



CHAPTER 2

Prevalence of Renal Replacement Therapy for End Stage Kidney Disease

Summarising the number of prevalent renal replacement therapy patients in Australia and New Zealand, the prevalence rate per million population and the demographics and clinical characteristics of prevalent patients.

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Suggested Citation

ANZDATA Registry. 43rd Report, Chapter 2: Prevalence of Renal Replacement Therapy for End Stage Kidney Disease. Australia and New Zealand Dialysis and Transplant Registry, Adelaide, Australia. 2020. Available at: <http://www.anzdata.org.au>

All Renal Replacement Therapy Modalities

Table 2.1 shows the number of prevalent patients treated with renal replacement therapy in Australia and New Zealand over the last 20 years. The prevalence per million population (pmp) is also shown. The prevalence of renal replacement therapy continues to grow in both countries. Table 2.2 shows the same data for the last 5 years, categorised by dialysis modality.

Population estimates for Australia and New Zealand used throughout this chapter for the calculation of prevalence per million population were sourced from the Australian Bureau of Statistics (2019)¹ and Stats NZ (2019)².

Table 2.1 Prevalence (pmp) of Renal Replacement Therapy 2000-2019

Year	Australia			New Zealand		
	Dialysis	Transplant	Total	Dialysis	Transplant	Total
2000	6409 (337)	5339 (281)	11748 (617)	1331 (345)	1018 (264)	2349 (609)
2001	6852 (355)	5561 (289)	12413 (644)	1462 (377)	1058 (273)	2520 (649)
2002	7262 (373)	5847 (300)	13109 (672)	1594 (404)	1113 (282)	2707 (686)
2003	7718 (391)	6079 (308)	13797 (700)	1711 (425)	1164 (289)	2875 (714)
2004	8003 (402)	6383 (320)	14386 (722)	1774 (434)	1219 (298)	2993 (732)
2005	8638 (428)	6647 (329)	15285 (758)	1878 (454)	1243 (301)	3121 (755)
2006	9262 (453)	6979 (341)	16241 (794)	1997 (477)	1258 (301)	3255 (778)
2007	9731 (467)	7248 (348)	16979 (815)	2071 (490)	1303 (308)	3374 (799)
2008	10179 (479)	7660 (360)	17839 (840)	2106 (494)	1354 (318)	3460 (812)
2009	10483 (483)	8054 (371)	18537 (855)	2282 (530)	1407 (327)	3689 (857)
2010	10748 (488)	8510 (386)	19258 (874)	2389 (549)	1447 (333)	3836 (882)
2011	11104 (497)	8872 (397)	19976 (894)	2395 (546)	1488 (339)	3883 (886)
2012	11567 (509)	9271 (408)	20838 (917)	2475 (561)	1526 (346)	4001 (908)
2013	11892 (514)	9670 (418)	21562 (932)	2603 (586)	1577 (355)	4180 (941)
2014	12314 (525)	10077 (429)	22391 (954)	2692 (598)	1630 (362)	4322 (960)
2015	12632 (530)	10479 (440)	23111 (970)	2716 (592)	1707 (372)	4423 (965)
2016	12799 (529)	11053 (457)	23852 (986)	2766 (591)	1786 (382)	4552 (973)
2017	13086 (532)	11619 (472)	24705 (1004)	2787 (585)	1892 (397)	4679 (982)
2018	13487 (540)	12215 (489)	25702 (1029)	2853 (589)	1973 (408)	4826 (997)
2019	13931 (549)	12815 (505)	26746 (1054)	2868 (583)	2098 (426)	4966 (1009)

Table 2.2 Prevalence (pmp) of Renal Replacement Therapy by Modality 2015-2019

Country	Patients	2015	2016	2017	2018	2019
Australia	Total	23111 (970)	23852 (986)	24705 (1004)	25702 (1029)	26746 (1054)
	Transplant	10479 (440)	11053 (457)	11619 (472)	12215 (489)	12815 (505)
	Dialysis	12632 (530)	12799 (529)	13086 (532)	13487 (540)	13931 (549)
	Percentage PD	20%	19%	19%	18%	17%
	Percentage Home HD	9%	9%	8%	8%	8%
	Percentage Facility HD	71%	72%	73%	74%	75%
New Zealand	Total	4423 (965)	4552 (973)	4679 (982)	4826 (997)	4966 (1009)
	Transplant	1707 (372)	1786 (382)	1892 (397)	1973 (408)	2098 (426)
	Dialysis	2716 (592)	2766 (591)	2787 (585)	2853 (589)	2868 (583)
	Percentage PD	29%	30%	31%	30%	30%
	Percentage Home HD	18%	17%	16%	15%	14%
	Percentage Facility HD	53%	53%	53%	55%	56%

