

CHAPTER 12

Haemodialysis Practices

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SECTION 12.1: VASCULAR ACCESS AND ITS COMPLICATIONS**Table 12.1.1:** Vascular Access on Haemodialysis, 1998-2007

Access types	1998		1999		2000		2001		2002	
	No	%	No	%	No	%	No	%	No	%
Wrist AVF	1763	84	2406	81	3561	82	4049	79	4680	78
BCF*	273	13	431	14	655	15	897	17	1068	18
Venous graft	6	0	8	0	11	0	19	0	14	0
Artificial graft	20	1	34	1	31	1	64	1	78	1
Permanent CVC	8	0	17	1	19	0	25	0	43	1
Temporary CVC*	37	2	77	3	77	2	90	2	138	2
Temporary FVC*	0	0	0	0	0	0	0	0	0	0
TOTAL	2107	100	2973	100	4354	100	5144	100	6021	100

Access types	2003		2004		2005		2006		2007	
	No	%	No	%	No	%	No	%	No	%
Wrist AVF	5249	75	5891	73	6405	69	7798	68	8297	65
BCF*	1358	19	1692	21	2169	23	2856	25	3418	27
Venous graft	23	0	41	1	30	0	22	0	38	0
Artificial graft	114	2	150	2	221	2	284	2	304	2
Permanent CVC	62	1	99	1	180	2	235	2	261	2
Temporary CVC*	180	3	233	3	269	3	302	3	430	3
Temporary FVC*	0	0	0	0	7	0	24	0	30	0
TOTAL	6986	100	8106	100	9281	100	11521	100	12778	100

*BCF = Brachiocephalic fistula

*CVC = Central venous catheter

*FVC = Femoral venous catheter

There proportion of patients with native vascular access remains at 92% in 2007. The ratio of brachiocephalic fistula (BCF) to arteriovascular fistula (AVF) has increased. In 2007, 27% of native vascular access was BCF. The proportion of patients with artificial graft remains at 2 % and permanent or temporary catheter remained at 5% in total.

Table 12.1.2: Difficulties reported with Vascular Access, 1998-2007

Access difficulty	1998		1999		2000		2001		2002	
	No	%	No	%	No	%	No	%	No	%
Difficulty with needle placement	82	4	133	5	146	4	217	5	215	4
Difficulty in obtaining desired blood flow rate	60	3	112	5	136	4	239	5	235	4
Other difficulties	30	2	55	2	32	1	39	1	57	1
No difficulties	1778	91	2155	88	3402	92	4276	90	5073	91
TOTAL	1950	100	2455	100	3716	100	4771	100	5580	100

Access difficulty	2003		2004		2005		2006		2007	
	No	%	No	%	No	%	No	%	No	%
Difficulty with needle placement	217	3	255	3	319	4	394	3	478	4
Difficulty in obtaining desired blood flow rate	243	4	301	4	354	4	356	3	368	3
Other difficulties	60	1	67	1	58	1	45	0	57	0
No difficulties	5969	92	6956	92	8339	92	10592	93	11559	93
TOTAL	6489	100	7579	100	9070	100	11387	100	12462	100

Complication rates have remained similar despite an increase in intake of elderly and diabetic patients on dialysis in recent years.

Table 12.1.3: Complications reported with Vascular Access, 1998-2007

Complication	1998		1999		2000		2001		2002	
	No	%	No	%	No	%	No	%	No	%
Thrombosis	69	3	129	5	148	4	209	4	202	3
Bleed	37	2	23	1	30	1	62	1	66	1
Aneurysmal dilatation	134	6	159	6	208	5	212	4	211	4
Swollen limb	36	2	51	2	44	1	67	1	56	1
Access related infection, local/ systemic	21	1	34	1	52	1	49	1	52	1
Distal limb ischaemia	12	1	9	0	26	1	22	0	17	0
Venous outflow obstruction	50	2	71	3	78	2	123	2	101	2
Carpal tunnel	19	1	35	1	42	1	41	1	44	1
Others	48	2	64	2	37	1	74	1	118	2
No complications	1636	79	2119	79	3237	83	4204	83	4988	85
TOTAL	2062	100	2694	100	3902	100	5063	100	5855	100

Complication	2003		2004		2005		2006		2007	
	No	%	No	%	No	%	No	%	No	%
Thrombosis	220	3	284	4	289	3	317	3	405	3
Bleed	54	1	67	1	73	1	69	1	58	0
Aneurysmal dilatation	199	3	193	2	179	2	246	2	385	3
Swollen limb	55	1	77	1	84	1	89	1	101	1
Access related infection, local/ systemic	43	1	70	1	63	1	78	1	97	1
Distal limb ischaemia	13	0	37	0	35	0	30	0	27	0
Venous outflow obstruction	119	2	151	2	170	2	202	2	196	2
Carpal tunnel	63	1	49	1	55	1	48	0	46	0
Others	118	2	133	2	109	1	116	1	152	1
No complications	5962	87	6895	87	8113	88	10154	89	11034	88
TOTAL	6846	100	7956	100	9170	100	11349	100	12501	100

