

DIALYSIS IN MALAYSIA

Dialysis Treatment Provision

Patient Demographics

Method and Location

Primary Renal Disease

Death on Dialysis

2. DIALYSIS IN MALAYSIA

2.1 DIALYSIS TREATMENT PROVISION

Table 2.01: Stock and flow – Dialysis Patients 1995 – 2002

Year	1995	1996	1997	1998	1999	2000	2001	2002
New Dialysis patients	675	936	1129	1225	1525	1787	1949	1734
Died	178	222	310	372	482	573	770	780
Transplanted	36	56	59	60	68	105	133	128
Lost to Follow-up	5	5	6	10	11	13	30	40
Dialysing at 31 st December	2221	2900	3679	4494	5487	6605	7639	8418

Table 2.02: Dialysis Treatment Rate per million population 1995 – 2002

Year	1995	1996	1997	1998	1999	2000	2001	2002
Acceptance rate	33	44	52	55	67	77	82	71
Prevalence rate	107	137	170	203	242	284	321	343

Table 2.03: Dialysis Treatment Rate by State, per million state population, 2002

State	Acceptance rate
Johor	120
Negeri Sembilan	100
Selangor & Federal Territory	97
Trengganu	84
Perak	82
Melaka	77
Pulau Pinang	70
Kedah & Perlis	64
Kelantan	57
Sarawak	51
Pahang	42
Sabah	33

Table 2.04: Dialysis Treatment Rate by Gender, per million male or female population 1999– 2002

Gender	1999	2000	2001	2002
Male	81	90	92	82
Female	60	72	84	71

Figure 2.04: Dialysis Treatment by Gender 1999 - 2002

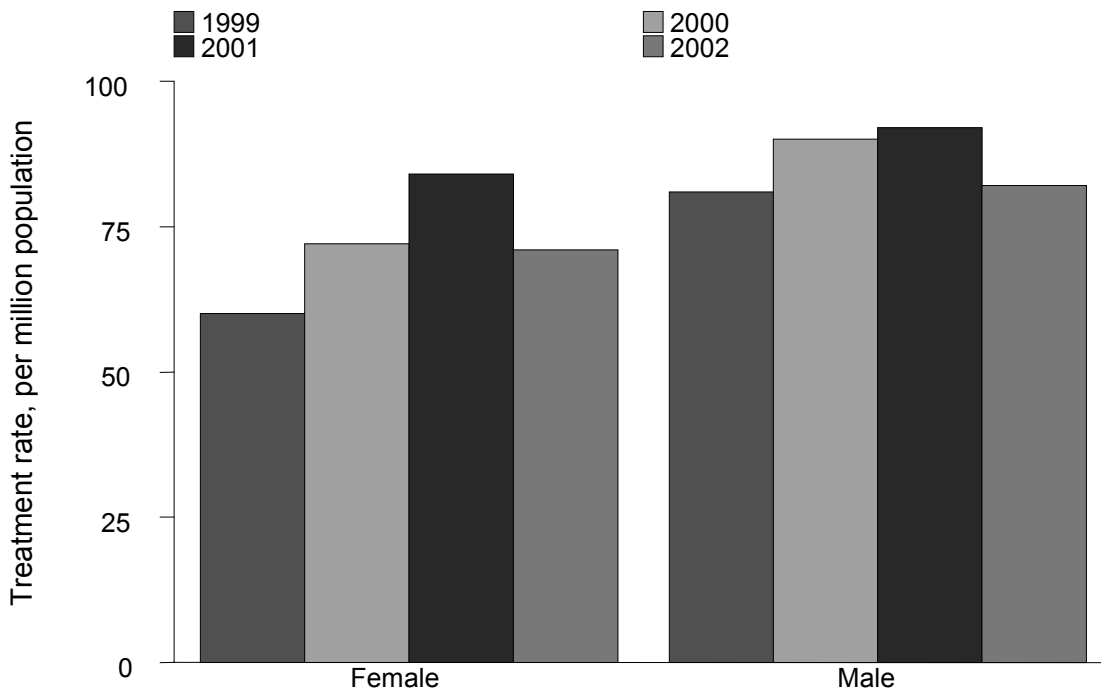
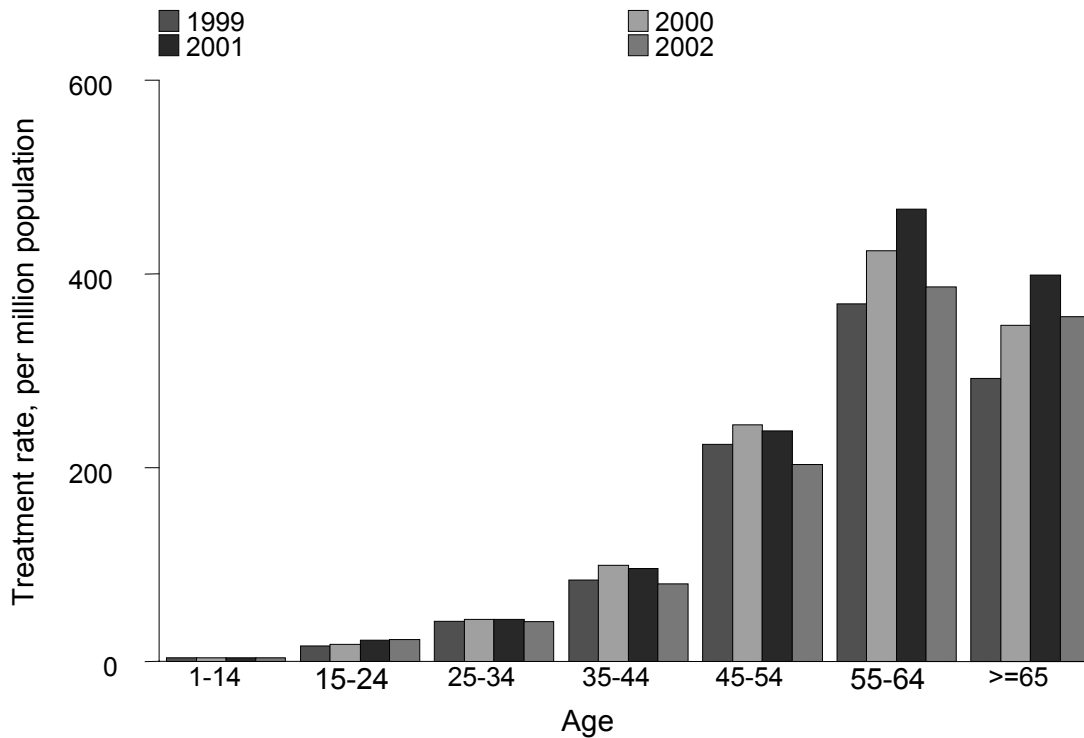


