



CHAPTER 1

STOCK AND FLOW

Blair Grace
Kylie Hurst
Stephen McDonald

2012 Annual Report—35th Edition





The number of new patients in Australia increased slightly to 2453 in 2011. While there is variation in this rate from year to year, the rate has clearly stabilised over the period 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 2011) has slowly increased.

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

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

The overall number of new transplants (825) decreased by 3% in 2011. Recent years have seen substantial changes in the mix of living versus deceased donor transplants. Further information is shown in the transplant chapter. In 2011, there were 255 live donor transplants reported, a 14% decrease after the 9% decrease in 2010 (296 transplants).

In New Zealand the number of new transplants remained similar in 2011 (118 transplants), and numbers of live donor transplants (57) have decreased by (3) from 2010.

Figure 1.1					
Patient Flow Summary 2007 - 2011 (Number Per Million Population at 31st December) * Country of Transplant					
	2007	2008	2009	2010	2011
Australia					
Total New Patients	2382 (113)	2549 (119)	2421 (111)	2319 (105)	2453 (110)
Total New Transplants *	615 (29)	813 (38)	773 (35)	846 (38)	825 (37)
Living Donor Transplants	271	354	327	296	255
Subsequent Transplants	88	105	99	102	81
Total Deaths	1629	1674	1690	1593	1680
Dialysis Patients	1459	1493	1538	1414	1476
Transplant Patients	170	181	152	179	204
New Zealand					
Total New Patients	468 (111)	497 (116)	583 (135)	512 (117)	477 (108)
Total New Transplants *	123 (29)	122 (29)	121 (28)	110 (25)	118 (27)
Living Donor Transplants	58	69	67	60	57
Subsequent Transplants	11	11	12	6	8
Total Deaths	343	388	365	354	412
Dialysis Patients	296	360	331	319	368
Transplant Patients	47	28	34	35	44

Figure 1.2					
Prevalent Patients 2007 - 2011 (Number Per Million Population at 31st December)					
	2007	2008	2009	2010	2011
Australia Total					
No. Functioning Transplants • #	7115 (339)	7501 (351)	7891 (362)	8350 (378)	8753 (392)
No. Dialysis Patients	9730 (463)	10166 (475)	10451 (480)	10677 (484)	10998 (493)
Proportion Home *	31%	31%	30%	28%	27%
Proportion Satellite HD	45%	46%	47%	50%	50%
Proportion CAPD/APD	22%	22%	21%	19%	19%
New Zealand Total					
No. Functioning Transplants • #	1283 (303)	1348 (316)	1399 (324)	1437 (329)	1481 (336)
No. Dialysis Patients	2071 (490)	2106 (493)	2280 (528)	2385 (546)	2381 (541)
Proportion Home *	52%	52%	51%	52%	51%
Proportion Satellite HD	18%	19%	18%	17%	15%
Proportion CAPD/APD	36%	36%	35%	35%	33%
• Country of Transplant # 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

