CHAPTER 6

PERITONEAL DIALYSIS

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STOCK AND FLOW

AUSTRALIA

In 2006, continuous ambulatory peritoneal dialysis was used to treat 11% of all dialysis patients (12% in 2005), and automated peritoneal dialysis 11% (9% in 2005). Together, these accounted for 69% of all home dialysis, a figure which has remained stable for the past number of years (Figure 6.1). Of the 20,340 patients who have ever received peritoneal dialysis, 4% had experienced at least five years of continuous peritoneal dialysis (Figure 6.2).

The proportion of all home dialysis patients on peritoneal dialysis in each State ranged from 62% (New South Wales), to 92% (South Australia) (Figure 6.1).

The prevalence of automated peritoneal dialysis increased 19% in 2006 (969 patients) from a 6% increase in 2005 (814 patients), 4% in 2004 (766 patients) and 19% in 2003 (737) patients.

The proportion of all dialysis patients receiving PD varied with age (Figure 6.9).

Figure 6.1

Proportion (%) Peritoneal Dialysis of all Home Patients 2002 - 2006

State	2002	2003	2004	2005	2006
Queensland	82%	80%	76%	75%	73%
New South Wales	58%	60%	59%	60%	62%
ACT	74%	71%	75%	73%	65%
Victoria	73%	72%	70%	70%	69%
Tasmania	79%	87%	79%	74%	80%
South Australia	80%	90%	88%	88%	92%
Northern Territory	97%	97%	88%	86%	63%
Western Australia	87%	87%	86%	90%	90%
Australia	**69%**	**70%**	**69%**	**69%**	**69%**
New Zealand	**77%**	**76%**	**74%**	**71%**	**70%**

The annual stock and flow of patients during the period 2002-2006 is shown in Figures 6.3 and 6.4.

There were 976 new peritoneal dialysis patients in the calendar year 2006, an increase of 18% from last year following an increase of 11% in 2005 and a decrease of 8% in 2004. There were 559 (57%) who started RRT with peritoneal dialysis, (24% of all new dialysis patients in 2006) and 402 (41%) who previously had haemodialysis or a failed transplant (Figure 6.3).

New patients over the age of 65 years increased 12%, from 367 to 411 in 2006, following an increase of 17% in 2005, following a 12% decrease in 2004.

There were increases in the age groups 0-14 years (60%), 45-54 years (43%), 25-34 years (33%), 55-64 years (16%), 75-84 years (14%), 65-74 years (13%), 35-44 years (6%) with decreases in only two groups, 15-24 years (5%) and >=85 years (31%).

There were 288 deaths (275 in 2005), at a rate of 14.9 deaths per 100 person-years (Figure 3.5). For more detail see Appendix II at Website (www.anzdata.org.au/ANZDATA/AnzdataReport/download.htm).

One hundred and thirty six patients received a transplant in 2006 compared to 124 in 2005; 6% of all patients treated, 12% of patients <65 years treated during the year (Figure 6.3). Nine patients >=65 years were transplanted.

Permanent transfer (>12 months) to haemodialysis was 429 (21%) and 396 (21%) in 2005. Most transfers to haemodialysis were permanent (429/529) (Figure 6.3).

The primary renal disease of new patients to peritoneal dialysis saw a 15% increase in 2006, following a 16% increase in 2005 of those diagnosed with diabetic nephropathy; this group comprised 32% of all new peritoneal dialysis patients, similar to 2005 (31% in 2004).

There was a 26% increase in glomerulonephritis from 2005 (201 to 254 patients), following decreases in 2005 and 2004 (Figure 6.8).

Figure 6.2

Continuous Period of Peritoneal Dialysis 2006

		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	16,657 pts	4624	3222	2243	1694	1318	880	702	522	681	382	189	110	42	48
All Treatments	20,340 pts	5979	3953	2716	2044	1538	1034	810	607	774	441	210	124	48	62
New Zealand															
1st Treatment	4,771 pts	930	749	605	551	442	373	306	191	298	146	73	53	24	30
All Treatments	5,634 pts	1169	906	726	640	511	425	345	211	329	165	85	57	27	38

Figure 6.3

Stock and Flow of Peritoneal Dialysis Patients 2002 - 2006

State	2002	2003	2004	2005	2006
Australia					
Patients new to PD	780	809	743	828	976
First Dialysis Treatment	495	492	440	477	559
Previous Dialysis (HD)	273	292	288	342	402
Failed Transplant	15	23	15	9	15
Transplanted	141	112	151	124	136
Deaths	334	289	288	275	288
Never Transplanted	325	278	274	269	280
Previous Transplant	9	11	14	6	8
Permanent Transfers Out (>12 months)	355	355	364	396	429
Temporary Transfers (<12 months)	89	87	131	120	100
Patients Dialysing (PD) at 31 December	1788	1844	1793	1853	2021
Patients Dialysing (PD) at Home 31 December	1747	1813	1772	1828	1997
% of all Home Dialysis Patients	69%	70%	69%	69%	69%
New Zealand					
Patients new to PD	292	260	277	252	296
First Dialysis Treatment	162	153	173	148	160
Previous Dialysis (HD)	124	102	99	101	126
Failed Transplant	6	5	5	3	10
Transplanted	43	37	39	35	23
Deaths	123	131	153	148	152
Never Transplanted	115	125	147	143	149
Previous Transplant	8	6	6	5	3
Permanent Transfers Out (>12 months)	68	99	114	99	96
Temporary Transfers (<12 months)	32	33	37	29	34
Patients Dialysing (PD) at 31 December	770	768	745	719	764
Patients Dialysing (PD) at Home 31 December	764	765	742	714	755
% of all Home Dialysis Patients	77%	76%	74%	71%	70%

