

## CHAPTER - 1

# **ALL RENAL REPLACEMENT THERAPY IN MALAYSIA**

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### SECTION 1.1: STOCK AND FLOW

The intake of new dialysis patients from 1993 to 2012 showed an exponential increase from 358 in 1993 to 5930 in 2011 and at least 5830 in 2012. The number of prevalent dialysis patients showed a steeper exponential increase from 1396 in 1993 to 28590 in 2012. (Data for 2012 however are preliminary since at the time of writing this report there was still many new patients yet to be notified to registry.) This rise parallels the increase in the wealth of the country as measured by per capita GDP.

The number of new kidney transplant recipients peaked at 1994 and 2004 but since 2004 has shown a decreasing trend due most probably to the increasing proscription against commercial transplantation done overseas. The number of patients with functioning renal transplants which showed a linear increase in the 1990s and early 2000 has also begun to plateau since 2006.

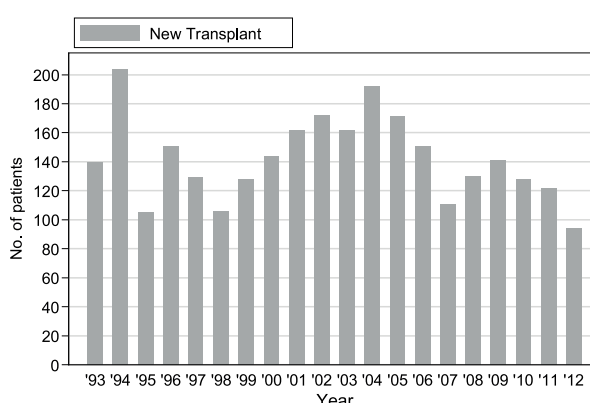
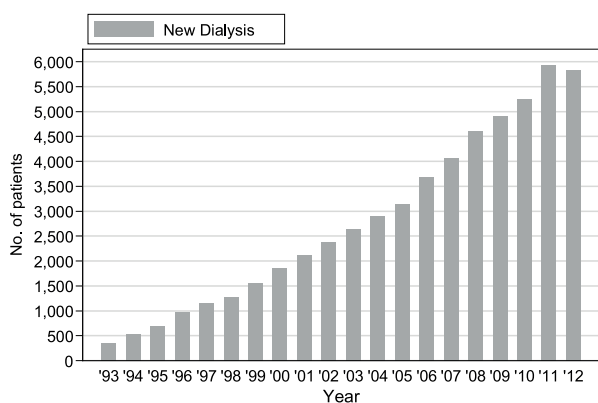
**Table 1.1:** Stock and flow of RRT, Malaysia 1993-2012

Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
New Dialysis patients	358	534	699	971	1154	1280	1562	1853	2114	2375
New Transplants	140	204	105	151	129	106	128	144	162	172
Dialysis deaths	102	147	179	227	320	383	503	610	852	961
Transplant deaths	24	30	17	37	32	28	29	32	40	38
Dialyzing at 31 <sup>st</sup> December	1396	1742	2233	2921	3704	4548	5550	6702	7838	9107
Functioning transplant at 31 <sup>st</sup> December	734	884	943	1033	1095	1124	1186	1263	1344	1443

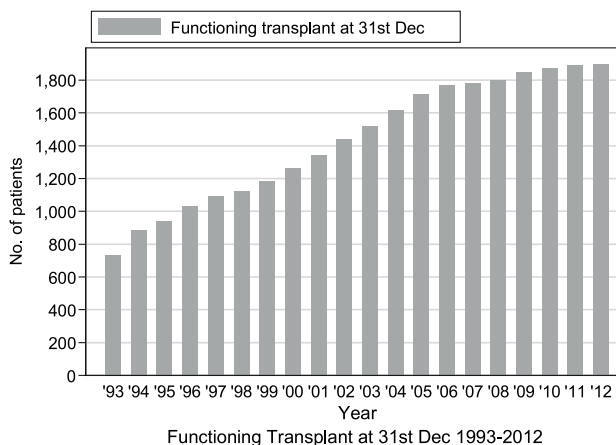
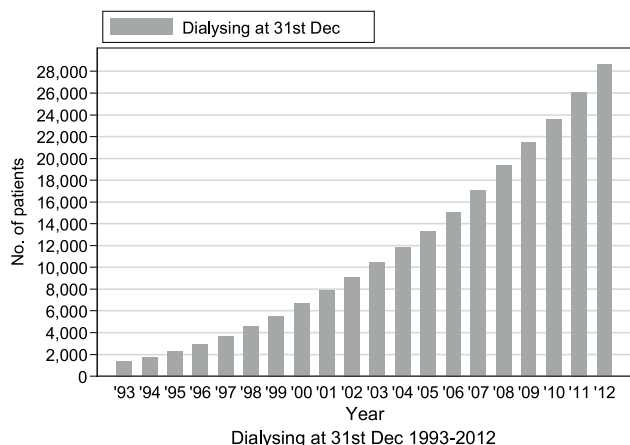
Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
New Dialysis patients	2629	2901	3145	3674	4067	4599	4907	5243	5930	5830
New Transplants	162	192	171	151	111	130	141	128	122	94
Dialysis deaths	1214	1320	1516	1820	1987	2192	2596	3013	3244	3075
Transplant deaths	41	44	48	58	47	59	49	47	54	45
Dialyzing at 31 <sup>st</sup> December	10405	11832	13339	15057	17053	19336	21500	23598	26091	28590
Functioning transplant at 31 <sup>st</sup> December	1519	1618	1714	1768	1784	1803	1846	1875	1892	1894

