

CHAPTER 6

PERITONEAL DIALYSIS

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Figure 6.1

Proportion (%) Peritoneal Dialysis of all Home Patients 1998 - 2002					
State	1998	1999	2000	2001	2002
Queensland	94%	86%	84%	84%	82%
New South Wales	59%	58%	58%	59%	59%
Aust.Capital Territory	73%	75%	75%	67%	75%
Victoria	67%	71%	72%	73%	73%
Tasmania	94%	88%	88%	80%	79%
South Australia	81%	79%	83%	83%	80%
Northern Territory	100%	100%	100%	96%	97%
Western Australia	87%	87%	90%	88%	87%
Australia	70%	70%	70%	70%	69%
New Zealand	76%	79%	78%	78%	77%

STOCK AND FLOW

AUSTRALIA

In 2002, continuous ambulatory peritoneal dialysis was used to treat 16% of all dialysis patients (19% in 2001), and automated peritoneal dialysis 8% (7% in 2001). Together, these accounted for 69% of all home dialysis. Of the 16,614 patients, 4% had had at least five years of continuous peritoneal dialysis (fig 6.5).

The prevalence of automated peritoneal dialysis increased 21%, from 501 patients in 2001 to 607 patients in 2002.

In relation to age, the proportion of all dialysis patients (65-74 years and 75-84 years) using peritoneal dialysis was 27% and 24% (29% and 28% respectively in 2001); range 19% (25-34 years) to 69% (0-14 years).

The annual stock and flow of patients during the period 1998-2002 is shown in Figures 6.2 and 6.3.

The proportion of all home dialysis patients on peritoneal dialysis in each State ranged from 59% (New South Wales), to 97% (Northern Territory) (fig 6.1).

There were 768 new peritoneal dialysis patients in the calendar year 2002, a decrease of 8% compared to the previous year; of whom 476 (62%) started dialysis with peritoneal dialysis and 292 (38%) previously had haemodialysis or a failed transplant (fig 6.2).

Figure 6.2

Stock and Flow of Peritoneal Dialysis Patients 1998 - 2002					
	1998	1999	2000	2001	2002
Australia					
Patients new to PD	720	750	785	832	768
First Dialysis Treatment	399	414	425	487	476
Previous Dialysis (HD)	307	326	340	334	276
Failed Transplant	14	10	20	11	16
Transplanted	122	92	122	110	141
Deaths	296	309	289	312	334
Never Transplanted	286	293	280	301	325
Previous Transplant	10	16	9	11	9
Permanent Transfers Out (>12 months)	323	319	350	361	359
Temporary Transfers (<12 months)	148	151	123	125	85
Patients Dialysing at 31 December	1619	1677	1736	1809	1770
Patients Dialysing at Home 31 December	1570	1622	1702	1767	1729
% of all Home Dialysis Patients	70%	70%	70%	70%	69%
New Zealand					
Patients new to PD	254	264	262	282	289
First Dialysis Treatment	158	177	142	180	160
Previous Dialysis (HD)	93	81	113	95	123
Failed Transplant	3	6	7	7	6
Transplanted	37	41	41	37	43
Deaths	105	98	139	135	123
Never Transplanted	100	93	138	132	115
Previous Transplant	5	5	1	3	8
Permanent Transfers Out (>12 months)	66	84	86	77	69
Temporary Transfers (<12 months)	40	55	65	34	29
Patients Dialysing at 31 December	634	671	680	715	767
Patients Dialysing at Home 31 December	627	665	676	706	761
% of all Home Dialysis Patients	76%	79%	78%	78%	77%

Figure 6.3

New patients over the age of 65 years decreased 4%, from 374 in 2001 to 358 in 2002, in contrast to an increase of 17% in the preceding year. There was a decrease in the 25-34 year age group of 45% (24 patients compared to 44 in 2001) and a 20% decrease in the 55-64 year age group (147 compared to 184 patients in 2001). There was a 6% increase in the 45-54 year age group (124 patients compared to 117 in 2001).

There were 334 deaths (312 in 2001), (18.7 deaths per 100 patient years; 12.7% of patients at risk) (fig 3.6). For more detail see Appendix II at Website (www.anzdata.org.au/ANZDATA/AnzdataReport/download.htm).

One hundred and forty one patients received a transplant in 2002 compared to 110 in 2001; 8% of all patients treated, 14% of patients <65 years treated during the year (fig 6.2). Seven patients > 65 years were transplanted.

Permanent transfer (>12 months) to haemodialysis was similar to last year, 359 (20%) and 361 (20%) in 2001. Most transfers to haemodialysis were permanent (359/444) (fig 6.2).

The primary renal disease of new patients to peritoneal dialysis remained similar to previous years (fig 6.8).

Stock and Flow of Peritoneal Dialysis Patients Australia 1998 - 2002

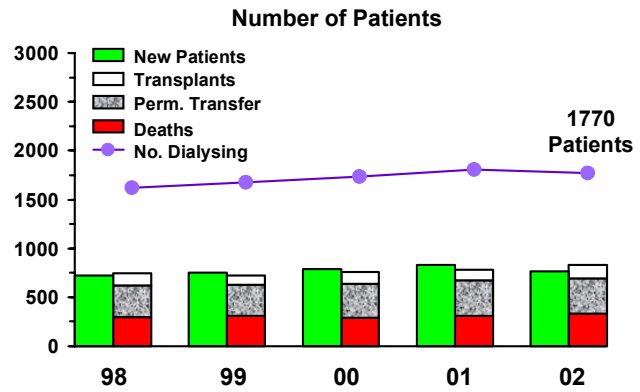


Figure 6.4

Stock and Flow of Peritoneal Dialysis Patients New Zealand 1998 - 2002

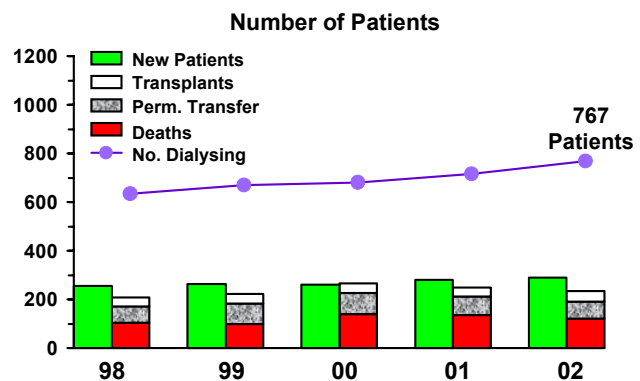


Figure 6.5

Continuous Period of Peritoneal Dialysis at 31 March 2003

	Months														
	0-6	7-12	13-18	19-24	25-30	31-36	37-42	43-48	49-60	61-72	73-84	85-96	97-108	>109	
Australia															
1st Treatment 13,489 Pts	3881	2644	1840	1365	1118	682	530	410	497	275	138	58	25	26	
All Treatments 16,614 Pts	5030	3287	2237	1670	1292	808	625	481	577	318	152	70	29	38	
New Zealand															
1st Treatment 3,757 Pts	764	596	524	452	350	285	235	130	201	97	45	44	16	18	
All Treatments 4,439 Pts	959	724	626	514	398	331	265	144	223	110	56	46	18	25	