Table 2.3 and figures 2.1-2.2 show the 2019 prevalence (pmp) of RRT by age groups. In both countries the modal age group was 55-64, although the highest prevalence rates were in the 65-74 year old group in New Zealand and the 75-84 year old group in Australia.

Table 2.3 Prevalence (pmp) of Renal Replacement Therapy by Age, 2019

Age	Australia	New Zealand
0-4	25 (16)	7 (23)
5-14	186 (59)	43 (66)
15-24	519 (159)	98 (150)
25-34	1263 (332)	310 (444)
35-44	2540 (752)	545 (897)
45-54	4793 (1492)	984 (1539)
55-64	6530 (2226)	1381 (2318)
65-74	6509 (2851)	1156 (2595)
75-84	3701 (2985)	417 (1771)
85+	680 (1319)	25 (283)

Figure 2.1.1 - Prevalent RRT Patient Numbers - Australia - 31 December 2019

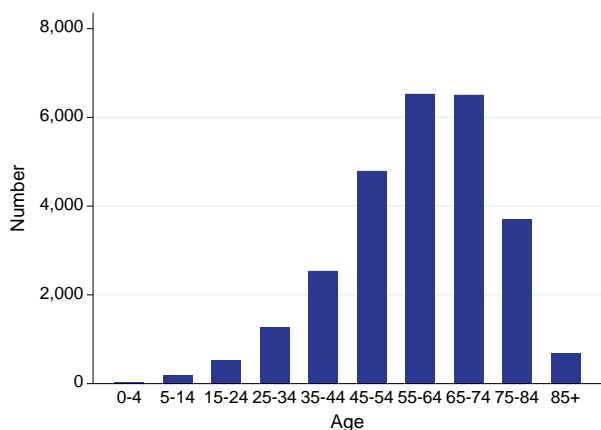


Figure 2.1.2 - Prevalent RRT Patients Per Million Population - Australia - 31 December 2019

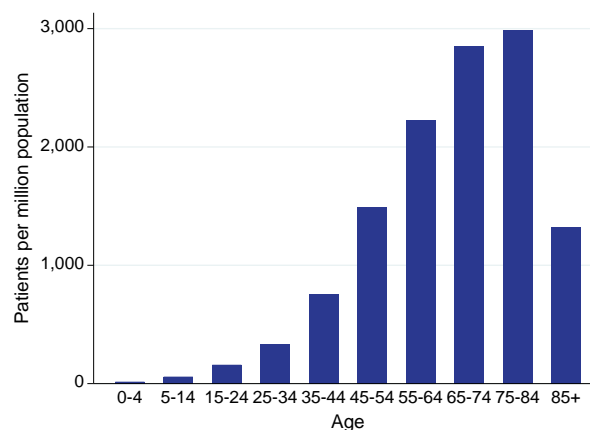


Figure 2.2.1 - Prevalent RRT Patient Numbers - New Zealand - 31 December 2019

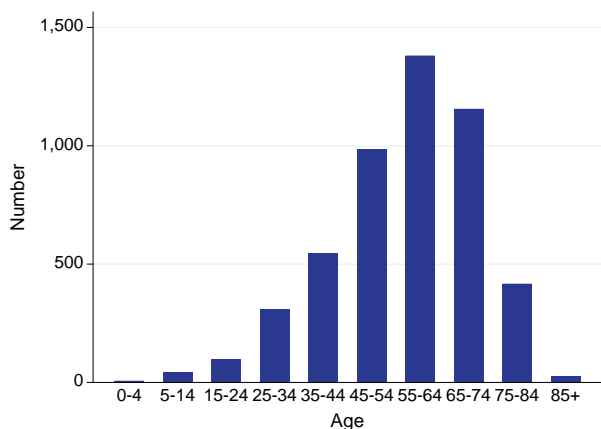


Figure 2.2.2 - Prevalent RRT Patients Per Million Population - New Zealand - 31 December 2019