Table 2.05: Dialysis Treatment Rate by Age Group, per million age group population 1999 – 2002

Age groups (years)	1999	2000	2001	2002
1-14	4	4	4	4
15-24	16	18	22	23
25-34	42	44	44	41
35-44	84	99	96	80
45-54	224	244	238	203
55-64	369	424	467	387
≥ 65	292	347	399	356

Figure 2.05: Dialysis Treatment Rate by Age Group 1999 - 2002



2.2 PATIENT DEMOGRAPHICS

Table 2.06: Percentage Age Distribution of Dialysis Patients 1999 – 2002

Year	1999	2000	2001	2002
New dialysis patients	1525	1787	1949	1734
% 1-14 years	2	1	2	2
% 15-24 years	4	4	4	5
% 25-34 years	9	9	7	8
% 35-44 years	16	16	14	14
% 45-54 years	27	27	25	25
% 55-64 years	26	27	29	27
% ≥ 65 years	16	17	19	19
Dialysing at 31 st December	5487	6605	7639	8418
% 1-14 years	2	1	1	1
% 15-24 years	5	5	5	5
% 25-34 years	15	14	13	12
% 35-44 years	21	20	20	19
% 45-54 years	25	25	25	25
% 55-64 years	22	22	23	23
% ≥65 years	11	12	12	13

