

CHAPTER 4

Death and Survival on Dialysis

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SECTION 4.1: DEATH ON DIALYSIS

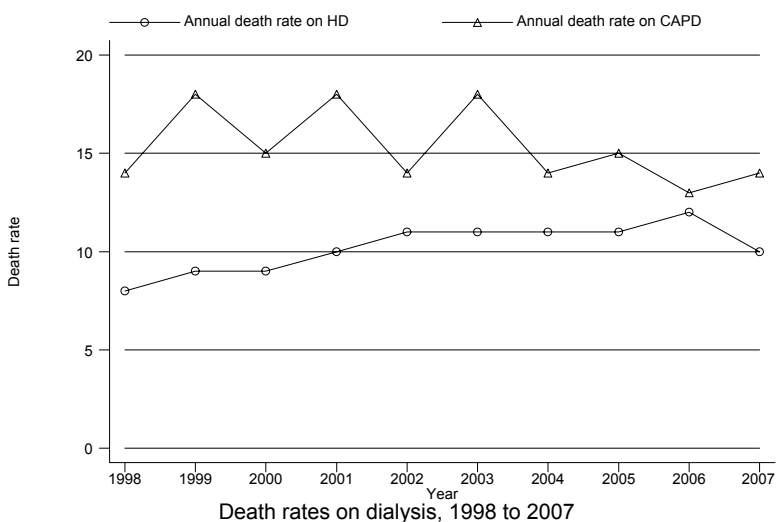
The number of deaths in dialysis patients for 2007 was 1678 (annual death rate of 10.6%). One thousand four hundred and seventy seven haemodialysis patients died in 2007 (annual rate of 10.2%) while 201 died while on continuous ambulatory peritoneal dialysis (CAPD) (annual death rate of 14.2%).

Table 4.1.1: Deaths on Dialysis 1998-2007

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
No. of dialysis patients at risk	4120	5040	6117	7270	8483	9778	11152	12626	14212	15879
Dialysis deaths	376	493	594	816	927	1157	1272	1420	1673	1678
Dialysis death rate %	9	10	10	11	11	12	11	11	12	11
No. of HD patients at risk	3600	4472	5489	6556	7640	8791	10066	11489	12980	14460
HD deaths	302	393	502	686	812	979	1120	1249	1507	1477
HD death rate %	8	9	9	10	11	11	11	11	12	10
No. of CAPD patients at risk	520	568	628	714	843	988	1086	1138	1232	1420
CAPD deaths	74	100	92	130	115	178	152	171	166	201
CAPD death rate %	14	18	15	18	14	18	14	15	13	14

Figure 4.1.1 shows the annual death rate on dialysis from 1998 till 2007. Despite a higher percentage of diabetics (41% in 1998 to 57% in 2007) and elderly patients (in 1998, 31% were aged more than 54 years compared with 42% in 2007) on dialysis in recent years, the overall annual death rate of patients on dialysis remained unchanged over the last 10 years.

The annual death rate for those on CAPD showed a downward trend in recent years while the annual death rate for those on haemodialysis showed a slight upward trend over the last 10 years. The annual death rate for those on CAPD in 2007 was 14% while the annual death rate for haemodialysis patients in 2007 was 11%; a difference of 3% between the two modalities.

Figure 4.1.1: Death Rates on Dialysis 1998-2007

The causes of death on dialysis are shown in Table 4.1.2. Cardiovascular disease remained the main cause of death in 2007; accounting for 25%. This has remained unchanged over the last 10 years. Death at home accounted for another 18% and a majority of these deaths were probably secondary to cardiovascular events. Death due to infections has decreased by 42% over the last 10 years and now accounting for only 10% (compared to 18% in 1998).

Table 4.1.2: Causes of Death on Dialysis 1998-2007

Year	1998		1999		2000		2001		2002	
	no	%	no	%	no	%	no	%	no	%
Cardiovascular	110	29	129	26	177	30	210	26	307	33
Died at home	72	19	107	22	135	23	228	28	212	23
Sepsis	66	18	84	17	85	14	128	16	141	15
CAPD peritonitis	2	1	11	2	21	4	29	4	16	2
GIT bleed	7	2	18	4	18	3	18	2	24	3
Cancer	8	2	6	1	8	1	18	2	18	2
Liver disease	5	1	7	1	14	2	11	1	16	2
Withdrawal	1	0	10	2	17	3	20	2	18	2
Others	54	14	65	13	74	12	88	11	104	11
Unknown	51	14	56	11	45	8	66	8	71	8
TOTAL	376	100	493	100	594	100	816	100	927	100

Year	2003		2004		2005		2006		2007	
	no	%	no	%	no	%	no	%	no	%
Cardiovascular	324	28	333	26	357	25	469	28	423	25
Died at home	291	25	304	24	315	22	346	21	307	18
Sepsis	183	16	154	12	161	11	206	12	165	10
CAPD peritonitis	11	1	13	1	18	1	21	1	14	1
GIT bleed	28	2	24	2	28	2	26	2	24	1
Cancer	27	2	20	2	28	2	36	2	26	2
Liver disease	23	2	29	2	25	2	32	2	33	2
Withdrawal	26	2	9	1	11	1	22	1	26	2
Others	160	14	317	25	398	28	383	23	521	31
Unknown	84	7	69	5	79	6	132	8	139	8
TOTAL	1157	100	1272	100	1420	100	1673	100	1678	100

4.2: Patient Survival on Dialysis

4.2.1 Patient survival by type of dialysis modality

Patient survival by dialysis modalities (censored for change of modalities) is shown in Table 4.2.1(a) and Figure 4.2.1(a). The overall unadjusted 5 years and 10 years patient survival on dialysis were 57% and 35% respectively. The unadjusted patient survival was better for those on haemodialysis compared to those on CAPD and this survival difference progressively widened with time. At 5 years the unadjusted patient survival on haemodialysis was 59% compared 46% in those on CAPD.