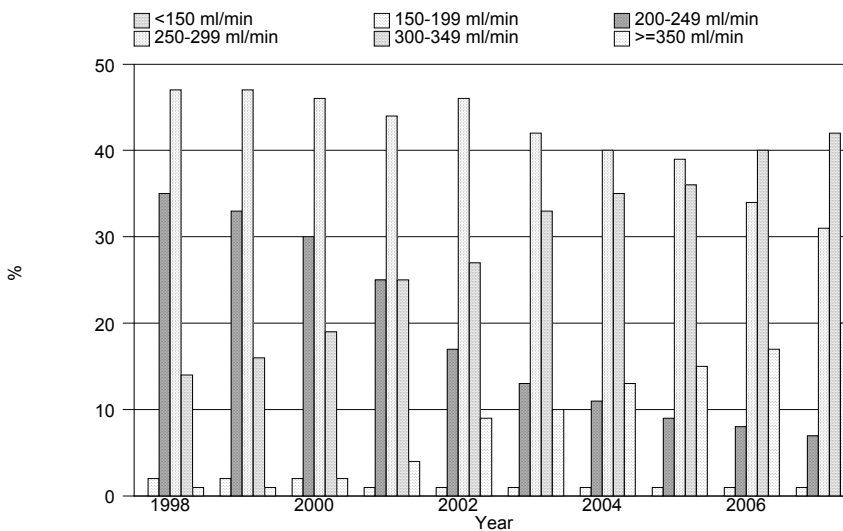
SECTION 12.2: HD PRESCRIPTION

Table 12.2.1: Blood Flow Rates in HD centres, 1998-2007

Blood flow rates	1998		1999		2000		2001		2002	
	No	%	No	%	No	%	No	%	No	%
<150 ml/min	4	0	6	0	9	0	7	0	9	0
150-199 ml/min	36	2	65	2	85	2	69	1	69	1
200-249 ml/min	735	35	962	33	1282	30	1233	25	973	17
250-299 ml/min	968	47	1367	47	1938	46	2229	44	2692	46
300-349 ml/min	298	14	455	16	814	19	1276	25	1590	27
>=350 ml/min	30	1	31	1	94	2	216	4	505	9
TOTAL	2071	100	2886	100	4222	100	5030	100	5838	100

Blood flow rates	2003		2004		2005		2006		2007	
	No	%	No	%	No	%	No	%	No	%
<150 ml/min	4	0	11	0	7	0	5	0	10	0
150-199 ml/min	84	1	86	1	94	1	103	1	87	1
200-249 ml/min	882	13	879	11	814	9	923	8	928	7
250-299 ml/min	2865	42	3112	40	3523	39	3818	34	3817	31
300-349 ml/min	2240	33	2711	35	3226	36	4529	40	5201	42
>=350 ml/min	690	10	1019	13	1328	15	1920	17	2451	20
TOTAL	6765	100	7818	100	8992	100	11298	100	12494	100

Figure 12.2.1: Blood Flow Rates in HD centres, 1998-2007



There was an increasing trend toward the use of higher blood flow rates from 1998 to 2007. The proportion of patients with blood flow rates > 350mls/min increased from 1% in 1998 to 20% in 2007. Sixty two per-cent of patients had blood flow rates of > 300mls/min in 2007.

Ninety eight percent of patients were on 3 haemodialysis (HD) sessions / week. The small percentage of patients on 2 HD sessions / week is likely to be patients who are dialyzing in private centres and unable to afford 3 HD sessions / week.

Majority of patients (99%) are on 4 hours HD session.

Table 12.2.2: Number of HD Sessions per week, 1998-2007

HD sessions per week	1998		1999		2000		2001		2002	
	No	%	No	%	No	%	No	%	No	%
1	1	0	4	0	8	0	8	0	10	0
2	5	0	153	5	341	8	337	7	369	6
3	2110	100	2811	95	3982	92	4761	92	5603	93
4	2	0	3	0	10	0	50	1	18	0
TOTAL	2118	100	2971	100	4341	100	5156	100	6000	100

HD sessions per week	2003		2004		2005		2006		2007	
	No	%	No	%	No	%	No	%	No	%
1	15	0	11	0	7	0	25	0	14	0
2	343	5	281	3	265	3	273	2	256	2
3	6557	95	7708	96	9010	97	11326	97	12584	98
4	9	0	30	0	31	0	34	0	31	0
TOTAL	6924	100	8030	100	9313	100	11658	100	12885	100

