CHAPTER 12

END-STAGE KIDNEY DISEASE AMONG INDIGENOUS PEOPLES OF AUSTRALIA AND NEW ZEALAND

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INTRODUCTION

In this chapter, rates of end-stage kidney disease among the Indigenous Peoples of Australia and New Zealand are substantially increased compared with the non-indigenous comparisons.

We have extended the analyses of treated ESKD among indigenous people, and drawn together analyses from elsewhere in the report into a separate chapter.

Figure 12.1

New Patients 2000 - 2009
(% Dialysis Patients on Haemodialysis)

		Australia		New Zealand		
Mode of Treatment		ATSI	Non-Indigenous	Maori	Pacific People	Non-Indigenous
2000	PD	28	399	46	17	78
	HD	122 (81%)	1159 (74%)	82 (64%)	53 (76%)	128 (62%)
2001	PD	32	451	55	15	109
	HD	142 (82%)	1236 (73%)	94 (63%)	53 (78%)	128 (54%)
2002	PD	23	468	51	9	102
	HD	150 (87%)	1186 (72%)	98 (66%)	47 (84%)	141 (58%)
2003	PD	27	468	44	13	95
	HD	146 (84%)	1280 (73%)	102 (70%)	64 (83%)	132 (58%)
2004	PD	27	414	54	12	106
	HD	168 (86%)	1284 (76%)	88 (62%)	52 (81%)	134 (56%)
2005	PD	29	450	40	20	88
	HD	187 (86%)	1543 (77%)	98 (71%)	54 (73%)	148 (63%)
2006	PD	31	551	47	17	95
	HD	190 (86%)	1585 (74%)	121 (72%)	62 (78%)	145 (60%)
2007	PD	56	531	36	13	82
	HD	181 (76%)	1545(74%)	108 (75%)	63 (83%)	138 (63%)
2008	PD	52	603	35	22	95
	HD	197 (79%)	1583 (72%)	119 (77%)	65 (75%)	137 (59%)
2009	PD	35	530	52	22	121
	HD	152 (81%)	1502 (74%)	116 (69%)	77 (78%)	155 (56%)

NEW PATIENTS

Figures 12.1 - 12.7

Australia

A total of 187 Aboriginal and Torres Strait Islander People commenced dialysis during 2009. This number decreased from 249 in 2008 and 237 in 2007.

The majority (81%) are treated with haemodialysis; in 2009 the number of people commencing PD (35 patients) was less than the previous two years.

New Zealand

The number of Maori and Pacific People starting dialysis continues to increase in 2009 (168 patients and 99 patients) respectively.

More Maori patients commenced on PD in 2009 than in the previous four years while the number of Pacific People starting PD remained the same as 2008

Figure 12.2

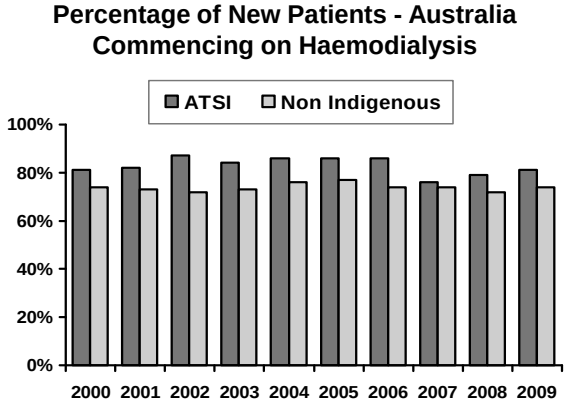
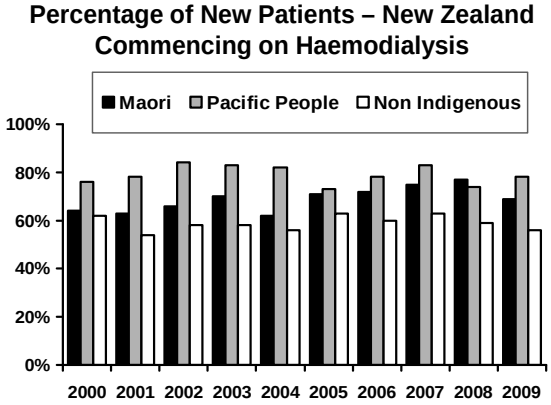


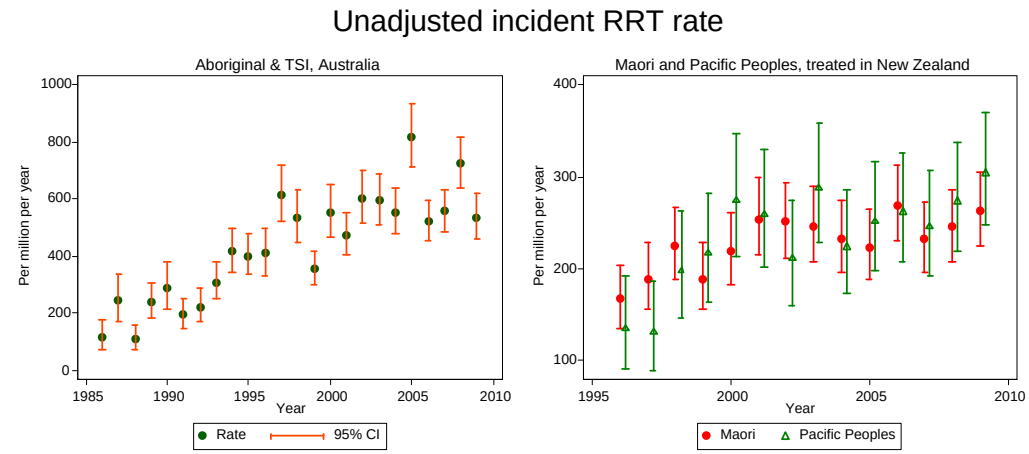
Figure 12.3



INCIDENCE RATE

Overall, the incidence rate (per million population) of indigenous people is considerably greater than that for non-indigenous people. Direct comparisons are confounded by the different age distributions - the indigenous population is considerably younger than the non-indigenous population. However, there does appear to have been a stabilisation of incident rates among Aboriginal Australians. In contrast, rates among Maori and Pacific Peoples in New Zealand have increased progressively in the last few years. The relative rate differs with age and also with gender - this is illustrated in Figure 12.5.

