

# **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 1994 – 2001**

Year	1994	1995	1996	1997	1998	1999	2000	2001
New Dialysis patients	517	673	934	1125	1216	1501	1736	1691
Died	145	178	220	302	367	476	561	715
Transplanted	45	37	56	59	60	68	104	127
Lost to Follow-up	3	10	8	12	12	9	14	39
Dialysing at 31 <sup>st</sup> December	1730	2204	2878	3655	4465	5440	6518	7330

**Table 2.02: Dialysis Treatment Rate per million population 1994 – 2001**

Year	1994	1995	1996	1997	1998	1999	2000	2001
Acceptance rate	26	33	44	52	55	66	75	71
Prevalence rate	88	107	136	169	201	240	280	308

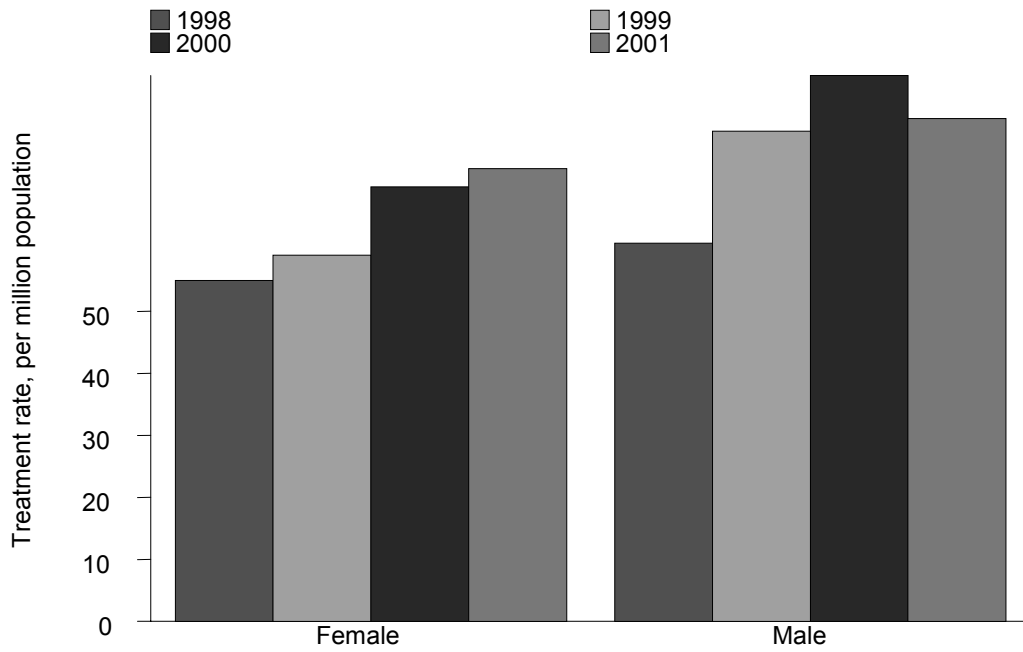
**Table 2.03: Dialysis Treatment Rate by State, per million state population, 2001**

State	Acceptance rate
Johor Darul Takzim	120
Negeri Melaka	117
Negeri Sembilan Darul Khusus	104
Selangor & W.Persekutuan	93
Pulau Pinang	81
Perak Darul Redzuan	78
Trengganu Darul Iman	72
Sarawak	60
Kedah & Perlis	55
Kelantan Darul Naim	53
Pahang Darul Makmur	42
Sabah	35

