



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. 41st Report, Chapter 2: Prevalence of End Stage Kidney Disease. Australia and New Zealand Dialysis and Transplant Registry, Adelaide, Australia. 2018. 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 rate 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, 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 (2017)¹ and Stats NZ (2017)².

Table 2.1 Prevalence (pmp) of Renal Replacement Therapy 1998-2017

| Year | Australia | | | New Zealand | | |
|------|-------------|-------------|---------------------|-------------|------------|-------------------|
| | Dialysis | Transplant | Total | Dialysis | Transplant | Total |
| 1998 | 5536 (298) | 4964 (267) | 10500 (564) | 1126 (295) | 929 (244) | 2055 (539) |
| 1999 | 6018 (320) | 5135 (273) | 11153 (593) | 1230 (321) | 976 (254) | 2206 (575) |
| 2000 | 6409 (337) | 5342 (281) | 11751 (618) | 1331 (345) | 1018 (264) | 2349 (609) |
| 2001 | 6853 (356) | 5563 (289) | 12416 (644) | 1462 (377) | 1058 (273) | 2520 (649) |
| 2002 | 7264 (373) | 5849 (300) | 13113 (673) | 1594 (404) | 1113 (282) | 2707 (686) |
| 2003 | 7720 (391) | 6080 (308) | 13800 (700) | 1711 (425) | 1164 (289) | 2875 (714) |
| 2004 | 8005 (402) | 6385 (320) | 14390 (722) | 1774 (434) | 1219 (298) | 2993 (732) |
| 2005 | 8641 (428) | 6648 (329) | 15289 (758) | 1878 (454) | 1243 (301) | 3121 (755) |
| 2006 | 9265 (453) | 6979 (341) | 16244 (794) | 1997 (477) | 1258 (301) | 3255 (778) |
| 2007 | 9734 (467) | 7249 (348) | 16983 (815) | 2071 (490) | 1303 (308) | 3374 (799) |
| 2008 | 10180 (479) | 7658 (360) | 17838 (839) | 2106 (494) | 1354 (318) | 3460 (812) |
| 2009 | 10484 (483) | 8049 (371) | 18533 (854) | 2282 (530) | 1407 (327) | 3689 (857) |
| 2010 | 10747 (488) | 8507 (386) | 19254 (874) | 2389 (549) | 1447 (333) | 3836 (882) |
| 2011 | 11099 (497) | 8869 (397) | 19968 (894) | 2395 (546) | 1488 (339) | 3883 (886) |
| 2012 | 11560 (508) | 9268 (408) | 20828 (916) | 2475 (561) | 1526 (346) | 4001 (908) |
| 2013 | 11883 (513) | 9668 (418) | 21551 (931) | 2600 (585) | 1576 (355) | 4176 (940) |
| 2014 | 12290 (523) | 10083 (429) | 22373 (952) | 2689 (596) | 1629 (361) | 4318 (957) |
| 2015 | 12596 (528) | 10490 (440) | 23086 (968) | 2710 (590) | 1703 (371) | 4413 (960) |
| 2016 | 12753 (527) | 11065 (457) | 23818 (984) | 2754 (587) | 1781 (379) | 4535 (966) |
| 2017 | 13051 (531) | 11687 (475) | 24738 (1006) | 2768 (577) | 1890 (394) | 4658 (972) |

Table 2.2 Prevalence (pmp) of Renal Replacement Therapy by Modality 2013-2017

| Country | Patients | 2013 | 2014 | 2015 | 2016 | 2017 |
|-------------|-------------------------|--------------------|--------------------|--------------------|--------------------|---------------------|
| Australia | Total | 21551 (931) | 22373 (952) | 23086 (968) | 23818 (984) | 24738 (1006) |
| | Transplant | 9668 (418) | 10083 (429) | 10490 (440) | 11065 (457) | 11687 (475) |
| | Dialysis | 11883 (513) | 12290 (523) | 12596 (528) | 12753 (527) | 13051 (531) |
| | Proportion home | 29% | 30% | 29% | 28% | 26% |
| | Proportion satellite HD | 49% | 48% | 49% | 50% | 51% |
| | Proportion PD | 19% | 20% | 20% | 19% | 19% |
| New Zealand | Total | 4176 (940) | 4318 (957) | 4413 (960) | 4535 (966) | 4658 (972) |
| | Transplant | 1576 (355) | 1629 (361) | 1703 (371) | 1781 (379) | 1890 (394) |
| | Dialysis | 2600 (585) | 2689 (596) | 2710 (590) | 2754 (587) | 2768 (577) |
| | Proportion home | 51% | 49% | 47% | 47% | 47% |
| | Proportion satellite HD | 14% | 16% | 17% | 16% | 17% |
| | Proportion PD | 32% | 31% | 29% | 30% | 31% |

