CHAPTER 2

NEW PATIENTS COMMENCING TREATMENT IN 2011

Blair Grace
Kylie Hurst
Stephen McDonald

2012 Annual Report—35th Edition

Figure 2.1

Annual Intake of New Patients 2007 - 2011
(Number Per Million Population)

	2007	2008	2009	2010	2011
Queensland	467 (112)	534 (125)	490 (112)	448 (101)	443 (99)
New South Wales	760 (114)	812 (120)	761 (111)	721 (104)	761 (109)
Aust. Capital Territory	55 (100)	61 (109)	41 (73)	53 (92)	53 (91)
Victoria	545 (105)	540 (102)	547 (101)	573 (105)	595 (108)
Tasmania	55 (111)	54 (108)	58 (115)	47 (92)	52 (102)
South Australia	166 (105)	185 (116)	207 (128)	179 (110)	182 (111)
Northern Territory	76 (353)	90 (407)	72 (317)	65 (282)	83 (359)
Western Australia	258 (122)	273 (125)	245 (109)	233 (101)	284 (121)
Australia	**2382 (113)**	**2549 (119)**	**2421 (111)**	**2319 (105)**	**2453 (110)**
New Zealand	**468 (111)**	**497 (116)**	**583 (135)**	**512 (117)**	**477 (108)**

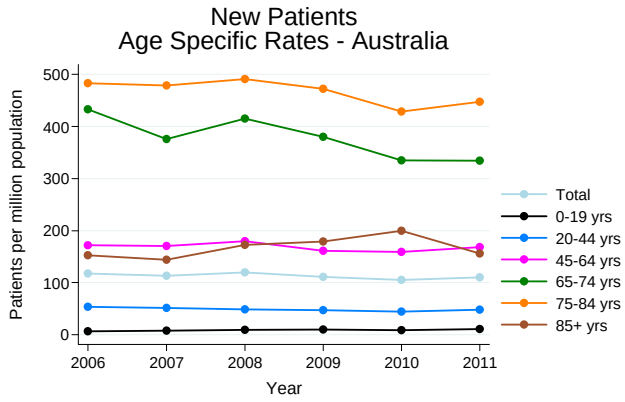
INTAKE OF NEW PATIENTS

There were 2453 patients who commenced treatment for end-stage renal failure in Australia in 2011, a rate of 110 per million population.

Incidence rates have stabilised over the past 5 years.

In New Zealand, the number of new patients commencing renal replacement treatment was 477, a rate of 108 per million of population. This rate has been essentially stable since 2007.

Figure 2.2



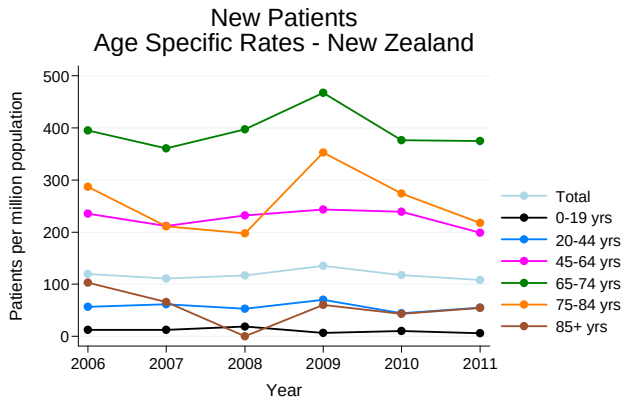
AGE OF NEW PATIENTS

In Australia in 2011, all age groups except 65-74 and 85+ years showed increased rates for acceptance of new patients compared to 2010.The largest increases were in the groups 65-69 years, and the 75-79 year group, from 489 to 524 per million (Figure 2.4).

The mean age of patients entering programs in Australia in 2011 was 60 years and the median 62.3 years (Figure 2.5).

In New Zealand, the mean age of patients entering was 57.5 years and the median 59.1 years (Figure 2.5).

Figure 2.3



Within the older age groups in Australia, only the 70-74 and ≥ 85 year age groups decreased in numbers in 2011 (Figure 2.4).

In New Zealand there were decreases in 60-64 and 70-79 age groups in 2011.

Rates in most age groups ≥ 70 years, were higher in Australia than in New Zealand, particularly for those 75 years or older.

Figure 2.4

Acceptance of Elderly New Patients 2007 - 2011
(Number Per Million Population)

Country	Age Groups	2007	2008	2009	2010	2011
Australia	60-64 years	273 (257)	287 (255)	268 (229)	277 (230)	281 (227)
	65-69 years	248 (308)	302 (364)	286 (330)	251 (277)	289 (303)
	70-74 years	297 (460)	317 (480)	302 (444)	288 (411)	270 (375)
	75-79 years	284 (514)	285 (517)	295 (535)	270 (489)	292 (524)
	80-84 years	179 (432)	194 (458)	169 (392)	155 (353)	156 (352)
	>=85 years	49 (144)	61 (172)	66 (179)	77 (200)	63 (156)
	Total	**1330 (348)**	**1446 (366)**	**1386 (341)**	**1318 (314)**	**1351 (313)**
New Zealand	60-64 years	58 (294)	65 (307)	72 (325)	93 (404)	59 (249)
	65-69 years	56 (343)	65 (392)	75 (437)	70 (397)	75 (416)
	70-74 years	47 (384)	51 (405)	66 (507)	48 (350)	47 (324)
	75-79 years	29 (278)	29 (277)	49 (468)	33 (314)	22 (208)
	80-84 years	9 (119)	7 (90)	16 (202)	18 (223)	19 (230)
	>=85 years	4 (66)	0 (0)	4 (60)	3 (43)	4 (55)
	Total	**203 (280)**	**217 (290)**	**282 (364)**	**265 (331)**	**226 (274)**

STATE OF ORIGIN OF NEW PATIENTS

The age at start of dialysis varied little between States (Figure 2.5) except Northern Territory. The highest acceptance rates were in the Northern Territory (350 per million) (Figure 2.6).