**Table 2.04: Dialysis Treatment Rate by Gender, per million male or female population 1998– 2001**

Gender	1998	1999	2000	2001
Male	61	79	88	81
Female	55	59	70	73

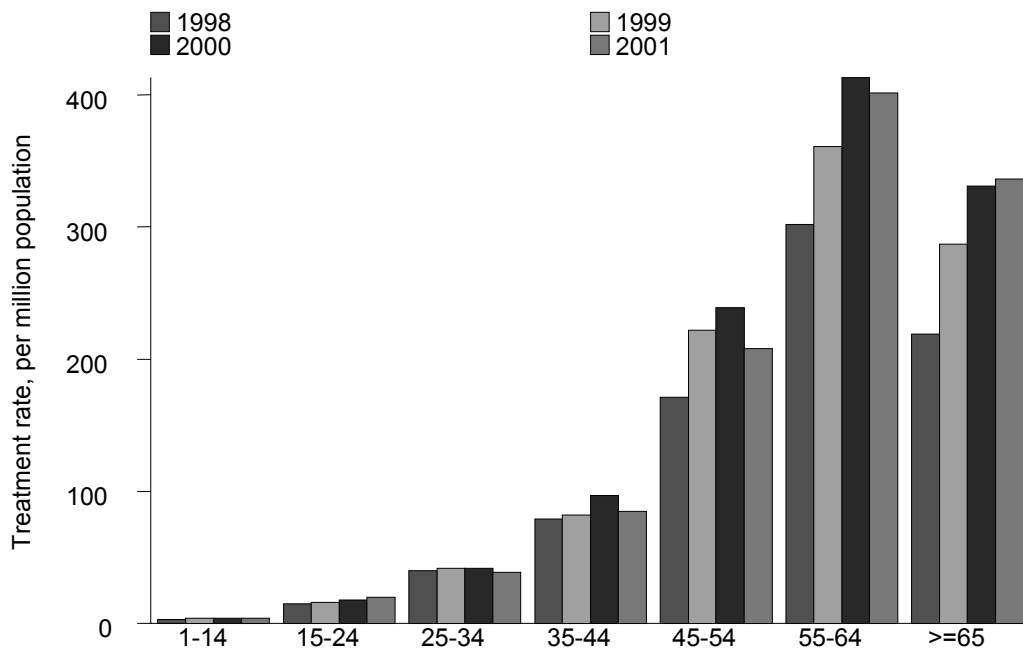
**Figure 2.04: Dialysis Treatment by Gender 1998 - 2001**



**Table 2.05: Dialysis Treatment Rate by Age Group, per million age group population 1998 – 2001**

Age groups (years)	1998	1999	2000	2001
1-14	3	4	4	4
15-24	15	16	18	20
25-34	40	42	42	39
35-44	79	82	97	85
45-54	171	222	239	208
55-64	302	361	413	401
≥ 65	219	287	331	336

**Figure 2.05: Dialysis Acceptance Rate by Age Group 1998 - 2001**

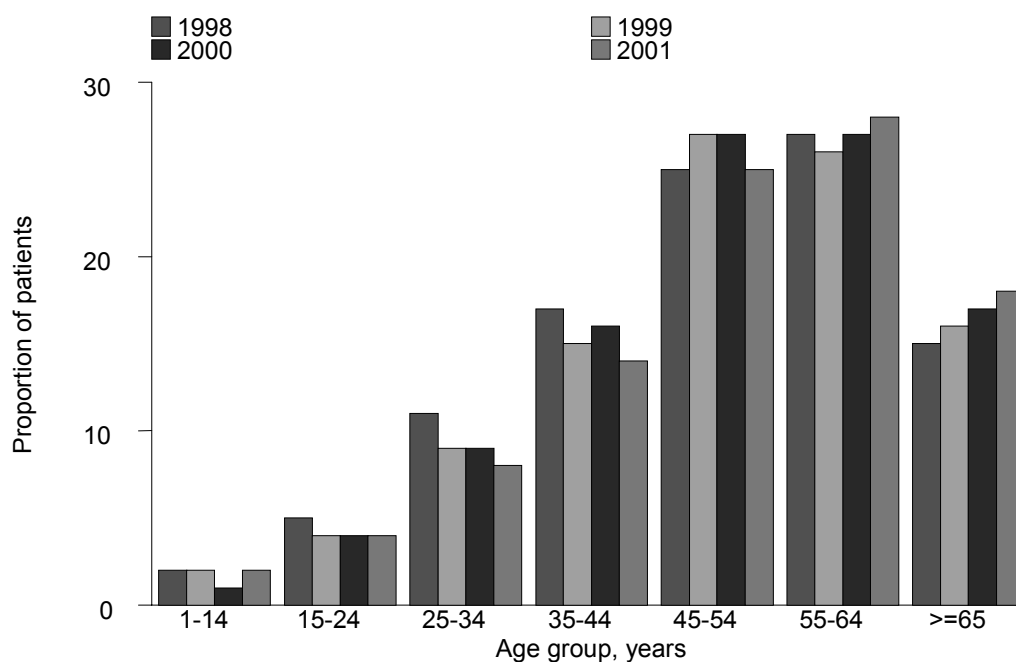


## 2.2 PATIENT DEMOGRAPHICS

**Table 2.06: Percentage Age Distribution of Dialysis Patients 1998 – 2001**

Year	1998	1999	2000	2001
New dialysis patients	1216	1501	1736	1691
% 1-14 years	2	2	1	2
% 15-24 years	5	4	4	4
% 25-34 years	11	9	9	8
% 35-44 years	17	15	16	14
% 45-54 years	25	27	27	25
% 55-64 years	27	26	27	28
% $\geq$ 65 years	15	16	17	18
Dialysing at 31 <sup>st</sup> December	4465	5440	6518	7330
% 1-14 years	2	2	2	2
% 15-24 years	5	5	5	5
% 25-34 years	16	15	14	13
% 35-44 years	22	21	20	20
% 45-54 years	24	25	25	25
% 55-64 years	21	22	22	23
% $\geq$ 65 years	10	11	11	12