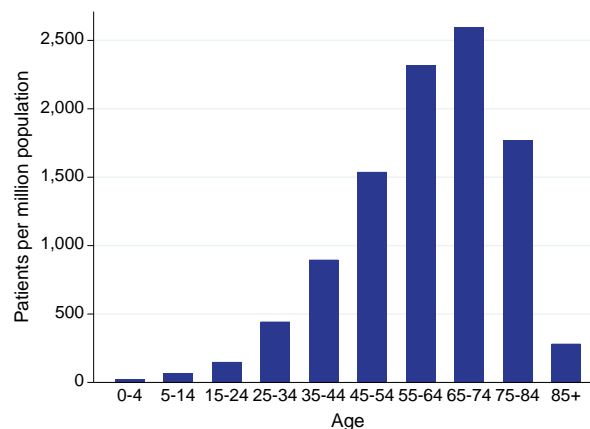


Table 2.4 shows the prevalence (pmp) of RRT by state/territory over 2015-2019. In Australia at the end of 2019 the Northern Territory had the highest prevalence of dialysis patients and Tasmania the lowest; South Australia had the highest prevalence of transplant patients and New South Wales the lowest.

State is based on the state of the treating hospital. NSW population estimates exclude residents of the NSW South Eastern region which includes the local government areas of Bega Valley, Eurobodalla, Goulburn Mulwaree, Hilltops, Queanbeyan-Palerang Regional, Snowy Monaro Regional, Upper Lachlan Shire and Yass Valley. ACT population includes residents of the NSW South Eastern region. The population base for the NSW South Eastern region is based on the estimated resident population by local government area from the Australian Bureau of Statistics (2020)³.

Table 2.4 Prevalence (pmp) of Renal Replacement Therapy by State 2015-2019

Modality	State	2015	2016	2017	2018	2019
Dialysis	QLD	2435 (510)	2429 (501)	2537 (515)	2677 (534)	2771 (544)
	NSW*	3966 (536)	3993 (532)	3986 (522)	4047 (522)	4173 (531)
	ACT*	282 (457)	292 (466)	274 (430)	268 (414)	293 (446)
	VIC	3045 (506)	3079 (499)	3136 (496)	3227 (499)	3269 (496)
	TAS	242 (470)	229 (443)	217 (415)	210 (398)	226 (423)
	SA	768 (452)	803 (469)	868 (504)	912 (525)	924 (527)
	NT	617 (2522)	636 (2589)	689 (2784)	733 (2967)	779 (3168)
	WA	1277 (503)	1338 (523)	1379 (536)	1413 (545)	1496 (571)
	Australia	12632 (530)	12799 (529)	13086 (532)	13487 (540)	13931 (549)
	New Zealand	2716 (592)	2766 (591)	2787 (585)	2853 (589)	2868 (583)
Transplant	QLD	1964 (411)	2080 (429)	2180 (442)	2277 (455)	2407 (472)
	NSW*	2981 (403)	3127 (416)	3281 (429)	3479 (449)	3634 (462)
	ACT*	257 (416)	275 (439)	304 (477)	302 (466)	304 (463)
	VIC	2943 (489)	3122 (506)	3313 (524)	3530 (546)	3711 (563)
	TAS	236 (458)	243 (470)	263 (503)	286 (541)	301 (563)
	SA	1005 (591)	1047 (611)	1055 (612)	1062 (612)	1100 (628)
	NT	99 (405)	108 (440)	110 (444)	116 (470)	127 (517)
	WA	994 (391)	1051 (411)	1113 (432)	1163 (448)	1231 (470)
	Australia	10479 (440)	11053 (457)	11619 (472)	12215 (489)	12815 (505)
	New Zealand	1707 (372)	1786 (382)	1892 (397)	1973 (408)	2098 (426)

*ACT and NSW population estimates adjusted for SE NSW Region.

