### **CHAPTER 2**

# NEW PATIENTS COMMENCING TREATMENT IN 2002

Stephen McDonald and Graeme Russ



Figure 2.1

_										
Annı	ual Int				ntient n Popul	_	1998 -	2002		
	199	98	19	99	20	00	20	01	20	02
Queensland New South Wales Aust. Capital Territory Victoria Tasmania South Australia Northern Territory Western Australia	500 46 425 29 114 48	(85) (81) (94) (92) (61) (77) (253) (83)	543 38 438 26 143 53	(87) (87) (77) (93) (55) (95) (275) (107)	536 39 437 32 118 53	(96) (85) (78) (92) (68) (78) (271) (105)	594 33 498 38 154 65	(93) (93) (65) (104) (81) (102) (329) (99)	560 45 470 36 120 58	(98) (87) (87) (96) (76) (79) (293) (105)
Australia	1607	. ,	1745	. ,	1754	` '	1907	` '	1855	. ,
New Zealand	371	(97)	375	(98)	421	(109)	469	(121)	453	(115)

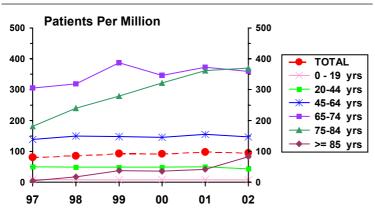
#### INTAKE OF NEW PATIENTS

For Australia, 1,855 new patients commenced treatment in 2002, a rate of 94 per million population per year. This was a decrease of 3% from 2001, and the first decrease since 1986.

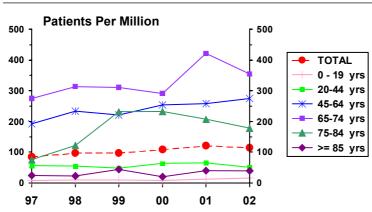
In New Zealand, the number of new patients entering renal failure programs was 453, a rate of 115 per million of population. This was also a decrease (the first decrease since 1993) of 3% from the previous year.

Figure 2.2

#### Acceptance of New Patients 1997 - 2002 Age Specific Rates - Australia



#### Acceptance of New Patients 1997 - 2002 Age Specific Rates - New Zealand



#### AGE OF NEW PATIENTS

In Australia, only two age groups showed an increase in acceptance of new patients. The 85-94 year group rose from 41 to 82 per million and the 75-84 year group rose from 361 to 369 per million. There were small decreases in all other age groups (fig 2.2 and 2.3).

The mean age of patients entering programs in Australia in 2002 was 59.3 years and the median 62.2 years (fig 2.4).

In New Zealand, the mean age of patients entering was 55.4 years and the median 57.8 years (fig 2.4).

The age specific rates of acceptance increased in 2002 in the 85-94 year group where the rate per million increased to 59 from 40. In the 45-64 year group there was an increase to 274 from 257 and in the 0-19 year group an increase to 16 from 12 in 2001 (fig 2.2 and 2.3).

There was a decrease in the acceptance rate per million in the 65-74 year group from 421 to 354, the 75-84 year group from 207 to 178 and the 20-44 year group from 66 to 50 in 2002 (fig 2.2 and 2.3).

Figure 2.3	3													
A	Acceptance of Elderly New Patients 1998 - 2002 (Number Per Million Population) Age Specific													
Country	Age Groups	1	998	1	999	2	000	20	001	20	002			
Australia	60-64 years 65-69 years 70-74 years 75-79 years 80-84 years > 85 years <b>Total</b>	212 204 139 44 4	(238) (310) (329) (296) (150) (18) (257)	251 255 167 53 9	(221) (369) (406) (339) (179) (38) (291)	211 243 196 67 9	(239) (312) (384) (386) (217) (36) (289)	240 252 219 88 11	(252) (352) (395) (422) (267) (41) (312)	207 272 228 96 23	(220) (297) (428) (432) (275) (82) (303)			
New Zealand	60-64 years 65-69 years 70-74 years 75-79 years 80-84 years > 85 years <b>Total</b>	46 33 17 1	(395) (346) (280) (189) (17) (23) (264)	47 31 29 6 2	(329) (355) (260) (311) (104) (44) (274)	44 29 26 10 1	(465) (335) (243) (274) (167) (21) (299)	56 50 24 9 2	(416) (428) (414) (249) (137) (40)	49 41 21 8 2	(457) (369) (339) (215) (123) (39) (311)			

#### STATE OF ORIGIN OF NEW PATIENTS

There was an increase in renal replacement therapy acceptance rates in only three States in 2002: the ACT (36%), Queensland (8%) and Western Australia (7%). The new patient entry rate decreased in South Australia by 22%, The Northern Territory (11%), both New South Wales and Victoria (6%) and Tasmania (5%).