Table 2.3 and figures 2.1-2.2 show the 2017 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. The prevalence in the 75-84 and 85+ age groups was substantially higher in Australia than in New Zealand.

Table 2.3 Prevalence (pmp) of Renal Replacement Therapy by Age 2017

| Age | Australia | New Zealand |
|-------|-------------|-------------|
| 0-4 | 30 (19) | 9 (29) |
| 5-14 | 179 (58) | 34 (54) |
| 15-24 | 524 (164) | 98 (146) |
| 25-34 | 1173 (319) | 313 (463) |
| 35-44 | 2495 (765) | 489 (840) |
| 45-54 | 4579 (1437) | 958 (1504) |
| 55-64 | 5961 (2099) | 1263 (2218) |
| 65-74 | 5801 (2693) | 1113 (2673) |
| 75-84 | 3354 (2926) | 354 (1598) |
| 85+ | 642 (1299) | 27 (317) |

Figure 2.1.1 - Prevalent RRT Patient Numbers - Australia - 31 December 2017

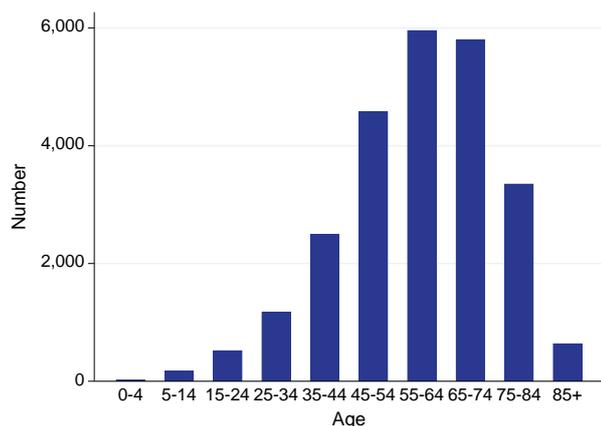


Figure 2.1.2 - Prevalent RRT Patients Per Million Population - Australia - 31 December 2017

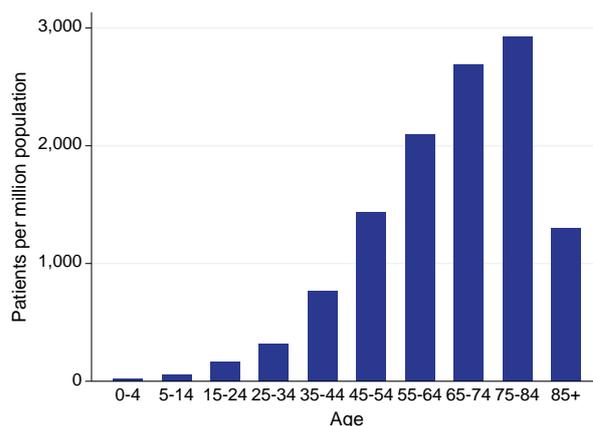


Figure 2.2.1 - Prevalent RRT Patient Numbers - New Zealand - 31 December 2017

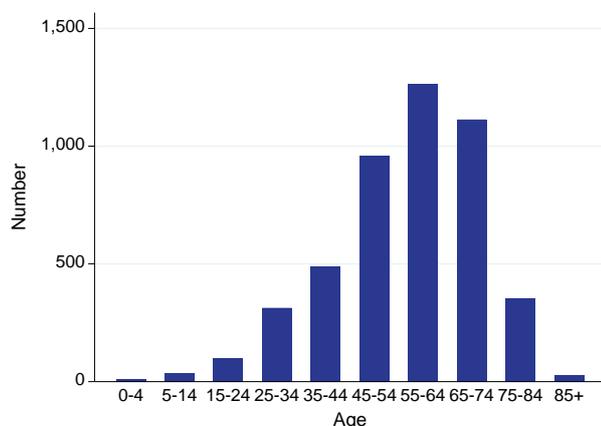


Figure 2.2.2 - Prevalent RRT Patients Per Million Population - New Zealand - 31 December 2017

