

CHAPTER 3

DEATHS

**Leonie Excell
and
Stephen McDonald**



INTRODUCTION

Death rate is predominantly reported as number of patients died/total number of years of treatment of all patients treated at any time during the year. It is expressed as deaths per 100 patient years (pt yrs) at risk. In this report, as in previous years, death is attributed to the renal replacement modality at the time of death.

AUSTRALIA

DIALYSIS DEPENDENT

The number of deaths totalled 1,121 (15.0 deaths per 100 pt yrs at risk) in 2003.

For those treated with peritoneal dialysis, 289 deaths occurred (15.9 deaths per 100 pt yrs at risk) and for haemodialysis there were 832 deaths (14.7 deaths per 100 pt yrs at risk) (fig 3.8).

The death rate for each State per 100 pt yrs at risk is shown in Figures 3.1 and 3.2.

Figure 3.3 shows the age specific mortality rates for patients treated with dialysis or transplantation relative to the Australian population rates for the five year period 1998-2003.

FUNCTIONING TRANSPLANT

There were 139 deaths (2.4 deaths per 100 pt yrs at risk) of patients with a functioning transplant.

The cadaver donor recipient death rate was 126 deaths (3.0 per 100 pt yrs) and the living donor recipient death rate 13 deaths (0.8 per 100 pt yrs).

The death rate in relation to age is shown in Figure 3.9.

NEW ZEALAND

DIALYSIS DEPENDENT

There were 263 deaths (15.8 deaths per 100 pt yrs at risk) in 2003.

For those treated with peritoneal dialysis, 131 deaths occurred (16.9 deaths per 100 pt yrs at risk) and for haemodialysis there were 132 deaths (15.0 deaths per 100 pt yrs at risk) shown in Figure 3.10.

FUNCTIONING TRANSPLANT

There were 26 deaths (2.3 deaths per 100 pt yrs at risk) in 2003.

The mortality rate for recipients of CD kidneys was 19 deaths (2.4 per 100 pt yrs) and, LD recipients seven deaths (2.0 per 100 pt yrs) shown in Figure 3.11.

See Appendix III at the Website (www.anzdata.org.au/ANZDATA/AnzdataReport/download.htm)

Figure 3.1

Death Rates by States 1995 - 2003
All Dialysis Patients
(per 100 patient years)

Year	Qld	NSW	ACT	Vic	Tas	SA	NT	WA	Aust	NZ
1995	16.8	13.8	11.4	15.4	18.6	16.2	20.2	13.1	15.0	19.0
1996	17.7	14.2	15.4	14.0	14.6	23.5	23.1	14.5	15.6	14.8
1997	16.5	16.7	12.2	12.5	15.3	20.5	18.4	17.1	15.8	15.9
1998	19.3	16.9	15.3	15.8	25.9	15.7	15.8	13.6	16.7	16.6
1999	20.7	16.0	14.7	14.1	23.9	15.2	17.6	17.3	16.5	16.4
2000	16.9	16.5	13.5	14.0	14.7	14.3	20.0	16.3	15.7	19.2
2001	18.6	15.3	14.2	14.3	23.4	14.3	15.0	21.9	16.2	18.6
2002	17.4	15.1	11.4	13.6	12.0	12.3	14.8	16.6	14.9	15.2
2003	17.0	14.0	9.0	14.9	20.7	14.1	15.1	15.9	15.0	15.8

