

CHAPTER 1

ALL KIDNEY REPLACEMENT THERAPY IN MALAYSIA

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SECTION 1.1: STOCK AND FLOW

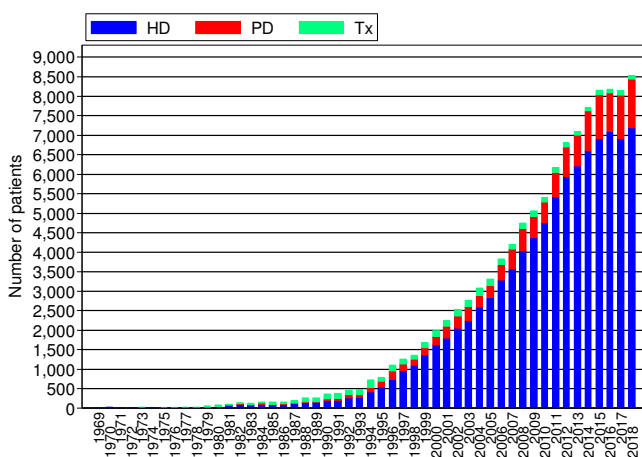
The number of new dialysis patients continues to increase over the last 10 years - from 4,606 in 2008 to 8,431 in 2018 (Data for 2018 however may be preliminary since at the time of writing this report there are still some new patients yet to be notified to registry) with 7,200 new HD and 1,231 new PD patients. However, the number of new transplant patients reported decreased from 133 in 2008 to 90 in 2018 (Table 1.1.1).

The number of prevalent dialysis patients also showed an increase to 44,136 in 2018, (from 19,430 in 2008), with 39,593 prevalent HD patients and 4,543 prevalent PD patients, while the prevalent transplant patients was only 1,801 in 2018 (Table 1.1.2). The total prevalent Kidney Replacement Therapy, KRT patients for 2018 were 45,937 (Table 1.1.2)

Table 1.1.1: Stock and flow of New KRT Incidence, Malaysia 2008-2018

Year	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
New Dialysis Patients	8431	8031	8090	8037	7618	6994	6696	6037	5276	4923	4606
New HD Patients	7200	6896	7086	6901	6621	6211	5937	5422	4739	4375	4037
New PD Patients	1231	1135	1004	1136	997	783	759	615	537	548	569
New Transplant Patients	90	111	87	113	91	99	107	130	128	141	133
New Dialysis Rate, pmp	260	251	262	264	253	235	228	208	185	176	167
New HD Rate, pmp	222	215	230	226	220	209	202	187	166	157	147
New PD Rate, pmp	38	35	33	37	33	26	26	21	19	20	21
New Transplant Rate, pmp	3	3	3	4	3	3	4	4	4	5	5
New HD, %	84.5	84.7	86.7	84.7	85.9	87.6	87.3	87.9	87.7	86.4	85.2
New PD, %	14.4	13.9	12.3	13.9	12.9	11.0	11.2	10.0	9.9	10.8	12.0
New Tx, %	1.1	1.4	1.1	1.4	1.2	1.4	1.6	2.1	2.4	2.8	2.8

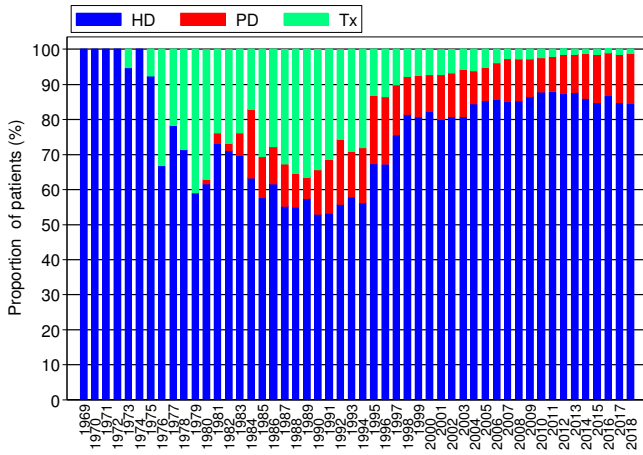
Figure 1.1.1a: Number of new KRT patients by modality (New Dialysis and New Transplant), Malaysia 1969-2018



