



CHAPTER 9

End Stage Kidney Disease in Aotearoa New Zealand

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Executive Summary

This chapter presents information about the rates of end-stage kidney disease in Aotearoa New Zealand, including information stratified by age, gender, and ethnicity. Clinical care patterns for treatment of end-stage kidney disease including dialysis and transplantation are described. Population statistics are drawn from estimates provided by Statistics New Zealand to calculate disease and treatment rates. Ethnicity population data are projections produced by Statistics New Zealand according to assumptions agreed to by the New Zealand Ministry of Health.

Suggested citation

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Incidence of Renal Replacement Therapy (RRT)

In 2017, 615 adults and children started renal replacement therapy (RRT) in New Zealand, equivalent to 128 per million of population (pmp) (figure 9.1 and table 9.1). The proportion of the New Zealand population commencing RRT is similar to that of Australia (128 versus 124 pmp in 2017).

Figure 9.1 - Incidence of Renal Replacement Therapy - New Zealand 1988-2017

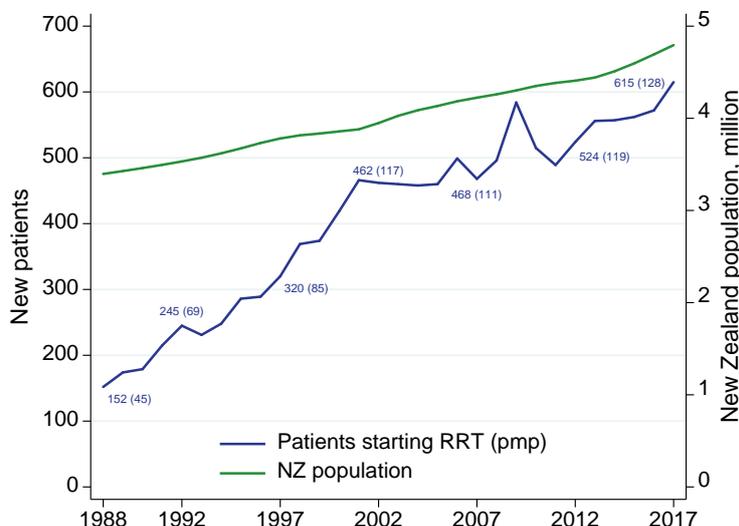
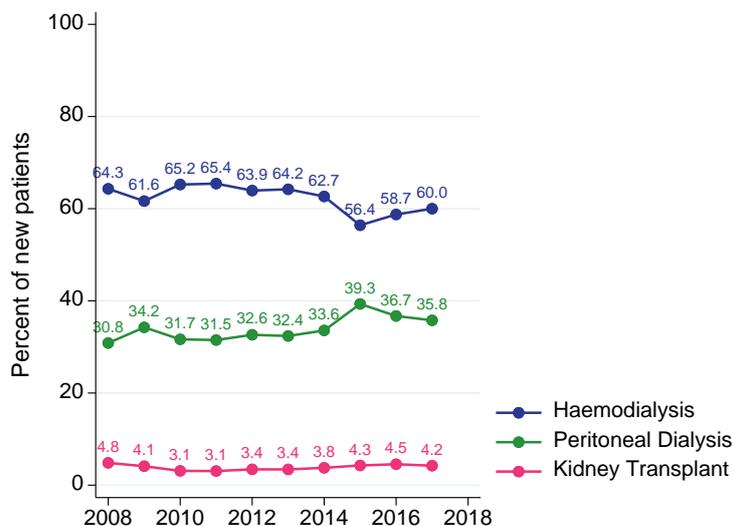


Table 9.1 Number (pmp) who Commenced Renal Replacement Therapy in New Zealand, 2013-2017

	2013	2014	2015	2016	2017
Total	556 (125)	557 (124)	562 (122)	572 (122)	615 (128)
Transplant	19 (4)	21 (5)	24 (5)	26 (6)	26 (5)
Haemodialysis	357 (80)	349 (77)	317 (69)	336 (72)	369 (77)
Peritoneal Dialysis	180 (41)	187 (41)	221 (48)	210 (45)	220 (46)

The proportion of patients who start RRT with a pre-emptive kidney transplant in New Zealand is stable and represents around 4% of all incident patients (figure 9.2). Similarly, the proportions of patients who start RRT with peritoneal dialysis or haemodialysis have been relatively stable over the last 10 years.