Figure 6.6

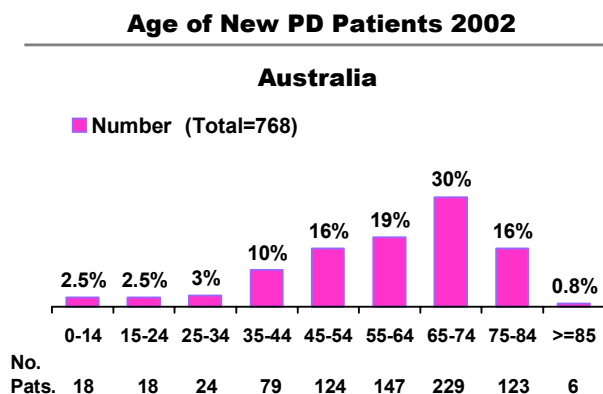


Figure 6.7

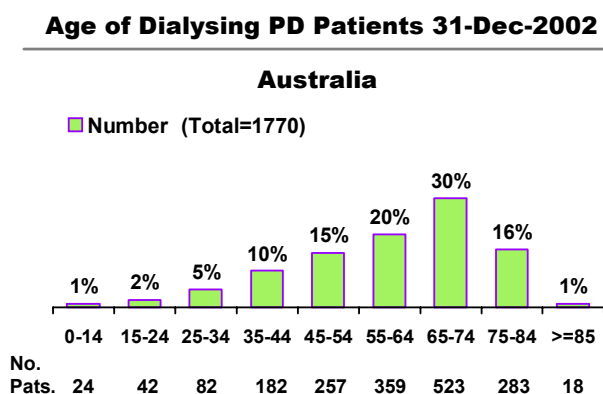


Figure 6.8

Stock and Flow of Peritoneal Dialysis 1998 - 2002

Age Groups	1998	1999	2000	2001	2002
New Patients *					
00-14 years	18 (2%)	16 (2%)	15 (2%)	13 (2%)	18 (2.5%)
15-24 years	19 (3%)	18 (2%)	26 (3%)	19 (2%)	18 (2.5%)
25-34 years	41 (6%)	39 (5%)	60 (8%)	44 (5%)	24 (3%)
35-44 years	69 (10%)	76 (10%)	67 (8%)	81 (10%)	79 (10%)
45-54 years	110 (15%)	122 (16%)	120 (15%)	117 (14%)	124 (16%)
55-64 years	151 (21%)	132 (18%)	178 (23%)	184 (22%)	147 (19%)
65-74 years	222 (31%)	243 (33%)	210 (27%)	233 (28%)	229 (30%)
75-84 years	88 (12%)	102 (13%)	103 (13%)	136 (17%)	123 (16%)
> 85 years	2 (<1%)	2 (<1%)	6 (1%)	5 (<1%)	6 (1%)
Total	720 (100%)	750 (100%)	785 (100%)	832 (100%)	768 (100%)
Patients Dialysing					
00-14 years	29 (2%)	23 (1%)	25 (1%)	22 (1%)	24 (1%)
15-24 years	39 (2%)	44 (2%)	51 (3%)	43 (2%)	42 (2%)
25-34 years	90 (6%)	96 (6%)	113 (7%)	105 (6%)	82 (5%)
35-44 years	168 (10%)	159 (10%)	151 (9%)	184 (10%)	182 (10%)
45-54 years	258 (16%)	281 (17%)	281 (16%)	256 (14%)	257 (15%)
55-64 years	334 (21%)	339 (20%)	356 (20%)	385 (21%)	359 (20%)
65-74 years	501 (31%)	499 (30%)	512 (30%)	521 (29%)	523 (30%)
75-84 years	195 (12%)	229 (14%)	235 (14%)	281 (16%)	283 (16%)
> 85 years	5 (<1%)	7 (<1%)	12 (<1%)	12 (<1%)	18 (1%)
Total	1619 (100%)	1677 (100%)	1736 (100%)	1809 (100%)	1770 (100%)
Primary Renal Disease *					
Glomerulonephritis	222 (31%)	220 (29%)	218 (28%)	215 (26%)	224 (29%)
Analgesic Nephropathy	52 (7%)	60 (8%)	54 (7%)	50 (6%)	34 (5%)
Hypertension	87 (12%)	72 (10%)	104 (13%)	123 (15%)	119 (15%)
Polycystic Disease	41 (5%)	34 (5%)	42 (5%)	27 (3%)	42 (5%)
Reflux Nephropathy	31 (4%)	25 (3%)	40 (5%)	24 (3%)	25 (3%)
Diabetic Nephropathy	177 (25%)	218 (29%)	205 (26%)	242 (29%)	201 (26%)
Miscellaneous	62 (9%)	70 (9%)	69 (9%)	89 (11%)	73 (10%)
Uncertain	48 (7%)	51 (7%)	53 (7%)	62 (7%)	50 (7%)
Total	720 (100%)	750 (100%)	785 (100%)	832 (100%)	768 (100%)

