



## CHAPTER 2

### Prevalence of Kidney Failure with Replacement Therapy

*Summarising the number of prevalent kidney 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. 44th Report, Chapter 2: Prevalence of Kidney Failure with Replacement Therapy. Australia and New Zealand Dialysis and Transplant Registry, Adelaide, Australia. 2021. Available at: <http://www.anzdata.org.au>

## Summary and Highlights

Both Australia and New Zealand saw growth in the prevalent number of people with kidney failure receiving replacement therapy in 2020. This reached a peak of 1074 per million population (pmp) in Australia and 1022 pmp in New Zealand. There was an increase in the number of both prevalent dialysis and transplant patients, however, the proportion of patients receiving dialysis care was higher than the proportion with a functioning transplant in both countries. Older Australians, aged 75-84, had the highest overall rate of prevalent kidney replacement therapy in 2020 (3037 pmp), whereas in New Zealand the rate was highest in people aged 65-74 (2636 pmp).

The burden of kidney disease requiring replacement therapy is not distributed evenly across the population in Australia or New Zealand, with a disproportionately high rate in Aboriginal and Torres Strait Islander people and Māori. In Australia, Aboriginal and Torres Strait Islander people had a dialysis prevalence of 2434 pmp compared with 487 pmp for non-indigenous Australians and in New Zealand the rate was 1138 pmp for Māori and 473 for non-Māori New Zealanders. The 2020 data shows some early impacts of efforts to reduce the burden of dialysis and increase access to transplantation for First Nations peoples. The rate of dialysis prevalence showed a small decrease for Aboriginal and Torres Strait Islander people in Australia in 2020 and has been relatively static for Māori in New Zealand in recent years, whilst for both groups the prevalent rate of functioning kidney transplants has increased year on year over the past 5 years. Kidney replacement therapy in these populations is explored in more depth in later chapters of the report.

The majority of growth in prevalent dialysis treatments has been in satellite haemodialysis in Australia and hospital-based haemodialysis in New Zealand. The prevalent dialysis populations in Australia and New Zealand had falling rates of all major comorbidities apart from diabetes, which continued to increase in both countries.

## All Kidney Replacement Therapy Modalities

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

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 (2020)<sup>1</sup> and Stats NZ (2020)<sup>2</sup>.

**Table 2.1 Prevalence (pmp) of Kidney Replacement Therapy 2001-2020**

Year	Australia			New Zealand		
	Dialysis	Transplant	Total	Dialysis	Transplant	Total
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	7719 (391)	6079 (308)	13798 (700)	1711 (425)	1164 (289)	2875 (714)
2004	8003 (402)	6383 (320)	14386 (722)	1774 (434)	1220 (298)	2994 (732)
2005	8638 (428)	6646 (329)	15284 (758)	1878 (454)	1244 (301)	3122 (755)
2006	9262 (453)	6979 (341)	16241 (794)	1997 (477)	1259 (301)	3256 (778)
2007	9733 (467)	7247 (348)	16980 (815)	2071 (490)	1304 (309)	3375 (799)
2008	10181 (479)	7660 (360)	17841 (840)	2106 (494)	1355 (318)	3461 (812)
2009	10485 (483)	8054 (371)	18539 (855)	2282 (530)	1408 (327)	3690 (858)
2010	10751 (488)	8510 (386)	19261 (874)	2389 (549)	1448 (333)	3837 (882)
2011	11109 (497)	8873 (397)	19982 (894)	2395 (546)	1489 (340)	3884 (886)
2012	11573 (509)	9270 (408)	20843 (917)	2475 (561)	1527 (346)	4002 (908)
2013	11899 (514)	9669 (418)	21568 (933)	2603 (586)	1578 (355)	4181 (941)
2014	12321 (525)	10075 (429)	22396 (954)	2692 (596)	1631 (361)	4323 (957)
2015	12640 (531)	10475 (440)	23115 (971)	2716 (589)	1709 (371)	4425 (960)
2016	12817 (530)	11042 (456)	23859 (986)	2770 (588)	1789 (379)	4559 (967)
2017	13106 (533)	11604 (472)	24710 (1004)	2797 (581)	1896 (394)	4693 (975)
2018	13521 (541)	12176 (487)	25697 (1029)	2869 (585)	1977 (403)	4846 (989)
2019	13963 (550)	12745 (502)	26708 (1053)	2853 (573)	2098 (421)	4951 (994)
2020	14554 (567)	13130 (511)	27684 (1078)	3004 (590)	2199 (432)	5203 (1022)

