CHAPTER 5

HAEMODIALYSIS

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Figure 5.1

Stock and Flow of Haemodialysis Patients 1996 - 2000

	1996	1997	1998	1999	2000
Australia					
Patients new to HD	1211	1262	1407	1525	1499
First Dialysis Treatment	1012	1062	1181	1302	1267
Previous Dialysis (PD)	175	182	200	188	206
Failed Transplant	24	18	26	35	26
Transplanted	329	352	358	329	362
Deaths	432	529	598	644	682
Never Transplanted	372	467	534	575	617
Previous Transplant	60	62	64	69	65
Permanent Transfers Out (>12 months)	221	226	252	304	385
Temporary Transfers (<12 months)	139	125	137	154	112
Patients Dialysing at 31 December	3301	3569	3921	4329	4635
Patients Dialysing at Home 31 December	641	637	656	699	718
% of all Home Dialysis Patients	29%	29%	29%	30%	30%
New Zealand					
Patients new to HD	197	274	267	262	349
First Dialysis Treatment	144	188	204	191	257
Previous Dialysis (PD)	47	73	54	62	81
Failed Transplant	6	13	9	9	11
Transplanted	32	63	59	62	50
Deaths	56	61	73	93	106
Never Transplanted	45	57	65	85	95
Previous Transplant	11	4	8	8	11
Permanent Transfers Out (>12 months)	68	104	89	92	160
Temporary Transfers (<12 months)	13	21	35	32	29
Patients Dialysing at 31 December	376	440	495	561	648
Patients Dialysing at Home 31 December	192	190	201	179	186
% of all Home Dialysis Patients	26%	25%	24%	21%	22%

Figure 5.2

Proportion (%) Home Haemodialysis of all HD and PD Patients 1996 - 2000

State	1996	1997	1998	1999	2000
Queensland	3%	3%	2%	5%	6%
New South Wales	22%	22%	22%	21%	21%
Aust.Capital Territory	14%	14%	15%	11%	12%
Victoria	12%	11%	10%	9%	9%
Tasmania	1%	0%	2%	3%	2%
South Australia	7%	5%	4%	5%	4%
Northern Territory	0%	0%	0%	0%	0%
Western Australia	7%	7%	5%	5%	3%
Australia	**13%**	**12%**	**12%**	**12%**	**11%**
New Zealand	**21%**	**19%**	**18%**	**15%**	**14%**

STOCK AND FLOW

AUSTRALIA

The annual stock and flow of haemodialysis patients during the period 1996-2000 is shown in Figures 5.1 and 5.3.

There were 4635 patients (242 per million) receiving treatment at 31st December, 2000, an increase of 7%; 37% were hospital based (38% in 1999), 48% were in satellite (limited or self care) centres (46% in 1999) and 15% at home (16% in 1999). The proportion of patients receiving satellite haemoidalysis increased by 11% compared to the previous year (15% increase in 1999 and 20% in 1998).

The proportion of all dialysis patients who were using home haemodialysis in each State (fig 5.2) was 21% for New South Wales, 12% for the ACT and less than 10% for the other States.

A total of 1,499 patients received haemodialysis for the first time during the year, a 2% decrease from last year; 85% had no previous dialysis nor a transplant. The modal age group was 65-74 years (26%).

Of the 4,635 patients dialysing, 40% were 65 years or older and 10% less than 35 years old. There was a 20% increase in the number of new patients commencing haemodialysis aged 75 years. In absolute terms there were 242 new patients aged 75 years or more, compared to 201 in 1999 and 158 in 1998 (fig 5.4).

The proportion of all dialysis patients in each age group who were using haemodialysis is shown in Figure 5.10.

For more detail regarding age and mode of haemodialysis in each State

Figure 5.3

see Appendix II at Website (www.anzdata.org.au).

There were 362 transplant operations, a 10% increase from 329 in 1999; representing 8% of all patients dialysing and 17% of those patients <65 years.

There were 682 deaths, representing 15.1 deaths per 100 patient years (11.3% of patients at risk) (fig 3.5). For more detail of cause of death see Appendix II at Website (www.anzdata.org.au).