Figure 2.06: Age Distribution of New Dialysis patients 1999 – 2002

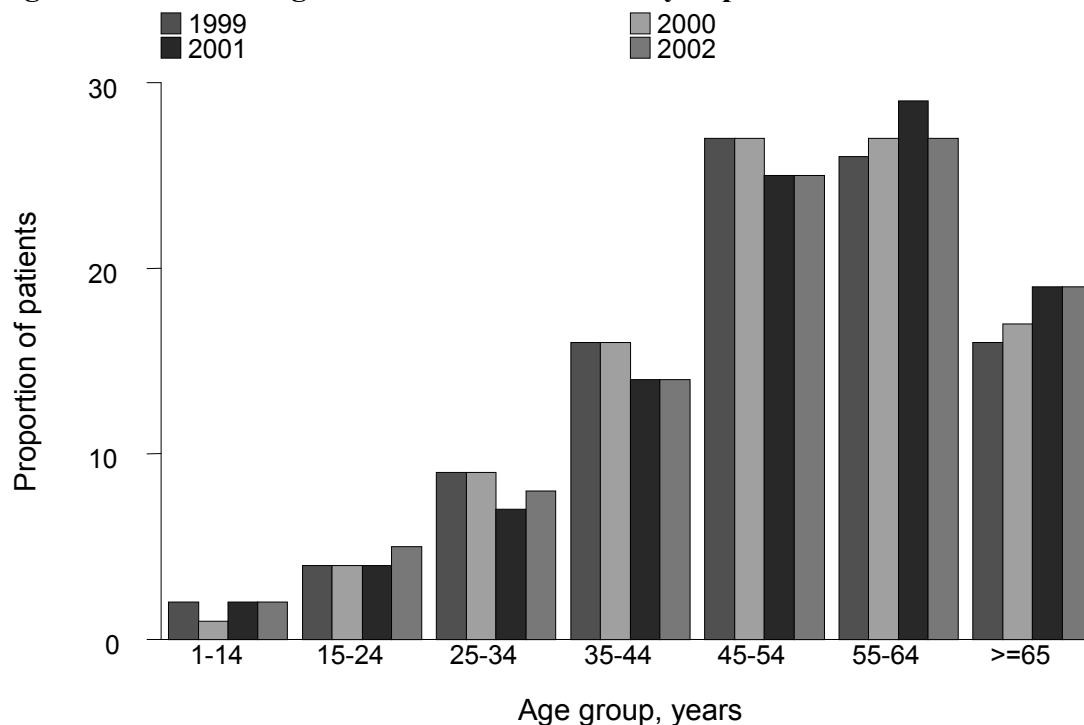
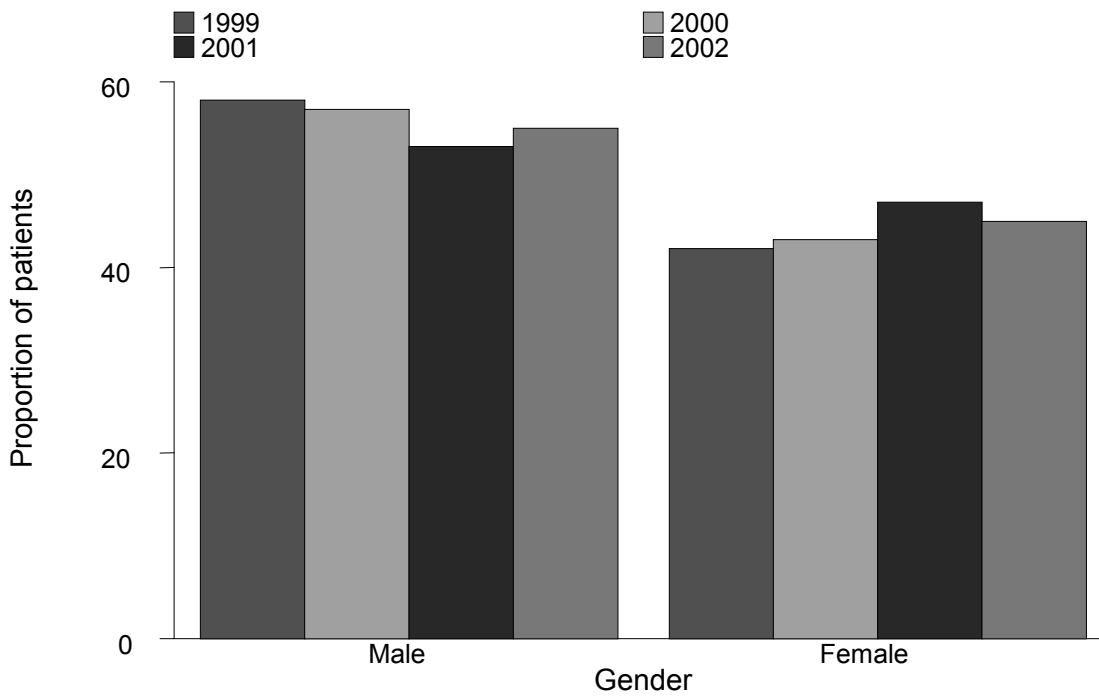


Table 2.07: Gender distribution of Dialysis Patients 1999 – 2002

Year	1999	2000	2001	2002
New Dialysis patients	1525	1787	1949	1734
% Male	58	57	53	55
% Female	42	43	47	45
Dialysing at 31 st December	5487	6605	7639	8418
% Male	56	56	55	55
% Female	44	44	45	45