However, when patient survival by dialysis modalities was analysed as per ITT (disregarding change of dialysis modality) [Table 4.2.1(b) and Fig 4.2.1(b)], the difference in survival according to dialysis modalities became less evident. The overall unadjusted 5 years and 10 years patient survival on haemodialysis versus CAPD were 61% vs 56% and 41% and 43% respectively.

Table 4.2.1(a): Patient survival by dialysis modality analysis censored for change of modality

Dialysis modality Interval (month)	CAPD			HD			All Dialysis		
	No.	% Survival	SE	No.	% Survival	SE	No.	% Survival	SE
6	3427	94	0	23081	94	0	26508	94	0
12	2812	88	1	19945	89	0	22757	89	0
24	1866	75	1	15139	81	0	17005	80	0
36	1228	62	1	11553	72	0	12781	71	0
48	804	52	1	8781	66	0	9585	64	0
60	530	46	1	6619	59	0	7149	57	0
72	334	40	1	5011	54	0	5345	52	0
84	207	34	1	3759	49	0	3965	47	0
96	117	28	2	2821	44	0	2937	43	0
108	76	24	2	2070	40	0	2145	38	0
120	42	19	2	1505	36	1	1547	35	1

Figure 4.2.1(a): Patient survival by dialysis modality analysis censored for change of modality

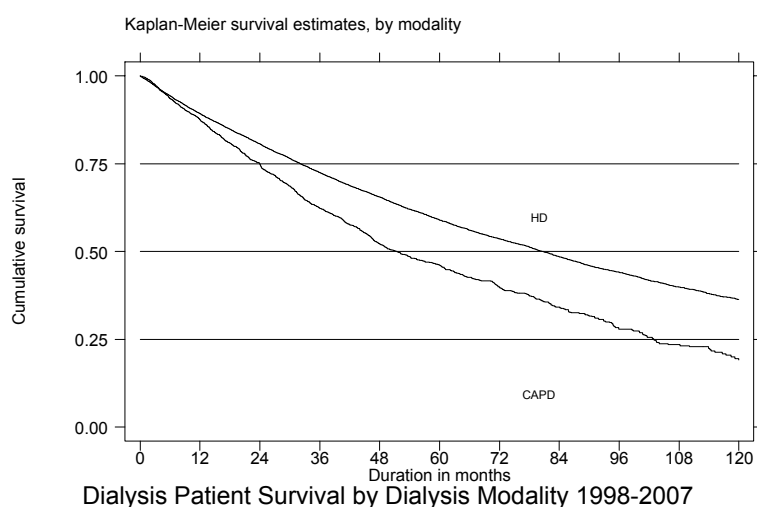
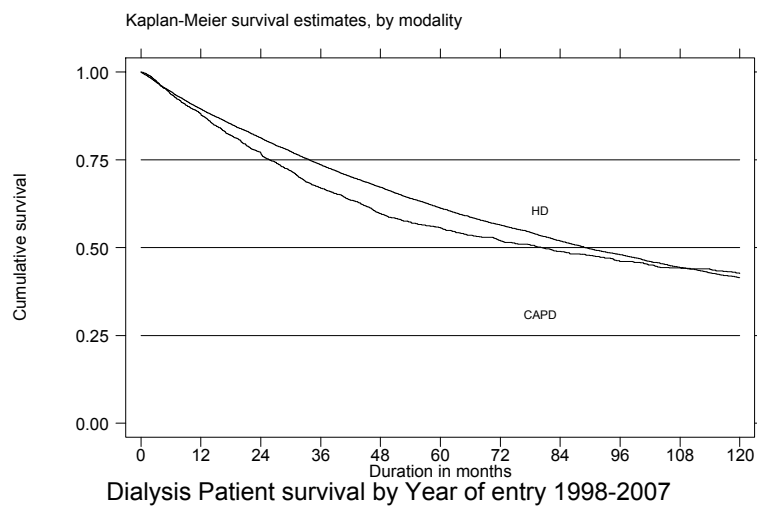


Table 4.2.1(b): Patient survival by dialysis modality analysis as per ITT

Dialysis modality Interval (month)	CAPD			HD			All Dialysis		
	No.	% Survival	SE	No.	% Survival	SE	No.	% Survival	SE
6	3552	94	0	23531	94	0	27064	94	0
12	3066	88	1	20727	89	0	23793	89	0
24	2304	77	1	16192	81	0	18496	81	0
36	1742	67	1	12634	74	0	14376	73	0
48	1328	60	1	9834	67	0	11162	66	0
60	1021	56	1	7611	61	0	8631	60	0
72	781	52	1	5912	56	0	6693	56	0
84	591	49	1	4567	52	0	5157	52	0
96	452	46	1	3535	48	0	3986	48	0
108	351	44	1	2708	44	0	3057	44	0
120	271	43	1	2068	41	0	2339	42	0

Figure 4.2.1(b): Patient survival by dialysis modality analysis as per ITT



4.2.2 Patient survival by year of starting dialysis

Table 4.2.2 and Fig 4.2.2 show the unadjusted patient survival by year of entry. The unadjusted 6 months survival of those starting dialysis in 2007 was 95%. Despite a progressive increase in the number of diabetic patients and older people starting dialysis in recent years, the unadjusted patient survival remained constant over the last 10 years with a 1-year and 5-year survival of 88-91% and 55-61% respectively.