* New patients receiving first peritoneal dialysis treatment

Figure 6.9

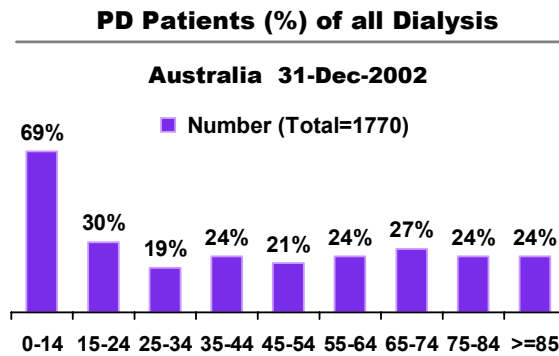


Figure 6.10

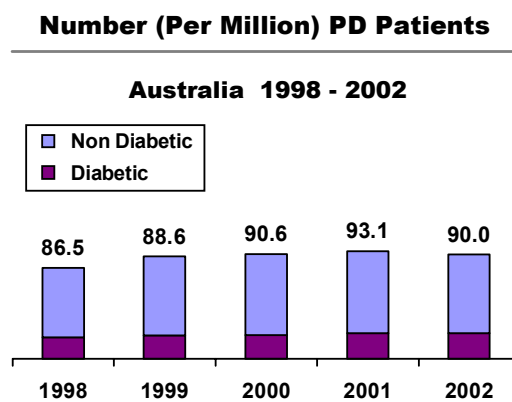


Figure 6.11

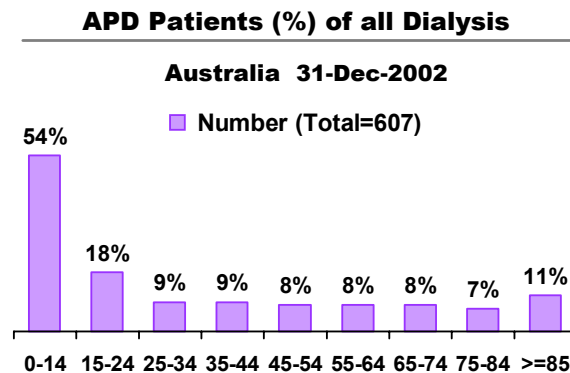


Figure 6.12

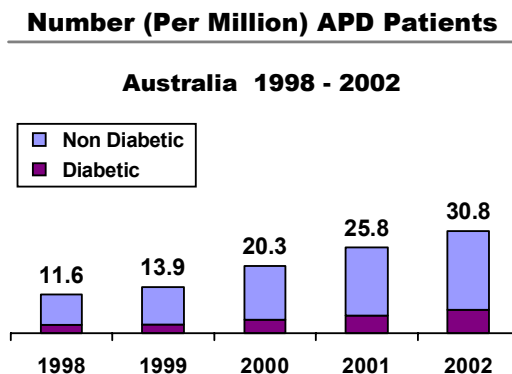




Figure 6.13

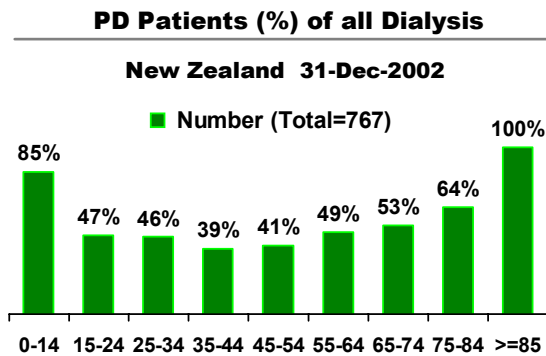


Figure 6.14

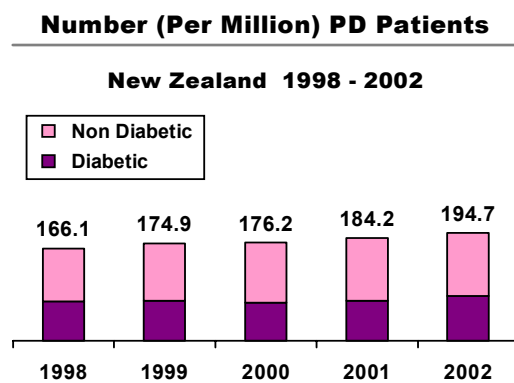


Figure 6.15

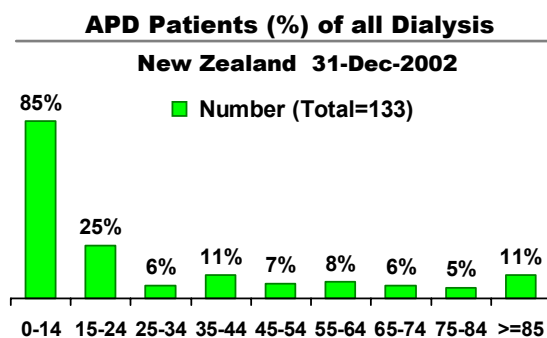
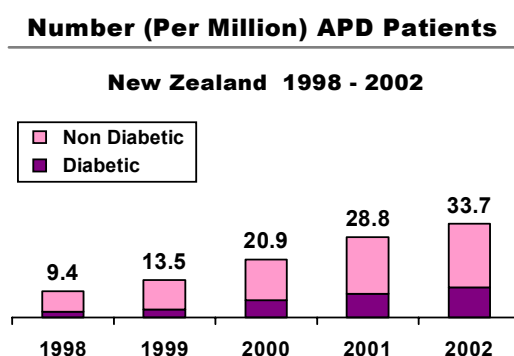


Figure 6.16



NEW ZEALAND

The annual stock and flow of patients during the period 1998 to 2002 is shown in Figures 6.2 and 6.4. Of the 4,439 treated since 1978, 767 (17%) were alive at 31 December 2002, 255 (6%) had more than five years continuous treatment (fig 6.5).

Peritoneal dialysis accounted for 48% of all dialysis patients, and 77% of all patients dialysing at home. Automated peritoneal dialysis accounted for 17% of all peritoneal dialysis patients in 2002, compared with 16% in 2001, and 12% in 2000.

The age distribution of prevalent peritoneal dialysis patients is shown in Figures 6.18 and 6.19.

There were 289 new peritoneal dialysis patients in the calendar year 2002 (282 in 2001). For 55%, peritoneal dialysis was the initial dialysis treatment (fig 6.17 and 6.19). For more detail see Appendix III at Website (www.anzdata.org.au/ANZDATA/AnzdataReport/download.htm).

There were 123 deaths amongst prevalent peritoneal dialysis patients in 2002 (135 in 2001) 16.6 deaths per 100 patient years, (12.0% of patients at risk; 14% 25-44 years, 21% 45-64 years, 34% 65-84 years) (fig 3.6). For more detail see Appendix III at Website (www.anzdata.org.au/ANZDATA/AnzdataReport/download.htm).

Forty three patients were transplanted in 2002 (37 in 2001), 6% of patients dialysed, 8% of patients <65 years treated during the year (fig 6.2). Three patients > 65 years were transplanted.

The most common primary renal disease of new patients to peritoneal dialysis was diabetic nephropathy (47%) followed by glomerulonephritis (24%).

The proportion of patients in each group treated with peritoneal dialysis ranged from 39% (35-44 years), 41% (45-54 years) to 85% (0-14 years) and 100% (85-94 years) (fig 6.13).