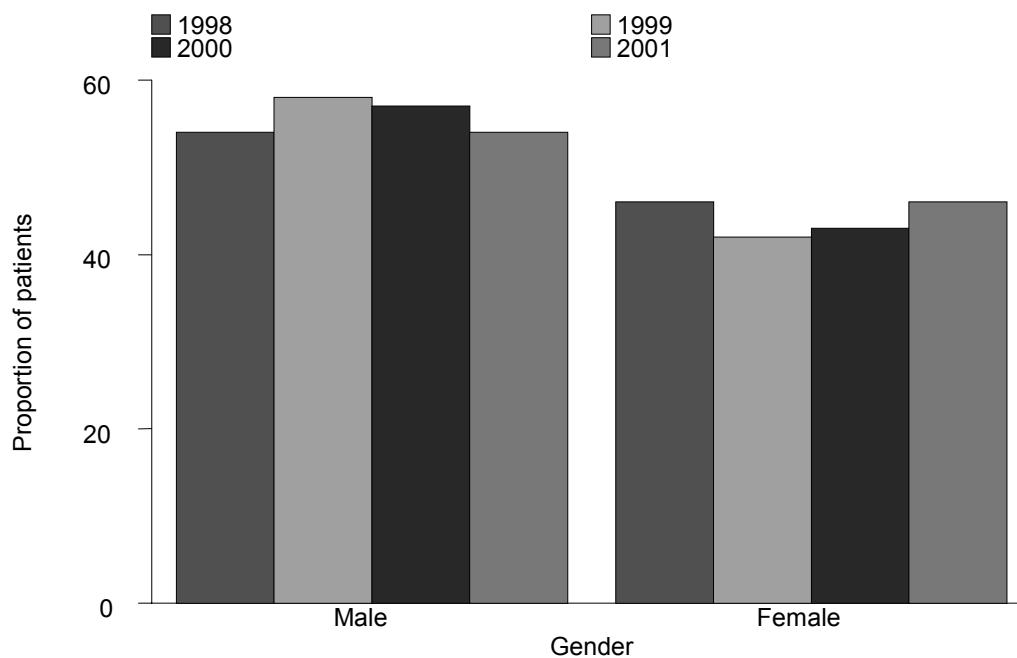
**Figure 2.06: Age Distribution of New Dialysis patients 1998 – 2001**



**Table 2.07: Gender distribution of Dialysis Patients 1998 – 2001**

Year	1998	1999	2000	2001
New Dialysis patients	1216	1501	1736	1691
% Male	54	58	57	54
% Female	46	42	43	46
Dialysing at 31 <sup>st</sup> December	4465	5440	6518	7330
% Male	56	56	56	55
% Female	44	44	44	45