Figure 2.07: Gender Distribution of New Dialysis patients 1999 – 2002

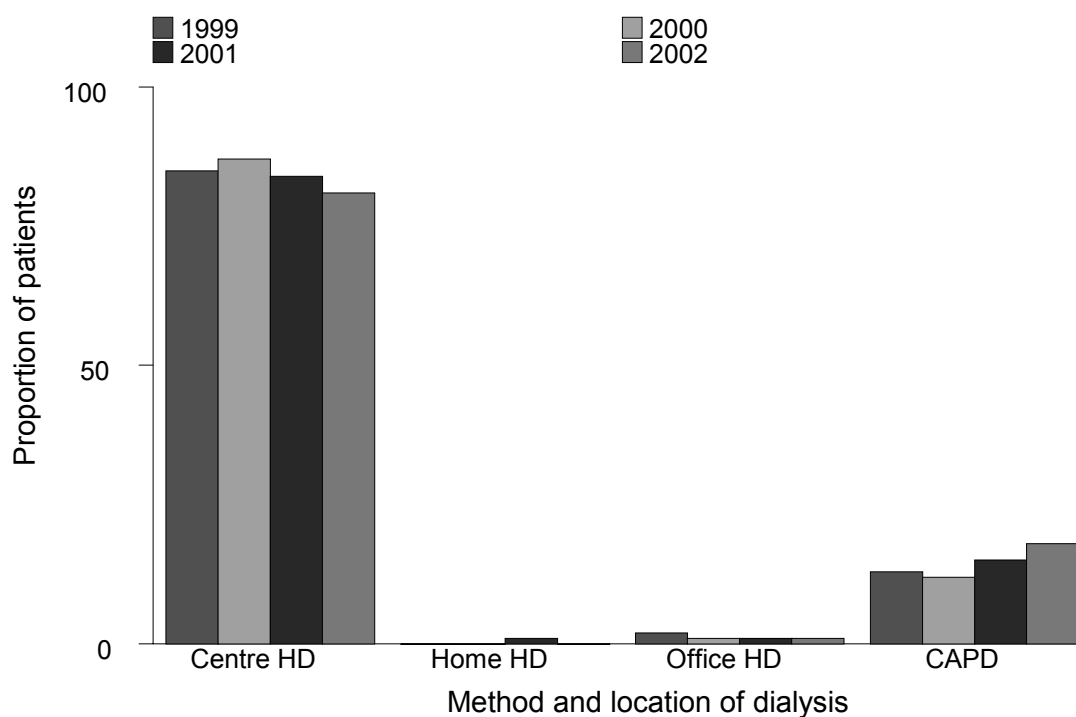


2.3 METHOD AND LOCATION

Table 2.08: Method and Location of Dialysis

Year	1999	2000	2001	2002
New Dialysis patients	1525	1787	1949	1734
% Centre HD	85	87	84	81
% Home HD	0	0	1	0
% Office HD	2	1	1	1
% CAPD	13	12	15	18
Dialysing at 31 st December	5487	6605	7639	8418
% Centre HD	84	86	87	86
% Home HD	1	1	1	1
% Office HD	4	3	2	2
% CAPD	11	10	10	11

Figure 2.08: Method and Location of New Dialysis Patients



2.4 PRIMARY RENAL DISEASE

Table 2.09: Primary Renal Disease 1999– 2002

Year	1999	2000	2001	2002
New Dialysis patients	1525	1787	1949	1734
% Unknown cause	30	30	32	33
% Diabetic Nephropathy	40	44	45	47
% Glomerulonephritis	11	10	7	7
% Polycystic kidney	1	1	2	1
% Obstructive Uropathy	4	3	3	2
% Gouty Nephropathy	0	0	1	0
% Toxic Nephropathy	1	0	1	0
% Miscellaneous	12	12	10	9

2.5 DEATH ON DIALYSIS

Table 2.10: Deaths on Dialysis 1995 – 2002

Year	1995	1996	1997	1998	1999	2000	2001	2002
No. of dialysis patients at risk	1980	2561	3290	4087	4991	6046	7122	8029
Dialysis deaths	178	222	310	372	482	573	770	780
Dialysis death rate %	9	9	9	9	10	9	11	10
No. of HD patients at risk	1694	2177	2819	3566	4424	5422	6412	7198
HD deaths	120	160	237	298	382	483	642	667
HD death rate %	7	7	8	8	9	9	10	9
No. of CAPD patients at risk	287	384	471	521	567	625	711	831
CAPD deaths	58	62	73	74	100	90	128	113
CAPD death rate %	20	16	15	14	18	14	18	14