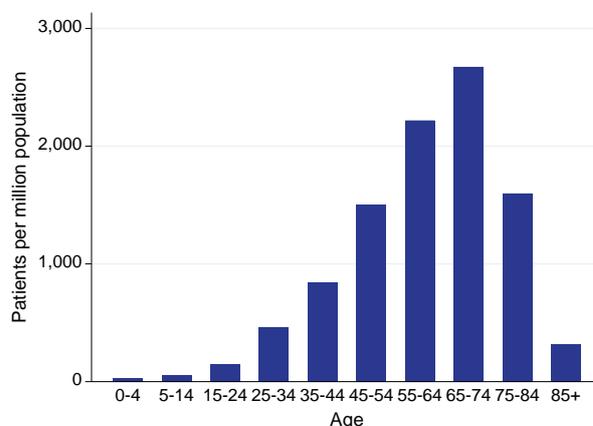


Table 2.4 shows the prevalence (pmp) of RRT by state over 2013-2017. In Australia at the end of 2017 the Northern Territory had the highest prevalence of dialysis patients and Tasmania the lowest; the Australian Capital Territory had the highest prevalence of transplant patients and New South Wales the lowest.

Table 2.4 Prevalence (pmp) of Renal Replacement Therapy by State 2013-2017

| Modality | State | 2013 | 2014 | 2015 | 2016 | 2017 |
|------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Dialysis | QLD | 2233 (480) | 2345 (496) | 2431 (508) | 2420 (499) | 2524 (512) |
| | NSW | 3826 (516) | 3911 (520) | 3954 (518) | 3985 (515) | 3974 (506) |
| | ACT | 288 (751) | 286 (734) | 282 (711) | 292 (724) | 276 (673) |
| | VIC | 2911 (504) | 2987 (506) | 3042 (504) | 3071 (497) | 3139 (496) |
| | TAS | 218 (425) | 229 (446) | 242 (470) | 229 (442) | 216 (415) |
| | SA | 752 (450) | 752 (446) | 767 (451) | 803 (469) | 863 (501) |
| | NT | 521 (2146) | 559 (2294) | 613 (2502) | 633 (2576) | 692 (2812) |
| | WA | 1134 (455) | 1221 (484) | 1265 (497) | 1320 (516) | 1367 (530) |
| | Australia | 11883 (513) | 12290 (523) | 12596 (528) | 12753 (527) | 13051 (531) |
| | New Zealand | 2600 (585) | 2689 (596) | 2710 (590) | 2754 (587) | 2768 (577) |
| Transplant | QLD | 1865 (401) | 1920 (406) | 1967 (411) | 2086 (430) | 2197 (446) |
| | NSW | 2703 (365) | 2843 (378) | 2988 (392) | 3132 (405) | 3319 (422) |
| | ACT | 239 (623) | 242 (621) | 251 (633) | 269 (667) | 291 (709) |
| | VIC | 2645 (458) | 2826 (479) | 2950 (489) | 3129 (506) | 3322 (525) |
| | TAS | 226 (441) | 223 (434) | 236 (458) | 242 (468) | 263 (505) |
| | SA | 966 (578) | 976 (578) | 1005 (591) | 1049 (612) | 1065 (618) |
| | NT | 85 (350) | 96 (394) | 98 (400) | 107 (435) | 111 (451) |
| | WA | 939 (377) | 957 (379) | 995 (391) | 1051 (411) | 1119 (434) |
| | Australia | 9668 (418) | 10083 (429) | 10490 (440) | 11065 (457) | 11687 (475) |
| | New Zealand | 1576 (355) | 1629 (361) | 1703 (371) | 1781 (379) | 1890 (394) |

Table 2.5 shows the same data by ethnicity.

