

Chapter 3 Section 3
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

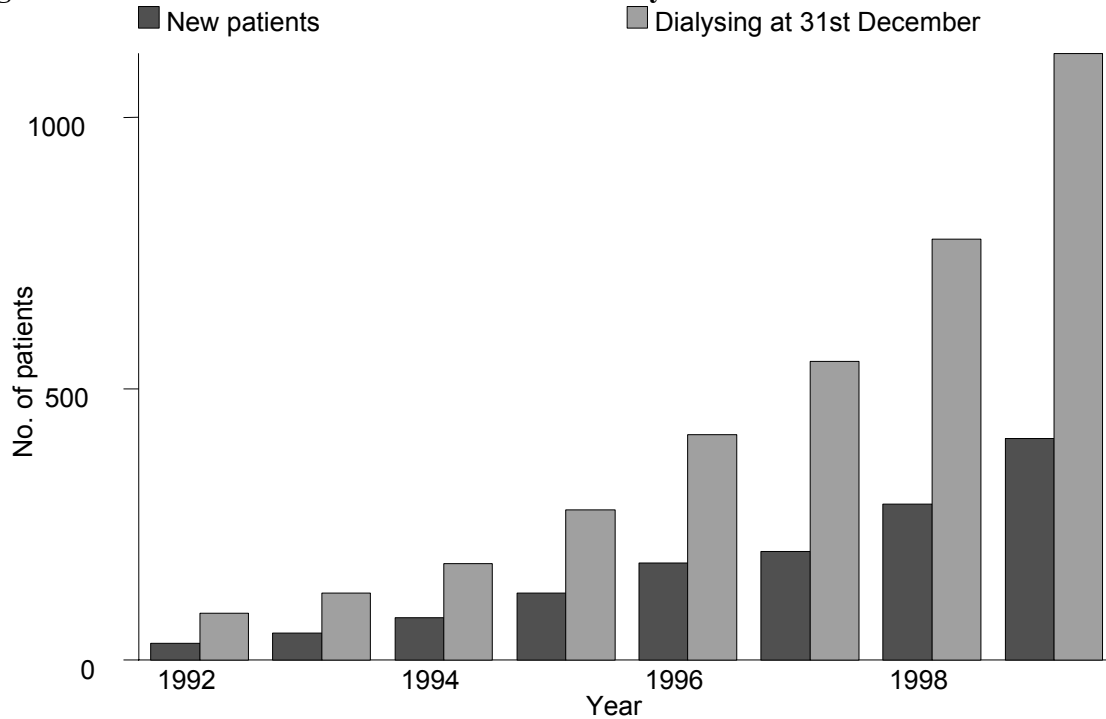
3.3: HAEMODIALYSIS IN PRIVATE CENTRES

3.3.1 STOCK AND FLOW

Table 3.3.01: Stock and Flow: Private Dialysis Centres 1992 - 1999

Year	1992	1993	1994	1995	1996	1997	1998	1999
New patients	31	49	78	123	179	200	287	408
Died	0	5	13	15	22	45	46	50
Transferred to HD/PD	0	0	0	1	2	2	0	0
Transplanted	1	5	6	2	8	7	5	13
Lost to F/U	2	1	6	6	8	11	10	3
Dialysing at 31st December	86	124	177	276	415	550	776	1118

Figure 3.3.01: Stock and Flow: Private Dialysis Centres 1992 – 1998



3.3.2 DEATH ON HAEMODIALYSIS, PRIVATE CENTRES

Table 3.3.04: Death Rate on HD: Private Centres 1992 – 1999

year	1992	1993	1994	1995	1996	1997	1998	1999
No. at risk	86	105	151	227	346	483	663	947
Deaths	0	5	13	15	22	45	46	50
Death rate %	0	5	9	7	6	9	7	5
Transfer to PD	0	0	0	1	2	2	0	0
Transfer to PD rate %	0	0	0	0	1	0	0	0
All Losses	0	5	13	16	24	47	46	50
All Losses rate %	0	5	9	7	7	10	7	5

Figure 3.3.04: Death Rate on HD: Private Centres 1993 - 1999

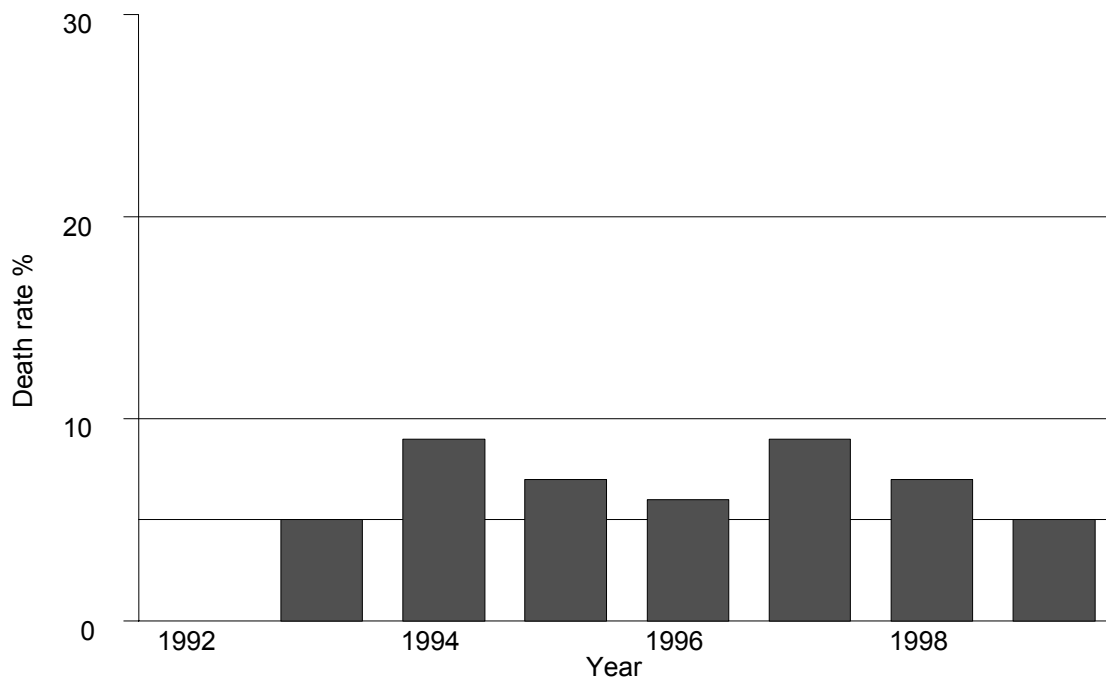


Table 3.3.05: Causes of Death: Private Centres 1996 – 1999

Causes of death	1996		1997		1998		1999	
	No.	%	No.	%	No.	%	No.	%
Cardiovascular	2	9	5	11	8	17	10	20
Died at home	3	14	10	22	10	22	14	28
Sepsis	1	5	2	4	3	7	5	10
GIT bleed	0	0	0	0	1	2	1	2
Cancer	0	0	1	2	3	7	1	2
Liver disease	0	0	1	2	0	0	2	4
Others	6	27	12	27	19	41	15	30
Unknown	10	45	14	31	2	4	2	4
Total	22	100	45	100	46	100	50	100

3.2.4 HAEMODIALYSIS PATIENTS' CHARACTERISTICS, PRIVATE CENTRES

Table 3.3.07: Age Distribution of Dialysis Patients, Private Centres 1996 – 1999

Year	1996	1997	1998	1999
New Dialysis patients	179	200	287	408
1-14 years	0	0	0	0
15-24 years	3	1	3	2
25-34 years	13	8	7	7
35-44 years	13	11	14	15
45-54 years	17	20	21	23
55-64 years	34	29	30	27
≥65 years	21	32	25	27
Dialysing at 31st December	415	550	776	1118
1-14 years	0	0	0	0
15-24 years	3	2	3	2
25-34 years	16	14	12	11
35-44 years	21	19	17	17
45-54 years	16	17	19	20
55-64 years	26	27	28	28
≥65 years	17	21	21	23

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Table 3.3.09: Patients' Characteristics , Private Centres 1995 – 1998

Year	1996	1997	1998	1999
New Dialysis patients (no)	179	200	287	408
Mean age \pm sd (years)	53 \pm 14	57 \pm 14	54 \pm 14	55 \pm 14
% male	46	49	48	55
% Diabetic	32	42	46	45
% HBsAg+	2	2	3	4
% Anti-HCV+	15	11	12	7

3.2.5 SURVIVAL ANALYSIS, PRIVATE CENTRES

Table 3.3.10: HD Patient Survival, Private Centres 1996-1999

Year Interval	1996			1997			1998		
	% survival	SE	No	% survival	SE	No	% survival	SE	No
6	91	2	153	93	2	182	94	1	261
12	88	2	142	90	2	175	93	2	235
24	82	3	129	87	2	163			
36	76	3	110						
<hr/>									
Year Interval	1999								
	% survival	SE	No						
6	97	1	191						
12									

No. = number at risk
SE = standard error

Figure 3.3.10: HD Patient Survival by year of entry, Private Centres
 Kaplan-Meier survival estimates, by Year

