

# Kidney Transplant Activity New Zealand

**2018 Calendar Year**

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## Data Collection

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Data is provided directly to the National Renal Transplantation Service (NRTS) from Clinical Directors at the three Transplanting District Health Boards (DHBs), and from individual units via the Australian and New Zealand Dialysis and Transplantation Registry (ANZDATA).

## Kidney Transplants in 2018

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There were 182 recipients of kidney transplants in New Zealand in 2018.

This included 84 living donor and 98 deceased donor kidney transplants. One deceased donor recipient received a dual transplants (two kidneys). There were six living donor kidney transplants as part of kidney exchanges (three exchanges each comprising two transplants).

This is the second largest total number of kidney transplant recipients in New Zealand in a calendar year (the largest was 187 in 2017).

There were more live donor transplants in NZ than any prior year, surpassing 82 in 2016. More than 50 live donor transplants were performed in a calendar year in Auckland for the first time.

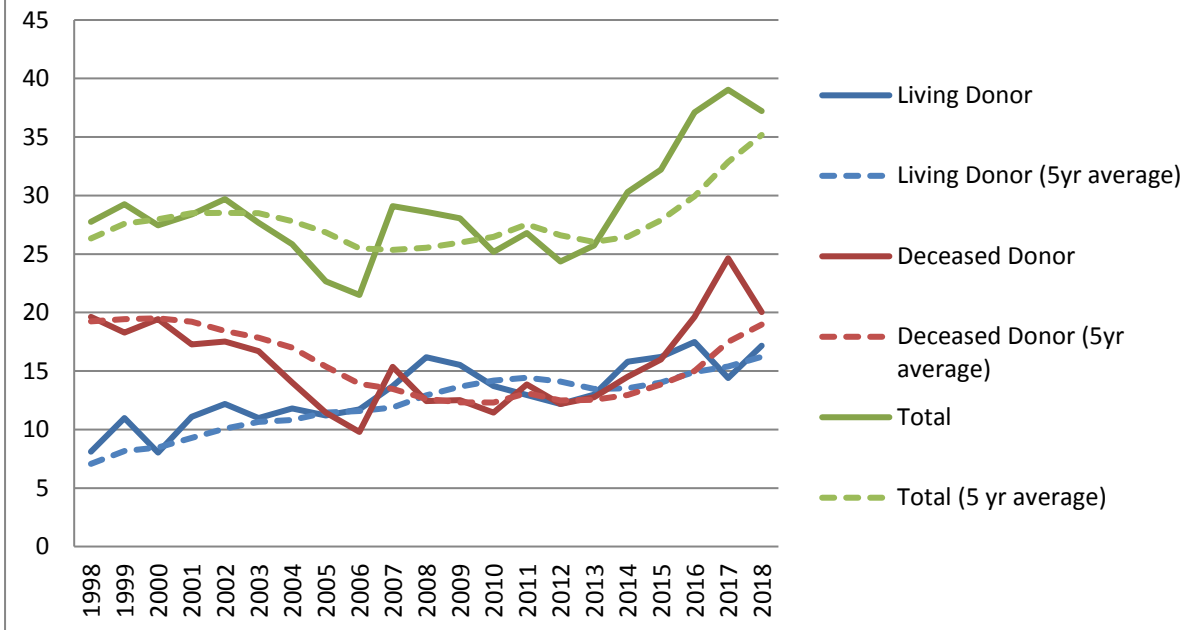
At the estimated population of 4.89 million (StatsNZ at 30 June 2018), the transplant rate was 37.2 per million population (pmp). This is the second highest total transplant rate pmp (the highest was 39.0 in 2017).

The three DHBs that provide kidney transplant procedures are in Auckland, Wellington and Christchurch. Services are arranged geographically around the transplant centres, with client DHBs referring most patients to their nearest transplant centre (see appendix). Numbers of transplants performed in each centre are provided in table 1.

**Table 1: Transplant Characteristics by Transplant Centre**

	<b>Auckland</b>	<b>Wellington</b>	<b>Christchurch</b>	<b>Overall</b>	<b>Pmp</b>
Kidney Transplants	115	32	35	182	37.2
Deceased donor, n (%)	64 (56)	16 (50)	18 (51)	98 (54)	20.0
Living donor, n (%)	51 (44)	16 (50)	17 (49)	84 (46)	17.2

## New Zealand Kidney Transplants per million population by donor type



There has been an overall increase in the total kidney transplant rate per million population since 2013, as represented by the five year moving average, with year by year variability. With the exception of live donor kidney transplantation 2017, each year in the last 5 have seen the rate of live and deceased donor transplantation increase relative to the 5 year moving average.

## Annual Target Progress

The target for the National Renal Transplant Service is to “increase the volume of live donor transplantation by 10 per annum from a base of approximately 110 live and deceased donor transplants per annum to 160 per annum in 2018/19”. The Ministry and the National Renal Transplant Service plan to release future indicative volumes to DHBs in the first half of 2019.

