



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 presented. For Australia, these are Aboriginal and Torres Strait Islanders; for New Zealand, analyses include Maori and Pacific Peoples. In all cases, indigenous origin is reported by the renal unit on the basis of self-description. Maori and Pacific Peoples resident in Australia and Aboriginal and Torres Strait islanders resident in New Zealand are not considered "indigenous" unless otherwise specified. For some tables, we have also included data on Maori and Pacific Peoples living in Australia. While not indigenous to Australia, these have been included as useful comparators with the NZ experience of this group.

This chapter contains a number of specific analyses of treated ESKD among indigenous people, and also draws together tables from elsewhere in the report .

Figure 12.1

New	PATIE	NTS
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		A	ustralia		New Zealand								
Mod Treat	e of ment	Non- Indigenous	ATSI	Total	Non- Indige- nous	Maori	Pacific People	Total					
	PD	552	31	583	95	47	17	159					
2006	HD	1 588	190	1 778	143	122	62	327					
	Graft	73	0	73	13	0	0	13					
	PD	532	56	588	83	35	13	131					
2007	HD	1,546	183	1,729	139	108	64	311					
	Graft	65	0	65	23	3	0	26					
	PD	606	51	657	96	35	22	153					
2008	HD	1,593	199	1,792	136	119	65	320					
	Graft	100	0	100	21	3	0	24					
	PD	552	35	587	124	53	22	199					
2009	HD	1,558	159	1,717	158	121	81	360					
	Graft	115	2	117	22	2	0	24					
	PD	460	36	496	88	47	28	163					
2010	HD	1,554	168	1,722	147	106	80	333					
	Graft	101	0	101	14	2	0	16					
	PD	513	30	543	90	37	22	149					
2011	HD	1.591	220	1.811	152	89	72	313					
	Graft	99	0	99	15	0	0	15					
	Total	13,198	1,360	14,558	1,559	929	548	3,036					

Nour Dationto 2006 2011

Figure 12.2



Figures 12.1 - 12.7

Australia

A total of 250 Aboriginal and Torres Strait Islander People commenced dialysis in Australia during 2011. The majority (88%) were treated with haemodialysis as their initial RRT modality; in 2011 the number of people commencing PD (30 patients). No preemptive transplants were performed among Aboriginal Australians in 2011.

New Zealand

The number of Maori and Pacific People starting dialysis decreased in 2011 (126 patients and 94 patients) respectively.

37 (23% of total) Maori patients commenced on PD in 2011 while the number of Pacific Peoples starting with PD increased to 23%.

Figure 12.3

Percentage of New Patients - New Zealand Commencing on Haemodialysis



INCIDENCE RATES

Overall, the incidence rates (per million population) of indigenous peoples in Australia and NZ are considerably higher 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. Rates among Pacific Peoples in New Zealand have increased in the last few years prior to a fall in 2011. This must be viewed with caution, as is it single year. In contrast, there is a clear trend to lower rates among Maori. The relative rate differs with age and also (for Aboriginal Australians) with gender - this is illustrated in Figure 12.5.



Unadjusted incident RRT rate



Figure 12.5



Among Aboriginal Australians, there is a marked excess relative 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.

Figure 12.6



Relative incidence rate

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 12.7.

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.





ANZDATA and ABS data, 2009-11

The overall stabilisation of rates among Aboriginal Australians is seen consistently across each age group. In some age groups (such as 25-34 & 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 12.8

note: Y axis scales differ

Age specific trends for Maori and Pacific Peoples are shown in Figures 12.9 and 12.10. Note that the Y axis scale varies.

Figure 12.9



Figure 12.10



Age-specific incident RRT rate

INDIGENOUS

New Transplants

Figure 12.11

New Transplants 2001 - 2011

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

Australia

Over the period 2001-11 there has been an increase in the number of transplants from deceased donors. Numbers from living donors remain extremely low. The table also contains transplants to Maori and Pacific people resident in Australia; the numbers of these have increased over 2010-11.