Table 2.5 shows the same data by ethnicity. Note that collection of ethnicity data in ANZDATA has evolved to align with Australian Bureau of Statistics Australian Standard Classification of Cultural and Ethnic Groups⁴ and data collection now allows for a patient to nominate more than one ethnicity group, however, consultation regarding reporting of ethnicity data is currently ongoing and reporting guidelines have not been finalised at the time of publication. As a result, ethnicity data thorough this report includes only the first ethnicity category entered for each patient and uses the legacy term 'Caucasian' which includes data recorded as 'Caucasoid', 'Oceanian – Australian', 'Oceanian – New Zealand European', 'North American' and a number of European ethnicities.

Table 2.5 Prevalence of Renal Replacement Therapy by Ethnicity 2015-2019

Country	Ethnicity	Modality	2015	2016	2017	2018	2019
Australia	Caucasian	Dialysis	8256	8090	8056	8178	8427
		Transplant	7876	8211	8519	8843	9175
	Aboriginal/Torres Strait Islander	Dialysis	1683	1761	1888	1948	2044
		Transplant	237	260	272	300	334
	Asian	Dialysis	1326	1397	1433	1526	1610
		Transplant	1152	1234	1372	1480	1599
	Māori	Dialysis	136	140	144	143	155
		Transplant	60	62	66	72	76
	Pacific	Dialysis	429	471	523	553	562
		Transplant	123	132	137	164	184
	Other	Dialysis	396	434	497	542	572
		Transplant	181	222	260	298	343
	Not reported	Dialysis	406	506	545	597	561
		Transplant	850	932	993	1058	1104
New Zealand	Caucasian	Dialysis	840	841	815	802	774
		Transplant	1247	1278	1301	1331	1380
	Aboriginal/Torres Strait Islander	Dialysis	1	2	2	2	2
		Transplant	0	0	1	1	1
	Asian	Dialysis	260	269	264	273	273
		Transplant	147	157	187	195	223
	Māori	Dialysis	867	895	916	919	923
		Transplant	175	195	208	226	247
	Pacific	Dialysis	710	718	740	803	840
		Transplant	119	130	166	185	209
	Other	Dialysis	31	32	40	41	44
		Transplant	14	19	21	25	27
	Not reported	Dialysis	7	9	10	13	12
		Transplant	5	7	8	10	11

Figure 2.3 shows the overall distribution of RRT modality by country at the end of 2019. The dialysis modalities are shown separately in figure 2.4. A substantially higher proportion of New Zealand dialysis patients receive dialysis at home (either PD or home HD) than in Australia. A higher proportion of patients on renal replacement therapy in Australia have a functioning renal transplant than in New Zealand.

Figure 2.3 – RRT Modality by Country 2019

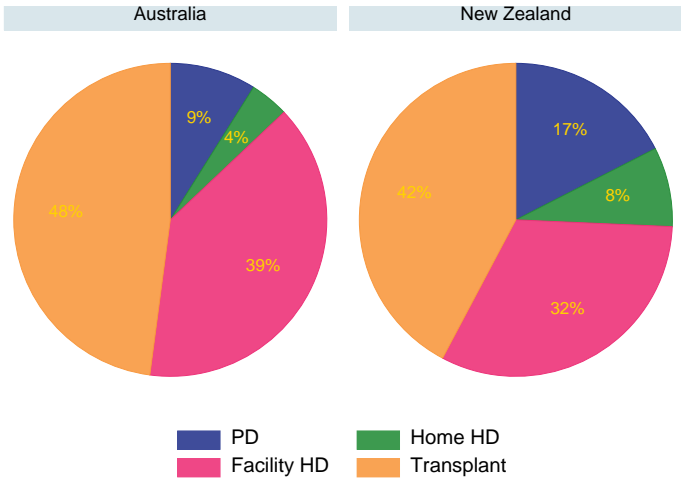
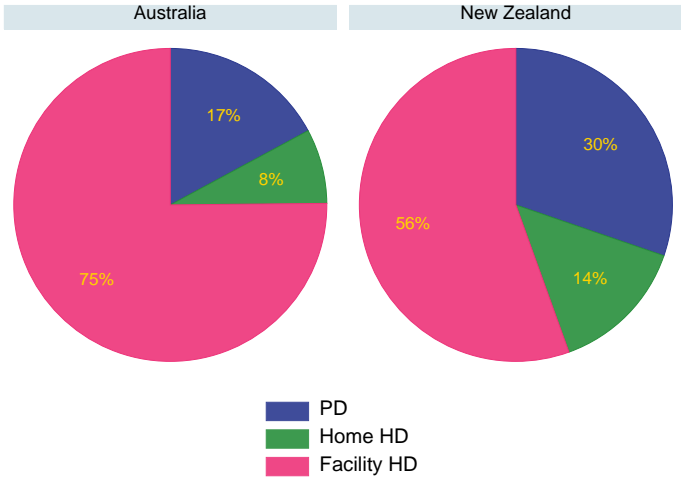


