

CHAPTER 3

DEATHS

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INTRODUCTION

Death rate is 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.

This report contains two forms of reporting the incidence of death:

- * Rate related to number of treatment years.
- * Proportion of all patients treated.

AUSTRALIA

DIALYSIS DEPENDENT

The number of deaths totalled 1,046 (14.9 deaths per 100 pt yrs at risk), 11.9% of patients treated at any time during the past year. For those treated with peritoneal dialysis, 334 deaths occurred (18.7 deaths per 100 pt yrs at risk), 12.7% of patients dialysed. For haemodialysis there were 712 deaths (13.6 deaths per 100 pt yrs at risk), 10.4% of patients dialysed (fig 3.6 and 3.7).

TRANSPLANT DEPENDENT

There were 139 deaths (2.5 deaths per 100 pt yrs at risk) of patients with a functioning transplant, 2.3% of patients with a functioning graft during the year. The cadaver donor recipient death rate was 3.0 per 100 pt yrs, and the living donor recipient rate 1.0 per 100 pt yrs. The death rate in relation to age is shown in Figures 3.6 and 3.8.

NEW ZEALAND

DIALYSIS DEPENDENT

There were 232 deaths (15.2 deaths per 100 pt yrs at risk) which was 11.9% of patients dialysed during 2002. For those treated with haemodialysis there were 109 deaths (13.9 deaths per 100 pt yrs at risk), 9.6 % of patients dialysed, peritoneal dialysis (16.6 deaths per 100 pt yrs at risk), 12.0 % of patients dialysed (fig 3.6 and 3.9). See Appendix III at the Website (www.anzdata.org.au/ANZDATA/AnzdataReport/download.htm).

TRANSPLANT DEPENDENT

There were 31 deaths (2.9 deaths per 100 pt yrs at risk) (2.6% at risk). Cadaver donor recipient death rate was 3.8 per 100 pt yrs, living donors 0.6 per 100 pt yrs (fig 3.6 and 3.10).

The graphs below show the age-specific mortality rates for patients treated with dialysis or transplantation relative to the Australian population rates, for the 5 year period 1997-2002.

Figure 3.1

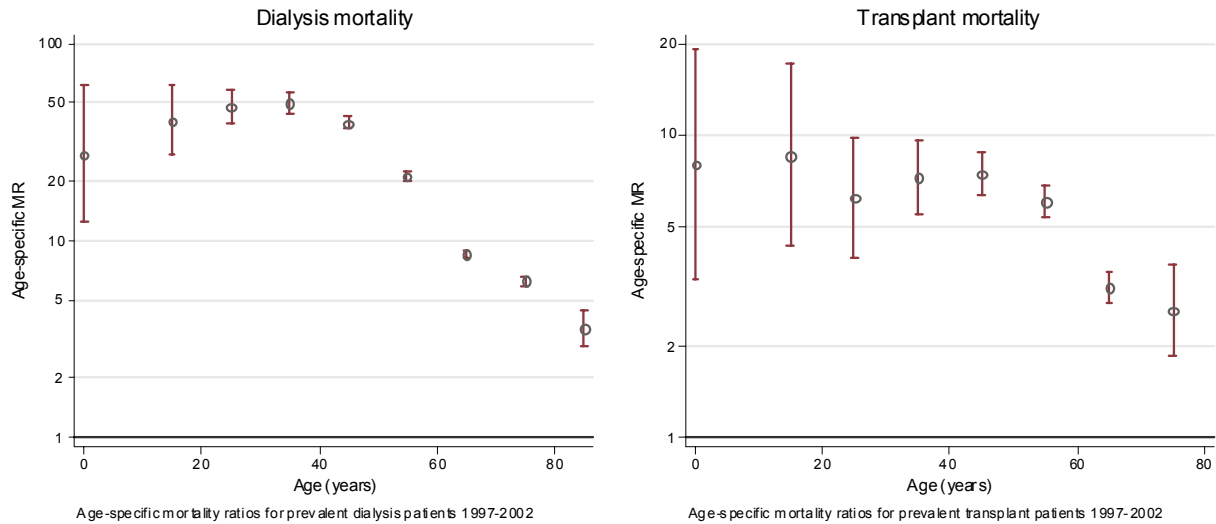


Figure 3.2

Death Rates by States 1995 - 2002 All Dialysis Patients (per 100 patient years)										
Year	Qld	NSW	ACT	Vic.	Tas.	SA	NT	WA	Aust.	N. Z.
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

