2006	0	2	3	5	10	10	4	0	0	34
	2007	3	1	6	8	6	10	8	0	0	42
	2008	0	5	14	5	7	12	10	0	0	53
	2009	2	1	3	7	10	17	5	0	0	45
	2010	2	0	8	7	14	28	11	0	0	70
	2011	2	5	8	7	10	17	12	0	0	61
New Zealand	2006	0	0	3	0	1	1	1	0	0	6
	2007	0	0	3	0	4	5	2	0	0	14
	2008	0	1	1	1	2	2	1	0	0	8
	2009	0	1	1	0	2	3	0	0	0	7
	2010	0	0	2	3	2	0	0	0	0	7
	2011	0	1	5	1	2	2	0	0	0	11

Figure 94

Regional Outcome of Requests for Heart Valve Donation 1989 - 2011										
	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	AUST	NZ *
Total Donors	964	1454	118	1189	92	637	51	426	4931	708
Requested	479	506	41	468	33	194	9	121	1851	352
Consented	450	478	39	434	32	174	8	107	1722	342
Retrieved	259	278	23	184	14	87	4	63	912	251
Transplanted or Stored	255	266	23	177	13	83	4	62	883	248

* New Zealand 1993 - 2011

LUNG DONATION

Figure 95

Outcome of Request for Lung Donation 2011



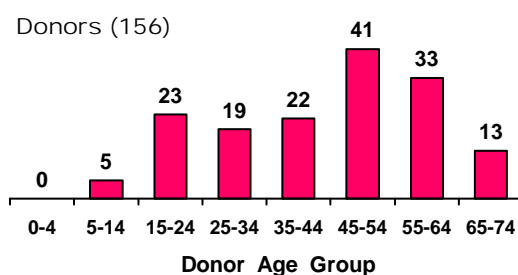
Refer to Appendices for reasons lungs were not requested, not retrieved and not transplanted

Figure 96

		Age of Donors Providing Transplanted Lungs 2006 - 2011 (Including Heart/Lung Donors)									
		Age Groups									Total
	Year	00-04	05-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	
Australia	2006	0	7	27	16	9	23	11	0	0	93
	2007	0	3	21	14	10	15	12	0	0	75
	2008	0	3	24	18	29	21	16	2	0	113
	2009	0	2	24	20	20	23	21	0	0	110
	2010	0	3	14	19	33	26	19	7	0	121
2011	0	5	23	19	22	41	33	13	0	156	
New Zealand	2006	0	1	1	3	5	1	2	0	0	13
	2007	0	0	1	0	3	7	2	0	0	13
	2008	0	1	2	0	3	5	2	1	0	14
	2009	0	1	4	0	3	5	3	0	0	16
	2010	0	0	3	2	2	2	3	0	0	12
2011	0	0	6	0	0	4	3	0	0	13	

Figure 97

Age of Donors Providing Transplanted Lungs - Australia 2011



Age of Donors Providing Transplanted Lungs - New Zealand 2011

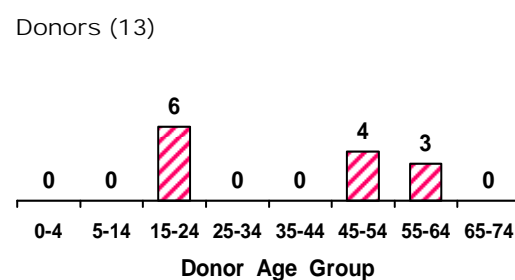


Figure 98

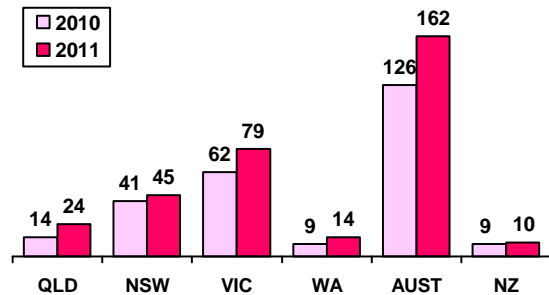
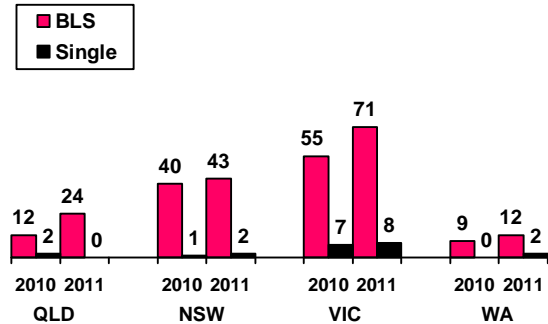
Lung Transplant Recipients 2010 - 2011
by Transplant State - Australia and NZBilateral Sequential (Double) and Single
Lung Transplants by State 2010 - 2011

Figure 99

Regional Outcome of Requests for Lung Donation 1989 - 2011										
	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	AUST	NZ **
Total Donors	964	1454	118	1189	92	637	51	426	4931	708
Requested	872	1176	103	981	76	427	42	312	3989	508
Consented	831	1118	96	946	74	409	41	290	3805	502
Retrieved x	599	1010	99	924	75	395	40	261	3403	407
Transplanted x	566	984	96	880	75	383	39	255	3278	387

X Number of Lungs (Includes Heart/Double Lungs and Heart/Single (L) Lung)
** New Zealand 1993 - 2011

DONOR LUNG FUNCTION

AUSTRALIA

There were 98 Australian lung donors (63%) who had a bronchoscopy in 2011. Fifteen donors had chest trauma; these included seven pneumothorax, four with a chest drain and one each had fractured ribs, sternal fractures, pulmonary embolus and contusions.

The arterial blood gases were taken on 100% FiO₂ and PEEP of 5 cm. Sixty four donors had a PEEP > 5 cm.

The results from 84 lung donors in 2011 show 20% (17) to be acidotic (pH < 7.35) and 18% (15) to be alkalotic (pH > 7.45).

Oxygenation measured as PaO₂ ranged from 206-642 mmHg with a median of 451 mmHg.

PaCO₂ ranged from 30.0-52.00 mmHg with a median of 39.0 mmHg.

NEW ZEALAND

There were six (46%) New Zealand lung donors who had a bronchoscopy in 2011. Three donors had chest trauma; one each a pneumothorax, contusions and fractured ribs due to CPR.

All thirteen lung donors had 100% FiO₂; twelve had a PEEP of 5cm and one donor had a PEEP of 8 cm.

The arterial blood gas results from twelve lung donors in 2011 show 42% (5) to be acidotic (pH < 7.35) and 8% (1) to be alkalotic (pH > 7.45).

Oxygenation measured as PaO₂ ranged from 220-560 mmHg with a median of 407 mmHg.

PaCO₂ ranged from 29.0 - 59.00 mmHg with a median of 43.3 mmHg.