Table 12.2.3: Duration of HD, 1998-2007

Duration of HD per session	1999		1999		2000		2001		2002	
	No	%	No	%	No	%	No	%	No	%
<=3 hours	3	0	4	0	8	0	6	0	18	0
-3.5 hours	18	1	9	0	12	0	33	1	15	0
-4 hours	1993	94	2735	92	4053	93	4956	96	5845	98
-4.5 hours	91	4	160	5	189	4	106	2	68	1
-5 hours	8	0	61	2	77	2	59	1	48	1
>5 hours	3	0	0	0	13	0	0	0	0	0
TOTAL	2116	100	2969	100	4352	100	5160	100	5994	100

Duration of HD per session	2003		2004		2005		2006		2007	
	No	%	No	%	No	%	No	%	No	%
<=3 hours	11	0	23	0	22	0	28	0	36	0
-3.5 hours	7	0	17	0	17	0	7	0	12	0
-4 hours	6760	98	7829	97	9152	98	11504	99	12754	99
-4.5 hours	76	1	119	1	67	1	68	1	42	0
-5 hours	66	1	47	1	54	1	42	0	32	0
>5 hours	0	0	3	0	0	0	1	0	1	0
TOTAL	6920	100	8038	100	9312	100	11650	100	12877	100

Table 12.2.4: Dialyser membrane types in HD centres, 1998-2007

Dialyser membrane	1998		1999		2000		2001		2002	
	No	%	No	%	No	%	No	%	No	%
Modified Cellulose	395	19	1224	41	1605	37	1666	37	1376	24
Regenerated Cellulose	1195	56	1012	34	1183	27	890	20	1473	26
Hydrophobic/Hydrophilic	524	25	754	25	1589	36	1944	43	2828	50
Hydrophilized copolymers	2	0	1	0	0	0	0	0	1	0
TOTAL	2116	100	2991	100	4377	100	4500	100	5678	100

Dialyser membrane	2003		2004		2005		2006		2007	
	No	%	No	%	No	%	No	%	No	%
Modified Cellulose	1114	17	1717	22	1919	21	2351	21	2803	23
Regenerated Cellulose	1502	23	1150	15	901	10	951	8	688	6
Hydrophobic/Hydrophilic	3782	59	4843	62	5976	67	7789	69	8813	71
Hydrophilized copolymers	35	1	74	1	139	2	132	1	134	1
TOTAL	6433	100	7784	100	8935	100	11223	100	12438	100

The use of synthetic membrane (hydrophobic/ hydrophilic and hydrophilised copolymer) has increased from 25% in 1998 to 72% in 2007. Regenerated cellulose membrane usage has progressively declined from 56% in 1998 to 6% in 2007. The use of modified cellulose membrane has increased over the same period to 23% in 2008.