Stock and Flow of Haemodialysis Patients
Australia 1994 - 2000

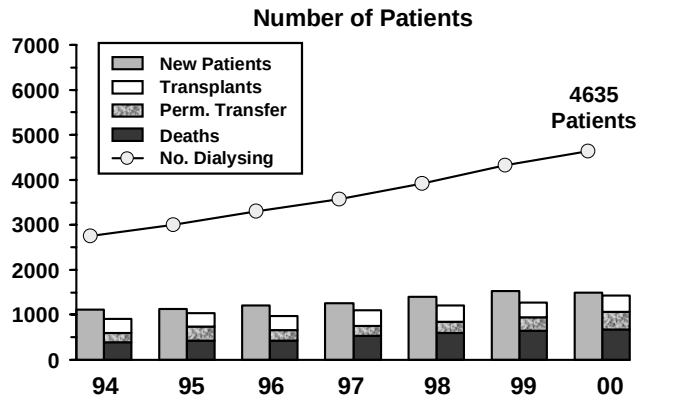


Figure 5.4 **AUSTRALIA**

Stock and Flow of Haemodialysis 1996 - 2000

Age Groups	1996	1997	1998	1999	2000
New Patients ★					
00-14 years	12 (1%)	10 (1%)	6 (<1%)	10 (<1%)	5 (<1%)
15-24 years	43 (4%)	54 (4%)	44 (3%)	47 (3%)	56 (4%)
25-34 years	110 (9%)	108 (9%)	107 (8%)	100 (7%)	108 (7%)
35-44 years	145 (12%)	169 (13%)	180 (13%)	172 (11%)	143 (10%)
45-54 years	199 (16%)	196 (16%)	255 (18%)	266 (17%)	250 (17%)
55-64 years	267 (22%)	273 (22%)	295 (21%)	303 (20%)	292 (19%)
65-74 years	330 (27%)	345 (27%)	362 (26%)	426 (28%)	403 (27%)
75-84 years	102 (8%)	106 (8%)	154 (11%)	192 (13%)	234 (16%)
≥ 85 years	3 (<1%)	1 (<1%)	4 (<1%)	9 (<1%)	8 (<1%)
Total	**1211 (100%)**	**1262 (100%)**	**1407 (100%)**	**1525 (100%)**	**1499 (100%)**
Patients Dialysing					
00-14 years	12 (<1%)	10 (<1%)	6 (<1%)	10 (<1%)	7 (<1%)
15-24 years	105 (3%)	98 (3%)	94 (2%)	98 (2%)	93 (2%)
25-34 years	298 (9%)	318 (9%)	324 (8%)	343 (8%)	350 (8%)
35-44 years	461 (14%)	486 (14%)	522 (13%)	560 (13%)	587 (13%)
45-54 years	580 (18%)	632 (18%)	706 (18%)	780 (18%)	804 (17%)
55-64 years	716 (22%)	771 (22%)	838 (21%)	889 (21%)	937 (20%)
65-74 years	867 (26%)	926 (26%)	1009 (26%)	1106 (26%)	1183 (26%)
75-84 years	258 (8%)	316 (8%)	405 (10%)	524 (12%)	645 (14%)
≥ 85 years	4 (<1%)	12 (<1%)	17 (<1%)	19 (<1%)	29 (<1%)
Total	**3301 (100%)**	**3569 (100%)**	**3921 (100%)**	**4329 (100%)**	**4635 (100%)**
Primary Renal Disease ★					
Glomerulonephritis	424 (35%)	442 (35%)	469 (33%)	482 (32%)	471 (31%)
Analgesic Nephropathy	78 (7%)	67 (5%)	84 (6%)	82 (5%)	58 (4%)
Hypertension	142 (12%)	154 (12%)	168 (12%)	166 (11%)	201 (13%)
Polycystic Disease	83 (7%)	72 (6%)	92 (7%)	104 (7%)	98 (7%)
Reflux Nephropathy	54 (4%)	60 (5%)	62 (4%)	67 (4%)	72 (5%)
Diabetic Nephropathy	220 (18%)	259 (21%)	310 (22%)	355 (23%)	325 (22%)
Miscellaneous	136 (11%)	132 (10%)	138 (10%)	154 (10%)	172 (11%)
Uncertain	74 (6%)	76 (6%)	84 (6%)	115 (8%)	102 (7%)
Total	**1211 (100%)**	**1262 (100%)**	**1407 (100%)**	**1525 (100%)**	**1499 (100%)**

★ New patients receiving first haemodialysis treatment

NEW ZEALAND

The annual stock and flow of haemodialysis patients during the period 1996-2000 is shown in Figure 5.5 and 5.6.

There were 648 patients (169 per million) receiving treatment at 31st December 2000, a 16% increase compared to 1999. Hospital based haemodialysis was similar to last year 51.5% (52.5% in 1999), satellite haemodialysis increased to 19.5% from 15.5% in 1999 and home haemodialysis decreased to 29% (32% in 1999).

Modal age group 55-64 years (27%); 20% were >65 years and 16% <35 years (fig 5.6).