Figure 3.3

Death Rates by States Dialysis Modality & Age Groups 2002 (per 100 patient years)											
Age Group	Treatment	Qld	NSW	ACT	Vic.	Tas.	SA	NT	WA	Aust.	N.Z.
45-64 yrs	All Dx Patients	10.3	9.8	8.6	10.1	3.7	9.1	13.0	14.4	10.4	14.3
	PD	13.0	11.9	14.6	15.8	-	19.7	4.9	21.9	13.9	14.5
	HD	9.2	9.1	6.7	8.6	4.4	7.5	14.6	11.9	9.3	14.0
65-84 yrs	All Dx Patients	28.8	22.3	15.2	19.0	17.2	18.1	27.8	26.3	22.2	22.8
	PD	39.4	23.7	16.6	22.4	20.6	35.6	-	34.6	27.0	23.1
	HD	24.8	21.6	14.3	18.0	16.5	13.2	30.3	23.6	20.5	22.5



Figure 3.4

**Cause of Death Dialysis and Transplant Dependent
1-Jan-2002 to 31-Dec-2002**

Cause of Death	Australia		New Zealand	
	Dialysis	Transplant	Dialysis	Transplant
Cardiac				
Cardiac Arrest	149	9	34	3
Haemorrhagic Pericarditis	1	-	-	-
Hyperkalaemia	5	-	-	-
Hypertensive Cardiac Failure	5	1	-	-
Myocardial Infarction	126	12	31	6
Myocardial Infarction (presumed)	102	13	60	1
Other Causes of Cardiac Failure	10	-	3	-
Pulmonary Oedema	9	1	1	-
Sub Total	407 (39%)	36 (26%)	129 (56%)	10 (32.5%)
Infection				
CNS - bacterial	2	-	-	-
CNS - viral	1 (a)	-	-	-
CNS - fungal	-	2 (j, k)	-	-
CNS - protozoa	1 (b)	-	-	-
Lung - bacterial	21	2	4	2
Lung - viral	-	1 (l)	-	-
Lung - fungal	1 (c)	3 (i, f, k)	-	-
Lung - protozoa	1 (d)	1 (d)	-	-
Lung - other	10 (e)	-	4 (e)	1 (e)
Urinary Tract - bacterial	1	-	-	-
Urinary Tract - other	-	1 (e)	-	-
Wound - bacterial	9	-	2	-
Wound - fungal	-	-	1	-
Wound - other	1 (e)	-	-	-
Shunt - bacterial	3	-	-	-
Peritoneum - bacterial	23	1	3	1
Peritoneum - fungal	6 (f)	-	1 (f)	-
Peritoneum - other	1 (e)	-	-	-
Septicaemia - bacterial	46	6	4	-
Septicaemia - viral	-	1 (m)	-	-
Septicaemia - fungal	-	1 (n)	-	-
Septicaemia - other	9 (e)	1 (e)	2 (e)	1 (e)
Liver - viral	1 (g)	-	-	-
Other Site - bacterial	12	-	2	-
Other Site - viral	1 (h)	-	-	-
Other Site - fungal	1 (i)	-	-	-
Other Site - other	2 (e)	-	1 (e)	-
SubTotal	153 (15%)	20 (14.5%)	24 (10%)	5 (16%)
Vascular				
Bowel Infarction	12	1	3	1
Cerebrovascular Accident	53	12	11	2
Gastrointestinal Haemorrhage	6	1	2	-
Haemorrhage - dialysis access site	3	-	-	-
Haemorrhage - elsewhere	7	-	2	-
Pulmonary Embolus	5	2	-	1
Ruptured Aortic Aneurysm	5	1	-	-
Sub Total	91 (9%)	17 (12%)	18 (8%)	4 (13%)
Social				
Accident	4	1	2	-
Patient refused further treatment	152	1	21	-
Suicide	7	1	-	-
Therapy ceased	93	-	14	1
Sub Total	256 (24%)	3 (2%)	37 (16%)	1 (3%)
Miscellaneous				
Bone Marrow Depression	1	-	-	-
Cachexia	15	1	2	-
Chronic Respiratory Failure	15	1	3	1
Dialysis Dementia	1	-	-	-
Hepatic Failure	7	1	1	-
Malignancy	63	44	7	8
Other	17	6	4	-
Pancreatitis	3	1	1	-
Perforation Abdominal Viscus	12	2	3	1
Unknown	5	2	3	1
Uraemia - graft failure	-	5	-	-
Sub Total	139 (13%)	63 (45.5%)	24 (10%)	11 (35.5%)
Total	1046 (100%)	139 (100%)	232 (100%)	31 (100%)

