

# CHAPTER 1

## STOCK AND FLOW

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The number of new patients in Australia increased by 5% in 2008 after a 3% decrease in 2007 and a 4% increase in 2006. While there is considerable variation in this rate of increase from year to year, over the longer term the rate of increase is steady.

In New Zealand there was a 6% increase in 2008 after a 7% decrease in 2007. The number of new patients in 2008, (492) was the second highest ever recorded, slightly lower than in 2006 (499 patients).

Rates of prevalent patients and new patients are shown in Figures 1.1 - 1.3.

The overall number of new transplants increased by 32% in Australia in 2008 after a 4% decrease the previous year, and live donors continue to increase overall. In 2008, 354 live donor transplants were reported, an increase of 31% from 2007 and the highest number ever.

Further data about stock and flow is shown in Figures 1.6 - 1.14.

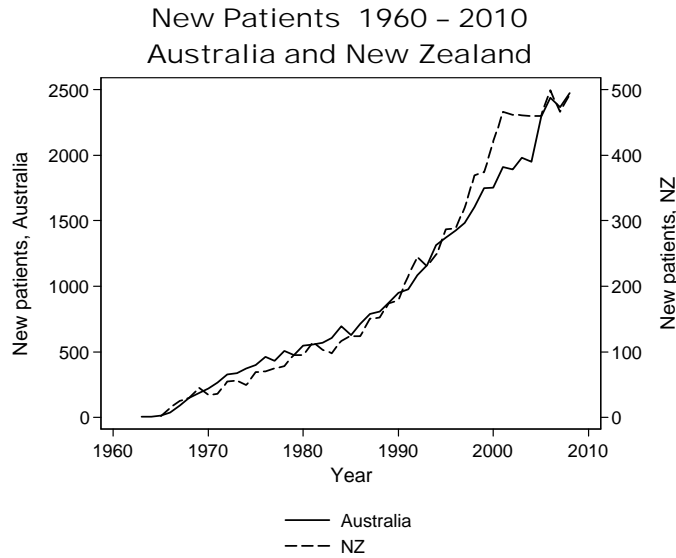
The number of new transplants remained similar in 2008 in New Zealand (122 transplants), with a 19% increase in live donors (69 donors) the highest ever.

Figure 1.1					
Prevalent Patients 2004 - 2008 (Number Per Million Population at 31st December)					
	2004	2005	2006	2007	2008
<b>Australia Total</b>	<b>14,291 (711)</b>	<b>15,175 (746)</b>	<b>16,112 (778)</b>	<b>16,808 (800)</b>	<b>17,578 (822)</b>
No. Functioning Transplants • #	6284 (312)	6538 (322)	6853 (330)	7107 (338)	7516 (352)
No. Dialysis Patients	8007 (398)	8637 (425)	9259 (447)	9701(462)	10,062 (471)
Proportion Home *	32%	31%	31%	31%	31%
Proportion Satellite HD	42%	42%	43%	44%	45%
Proportion CAPD/APD	22%	22%	22%	22%	22%
<b>New Zealand Total</b>	<b>3000 (734)</b>	<b>3117 (754)</b>	<b>3243 (775)</b>	<b>3352 (793)</b>	<b>3450 (808)</b>
No. Functioning Transplants • #	1221 (299)	1239 (300)	1247 (298)	1284 (305)	1351 (316)
No. Dialysis Patients	1779 (435)	1878 (454)	1996 (477)	2068 (489)	2099 (492)
Proportion Home *	57%	54%	54%	52%	52%
Proportion Satellite HD	16%	16%	17%	18%	18%
Proportion CAPD/APD	42%	38%	38%	36%	36%

• 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 1.2					
Patient Flow Summary 2004 - 2008 (Number Per Million Population at 31st December) * Country of Transplant					
	2004	2005	2006	2007	2008
<b>Australia</b>					
Total New Patients	1949 (97)	2294 (113)	2437 (118)	2366 (113)	2476 (116)
Total New Transplants *	650 (32)	623 (31)	641 (31)	615 (29)	813 (38)
Living Donor Transplants	244	246	273	271	354
Subsequent Transplants	67	84	92	88	105
Total Deaths	1353	1363	1475	1627	1649
Dialysis Patients	1208	1202	1326	1459	1482
Transplant Patients	145	161	149	168	167
<b>New Zealand</b>					
Total New Patients	460 (113)	460 (111)	499 (119)	466 (110)	492 (115)
Total New Transplants *	105 (26)	93 (22)	90 (22)	123 (29)	122 (29)
Living Donor Transplants	48	46	49	58	69
Subsequent Transplants	7	6	10	11	11
Total Deaths	333	331	367	343	382
Dialysis Patients	306	298	333	296	356
Transplant Patients	27	33	34	47	26

