

HAEMODIALYSIS
IN
GOVERNMENT CENTRES

Stock and Flow
Place of Haemodialysis and its Finance
Death on Haemodialysis and Transfer to PD
Government Haemodialysis Centres
Haemodialysis Patient Characteristics
Survival Analysis
Work related rehabilitation and quality of life
Haemodialysis practices
Dyslipidaemia in HD patients
Treatment of Renal Bone Disease
Management of Blood Pressure
Management of Anaemia
Nutritional status
Prevalence of anti-HCV and HbsAg

3. HAEMODIALYSIS IN MALAYSIA

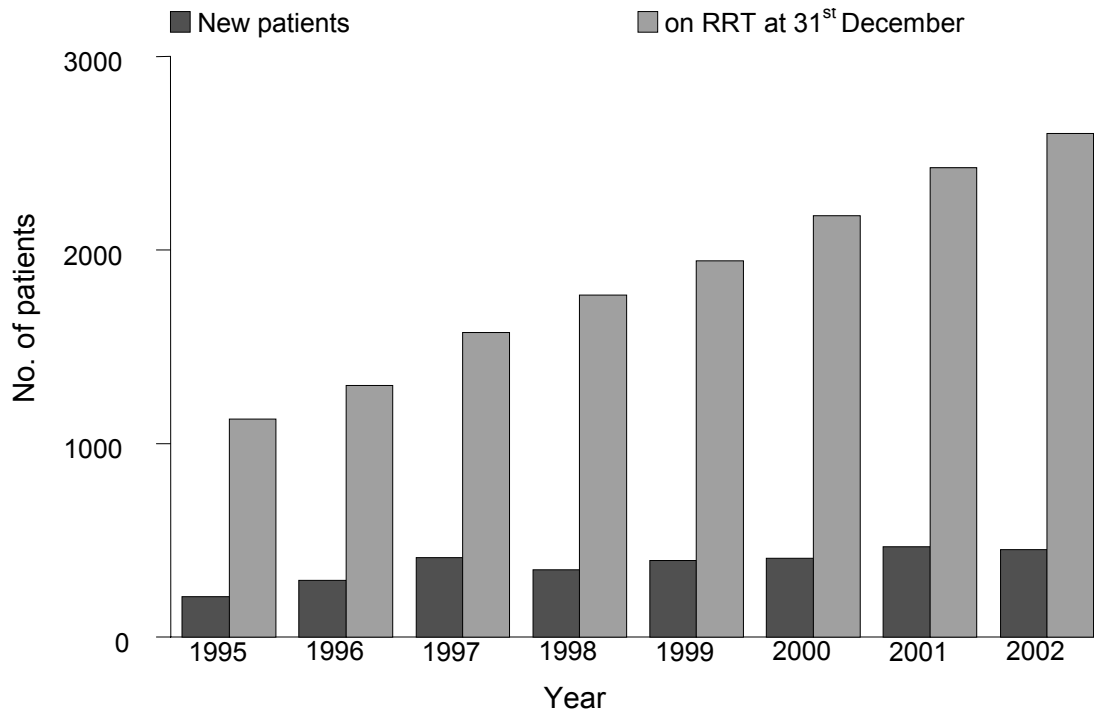
3.1 HAEMODIALYSIS IN GOVERNMENT CENTRES

3.1.1 STOCK AND FLOW

**Table 3.1.01: Stock and flow of Haemodialysis Patients, Government Centres
1995 – 2002**

Year	1995	1996	1997	1998	1999	2000	2001	2002
New patients	209	293	410	346	393	407	468	450
Died	85	115	139	159	210	198	219	262
Transferred to PD	13	7	9	6	12	6	27	41
Transplanted	25	35	34	30	26	26	41	32
Lost to follow up	5	1	3	7	5	4	3	8
On HD at 31 st December	1126	1298	1574	1765	1942	2177	2425	2602

Figure 3.1.01: Stock and Flow HD patients, Government Centres 1995 – 2002



3.1.2 PLACE OF HAEMODIALYSIS AND ITS FINANCE

Table 3.1.02: Place for HD, Government Centres 1999 – 2002

Year	1999	2000	2001	2002
New patients	393	407	468	450
% Centre HD	94	96	94	96
% Home HD	1	1	2	1
% Office HD	5	3	4	2
On HD at 31st December	1942	2177	2425	2602
% Centre HD	88	90	91	92
% Home HD	3	2	2	2
% Office HD	9	8	7	6

Figure 3.1.02: Place of HD, Government Centres 1999- 2002

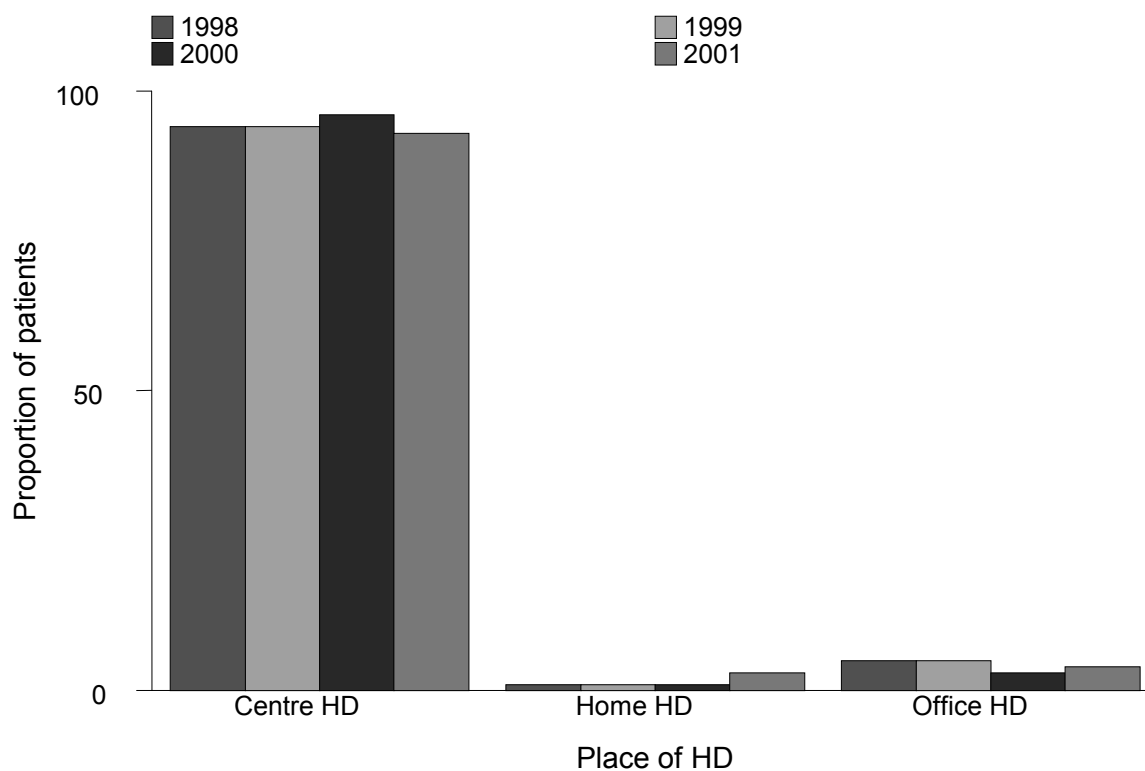
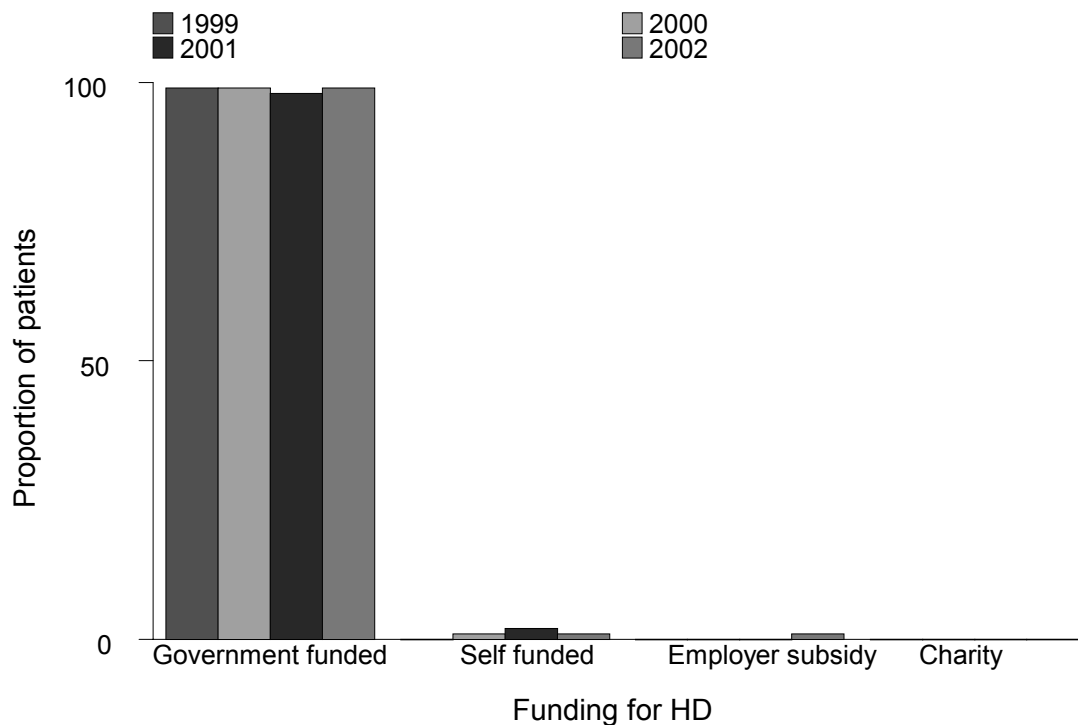


Table 3.1.03: Finance for HD, Government Centres 1999 – 2002

Year	1999	2000	2001	2002
New patients	393	407	468	450
Government funded	99	99	98	99
% Self funded	0	1	2	1
% Employer subsidy	0	0	0	1
% Charity	0	0	0	0
on HD at 31 st December	1942	2177	2425	2602
% Government funded	98	98	98	99
% Self funded	1	1	1	1
% Employer subsidy	1	1	0	1
% Charity	0	0	0	0

Figure 3.1.03: Finance for new HD, Government Centres 1999 – 2002



3.1.3 DEATH ON HAEMODIALYSIS AND TRANSFER TO PERITONEAL DIALYSIS

Table 3.1.04: HD Death Rate and Transfer to PD, Government Centres 1995 – 2002

year	1995	1996	1997	1998	1999	2000	2001	2002
No. at risk	1126	1212	1436	1670	1854	2060	2301	2514
Deaths	85	115	139	159	210	198	219	262
Death rate %	8	9	10	10	11	10	10	10
Transfer to PD	13	7	9	6	12	6	27	41
Transfer to PD rate %	1	1	1	0	1	0	1	2
All Losses	98	122	148	165	222	204	246	303
All Losses rate %	9	10	10	10	12	10	11	12

Figure 3.1.04: Death Rate on HD, Government Centres 1995 – 2002

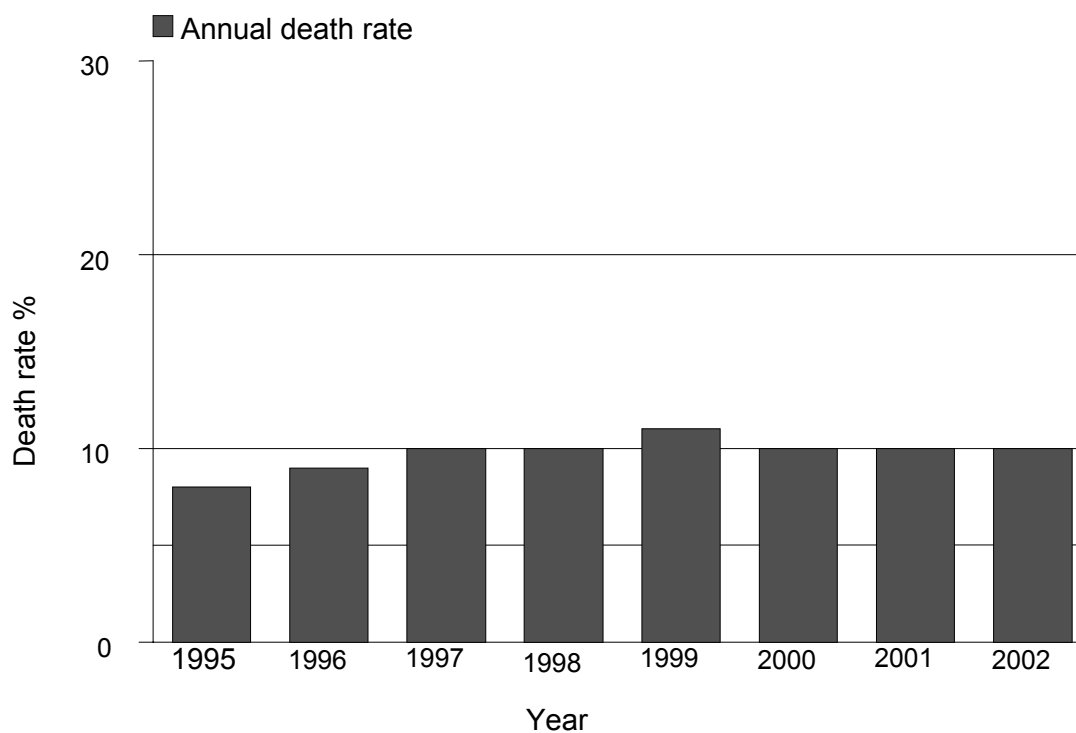


Table 3.1.05: Causes of Death on HD, Government Centres 1999 – 2002

Cause of death	1999		2000		2001		2002	
	No.	%	No.	%	No.	%	No.	%
Cardiovascular	79	38	73	37	87	40	91	35
Died at home	44	21	33	17	35	16	56	21
Sepsis	37	18	43	22	43	20	56	21
GIT bleed	6	3	6	3	4	2	7	3
Cancer	2	1	6	3	3	1	7	3
Liver disease	2	1	1	1	1	0	2	1
Others	33	16	32	16	34	16	30	11
Unknown	7	3	4	2	12	5	12	5
Total	210	100	198	100	219	100	262	100