Figure 2.5

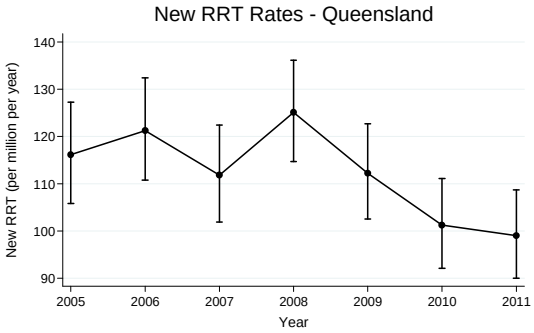
Age and Gender of New Patients 1-Jan-2011 to 31-Dec-2011
(n = Number of Patients)

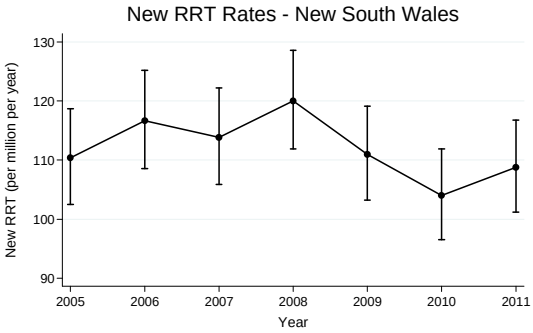
Age Groups Years	QLD (n=443)		NSW (n=761)		ACT (n=53)		VIC (n=595)		TAS (n=52)		SA (n=182)		NT (n=83)		WA (n=284)		AUST (n=2453)		NZ (n=477)	
	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M
00-04	0	2	4	1	0	0	1	4	0	0	0	1	0	0	0	1	5	9	1	2
05-14	5	2	3	5	0	0	0	4	0	0	2	0	0	0	1	0	11	11	2	0
15-24	5	9	9	10	1	0	7	8	0	0	0	4	3	2	1	2	26	35	2	10
25-34	8	13	13	12	2	2	11	16	0	2	5	4	4	1	6	6	49	56	6	16
35-44	20	23	21	36	1	3	27	25	1	6	6	10	14	6	24	15	114	124	20	30
45-54	32	41	46	64	2	4	34	47	3	3	15	23	15	11	15	32	162	225	37	53
55-64	30	57	69	106	4	7	52	83	7	6	15	23	15	8	32	42	224	332	54	77
65-74	43	67	79	104	2	12	57	99	4	7	16	20	3	1	19	26	223	336	45	77
75-84	38	36	62	105	2	7	30	74	3	10	10	22	0	0	16	33	161	287	10	31
>=85	3	9	5	7	1	3	2	14	0	0	2	4	0	0	4	9	17	46	1	3
Total	**184**	**259**	**311**	**450**	**15**	**38**	**221**	**374**	**18**	**34**	**71**	**111**	**54**	**29**	**118**	**166**	**992**	**1461**	**178**	**299**
Mean age	59	59.3	60.6	61.8	58.2	64.9	58.6	61.6	63.8	61.2	58.4	59.9	48.3	48.3	57.6	61.3	58.7	60.9	57.1	57.7
Mean age	59.2		61.3		63		60.5		62.1		59.3		48.3		59.7		60		57.5	
Median age	61.5		64.1		65.3		63.4		64.3		60.6		49.9		60.5		62.3		59.1	
Age range	2.7 - 90.7		0.2 - 89.3		16.7 - 90.2		0 - 89.8		26.4 - 84.2		3.5 - 90		19.6 - 67.6		3.7 - 90.7		0 - 90.7		1.5 - 87.1	

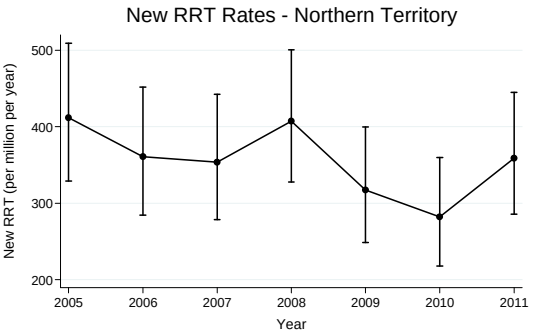
INCIDENCE RATES FOR NEW RRT PATIENTS BY STATE

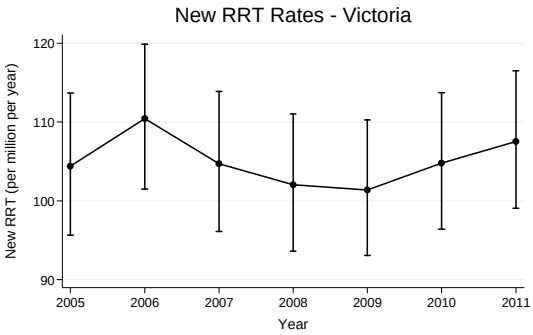
Figure 2.6

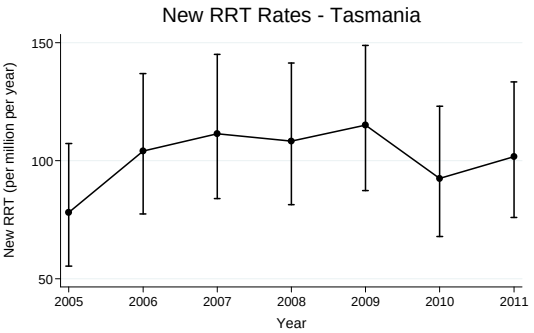
Incidence rates (95% confidence intervals) for new RRT patients by State. Note the Y axis scales for each State are different. ACT population data includes the adjacent area of NSW (serviced by Canberra).

