HAEMODIALYSIS
IN
PRIVATE CENTRES

Stock and Flow

Death on Haemodialysis and Transfer to PD

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 antibodies and HbsAg

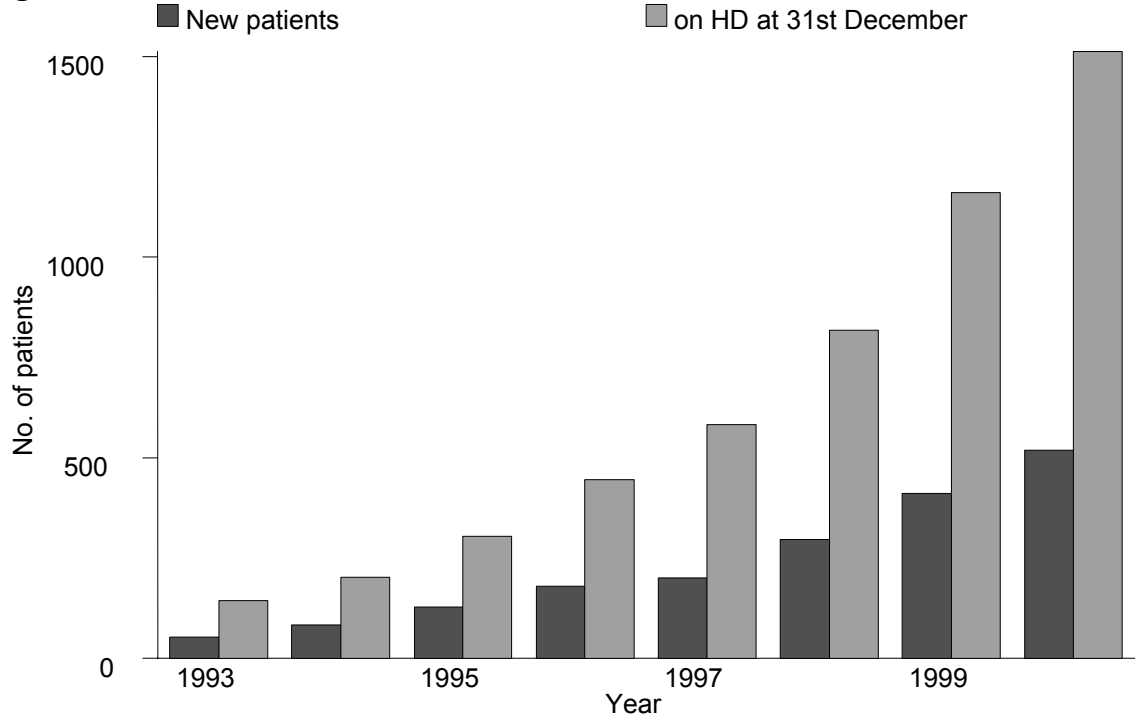
3.3: HAEMODIALYSIS IN PRIVATE CENTRES

3.3.1 STOCK AND FLOW

Table 3.3.01: Stock and Flow HD Patient, Private Centres 1993 - 2000

Year	1993	1994	1995	1996	1997	1998	1999	2000
New patients	52	83	128	179	200	296	410	518
Died	4	16	20	24	48	50	51	115
Transferred to PD	0	0	1	2	2	1	0	8
Transplanted	5	6	2	8	6	5	14	36
Lost to Follow up	0	2	3	4	7	5	1	7
Dialysing at 31st December	143	202	304	445	582	817	1161	1513

Figure 3.3.01: Stock and Flow HD Patient, Private Centres 1993 – 2000



3.3.3 DEATH ON HAEMODIALYSIS, PRIVATE CENTRES

Table 3.3.04: HD Death Rate and Transfer to PD, Private Centres 1993 – 2000

	1993	1994	1995	1996	1997	1998	1999	2000
No. at risk	143	173	253	375	514	700	989	1337
Deaths	4	16	20	24	48	50	51	115
Death rate %	3	9	8	6	9	7	5	9
Transfer to PD	0	0	1	2	2	1	0	8
Transfer to PD rate %	0	0	0	1	0	0	0	1
All Losses	4	16	21	26	50	51	51	123
All Losses rate %	3	9	8	7	10	7	5	9

Figure 3.3.04: Death Rate on HD, Private Centres 1993 - 2000

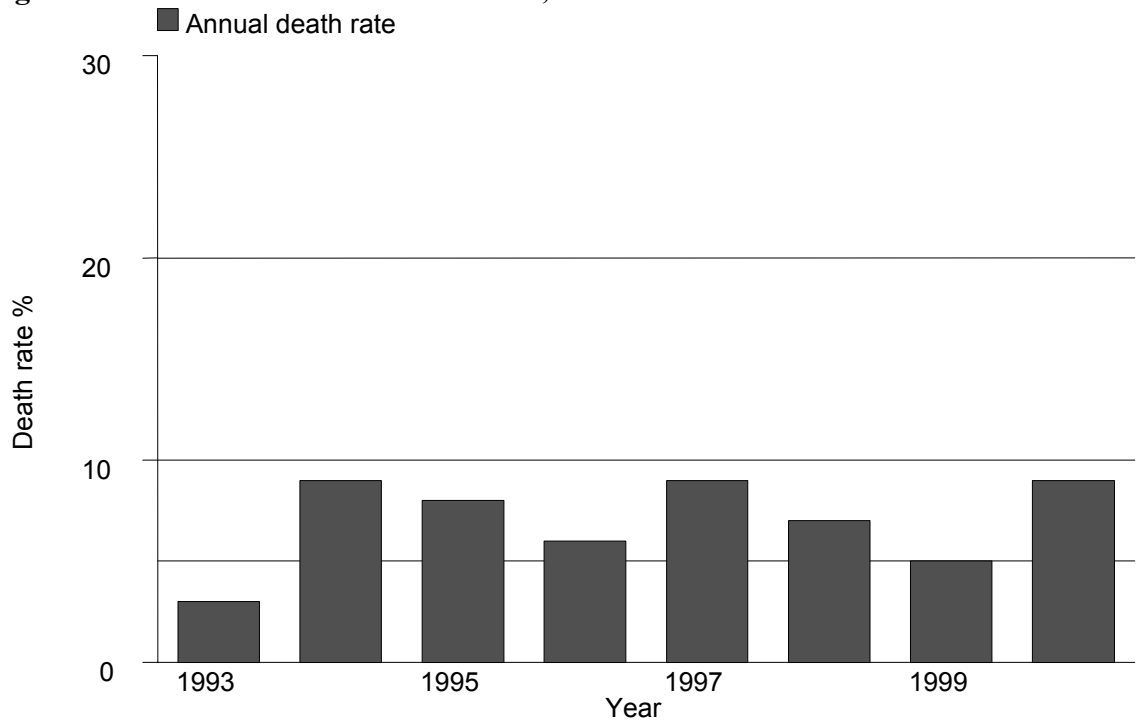


Table 3.3.05: Causes of Death HD Patient, Private Centres 1997 – 2000

Causes of death	1997		1998		1999		2000	
	No.	%	No.	%	No.	%	No.	%
Cardiovascular	5	10	11	22	12	24	41	36
Died at home	10	21	10	20	14	27	32	28
Sepsis	3	6	4	8	8	16	11	10
GIT bleed	0	0	1	2	1	2	2	2
Cancer	2	4	3	6	1	2	2	2
Liver disease	1	2	0	0	2	4	2	2
Others	13	27	19	38	11	22	21	18
Unknown	14	29	2	4	2	4	4	3
Total	48	100	50	100	51	100	115	100

3.3.5 HAEMODIALYSIS PATIENTS' CHARACTERISTICS, PRIVATE CENTRES

Table 3.3.08: Age Distribution of Dialysis Patients, Private Centres 1997 – 2000

Year	1997	1998	1999	2000
New Dialysis patients	200	296	410	518
1-14 years	0	0	0	0
15-24 years	1	3	2	1
25-34 years	8	7	7	5
35-44 years	11	15	15	14
45-54 years	20	21	21	24
55-64 years	29	29	27	30
≥65 years	32	26	28	27
Dialysing at 31st December	582	817	1161	1513
1-14 years	0	0	0	0
15-24 years	2	3	3	2
25-34 years	14	12	11	9
35-44 years	19	18	17	16
45-54 years	17	19	20	21
55-64 years	27	28	27	29
≥65 years	20	21	23	23

Table 3.3.09: Patients' Characteristics , Private Centres 1997 – 2000

Year	1997	1998	1999	2000
New Dialysis patients (No)	200	296	410	518
Mean age±sd (years)	57±14	54±14	55±14	56±13
% male	50	49	55	56
% Diabetic	42	45	45	52
% HbsAg+	2	3	4	4
% Anti-HCV+	12	12	8	4

3.3.6 SURVIVAL ANALYSIS, PRIVATE HD CENTRES

Table 3.3.10: HD Patient Survival, Private Centres 1995 - 2000

Year	1995			1996			1997		
Interval	% survival	SE	No	% survival	SE	No	% survival	SE	No
6	84	3	102	90	2	154	93	2	182
12	81	4	98	87	3	143	90	2	176
24	74	4	85	80	3	130	86	2	166
36	65	4	75	75	3	118	79	3	148
48	61	5	70	67	4	103			
60	58	5	65						

Year	1998			1999			2000		
Interval	% survival	SE	No	% survival	SE	No	% survival	SE	No
6	94	1	274	96	1	384	97	1	246
12	92	2	266	90	1	353			
24	85	2	233						