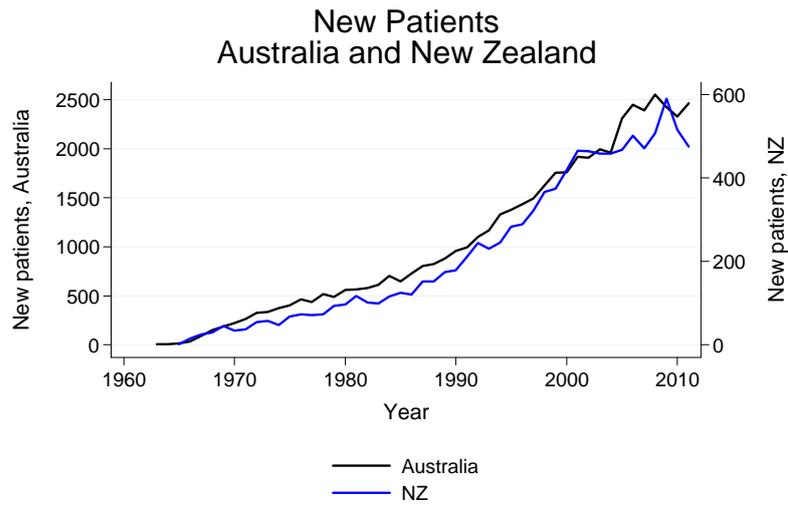


Figure 1.4

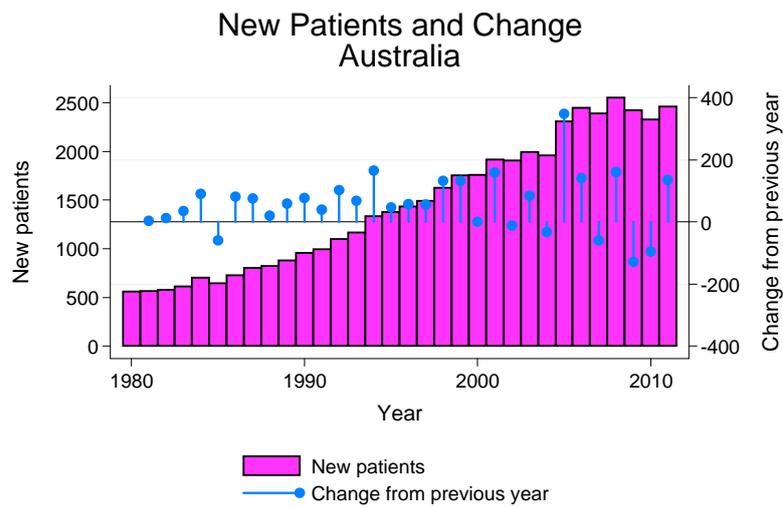


Figure 1.5

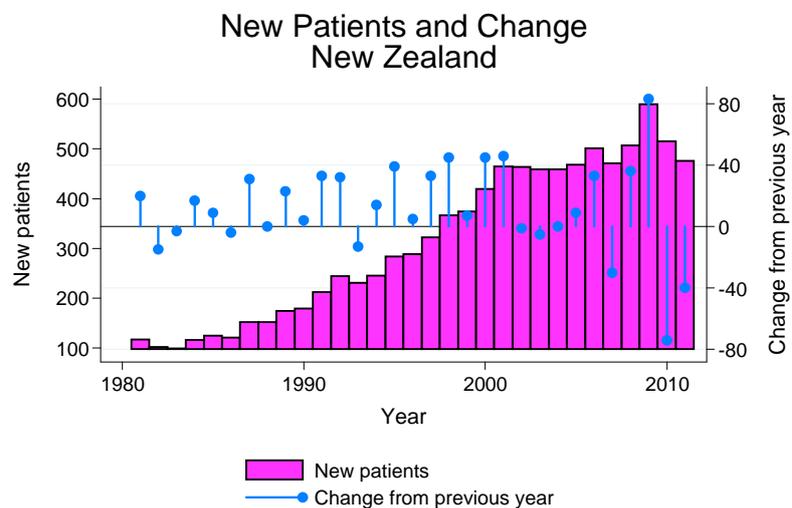




Figure 1.6

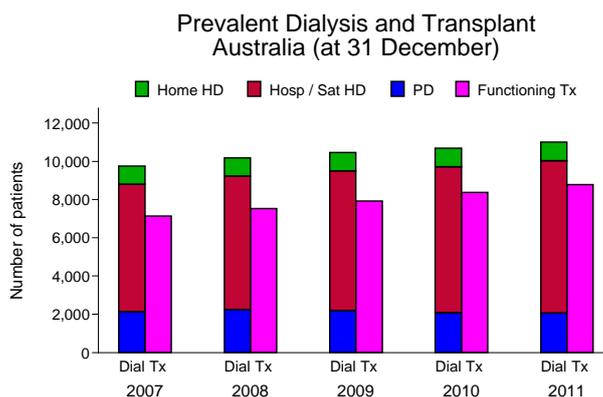
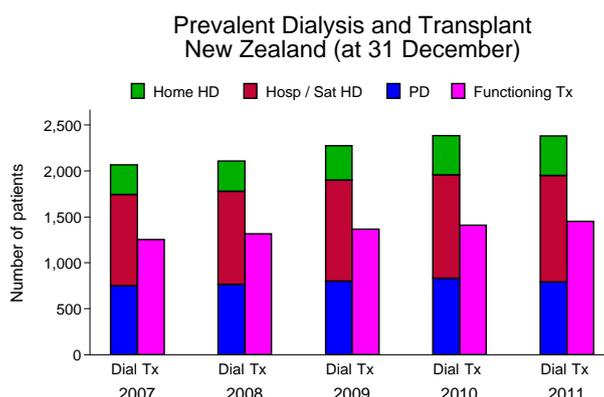


Figure 1.7



The incidence rate among Australian Aboriginal, Maori and Pacific People is substantially higher than among non-indigenous people. Although interpretation is complicated by fluctuations from year to year, among Australian Aboriginal people the incidence rate may have stabilised over the past 5 years (after a long period of steady increase since 1990). In New Zealand, rates among Maori appear to be dropping, while those among Pacific Peoples are increasing compared to non indigenous groups. Lower rates of transplantation leads to higher rates of prevalent dialysis patients (Figure 1.8).

