



## **CHAPTER 1**

# **STOCK AND FLOW**

**Blair Grace**

**Kylie Hurst**

**Stephen McDonald**

**Philip Clayton**

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The number of new patients in Australia increased slightly to 2534 in 2012. While there is variation in this rate from year to year, the rate remains stable from 2007. Reflecting both the changes in numbers of new patients and higher number of transplants, the number of prevalent dialysis patients (people receiving dialysis at the end of 2012) has slowly increased.

In New Zealand there was greater variability reflecting a smaller population base.

Rates of new and prevalent patients are shown in Figures 1.1 to 1.2 respectively. Further data about stock and flow are shown in Figures 1.6 to 1.14.

The overall number of new transplants (845) increased by 2.5% in 2012 similar to the number of new transplants in 2010. Recent years have seen substantial changes in the mix of living verses deceased donor transplants. Further information is shown in the transplant chapter. In 2012, there were 238 live donor transplants reported, a 6% decrease after the 14% decrease in 2011 (255 transplants).

In New Zealand the number of new transplants remained similar in 2012 (108 transplants), and numbers of live donor transplants (54) have decreased (by 3) from 2011.

**Figure 1.1**

**Patient Flow Summary 2008 - 2012**  
(Number Per Million Population at 31st December)  
\* Country of Transplant

	2008	2009	2010	2011	2012
<b>Australia</b>					
Total New Patients	2551 (119)	2431 (112)	2330 (106)	2496 (112)	2534 (112)
Total Transplants *	813 (38)	773 (35)	846 (38)	825 (37)	845 (37)
Living Donor Transplants	354	327	296	255	238
Subsequent Transplants	105	99	102	81	98
Total Deaths	1677	1692	1598	1726	1606
Dialysis Patients	1493	1538	1414	1502	1440
Transplant Patients	184	154	184	224	166
<b>New Zealand</b>					
Total New Patients	497 (116)	584 (135)	515 (118)	485 (110)	513 (116)
Total Transplants *	122 (29)	121 (28)	110 (25)	118 (27)	108 (24)
Living Donor Transplants	69	67	60	57	54
Subsequent Transplants	11	12	6	8	9
Total Deaths	388	365	354	413	384
Dialysis Patients	360	331	319	369	355
Transplant Patients	28	34	35	44	29

Notes: Figures for total transplants are by country of transplant. Figures for transplant deaths are by country of residence at time of death.