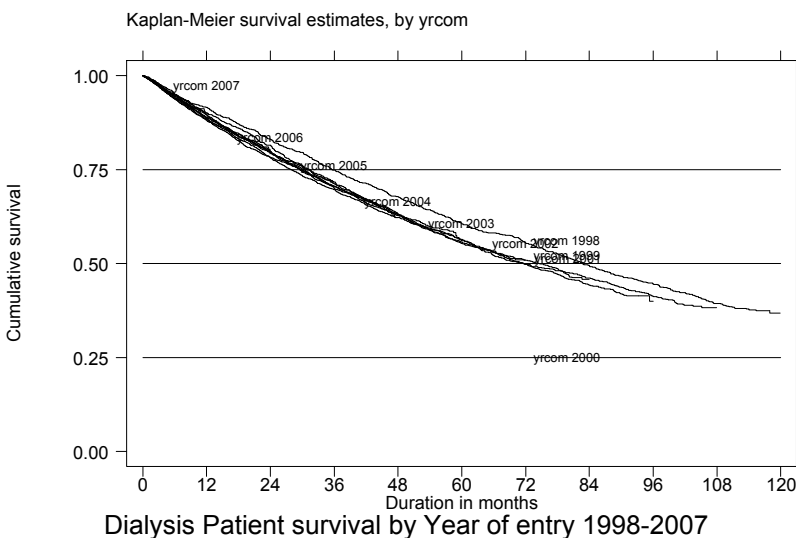
Table 4.2.2: Unadjusted patient survival by year of entry, 1998-2007

Year Interval (months)	1998			1999			2000			2001		
	No.	% Survival	SE	No.	% Survival	SE	No.	% Survival	SE	No.	% Survival	SE
6	1245	95	1	1511	95	1	1807	95	1	2071	94	1
12	1179	91	1	1411	90	1	1667	90	1	1888	89	1
24	1039	83	1	1214	81	1	1415	80	1	1604	78	1
36	915	75	1	1038	72	1	1225	71	1	1388	70	1
48	804	68	1	894	63	1	1059	63	1	1207	62	1
60	710	61	1	789	56	1	919	56	1	1044	55	1
72	637	56	1	703	51	1	800	50	1	927	50	1
84	556	49	1	623	46	1	698	44	1	-	.	.
96	496	45	1	548	41	1	-	.	.	-	.	.
108	434	39	1	-	.	.	-	.	.	-	.	.

Year Interval (months)	2002			2003			2004			2005		
	No.	% Survival	SE	No.	% Survival	SE	No.	% Survival	SE	No.	% Survival	SE
6	2353	95	0	2530	94	0	2845	95	0	3012	94	0
12	2176	90	1	2334	89	1	2616	89	1	2767	88	1
24	1844	80	1	2020	79	1	2269	80	1	2383	78	1
36	1597	70	1	1745	70	1	1952	71	1	-	.	.
48	1393	63	1	1534	63	1	-	.	.	-	.	.
60	1215	56	1	-	.	.	-	.	.	-	.	.

Year Interval (months)	2006			2007		
	No.	% Survival	SE	No.	% Survival	SE
6	3454	94	0	1886	95	0
12	3194	88	1	-	.	.

Figure 4.2.2: Unadjusted patient survival by year of entry, 1998-2007



4.2.3 Patient survival by Age at starting dialysis

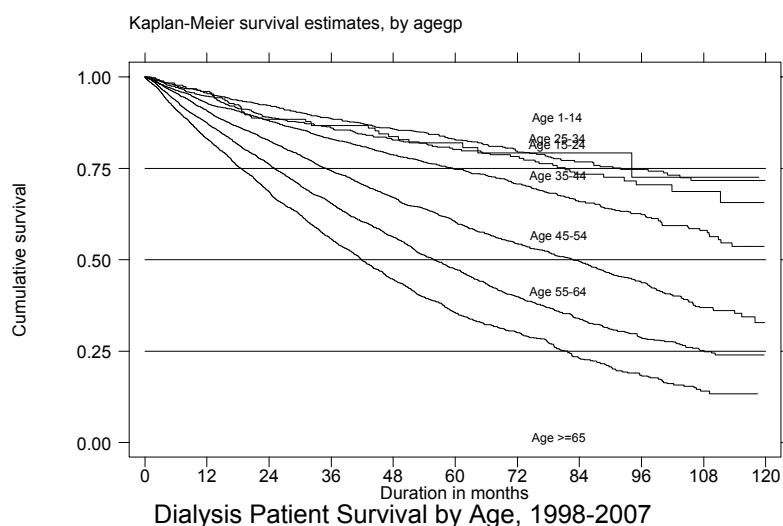
The unadjusted survival for age groups <14 years, 15-24 years and 25-34 years at the start of dialysis were similar, with a 5-year survival of more than 80% as shown in Table 4.2.3. Beyond the age of 34 years old, the unadjusted survival progressively worsens with increasing age. The 9-year unadjusted survival for those who started dialysis at the age of less than 15 years was 73 % compared with 14% in those more than 64 years of age at the time of initiation of dialysis.

Table 4.2.3: Unadjusted patient survival by age, 1998-2007

Age group (years) Interval (months)	<=14			15-24			25-34			35-44		
	No.	% Survival	SE	No.	% Survival	SE	No.	% Survival	SE	No.	% Survival	SE
6	314	98	1	1021	97	1	1761	98	0	3062	96	0
12	280	96	1	877	95	1	1537	96	0	2651	93	0
24	204	88	2	630	89	1	1170	92	1	2052	88	1
36	141	87	2	481	86	1	924	89	1	1598	83	1
48	104	84	3	350	83	1	723	86	1	1214	79	1
60	71	82	3	249	80	2	537	83	1	916	75	1
72	40	79	3	175	78	2	374	80	1	654	71	1
84	26	79	3	109	73	2	270	77	2	423	66	1
96	11	73	7	62	70	3	169	75	2	243	62	1
108	6	73	7	26	69	3	77	72	2	113	58	2

Age group (years) Interval (months)	45-54			55-64			≥65		
	No.	% Survival	SE	No.	% Survival	SE	No.	% Survival	SE
6	5767	96	0	6198	93	0	4584	91	0
12	4936	91	0	5207	87	0	3743	83	1
24	3593	83	1	3686	76	1	2454	69	1
36	2635	74	1	2522	65	1	1561	56	1
48	1861	67	1	1696	56	1	941	45	1
60	1309	60	1	1061	47	1	534	35	1
72	865	54	1	640	40	1	318	30	1
84	543	50	1	365	34	1	147	23	1
96	300	44	1	195	29	1	70	18	1
108	113	37	2	77	25	1	28	14	1