Figure 2.10: Death Rates on Dialysis 1995 – 2002

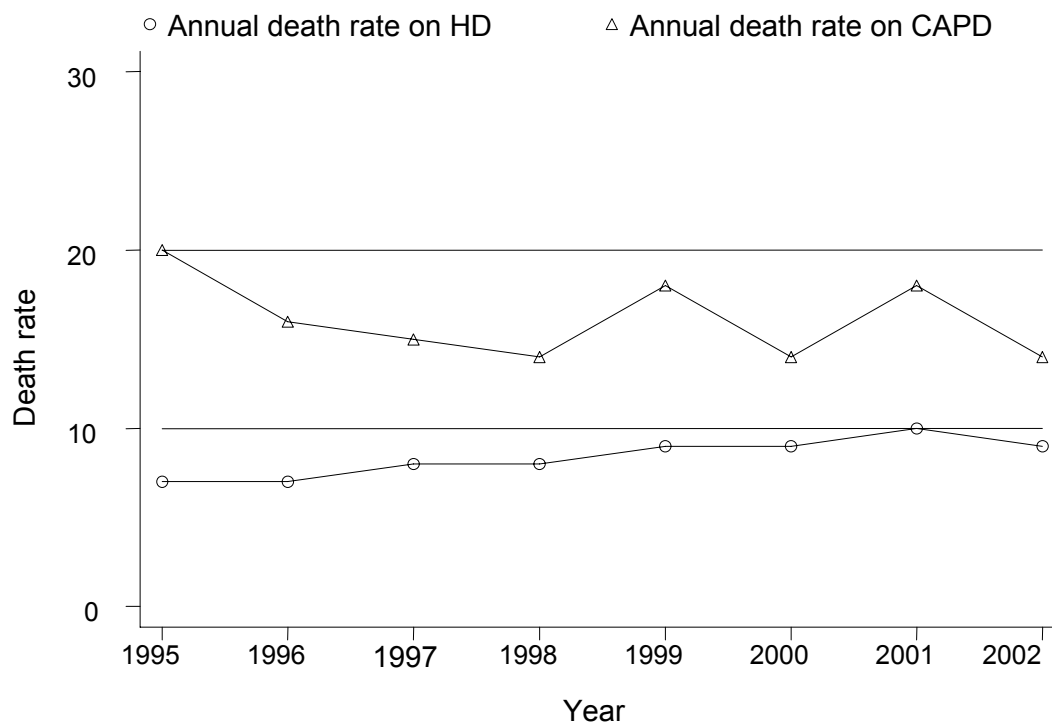


Table 2.11: Causes of Death on Dialysis 1999 - 2002

Year	1999		2000		2001		2002	
	No.	%	No.	%	No.	%	No.	%
Cardiovascular	157	33	209	36	266	35	305	39
Died at home	107	22	127	22	203	26	175	22
Sepsis	73	15	86	15	119	15	118	15
CAPD peritonitis	8	2	15	3	21	3	10	1
GIT bleed	13	3	10	2	15	2	17	2
Cancer	6	1	10	2	14	2	17	2
Liver disease	8	2	6	1	6	1	7	1
Others	87	18	100	17	93	12	96	12
Unknown	23	5	10	2	33	4	35	4
Total	482	100	573	100	770	100	780	100

2.6. DIALYSIS CENTRE, CAPACITY AND TREATMENT PROVISION

(Up-To- Date Results From Year 2002 Centre Survey, as at December 2002)

**Table 2.12: Number of dialysis centres, number of HD machines and treatment capacity, HD capacity to patient ratio
By State, December 2002**

State	Centres HD (No.)	Centre HD machines	Centre HD machines pmp	Centre HD capacity (No.)	Centre HD capacity pmp	Centre HD patients (No.)	Centre HD patients pmp	HD capacity:patient ratio	All dialysis patients (No.)	Dialysis treatment rate pmp
Melaka (Me)	10	141	209	705	1046	455	675	1.55	460	682
Penang (Pe)	24	310	223	1550	1115	813	585	1.91	832	598
Johor (Jo)	33	391	135	1955	676	1359	470	1.44	1381	478
Perak (Pe)	20	301	139	1505	696	995	460	1.51	1024	474
Selangor & Federal Territory (SF)	62	805	137	4025	686	2499	426	1.61	2606	444
Negeri Sembilan (Ne)	7	119	133	595	663	337	376	1.77	352	392
Sarawak (Sw)	14	171	79	855	395	570	263	1.5	650	300
Kedah & Perlis (KP)	22	162	83	810	414	512	262	1.58	531	271
Trengganu (Tr)	5	55	58	275	292	158	168	1.74	162	172
Pahang (Pa)	7	69	51	345	256	207	154	1.67	217	161
Kelantan (Ke)	8	71	50	355	249	199	140	1.78	205	144
Sabah (Sb)	11	85	30	425	151	266	95	1.6	288	103
Malaysia	223	2680	115	13400	576	8370	360	1.6	8708	374