**Figure 2.07: Gender Distribution of New Dialysis patients 1998 – 2001**

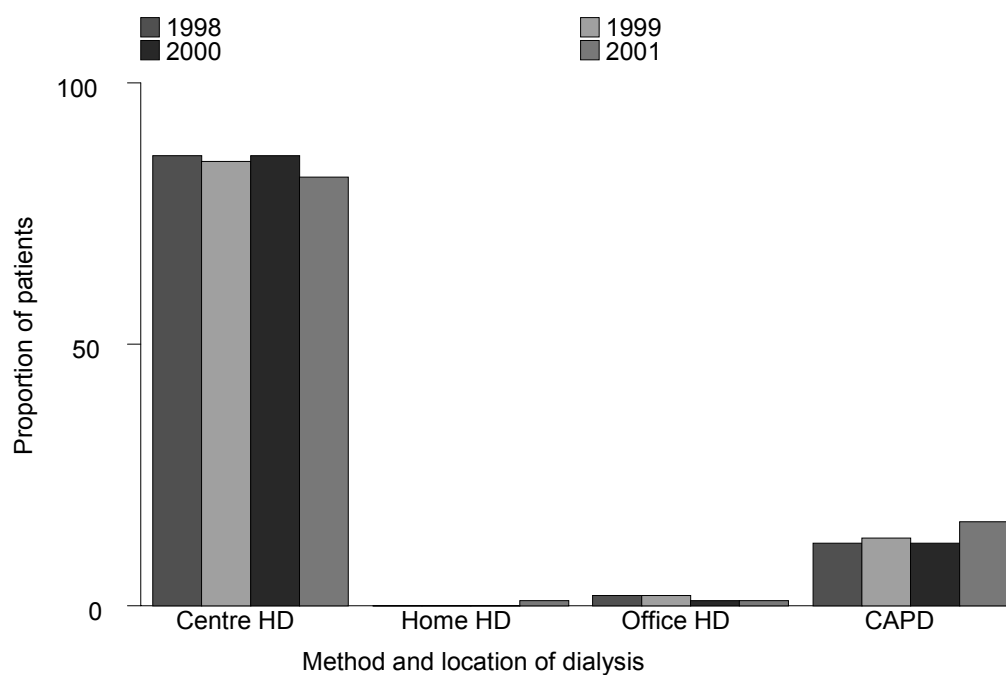


### 2.3 METHOD AND LOCATION

**Table 2.08: Method and Location of Dialysis**

Year	1998	1999	2000	2001
New Dialysis patients	1216	1501	1736	1691
% Centre HD	86	85	86	82
% Home HD	0	0	0	1
% Office HD	2	2	1	1
% CAPD	12	13	12	16
Dialysing at 31st December	4465	5440	6518	7330
% Centre HD	81	84	86	86
% Home HD	2	1	1	1
% Office HD	5	4	3	3
% CAPD	12	11	10	10

**Figure 2.08: Method and Location of New Dialysis Patients**



#### 2.4. PRIMARY RENAL DISEASE

**Table 2.09: Primary Renal Disease 1998– 2001**

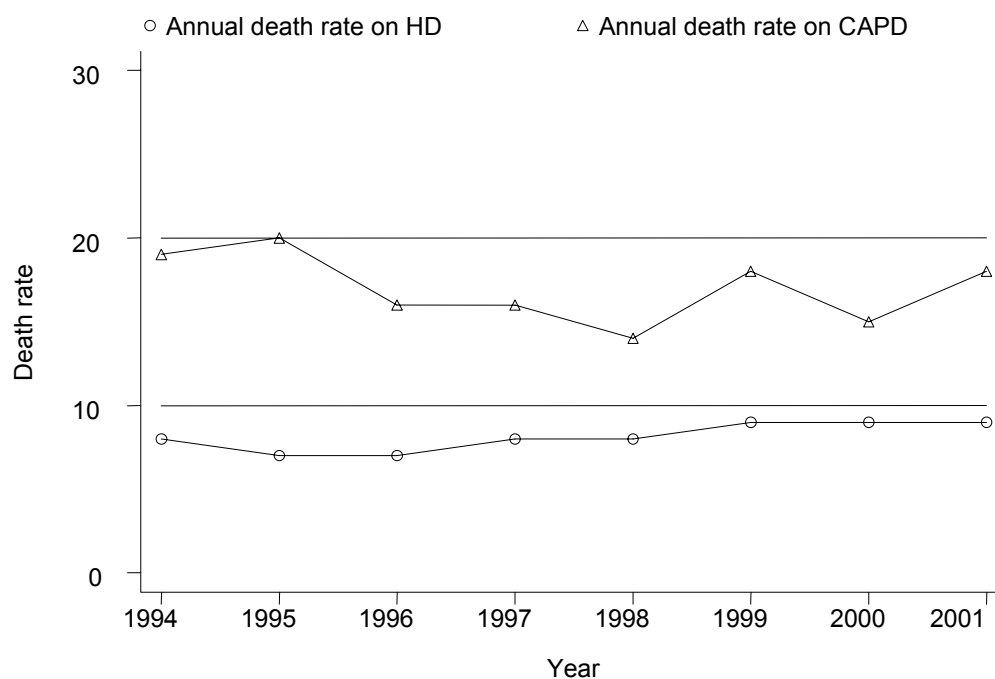
Year	1998	1999	2000	2001
New Dialysis patients	1216	1501	1736	1691
% Unknown cause	33	30	29	32
% Diabetic Nephropathy	41	40	44	46
% Glomerulonephritis	11	11	10	8
% Polycystic kidney	1	1	1	2
% Obstructive Uropathy	4	4	3	2
% Gouty Nephropathy	0	0	0	0
% Toxic Nephropathy	0	1	0	0
% Miscellaneous	9	12	12	9

## 2.5. DEATH ON DIALYSIS

**Table 2.10: Deaths on Dialysis 1994 – 2001**

Year	1994	1995	1996	1997	1998	1999	2000	2001
No. of dialysis patients at risk	1559	1967	2541	3267	4060	4953	5979	6924
Dialysis deaths	145	178	220	302	367	476	561	715
Dialysis death rate %	9	9	9	9	9	10	9	10
No. of HD patients at risk	1341	1681	2158	2796	3541	4387	5355	6224
HD deaths	103	120	159	229	293	376	470	589
HD death rate %	8	7	7	8	8	9	9	9
No. of CAPD patients at risk	218	287	384	471	520	566	624	700
CAPD deaths	42	58	61	73	74	100	91	126
CAPD death rate %	19	20	16	16	14	18	15	18