**Table 2.2 Prevalence (pmp) of Kidney Replacement Therapy by Modality 2016-2020**

Country	Patients	2016	2017	2018	2019	2020
Australia	<b>Total</b>	<b>23859 (986)</b>	<b>24710 (1004)</b>	<b>25697 (1029)</b>	<b>26708 (1053)</b>	<b>27684 (1078)</b>
	<b>Transplant</b>	11042 (456)	11604 (472)	12176 (487)	12745 (502)	13130 (511)
	<b>Dialysis</b>	12817 (530)	13106 (533)	13521 (541)	13963 (550)	14554 (567)
	<b>Percentage PD</b>	19%	18%	18%	17%	17%
	<b>Percentage Home HD*</b>	9%	8%	8%	8%	8%
	<b>Percentage Facility HD</b>	72%	74%	74%	75%	75%
New Zealand	<b>Total</b>	<b>4559 (967)</b>	<b>4693 (975)</b>	<b>4846 (989)</b>	<b>4951 (994)</b>	<b>5203 (1022)</b>
	<b>Transplant</b>	1789 (379)	1896 (394)	1977 (403)	2098 (421)	2199 (432)
	<b>Dialysis</b>	2770 (588)	2797 (581)	2869 (585)	2853 (573)	3004 (590)
	<b>Percentage PD</b>	30%	31%	30%	29%	28%
	<b>Percentage Home HD*</b>	17%	16%	15%	14%	13%
	<b>Percentage Facility HD</b>	53%	53%	55%	57%	59%

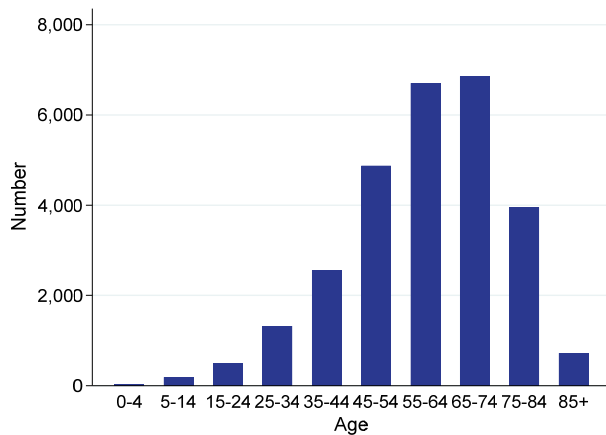
\*Includes Community House HD

Table 2.3 and figures 2.1-2.2 show the 2020 prevalence (pmp) of KRT by age groups.

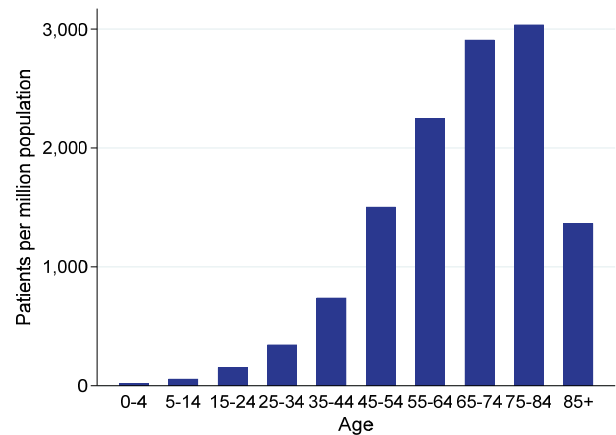
**Table 2.3 Prevalence (pmp) of Kidney Replacement Therapy by Age 2020**