3.1.4 GOVERNMENT HAEMODIALYSIS CENTRES

Table 3.1.07: Centre Distribution of HD patients, Government Centres 2002

	Centre	No	percent
	No. on RRT at 31 st December	2602	100
1	801 Rumah Sakit Angkatan Tentera, Kuching	7	0
2	807 Rumah Sakit Angkatan Tentera, Sg Petani	9	0
3	810 Rumah Sakit Angkatan Tentera, Majidee	5	0
4	819 Rumah Sakit Angkatan Tentera, TUDM	4	0
5	94 Hospital Angkatan Tentera, Terendak	25	1
6	95 Hospital Angkatan Tentera, Kinrara	21	1
7	96 Hospital Angkatan Tentera, Lumut	18	1
8	Alor Setar Hospital	93	4
9	Baling Hospital	12	0
10	Banting Hospital	24	1
11	Batu Pahat Hospital	40	2
12	Beaufort Hospital	21	1
13	Besut Hospital	21	1
14	Bintulu Hospita	26	1
15	Bukit Mertajam Hospital	39	1
16	Butterworth Hospital	8	0
17	Duchess of Kent Hospital	43	2
18	Dungun Hospital	27	1
19	Ipoh Hospital	101	4
20	Jerantut Hospital	13	0
21	Kajang Hospital	32	1
22	Kangar Hospital	60	2
23	Kemaman Hospital	20	1
24	Keningau Hospital	30	1
25	Kluang Hospital	47	2
26	Kota Bharu Hospital	53	2
27	Kota Tinggi Hospital	15	1
28	Kuala Krai Hospital	10	0
29	Kuala Lumpur Hospital	162	6

30	Kuala Lumpur Hospital (Paed.)	3	0
31	Kuala Nerang Hospital	7	0
32	Kuala Pilah Hospital	33	1
33	Kuala Terengganu Hospital	68	3
34	Kuching Hospital	83	3
35	Kulim Hospital	19	1
36	Labuan Hospital	25	1
37	Lahad Datu Hospital	12	0
38	Langkawi Hospital	18	1
39	Melaka Hospital	53	2
40	Mentakab Hospital	42	2
41	Miri Hospital	66	3
42	Muar Hospital	59	2
43	Pasir Mas Hospital	8	0
44	Pontian Hospital	18	1
45	Port Dickson Hospital	11	0
46	Pulau Pinang Hospital	77	3
47	Pusat Hemodialisis KEMENTAH	14	1
48	Pusat Kesihatan Jitra	12	0
49	Pusat Perubatan Angkatan Tentera (KB)	11	0
50	Putrajaya Hospital	34	1
51	Queen Elizabeth Hospital	74	3
52	Raub Hospital	32	1
53	Sarikei Hospital	13	0
54	Segamat Hospital	37	1
55	Selayang Hospital	54	2
56	Seremban Hospital	49	2
57	Seri Manjung Hospital	7	0
58	Serian Hospital	9	0
59	Sibu Hospital	48	2
60	Sik Hospital	14	1
61	Sri Aman Hospital	19	1
62	Sultanah Aminah Hospital	105	4
63	Sungai Bakap Hospital	6	0

64	Sungai Petani Hospital	36	1
65	Taiping Hospital	38	1
66	Tanah Merah Hospital	20	1
67	Tanjung Karang Hospital	32	1
68	Tanjung Malim Hospital	12	0
69	Tawau Hospital	60	2
70	Teluk Intan Hospital	29	1
71	Tengku Ampuan Jemaah Hospital, Sabak Bernam	11	0
72	Tengku Ampuan Afzan Hospital, Kuantan	57	2
73	Tengku Ampuan Rahimah Hospital, Klang	66	3
74	Universiti Kebangsaan Malaysia Hospital	28	1
75	Universiti Sains Malaysia Hospital	13	0
76	University Malaya Medical Centre	65	2
77	Yan Hospital	9	0

3.1.5 HAEMODIALYSIS PATIENTS' CHARACTERISTICS

Table 3.1.08: Age Distribution of HD patients, Government Centres 1999 – 2002

Year	1999	2000	2001	2002
New patients	393	407	468	450
% 1-14 years	1	0	1	1
% 15-24 years	9	6	7	7
% 25-34 years	10	13	9	10
% 35-44 years	16	19	17	17
% 45-54 years	32	25	31	25
% 55-64 years	24	26	25	26
% ≥65 years	7	10	11	14
Dialysing at 31 st December	1942	2177	2425	2602
% 1-14 years	1	1	1	1
% 15-24 years	8	8	8	9
% 25-34 years	18	18	17	16
% 35-44 years	25	24	24	23
% 45-54 years	25	25	26	26
% 55-64 years	18	18	19	19
% ≥65 years	5	5	6	6

Table 3.1.09: HD Patient Characteristics, Government Centres 1999 – 2002

Year	1999	2000	2001	2002
New patients	393	407	468	450
Mean age ± sd	46 ± 14	48 ± 14	49 ± 14	49 ± 15
% Male	65	60	58	58
% Diabetic	34	33	40	39
% HbsAg+	8	7	4	4
% Anti-HCV+	6	4	3	3

3.1.6 SURVIVAL ANALYSIS – GOVERNMENT CENTRES

**Table 3.1.10: HD patient Survival related to Year of Entry, Government Centres
1997 – 2002**

Year	1997			1998			1999		
	% survival	SE	No	% survival	SE	No	% survival	SE	No
Interval (months)									
6	93	1	422	94	1	362	92	1	388
12	88	2	393	90	2	339	86	2	359
24	82	2	355	82	2	305	80	2	324
36	75	2	324	75	2	277	73	2	290
48	68	2	291	70	2	244			
60	63	2	261						

Year	2000			2001			2002		
	% survival	SE	No	% survival	SE	No	% survival	SE	No
Interval (months)									
6	92	1	429	91	1	472	92	1	250
12	89	1	406	85	2	429			
24	81	2	351						

No. = number at risk

SE = standard error

**Figure 3.1.10: HD patient Survival related to Year of Entry, Government Centres
1998– 2002**

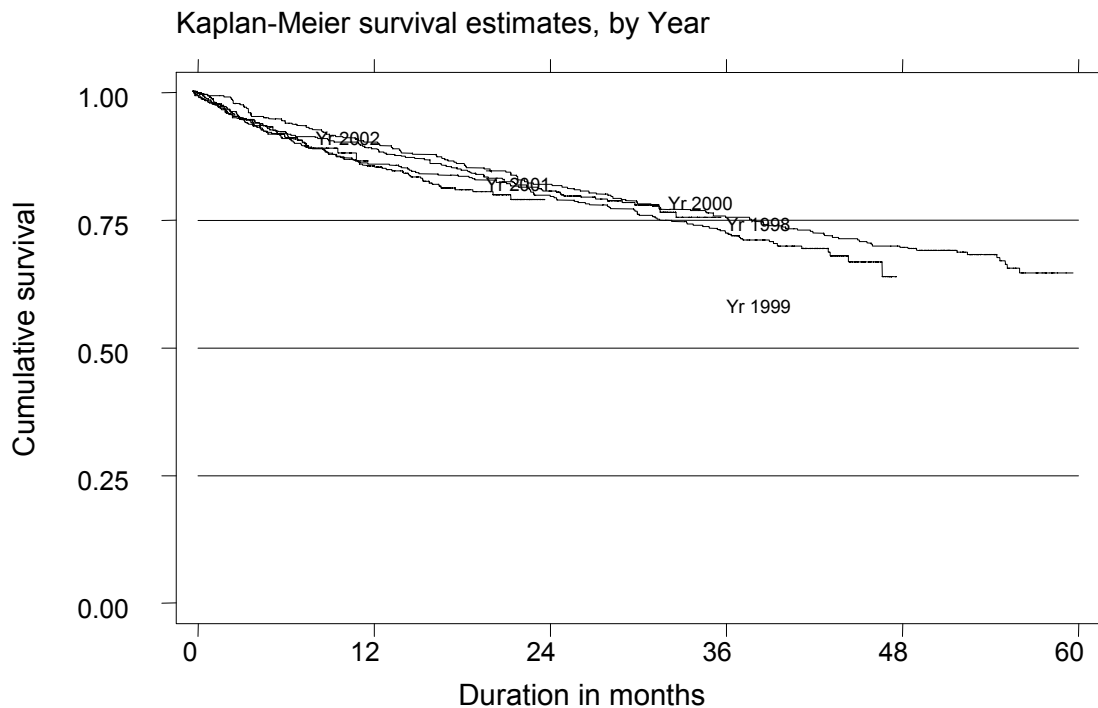


Table 3.1.11: HD Technique Survival related to Year of Entry, Government Centres 1997– 2002

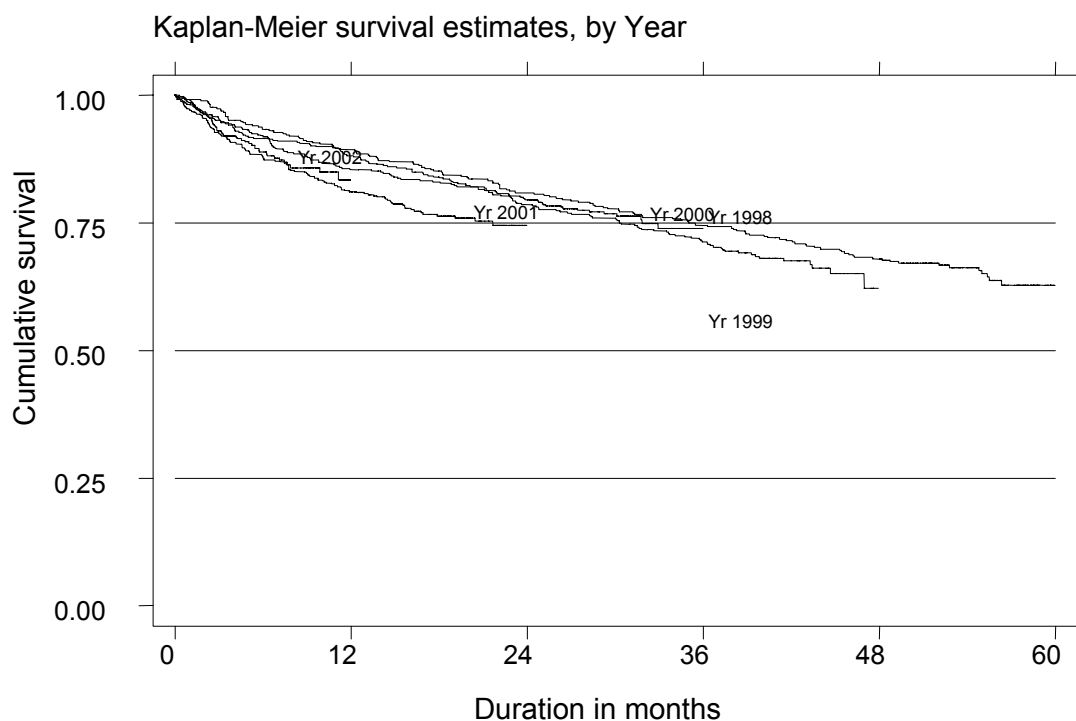
Year	1997			1998			1999		
Interval	% survival	SE	No	% survival	SE	No	% survival	SE	No
6	93	1	422	93	1	362	91	1	388
12	88	2	393	89	2	339	85	2	359
24	81	2	355	81	2	305	79	2	323
36	74	2	324	74	2	277	71	2	290
48	67	2	291	68	2	245			
60	62	2	261						