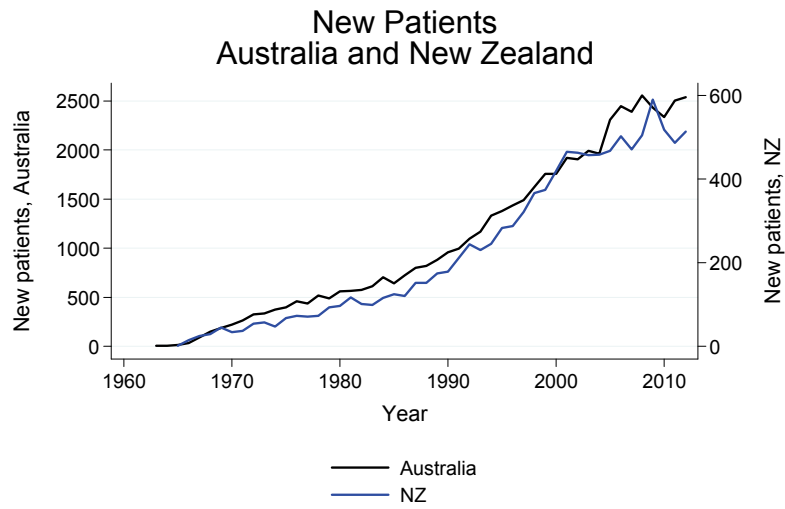
**Figure 1.2**

**Prevalent Patients 2008 - 2012**  
(Number Per Million Population at 31st December)

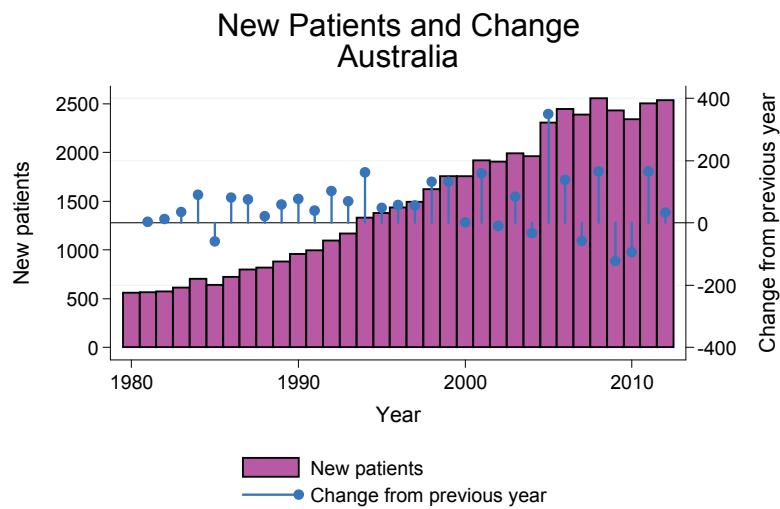
	2008	2009	2010	2011	2012
<b>Australia Total</b>					
No. Transplants • #	7654 (358)	8047 (370)	8506 (386)	8878 (398)	9320 (413)
No. Dialysis Patients	10170 (476)	10465 (481)	10704 (485)	11035 (494)	11446 (507)
Proportion Home *	31%	30%	29%	28%	29%
Proportion Satellite HD	46%	47%	50%	51%	49%
Proportion CAPD/APD	22%	21%	20%	19%	19%
<b>New Zealand Total</b>					
No. Transplants • #	1350 (316)	1404 (325)	1440 (330)	1483 (337)	1524 (344)
No. Dialysis Patients	2106 (493)	2281 (529)	2388 (547)	2389 (542)	2469 (557)
Proportion Home *	52%	52%	53%	51%	50%
Proportion Satellite HD	19%	18%	17%	15%	16%
Proportion CAPD/APD	36%	35%	35%	33%	31%

• Country of Residence      # Patients lost to follow up are not included  
\* Proportion of all patients dialysing currently receiving home-based treatment (either PD or HD)