Age	Australia	New Zealand
0-4	27 (17)	6 (20)
5-14	186 (58)	41 (62)
15-24	488 (152)	114 (173)
25-34	1320 (345)	322 (426)
35-44	2557 (740)	581 (902)
45-54	4874 (1504)	1008 (1531)
55-64	6703 (2246)	1427 (2312)
65-74	6858 (2909)	1214 (2636)
75-84	3951 (3037)	464 (1906)
85+	720 (1365)	26 (294)

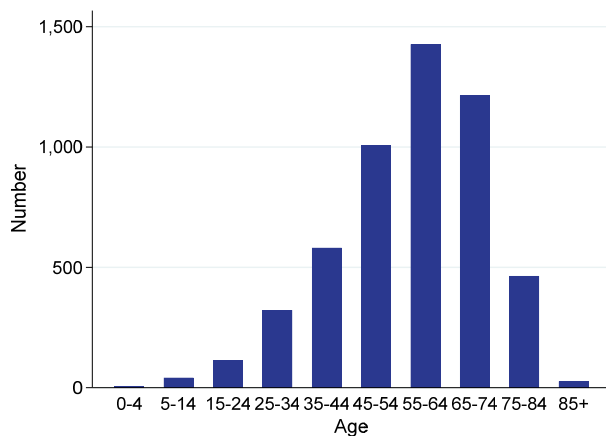
**Figure 2.1.1 - Prevalent KRT Patient Numbers - Australia - 31 December 2020**



**Figure 2.1.2 - Prevalent KRT Patients Per Million Population - Australia - 31 December 2020**



**Figure 2.2.1 - Prevalent KRT Patient Numbers - New Zealand - 31 December 2020**



**Figure 2.2.2 - Prevalent KRT Patients Per Million Population - New Zealand - 31 December 2020**

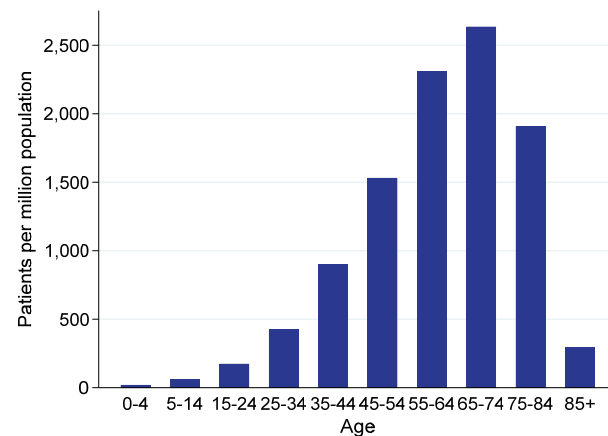


Table 2.4 shows the prevalence (pmp) of KRT by state/territory over 2016-2020.

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 (2021)<sup>3</sup>.