(a) virus not identified (b) toxoplasmosis (c) fungus not identified (d) pneumocystis
(e) organism not isolated (f) candida (g) hepatitis C (h) herpes zoster (i) aspergillus
(j) cryptococcus (k) nocardia (l) cmv (m) disseminated (n) mucormycosis

CAUSE OF DEATHS

AUSTRALIA

DIALYSIS DEPENDENT

Cardiac events (39%) were the most common cause of death reported, followed by “social causes” (24%), infection (15%), miscellaneous (13%) and vascular (9%). Myocardial infarction (22%) and “cardiac arrest” (14%) formed the majority of the cardiac group.

The site of infection was most commonly 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).

Withdrawal of treatment was reported as the cause for 23% of deaths, mostly in the older age group. Twenty four percent were diabetics. Only one patient under 35 years of age withdrew from treatment.

The proportion of deaths from malignancy (6%) was similar to the previous two years.

TRANSPLANT DEPENDENT

Cardiac events were the most common cause of death (32.5%), followed by malignancy (32%) then infection (14.5%).

DEATH OF YOUNG ADULTS

15-24 YEARS OF AGE

There were two deaths in the age group 15-24 years; both males. One was a home haemodialysis patient (presumed myocardial infarction) and, the other had a functioning transplant (lymphoproliferative disorder).

25-34 YEARS OF AGE

There were 21 deaths in this age group; thirteen females and eight males.

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

Causes of death were cardiac nine (one hospital haemodialysis, four satellite haemodialysis, two home haemodialysis, one home peritoneal dialysis, one home continuous ambulatory peritoneal dialysis), malignancy three (two functioning transplants, one hospital haemodialysis), suicide two (one functioning transplant, one hospital haemodialysis), infection two (both home continuous ambulatory peritoneal dialysis), vascular two (one hospital haemodialysis, one home haemodialysis), therapy ceased one (hospital peritoneal dialysis), and other causes two (both hospital haemodialysis).

NEW ZEALAND

DIALYSIS DEPENDENT

Cardiac events comprised the most common cause of death 56%, “social” (16%), infection and miscellaneous (10%) and vascular (8%). Treatment withdrawal was reported in 35 patients (15%).

TRANSPLANT DEPENDENT

Amongst the 31 deaths of transplant dependent patients, the major causes were cardiac disease (32.5%) and malignancy (26%).

Figure 3.5

Death as a Proportion of Dialysis Treated Patients 1998 - 2002

		1998	1999	2000	2001	2002
Australia	All Dialysis	12.9%	12.9%	12.3%	12.8%	11.9%
	PD	11.9%	12.3%	11.4%	11.8%	12.7%
	HD	11.3%	11.2%	11.3%	11.7%	10.4%
	All Patients 55-64 years	12%	12.5%	10.4%	11.3%	9.5%
	PD	9%	9%	9.9%	8.7%	10.9%
	HD	11%	12%	9.1%	10.9%	7.9%
	All Patients 65-74 years	18%	19%	16.7%	16.6%	15.5%
	PD	16%	16%	14.1%	15.8%	14.8%
	HD	16%	17%	15.6%	14.9%	14.1%
New Zealand	All Dialysis	12.7%	12.6%	14.8%	14.3%	11.9%
	PD	12.1%	10.6%	14.7%	13.8%	12.0%
	HD	9.7%	11.3%	10.9%	11.9%	9.6%