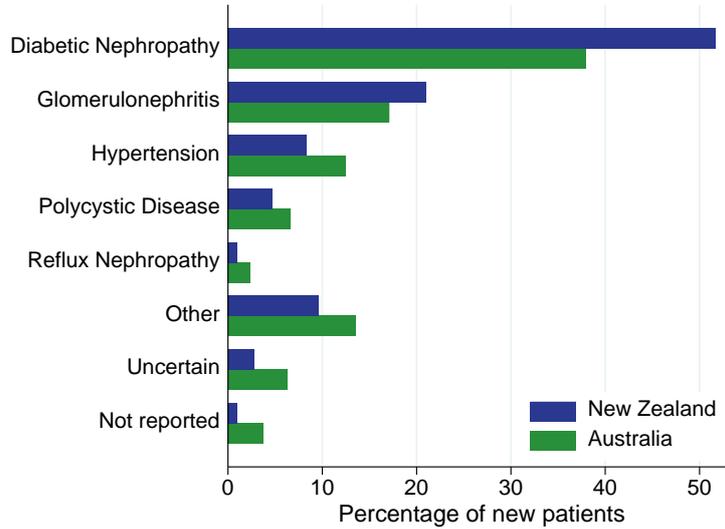
Figure 9.2 - Trends in Modality at Start of Renal Replacement Therapy - New Zealand 2008-2017



Primary Renal Disease

The leading cause of end stage kidney disease in New Zealand is diabetes (52%), followed by glomerulonephritis (21%) (figure 9.3). There is marked variation by ethnicity, with diabetic nephropathy the cause of ESKD in 36%, 68%, 72% and 43% of European/Other, Māori, Pasifika and Asian New Zealanders respectively.

Figure 9.3 - Primary Renal Disease of New Patients Commencing Renal Replacement Therapy, 2017

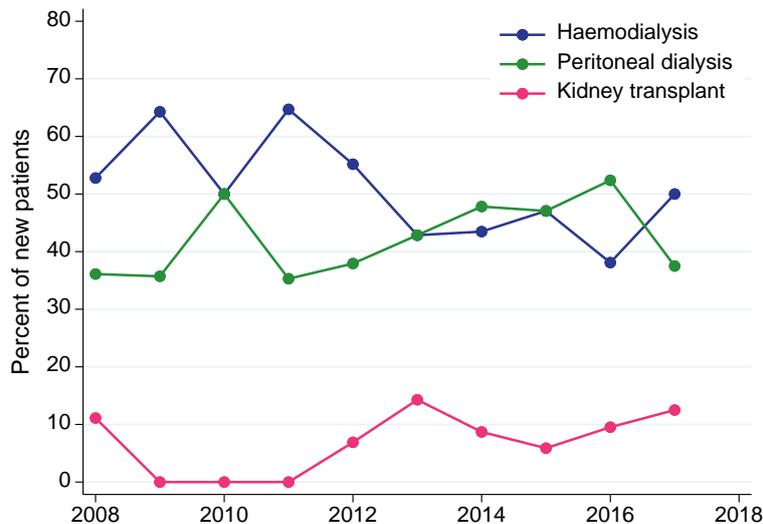


Children and Young Adults

In 2017, 24 patients in the 0-24 age group commenced renal replacement therapy (15 pmp) in New Zealand. The incidence rate of RRT among young patients has ranged between 9 and 15 pmp from 2013-2017. The incidence rate of RRT is variable due to the low numbers of patients commencing RRT in this age group.

Of the 24 younger New Zealand patients commencing RRT in 2017, 3 (13%) patients received a pre-emptive transplant, 9 (38%) patients commenced with peritoneal dialysis, and 12 (50%) patients commenced with haemodialysis (figure 9.4).

Figure 9.4 - Children and Young Adults (0-24 years) Commencing RRT - New Zealand 2008-2017



Age

Renal replacement therapy incidence rates vary widely by age group and modality (figures 9.5 and 9.6).

The highest incidence of renal replacement therapy in New Zealand is among patients in the 65-74 age group (435 pmp). Children, young adults, and adults 85 years and older have the lowest rates of renal replacement therapy.