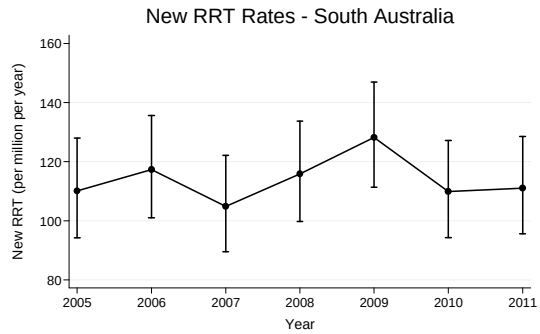


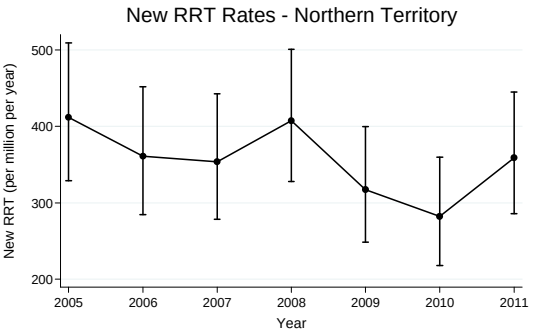


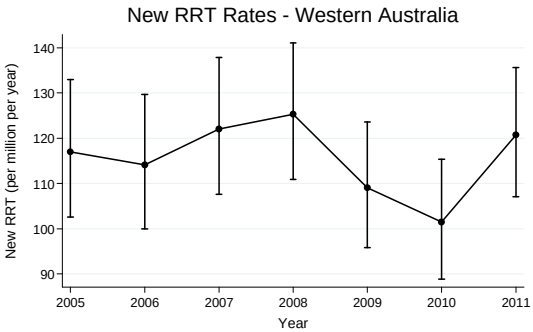








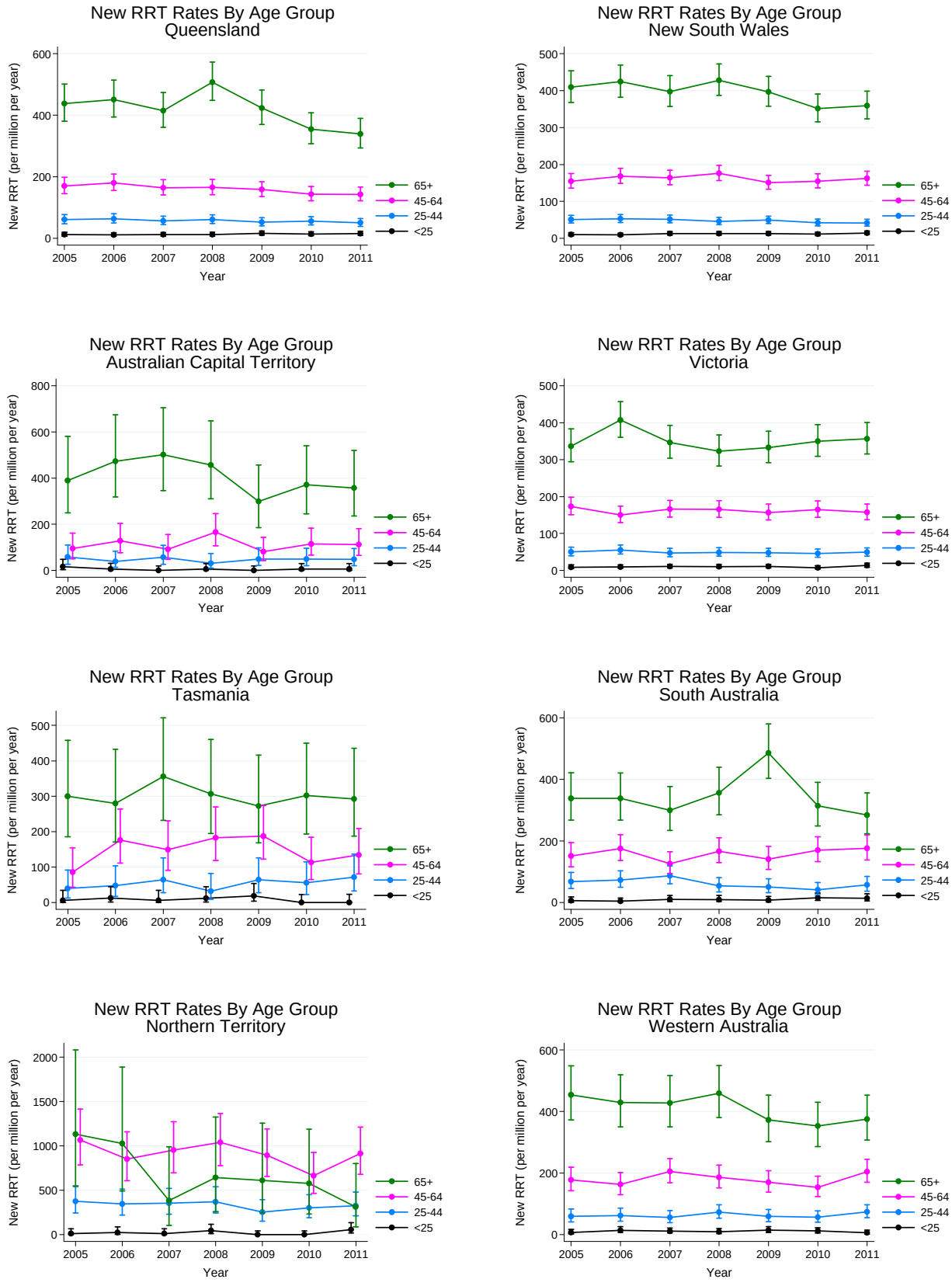




INCIDENCE RATES FOR NEW RRT PATIENTS BY AGE GROUPS

Figure 2.7

Incidence rates (95% confidence intervals) for new RRT patients by state and age groups. Note the Y axis scales for each state are different. ACT population data includes the adjacent area of NSW (serviced by Canberra).



LATE REFERRAL

In total 22% of all new patients in Australia and New Zealand both were referred "late" to nephrological care, i.e. less than three months before first treatment (Figure 2.8). There is some variation with age and patterns differ between Australia and New Zealand (Figure 2.9). Late referral rates have been essentially stable for a number of years (Figure 2.10).
Among the states/territories, the lowest rate was 8% in the Tasmania ranging to 40% in Northern Territory. Variation with racial origin is shown in Figure 2.11. Higher rates are seen among ATSI and Maori's.

Figure 2.8

Late Referral of New Patients

Number of Patients (% Patients)

Primary Renal Disease	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	AUST	NZ
LATE REFERRAL										
Analgesic	0 (0%)	1 (1%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (2%)	2 (0%)	1 (1%)
T1 diabetes	2 (2%)	4 (2%)	0 (0%)	6 (5%)	0 (0%)	0 (0%)	0 (0%)	2 (4%)	14 (3%)	2 (2%)
T2 diabetes	25 (25%)	44 (22%)	1 (8%)	34 (26%)	0 (0%)	5 (24%)	24 (73%)	22 (46%)	155 (28%)	31 (30%)
Glomerulonephritis	23 (23%)	49 (25%)	2 (15%)	37 (28%)	0 (0%)	6 (29%)	1 (3%)	11 (23%)	129 (24%)	28 (27%)