**Figure 2.10: Death Rates on Dialysis 1994 – 2001**



**Table 2.11: Causes of Death on Dialysis 1998 - 2001**

Year	1998		1999		2000		2001	
	No.	%	No.	%	No.	%	No.	%
Cardiovascular	122	33	157	33	200	36	244	34
Died at home	61	17	107	22	125	22	188	26
Sepsis	61	17	72	15	85	15	110	15
CAPD peritonitis	1	0	8	2	15	3	21	3
GIT bleed	8	2	13	3	10	2	14	2
Cancer	8	2	6	1	9	2	14	2
Liver disease	2	1	8	2	6	1	5	1
Others	78	21	86	18	101	18	75	10
Unknown	26	7	19	4	10	2	44	6
Total	367	100	476	100	561	100	715	100

## 2.6. DIALYSIS CENTRE, CAPACITY AND TREATMENT PROVISION

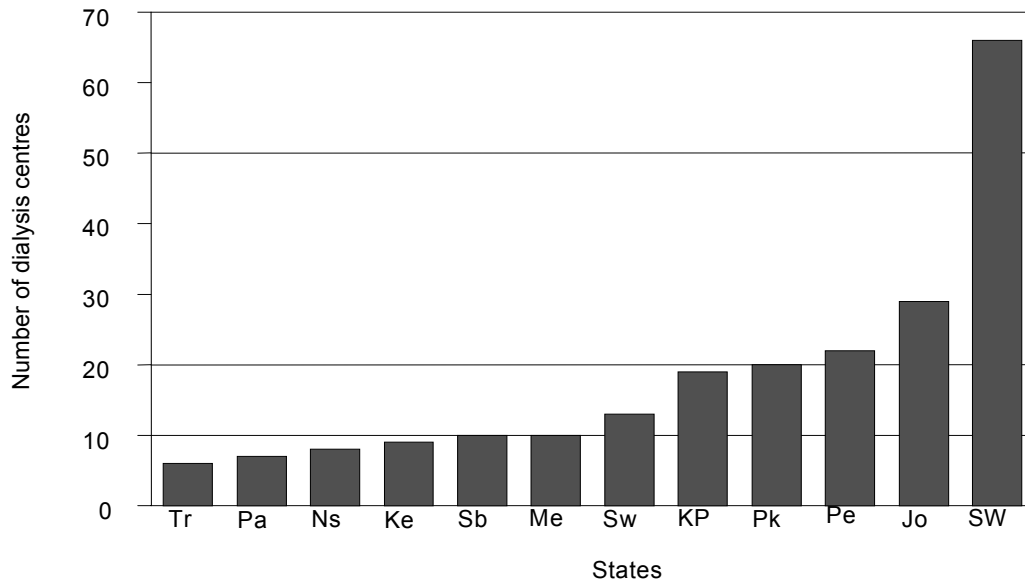
(Up-To- Date Results From Year 2001 Centre Survey, as at December 2001)

**Table 2.12: Number of dialysis centres, number of HD machines and treatment capacity, HD capacity to patient ratio  
By State, December 2001**