**Table 2: Target and Observed Kidney Transplantation in NZ, by Donor Source and Year**

Year	Target		Observed	
	Live Donor	Total	Live Donor	Total
2004			48	105
2005			46	93
2006			49	90
2007			58	123
2008			69	122
2009			67	121
2010			60	110
2011			57	118
2012			54	108
2013			59	116
2014	70	120	72	138
2015	80	130	74	147
2016	90	140	82	172
2017	100	150	69	187
2018	110	160	84	182

Notes:

- 1) NRTS was established in September 2014. Data from 10 years prior presented for context.
- 2) Total transplants = numbers of recipients of live donor + deceased donor kidney transplants, including recipients of kidneys with or without other organs at the same operation.

## Transplants per 100 Dialysis Patients, by dialysis unit and DHB of domicile

Overall, there were 6.6 kidney transplants per 100 dialysis patients in New Zealand in 2018. This had been steadily increasing in the last five calendar years (table 3). Dialysis numbers have also been slowly increasing.

**Table 3: NZ Numbers of transplants per 100 Dialysis Patients, 2012-2018**

Year	Prevalent Dialysis Pts (31 Dec year prior)	Transplants per 100 dialysis patients
2012	2381	4.4
2013	2467	4.6
2014	2584	5.3
2015	2678	5.5
2016	2674	6.4
2017	2750	6.8
<b>2018</b>	<b>2768</b>	<b>6.6</b>

Compared to the average rate over the period 2013-2017, there was an increase in the rate of transplants per 100 dialysis patients at 7 of 11 DHBs with comprehensive dialysis services (including their client DHBs, Table 4).

It should be noted that no attempt is made to adjust for case-mix at different DHBs, so comparisons between DHBs may be confounded. Also, due to small numbers at individual DHBs, random variability may be responsible for year to year changes in transplantation rate.

**Table 4: Transplants by DHB of Domicile and Donor Type, 2017 compared to 2012-2016**

	Deceased Donor	Living Donor	Total	Dialysis Prevalent Numbers	Transplants per 100 Dialysis Patients	
					2018	Annual Mean 2013-2017
Starship	1	5	6	15	40	64.0
<b>Auckland Region DHBs</b>	<b>61</b>	<b>48</b>	<b>109</b>	<b>2016</b>	5.4	4.6
Northland	3	7	10	157	6.4	4.7
Waitemata	12	6	18	288	6.3	6.3
Auckland	11	9	20	340	5.9	4.9
Counties Manukau	15	7	22	616	3.6	4.1
Waikato (includes BOP, Lakes, Tairāwhiti)	18	12	30	541	5.5	3.5
Taranaki	1	2	3	59	5.1	5.3
<b>Wellington Region DHBs</b>	<b>18</b>	<b>18</b>	<b>36</b>	<b>503</b>	7.2	7.4
Hawke's Bay	2	3	5	117	4.3	6.3
MidCentral (includes Whanganui)	4	5	9	126	7.9	5.2
Capital & Coast (includes Wairarapa, Hutt, Nelson/Marlborough)	12	9	21	260	8.1	9.0
<b>Christchurch Region DHBs</b>	<b>19</b>	<b>18</b>	<b>37</b>	<b>249</b>	14.9	9.9
Canterbury (includes West Coast, South Canterbury)	13	13	26	158	16.5	11.4
Southern	6	5	11	91	12.1	7.6
<b>Total</b>	<b>98</b>	<b>84</b>	<b>182</b>	<b>2768</b>	6.6	5.7

**Notes on table 4:**

1. DHB of domicile is the recipients, at discharge from hospital. Living donors may come from different DHBs to their recipients.
2. Transplants per 100 prevalent dialysis patients at 31 December 2017, per ANZDATA.
3. Paediatric patients <=16 years, managed via Starship and transplanted in Auckland, are reported separately and in Auckland Renal Transplant Group's figures.

## **Multi-organ Transplantation (all performed in Auckland)**

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In 2018, there were six simultaneous pancreas-kidney transplants performed (DHB of Domicile: 4 x Waikato, 1 x Auckland, 1 x Canterbury). There were two recipients of simultaneous liver-kidney transplants (both Hawkes Bay). These are included in table 2.

## **ABO Incompatible Kidney Transplants (ABOi)**

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ABOi are performed at Auckland and Christchurch, using a similar protocol, developed in Auckland. All ABOi are living donor transplants. ABOi is an important programme that enables additional directed donations where there is no option for an ABO compatible donor, including kidney exchange.

There were 11 ABOi in 2018 (nine in Auckland, two in Christchurch). Recipients each came from Auckland (2), Canterbury (2), Capital & Coast (2), and Waikato (1) DHBs.

## **Kidney Exchange**

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Where a willing, acceptable kidney donor is incompatible with their recipient, the pair are encouraged to enter the NZ Kidney Exchange. This facilitates additional live donor transplants by providing exchanges between compatible pairs within the exchange. Exchange transplants may take place within or between transplant centres.