Figure 12.2.4: Dialyser membrane types in HD centres, 1998-2007

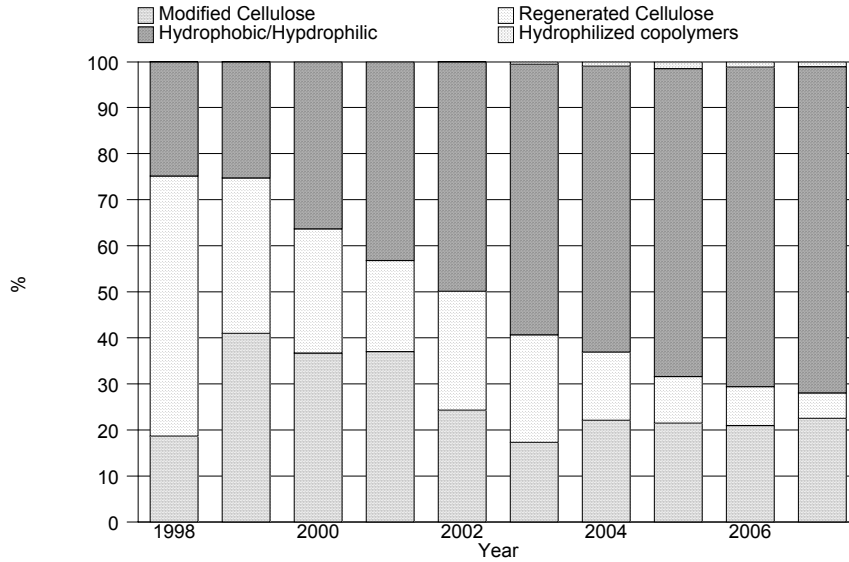


Table 12.2.5: Dialyser Reuse Frequency in HD centres, 1998-2007

Dialyser reuse frequency	1998		1999		2000		2001		2002	
	No	%	No	%	No	%	No	%	No	%
1*	16	1	65	2	116	3	152	3	197	4
2	5	0	13	0	17	0	15	0	41	1
3	215	11	191	7	205	5	232	5	316	6
4	113	6	250	9	477	12	416	9	337	6
5	137	7	264	10	312	8	357	7	318	6
6	1072	55	1414	51	1730	43	1413	29	1216	22
7	37	2	46	2	69	2	85	2	124	2
8	66	3	122	4	357	9	793	16	866	16
9	109	6	179	6	101	2	132	3	59	1
10	84	4	96	3	246	6	400	8	538	10
11	23	1	6	0	4	0	43	1	36	1
12	64	3	118	4	333	8	470	10	879	16
>=13	0	0	0	0	91	2	331	7	644	12
TOTAL	1941	100	2764	100	4058	100	4839	100	5571	100

Dialyser reuse frequency	2003		2004		2005		2006		2007	
	No	%	No	%	No	%	No	%	No	%
1*	251	4	319	4	196	4	400	5	568	5
2	19	0	42	1	1	0	5	0	24	0
3	349	5	194	3	81	2	36	0	117	1
4	339	5	192	3	85	2	75	1	151	1
5	266	4	191	3	137	3	190	3	128	1
6	915	14	806	11	555	10	593	8	809	7
7	71	1	89	1	44	1	63	1	138	1
8	852	13	809	11	477	9	422	6	797	7
9	87	1	50	1	46	1	115	2	107	1
10	880	14	1160	16	770	15	959	13	1530	13
11	25	0	42	1	12	0	100	1	94	1
12	1511	24	1916	26	1353	26	2243	30	4074	36
>=13	819	13	1644	22	1548	29	2191	30	2817	25
TOTAL	6384	100	7454	100	5305	100	7392	100	11354	100

Reuse of dialysers is a common practice in Malaysia whereby 95% reuse the dialyser. The frequency of reuse depends on the type of dialyser membrane. Five percent of patients did not reuse dialysers.

Table 12.2.6: Dialysate Buffer used in HD centres, 1998-2007

Dialysate buffer	1998		1999		2000		2001		2002	
	No	%	No	%	No	%	No	%	No	%
Acetate	627	30	552	19	393	9	240	5	138	2
Bicarbonate	1492	70	2429	81	3969	91	4920	95	5880	98
TOTAL	2119	100	2981	100	4362	100	5160	100	6018	100

Dialysate buffer	2003		2004		2005		2006		2007	
	No	%	No	%	No	%	No	%	No	%
Acetate	76	1	33	0	58	1	147	1	176	1
Bicarbonate	6814	99	7956	100	9268	99	11640	99	12836	99
TOTAL	6890	100	7989	100	9326	100	11787	100	13012	100

Ninety nine percent of patients were on bicarbonate dialysate buffer in 2007 compared to 70% in 1998. One percent of patients were still reported to use acetate as buffer.

Table 12.2.7(a): Distribution of prescribed KT/V, HD patients 1998-2007

Year	No. of subjects	Mean	SD	Median	LQ	UQ	% patients ≥ 1.3
1998	2022	1.4	0.3	1.4	1.2	1.6	65
1999	2831	1.5	0.4	1.5	1.3	1.7	72
2000	4087	1.5	0.4	1.5	1.3	1.7	73
2001	4908	1.5	0.4	1.5	1.3	1.7	73
2002	5496	1.5	0.4	1.5	1.3	1.7	73
2003	6515	1.6	0.4	1.6	1.3	1.8	79
2004	7452	1.6	0.4	1.6	1.4	1.8	81
2005	8749	1.6	0.4	1.6	1.4	1.9	81
2006	11092	1.6	0.4	1.6	1.3	1.8	77
2007	12336	1.6	0.4	1.6	1.3	1.8	78

The median prescribed KT/V was 1.6. The percentage of patients with $KT/V > 1.3$ has increased from 65% in 1998 to 78% in 2007. There is a slight decrease when compared to 2005 when 81% had $KT/V > 1.3$.