Figure 6.4

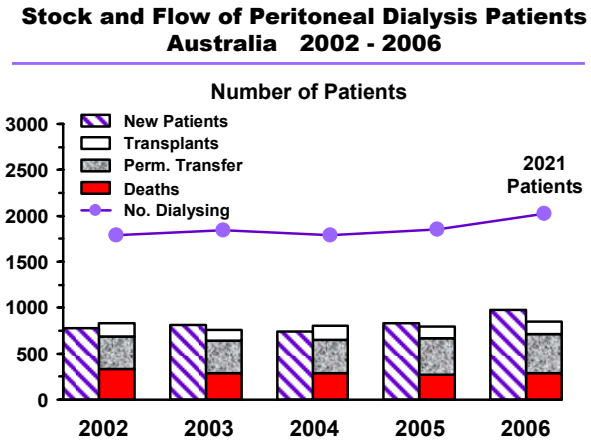


Figure 6.5

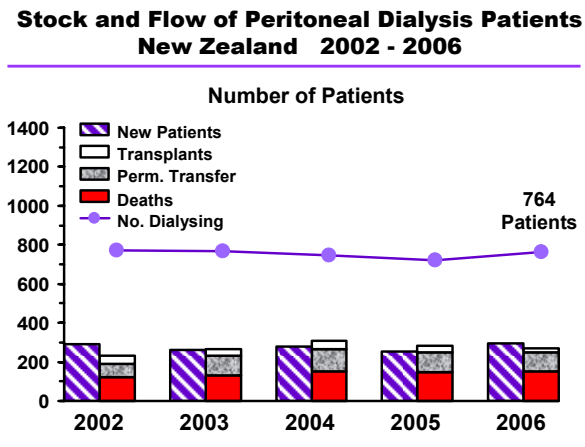


Figure 6.6

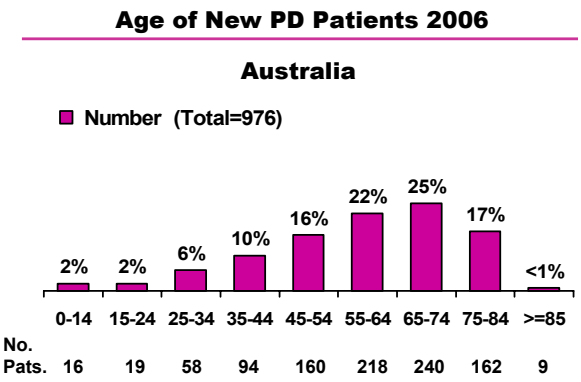


Figure 6.7

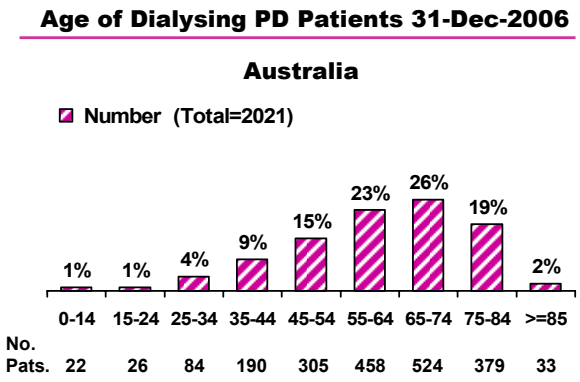


Figure 6.8 **Australia**

Stock and Flow of Peritoneal Dialysis by Age Groups 2002 - 2006

Age Groups	2002	2003	2004	2005	2006
New Patients *					
00-14 years	18 (2%)	21 (2%)	16 (2%)	10 (1%)	16 (2%)
15-24 years	17 (2%)	21 (3%)	19 (3%)	20 (2%)	19 (2%)
25-34 years	24 (3%)	51 (6%)	34 (5%)	42 (5%)	58 (6%)
35-44 years	80 (10%)	89 (11%)	77 (10%)	89 (11%)	94 (10%)
45-54 years	126 (16%)	112 (14%)	127 (17%)	112 (13%)	160 (16%)
55-64 years	153 (20%)	158 (19%)	156 (21%)	188 (23%)	218 (22%)
65-74 years	230 (30%)	218 (27%)	204 (27%)	212 (26%)	240 (25%)
75-84 years	126 (16%)	134 (17%)	102 (14%)	142 (17%)	162 (17%)
>=85 years	6 (1%)	5 (1%)	8 (1%)	13 (2%)	9 (<1%)
Total	**780 (100%)**	**809 (100%)**	**743 (100%)**	**828 (100%)**	**976 (100%)**
Patients Dialysing					
00-14 years	24 (1%)	27 (1%)	27 (1%)	18 (1%)	22 (1%)
15-24 years	42 (3%)	36 (2%)	29 (2%)	29 (2%)	26 (1%)
25-34 years	83 (5%)	92 (5%)	75 (4%)	66 (3%)	84 (4%)
35-44 years	183 (10%)	189 (10%)	179 (10%)	182 (10%)	190 (9%)
45-54 years	259 (14%)	268 (15%)	270 (15%)	264 (14%)	305 (15%)
55-64 years	362 (20%)	371 (20%)	373 (21%)	417 (23%)	458 (23%)
65-74 years	527 (30%)	528 (29%)	512 (29%)	496 (27%)	524 (26%)
75-84 years	290 (16%)	319 (17%)	311 (17%)	355 (19%)	379 (19%)
>=85 years	18 (1%)	14 (<1%)	17 (1%)	26 (1%)	33 (2%)
Total	**1788 (100%)**	**1844 (100%)**	**1793 (100%)**	**1853 (100%)**	**2021 (100%)**
Primary Renal Disease *					
Glomerulonephritis	228 (29%)	234 (29%)	204 (27%)	201 (25%)	254 (26%)
Analgesic Nephropathy	37 (5%)	34 (4%)	18 (3%)	31 (4%)	26 (3%)
Hypertension	117 (15%)	126 (16%)	105 (15%)	119 (14%)	131 (13%)
Polycystic Disease	44 (6%)	43 (5%)	46 (6%)	51 (6%)	50 (5%)
Reflux Nephropathy	24 (3%)	30 (4%)	18 (3%)	29 (4%)	42 (4%)
Diabetic Nephropathy	207 (26%)	208 (26%)	234 (31%)	272 (32%)	312 (32%)
Miscellaneous	71 (9%)	78 (9%)	80 (10%)	70 (8%)	109 (11%)
Uncertain	52 (7%)	56 (7%)	38 (5%)	55 (7%)	52 (6%)
Total	**780 (100%)**	**809 (100%)**	**743 (100%)**	**828 (100%)**	**976 (100%)**

* New patients receiving first peritoneal dialysis treatment

Figure 6.9

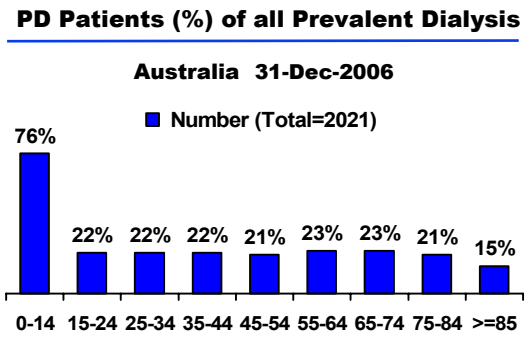
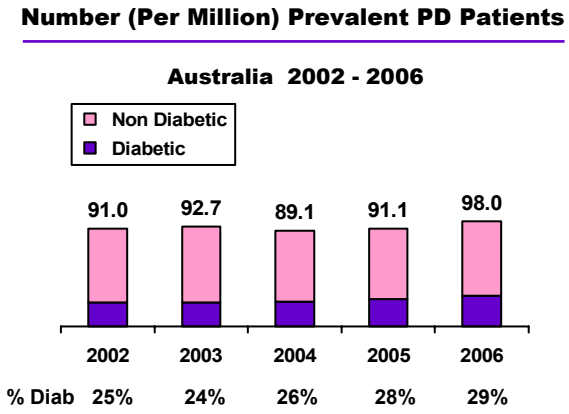


Figure 6.10



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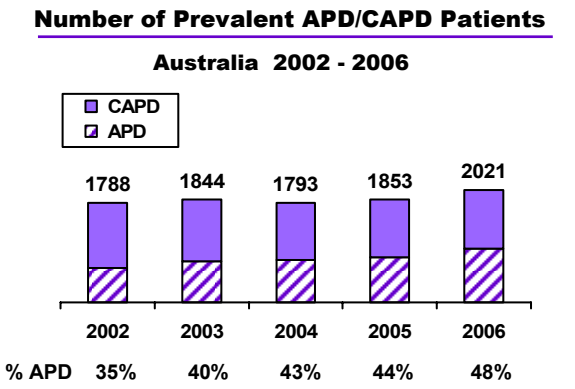

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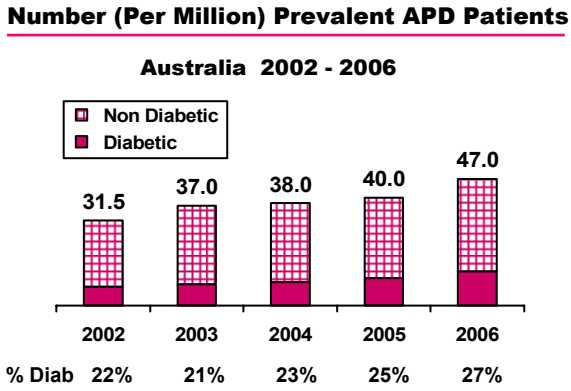