No. = number at risk SE = standard error

Figure 3.3.10: HD Patient Survival by year of entry, Private Centres

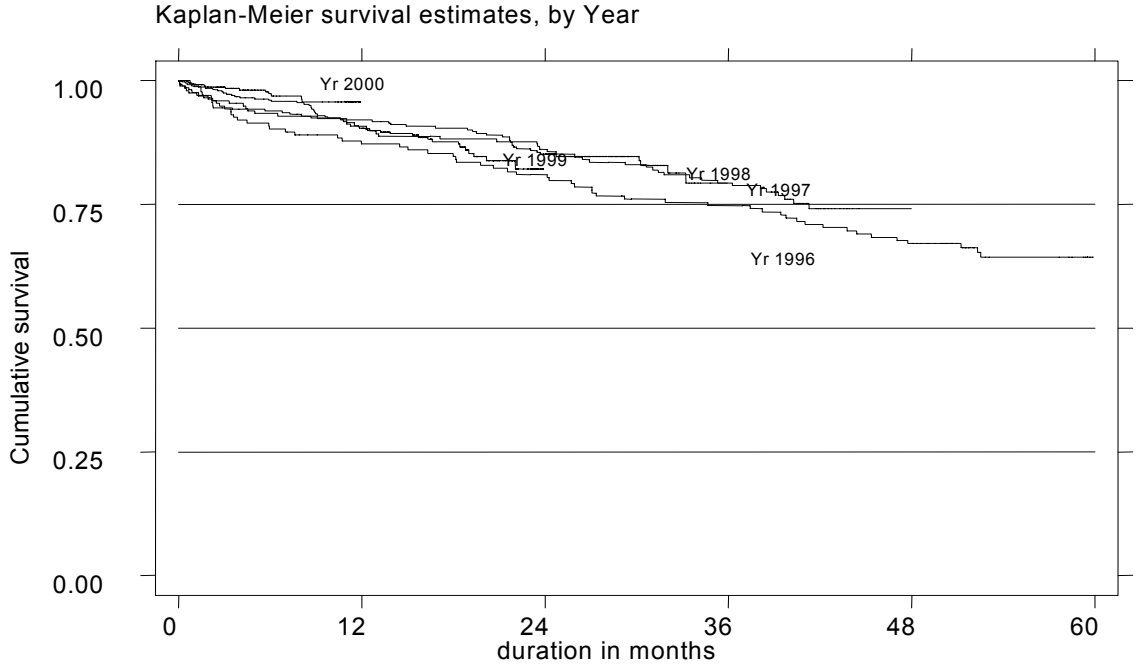


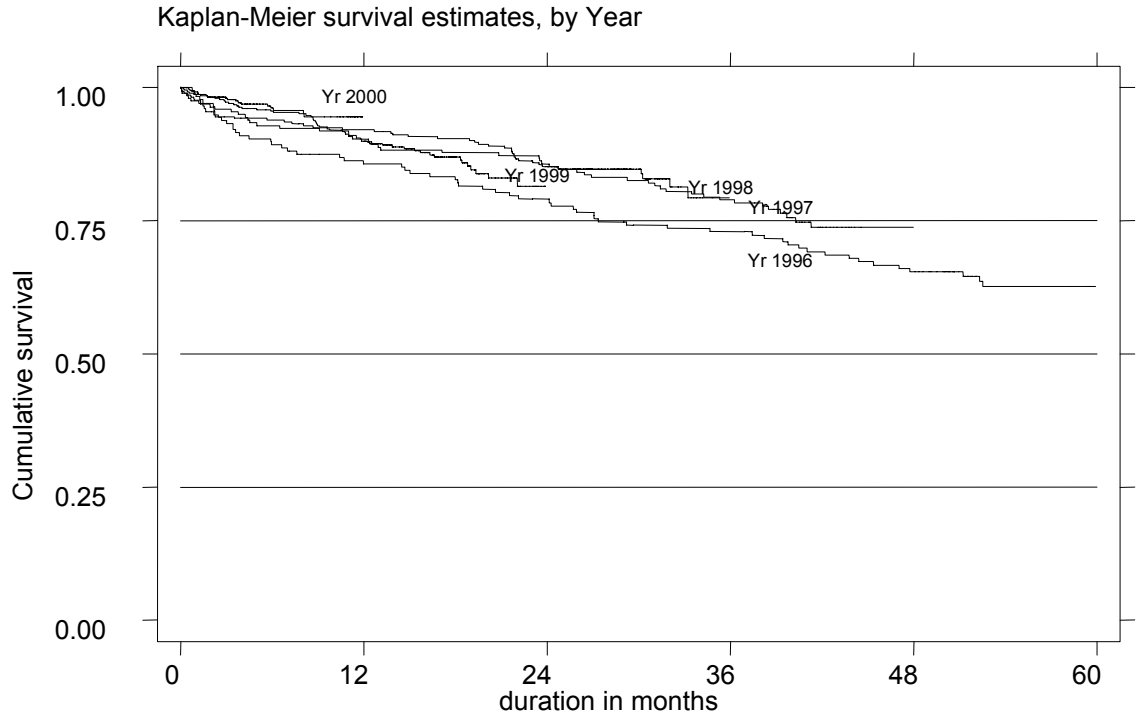
Table 3.3.11: HD Technique Survival, Private Centres

Year	1995			1996			1997		
Interval	% survival	SE	No	% survival	SE	No	% survival	SE	No
6	83	3	102	89	2	154	93	2	182
12	81	4	98	86	3	143	90	2	176
24	73	4	85	78	3	130	85	3	166
36	65	4	75	73	3	118	79	3	148
48	60	5	70	65	4	103			
60	57	5	65						

Year	1998			1999			2000		
Interval	% survival	SE	No						
6	94	1	274	95	1	384	96	1	246
12	92	2	266	90	1	353			
24	85	2	233						

No. = number at risk SE = standard error

Figure 3.3.11: HD Technique Survival by year of entry, Private Centres



3.3.7 WORK RELATED REHABILITATION AND QUALITY OF LIFE ON HAEMODIALYSIS, PRIVATE CENTRES

Table 3.3.12: Work Related Rehabilitation on HD, Private centres 1999-2000

REHABILITATION STATUS	1999		2000	
	No.	%	No.	%
Full time work for pay	111	30	155	23
Part time work for pay	24	6	34	5
Able to work but unable to get a job	4	1	6	1
Able to work but not yet due to dialysis schedule	5	1	10	1
Able but disinclined to work	2	1	7	1
Home maker	88	24	177	26
Full time student	1	0	2	0
Age<15 years	0	0	0	0
Retired	44	12	82	12
Age>65 years	62	17	124	19
Unable to work due to poor health	33	9	71	11
Total	374	100	668	100

Table 3.3.13: Quality of Life on Haemodialysis, Private Centres 1999-2000

QOL Index Summated Score	1999		2000	
	No.	%	No.	%
0 (Worst QOL)	1	0	1	0
1	0	0	0	0
2	2	1	1	0
3	0	0	10	1
4	3	1	21	3
5	22	6	50	7
6	26	7	56	8
7	40	11	55	8
8	32	9	68	10
9	48	13	66	10
10 (Best QOL)	195	53	365	53
Total	369	100	693	100

3.3.8 HAEMODIALYSIS PRACTICES IN PRIVATE CENTRES

Table 3.3.14: Vascular Access on Haemodialysis, Private Centres 1999-2000

Access Type	1999		2000	
	No	%	No.	%
Wrist AVF	319	81	612	80
BCF*	45	11	117	15
Venous graft	4	1	3	0
Artificial graft	6	2	10	1
PERMCATH	3	1	4	1
Temporary CVC*	18	5	18	2
Total	395	100	764	100

* *BCF = Brachiocephalic fistula*
* *CVC = Central venous catheter*

Table 3.3.15: Difficulties reported with Vascular Access, Private Centres 1999-2000

Access difficulty	1999		2000	
	No	%	No.	%
Difficulty with needle placement	12	3	28	4
Difficulty in obtaining desired blood flow rate	8	2	25	3
Other difficulty	6	2	3	0
No difficulty	369	93	709	93
Total	395	100	765	100

Table 3.3.16: Complications reported with Vascular Access, Private Centres 1999-2000

Complication	1999		2000	
	No	%	No.	%
thrombosis	13	3	20	3
bleed	2	1	3	0
aneurysmal dilatation	12	3	41	5
swollen limb	5	1	3	0
access related infection, local/systemic	1	0	3	0
distal limb ischaemia	1	0	7	1
venous outflow obstruction	1	0	6	1
carpal tunnel	1	0	2	0
other	6	2	6	1
no complication	353	89	674	88
Total	395	100	765	100

Table 3.3.17: Blood Flow Rates in Private HD Units 1999-2000

Blood flow rates	1999		2000	
	No	%	No.	%
<150 ml/min	1	0	2	0
150-199 ml/min	10	3	16	2
200-249 ml/min	194	53	387	53
250-299 ml/min	132	36	250	34
300-349 ml/min	22	6	76	10
≥350 ml/min	9	2	5	1
Total	368	100	736	100

Table 3.3.18: Number of HD Sessions per week, Private HD Units 1999-2000

HD sessions Per week	1999		2000	
	No	%	No.	%
1	2	1	4	1
2	119	30	240	32
3	270	69	512	67
4	1	0	2	0
Total	392	100	760	100

Table 3.3.19 Duration of HD in Private HD Units, 1999-2000

Duration of HD per session	1999		2000	
	No	%	No.	%
≤3 hours	1	0	0	0
3.5 hours	8	2	9	1
4 hours	291	74	603	79
4.5 hours	54	14	79	10
5 hours	37	9	59	8
≥5 hours	0	0	10	1
Total	391	100	760	100

Table 3.3.20: Dialyser membrane types in Private HD Units 1999-2000

Dialyser membrane	1999		2000	
	No	%	No.	%
Cellulosic	141	81	323	78
Cellulose acetate	11	6	13	3
Synthetic	23	13	80	19
Total	175	100	416	100

Table 3.3.21: Dialyser Reuse Frequency in Private HD Units 1999-2000

Dialyser reuse frequency	1999		2000	
	No	%	No.	%
1*	43	12	57	8
2	6	2	2	0
3	28	8	26	4
4	131	38	305	44
5	42	12	76	11
6	92	26	163	24
7	2	1	4	1
8	2	1	44	6
9	0	0	0	0
10	0	0	14	2
11	1	0	1	0
12	1	0	1	0
≥13	0	0	0	0
Total	348	100	693	100

* 1 is single use i.e. no reuse

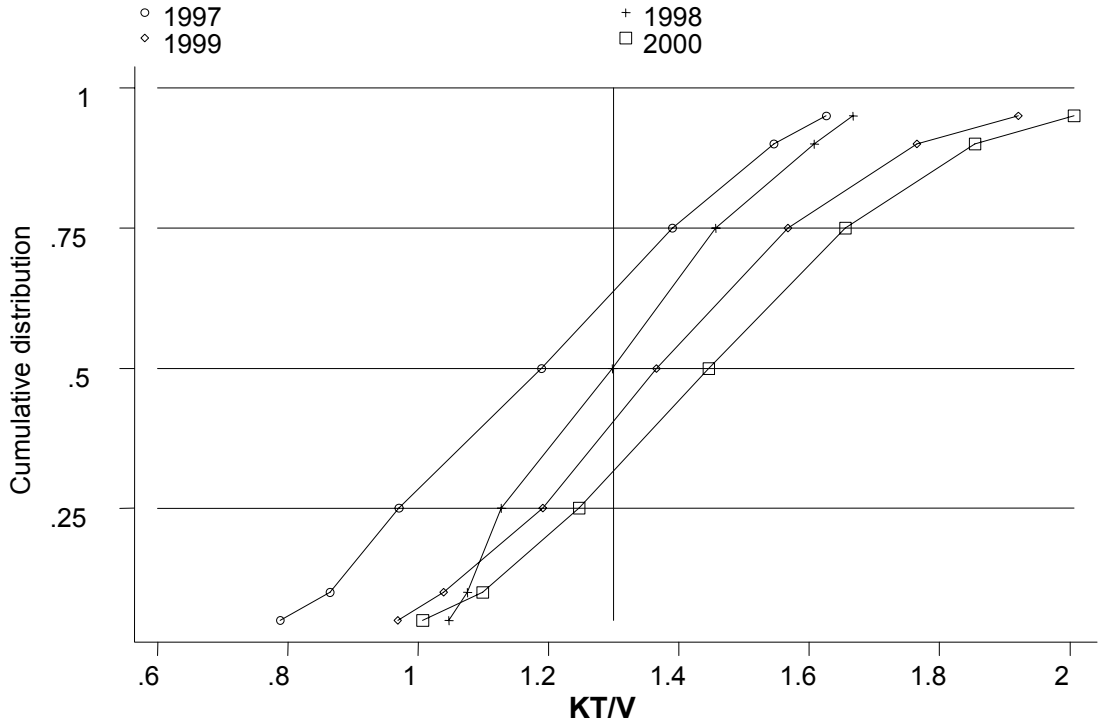
Table 3.3.22: Dialysate Buffer used in Private HD Units 1999-2000