**Table 2.4 Prevalence (pmp) of Kidney Replacement Therapy by State/Territory 2016-2020**

Modality	State	2016	2017	2018	2019	2020
Dialysis	QLD	2430 (502)	2540 (515)	2685 (536)	2780 (546)	2927 (566)
	NSW*	4008 (534)	4002 (524)	4071 (525)	4213 (536)	4396 (554)
	ACT*	293 (467)	274 (430)	268 (414)	291 (444)	299 (450)
	VIC	3081 (499)	3139 (497)	3234 (500)	3279 (497)	3435 (513)
	TAS	229 (443)	217 (415)	209 (396)	225 (421)	209 (387)
	SA	803 (469)	868 (504)	912 (525)	923 (527)	975 (551)
	NT	636 (2589)	689 (2784)	733 (2967)	776 (3153)	773 (3143)
	WA	1337 (523)	1377 (535)	1409 (543)	1476 (563)	1540 (579)
	<b>Australia</b>	<b>12817 (530)</b>	<b>13106 (533)</b>	<b>13521 (541)</b>	<b>13963 (550)</b>	<b>14554 (567)</b>
	<b>New Zealand</b>	<b>2770 (588)</b>	<b>2797 (581)</b>	<b>2869 (585)</b>	<b>2853 (573)</b>	<b>3004 (590)</b>
Transplant	QLD	2080 (429)	2179 (442)	2271 (453)	2401 (471)	2456 (475)
	NSW*	3114 (415)	3265 (427)	3448 (445)	3591 (457)	3699 (466)
	ACT*	275 (439)	302 (474)	299 (461)	297 (453)	301 (453)
	VIC	3124 (506)	3317 (525)	3534 (547)	3709 (562)	3818 (570)
	TAS	243 (470)	263 (503)	288 (545)	299 (559)	306 (566)
	SA	1046 (611)	1054 (611)	1057 (609)	1088 (621)	1116 (631)
	NT	109 (444)	111 (448)	116 (470)	127 (516)	140 (569)
	WA	1051 (411)	1113 (432)	1163 (448)	1233 (470)	1294 (486)
	<b>Australia</b>	<b>11042 (456)</b>	<b>11604 (472)</b>	<b>12176 (487)</b>	<b>12745 (502)</b>	<b>13130 (511)</b>
	<b>New Zealand</b>	<b>1789 (379)</b>	<b>1896 (394)</b>	<b>1977 (403)</b>	<b>2098 (421)</b>	<b>2199 (432)</b>

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

Tables 2.5 and 2.6 show the same data by ethnicity for Australia and New Zealand, respectively.

**Table 2.5 Prevalence (pmp) of Kidney Replacement Therapy by Ethnicity, Australia 2016-2020**

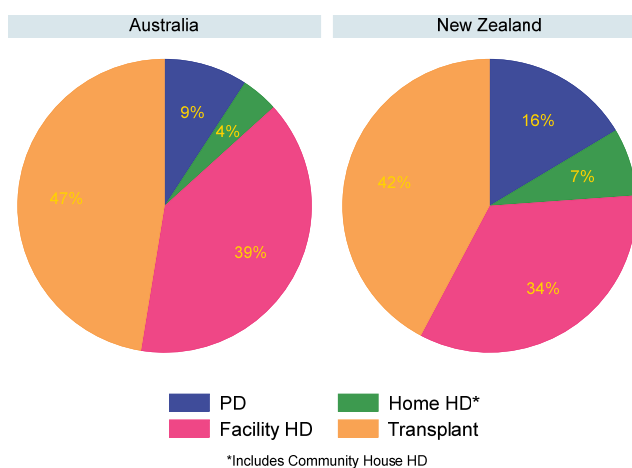
Ethnicity	Modality	2016	2017	2018	2019	2020
Aboriginal/Torres Strait Islander	Dialysis	1776 (2225)	1904 (2338)	1966 (2366)	2064 (2434)	2098 (2423)
	Transplant	266 (333)	279 (343)	309 (372)	342 (403)	373 (431)
Other	Dialysis	10718 (458)	10805 (454)	11129 (461)	11538 (471)	12089 (487)
	Transplant	9977 (427)	10487 (441)	10976 (454)	11459 (467)	11791 (475)
Not reported	Dialysis	323	397	426	361	367
	Transplant	799	838	891	944	966