(For actual numbers in Fig 1.1.1, refer to Appendix T1.1.1)

The proportion of new transplant over all modalities of new KRT had demonstrated substantial decline from the peak of about 30% in the late 70's to early 90's (1976 to 1994) (Appendix T.1.1.1) to the current 3.9% for the last decade (Fig 1.1.1b & Appendix T.1.1.1). The proportion of new home dialysis, which predominantly was PD, was about 15% of all KRT in 2018 (Fig 2.1.5i & Appendix T2.1.5). However, the proportion of prevalent home dialysis had remained at $\leq 10\%$ for the last decade (Fig 2.1.5ii & Appendix T2.1.5)

Figure 1.1.1b: Proportion of new KRT patients by modality (New Dialysis and New Transplant), Malaysia 1969-2018



(For actual numbers in Fig 1.1.1, refer to Appendix T1.1.1)

Table 1.1.2: Stock and flow of ESKD Patients on KRT at 31st Dec, Malaysia 2008-2018

Year	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Dialysis Patients	44136	42355	40627	38028	35106	32321	29400	26442	23790	21641	19430
HD Patients	39593	38061	36638	34236	31798	29451	26827	24260	21793	19750	17677
PD Patients	4543	4294	3989	3792	3308	2870	2573	2182	1997	1891	1753
Transplant Patients	1801	1840	1821	1849	1865	1900	1916	1929	1897	1867	1825
Dialysis Rate, pmp	1363	1322	1316	1247	1166	1088	1002	913	832	776	706
HD Rate, pmp	1223	1188	1187	1123	1056	991	914	838	762	708	642
PD Rate, pmp	140	134	129	124	110	97	88	75	70	68	64
Transplant Rate, pmp	56	57	59	61	62	64	65	67	66	67	66
HD, %	86.2	86.1	86.3	85.9	86.0	86.1	85.7	85.5	84.8	84.0	83.2
PD, %	9.9	9.7	9.4	9.5	8.9	8.4	8.2	7.7	7.8	8.0	8.2
Tx, %	3.9	4.2	4.3	4.6	5.0	5.6	6.1	6.8	7.4	7.9	8.6

Figure 1.1.2a: Prevalence of treated ESKD patients by modality (On KRT at 31st Dec), Malaysia 1969-2018

(For actual numbers for Fig 1.1.2, refer to Appendix T1.1.2)

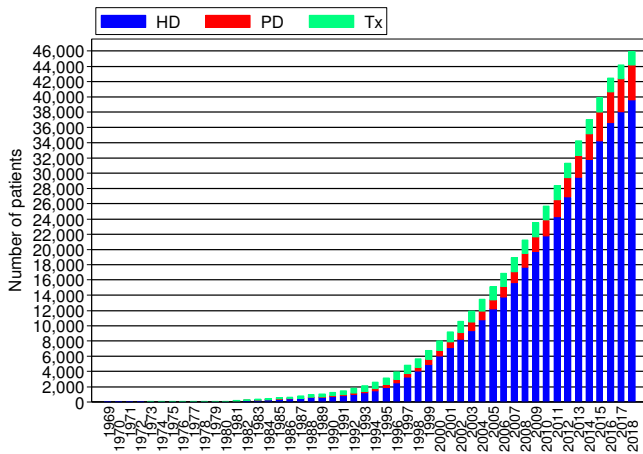
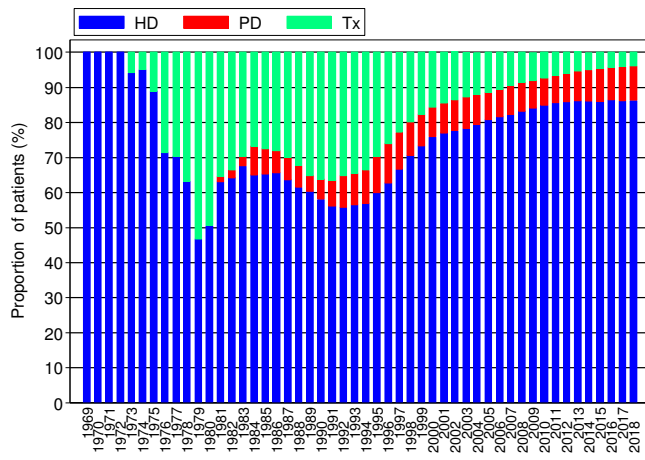