Dialysate buffer	1999		2000	
	No	%	No.	%
Acetate	64	16	85	11
Bicarbonate	331	84	674	89
Total	395	100	759	100

Table 3.3.23: Distribution of Prescribed KT/V, Private Centres 1999-2000

Year	No of subjects	No of observations	median	LQ	UQ	% > 1.45
1999	235	1698	1.4	1.2	1.6	61
2000	469	4443	1.4	1.2	1.7	67

Figure 3.3.23: Cumulative distribution of Prescribed KT/V by Year



3.3.9 DYSLIPIDAEMIA IN HD PATIENTS, PRIVATECENTRES

Table 3.3.24: Distribution of Serum Cholesterol Levels (mmol/l), HD patients, Private Centres 1999-2000

Year	No of subjects	No of observations	median	LQ	UQ	% patients < 5.3 mmol/l
1999	189	285	5	4.3	5.7	67
2000	323	514	4.9	4.1	5.8	66

Figure 3.3.24: Cumulative distribution of serum cholesterol concentration by year

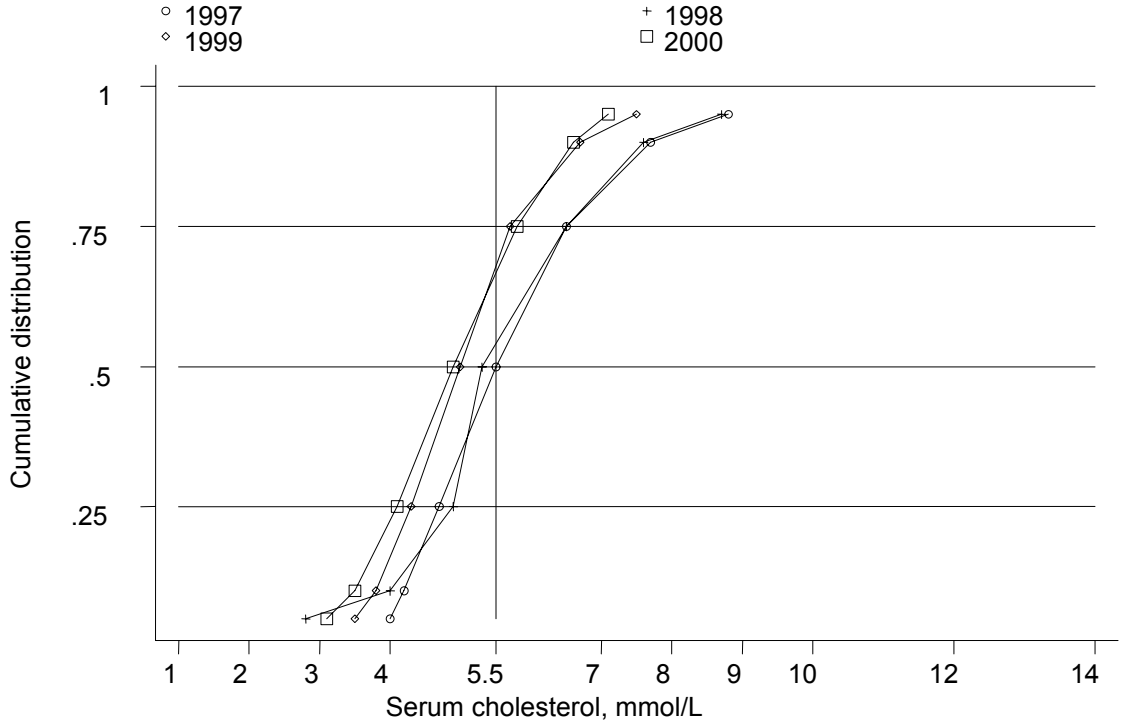


Table 3.3.25: Distribution of serum Triglyceride (mmol/l), HD patients, Private Centres 1999-2000

Year	No of subjects	No of observations	median	LQ	UQ	% patients < 3.5 mmol/l
1999	81	104	1.8	1.2	2.7	87
2000	240	366	1.7	1.1	2.5	86

Figure 3.3.25: Cumulative distribution of serum triglyceride concentration by year

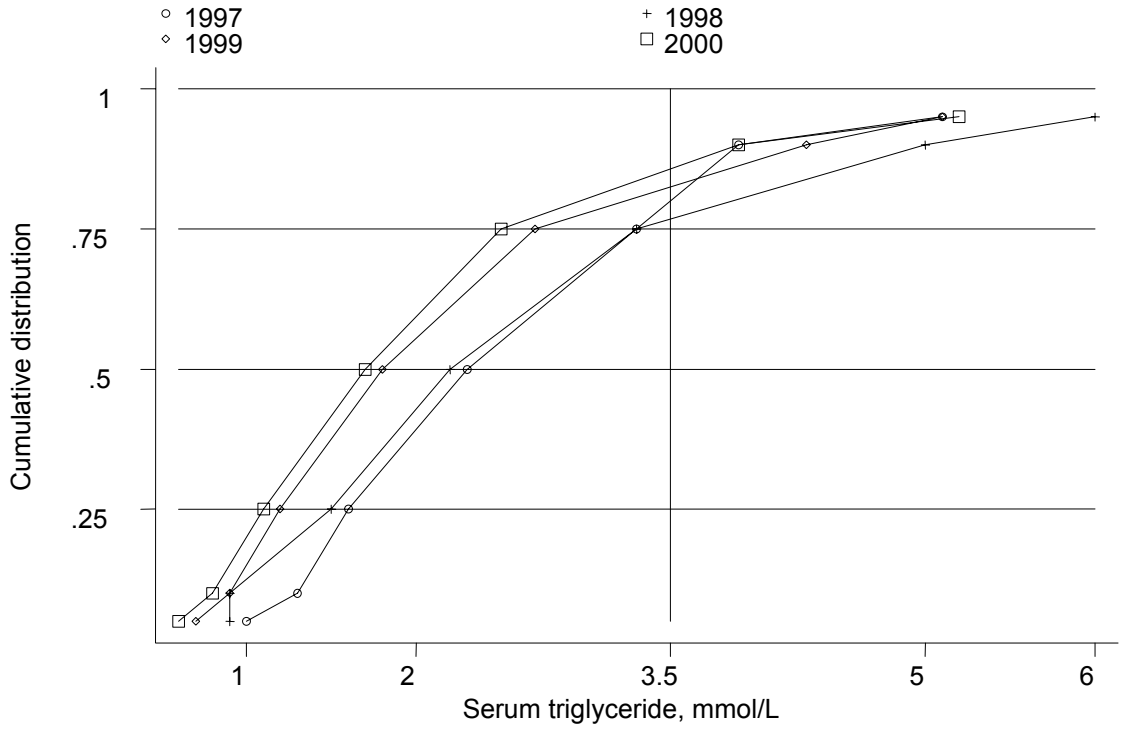


Table 3.3.26: Distribution of serum LDL (mmol/l), HD patient, Private Centres 1999-2000

Year	No of subjects	No of observations	median	LQ	UQ	% patients <5 mmol/l
1999	72	92	3	2.5	4	93
2000	218	329	2.9	2.2	3.5	98

Figure 3.3.26 : Cumulative distribution of serum LDL by year

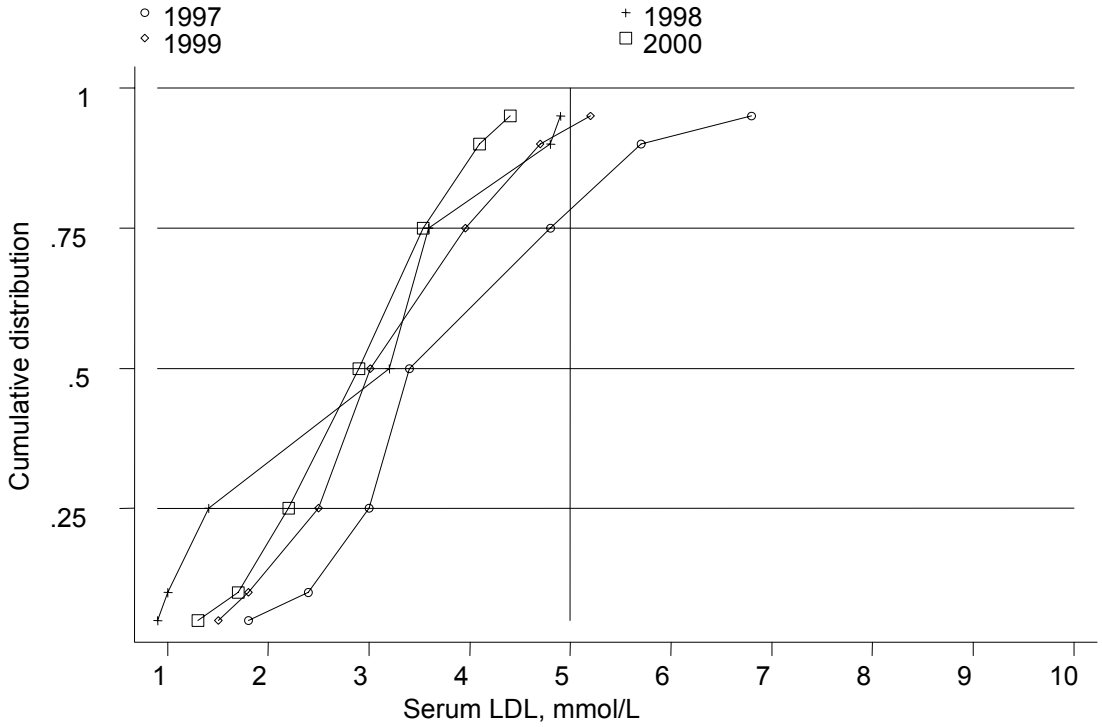
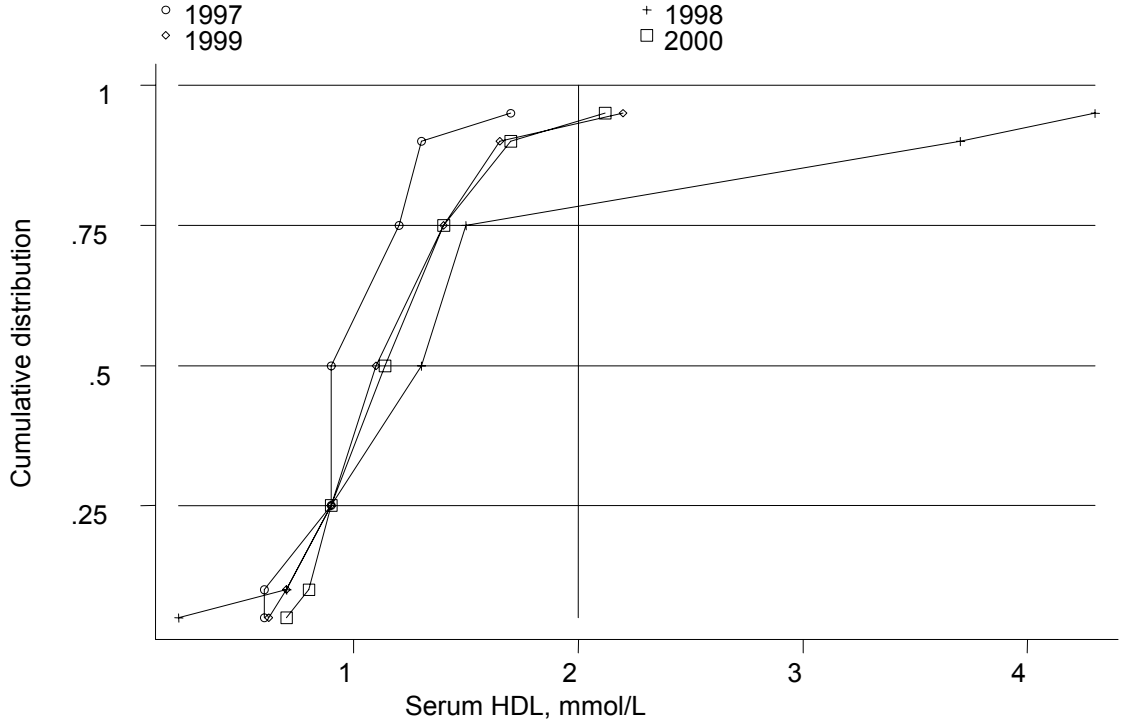