**Table 2.6 Prevalence (pmp) of Kidney Replacement Therapy by Ethnicity, New Zealand 2016-2020**

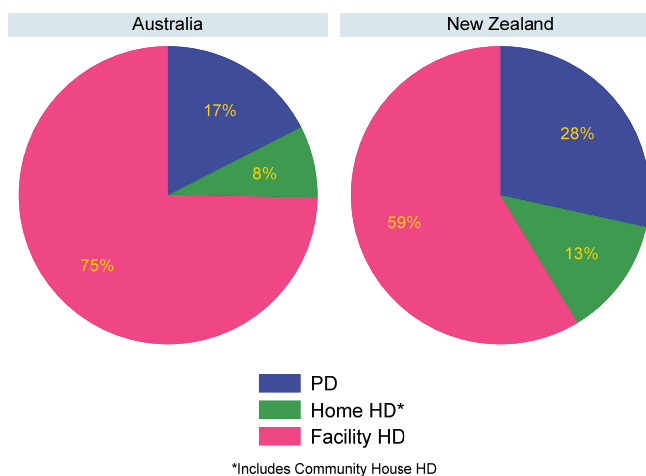
Ethnicity	Modality	2016	2017	2018	2019	2020
Māori	Dialysis	899 (1144)	921 (1149)	925 (1133)	921 (1105)	968 (1138)
	Transplant	200 (255)	213 (266)	231 (283)	251 (301)	268 (315)
Other	Dialysis	1856 (472)	1863 (464)	1926 (472)	1916 (462)	2007 (473)
	Transplant	1581 (402)	1674 (417)	1734 (425)	1835 (443)	1918 (452)
Not reported	Dialysis	15	13	18	16	29
	Transplant	8	9	12	12	13

Figure 2.3 shows the overall distribution of KRT modality by country at the end of 2020. The dialysis modalities are shown separately in figure 2.4.

**Figure 2.3 - KRT Modality by Country 2020**



**Figure 2.4 - Dialysis Modality by Country 2020**



Figures 2.5 and 2.6 show the same data by Australian state/territory.

Figure 2.5 - KRT Modality by State/Territory - 31 December 2020

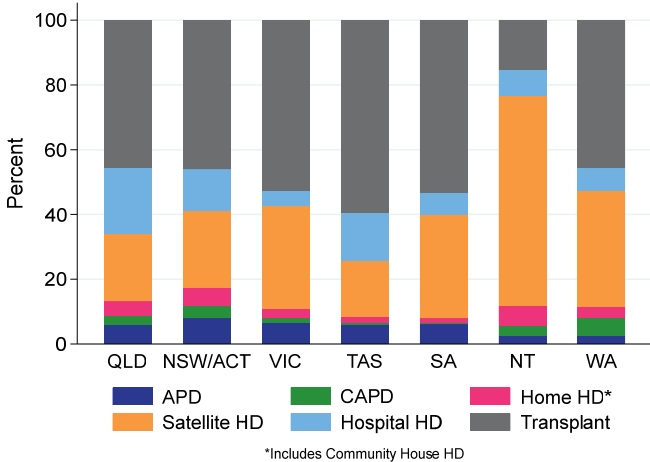
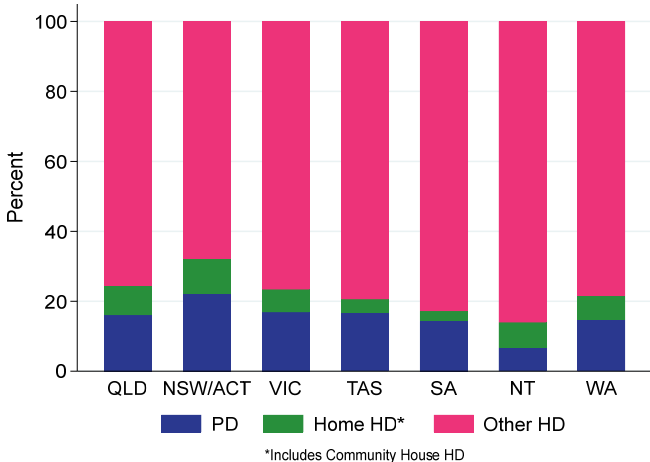


Figure 2.6 - Dialysis Modality by State/Territory - 31 December 2020



## Dialysis

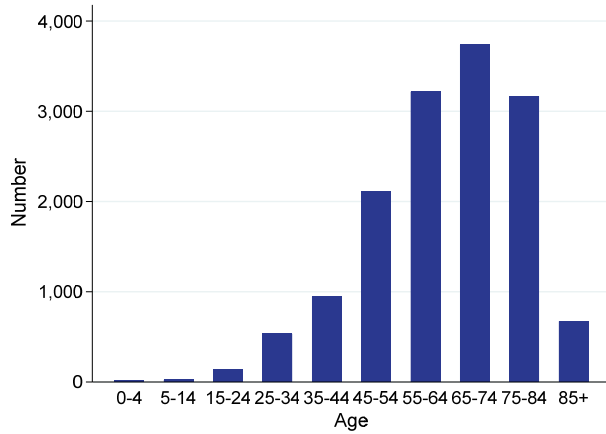
Table 2.7 and figures 2.7-2.8 show the age distribution of prevalent dialysis patients in 2020.