pmp = per million population

Figure 2.12 (a): Distribution of dialysis centres by State, December 2002

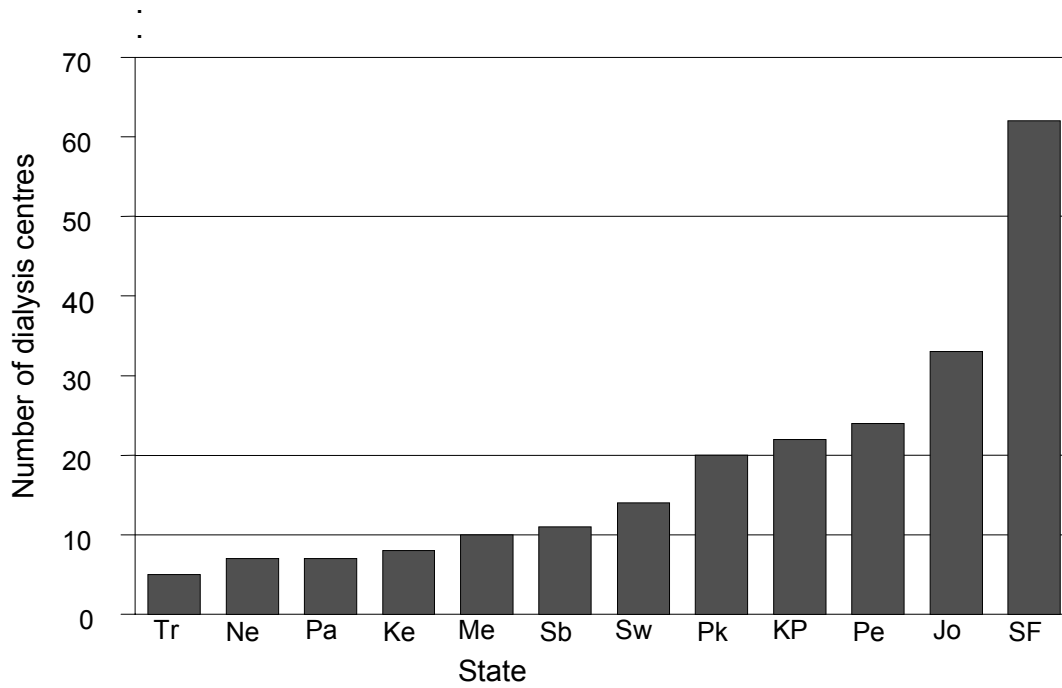
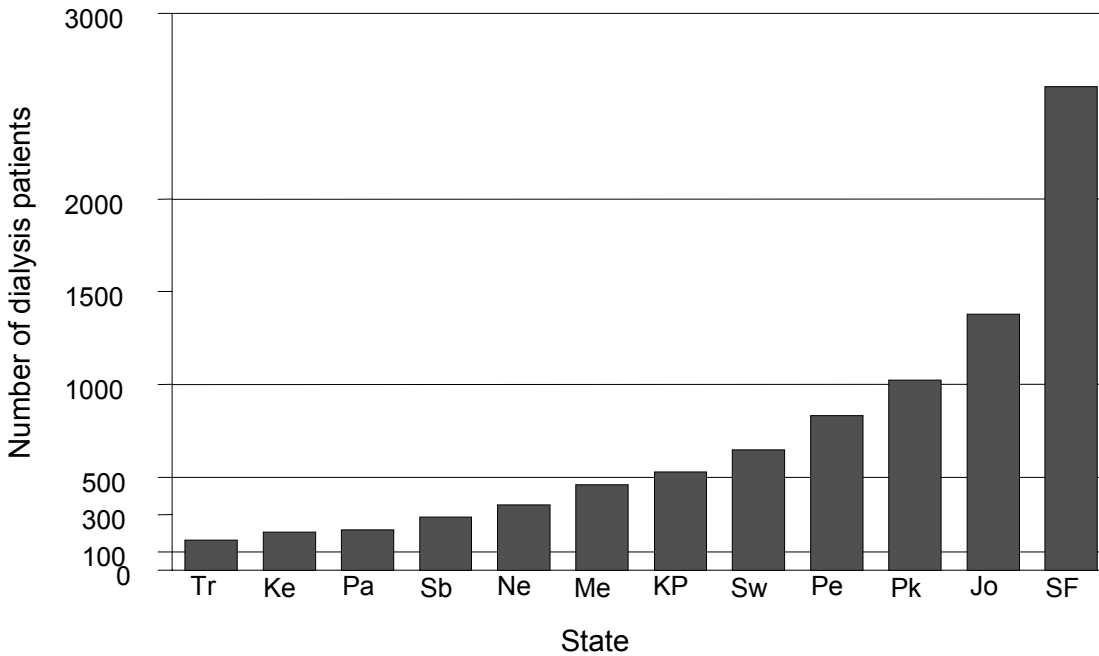