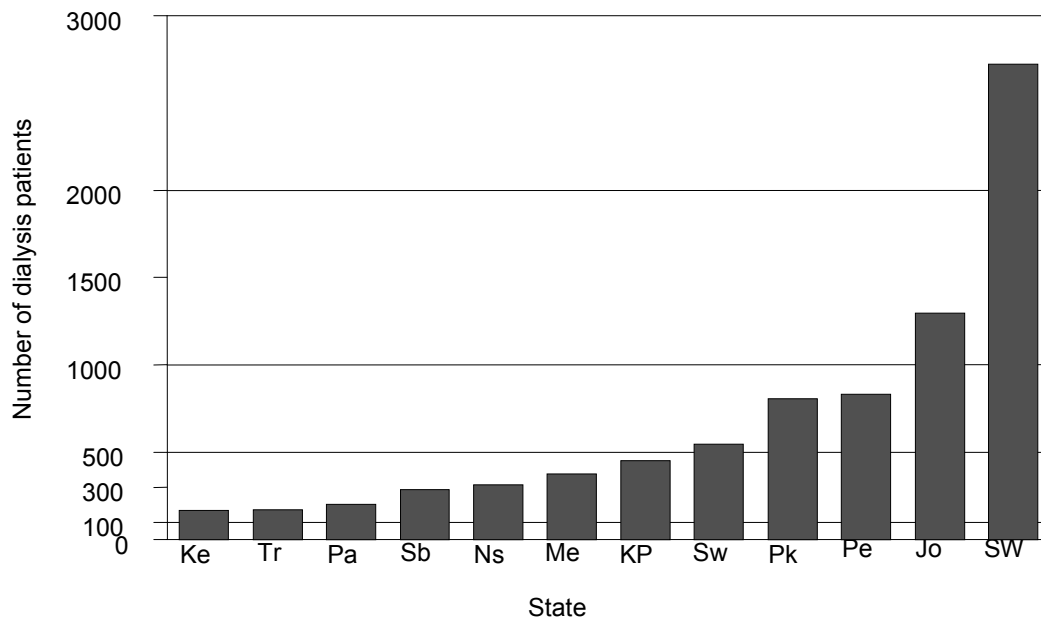
State	Centres (No.)	Centre HD machines	Centre HD machines pmp	Centre HD capacity (No.)	Centre HD capacity pmp	Centre HD patients (No.)	Centre HD patients pmp	HD capacity:patient ratio	All dialysis patients (No.)	Dialysis treatment rate pmp
Selangor & F. Territory	66	692	122	3460	610	2253	397	1.54	2722	480
Johor	29	340	122	1700	611	1173	421	1.45	1298	466
Pulau Pinang	22	246	184	1230	920	717	536	1.72	834	624
Perak	20	255	118	1275	591	741	343	1.72	808	374
Kedah & Perlis	19	130	68	650	342	437	230	1.49	450	237
Sarawak	13	130	61	650	307	449	212	1.45	546	258
Melaka	10	135	208	675	1041	370	571	1.82	375	578
Sabah	10	64	24	320	118	253	93	1.26	288	106
Kelantan	9	77	57	385	286	161	120	2.39	169	126
Negeri Sembilan	8	81	92	405	461	242	275	1.67	314	357
Pahang	7	52	39	260	197	186	141	1.4	202	153
Trengganu Darul Iman	6	42	46	210	228	128	139	1.64	173	188
Malaysia	219	2244	96	11220	482	7110	306	1.58	8179	352

pmp = per million population

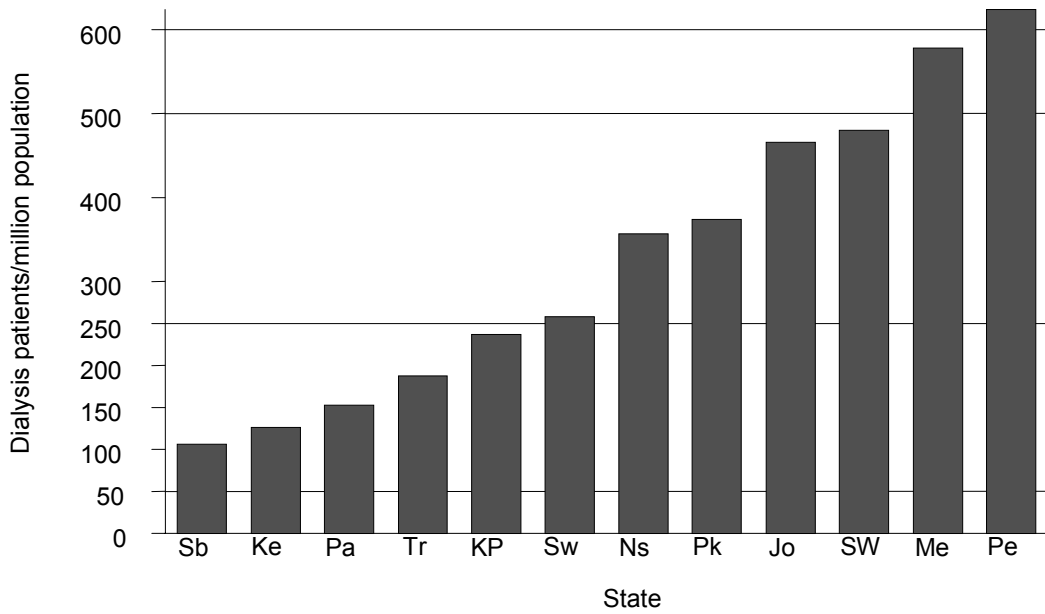
**Figure 2.12(a): Distribution of dialysis centres by State, December 2001**



