METHOD AND LOCATION OF DIALYSIS

AUSTRALIA

During the past year there was a further rise in the number of patients using dialysis treatment of all types, especially in the elderly group.

The trends in distribution of dialysis patients in relation to method of dialysis are shown in Table 49 and Figures 56 and 57.

There were 4862 patients (266 per million) receiving dialysis treatment at the completion of the year to 31st December 1996. The majority (72%) were out of hospital: 44% home dialysis (66% CAPD and 5% IPD), 27% satellite "free standing" dialysis. In the **modal age group** 65-74 years, 33% were dialysing in a hospital and 41% at home.

Thirty percent of all patients were using CAPD, 27% used hospital based haemodialysis, 27% satellite haemodialysis, and 13% home haemodialysis.

The number of dialysis dependent patients increased by only 7% (10.5% 1995). Satellite based dialysis increased by 17%, hospital haemodialysis by 6% (7% 1995) and home haemodialysis increased 1% from 1995, CAPD increased by only 1.6% (11% 1995). Continuous Cycler Peritoneal Dialysis (CCPD) increased 67% to 95 patients from 57 in 1995 and only 23 in 1994.

Thirty six percent of patients were 65 years and older; nine patients were 85 years or more. See Figure 59. An increase occurred in all age groups 35 years or older, especially 65-84 years.

The effect of age on selection of dialysis method and location is shown in Table 50. For those less than 15 years, peritoneal dialysis was 63% (61% 1995), for those 25-34 years it was 23%, for those 65-84 years it was 36%, and for the 85 years and older group it was 56%.

The number of patients rose in all States except South Australia. There was a considerable population adjusted increase in Northern Territory, New South Wales/ACT and Victoria.

The number of dialysis patients in relation to population in each State is shown in Table 51 and Figure 58.

In relation to State population, the highest prevalence of dialysis patients was in the Northern Territory (715 per million) and New South Wales/ACT (295 per million). The number fell in South Australia (211 per million) in the young (15-24 years of age).

The **satellite** category reflects the "free standing" status which connotes a site other than a major hospital. In some cases the facility may be in the grounds of a major hospital or in a smaller hospital . When the term was introduced it was associated with a policy of **self care** with low staff/patient ratios. Over recent years, an increasing number require more support, some times similar to the main hospital unit. The term **limited care** has been used for those unable to manage most aspects of dialysis. No simple classification could be widely sampled without considerable effort. Therefore it is proposed to retain the satellite term but acknowledge that it reflects geographic independence from the main hospital unit, rather than treatment independence. Of course many patients in these centres do manage self care treatment.

NEW ZEALAND

There was a 9% increase in dialysis patients (932 patients, 256 per million), mainly in the age group 45-74 years. Home haemodialysis rose (10%) after four years of steady decline. Eighty per cent of patients used home dialysis (71% CAPD).

Home CCPD has become more popular, the number increasing by 64% (23 patients 1996, 14 patients 1995). Most patients used peritoneal dialysis (58%), especially for home dialysis (71%), CCPD.

See Table 52 and 53, and Figures 60-62.

Table 49 — Australia

Dialysis Patients 1988 - 1996

Year	Hospital ★	Home HD	Home IPD/CAPD	Sat.HD/PD	Total
1988	826	602	825	430	**2683**
1989	898	570	821	463	**2752**
1990	959	589	865	546	**2959**
1991	1024	587	915	615	**3141**
1992	1021	611	1028	730	**3390**
1993	1112	645	1182	768	**3707**
1994	1230	625	1287	958	**4100**
1995	1306	624	1470	1133	**4533**
1996	1383	632	1530	1317	**4862**

★ Includes IPD and CAPD

Table 50 — Australia

Age Distribution of Dialysis Patients 31-Dec-96

Treatment		Age Groups										Total
		00-04	05-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85-94	
IPD	Hospital	-	2	-	1	2	2	3	5	4	-	**19**
	Home	8	5	11	12	8	17	24	17	4	-	**106**
HD	Hospital	1	11	36	77	137	201	289	422	159	2	**1335**
	Home	-	-	22	75	133	164	144	81	12	1	**632**
	Satellite	-	1	48	143	192	211	275	359	87	1	**1317**
CAPD	Hospital	-	-	-	1	2	2	8	11	4	1	**29**
	Home	1	6	35	73	165	234	332	450	124	4	**1425**
Total		**10**	**25**	**152**	**382**	**639**	**831**	**1075**	**1345**	**394**	**9**	**4862**

Table 51 — Australia and New Zealand

State Distribution of Dialysis Dependent Patients 1988 - 1996

State	1988	1989	1990	1991	1992	1993	1994	1995	1996
Dialysis Patients									
Qld	377	400	470	501	511	558	610	683	729
NSW/ACT	1134	1158	1205	1248	1331	1472	1608	1758	1915
Vic.	652	673	709	764	857	921	1051	1138	1226
Tas.	43	46	58	59	62	63	67	92	97
SA	245	231	257	285	295	308	322	329	312
NT	21	31	38	45	54	78	91	112	127
WA	211	213	222	239	280	307	351	421	456
Aust.	**2683**	**2752**	**2959**	**3141**	**3390**	**3707**	**4100**	**4533**	**4862**
N.Z.	**482**	**528**	**557**	**632**	**677**	**723**	**788**	**852**	**932**
Per Million Population all Dialysis Patients									
Qld	137	141	162	169	168	178	191	208	217
NSW/ACT	190	192	197	201	212	233	253	274	295
Vic.	153	156	162	172	192	206	235	253	270
Tas.	96	102	127	128	132	134	142	194	205
SA	174	162	179	196	202	211	219	223	211
NT	135	199	242	283	320	464	531	644	715
WA	137	134	136	143	168	183	206	243	259
Aust.	**162**	**164**	**173**	**181**	**193**	**210**	**230**	**251**	**266**
N.Z.	**144**	**156**	**162**	**183**	**194**	**205**	**220**	**234**	**256**

Figure 56

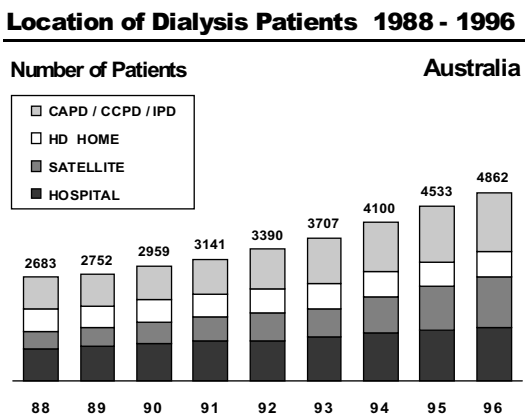


Figure 57

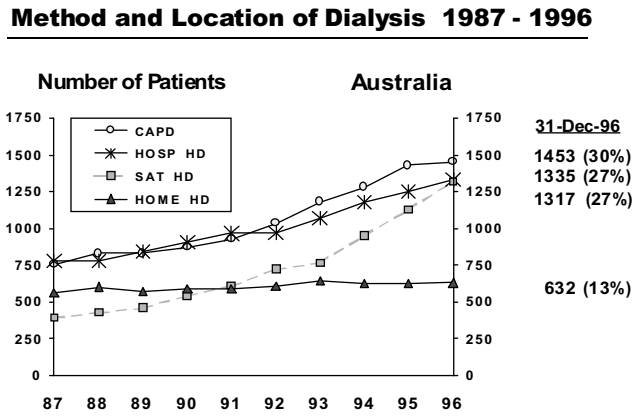


Figure 58

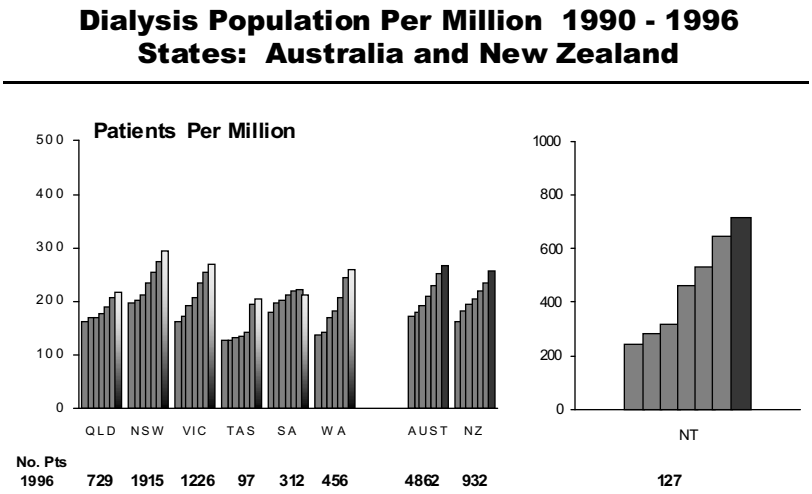


Figure 59

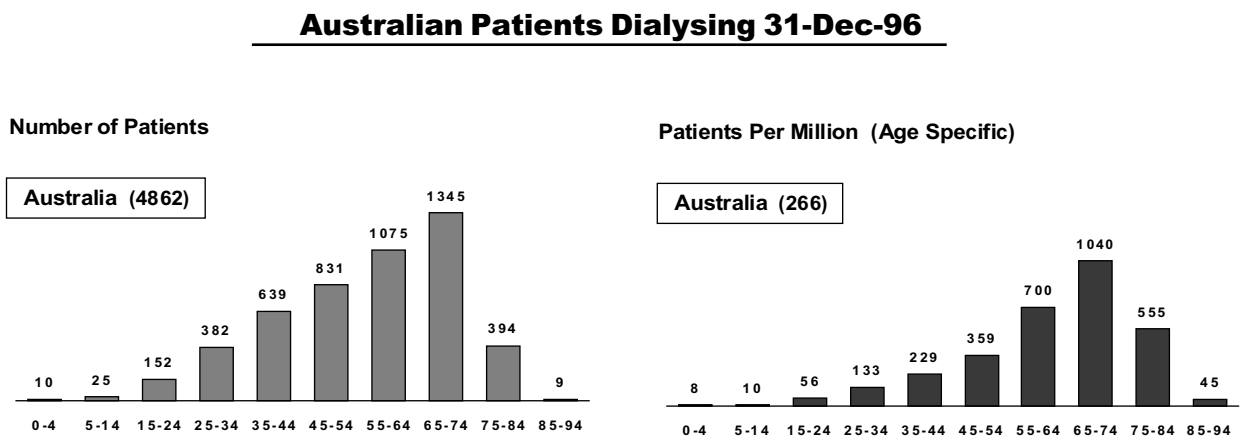


Table 52 **New Zealand**

Age Distribution of Dialysis Patients 31-Dec-96

Treatment		Age Groups										Total
		00-04	05-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85-94	
IPD	Hospital	-	1	-	-	-	-	-	1	-	-	**2**
	Home	2	11	2	2	2	3	3	1	-	-	**26**
HD	Hospital	-	-	8	18	33	39	41	37	5	-	**181**
	Home	-	-	11	29	37	53	38	19	2	-	**189**
	Satellite	-	-	-	1	1	1	-	1	-	-	**4**
CAPD	Hospital	-	-	-	1	-	1	1	1	-	-	**4**
	Home	-	-	19	37	67	132	156	100	15	-	**526**
Total		**2**	**12**	**40**	**88**	**140**	**229**	**239**	**160**	**22**	**-**	**932**