Figure 4.2.3: Unadjusted patient survival by age, 1998-2007

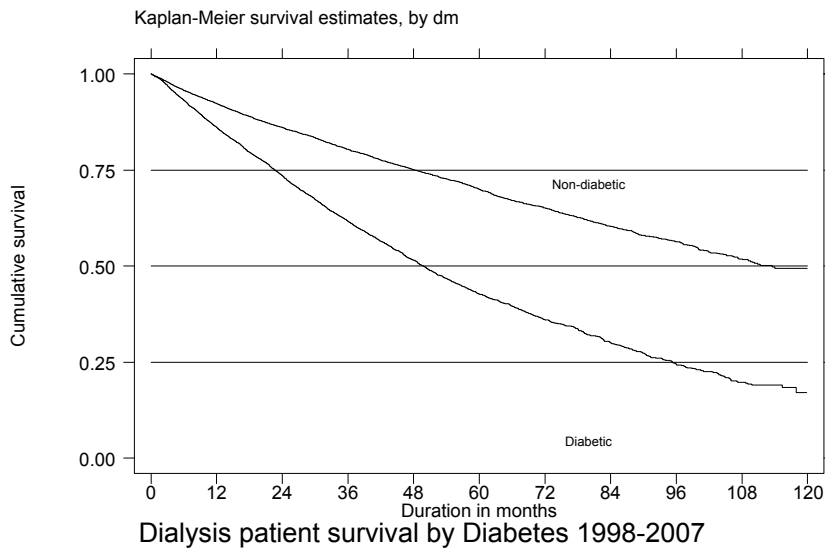


4.2.4 Patient survival by Diabetic status

The unadjusted patient survival among diabetic and non-diabetic patients are shown in Table 4.2.4 and Figure 4.2.4. The presence of diabetes mellitus has major impact on patient survival. The difference in the unadjusted patient survival appeared as early as 6 months after initiation of dialysis and increased with the time on dialysis. The 9 years unadjusted patient survival among diabetics and non-diabetics were 52% and 20% respectively, a two and a half fold difference.

Table 4.2.4: Unadjusted patient survival by Diabetes status, 1998-2007

Diabetes status Interval (months)	Non-diabetic			Diabetic		
	No.	% Survival	SE	No.	% Survival	SE
6	11107	96	0	11599	93	0
12	9631	92	0	9598	86	0
24	7343	86	0	6441	74	0
36	5648	80	0	4209	62	1
48	4223	75	0	2664	52	1
60	3064	70	1	1611	43	1
72	2115	65	1	948	36	1
84	1357	60	1	520	30	1
96	794	56	1	249	24	1
108	333	52	1	102	20	1

Figure 4.2.4: Unadjusted patient survival by Diabetes status, 1998-2007

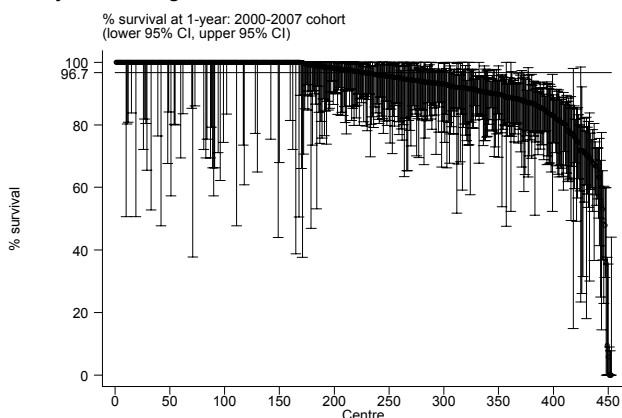
4.3 Survival of incidence patients by centre

4.3.1. Survival of incident haemodialysis patients 2000 – 2007 by centre

Figure 4.3.1(a) and Figure 4.3.1(b) show the patient survival (adjusted for age and diabetes) by haemodialysis centres at 1 year and at 5 years respectively. The median adjusted patient survival among haemodialysis centres at 1 year and 5 years for the 2000-2007 cohort were 96.7% and 69.8% respectively. There was wide centre variation with regards to patient survival at one year and this became more apparent at 5 years (more than 10 fold difference)..

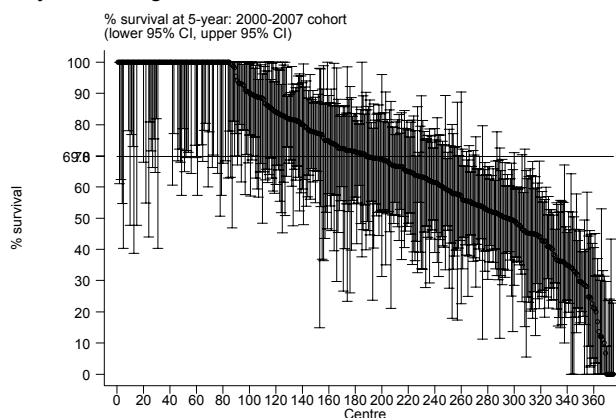
Data on survival at 1 year and 5 years adjusted for age and diabetes are also shown in funnel plots (Figure 4.3.3.1(c) and Figure 4.3.3.1(d) respectively) to identify outliers. For 1 year survival, 63 (14%) centres lie below 3SD while for 5 years survival 113 (30%) centres are more than 3SD below the adjusted median survival.