Hypertension	13 (13%)	39 (20%)	3 (23%)	12 (9%)	1 (25%)	3 (14%)	2 (6%)	6 (13%)	79 (14%)	6 (6%)
Miscellaneous	24 (24%)	39 (20%)	3 (23%)	30 (23%)	2 (50%)	2 (10%)	2 (6%)	4 (8%)	106 (19%)	23 (22%)
Polycystic	3 (3%)	7 (4%)	0 (0%)	2 (2%)	0 (0%)	1 (5%)	0 (0%)	1 (2%)	14 (3%)	2 (2%)
Reflux	2 (2%)	1 (1%)	1 (8%)	1 (1%)	0 (0%)	1 (5%)	3 (9%)	0 (0%)	9 (2%)	3 (3%)
Uncertain	10 (10%)	13 (7%)	3 (23%)	8 (6%)	1 (25%)	3 (14%)	1 (3%)	1 (2%)	40 (7%)	7 (7%)
Subtotals	**102 (23%)**	**197 (26%)**	**13 (25%)**	**130 (22%)**	**4 (8%)**	**21 (12%)**	**33 (40%)**	**48 (17%)**	**548 (22%)**	**103 (22%)**
NOT LATE REFERRAL										
Analgesic	5 (1%)	20 (4%)	0 (0%)	3 (1%)	0 (0%)	1 (1%)	0 (0%)	1 (0%)	30 (2%)	4 (1%)
T1 diabetes	17 (5%)	23 (4%)	1 (3%)	21 (5%)	8 (17%)	8 (5%)	1 (2%)	5 (2%)	84 (4%)	17 (5%)
T2 diabetes	107 (31%)	180 (32%)	9 (23%)	143 (31%)	13 (27%)	49 (30%)	29 (59%)	86 (37%)	616 (32%)	149 (40%)
Glomerulonephritis	65 (19%)	112 (20%)	10 (25%)	130 (28%)	10 (21%)	38 (24%)	5 (10%)	63 (27%)	433 (23%)	85 (23%)
Hypertension	61 (18%)	89 (16%)	7 (18%)	49 (11%)	6 (13%)	18 (11%)	8 (16%)	41 (17%)	279 (15%)	44 (12%)
Miscellaneous	29 (9%)	64 (11%)	6 (15%)	55 (12%)	4 (8%)	14 (9%)	1 (2%)	18 (8%)	191 (10%)	26 (7%)
Polycystic	20 (6%)	33 (6%)	3 (8%)	36 (8%)	3 (6%)	16 (10%)	1 (2%)	14 (6%)	126 (7%)	24 (7%)
Reflux	11 (3%)	13 (2%)	2 (5%)	10 (2%)	1 (2%)	4 (2%)	1 (2%)	3 (1%)	45 (2%)	6 (2%)
Uncertain	26 (8%)	27 (5%)	2 (5%)	18 (4%)	3 (6%)	13 (8%)	3 (6%)	4 (2%)	96 (5%)	14 (4%)
Subtotals	**341 (77%)**	**561 (74%)**	**40 (75%)**	**465 (78%)**	**48 (92%)**	**161 (88%)**	**49 (60%)**	**235 (83%)**	**1900 (78%)**	**369 (78%)**
Total (100%)	**443**	**758**	**53**	**595**	**52**	**182**	**82**	**283**	**2448**	**472**