Table 53 **New Zealand**

Method and Location of Dialysis 1988 - 1996

Mode of Treatment		1988	1989	1990	1991	1992	1993	1994	1995	1996
HD	Hospital	96	97	97	94	103	126	114	151	181
	Home	169	186	178	202	194	179	174	172	189
	Satellite	3	2	3	2	1	1	6	4	4
Total		**268**	**285**	**278**	**298**	**298**	**306**	**294**	**327**	**374**
PD	IPD	1	1	1	1	3	3	8	25	28
	CAPD	213	242	378	333	376	414	486	500	530
Total		**214**	**243**	**279**	**334**	**379**	**417**	**494**	**525**	**558**

Figure 60

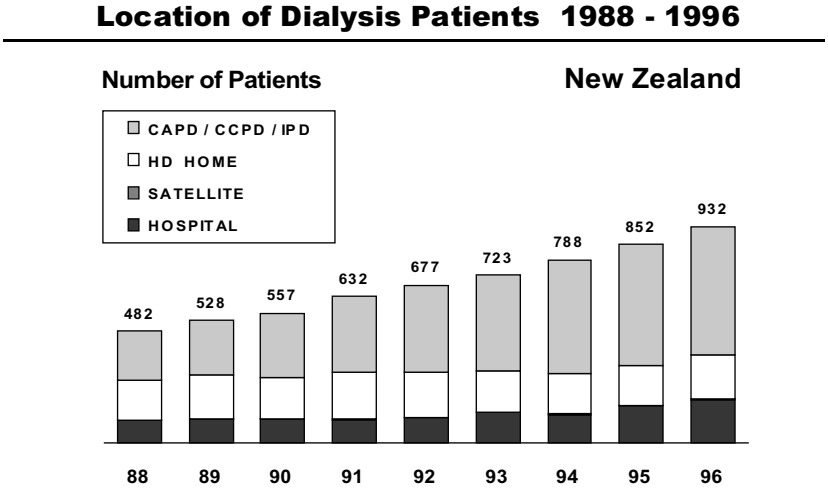


Figure 61

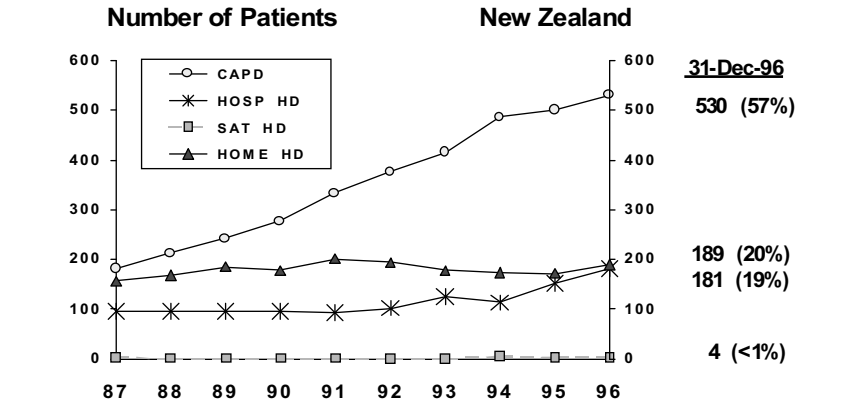
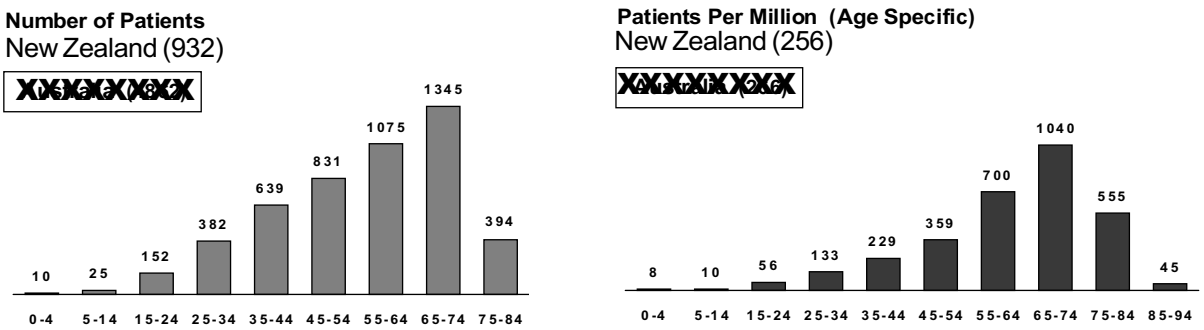


Figure 62



CONTINUOUS AMBULATORY PERITONEAL DIALYSIS (CAPD)

Stock and Flow

Australia

The annual stock and flow of patients during the period 1988-96 is shown in Table 54 and Figure 63. Of 9795 patients treated, 1453 (15%) were still alive on CAPD at 31st December 1996. CAPD treated 30% (32% 1995) of all dialysis patients and 66% (67% 1995) of all home dialysis patients.

The State prevalence of CAPD ranged from 13% (Northern Territory), 16% (South Australia), 41% (Western Australia) to 47% of patients (Tasmania). The steady decline in relative prevalence in Victoria continued; 38% (1988) to 24% (1996), with the exception of New South Wales/ACT. Relative prevalence decreased in all States at the end of 1996. See Table 55.

Of the 9795 patients, 239 patients (2.4%) had had at least five years of continuous CAPD treatment. See Table 56.

CCPD has increased rapidly from 23 patients in 1994 (57 in 1995) to 95 patients in the past year, reflecting the increased use of automated cyclers.

In relation to age, the proportion of all dialysis patients (65-74 years) using CAPD was 34% (36% 1995); range 19% (25-34 years) to 56% (85-94 years). See Table 57 and Figure 64.

There were only 654 new CAPD patients in the calendar year 1996, a notable fall of 11% compared to the previous year (12% rise in 1995); of whom 281 (43%) started dialysis with CAPD, and 373 (57%) had previously had haemodialysis or peritoneal dialysis, or a failed transplant. See Table 54. There was a reduction in new patients <65 years. There has been no change in the modal age group 65-74 years for some time. See Figure 66 and 67. For more detail see Appendix II.

There were 278 deaths (19.8 deaths per 100 patient years; 13% of patients at risk): range 2.8 deaths per 100 patient years; 2% (15-24 years), 30.5 deaths per 100 patient years; 19% (65-84 years). See Table 35 and Appendix II.

There were only 103 patients, the lowest number since 1987, receiving a transplant compared to 116 in 1995; 5% of all patients treated, (8% of patients <65 years treated during the year). See Table 54.

Permanent transfer (>12 months) to another form of dialysis, normally haemodialysis, rose from 268 patients (13% of patients dialysed) to 282 patients (13%) in 1996. Most transfers to another form of dialysis were permanent (282/434). See Table 54.

The primary renal disease of new patients to CAPD was 31% glomerulonephritis, 23% diabetic nephropathy. See Table 57.

New Zealand

The annual stock and flow of patients during the period 1988-96 is shown in Table 58 and Figure 68. Of 2124 patients treated 530 (25%) were alive at 31st December 1996, a slight fall from the previous year: 57% all dialysis patients, 71% of home dialysis.

Of 2421 patients dialysed, 113 (4.7%) had had more than five years continuous treatment. See Table 56.

Modal age group was 55-64 years (30%), 10% <35 years (12% 1995), 22% >65 years (21% 1995). See Table 59 and Figures 72.

There were 220 new CAPD patients in the calendar year 1996 (212, 1995), 57% as initial dialysis treatment; 25% were 45-54 years, 13% <35 years, 49% >65 years. See Table 58 and Figure 71. For more detail see Appendix III.

There were 76 deaths in 1996 (101, 1995), 14.7 deaths per 100 patient years, (10.3% of patients at risk); 8% 35-44 years, 10% 55-64 years, 24% 65-74 years. For more detail see Table 41 and 42 and Appendix III.

Forty six patients were transplanted in 1996 (43, 1995), 6% of patients dialysed, 8% of patients <65 years old. See Table 58.

The proportion of patients in each age group using CAPD ranged from 43% (25-34 years) to 64% (65-84 years). See Table 56 and Figure 69.

Figure 63

Stock and Flow of C.A.P.D Patients
Australia 1988 - 1996

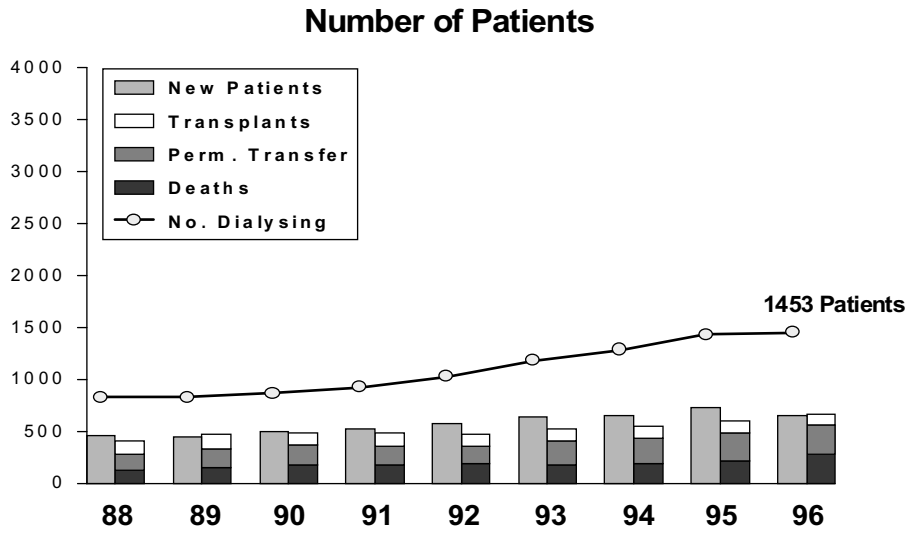


Table 54 **Australia**

Stock and Flow of CAPD Patients 1988 - 1996

	1988	1989	1990	1991	1992	1993	1994	1995	1996
Patients new to CAPD	460	447	498	521	569	642	651	732	654
First Dialysis Treatment	143	153	168	233	228	258	268	303	281
Previous Dialysis (HD/IPD)	296	281	308	274	318	365	359	407	357
Failed Transplant	21	13	22	14	23	19	24	22	16
Transplanted	135	142	111	127	115	106	115	116	103
Deaths	125	160	174	174	190	176	199	215	278
Never Transplanted	114	145	158	157	178	166	187	204	267
Previous Transplant	11	15	16	17	12	10	12	11	11
Permanent Transfers (>12/12)	151	174	195	191	169	242	239	268	282
Temporary Transfers (<12/12)	75	96	77	80	117	115	132	131	152
Patients Dialysing at 31 December	831	831	870	926	1034	1183	1283	1429	1453
Patients Ddialysing at Home 31 December	805	804	846	895	1001	1156	1253	1398	1424
% of all Home Dialysis Patients	56%	58%	58%	60%	61%	63%	66%	67%	67%