Figure 12.2.7(a): Cumulative distribution of prescribed KT/V, HD patients 1998-2007

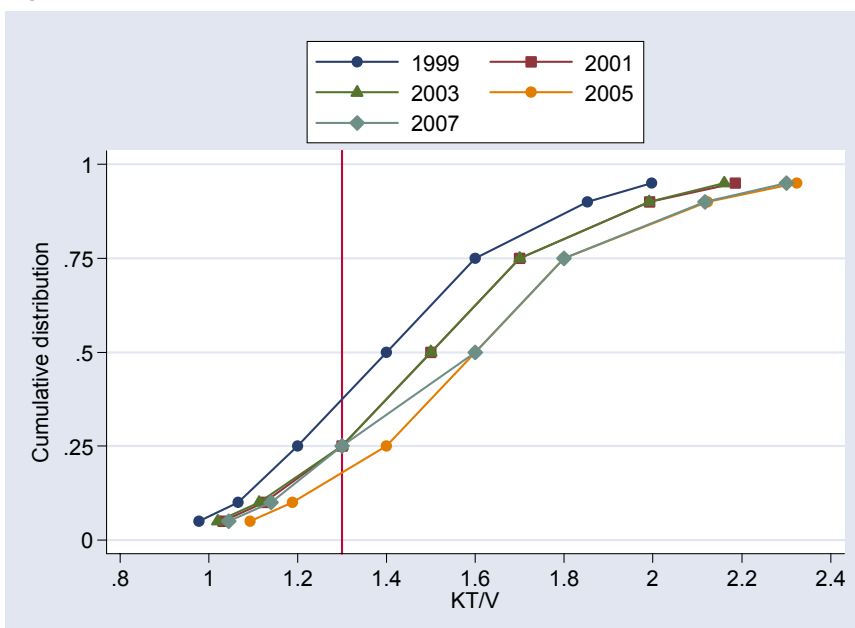
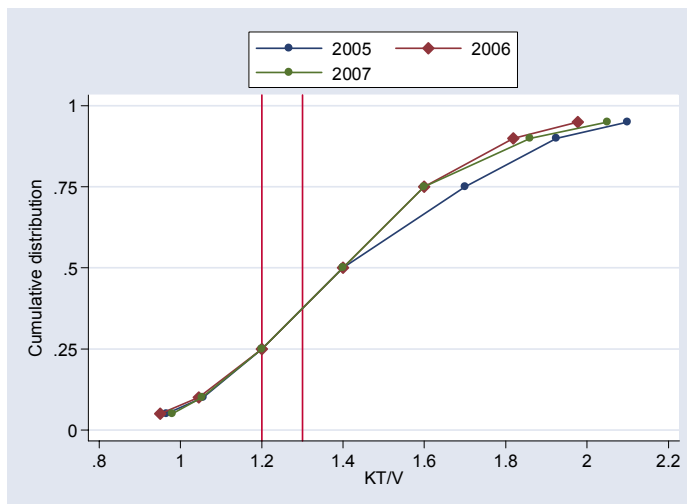


Table 12.2.7(b): Distribution of delivered KT/V, HD patients 2005-2007

Year	No. of subjects	Mean	SD	Median	LQ	UQ	% Patients ≥1.2	% Patients ≥1.3	Variance*
2005	1760	1.6	2.7	1.4	1.2	1.7	80	63	0
2006	5555	1.4	1.3	1.4	1.2	1.6	76	59	0
2007	6346	1.5	0.6	1.4	1.2	1.6	78	62	0

*(prescribed KT/V – delivered KT/V)/ Prescribed KT/V

Figure 12.2.7(b): Cumulative distribution of delivered KT/V, HD patients 2005-2007

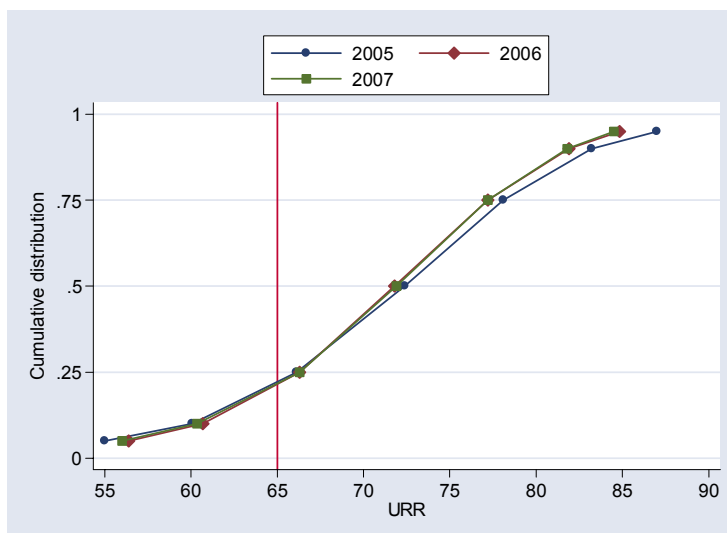


Although the prescribed median KT/V was 1.6, the delivered median KT/V was only 1.4. The percentage of patients with a delivered KT/V > 1.3 had increased from 59% in 2006 to 62% in 2007.