NOTE; Diabetes Type 2 non insulin requiring and Diabetes Type 2 requiring insulin are now combined

Figure 2.9

Late Referral - All Modes of Treatment Including Pre-emptive Transplants
New Patients 1-Jan-2007 to 31-Dec-2011

Country	Age Groups									Total
	0-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	>=85	
Australia										
Late referral	31 (20%)	95 (35%)	148 (26%)	265 (24%)	420 (22%)	555 (21%)	606 (21%)	476 (21%)	95 (30%)	2691 (22%)
Not late referral	123 (80%)	178 (65%)	423 (74%)	853 (76%)	1501 (78%)	2082 (79%)	2243 (79%)	1802 (79%)	221 (70%)	9426 (78%)
Total	**154**	**273**	**571**	**1118**	**1921**	**2637**	**2849**	**2278**	**316**	**12117**
New Zealand										
Late referral	12 (40%)	37 (49%)	29 (25%)	61 (23%)	113 (22%)	97 (14%)	95 (16%)	47 (20%)	0 (0%)	491 (19%)
Not late referral	18 (60%)	39 (51%)	88 (75%)	201 (77%)	411 (78%)	580 (86%)	505 (84%)	183 (80%)	15 (100%)	2040 (81%)
Total	**30**	**76**	**117**	**262**	**524**	**677**	**600**	**230**	**15**	**2531**

Figure 2.10

Late Referral - All Modes of Treatment
Including Pre-emptive Transplants 2007 to 2011

Country	Years				
	2007	2008	2009	2010	2011
Australia					
Late referral	562 (24%)	556 (22%)	507 (21%)	518 (22%)	548 (22%)
Not late referral	1820 (76%)	1993 (78%)	1914 (79%)	1799 (78%)	1900 (78%)
Total	**2382**	**2549**	**2421**	**2317**	**2448**
New Zealand					
Late referral	96 (21%)	112 (23%)	97 (17%)	83 (16%)	103 (22%)
Not late referral	372 (79%)	385 (77%)	486 (83%)	428 (84%)	369 (78%)
Total	**468**	**497**	**583**	**511**	**472**

Figure 2.11

Late Referral - All Modes of Treatment
Including Pre-emptive Transplants
By Race 2007 to 2011

Country	Race					
	Asian	Aboriginal / TSI	Caucasian	Maori	Pacific People	Other
Australia						
Late referral	224 (22%)	307 (27%)	2025 (21%)	25 (25%)	57 (27%)	53 (27%)
Not late referral	797 (78%)	831 (73%)	7432 (79%)	75 (75%)	151 (73%)	140 (73%)
Total	**1021**	**1138**	**9457**	**100**	**208**	**193**
New Zealand						
Late referral	27 (14%)	-	204 (18%)	162 (21%)	96 (21%)	2 (17%)
Not late referral	160 (86%)	-	901 (82%)	597 (79%)	372 (79%)	10 (83%)
Total	**187**	**-**	**1105**	**759**	**468**	**12**

Notes: Maori and Pacific Peoples who were resident and commenced treatment in Australia are also shown.
Figures presented in the 2011 Annual Report included years 2005 - 2010.

CO-MORBID CONDITIONS

Co-morbid conditions at entry to RRT are shown in Figures 2.12 - 2.18. In Australia, the proportion of people with reported coronary artery disease, chronic lung disease and peripheral vascular disease at the onset of dialysis is gradually climbing (Figure 2.13). See Appendix II and III for further analyses of co-morbid conditions.

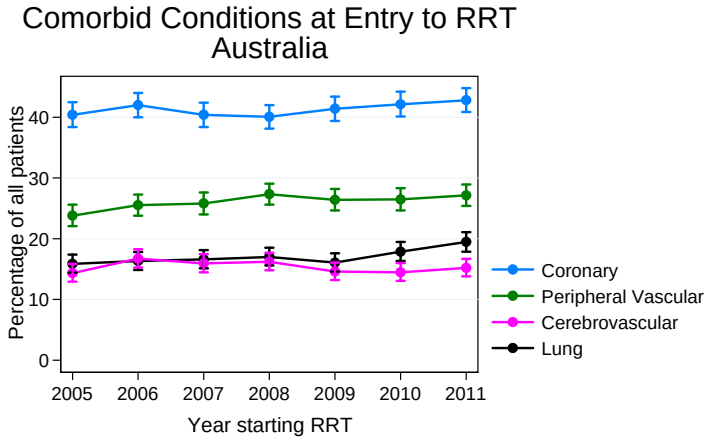
Figure 2.12

Co-morbid Conditions at Entry to Program 2011

Number of Patients (% Patients)