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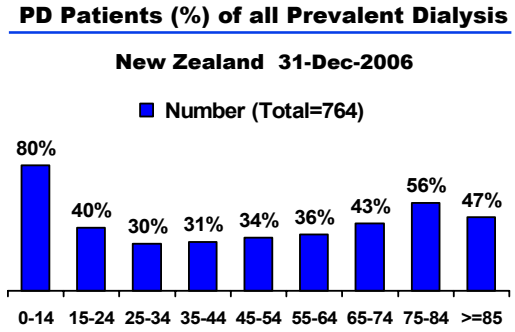

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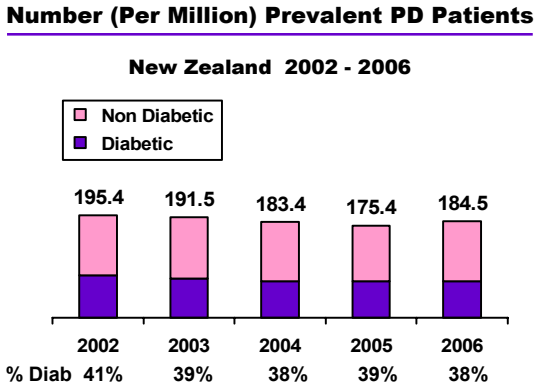

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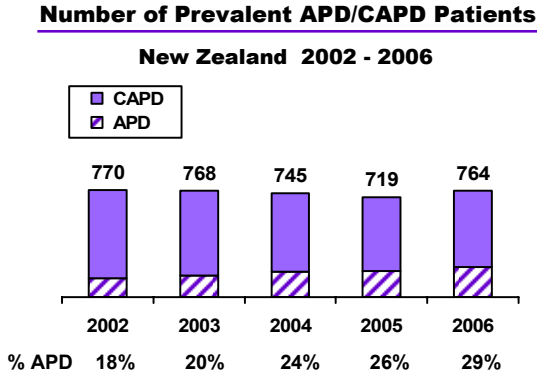

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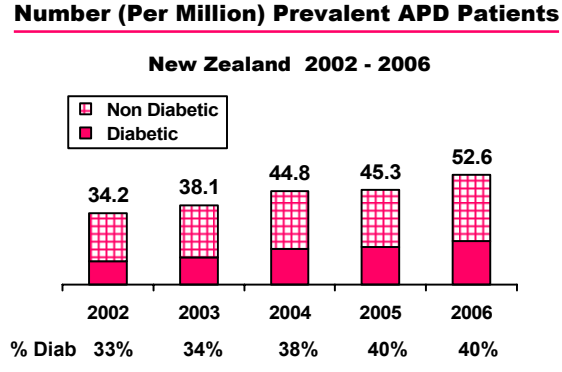


NEW ZEALAND

The annual stock and flow of patients during the period 2002 to 2006 is shown in Figures 6.3 and 6.5. Of the 5,634 patients treated since 1978, 764 (14%) were alive at 31st December, 2006; 372 (7%) had more than five years continuous treatment (Figure 6.2).

Peritoneal dialysis accounted for 38% of all dialysis patients and 70% of all patients dialysing at home. A substantially lower proportion of patients used automated PD than Australia. Twenty nine percent of all peritoneal dialysis in 2006 was automated compared with 26% in 2005 and 24% in 2004.

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

There were 296 new peritoneal dialysis patients in the calendar year 2006, an increase of 17% from 2005 (252 patients). For 54%, peritoneal dialysis was the initial dialysis treatment (Figures 6.17 and 6.19).

For more detail see Appendix III at Website (www.anzdata.org.au/ANZDATA/AnzdataReport/download.htm).

There were 152 deaths amongst prevalent peritoneal dialysis patients in 2006 (148 in 2005), at a rate of 20.7 deaths per 100 person-years (fig 3.7).

For more detail see Appendix III at Website (www.anzdata.org.au/ANZDATA/AnzdataReport/download.htm).

Twenty three patients were transplanted in 2006 (35 in 2005), 3% of patients dialysed, 5% of patients <65 years treated during the year (Figure 6.3). One patient >=65 years was transplanted.

The most common primary renal disease of new patients to peritoneal dialysis was diabetic nephropathy (39%) followed by glomerulonephritis (22%). Hypertension accounted for 15% of all new patients, an increase of 47% (44 patients from 30 patients in 2005).

The proportion of patients in each group treated with peritoneal dialysis ranged from 30% (25-34 years and 31% 35-44 years) to 56% (75-84 years) and 80% (0-14 years) (Figure 6.13).

Figure 6.17

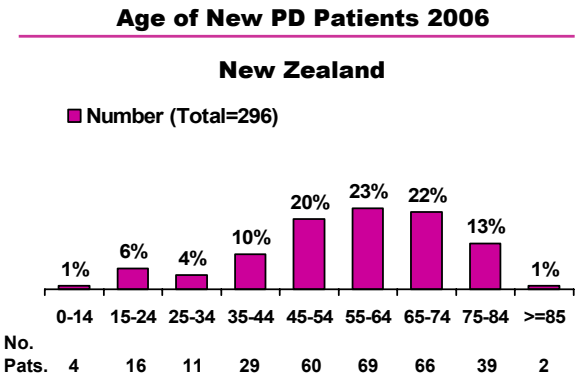


Figure 6.18

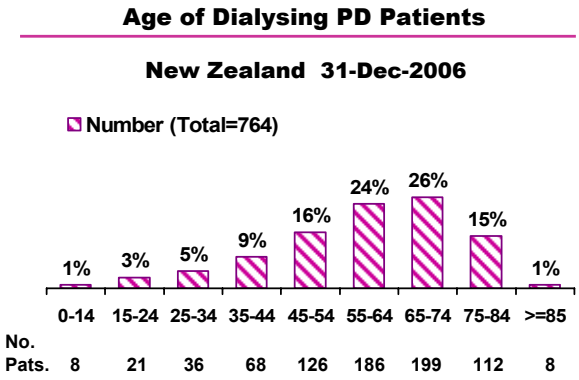


Figure 6.19 **New Zealand**

Stock and Flow of Peritoneal Dialysis by Age Groups 2002 - 2006

Age Groups	2002	2003	2004	2005	2006
New Patients *					
00-14 years	9 (3%)	7 (3%)	4 (2%)	5 (2%)	4 (1%)
15-24 years	5 (2%)	11 (4%)	4 (2%)	3 (1%)	16 (6%)
25-34 years	23 (8%)	10 (4%)	15 (5%)	8 (3%)	11 (4%)
35-44 years	26 (9%)	26 (10%)	22 (8%)	17 (6%)	29 (10%)
45-54 years	61 (21%)	45 (17%)	44 (15%)	44 (18%)	60 (20%)
55-64 years	76 (26%)	68 (26%)	62 (22%)	75 (30%)	69 (23%)
65-74 years	69 (24%)	68 (26%)	80 (29%)	74 (29%)	66 (22%)
75-84 years	21 (7%)	22 (9%)	42 (15%)	24 (10%)	39 (13%)
>=85 years	2 (<1%)	3 (1%)	4 (2%)	2 (1%)	2 (1%)
Total	**292 (100%)**	**260 (100%)**	**277 (100%)**	**252 (100%)**	**296 (100%)**
Patients Dialysing					
00-14 years	12 (2%)	7 (1%)	7 (<1%)	9 (1%)	8 (1%)
15-24 years	25 (3%)	29 (4%)	22 (3%)	14 (2%)	21 (3%)
25-34 years	50 (6%)	46 (6%)	42 (6%)	31 (5%)	36 (5%)
35-44 years	74 (10%)	70 (9%)	72 (10%)	58 (8%)	68 (9%)
45-54 years	130 (17%)	133 (17%)	117 (16%)	115 (16%)	126 (16%)
55-64 years	221 (29%)	208 (27%)	189 (25%)	183 (25%)	186 (24%)
65-74 years	178 (23%)	185 (24%)	192 (26%)	201 (28%)	199 (26%)
75-84 years	71 (9%)	83 (11%)	96 (13%)	99 (14%)	112 (15%)
>=85 years	9 (1%)	7 (1%)	8 (1%)	9 (1%)	8 (1%)
Total	**770 (100%)**	**768 (100%)**	**745 (100%)**	**719 (100%)**	**764 (100%)**
Primary Renal Disease *					
Glomerulonephritis	72 (25%)	64 (25%)	56 (20%)	56 (22%)	66 (22%)
Analgesic Nephropathy	2 (<1%)	0 (0%)	1 (<1%)	1 (<1%)	1 (<1%)
Hypertension	19 (7%)	30 (12%)	53 (19%)	30 (12%)	44 (15%)
Polycystic Disease	10 (3%)	9 (3%)	11 (4%)	13 (5%)	24 (8%)
Reflux Nephropathy	10 (3%)	11 (4%)	7 (3%)	7 (3%)	10 (3%)
Diabetic Nephropathy	138 (47%)	97 (37%)	105 (38%)	112 (44%)	114 (39%)
Miscellaneous	25 (9%)	27 (10%)	29 (11%)	23 (10%)	24 (8%)
Uncertain	16 (5%)	22 (9%)	15 (5%)	10 (4%)	13 (4%)
Total	**292 (100%)**	**260 (100%)**	**277 (100%)**	**252 (100%)**	**296 (100%)**