Year	2000			2001			2002		
Interval	% survival	SE	No	% survival	SE	No	% survival	SE	No
6	92	1	429	88	1	472	89	2	250
12	88	1	406	81	2	429			
24	80	2	351						

No. = number at risk

SE = standard error

Figure 3.1.11: HD Technique Survival by Year of Entry, Government Centres 1998 – 2002



3.1.7 WORK RELATED REHABILITATION AND QUALITY OF LIFE ON HAEMODIALYSIS, GOVERNMENT CENTRES

Table 3.1.12: Work Related Rehabilitation on HD, Government Centres 1999 – 2002

REHABILITATION STATUS	1999		2000		2001		2002	
	No.	%	No.	%	No.	%	No.	%
Full time work for pay	595	35	617	32	685	32	644	30
Part time work for pay	165	10	230	12	204	10	253	12
Able to work but unable to get a job	48	3	74	4	108	5	87	4
Able to work but not yet due to dialysis schedule	54	3	45	2	51	2	74	3
Able but disinclined to work	30	2	35	2	38	2	42	2
Home maker	358	21	419	22	490	23	493	23
Full time student	24	1	45	2	51	2	44	2
Age<15 years	4	0	6	0	6	0	5	0
Retired	204	12	197	10	205	10	192	9
Age>65 years	101	6	129	7	158	7	172	8
Unable to work due to poor health	138	8	115	6	150	7	168	8
Total	1721	100	1912	100	2146	100	2174	100

Table 3.1.13: Quality of Life on Haemodialysis, Government Centres 1999 – 2002

QOL Index Summated Score	1999		2000		2001		2002	
	No.	%	No.	%	No.	%	No.	%
0 (Worst QOL)	2	0	1	0	1	0	4	0
1	2	0	2	0	2	0	5	0
2	6	0	7	0	6	0	9	0
3	12	1	10	1	10	0	8	0
4	26	2	32	2	32	1	33	2
5	55	3	55	3	66	3	90	4
6	70	4	74	4	98	5	95	4
7	112	7	122	6	112	5	112	5
8	124	7	146	8	183	9	154	7
9	174	10	187	10	169	8	209	10
10 (Best QOL)	1098	65	1251	66	1462	68	1449	67
Total	1681	100	1887	100	2141	100	2168	100

3.1.8 HAEMODIALYSIS PRACTICES IN GOVERNMENT CENTRES

Table 3.1.14: Vascular Access on Haemodialysis, Government Centres 1999 – 2002

Access types	1999		2000		2001		2002	
	No	%	No	%	No	%	No	%
Wrist AVF	1480	79	1663	79	1762	76	1819	75
BCF*	296	16	366	17	472	20	492	20
Venous graft	2	0	5	0	4	0	3	0
Artificial graft	23	1	10	0	20	1	19	1
PERMCATH	12	1	14	1	15	1	23	1
Temporary CVC*	51	3	43	2	55	2	63	3
Total	1864	100	2101	100	2328	100	2419	100

* *BCF = Brachiocephalic fistula*

* *CVC = Central venous catheter*

Table 3.1.15: Difficulties reported with Vascular Access, Government Centres 1999 – 2002

Access difficulty	1999		2000		2001		2002	
	No	%	No	%	No	%	No	%
Difficulty with needle placement	98	5	78	4	89	4	91	4
Difficulty in obtaining desired blood flow rate	58	3	68	3	79	3	58	2
Other difficulty	28	1	15	1	19	1	21	1
No difficulty	1686	90	1946	92	2153	92	2255	93
Total	1870	100	2107	100	2340	100	2425	100

**Table 3.1.16: Complications reported with Vascular Access, Government Centres
1999 – 2002**

Complication	1999		2000		2001		2002	
	No.	%	No.	%	No.	%	No.	%
thrombosis	92	5	79	4	95	4	82	3
bleed	14	1	9	0	16	1	12	0
aneurysmal dilatation	120	6	124	6	107	5	137	6
swollen limb	21	1	18	1	23	1	19	1
access related infection, local/systemic	19	1	31	1	17	1	15	1
distal limb ischaemia	7	0	2	0	5	0	5	0
venous outflow obstruction	29	2	33	2	38	2	24	1
carpal tunnel	23	1	25	1	13	1	18	1
other	21	1	21	1	25	1	26	1
no complication	1524	81	1764	84	2000	86	2086	86
Total	1870	100	2106	100	2339	100	2424	100

Table 3.1.17: Blood Flow Rates in Government HD Units 1999– 2002

Blood flow rates	1999		2000		2001		2002	
	No.	%	No.	%	No.	%	No.	%
<150 ml/min	4	0	4	0	2	0	6	0
150-199 ml/min	43	2	37	2	23	1	15	1
200-249 ml/min	439	24	392	19	291	13	187	8
250-299 ml/min	944	52	937	46	916	40	828	36
300-349 ml/min	373	20	595	29	878	38	957	41
> 350 ml/min	20	1	76	4	185	8	336	14
Total	1823	100	2041	100	2295	100	2329	100

Table 3.1.18: Number of HD Sessions per week, Government HD Units 1999 – 2002

HD sessions Per week	1999		2000		2001		2002	
	No.	%	No.	%	No.	%	No.	%
1	1	0	1	0	1	0	2	0
2	18	1	22	1	19	1	19	1
3	1845	99	2074	99	2309	99	2372	99
4	1	0	3	0	11	0	11	0
Total	1865	100	2102	100	2340	100	2404	100

Table 3.1.19: Duration of HD in Government Units 1999 – 2002

Duration of HD per session	1999		2000		2001		2002	
	No.	%	No.	%	No.	%	No.	%
≤3 hours	2	0	6	0	1	0	11	0
3.5 hours	0	0	1	0	20	1	0	0
4 hours	1733	93	1983	94	2261	97	2363	98
4.5 hours	107	6	98	5	54	2	26	1
5 hours	23	1	11	1	5	0	2	0
≥5 hours	0	0	1	0	0	0	0	0
Total	1865	100	2100	100	2341	100	2402	100

Table 3.1.20: Dialyser membrane types in Government HD Units 1999 – 2002

Dialyser membrane	1999		2000		2001		2002	
	No.	%	No.	%	No.	%	No.	%
Cellulosic	518	38	505	31	409	23	304	14
Cellulose acetate	316	23	295	18	168	9	145	7
Synthetic	541	39	815	50	1200	68	1678	79
Total	1375	100	1615	100	1777	100	2127	100

Table 3.1.21: Dialyser Reuse Frequency in Government HD Units 1999- 2002

Dialyser reuse frequency	1999		2000		2001		2002	
	No.	%	No.	%	No.	%	No.	%
1*	15	1	15	1	16	1	22	1
2	5	0	11	1	7	0	21	1
3	117	7	99	5	127	6	73	3
4	94	5	118	6	94	4	56	3
5	120	7	76	4	110	5	39	2
6	928	53	1005	51	747	34	414	19
7	41	2	62	3	67	3	83	4
8	79	5	120	6	135	6	128	6
9	173	10	64	3	84	4	16	1
10	66	4	81	4	223	10	185	8
11	5	0	3	0	37	2	27	1
12	106	6	280	14	375	17	742	34
≥13	0	0	44	2	155	7	382	17
Total	1749	100	1978	100	2177	100	2188	100

1* is single use i.e. no reuse

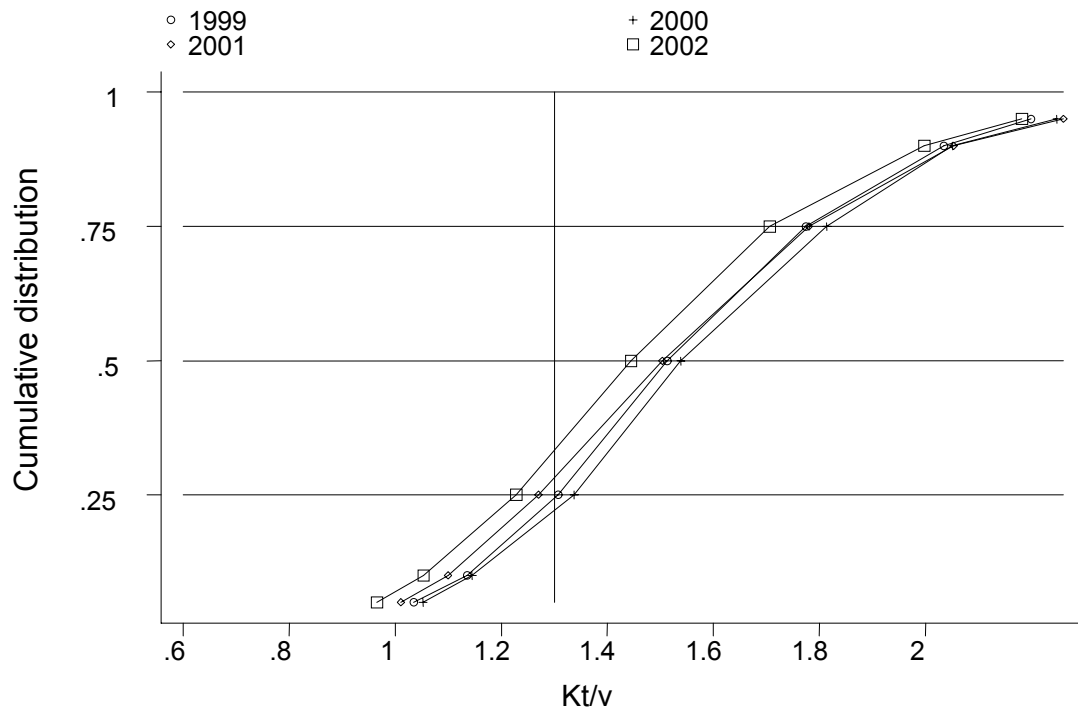
Table 3.1.22: Dialysate Buffer used in Government HD Units 1999 – 2002

Dialysate buffer	1999		2000		2001		2002	
	No.	%	No.	%	No.	%	No.	%
Acetate	426	23	271	13	162	7	69	3
Bicarbonate	1441	77	1821	87	2171	93	2307	97
Total	1867	100	2092	100	2333	100	2376	100

Table 3.1.23: Distribution of Prescribed KT/V, Government Centres 1999 – 2002

Year	No of subjects	No of observations	Median	LQ	UQ	% > 1.3
1999	1776	17888	1.5	1.3	1.8	76
2000	1977	20487	1.5	1.3	1.8	79
2001	2234	22816	1.5	1.3	1.8	72
2002	2220	22817	1.4	1.2	1.7	67

Figure 3.1.23: Cumulative distribution of Prescribed KT/V by year



3.1.9 DYSLIPIDAEMIA IN HD PATIENTS, GOVERNMENT CENTRES

Table 3.1.24: Distribution of serum Cholesterol Levels (mmol/L), HD patients, Government Centres 1999 – 2002

Year	No of subjects	No of observations	Median	LQ	UQ	% Patients < 5.3 mmol/L
1999	1514	2476	4.8	4	5.7	69
2000	1709	2825	4.9	4.1	5.7	69
2001	2007	3416	4.9	4.2	5.8	67
2002	2096	3669	4.9	4.1	5.7	68

Figure 3.1.24: Cumulative distribution of serum cholesterol concentration by year