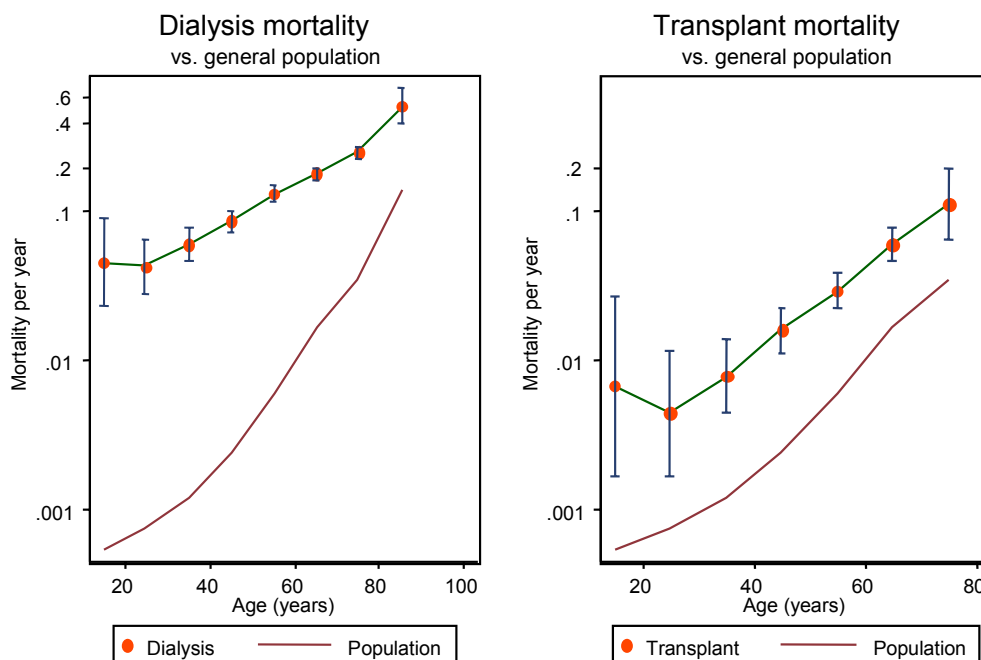
Figure 3.2

Death Rates by States
Dialysis Modality and Age Groups 2003
(per 100 patient years)

Age Group	Treatment	Qld	NSW	ACT	Vic	Tas	SA	NT	WA	Aust	NZ
45-64 yrs	All Dx Patients	19.4	8.6	5.5	10.2	8.7	9.8	14.0	13.5	11.6	13.3
	PD	26.4	9.5	-	9.1	-	7.9	32.6	11.7	12.8	15.0
	HD	17.4	8.2	7.8	10.5	10.4	10.1	10.7	14.1	11.2	11.9
65-84 yrs	All Dx Patients	18.8	20.8	16.6	20.5	36.2	19.2	31.6	23.1	20.8	24.8
	PD	18.6	21.9	18.1	22.4	19.0	11.2	24.3	24.5	20.9	23.9
	HD	18.9	20.4	15.7	20.0	39.6	21.6	32.7	22.7	20.8	25.9

The graphs across show the age-specific mortality rates for patients treated with dialysis or transplantation across relative to the Australian population rates for the five year period 1998-2003.

Figure 3.3





CAUSE OF DEATHS

AUSTRALIA

DIALYSIS DEPENDENT

Cardiac events (40%) were the most common cause of death reported, followed by “social causes” (23%), infection (13%), miscellaneous (13%) and vascular (11%). Myocardial infarction (21%) and “cardiac arrest” (15%) formed the majority of the cardiac group.

The site of infection was most commonly reported as septicaemia followed by the lung and the peritoneum. The detail of the site and identity of the organisms can be found at the Website (www.anzdata.org.au/ANZDATA/AnzdataReport/download.htm).

Analysis of numbers in the withdrawal from treatment categories is complicated by the change introduced in October 2003. In response to requests to examine the trends among the group who cease dialysis treatment, more detailed categories were introduced to explore whether withdrawal was precipitated by comorbid events. Six new categories were added to the data collection from 1st October, 2003. The reporting period thus includes only three months of these new categories.

Withdrawal of treatment was reported as the cause for 22% of deaths, mostly in the older age group. Twenty six percent were diabetics. There were two patients under 25 years of age and two under 35 years of age that withdrew from treatment.

The proportion of deaths from malignancy (7%) was similar to the previous three years.

FUNCTIONING TRANSPLANT

Cardiac events were the most common cause of death (23%), followed by malignancy (30%) then infection (17%) and vascular (13%).

DEATH OF YOUNG ADULTS

15-24 YEARS OF AGE

There were eight deaths in the age group **15-24 years**; six females and two males. Three were haemodialysis patients (two with access difficulties and one with MRSA septicaemia), three were peritoneal dialysis patients (one with pancreatitis, one post cardiac surgery, one cardiac arrest) and the other two had a functioning transplant (one with a ruptured aortic aneurysm and one with chronic respiratory failure).

25-34 YEARS OF AGE

There were 23 deaths in this age group; fourteen females and nine males.

Three died with a functioning transplant, sixteen were treated with haemodialysis (thirteen hospital and three satellite) and four with peritoneal dialysis (three continuous ambulatory peritoneal dialysis and one home automated peritoneal dialysis).

Causes of death were cardiac seven (including three hospital haemodialysis and four satellite haemodialysis), infection six (including five hospital haemodialysis and one home automated peritoneal dialysis), other causes three (including one hospital, one home continuous ambulatory peritoneal dialysis and one functioning transplant), malignancy two (two functioning transplants), ruptured aortic aneurysm two (both hospital haemodialysis), one withdrawal from dialysis and one therapy ceased (both hospital haemodialysis) and one unknown cause, subject to a coronial inquiry (home continuous ambulatory peritoneal dialysis).