Figure 2.12 (b): Distribution of dialysis patients by State, December 2002



Key: Please refer Table 2.12

Figure 2.12 (c): Distribution of dialysis treatment by State, December 2002

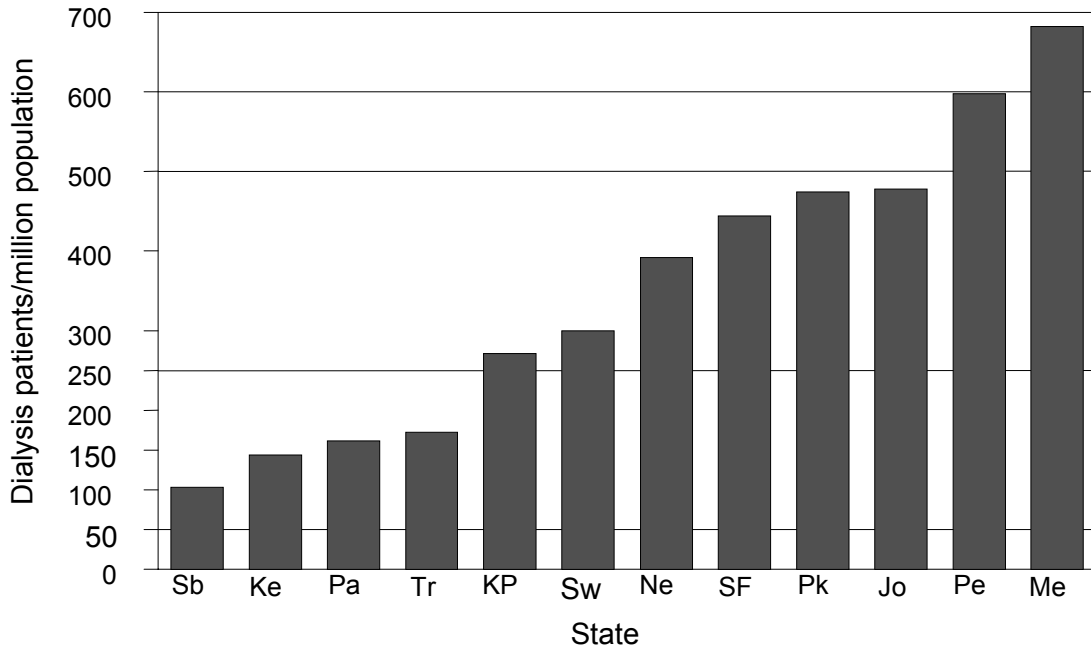
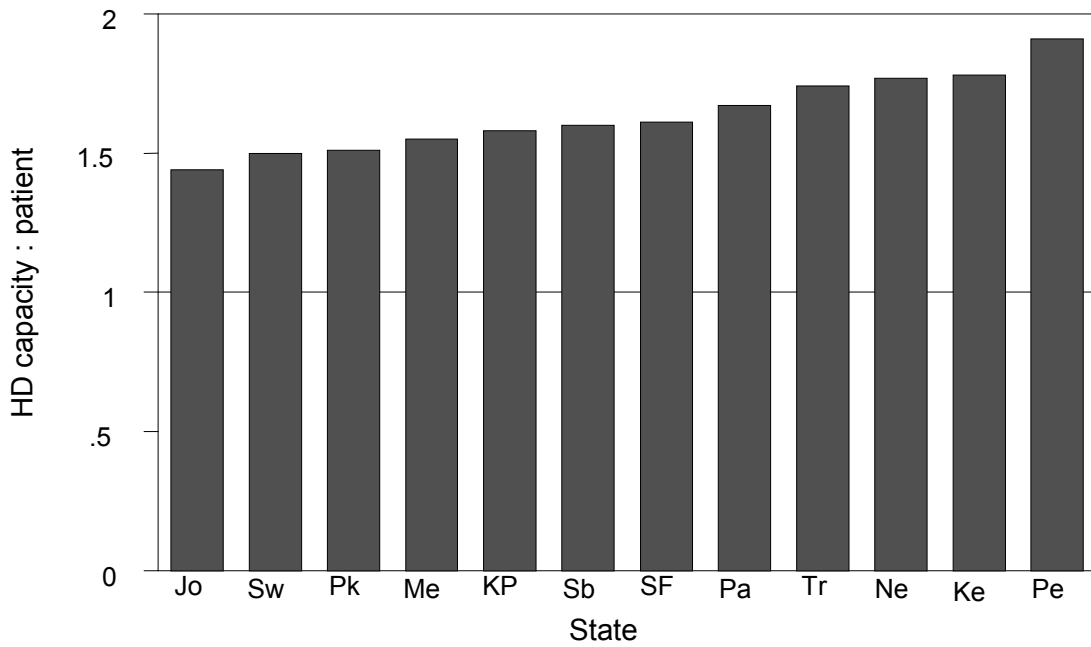


Figure 2.12 (d): HD capacity to patient ratio by State, December 2002



Key: Please refer Table 2.12

Table 2.13: Number of dialysis centres, dialysis patients and HD machines and treatment capacity, by sector December 2002

Sector	Centre (No.)	Centre HD machines (No.)	Centre HD capacity (No.)	Centre HD patients (No.)	Centre HD capacity : patient ratio	All dialysis patients (No.)
NGO	72	1007	5035	3069	1.64	3069
MOH	65	745	3725	2471	1.51	2873
Private	74	839	4195	2596	1.62	2596
University	3	45	225	123	1.83	123
Armed Forces	9	44	220	111	1.98	111