Table 3.3.27: Distribution of serum HDL (mmol/l), HD patient, Private Centres 1999-2000

Year	No of subjects	No of observations	median	LQ	UQ	% patients < 2mmol/l
1999	74	95	1.1	.9	1.4	95
2000	218	337	1.1	.9	1.4	94

Figure 3.3.27: Cumulative distribution of serum HDL by year



3.3.10 MANAGEMENT OF RENAL BONE DISEASE, PRIVATECENTRES

Table 3.3.28: Treatment for Renal Bone Disease, HD patients, Private Centres 1999-2000

year	No of subjects	% on CaCO3	% on Al(OH)3	% on Vit D
1999	396	81	6	28
2000	768	84	3	33

Table 3.3.29: Distribution of serum Phosphate (mmol/l), HD patients, Private Centres 1999-2000

year	No of subjects	No of observations	median	LQ	UQ	% patients < 1.6 mmol/l
1999	353	951	2	1.6	2.3	26
2000	658	1643	1.9	1.5	2.3	31

Figure 3.3.29 Cumulative distribution of serum Phosphate by year

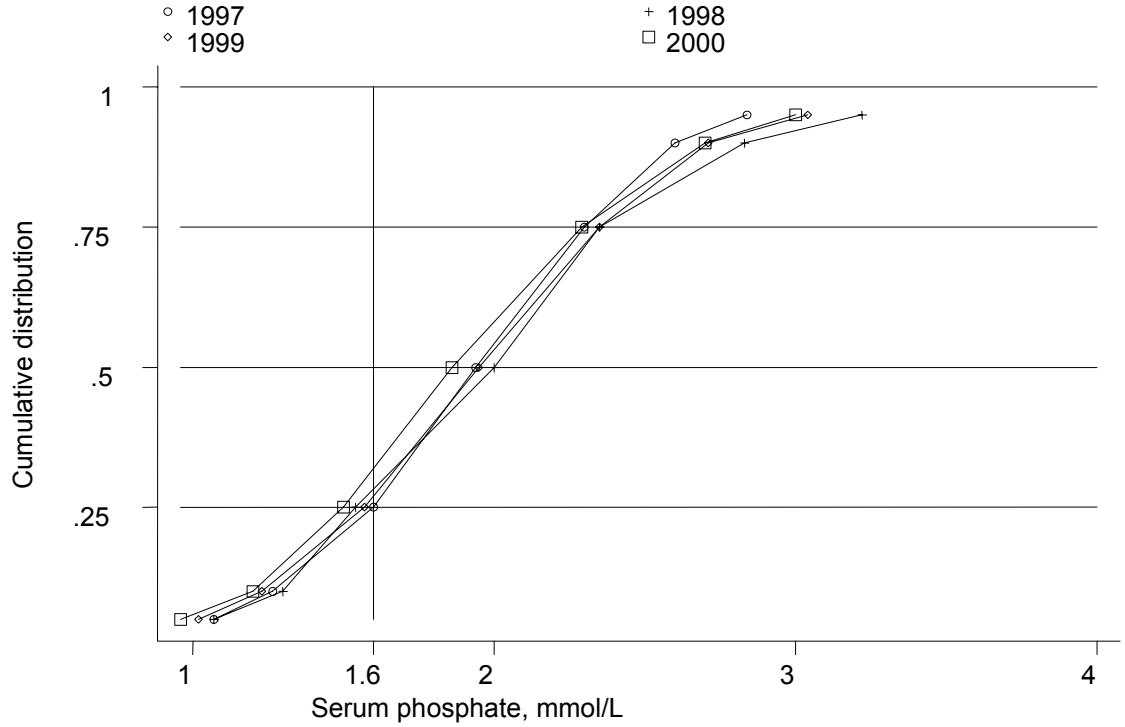


Table 3.3.30: Distribution of serum Calcium (mmol/l), HD patients, Private Centres 1999-2000

year	No of subjects	No of observations	median	LQ	UQ	% patients ≥ 2.2 & ≤2.6 mmol/l
1999	354	978	2.3	2.1	2.5	51
2000	668	1678	2.3	2.2	2.5	56

Figure 3.3.30: Cumulative distribution of serum Calcium by year

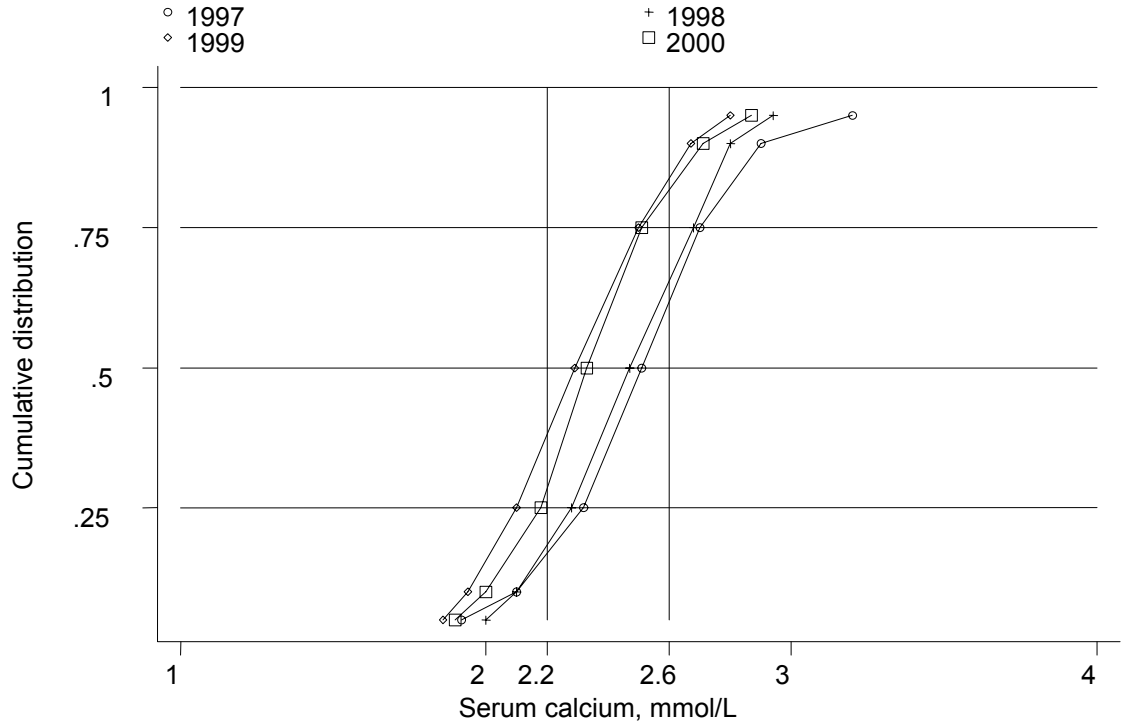
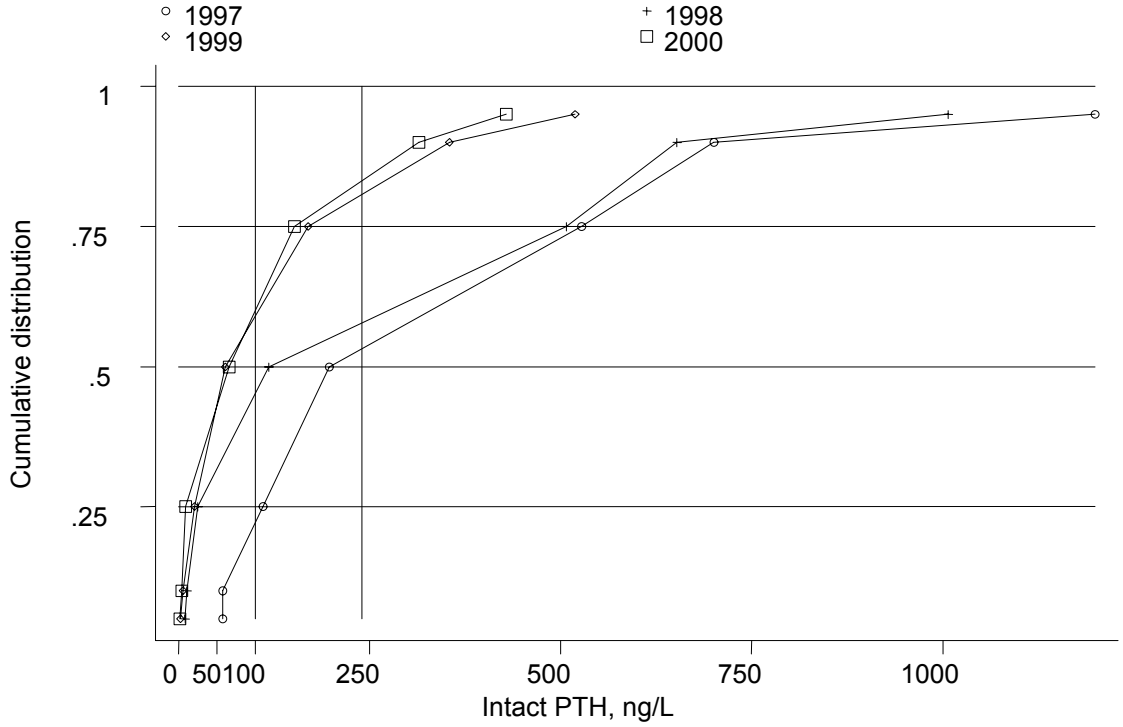


Table 3.3.31: Distribution of serum iPTH (ng/L), HD patients, Private Centres 1999-2000

year	No of subjects	No of observations	median	LQ	UQ	% patients ≥ 100 & ≤ 250 ng/l
1999	57	75	61	21	169.9	24
2000	82	101	66	9.6	151	23