NEW ZEALAND

DIALYSIS DEPENDENT

Cardiac events comprised the most common cause of death (40%), “social” (22%), vascular (12%), infection (11%) and miscellaneous (11%). Treatment withdrawal was reported in 68 patients (26%). Three patients between 15-24 years of age died (one cerebrovascular accident, one cardiac and one withdrawal from dialysis).

FUNCTIONING TRANSPLANT

Amongst the 26 deaths of functioning transplant patients, the major causes were malignancy (38%), vascular (23%), infection (12%) and social (12%). There was only one cardiac death.

Figure 3.4
**Cause of Death Dialysis and Transplant Dependent
1-Jan-2003 to 31-Dec-2003**

Cause of Death	Australia		New Zealand	
	Dialysis	Transplant	Dialysis	Transplant
Cardiac				
Cardiac Arrest	166	10	25	-
Haemorrhagic Pericarditis	2	-	-	-
Hyperkalaemia	4	-	1	-
Hypertensive Cardiac Failure	7	2	-	-
Myocardial Infarction	125	10	20	-
Myocardial Infarction (presumed)	114	7	51	1
Other Causes of Cardiac Failure	20	3	8	-
Pulmonary Oedema	9	-	-	-
Sub Total	447 (40%)	32 (23%)	105 (40%)	1 (3%)
Infection				
CNS - bacterial	-	1	-	-
CNS - viral	3 (a)	-	-	-
CNS - fungal	1 (b)	2 (e, f)	-	-
Lung - bacterial	29	1	3	-
Lung - viral	2 (c)	-	-	1 (i)
Lung - fungal	-	2 (e, g)	-	-
Lung - protozoa	-	1 (h)	-	-
Lung - other	6 (d)	2 (d)	3 (d)	1 (d)
Wound - bacterial	11	1	3	-
Wound - other	1 (d)	-	-	-
Shunt - bacterial	5	-	1	-
Peritoneum - bacterial	21	-	5	-
Peritoneum - fungal	1 (b)	-	1 (b)	-
Peritoneum - other	3 (d)	-	1 (d)	-
Septicaemia - bacterial	38	8	3	1
Septicaemia - fungal	1 (b)	-	-	-
Septicaemia - other	12 (d)	3 (d)	5 (d)	-
Liver - bacterial	1	-	-	-
Other Site - bacterial	10	3	3	-
Other Site - other	1 (d)	-	2 (d)	-
SubTotal	146 (13%)	24 (17%)	30 (11%)	3 (12%)
Vascular				
Bowel Infarction	18	2	6	-
Cerebrovascular Accident	68	9	22	3
Gastrointestinal Haemorrhage	8	-	-	-
Haemorrhage - dialysis access site	2	-	-	-
Haemorrhage - elsewhere	8	4	1	-
Pulmonary Embolus	4	-	-	2
Ruptured Aortic Aneurysm	14	3	2	1
Sub Total	122 (11%)	18 (13%)	31 (12%)	6 (23%)
Social				
Accident	6	-	-	-
Patient refused further treatment	115	-	37	1
Suicide	3	1	-	2
Therapy ceased	79	-	14	-
Withdrawal - Access problems *	4	-	-	-
Withdrawal - Cardiovascular *	15	-	4	-
Withdrawal - Cerebrovascular *	7	-	4	-
Withdrawal - Malignancy *	5	-	2	-
Withdrawal - Peripheral Vascular *	8	-	2	-
Withdrawal - Psychosocial *	18	1	5	-
Sub Total	260 (23%)	2 (2%)	68 (26%)	3 (12%)
Miscellaneous				
Bone Marrow Depression	2	-	-	-
Cachexia	17	1	3	-
Chronic Respiratory Failure	10	3	1	-
Hepatic Failure	5	3	-	-
Malignancy	79	42	13	10
Other	17	6	-	1
Pancreatitis	3	-	-	1
Perforation Abdominal Viscus	8	2	4	-
Unknown	5	3	8	1
Uraemia - graft failure	-	3	-	-
Sub Total	146 (13%)	63 (45%)	29 (11%)	13 (50%)
Total	1121 (100%)	139 (100%)	263 (100%)	26 (100%)

(a) herpes zoster (b) candida (c) influenza (d) organism not isolated (e) aspergillus
(f) scedosporum (g) fungus presumed (h) leishmaniasis (i) Guillian-Barre syndrome

* New categories for Withdrawal from Treatment - Data from 1-Oct-2003 to 31-Dec-2003



TEMPORAL TRENDS IN DIALYSIS OUTCOMES

The number of people in older age groups commencing dialysis has grown rapidly over the past decade. Particularly in this older group, recognition of likely outcomes is an important aspect of the Registry's output.