Figure 5.5

Stock and Flow of Haemodialysis Patients
New Zealand 1994 - 2000

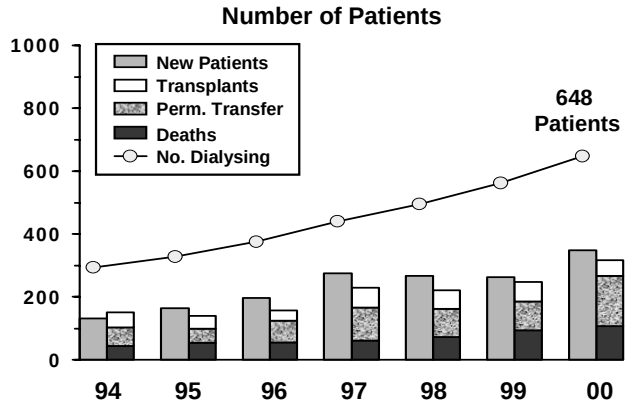


Figure 5.6 **NEW ZEALAND**

Stock and Flow of Haemodialysis 1996 - 2000

Age Groups	1996	1997	1998	1999	2000
New Patients ★					
00-14 years	0 (0%)	2 (<1%)	3 (1%)	2 (<1%)	2 (<1%)
15-24 years	17 (9%)	13 (5%)	12 (4%)	8 (3%)	21 (6%)
25-34 years	10 (5%)	29 (11%)	24 (9%)	22 (8%)	28 (8%)
35-44 years	36 (18%)	31 (11%)	35 (13%)	27 (10%)	35 (10%)
45-54 years	44 (22%)	66 (24%)	55 (21%)	58 (22%)	77 (22%)
55-64 years	47 (24%)	67 (24%)	81 (30%)	76 (29%)	105 (30%)
65-74 years	38 (19%)	59 (22%)	47 (18%)	41 (16%)	57 (16%)
75-84 years	5 (3%)	7 (3%)	10 (4%)	27 (10%)	24 (7%)
≥ 85 years	0 (0%)	0 (0%)	0 (0%)	1 (<1%)	0 (0%)
Total	**197 (100%)**	**274 (100%)**	**267 (100%)**	**262 (100%)**	**349 (100%)**
Patients Dialysing					
00-14 years	0 (0%)	2 (<1%)	4 (<1%)	4 (<1%)	2 (<1%)
15-24 years	20 (5%)	19 (4%)	18 (4%)	22 (4%)	37 (6%)
25-34 years	47 (13%)	54 (12%)	52 (11%)	51 (9%)	62 (9%)
35-44 years	71 (19%)	82 (19%)	104 (21%)	100 (18%)	95 (15%)
45-54 years	94 (25%)	108 (25%)	100 (20%)	126 (22%)	144 (22%)
55-64 years	80 (21%)	102 (23%)	127 (26%)	137 (24%)	177 (27%)
65-74 years	57 (15%)	64 (15%)	75 (15%)	94 (17%)	94 (15%)
75-84 years	7 (2%)	9 (2%)	15 (3%)	27 (5%)	37 (6%)
≥ 85 years	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Total	**376 (100%)**	**440 (100%)**	**495 (100%)**	**561 (100%)**	**648 (100%)**
Primary Renal Disease ★					
Glomerulonephritis	59 (30%)	66 (24%)	56 (21%)	75 (29%)	101 (29%)
Analgesic Nephropathy	1 (<1%)	1 (<1%)	2 (<1%)	2 (<1%)	0 (0%)
Hypertension	26 (13%)	29 (11%)	31 (12%)	29 (11%)	50 (14%)
Polycystic Disease	11 (6%)	16 (6%)	17 (6%)	14 (5%)	11 (3%)
Reflux Nephropathy	4 (2%)	19 (7%)	11 (4%)	6 (2%)	18 (5%)
Diabetic Nephropathy	67 (34%)	107 (39%)	108 (40%)	102 (39%)	122 (35%)
Miscellaneous	17 (9%)	25 (9%)	22 (8%)	21 (8%)	29 (8%)
Uncertain	12 (6%)	11 (4%)	20 (8%)	13 (5%)	18 (5%)
Total	**197 (100%)**	**274 (100%)**	**267 (100%)**	**262 (100%)**	**349 (100%)**

★ New patients receiving first haemodialysis treatment

Figure 5.7

Proportion (%) of Patients aged ≥ 65 years Having Home Haemodialysis 1996 - 2000

State	1996	1997	1998	1999	2000
Queensland	1.5%	1%	1%	1%	1.5%
New South Wales	9%	8%	7%	7%	7%
Aust.Capital Territory	11%	12%	2%	6%	5%
Victoria	4%	3%	4%	3%	2%
Tasmania	0%	0%	0%	0%	0%
South Australia	4%	3%	<1%	2%	<1%
Northern Territory	0%	0%	0%	0%	0%
Western Australia	2%	1%	1%	<1%	<1%
Australia	**5%**	**5%**	**4%**	**4%**	**3%**
New Zealand	**11.5%**	**8%**	**8%**	**7%**	**5%**