Figure 4.3.1(a): Variation in % Survival at 1-years adjusted to age and diabetes, 2000-2007



*Horizontal line represents the median % survival among HD centres

Figure 4.3.1(b): Variation in % Survival at 5-years adjusted to age and diabetes, 2000-2007



*Horizontal line represents the median % survival among HD centres

Figure 4.3.1(c): Funnel plot for adjusted age at 60 and diabetes at 1 year after 90 days survival; 2000-2007 cohort (HD centres)

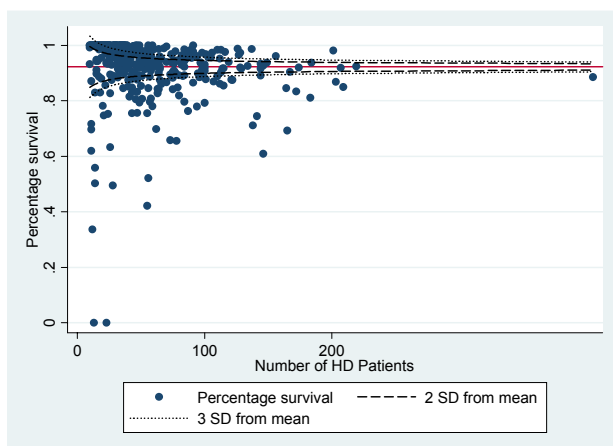
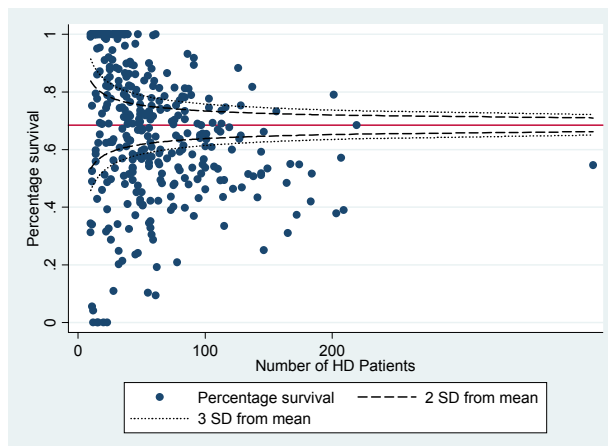


Figure 4.3.1(d): Funnel plot for adjusted age at 60 and diabetes at 5 year after 90 days survival; 2000-2007 cohort (HD centres)

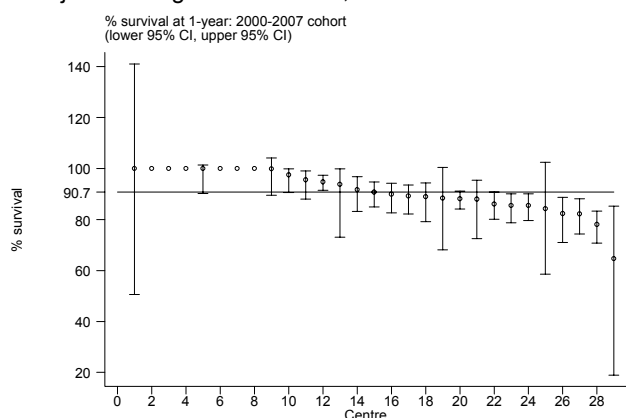


4.3.2. Survival of incidence CAPD patients 2000 – 2007 by centre

The adjusted patient survival (adjusted for age and diabetes) at 1 year and at 5 years by CAPD centres are showed in Figure 4.3.2(a) and Figure 4.3.2(b). The median adjusted patient survival among CAPD centres at one year and 5 years for the 2000-2007 cohort were 90.7% and 47.9% respectively. There was no overt centre variation with regards to patient survival at one year. However the adjusted CAPD patient survival at 5 years demonstrated marked centre variation with a 5 fold difference.

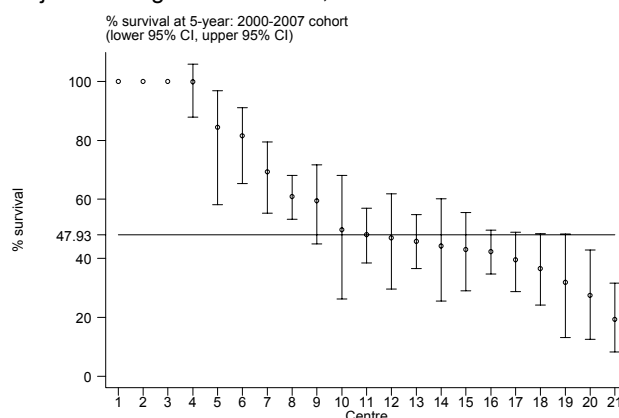
Figure 4.3.2(c) and Figure 4.3.2(d) show the funnel plot for 1 year and 5 years adjusted patient survival among CAPD centres respectively. For 1 year survival, 10 (48%) centres lie below the 3SD while for 5 years survival, 11 (52%) centres are more than 3SD below the adjusted median survival.

Figure 4.3.2(a): Variation in % Survival at 1-year adjusted to age and diabetes, 2000-2007



*Horizontal line represents the median % survival among CAPD centres

Figure 4.3.2(b): Variation in % Survival at 5-years adjusted to age and diabetes, 2000-2007



*Horizontal line represents the median % survival among CAPD centres

Figure 4.3.2(c): Funnel plot for adjusted age at 60 and diabetes at 1 year after 90 days survival; 2000-2007 cohort (CAPD centres)

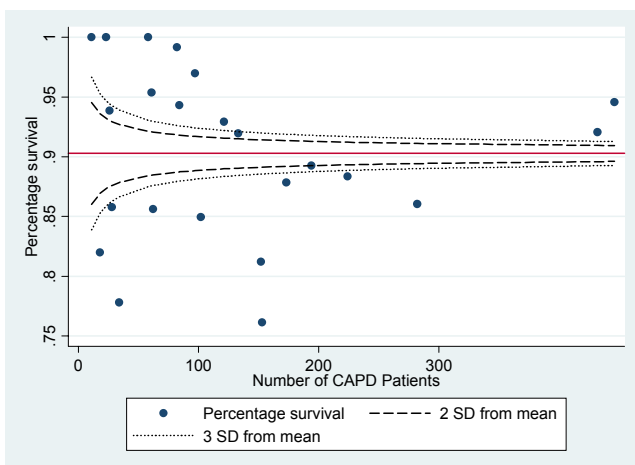
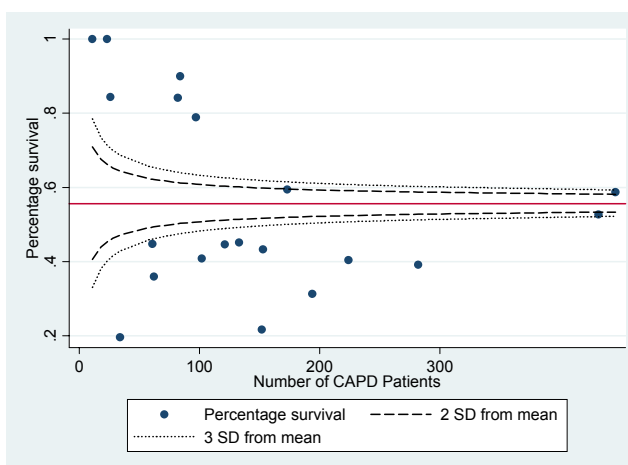