In the Figures 3.5 - 3.7 below are presented mortality rates for age groups 45-54, 55-64, 65-74 and 75+ years at the time of RRT start. For each age group, the mortality rate has been split into the first, second, third and fourth and subsequent years of treatment. Mortality rates are presented by "vintage", that is, by year of first dialysis.

It can thus be seen that there has been some improvement in mortality rates at all periods of follow-up for those aged 65-74 years at RRT start and from 12 months for the 54-65 year groups. The situation is less clear for those aged 75+ years at RRT start and for the 45-54 year groups.

These analyses were censored at time of transplantation and included deaths. Note that the Y axes vary between individual graphs.

Figure 3.5

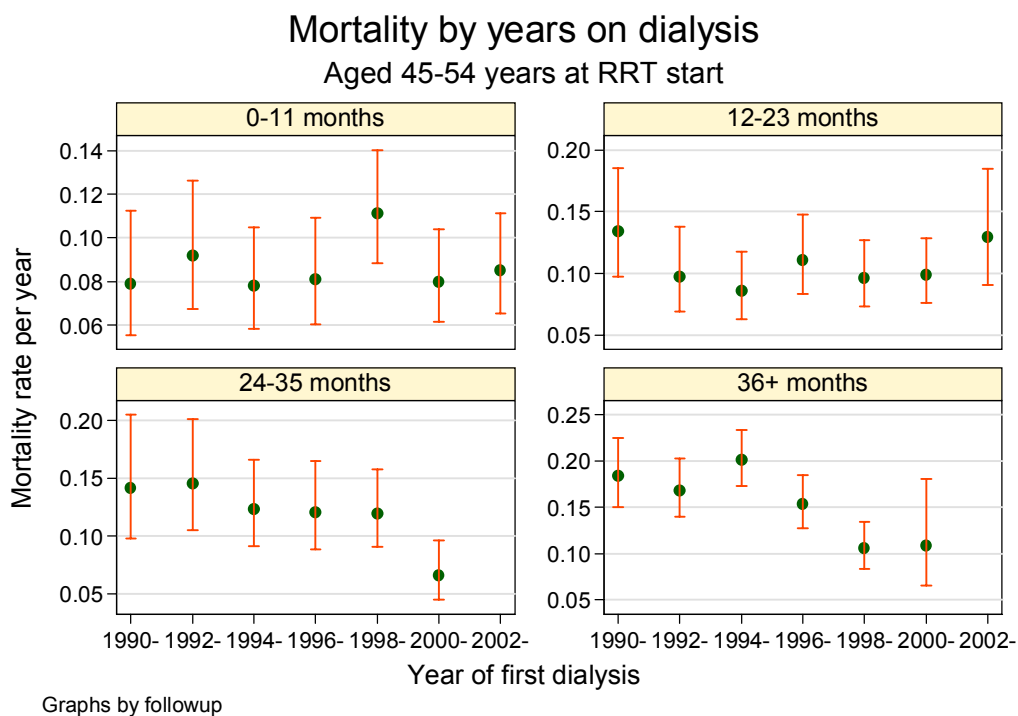
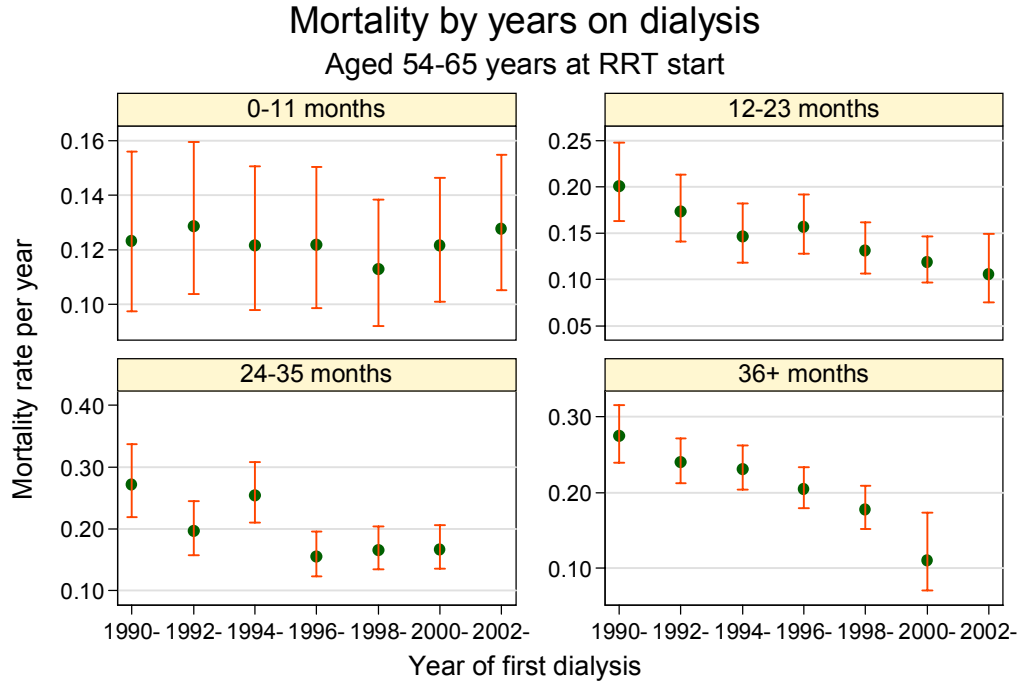
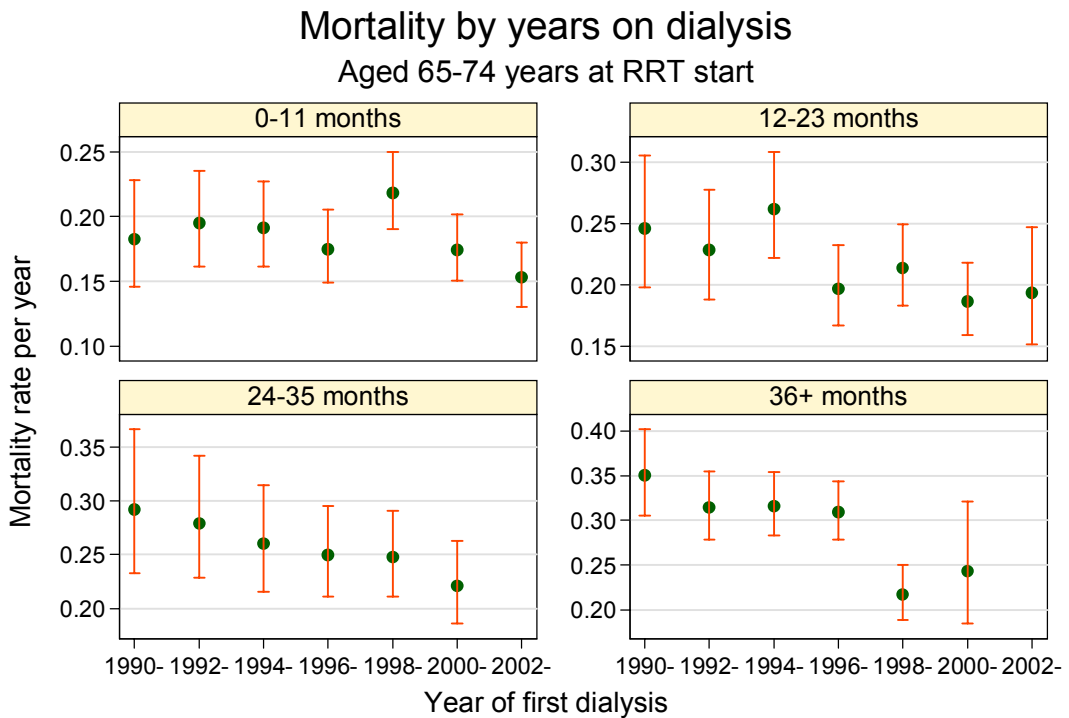