Figure 5.8

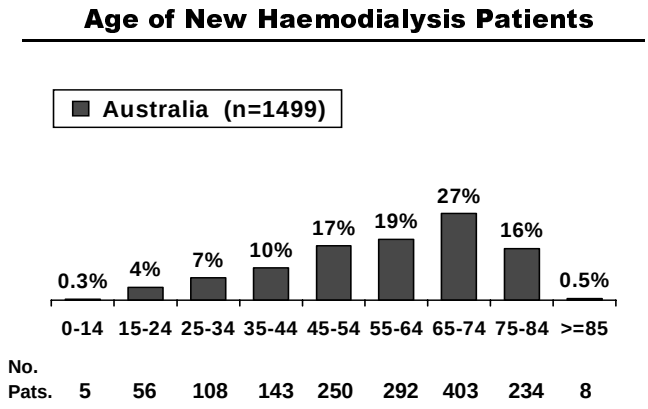


Figure 5.9

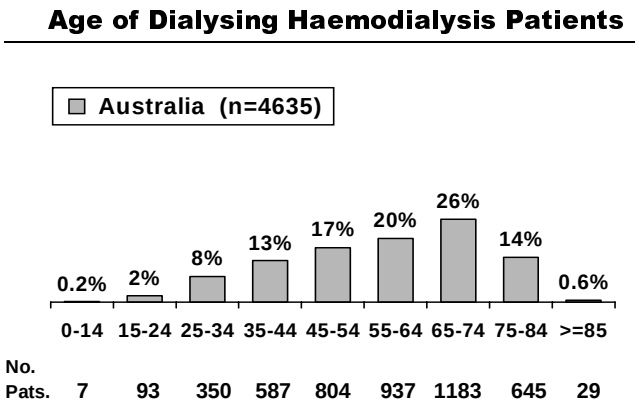


Figure 5.10

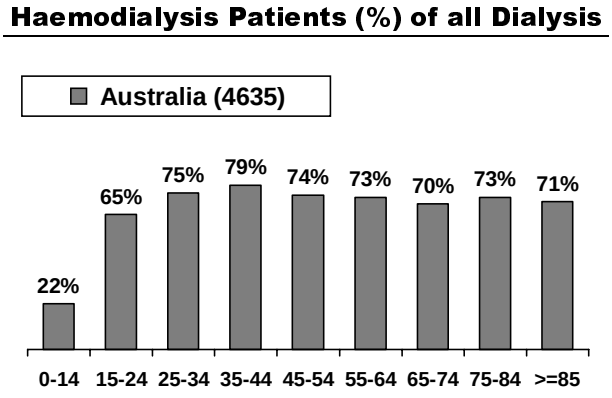


Figure 5.11

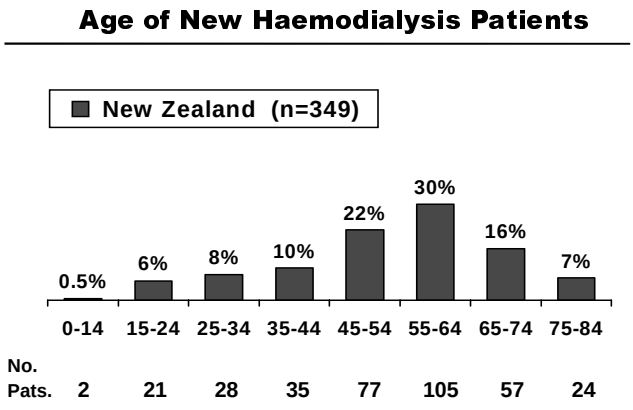


Figure 5.12

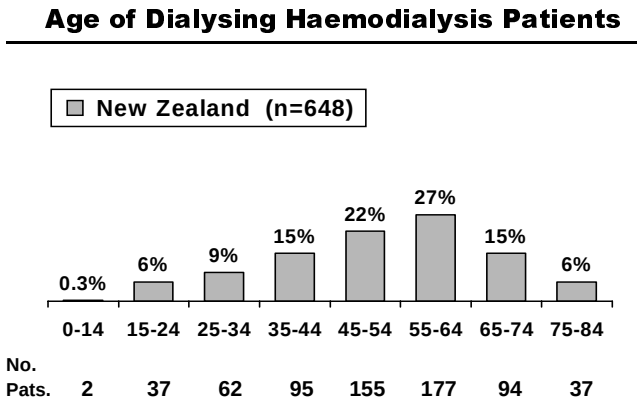
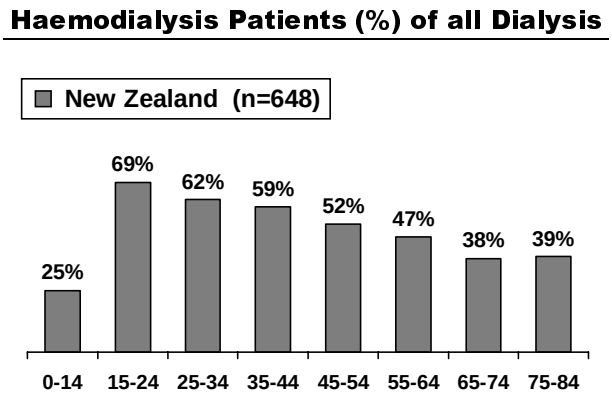


Figure 5.13



NEW ZEALAND (continued)

The proportion of all dialysis patients who were using home haemodialysis is shown in Figure 5.13.

There were 349 patients who received haemodialysis for the first time, a 33% increase from 1999, 74% having their initial dialysis treatment. Modal age group 45-64 years (52%), 15% were <35 years and 23% >65 years (fig 5.6 and 5.11, and Appendix III at Website (www.anzdata.org.au)).

Fifty haemodialysis patients received transplants in 2000 (62 in 1999), representing 8% of all patients dialysing and 9% of those patients <65 years.

There were 106 deaths, 17/3 deaths per 100 patient years, (10.9% of patients at risk) (fig 3.5).

The proportion of dialysis patients in each group using haemodialysis is shown in Figure 5.13.

Blood Flow Rates

Australia

The trend towards a prescribed blood flow rate of 300 mls/minute or higher has accelerated rapidly from approximately 15% of all patients in 1994 to 69% in March 2001; only 7% were now prescribed less than 250 mls/minute.

It will be interesting to see whether this changes with the interest in nocturnal and daily haemodialysis.

New Zealand

In March 2001, 52% of patients were using 300 ml/minute or higher compared to 6% in 1996. There were 14% still using <250 mls/minute, many of these receiving long session duration dialysis.