New Zealand

The number of transplants to Maori and Pacific Peoples recipients remains stable. In contrast to the situation in Australia,, there is a higher proportion of transplants from living donors.

Pacific People
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Indigenous transplants numbers ATSI in Australia, Maori and PP in New Zealand

Cumulative incidence curves (utilising competing risk techniques to account for the effects of both components of graft failure) are shown for indigenous transplant outcomes in Figure 12.13. It can be seen that for Aboriginal and TSI, there are higher rates of loss of graft function, and substantially higher rates of death with graft function compared with non-indigenous. Both of these differences are progressive over time. Lesser differences are seen for Maori / PP. In particular, the excess death rate among Maori/PP stabilises after the initial months.

Figure 12.13



Information on donor source is shown in Figure 12.14. There are substantially lower rates of living donation among indigenous groups in Australia, with a lesser difference in New Zealand. Australian figures include ATSI only.

Figure 12.14



ANZDATA, Donor source, grafts 1/1/01 to 31/12/11



TREATMENT OF PREVALENT PATIENTS

Australia

The number of prevalent Aboriginal and Torres Strait Islander People with treated end-stage kidney disease increased by only 8% in 2011 after a slight increase in 2010. The percentage of ATSI on home haemodialysis was 6% in 2011 (this includes patients who perform independent self-care dialysis in other community settings).

The percentage of ATSI treated with peritoneal dialysis was steady in 2011.

New Zealand

The number of prevalent Maori with treated end-stage kidney disease decreased in 2011, whilst Pacific People increased. The percentage of Maori (26%) treated with home haemodialysis remains similar to past years, whilst in Pacific People this percentage (11%) has decreased since 2006.

The use of peritoneal dialysis in the Maori population decreased slightly whilst in Pacific Islanders population increased slightly in 2011.

Figure 12.15										
		F	Prevalent Pa	atients	2006 - 2	2011				
			Australia		New Zealand					
Year	Mode of Treatment	Non-Indigenous ATSI	Aboriginal/TSI	Maori	Pacific People	Non-Indigenous ATSI	Maori	Pacific People		
2006	APD	912	55	7	16	108	92	18		
	CAPD	937	95	2	23	323	155	70		
	Hospital HD	2,119	186	18	42	252	204	106		
	Satellite HD	3,263	603	20	70	85	124	138		
	Home HD	820	51	9	14	174	109	39		
	Graft	6,762	148	26	53	1,074	106	75		
2007	APD	1,058	65	9	18	120	101	25		
	CAPD	862	92	5	28	306	130	64		
	Hospital HD	2,050	205	14	33	273	216	126		
	Satellite HD	3,548	679	22	93	95	130	158		
	Home HD	864	53	11	21	179	111	37		
	Graft	7,022	148	28	55	1,114	108	76		
2008	APD	1,165	79	12	15	149	105	34		
	CAPD	850	87	11	23	284	117	74		
	Hospital HD	2,054	215	17	40	276	222	124		
	Satellite HD	3,784	728	28	107	97	135	158		
	Home HD	868	53	8	22	177	110	44		
	Graft	7,409	159	27	61	1,156	112	82		
2009	APD	1,212	68	10	23	175	125	36		
	CAPD	783	74	9	21	278	111	74		
	Hospital HD	2,063	224	19	37	310	221	159		
	Satellite HD	4,039	747	35	110	97	147	169		
	Home HD	869	70	11	27	198	128	52		
	Graft	7,798	160	31	65	1,200	120	84		
2010	APD	1,177	62	16	24	188	138	32		
	CAPD	695	80	10	18	269	115	90		
	Hospital HD	2,041	216	23	41	307	235	189		
	Satellite HD	4,356	779	42	123	97	141	160		
	Home HD	858	74	13	29	222	131	71		
	Graft	8,241	177	31	73	1,225	130	86		
2011	APD CAPD Hospital HD Satellite HD Home HD Graft	1,180 682 2,109 4,518 847 8,621	63 73 261 832 73 190 * By Resident	12 11 20 45 14 40 Country at 3	26 22 37 135 38 84 31st Decembe	185 242 328 87 230 1,257	137 107 246 122 130 143	29 90 216 159 73 88		