Table 2.7 Dialysis Prevalence (pmp) by Age - 2020

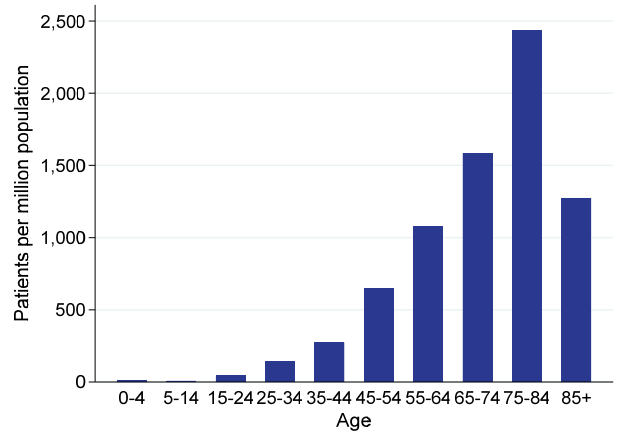
Age	Australia	New Zealand
0-4	14 (9)	2 (7)
5-14	23 (7)	6 (9)
15-24	136 (42)	54 (82)
25-34	534 (139)	163 (215)
35-44	947 (274)	308 (478)
45-54	2108 (650)	547 (831)
55-64	3217 (1078)	792 (1283)
65-74	3736 (1585)	749 (1626)
75-84	3167 (2434)	363 (1491)
85+	672 (1274)	20 (226)



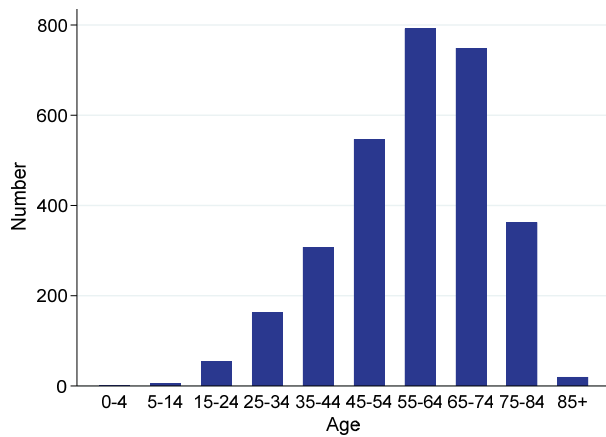
**Figure 2.7.1 - Prevalent Dialysis Patient Numbers - Australia - 31 December 2020**