The highest acceptance rate was in the Northern Territory (293 per million) and Western Australia (105 per million) and the lowest was in Tasmania and South Australia (76 and 79 per million respectively).

Figure 2	2.4	Αg	ge aı	nd G	endo	er of	Nev				1 f Patie		-200	)2 t	ю 3	1-De	ec-200	2		
Age Groups	Q (n=:			SW 560)	A( (n=		(n=	ic. 470)		as. :56)	S. (n=:		N (n=	-	W (n=	/A 202)		I <b>st.</b> 1855)		. <b>Z.</b> 453)
Groups	F	М	F	M	F	М	F	M	F	M	F	M	F	М	F	М	F	М	F	М
00-04 yrs	0	2	0	5	0	0	2	3	0	0	0	1	0	0	0	0	2	11	0	0
05-14 yrs	2	1	1	1	0	0	1	3	0	0	0	1	0	0	2	0	6	6	6	5
15-24 yrs	5	4	7	13	0	1	4	6	0	0	2	1	0	0	1	3	19	28	6	7
25-34 yrs	5	11	17	16	0	2	13	14	1	2	3	7	3	1	6	5	48	57	13	10
35-44 yrs	20	16	18	38	0	4	19	21	2	3	4	5	4	4	13	7	80	96	18	25
45-54 yrs	29	37	27	37	1	8	26	49	1	3	11	12	13	11	18	28	126	184	39	62
55-64 yrs	23	50	34	63	3	10	39	69	5	7	9	13	5	10	14	17	132	234	67	74
65-74 yrs	32	42	80	92	8	6	37	83	5	15	15	18	3	3	13	32	193	286	38	52
75-84 yrs	34	42	45	62	1	1	23	51	1	6	6	12	1	0	16	24	127	197	10	19
> 85 yrs	3	6	1	3	0	0	0	7	0	0	0	0	0	0	1	2	5	18	0	2
Total	153	211	230	330	13	32	164	306	15	36	50	70	29	29	84	118	738	1117	197	256
Mean (yrs)	59.6	60.3	61.2	59.2	66.7	54.7	56.7	60.3	59.6	65.7	58.0	57.5	51.1	52.5	56.7	61.5	58.8	59.7	54.3	56.2
All	60	0.0	60	0.0	58	3.2	59	9.1	63	3.2	57	7.7	51	.8	59	9.5	59	9.3	5!	5.4
Median (yrs)	61	.6	65	5.5	58	3.7	61	.1	67	7.1	63	3.3	50	).7	60	).9	62	2.2	5	7.8
Range	<1 -	97.0	<1 -	90.0	17.3	- 80.5	<1 -	90.3	27.5	- 82.8	2.7 -	83.0	26.6	76.6	11.9	- 89.1	<1-	97.0	7.2 -	86.6



#### LATE REFERRAL

Twenty six percent in Australia and 27% in New Zealand of all new patients were referred late to nephrological care, i.e. less than three months before first treatment (fig 2.5).