Figure 5.14

Blood Flow Rates (mls/minute) 1994 - 2001

Country		No. Pts	Mls/Minute					
			<200	200-249	250-299	300-349	350-399	>400
Aust.	March 2001	4717	<1%	7%	23%	55%	11%	3%
	March 2000	4374	1%	8%	26%	54%	9%	2%
	March 1999	4029	1%	10%	29%	51%	8%	1%
	March 1998	3590	1%	10%	33%	49%	6%	1%
	March 1997	3342	<1%	15%	37%	43%	4%	<1%
	March 1996	3041	<1%	18%	45%	33%	3%	<1%
	March 1995	2765	2%	24%	50%	22%	1%	1%
	March 1994	2547	<3%	39%	44%	13%	1%	<1%
N.Z.	March 2001	679	1%	13%	34%	36%	15%	1%
	March 2000	575	1%	19%	37%	35%	8%	<1%
	March 1999	501	1%	25%	40%	26%	8%	0%
	March 1998	441	1%	25%	44%	28%	2%	0%
	March 1997	390	1%	30%	47%	21%	<1%	0%
	March 1996	352	1%	42%	51%	5%	<1%	0%
	March 1995	297	1%	43%	51%	4%	<1%	<1%
	March 1994	296	<1%	51%	45%	2%	1%	<1%

Frequency and Hours of Dialysis

Australia

Figures 5.15-18.

Of the 4,717 patients, there were still 83 receiving dialysis twice a week (2%); almost all patients (96%) dialysed three times per week. There has not been a significant trend to daily dialysis.

There was a continuing trend towards longer duration of each dialysis treatment. Of the patients dialysing three times per week 30% were dialysing for five hours or longer (32% 1999); only 7% (8% 1999) received less than four hours. Forty five percent of patients dialysed for 4-4.4 hours.

The median weekly dialysis treatment period of all haemodialysis patients was 12 hours; range 2-42 hours.

Figure 5.15

Number of Sessions Per Week (At 31-Mar) 1996 - 2001

Sessions per week	1996	1997	1998	1999	2000	2001
Australia						
1	<1%	<1%	<1%	<1%	<1%	<1%
2	3%	3%	2%	2%	2%	2%
3	96%	96%	97%	97%	96%	95%
3.5	<1%	<1%	<1%	<1%	<1%	1%
4	<1%	<1%	<1%	<1%	1%	2%
5	0%	0%	<1%	<1%	<1%	<1%
6	0%	0%	0%	<1%	<1%	<1%
7	0%	0%	0%	0%	0%	<1%
Total	**3041**	**3342**	**3590**	**4029**	**4374**	**4717**
New Zealand						
1	0%	0%	<1%	0%	<1%	<1%
2	6%	3%	3%	2%	2%	2%
3	92%	95%	95%	97%	97%	97%
3.5	1%	0%	0%	0%	0%	<1%
4	1%	2%	2%	1%	1%	<1%
Total	**352**	**390**	**441**	**501**	**575**	**679**

Figure 5.16

Duration and Number of Treatments Per Week 31-Mar-2001

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	0	1	4	0	1	1	1	0	0	0	**8**
2	1	2	17	6	35	9	11	1	1	0	**83**
3	5	4	96	219	2056	781	1150	118	75	19	**4523**
4	0	1	19	8	22	12	15	1	3	1	**82**
5	0	0	6	1	0	0	1	0	0	0	**8**
6	0	5	5	0	1	0	0	0	0	1	**12**
7	1	0	0	0	0	0	0	0	0	0	**1**
Total	**7**	**13**	**147**	**234**	**2115**	**803**	**1178**	**120**	**79**	**21**	**4717**
New Zealand											
1	0	0	0	0	1	0	0	0	0	0	**1**
2	0	0	2	2	4	1	2	0	1	0	**12**
3	0	0	5	5	247	107	187	27	50	32	**660**
4	0	0	4	0	0	0	1	0	0	1	**6**
Total	**0**	**0**	**11**	**7**	**252**	**108**	**190**	**27**	**51**	**33**	**679**

New Zealand

Figures 5.15-18.

There were 679 patients (97%) dialysing three times per week.

The majority (54%) dialysed between four and less than five hours, three times a week. Only ten patients (1.5%) dialysed for less than four hours. The remainder dialysed for five or more hours, three times a week.

Median weekly treatment was 13 hours, range 4-32 hours per week.

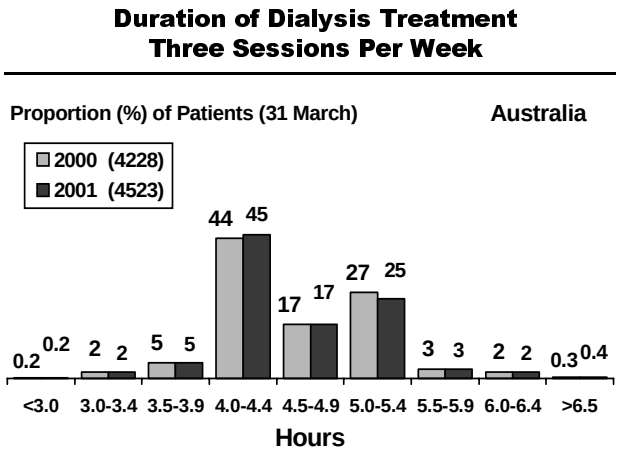
Figure 5.17

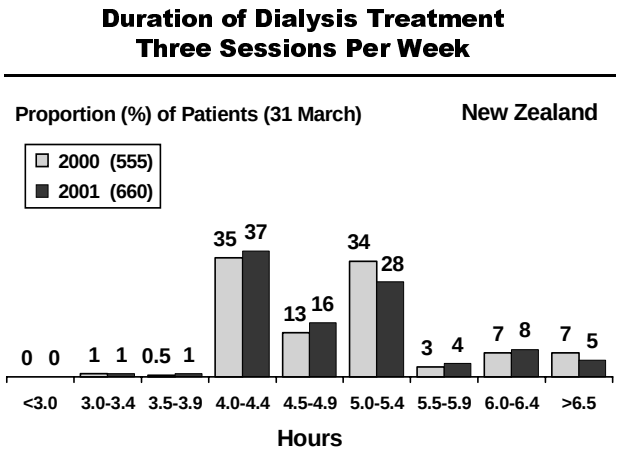
Duration of Haemodialysis Per Week 31-Mar-2001