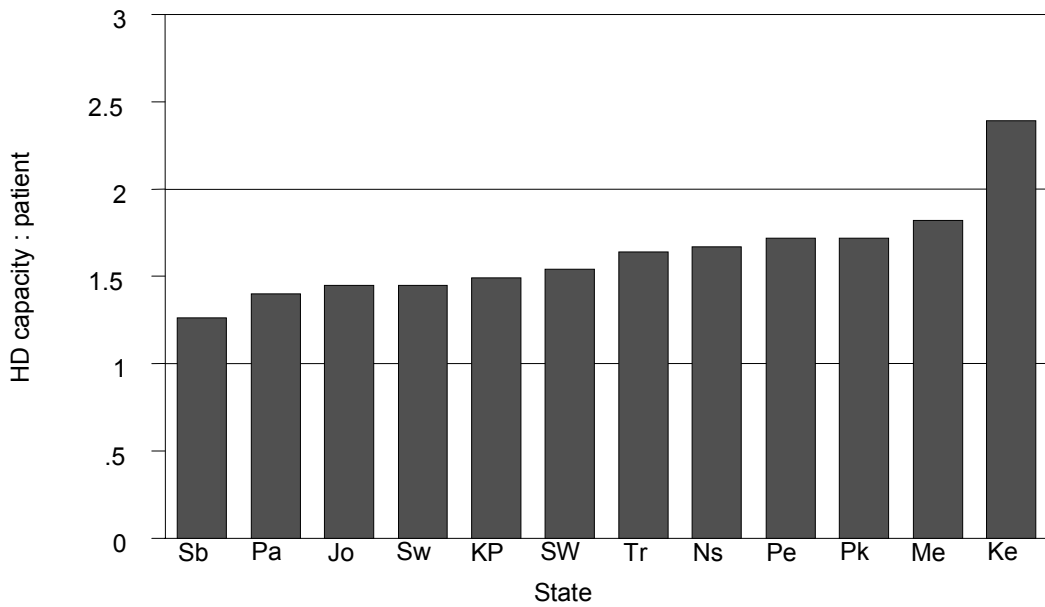
**Figure 2.12 (b): Distribution of dialysis patients by State, December 2001**



**Figure 2.12 (c): Distribution of dialysis patients by State, December 2001**



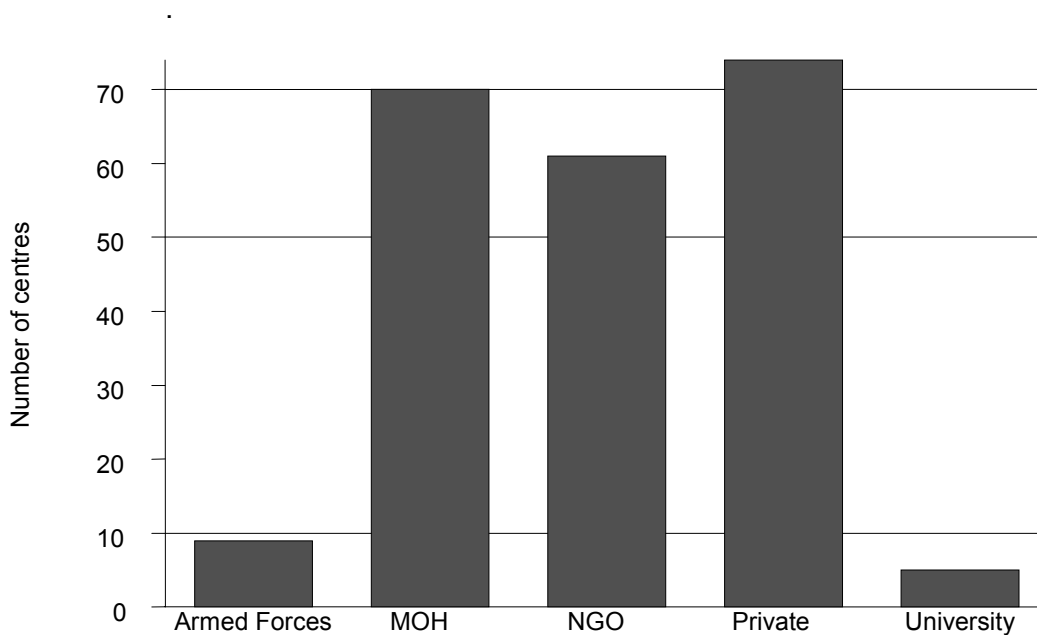
**Figure 2.12 (d): HD capacity to patient ratio by State, December 2001**