Figure 3.6

Dialysis and Transplant Patient Deaths *
Deaths as a Proportion of All Patients Treated During the Year 2002

Mode of Treatment	No. of Pts.	Age Groups										Total Deaths
		00-04	05-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	> 85	
Australia												
All Patients												
Peritoneal Dialysis	2626	7%	0%	0%	4%	6%	8%	11%	15%	24%	18%	12.7% (334)
Haemodialysis	6871	25%	0%	<1%	3%	6%	6%	8%	14%	18%	23%	10.4% (712)
All Dialysis Pts	8814	11%	3%	<1%	3%	6%	7%	10%	16%	21%	23%	11.9% (1046)
Transplant Pts	6060	0%	1%	<1%	<1%	<1%	2%	3%	8%	15%	0%	2.3% (139)
Diabetic Patients												
Peritoneal Dialysis	646	0%	0%	0%	13%	7%	8%	15%	19%	25%	33%	14.9% (96)
Haemodialysis	1368	0%	0%	0%	3%	11%	10%	10%	18%	19%	0%	12.9% (176)
All Diabetic Dx	1840	0%	0%	0%	8%	10%	11%	12%	20%	23%	25%	14.8% (272)
Diabetic Tx	460	0%	0%	0%	0%	3%	1%	4%	25%	100%	0%	3.0% (14)
Non Diabetic Patients												
Peritoneal Dialysis	1980	7%	0%	0%	2%	5%	7%	9%	14%	24%	16%	12.0% (238)
Haemodialysis	5503	25%	6%	<1%	3%	5%	5%	7%	13%	18%	24%	9.7% (536)
Non Diabetic Pts	6974	11%	3%	<1%	3%	5%	6%	8%	14%	21%	24%	11.1% (774)
Non Diabetic Tx	5600	0%	1%	<1%	<1%	<1%	2%	3%	7%	13%	0%	2.2% (125)
New Zealand												
All Patients												
Peritoneal Dialysis	1023	25%	0%	3%	5%	9%	12%	9%	16%	18%	29%	12.0% (123)
Haemodialysis	1140	0%	0%	0%	0%	7%	9%	10%	13%	22%	50%	9.6% (109)
All Dialysis Pts	1937	25%	0%	2%	2%	8%	11%	11%	17%	22%	36%	11.9% (232)
Transplant Pts	1179	0%	0%	0%	0%	1%	4%	3%	5%	27%	0%	2.6% (31)
Diabetic Patients												
Peritoneal Dialysis	415	0%	0%	0%	9%	15%	17%	14%	14%	13%	0%	14.5% (60)
Haemodialysis	402	0%	0%	0%	0%	7%	12%	16%	16%	13%	0%	13.7% (55)
All Diabetic Dx	717	0%	0%	0%	6%	12%	17%	17%	17%	14%	0%	16.0% (115)
Diabetic Tx	109	0%	0%	0%	0%	0%	11%	6%	0%	100%	0%	6.4% (7)
Non Diabetic Patients												
Peritoneal Dialysis	608	25%	0%	3%	4%	6%	6%	4%	18%	19%	29%	10.4% (63)
Haemodialysis	738	0%	0%	0%	0%	7%	6%	5%	11%	24%	50%	7.3% (54)
Non Diabetic Pts	1220	25%	0%	2%	2%	7%	7%	5%	16%	23%	36%	9.6% (117)
Non Diabetic Tx	1070	0%	0%	0%	0%	2%	3%	2%	5%	21%	0%	2.2% (24)

* Expressed as (%) of all patients, non diabetic, and diabetic patients treated by dialysis or with a functioning transplant in 2002

Note: some patients will have been treated by both peritoneal dialysis and haemodialysis