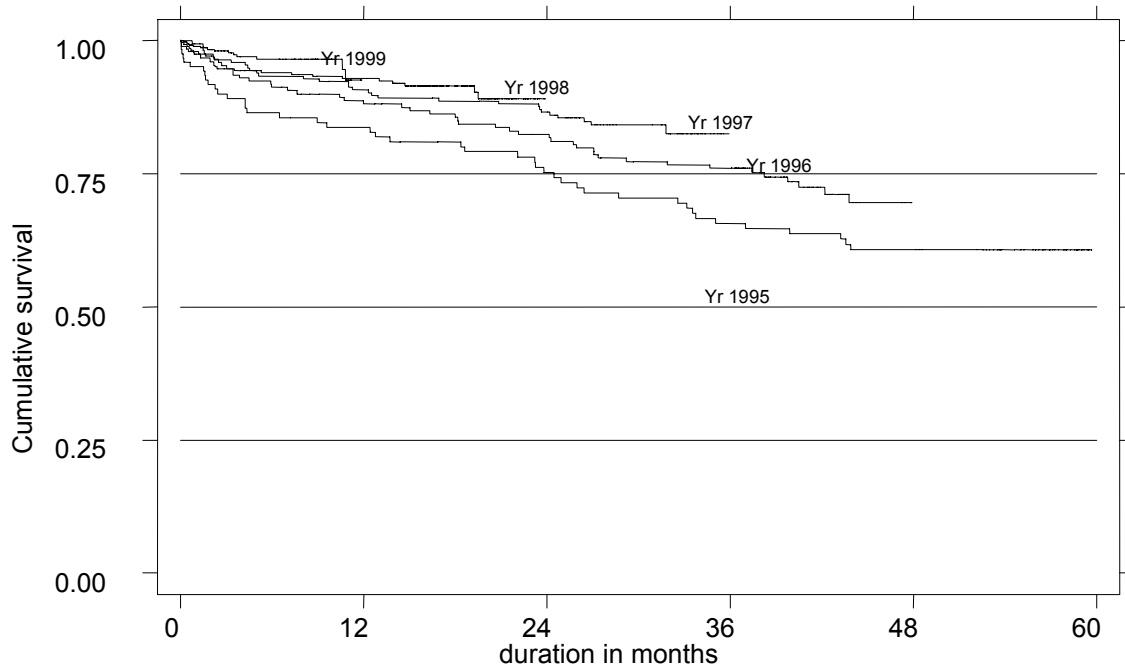
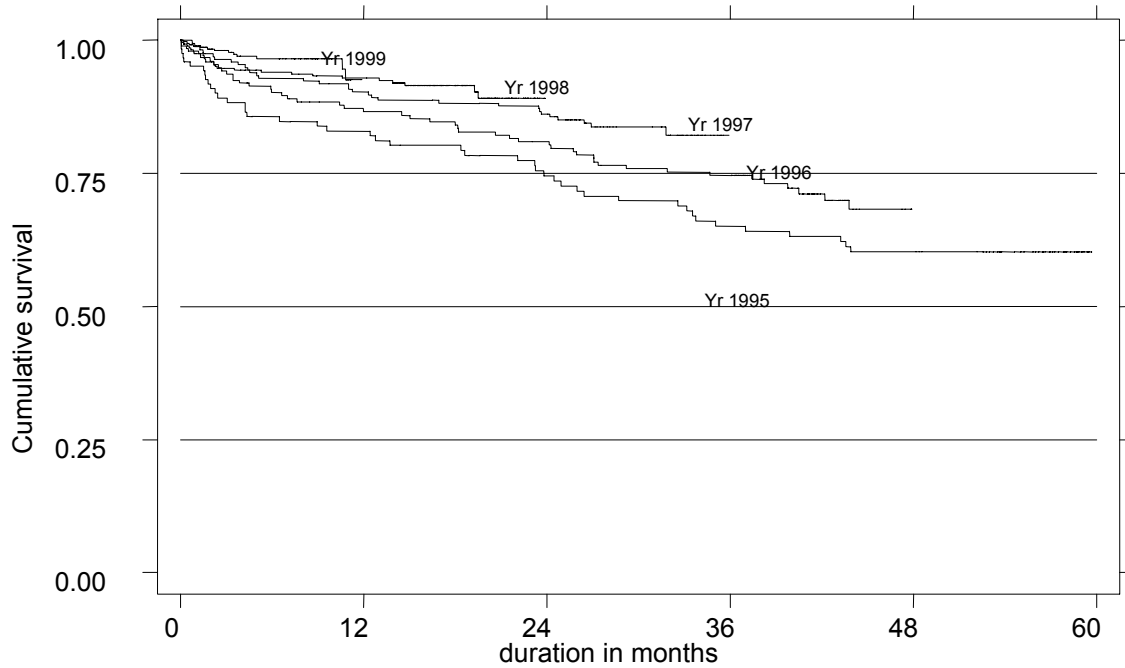


Table 3.3.11: HD Technique Survival, Private Centres

Year	1996			1997			1998		
Interval	% survival	SE	No	% survival	SE	No	% survival	SE	No
6	90	2	153	93	2	182	94	1	261
12	87	3	142	90	2	175	93	2	235
24	80	3	129	86	2	163			
36	75	3	110						
<hr/>									
Year	1999								
Interval	% survival	SE	No						
6	97	1	191						
12									

No. = number at risk
SE = standard error

Figure 3.3.11 HD Technique Survival by year of entry, Private Centres
 Kaplan-Meier survival estimates, by Year



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

Table 3.3.12: Work Related Rehabilitation on HD, PRIVATE centres 1999

REHABILITATION STATUS	1995	
	No.	%
Full time work for pay	117	30
Part time work for pay	23	6
Able to work but unable to get a job	4	1
Able to work but not yet due to dialysis schedule	6	2
Able but disinclined to work	3	1
Home maker	92	24
Full time student	1	0
Age<15 years	0	0
Retired	45	12
Age>65 years	62	16
Unable to work due to poor health	35	9
Total	388	100

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

QOL Index Summated Score	1999	
	No.	%
0 (Worst QOL)	1	0
1	0	0
2	2	1
3	0	0
4	4	1
5	22	6
6	26	7
7	42	11
8	33	9
9	47	12
10 (Best QOL)	204	54
Total	381	100

3.3.7 HAEMODIALYSIS PRACTICES IN PRIVATE CENTRES

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

Access types	1999	
	No	%
Wrist AVF	330	81
BCF*	46	11
venous graft	4	1
artificial graft	6	1
PERMCATH	3	1
temporary CVC	19	5
Total	408	100

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

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

Access difficulty	1999	
	No	%
Difficulty with needle placement	11	3
Difficulty in obtaining desired blood flow rate	8	2
Other difficulty	6	1
No difficulty	383	94
Total	408	100

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

Complication	1999	
	No.	%
thrombosis	13	3
bleed	3	1
aneurysmal dilatation	12	3
swollen limb	6	1
access related infection, local/systemic	1	0
distal limb ischaemia	1	0
venous outflow obstruction	1	0
carpal tunnel	1	0
other	5	1
no complication	365	89
Total	408	100

Table 3.3.17: Blood Flow Rates in Private HD Units, 1999

Blood flow rates	1999	
	No.	%
<150 ml/min	1	0
150-199 ml/min	9	2
200-249 ml/min	207	55
250-299 ml/min	133	35
300-349 ml/min	19	5
≥350 ml/min	9	2
Total	378	100

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

HD sessions Per week	1999	
	No.	%
1	2	0
2	133	33
3	269	66
4	1	0
Total	405	100

Table 3.3.19 Duration of HD in Private Units, 1999

Duration of HD per session	1999	
	No.	%
≤3 hours	1	0
-3.5 hours	8	2
-4 hours	299	74
-4.5 hours	54	13
-5 hours	42	10
≥5 hours	0	0
Total	404	100

Table 3.3.20: Dialyser membrane types in Private HD Units, 1999

Dialyser membrane	1999	
	No.	%
Cellulosic	148	80
Cellulose acetate	11	6
Synthetic	25	14
Total	184	100

Table 3.3.21: Dialyser Reuse Frequency in Private HD Units, 1999

Dialyser reuse frequency	1999	
	No.	%
1*	44	12
2	5	1
3	24	7
4	135	38
5	45	13
6	98	27
7	2	1
8	3	1
9	1	0
10	0	0
11	1	0
12	1	0
≥13	0	0
Total	359	100

- 1 is single use ie no reuse

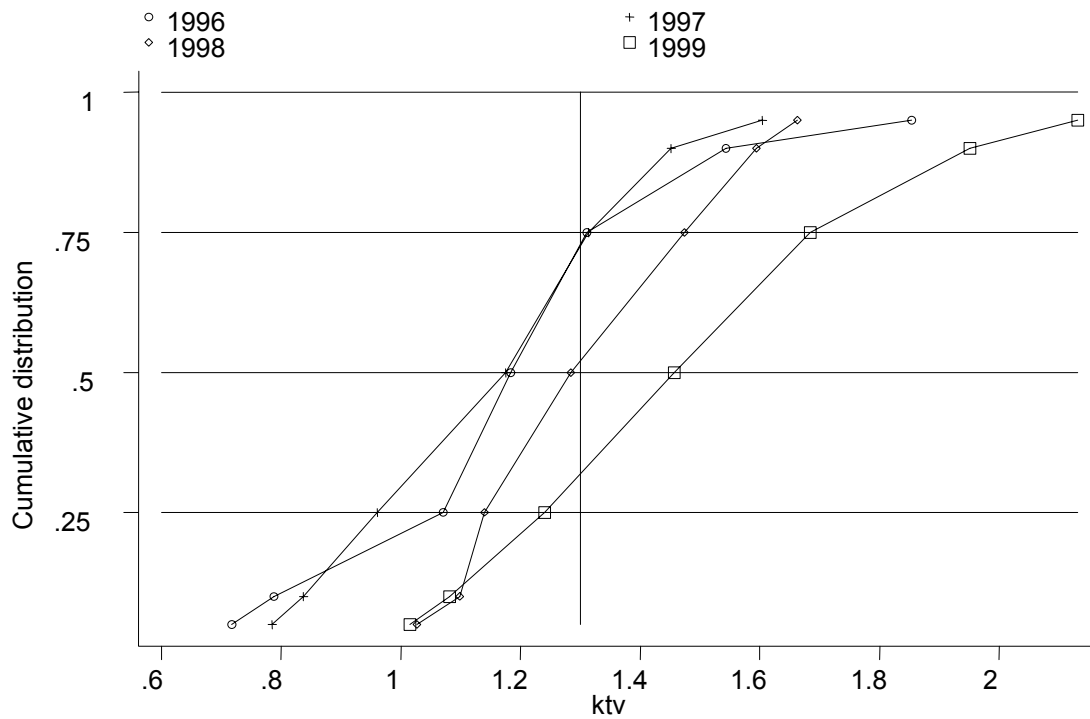
Table 3.3.22 Dialysate Buffer used in Private HD Units, 1999

Dialysate buffer	1999	
	No.	%
Acetate	66	16
Bicarbonate	343	84
Total	409	100

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

year	No of subjects	No of observations	median	LQ	UQ	% > 1.45
1999	358	2438	1.5	1.2	1.7	68

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



3.3.8. DYSLIPIDAEMIA IN HD PATIENTS, PRIVATECENTRES

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

year	No of subjects	No of observations	median	LQ	UQ	% patients < 5.3 mmol/l
1999	191	287	5	4.2	5.7	70