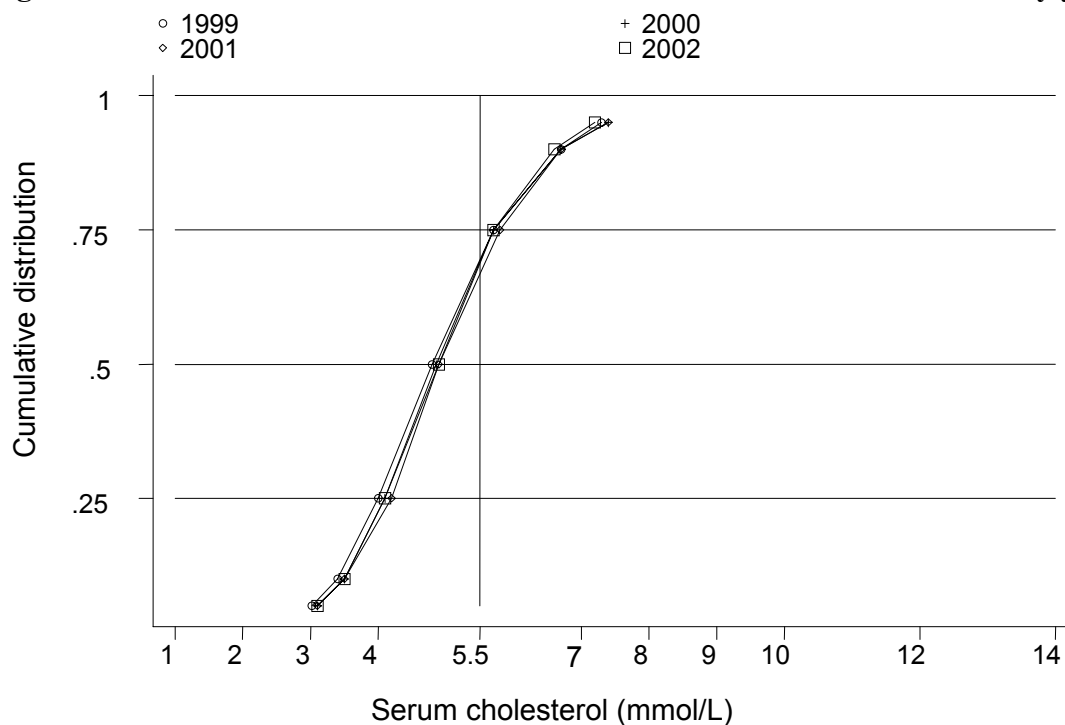


Table 3.1.25: Distribution of serum Triglyceride (mmol/L), HD patients, Government Centres 1999 – 2002

Year	No of subjects	No of observations	Median	LQ	UQ	% Patients < 3.5 mmol/L
1999	1400	2221	1.7	1.2	2.5	88
2000	1558	2567	1.7	1.2	2.5	88
2001	1890	3206	1.7	1.2	2.5	87
2002	1990	3475	1.7	1.2	2.5	88

Figure 3.1.25: Cumulative distribution of serum triglyceride concentration by year

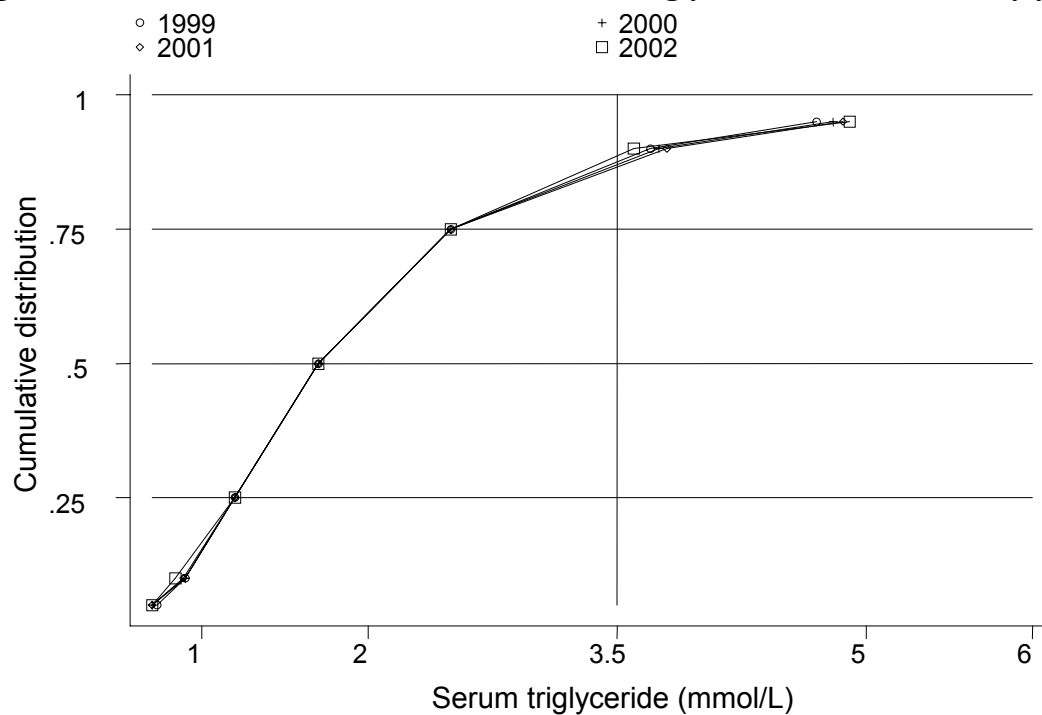


Table 3.1.26: Distribution of serum LDL (mmol/L), HD patient, Government Centres 1999– 2002

Year	No of subjects	No of observations	Median	LQ	UQ	% Patients <5 mmol/L
1999	717	1013	3	2.3	3.9	93
2000	924	1496	2.9	2.2	3.7	94
2001	1304	2091	2.9	2.2	3.7	95
2002	1408	2364	2.9	2.2	3.6	96

Figure 3.1.26 : Cumulative distribution of serum LDL concentration by year

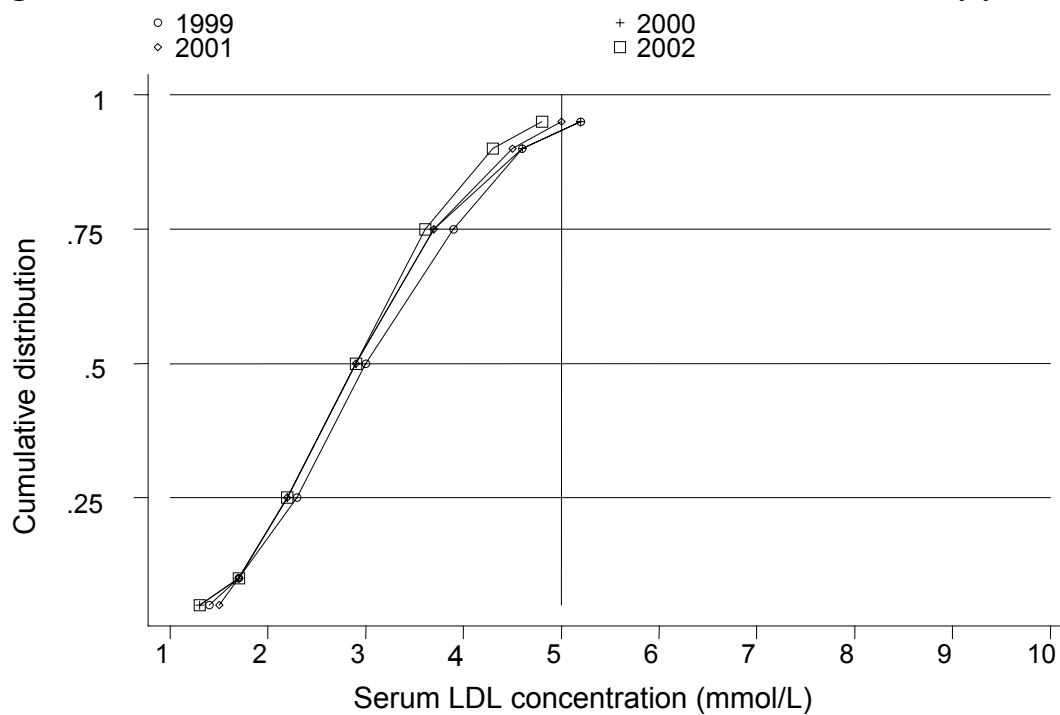
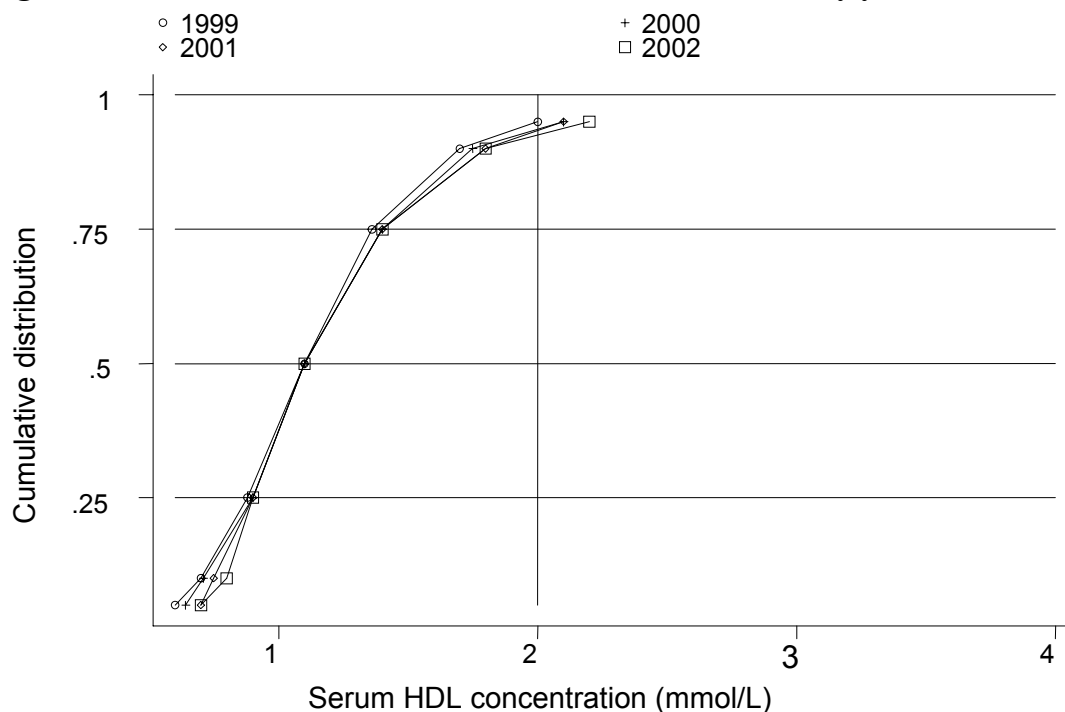


Table 3.1.27: Distribution of serum HDL (mmol/L), HD patient, Government Centres 1999- 2002

Year	No of subjects	No of observations	Median	LQ	UQ	% Patients < 2mmol/L
1999	732	1045	1.1	0.9	1.4	95
2000	950	1532	1.1	0.9	1.4	94
2001	1298	2102	1.1	0.9	1.4	93
2002	1414	2395	1.1	0.9	1.4	93

Figure 3.1.27: Cumulative distribution of serum HDL by year



3.1.10 MANAGEMENT OF RENAL BONE DISEASE, GOVERNMENT CENTRES

Table 3.1.28: Treatment for Renal Bone Disease, HD patients, Government Centres 1999 – 2002

Year	No of subjects	% on CaCO ₃	% on Al(OH) ₃	% on Vit D
1999	1881	91	9	24
2000	2114	92	8	23
2001	2358	92	4	21
2002	2436	92	5	24

Table 3.1.29: Distribution of serum Phosphate (mmol/l), HD patients, Government Centres 1999 – 2002

Year	No of subjects	No of observations	Median	LQ	UQ	% Patients <1.6 mmol/L
1999	1821	5830	1.8	1.4	2.3	36
2000	2046	6600	1.8	1.4	2.3	36
2001	2264	7348	1.8	1.4	2.3	36
2002	2316	7602	1.8	1.4	2.3	34

Figure 3.1.29: Cumulative distribution of serum Phosphate by year

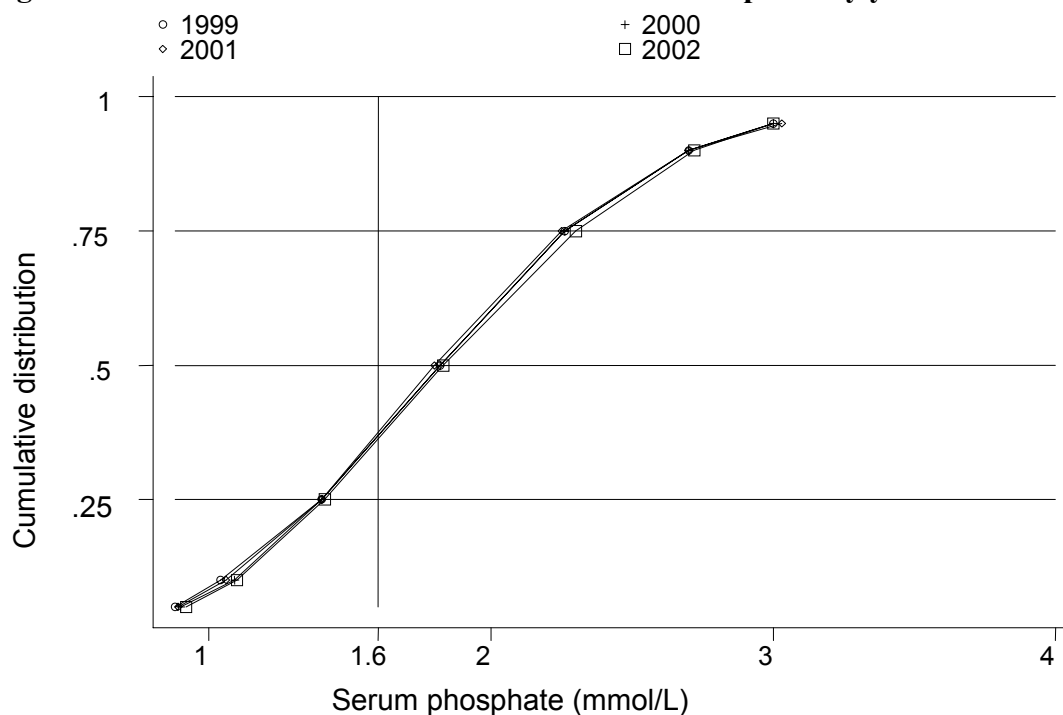


Table 3.1.30: Distribution of serum Calcium (mmol/l), HD patients, Government Centres 1999– 2002