12-8



DIALYSIS MODALITY

The distribution of dialysis modality is shown graphically in Figures 12.16 below. Among indigenous Australians, the principal differences are a substantially lower rate of home HD and APD; this figure also includes the experience for Maori and Pacific Peoples treated in Australia at the end of 2011. Similar data is shown for New Zealand in Figure 12.17. Again, rates of home treatments (HD and PD) are lower among the indigenous groups.

Figure 12.16



Patients at end 2011 dialysing and resident in Australia

Figure 12.17



Patients at end 2011 dialysing and resident in New Zealand



ESTIMATED GLOMERULAR FILTRATION RATE AT TREATMENT START

In both Australia and New Zealand, there has been a gradual trend towards lower eGFR at the time of dialysis start, over 2010/11 among all groups. However, there is also a consistent difference (in both countries) between indigenous and non-indigenous, with higher eGFR values among the non-indigenous groups.

Figure 12.18



Figure 12.19



Excluding pre-emptive transplants

eGFR at Dialysis Start Australia

The tables on this page (Figures) show the actual numbers for ATSI people in various states over the last 5 years. Clearly the number of patients receiving dialysis vary considerably. There is also considerable variation between states, and over time, in he number referred for transplantation.

Figure 12.20												
Referring State before Transplantation 2007 - 2011												
Tx Year	NT	NSW/ACT	VIC	QLD	SA	WA	TAS	Total				
2007	3	1	-	3	5	5	1	18				
2008	1	4	1	5	5	15	-	31				
2009	2	5	1	1	5	10	-	24				
2010	2	6	2	4	5	9	-	28				
2011	5	4	2	3	4	9	1	28				
Total	13	20	6	16	24	48	2	129				

Figure 12.21											
Numbers of patients on 31 December 2011 Modality - State											
Modality	NT	NSW/ACT	VIC	QLD	SA	WA	TAS	Total			
PD	22	21	3	56	2	32	0	136			
Centre HD	375	127	42	242	76	225	6	1,093			
Home HD	22	14	0	22	0	15	0	73			
Тx	32	29	11	31	36	50	1	190			
Total	451	191	56	351	114	322	7	1,492			

Figure 1	Figure 12.22												
Number of new patients - Initial State 2007 - 2011													
Tx Year	NT	NSW/ACT	VIC	QLD	SA	WA	TAS	Total					
2007	67	34	8	66	9	55	0	239					
2008	76	32	4	56	19	63	0	250					
2009	59	21	9	49	16	41	1	196					
2010	52	30	9	62	17	32	2	204					
2011	67	35	10	60	16	59	3	250					
Total	321	152	40	293	77	250	6	1,139					



INCIDENCE AND PREVALENCE BY STATE/TERRITORY

The next four pages show a variety of figures which summarise various key rates (incidence, prevalence, transplant rates) among indigenous people in Australia and New Zealand. In large part they show information from previous pages, in a series of differing formats.

State Incidence

The Northern Territory has the highest national incidence among indigenous people of treated end-stage kidney disease in Australia at 743pmp, the next highest is in South Australia (527 pmp).

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

Figure 12.23



Figure 12.24





Figure 12.25

ANZATA



Figure 12.26



Figure 12.27



Per million ATSI population

300 200

100 0



1,000-900 800 700 600 2008 2009 500 400 2011

NT

WA Australia

QLD NSW/ACTIC/TAS SA

Deaths ATSI Patients

Year

2010

À



Incidence of New Patients - New Zealand Maori and Pacific People





Incidence of New Transplants - New Zealand Maori and Pacific People





Prevalence of Haemodialysis- New Zealand Maori and Pacific People





ANZ

Prevalence of Peritoneal Dialysis- New Zealand Maori and Pacific People



Figure 12.33

Functioning Transplant - New Zealand Maori and Pacific People



Figure 12.34

Deaths - New Zealand Maori and Pacific People





GEOGRAPHICAL DISTRIBUTION

Figure 12.35 shows the number of incident ATSI (patients by postcode) The distribution of prevalent dialysis patients are summarized in Figure 12.36 (by state) and 12.37 by statistical subdivision (obtained by mapping postcodes to SSD). Note that some postcodes were distributed over more than one SSD