Figure 3.3.24: Cumulative distribution of serum cholesterol concentration by year

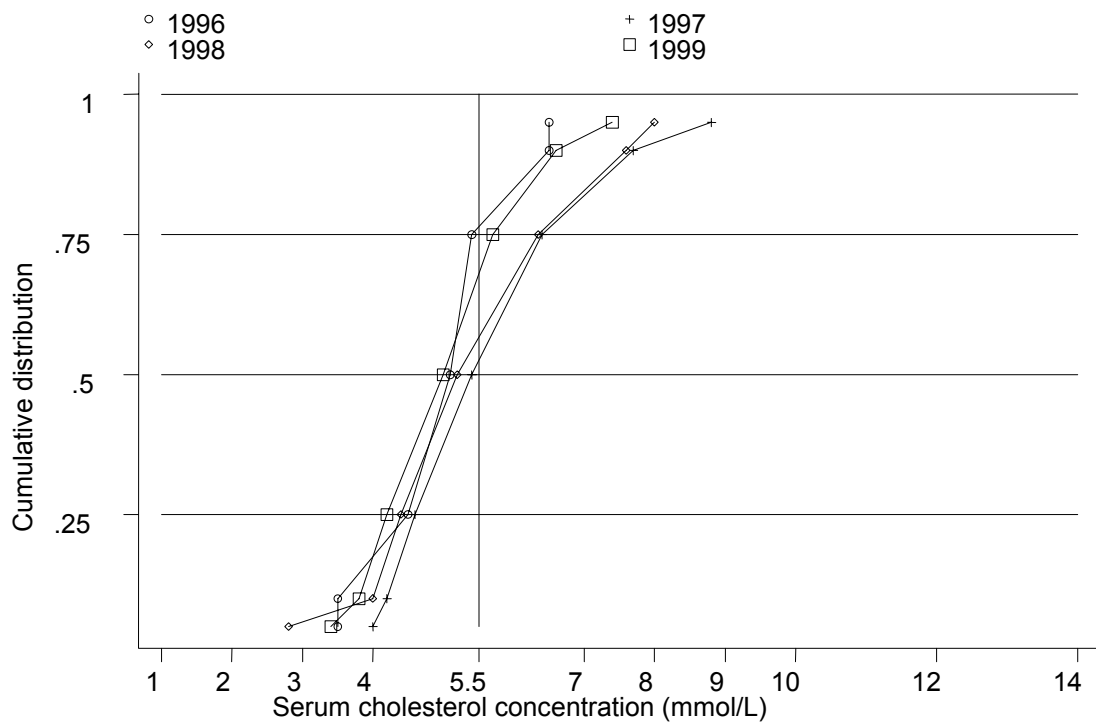


Table 3.3.25: Distribution of Serum Triglyceride (mmol/l), HD patients, Private Centres 1999

year	No of subjects	No of observations	median	LQ	UQ	% patients < 3.5 mmol/l
1999	74	96	1.7	1.2	2.7	88

Figure 3.3.25: Cumulative distribution of serum triglyceride concentration by year

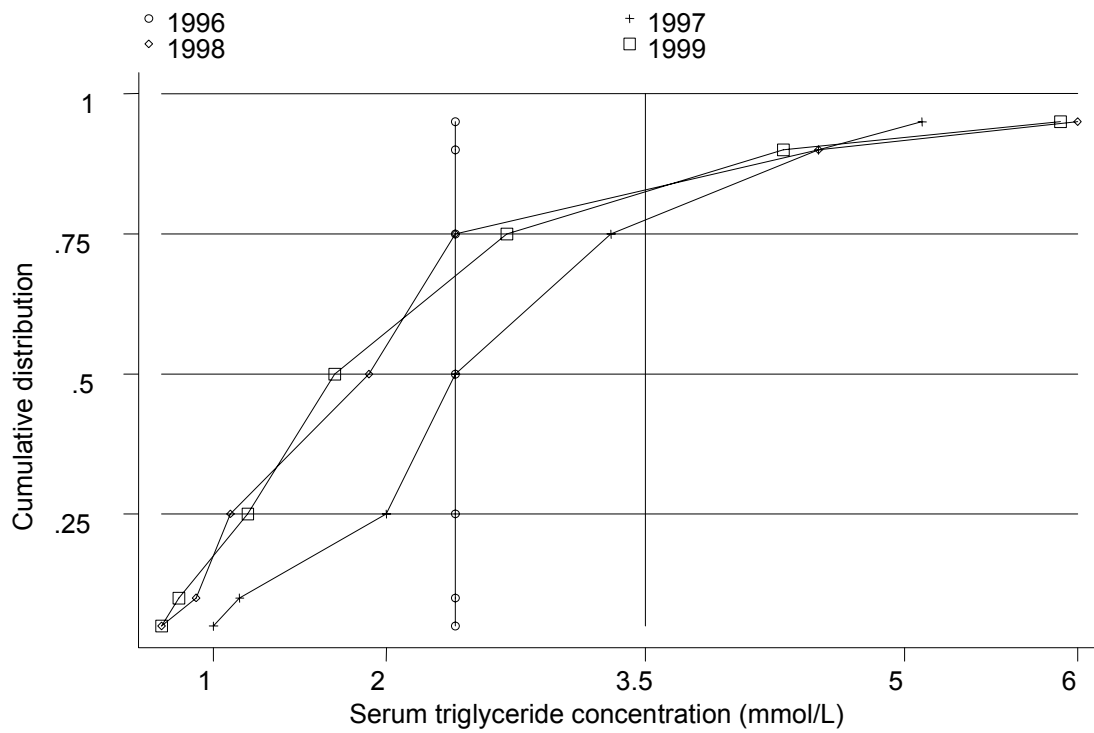


Table 3.3.26: Distribution of serum LDL (mmol/l), HD patient, Private Centres 1999

year	No of subjects	No of observations	median	LQ	UQ	% patients <5 mmol/l
1999	66	84	3	2.5	3.9	95

Figure 3.3.26 : Cumulative distribution of serum LDL by year

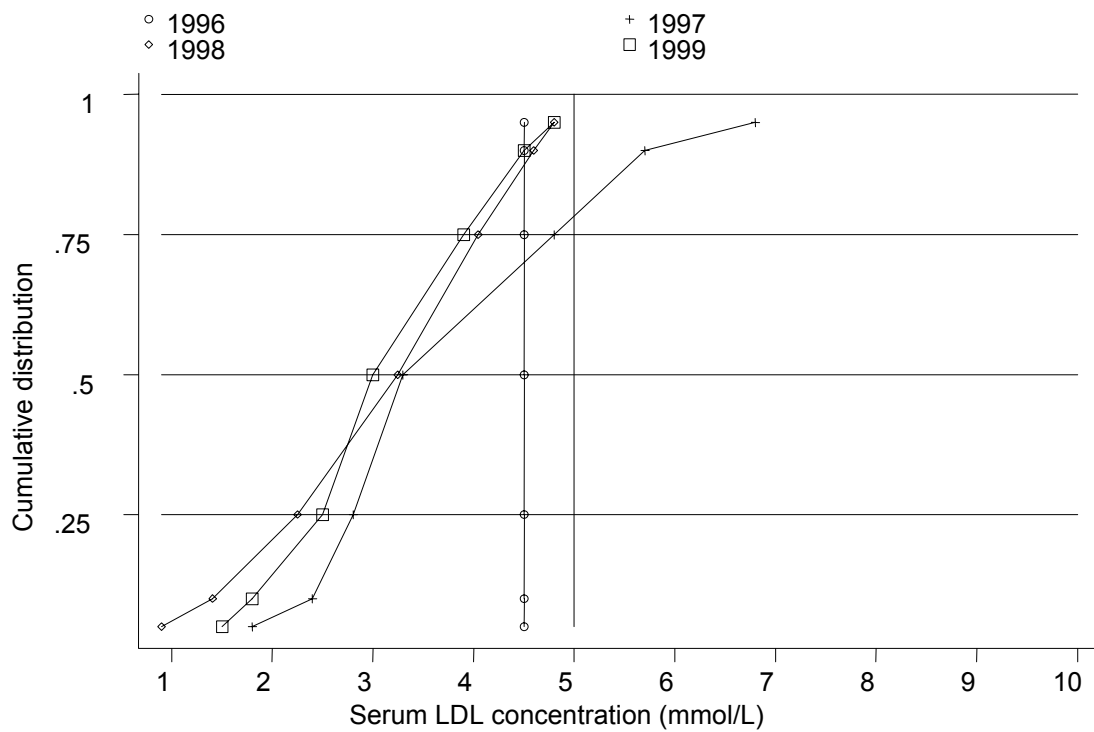
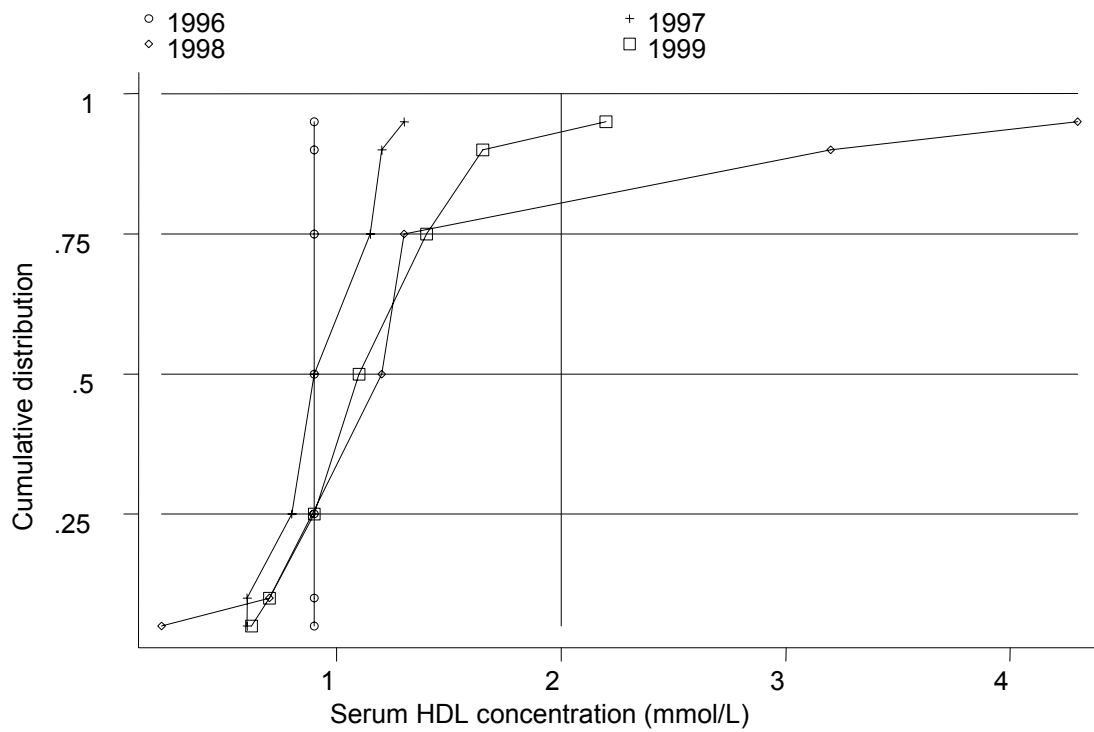