Figure 2.4 – Dialysis Modality by Country 2019



Figures 2.5 and 2.6 show the same data by state/territory. There was substantial variation in the types of RRT received between states/territories; in particular, in the Northern Territory the large majority of patients were receiving satellite HD.

Figure 2.5 - RRT Modality by State/Territory - 31 December 2019

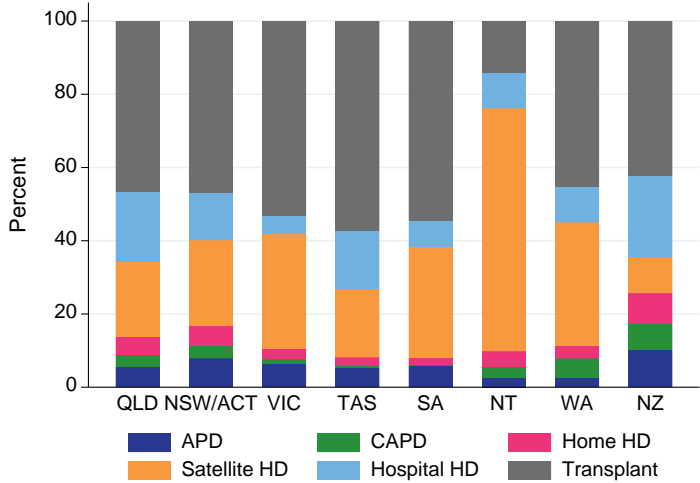
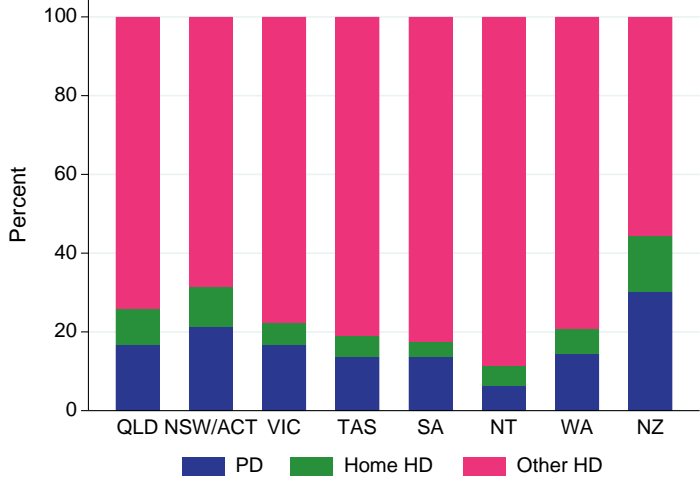


Figure 2.6 - Dialysis Modality by State/Territory - 31 December 2019



Dialysis

Table 2.6 and figures 2.7-2.8 show the age distribution of prevalent dialysis patients in 2019.

Table 2.6 Dialysis Prevalence (pmp) by Age - 2019

Age	Australia	New Zealand
0-4	14 (9)	3 (10)
5-14	13 (4)	9 (14)
15-24	137 (42)	38 (58)
25-34	497 (131)	157 (225)
35-44	933 (276)	288 (474)
45-54	2084 (649)	525 (821)
55-64	3025 (1031)	769 (1291)
65-74	3580 (1568)	731 (1641)
75-84	3017 (2433)	328 (1393)
85+	631 (1224)	20 (226)