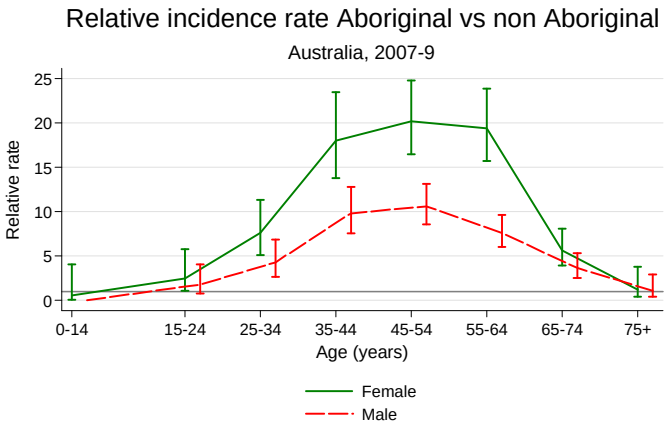
Figure 12.4



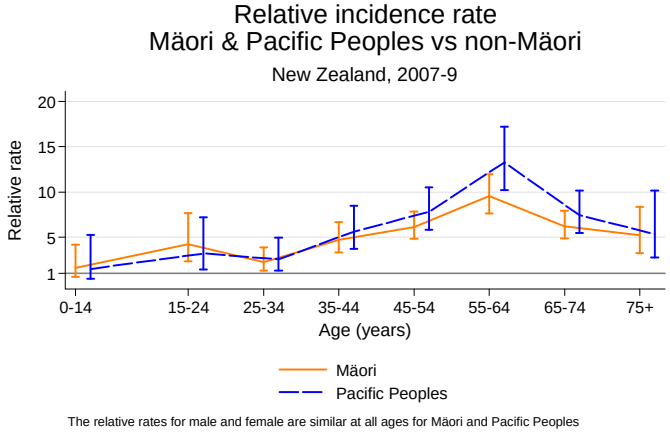
ANZDATA
Note X and Y scales differ

Figure 12.5

Among Aboriginal Australians, there is a marked excess rate among those aged 35-64 years. The relative rate is higher among females than males.



Among Maori and Pacific People the excess rate is concentrated among older groups, and there is no gender difference.

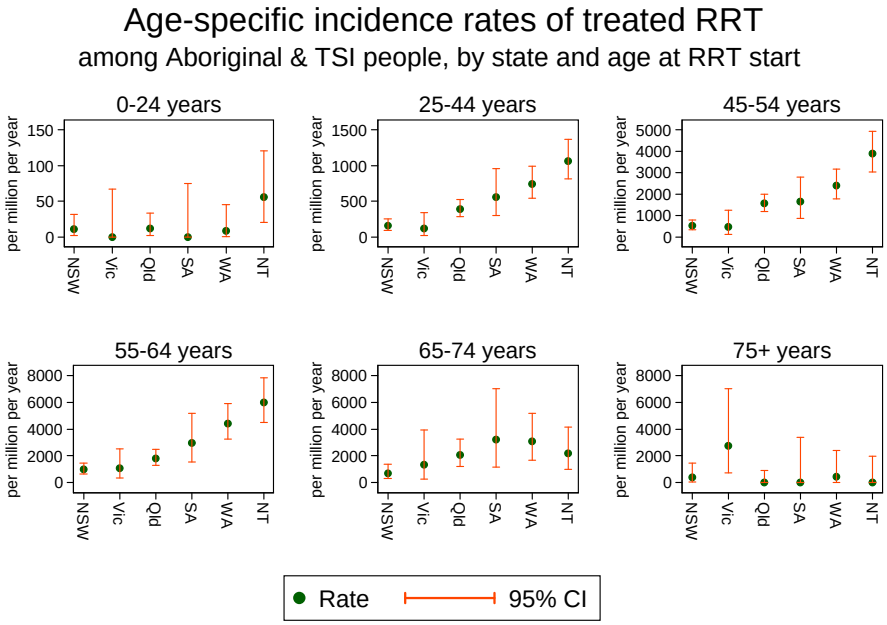


The relative rates for male and female are similar at all ages for Mäori and Pacific Peoples

There is also considerable variation between Australian jurisdictions in the Aboriginal/TSI RRT incident rates. The incidence rates for each State/Territory can be seen in Figure 12.6.

While rates for the very young (<15 years) and older (>65 years) groups are similar in each State/Territory, the rates for people 25-65 years of age show a clear trend of progressively higher rates from NSW/Victoria to Queensland then South Australia, Western Australia and the Northern Territory. Data is shown for a three year period given the small numbers in some locations.