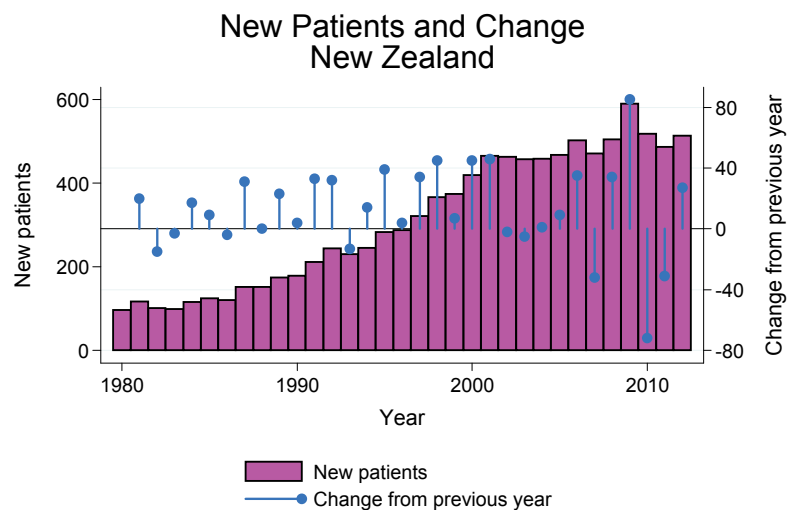
**Figure 1.3**



**Figure 1.4**

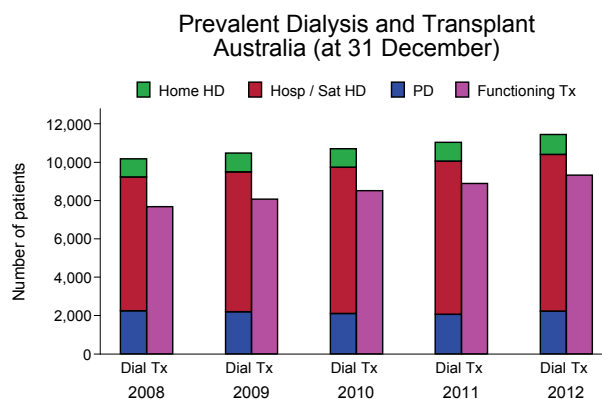


**Figure 1.5**

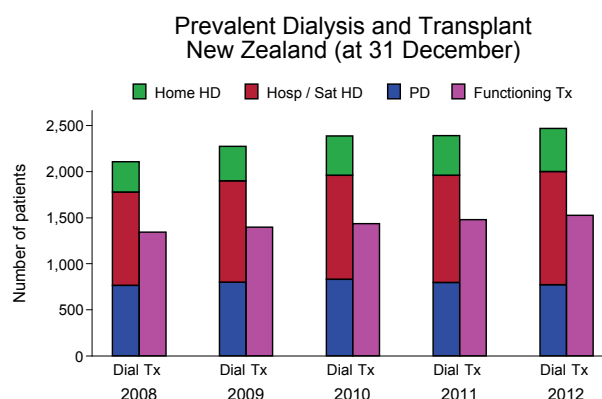




**Figure 1.6**



**Figure 1.7**



The incidence rate among Australian Aboriginal, Māori and Pacific People is substantially higher than among non-indigenous people. Although interpretation is complicated by fluctuations from year to year, the incidence rate may have stabilised over the past 5-10 years after a steady rise since the 1980s. Compared with non-indigenous patients, lower rates of transplantation in indigenous patients contributes to higher rates of prevalent dialysis patients (Figure 1.8).

**Figure 1.8**

**Prevalent Transplant/Dialysis Patients by Indigenous Racial Origin,  
2008 - 2012  
(Number Per Million Population Per Year)**

Race		2008	2009	2010	2011	2012
<b>Aboriginal and Torres Strait Islanders #</b>	New Patients	251 (466)	196 (356)	206 (367)	256 (446)	254 (433)
	Dialysis	1163 (2160)	1184 (2153)	1214 (2161)	1307 (2278)	1425 (2431)
	Functioning Transplants *	159 (295)	160 (291)	177 (315)	190 (331)	193 (329)
	Transplant Operations	31 (58)	24 (44)	28 (50)	28 (49)	20 (34)
	Deaths	164 (305)	174 (316)	162 (288)	149 (260)	129 (220)
<b>Māori ^</b>	New Patients	157 (244)	177 (271)	155 (233)	129 (192)	167 (244)
	Dialysis	689 (1072)	733 (1123)	761 (1146)	746 (1108)	773 (1130)
	Functioning Transplants *	112 (174)	120 (184)	130 (196)	142 (211)	149 (218)
	Transplant Operations	12 (19)	19 (29)	20 (30)	20 (30)	15 (22)
	Deaths	152 (236)	126 (193)	114 (172)	131 (194)	128 (187)
<b>Pacific People ^</b>	New Patients	87 (274)	103 (315)	109 (325)	95 (275)	92 (261)
	Dialysis	434 (1365)	490 (1500)	542 (1615)	568 (1646)	600 (1699)
	Functioning Transplants *	83 (261)	85 (260)	86 (256)	88 (255)	89 (252)
	Transplant Operations	10 (31)	6 (18)	9 (27)	9 (26)	7 (20)
	Deaths	55 (173)	48 (147)	50 (149)	61 (177)	62 (176)

\* By Transplanting Country # Aboriginal and Torres Strait Islanders Combined  
^ Māori and Pacific People data collected from patients living in New Zealand only

State by State rates are shown in Figure 1.9.

Figures 1.10 to 1.14 deal with the number of prevalent dialysis and transplant patients, showing trends over the past 25 years (Figure 1.10) and state-by-state comparisons.