In 2018, there were three exchange involving two kidneys each, undertaken at Auckland and Wellington hospitals, involving recipients from Auckland (3), Capital & Coast, Northland and Waitemata DHBs (1 each).

## Appendix: Transplantation Service Arrangement in New Zealand

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Within New Zealand there are three types of district health boards (DHBs), with respect to provision of transplantation services:

- 1) Transplanting DHBs – these DHBs provide kidney transplantation services for their local population and several other DHBs. These DHBs also have comprehensive dialysis services. There are three of these.
- 2) Referring DHBs with “comprehensive” dialysis services. These DHBs provide their own dialysis services without any involvement from other DHBs. There are eight of these.
- 3) Referring DHBs without comprehensive dialysis services. These DHBs are dependent on referring or transplanting DHBs for at least part of their dialysis service. There are nine of these.

Please note that “comprehensive” is an arbitrary distinction. For example, Nelson/Marlborough provides many dialysis services, with support from Wellington for some elements only, but is included in Capital and Coast DHB’s figures.

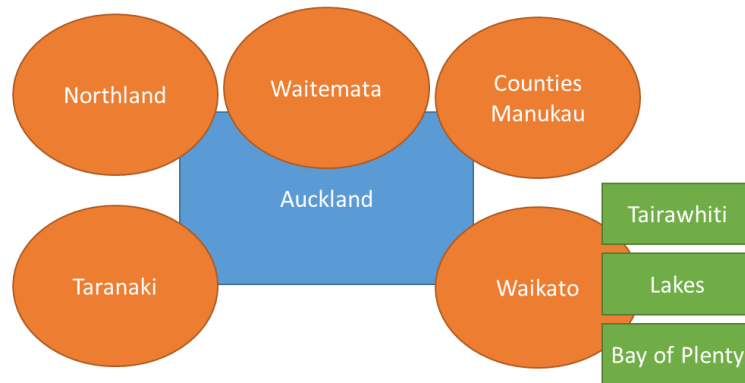
Three district health boards (Auckland, Capital and Coast and Canterbury) provide kidney transplantation procedures (living and deceased donor transplants) regionally (labelled “Auckland”, “Wellington” and “Christchurch”). Assessment of recipients and potential living donors is complex and is, at least partially, provided by referring DHBs in many cases. Referring DHBs send patients to a single transplant centre for routine transplants. Auckland DHB provides multi-organ transplants (kidney plus another organ) and paediatric transplantation for the entire country. ABO incompatible transplantation is provided in Auckland and Christchurch only.

The arrangements of DHBs into three regional transplantation services is shown in Figure 1. Some patients are, therefore, dependent on services provided via three DHBs for access to transplantation.

Transplanting DHBs provide the immediate after care following transplantation, with recipients and donors returning to their DHB of domicile for long term care.

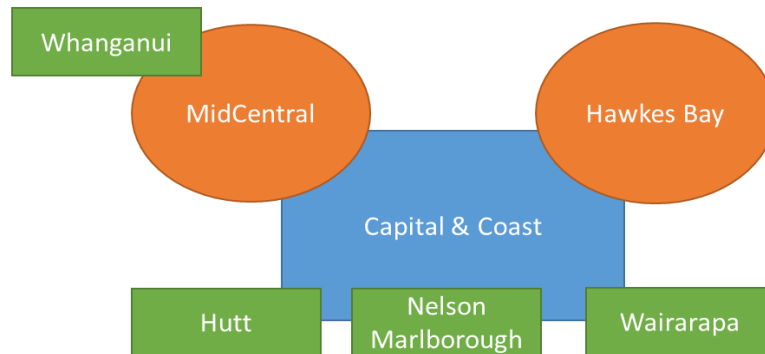
**Figure 1: Arrangement of DHBs for Provision of Kidney Transplantation Services**

**Auckland Renal Transplant Group**

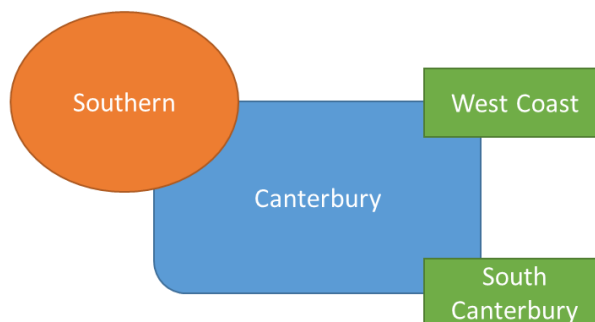


Auckland provide national kidney transplantation services for all other DHBs: Kidney-Pancreas, ABO incompatible (except Canterbury) and paediatric transplantation

**Wellington Renal Transplant Service**



**South Island Kidney Transplant Committee**



**Legend:**

- Transplanting DHBS
- DHBs with comprehensive dialysis services
- DHBs without comprehensive dialysis services