Figure 2.5

			Lat		ral of Ne			2			
Late Referral	Primary Renal Disease	Qld	NSW	ACT	Vic.	Tas.	SA	NT	WA	Aust.	N.Z.
	Analgesic	4 (4%)	6 (4%)	0 (0%)	1 (<1%)	0 (0%)	2 (10%)	0 (0%)	0 (0%)	13 (3%)	0 (0%)
	Diabetes-I insulin	4 (4%)	1 (<1%)	0 (0%)	3 (3%)	0 (0%)	0 (0%)	0 (0%)	1 (2%)	9 (2%)	2 (2%)
	Diabetes-II ins. req.	12 (13%)	16 (10%)	2 (25%)	9 (8%)	0 (0%)	3 (15%)	1 (4%)	3 (5%)	46 (9%)	24 (20%
	Diabetes-II non-ins.	18 (19%)	13 (8%)	0 (0%)	17 (15%)	1 (11%)	2 (10%)	13 (54%)	13 (22%)	77 (16%)	28 (23%
	Glomerulonephritis	25 (26%)	43 (27%)	2 (25%)	22 (19%)	1 (11%)	5 (25%)	2 (8%)	16 (27%)	116 (24%)	30 (24%
Yes	Hypertension	9 (9%)	30 (19%)	2 (25%)	14 (12%)	2 (22%)	3 (15%)	2 (8%)	14 (24%)	76 (15%)	9 (7%)
	Miscellaneous	13 (14%)	27 (17%)	1 (12.5%)	29 (25%)	3 (33%)	5 (25%)	0 (0%)	6 (10%)	84 (17%)	18 (15%
	Polycystic	3 (3%)	6 (4%)	0 (0%)	5 (4%)	0 (0%)	0 (0%)	2 (8%)	2 (3%)	18 (4%)	2 (2%)
	Reflux	3 (3%)	2 (1%)	1 (12.5%)	3 (3%)	0 (0%)	0 (0%)	1 (4%)	2 (3%)	12 (2%)	3 (2%)
	Uncertain	5 (5%)	15 (9%)	0 (0%)	11 (10%)	2 (22%)	0 (0%)	3 (13%)	2 (3%)	38 (8%)	7 (5%)
	Sub Total	96 (26%)	159 (28%)	8 (18%)	114 (24%)	9 (25%)	20 (17%)	24 (41%)	59 (29%)	489 (26%)	123 (27%
	Analgesic	7 (3%)	34 (8%)	4 (11%)	9 (3%)	0 (0%)	2 (2%)	1 (3%)	5 (3%)	62 (5%)	2 (<1%
	Diabetes-I insulin	6 (2%)	14 (3%)	2 (5%)	16 (5%)	4 (15%)	7 (7%)	0 (0%)	3 (2%)	52 (4%)	14 (4%
	Diabetes-II ins. req.	29 (11%)	47 (12%)	6 (16%)	45 (13%)	3 (11%)	8 (8%)	2 (5.5%)	17 (12%)	157 (11%)	65 (20%
	Diabetes-II non-ins.	35 (13%)	28 (7%)	1 (3%)	39 (11%)	2 (7%)	6 (6%)	18 (53%)	20 (14%)	149 (11%)	70 (21%
	Glomerulonephritis	72 (27%)	119 (30%)	8 (22%)	97 (27%)	7 (26%)	27 (27%)	6 (18%)	47 (33%)	383 (28%)	76 (23%
No	Hypertension	47 (18%)	63 (16%)	4 (11%)	51 (14%)	7 (26%)	14 (14%)	1 (3%)	31 (22%)	218 (16%)	30 (9%
	Miscellaneous	24 (9%)	43 (11%)	3 (8%)	32 (9%)	1 (4%)	11 (11%)	2 (5.5%)	8 (6%)	124 (9%)	32 (10%
	Polycystic	17 (6%)	19 (5%)	5 (14%)	30 (8%)	1 (4%)	7 (7%)	0 (0%)	8 (6%)	87 (6%)	17 (5%
	Reflux	14 (5%)	20 (5%)	2 (5%)	15 (4%)	2 (7%)	6 (6%)	1 (3%)	2 (1%)	62 (5%)	13 (4%
	Uncertain	17 (6%)	14 (3%)	2 (5%)	22 (6%)	0 (0%)	12 (12%)	3 (9%)	2 (1%)	72 (5%)	11 (3%
	Sub Total	268 (74%)	401 (72%)	37 (82%)	356 (76%)	27 (75%)	100 (83%)	34 (59%)	143 (71%)	1366 (74%)	330 (73%
	Total	364 (100%)	560 (100%)	45 (100%)	470 (100%)	36 (100%)	120 (100%)	58 (100%)	202 (100%)	1855 (100%)	453 (100%)

#### **Co-morbid Conditions**

Co-morbid conditions at entry to RRT are shown in Figure 2.6. There are only minor differences between the two countries except in the incidence of Type II Diabetes which is more common in New Zealand (46% of new patients, compared to 33% in Australia).

(See Appendix II and III for further analyses of co-morbid conditions).