Figure 2.7.1 - Prevalent Dialysis Patient Numbers - Australia - 31 December 2019

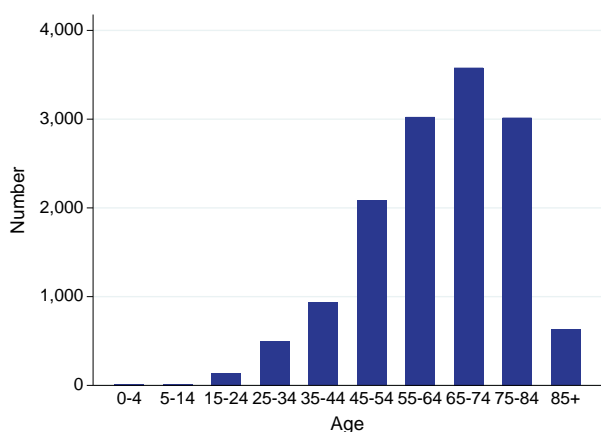


Figure 2.7.2 - Prevalent Dialysis Patients Per Million Population - Australia - 31 December 2019

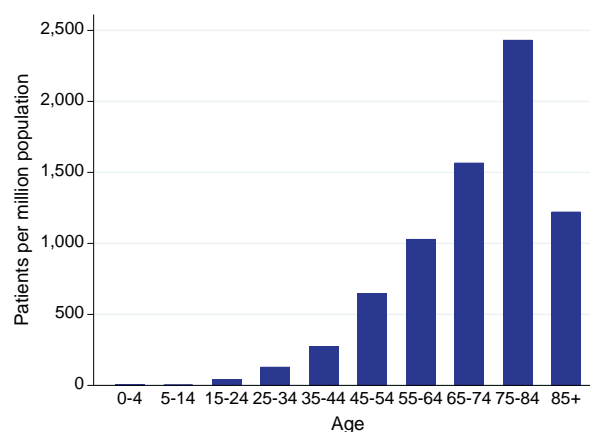


Figure 2.8.1 - Prevalent Dialysis Patient Numbers - New Zealand - 31 December 2019

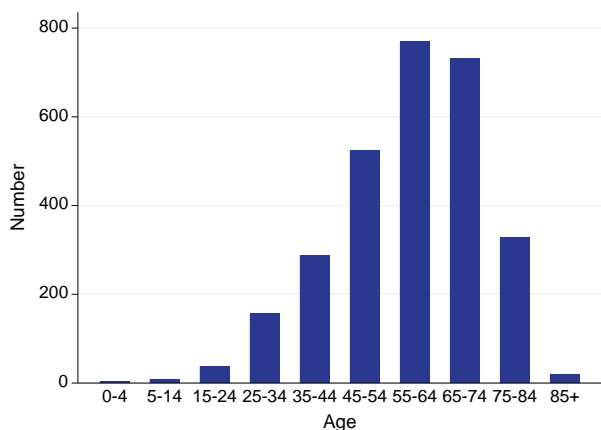


Figure 2.8.2 - Prevalent Dialysis Patients Per Million Population - New Zealand - 31 December 2019

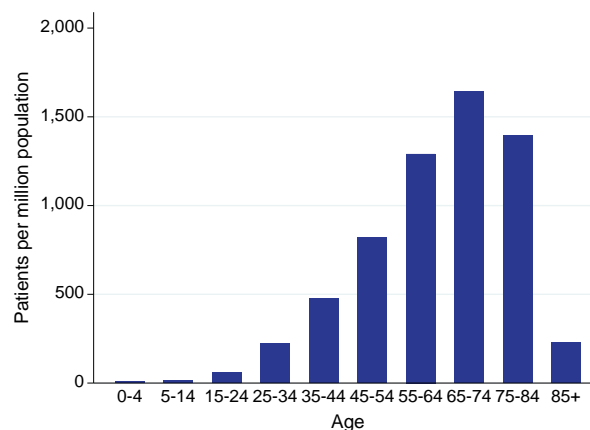


Figure 2.9 and table 2.7 show trends in the method and location of dialysis in Australia and New Zealand over 2015-2019. In Australia the growth is in satellite and hospital HD, whereas in New Zealand there is growth in hospital HD, satellite HD and automated PD, and home HD numbers are falling.