Figure 1.8

Prevalence and Incidence by Indigenous Racial Origin, 2007 - 2011
(Number Per Million Population Per Year)

Race	2007	2008	2009	2010	2011
Australia					
New Patients	239 (453)	250 (464)	196 (356)	204 (363)	250 (436)
Aboriginal and Torres Strait Islanders # Dialysis	1094 (2075)	1162 (2158)	1183 (2152)	1211 (2156)	1302 (2269)
Functioning Transplants *	148 (281)	159 (295)	160 (291)	177 (315)	189 (329)
Transplant Operations	18 (34)	31 (58)	24 (44)	28 (50)	28 (49)
Deaths	134 (254)	164 (305)	174 (316)	162 (288)	145 (253)
New Zealand					
New Patients	146 (231)	157 (244)	176 (270)	155 (233)	126 (187)
Maori Dialysis	688 (1087)	689 (1072)	732 (1121)	760 (1145)	742 (1102)
Functioning Transplants *	113 (179)	117 (182)	126 (193)	138 (208)	151 (224)
Transplant Operations	17 (27)	12 (19)	19 (29)	20 (30)	20 (30)
Deaths	134 (212)	152 (236)	126 (193)	114 (172)	130 (193)
Pacific People New Patients	77 (249)	87 (274)	103 (315)	108 (322)	94 (272)
Dialysis	410 (1324)	434 (1365)	490 (1500)	542 (1615)	567 (1643)
Functioning Transplants *	78 (252)	85 (267)	87 (266)	89 (265)	91 (264)
Transplant Operations	6 (19)	10 (31)	6 (18)	9 (27)	9 (26)
Deaths	34 (110)	55 (173)	48 (147)	50 (149)	61 (177)

* By Transplanting Country # Aboriginal and Torres Strait Islanders Combined

State by State rates are shown in figures (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.

Figure 1.9

National and State Stock and Flow 1-Jan-2011 to 31-Dec-2011
(31-Dec-2010 Figures)

State	New Patients	Transplant Operations *	Deaths		Dialysis Dependent +	Functioning Transplants # * +	Total
			Dialysis	Transplant			
Queensland	443 (448)	146 (141)	314 (296)	46 (39)	2005 (2001)	1699 (1626)	3704 (3627)
New South Wales	761 (721)	218 (239)	475 (454)	74 (57)	3555 (3484)	2466 (2370)	6021 (5854)
Aust. Capital Territory	53 (53)	20 (21)	27 (27)	8 (3)	264 (245)	215 (213)	479 (458)
Victoria	595 (573)	253 (247)	338 (298)	33 (28)	2693 (2612)	2327 (2177)	5020 (4789)
Tasmania	52 (47)	23 (31)	23 (28)	1 (2)	204 (192)	220 (205)	424 (397)
South Australia	182 (179)	68 (82)	108 (115)	20 (24)	712 (676)	929 (904)	1641 (1580)
Northern Territory	83 (65)	12 (5)	45 (43)	3 (0)	468 (441)	69 (69)	537 (510)
Western Australia	284 (233)	88 (80)	146 (153)	63 (61)	1097 (1026)	857 (813)	1954 (1839)
Australia	2453 (2319)	828 (846)	1476 (1414)	204 (179)	10998 (10677)	8782 (8377)	19780 (19054)
New Zealand	477 (512)	118 (110)	368 (319)	44 (35)	2381 (2385)	1453 (1410)	3834 (3795)

Patients lost to follow-up are not included * Resident State + Point Prevalence at 31 December

Figure 1.10

Prevalent Transplant and Dialysis Patients 1985 to 2011
Country of Transplant
(Number Per Million Population at 31 December)