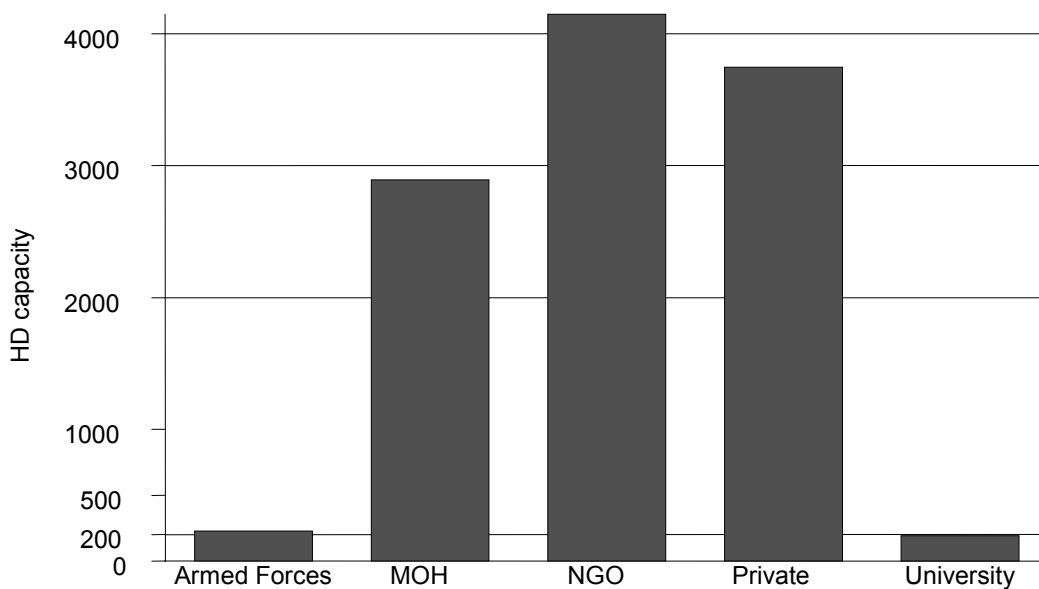
**Table 2.13: Number of dialysis centres, dialysis patients and HD machines and treatment capacity, by sector December 2001**

Sector	Centre (No.)	Centre HD machines (No.)	Centre HD capacity (No.)	Centre HD patients (No.)	Centre HD capacity : patient ratio	All dialysis patients (No.)
MOH	70	579	2895	2108	1.37	3102
NGO	61	830	4150	2620	1.58	2620
Private	74	750	3750	2216	1.69	2223
University	5	39	195	50	3.9	172
Armed Forces	9	46	230	116	1.98	116

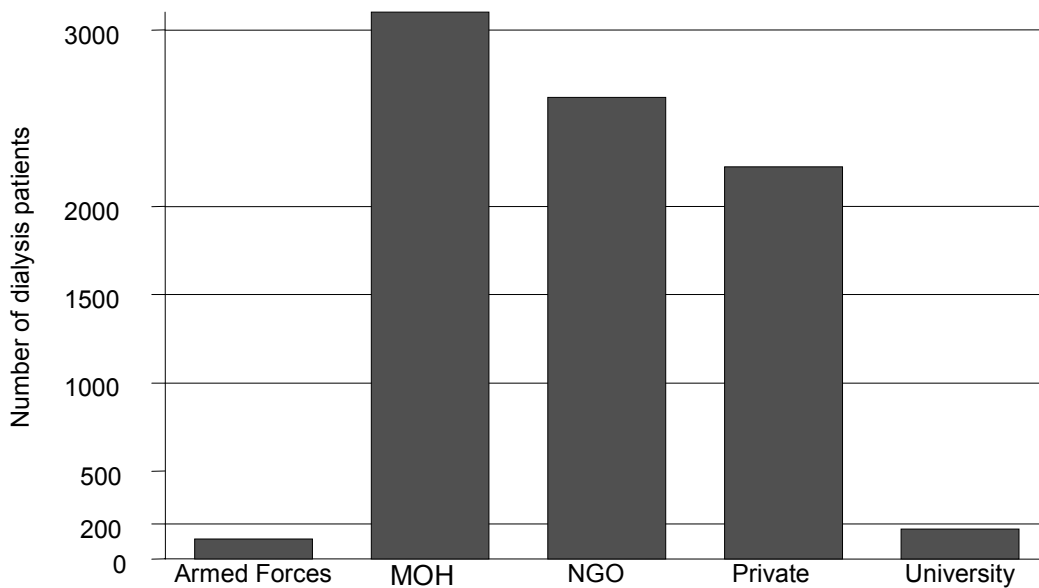
**Figure 2.13 (a): Distribution of dialysis centres by Sector, December 2001**



**Figure 2.13 (b): Distribution of HD capacity by Sector, December 2001**



**Figure 2.13 (c): Distribution of dialysis patients by Sector, December 2001**



**Figure 2.13 (d): HD capacity: patient ratio by Sector, December 2001**