Table 55 **Australia and New Zealand**

Proportion (%) CAPD of all Dialysis Patients - Each State 1988 - 1996

State	1988	1989	1990	1991	1992	1993	1994	1995	1996
Aust.	**31%**	**30%**	**29%**	**29%**	**31%**	**32%**	**31%**	**32%**	**30%**
Qld	33%	31%	33%	34%	39%	39%	38%	39%	34%
NSW/ACT	28%	29%	28%	27%	28%	30%	29%	31%	32%
Vic.	38%	35%	31%	30%	30%	32%	30%	27%	24%
Tas.	70%	70%	64%	58%	53%	46%	54%	57%	47%
SA	18%	18%	18%	22%	21%	21%	22%	17%	16%
NT	14%	3%	5%	-	2%	4%	7%	12%	13%
WA	29%	26%	33%	38%	42%	45%	46%	47%	41%
N.Z.	**44%**	**46%**	**50%**	**53%**	**56%**	**57%**	**62%**	**59%**	**57%**

Table 56 **Australia and New Zealand**

Continuous Period of CAPD

	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 7981 Patients	2309	1707	1175	823	648	375	261	242	237	123	41	24	10	6
All Treatments 9795 Patients	3005	2081	1416	999	757	454	300	270	274	143	48	26	13	9
NEW ZEALAND														
1st Treatment 2124 Patients	445	369	316	265	191	163	124	52	104	50	15	17	4	9
All Treatments 2421 Patients	548	420	358	286	211	180	133	58	114	59	16	17	7	14

Stock and Flow of CAPD Patients 1988 - 1996

Age Groups	1988	1989	1990	1991	1992	1993	1994	1995	1996
New Patients ★									
00-14 years	16	13	10	11	11	14	15	11	6
15-24 years	26	19	20	29	21	26	24	23	16
25-34 years	31	36	50	37	48	45	51	43	41
35-44 years	44	52	64	50	72	65	55	102	78
45-54 years	82	60	80	74	84	80	118	132	93
55-64 years	132	149	122	156	168	181	150	172	152
65-74 years	115	104	130	145	146	194	190	195	208
75-84 years	14	14	22	17	19	36	46	52	56
85-94 years	-	-	-	2	-	1	2	2	4
Total	**460**	**447**	**498**	**521**	**569**	**642**	**651**	**732**	**654**
Patients Dialysing									
00-14 years	23	18	16	15	10	13	12	9	7
15-24 years	34	35	29	27	30	39	42	38	35
25-34 years	56	52	64	66	77	77	86	80	74
35-44 years	93	88	100	103	123	128	128	162	167
45-54 years	133	123	129	113	136	152	187	235	236
55-64 years	226	247	235	265	308	326	321	350	340
65-74 years	238	225	246	289	301	375	401	437	461
75-84 years	28	43	51	47	48	72	103	114	128
85-94 years	-	-	-	1	1	1	3	4	5
Total	**831**	**831**	**870**	**926**	**1034**	**1183**	**1283**	**1429**	**1453**
Primary Renal Disease ★									
Glomerulonephritis	148	137	154	174	217	192	199	246	203
Analgesic Nephropathy	68	73	67	66	58	78	53	59	56
Hypertension	34	36	41	52	51	75	74	67	91
Polycystic Disease	21	34	26	33	33	38	43	42	32
Reflux Nephropathy	22	36	35	21	35	35	32	33	31
Diabetic Nephropathy	54	61	92	84	98	112	135	172	149
Miscellaneous	66	46	52	53	46	64	60	68	48
Uncertain	47	24	31	38	31	48	55	45	44
Total	**460**	**447**	**498**	**521**	**569**	**642**	**651**	**732**	**654**

★ New patients receiving first CAPD treatment

Proportion (%) Age Distribution 1988 - 1996

Age Groups	1988	1989	1990	1991	1992	1993	1994	1995	1996
New Patients									
00-14 years	3%	3%	2%	2%	2%	2%	2%	2%	1%
15-24 years	6%	4%	4%	6%	4%	4%	4%	3%	2%
25-34 years	7%	8%	10%	7%	8%	7%	8%	6%	6%
35-44 years	9%	12%	13%	10%	13%	10%	8%	14%	12%
45-54 years	18%	14%	16%	14%	15%	13%	18%	18%	14%
55-64 years	29%	33%	25%	30%	29%	28%	23%	23%	23%
65-74 years	25%	23%	26%	28%	26%	30%	29%	27%	32%
75-84 years	3%	3%	4%	3%	3%	6%	7%	7%	9%
85-94 years	-	-	-	<1%	-	<1%	1%	<1%	1%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Patients Dialysing									
00-14 years	3%	2%	2%	2%	1%	1%	1%	1%	<1%
15-24 years	4%	4%	3%	3%	3%	3%	3%	3%	2%
25-34 years	7%	6%	7%	7%	7%	7%	7%	6%	5%
35-44 years	11%	11%	12%	11%	12%	11%	10%	11%	11%
45-54 years	16%	15%	15%	12%	13%	13%	15%	16%	16%
55-64 years	27%	30%	27%	28%	30%	27%	25%	24%	23%
65-74 years	29%	27%	28%	31%	29%	32%	31%	31%	32%
75-84 years	3%	5%	6%	5%	5%	6%	8%	8%	9%
85-94 years	-	-	-	<1%	<1%	<1%	<1%	<1%	<1%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Australia 1996

Figure 64

C.A.P.D Patients (%) of all Dialysis

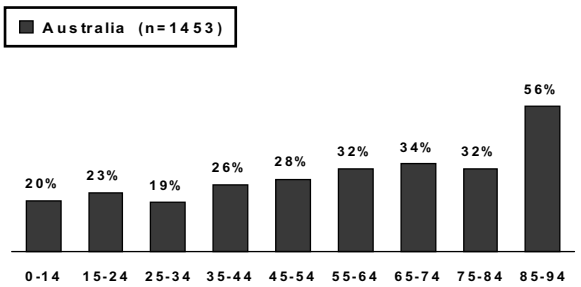


Figure 65

Number (Per Million) C.A.P.D Patients

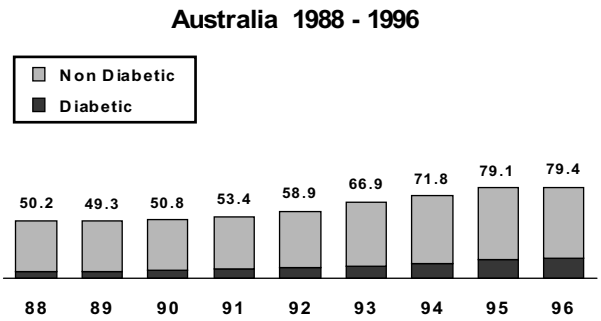
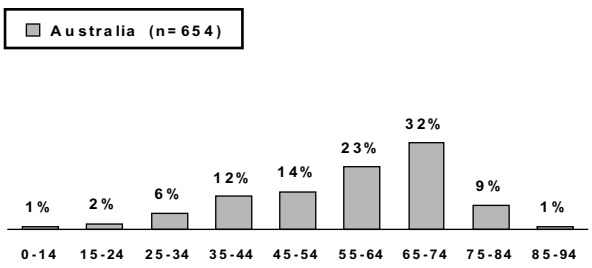


Figure 66

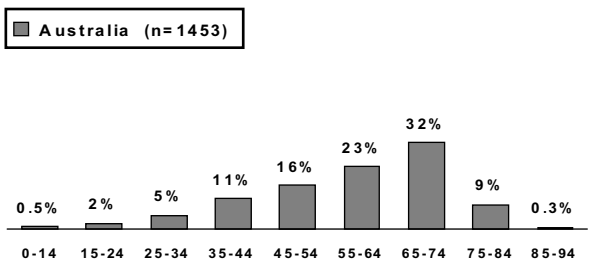
Age of New C.A.P.D Patients



No. Pats.	6	16	41	78	93	152	208	56	4

Figure 67

Age of Dialysing C.A.P.D Patients



No. Pats.	7	35	74	167	236	340	461	128	5

Figure 68

Stock and Flow of C.A.P.D Patients
New Zealand 1988 - 1996

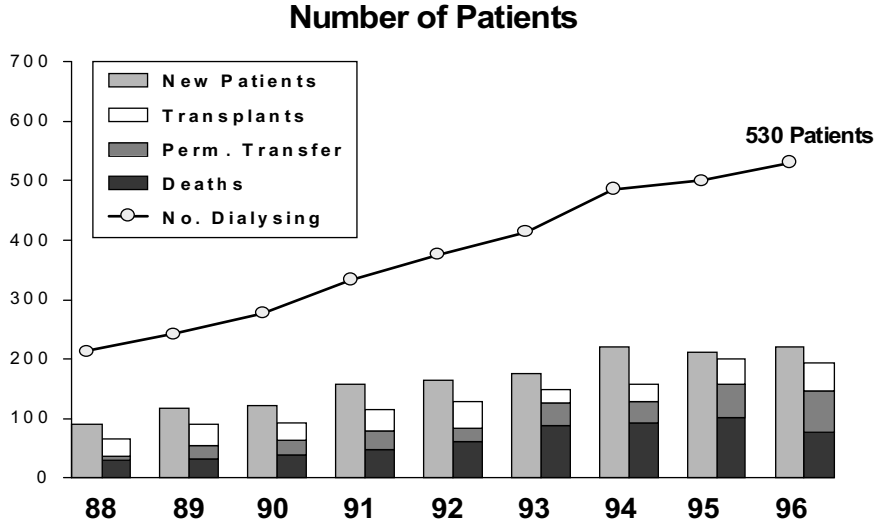


Table 58 **New Zealand**

Stock and Flow of CAPD Patients 1988 - 1996

	1988	1989	1990	1991	1992	1993	1994	1995	1996
Patients new to CAPD	90	117	123	158	164	176	221	212	220
First Dialysis Treatment	56	84	85	100	112	89	134	134	125
Previous Dialysis (HD/IPD)	29	29	35	55	45	82	78	73	89
Failed Transplant	5	4	3	3	7	5	9	5	6
Transplanted	30	35	29	34	45	23	30	43	46
Deaths	29	33	39	48	61	88	92	101	76
Never Transplanted	25	29	33	44	57	80	83	97	70
Previous Transplant	4	4	6	4	4	8	9	4	6
Permanent Transfers (>12/12)	7	22	26	32	23	38	36	57	71
Temporary Transfers (<12/12)	3	6	6	4	8	22	28	8	28
Patients Dialysing at 31 December	213	242	278	333	376	414	486	500	530
Patients Dialysing at Home 31 December	210	236	272	325	369	407	481	496	526
% of all Home Dialysis Patients	55%	56%	60%	62%	65%	69%	73%	72%	71%