Country	No. Pts	Hours of Haemodialysis Per Week							
		<9	9-11	12-14	15-17	18-20	21-23	24-26	>27
Aust.	4601	<2%	7%	61%	28%	2%	<1%	<1%	<1%
N.Z.	678	1%	2%	53%	32%	8%	2%	2%	<1%

Excludes patients on haemofiltration and haemodiafiltration
Frequency between 2 and 4 sessions weekly

Figure 5.18





Membrane Type and Surface Areas

Australia

Figures 5.19-20.

The trend away from cuprophan continues (3% of total, down from 4% in March 2000 and 11% in March 1999). The change is due to an increase in the use of low flux polysulfone now 44% (46% in March 2000).

Eleven percent of patients receive high flux dialysis (8% in March 2000). Haemophan decreased from 20% to 19%.

The trend to larger surface area dialysers continues.

New Zealand

Figures 5.19-20.

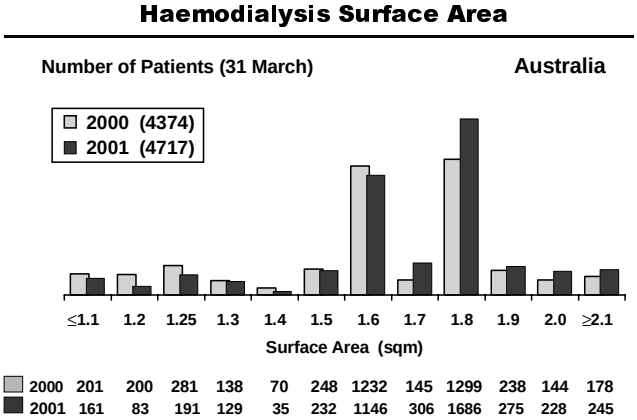
The cuprophan usage declined to 1% in March 2001 (13% in 2000 and 21% in 1999). Haemophan decreased from 50% in March 2000 to 41% this year, while low flux polysulphone increased from 30% to 52%. Only one patient was reported as receiving high flux dialysis.

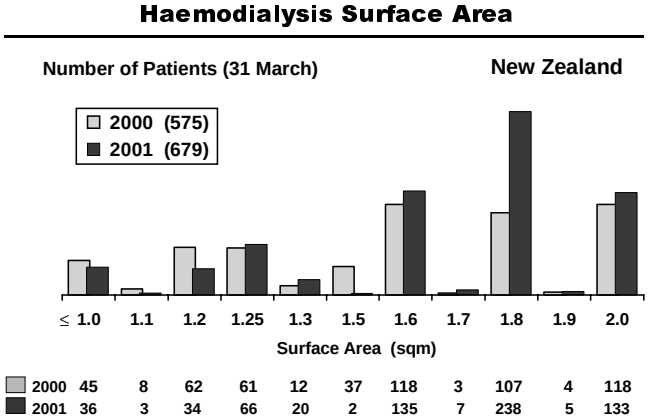
Figure 5.19

Haemodialyser Membrane Types by Surface Aea
Patients Alive on Haemodialysis at 31-Mar-2001

Dialyser Membrane Type	Flux	Square Metres					Total
		<1.0	1.0-1.4	1.5-1.7	1.8-1.9	>1.9	
Australia							
Acrylonitrile	High	0	0	1	0	0	**1 (<1%)**
Cellulose Acetate	Low	3	30	379	17	99	**528 (11%)**
Cellulose Triacetate	Low	0	9	34	241	20	**304 (6%)**
Cuprophan	Low	0	9	62	1	46	**118 (3%)**
Diacetate	Low	0	0	0	0	1	**1 (<1%)**
Exebrane	High	0	1	14	22	0	**37 (<1%)**
Haemophan	Low	7	110	499	58	228	**902 (19%)**
Polyacrylonitrile	High	0	0	0	1	0	**1 (<1%)**
Polyamide Haemo-diafiltration	High	0	12	14	2	1	**29 (<1%)**
Polyamide S	Low	0	1	47	0	0	**48 (1%)**
Polycarbonate/Poly/Copolymer	Low	0	13	0	16	0	**29 (<1%)**
Polysulphone	High	0	78	0	353	17	**448 (9%)**
Polysulphone	Low	37	190	594	1249	0	**2070 (44%)**
Polysynthane	Low	0	32	37	0	60	**129 (3%)**
Sureflex	Low	28	39	3	1	1	**72 (1%)**
Total		**75**	**524**	**1684**	**1961**	**473**	**4717 (100%)**
New Zealand							
Cellulose Acetate	Low	0	3	8	0	0	**11 (2%)**
Cuprophan	Low	0	5	1	1	0	**7 (1%)**
Haemophan	Low	0	29	117	1	133	**280 (41%)**
Polycarbonate/Poly/Copolymer	Low	1	22	0	5	0	**28 (4%)**
Polysulphone	High	0	0	0	1	0	**1 (<1%)**
Polysulphone	Low	33	66	18	235	0	**352 (52%)**
Total		**34**	**125**	**144**	**243**	**133**	**679 (100%)**