* New patients receiving first peritoneal dialysis treatment

OUTCOMES AMONG PERITONEAL DIALYSIS PATIENTS

Figure 6.20

Peritoneal Dialysis at 90 Days Patient Survival
Censored for Transplant
% [95% Confidence Interval]

Year of Starting	No. of Patients	Survival			
		6 months	1 year	3 years	5 years
Australia					
1994-1996	1562	94 [93, 95]	87 [85, 88]	54 [51, 56]	33 [30, 35]
1997-1999	1732	92 [91, 93]	86 [85, 88]	60 [57, 62]	38 [35, 40]
2000-2002	1901	93 [92, 94]	87 [85, 88]	59 [57, 61]	40 [37, 42]
2003-2005	1836	94 [93, 95]	88 [87, 90]	64 [61, 66]	-
New Zealand					
1994-1996	562	96 [94, 97]	90 [87, 92]	61 [57, 66]	36 [32, 41]
1997-1999	608	96 [94, 97]	89 [86, 91]	56 [52, 60]	36 [32, 41]
2000-2002	681	93 [91, 95]	85 [82, 87]	58 [54, 62]	35 [31, 39]
2003-2005	619	93 [91, 95]	87 [84, 90]	58 [52, 63]	-

Patient Survival

On univariate analyses, there has been some improvement in patient survival in Australia, in three and five year patient outcomes.

Survival has been unchanged in New Zealand (Figures 6.20 - 6.22).

Among patients with diabetes, survival was substantially lower (Figures 6.23 - 6.25).

As expected, patient survival is closely related to age (Figures 6.26 - 6.28).

Figure 6.21

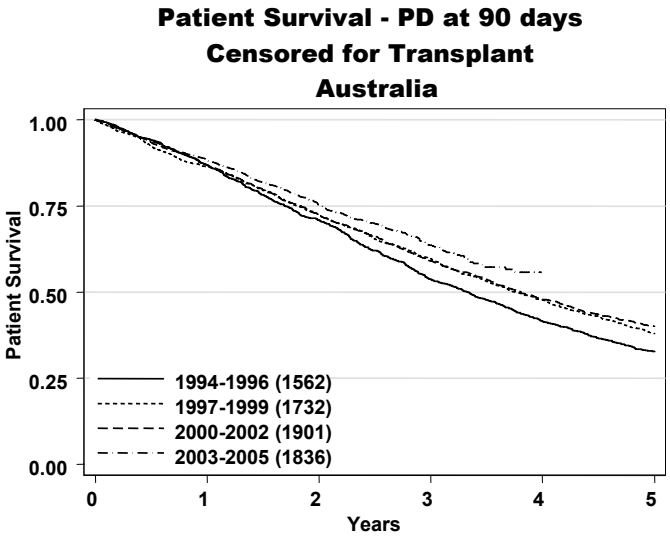


Figure 6.22

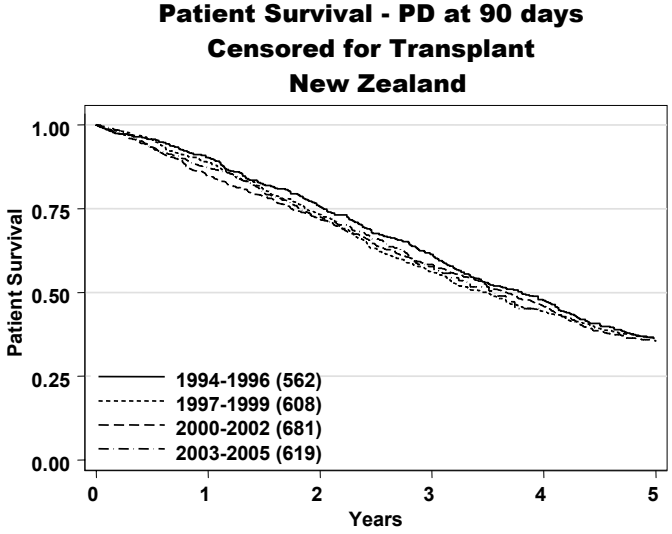


Figure 6.23

Peritoneal Dialysis at 90 Days
Patient Survival - Diabetic / Non Diabetic
Censored for Transplant Commenced 1994 - 2005
% [95% Confidence Interval]

	Survival			
	6 months	1 year	3 years	5 years
Australia				
Non Diabetic (5278)	94 [93, 95]	88 [88, 89]	62 [60, 63]	42 [40, 43]
Diabetic (1892)	92 [90, 93]	84 [82, 85]	50 [48, 53]	28 [25, 30]
New Zealand				
Non Diabetic (1409)	95 [93, 96]	88 [87, 90]	63 [60, 66]	44 [40, 47]
Diabetic (1061)	94 [92, 95]	86 [84, 88]	53 [49, 56]	28 [24, 31]