<b>Figure 1.9</b>							
<b>National and State Stock and Flow 1-Jan-2012 to 31-Dec-2012</b>							
<b>(31-Dec-2011 Figures)</b>							
State	New Patients	Transplant Operations *	Deaths		Dialysis Dependent +	Functioning Transplants # * +	Total
			Dialysis	Transplant			
Queensland	467 (451)	164 (154)	272 (315)	31 (47)	2085 (2012)	1810 (1717)	3895 (3729)
New South Wales	786 (780)	224 (217)	457 (482)	47 (80)	3707 (3574)	2640 (2524)	6347 (6098)
Aust. Capital Territory	64 (53)	16 (21)	36 (27)	4 (8)	269 (264)	226 (216)	495 (480)
Victoria	628 (602)	250 (255)	343 (338)	33 (38)	2792 (2704)	2493 (2352)	5285 (5056)
Tasmania	47 (52)	15 (23)	32 (23)	4 (1)	214 (204)	225 (221)	439 (425)
South Australia	202 (183)	78 (66)	114 (110)	26 (27)	733 (712)	952 (920)	1685 (1632)
Northern Territory	98 (83)	14 (11)	47 (49)	2 (4)	502 (464)	77 (68)	579 (532)
Western Australia	242 (292)	86 (87)	139 (158)	19 (19)	1144 (1101)	897 (860)	2041 (1961)
<b>Australia</b>	<b>2534 (2496)</b>	<b>847 (834)</b>	<b>1440 (1502)</b>	<b>166 (224)</b>	<b>11446 (11035)</b>	<b>9320 (8878)</b>	<b>20766 (19913)</b>
<b>New Zealand</b>	<b>513 (485)</b>	<b>109 (121)</b>	<b>355 (369)</b>	<b>29 (44)</b>	<b>2469 (2389)</b>	<b>1524 (1483)</b>	<b>3993 (3872)</b>

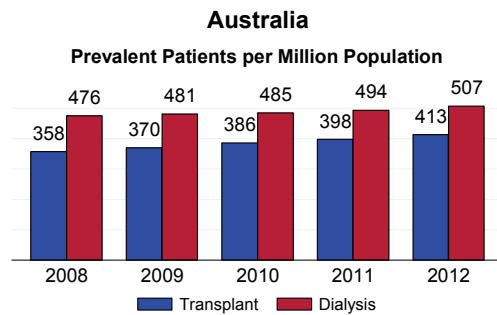
# Patients lost to follow-up are excluded      \* Resident State      + Point Prevalence at 31 December

<b>Figure 1.10</b>						
<b>Prevalent Transplant and Dialysis Patients 1991 to 2012</b>						
<b>Country of Transplant</b>						
<b>(Number Per Million Population at 31 December)</b>						
Year	Australia			New Zealand		
	Transplant #	Dialysis	Total	Transplant #	Dialysis	Total
1991	3518 (204)	3138 (182)	6656 (385)	600 (172)	630 (180)	1230 (352)
1992	3729 (213)	3383 (193)	7112 (407)	671 (190)	674 (191)	1345 (381)
1993	3900 (221)	3703 (210)	7603 (430)	702 (197)	721 (202)	1423 (398)
1994	4095 (229)	4099 (230)	8194 (459)	729 (201)	784 (217)	1513 (418)
1995	4271 (236)	4518 (250)	8789 (486)	782 (213)	850 (231)	1632 (444)
1996	4483 (245)	4882 (267)	9365 (512)	822 (220)	934 (250)	1756 (471)
1997	4740 (256)	5190 (280)	9930 (536)	878 (232)	1017 (269)	1895 (501)
1998	4970 (266)	5536 (296)	10506 (562)	931 (244)	1126 (295)	2057 (539)
1999	5141 (272)	6019 (318)	11160 (590)	978 (255)	1230 (321)	2208 (576)
2000	5350 (279)	6409 (335)	11759 (614)	1020 (264)	1331 (345)	2351 (609)
2001	5572 (287)	6851 (353)	12423 (640)	1060 (273)	1462 (377)	2522 (650)
2002	5858 (298)	7263 (370)	13121 (668)	1113 (282)	1594 (404)	2707 (686)
2003	6089 (306)	7719 (388)	13808 (694)	1164 (289)	1711 (425)	2875 (714)
2004	6395 (318)	8004 (398)	14399 (715)	1218 (298)	1774 (434)	2992 (732)
2005	6656 (326)	8642 (424)	15298 (750)	1243 (301)	1878 (454)	3121 (755)
2006	6987 (338)	9263 (448)	16250 (785)	1256 (300)	1997 (477)	3253 (777)
2007	7251 (345)	9731 (463)	16982 (808)	1300 (307)	2071 (490)	3371 (797)
2008	7654 (358)	10170 (476)	17824 (834)	1350 (316)	2106 (493)	3456 (810)
2009	8047 (370)	10465 (481)	18512 (850)	1404 (325)	2281 (529)	3685 (854)
2010	8506 (386)	10704 (485)	19210 (871)	1440 (330)	2388 (547)	3828 (876)
2011	8878 (398)	11035 (494)	19913 (892)	1483 (337)	2389 (542)	3872 (879)
2012	9320 (413)	11446 (507)	20766 (919)	1524 (344)	2469 (557)	3993 (901)