Figure 6.17

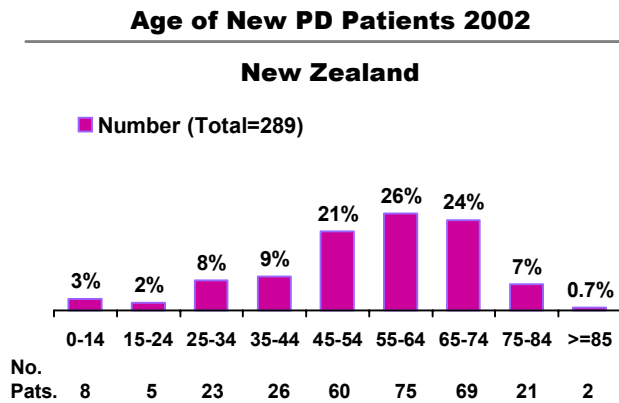


Figure 6.18

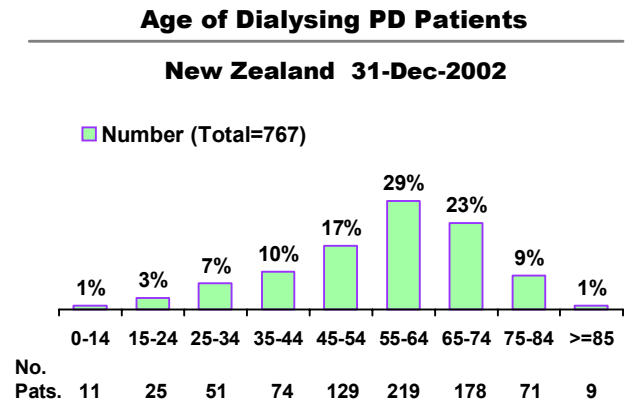


Figure 6.19

New Zealand

Stock and Flow of Peritoneal Dialysis 1998 - 2002

Age Groups	1998	1999	2000	2001	2002
New Patients *					
00-14 years	5 (2%)	5 (2%)	6 (2%)	6 (2%)	8 (3%)
15-24 years	9 (4%)	5 (2%)	4 (1%)	12 (4%)	5 (2%)
25-34 years	19 (8%)	11 (4%)	13 (5%)	16 (5%)	23 (8%)
35-44 years	21 (8%)	22 (8%)	24 (9%)	30 (10%)	26 (9%)
45-54 years	44 (17%)	56 (21%)	49 (19%)	49 (17%)	60 (21%)
55-64 years	82 (32%)	78 (30%)	80 (31%)	72 (26%)	75 (26%)
65-74 years	60 (24%)	61 (23%)	56 (22%)	71 (26%)	69 (24%)
75-84 years	13 (5%)	24 (9%)	29 (11%)	24 (9%)	21 (7%)
> 85 years	1 (<1%)	2 (1%)	1 (<1%)	2 (1%)	2 (<1%)
Total	254 (100%)	264 (100%)	262 (100%)	282 (100%)	289 (100%)
Patients Dialysing					
00-14 years	9 (2%)	8 (1%)	6 (1%)	10 (2%)	11 (1%)
15-24 years	23 (4%)	18 (3%)	18 (2%)	25 (3%)	25 (3%)
25-34 years	41 (6%)	39 (6%)	38 (6%)	42 (6%)	51 (7%)
35-44 years	71 (11%)	70 (10%)	66 (10%)	66 (9%)	74 (10%)
45-54 years	129 (20%)	136 (20%)	135 (20%)	131 (18%)	129 (17%)
55-64 years	179 (28%)	188 (28%)	202 (30%)	199 (28%)	219 (29%)
65-74 years	145 (23%)	164 (24%)	155 (23%)	170 (24%)	178 (23%)
75-84 years	34 (5%)	44 (7%)	56 (8%)	65 (9%)	71 (9%)
> 85 years	3 (<1%)	4 (1%)	4 (<1%)	7 (1%)	9 (1%)
Total	634 (100%)	671 (100%)	680 (100%)	715 (100%)	767 (100%)
Primary Renal Disease *					
Glomerulonephritis	45 (18%)	52 (20%)	60 (23%)	75 (27%)	70 (24%)
Analgesic Nephropathy	1 (<1%)	1 (<1%)	0 (0%)	0 (0%)	2 (1%)
Hypertension	37 (15%)	33 (13%)	39 (15%)	39 (14%)	19 (7%)
Polycystic Disease	10 (4%)	15 (6%)	5 (2%)	14 (5%)	10 (3%)
Reflux Nephropathy	9 (3%)	8 (3%)	12 (4.5%)	9 (3%)	10 (3%)
Diabetic Nephropathy	124 (49%)	114 (43%)	104 (40%)	112 (40%)	137 (47%)
Miscellaneous	15 (6%)	21 (8%)	29 (11%)	21 (7%)	25 (9%)
Uncertain	13 (5%)	20 (7%)	13 (4.5%)	12 (4%)	16 (6%)
Total	254 (100%)	264 (100%)	262 (100%)	282 (100%)	289 (100%)

* New patients receiving first peritoneal dialysis treatment

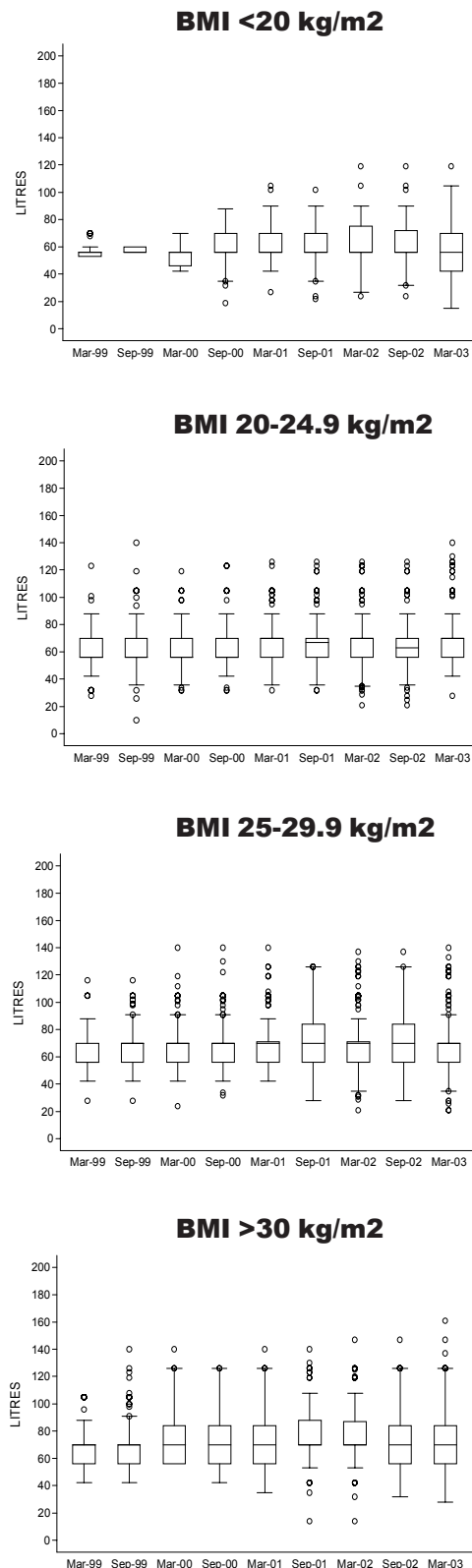
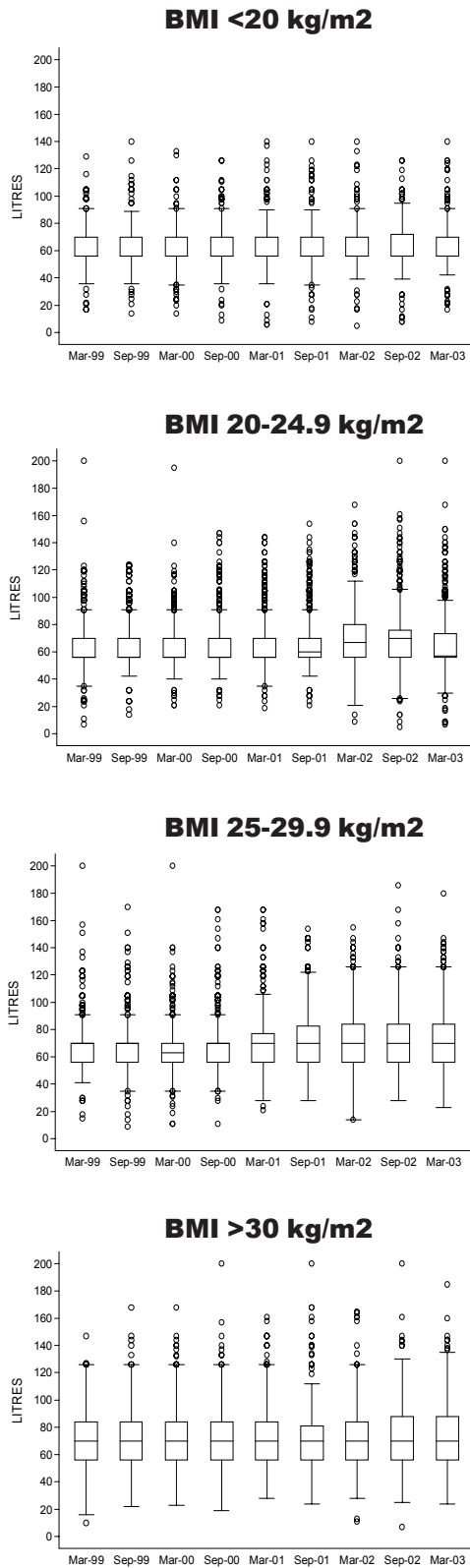