Figure 6.24

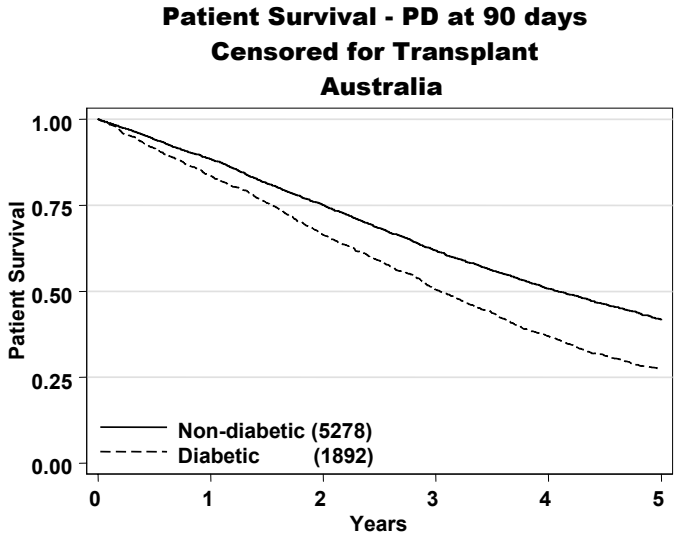


Figure 6.25

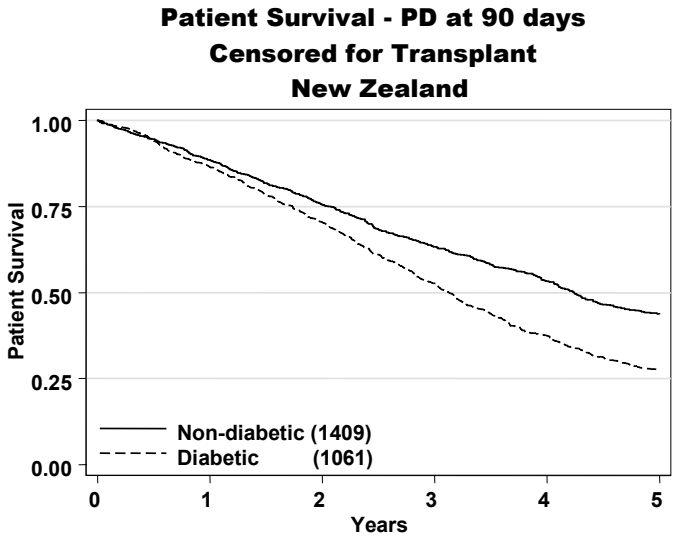


Figure 6.26

Peritoneal Dialysis at 90 Days
Patient Survival - By Age Group
Censored for Transplant 1994 - 2005
% [95% Confidence Interval]

Age Groups	No. of Pa-	Survival			
		6 months	1 year	3 years	5 years
Australia					
0-39 years	1063	99 [98, 99]	98 [97, 99]	86 [83, 89]	71 [66, 75]
40-59 years	2139	95 [94, 96]	92 [91, 93]	73 [71,75]	53 [51, 56]
60-74 years	2969	92 [91, 93]	84 [83, 85]	51 [49, 53]	30 (28, 32]
75 and over	999	88 [85, 90]	76 [73, 79]	36 [33, 39]	14 [11, 17]
New Zealand					
0-39 years	356	99 [97, 99]	95 [92, 97]	86 [81, 90]	76 [69, 82]
40-59 years	955	96 [95, 97]	91 [89, 93]	66 [62, 69]	42 [38, 46]
60-74 years	953	93 [91, 94]	83 [81, 86]	48 [45, 51]	25 [21, 28]
75 and over	206	85 [80, 90]	78 [72, 83]	38 [31, 46]	16 [10, 23]

Figure 6.27

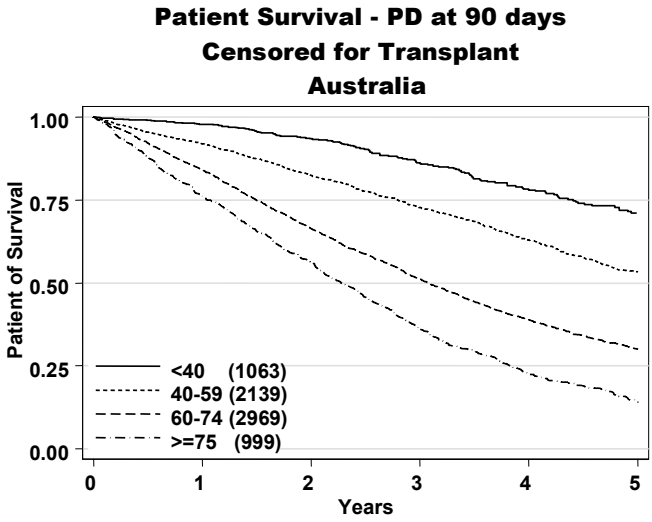
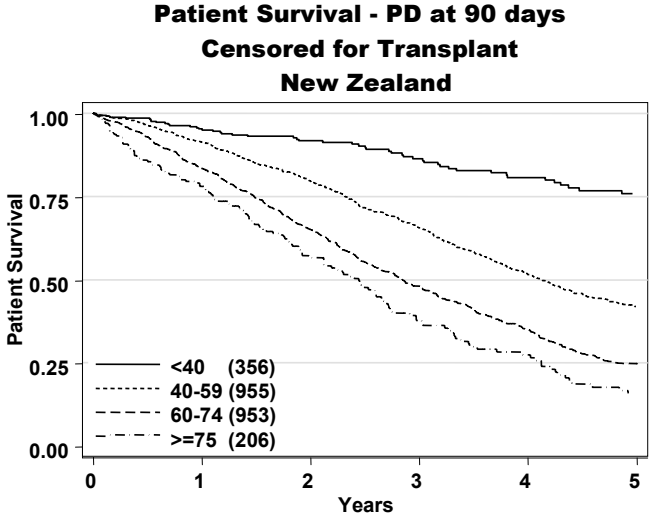


Figure 6.28



Figures 6.29 - 6.30 show adjusted patient survival for non diabetic caucasoid females with median age of each cohort and no co-morbidities (lung disease, coronary heart disease, peripheral vascular disease and cerebrovascular disease).

Improving survival rates in recent cohorts are evident in Australia and less so in New Zealand.

Figure 6.29

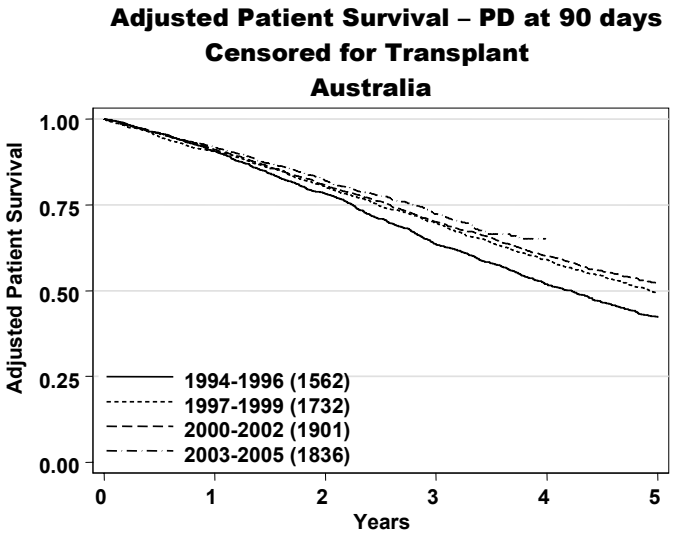
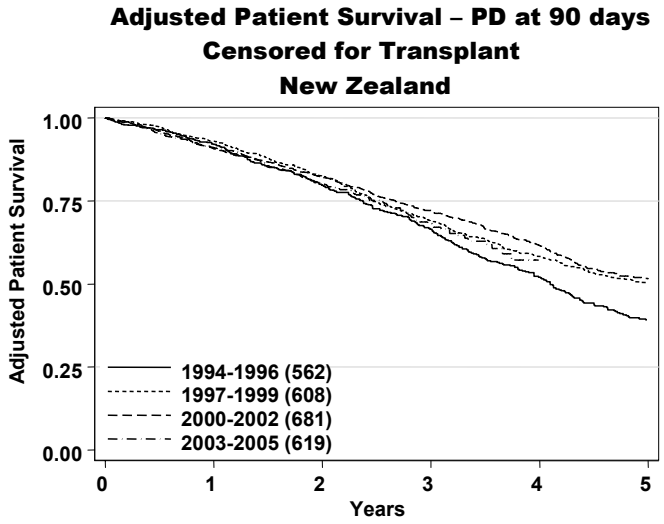


Figure 6.30



PERITONITIS

Australian median time to first peritonitis has decreased to 20.0 months overall, with 33% of patients completely free of peritonitis at three years. In New Zealand the time was 15.9 months (23% of patients free of peritonitis at three years), (Figure 6.31). As noted in previous reports there is a strong association between ethnicity and peritonitis free survival (Figure 6.34).

The median peritonitis-free survival for home automated peritoneal dialysis patients was 18.6 months in Australia, and 15.9 months in New Zealand.