Figure 12.35



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







12-16



Figure 12.37

Prevalent indigenous dialysis patients

31 Dec 2011



ANZDATA, based on postcode of residence reported at at end 2011 mapped to SSD using ABS concordance files



LATE REFERRAL

Australia

The percentage of Aboriginal and Torres Strait Islander People referred late for treatment has been stable for the last 3 years, and is very similar to the non-indigenous rate. Most (56%) commenced haemodialysis using a catheter rather than permanent access in 2011 (Figure 12.39); again this is a similar situation to the non-indigenous patients.

New Zealand

The proportion of Maori people referred late in 2011 decreased to 17% in 2010 from a peak in 2009. For Pacific People referred late, the proportion increased to 26%. Most Maori (66%) and Pacific People (76%) commenced haemodialysis with a catheter (Figure 12.39).

Figure 12.38													
Late Referral 2007 - 2011 % Late Referral of (Total Number of Patients)													
	Australia New Zealand												
Year	ATSI	Maori	Pacific	Non-	Maori	Pacific	Non-						
			People	Indigenous		People	Indigenous						
2007	32% (239)	36% (11)	27% (41)	23% (2091)	16% (146)	30% (77)	20% (245)						
2008	24% (250)	24% (21)	32% (41)	21% (2237)	31% (157)	22% (87)	17% (253)						
2009	22% (196)	32% (22)	37% (38)	20% (2165)	22% (176)	13% (103)	15% (304)						
2010	25% (204)	19% (26)	26% (42)	22% (2047)	19% (155)	16% (108)	15% (249)						
2011	30% (250)	20% (20)	17% (46)	22% (2137)	17% (126)	26% (94)	22% (257)						

VASCULAR ACCESS

For all indigenous groups in Australia and New Zealand the vascular access rates (at first HD) are stable over recent years. For both indigenous and non-indigenous groups these rates are higher in NZ than Australia.

Figure	e 12.39														
	Vascular Access Use at First ESRF Treatment Where this is Haemodialysis 2007 - 2011 (% Using CVC)														
	Australia New Zealand														
Year	Vascular Access	ATSI	Maori	Pacific People	Non- Indigenous	Maori	Pacific People	Non- Indigenous							
2007	CVC	126 (69%)	5 (63%)	29 (78%)	869 (58%)	80 (74%)	52 (81%)	101 (73%)							
2007	AVF/AVG	57	3	8	632	28	12	38							
2008	CVC AVF/AVG	121 (61%) 78	8 (57%) 6	22 (71%) 9	940 (61%) 608	90 (76%) 29	56 (86%) 9	101 (74%) 35							
	CVC	94 (59%)	12 (60%)	24 (75%)	838 (56%)	87 (72%)	51 (63%)	111 (70%)							
2009	AVF/AVG	65	8	8	668	34	30	47							
2010	CVC AVF/AVG	105 (63%) 62	10 (59%) 7	22 (71%) 9	894 (59%) 611	82 (77%) 24	60 (75%) 20	108 (73%) 39							
	CVC	123 (56%)	8 (53%)	25 (71%)	829 (54%)	59 (66%)	55 (76%)	106 (70%)							
2011	AVF/AVG	96	7	10	705	30	17	46							

Figure 12.40

ANZATA

Incidence and prevalence - Aboriginal And Torres Strait Islanders 2007- 2011 by Resident State (rate per million indigenous population)