Table 2.5 Prevalence of Renal Replacement Therapy by Ethnicity 2013-2017

| Country | Ethnicity | Modality | 2013 | 2014 | 2015 | 2016 | 2017 |
|-------------|-----------------------------------|------------|------|------|------|------|------|
| Australia | Caucasian | Dialysis | 8382 | 8437 | 8482 | 8290 | 8235 |
| | | Transplant | 8164 | 8442 | 8673 | 9038 | 9408 |
| | Aboriginal/Torres Strait Islander | Dialysis | 1490 | 1598 | 1672 | 1748 | 1888 |
| | | Transplant | 205 | 219 | 236 | 258 | 273 |
| | Asian | Dialysis | 1219 | 1285 | 1290 | 1339 | 1382 |
| | | Transplant | 963 | 1035 | 1125 | 1203 | 1332 |
| | Māori | Dialysis | 120 | 133 | 132 | 136 | 142 |
| | | Transplant | 54 | 56 | 60 | 63 | 67 |
| | Pacific | Dialysis | 347 | 377 | 409 | 440 | 488 |
| | | Transplant | 106 | 116 | 119 | 128 | 133 |
| | Other | Dialysis | 277 | 371 | 469 | 535 | 584 |
| | | Transplant | 155 | 178 | 211 | 258 | 311 |
| | Not reported | Dialysis | 48 | 89 | 142 | 265 | 332 |
| | | Transplant | 21 | 37 | 66 | 117 | 163 |
| New Zealand | Caucasian | Dialysis | 851 | 848 | 836 | 840 | 809 |
| | | Transplant | 1187 | 1208 | 1249 | 1277 | 1300 |
| | Aboriginal/Torres Strait Islander | Dialysis | 0 | 0 | 1 | 2 | 2 |
| | | Transplant | 0 | 0 | 0 | 0 | 1 |
| | Asian | Dialysis | 226 | 236 | 249 | 249 | 249 |
| | | Transplant | 132 | 141 | 145 | 154 | 179 |
| | Māori | Dialysis | 853 | 881 | 868 | 895 | 912 |
| | | Transplant | 149 | 160 | 174 | 192 | 206 |
| | Pacific | Dialysis | 644 | 688 | 699 | 707 | 737 |
| | | Transplant | 94 | 105 | 118 | 127 | 164 |
| | Other | Dialysis | 21 | 32 | 47 | 53 | 50 |
| | | Transplant | 11 | 12 | 13 | 20 | 27 |
| | Not reported | Dialysis | 5 | 4 | 10 | 8 | 9 |
| | | Transplant | 3 | 3 | 4 | 11 | 13 |

Figure 2.3 shows the overall distribution of RRT modality by country at the end of 2017. 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 2017