Figure 3.3.31: Cumulative distribution of serum iPTH by year,



3.3.11 MANAGEMENT OF BLOOD PRESSURE, PRIVATE CENTRES

Table 3.3.32: Treatment for hypertension, HD patients, Private Centres 1999-2000

Year	No.	% on anti-hypertensives	% on 1 anti-hypertensives	% on 2 anti-hypertensives	% on 3 anti-hypertensives
1999	396	63	39	19	5
2000	768	68	43	21	4

Table 3.3.33: Distribution of Systolic BP without anti-hypertensives, HD patients Privaate Centres 1999-2000

Year	No of subjects	No of observations	median	LQ	UQ	% patients < 160 mmHg
1999	137	843	140	130	160	69
2000	237	2217	140	125	160	73

Figure 3.3.33: Cumulative distribution of Systolic BP without anti-hypertensives by year

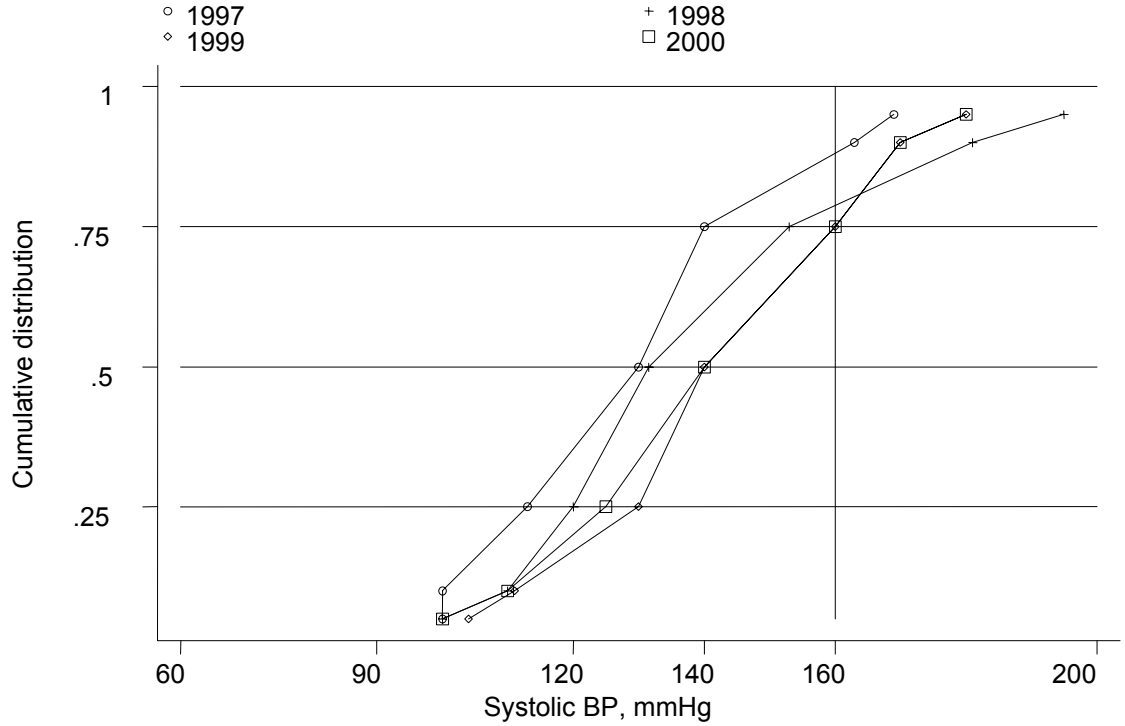


Table 3.3.34: Distribution of Diastolic BP without anti-hypertensives, HD patients, Private Centres 1999-2000

Year	No of subjects	No of observations	median	LQ	UQ	% patients < 90 mmHg
1999	137	845	80	71	90	68
2000	237	2218	80	70	88	76

Figure 3.3.34: Cumulative distribution of Diastolic BP without anti-hypertensives by year

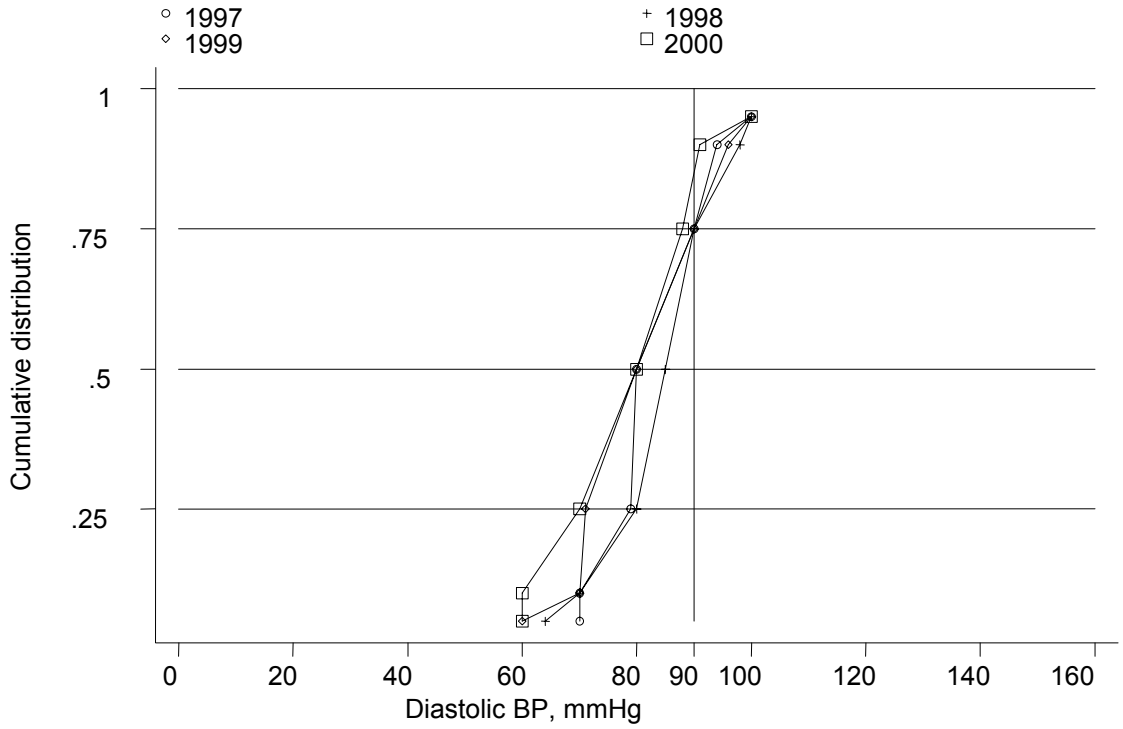


Table 3.3.35: Distribution of systolic BP on anti-hypertensives, HD patients, Private Centres 1999-2000

Year	No of subjects	No of observations	median	LQ	UQ	% patients < 160 mmHg
1999	247	1853	155	140	170	52
2000	504	4523	156	140	170	52

Figure 3.3.35: Cumulative distribution of systolic BP on anti-hypertensives by year

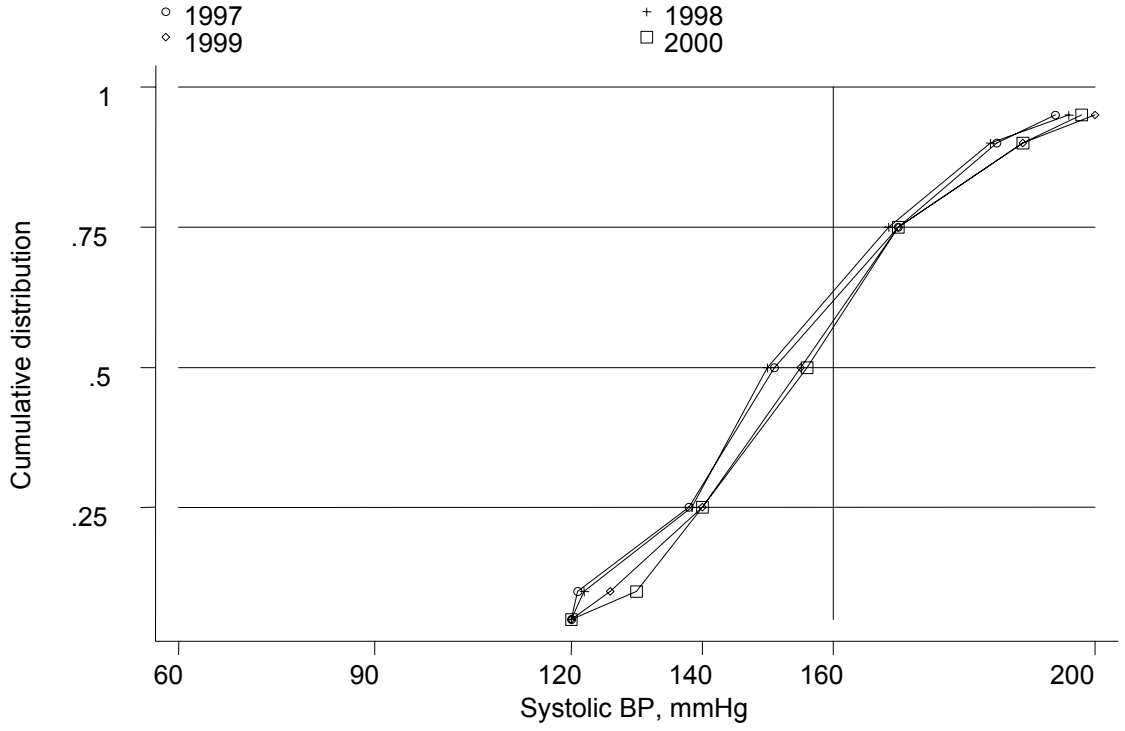
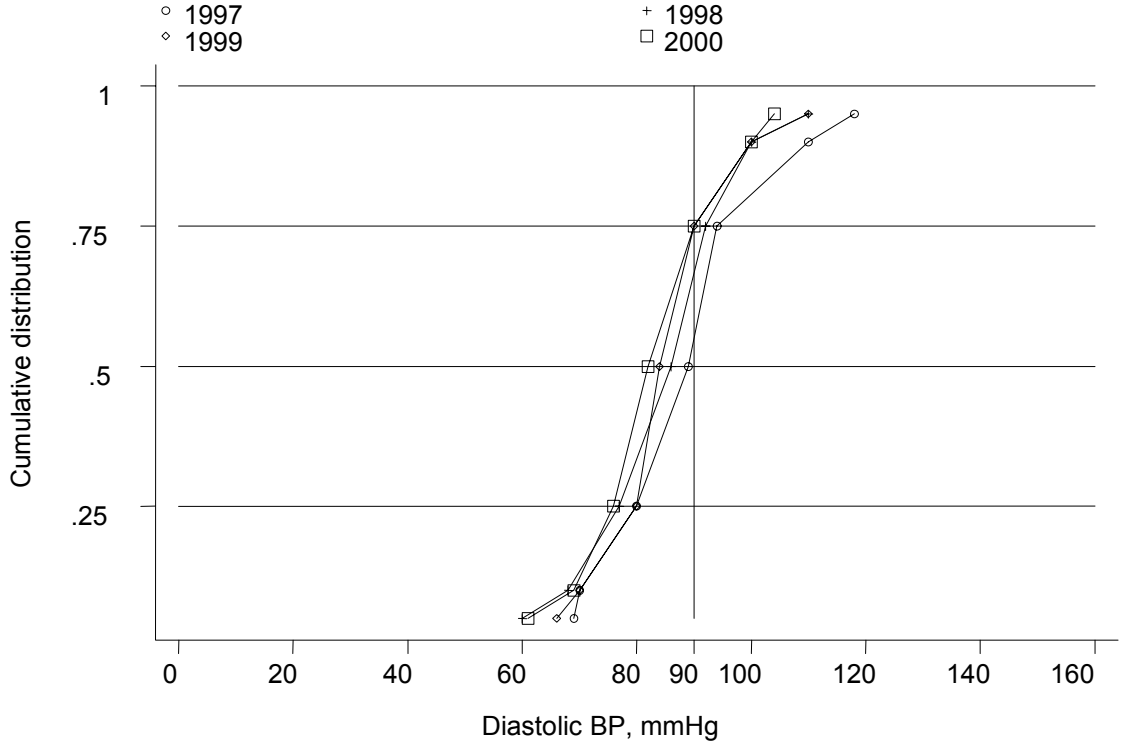