Figure 3.7 **Australia**

Death Rates, Dialysis Patients 2002
(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	8.6	0.8	6.5	10.4	22.2	32.5	14.9
No. of Deaths	3	1	76	271	671	24	1046
No. at Risk	55	175	1465	3228	3792	99	8814
Diabetic Death Rate	-	-	12.6	14.9	26.4	37.2	19.2
No. of Deaths	-	-	23	101	147	1	272
No. at Risk	-	2	241	876	717	4	1840
Non Diabetic Death Rate	8.6	0.8	5.3	8.8	21.3	32.3	13.8
No. of Deaths	3	1	53	170	524	23	774
No. at Risk	55	173	1224	2352	3075	95	6974
Peritoneal Dialysis *							
All Patients Death Rate	4.1	-	7.4	13.9	27.0	29.3	18.7
No. of Deaths	1	-	19	86	222	6	334
No. at Risk	39	61	384	908	1203	31	2626
Diabetic Death Rate	-	-	12.7	18.2	31.7	57.1	22.5
No. of Deaths	-	-	8	36	51	1	96
No. at Risk	-	1	99	300	243	3	646
Non Diabetic Death Rate	4.1	-	5.7	11.9	25.8	26.7	17.5
No. of Deaths	1	-	11	50	171	5	238
No. at Risk	39	60	285	608	960	28	1980
Haemodialysis *							
All Patients Death Rate	18.8	1.1	6.2	9.3	20.5	33.8	13.6
No. of Deaths	2	1	57	185	449	18	712
No. at Risk	20	127	1183	2585	2881	75	6871
Diabetic Death Rate	-	-	12.8	13.6	24.3	-	17.7
No. of Deaths	-	-	15	65	96	-	176
No. at Risk	-	1	166	666	533	2	1368
Non Diabetic Death Rate	18.8	1.1	5.2	8.0	19.6	34.4	12.6
No. of Deaths	2	1	42	120	353	18	536
No. at Risk	20	126	1017	1919	2348	73	5503

Figure 3.8 **Australia**

Death Rates, Transplant Patients 2002
(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	-	1.0	0.4	0.4	0.9	1.7	3.1	8.2	15.9	2.5
No. of Deaths	-	1	1	3	10	25	38	51	10	139
No. at Risk	17	114	260	820	1256	1550	1299	676	70	6062
Diabetic Death Rate	-	-	-	-	3.0	1.5	4.0	30.6	114.9	3.4
No. of Deaths	-	-	-	-	4	2	3	4	1	14
No. at Risk	-	-	-	62	149	151	82	16	1	461
Non Diabetic Death Rate	-	1.0	0.4	0.4	0.6	1.8	3.1	7.7	14.5	2.4
No. of Deaths	-	1	1	3	6	23	35	47	9	125
No. at Risk	17	114	260	758	1107	1399	1217	660	69	5601
Cadaver Transplants										
All Patients Death Rate	-	3.1	-	0.5	1.0	1.8	3.6	8.3	15.9	3.0
No. of Deaths	-	1	-	2	8	20	37	47	10	125
No. at Risk	2	38	104	459	876	1213	1093	611	70	4466
Diabetic Death Rate	-	-	-	-	1.8	1.8	4.8	28.4	114.9	3.3
No. of Deaths	-	-	-	-	2	2	3	3	1	11
No. at Risk	-	-	-	49	123	124	66	12	1	375
Non Diabetic Death Rate	-	3.1	-	0.5	0.9	1.8	3.5	7.9	14.5	3.0
No. of Deaths	-	1	-	2	6	18	34	44	9	114
No. at Risk	2	38	104	410	753	1089	1027	599	69	4091
Living Donor Transplants										
All Patients Death Rate	-	-	0.7	0.3	0.6	1.6	0.5	7.2	-	1.0
No. of Deaths	-	-	1	1	2	5	1	4	-	14
No. at Risk	15	76	156	361	380	337	206	65	-	1596
Diabetic Death Rate	-	-	-	-	8.4	-	-	40.2	-	4.1
No. of Deaths	-	-	-	-	2	-	-	1	-	3
No. at Risk	-	-	-	13	26	27	16	4	-	86
Non Diabetic Death Rate	-	-	0.7	0.3	-	1.8	0.6	5.6	-	0.8
No. of Deaths	-	-	1	1	-	5	1	3	-	11
No. at Risk	15	76	156	348	354	310	190	61	-	1510