**Figure 2.7.2 - Prevalent Dialysis Patients Per Million Population - Australia - 31 December 2020**



**Figure 2.8.1 - Prevalent Dialysis Patient Numbers - New Zealand - 31 December 2020**



**Figure 2.8.2 - Prevalent Dialysis Patients Per Million Population - New Zealand - 31 December 2020**

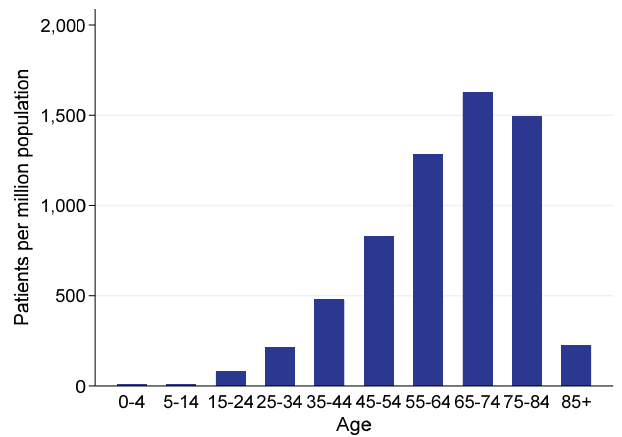
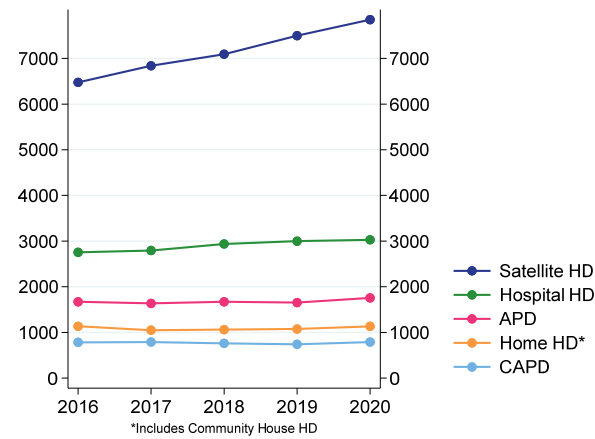
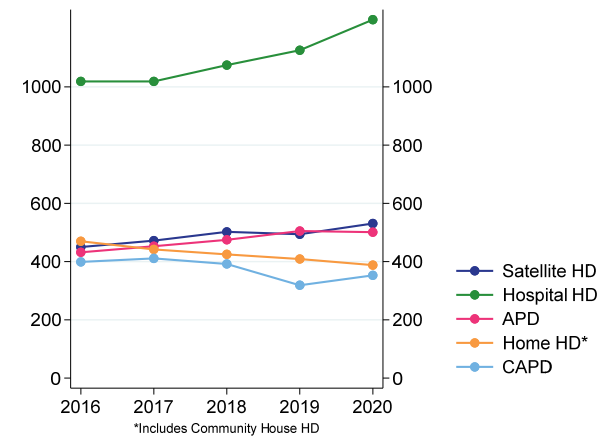


Figure 2.9 and table 2.8 show trends in the method and location of dialysis in Australia and New Zealand over 2016-2020.

**Figure 2.9.1 - Method and Location of Dialysis - Australia, 2016-2020**



**Figure 2.9.2 - Method and Location of Dialysis - New Zealand, 2016-2020**



**Table 2.8 Method and Location of Dialysis 2016-2020**

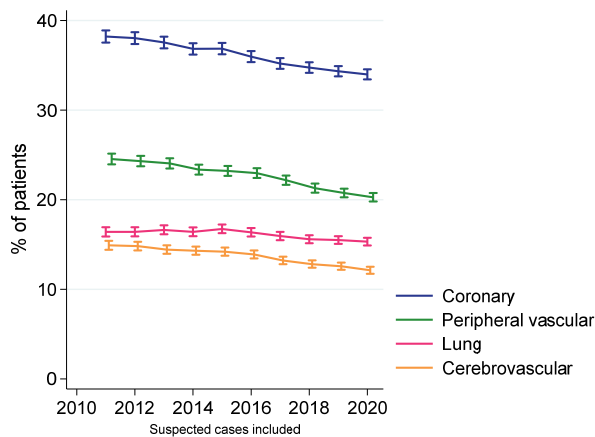
Country	Dialysis type	Modality	2016	2017	2018	2019	2020	
Australia	PD	APD	1670 (68%)	1635 (67%)	1670 (69%)	1653 (69%)	1755 (69%)	
		CAPD	783 (32%)	789 (33%)	761 (31%)	740 (31%)	789 (31%)	
		<b>Total</b>	<b>2453</b>	<b>2424</b>	<b>2431</b>	<b>2393</b>	<b>2544</b>	
	HD	Hospital	2754 (27%)	2794 (26%)	2937 (26%)	2998 (26%)	3028 (25%)	
		Satellite	6476 (62%)	6839 (64%)	7093 (64%)	7498 (65%)	7849 (65%)	
		Home	1134 (11%)	1049 (10%)	1060 (10%)	1074 (9%)	1108 (9%)	
		Community House	0 (0%)	0 (0%)	0 (0%)	0 (0%)	25 (0%)	
		<b>Total</b>	<b>10364</b>	<b>10682</b>	<b>11090</b>	<b>11570</b>	<b>12010</b>	
	New Zealand	PD	APD	432 (52%)	453 (52%)	475 (55%)	505 (61%)	501 (59%)
			CAPD	399 (48%)	411 (48%)	392 (45%)	319 (39%)	353 (41%)
<b>Total</b>			<b>831</b>	<b>864</b>	<b>867</b>	<b>824</b>	<b>854</b>	
HD		Hospital	1019 (53%)	1019 (53%)	1075 (54%)	1126 (55%)	1231 (57%)	
		Satellite	450 (23%)	472 (24%)	502 (25%)	494 (24%)	531 (25%)	
		Home	470 (24%)	442 (23%)	425 (21%)	409 (20%)	355 (17%)	
		Community House	0 (0%)	0 (0%)	0 (0%)	0 (0%)	33 (2%)	
<b>Total</b>		<b>1939</b>	<b>1933</b>	<b>2002</b>	<b>2029</b>	<b>2150</b>		