Year	Australia			New Zealand		
	Transplant #	Dialysis	Total	Transplant #	Dialysis	Total
1991	3493 (202)	3138 (182)	6631 (384)	607 (174)	630 (180)	1237 (354)
1992	3699 (211)	3383 (193)	7082 (405)	677 (192)	674 (191)	1351 (383)
1993	3872 (219)	3703 (210)	7575 (429)	705 (197)	721 (202)	1426 (399)
1994	4064 (228)	4099 (230)	8163 (457)	731 (202)	784 (217)	1515 (419)
1995	4236 (234)	4518 (250)	8754 (484)	783 (213)	850 (231)	1633 (445)
1996	4450 (243)	4882 (267)	9332 (510)	824 (221)	934 (250)	1758 (471)
1997	4698 (254)	5190 (280)	9888 (534)	882 (233)	1017 (269)	1899 (502)
1998	4923 (263)	5536 (296)	10459 (559)	936 (245)	1126 (295)	2062 (540)
1999	5093 (269)	6019 (318)	11112 (587)	983 (256)	1230 (321)	2213 (577)
2000	5296 (277)	6409 (335)	11705 (611)	1023 (265)	1331 (345)	2354 (610)
2001	5509 (284)	6851 (353)	12360 (637)	1063 (274)	1462 (377)	2525 (651)
2002	5784 (294)	7263 (370)	13047 (664)	1116 (283)	1594 (404)	2710 (686)
2003	6006 (302)	7719 (388)	13725 (690)	1168 (290)	1711 (425)	2879 (715)
2004	6295 (313)	8004 (398)	14299 (711)	1221 (299)	1774 (434)	2995 (733)
2005	6548 (321)	8641 (424)	15189 (745)	1239 (300)	1878 (454)	3117 (754)
2006	6862 (332)	9262 (448)	16124 (779)	1247 (298)	1997 (477)	3244 (775)
2007	7115 (339)	9730 (463)	16845 (802)	1283 (303)	2071 (490)	3354 (793)
2008	7501 (351)	10166 (475)	17667 (826)	1348 (316)	2106 (493)	3454 (809)
2009	7891 (362)	10451 (480)	18342 (842)	1399 (324)	2280 (528)	3679 (852)
2010	8350 (378)	10677 (484)	19027 (862)	1437 (329)	2385 (546)	3822 (875)
2011	8753 (392)	10998 (493)	19751 (885)	1481 (336)	2381 (541)	3862 (877)

Patients Lost of Follow-up are not included



Figure 1.11

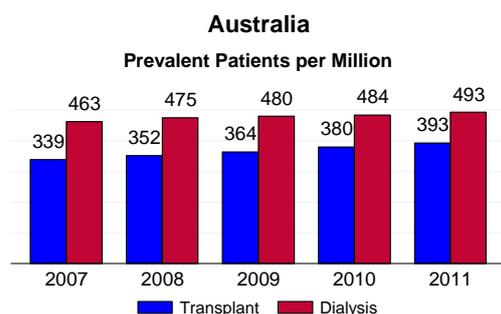
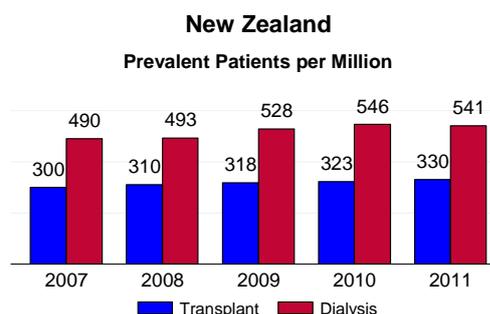


Figure 1.13



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 2007 - 2011 (Number Per Million Population at 31 December)					
	2007	2008	2009	2010	2011
Transplants #					
Queensland	1403 (336)	1483 (347)	1554 (356)	1626 (368)	1699 (380)
New South Wales*	2034 (305)	2131 (315)	2234 (326)	2370 (342)	2466 (352)
Aust. Capital Territory*	194 (353)	198 (355)	199 (352)	213 (371)	215 (369)
Victoria	1766 (339)	1887 (357)	2025 (375)	2177 (398)	2327 (420)
Tasmania	165 (334)	179 (359)	192 (381)	205 (403)	220 (430)
South Australia	785 (496)	831 (520)	863 (535)	904 (555)	929 (567)
Northern Territory	78 (363)	74 (335)	67 (295)	69 (300)	69 (298)
Western Australia	703 (333)	743 (341)	782 (348)	813 (354)	857 (364)
Australia	7128 (339)	7526 (352)	7916 (364)	8377 (380)	8782 (393)
New Zealand	1270 (300)	1323 (310)	1374 (318)	1410 (323)	1453 (330)
#By Resident State and Country					
Dialysis					
Queensland	1807 (433)	1885 (441)	1957 (448)	2001 (452)	2005 (448)
New South Wales*	3194 (478)	3360 (497)	3426 (500)	3484 (503)	3555 (508)
Aust. Capital Territory*	215 (391)	235 (422)	239 (423)	245 (427)	264 (453)
Victoria	2412 (463)	2485 (469)	2528 (469)	2612 (478)	2693 (487)
Tasmania	175 (355)	179 (359)	199 (395)	192 (378)	204 (399)
South Australia	626 (396)	630 (394)	683 (423)	676 (415)	712 (435)
Northern Territory	368 (1711)	398 (1801)	417 (1838)	441 (1915)	468 (2023)
Western Australia	933 (441)	994 (456)	1002 (446)	1026 (447)	1097 (466)
Australia	9730 (463)	10166 (475)	10451 (480)	10677 (484)	10998 (493)
New Zealand	2071 (490)	2106 (493)	2280 (528)	2385 (546)	2381 (541)
* 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 2006 - 2010

Note: Y scales vary between states