Stock and Flow of CAPD Patients 1988 - 1996

Age Groups	1988	1989	1990	1991	1992	1993	1994	1995	1996
New Patients ★									
00-14 years	3	4	2	5	5	6	4	5	6
15-24 years	8	9	4	6	7	3	7	9	12
25-34 years	14	11	15	11	13	21	23	16	12
35-44 years	9	17	22	20	26	23	33	27	28
45-54 years	31	27	27	37	36	36	54	55	54
55-64 years	17	34	34	56	47	54	67	53	62
65-74 years	5	14	18	19	28	31	31	40	43
75-84 years	3	1	1	4	2	2	2	7	3
85-94 years	-	-	-	-	-	-	-	-	-
Total	**90**	**117**	**123**	**158**	**164**	**176**	**221**	**212**	**220**
Patients Dialysing									
00-14 years	7	6	6	7	10	8	6	6	-
15-24 years	13	11	12	13	11	10	12	13	19
25-34 years	29	27	28	24	31	39	46	41	38
35-44 years	36	38	43	47	52	65	74	77	67
45-54 years	62	68	73	79	84	88	113	125	133
55-64 years	43	56	75	106	111	119	138	134	157
65-74 years	18	31	39	53	69	73	85	91	101
75-84 years	5	5	1	4	8	12	12	13	15
85-94 years	-	-	1	-	-	-	-	-	-
Total	**213**	**242**	**278**	**333**	**376**	**414**	**486**	**500**	**530**
Primary Renal Disease ★									
Glomerulonephritis	29	37	32	30	51	32	55	61	48
Analgesic Nephropathy	-	-	2	2	2	1	2	-	-
Hypertension	12	11	15	19	24	28	28	31	25
Polycystic Disease	5	7	10	9	4	10	8	6	16
Reflux Nephropathy	4	6	5	8	12	8	9	6	15
Diabetic Nephropathy	28	36	50	65	51	66	87	79	88
Miscellaneous	11	12	3	14	13	17	24	21	22
Uncertain	1	8	6	11	7	14	8	8	6
Total	**90**	**117**	**123**	**158**	**164**	**176**	**221**	**212**	**220**

★ New patients receiving first CAPD treatment

Proportion (%) Age Distribution 1988 - 1996

Age Groups	1988	1989	1990	1991	1992	1993	1994	1995	1996
New Patients									
00-14 years	3%	3%	2%	3%	3%	3%	2%	2%	3%
15-24 years	9%	8%	3%	3%	4%	2%	3%	4%	5%
25-34 years	16%	9%	12%	7%	8%	12%	10%	8%	5%
35-44 years	10%	15%	18%	13%	16%	13%	15%	13%	13%
45-54 years	34%	23%	22%	23%	22%	20%	25%	26%	25%
55-64 years	19%	29%	28%	35%	29%	31%	30%	25%	28%
65-74 years	6%	12%	15%	12%	17%	18%	14%	19%	20%
75-84 years	3%	1%	<1%	3%	1%	1%	1%	3%	1%
85-94 years	-	-	-	-	-	-	-	-	-
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Patients Dialysing									
00-14 years	3%	2%	2%	2%	3%	2%	1%	1%	-
15-24 years	6%	5%	4%	4%	3%	2%	2%	3%	3%
25-34 years	14%	11%	10%	7%	8%	9%	10%	8%	7%
35-44 years	17%	16%	16%	14%	14%	16%	15%	15%	13%
45-54 years	29%	28%	26%	24%	22%	21%	23%	25%	25%
55-64 years	20%	23%	27%	32%	30%	29%	29%	27%	30%
65-74 years	9%	13%	14%	16%	18%	18%	18%	18%	19%
75-84 years	2%	2%	<1%	1%	2%	3%	2%	3%	3%
85-94 years	-	-	<1%	-	-	-	-	-	-
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

New Zealand 1996

Figure 69

C.A.P.D Patients (%) of all Dialysis

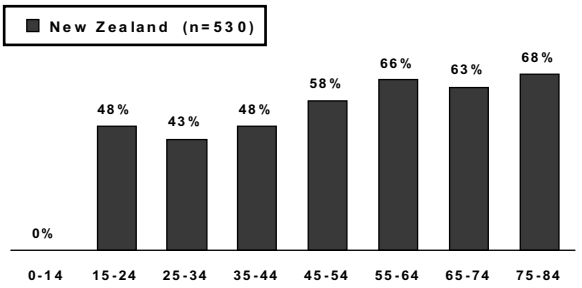


Figure 70

Number (Per Million) C.A.P.D Patients

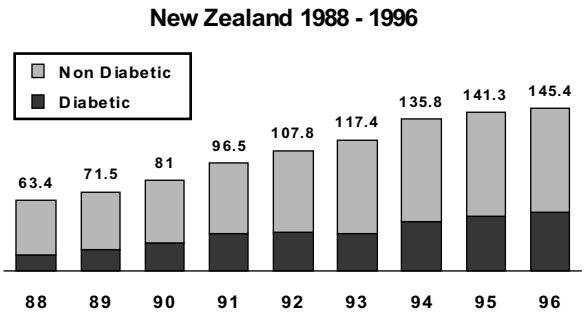
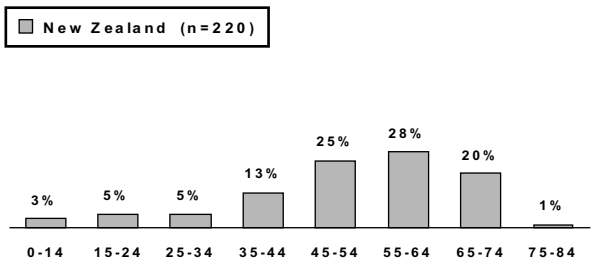


Figure 71

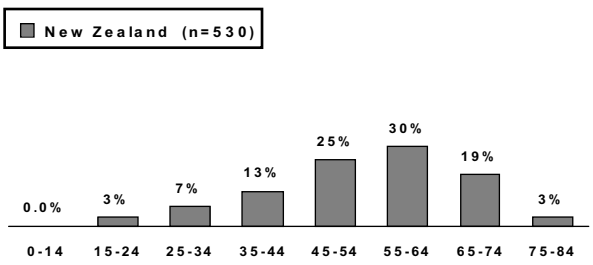
Age of New C.A.P.D Patients



	0-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84
No. Pats.	6	12	12	28	54	62	43	3

Figure 72

Age of Dialysing C.A.P.D Patients



	0-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84
No. Pats.	0	19	38	67	133	157	101	15

CAPD TREATMENT

Connection Systems

Now that virtually all patients were using a disconnect system in both Australia and New Zealand, formal reporting of this item will cease.

Table 60 **Australia and New Zealand**

CAPD Connection Systems 31-Mar-97

Connection System	Australia			New Zealand		
	March 1996	Sept. 1996	March 1997	March 1996	Sept. 1996	March 1997
Non Disconnect						
(1)	1%	1%	1%	2%	2%	1.5%
(2) CXD, UVXD	2%	2%	1.5%	1%	0.5%	0.5%
Disconnect	97%	97%	97.5%	97%	97.5%	98%
Total	**1371**	**1402**	**1427**	**505**	**523**	**537**

(1) No additional method to reduce infection. (2) Use of mechanical (CXD) or ultraviolet light.

CAPD Litres per week

The standard dose of peritoneal dialysis has steadily increased over the past two years. Whereas in 1994, most patients used 56 L/week (4x2L per day) regardless of body size or clearance of urea/creatinine, more in 1996 were using larger weekly dialysate volumes. See Table 61.

This trend was age dependent, being more pronounced in those who were middle aged of whom 30% were using 10L or more of dialysate each day. Two years earlier in the same age group only 6% used more than 8L of dialysate per day.

Table 61 **Australia and New Zealand**

Volume of Dialysate per Week

Age Groups	1994					1996				
	No. Pts	Litres per Week				No. Pts	Litres per Week			
		42	56	70	84		42	56	70	84
Australia										
45-64	511	12	82	5	1	599	5	65	25	5
65-74	402	12	84	4	1	469	6	72	20	2
75-84	102	14	84	-	2	132	8	79	11	3
New Zealand										
45-64	265	6	83	9	2	307	3	72	20	5
65-74	88	14	77	9	-	111	9	65	20	6
75-84	13	31	62	8	-	108	22	50	28	-

PERITONITIS (Table 62 and Figures 75 and 76)

AUSTRALIA

The median survival period free of infection estimated by actuarial survival increased slightly from 14 (1993-95) to 15 months with age related variation. There was a disappointing fall in peritonitis free period in the age group 55-64 years in 1995-6 compared to 1993-94. In contrast a marked improvement (60%) was seen in the peritonitis free period in the modal age group 65-74 years.

NEW ZEALAND

Median survival was 11 months (9 months 1993-95). A similar improvement (80%) to that reported in Australia was seen in the age group 65-74 years; the middle aged group (55-64 years) improved (25%) to a peritonitis free interval once again on a par with that of Australia.