Figure 1.3



Numbers of new (incident) RRT patients in Australia have been progressively increasing with a recent drop in 2007. Whether there has been a substantial change in the overall pattern will not be apparent for several years.

Rates in New Zealand have clearly stabilised for the past five years.

Figure 1.4

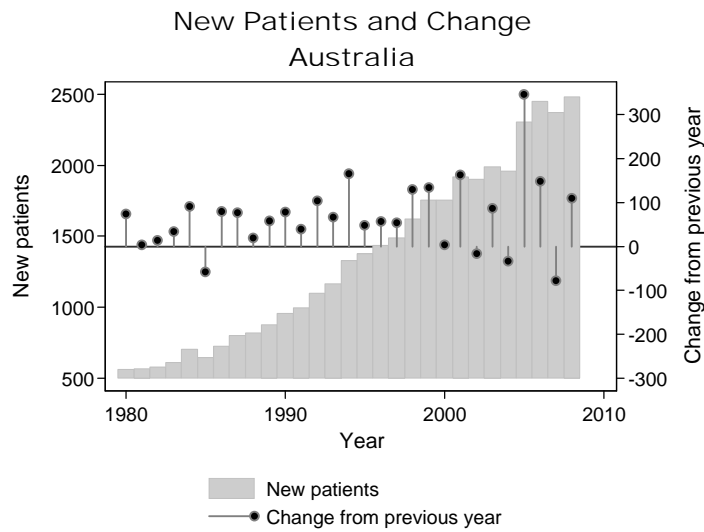


Figure 1.5

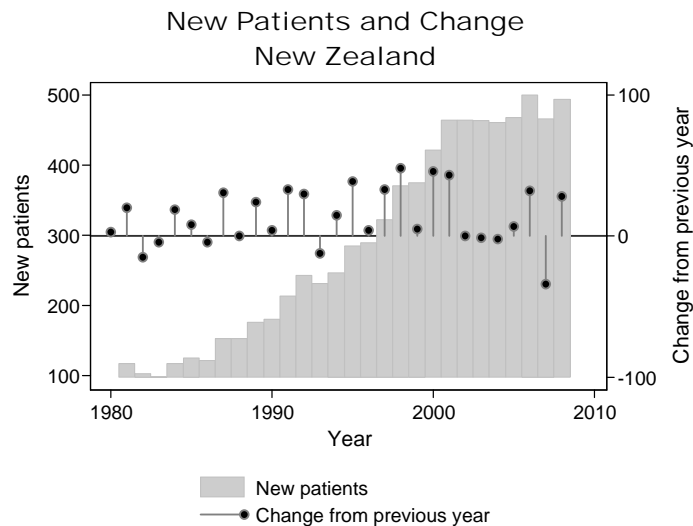




Figure 1.6

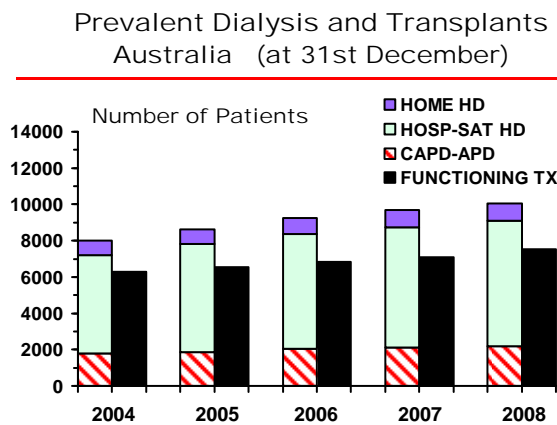
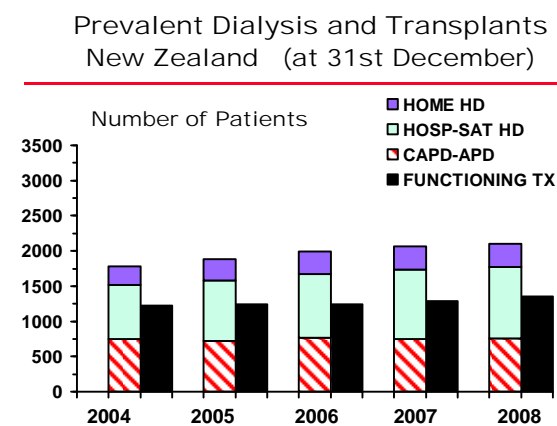