## Co-morbidities

Figure 2.10 shows trends in the prevalence of co-morbidities (with 95% CIs) in prevalent KRT patients over the last 10 years.

Figure 2.11 shows the prevalence of diabetes.

**Figure 2.10.1 - Comorbid Conditions at End of Year – Australia**



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

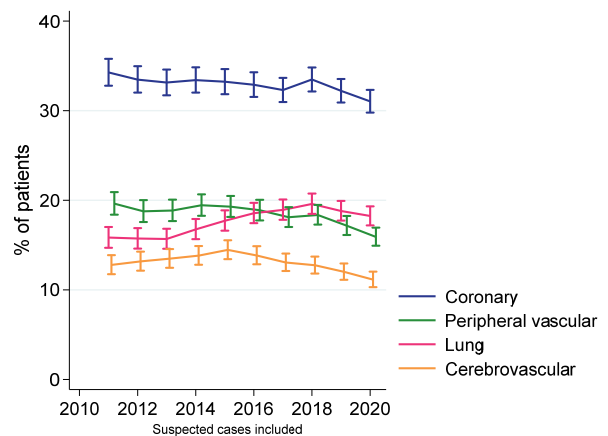
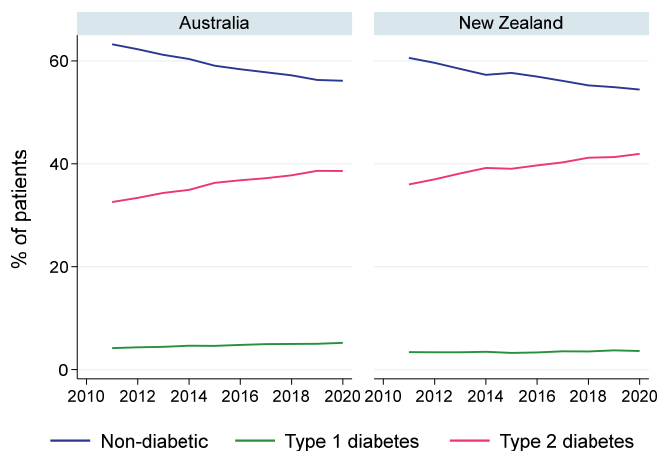


Figure 2.11 - Diabetes Status at End of Year



## References

<sup>1</sup> Australian Bureau of Statistics, 2020, *Australian Demographic Statistics, Jun 2020, time series spreadsheets, cat. no. 3101.0*, viewed 4 Jan 2021,

<http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3101.0Jun%202020?OpenDocument>

<sup>2</sup> 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, 2020, *Estimated Resident Population by Age and Sex (1991+) (Annual-Jun)*, NZ Infoshare, viewed 4 Jan 2021, <http://archive.stats.govt.nz/infoshare/>

<sup>3</sup> Australian Bureau of Statistics, 2021, *Regional Population by Age and Sex, Australia, 2020*, viewed 20 Sep 2021, <https://www.abs.gov.au/statistics/people/population/regional-population-age-and-sex/2020>