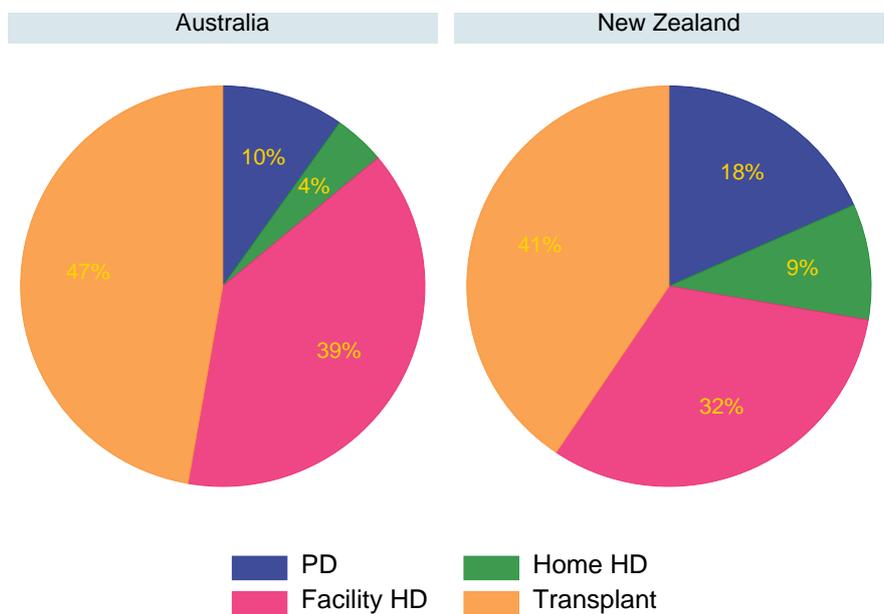
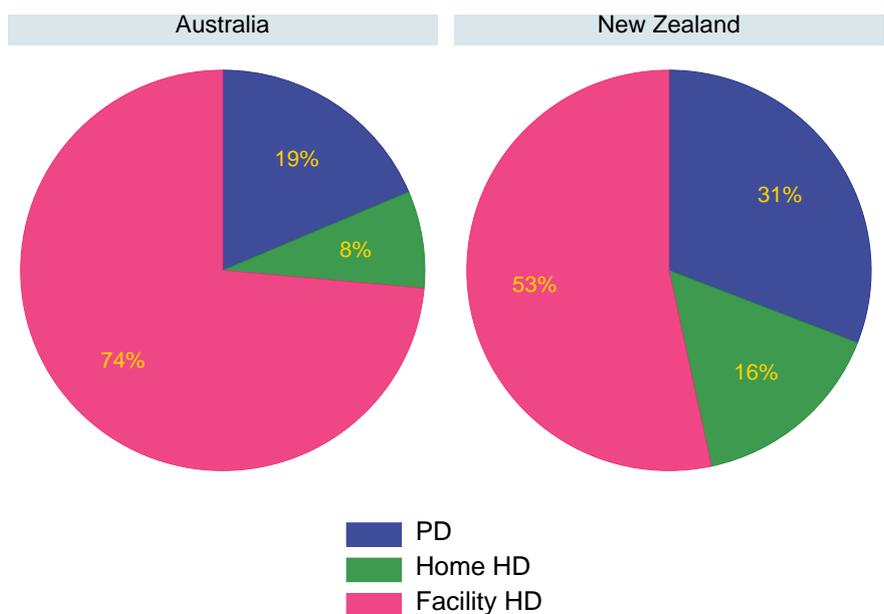


Figure 2.4 - Dialysis Modality by Country 2017



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

Figure 2.5 - RRT Modality by State - 31 December 2017

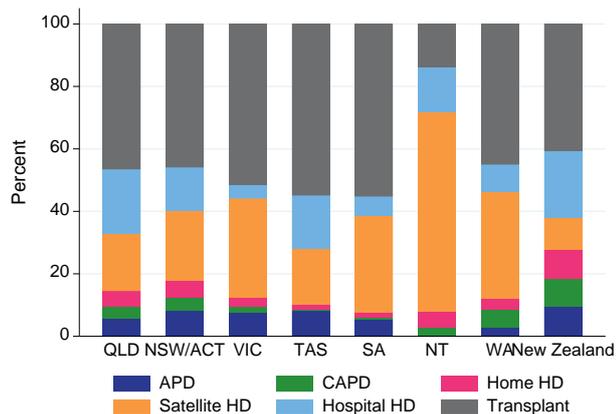
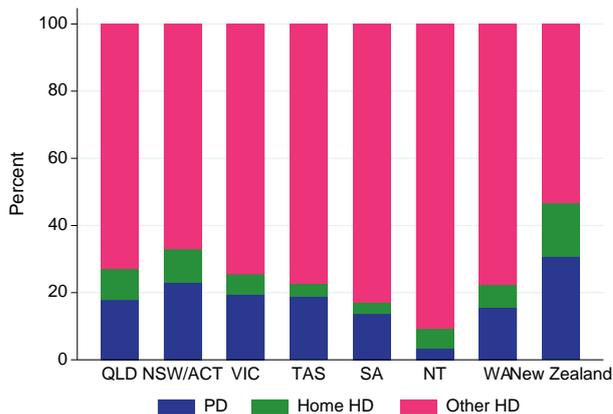


Figure 2.6 - Dialysis Modality by State - 31 December 2017



Dialysis

Table 2.6 and figures 2.7-2.8 show the age distribution of prevalent dialysis patients in 2017. The dialysis population in New Zealand is slightly younger than that of Australia.