Table 3.3.27: Distribution of serum HDL (mmol/l), HD patient, Private Centres 1999

year	No of subjects	No of observations	median	LQ	UQ	% patients < 2mmol/l
1999	68	87	1.1	.9	1.4	94

Figure 3.3.27: Cumulative distribution of serum HDL by year



3.1.10 MANAGEMENT OF RENAL BONE DISEASE, PRIVATECENTRES

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

year	No of subjects	% on CaCO ₃	% on Al(OH) ₃	% on Vit D
1999	409	80	6	27

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

year	No of subjects	No of observations	median	LQ	UQ	% patients < 1.6 mmol/l
1999	363	949	1.9	1.6	2.4	27

Figure 3.3.29 Cumulative Distribution of serum Phosphate by year

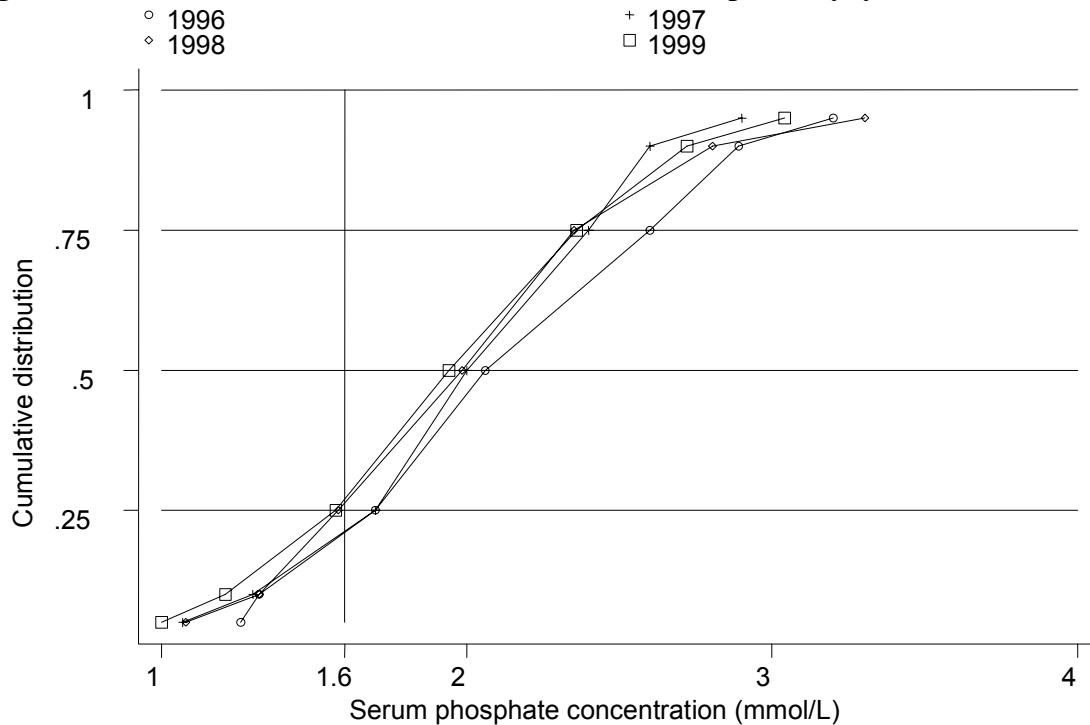


Table 3.3.30: Distribution of serum Calcium (mmol/l), HD patients, Private Centres 1999

year	No of subjects	No of observations	median	LQ	UQ	% patients ≥ 2.2 & ≤ 2.6 mmol/l
1999	364	976	2.3	2.1	2.5	52

Figure 3.3.30: Cumulative distribution of Serum Calcium by year

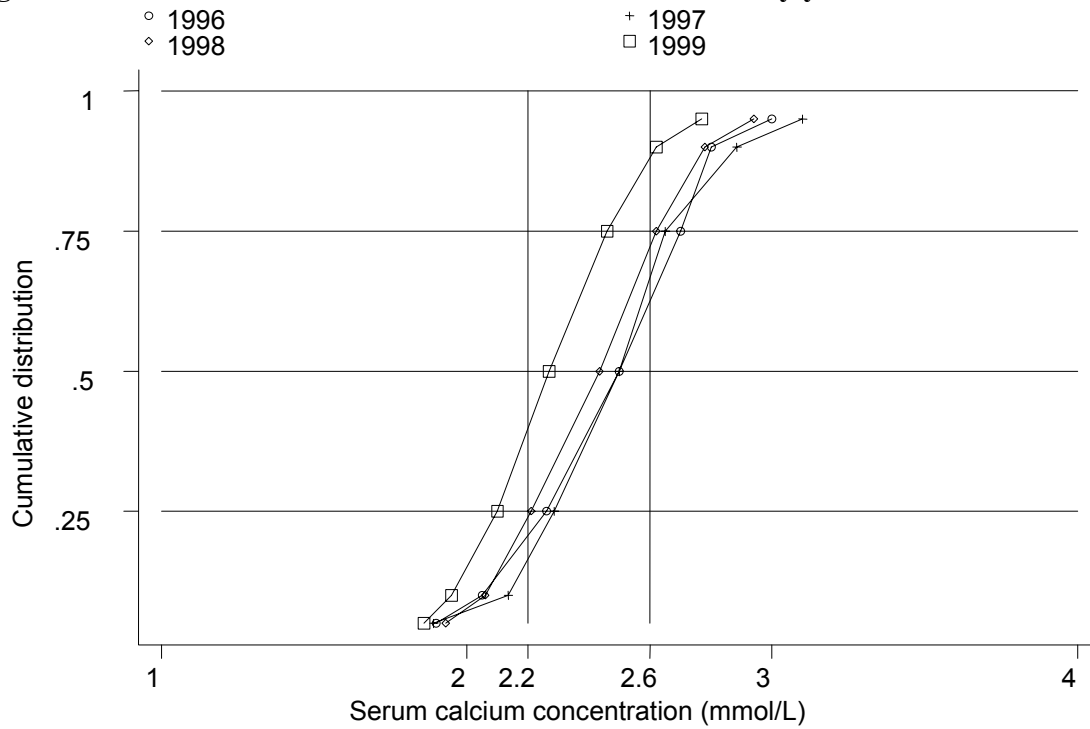
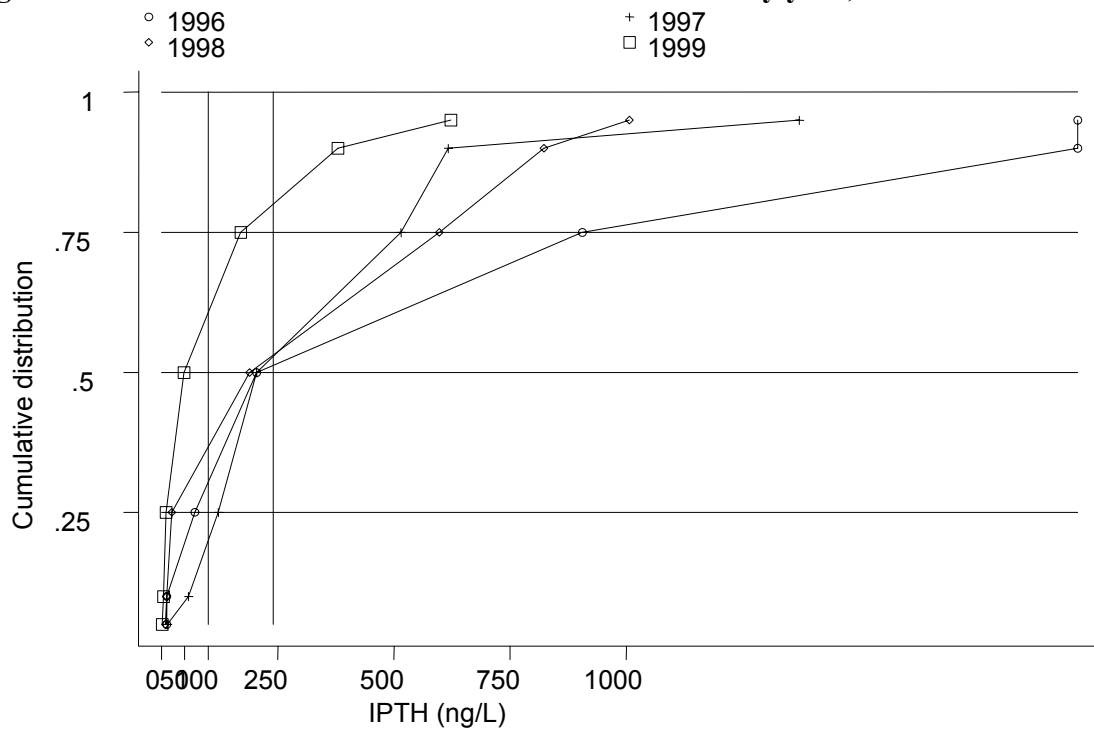


Table 3.3.31: Distribution of serum iPTH (ng/L), HD patients, PRIVATE Centres 1999

year	No of subjects	No of observations	median	LQ	UQ	% patients ≥ 100 & ≤ 250 ng/l
1999	47	58	48.4	10	169.9	24