Figure 5.20





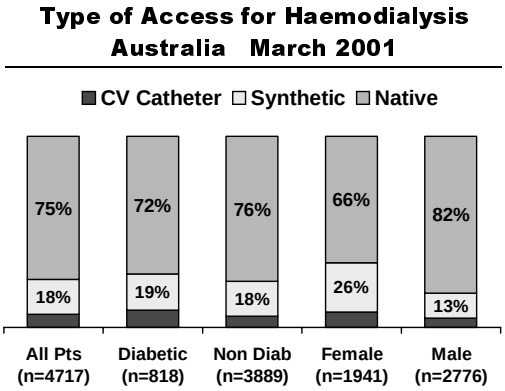
Arterio Venous Access

Figure 5.21

Percentage Synthetic Fistulae/Grafts March 2001
(Number of Patients)

		Diabetic		Non Diabetic	
Queensland	(745)	23.0%	(139)	15.3%	(606)
New South Wales	(1518)	30.0%	(206)	27.8%	(1312)
Aust. Capital Territory	(99)	66.6%	(15)	44.0%	(84)
Victoria	(1320)	11.9%	(218)	11.5%	(1102)
Tasmania	(103)	5.5%	(18)	5.8%	(85)
South Australia	(324)	10.4%	(48)	9.0%	(276)
Northern Territory	(153)	12.5%	(56)	8.2%	(97)
Western Australia	(455)	11.0%	(118)	14.5%	(337)
Australia	**(4717)**	**19.0%**	**(818)**	**18.2%**	**(3899)**
New Zealand	**(679)**	**21.4%**	**(210)**	**19.6%**	**(469)**

Figure 5.22



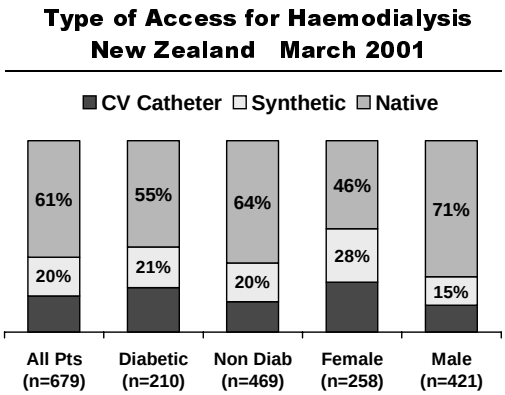


Figure 5.23

Percentage of Non Native Access
n = Number of Patients

	Australia (n=4717)		New Zealand (n=679)	
	Grafts	Catheters	Grafts	Catheters
Total HD Population	18.3%	6.4%	20.1%	18.7%
Diabetics	19.0%	9.4%	21.4%	23.3%
Female	26.1%	8.0%	28.2%	25.9%

Figure 5.24

Access Intervention in Previous Six Months
n = Number of Patients

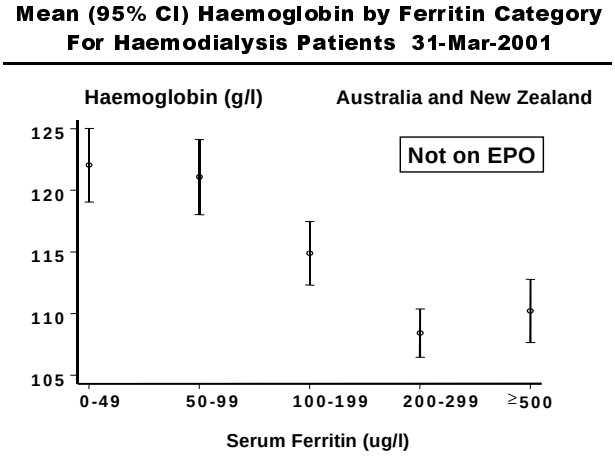
		Revision of Access			Declotting of Access		
		Native	Grafts	Catheters	Native	Grafts	Catheters
Australia	**n=4717**	**8.5%**	**25.4%**	**25.8%**	**3.3%**	**18.8%**	**16.3%**
Diabetics	n=818	10.0%	25.0%	20.7%	3.0%	21.7%	14.2%
Female	n=1941	9.8%	25.0%	28.2%	3.5%	16.7%	17.9%
New Zealand	**n=679**	**12.7%**	**20.4%**	**<1%**	**3.1%**	**4.3%**	**16.0%**