Figure 4.3.2(d): Funnel plot for adjusted age at 60 and diabetes at 5 year after 90 days survival; 2000-2007 cohort (CAPD centres)



4.4 Adjusted Mortality of dialysis patient

4.4.1. Adjusted hazard ratio for mortality of dialysis patients

Table 4.4.1 shows the adjusted hazard ratio for mortality of dialysis patients (1998-2007). The 1998-2007 cohort was adjusted for age, gender, primary diagnosis, year commencing dialysis, dialysis modality, body mass index (BMI), serum albumin, serum cholesterol, adequacy of dialysis (KT/V), diastolic blood pressure, haemoglobin, serum calcium, calcium phosphate product, serum phosphate, viral hepatitis status and presence of cardiovascular disease.

Patient characteristics that had significant impact on mortality were age, gender, primary renal disease, year commencing dialysis, dialysis modality, BMI, KT/V, diastolic blood pressure and the presence cardiovascular disease. The significant biochemical risk factors for mortality were serum albumin, serum cholesterol, haemoglobin, calcium, calcium phosphate product, phosphate, hepatitis B status and hepatitis C status.

There were positive correlation between age of patient, diabetes mellitus as primary renal disease, diastolic blood pressure [Figure 4.4.1(a)], serum calcium, serum phosphate [Figure 4.4.1(b)] and hepatitis B antigenaemia with mortality while negative correlation was noted between serum albumin, KT/V [Figure 4.4.1(c)], haemoglobin concentration [Figure 4.4.1(d)], calcium phosphate product and presence of hepatitis C antibodies with mortality.

Table 4.4.2 and Fig 4.4.2 show the odd ratio of death according to state. There was variation in the mortality among the dialysis patients in the 14 states in this country. Dialysis patients in Sabah and Labuan has the highest mortality while patients dialysing in Kuala Lumpur has the lowest mortality; a difference in odd ratio of death of 0.62.

Table 4.4.1: Adjusted hazard ratio for mortality of dialysis patients (1998-2007 cohort)

Factors	N	Hazard Ratio	95% CI	P value
Age (years):				
0-14(ref.*)	355	1.00		
15-24	1,154	1.51	(1.08, 2.11)	0.02
25-34	1,987	1.29	(0.93, 1.79)	0.12
35-44	3,443	1.86	(1.35, 2.55)	0.00
45-54	6,553	2.60	(1.90, 3.55)	0.00
55-64	7,235	3.35	(2.45, 4.58)	0.00
>=65	5,528	4.67	(3.41, 6.39)	0.00
Gender:				
Male (ref.*)	14,570	1.00		
Female	11,685	0.87	(0.83, 0.91)	0.00
Primary diagnosis:				
Unknown primary (ref.*)	7,236	1.00		
Diabetes mellitus	13,319	1.49	(1.40, 1.58)	0.00
GN/SLE	2,006	0.89	(0.79, 0.99)	0.04
Polycystic kidney	339	1.10	(0.87, 1.38)	0.43
Obstructive nephropathy	823	1.02	(0.89, 1.18)	0.74
Others	2,532	1.01	(0.92, 1.11)	0.83
Year start dialysis:				
Year 1998-9 (ref.*)	2,949	1.00		
Year 2000-2001	4,180	1.07	(0.99, 1.14)	0.06
Year 2002-3	5,267	1.09	(1.02, 1.17)	0.02
Year 2004-7	13,859	1.10	(1.02, 1.18)	0.01
Modality:				
HD (ref*)	22,793	1.00		
CAPD	3,462	1.30	(1.20, 1.41)	0.00

Table 4.4.1: Adjusted hazard ratio for mortality of dialysis patients (1998-2007 cohort) - continued

Factors	N	Hazard Ratio	95% CI	P value
BMI:				
<18.5	2,432	1.56	(1.41, 1.73)	0.00
18.5-<25	17,597	1.29	(1.21, 1.37)	0.00
>=25 (ref.*)	6,226	1.00		
Serum albumin (g/L):				
<30	1,574	4.29	(3.88, 4.74)	0.00
30-<35	3,426	2.43	(2.25, 2.63)	0.00
35-<40	12,417	1.76	(1.66, 1.87)	0.00
>=40 (ref.*)	8,838	1.00		
Serum cholesterol (mmol/L):				
<3.2	960	1.12	(0.99, 1.27)	0.07
3.2-<5.2	19,202	1.16	(1.10, 1.23)	0.00
>=5.2 (ref.*)	6,093	1.00		
KT/V				
<1	589	1.49	(1.28, 1.73)	0.00
1-<1.2	2,053	1.06	(0.97, 1.17)	0.20
1.2-<1.4 (ref.*)	5,577	1.00		
1.4-<1.6	7,896	0.99	(0.94, 1.06)	0.96
>=1.6	10,140	0.82	(0.77, 0.89)	0.00
Diastolic BP (mmHg):				
<70	3,044	0.92	(0.85, 0.99)	0.03
70-<80	9,732	0.97	(0.92, 1.02)	0.27
80-<90 (ref.*)	10,282	1.00		
90-<100	2,619	1.07	(0.98, 1.17)	0.15
>=100	578	1.96	(1.69, 2.28)	0.00
Hemoglobin:				
<8	2,373	3.42	(3.08, 3.80)	0.00
8-<9	3,819	2.23	(2.02, 2.46)	0.00
9-<10	10,667	2.26	(2.06, 2.47)	0.00
10-<11	5,288	1.26	(1.14, 1.39)	0.00
11-<12 (ref.*)	2,729	1.00		
>=12	1,379	1.01	(0.88, 1.17)	0.87
Serum calcium (mmol/L):				
<2.2	8,160	0.82	(0.77, 0.86)	0.00
2.2-<2.6 (ref.*)	17,463	1.00		
>=2.6	632	1.72	(1.52, 1.95)	0.00
Calcium Phosphate product (mmol²/L²):				
<3.5	8,564	1.01	(0.93, 1.10)	0.84
3.5-<4.5 (ref.*)	12,014	1.00		
4.5-<5.5	3,985	0.67	(0.61, 0.74)	0.00
>=5.5	1,692	0.61	(0.51, 0.73)	0.00
Serum Phosphate (mmol/L):				
<1.6	9,111	0.89	(0.82, 0.97)	0.01
1.6-<2.0 (ref.*)	11,571	1.00		
2.0-<2.2	2,349	1.00	(0.90, 1.12)	0.95
2.2-<2.4	1,454	1.13	(0.98, 1.30)	0.09
2.4-<2.6	875	1.37	(1.13, 1.65)	0.00
>=2.6	895	1.85	(1.50, 2.28)	0.00
HBsAg:				
Negative (ref.*)	25,203	1.00		
Positive	1,052	1.16	(1.05, 1.28)	0.00
Anti-HCV:				
Negative (ref.*)	25,145	1.00		
Positive	1,110	0.86	(0.78, 0.95)	0.00
Cardiovascular disease (CVD):				
No CVD (ref.*)	21,248	1.00		
CVD	5,007	1.31	(1.24, 1.37)	0.00