Table 2.6 Dialysis Prevalence (pmp) by Age - 2017

| Age | Australia | New Zealand |
|-------|-------------|-------------|
| 0-4 | 11 (7) | 4 (13) |
| 5-14 | 29 (9) | 10 (16) |
| 15-24 | 146 (46) | 49 (73) |
| 25-34 | 461 (125) | 163 (241) |
| 35-44 | 962 (295) | 281 (483) |
| 45-54 | 1942 (610) | 503 (789) |
| 55-64 | 2794 (984) | 724 (1272) |
| 65-74 | 3294 (1529) | 734 (1763) |
| 75-84 | 2801 (2444) | 277 (1250) |
| 85+ | 611 (1236) | 23 (270) |

Figure 2.7.1 - Prevalent Dialysis Patient Numbers - Australia - 31 December 2017

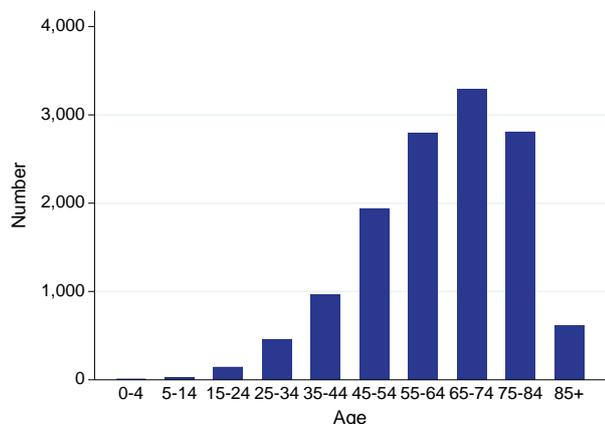


Figure 2.7.2 - Prevalent Dialysis Patients Per Million Population - Australia - 31 December 2017

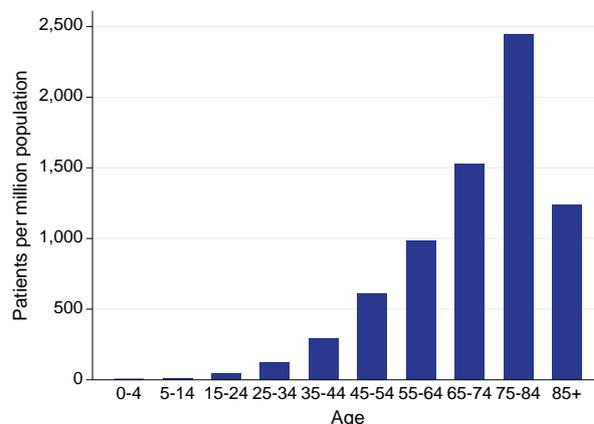


Figure 2.8.1 - Prevalent Dialysis Patient Numbers - New Zealand - 31 December 2017

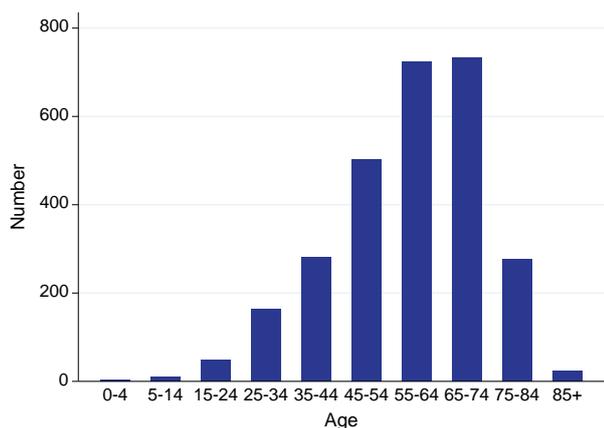


Figure 2.8.2 - Prevalent Dialysis Patients Per Million Population - New Zealand - 31 December 2017