Figure 2.13 (a): Distribution of dialysis centres by Sector, December 2002

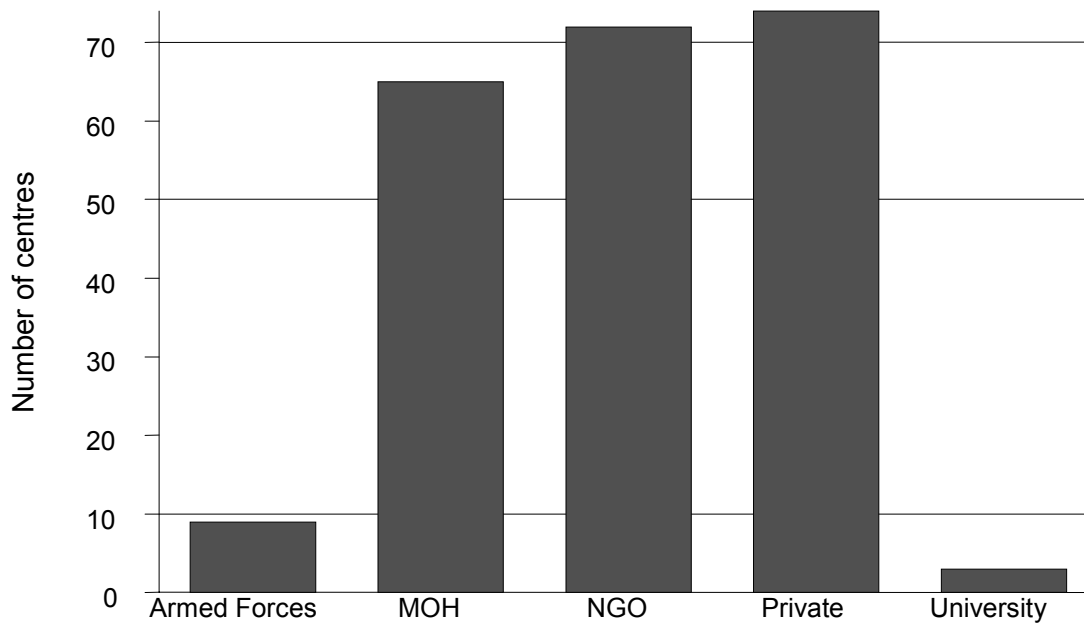


Figure 2.13 (b): Distribution of HD capacity by Sector, December 2002

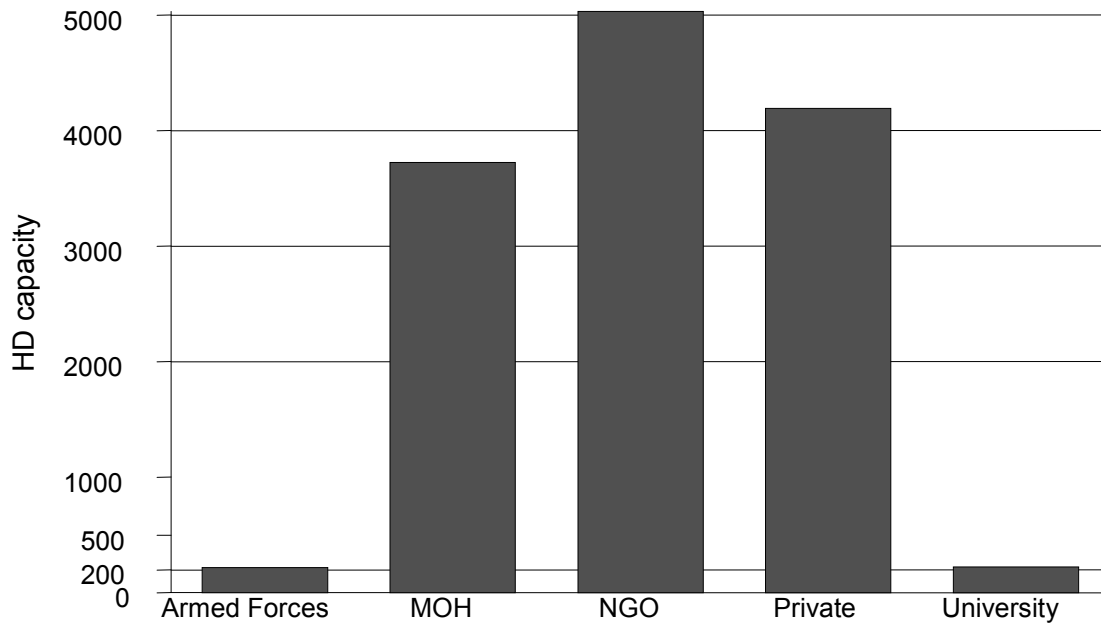


Figure 2.13 (c): Distribution of dialysis patients by Sector, December 2002

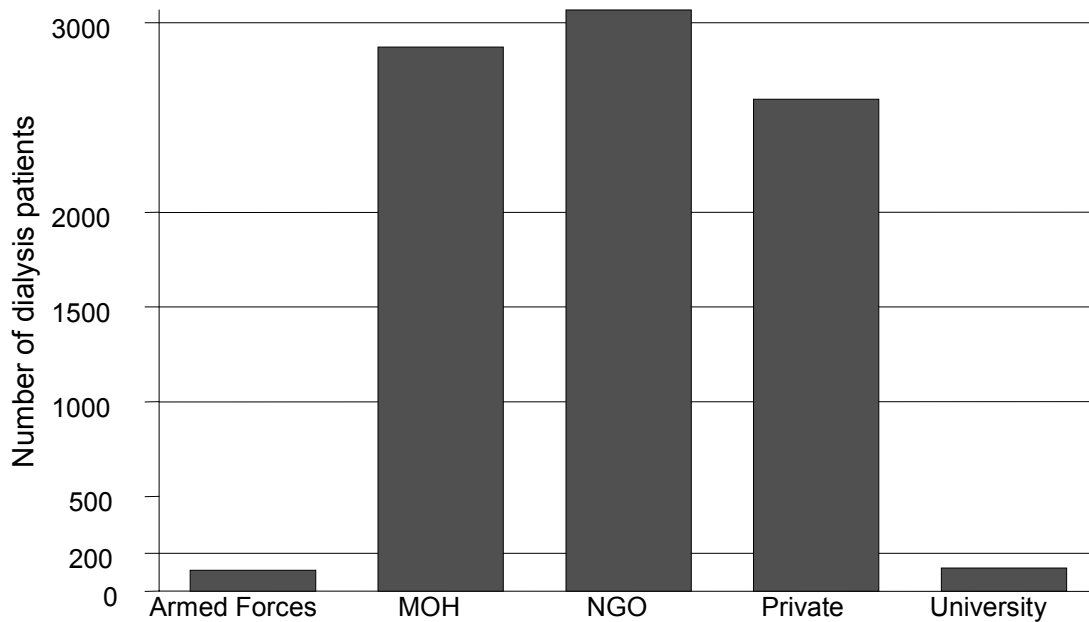


Figure 2.13 (d): HD capacity: patient ratio by Sector, December 2002