Figure 4.4.1(a): Adjusted hazard ratio for mortality of dialysis patients by diastolic blood pressure (1998-2007 cohort)

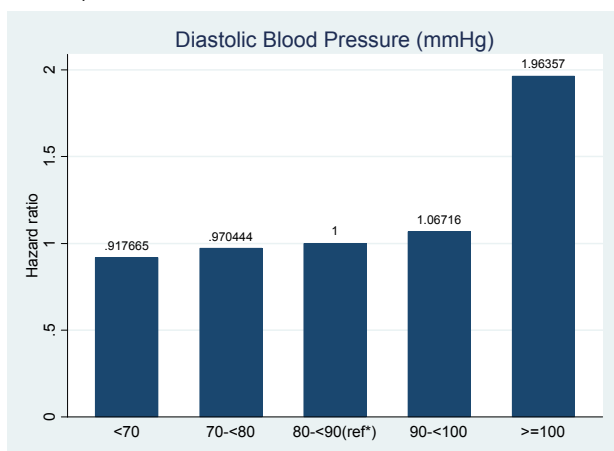


Figure 4.4.1(b): Adjusted hazard ratio for mortality of dialysis patients by serum phosphate (1998-2007 cohort)

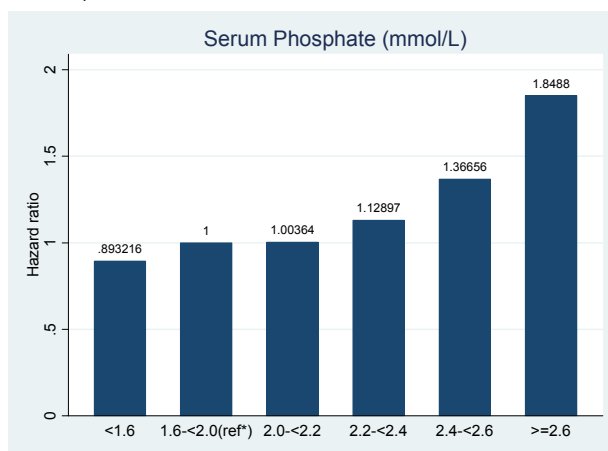


Figure 4.4.1(c): Adjusted hazard ratio for mortality of dialysis patients by KT/V (1998-2007 cohort)

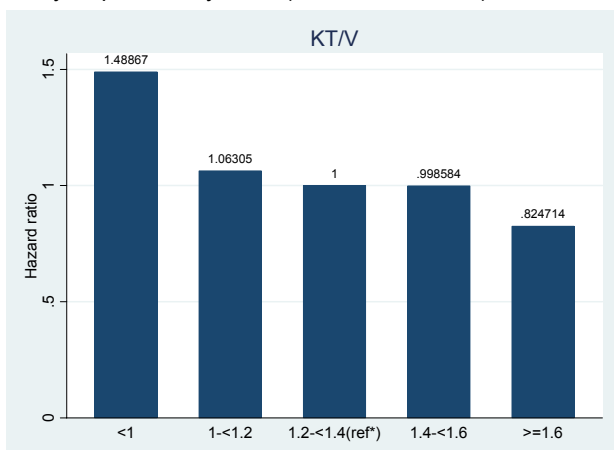
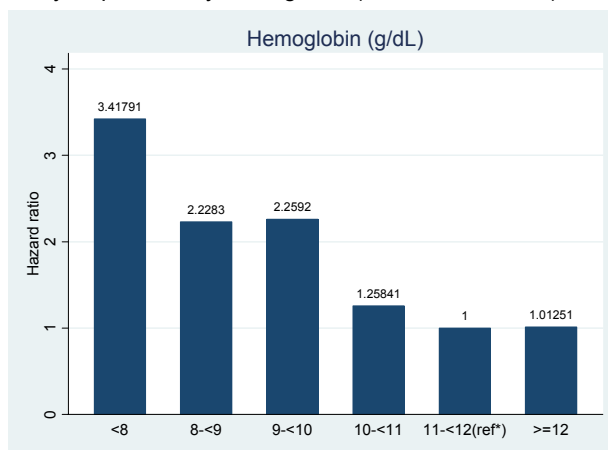


Figure 4.4.1(d): Adjusted hazard ratio for mortality of dialysis patients by hemoglobin (1998-2007 cohort)