Figure 3.9		New Zealand						
Death Rates, Dialysis Patients 2002								
(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	8.6	2.0	7.2	14.3	22.8	49.0	15.2	
No. of Deaths	1	1	21	103	101	5	232	
No. at Risk	18	62	352	928	563	14	1937	
Diabetic Death Rate	-	-	12.4	22.4	20.8	-	20.9	
No. of Deaths	-	-	7	76	32	-	115	
No. at Risk	-	-	69	458	190	-	717	
Non Diabetic Death Rate	8.6	2.0	6.0	7.1	23.9	49.0	12.0	
No. of Deaths	1	1	14	27	69	5	117	
No. at Risk	18	62	283	470	373	14	1220	
Peritoneal Dialysis *								
All Patients Death Rate	11.1	4.2	9.3	14.5	23.1	42.3	16.6	
No. of Deaths	1	1	11	48	58	4	123	
No. at Risk	15	29	159	460	346	14	1023	
Diabetic Death Rate	-	-	17.4	21.6	18.9	-	20.4	
No. of Deaths	-	-	5	38	17	-	60	
No. at Risk	-	-	39	256	120	-	415	
Non Diabetic Death Rate	11.1	4.2	6.7	6.4	25.4	42.3	14.0	
No. of Deaths	1	1	6	10	41	4	63	
No. at Risk	15	29	120	204	226	14	608	
Haemodialysis *								
All Patients Death Rate	-	-	5.8	14.0	22.5	135.1	13.9	
No. of Deaths	-	-	10	55	43	1	109	
No. at Risk	3	38	233	577	287	2	1140	
Diabetic Death Rate	-	-	7.2	23.2	23.3	-	21.5	
No. of Deaths	-	-	2	38	15	-	55	
No. at Risk	-	-	41	265	96	-	402	
Non Diabetic Death Rate	-	-	5.5	7.5	22.0	135.1	10.2	
No. of Deaths	-	-	8	17	28	1	54	
No. at Risk	3	38	192	312	191	2	738	

Figure 3.10		New Zealand									
Death Rates, Transplant Patients 2002											
(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	-	-	-	-	1.5	4.2	3.0	5.0	31.2	2.9	
No. of Deaths	-	-	-	-	4	12	6	5	4	31	
No. at Risk	4	23	56	155	282	317	218	107	15	1177	
Diabetic Death Rate	-	-	-	-	-	15.5	6.0	-	161.3	7.2	
No. of Deaths	-	-	-	-	-	4	2	-	1	7	
No. at Risk	-	-	-	3	29	33	36	6	1	108	
Non Diabetic Death Rate	-	-	-	-	1.7	3.1	2.4	5.3	24.6	2.4	
No. of Deaths	-	-	-	-	4	8	4	5	3	24	
No. at Risk	4	23	56	152	253	284	182	101	14	1069	
Cadaver Transplants											
All Patients Death Rate	-	-	-	-	2.3	5.4	3.0	4.4	31.2	3.8	
No. of Deaths	-	-	-	-	4	12	5	4	4	29	
No. at Risk	1	9	17	76	188	243	177	97	15	823	
Diabetic Death Rate	-	-	-	-	-	23.8	3.4	-	161.3	7.3	
No. of Deaths	-	-	-	-	-	4	1	-	1	6	
No. at Risk	-	-	-	3	27	23	31	6	1	91	
Non Diabetic Death Rate	-	-	-	-	2.7	3.9	3.0	4.7	24.6	3.4	
No. of Deaths	-	-	-	-	4	8	4	4	3	23	
No. at Risk	1	9	17	73	161	220	146	91	14	732	
Living Donor Transplants											
All Patients Death Rate	-	-	-	-	-	-	2.8	11.4	-	0.6	
No. of Deaths	-	-	-	-	-	-	1	1	-	2	
No. at Risk	3	14	39	79	94	74	41	10	-	354	
Diabetic Death Rate	-	-	-	-	-	-	24.7	-	-	6.7	
No. of Deaths	-	-	-	-	-	-	1	-	-	1	
No. at Risk	-	-	-	-	2	10	5	-	-	17	
Non Diabetic Death Rate	-	-	-	-	-	-	-	11.4	-	0.3	
No. of Deaths	-	-	-	-	-	-	-	1	-	1	
No. at Risk	3	14	39	79	92	64	36	10	-	337	