Figure 3.3.31: Cumulative Distribution of serum iPTH by year,



3.1.11. MANAGEMENT OF HYPERTENSION, PRIVATE CENTRES

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

year	No.	% on anti-hypertensives	% on 1 anti-hypertensives	% on 2 anti-hypertensives	% on 3 anti-hypertensives
1999	409	62	39	18	5

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

year	No of subjects	No of observations	median	LQ	UQ	% patients < 160 mmHg
1999	146	867	140	130	160	69

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

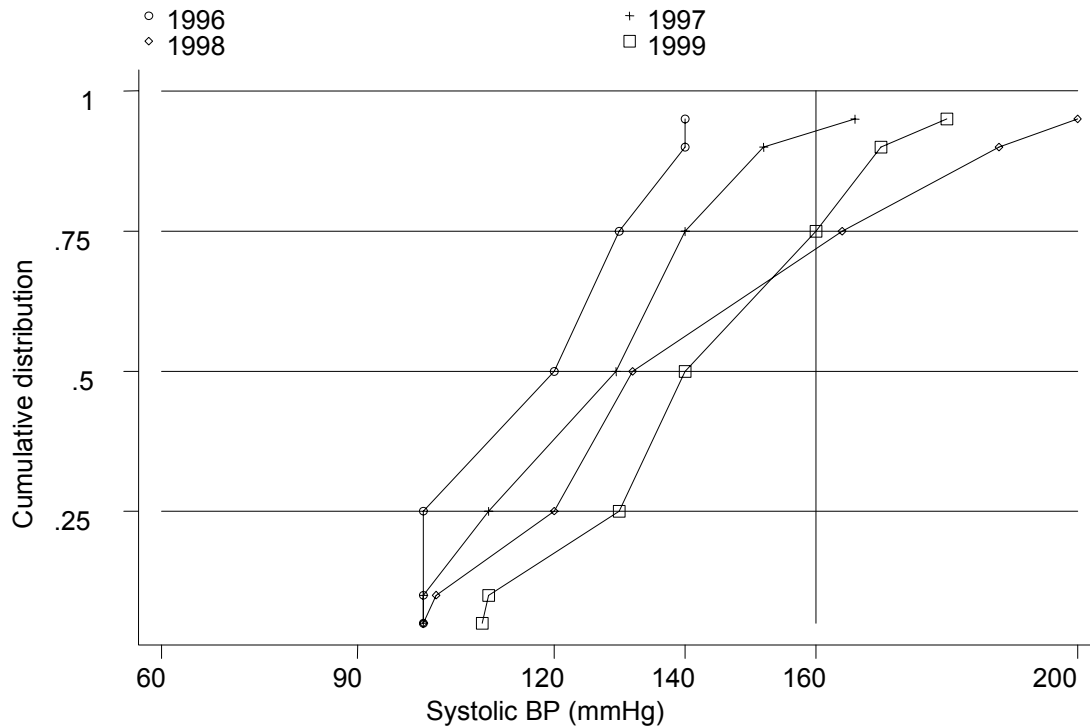


Table 3.3.34: Distribution of Diastolic BP without anti-hypertensives, HD patients, Private Centres 1999

Year	No of subjects	No of observations	median	LQ	UQ	% patients < 90 mmHg
1999	146	869	80	72	90	66

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

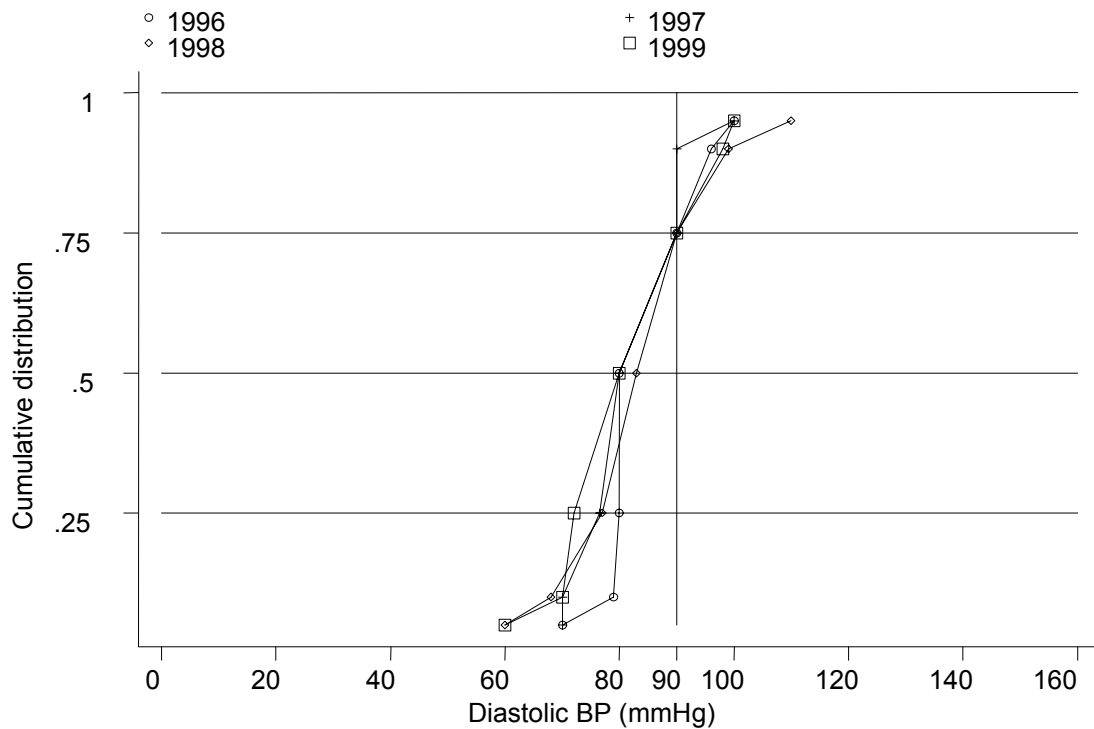


Table 3.3.35: Distribution of systolic BP on anti-hypertensives, HD patients, Private Centres 1999

Year	No of subjects	No of observations	median	LQ	UQ	% patients < 160 mmHg
1999	251	1813	158	140	170	51

Table 3.3.35: Cumulative Distribution of systolic BP on anti-hypertensives, by year

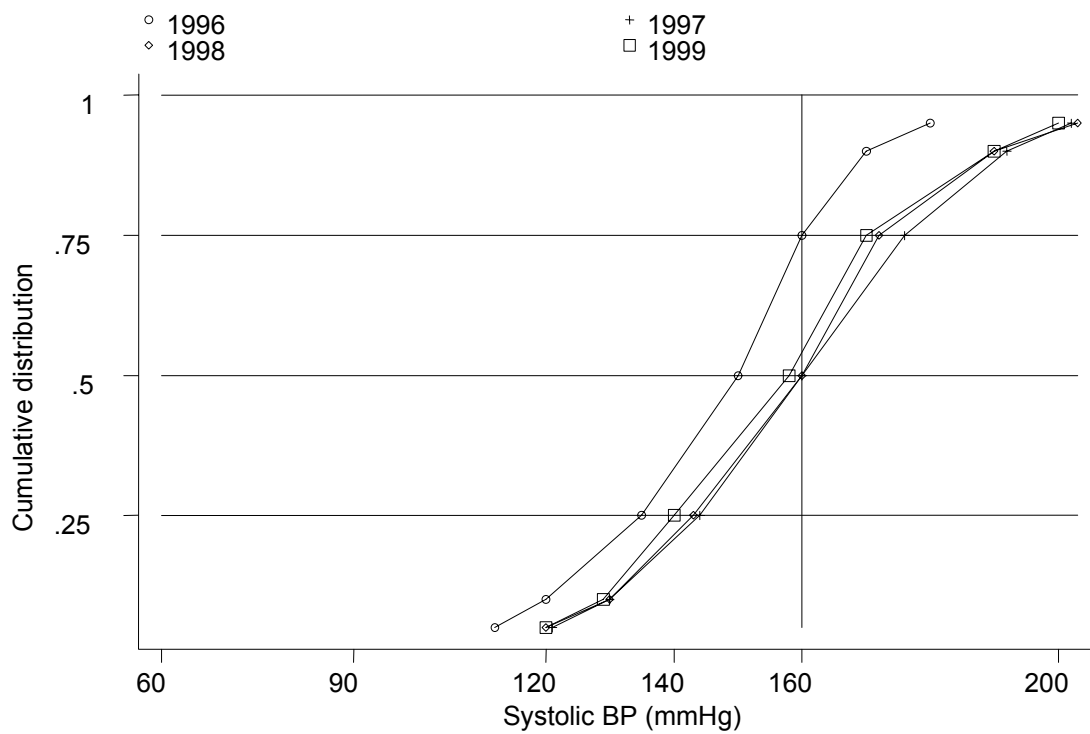
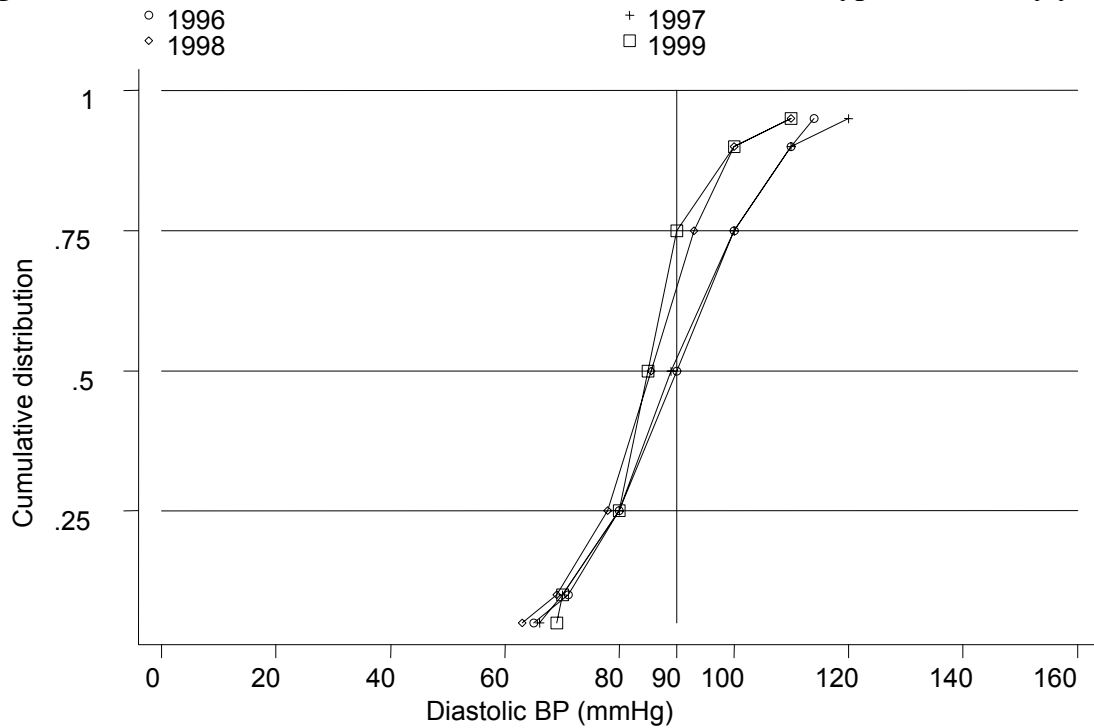