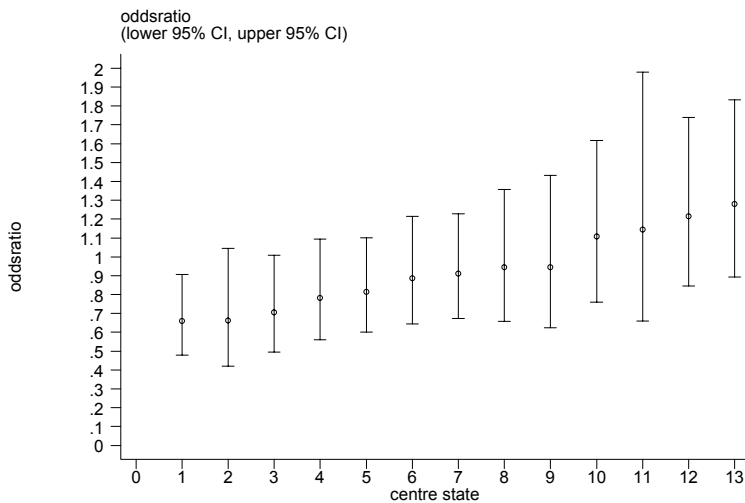
4.4.2. Variation in odds ratio of death by state 2007

Table 4.4.2 and Fig 4.4.2 show the odd ratio of death according to state. There was variation in the mortality among the dialysis patients in the 14 states in this country. Dialysis patients in Sabah and Labuan has the highest mortality while patients dialysing in Kuala Lumpur has the lowest mortality; a difference in odd ratio of death of 0.62.

Table 4.4.2: Variation in odds ratio of death by state, dialysis patients 2007

	Variation in odds ratio of death						
	Min 0.659	5th centile 0.659	LQ 0.783	Median 0.91	UQ 1.108	95th centile 1.279	Max 1.279
State	Number of centres			Odds ratio			
Pulau Pinang	59			0.783			
Melaka	30			1.214			
Johor	90			0.910			
Perak	71			0.885			
Selangor and WP Putrajaya	123			0.813			
WP Kuala Lumpur	76			0.660			
Negeri Sembilan	26			0.662			
Kedah	36			0.945			
Perlis	3			1.143			
Terengganu	16			0.946			
Pahang	26			1			
Kelantan Darul Naim	26			1.108			
Sarawak	38			0.706			
Sabah and WPLabuan	35			1.279			

Figure 4.4.2: Variation in odds ratio of death by state 2007



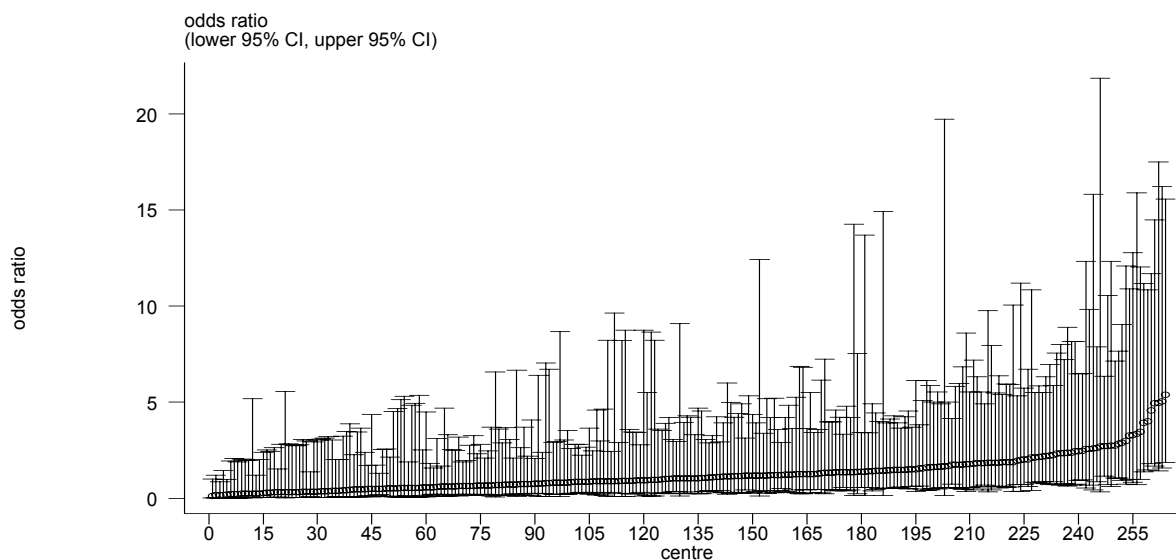
4.4.3. Variation in odds ratio of death by dialysis centre

Table 4.4.3 show the odd ratio of death by all centres in 1998 till 2007. The number of centres has increased from 50 in 1998 to 264 centres in 2007 but centre variations remained wide. In 2007, difference in mortality rate between centres in the lower quartile and centres in the upper quartile was more than two times (Table 4.4.3 and Fig. 4.4.3).

Table 4.4.3 Variation in odds ratio of death by centre, 1998-2007

Year	Number of Centre	Min	5th Centile	LQ	Median	UQ	95th Centile	Max
1998	50	0.075	0.194	0.646	0.927	1.719	2.855	5.190
1999	51	0.017	0.236	0.764	1.916	2.810	5.345	11.666
2000	82	0.024	0.069	0.254	0.518	0.930	1.955	3.888
2001	114	0.071	0.344	0.998	1.446	2.687	4.898	7.257
2002	144	0.125	0.466	1.100	1.710	3.013	5.971	10.684
2003	171	0.044	0.112	0.354	0.656	0.946	2.300	3.860
2004	200	0.000	0.000	0.337	0.610	0.837	1.852	6.820
2005	233	0.054	0.131	0.453	0.806	1.227	2.118	7.476
2006	250	0.065	0.165	0.393	0.751	1.065	1.953	8.789
2007	264	0.116	0.240	0.603	1.025	1.597	2.831	5.390

Figure 4.4.3 Variation in odds ratio of death by centre, 2007



*8 centre were dropped due to very small number of patients