Figure 9.5 - Incidence of Renal Replacement Therapy by Age Group - New Zealand, 2008-2017

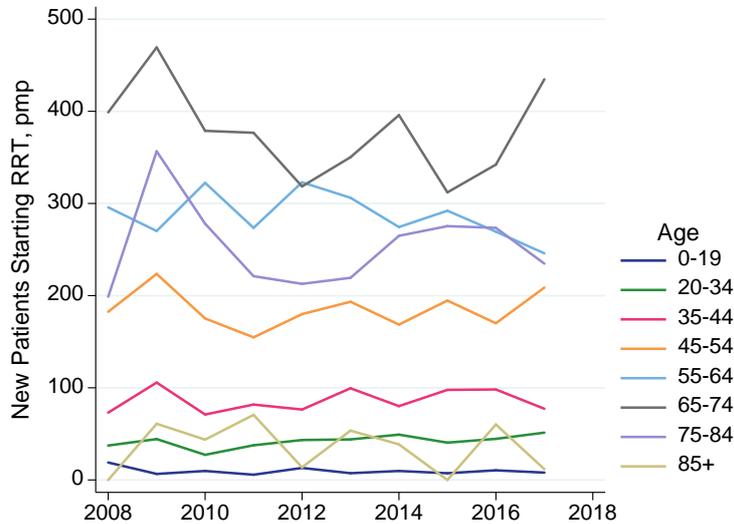
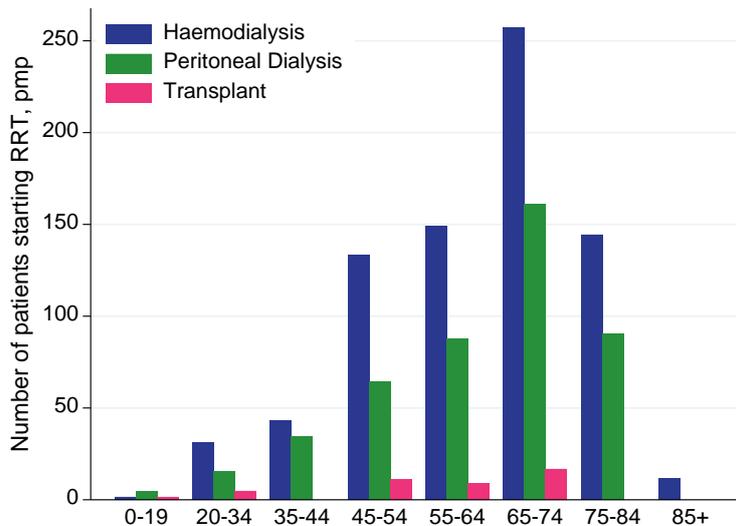


Figure 9.6 - Incidence of RRT by Age Group and Modality - Per Million Population, New Zealand 2017

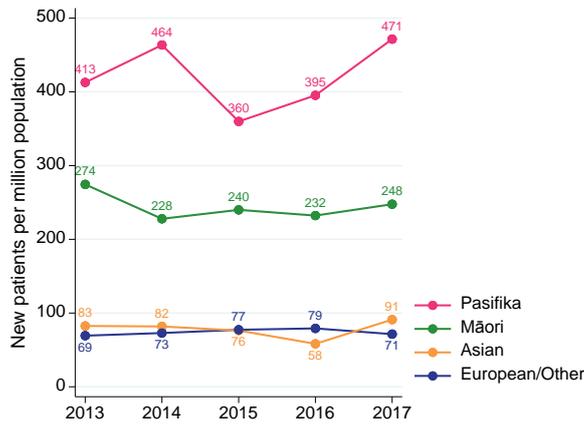


Ethnicity

There are marked and persistent disparities in the incidence and prevalence of end-stage kidney disease and treatment practices in renal replacement therapy based on ethnicity in New Zealand.

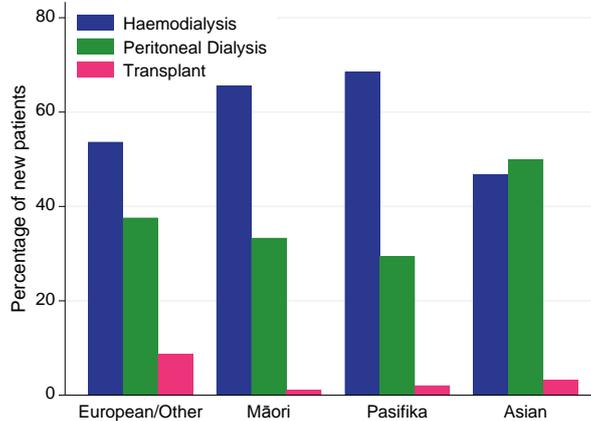
The incidence of renal replacement therapy is markedly higher among Pasifika (471 pmp) and Māori (248 pmp) patients, compared to Asian (91 pmp) and European/Other ethnicities (71 pmp) (figure 9.7).