				Australia				
Year	Mode of Treatment	QLD	NSW/ACT	VIC/TAS	SA	NT	WA	Australia
	New Patients	66 (444)	34 (213)	8 (152)	9 (315)	67 (1028)	55 (761)	239 (453)
	Prevalent HD	223 (1500)	107 (669)	31 (590)	52 (1817)	315 (4835)	209 (2894)	937 (1778)
2007	Prevalent PD	61 (410)	22 (138)	5 (95)	7 (245)	25 (384)	37 (512)	157 (298)
2007	Functioning Transplant	27 (182)	22 (138)	8 (152)	26 (909)	39 (599)	26 (360)	148 (281)
	Transplant Ops	3 (20)	1 (6)	1 (19)	5 (175)	3 (46)	5 (69)	18 (34)
	Deaths	35 (235)	14 (88)	6 (114)	12 (419)	32 (491)	36 (498)	135 (256)
			/				/>	
	New Patients	56 (367)	32 (196)	4 (75)	19 (651)	76 (1146)	63 (857)	250 (464)
	Prevalent HD	242 (1587)	108 (662)	31 (578)	61 (2090)	335 (5054)	219 (2978)	996 (1850)
2008	Prevalent PD	48 (315)	33 (202)	6 (112)	9 (308)	26 (392)	44 (598)	166 (308)
	Functioning Transplant	30 (197)	21 (129)	7 (130)	29 (994)	35 (528)	37 (503)	159 (295)
	Transplant Ops	5 (33)	4 (25)	1 (19)	5 (171)	1 (15)	15 (204)	31 (58)
	Deaths	45 (295)	18 (110)	3 (56)	6 (206)	55 (830)	37 (503)	164 (305)
	New Patients	49 (313)	21 (126)	10 (182)	16 (537)	59 (875)	41 (548)	196 (356)
	Prevalent HD	246 (1572)	119 (715)	33 (601)	62 (2082)	361 (5353)	220 (2939)	1041 (1893)
	Prevalent PD	50 (320)	22 (132)	5 (91)	7 (235)	22 (326)	36 (481)	142 (258)
2009	Functioning Transplant	26 (166)	21 (126)	8 (146)	29 (974)	31 (460)	45 (601)	160 (291)
	Transplant Ops	1 (6)	5 (30)	1 (18)	5 (168)	2 (30)	10 (134)	24 (44)
	Deaths	50 (320)	22 (132)	9 (164)	14 (470)	42 (623)	40 (534)	177 (322)
		· · · ·	()		()		. ,	
	New Patients	62 (386)	30 (177)	11 (196)	17 (560)	52 (758)	32 (420)	204 (363)
	Prevalent HD	251 (1564)	120 (707)	40 (712)	68 (2238)	368 (5365)	222 (2913)	1069 (1903)
2010	Prevalent PD	49 (305)	29 (171)	5 (89)	2 (66)	29 (423)	28 (367)	142 (253)
2010	Functioning Transplant	30 (187)	26 (153)	10 (178)	33 (1086)	32 (466)	46 (604)	177 (315)
	Transplant Ops	4 (25)	6 (35)	2 (36)	5 (165)	2 (29)	9 (118)	28 (50)
	Deaths	55 (343)	18 (106)	1 (18)	9 (296)	42 (612)	38 (499)	163 (290)
		()	()			()	()	
	New Patients	60 (364)	35 (202)	13 (226)	16 (516)	67 (960)	59 (760)	250 (436)
	Prevalent HD	264 (1603)	141 (814)	48 (836)	76 (2451)	397 (5691)	240 (3093)	1166 (2032)
2011	Prevalent PD	56 (340)	21 (121)	3 (52)	2 (65)	22 (315)	32 (412)	136 (237)
	Functioning Transplant	31 (188)	29 (167)	12 (209)	36 (1161)	32 (459)	50 (644)	190 (331)
	Transplant Ops	3 (18)	5 (29)	2 (35)	4 (129)	5 (72)	9 (116)	28 (49)
	Deaths	39 (237)	19 (110)	5 (87)	5 (161)	44 (631)	33 (425)	145 (253)