RELATIONSHIP OF BMI TO WEEKLY DIALYSATE VOLUME

The box is split at the median, with the length of the box known as the inter-quartile range (the distance between 25th and 75th percentile). Fifty percent of the data lies in the box. The median weekly dialysate volume for patients on peritoneal dialysis has remained reasonably constant throughout the surveys for most BMI groups. A large number of outliers are occurrent in the Australian population with a lower BMI which could be as a result of a number of other determinants.

Figure 6.20 Australia 1998-2003

New Zealand 1998-2003



PERITONITIS

Australian median peritonitis free survival has increased to 18.4 months overall, with 30% of patients completely free of peritonitis at three years. In New Zealand the survival time was 14.5 months (23% of patients) (fig 6.21). As noted in previous reports there is a strong association between ethnicity and peritonitis free survival (fig 6.23). In this Report, for the first time, we report on peritonitis free survival in patients on home automated peritoneal dialysis (fig 6.24). The median survival peritonitis for Australian home automated peritoneal dialysis patients was 21.3 months, and was 15.7 months for New Zealand home automated peritoneal dialysis patients.

Figure 6.21

First PD Treatment to First Episode of Peritonitis Related to Age at Entry 1998 to 31-Dec-2002							
Survival	Age Groups						All
	00-14	15-34	35-54	55-64	65-74	> 75	
Australia	n=81	n=315	n=972	n=791	n=1140	n=574	n=3873
3 months	71 + 5.1 (51)	90 + 1.7 (264)	86 + 1.1 (775)	87 + 1.2 (634)	84 + 1.1 (861)	85 + 1.6 (427)	85 + 0.6 (3012)
6 months	57 + 5.8 (35)	80 + 2.4 (201)	75 + 1.5 (574)	75 + 1.6 (492)	74 + 1.4 (667)	74 + 1.9 (336)	75 + 0.7 (2305)
9 months	48 + 6.1 (23)	70 + 2.8 (149)	68 + 1.6 (469)	67 + 1.8 (383)	66 + 1.5 (517)	68 + 2.1 (261)	67 + 0.8 (1802)
1 year	37 + 6.8 (18)	63 + 3.1 (116)	61 + 1.8 (371)	60 + 1.9 (305)	58 + 1.7 (396)	60 + 2.3 (199)	60 + 0.9 (1405)
2 years	37 + 6.8 (7)	41 + 3.7 (41)	44 + 2.0 (144)	41 + 2.2 (118)	40 + 1.9 (158)	39 + 2.8 (57)	41 + 1.0 (525)
3 years	-	30 + 4.2 (15)	31 + 2.4 (44)	30 + 2.5 (41)	28 + 2.0 (57)	32 + 3.3 (17)	30 + 1.2 (178)
N. Zealand	n=29	n=118	n=376	n=390	n=316	n=119	n=1348
3 months	69 + 8.6 (20)	89 + 2.9 (102)	86 + 7.2 (314)	85 + 1.9 (314)	87 + 1.9 (252)	87 + 3.1 (95)	86 + 0.9 (1097)
6 months	47 + 9.5 (11)	78 + 3.9 (75)	71 + 7.5 (237)	70 + 2.4 (238)	73 + 2.6 (190)	75 + 4.1 (71)	72 + 1.3 (822)
9 months	42 + 9.6 (9)	70 + 4.5 (63)	62 + 6.7 (179)	58 + 2.6 (182)	64 + 2.9 (154)	68 + 4.6 (59)	62 + 1.4 (646)
1 year	42 + 9.6 (7)	60 + 5.0 (45)	54 + 6.1 (146)	51 + 2.7 (142)	56 + 3.1 (113)	57 + 5.1 (44)	54 + 1.5 (497)
2 years	-	35 + 7.0 (10)	35 + 2.6 (44)	36 + 2.9 (50)	37 + 3.4 (46)	28 + 5.4 (10)	34 + 1.6 (161)
3 years	-	25 + 7.0 (3)	24 + 3.1 (8)	21 + 3.1 (15)	24 + 3.6 (17)	22 + 5.8 (5)	23 + 1.8 (48)