Figure 9.7 - Incidence of RRT by Ethnicity in New Zealand 2013-2017



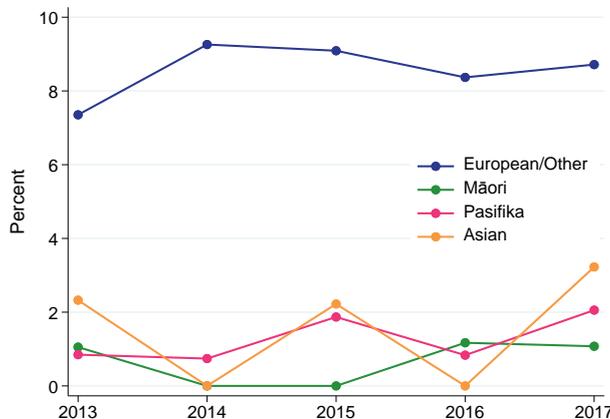
Māori, Pasifika and European/Other ethnicity patients had the highest proportion of patients starting dialysis with haemodialysis (66, 68 and 54 per 100 incident RRT patients), while among Asian patients, the highest proportion of patients started RRT on peritoneal dialysis (50 per 100 incident RRT patients) (figure 9.8). Overall, 9 European/Other ethnicity patients had a pre-emptive kidney transplant per 100 incident patients, while there was 1 pre-emptive kidney transplant per 100 incident patients among Māori patients, 2 among Pasifika patients, and 3 among Asian patients.

Figure 9.8 - Incidence of RRT by Ethnicity and Modality - New Zealand 2017



The rate of pre-emptive kidney transplants has continued to be markedly lower among Māori, Pasifika, and Asian patients, compared to European/Other ethnicities (figure 9.9).

Figure 9.9 - Percentage of Patients Starting RRT with Pre-emptive Kidney Transplant in New Zealand 2013-2017

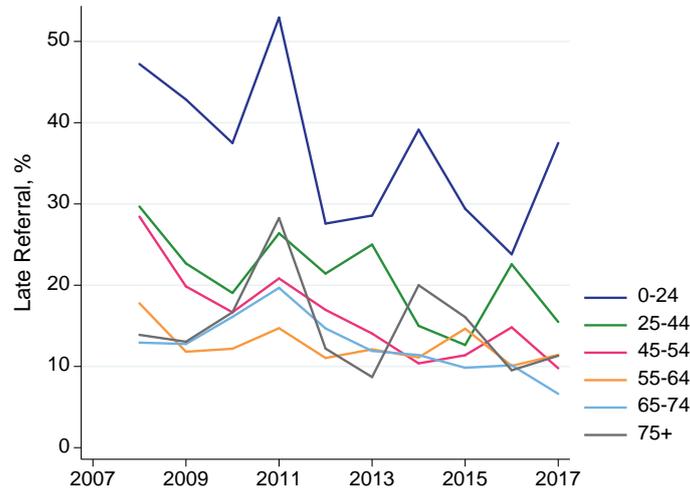


Late Referral to Nephrology Services

The rate of late referrals (defined as the first assessment by a specialist nephrologist within 3 months of commencing dialysis) has decreased in New Zealand over time. Late referrals represented 11% of all patients who commenced renal replacement therapy in 2017. Late referrals reduce opportunities for patients to prepare for their preferred modality of dialysis or to have pre-emptive transplantation.

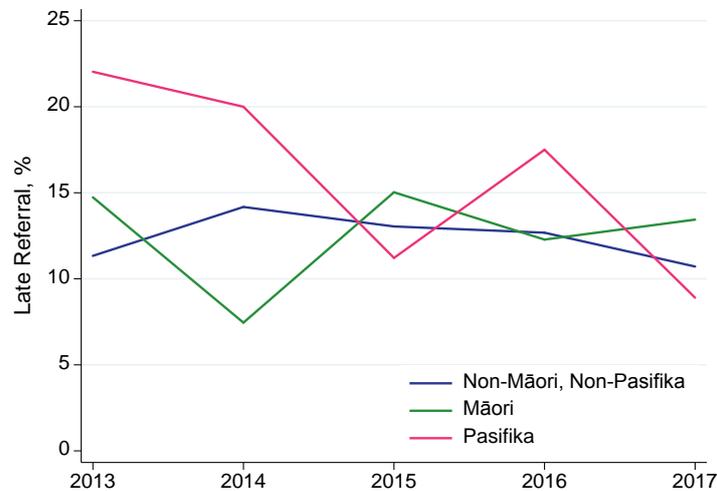
Younger New Zealand patients experience the highest rate of late referral. The highest rate of late referral has occurred among the 0-24 age group in the last decade (figure 9.10).