Table 3.3.36: Distribution of diastolic BP on anti-hypertensives, HD patients, Private Centres 1999

year	No of subjects	No of observations	median	LQ	UQ	% patients < 90 mmHg
1999	251	1812	85	80	90	54

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



3.1.11 TREATMENT OF ANAEMIA, PRIVATE HD CENTRES

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

year	No	% on rHuEpo	% received blood transfusion	% received parenteral iron	% received oral iron
1999	409	60	23	79	13

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

Year	1999
No. of patients	238
% on 2000 u/week	28
% on 2-4000 u/week	65
% on 4-6000 u/week	3
% on 6-8000 u/week	2
% on 8-12000 u/week	3
% on >12000 u/week	0

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

year	No of subjects	No of observations	median	LQ	UQ	% patients > 10 umol/l
1999	13	18	11.1	9.6	17.1	67

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

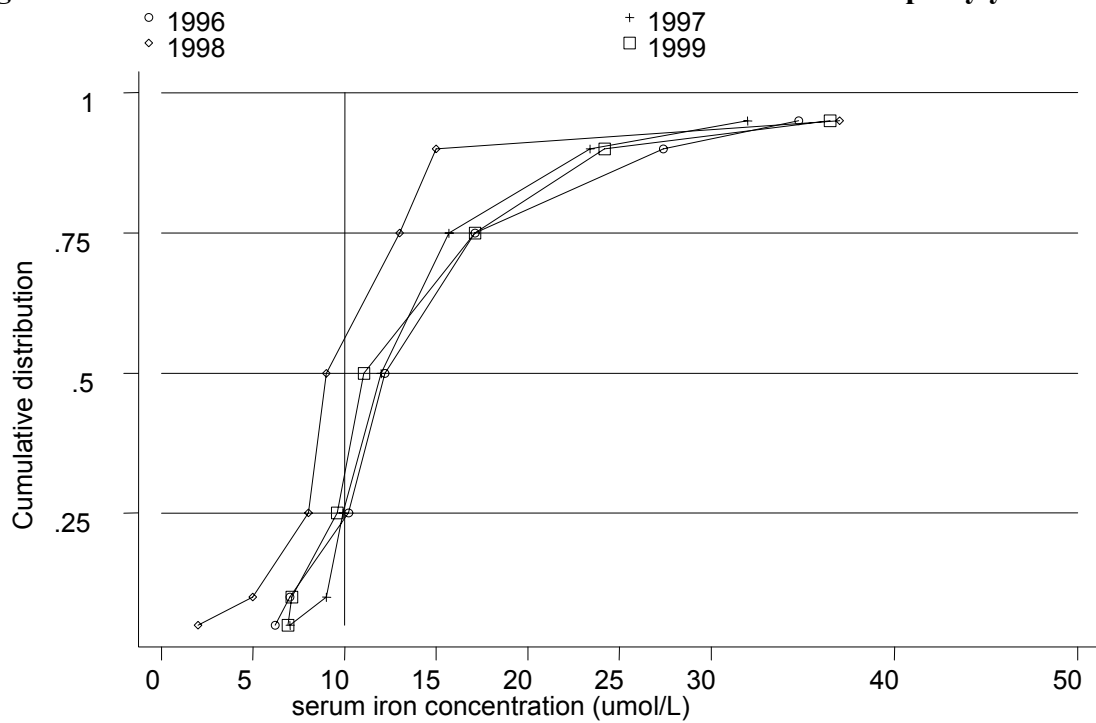


Table 3.3.40: Distribution of serum Iron on rHuEpo,HD patients, Private Centres 1999

Year	No of subjects	No of observations	median	LQ	UQ	% patients > 10 umol/l
1999	75	98	12.7	9.1	18.3	67

Figure 3.3.40: Cumulative Distribution of serum Iron on rHuEpo, by year.

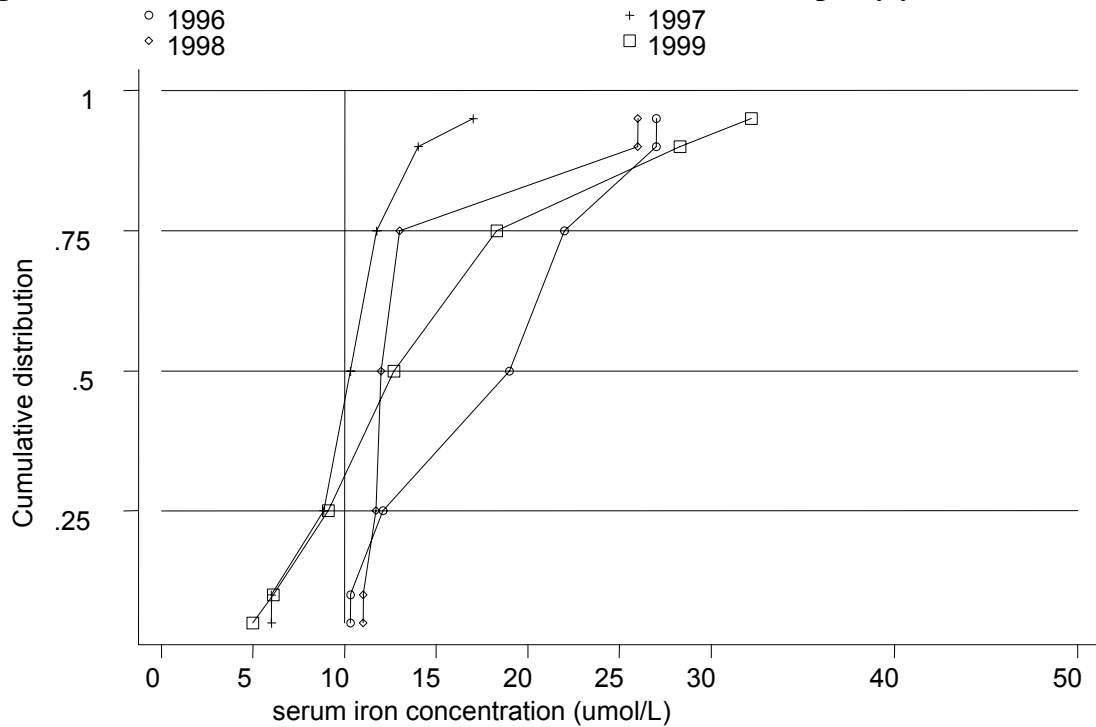


Table 3.3.41: Distribution of serum Transferrin Saturation without rHuEpo, HD patients, Private Centres 1999

Year	No of subjects	No of observations	median	LQ	UQ	% patients > 20%
1999	7	28	25.1	19.1	29.7	71

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

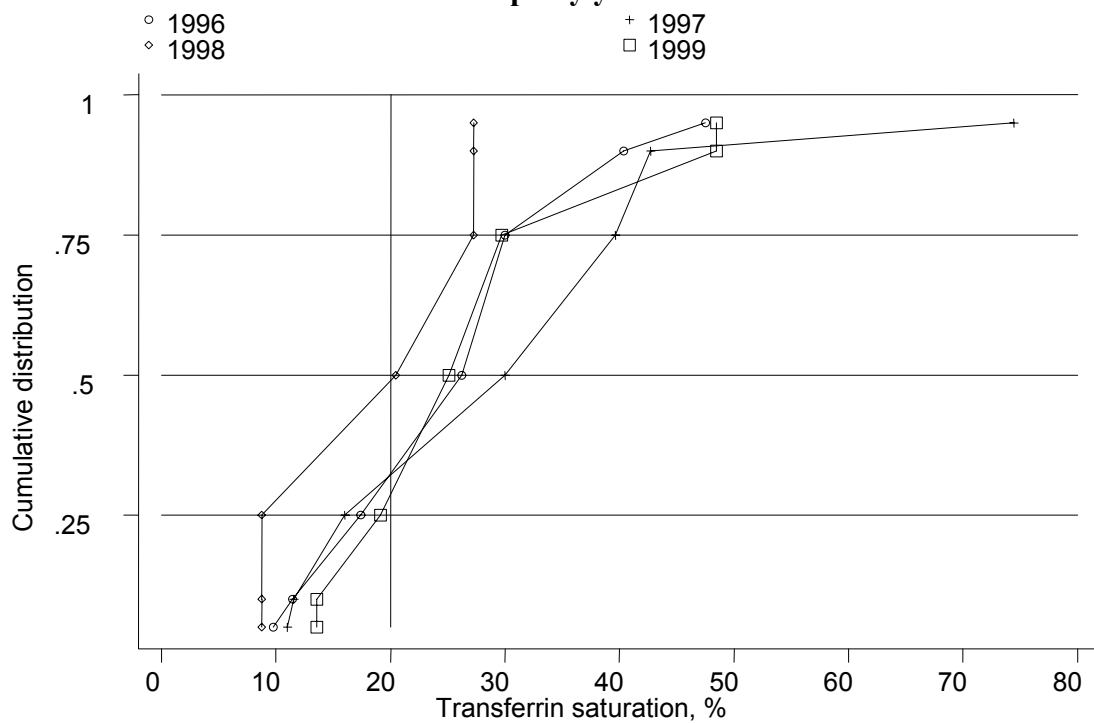


Table 3.3.42: Distribution of serum Transferrin Saturation on rHuEpo, HD patients, Private Centres 1999