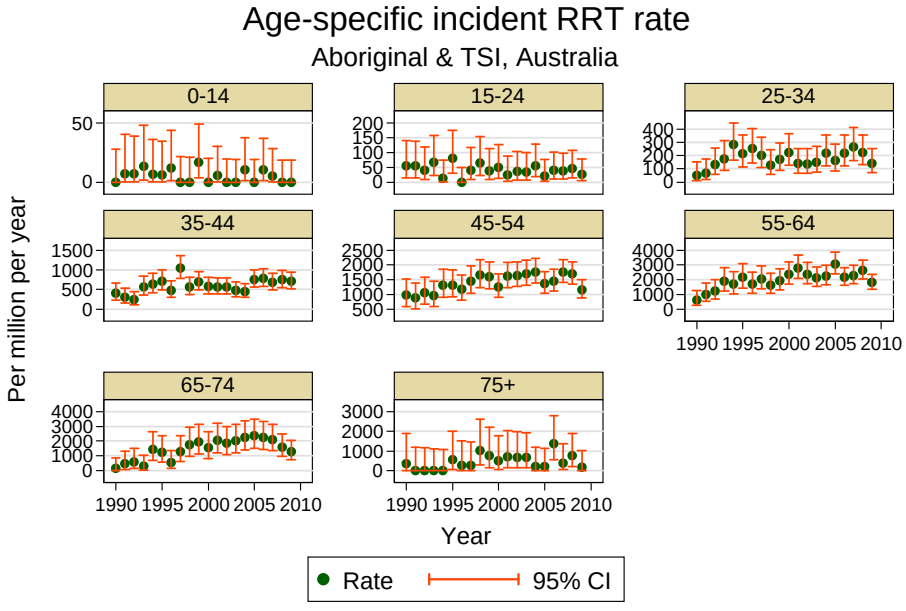
Figure 12.6



ANZDATA and ABS data, 2007-9

The overall stabilisation of rates among Aboriginal Australians is seen consistently across each age group. In some age groups (such as 65-74 years) there is a suggestion of a downwards trend. There are a number of factors which contribute to incident numbers of RRT (among both indigenous and non-indigenous people). It is not clear whether this stabilisation reflects the underlying rates of diabetes, rates of disease progression, referral patterns or other diseases.

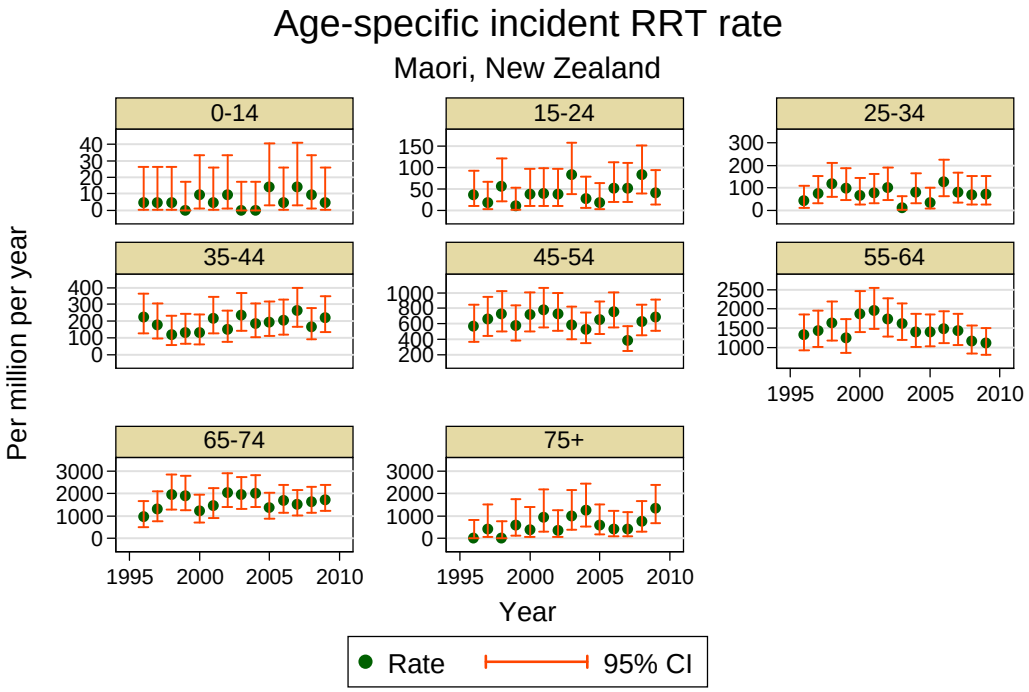
Figure 12.7



note: Y axis scales differ

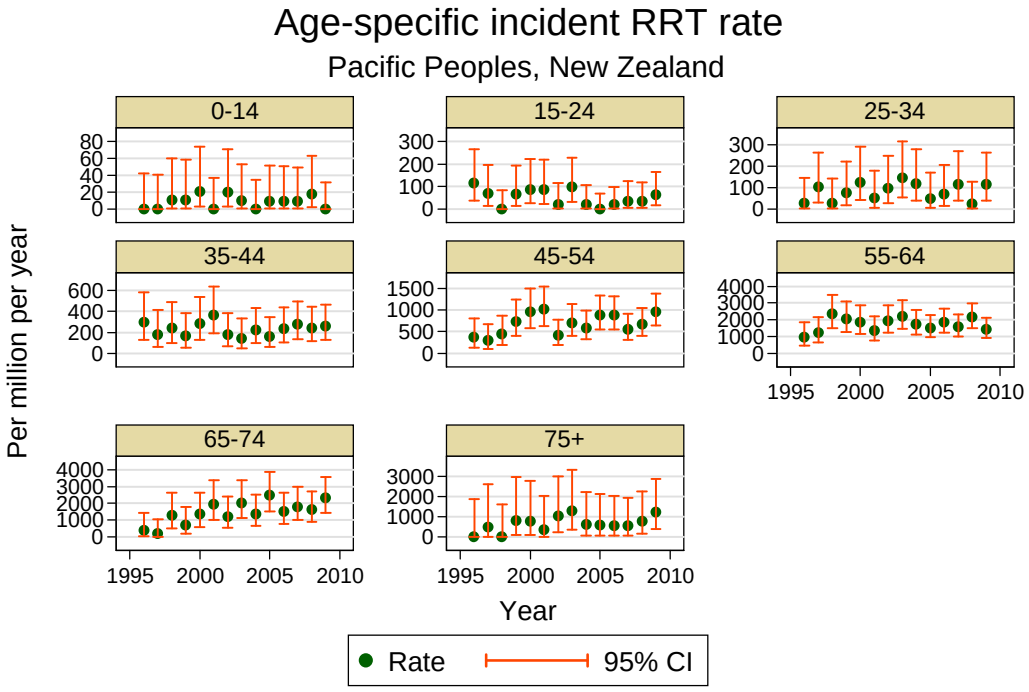
Age specific trends for Maori and Pacific Peoples are shown in Figures 12.8 and 12.9

Figure 12.8



note: Y axis scales differ

Figure 12.9



note: Y axis scales differ

NEW TRANSPLANTS

Figure 12.10

In both Australia and New Zealand numbers of transplants to indigenous recipients were low.