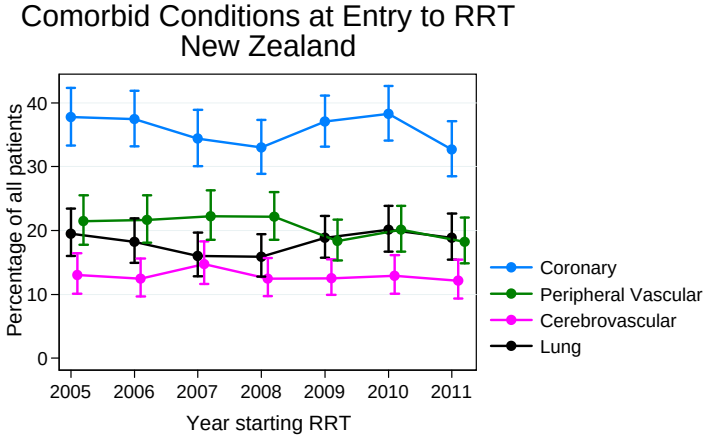
Country		Chronic Lung Disease	Coronary Artery Disease	Peripheral Vascular Disease	Cerebro-Vascular Disease	Smoking		Diabetes (Including Diabetic Nephropathy)	
Australia n=2453	Yes	347 (14%)	832 (34%)	442 (18%)	278 (11%)	Current	298 (12%)	Type 1	104 (4%)
	Suspected	130 (5%)	218 (9%)	224 (9%)	95 (4%)	Former	1036 (42%)	Type 2	1035 (42%)
	No	1976 (81%)	1403 (57%)	1787 (73%)	2080 (85%)	Never	1110 (45%)	No	1315 (54%)
New Zealand n=477	Yes	65 (14%)	115 (24%)	64 (13%)	49 (10%)	Current	79 (17%)	Type 1	19 (4%)
	Suspected	25 (5%)	41 (9%)	23 (5%)	9 (2%)	Former	195 (41%)	Type 2	217 (46%)
	No	387 (81%)	321 (67%)	390 (82%)	419 (88%)	Never	196 (42%)	No	240 (50%)

Figure 2.13



(Suspected cases included)

Figure 2.14



(Suspected cases included)

Figure 2.15

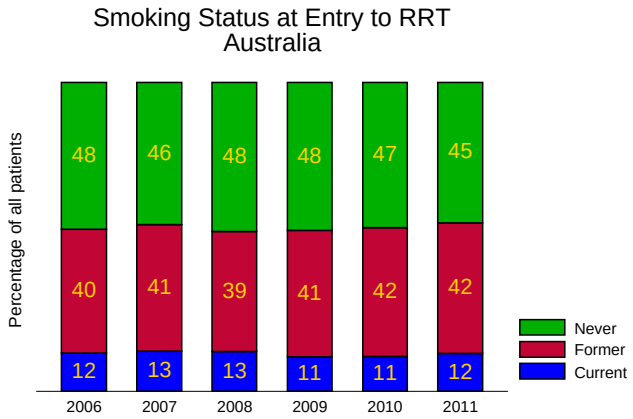


Figure 2.16

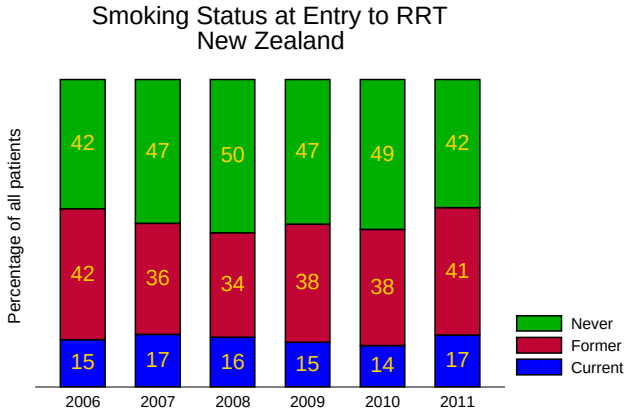


Figure 2.17

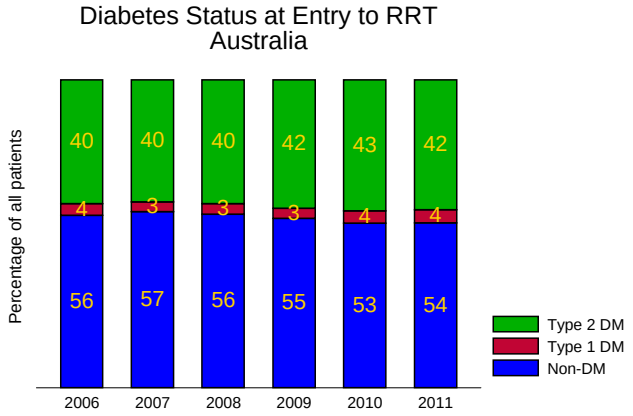
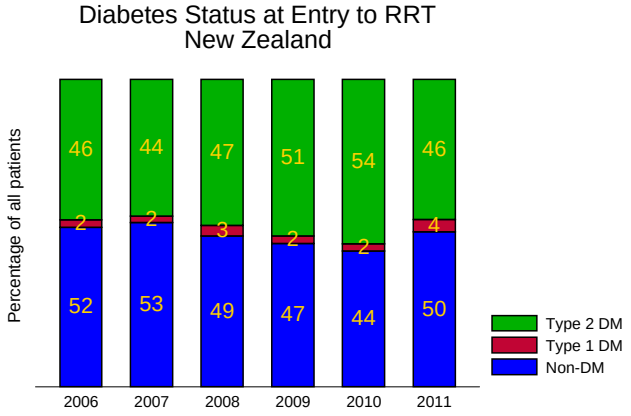


Figure 2.18



PRIMARY RENAL DISEASE OF NEW PATIENTS

The coding of primary renal disease in ANZDATA has remained unchanged for many years. During that time, a number of new disease entities have emerged, and the understanding of others considerably evolved. To better reflect this, a project is underway to review and modify the categories used to report primary renal disease in future reports. It is likely the introduction of these codes will be staged over several years.

AUSTRALIA

Diabetic nephropathy (35% of all new patients), continued as the most common cause of primary renal disease (Figure 2.19).

Glomerulonephritis (23%) was the next most common cause of ESRD, followed by hypertension (15%), polycystic kidney disease (6%), reflux nephropathy (2%).