Figure 6.31

First PD Treatment to First Episode of Peritonitis
Related to Age at Entry 2002 to 31-Dec-2006

Survival	Age Groups						All
	00-14	15-34	35-54	55-64	65-74	>=75	
Australia	**n= 82**	**n= 309**	**n= 1069**	**n= 873**	**n= 1103**	**n= 708**	**n= 4144**
3 months	82 ± 4 (57)	88 ± 2 (231)	86 ± 1 (799)	89 ± 1 (680)	87 ± 1 (832)	84 ± 1 (494)	86 ± 1 (3093)
6 months	69 ± 5 (41)	78 ± 3 (166)	77 ± 1 (614)	80 ± 1 (546)	78 ± 1 (653)	74 ± 2 (382)	77 ± 1 (2402)
9 months	58 ± 6 (26)	73 ± 3 (125)	68 ± 2 (480)	74 ± 2 (430)	70 ± 2 (512)	65 ± 2 (286)	70 ± 1 (1859)
1 year	53 ± 7 (17)	65 ± 3 (84)	62 ± 2 (362)	68 ± 2 (351)	62 ± 2 (398)	59 ± 2 (224)	63 ± 1 (1436)
2 years	37 ± 8 (6)	47 ± 4 (23)	43 ± 2 (118)	47 ± 2 (136)	43 ± 2 (157)	40 ± 3 (78)	44 ± 1 (518)
3 years	-	37 ± 6 12)	31 ± 2 (48)	35 ± 3 (53)	34 ± 2 (63)	29 ± 3 (34)	33 ± 1 (210)
New Zealand	**n= 29**	**n= 104**	**n= 378**	**n= 350**	**n= 357**	**n= 162**	**n= 1380**
3 months	81 ± 7 (20)	89 ± 3 (79)	86 ± 2 (282)	83 ± 2 (267)	85 ± 2 (271)	88 ± 3 (130)	85 ± 1 (1049)
6 months	77 ± 8 (19)	77 ± 4 (63)	72 ± 2 (208)	73 ± 2 (208)	74 ± 2 (217)	77 ± 3 (95)	74 ± 1 (810)
9 months	60 ± 10 (12)	69 ± 5 (52)	65 ± 3 (165)	63 ± 3 (161)	64 ± 3 (170)	69 ± 4 (72)	65 ± 1 (632)
1 year	54 ± 10 (9)	65 ± 5 (38)	57 ± 3 (128)	54 ± 3 (123)	55 ± 3 (127)	59 ± 5 (57)	57 ± 2 (482)
2 years	-	47 ± 6 (18)	38 ± 3 (52)	34 ± 3 (47)	32 ± 3 (46)	39 ± 5 (21)	36 ± 2 (187)
3 years	-	37 ± 7 (7)	23 ± 4 (15)	22 ± 3 (18)	17 ± 3 (8)	34 ± 6 (6)	23 ± 2 (55)

% Survival ± S.E. and Numbers at risk

Figure 6.32

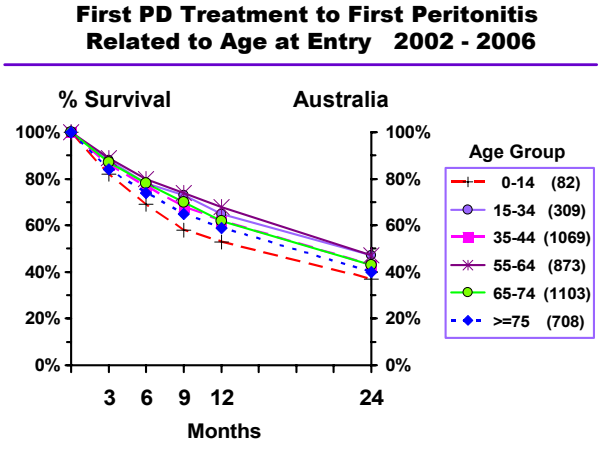


Figure 6.33

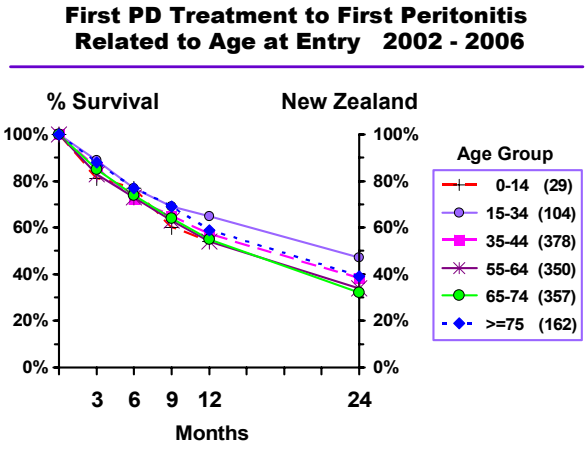
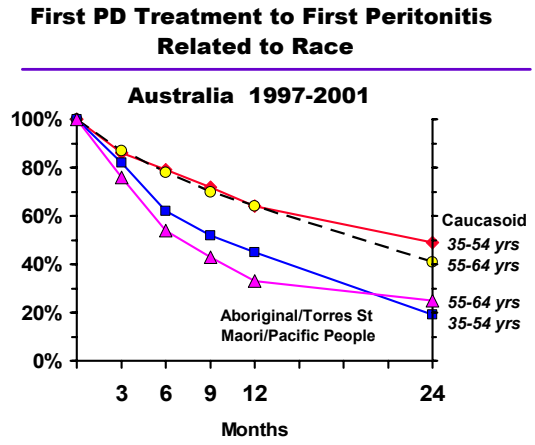


Figure 6.34



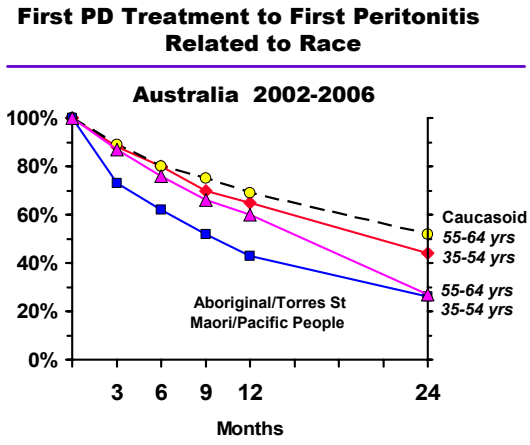
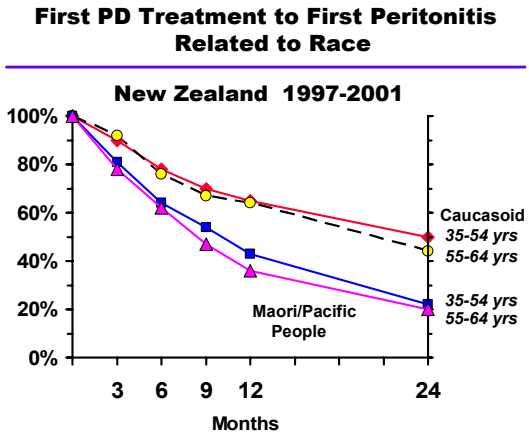


Figure 6.35



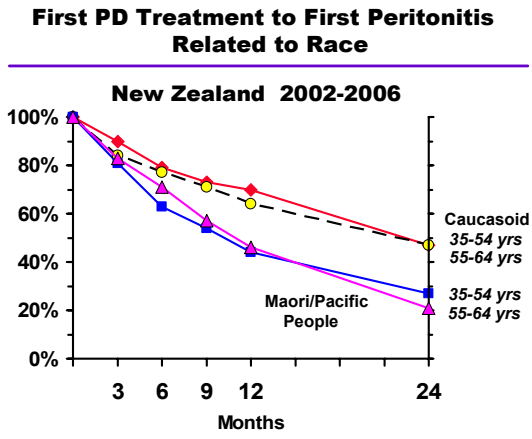


Figure 6.36

First Home APD Treatment to First Episode of Peritonitis Related to Age at Entry 2002 to 31-Dec-2006