Figure 3.6



Graphs by followup

Figure 3.7



Graphs by followup

Death rates by dialysis modality, age and diabetes are shown in Figures 3.8 to 3.11.

Figure 3.8		Australia						
		Death Rates, Dialysis Patients 2003						
		(per 100 patient years)						
		* Treatment at Death						
Age Groups	00-14	15-24	25-44	45-64	65-84	>=85	All Ages	
All Dialysis								
All Patients Death Rate	7.0	4.6	5.8	11.6	20.8	43.1	15.0	
No. of Deaths	2	6	68	318	686	41	1121	
Years of Risk	28	130	1169	2749	3290	95	7463	
Diabetic Death Rate	-	163.9	13.3	16.3	25.5	61.4	19.8	
No. of Deaths	-	1	25	127	161	2	316	
Years of Risk	-	1	188	778	630	3	1600	
Non Diabetic Death Rate	7.0	3.8	4.4	9.7	19.7	42.5	13.7	
No. of Deaths	2	5	43	191	525	39	805	
Years of Risk	28	130	981	1972	2661	92	5863	
Peritoneal Dialysis *								
All Patients Death Rate	4.4	7.8	6.4	12.8	20.9	62.9	15.9	
No. of Deaths	1	3	17	79	178	11	289	
Years of Risk	22	39	267	619	853	17	1818	
Diabetic Death Rate	-	163.9	13.0	18.7	29.4	714.2	22.5	
No. of Deaths	-	1	8	40	52	1	102	
Years of Risk	-	1	62	213	177	<1	452	
Non Diabetic Death Rate	4.4	5.3	4.4	9.6	18.6	57.7	13.7	
No. of Deaths	1	2	9	39	126	10	187	
Years of Risk	22	38	205	406	676	17	1365	
Haemodialysis *								
All Patients Death Rate	16.8	3.3	5.6	11.2	20.8	38.6	14.7	
No. of Deaths	1	3	51	239	508	30	832	
Years of Risk	6	92	902	2130	2438	78	5646	
Diabetic Death Rate	-	-	13.5	15.4	24.0	32.0	18.6	
No. of Deaths	-	-	17	87	109	1	214	
Years of Risk	-	-	126	564	454	3	1148	
Non Diabetic Death Rate	16.8	3.3	4.4	9.7	20.1	38.9	13.7	
No. of Deaths	1	3	34	152	399	29	618	
Years of Risk	6	92	776	1566	1984	74	4498	

Figure 3.9		Australia									
		Death Rates, Transplant Patients 2003									
		(per 100 patient years)									
Age Groups	00-04	05-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	All Ages	
All Transplants											
All Patients Death Rate	8.7	-	0.8	0.4	0.9	1.7	3.0	7.0	15.3	2.4	
No. of Deaths	1	-	2	3	11	25	39	47	11	139	
Years of Risk	12	110	251	753	1204	1483	1284	674	72	5843	
Diabetic Death Rate	-	-	-	-	2.1	4.0	3.8	-	-	2.7	
No. of Deaths	-	-	-	-	3	6	3	-	-	12	
Years of Risk	-	-	-	50	145	149	79	15	-	438	
Non Diabetic Death Rate	8.7	-	0.8	0.4	0.8	1.4	3.0	7.1	15.3	2.4	
No. of Deaths	1	-	2	3	8	19	36	47	11	127	
Years of Risk	12	110	251	703	1059	1334	1205	659	72	5405	
Cadaver Transplants											
All Patients Death Rate	-	-	1.1	0.5	1.1	2.0	3.4	7.4	15.9	3.0	
No. of Deaths	-	-	1	2	9	23	36	44	11	126	
Years of Risk	2	38	94	399	839	1131	1065	597	69	4235	
Diabetic Death Rate	-	-	-	-	2.4	5.0	4.6	-	-	3.4	
No. of Deaths	-	-	-	-	3	6	3	-	-	12	
Years of Risk	-	-	-	37	123	121	65	12	-	358	
Non Diabetic Death Rate	-	-	1.1	0.6	0.8	1.7	3.3	7.5	15.9	2.9	
No. of Deaths	-	-	1	2	6	17	33	44	11	114	
Years of Risk	2	38	94	361	716	1011	1000	585	69	3877	
Living Donor Transplants											
All Patients Death Rate	10.9	-	0.6	0.3	0.6	0.6	1.4	3.9	-	0.8	
No. of Deaths	1	-	1	1	2	2	3	3	-	13	
Years of Risk	9	71	157	355	365	352	219	77	3	1608	
Diabetic Death Rate	-	-	-	-	-	-	-	-	-	-	
No. of Deaths	-	-	-	-	-	-	-	-	-	-	
Years of Risk	-	-	-	13	22	28	14	3	-	80	
Non Diabetic Death Rate	10.9	-	0.6	0.3	0.6	0.6	1.5	4.0	-	0.8	
No. of Deaths	1	-	1	1	2	2	3	3	-	13	
Years of Risk	9	71	157	342	344	324	205	74	3	1528	