Table 62 **Australia and New Zealand**

First CAPD Treatment to First Episode of Peritonitis Related to Age at Entry 1994 - 1996

Survival	Age Groups						All
	00-14	15-34	35-54	55-64	65-74	>75	
AUSTRALIA	**n=29**	**n=198**	**n=578**	**n=474**	**n=593**	**n=162**	**n=2034**
3 months	56 ± 9.5 15	80 ± 2.9 145	85 ± 1.5 458	85 ± 1.7 380	86 ± 1.5 462	81 ± 3.1 122	84 ± 0.8 1582
6 months	47 ± 9.9 8	70 ± 3.4 109	74 ± 1.9 327	77 ± 2.0 291	75 ± 1.9 332	69 ± 3.8 83	74 ± 1.0 1150
9 months	35 ± 10.4 6	61 ± 3.8 80	66 ± 2.2 237	68 ± 2.3 221	66 ± 2.2 237	63 ± 4.1 68	65 ± 1.2 849
1 year	35 ± 10.4 6	56 ± 4.0 58	59 ± 2.4 184	58 ± 2.6 153	55 ± 2.4 176	49 ± 4.6 42	56 ± 1.3 619
2 years	14 ± 8.8 1	38 ± 4.8 14	38 ± 2.9 41	36 ± 3.1 36	37 ± 2.8 48	29 ± 5.0 10	36 ± 1.5 150
3 years	-	38 ± 4.8 2	27 ± 4.0 1	25 ± 4.1 3	26 ± 3.7 4	-	26 ± 2.0 10
NEW ZEALAND	**n=15**	**n=80**	**n=249**	**n=182**	**n=114**	**n=12**	**n=652**
3 months	66 ± 12.5 7	82 ± 4.3 63	84 ± 2.3 205	82 ± 2.9 143	87 ± 3.2 90	64 ± 14.5 6	83 ± 1.5 514
6 months	47 ± 14.3 5	75 ± 5.0 47	71 ± 3.0 150	68 ± 3.6 104	75 ± 4.4 62	53 ± 15.5 5	70 ± 1.9 373
9 months	36 ± 14.4 3	65 ± 5.8 34	59 ± 3.3 109	50 ± 4.1 61	63 ± 5.1 46	53 ± 15.5 5	57 ± 2.1 258
1 year	22 ± 14.2 1	51 ± 6.6 23	47 ± 3.6 68	42 ± 4.2 42	60 ± 5.3 33	43 ± 15.7 4	47 ± 2.2 171
2 years	-	30 ± 7.2 4	30 ± 3.9 14	25 ± 4.4 9	28 ± 6.6 2	28 ± 15.6 1	28 ± 2.5 30
3 years	-	-	-	13 ± 5.4 1	-	-	15 ± 3.4 1

Figure 73

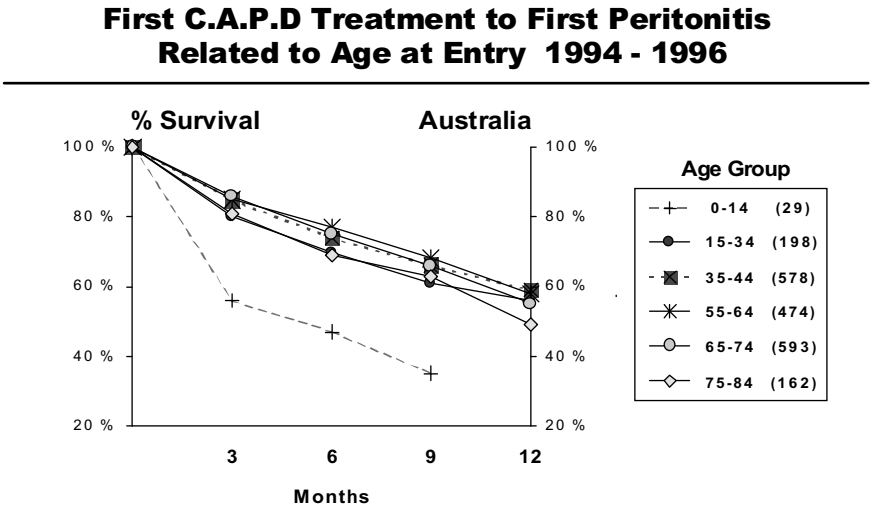
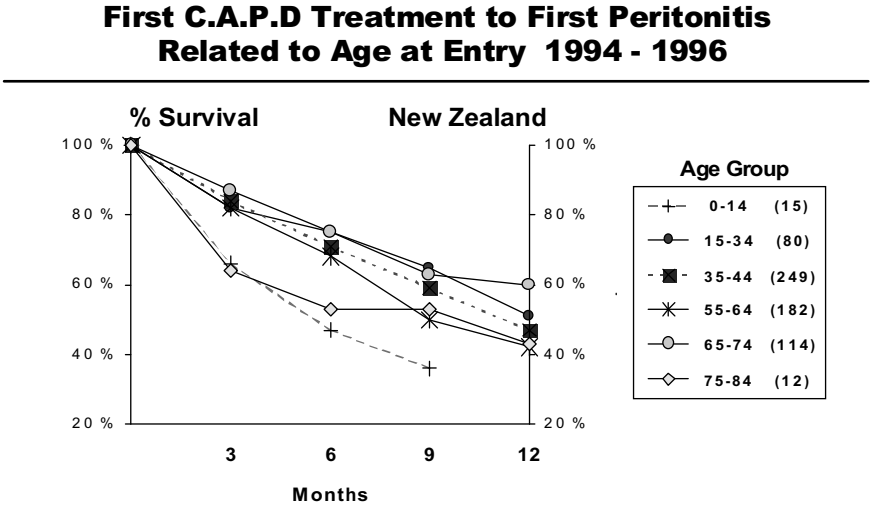
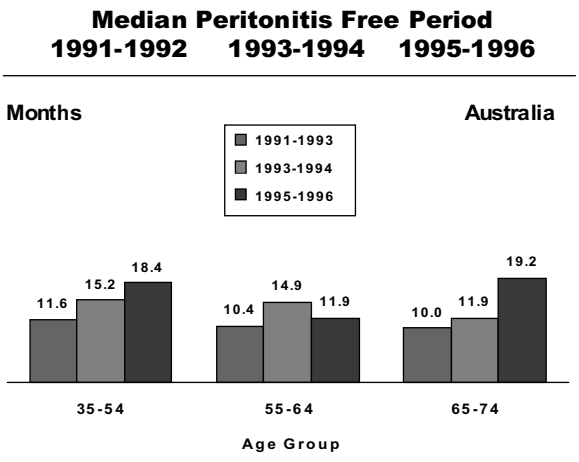
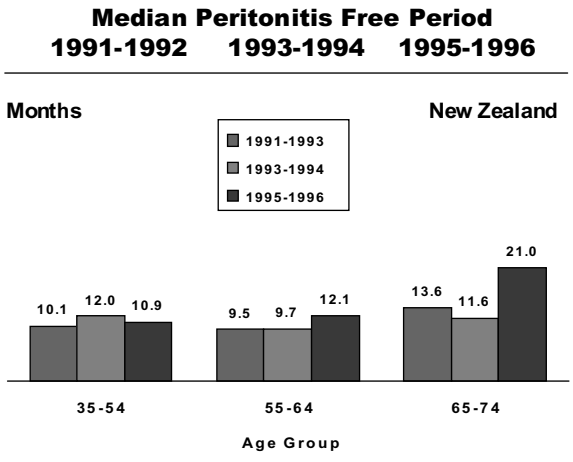


Figure 74



Figures 75 and 76





HAEMODIALYSIS

Stock and Flow

Australia

The annual stock and flow of haemodialysis patients during the period 1988-96 is shown in Table 63 and 64 and Figure 77.

There were 3284 patients (180 per million) receiving treatment at 31st December 1996, an increase of 9% (9% 1995); 41% hospital based (42% 1995), 40% in satellite (limited or self care centres) (38% 1995) and 19% at home (21% 1995). There was a further substantial rise (17%) in satellite based patients (19% 1995). After a minor fall over the last two years, a slight increase was recorded, although as a proportion of all dialysis patients, the 632 patients represented a further fall.

The proportion of all dialysis patients who were using home haemodialysis in each State, shown in Table 64, was low except for New South Wales/ACT 21%, Victoria 12%, Queensland only 3%.

A total of 1199 patients received haemodialysis for the first time during the year, a 5% increase; 84% had no previous dialysis nor a transplant. The modal age group was 65-74 years (27%). See Table 65 and Figure 78.

Of the 3284 patients dialysing, 34% were 65 years or over, 13% less than 35 years old. See Table 65 and Figure 79. The proportion of all dialysis patients in each age group who were using haemodialysis is shown in Figure 80. For more detail regarding age and mode of haemodialysis in each State see Appendix II.

There were 329 transplants, an 11% increase from 297 in 1995, and return to the previous mean level of transplantation activity.

There were 431 deaths, representing 13.6 deaths per 100 patient years (12.1% of patients at risk). See Table 63. For more detail of cause of death see Appendix II.

There was a moderate increase (21%) in the number of permanent transfers (>12 months). The majority (78%) of all transfers were permanent.

New Zealand

The annual stock and flow of haemodialysis patients during the period 1988-96 is shown in Table 66 and 67, and Figure 81.

There were 374 patients (103 per million) receiving treatment at 31st December 1996, a 14% increase (11% 1995). Hospital based haemodialysis increased to 49% (47% 1995), and home dialysis decreased to 51% (53% 1995). Modal age group 45-54 years (25%): 17% >65years; 18% <35 years. See Figure 83. The proportion of all dialysis patients who were using home haemodialysis is shown in Table 67.

There were 193 patients who received haemodialysis for the first time, 18% increase from 1995, 73% having their initial dialysis treatment. Modal age group 45-64 years (46%), 14% <35 years, 22% >65 years. See Table 67 and Figure 82, and Appendix III.

There were even fewer transplants, 32 patients (41 in 1995), 6% of all patients dialysing, 7% of patients <65 years dialysed.

There were 56 deaths, 15.6 deaths per 100 patient years, (10% of patients at risk); more in the young and old groups. See Table 66.

Permanent transfers for >12 months rose to 95 (59 in 1995). The proportion of dialysis patients in each age group using haemodialysis is shown in Figure 84. Most middle aged and elderly patients used peritoneal dialysis.