Figure 9.10 - Late Referral Rates by Age Group - New Zealand 2008 – 2017



There is little evidence of different late referral rates by ethnicity in New Zealand (figure 9.11).

Figure 9.11 - Late Referral Rates by Ethnicity - New Zealand 2013 – 2017



Prevalence of Renal Replacement Therapy

There were 4658 people (972 pmp) receiving renal replacement therapy in the form of dialysis or a kidney transplant in New Zealand at the end of 2017 (figures 9.12-9.13 and table 9.2). Overall New Zealand continues to have a higher prevalence (577 pmp) of dialysis patients as compared with Australia (531 pmp), and a lower prevalence of people treated with a kidney transplant (394 pmp versus 475 pmp).

Figure 9.12 - Prevalence of Dialysis and Transplantation - New Zealand 1988-2017

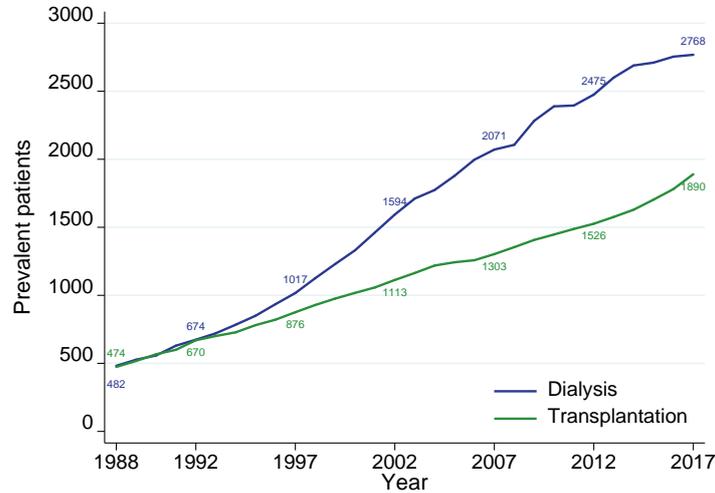
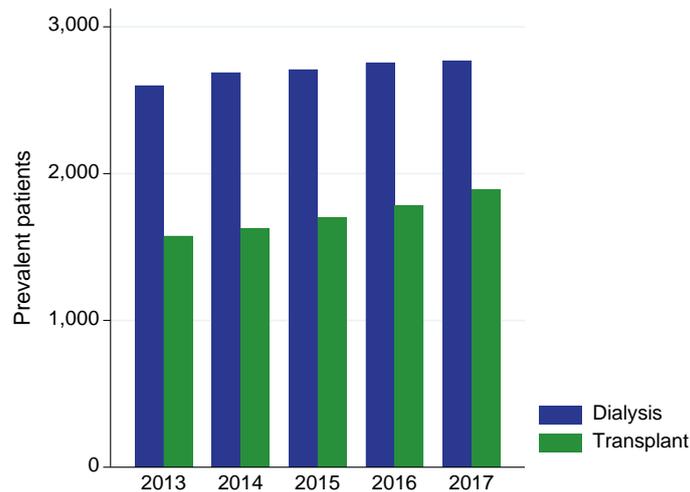


Table 9.2 Prevalence of Renal Replacement Therapy (pmp) in New Zealand 2013-2017

	2013	2014	2015	2016	2017
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)

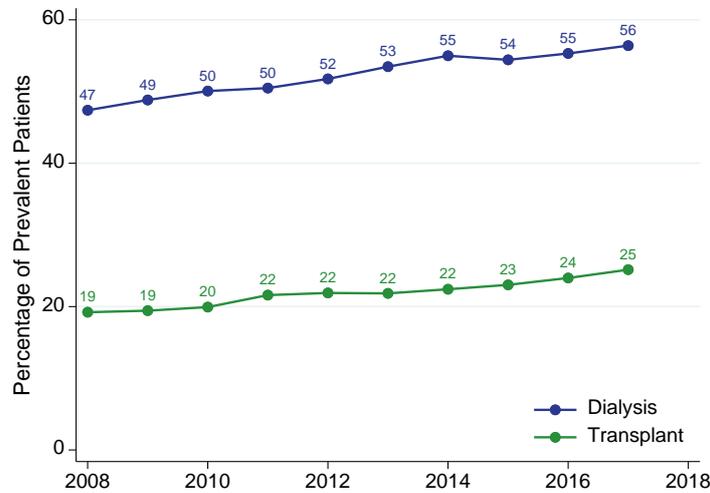
Figure 9.13 - Prevalence of Renal Replacement Therapy - New Zealand 2013-2017



Diabetes

The percentage of prevalent dialysis patients with diabetes as a comorbidity has increased by 9 percentage points over the previous decade (figure 9.14).