Table 3.3.36: Distribution of diastolic BP on anti-hypertensives, HD patients, Private Centres 1999-2000

year	No of subjects	No of observations	median	LQ	UQ	% patients < 90 mmHg
1999	247	1853	84	80	90	55
2000	504	4525	82	76	90	59

Figure 3.3.36: Cumulative distribution of diastolic BP on anti-hypertensives by year



3.3.12 TREATMENT OF ANAEMIA, PRIVATE HD CENTRES

Table 3.3.37: Treatment for Anaemia, HD patients, Private Centres 1999-2000

year	No	% on rHuEpo	% received blood transfusion	% received oral iron	% received parenteral iron
1999	396	61	23	81	13
2000	768	63	21	75	3

Table 3.3.38: Distribution of rHuEpo dose per week, HD patients, Private Centres 1999-2000

Year	1999	2000
No. of patients	233	470
% on 2000 u/week	28	30
% on 2-4000 u/week	64	59
% on 4-6000 u/week	4	7
% on 6-8000 u/week	2	1
% on 8-12000 u/week	2	2
% on >12000 u/week	0	0

Table 3.3.39: Distribution of serum Iron without rHuEpo, HD patients, PrivateCentres 1999-2000

year	No of subjects	No of observations	median	LQ	UQ	% patients > 10 umol/l
1999	14	21	11	9.1	14.4	62
2000	20	28	15.1	11.5	19	82

Figure 3.3.39: Cumulative distribution of serum Iron without rHuEpo by year

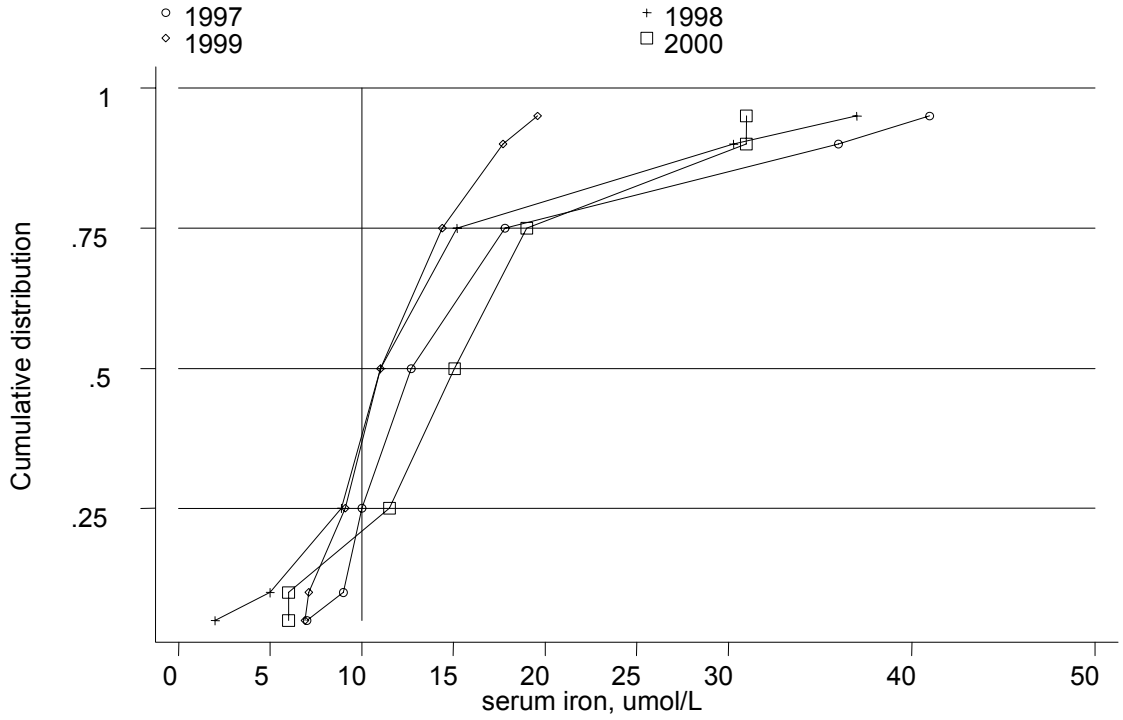


Table 3.3.40: Distribution of serum Iron on rHuEpo,HD patients, Private Centres 1999-2000

Year	No of subjects	No of observations	median	LQ	UQ	% patients > 10 umol/l
1999	74	99	12.4	9.1	18.3	67
2000	63	87	12.7	9.1	19.5	67

Figure 3.3.40: Cumulative distribution of serum Iron on rHuEpo by year

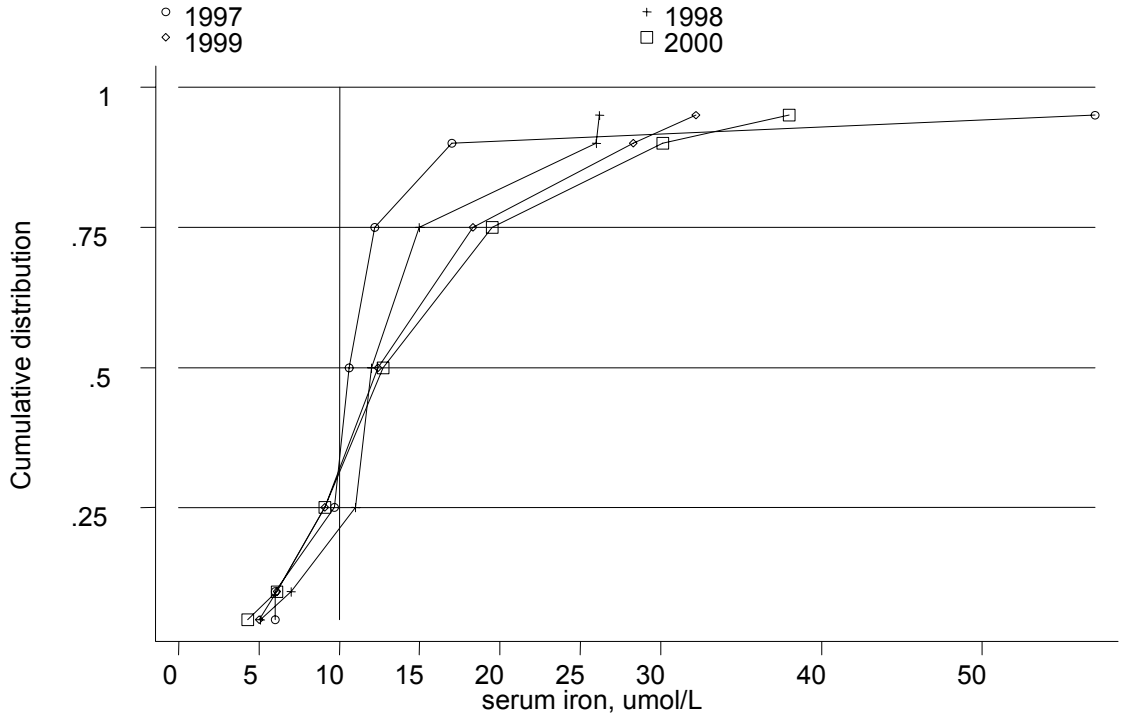


Table 3.3.41: Distribution of serum Transferrin Saturation without rHuEpo, HD patients, Private Centres 1999-2000

Year	No of subjects	No of observations	median	LQ	UQ	% patients > 20%
1999	7	28	25.1	19.1	29.7	71
2000	18	72	27.4	18.1	35.6	72

Figure 3.3.41: Cumulative distribution of serum Transferrin Saturation without rHuEpo by year

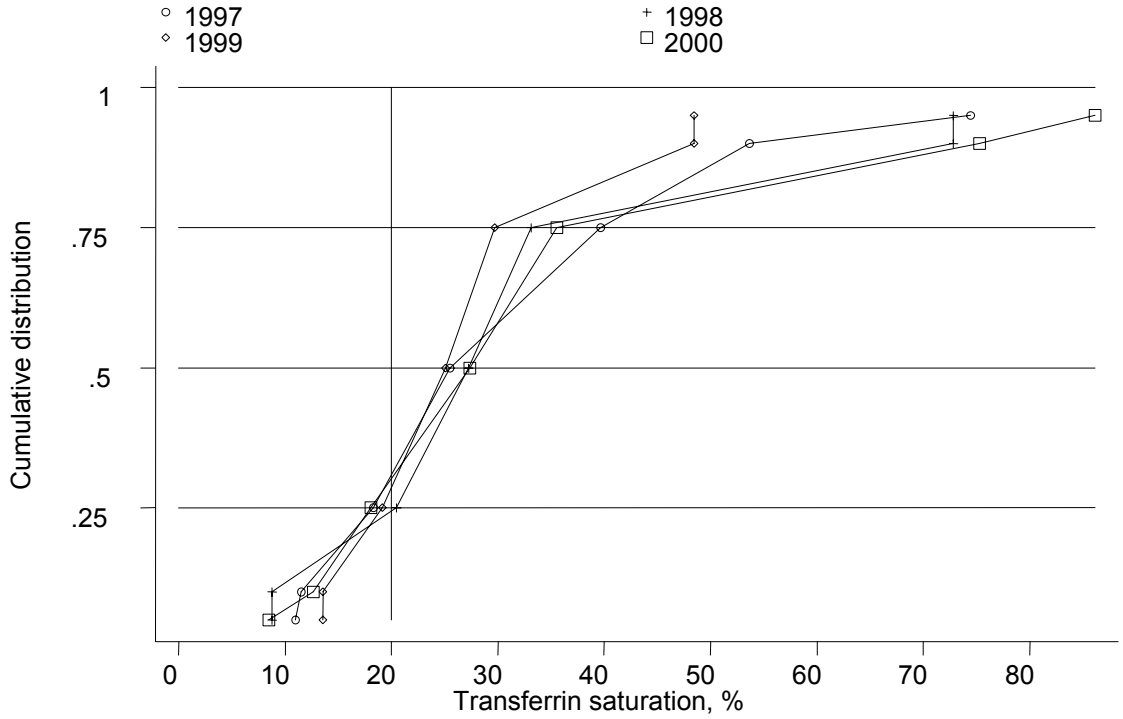


Table 3.3.42: Distribution of serum Transferrin Saturation on rHuEpo, HD patients, Private Centres 1999-2000