Figure 3.10		New Zealand						
		Death Rates, Dialysis Patients 2003						
		(per 100 patient years)						
		* Treatment at Death						
Age Groups	00-14	15-24	25-44	45-64	65-84	>=85	All Ages	
All Dialysis								
All Patients Death Rate	-	5.2	7.6	13.3	24.8	78.0	15.8	
No. of Deaths	-	3	22	103	128	7	263	
Years of Risk	9	58	291	776	516	9	1659	
Diabetic Death Rate	-	-	17.2	13.9	26.0	-	17.6	
No. of Deaths	-	-	9	54	46	-	109	
Years of Risk	-	1	52	390	177	1	621	
Non Diabetic Death Rate	-	5.3	5.4	12.7	24.2	86.2	14.8	
No. of Deaths	-	3	13	49	82	7	154	
Years of Risk	9	57	239	387	338	8	1038	
Peritoneal Dialysis *								
All Patients Death Rate	-	3.8	5.2	15.0	23.9	78.0	16.9	
No. of Deaths	-	1	6	51	66	7	131	
Years of Risk	9	27	115	340	276	9	776	
Diabetic Death Rate	-	-	8.0	15.0	26.0	-	17.8	
No. of Deaths	-	-	2	28	25	-	55	
Years of Risk	-	1	25	187	96	1	310	
Non Diabetic Death Rate	-	3.9	4.4	15.0	22.8	86.2	16.3	
No. of Deaths	-	1	4	23	41	7	76	
Years of Risk	9	26	90	153	180	8	466	
Haemodialysis *								
All Patients Death Rate	-	6.44	9.1	11.9	25.9	-	15.0	
No. of Deaths	-	2	16	52	62	-	132	
Years of Risk	-	31	176	437	240	-	883	
Diabetic Death Rate	-	-	25.6	12.8	26.0	-	17.4	
No. of Deaths	-	-	7	26	21	-	54	
Years of Risk	-	-	27	203	81	-	311	
Non Diabetic Death Rate	-	6.4	6.1	11.1	25.8	-	13.6	
No. of Deaths	-	2	9	26	41	-	78	
Years of Risk	-	31	149	234	159	-	572	

Figure 3.11		New Zealand									
		Death Rates, Transplant Patients 2003									
		(per 100 patient years)									
Age Groups	00-04	05-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	All Ages	
All Transplants											
All Patients Death Rate	-	-	-	0.7	0.8	1.3	5.0	4.3	23.2	2.3	
No. of Deaths	-	-	-	1	2	4	11	5	3	26	
Years of Risk	3	23	53	143	262	310	219	116	13	1141	
Diabetic Death Rate	-	-	-	-	-	-	9.0	-	-	2.9	
No. of Deaths	-	-	-	-	-	-	3	-	-	3	
Years of Risk	-	-	-	5	25	30	33	9	-	103	
Non Diabetic Death Rate	-	-	-	0.7	0.8	1.4	4.3	4.7	23.2	2.2	
No. of Deaths	-	-	-	1	2	4	8	5	3	23	
Years of Risk	3	23	53	138	237	280	185	107	13	1038	
Cadaver Transplants											
All Patients Death Rate	-	-	-	-	-	1.3	4.6	4.8	23.2	2.4	
No. of Deaths	-	-	-	-	-	3	8	5	3	19	
Years of Risk	1	7	18	68	172	231	173	104	13	788	
Diabetic Death Rate	-	-	-	-	-	-	7.3	-	-	2.4	
No. of Deaths	-	-	-	-	-	-	2	-	-	2	
Years of Risk	-	-	-	5	22	22	28	9	-	85	
Non Diabetic Death Rate	-	-	-	-	-	1.4	4.1	5.2	23.2	2.4	
No. of Deaths	-	-	-	-	-	3	6	5	3	17	
Years of Risk	1	7	18	62	150	210	146	96	13	702	
Living Donor Transplants											
All Patients Death Rate	-	-	-	1.3	2.2	1.3	6.6	-	-	2.0	
No. of Deaths	-	-	-	1	2	1	3	-	-	7	
Years of Risk	2	15	35	75	90	78	45	12	-	353	
Diabetic Death Rate	-	-	-	-	-	-	17.0	-	-	5.8	
No. of Deaths	-	-	-	-	-	-	1	-	-	1	
Years of Risk	-	-	-	-	3	8	6	-	-	17	
Non Diabetic Death Rate	-	-	-	1.3	2.3	1.4	5.1	-	-	1.8	
No. of Deaths	-	-	-	1	2	1	2	-	-	6	
Years of Risk	2	15	35	75	87	70	40	12	-	336	