Survival	Age Groups						All
	00-14	15-34	35-54	55-64	65-74	>=75	
Australia	**n=51**	**n=129**	**n=401**	**n=279**	**n=341**	**n=194**	**n=1395**
1 month	98 ± 2 (50)	97 ± 2 (122)	93 ± 1 (365)	96 ± 1 (263)	97 ± 1 (319)	96 ± 1 (180)	96 ± 1 (1299)
3 months	80 ± 6 (37)	87 ± 3 (93)	84 ± 2 (306)	90 ± 2 (227)	89 ± 2 (264)	90 ± 2 (154)	88 ± 1 (1081)
6 months	68 ± 7 (27)	80 ± 4 (69)	74 ± 2 (228)	84 ± 2 (181)	79 ± 2 (206)	81 ± 3 (116)	78 ± 1 (827)
9 months	60 ± 7 (21)	74 ± 4 (55)	65 ± 3 (172)	74 ± 3 (139)	69 ± 3 (161)	72 ± 4 (87)	69 ± 1 (635)
1 year	57 ± 8 (15)	68 ± 5 (39)	58 ± 3 (128)	66 ± 3 (110)	63 ± 3 (130)	63 ± 4 (72)	62 ± 2 (494)
2 years	-	38 ± 7 (11)	36 ± 3 (48)	44 ± 4 (38)	42 ± 3 (49)	40 ± 5 (28)	40 ± 2 (178)
New Zealand	**n=23**	**n=27**	**n=78**	**n=56**	**n=47**	**n=21**	**n=252**
1 month	87 ± 7 (20)	93 ± 5 (25)	97 ± 2 (73)	98 ± 2 (55)	96 ± 3 (43)	95 ± 5 (19)	96 ± 1 (235)
3 months	87 ± 7 (20)	85 ± 7 (19)	89 ± 4 (62)	91 ± 4 (45)	89 ± 5 (37)	79 ± 9 (14)	88 ± 2 (197)
6 months	78 ± 9 (18)	75 ± 9 (15)	76 ± 5 (47)	82 ± 5 (34)	69 ± 7 (26)	79 ± 9 (12)	76 ± 3 (152)
9 months	63 ± 10 (10)	75 ± 9 (13)	64 ± 6 (36)	57 ± 8 (21)	54 ± 8 (16)	65 ± 12 (8)	62 ± 3 (104)
1 year	56 ± 11 (7)	75 ± 9 (12)	62 ± 6 (32)	51 ± 8 (17)	47 ± 8 (13)	57 ± 13 (7)	57 ± 4 (88)

% Survival ± S.E. and Numbers at risk

Figure 6.37

Causes of Technique Failure 1-Apr-2004 to 31-Dec-2006
Excluding Death, Transplantation, Recovery of Renal Function

Causes of Technique Failure	Australia		New Zealand	
	Primary	Secondary	Primary	Secondary
Recurrent/persistent peritonitis	210	22	105	6
Acute peritonitis	356	24	94	3
Tunnel/exit site infection	71	4	4	1
Total Infective Complications	**637 (29%)**	**50 (25%)**	**203 (30%)**	**10 (21%)**
Inadequate solute clearance	350	18	154	7
Inadequate fluid ultrafiltration	107	18	85	8
Excessive fluid ultrafiltration	2	-	-	-
Total Dialysis Failure	**459 (21%)**	**36 (18%)**	**239 (35%)**	**15 (31%)**
Dialysate leak	101	15	25	1
Hydrothorax	14	1	2	-
Scrotal oedema	1	-	-	-
Catheter block	37	4	7	2
Catheter fell out	7	2	-	-
Catheter tear	-	-	-	-
Hernia	52	5	14	1
Abdominal pain	14	1	6	1
Abdominal surgery	44	6	12	2
Other surgery	21	3	2	-
Haemoperitoneum	-	-	1	-
Sclerosing Peritonitis	2	1	2	-
Excessive weight gain	1	-	-	-
Miscellaneous	29	5	9	1
Total Technical Failure	**323 (15%)**	**43 (22%)**	**80 (12%)**	**8 (17%)**
Unable to manage self care	166	12	36	2
Patient preference	631	59	114	13
Transfer outside Australia/NZ	2	-	2	-
Total Social Reasons	**799 (36%)**	**71 (36%)**	**152 (23%)**	**15 (31%)**

TECHNIQUE FAILURE

In Australia, the most common primary cause of technique failure were social reasons (generally patient preference), rather than a technical cause.

This accounted for 36% of transfers in the era 2004-2006 (Figure 6.37) and was comparable to that observed in the era 2001-2004 (35%) (Figure 6.38).

Infections (primarily peritonitis) were the second commonest cause, followed by inadequate dialysis and mechanical/ technical complications.

In New Zealand, the most common primary cause of technique failure was inadequate dialysis, which accounted for 35% of transfers in the era 2004-2006 and infections 30% (Figure 6.37).

Figure 6.38

Causes of Technique Failure 1-Apr-2001 to 31-Mar-2004
Excluding Death, Transplantation, Recovery of Renal Function

Causes of Technique Failure	Australia		New Zealand	
	Primary	Secondary	Primary	Secondary
Recurrent/persistent peritonitis	234	8	69	3
Acute peritonitis	322	6	102	1
Tunnel/exit site infection	61	3	11	1
Total Infective Complications	**617 (26%)**	**17 (15%)**	**182 (27%)**	**3 (19%)**
Inadequate solute clearance	380	13	139	4
Inadequate fluid ultrafiltration	170	12	76	-
Excessive fluid ultrafiltration	1	-	-	
Total Dialysis Failure	**551 (23%)**	**25 (22%)**	**215 (32%)**	**4 (25%)**
Dialysate leak	153	13	39	2
Hydrothorax	19	-	3	1
Catheter block	32	3	6	-
Catheter fell out	11	-	1	-
Catheter tear	1	-	-	-
Hernia	58	3	12	-
Abdominal pain	8	3	6	-
Abdominal surgery	39	2	9	3
Other surgery	32	-	3	-
Haemoperitoneum	2	-	-	-
Sclerosing Peritonitis	4	1	2	-
Excessive weight gain	2	-	-	-
Miscellaneous	14	1	7	1
Multiple adhesions	-	-	1	-
Total Technical Failure	**375 (16%)**	**26 (22%)**	**89 (13%)**	**7 (44%)**
Unable to manage self care	182	10	43	-
Patient preference	659	38	120	2
Transfer outside Australia/NZ	3	-	16	-
Total Social Reasons	**844 (35%)**	**48 (41%)**	**179 (27%)**	**2 (12%)**

PERITONITIS REGISTRY

1-OCT-2003 TO 31-DEC-2006

STEPHEN MCDONALD AND KYM BANNISTER

Details of the organism and treatment for episodes of peritonitis within Australia collected by ANZDATA. Similar information for patients in New Zealand is collected separately by the New Zealand Peritonitis Registry (reported separately).

During 2006, the number of episodes of peritonitis was relatively stable in each year (shown in Figure 6.39).