Year	No of subjects	No of observations	Median	LQ	UQ	% Patients ≥ 2.2 & ≤ 2.6 mmol/L
1999	1835	5957	2.3	2.1	2.5	52
2000	2058	6707	2.3	2.2	2.5	56
2001	2294	7500	2.4	2.2	2.5	57
2002	2354	7811	2.3	2.1	2.5	55

Figure 3.1.30: Cumulative distribution of serum Calcium by year

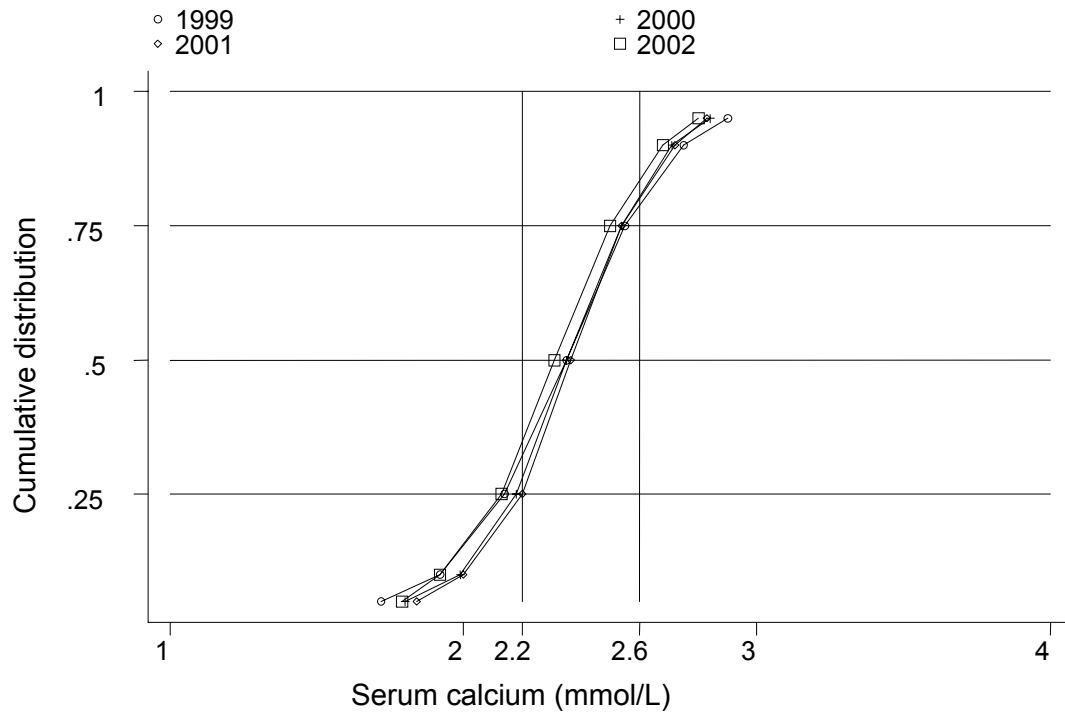
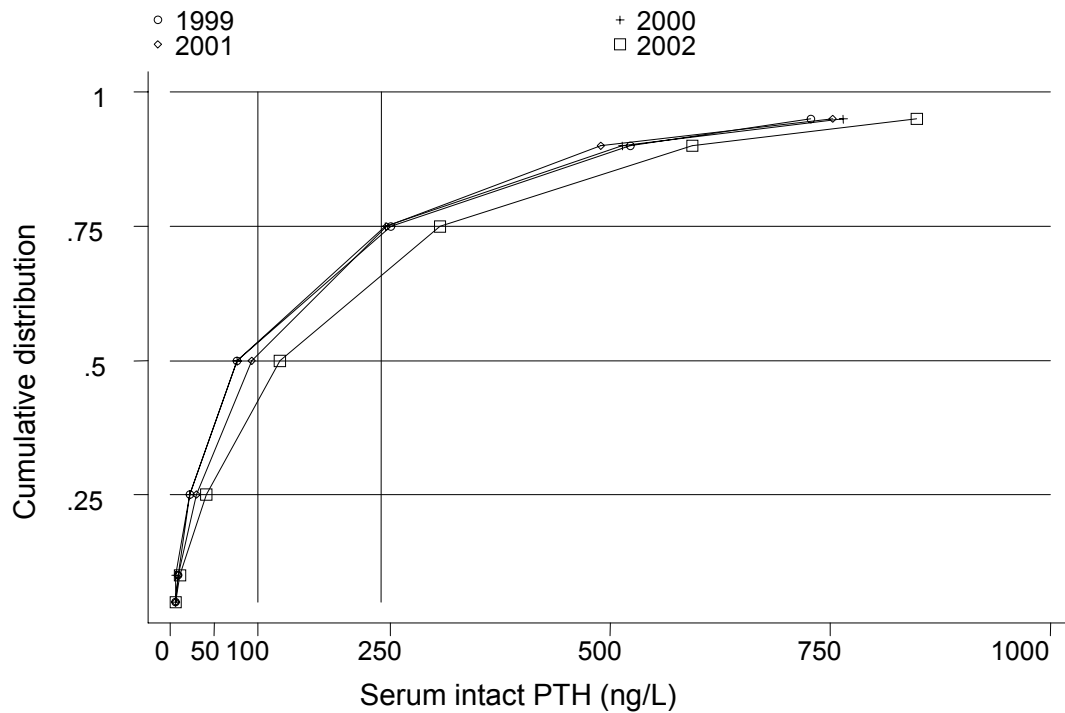


Table 3.1.31: Distribution of serum iPTH (ng/L), HD patients, Government Centres 1999 – 2002

Year	No of subjects	No of observations	Median	LQ	UQ	% Patients ≥ 100 & ≤ 250 ng/L
1999	1194	1799	76	22	251	19
2000	1533	2361	76	22	245	18
2001	1714	2734	93	30	246	23
2002	1755	2847	125	41	307	24

Figure 3.1.31: Cumulative distribution of serum iPTH by year



3.1.11 MANAGEMENT OF BLOOD PRESSURE, GOVERNMENT CENTRES

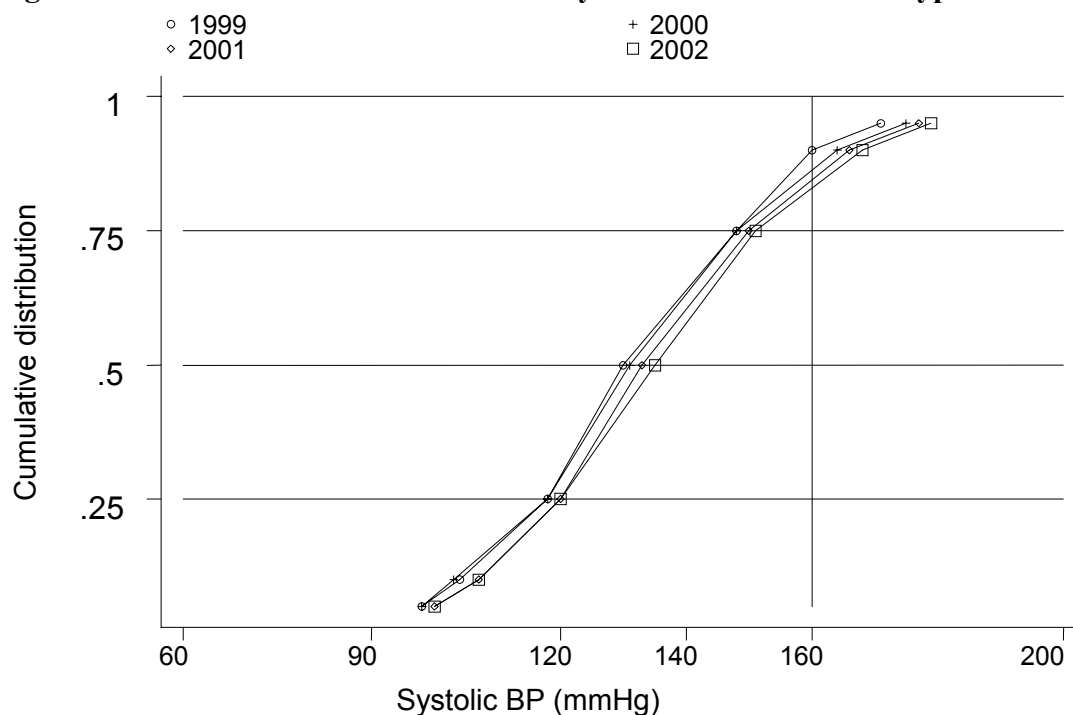
**Table 3.1.32: Treatment for hypertension, HD patients, Government Centres
1999 – 2002**

Year	No.	% on anti-hypertensives	% on 1 anti-hypertensives	% on 2 anti-hypertensives	% on 3 anti-hypertensives
1999	1881	67	35	24	8
2000	2114	67	37	22	8
2001	2358	67	34	24	9
2002	2436	67	33	25	10

**Table 3.1.33: Distribution of Systolic BP without anti-hypertensives, HD patients,
Government Centres 1999 – 2002**

Year	No of subjects	No of observations	Median	LQ	UQ	% Patients < 160 mmHg
1999	613	6252	130	118	148	88
2000	696	7346	131	118	148	86
2001	771	7905	133	120	150	84
2002	782	8253	135	120	151	83

Figure 3.1.33: Cumulative distribution of Systolic BP without anti-hypertensives by year



**Table 3.1.34: Distribution of Diastolic BP without anti-hypertensives HD patients
Government Centres 1999– 2002**

Year	No of subjects	No of observations	Median	LQ	UQ	% Patients < 90 mmHg
1999	613	6249	79	70	86	80
2000	696	7349	79	70	87	79
2001	770	7902	78	70	86	80
2002	782	8244	79	69	87	80

**Figure 3.1.34: Cumulative distribution of Diastolic BP without anti hypertensives
by year**

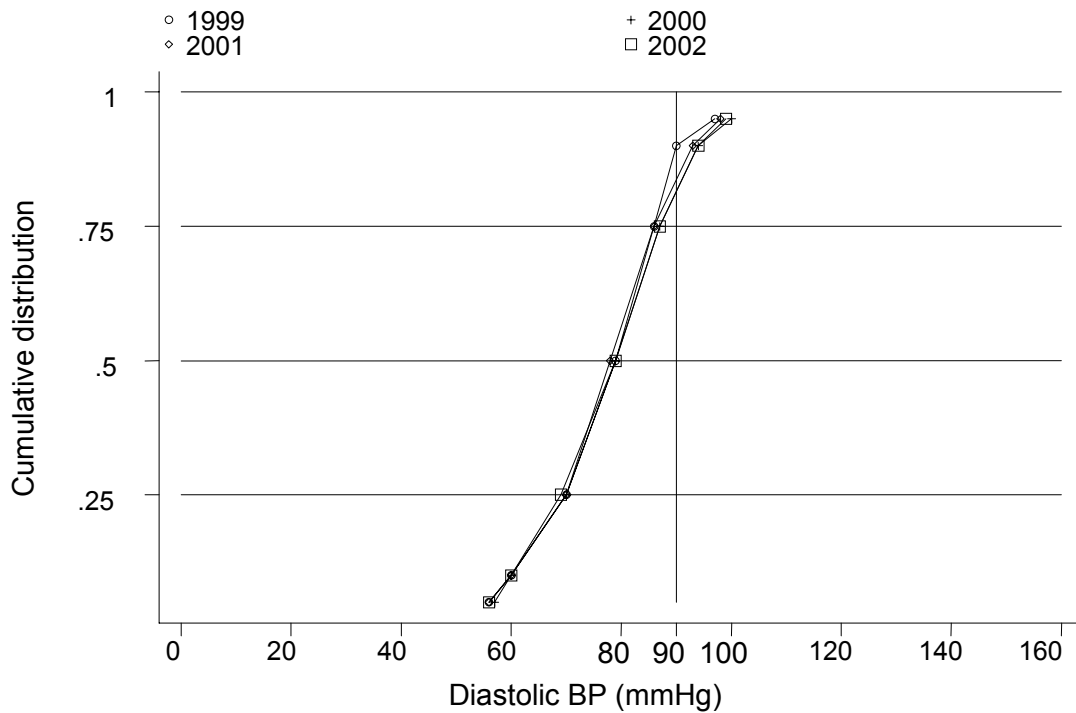


Table 3.1.35: Distribution of systolic BP on anti-hypertensives, HD patients, Government Centres 1999 – 2002