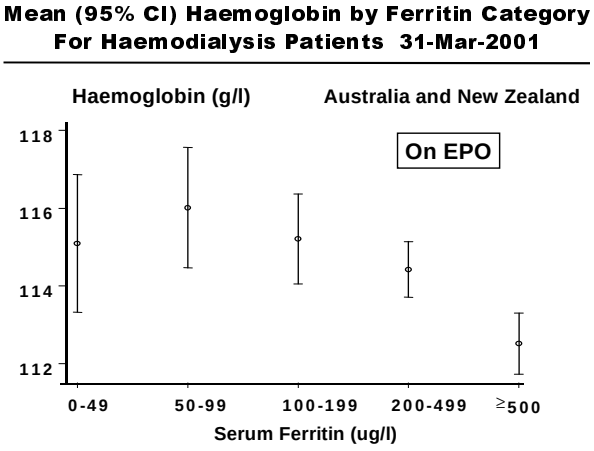
Figure 5.25

**Patients Having EPO
Haemoglobin and Ferritin Levels
Alive on Dialysis at 31-Mar-2001**

Haemoglobin	Ferritin Levels					
	00-49	50-99	100-199	200-499	500-on	Total
Australia						
< 69	2 (1%)	3 (1%)	2 (<1%)	4 (<1%)	11 (<1%)	22 (1%)
70-89	17 (5%)	16 (4%)	39 (5%)	100 (5%)	129 (8%)	301 (6%)
90-109	90 (28%)	110 (27%)	187 (25%)	579 (30%)	494 (31%)	1460 (29%)
110-129	144 (45%)	193 (47%)	364 (49%)	890 (46%)	703 (44%)	2294 (46%)
130-149	58 (18%)	77 (19%)	137 (19%)	321 (17%)	254 (16%)	847 (17%)
≥ 150	7 (2%)	8 (2%)	10 (1%)	27 (1%)	21 (1%)	73 (1%)
Total	**318 (100%)**	**407 (100%)**	**739 (100%)**	**1921 (100%)**	**1612 (100%)**	**4997 (100%)**
New Zealand						
< 69	0 (0%)	0 (0%)	1 (1%)	1 (<1%)	7 (4%)	9 (2%)
70-89	4 (14%)	5 (10%)	9 (13%)	29 (14%)	36 (25%)	83 (16%)
90-109	13 (45%)	20 (40%)	33 (47%)	103 (48%)	58 (40%)	227 (45%)
110-129	7 (24%)	18 (36%)	20 (29%)	67 (31%)	36 (25%)	148 (29%)
130-149	5 (17%)	5 (10%)	7 (10%)	13 (6%)	9 (6%)	39 (8%)
≥ 150	0 (0%)	2 (4%)	0 (0%)	2 (1%)	0 (0%)	4 (<1%)
Total	**29 (100%)**	**50 (100%)**	**70 (100%)**	**215 (100%)**	**146 (100%)**	**510 (100%)**

Figure 5.26





ANZDATA has begun collecting data on Hb and iron status. In those receiving erythropoietic agents, and those not, there is significant variation in Hb with ferritin levels, with lower Hb associated with higher ferritin concentrations. A possible explanation for this is the move to push iron supplementation in those with a low Hb or a poor response to erythropoietic agent. An alternative explanation relates to the interaction of inflammation and ferritin levels, and the subsequent effect of that inflammation on erythropoietin response. We do not have data on CRP levels.

On examining Figure 5.25 for Australia, 79% of dialysis patients received erythropoietic therapy, with 64% of these having a Hb level above 110 gm/l and 7% having a Hb level less than 90 gm/l. Of those receiving treatment, 15% had a ferritin level below the recommended level of 100 ug/l and 32% had a level above 500 ug/l. For New Zealand, only 39% of the total dialysis population received erythropoietin, with 39% of these patients having a Hb level greater than 110 gm/l and 18% having a result below 90 gm/l. Ferritin levels were below 100 ug/l in 16% and above 500 ug/l in 29%.

Urea Reduction Ratio and Patient Survival

Overall, data has not been reported on 15% of Australian patients and 25% of New Zealand patients at 31st March 2001.

Figure 5.27

Urea Reduction Ratio (URR) of Patients Alive on Haemodialysis At 30-Sep-1999 and 31-Mar-2001

Reported URR	Australia				New Zealand			
	30-Sep-99	31-Mar-00	30-Sep-00	31-Mar-01	30-Sep-99	31-Mar-00	30-Sep-00	31-Mar-01
00-39%	<1%	<1%	<1%	<1%	<1%	0%	<1%	0%
40-49%	<1%	1%	1%	1%	3%	4%	2%	2%
50-59%	8%	7%	7%	6%	22%	18%	17%	15%
60-64%	14%	13%	12%	12%	20%	22%	21%	19%
65-69%	25%	24%	24%	22%	28%	26%	25%	26%
70-74%	26%	26%	26%	26%	16%	13%	17%	21%
75-79%	17%	18%	18%	19%	7%	12%	12%	10%
80-100%	10%	11%	12%	13%	5%	6%	6%	8%
Total Pts	**3444**	**3576**	**3810**	**3989**	**349**	**391**	**460**	**510**

Figure 5.28

Urea Reduction Ratio and Patient Survival March 1998 - March 2001

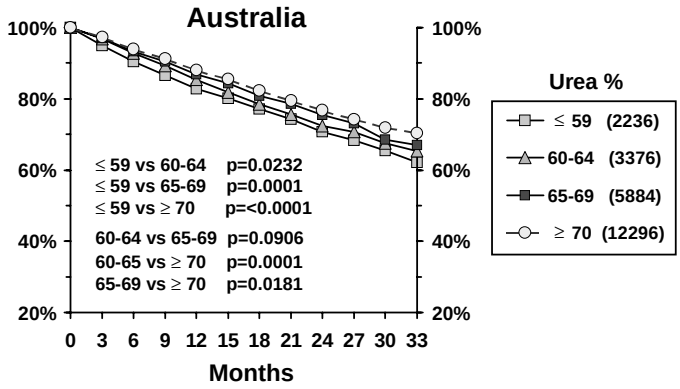


Figure 5.29

Urea Reduction Ratio and Patient Survival March 1998 - March 2001