Year	No of subjects	No of observations	median	LQ	UQ	% patients > 20%
1999	47	188	31.6	21.6	49.8	85

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

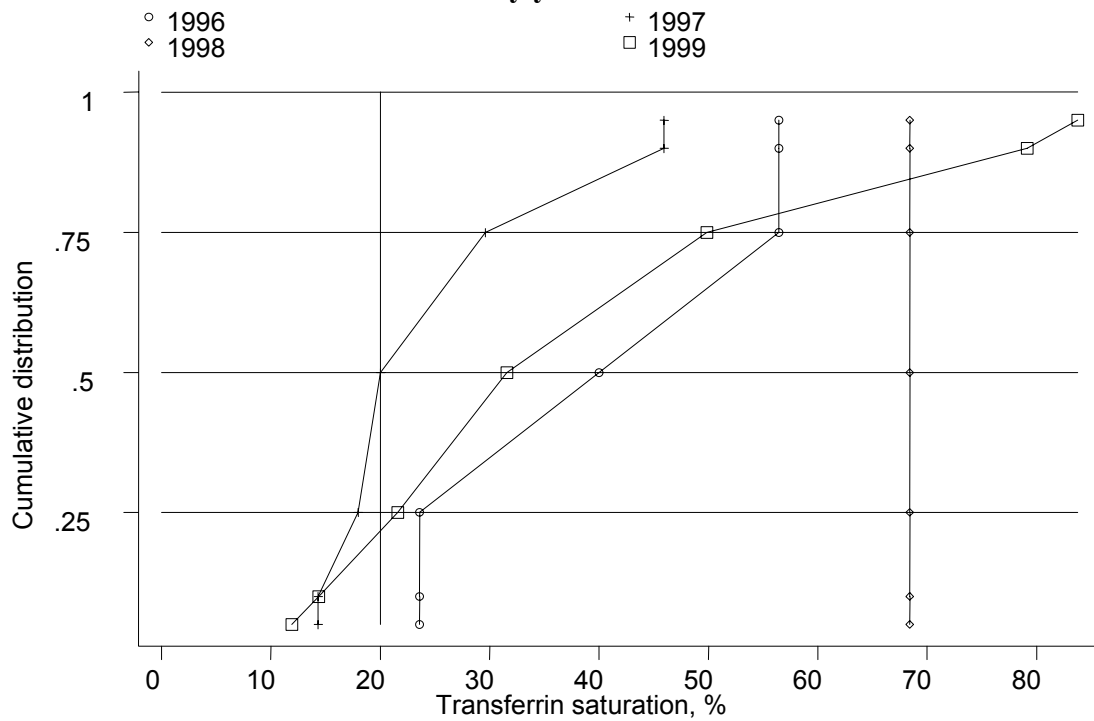


Table 3.3.43: Distribution of serum Ferritin without rHuEpo, HD patients, Private Centres 1999

year	No of subjects	No of observations	median	LQ	UQ	% patients > 100 ug/l
1999	18	22	442	126	916	77

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

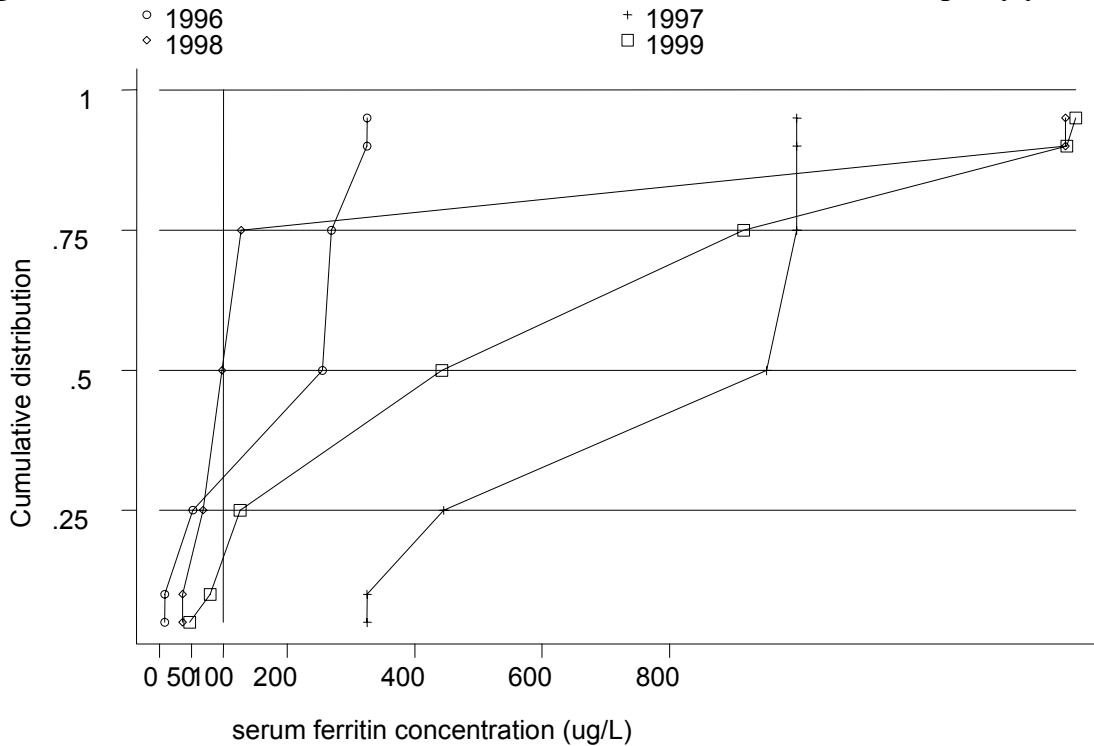


Table 3.3.44: Distribution of serum Ferritin on rHuEpo, HD patients, PRIVATE Centres 1999

year	No of subjects	No of observations	median	LQ	UQ	% patients > 100 ug/l
1999	109	150	478.9	315	876	95

Figure 3.3.44: Cumulative Distribution of serum Ferritin on rHuEpo, by year

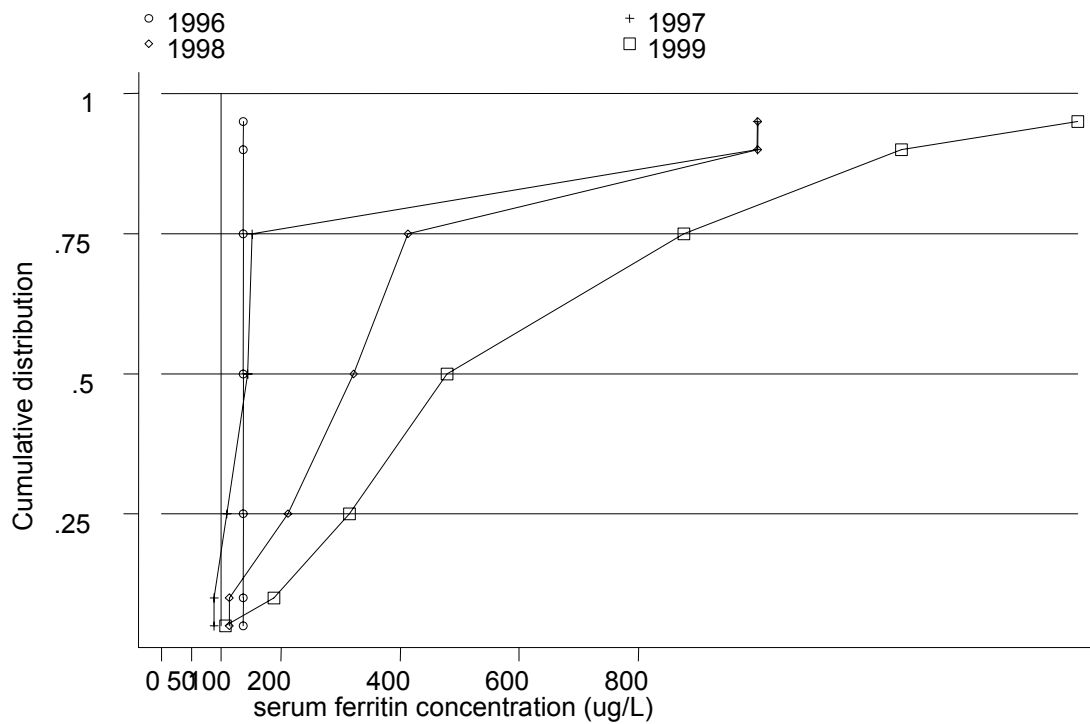


Table 3.3.45: Distribution of Hb without rHuEpo, HD patients, Private Centres 1999

year	No of subjects	No of observations	median	LQ	UQ	% patients <10 g/dl	% patients ≥ 10 & ≤ 12 g/dl	% patients >12 g/dl
1999	139	361	8.5	7.5	10.1	73	19	8