Table 12.2.7(c): Distribution of URR, HD patients 2005-2007

Year	No. of subjects	Mean	SD	Median	LQ	UQ	% Patient ≥65
2005	2510	71.8	10.2	72.4	66.1	78.1	79
2006	8170	71.4	9.2	71.8	66.3	77.2	79
2007	9838	71.3	9.2	71.9	66.3	77.2	80

Figure 12.2.7(c): Cumulative distribution of URR, HD patients 2005-2007



The percentage of patients with URR > 65 was 80% in 2007 compared to 79% in 2006.

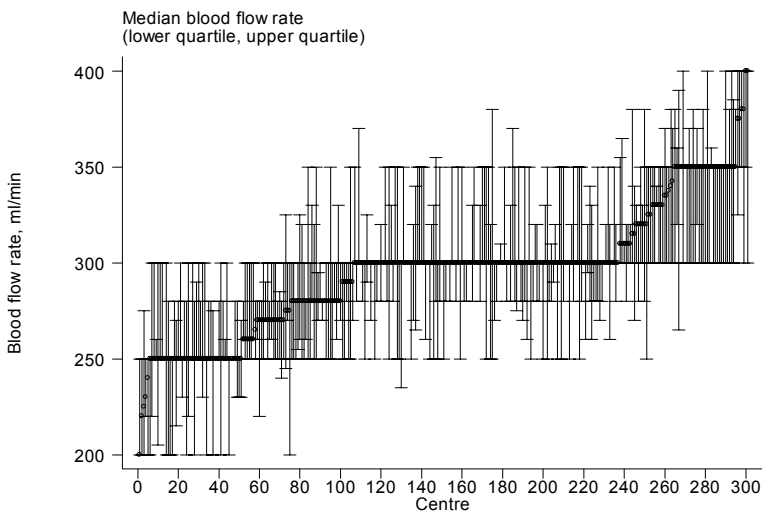
Table 12.2.8: Variation in HD prescription among HD centres 2007.

(a) Median blood flow rates in HD patients, HD centres

Year	No. of centres	Min	5th Centile	LQ	Median	UQ	95th Centile	Max
1998	46	200	200	230	250	250	300	300
1999	67	200	200	230	250	250	300	300
2000	100	200	200	240	250	275	300	300
2001	116	200	220	250	252.5	300	300	350
2002	137	200	230	250	280	300	300	350
2003	155	200	240	250	280	300	325	350
2004	184	220	250	257.5	287.5	300	350	400
2005	228	200	250	260	300	300	350	400
2006	283	200	250	270	300	300	350	400
2007	301	200	250	280	300	300	350	400

The median blood flow rates among centres had increased from 250 mls/min in 1998 to 300mls/min in 2007. There was still a wide variation in practices among centres. The median blood flow rates among centres ranged from 200mls/min to 400mls/min.

Figure 12.2.8(a): Variation in medical blood flow rates in HD patients among centres 2007



(b) Proportion of patients with blood flow rates > 250 ml/min, HD centres

Year	No. of centres	Min	5th Centile	LQ	Median	UQ	95th Centile	Max
1998	46	0	2	9	20.5	38	79	100
1999	67	0	2	8	28	49	85	100
2000	100	0	0	10.5	31.5	59.5	85.5	91
2001	116	0	0	22.5	49.5	73.5	92	100
2002	137	0	2	36	61	82	95	100
2003	155	0	4	42	70	85	98	100
2004	184	0	17	50	73	86	96	100
2005	228	0	17	54.5	77	90.5	99	100
2006	283	0	19	56	81	92	100	100
2007	301	0	22	65	83	93	100	100

There was an increase in the proportion of patients with blood flow rates from >250mls/min. In 2007, 50% of centres had 83% of their patients with blood flow rates of > 250mls/min compared to only 20.5% in 1998.

There was still a wide variation in the proportion of patients with blood flow rate > 250mls/min among centres. Three centres that had no patients with blood flow rates of > 250mls/min.

Figure 12.2.8(b): Variation in Proportion of patients with blood flow rates > 250 ml/min among HD centres 2007