IgA + mesangioproliferative GN (26% of all GN) was the most common histologically proven form of glomerulonephritis (Figure 2.20).

Miscellaneous diseases causing end stage renal failure are tabulated in Figure 2.21.

A renal biopsy based diagnosis was reported in 31% of cases: glomerulonephritis 76%, hypertension 21% and diabetes (types I and II) 15%, (Figure 2.22).

NEW ZEALAND

Diabetic nephropathy (42%) was the most common cause of ESRD followed by glomerulonephritis (24%) and hypertension (11%).

IgA nephropoathy and focal sclerosis are the most common forms of GN in New Zealand (causing end -stage kidney disease).

Figure 2.19

Causes of ESRD 2008 - 2011
Number of Patients (% Patients)

Disease	2008	2009	2010	2011
Australia				
Glomerulonephritis	575 (23%)	589 (24%)	497 (21%)	563 (23%)
Analgesic Nephropathy	51 (2%)	41 (2%)	37 (2%)	32 (1%)
Polycystic Kidney Disease	161 (6%)	176 (7%)	167 (7%)	140 (6%)
Reflux	76 (3%)	80 (3%)	60 (3%)	54 (2%)
Hypertension	366 (14%)	344 (14%)	318 (14%)	358 (15%)
Diabetic Nephropathy	867 (34%)	781 (32%)	823 (35%)	870 (35%)
Miscellaneous	263 (10%)	264 (11%)	284 (12%)	298 (12%)
Uncertain diagnosis	190 (7%)	146 (6%)	133 (6%)	138 (6%)
Australia Total	**2549**	**2421**	**2319**	**2453**
New Zealand				
Glomerulonephritis	103 (21%)	125 (21%)	111 (22%)	114 (24%)
Analgesic Nephropathy	2 (0%)	2 (0%)	2 (0%)	5 (1%)
Polycystic Kidney Disease	23 (5%)	34 (6%)	17 (3%)	26 (5%)
Reflux	14 (3%)	9 (2%)	8 (2%)	9 (2%)
Hypertension	44 (9%)	62 (11%)	58 (11%)	51 (11%)
Diabetic Nephropathy	227 (46%)	278 (48%)	259 (51%)	200 (42%)
Miscellaneous	62 (12%)	54 (9%)	41 (8%)	49 (10%)
Uncertain diagnosis	22 (4%)	19 (3%)	16 (3%)	23 (5%)
NZ Total	**497**	**583**	**512**	**477**

Figure 2.20

Types of Glomerulonephritis
1-Jan-2011 to 31-Dec-2011
Number (% of all GN)

	Australia	New Zealand
Advanced Gn (unclassified=end stage)	13 (2%)	7 (6%)
Extra and intra capillary Gn (rapidly progressive)	15 (3%)	0 (0%)
Familial Gn (including alports)	16 (3%)	2 (2%)
Focal and segmental proliferative GN	28 (5%)	4 (4%)
Focal sclerosing Gn (including hyalinosis)	33 (6%)	6 (5%)
GN other (specify)	13 (2%)	4 (4%)
GN with systemic disease (specify)	3 (1%)	0 (0%)
Goodpastures with linear IgG and lung haemorrhage	15 (3%)	3 (3%)
Henoch-schonlein purpura	5 (1%)	1 (1%)
Membranous GN	38 (7%)	5 (4%)
Mesangial proliferative (IgA+)	147 (26%)	19 (17%)
Mesangial proliferative (IgA-)	5 (1%)	1 (1%)
Mesangial proliferative (no if studies)	2 (<1%)	1 (1%)
Mesangiocapillary GN (dense deposit disease)	4 (1%)	0 (0%)
Mesangiocapillary GN (double contour)	10 (2%)	3 (3%)
Microscopic polyarteritis	19 (3%)	4 (4%)
Presumed GN (no biopsy)	87 (15%)	21 (18%)
Primary focal sclerosing GN/focal glomerular sclerosis	47 (8%)	13 (11%)
Proliferative Gn with linear IgG and no lung haemorrhage	2 (<1%)	1 (1%)
S.L.E.	27 (5%)	9 (8%)
Scleroderma	4 (1%)	1 (1%)
Secondary focal sclerosing GN	7 (1%)	4 (4%)
Wegeners granulomatosis	23 (4%)	5 (4%)
Totals	**563**	**114**

Figure 2.21

Miscellaneous Causes of ESRD 1-Jan-2011 to 31-Dec-2011

Renal Disease	Aust (298)	NZ (49)	Renal Disease	Aust (298)	NZ (49)
Lead nephropathy	2	49	Medullary cystic disease	10	0
Cadmium toxicity	0	0	Calculi	24	5
Interstitial nephritis	32	1			
Loss of single kidney (trauma-surgery)	1	5	Haemolytic uraemic syndrome	7	1
Oxalosis	3	1	Cortical necrosis	15	0
Cystinosis	1	0			
Lithium toxicity	19	0	Congenital renal hypoplasia and dysplasia	18	2
Calcineurin inhibitor toxicity	9	3	Obstructed megaureter	1	0
Gout	2	3			
			Amyloid disease	23	4
Posterior urethral valves	4	0	Paraproteinaemia (including multiple myeloma)	39	9
Neuropathic bladder	1	0	Light chain nephropathy (not malignant)	2	1
Spina bifida or myelomeningocoele	3	0			
Bladder neck obstruction (incl. prostatomegaly)	5	2	Renal cell carcinoma (Grawitz)	9	4
Other lower urinary tract abnormalities (with 2nd.reflux)	4	0	Transitional cell carcinoma urinary tract	5	0
Ureteric obstructive nephropathy	9	2			
Obstructive nephropathy	23	4	Other	27	2

RENAL BIOPSY RATES

Renal biopsy rates vary widely with different types of disease (Figure 2.23). In 2011 in Australia, 33% of patients were biopsied, continuing a slow trend over the last 4 years. Rates in New Zealand are somewhat lower, and stable.