Figure 3.3.45: Cumulative Distribution of Hb without rHuEpo by year

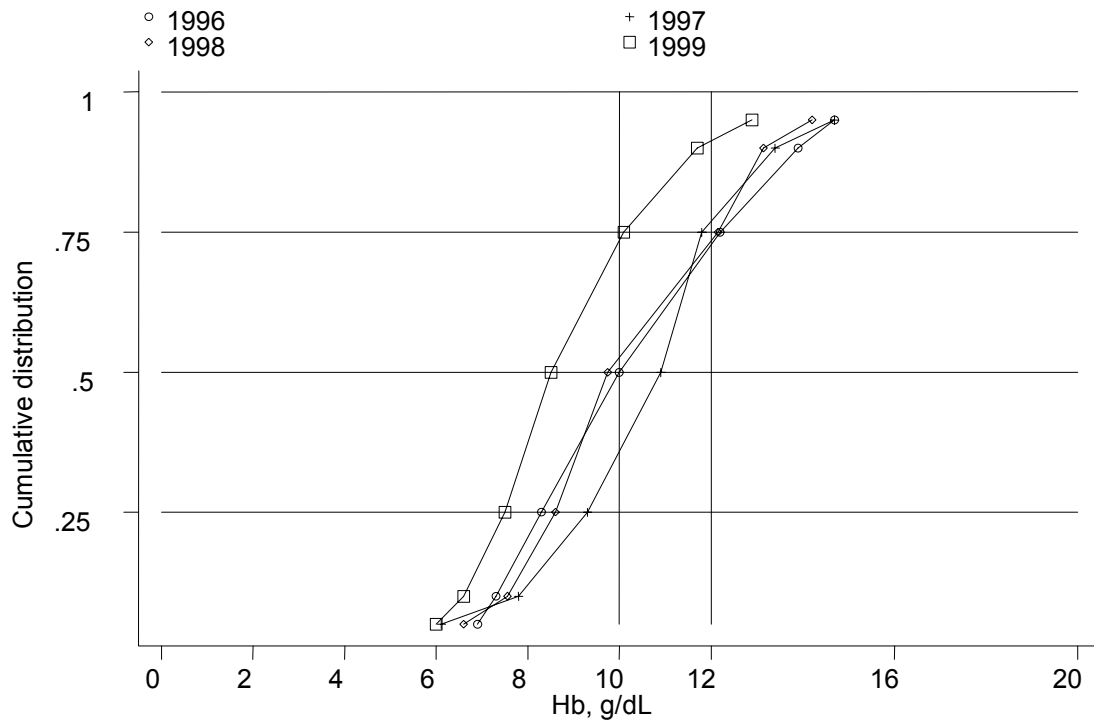
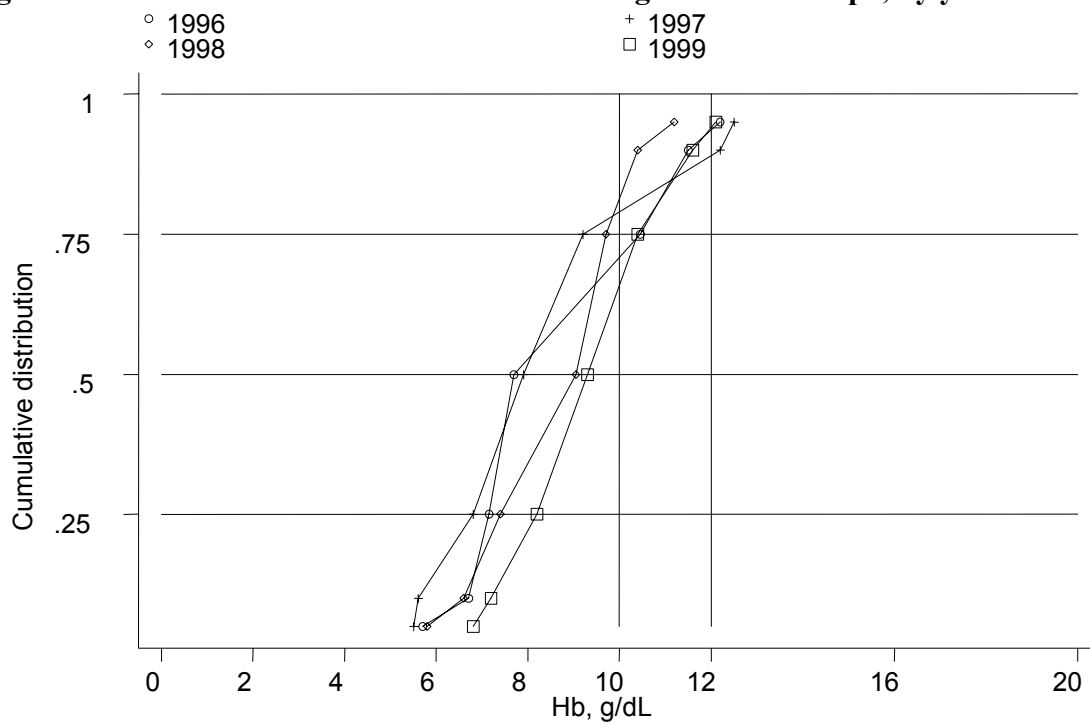


Table 3.3.46: Distribution of Hb on rHuEpo, HD patients, PRIVATE Centres 1999

year	No of subjects	No of observations	median	LQ	UQ	% patients <10 g/dl	% patients ≥ 10 & ≤ 12 g/dl	% patients >12 g/dl
1999	229	717	9.3	8.2	10.4	66	28	6

Figure 3.3.46: Cumulative Distribution of Haemoglobin on rHuEpo, by year

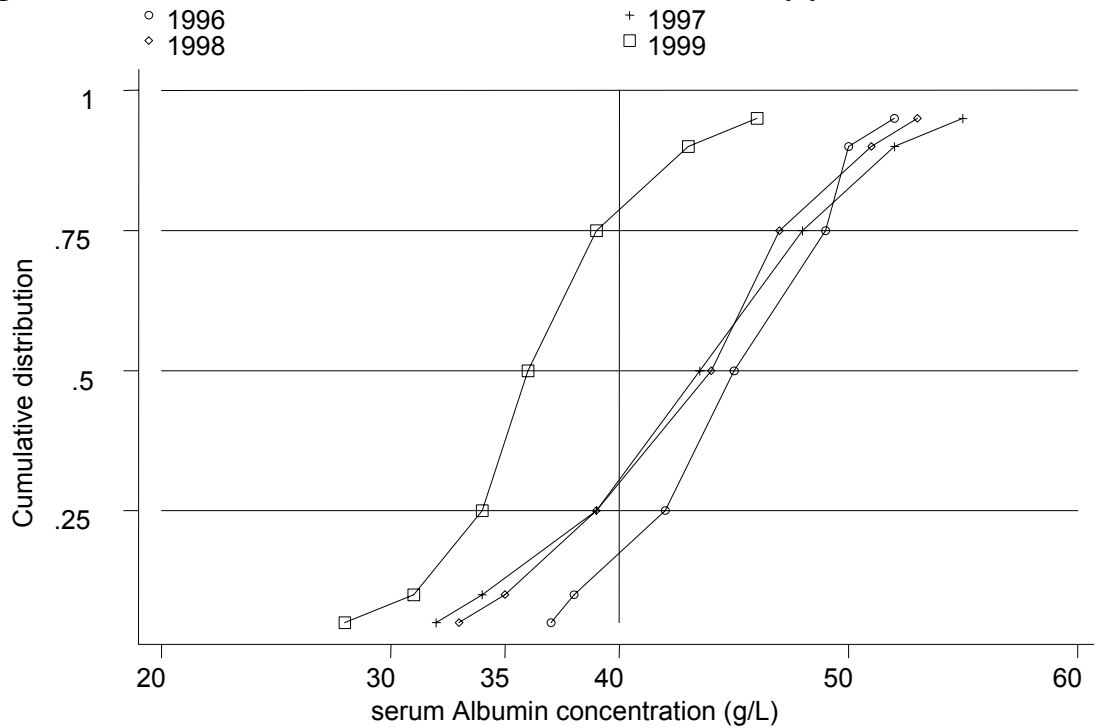


3.3.13 NUTRITIONAL STATUS OF HD PATIENTS PRIVATE CENTRES

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

year	No of subjects	No of observations	median	LQ	UQ	% patients >40g/l
1999	295	802	36	34	39	24

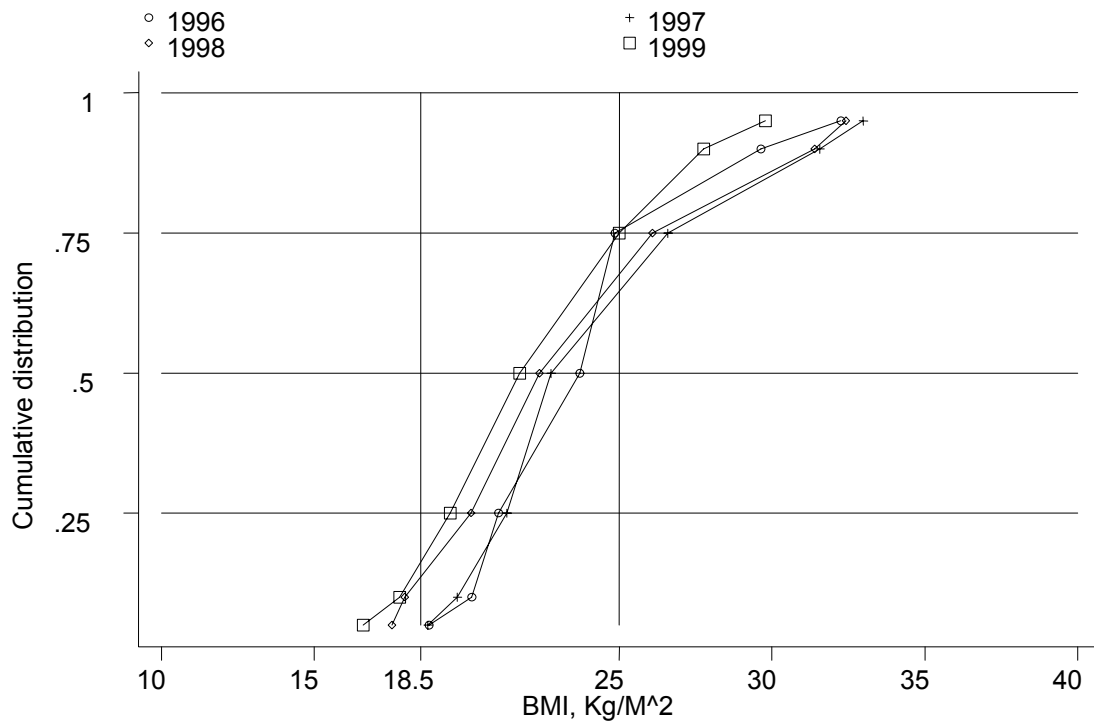
Figure 3.3.47: Cumulative Distribution of serum Albumin by year



**Table 3.3.48: Distribution of Body Mass Index
HD patients, PRIVATE Centres 1999**

year	No of subjects	No of observations	median	LQ	UQ	% patients <18.5	% patients ≥ 18.5 & ≤ 25	% patients >25
1999	280	1838	21.7	19.4	25	15	60	25

Figure 3.3.48: Cumulative Distribution of BMI by year



3.1.14 SEROLOGICAL STATUS, HD PATIENTS PRIVATECENTRES

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

year	No	% HbsAg positive	% anti-HCV positive
1999	409	4	16

Figure 3.3.49: Prevalence of positive anti-HCV and HbsAg HD patients, PRIVATE Centres 1995 – 1998