Figure 2.9.1 - Method and Location of Dialysis - Australia, 2015-2019

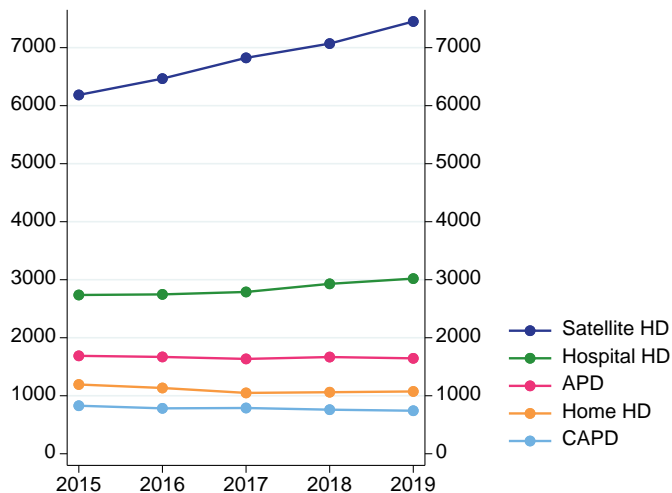


Figure 2.9.2 - Method and Location of Dialysis - New Zealand, 2015-2019

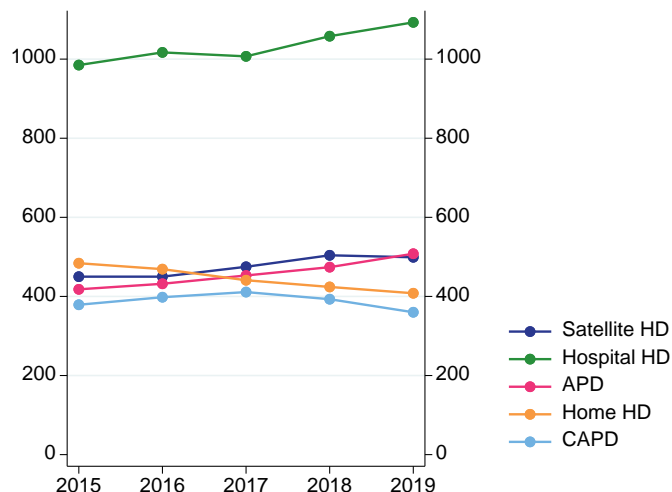


Table 2.7 Method and Location of Dialysis 2015-2019

Country	Dialysis type	Modality	2015	2016	2017	2018	2019
Australia	PD	APD	1688 (67%)	1669 (68%)	1635 (67%)	1667 (69%)	1645 (69%)
		CAPD	828 (33%)	783 (32%)	789 (33%)	760 (31%)	742 (31%)
	Total		2516	2452	2424	2427	2387
	HD	Hospital	2737 (27%)	2747 (27%)	2789 (26%)	2929 (26%)	3019 (26%)
		Satellite	6185 (61%)	6466 (62%)	6824 (64%)	7070 (64%)	7451 (65%)
Home		1194 (12%)	1134 (11%)	1049 (10%)	1061 (10%)	1074 (9%)	
Total		10116	10347	10662	11060	11544	
New Zealand	PD	APD	418 (52%)	432 (52%)	453 (52%)	474 (55%)	508 (59%)
		CAPD	379 (48%)	398 (48%)	411 (48%)	393 (45%)	360 (41%)
		Total		797	830	864	867
	HD	Hospital	985 (51%)	1017 (53%)	1007 (52%)	1058 (53%)	1093 (55%)
		Satellite	450 (23%)	450 (23%)	475 (25%)	504 (25%)	499 (25%)
Home		484 (25%)	469 (24%)	441 (23%)	424 (21%)	408 (20%)	
Total		1919	1936	1923	1986	2000	

Co-morbidities

Figure 2.10 shows trends in the prevalence of co-morbidities (with 95% CIs) in prevalent RRT patients over the last 10 years. In general, the rates of these co-morbidities appear to be falling over time, with the exception of lung disease in New Zealand.

Figure 2.11 shows the prevalence of diabetes. Although the majority of prevalent RRT patients are non-diabetic, there is a strong trend in both countries towards a higher percentage of patients with type II diabetes.