% Survival ± S.E. and Numbers at risk

Figure 6.22

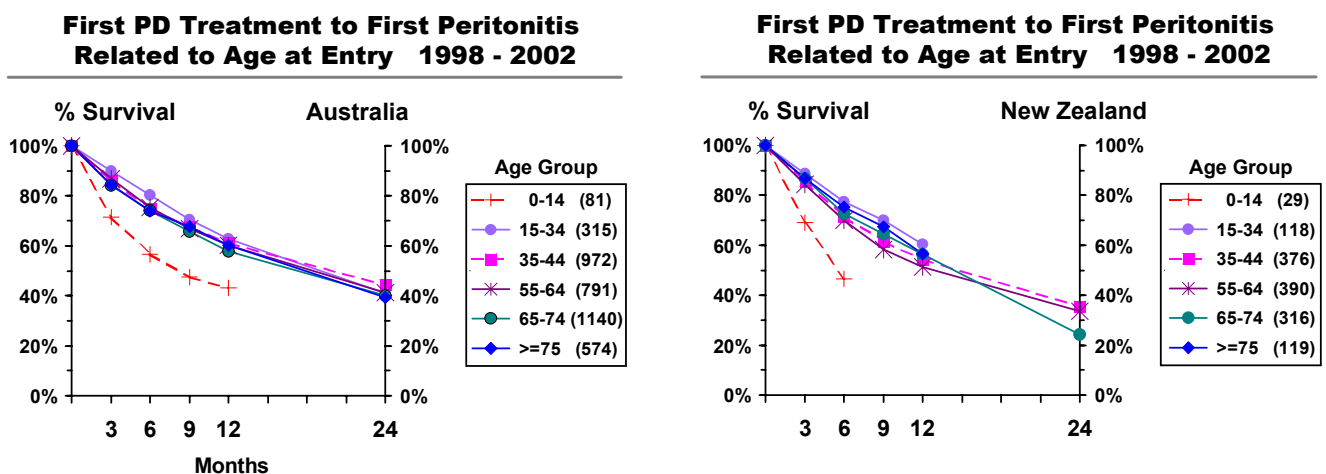




Figure 6.23

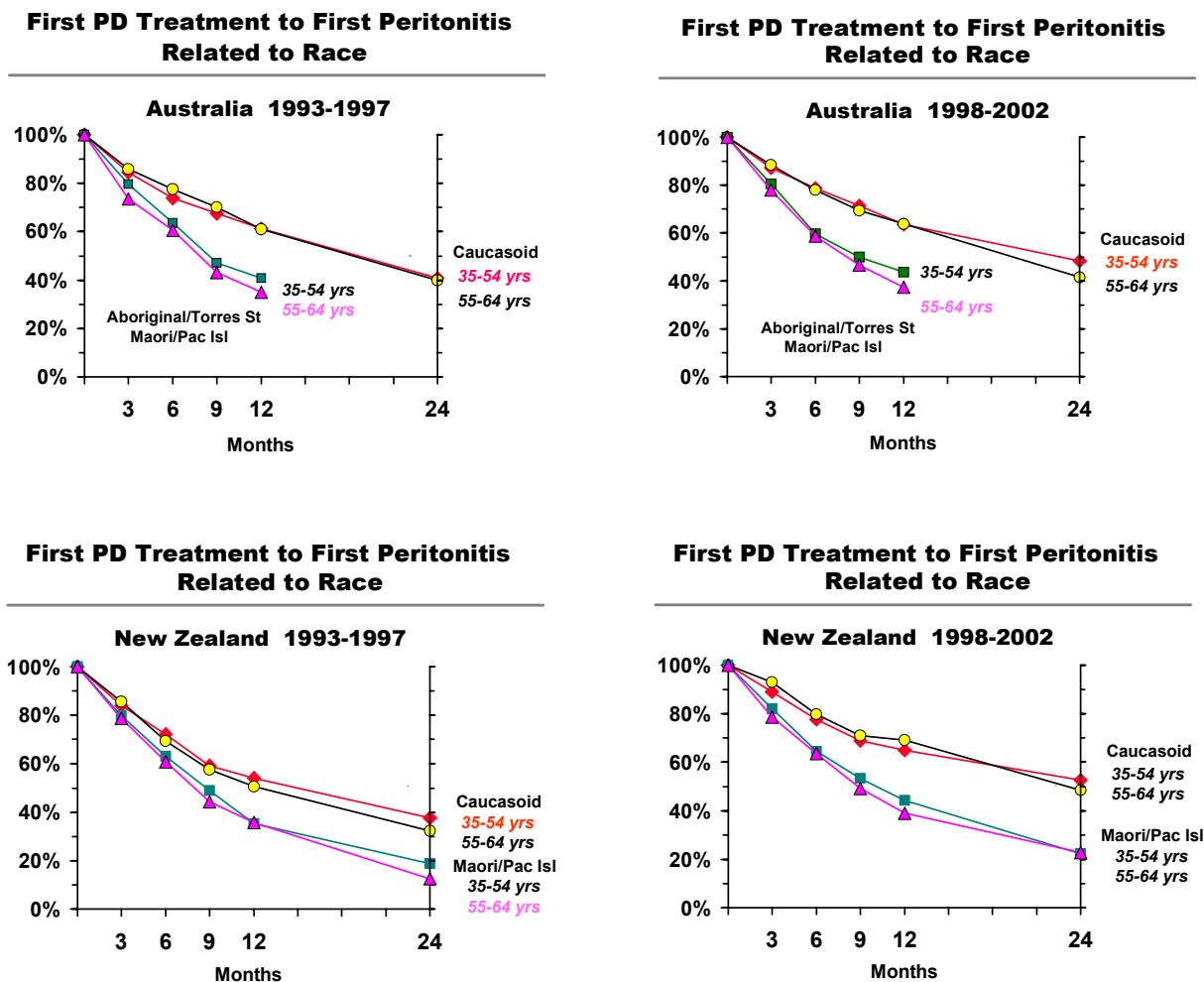


Figure 6.24

First Home APD Treatment to First Episode of Peritonitis Related to Age at Entry 1998 to 31-Dec-2002

Survival	Age Groups						All
	00-14	15-34	35-54	55-64	65-74	> 75	
Australia	n=54	n=137	n=282	n=194	n=254	n=125	n=1046
1 month	83 ± 5.1 44	96 ± 1.6 128	95 ± 1.3 264	97 ± 1.3 182	95 ± 1.3 237	98 ± 1.4 117	95 ± 0.7 972
3 months	73 ± 6.1 36	86 ± 3.1 109	86 ± 2.1 226	89 ± 2.3 158	87 ± 2.2 202	91 ± 2.6 101	87 ± 1.1 832
6 months	60 ± 7.0 24	73 ± 4.0 78	75 ± 2.7 165	80 ± 3.0 115	78 ± 2.7 156	88 ± 3.1 86	77 ± 1.4 624
9 months	57 ± 7.2 21	65 ± 4.5 56	67 ± 3.1 122	72 ± 3.6 91	72 ± 3.1 115	81 ± 4.0 59	70 ± 1.6 464
1 year	51 ± 7.6 15	60 ± 4.8 43	61 ± 3.3 88	64 ± 4.1 62	67 ± 3.4 85	76 ± 4.5 48	64 ± 1.7 341
2 years	39 ± 8.6 6	40 ± 5.6 19	44 ± 4.1 33	46 ± 5.2 14	51 ± 4.4 28	52 ± 6.8 10	46 ± 2.2 110
N. Zealand	n=27	n=26	n=54	n=33	n=23	n=14	n=177
1 month	89 ± 6.0 24	85 ± 7.1 22	94 ± 3.1 51	88 ± 5.8 27	96 ± 4.2 22	93 ± 7.1 12	91 ± 2.2 158
3 months	74 ± 8.5 19	80 ± 7.8 18	85 ± 4.9 45	88 ± 5.8 26	82 ± 8.2 17	76 ± 11.9 9	82 ± 2.9 134
6 months	49 ± 10.0 11	71 ± 9.4 13	79 ± 5.6 36	80 ± 7.2 22	77 ± 9.1 14	76 ± 11.9 7	73 ± 3.5 103
9 months	44 ± 10.1 8	65 ± 10.3 10	67 ± 6.8 27	72 ± 8.4 16	65 ± 11.1 9	56 ± 15.6 5	63 ± 3.9 75
1 year	38 ± 10.5 5	51 ± 11.8 7	67 ± 6.8 18	67 ± 9.4 10	56 ± 12.3 6	30 ± 15.4 2	56 ± 4.3 48