Australia

Twenty four transplant operations were performed in Aboriginal and Torres Strait Islander recipients in 2009, of which four (20%) were from living donors.

New Zealand

The number of Maori transplanted has increased from five patients in 2008 to eleven patients in 2009, with 42% from living donors.

Pacific People had five deceased donor and one (20%) living donor

Figure 12.10

New Transplants 2000 - 2009
(% Transplants with Living Donor)

		Australia		New Zealand		
Year	Donor Source	ATSI	Non-Indigenous	Maori	Pacific People	Non-Indigenous
2000	DD	15	335	11	3	61
	LD	3 (17%)	178 (35%)	2 (15%)	1 (25%)	28 (31%)
2001	DD	18	310	10	5	52
	LD	3 (14%)	210 (40%)	5 (33%)	1 (17%)	37 (42%)
2002	DD	17	357	10	13	46
	LD	0 (0%)	230 (39%)	3 (23%)	2 (13%)	43 (48%)
2003	DD	10	315	8	11	48
	LD	3 (23%)	215 (41%)	8 (50%)	3 (21%)	33 (41%)
2004	DD	22	384	7	8	42
	LD	4 (15%)	240 (38%)	5 (42%)	4 (33%)	39 (48%)
2005	DD	19	358	3	2	42
	LD	3 (14%)	243 (40%)	0 (0%)	2 (50%)	44 (51%)
2006	DD	24	344	6	4	31
	LD	3 (11%)	270 (44%)	4 (40%)	3 (43%)	42 (57%)
2007	DD	14	330	8	2	55
	LD	4 (22%)	267 (45%)	9 (53%)	4 (67%)	45 (45%)
2008	DD	24	435	5	6	42
	LD	7 (23%)	347 (44%)	7 (58%)	4 (40%)	58 (58%)
2009	DD	20	426	11	5	38
	LD	4 (20%)	322 (43%)	8 (42%)	1 (20%)	58 (60%)

PREVALENCE

Figure 12.11

Australia

The number of prevalent Aboriginal and Torres Strait Islander People with treated end-stage kidney disease increased by only 1% in 2009 after a 6% increase in 2008.

The percentage of ATSI on home haemodialysis rose from 5% in 2008 to 7% in 2009.

The percentage of ATSI treated with peritoneal dialysis decreased by 16% in 2009 after an increase of 5% in 2008.

New Zealand

The number of prevalent Maori with treated end-stage kidney disease rose by 6% whilst Pacific People increased by 10% in 2009.

The percentage of Maori (25%) treated with home haemodialysis remains similar to past years, whilst in Pacific People this percentage (14%) also remained similar since 2005.

The use of peritoneal dialysis in the Maori population increased by 5% whilst in Pacific Islanders remained similar in 2009 to the previous year.

Figure 12.11

Prevalent Patients 2005 - 2009
(% Haemodialysis Patients on Home HD)

		Australia		New Zealand		
Year	Mode of Treatment	ATSI	Non-Indigenous	Maori	Pacific People	Non-Indigenous
2005	PD	144	1716	236	91	391
	HD	780 (5%)	5999 (13%)	404 (26%)	260 (10%)	496 (33%)
	Func TX*	134	6426	107	70	1043
2006	PD	149	1898	247	88	431
	HD	839 (6%)	6370 (13%)	436 (25%)	283 (14%)	513 (34%)
	Func TX*	148	6726	106	75	1048
2007	PD	156	1979	231	89	425
	HD	934 (6%)	6649 (143)	456 (24%)	320 (12%)	548 (33%)
	Func TX*	148	6973	108	76	1087
2008	PD	167	2070	222	108	432
	HD	990 (5%)	6908 (13%)	465 (24%)	325 (14%)	550 (32%)
	Func TX*	159	7362	112	82	1131
2009	PD	141	2036	234	109	447
	HD	1033 (7%)	7131 (13%)	489 (25%)	376 (14%)	605 (32%)
	Func TX*	160	7766	121	84	1174

* By Resident Country at 31st December

INCIDENCE AND PREVALENCE BY STATE/TERRITORY

Figures 12.12 - 12.17 show various comparisons between States/Territories. This includes both incidence and treatment related information. Corresponding New Zealand data is shown in Figures 12.18 - 12.23

State Incidence

The Northern Territory has the highest national incidence among indigenous people of treated end-stage kidney disease in Australia at 925 pmp, the next highest is in South Australia (534 pmp). Detailed data are given in Figure 12.24.

Dialysis by Resident State

Treatment patterns for Aboriginal and Torres Strait Islander People vary by State. The highest rates are in the Northern Territory, Western Australia and South Australia.

Transplant by Referring State

Rates of prevalent transplants vary substantially between States with highest rates in South Australia.

These rates are per population, not per dialysis patient, and they reflect both background rates of kidney disease and transplant rates.