Figure 9.14 - Diabetes as a Comorbidity in Prevalent Patients - New Zealand, 2008-2017



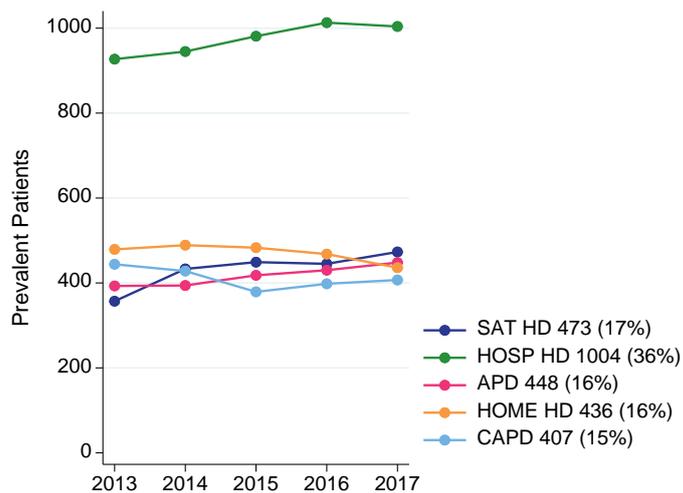
Dialysis

In 2017, 47% of the 2750 New Zealand dialysis patients were treated with home-based dialysis (peritoneal dialysis or home haemodialysis), as compared with 26% in Australia.

Home-based dialysis therapies consisted of 16% of patients treated with automated peritoneal dialysis, 15% treated with continuous ambulatory peritoneal dialysis, and 16% treated with home haemodialysis.

Figure 9.15 shows trends in the method and location of dialysis in New Zealand over 2013-2017.

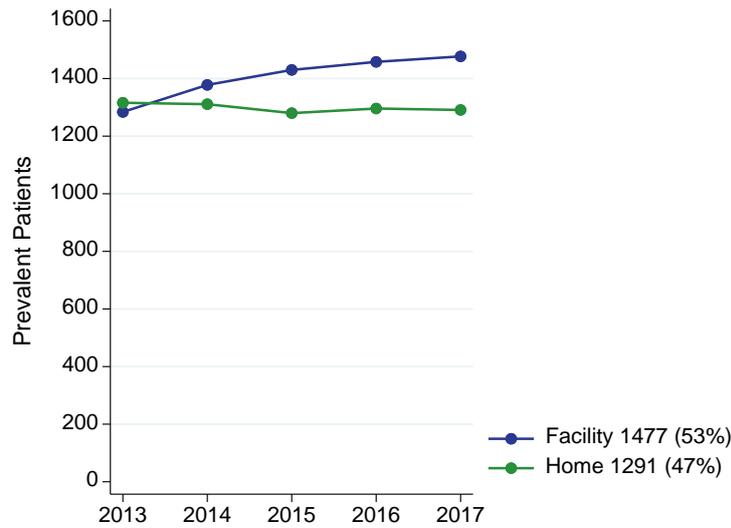
Figure 9.15 - Method and Location of Dialysis - New Zealand, 2013-2017



Overall, 53% of patients on dialysis were treated with haemodialysis in a satellite unit (17%) or in a hospital unit (36%).

Figure 9.16 shows trends in home and facility-based dialysis in New Zealand over 2013-2017.

Figure 9.16 - Home and Facility Based Dialysis - New Zealand, 2013-2017



Transplantation

The National Renal Transplant Service (NRTS) was established in New Zealand in early 2014 with funding from the New Zealand Government. The purpose of the NRTS is to increase kidney transplantation rates in New Zealand with an initial focus on living donor kidney transplantation.

In 2017, 187 patients (39 pmp) were treated with a kidney transplant – the highest number in any calendar year in New Zealand (figure 9.17). There is a clear pattern of year on year growth in deceased, but not living, donor kidney transplantation. The New Zealand transplant rate (39 pmp) is increasing but remains lower than for Australia (45 pmp).

Figure 9.17 - New Kidney Transplants in New Zealand 2013-2017