% Survival ± S.E. and Numbers at risk

TECHNIQUE FAILURE (CENSORED FOR DEATH OR TRANSPLANTATION)

Figure 6.25

Causes of Technique Failure April 1997 to March 2000 Excluding Death, Transplantation, Recovery of Renal Function				
Causes of Technique Failure	Australia		New Zealand	
	Primary	Secondary	Primary	Secondary
Recurrent/persistent peritonitis	322	8	110	2
Acute peritonitis	283	5	85	4
Tunnel/exit site infection	110	2	15	-
Total Infective Complications	715 (39%)	15 (18%)	210 (45%)	6 (46%)
Inadequate solute clearance	191	10	47	1
Inadequate fluid ultrafiltration	150	8	31	1
Total Dialysis Failure	341 (19%)	18 (21%)	78 (17%)	2 (15%)
Dialysate leak	128	19	32	4
Catheter block	18	-	7	-
Catheter fell out	6	-	-	-
Hernia	67	4	8	-
Abdominal pain	9	1	3	-
Abdominal surgery	55	4	13	-
Multiple adhesions	2	-	6	-
Hydrothorax	-	-	1	-
Haemoperitoneum	1	1	-	-
Scrotal oedema	1	-	-	-
Total Technical Failure	287 (16%)	29 (34%)	70 (15%)	4 (31%)
Unable to manage self care	159	7	22	-
Patient preference	316	16	83	1
Total Social Reasons	475 (26%)	23 (27%)	105 (23%)	1 (8%)

Interestingly, in Australia, patient preference as a cause for transfer has risen dramatically from 316 (17%) in the era 1997 to 2000, to 645 (28%) in the era 2000-2003. In New Zealand the results were similar over the same period; 83 (18%) and 123 (20%) being recorded in the two epochs.

Ethnicity is also associated with the cause of technique failure. Infective reasons are attributed as the cause of technique failure for 52% of Aboriginal patients, compared to 29% of Caucasians and 30% of Asians. Similarly in New Zealand, infective reasons are attributed as the cause of technique failure for 41% of Maori and 46% of Pacific Islanders, compared to 31% of Caucasians and 31% of Asians.

In contrast social reasons account for only 20% of failures in Australian Aborigines and in New Zealand 19% of Maori's and 22% of Pacific Islanders.

These failure rates related to infection correlate with the tendency towards early peritonitis in the indigenous populations (fig 6.27).

Figure 6.26

Causes of Technique Failure April 2000 to March 2003 Excluding Death, Transplantation, Recovery of Renal Function				
Causes of Technique Failure	Australia		New Zealand	
	Primary	Secondary	Primary	Secondary
Recurrent/persistent peritonitis	219	8	69	4
Acute peritonitis	292	8	102	1
Tunnel/exit site infection	55	2	10	1
Total Infective Complications	566 (25%)	18 (16%)	181 (30%)	6 (26%)
Inadequate solute clearance	347	13	137	7
Inadequate fluid ultrafiltration	161	11	55	2
Total Dialysis Failure	508 (23%)	24 (21%)	192 (32%)	9 (39%)
Dialysate leak	155	18	47	4
Catheter block	38	2	5	-
Catheter fell out	11	-	2	-
Hernia	61	4	5	-
Abdominal pain	9	3	4	-
Abdominal surgery	45	2	14	1
Multiple adhesions	-	-	1	-
Hydrothorax	4	-	-	-
Haemoperitoneum	1	-	-	-
Total Technical Failure	324 (14%)	29 (25%)	78 (13%)	5 (22%)
Unable to manage self care	194	7	30	1
Patient preference	645	36	123	2
Total Social Reasons	839 (38%)	43 (38%)	153 (25%)	3 (13%)

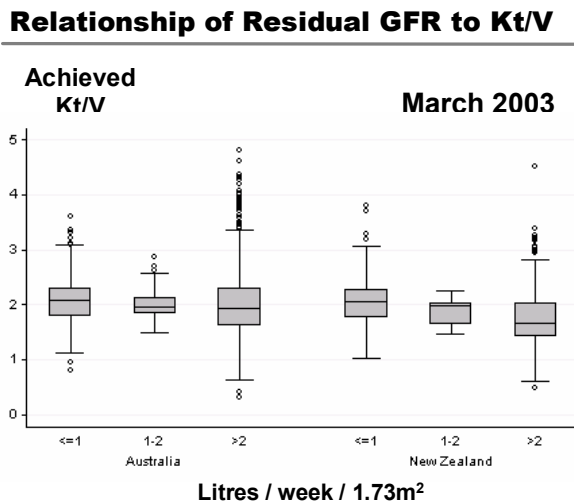


Figure 6.27

Causes of Technique Failure April 1997 to March 2003											
Causes of Technique Failure	Diab.	Non Diab.	Race						Age Group		Total
			Asian	Abor./ Torres St.Isl.	Cauc.	Maori	Pac.Is.	Other	19-54	>55	
Australia											
Infective	327 35%	954 31%	104 30%	199 52%	949 29%	3 30%	18 35%	8 30%	464 32%	791 31%	1281 32%
Reduced Solute Clearance	100 11%	438 14%	47 14%	22 6%	456 14%	- -	8 15%	5 19%	225 15%	303 12%	538 13%
Inadequate Ultrafiltration	78 8%	233 7%	22 6%	25 6%	259 8%	1 10%	3 6%	1 4%	102 7%	202 8%	311 8%
Technical	107 11%	504 16%	39 11%	62 16%	500 15%	2 20%	4 8%	4 15%	211 15%	396 16%	611 15%
Social	330 35%	984 32%	136 39%	78 20%	1068 33%	4 40%	19 37%	9 33%	452 31%	836 33%	1314 32%
Total	942	3113	348	386	3232	10	52	27	1454	2528	4055
New Zealand											
Infective	155 37%	236 37%	25 31%	- -	140 31%	159 41%	66 46%	1 50%	139 33%	247 41%	391 37%
Reduced Solute Clearance	79 19%	105 16%	16 20%	- -	63 14%	82 21%	23 16%	- -	85 20%	98 16%	184 17%
Inadequate Ultrafiltration	39 9%	47 7%	5 6%	- -	48 11%	28 7%	5 3%	- -	32 8%	52 9%	86 8%
Technical	56 13%	92 14%	14 17%	- -	69 15%	46 12%	19 13%	- -	57 13%	88 15%	148 14%
Social	93 22%	165 26%	21 26%	- -	133 29%	72 19%	31 22%	1 50%	111 26%	118 20%	258 24%
Total	422	645	81	-	453	387	144	2	424	603	1067

ACHIEVED SOLUTE CLEARANCE

Figure 6.28



The median (interquartile range) total weekly Kt/V was 1.94 (1.60 to 2.25) for Australian patients and 1.92 (1.65 to 2.24) for New Zealand patients. The corresponding values for total weekly creatinine clearances were 53.05 (44.17 to 66.67) and 47.44 (41.00 to 56.68) L/week/1.73 m², respectively. Total small solute clearances were not appreciably influenced by residual renal GFR (fig 6.28-6.30). However, higher prescribed dialysate volumes were more likely to be associated with a total weekly Kt/V in excess of 1.8 (fig 6.31 and 6.32).