Figure 12.12

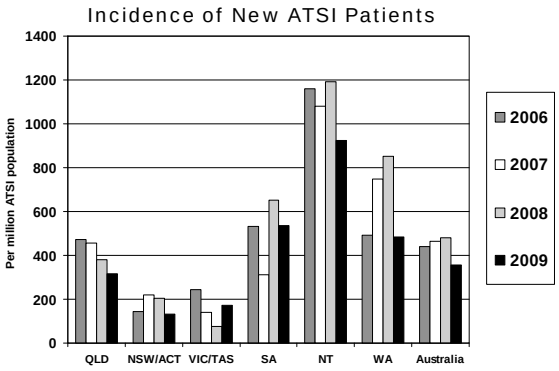


Figure 12.13

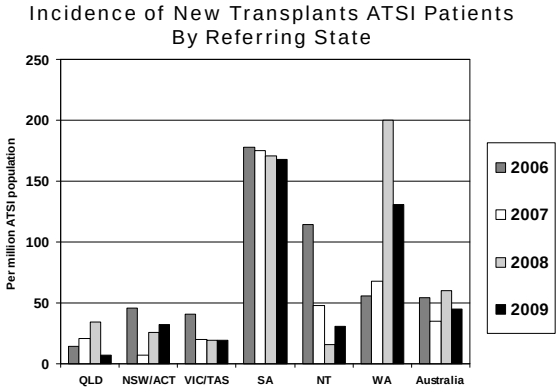


Figure 12.14

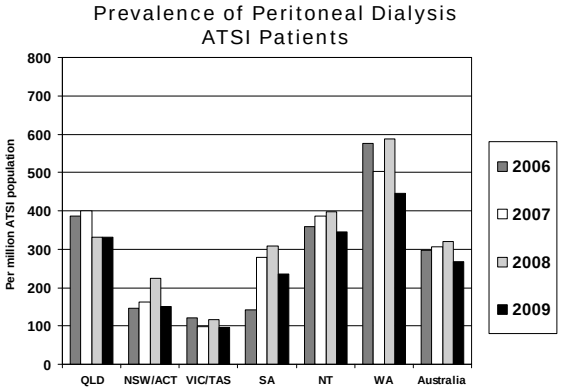


Figure 12.15

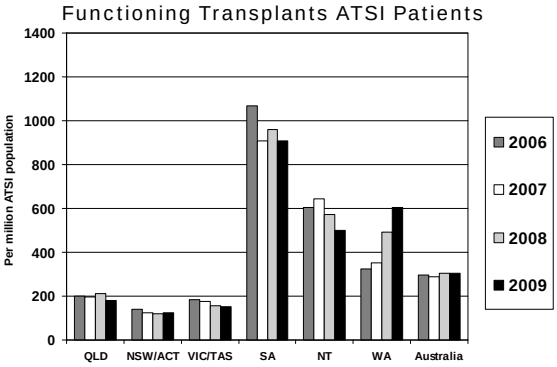


Figure 12.16

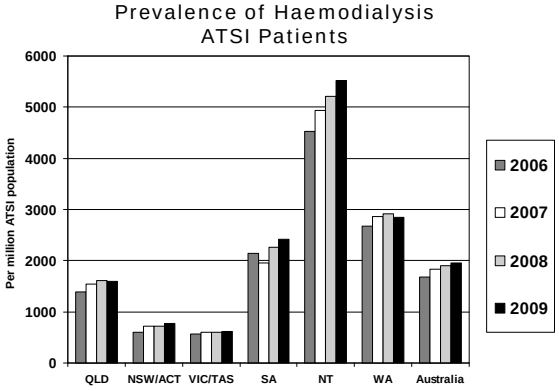
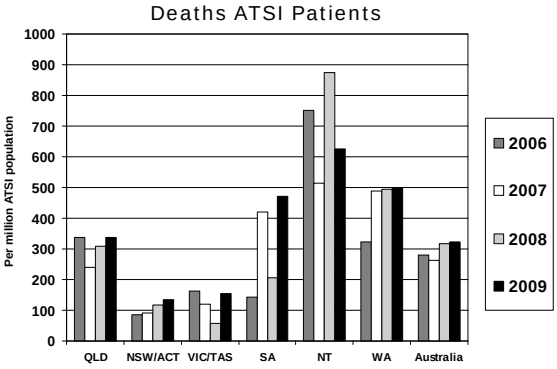