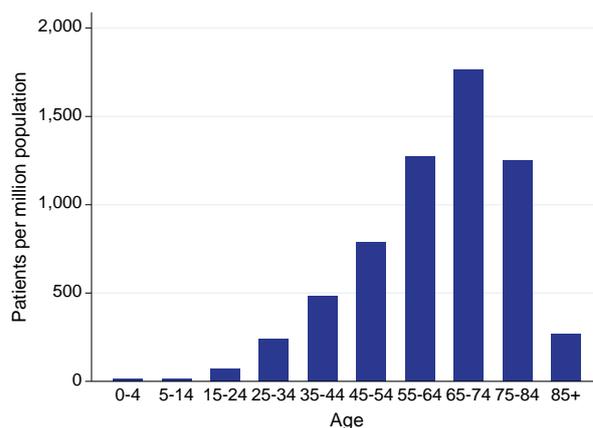


Figure 2.9 and table 2.7 show trends in the method and location of dialysis in Australia and New Zealand over 2013-2017. In Australia the growth is in satellite and hospital HD, whereas in New Zealand there is growth in satellite HD and PD, whereas home HD numbers are falling.

Figure 2.9.1 - Method and Location of Dialysis - Australia, 2013-2017

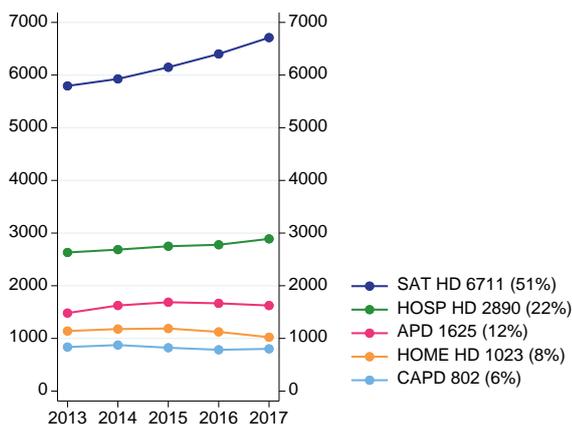


Figure 2.9.2 - Method and Location of Dialysis - New Zealand, 2013-2017

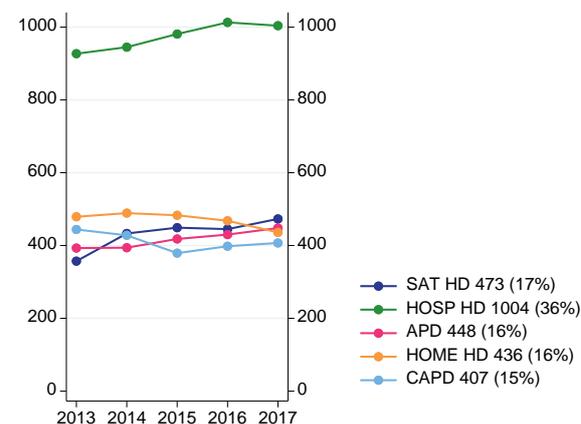


Table 2.7 Method and Location of Dialysis 2013-2017

| Country | Dialysis type | Modality | 2013 | 2014 | 2015 | 2016 | 2017 |
|--------------|---------------|--------------|-------------|--------------|--------------|--------------|-------------|
| Australia | PD | APD | 1481 (64%) | 1625 (65%) | 1687 (67%) | 1666 (68%) | 1625 (67%) |
| | | CAPD | 836 (36%) | 874 (35%) | 823 (33%) | 784 (32%) | 802 (33%) |
| | | Total | 2317 | 2499 | 2510 | 2450 | 2427 |
| | HD | Hospital | 2632 (28%) | 2686 (27%) | 2750 (27%) | 2778 (27%) | 2890 (27%) |
| | | Satellite | 5794 (61%) | 5927 (61%) | 6148 (61%) | 6401 (62%) | 6711 (63%) |
| | | Home | 1140 (12%) | 1178 (12%) | 1188 (12%) | 1124 (11%) | 1023 (10%) |
| Total | | 9566 | 9791 | 10086 | 10303 | 10624 | |
| New Zealand | PD | APD | 393 (47%) | 394 (48%) | 418 (52%) | 430 (52%) | 448 (52%) |
| | | CAPD | 444 (53%) | 428 (52%) | 379 (48%) | 398 (48%) | 407 (48%) |
| | | Total | 837 | 822 | 797 | 828 | 855 |
| | HD | Hospital | 927 (53%) | 945 (51%) | 981 (51%) | 1013 (53%) | 1004 (52%) |
| | | Satellite | 357 (20%) | 433 (23%) | 449 (23%) | 445 (23%) | 473 (25%) |
| | | Home | 479 (27%) | 489 (26%) | 483 (25%) | 468 (24%) | 436 (23%) |
| Total | | 1763 | 1867 | 1913 | 1926 | 1913 | |