Figure 2.10.1 - Comorbid Conditions at End of Year - Australia

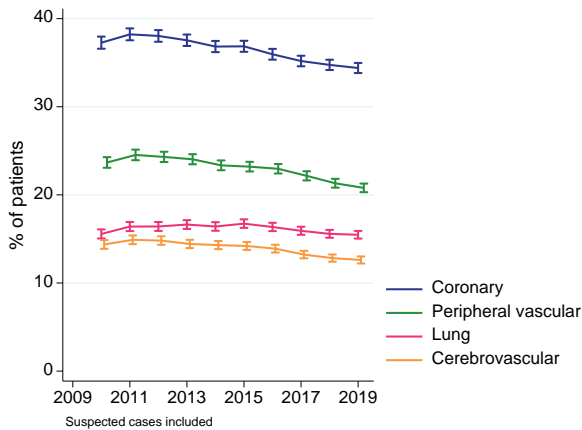


Figure 2.10.2 - Comorbid Conditions at End of Year - New Zealand

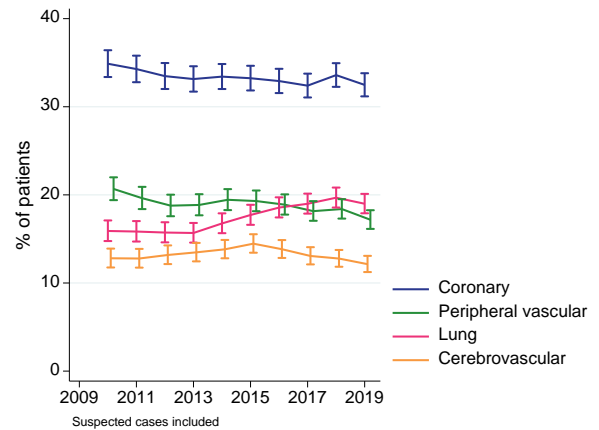
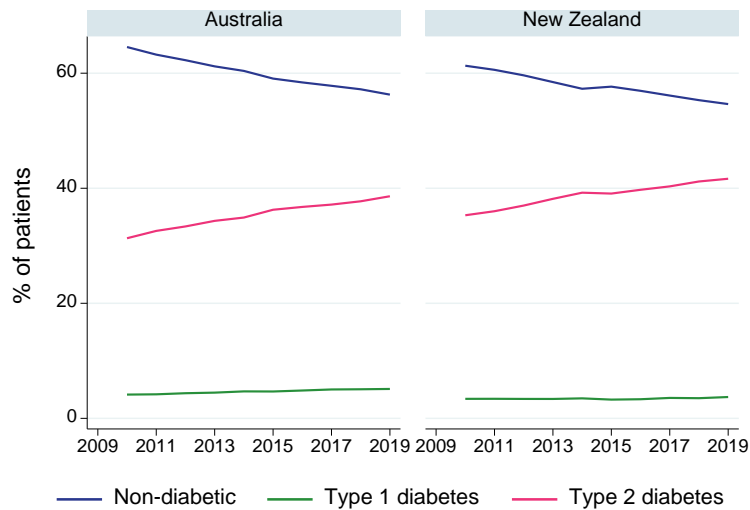


Figure 2.11 - Diabetes Status at End of Year



References

¹ Australian Bureau of Statistics, 2019, Australian Demographic Statistics, Jun 2019, time series spreadsheets, cat. no. 3101.0, viewed 19 Dec 2019,

<http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3101.0Jun%202019?OpenDocument>

² This work is based on/includes Stats NZ's data which are licensed by Stats NZ for re-use under the Creative Commons Attribution 4.0 International licence. Stats NZ, 2019, Estimated Resident Population by Age and Sex (1991+) (Annual-Jun), NZ Infoshare, viewed 19 Dec 2019, <http://archive.stats.govt.nz/infoshare/>

³ Australian Bureau of Statistics, 2020, Regional Population by Age and Sex, Australia, 2019, viewed 25 Sep 2020, <https://www.abs.gov.au/statistics/people/population/regional-population-age-and-sex/2019>

⁴ Australian Bureau of Statistics, 2019, Australian Standard Classification of Cultural and Ethnic Groups (ASCEG), December 2019, viewed 23 Oct 2020,

<https://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/1249.0Main+Features12019?OpenDocument>