**Figure 1.1:** Stock and flow of RRT, Malaysia 1993-2012

(a) New dialysis and transplant patients



(b) Patients dialysing and with functioning transplant at 31<sup>st</sup> December 1993-2012



## SECTION 1.2: TREATMENT PROVISION RATE

Dialysis acceptance rates increased more than 10-fold; from 18 per million population (pmp) in 1993 to 208 per million population in 2011. The acceptance rate of 199 pmp for 2012 however is preliminary since at the time of writing this report there was still many new patients yet to be notified to registry. Dialysis prevalence rate increased almost 14-fold over the last 20 years, from 71 per million population in 1993 to at least 975 per million in 2012.

New transplant recipient rate which was at the highest of 10 pmp in 1994 has decreased to 5 per million population or less since 2007. With the very low transplant rate, the prevalence rate of kidney transplantation has remained at 65-66 pmp since 2005.

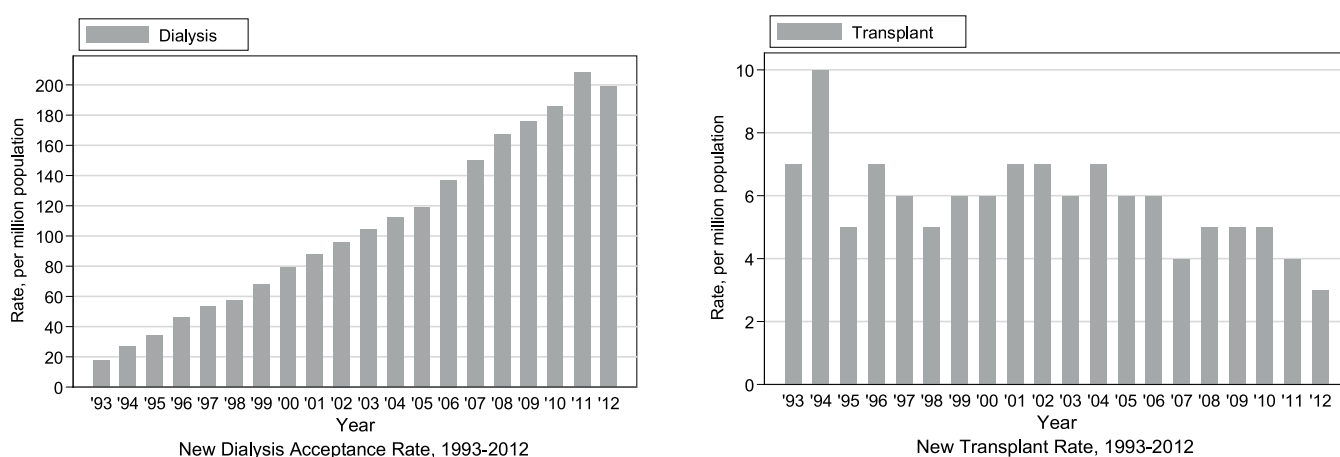
**Table 1.2:** New dialysis acceptance rate and new transplant rate per million population 1993-2012

Acceptance rate	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
New Dialysis	18	27	34	46	53	57	68	79	88	96
New Transplant	7	10	5	7	6	5	6	6	7	7

Acceptance rate	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
New Dialysis	104	112	119	137	150	167	176	186	208	199
New Transplant	6	7	6	6	4	5	5	5	4	3

**Figure 1.2:** New dialysis acceptance and new transplant rate 1993-2012



**Table 1.3:** RRT prevalence rate per million population 1993-2012

Prevalence rate	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Dialysis	71	86	108	138	170	204	242	285	325	368
Transplant	37	44	46	49	50	50	52	54	56	58

Prevalence rate	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Dialysis	411	457	504	561	627	702	771	835	914	975
Transplant	60	62	65	66	66	65	66	66	66	65

**Figure 1.3:** Dialysis and transplant prevalence rate per million population 1993-2012