Figure 2.22

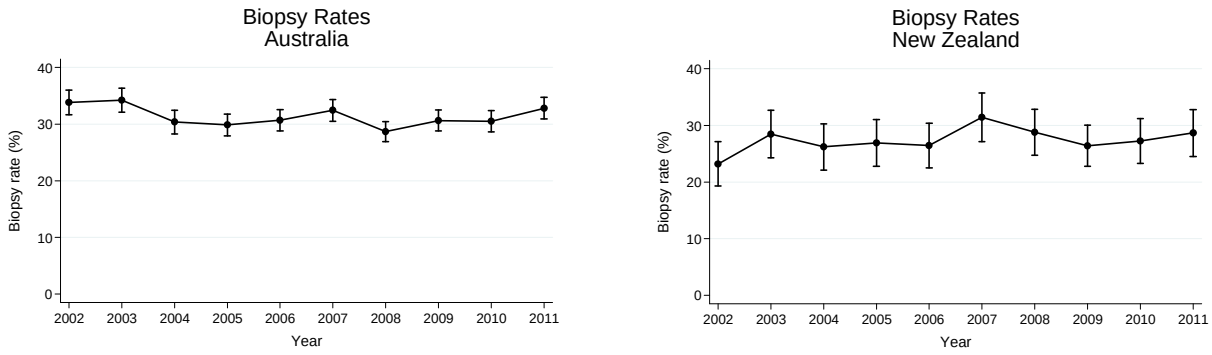


Figure 2.23

Biopsy of New Patients 2011

Biopsy	Primary Renal Disease	Qld	NSW	ACT	Vic	Tas	SA	NT	WA	Aust	NZ
Yes	Analgesic Nephropathy	0	2	0	0	0	0	0	0	2	0
	Diabetes T1	4	9	0	6	3	2	0	2	26	2
	Diabetes T2	12	43	3	21	2	8	2	11	102	15
	Glomerulonephritis	68	122	9	142	8	39	3	52	443	88
	Hypertension	18	23	5	13	3	8	0	8	78	6
	Miscellaneous	19	40	7	31	2	3	2	9	113	18
	Polycystic Kidney Disease	3	7	1	2	0	4	1	1	19	1
	Reflux	2	2	0	1	0	2	0	0	7	0
	Uncertain diagnosis	6	4	0	1	0	3	0	0	14	5
	Sub Total	**132**	**252**	**25**	**217**	**18**	**69**	**8**	**83**	**804**	**135**
No	Analgesic Nephropathy	5	19	0	3	0	1	0	2	30	5
	Diabetes T1	15	18	1	21	5	6	1	5	72	17
	Diabetes T2	120	182	7	156	11	46	51	96	669	163
	Glomerulonephritis	20	39	3	25	2	5	3	23	120	26
	Hypertension	56	105	5	48	4	13	10	39	280	44
	Miscellaneous	34	63	2	54	4	13	1	13	184	31
	Polycystic Kidney Disease	20	33	2	36	3	13	0	14	121	25
	Reflux	11	11	3	10	1	3	4	3	46	9
	Uncertain diagnosis	30	37	5	25	4	13	4	5	123	16
	Sub Total	**311**	**507**	**28**	**378**	**34**	**113**	**74**	**200**	**1645**	**336**
	Total	**443**	**761**	**53**	**595**	**52**	**182**	**83**	**284**	**2453**	**477**

NOTE; Diabetes Type 2 non insulin requiring and Diabetes Type 2 requiring insulin are now combined

Figure 2.24

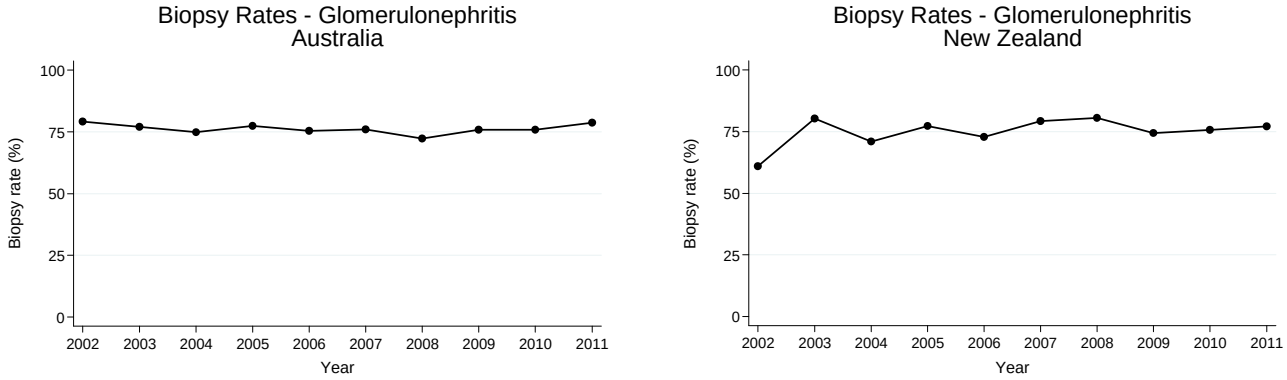


Figure 2.25