Year	No of subjects	No of observations	median	LQ	UQ	% patients > 20%
1999	47	188	31.4	21.6	48.6	85
2000	51	204	34.3	22.9	50	82

Figure 3.3.42: Cumulative distribution of serum Transferrin Saturation on rHuEpo by year

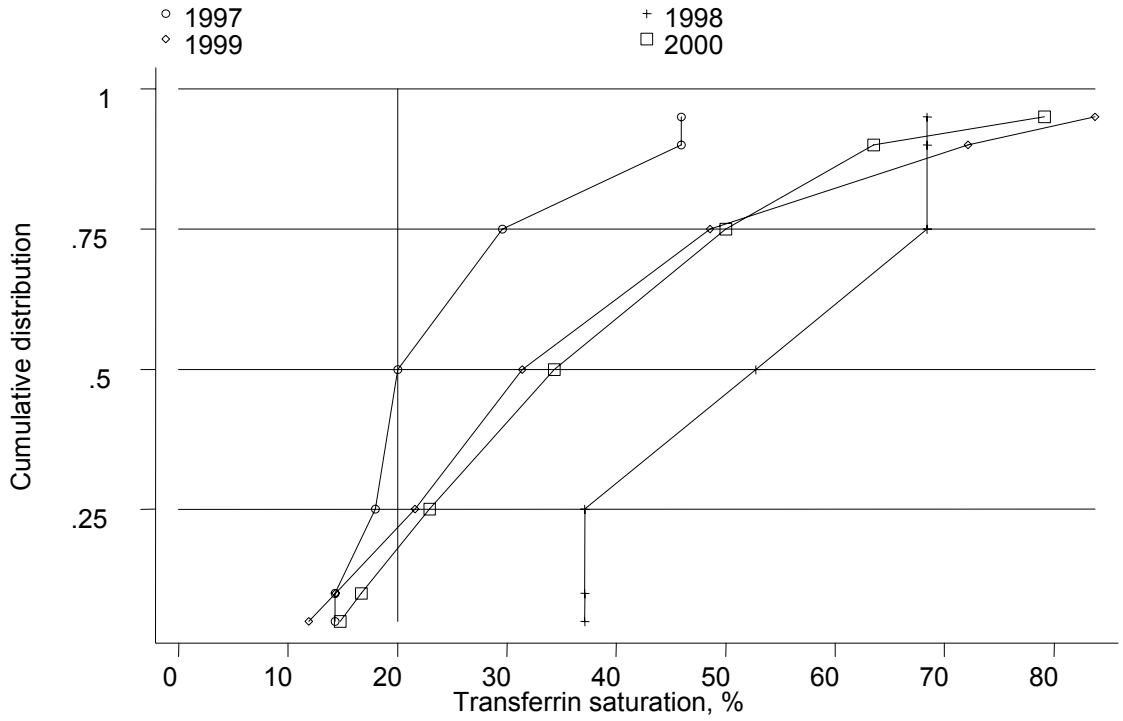


Table 3.3.43: Distribution of serum Ferritin without rHuEpo, HD patients, Private Centres 1999-2000

year	No of subjects	No of observations	median	LQ	UQ	% patients > 100 ug/l
1999	21	27	332	96.6	776	74
2000	26	36	329.4	127.4	489.7	86

Figure 3.3.43: Cumulative distribution of serum Ferritin without rHuEpo by year

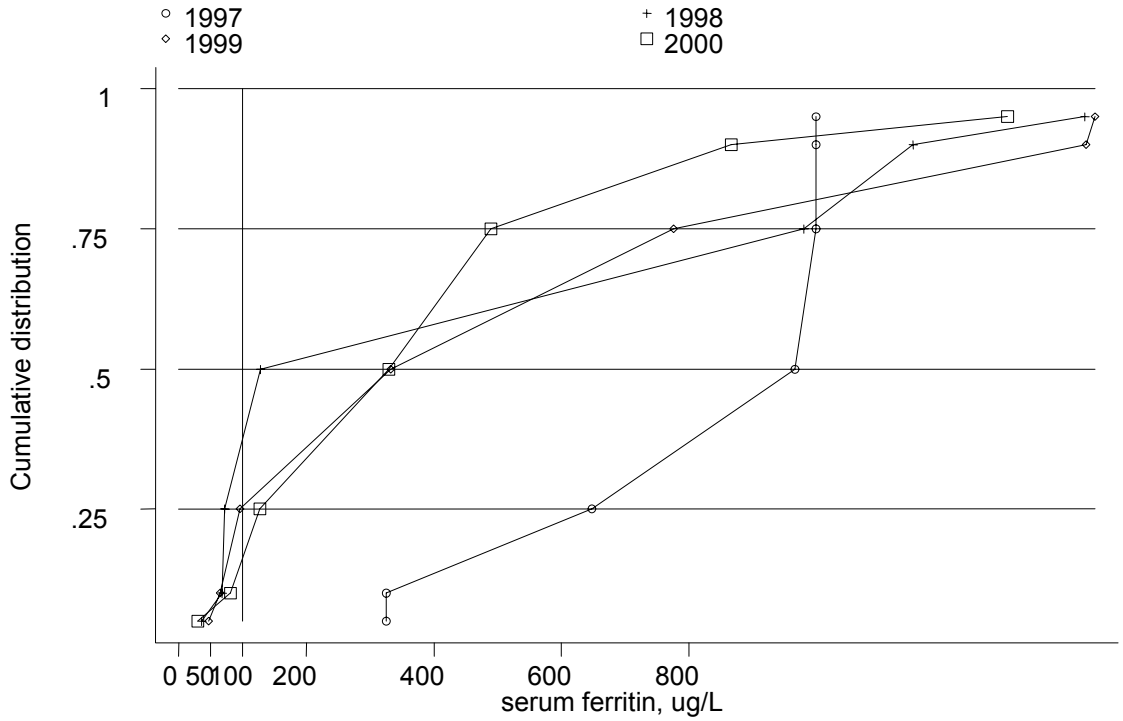


Table 3.3.44: Distribution of serum Ferritin on rHuEpo, HD patients, Private Centres 1999-2000

Year	No of subjects	No of observations	median	LQ	UQ	% patients > 100 ug/l
1999	107	151	472.9	298	868	95
2000	102	137	525	229	1000	90

Figure 3.3.44: Cumulative distribution of serum Ferritin on rHuEpo by year

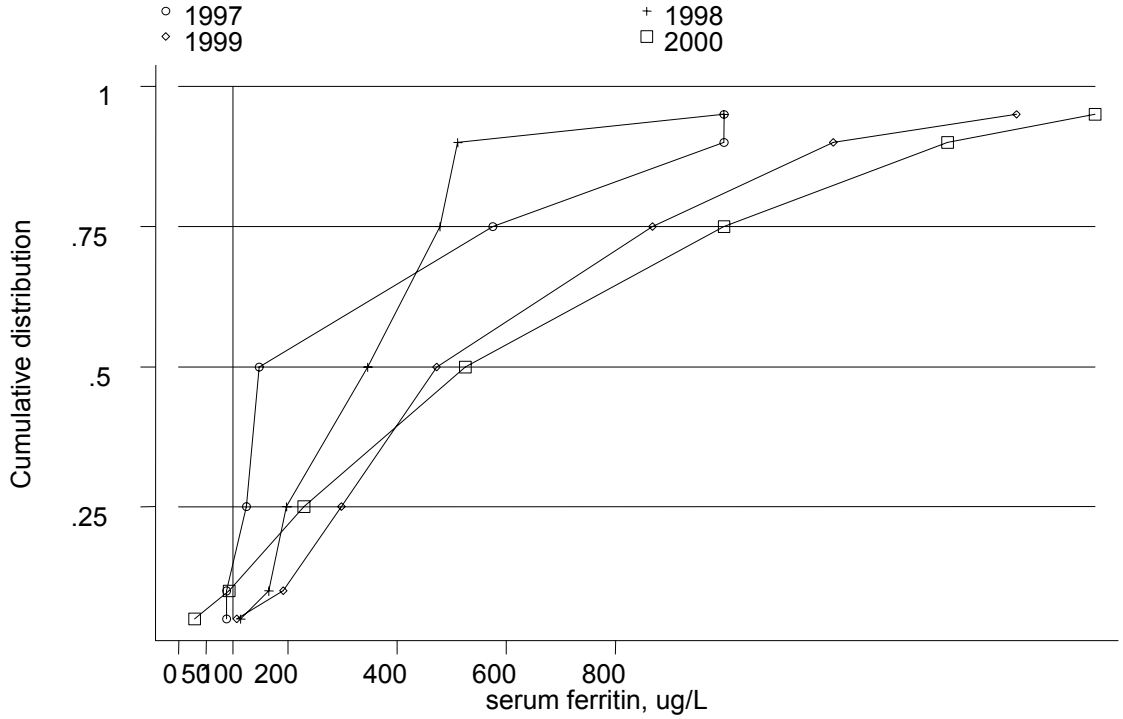


Table 3.3.45: Distribution of Haemoglobin concentration without rHuEpo, HD patients, Private Centres 1999-2000

year	No of subjects	No of observations	median	LQ	UQ	% patients <10 g/dl	% patients ≥10 & ≤12 g/dl	% patients >12 g/dl
1999	135	366	8.7	7.6	10.2	71	19	10
2000	249	635	8.7	7.6	10.1	73	20	7