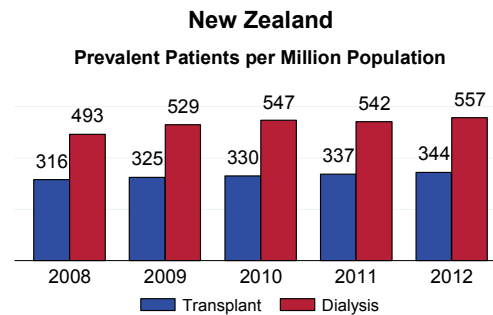
# Patients lost to follow-up are excluded



**Figure 1.11**



**Figure 1.12**



There is substantial variation in prevalence of RRT and transplantation between states rates leading to differences between dialysis and transplantation (Figures 1.11 to 1.14). The proportionally large number per million population of dialysis patients in the Northern Territory reflects the higher proportion of indigenous population.

**Figure 1.13**

**Comparison of Prevalent Transplant and Dialysis Dependent Patients  
2008 - 2012  
(Number Per Million Population at 31 December)**

	2008	2009	2010	2011	2012
<b>Transplants #</b>					
Queensland	1505 (352)	1576 (361)	1649 (373)	1717 (384)	1810 (400)
New South Wales*	2195 (324)	2298 (335)	2435 (351)	2524 (361)	2640 (374)
Aust. Capital Territory*	199 (357)	199 (352)	213 (371)	216 (371)	226 (382)
Victoria	1914 (362)	2058 (381)	2210 (404)	2352 (425)	2493 (445)
Tasmania	181 (363)	194 (385)	206 (405)	221 (432)	225 (437)
South Australia	838 (525)	868 (538)	906 (556)	920 (562)	952 (578)
Northern Territory	74 (335)	67 (295)	69 (300)	68 (294)	77 (331)
Western Australia	748 (343)	787 (350)	818 (356)	860 (366)	897 (372)
<b>Australia</b>	<b>7654 (358)</b>	<b>8047 (370)</b>	<b>8506 (386)</b>	<b>8878 (398)</b>	<b>9320 (413)</b>
<b>New Zealand</b>	<b>1350 (316)</b>	<b>1404 (325)</b>	<b>1440 (330)</b>	<b>1483 (337)</b>	<b>1524 (344)</b>
#By Resident State and Country					
<b>Dialysis</b>					
Queensland	1885 (441)	1957 (448)	2004 (453)	2012 (450)	2085 (461)
New South Wales*	3363 (497)	3434 (501)	3494 (504)	3574 (511)	3707 (525)
Aust. Capital Territory*	235 (422)	239 (423)	245 (427)	264 (453)	269 (455)
Victoria	2486 (470)	2531 (469)	2616 (478)	2704 (489)	2792 (498)
Tasmania	179 (359)	199 (395)	192 (378)	204 (399)	214 (416)
South Australia	630 (394)	683 (423)	677 (415)	712 (435)	733 (445)
Northern Territory	398 (1801)	417 (1838)	441 (1915)	464 (2006)	502 (2159)
Western Australia	994 (456)	1005 (447)	1035 (451)	1101 (468)	1144 (475)
<b>Australia</b>	<b>10170 (476)</b>	<b>10465 (481)</b>	<b>10704 (485)</b>	<b>11035 (494)</b>	<b>11446 (507)</b>
<b>New Zealand</b>	<b>2106 (493)</b>	<b>2281 (529)</b>	<b>2388 (547)</b>	<b>2389 (542)</b>	<b>2469 (557)</b>

\* NSW population excludes residents of the Southern Area Health Service  
 \* ACT population includes residents of the Southern Area Health Service  
 (Medical services in the ACT service this Southern Area Region)  
 Transplanted patients lost to follow up have been excluded

**Figure 1.14**

**Comparison of Transplant and Dialysis Dependent Patients 2008 - 2012**

Note: Y scales vary between states





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