Figure 1.1.2b: Proportion of treated prevalent ESKD patients by modality (On KRT at 31st Dec), Malaysia 1969-2018



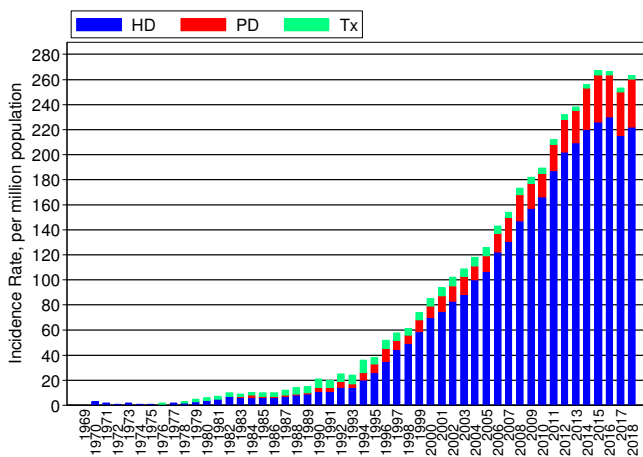
(For actual numbers for Fig 1.1.2, refer to Appendix T1.1.2)

SECTION 1.2: TREATMENT PROVISION RATE

Dialysis acceptance rates showed an increase over the last 10 years, from 167 per million population (pmp) in 2008 to 260 pmp in 2018 (Data for 2018 however is preliminary since at the time of writing this report there was still some new patients yet to be notified to registry), while the new HD acceptance rates was 222 pmp and the new PD acceptance rate was 38 pmp in 2018 (Table 1.1.1). Dialysis prevalence rate increased by almost 2-fold over the last 10 years, from 706 pmp in 2008 to 1363 pmp in 2018 (Table 1.1.2).

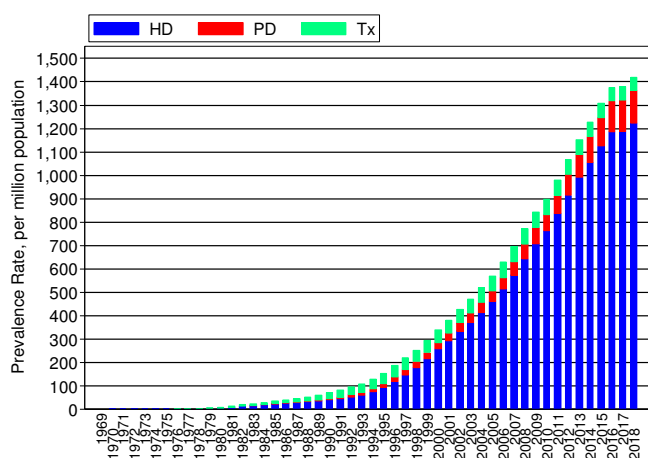
New transplant recipient rate has declined from 5 pmp in 2008 to 3 pmp in 2018 over the last 10 years (Table 1.1.1), while the prevalence rate has declined from 66 pmp in 2008 to 56 pmp in 2018 (Table 1.1.2). This decrease is more remarkable if the rate is compared to those who are on the potential transplant waiting list i.e. prevalent dialysis patients. As shown in table 1.2.3 and figure 1.2.3, the transplant rate per 1000 dialysis patients has decreased from 6.6 to 2.2 per 1000 dialysis patients over the last decade. In short, the average waiting time for a kidney transplant which was already very long is now at least 3 times longer, while the waiting time for 2018 was 10 times longer compared to 2 decades ago (2.2 per 1000 dialysis patients for 2018 vs 23.1 per 1000 dialysis patients 2 decades ago) (Table 1.2.3).