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	Number of Patients (% Patients)														
Country	Chronic Country Lung Disease		Lung Arte		Vas	pheral scular sease	Cerebro- vascular Disease		Smoking			<b>Diabetes</b> (Including Diabetic Nephropathy)			
<b>Aust.</b> n=1855	Yes Suspected No	202 (11 <sup>4</sup> 55 (3% 1598 (86 <sup>6</sup>	) 146	(32%) (8%) (60%)	130	(19%) (7%) (74%)	83	(10%) (5%) (85%)	Current Former Never Unknown	763 877	(12%) (41%) (47%) (<1%)	I-insulin II-ins.requ. II-non-ins. No	374	(13%	
<b>N.Z.</b> n=453	Yes Suspected No	55 (12 <sup>4</sup> ) 17 (4%) 381 (84 <sup>4</sup> )	51	(26%) (11%) (63%)	27	(19%) (6%) (75%)	12	(11%) (3%) (86%)	Current Former Never	189	(18%) (42%) (40%)	I-insulin II-ins.requ. II-non-ins.	114	(21% (25%	

The proportion of people with vascular diseases or chronic lung disease has remained steady over time, although the proportion with type 2 diabetes has steadily increased. Figures 2.7-2.11.

Figure 2.7 Chronic Lung Disease

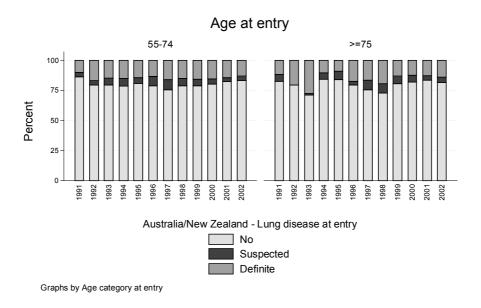


Figure 2.8 Coronary Artery Disease

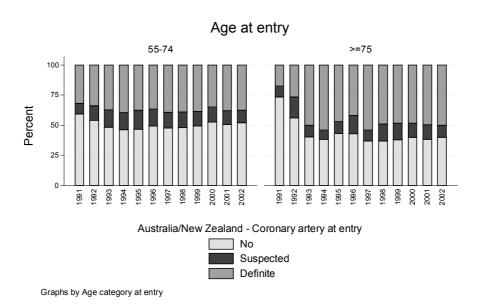




Figure 2.9 Peripheral Vascular Disease

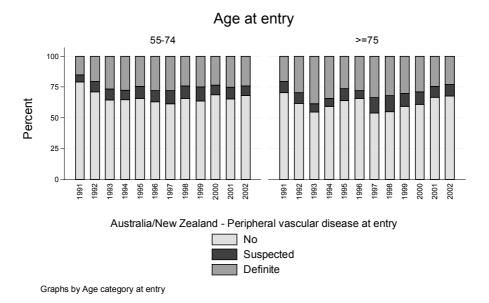


Figure 2.10 Cerebrovascular Disease

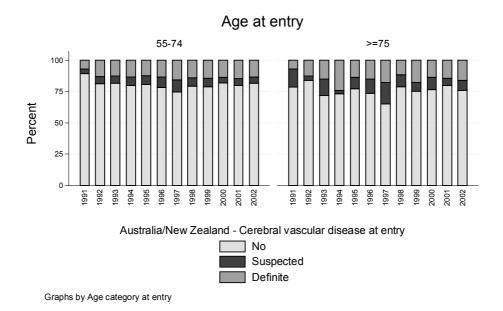
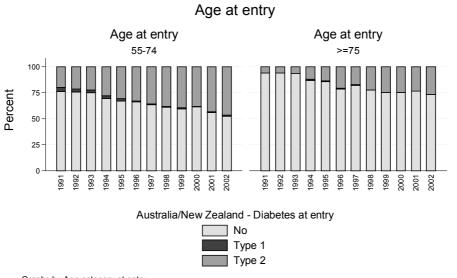


Figure 2.11 Diabetes



# PRIMARY RENAL DISEASE OF NEW PATIENTS

#### **A**USTRALIA

Glomerulonephritis and diabetic nephropathy (excluding diabetics with renal failure due to other causes) were the most common causes of ESRD (both 26%), followed by hypertension (16%), polycystic kidney disease (6%), reflux and analgesic nephropathy (both 4%) (fig 2.12).

IgA mesangioproliferative glomerulonephritis (26% of all GN) was the most common histologically proven form of glomerulonephritis (33% of biopsy proven glomerulonephritis), followed by focal sclerosing GN (12%) and systemic disease (15%) (fig 2.13).

A renal biopsy based diagnosis was reported in 34% of cases: glomerulo-nephritis 79%, hypertension 19%, diabetes (types I and II) 15%, reflux 9%, polycystic kidney disease 7% and analgesic nephropathy 4% (fig 2.15).