Figure 3.3.45: Cumulative distribution of Hb without rHuEpo by year

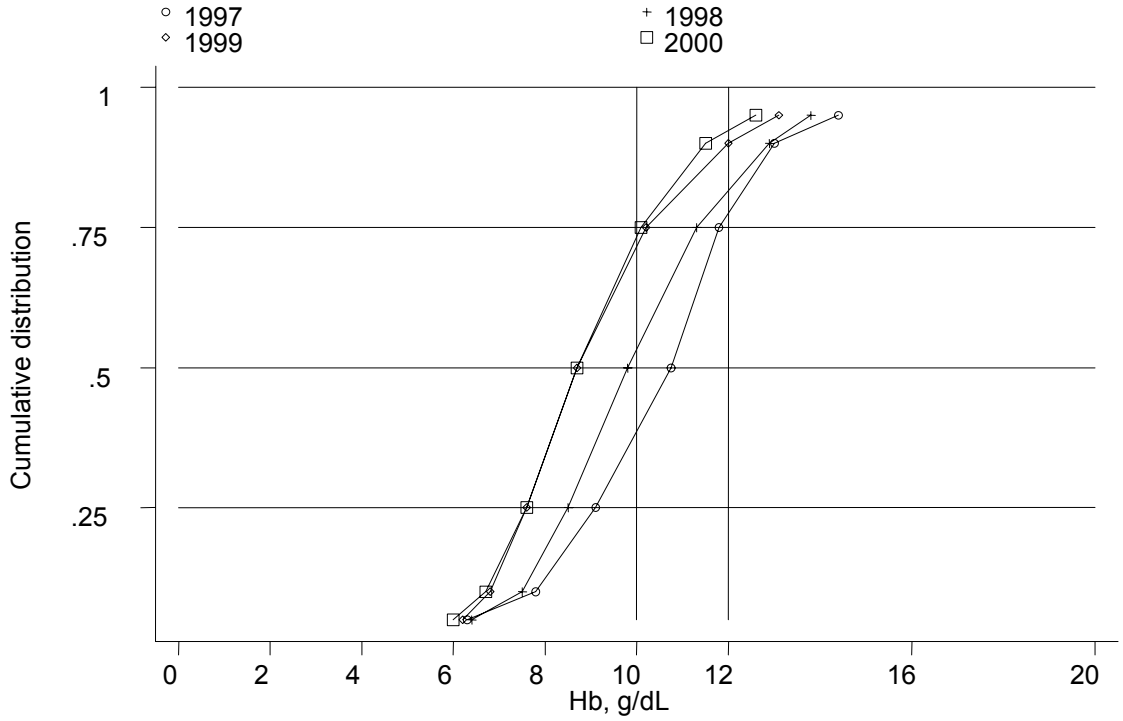
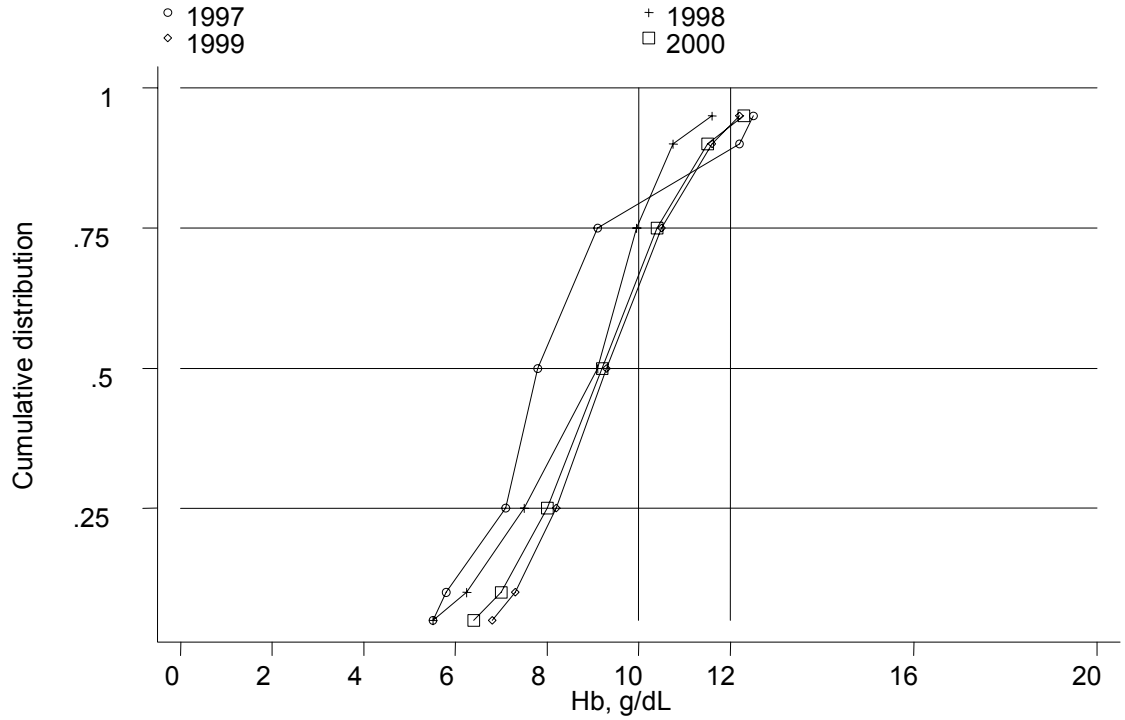


Table 3.3.46: Distribution of haemoglobin concentration on rHuEpo, HD patients, Private Centres 1999-2000

Year	No of subjects	No of observations	median	LQ	UQ	% patients <10 g/dl	% patients ≥10 & ≤12 g/dl	% patients >12 g/dl
1999	224	708	9.3	8.2	10.5	65	29	6
2000	453	1335	9.2	8	10.4	66	28	6

Figure 3.3.46: Cumulative distribution of Haemoglobin on rHuEpo by year



3.3.13 NUTRITIONAL STATUS OF HD PATIENTS PRIVATE CENTRES

Table 3.3.47: Distribution of serum Albumin (g/L), HD patients, Private Centres 1999-2000

Year	No of subjects	No of observations	median	LQ	UQ	% patients >40g/l
1999	287	806	37	34	40	29
2000	506	1217	37	35	40	30

Figure 3.3.47: Cumulative distribution of serum Albumin by year

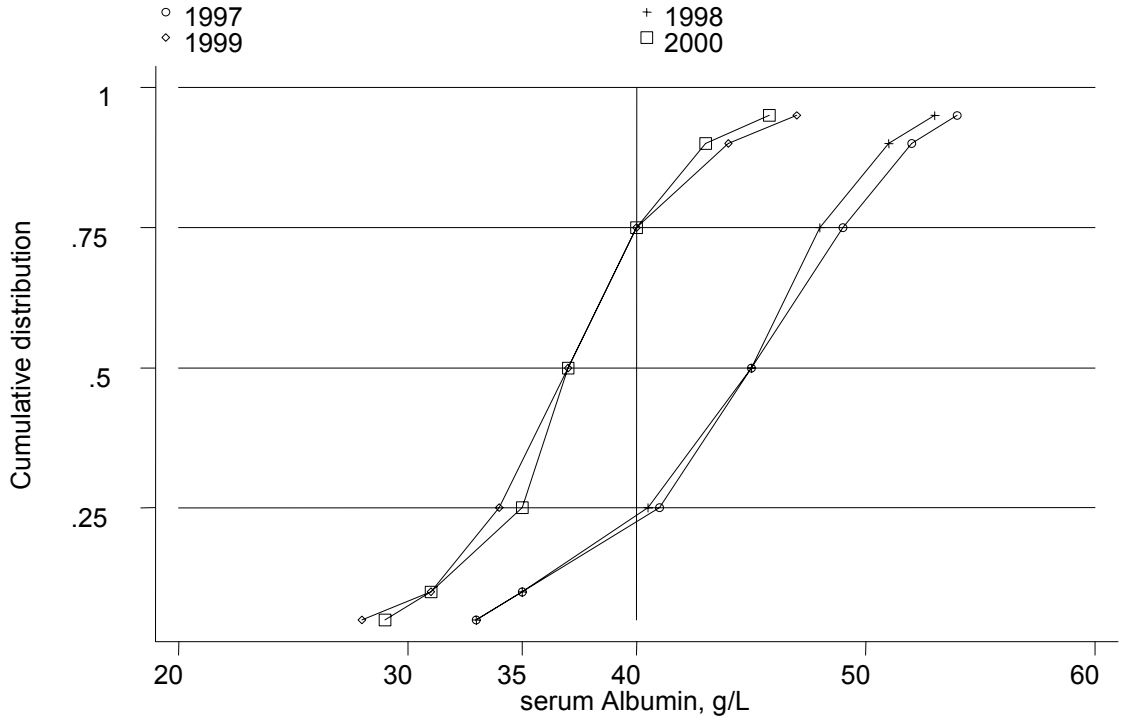
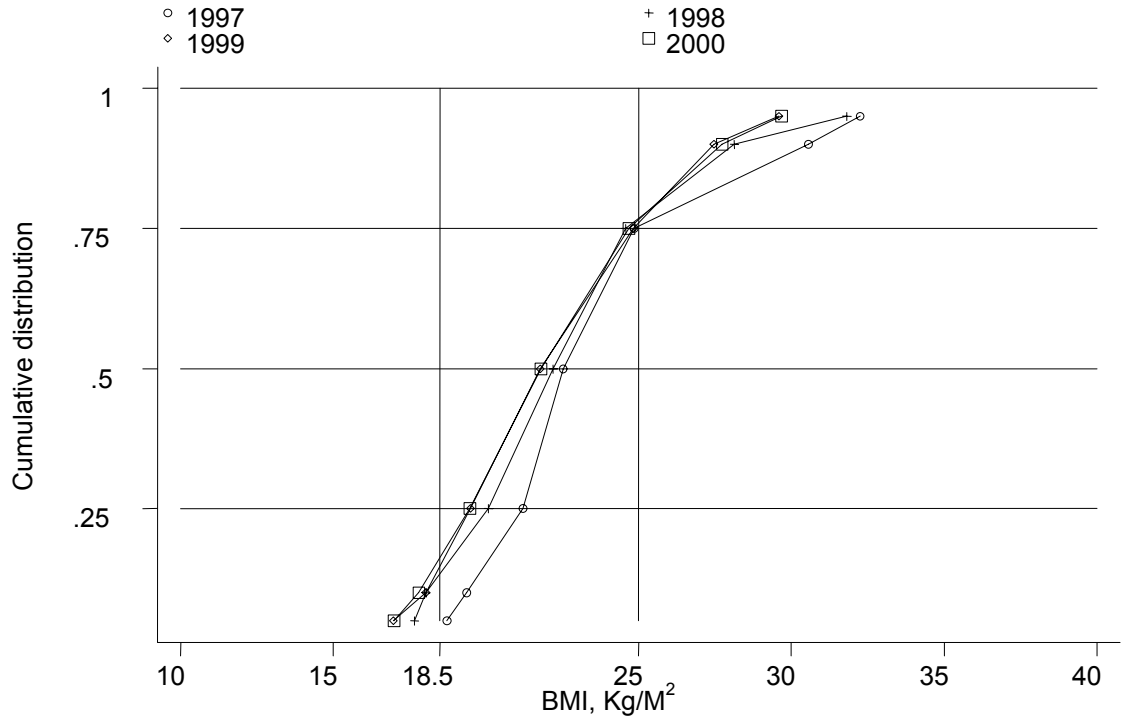


Table 3.3.48: Distribution of Body Mass Index
HD patients, Private Centres 1999-2000

Year	No of subjects	No of observations	median	LQ	UQ	% patients <18.5	% patients ≥18.5 & ≤25	% patients >25
1999	276	1912	21.8	19.5	24.8	13	63	24
2000	574	5464	21.8	19.5	24.7	17	61	23

Figure 3.3.48: Cumulative distribution of body mass index by year



3.3.14 SEROLOGICAL STATUS, HD PATIENTS PRIVATECENTRES

Table 3.3.49: Prevalence of positive anti-HCV antibody and HbsAg HD patients, Private Centres 1999-2000

Year	No	% HbsAg positive	% anti-HCV positive
1999	396	5	16
2000	768	5	23

Figure 3.3.49: Prevalence of positive anti-HCV antibody and HbsAg HD patients, Private Centres 1997 – 2000