Year	No of subjects	No of observations	Median	LQ	UQ	% Patients < 160 mmHg
1999	1252	12467	150	137	168	61
2000	1401	14289	150	134	169	63
2001	1571	15917	150	135	169	62
2002	1615	16280	150	136	169	61

Figure 3.1.35: Cumulative distribution of systolic BP on anti-hypertensives by year

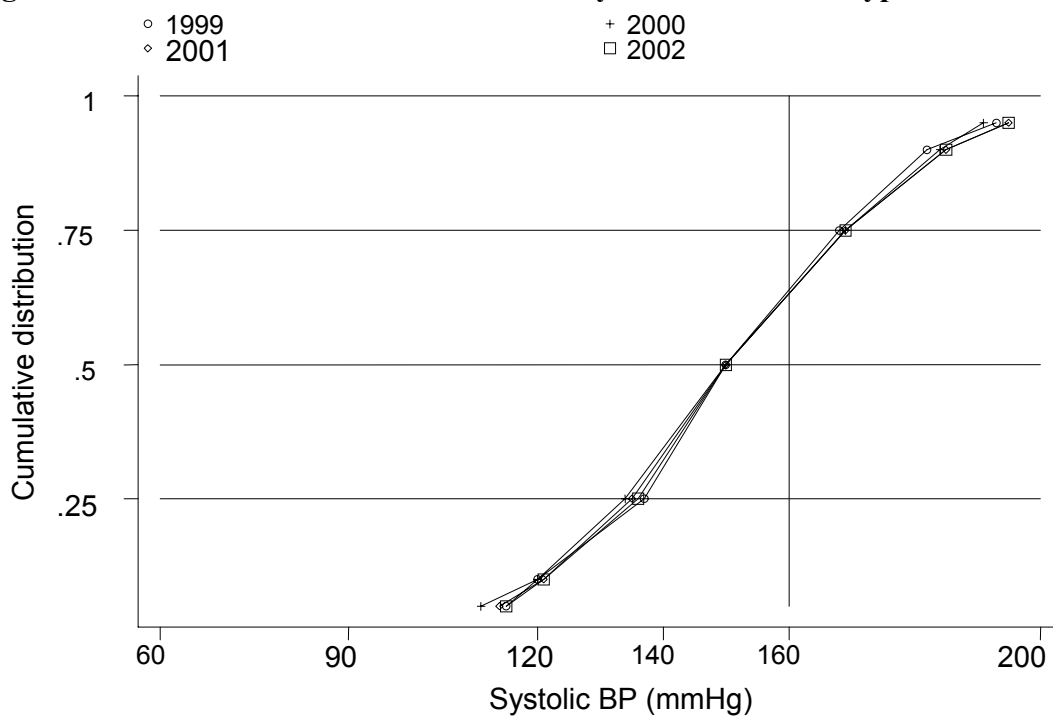
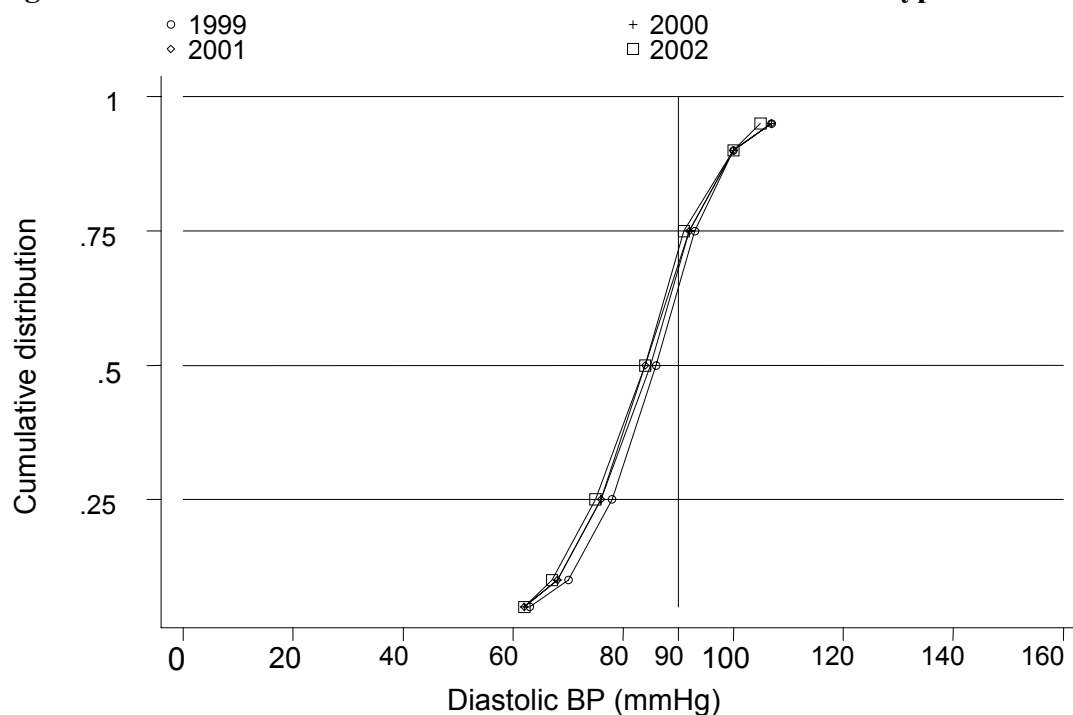


Table 3.1.36: Distribution of diastolic BP on anti-hypertensives, HD patients, Government Centres 1999– 2002

Year	No of subjects	No of observations	Median	LQ	UQ	% Patients < 90 mmHg
1999	1252	12467	86	78	93	56
2000	1401	14297	85	76	92	59
2001	1571	15927	84	76	92	62
2002	1614	16298	84	75	91	64

Figure 3.1.36: Cumulative distribution of diastolic BP on anti-hypertensives by year



3.1.12 TREATMENT OF ANAEMIA, GOVERNMENT HD CENTRES

**Table 3.1.37: Treatment for Anaemia, HD patients, Government Centres
1999 – 2002**

Year	No	% on rHuEpo	% received blood transfusion	% on oral Iron	% received parenteral Iron
1999	1881	49	16	94	5
2000	2114	54	15	92	7
2001	2358	60	13	91	7
2002	2436	66	11	89	11

**Table 3.1.38: Distribution of rHuEpo dose per week, HD patients,
Government Centres 1999 – 2002**

Year	1999	2000	2001	2002
No. of patients	872	1085	1386	1575
% on 2000 u/week	20	21	20	18
% on 2-4000 u/week	60	57	58	56
% on 4-6000 u/week	6	7	8	10
% on 6-8000 u/week	14	11	12	12
% on 8-12000 u/week	2	4	3	3
% on >12000 u/week	0	0	0	0

Table 3.1.39: Distribution of serum Iron without rHuEpo, HD patients, Government Centres 1999 – 2002

Year	No of subjects	No of observations	Median	LQ	UQ	% Patients > 10 umol/L
1999	636	1498	14.1	10	23	71
2000	665	1638	14	9.8	20	70
2001	684	1591	15	10.3	23.4	76
2002	614	1531	14	9.8	21	72

Figure 3.1.39: Cumulative Distribution of serum Iron without rHuEpo by year

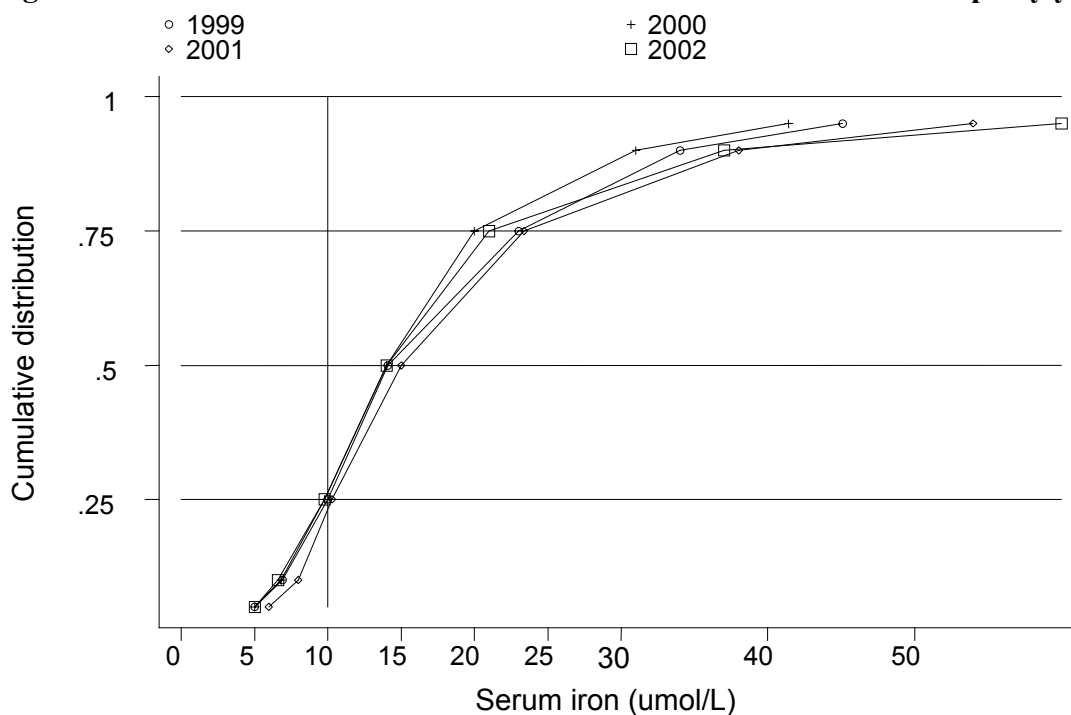


Table 3.1.40: Distribution of serum Iron on rHuEpo,HD patients, Government Centres 1999 – 2002

Year	No of subjects	No of observations	Median	LQ	UQ	% Patients > 10 umol/L
1999	639	1851	14	10	23	74
2000	915	2634	13.3	9.6	20.2	69
2001	1165	3341	14	10	22.6	71
2002	1366	4150	13	9	19.2	66

Figure 3.1.40: Cumulative Distribution of serum Iron on rHuEpo by year

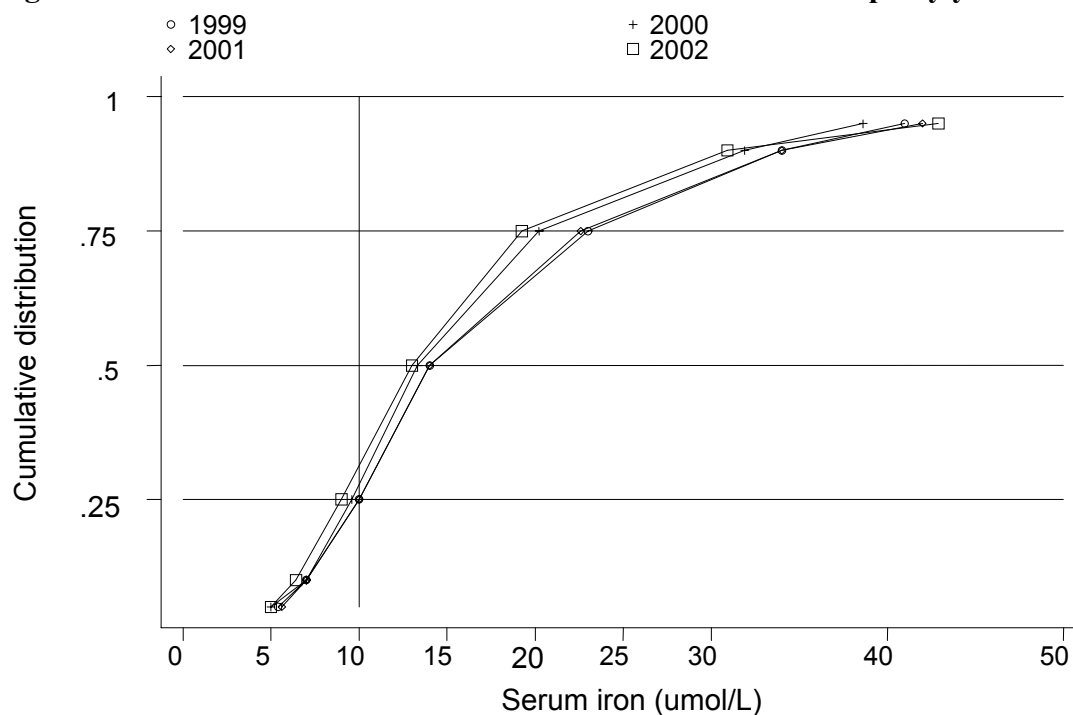


Table 3.1.41: Distribution of Transferrin Saturation without rHuEpo, HD patients, Government Centres 1999 – 2002