Amongst the **miscellaneous diseases** causing end stage renal failure, there were ten cases of lithium toxicity and eight cases of cyclosporin nephrotoxicity (fig 2.14).

The incidence of analgesic nephropathy decreased to 4% (75 patients) in 2002, the lowest recorded.

#### **New Zealand**

**Diabetic nephropathy** (45%) was the most common cause of ESRD followed by **glomerulonephritis** (23%) and **hypertension** (9%). **Diabetes Type II** (non insulin and insulin requiring) represented 92% of diabetic nephropathy.

The proportion of glomerulonephritis proven by biopsy was lower in New Zealand

**Focal sclerosing** (12%) and **IgA mesangioproliferative** (7%), represented 32% of biopsy proven glomerulonephritis.

Figure 2.12								
				1999 s (% Patie		)2		
Disease	19	999	2	000	20	001	20	002
Australia								
Glomerulonephritis	527	(30%)	529	(30%)	511	(27%)	499	(26%)
Analgesic Nephropathy	96	(6%)	84	(5%)	100	(5%)	75	(4%)
Polycystic Kidney	119	(7%)	110	(6%)		(6%)	105	(6%)
Reflux Nephropathy	78	(4%)	89	(5%)	73	(4%)	74	(4%)
Hypertension	185	(11%)	237	(14%)	276	(15%)	294	(16%)
Diabetic Nephropathy	426	(24%)	392	(22%)	480	(25%)	490	(26%)
Miscellaneous	184	(11%)	198	(11%)	215	(11%)	208	(11%)
Uncertain Diagnosis	130	(7%)	115	(7%)	143	(7%)	110	(6%)
Total	1745	(100%)	1754	(100%)	1907	(100%)	1855	(100%)
New Zealand								
Glomerulonephritis	89	(24%)	112	(27%)	132	(28%)	106	(23%)
Analgesic Nephropathy	2	(<1%)	-	(-)	-	(-)	2	(<1%)
Polycystic Kidney	27	(7%)	12	(3%)	29	(6%)	19	(4%)
Reflux Nephropathy		(3%)	22	(5%)	12	(3%)	16	(4%)
Hypertension	39	(11%)	59	(14%)	56	(12%)	39	(9%)
Diabetic Nephropathy	148	(39%)	151	(36%)	177	(38%)	203	(45%)
Miscellaneous	34	(9%)	42	(10%)	39	(8%)	50	(11%)
Uncertain Diagnosis	24	(6%)	23	(5%)	24	(5%)	18	(4%)
Total	375	(100%)	421	(100%)	469	(100%)	453	(100%)

Fia	ure	2.	13

#### Types of Glomerulonephritis 1-Jan-2002 to 31-Dec-2002

Number (% of all GN )

		ralia 99		ealand <sup>06</sup>
Presumed GN - No Biopsy performed	101	(20%)	38	(36%)
Focal Sclerosing	60	(12%)	13	(12%)
MCGN - Type I	16	(3%)	3	(3%)
MCGN - Type II	4	(1%)	1	(1%)
Membranous GN	21	(4%)	5	(5%)
Rapidly Progressive GN	8	(2%)	2	(2%)
Mesangioproliferative IgA +	130	(26%)	8	(7%)
Mesangioproliferative IgA -	4	(1%)	1	(1%)
Mesangioproliferative No I.F.	8	(2%)	-	(-)
Focal & Segmental Proliferative GN	20	(4%)	6	(5%)
Advanced GN (end-stage type)	21	(4%)	5	(5%)
Goodpasture's Syndrome	6	(1%)	2	(2%)
Systemic Lupus	22	(4%)	6	(5%)
Henoch-Schonlein Purpura	5	(1%)	1	(1%)
Wegener's Granulomatosis	14	(3%)	3	(3%)
Microscopic Polyarteritis	12	(3%)	2	(2%)
Scleroderma	10	(2%)	2	(2%)
GN Other	15	(3%)	4	(4%)
Familial GN (including Alports)	16	(3%)	3	(3%)
Anti GBM (no haemoptysis)	6	(1%)	1	(1%)



Figure 2.14

## Miscellaneous Causes of ESRD 1-Jan-2002 to 31-Dec-2002

(Number of Patients)