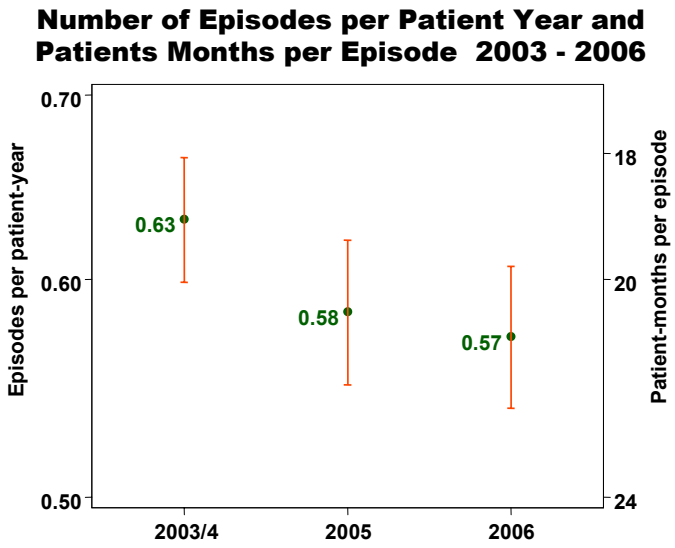
Figure 6.39

Number of Peritonitis Episodes

Year	Frequency
2003	250 (3 months data only)
2004	1,195
2005	1,072
2006	1,106
Total	**3,323**

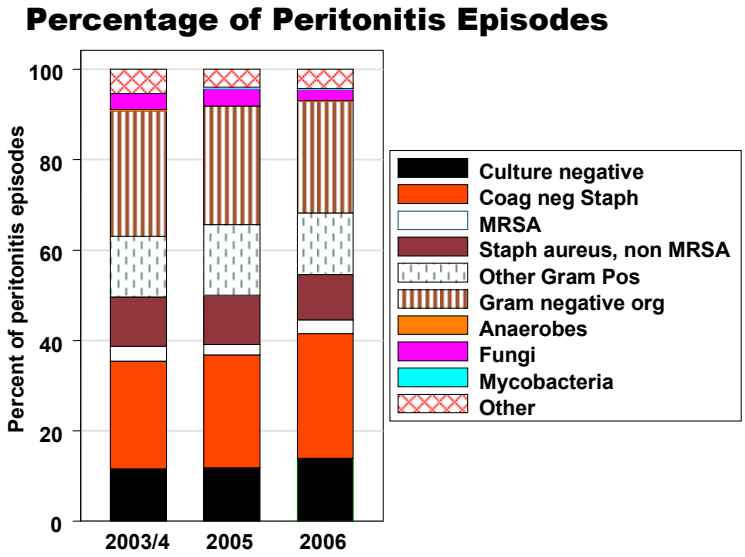
However the total number of person-years of peritoneal dialysis treatment has increased a little, so the observed rate has decreased (Figure 6.40 - data for the last three months of 2003 have been combined with the 2004 figures).

Figure 6.40



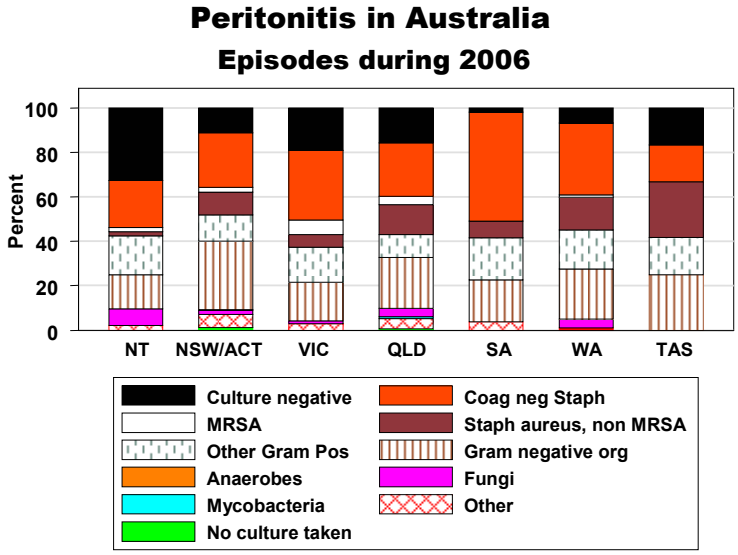
There has been a gradual trend over this time towards a lower proportion of episodes attributable to gram negative organisms and non-MRSA staph aureus, with a greater proportion of culture negative episodes and those attributed to coagulase negative staphylococci (Figure 6.41).

Figure 6.41



There remains quite widespread variation in the major organisms reported between the different states in Australia (Figure 6.42).

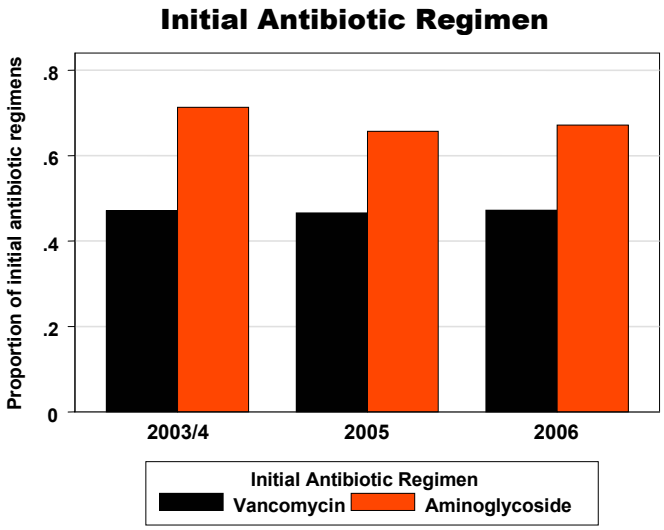
Figure 6.42



ANTIBIOTIC TREATMENT

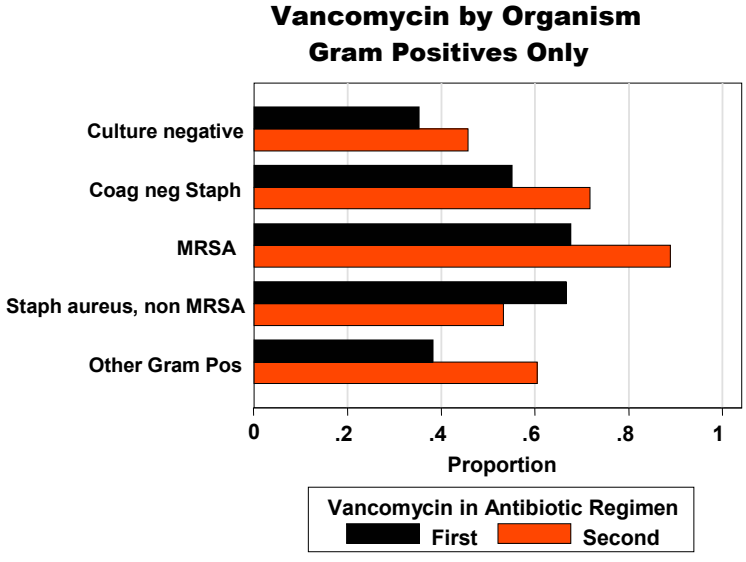
The proportion of episodes which were treated with a vancomycin-containing initial regimen has decreased somewhat between 2004 and 2005, whereas the proportion containing gentamicin has remained steady (Figure 6.43).

Figure 6.43



Among episodes of peritonitis treated during 2006, the proportion of those who received vancomycin in the initial or second antibiotic regimen categorised by the organism grown is shown in Figure 6.44. As expected, an initial culture result of non-MRSA staph aureus is associated with a reduction in vancomycin use as antibiotic regimens are modified.

Figure 6.44



OUTCOMES

Overall, 194 of the 1106 (18%) of episodes of peritonitis in 2006 ended in a permanent transfer to haemodialysis with a period of interim haemodialysis reported in a further 41 (4%) of episodes. This proportion varied between States, and between the type of infecting organism (Figure 6.45).

Figure 6.45