Figure 6.29

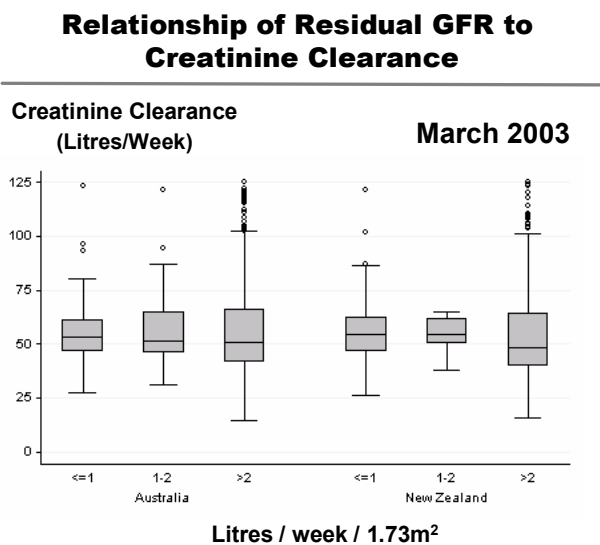


Figure 6.30

Relationship of Residual GFR to KT/V			
March 2003			
	Residual GFR	KT/V (Total)	
		95% C.I	
Aust	< 1 ml / min (n=338)	2.07	(1.21 - 2.93)
	> 1 ml / min (n=939)	2.03	(0.78 - 3.28)
NZ	< 1 ml / min (n=186)	2.05	(1.17 - 2.93)
	> 1 ml / min (n=410)	1.77	(0.46 - 3.08)

Figure 6.31

KT/V Related to Volume of Dialysate		
Australia March 2003		
Prescribed Dialysate Volume	Achieved KT/V (Total)	
	< 1.8	> 1.8
< 56 L / week	213 (40%)	317 (60%)
> 70 L / week	240 (33%)	494 (67%)
	453	811

Figure 6.32

KT/V Related to Volume of Dialysate		
New Zealand March 2003		
Prescribed Dialysate Volume	Achieved KT/V (Total)	
	< 1.8	> 1.8
< 56 L / week	148 (63%)	87 (37%)
> 70 L / week	160 (40%)	235 (60%)
	308	322



PERITONEAL TRANSPORT STATUS

The Registry commenced collection of this data in April 1999 in patients new to peritoneal dialysis, with the aim of using these measurements as another predictor of outcome.

Only 1,161 patients in Australia and 446 patients in New Zealand had data supplied: 68% of all new patients in Australia and 71% of all new patients in New Zealand.

The mean D/P creatinine ratios tend to be higher than expected from the proposed international means of Twardowski (Reference: Perit Dial Bull 1987;7:138-147).

However, the proportion of Australian and New Zealand patients with high peritoneal transport status was 10%, similar to what has been reported in other patient populations. Diabetic status did not appreciably influence mean D/P creatinine ratios.

Australian and New Zealand patients with low-average peritoneal transport status enjoyed survival rates that were superior to those with low, high-average or high peritoneal membrane permeabilities ($p < 0.01$, fig 6.35). High transporters experienced the worst survival rates of any transport category.

Figure 6.33

**PET D/P Creatinine at Four Hours
New PD Patients from 1-Apr-99 to 31-Mar-03**

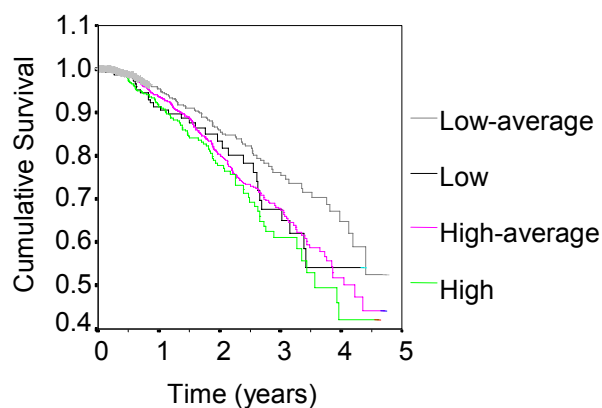
	Australia		New Zealand	
	Diabetic	Non Diabetic	Diabetic	Non Diabetic
Mean + 1 SD	0.83	0.82	0.84	0.84
Mean	0.70	0.69	0.71	0.71
Mean - 1 SD	0.57	0.56	0.58	0.58

Figure 6.34

**Peritoneal Transport Status
New PD Patients 1-Apr-1999 to 31-Mar-2003**

	Australia		New Zealand	
	Diabetic	Non Diabetic	Diabetic	Non Diabetic
High (≥ 0.81)	32 (10%)	77 (9%)	18 (10%)	26 (10%)
High Average (0.65-0.80)	164 (51%)	469 (56%)	115 (62%)	165 (63%)
Low Average (0.50-0.64)	120 (37%)	271 (32%)	44 (24%)	59 (22%)
Low (< 0.50)	6 (2%)	22 (3%)	7 (4%)	12 (3%)

Figure 6.35



TRANSPLANTATION IN PERITONEAL DIALYSIS PATIENTS

In Australia in patients receiving first cadaveric grafts, those who are on haemodialysis had a higher frequency of delayed graft function (22%) than those on peritoneal dialysis (12%). (Figure 6.37)

However, this did not have an effect on overall graft survival. (Figure 6.38)

Figure 6.36

**Delayed Graft Function 1993 - 2002
According to Type of Dialysis**

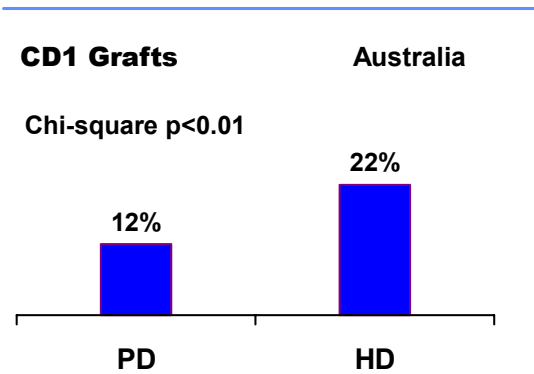


Figure 6.37

**Primary Cadaver Graft Survival 1993 - 2002
According to Type of Dialysis**