Year	No of subjects	No of observations	Median	LQ	UQ	% Patients > 20%
1999	381	1524	27.2	18.3	41.6	69
2000	559	2236	29.2	19.4	43.4	72
2001	594	2376	30.8	22.5	44.2	80
2002	522	2088	32.3	21.9	48.4	80

Figure 3.1.41: Cumulative distribution of serum Transferrin Saturation without rHuEpo by year

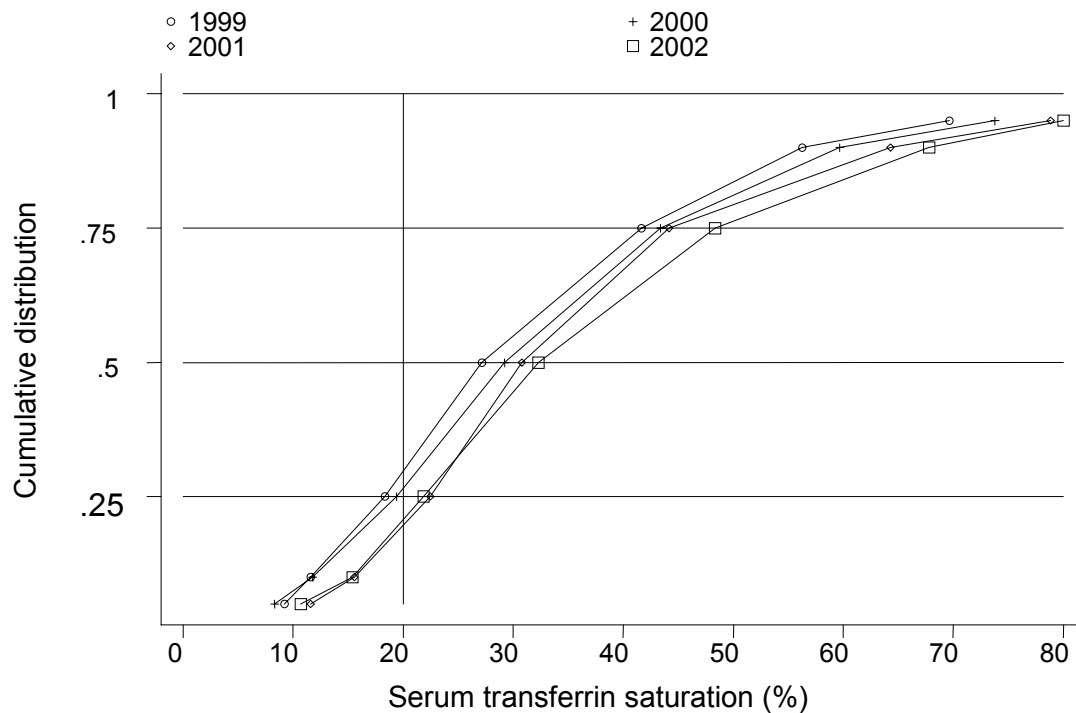


Table 3.1.42: Distribution of Transferrin Saturation on rHuEpo, HD patients, Government Centres 1999 – 2002

Year	No of subjects	No of observations	Median	LQ	UQ	% Patients > 20%
1999	481	1924	30.2	21	42.4	78
2000	854	3416	29.8	20.1	42.9	75
2001	1071	4284	31.9	22.6	47.9	80
2002	1204	4816	30.9	21.1	46.8	77

Figure 3.1.42: Cumulative distribution of serum Transferrin Saturation on rHuEpo by year

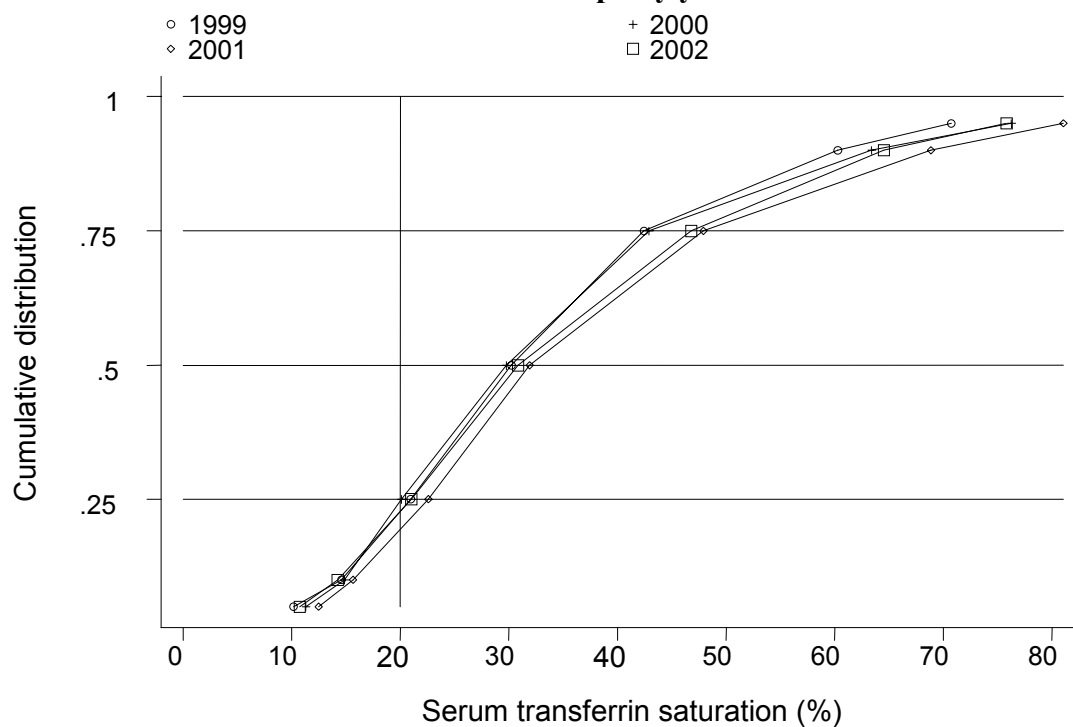


Table 3.1.43: Distribution of serum Ferritin without rHuEpo, HD patients, Government Centres 1999 – 2002

Year	No of subjects	No of observations	Median	LQ	UQ	% Patients > 100 ug/L
1999	288	433	385	157	828	85
2000	379	578	317.5	131.7	743	80
2001	454	719	355.8	157.3	779	86
2002	418	673	353	132	728	80

Figure 3.1.43: Cumulative distribution of serum Ferritin without rHuEpo by year

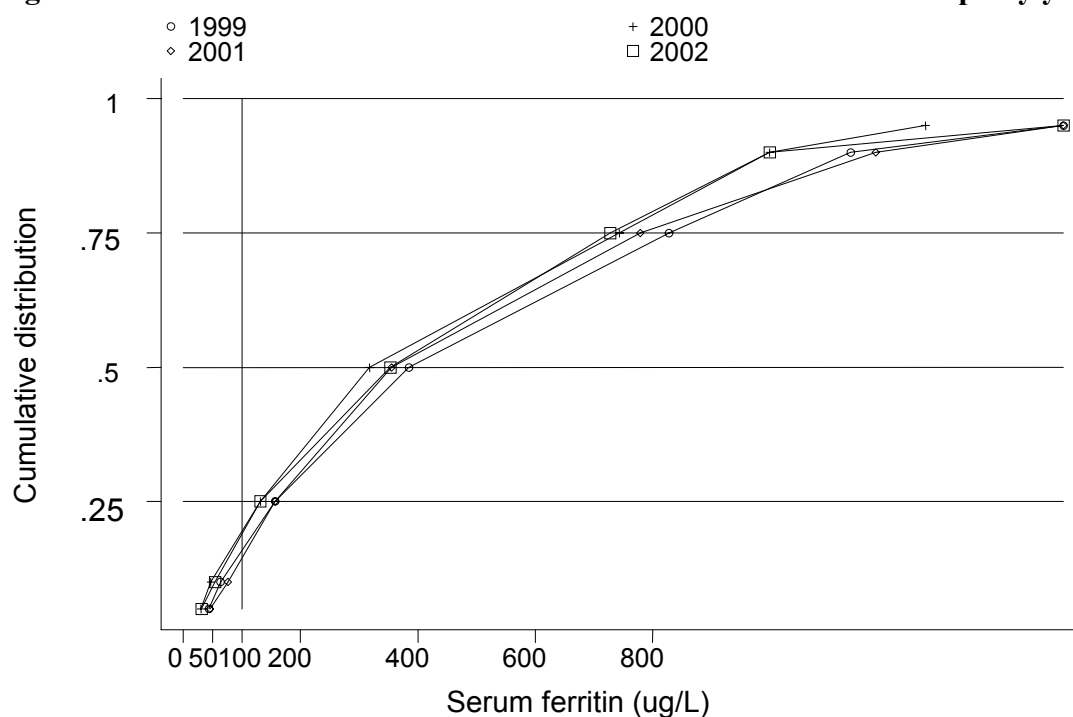


Table 3.1.44: Distribution of serum Ferritin on rHuEpo, HD patients, Government Centres 1999 – 2002

Year	No of subjects	No of observations	Median	LQ	UQ	% Patients > 100 ug/L
1999	442	691	430.6	210.7	840.7	91
2000	711	1167	413	184	836	88
2001	892	1531	435	207	876.9	88
2002	1076	1830	420	207	857	90

Figure 3.1.44: Cumulative distribution of serum Ferritin on rHuEpo by year

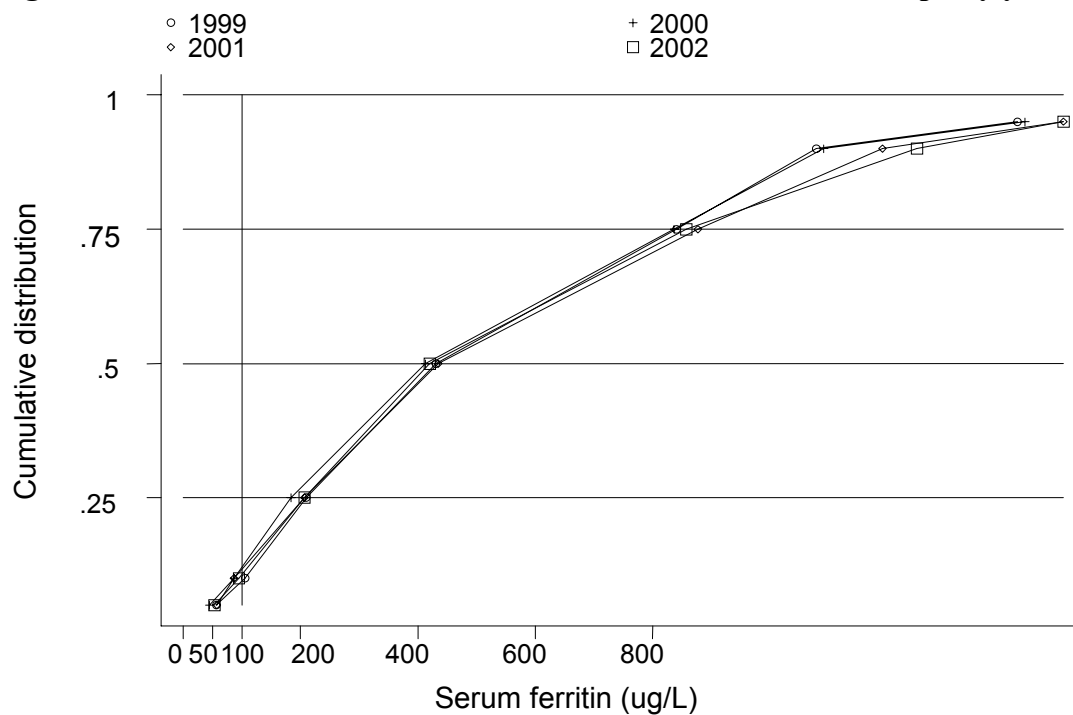


Table 3.1.45: Distribution of Haemoglobin concentration without rHuEpo, HD patients, Government Centres 1999 – 2002