Figure 77

Stock and Flow of Haemodialysis Patients
Australia 1988 - 1996

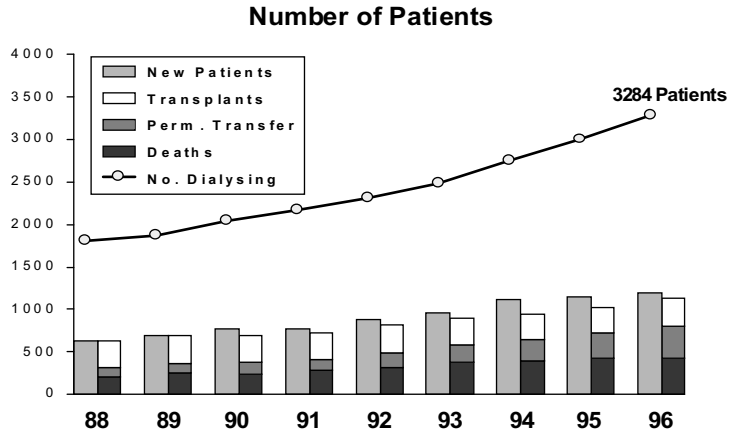


Table 63 — Australia

Stock and Flow of Haemodialysis Patients 1988 - 1996

	1988	1989	1990	1991	1992	1993	1994	1995	1996
Patients new to Haemodialysis	623	684	770	768	888	965	1117	1142	1199
First Dialysis Treatment	493	508	613	608	730	767	921	952	1002
Previous Dialysis (IPD/CAPD)	111	158	135	137	134	179	178	167	173
Failed Transplant	19	18	22	23	24	19	18	23	24
Transplanted	318	327	316	319	341	322	300	297	329
Deaths	202	255	242	277	313	365	390	421	431
Never Transplanted	153	197	187	214	257	303	335	372	372
Previous Transplant	49	58	55	63	56	62	55	49	59
Permanent Transfers (>12/12)	115	109	131	134	168	212	247	307	365
Temporary Transfers (<12/12)	68	87	76	80	88	108	121	101	100
Patients Dialysing at 31 December	1807	1872	2036	2163	2307	2483	2754	3009	3284
Patients Dialysing at Home 31 December	602	570	589	587	611	645	625	624	632
% of all Home Dialysis Patients	42%	41%	41%	39%	37%	35%	33%	30%	29%

Table 64 — Australia and New Zealand

Proportion (%) Home Haemodialysis of all Dialysis Patients
Each State 1988 - 1996

State	1988	1989	1990	1991	1992	1993	1994	1995	1996
Aust.	**22%**	**21%**	**20%**	**19%**	**18%**	**17%**	**15%**	**14%**	**13%**
Qld	10%	9%	7%	6%	6%	6%	5%	4%	3%
NSW/ACT	30%	29%	28%	27%	25%	25%	22%	21%	21%
Vic.	25%	22%	23%	22%	21%	20%	17%	14%	12%
Tas.	2%	2%	3%	5%	3%	5%	3%	1%	1%
SA	13%	14%	12%	11%	11%	11%	9%	8%	7%
NT	5%	-	-	-	-	-	-	-	-
WA	12%	8%	9%	8%	10%	9%	8%	8%	7%
N.Z.	**35%**	**35%**	**32%**	**32%**	**29%**	**25%**	**22%**	**20%**	**20%**

Table 65 **Australia**

Stock and Flow of Haemodialysis Patients 1988 - 1996

Age Groups	1988	1989	1990	1991	1992	1993	1994	1995	1996
New Patients ★									
00-14 years	9	9	9	5	6	5	11	12	13
15-24 years	53	48	57	53	62	50	60	58	45
25-34 years	56	73	71	71	101	94	98	101	106
35-44 years	102	112	119	115	104	122	150	140	147
45-54 years	121	122	159	143	163	164	209	213	194
55-64 years	177	170	191	192	239	245	245	247	262
65-74 years	95	141	145	165	186	233	288	281	328
75-84 years	10	9	19	24	27	51	54	89	101
85-94 years	-	-	-	-	-	1	2	1	3
Total	**623**	**684**	**770**	**768**	**888**	**965**	**1117**	**1142**	**1199**
Patients Dialysing									
00-14 years	7	8	7	8	6	4	12	14	13
15-24 years	104	102	102	92	102	107	109	106	106
25-34 years	187	204	204	221	242	263	288	298	295
35-44 years	258	271	294	310	315	349	386	416	462
45-54 years	390	361	404	417	424	456	495	547	576
55-64 years	489	491	502	517	543	555	615	659	708
65-74 years	346	391	458	508	568	630	697	770	862
75-84 years	26	44	65	90	107	118	150	195	258
85-94 years	-	-	-	-	-	1	2	4	4
Total	**1807**	**1872**	**2036**	**2163**	**2307**	**2483**	**2754**	**3009**	**3284**
Primary Renal Disease ★									
Glomerulonephritis	260	263	305	292	347	348	400	405	421
Analgesic Nephropathy	59	69	80	96	74	101	81	79	77
Hypertension	33	57	59	59	74	79	112	92	141
Polycystic Disease	55	57	67	53	76	74	78	97	83
Reflux Nephropathy	31	54	54	47	56	54	56	50	54
Diabetic Nephropathy	51	68	82	92	109	137	189	213	211
Miscellaneous	79	75	84	67	100	108	123	133	136
Uncertain	55	41	39	62	52	64	78	73	76
Total	**623**	**684**	**770**	**768**	**888**	**965**	**1117**	**1142**	**1199**

★ New patients receiving first haemodialysis treatment

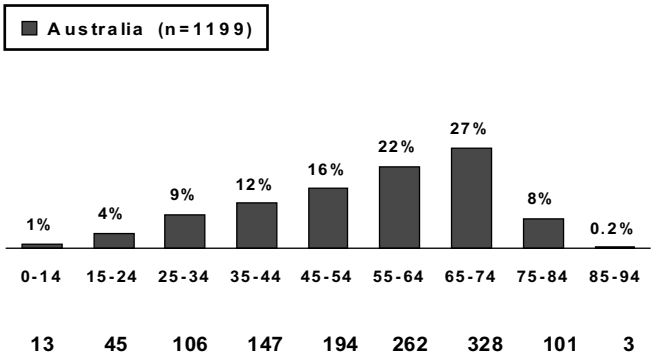
Proportion (%) Age Distribution 1988 - 1996

Age Groups	1988	1989	1990	1991	1992	1993	1994	1995	1996
New Patients									
00-14 years	1%	1%	1%	<1%	<1%	<1%	1%	1%	1%
15-24 years	9%	7%	7%	7%	7%	5%	5%	5%	4%
25-34 years	9%	11%	10%	9%	11%	10%	9%	9%	9%
35-44 years	16%	16%	15%	15%	12%	13%	13%	12%	12%
45-54 years	20%	18%	21%	19%	18%	17%	19%	19%	16%
55-64 years	28%	25%	25%	25%	27%	25%	212%	21%	22%
65-74 years	15%	21%	19%	2%	21%	24%	26%	25%	27%
75-84 years	2%	1%	2%	3%	3%	5%	5%	8%	8%
85-94 years	-	-	-	-	<1%	<1%	<1%	<1%	<1%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Patients Dialysing									
00-14 years	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%
15-24 years	6%	5%	5%	4%	4%	4%	4%	4%	3%
25-34 years	10%	11%	10%	10%	11%	11%	10%	10%	9%
35-44 years	14%	15%	14%	15%	14%	14%	14%	14%	14%
45-54 years	22%	19%	20%	19%	18%	18%	18%	18%	18%
55-64 years	27%	26%	25%	24%	23%	22%	23%	22%	22%
65-74 years	20%	21%	23%	23%	25%	25%	25%	26%	26%
75-84 years	1%	2%	3%	4%	5%	5%	5%	6%	8%
85-94 years	-	-	-	-	<1%	<1%	<1%	<1%	<1%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Australia 1996

Figure 78

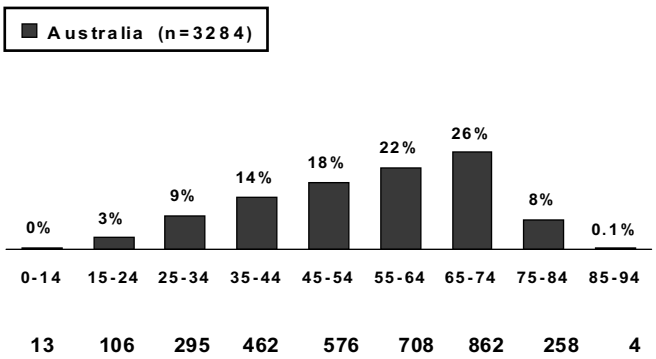
Age of New Haemodialysis Patients



	0-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85-94
No. Pats.	13	45	106	147	194	262	328	101	3

Figure 79

Age of Dialysing Haemodialysis Patients



	0-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85-94
No. Pats.	13	106	295	462	576	708	862	258	4

Figure 80

Haemodialysis Patients (%) of all Dialysis

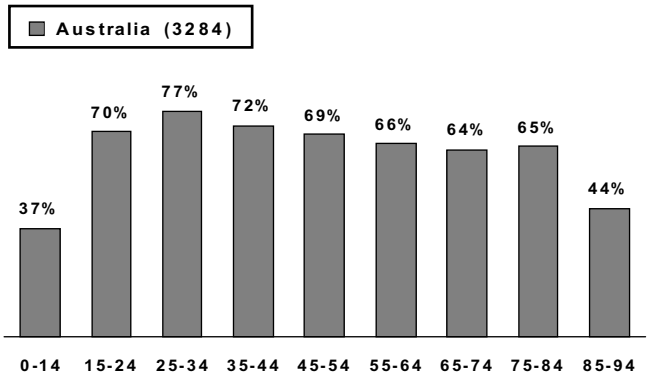


Figure 81

Stock and Flow of Haemodialysis Patients New Zealand 1988 - 1996

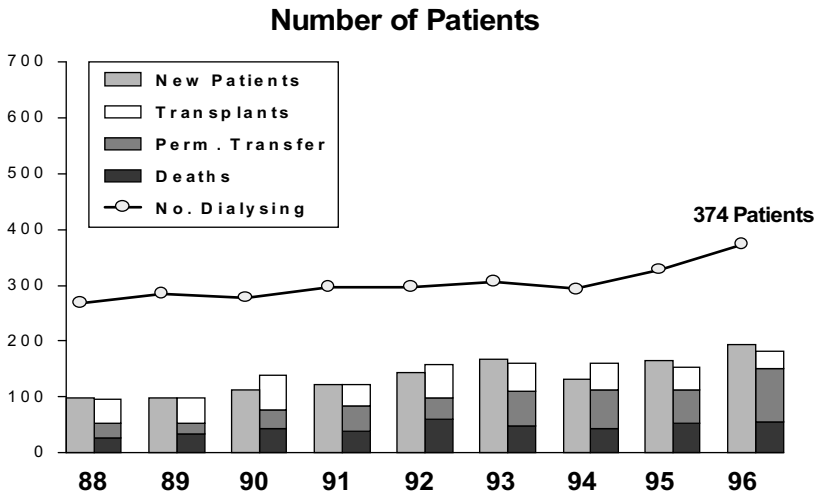


Table 66 **New Zealand**

Stock and Flow of Haemodialysis Patients 1988 - 1996

	1988	1989	1990	1991	1992	1993	1994	1995	1996
Patients new to Haemodialysis	97	99	113	122	144	168	133	164	193
First Dialysis Treatment	87	79	86	108	122	128	104	132	141
Previous Dialysis (IPD/CAPD)	6	19	23	13	19	35	23	28	46
Failed Transplant	4	1	4	1	3	5	6	4	6
Transplanted	44	43	64	39	62	51	48	41	32
Deaths	27	34	44	40	59	47	43	53	56
Never Transplanted	16	27	31	26	48	34	34	40	45
Previous Transplant	11	7	13	14	11	13	9	13	11
Permanent Transfers (>12/12)	25	20	32	44	38	63	69	59	95
Temporary Transfers (<12/12)	3	5	3	11	5	21	22	11	12
Patients Dialysing at 31 December	268	285	278	298	298	306	294	327	374
Patients Dialysing at Home 31 December	169	186	178	202	194	179	174	172	189
% of all Home Dialysis Patients	45%	44%	39%	38%	34%	30%	26%	25%	26%