Figure 12.17



INCIDENCE AND PREVALENCE OF MAORI AND PACIFIC PEOPLE IN NEW ZEALAND

Figure 12.18

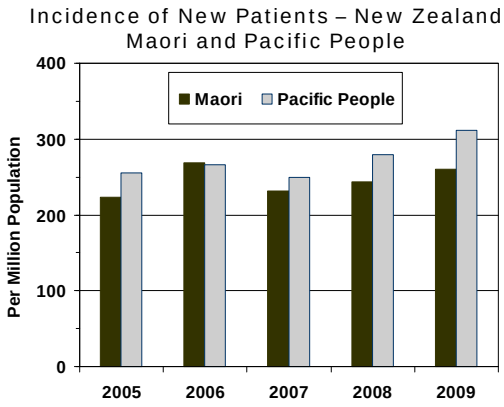


Figure 12.19

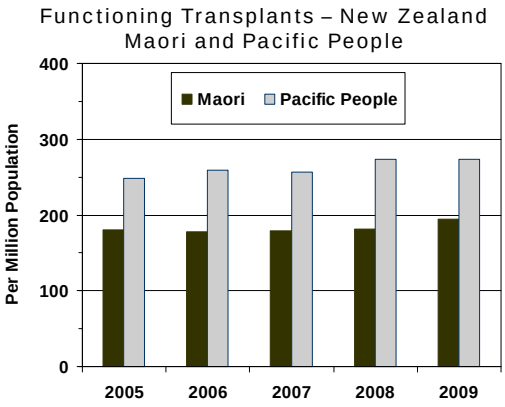


Figure 12.20

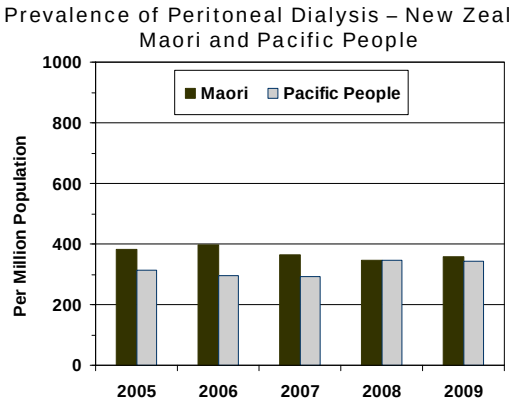


Figure 12.21

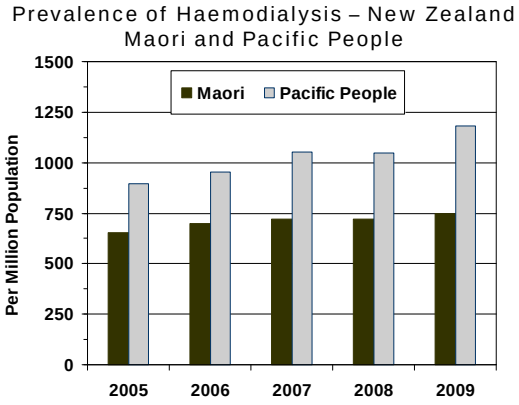


Figure 12.22

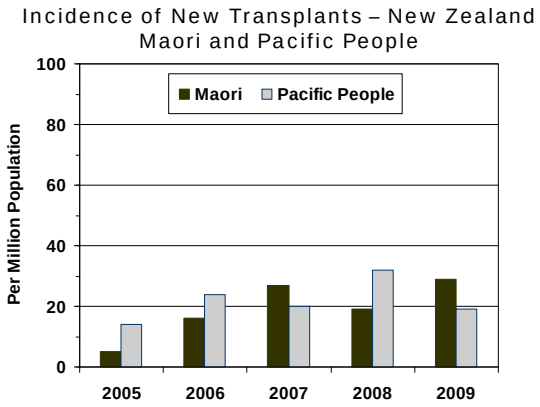
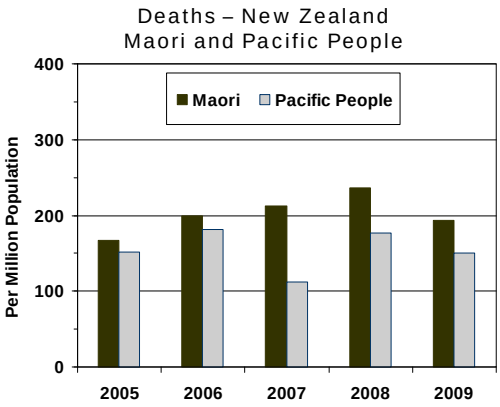


Figure 12.23



INCIDENCE AND PREVALENCE BY STATE/TERRITORY

Detailed data about States/Territories is presented in Figure 12.24.

Figure 12.24

Incidence and Prevalence - Aboriginal And Torres Strait Islanders 2005 - 2009 by Resident State

(Number per million ATSI population in each State)

		QLD	NSW / ACT	Vic / Tas	SA	NT	WA	Australia
2005	New Patients	47 (344)	26 (176)	6 (123)	16 (580)	76 (1259)	45 (634)	**216 (438)**
	Prevalent PD	46 (336)	20 (135)	6 (123)	4 (145)	27 (447)	41 (578)	**144 (292)**
	Prevalent HD	183 (1338)	92 (621)	23 (473)	55 (1994)	250 (4141)	176 (2480)	**780 (1583)**
	Functioning Transplants	29 (212)	14 (95)	9 (185)	26 (943)	34 (563)	22 (310)	**134 (272)**
	Transplant Ops *	2 (15)	1 (7)	3 (62)	4 (145)	4 (66)	8 (113)	**22 (45)**
	Deaths	34 (249)	18 (122)	2 (41)	5 (181)	38 (629)	22 (310)	**119 (242)**
2006	New Patients	66 (473)	22 (146)	12 (244)	15 (534)	71 (1160)	35 (491)	**221 (441)**
	Prevalent PD	54 (387)	22 (146)	6 (122)	4 (142)	22 (359)	41 (575)	**149 (297)**
	Prevalent HD	193 (1383)	90 (598)	28 (568)	60 (2135)	277 (4523)	190 (2667)	**839 (1673)**
	Functioning Transplants	28 (201)	21 (139)	9 (183)	30 (1067)	37 (604)	23 (323)	**148 (295)**
	Transplant Ops *	2 (14)	7 (46)	2 (41)	5 (178)	7 (114)	4 (56)	**27 (54)**
	Deaths	47 (337)	13 (86)	8 (162)	4 (142)	46 (751)	23 (323)	**141 (281)**
2007	New Patients	65 (457)	34 (222)	7 (139)	9 (314)	67 (1079)	55 (748)	**237 (464)**
	Prevalent PD	57 (400)	25 (163)	5 (99)	8 (279)	24 (387)	37 (503)	**156 (306)**
	Prevalent HD	220 (1546)	109 (712)	30 (594)	56 (1955)	307 (4945)	211 (2868)	**934 (1830)**
	Functioning Transplants	28 (197)	19 (124)	9 (178)	26 (908)	40 (644)	26 (353)	**148 (290)**
	Transplant Ops *	3 (21)	1 (7)	1 (20)	5 (175)	3 (48)	5 (68)	**18 (35)**
	Deaths	34 (239)	14 (91)	6 (119)	12 (419)	32 (515)	36 (489)	**134 (263)**
2008	New Patients	55 (379)	32 (206)	4 (78)	19 (651)	75 (1192)	64 (854)	**249 (479)**
	Prevalent PD	48 (331)	35 (225)	6 (117)	9 (308)	25 (397)	44 (587)	**167 (321)**
	Prevalent HD	235 (1619)	112 (720)	31 (602)	66 (2261)	328 (5212)	218 (2910)	**990 (1906)**
	Functioning Transplants	31 (214)	19 (122)	8 (155)	28 (959)	36 (572)	37 (494)	**159 (306)**
	Transplant Ops *	5 (34)	4 (26)	1 (19)	5 (171)	1 (16)	15 (200)	**31 (60)**
	Deaths	45 (310)	18 (116)	3 (58)	6 (206)	55 (874)	37 (494)	**164 (316)**
2009	New Patients	47 (316)	21 (133)	9 (172)	16 (538)	59 (925)	37 (485)	**189 (358)**
	Prevalent PD	49 (331)	24 (152)	5 (95)	7 (235)	22 (345)	34 (446)	**141 (267)**
	Prevalent HD	237 (1601)	123 (778)	32 (610)	72 (2421)	352 (5519)	217 (2845)	**1033 (1954)**
	Functioning Transplants	27 (182)	20 (126)	8 (153)	27 (908)	32 (502)	46 (603)	**160 (303)**
	Transplant Ops *	1 (7)	5 (32)	1 (19)	5 (168)	2 (31)	10 (131)	**24 (45)**
	Deaths	50 (338)	21 (133)	8 (153)	14 (471)	40 (627)	38 (498)	**171 (323)**