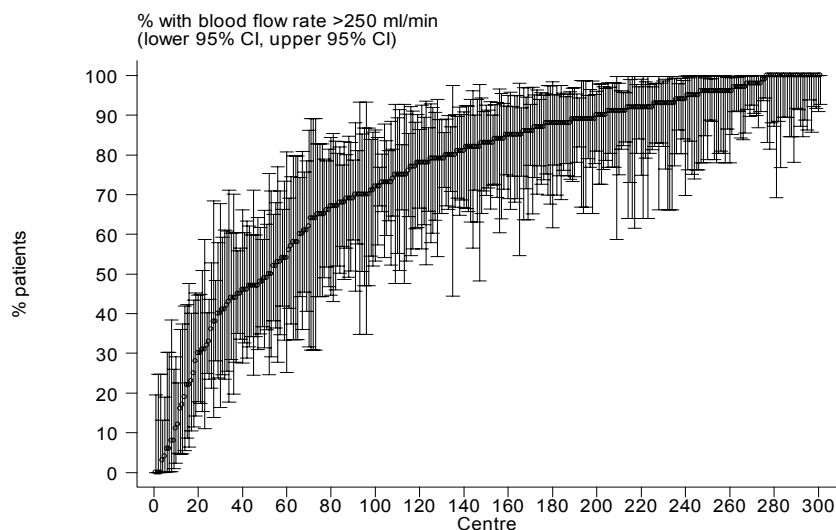


Table 12.2.8(c): Proportion of patients with 3 HD sessions per week, HD centres

Year	No.of centres	Min	5th Centile	LQ	Median	UQ	95th Centile	Max
1998	46	80	98	100	100	100	100	100
1999	69	17	45	97	100	100	100	100
2000	100	25	44.5	90.5	100	100	100	100
2001	118	23	50	92	100	100	100	100
2002	137	28	48	94	99	100	100	100
2003	160	36	55	97	100	100	100	100
2004	188	37	70	98	100	100	100	100
2005	231	40	75	99	100	100	100	100
2006	287	52	83	98	100	100	100	100
2007	308	51	87	98	100	100	100	100

The majority of centres had 100% of their patients with 3 HD sessions/ week. Three centres had less than 60% of their patients on less than 3 HD session/ week.

Figure 12.2.8(c): Variation in proportion of patients with 3 HD sessions per week among HD centres 2007

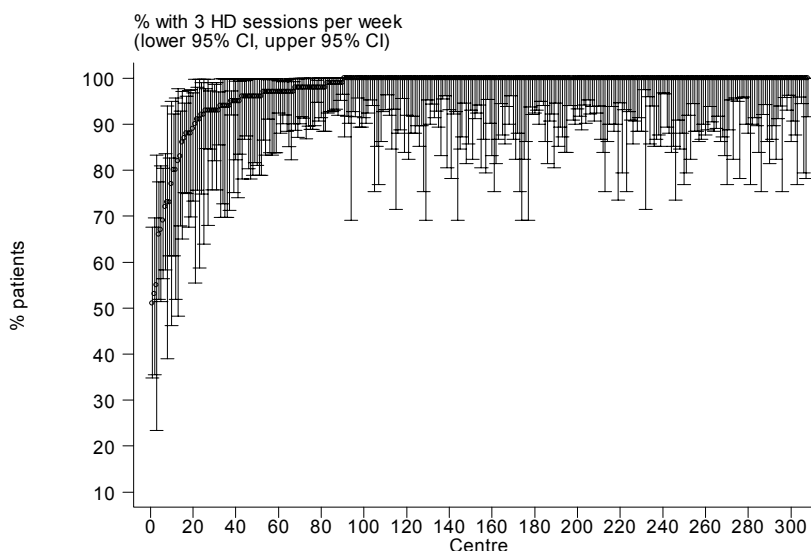
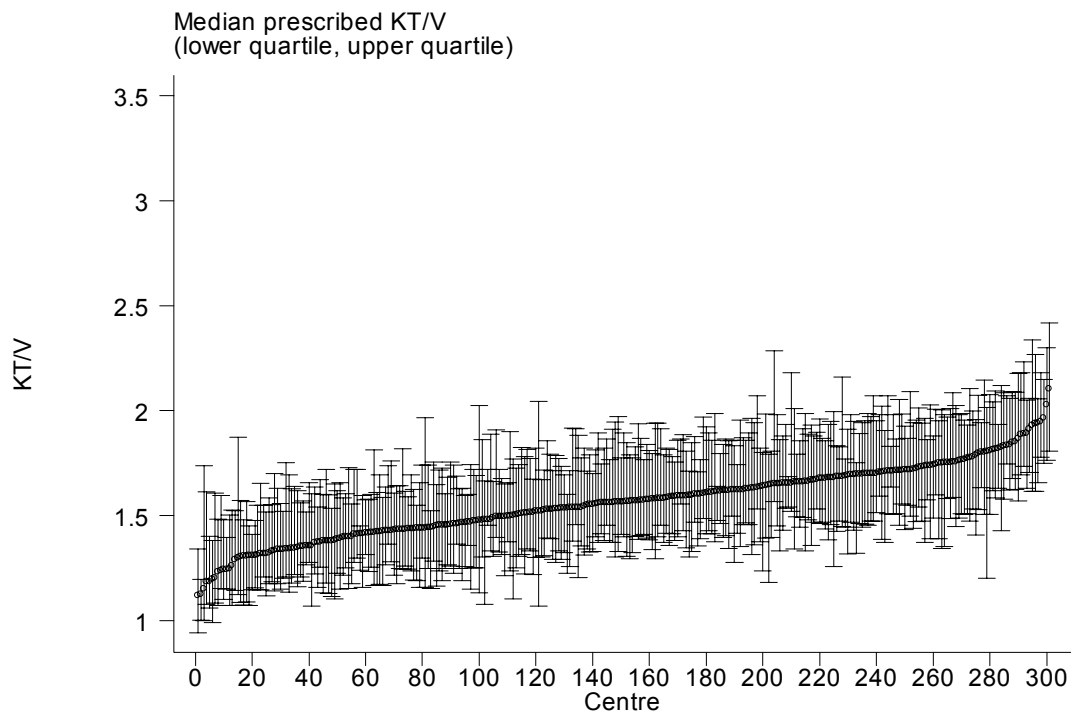