Figure 1.2.1: Incidence rate of newly treated ESKD patients (per million population) by modality (New Dialysis and New Transplant), Malaysia 1969-2018



(For actual numbers in Fig 1.2.1, refer to Appendix T1.1.1)

Figure 1.2.2: Prevalence rate of treated ESKD patients (per million population) by modality (On KRT at 31st Dec), Malaysia 1969-2018

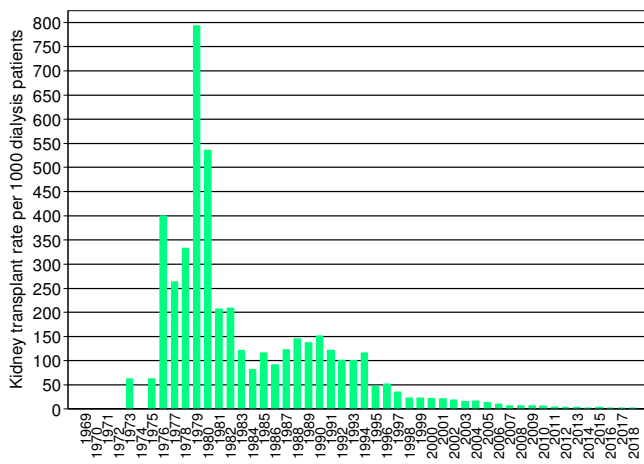


(For actual numbers in Fig 1.2.2, refer to Appendix T1.1.2)

Table 1.2.3: Kidney transplant rate per 1000 dialysis patients, 1969-2018

Year	Number of new transplant recipients	Number of prevalent dialysis patients	Kidney transplant rate per 1000 dialysis patients	Year	Number of new transplant recipients	Number of prevalent dialysis patients	Kidney transplant rate per 1000 dialysis patients
2018	90	44136	2.2	1993	140	1396	100.1
2017	111	42355	2.2	1992	119	1176	101.2
2016	87	40627	2.2	1991	117	965	121.0
2015	113	38028	3.3	1990	125	831	150.7
2014	91	35106	2.2	1989	96	697	137.5
2013	99	32321	3.3	1988	91	628	145.2
2012	107	29400	3.3	1987	66	538	123.2
2011	130	26442	4.4	1986	42	462	91.3
2010	128	23790	5.5	1985	47	403	116.6
2009	141	21641	6.6	1984	27	331	81.4
2008	133	19430	6.6	1983	30	249	121.0
2007	113	17117	6.6	1982	40	191	209.0
2006	154	15101	9.9	1981	25	121	206.8
2005	174	13374	13.2	1980	30	56	535.7
2004	194	11855	16.5	1979	23	29	793.1
2003	160	10425	15.4	1978	8	24	333.3
2002	172	9125	18.7	1977	5	19	262.9
2001	163	7850	20.9	1976	6	15	400.4
2000	145	6711	22.0	1975	1	16	62.7
1999	128	5557	23.1	1974	0	19	0.0
1998	106	4551	23.1	1973	1	16	62.7
1997	129	3707	35.2	1972	0	17	0.0
1996	151	2925	51.7	1971	0	15	0.0
1995	105	2237	47.3	1970	0	18	0.0
1994	203	1744	116.6	1969	0	12	0.0

Figure 1.2.3: Kidney transplant rate per 1000 dialysis patients, Malaysia 1969 – 2018



(For actual numbers in Fig 1.2.3, refer to Appendix T1.2.3)

Figure 1.2.3: Kidney transplant rate per 1000 dialysis patients in In, Malaysia 1969 – 2018