* By Referring State, not State of Transplantation

The per million population figures have been calculated from the estimated indigenous populations of each States published in the Australian Bureau of Statistics document 3238.0 Experimental Projections of the Indigenous Population 1991 to 2009 (low series).

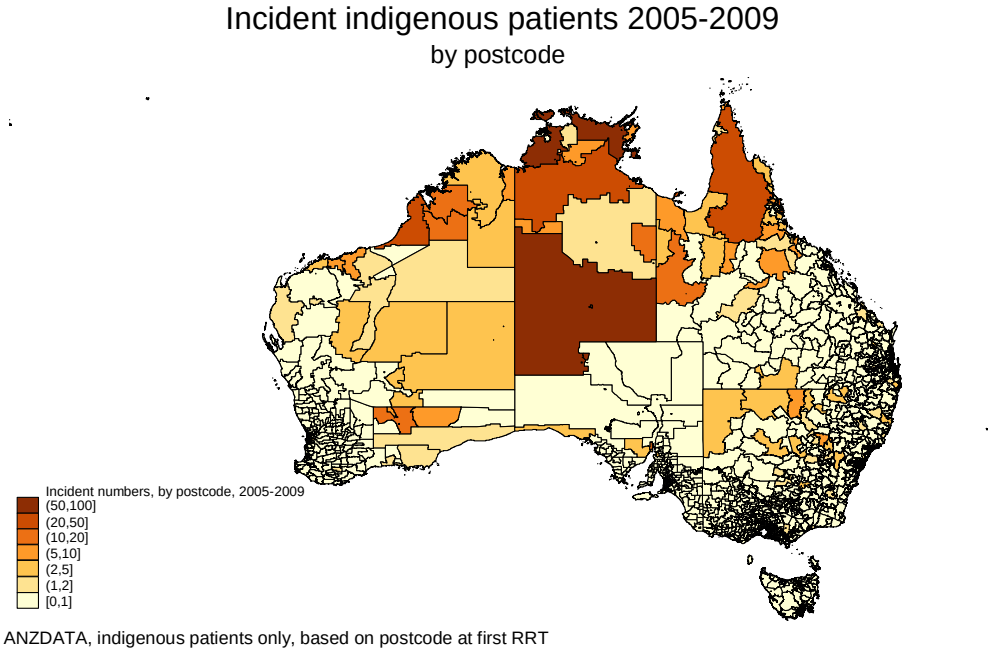
PREVALENT INDIGENOUS DIALYSIS PATIENTS 2009

BY STATISTICAL SUBDIVISION

DERIVED FROM POSTCODE REPORTED TO ANZDATA

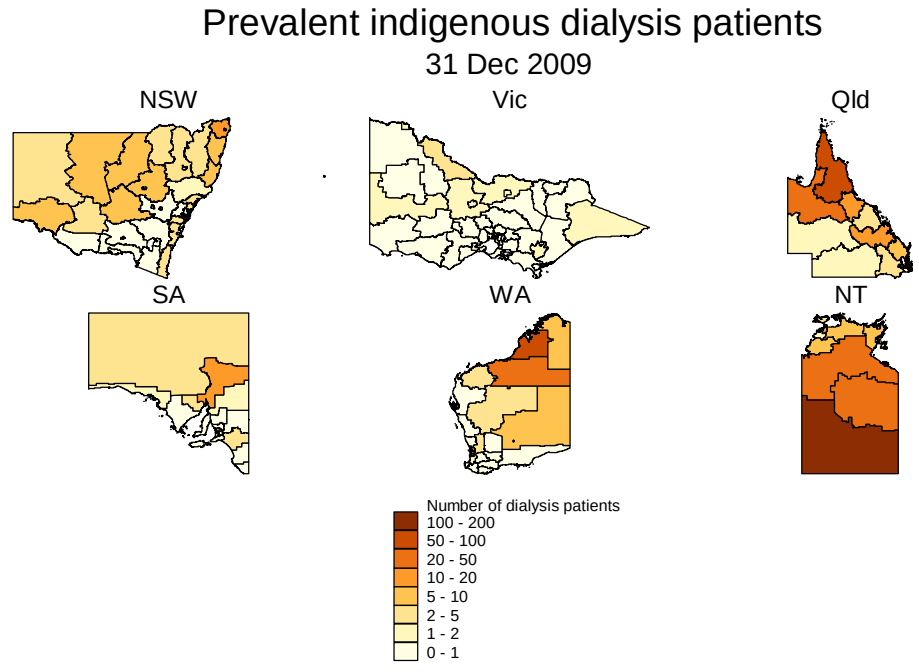
Figure 12.25 shows graphically the distribution of incident ATSI patients (by postcode) and prevalent dialysis patients are summarised in Figure 12.26 by statistical subdivision (obtained by mapping postcodes to SSD). Note that some postcodes were distributed over more than one SSD.

Figure 12.25



ANZDATA, indigenous patients only, based on postcode at first RRT

Figure 12.26



ANZDATA, based on postcode of residence reported at at end 2009
mapped to SSD using ABS concordance files

LATE REFERRAL

Australia

The percentage of Aboriginal and Torres Strait Islander People referred late for treatment decreased to 21.2% (40/189 patients) in 2009 from 24.5% (61/249 patients) the previous year (Figure 12.27).