Stock and Flow of Haemodialysis Patients 1988 - 1996

Age Groups	1988	1989	1990	1991	1992	1993	1994	1995	1996
New Patients ★									
00-14 years	-	4	3	2	-	-	2	1	-
15-24 years	12	7	12	7	13	13	8	5	16
25-34 years	13	9	12	18	18	26	20	14	11
35-44 years	15	17	23	15	19	29	19	22	36
45-54 years	25	24	24	28	29	37	34	47	43
55-64 years	24	29	24	36	42	40	34	48	45
65-74 years	7	9	14	13	21	20	15	24	37
75-84 years	1	-	1	3	2	3	1	3	5
85-94 years	-	-	-	-	-	-	-	-	-
Total	**97**	**99**	**113**	**122**	**144**	**168**	**133**	**164**	**193**
Patients Dialysing									
00-14 years	1	1	-	-	-	-	1	-	-
15-24 years	20	19	20	23	25	21	18	15	19
25-34 years	45	44	42	48	46	51	48	48	48
35-44 years	49	58	47	48	52	53	54	60	71
45-54 years	72	71	72	71	71	79	65	79	93
55-64 years	59	69	70	73	64	59	65	78	79
65-74 years	21	22	25	32	35	38	39	41	57
75-84 years	1	1	2	3	5	5	4	6	7
85-94 years	-	-	-	-	-	-	-	-	-
Total	**268**	**285**	**278**	**298**	**298**	**306**	**294**	**327**	**374**
Primary Renal Disease ★									
Glomerulonephritis	31	35	29	31	46	52	45	53	57
Analgesic Nephropathy	-	2	1	1	1	-	-	-	1
Hypertension	13	8	12	18	23	18	18	15	26
Polycystic Disease	10	12	12	6	12	9	4	11	10
Reflux Nephropathy	12	7	6	11	9	11	2	6	4
Diabetic Nephropathy	18	17	31	38	32	54	41	56	66
Miscellaneous	11	15	11	12	17	16	16	15	17
Uncertain	2	3	11	5	4	8	7	8	12
Total	**97**	**99**	**113**	**122**	**144**	**168**	**133**	**164**	**193**

★ New patients receiving first haemodialysis treatment

Proportion (%) Age Distribution 1988 - 1996

Age Groups	1988	1989	1990	1991	1992	1993	1994	1995	1996
New Patients									
00-14 years	-	4%	3%	2%	-	-	2%	<1%	-
15-24 years	12%	7%	11%	6%	9%	8%	6%	3%	8%
25-34 years	14%	9%	10%	14%	13%	16%	15%	9%	6%
35-44 years	17%	17%	20%	12%	13%	17%	14%	13%	19%
45-54 years	26%	24%	20%	23%	20%	22%	26%	29%	22%
55-64 years	24%	30%	21%	30%	29%	24%	26%	29%	23%
65-74 years	7%	9%	13%	11%	15%	12%	11%	15%	19%
75-84 years	1%	-	2%	2%	1%	1%	<1%	2%	3%
85-94 years	-	-	-	-	-	-	-	-	-
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Patients Dialysing									
00-14 years	<1%	<1%	-	-	-	-	<1%	-	-
15-24 years	7%	7%	7%	8%	8%	7%	6%	5%	5%
25-34 years	17%	15%	15%	16%	16%	17%	16%	15%	13%
35-44 years	19%	20%	17%	16%	18%	17%	19%	18%	19%
45-54 years	27%	25%	26%	24%	24%	26%	22%	24%	25%
55-64 years	22%	24%	25%	25%	21%	19%	22%	24%	21%
65-74 years	7%	8%	9%	11%	12%	12%	13%	12%	15%
75-84 years	<1%	<1%	<1%	<1%	1%	2%	1%	2%	2%
85-94 years	-	-	-	-	-	-	-	-	-
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

New Zealand 1996

Figure 82

Age of New Haemodialysis Patients

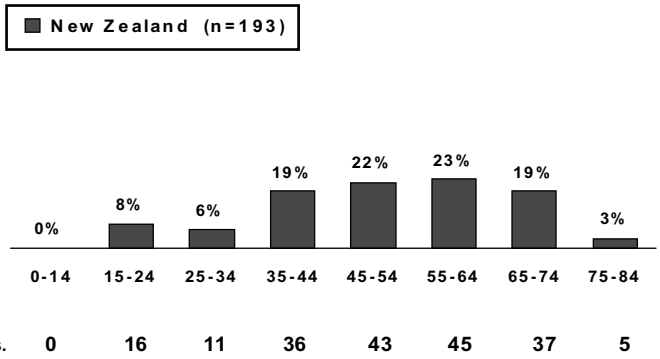


Figure 83

Age of Dialysing Haemodialysis Patients

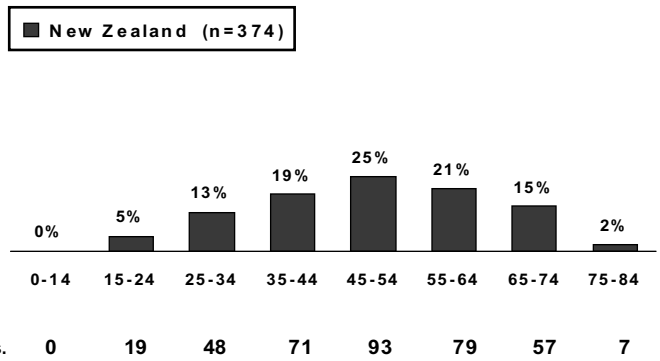
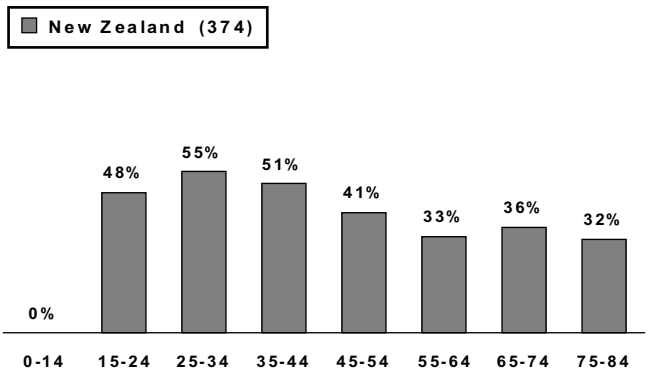


Figure 84

Haemodialysis Patients (%) of all Dialysis



HAEMODIALYSIS

Blood Flow Rates

Table 68. Figure 85 and 86.

The last few years have seen a marked increase in the prescribed dose of dialysis, achieved by increased blood flow rate, hours of dialysis, and surface area of the dialyser.

Australia

The trend towards a prescribed blood flow rate of 300 mls/minute or higher has accelerated rapidly from 13% (1994) to 47% of patients in 1997; only 16% were now prescribed less than 250 mls/minute.

New Zealand

Over the past two years the most common flow rate has increased from 200-249 to 250-299 mls/minute, in 1997 there were 83 (22%) using 300 ml/minute or higher compared to 6% in 1996. A considerable proportion (30%) still used <250 mls/minute.

Table 68 **Australia and New Zealand**

Blood Flow Rates (mls/minutes) 1992 - 1997

	No. Pts	Mls/Minute							
		<150	150-199	200-249	250-299	300-349	350-399	400-499	>450
AUSTRALIA									
March 1997	3342	5	28	501	1224	1446	132	5	1
March 1996	3041	3	24	552	1357	1019	81	4	1
March 1995	2765	5	41	668	1383	618	43	3	2
March 1994	2547	7	54	994	1118	328	34	11	1
March 1993	2278	4	45	945	976	280	17	9	2
March 1992	2175	1	52	1020	923	156	17	5	1
NEW ZEALAND									
March 1997	390	-	3	118	184	83	2	-	-
March 1996	352	-	4	147	179	19	3	-	-
March 1995	297	-	2	128	152	13	1	1	-
March 1994	296	-	1	151	133	7	3	1	-
March 1993	288	-	3	156	113	11	2	3	-
March 1992	293	-	-	166	115	6	1	5	-

Figure 85

Distribution of Blood Flow Rates

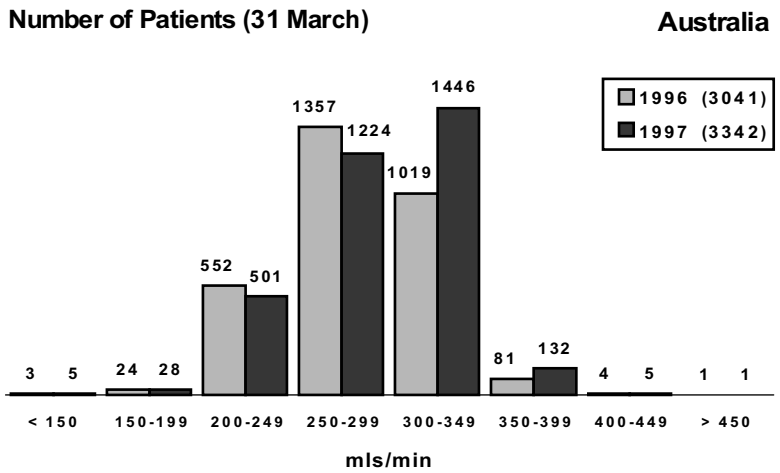
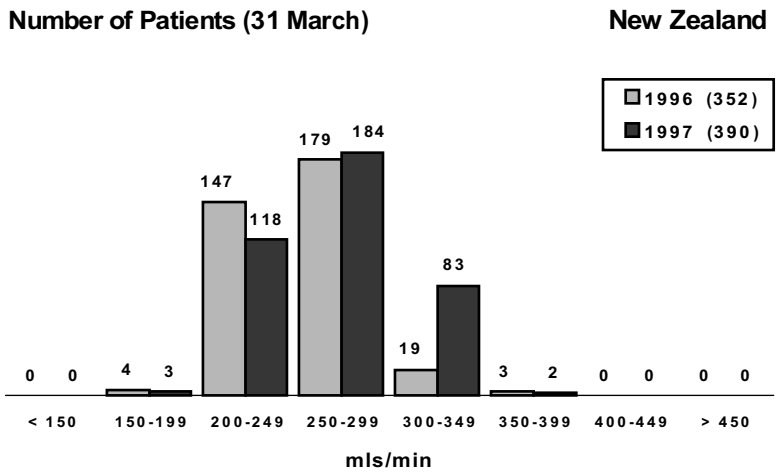


Figure 86

Distribution of Blood Flow Rates



FREQUENCY AND HOURS OF DIALYSIS

AUSTRALIA

Of the 3342 patients there were still 100 using dialysis twice a week (3%); almost all patients (96%) dialysed three times per week. See Table 69.