Figure 3.12

**Deaths from Malignancy 2003
By RRT Modality at Time of Death**

Australia	Dx	Tx	Total
Adenocarcinoma			
Ampulla of vater	-	1	1
Breast	6 (#4) (*1)	2	8
Colon	5	-	5
Duodenum	1 (#1)	1	2
Kidney	7 (#5)	1 x	8
Lung	4	2	6
Oesophagus	3	2	5
Pancreas	1	3	4
Prostate	3 (#2)	-	3
Rectum	1	1	2
Stomach	2 (*1)	-	2
Unknown site	4	1	5
Leukaemia			
-	-	1	1
Lymphoproliferative Disease			
Transplant kidney	1 (*1)	1	2
Neck node	-	1	1
Lymphoma			
Abdominal nodes	-	1	1
Bone marrow	-	2	2
Ileum	-	1	1
Lung	1 (#1)	-	1
Oesophagus	-	1	1
Maxilla	-	1	1
Mesentery	-	1	1
Pylorus	-	1	1
Retroperitoneal	1	-	1
Skin of arm	-	1	1
Melanoma	1	2	3
Merkel Cell			
-	-	1	1
Myeloma			
13 (#13)	-	-	13
Squamous Cell Carcinoma			
Cervix	1 (#1)	1	2
Lung	3	1	4
Oropharynx	-	1	1
Pharynx	-	1	1
Skin	1	7	8
Transitional Cell Carcinoma			
Kidney	2 (#2)	-	2
Other			
Anaplastic - thyroid	1	-	1
Carcinoid - liver	1	-	1
Fibrous histiocytoma - skin	-	1	1
Glioblastoma - brain	1	1	2
Hepatoma - liver	2	-	2
Mesothelioma - pleura	1 (#1)	-	1
Neuroendocrine - axilla	1	-	1
Large cell - lung	1	-	1
Large cell - primary unknown	1	-	1
Small cell - lung	2	-	2
Small cell - parotid	1 (*1)	-	1
Unknown - lung	2	-	2
Unknown - pancreas	2	-	2
Unknown - primary unknown	2 (#1)	-	2
Total Deaths from Malignancy	79	42	121
#(31 pts) diagnosed pre dialysis or within two months of commencing			
* (4 patients) had previous transplants			
x (1 patient) also had metastatic skin SCC			
New Zealand			
Adenocarcinoma			
Lung	1	-	1
Oesophagus	2	-	2
Rectosigmoid	1 (#1)	-	1
Sigmoid colon	-	1	1
Unknown site	-	1	1
Leukaemia			
1	-	-	1
Lymphoma			
-	-	-	-
Axillary nodes	-	1	1
Cervical nodes	-	1	1
Merkel Cell			
1	1	2	2
Myeloma			
5 (#5)	-	-	5
Squamous Cell Carcinoma			
Skin	-	1	1
Other			
Carcinosarcoma - breast	1	-	1
Hepatoma - liver	-	1	1
Mesothelioma - pleura	-	1	1
Non small cell - lung	1	-	1
Scirrhus - breast	-	1	1
Unknown - primary unknown	-	1	1
Total Deaths from Malignancy	13	10	23
No dialysis patients had a previous transplant			
# (6 pts) diagnosed pre dialysis or within two months of commencing			

DEATHS FROM MALIGNANCY
AUSTRALIA

During 2003 there were 121 deaths attributed to malignancies (79 among dialysis dependent and 42 among functioning transplant patients). Deaths were attributed by modality at time of death.

DIALYSIS DEPENDENT

Thirty one of the 79 patients had cancer diagnosed before or within two months of their first dialysis.

A further six tumours were identified less than nine months after the first dialysis. There were fifteen patients who had been dialysed for more than five years. Four patients had a previous renal transplant.

There were fourteen tumours of the lung (one with mesothelioma), thirteen cases with myeloma, ten tumours of the urinary tract, six of the breast, five of the colon, two hepatoma and one each glioblastoma, carcinoid, neuroendocrine, anaplastic, large cell and small cell. The lymphoproliferative disease of the transplant kidney was diagnosed four months post transplant and subsequently caused graft failure and the return to dialysis for six weeks before death.

There was one death each from melanoma and squamous cell carcinoma of the skin.

FUNCTIONING TRANSPLANT

There were 42 deaths in 2003 (46 in 2002) in this group of patients.

Thirty one died from non-skin cancer: fourteen adenocarcinoma, nine lymphoma, four squamous cell carcinoma, two lymphoproliferative disease, one leukaemia and one glioblastoma.

Eleven died from skin cancer: seven from squamous cell carcinoma, two from melanoma and one each from Merkel Cell and fibrous histiocytoma.

The myeloma patients had a median survival from diagnosis of 59 months (range 7 - 127 months).

NEW ZEALAND
DIALYSIS DEPENDENT

There were thirteen deaths due to malignancy; six were diagnosed before dialysis or within days of commencement; none had received a previous transplant.

FUNCTIONING TRANSPLANT

There were ten deaths; two from lymphoma, two adenocarcinoma, two skin (one Merkel Cell and one squamous cell) and one each hepatoma, mesothelioma, scirrhus breast carcinoma and unknown type and site.

Further analyses of cancer mortality are contained in Chapter 10.