Year	No of subjects	No of observations	Median	LQ	UQ	% Patients <10 g/dL	% Patients ≥ 10 & ≤ 12 g/dL	% Patients >12 g/dL
1999	944	2882	9.2	7.7	10.6	64	27	10
2000	939	2836	9.5	8	11	59	27	14
2001	908	2734	9.6	8.3	11.2	54	31	15
2002	783	2380	9.9	8.4	11.4	51	32	17

Figure 3.1.45: Cumulative distribution of Haemoglobin concentration without rHuEpo by year

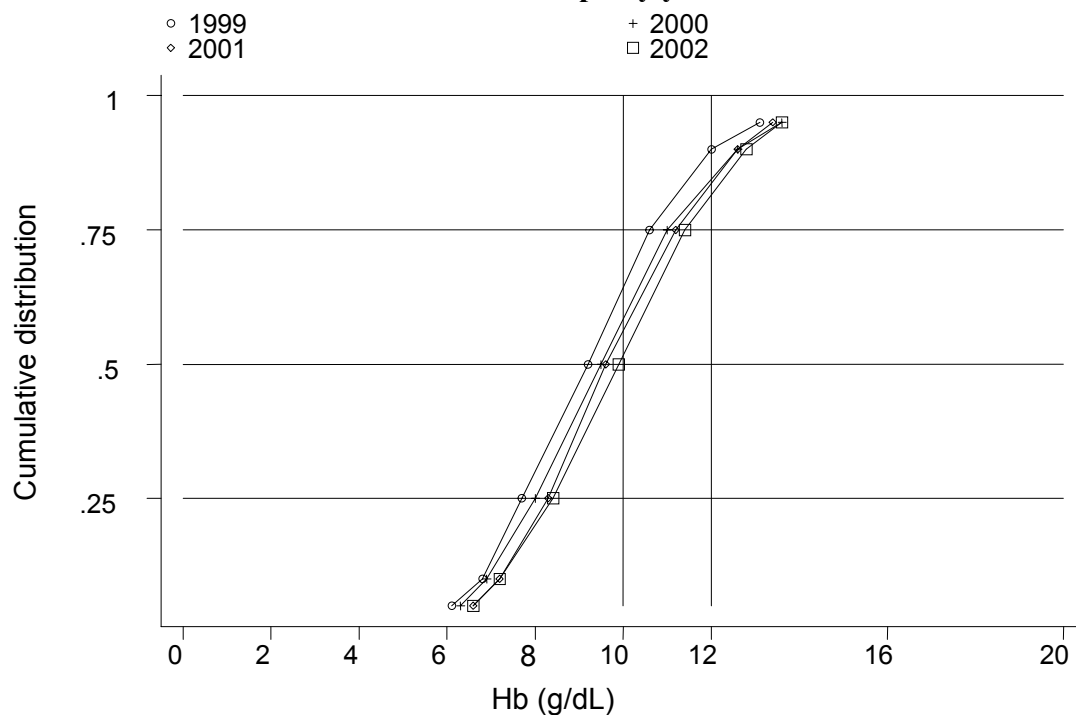
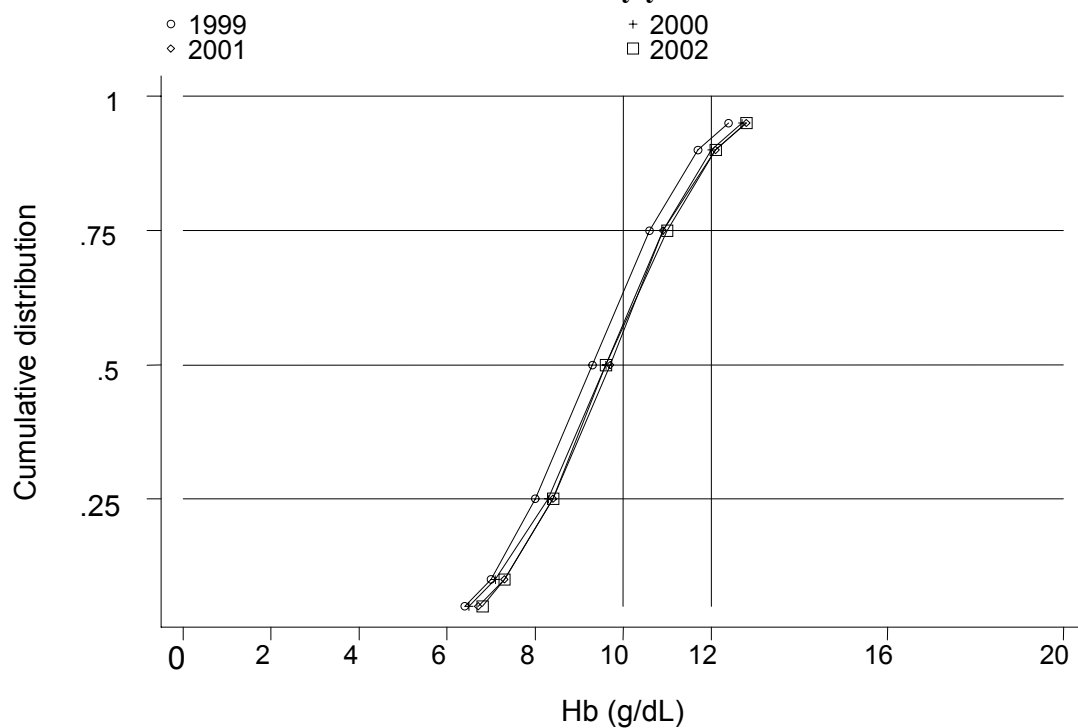


Table 3.1.46: Distribution of Haemoglobin concentration on rHuEpo, HD patients, Government Centres 1999 – 2002

Year	No of subjects	No of observations	Median	LQ	UQ	% Patients <10 g/dL	% Patients ≥ 10 & ≤ 12 g/dL	% Patients >12 g/dL
1999	907	3223	9.3	8	10.6	63	30	8
2000	1125	4043	9.6	8.3	10.9	56	34	10
2001	1393	4924	9.7	8.4	10.9	55	35	10
2002	1569	5595	9.6	8.4	11	56	33	10

Figure 3.1.46: Cumulative distribution of Haemoglobin concentration on rHuEpo, by year



3.1.13 NUTRITIONAL STATUS OF HD PATIENTS GOVERNMENT CENTRES

Table 3.1.47: Distribution of serum Albumin (g/L), HD patients, Government Centres 1999 - 2002

Year	No of subjects	No of observations	Median	LQ	UQ	% Patients >40g/L
1999	1822	5908	41	37	44	59
2000	2013	6520	40	37	44	56
2001	2279	7503	40.5	37	44	57
2002	2343	7808	40.1	37	44	57

Figure 3.1.47: Cumulative distribution of serum Albumin by year

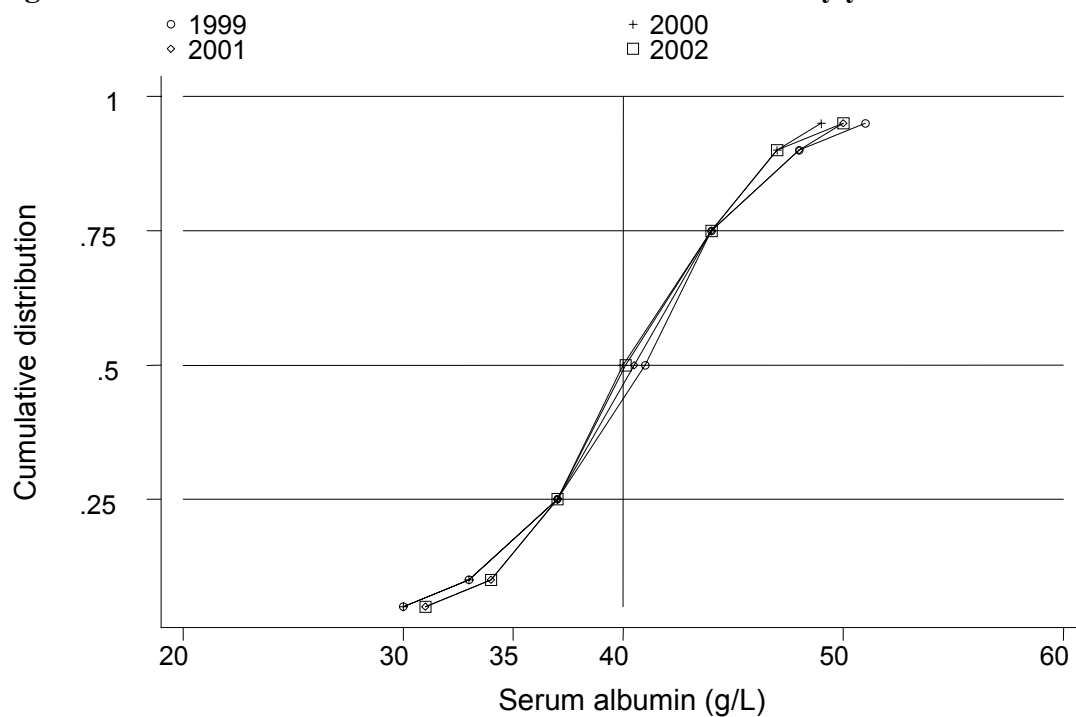
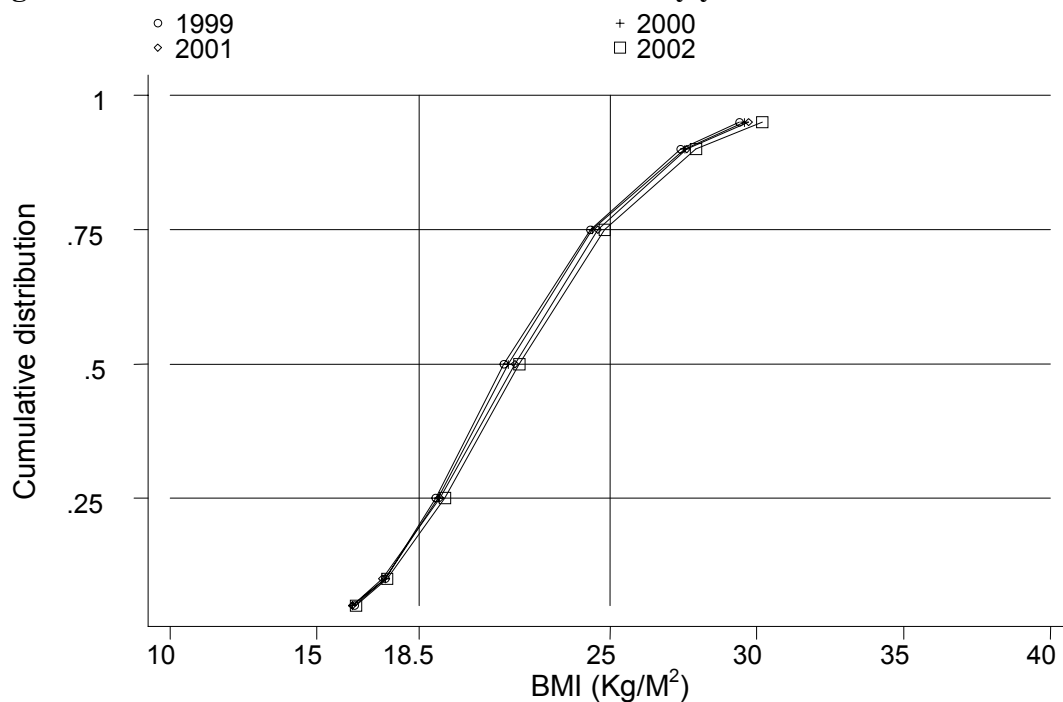


Table 3.1.48: Distribution of Body Mass Index, HD patients, Government Centres 1999 – 2002

Year	No of subjects	No of observations	Median	LQ	UQ	% Patients <18.5	% Patients ≥ 18.5 & ≤ 25	% Patients >25
1999	1776	17783	21.4	19.1	24.3	19	60	20
2000	1993	20559	21.5	19.1	24.4	19	60	21
2001	2214	22468	21.7	19.2	24.6	19	59	22
2002	2232	22909	21.9	19.4	24.8	18	59	23

Figure 3.1.48: Cumulative distribution of BMI by year



3.1.14 SEROLOGICAL STATUS, HD PATIENTS GOVERNMENT CENTRES

Table 3.1.49: Prevalence of positive anti-HCV and HbsAg, HD patients, Government Centres 1999– 2002

Year	No	% HbsAg positive	% anti-HCV positive
1999	1881	6	25
2000	2114	6	29
2001	2358	6	27
2002	2436	5	23

Figure 3.1.49: Prevalence of positive anti-HCV and HbsAg, HD patients, Government Centres 1999 – 2002