Renal Disease	Aust. (208)	N. Z. (50)	Renal Disease	Aust. (208)	N.Z. (50)
Interstitial Nephritis	28	4	Calculi	12	1
Lithium Toxicity	10	3	Gout	6	1
Cyclosporin Nephrotoxicity	8	3	Medullary Cystic Disease	3	1
Lead Nephropathy	2	-	Cystinosis	-	1
Renal Tuberculosis	2	-	Oxalosis	-	1
Acute Glycol Chemical Poisoning	1	-		4.0	
Cisplantin Nephrotoxicity	1	-	Amyloid	12	4
Congenital Tubulo Interstitial Nephritis	1	-	Congenital Renal Hypoplasia & Dysplasia	12	-
Gentamicin Toxicity	1	-	Congenital Nephrotic Syndrome	1	1
Interstitial Fibrosis	1	-	Oligomeganephronia	1	-
IV Drug Abuse - Prolodone	1	-	Juvenile Nephronophythisis	-	2
Laurence-Moon-Beidl Syndrome	1	-			
Loss Single Kidney	1	1	Multiple Myeloma	27	10
Nail Patella Syndrome	1	-	Renal Cell Carcinoma	6	-
Thrombotic Thrombocytopaenia	1	-	Light Chain Nephropathy (Benign)	3	-
Caroli's Disease	-	1	Transitional Cell Carcinoma	3	-
Multiorgan Failure	-	1	Non Hodgkin's Lymphoma	2	-
Pyelonephritis	-	1	Bone Marrow Transplant Nephropathy	1	-
Trauma to Both Renal Arteries	-	1	Chemotherapy Toxicity	1	-
			Von Hippel-Lindau Syndrome	1	-
Obstructive Uropathy	12	-	Waldenstrom's Macroglobulinaemia	1	-
Ureteric Obstructive Uropathy	6	4	Wilm's-Anirioia Syndrome	1	-
Bladder Neck Obstruction	4	2			
Spina Bifida or Myelomeningocoele	3	-	Cortical Necrosis	16	3
Posterior Urethral Valves	2	-	Haemolytic Uraemic Syndrome	7	-
Neuropathic Bladder	1	-	Acute Tubular Necrosis	1	-
Lower Urinary Tract Abnormalities	-	2			
Hinman's Syndrome (1)			Nephrocalcinosis	2	1
Prune Belly Syndrome (1)			Hypophosphaemic Renal Disease	1	-
Pelvi-ureteric Junction Obstruction	-	1			

Fi	in	 ro	2	1	5

D D D	Analgesic Diabetes I - Insulin Diabetes II - Insulin Reg.	0	1								
D D G		_	1	1	1	0	0	0	0	3	0
D G	Diabotos II Insulin Dog	0	2	0	4	2	2	0	0	10	2
G	Diabetes II - Ilisuilli Keq.	4	11	3	10	0	0	0	3	31	8
	Diabetes II - Non Insulin	6	7	0	11	1	2	3	2	32	3
Voc H	Glomerulonephritis	79	129	9	102	6	27	5	37	394	66
165	Hypertension	6	23	0	13	5	5	0	5	57	8
M	Miscellaneous	11	35	0	26	3	3	1	3	82	18
P	Polycystic	1	3	0	1	1	1	0	0	7	0
R	Reflux	0	3	0	2	0	1	0	1	7	1
U	Jncertain	0	1	0	1	0	2	0	0	4	2
	Sub Total	107	215	13	171	18	43	9	51	627	108
А	Analgesic	11	39	3	9	0	4	1	5	72	2
D	Diabetes I - Insulin	10	13	2	15	2	5	0	4	51	14
D	Diabetes II - Insulin Req.	37	52	5	44	3	11	3	17	172	81
D	Diabetes II - Non Insulin	47	34	1	45	2	6	28	31	194	95
G	Glomerulonephritis	18	33	1	17	2	5	3	26	105	40
No H	Hypertension	50	70	6	52	4	12	3	40	237	31
M	Miscellaneous	26	35	4	35	1	13	1	11	126	32
P	Polycystic	19	22	5	34	0	6	2	10	98	19
R	Reflux	17	19	3	16	2	5	2	3	67	15
U	Jncertain	22	28	2	32	2	10	6	4	106	16
	Sub Total	257	345	32	299	18	77	49	151	1228	345

Eighteen per cent of all patients with diabetic nephropathy in Australia (442/2407) and 5% (45/939) in New Zealand, have had a biopsy proven diagnosis since this data was first collected by the Registry from 1st April, 1997.