Figure 1.7



The incident rate among Australian Aboriginal, Maori and Pacific People is substantially higher than among non-indigenous people. This, together with 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, 2004 - 2008 (Number Per Million Population Per Year for Patients) Aboriginal and Torres Strait Islanders Combined						
Race		2004	2005	2006	2007	2008
<b>Australia</b>						
	New Patients	195 (403)	217 (440)	220 (439)	234 (458)	242 (466)
Aboriginal and Torres Strait Islanders	Dialysis	838 (1731)	925 (1877)	988 (1970)	1086 (2128)	1147 (2208)
	Functioning Transplants *	124 (260)	133 (270)	147 (290)	147 (288)	159 (306)
	Transplant Operations	26 (50)	22 (40)	27 (50)	18 (40)	31 (60)
	Deaths	121 (250)	119 (240)	141 (280)	134 (260)	163 (314)
<b>New Zealand</b>						
	New Patients	142 (233)	137 (222)	168 (269)	147 (232)	151 (235)
Maori	Dialysis	600 (982)	639 (1035)	682 (1092)	687 (1085)	683 (1062)
	Functioning Transplants *	116 (190)	111 (180)	111 (178)	112 (177)	116 (180)
	Transplant Operations	12 (20)	3 (5)	10 (16)	17 (27)	12 (19)
	Deaths	128 (210)	103 (167)	125 (200)	134 (212)	150 (233)
	New Patients	65 (230)	74 (255)	78 (263)	76 (250)	84 (270)
Pacific People	Dialysis	330 (1166)	351 (1211)	370 (1247)	408 (1343)	430 (1384)
	Functioning Transplants *	70 (247)	72 (248)	77 (259)	79 (260)	86 (277)
	Transplant Operations	12 (42)	4 (14)	7 (24)	6 (20)	10 (32)
	Deaths	37 (131)	44 (152)	54 (182)	34 (112)	54 (174)

\* By Transplanting Country

Figure 1.9

## National and State Stock and Flow 1-Jan-2008 to 31-Dec-2008

( ) 31-Dec-2007 Figures

# Patients lost to follow-up are not included

\* Resident State

State	New Patients	Transplant Operations *	Deaths		Dialysis Dependent	Functioning Transplants # *	Total
			Dialysis	Transplant			
Queensland	508 (463)	140 (114)	337 (281)	43 (28)	1854 (1804)	1489 (1402)	<b>3343 (3206)</b>
New South Wales	792 (755)	223 (168)	464 (458)	46 (69)	3332 (3179)	2135 (2033)	<b>5467 (5212)</b>
Aust. Capital Territory	63 (55)	14 (14)	35 (31)	3 (6)	233 (215)	198 (192)	<b>431 (407)</b>
Victoria	527 (541)	219 (163)	311 (368)	24 (27)	2465 (2406)	1895 (1765)	<b>4360 (4171)</b>
Tasmania	52 (55)	26 (20)	28 (31)	3 (4)	177 (175)	177 (165)	<b>354 (340)</b>
South Australia	184 (165)	106 (74)	102 (90)	21 (15)	625 (624)	829 (783)	<b>1454 (1407)</b>
Northern Territory	89 (76)	4 (5)	56 (37)	3 (2)	398 (368)	74 (78)	<b>472 (446)</b>
Western Australia	261 (256)	81 (56)	149 (163)	24 (17)	978 (930)	744 (702)	<b>1722 (1632)</b>
<b>Australia</b>	<b>2476 (2366)</b>	<b>813 (614)</b>	<b>1482 (1459)</b>	<b>167 (168)</b>	<b>10,062 (9701)</b>	<b>7541 (7120)</b>	<b>17,603 (16,821)</b>
<b>New Zealand</b>	<b>492 (466)</b>	<b>122 (124)</b>	<b>356 (296)</b>	<b>26 (47)</b>	<b>2099 (2068)</b>	<b>1326 (1271)</b>	<b>3425 (3339)</b>

Historical data (Figure 1.10) show a steady increase in the number of prevalent patients in both Australia and New Zealand.