There was a continuing trend towards longer duration of each dialysis treatment. The proportion (30%) dialysing for 5 hours or longer had increased. amongst patients dialysing three times per week; only 10% (11% 1995) received less than four hours. Half (46%) of the patients dialysed for 4-4.25 hours. See Table 69 and Figure 87. Amongst patients dialysing only twice per week, 31% received less than four hours, and only 10% more than five hours each treatment.

The median weekly dialysis treatment period of all haemodialysis patients was 12 hours, range 4-27 hours. See Table 70.

NEW ZEALAND

There were 390 patients (95%) (93% 1995) dialysing three times per week.

The majority dialysed for five hours or more three times a week; most of the remainder dialysed for four hours.

Only four patients (1%) dialysed less than four hours thrice weekly. See Table 69 and 70, and Figure 88.

The trend was towards five hours as the standard treatment. Median weekly treatment 15 hours. Many of these patients dialysed at home; range 8-33 hours per week.

Table 69 **Australia and New Zealand**

Duration and Number of Treatments Per Week 31-Mar-97

Country	Sessions Per Week	Hours of Each Treatment										Total
		<2.5	2.5-2.9	3-3.4	3.5-3.9	4-4.4	4.5-4.9	5-5.4	5.5-5.9	6-6.4	>6.5	
AUSTRALIA	1	-	-	2	1	-	-	2	-	-	-	**5**
	2	1	1	23	6	33	4	22	5	4	1	**100**
	3	-	2	135	178	1467	484	842	58	54	3	**3223**
	4	-	-	4	1	6	-	3	-	-	-	**14**
Total		**1**	**3**	**164**	**186**	**1506**	**488**	**869**	**63**	**58**	**4**	**3342**
NEW ZEALAND	1	-	-	-	-	-	-	-	-	-	-	**-**
	2	-	-	-	-	1	-	10	-	1	-	**12**
	3	-	-	3	1	121	34	148	2	21	42	**372**
	4	-	-	-	-	2	-	4	-	-	-	**6**
Total		**-**	**-**	**3**	**1**	**124**	**34**	**162**	**2**	**22**	**42**	**390**

Table 70 **Australia and New Zealand**

Duration of Haemodialysis Per Week 31-Mar-97

Country	No. Pts	Hours of Haemodialysis Per Week							
		<9	9-11	12-14	15-17	18-20	21-23	24-26	>27
AUSTRALIA	3289	2%	10%	59%	27%	2%	-	<1%	<1%
NEW ZEALAND	384	<1%	4%	41%	39%	6%	5%	5%	<1%

Excludes patients on haemofiltration and haemodiafiltration

Figure 87

Duration of Dialysis Treatment
Three Sessions Per Week

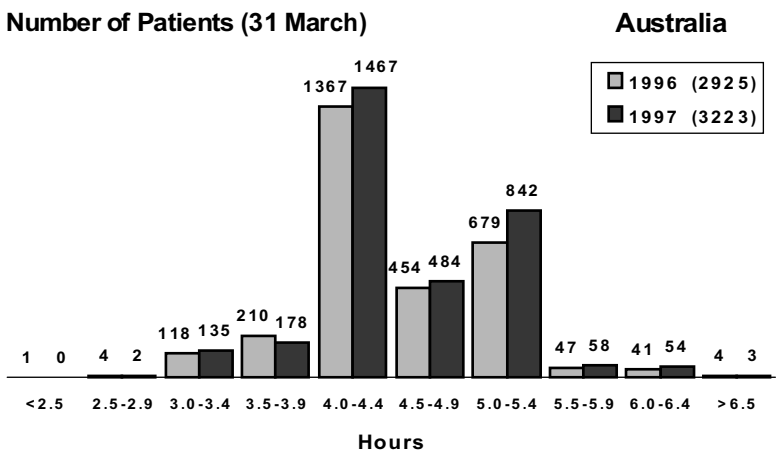
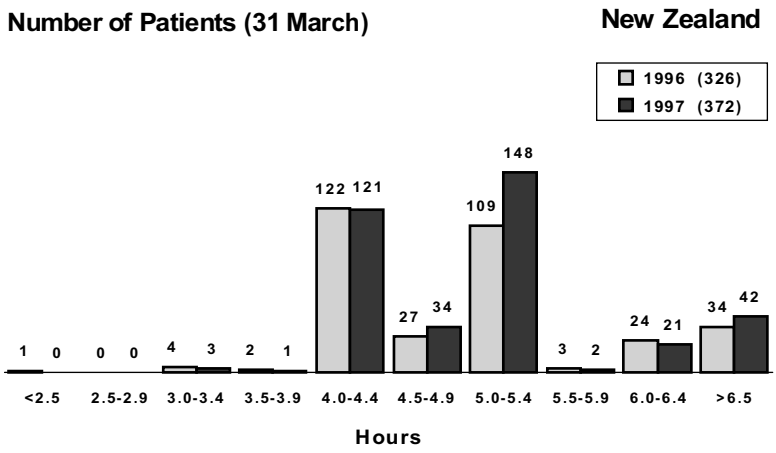


Figure 88

Duration of Dialysis Treatment
Three Sessions Per Week



MEMBRANE TYPE AND SURFACE AREA

AUSTRALIA

The trend towards cellulose acetate in more 'biocompatible' modifications (haemophan) which had been accelerating for a few years, surged ahead, while cellulose acetate use declined as did cuprophan. One hundred and sixty three patients (103, 1995) were using a 'mid flux' dialyser (cellulose triacetate) and 126 (45, 1995) using synthetic membranes. See Table 71 and Figure 89.

NEW ZEALAND

The cuprophan usage declined markedly to 48% in 1997 (73% in 1996) while that of cellulose acetate increased. A small number of synthetic membrane dialysers were being used. See Table 71 and Figure 89.

Table 71 **Australia and New Zealand**

Haemodialyser Membrane Types by Surface Area
Patients on Haemodialysis 31-Mar-97

Dialyser Membrane Type	<1.0 sq.m	1.0-1.4 sq.m	1.5-2.1 sq.m	Total
AUSTRALIA				
Acrylonitrile	-	-	1	**1 (<1%)**
Cellulose Acetate	27	493	525	**1045 (31%)**
Cellulose Triacetate	1	47	115	**163 (5%)**
Cuprophan	50	391	363	**804 (24%)**
Diacetate	-	14	9	**23 (<1%)**
Eval	-	1	-	**1 (<1%)**
Haemophan	208	707	263	**1178 (35%)**
Poly/Carbonate/Ether/Co-polymer	1	2	-	**3 (<1%)**
Polyacrylonitrile	-	-	1	**1 (<1%)**
Polyamide Haemo-diafiltration	-	12	21	**33 (1%)**
Polysulphone	22	21	46	**89 (3%)**
Saponified Ester	-	-	1	**1 (<1%)**
Total	309	1688	1345	**3342 (100%)**
NEW ZEALAND				
Cellulose Acetate	-	17	106	**123 (32%)**
Cuprophan	82	58	48	**188 (48%)**
Haemophan	-	27	36	**63 (16%)**
Polysulphone	1	-	-	**1 (<1%)**
Poly/Carbonate/Ether/Co-polymer	-	15	-	**15 (4%)**
Total	**83**	**117**	**190**	**390 (100%)**

Figure 89

Haemodialysis Surface Area

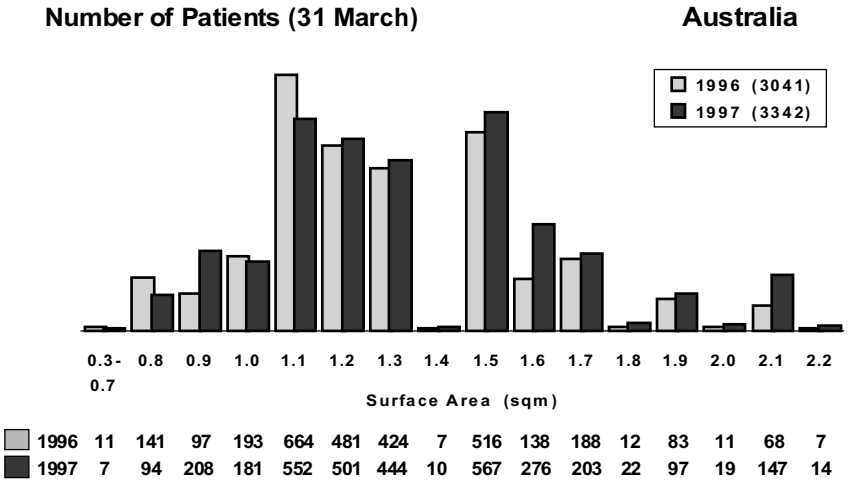
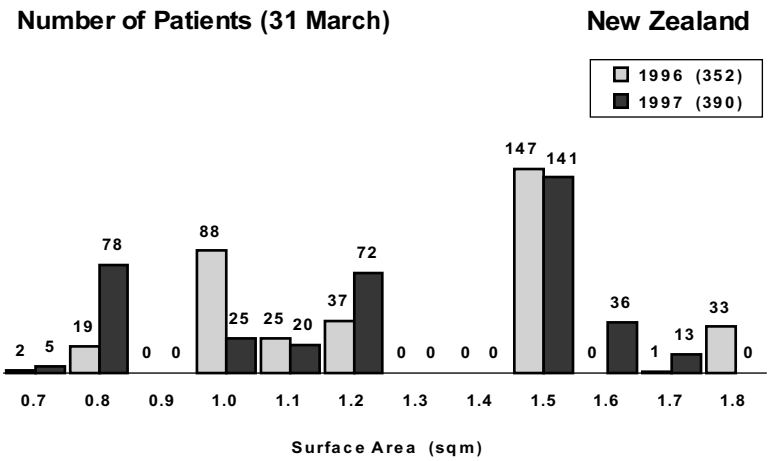


Figure 90

Haemodialysis Surface Area



CO-MORBID CONDITIONS AT ENTRY TO DIALYSIS

The detail of age, race, diabetic status related to presence of co-morbid conditions at **entry** to end stage renal failure treatment is listed in Appendix II.

Vascular disease has been more frequent in diabetics, particularly in the young Type I insulin dependent group.

Most cases of diabetes **without** diabetic nephropathy as the prime cause of renal failure occurred in those with Type II diabetes.

There was no racial difference in regard to vascular disease in the middle aged group (45-64 years).

Figure 91

Co-Morbid Conditions at Entry to Program
Australia 1-Jan-94 to 31-Dec-96

(n = 4102)	CAD	PVD	CVD	CLD
CATEGORY	No. Patients	No. Patients	No. Patients	No. Patients
Suspected	10.5% (434)	6.4% (264)	4.8% (195)	4.7% (194)
Yes	26.3% (1079)	18.4% (754)	8.7% (356)	10.0% (409)
TOTAL	36.9% (1513)	24.8% (1018)	13.4% (551)	14.7% (603)