Figure 3.11

Deaths from Malignancy 2002 By RRT Modality at Time of Death			
	Dx	Tx	Total
Australia			
Adenocarcinoma			
Breast	1 (#1)	-	1
Colon	5 (#1)	1	6
Kidney	9 (#5)(*2)	2	11
Lung	2	2	4
Oesophagus	1	-	1
Ovary	-	1	1
Pancreas	1	-	1
Prostate	4 (#1)	1	5
Rectum	2 (#1)	1	3
Stomach	2	-	2
Unknown site	1	-	1
Leukaemia	2 (#1)	1	3
Lymphoproliferative Disease			
Bone marrow	-	1	1
Lymph node	-	1	1
Lymphoma			
Hilar lymph node	1 (#1)	-	1
Intercranial	-	1	1
Liver	-	1	1
Lymph nodes	-	1	1
Retroperitoneal	1	1	2
Small bowel	-	1	1
Melanoma			
Arm	-	1	1
Back	-	1	1
Post auricular	-	1	1
Thigh	1	-	1
Shoulder	1 (*1)	-	1
Unknown site	-	1	1
Merkel Cell	-	5	5
Myeloma	12 (#11)	-	12
Squamous Cell Carcinoma			
Lung	2 (#1)	2	4
Oesophagus	1	1	2
Palate	-	1	1
Parotid	-	1	1
Skin	2	10	12
Transitional Cell Carcinoma			
Bladder	-	1	1
Kidney	4 (#4)	-	4
Other			
Hepatocellular - liver	1 (*1)	-	1
Mesothelioma - lung	2	-	2
Mucoepidermoid - buccal mucosa	1	-	1
Myeloepithelioma - breast	1 (#1)	-	1
Poorly differentiated - breast	1	-	1
Small Cell - lung	1	-	1
Unknown - pancreas	1	-	1
Unknown - primary unknown	-	3	3
Total Deaths from Malignancy	63	44	107
* (4 patients) had a previous transplants			
# (28 patients) diagnosed pre dialysis or within two months of commencing			
New Zealand			
Adenocarcinoma			
Bladder	-	1	1
Breast	1	-	1
Colon	-	1	1
Rectosigmoid	1 (#1)	-	1
Prostate	1	-	1
Melanoma			
Back	-	1	1
Foot	-	1	1
Myeloma	2 (#2)	-	2
Squamous Cell Carcinoma			
Oral	-	1	1
Skin	-	2	2
Other			
Hepatocellular - liver	1	-	1
Spindle cell carcinoma	-	1	1
Unknown - primary unknown	1	-	1
Total Deaths from Malignancy	7	8	15
No dialysis patients had a previous transplant			
# (3 patients) diagnosed pre dialysis or within two months of commencing			

DEATHS FROM MALIGNANCY

AUSTRALIA

During 2002 there were 107 deaths attributed to malignancies (63 among dialysis dependent and 44 among transplant dependent patients).

DIALYSIS DEPENDENT

Twenty eight of the 63 patients had cancer diagnosed before or within two months of their first dialysis. A further seven tumours were identified less than nine months after the first dialysis. There were sixteen patients who had been dialysed for more than five years. Four patients had a previous renal transplant.

There were thirteen tumours of the urinary tract, twelve cases with myeloma, seven tumours of the lung (two with mesothelioma), five of the colon and one each hepatocellular, mucoepidermoid, myeloepithelioma, small cell and poorly differentiated carcinoma.

Two deaths each were from melanoma and squamous cell carcinoma of the skin.

TRANSPLANT DEPENDENT

There were 44 deaths in 2002 (37 in 2001) in this group of patients.

Twenty five died from non-skin cancer: eight adenocarcinoma, five lymphoma, five squamous cell carcinoma, two lymphoproliferative disease, one leukaemia, one transitional cell carcinoma and three with an unknown primary.

Nineteen died from skin cancer: ten from squamous cell carcinoma, five from Merkel cell and four from melanoma.

The myeloma patients had a median survival from diagnosis of 13 months (range 3 - 143 months).

NEW ZEALAND

DIALYSIS DEPENDENT

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

TRANSPLANT DEPENDENT

There were eight deaths; two from adenocarcinoma, five skin (two melanoma, two squamous cell, one spindle cell carcinoma) and one oral squamous cell carcinoma.