Figure 1.10

## Prevalent Transplant and Dialysis Patients 1985 to 2008

Country of Transplant

# Patients Lost of Follow-up are not included

(Number Per Million Population at 31 December)

Year	Australia			New Zealand		
	Transplant #	Dialysis	Total	Transplant #	Dialysis	Total
1985	2163 (137)	2230 (141)	<b>4393 (278)</b>	377 (115)	402 (122)	<b>779 (237)</b>
1986	2392 (149)	2339 (146)	<b>4731 (295)</b>	426 (129)	402 (122)	<b>828 (250)</b>
1987	2574 (158)	2526 (155)	<b>5100 (314)</b>	452 (135)	437 (131)	<b>889 (266)</b>
1988	2798 (169)	2675 (162)	<b>5473 (331)</b>	484 (145)	482 (144)	<b>966 (289)</b>
1989	3054 (182)	2750 (164)	<b>5804 (345)</b>	531 (158)	527 (156)	<b>1058 (313)</b>
1990	3265 (191)	2956 (173)	<b>6221 (365)</b>	579 (171)	557 (162)	<b>1136 (331)</b>
1991	3493 (202)	3138 (182)	<b>6631 (384)</b>	607 (174)	630 (180)	<b>1237 (354)</b>
1992	3699 (211)	3383 (193)	<b>7082 (405)</b>	677 (192)	674 (191)	<b>1351 (383)</b>
1993	3871 (219)	3703 (210)	<b>7574 (429)</b>	705 (197)	721 (202)	<b>1426 (399)</b>
1994	4063 (228)	4098 (230)	<b>8161 (457)</b>	731 (202)	784 (217)	<b>1515 (418)</b>
1995	4235 (234)	4519 (250)	<b>8754 (484)</b>	783 (213)	851 (232)	<b>1634 (445)</b>
1996	4447 (243)	4883 (267)	<b>9330 (510)</b>	824 (221)	935 (250)	<b>1759 (471)</b>
1997	4695 (254)	5190 (280)	<b>9885 (534)</b>	882 (233)	1018 (269)	<b>1900 (502)</b>
1998	4917 (263)	5536 (296)	<b>10,453 (559)</b>	936 (245)	1127 (295)	<b>2063 (541)</b>
1999	5087 (269)	6021 (318)	<b>11,108 (587)</b>	983 (256)	1231 (321)	<b>2214 (577)</b>
2000	5289 (276)	6409 (335)	<b>11,698 (611)</b>	1023 (265)	1334 (346)	<b>2357 (611)</b>
2001	5503 (283)	6853 (353)	<b>12,356 (636)</b>	1063 (274)	1465 (376)	<b>2528 (651)</b>
2002	5777 (294)	7264 (370)	<b>13,041 (664)</b>	1116 (283)	1596 (404)	<b>2712 (687)</b>
2003	5996 (302)	7722 (388)	<b>13,718 (690)</b>	1168 (290)	1714 (426)	<b>2882 (716)</b>
2004	6284 (312)	8007 (398)	<b>14,291 (711)</b>	1221 (299)	1779 (435)	<b>3000 (734)</b>
2005	6538 (322)	8637 (425)	<b>15,175 (746)</b>	1239 (300)	1878 (454)	<b>3117 (754)</b>
2006	6853 (330)	9259 (447)	<b>16,112 (778)</b>	1247 (298)	1996 (477)	<b>3243 (775)</b>
2007	7107 (338)	9701 (462)	<b>16,808 (800)</b>	1284 (304)	2068 (489)	<b>3352 (793)</b>
2008	7516 (352)	10,062 (471)	<b>17,578 (822)</b>	1351 (316)	2099 (492)	<b>3450 (808)</b>



There is substantial variation in incidence rates and especially transplant rates leading to differences in the balance between dialysis and transplantation in various States (Figure 1.11 - 1.14).