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

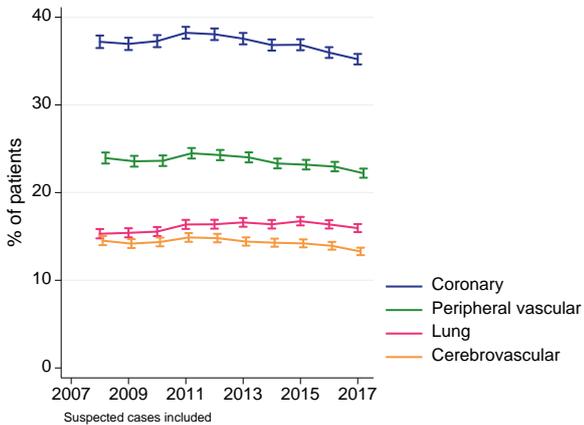


Figure 2.10.2 - Comorbid Conditions at End of Year - New Zealand

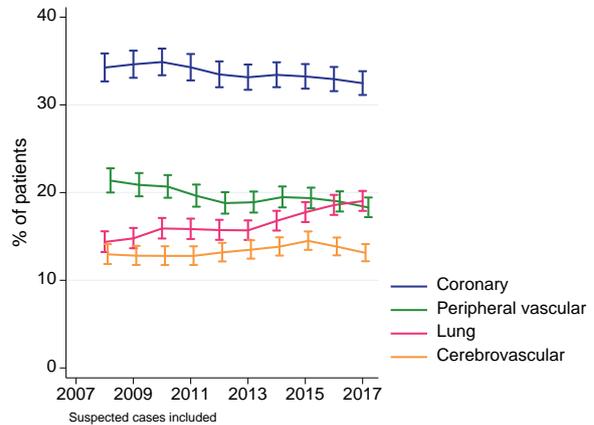
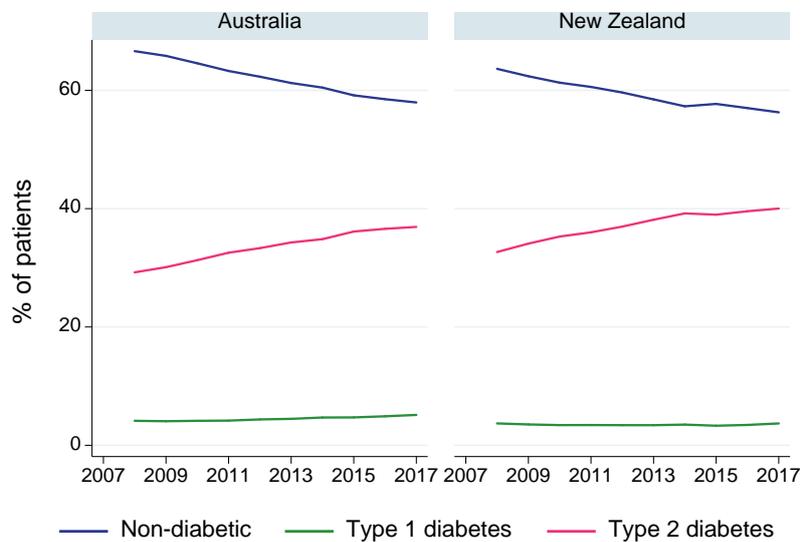


Figure 2.11 - Diabetes Status at End of Year



References

¹ Australian Bureau of Statistics, 2017, Australian Demographic Statistics, Jun 2017, time series spreadsheets, cat. no. 3101.0, viewed 27 Dec 2017, <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3101.0Jun%202017?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, 2017, Estimated Resident Population by Age and Sex (1991+) (Annual-Jun), NZ Infoshare, viewed 27 Dec 2017, <http://archive.stats.govt.nz/infoshare/>