Most (58.5%) commenced haemodialysis using a catheter in 2009 (Figure 12.28).

New Zealand

The total number of Maori people referred late in 2009 decreased from 31.2% (49/157 patients) in 2008 to 21.8% (37/170 patients) in 2009. Pacific People referred late decreased to 31.1% (13/99 patients) in 2009 from 21.8% (19/87 patients) the previous year.

Most Maori (71.6%) and Pacific People (61%) commenced haemodialysis with a catheter (Figure 12.28).

Figure 12.27

Late Referral 2005 - 2009

% Late Referral of (Total Number of Patients)

	Australia		New Zealand		
Year	ATSI	Non-Indigenous	Maori	Pacific People	Non-Indigenous
2005	33.8% (216)	23.1% (2075)	33.3% (138)	23.0% (74)	13.6% (249)
2006	35.7% (221)	21.6% (2209)	29.1% (168)	17.7% (79)	18.5% (253)
2007	31.6% (237)	22.7% (2141)	16.3% (147)	30.3% (76)	20.2% (243)
2008	24.5% (249)	21.6% (2285)	31.2% (157)	21.8% (87)	17.3% (253)
2009	21.2% (189)	21.3% (2148)	21.8% (170)	13.1% (99)	14.8% (298)

VASCULAR ACCESS

For all indigenous groups in Australia and New Zealand there has been a progressive improvement in vascular access (at first dialysis) over the past five years.

Figure 12.28

Vascular Access Use at First ESRF Treatment
Where this is Haemodialysis 2005 - 2009

(% Using CVC)

		Australia		New Zealand		
Year	Vascular Access	ATSI	Non-Indigenous	Maori	Pacific People	Non-Indigenous
2005	AVF/AVG	58	592	17	14	54
	CVC	129 (68.9%)	951 (61.6%)	81 (82.6%)	40 (74.1%)	94 (63.5%)
2006	AVF/AVG	55	632	24	15	38
	CVC	135 (71.1%)	953 (60.1%)	97 (80.2%)	47 (75.8%)	107 (73.7%)
2007	AVF/AVG	57	643	27	12	38
	CVC	124 (68.5%)	902 (58.3%)	81 (75.0%)	51 (80.9%)	100 (72.4%)
2008	AVF/AVG	77	618	29	9	35
	CVC	120 (60.9%)	965 (60.9%)	90 (75.6%)	56 (86.1%)	102 (74.5%)
2009	AVF/AVG	63	648	33	30	46
	CVC	89 (58.5%)	854 (56.8%)	83 (71.6%)	47 (61.0%)	109 (70.3%)

CAUSE OF DEATH

Australia

Cardiac events (37%) were the most common cause of death for Aboriginal and Torres Strait Islander People on dialysis, followed by "social causes" (24%) and infection (19%). In 2009, the most common cause of death in transplanted Aboriginal and Torres Strait Islander People was infection (60%) and cardiac and "social causes" both (20%).

New Zealand

Cardiac events were the most common cause of death in Maori (52%) and Pacific People (46%) treated with dialysis, followed by "social causes" (19%) for Maori and vascular (17%) for Pacific People. In transplanted people malignancy was the most common cause of death for Maori and cardiac and infection for Pacific People, although the overall number of deaths is small.

Figure 12.29

Cause of Death 2008 - 2009

			Australia		New Zealand		
	Mode of Treatment	Cause of Death	ATSI	Non-Indigenous	Maori	Pacific People	Non-Indigenous
2008	Dialysis	Cardiac	60 (38%)	444 (33%)	70 (47%)	27 (49%)	50 (32%)
		Vascular	10 (6%)	112 (9%)	13 (8%)	4 (7%)	10 (6%)
		Infection	30 (19%)	137 (10%)	25 (17%)	16 (29%)	25 (16%)
		Social	32 (20%)	517 (39%)	22 (15%)	3 (5%)	46 (30%)
		Malignancy	7 (4%)	85 (6%)	7 (4%)	3 (5%)	15 (10%)
		Miscellaneous	19 (12%)	40 (3%)	13 (9%)	2 (4%)	9 (6%)
		Total	**158**	**1335**	**150**	**55**	**155**
	Transplant	Cardiac	2 (33%)	45 (26%)	1 (50%)	-	9 (35%)
		Vascular	-	14 (8%)	-	-	-
		Infection	4 (67%)	25 (15%)	-	-	5 (19%)
		Social	-	10 (6%)	-	-	-
		Malignancy	-	54 (31%)	-	-	8 (31%)
		Miscellaneous	-	24 (14%)	1 (50%)	-	4 (15%)
		Total	**6**	**1722**	**2**	**-**	**26**
2009	Dialysis	Cardiac	59 (37%)	456 (33%)	63 (52%)	21 (46%)	64 (39%)
		Vascular	15 (9%)	122 (9%)	11 (9%)	8 (17%)	13 (8%)
		Infection	30 (19%)	146 (11%)	16 (13%)	7 (15%)	23 (14%)
		Social	39 (24%)	526 (39%)	23 (19%)	7 (15%)	53 (32%)
		Malignancy	6 (4%)	65 (5%)	4 (3%)	2 (4%)	6 (4%)
		Miscellaneous	12 (7%)	49 (4%)	4 (3%)	1 (2%)	5 (3%)
		Total	**161**	**1364**	**121**	**46**	**164**
	Transplant	Cardiac	2 (20%)	31 (24%)	1 (20%)	1 (50%)	7 (26%)
		Vascular	-	17 (13%)	-	-	-
		Infection	6 (60%)	22 (17%)	1 (20%)	1 (50%)	1 (4%)
		Social	2 (20%)	9 (7%)	1 (20%)	-	1 (4%)
		Malignancy	-	38 (29%)	2 (40%)	-	15 (55%)
		Miscellaneous	-	14 (11%)	-	-	3 (11%)
		Total	**10**	**131**	**5**	**2**	**27**