Figure 1.11

Comparison of Prevalent Transplant and Dialysis Dependent Patients  
2004 - 2008  
(Number Per Million Population at 31 December)

	2004	2005	2006	2007	2008
<b>Transplants **</b>					
Queensland	1273 (328)	1313 (331)	1354 (331)	1402 (335)	1489 (348)
New South Wales *	1852 (284)	1914 (291)	1991 (301)	2033 (304)	2135 (316)
Aust. Capital Territory *	182 (347)	184 (347)	187 (345)	192 (349)	198 (356)
Victoria	1506 (303)	1588 (316)	1686 (329)	1765 (339)	1895 (358)
Tasmania	140 (290)	143 (295)	154 (314)	165 (334)	177 (355)
South Australia	695 (453)	706 (458)	745 (475)	783 (494)	829 (518)
Northern Territory	73 (365)	71 (350)	73 (347)	78 (363)	74 (336)
Western Australia	583 (294)	638 (317)	681 (331)	702 (333)	744 (344)
<b>Australia</b>	<b>6304 (313)</b>	<b>6557 (323)</b>	<b>6871 (332)</b>	<b>7120 (339)</b>	<b>7541 (353)</b>
<b>New Zealand</b>					
	<b>1201 (294)</b>	<b>1220 (295)</b>	<b>1229 (294)</b>	<b>1271 (301)</b>	<b>1326 (311)</b>
** By Resident State and Country					
<b>Dialysis</b>					
Queensland	1443 (372)	1604 (405)	1705 (417)	1804 (431)	1854 (433)
New South Wales *	2556 (391)	2764 (421)	3024 (458)	3179 (476)	3332 (493)
Aust. Capital Territory *	185 (353)	192 (362)	205 (381)	215 (391)	233 (419)
Victoria	2055 (413)	2187 (435)	2348 (458)	2406 (462)	2465 (465)
Tasmania	147 (305)	156 (321)	163 (333)	175 (355)	177 (355)
South Australia	512 (334)	569 (369)	604 (385)	624 (394)	625 (390)
Northern Territory	279 (1396)	316 (1558)	334 (1585)	368 (1712)	398 (1810)
Western Australia	830 (419)	849 (422)	876 (425)	930 (442)	978 (452)
<b>Australia</b>	<b>8007 (398)</b>	<b>8637 (425)</b>	<b>9259 (447)</b>	<b>9701 (462)</b>	<b>10,062 (471)</b>
<b>New Zealand</b>					
	<b>1779 (435)</b>	<b>1878 (454)</b>	<b>1996 (477)</b>	<b>2068 (489)</b>	<b>2099 (492)</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 1.12

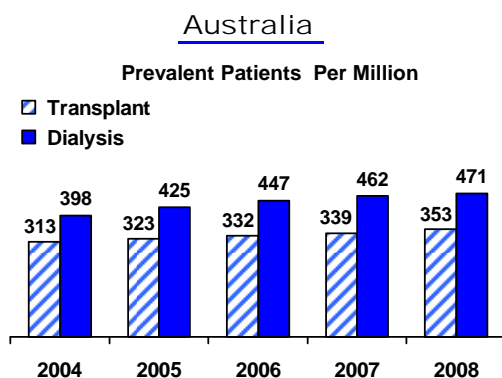


Figure 1.13

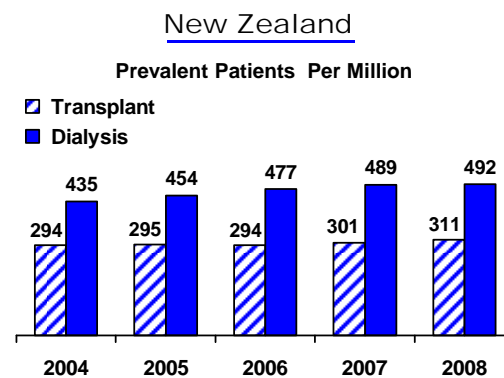


Figure 1.14

Comparison of Transplant and Dialysis Dependent Patients 2004 - 2008