Table 12.2.8(d): Median prescribed KT/V in HD patients, HD centres

Year	No. of centres	Min	5th Centile	LQ	Median	UQ	95th Centile	Max
1998	45	1.1	1.3	1.3	1.4	1.5	1.5	1.6
1999	67	1.1	1.3	1.4	1.5	1.6	1.8	1.8
2000	99	1	1.3	1.4	1.5	1.6	1.8	2.8
2001	114	1.2	1.3	1.4	1.5	1.6	1.7	1.9
2002	132	1.2	1.3	1.4	1.5	1.6	1.7	1.8
2003	150	1.1	1.3	1.5	1.6	1.7	1.9	2
2004	181	1.2	1.4	1.5	1.6	1.7	1.8	2.2
2005	224	1.2	1.3	1.5	1.6	1.7	1.8	2
2006	281	1	1.3	1.4	1.6	1.7	1.8	2.1
2007	301	1.1	1.3	1.4	1.6	1.7	1.8	2.1

Figure 12.2.8(d): Variation in median prescribed KT/V in HD patients among HD centres 2007

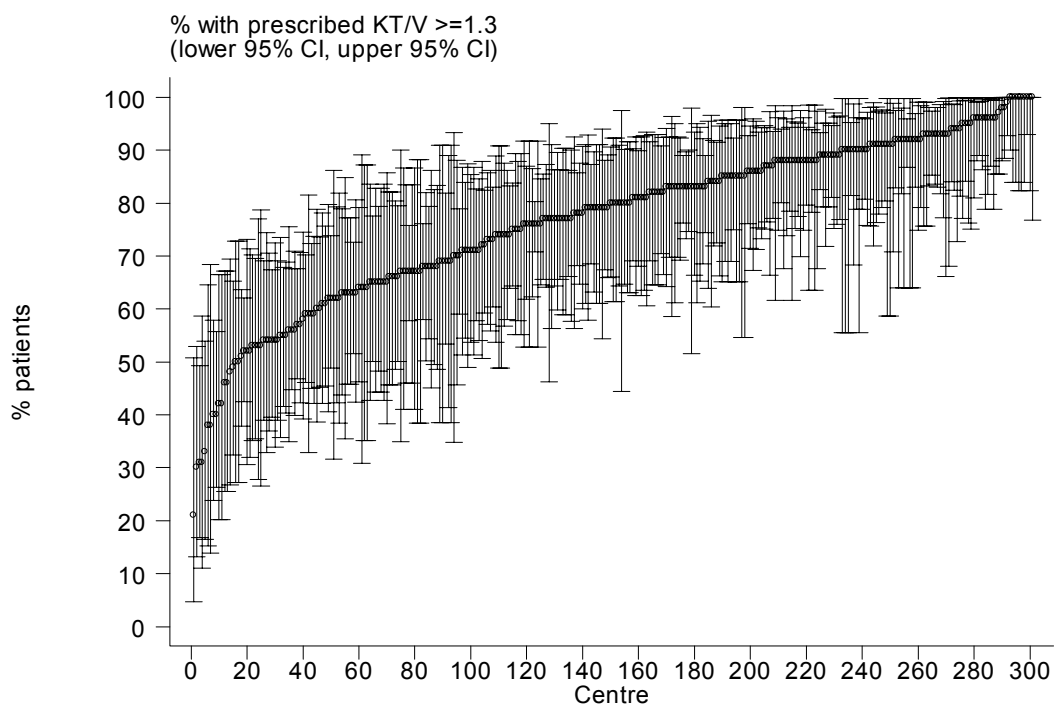


The median prescribed KT/V in HD patients was 1.6 in 2007. The minimum prescribed KT/V was 1.1 and maximum KT/V was 2.1.

Table 12.2.8(e): Proportion of patients with prescribed $KT/V \geq 1.3$

Year	No. of centres	Min	5th Centile	LQ	Median	UQ	95th Centile	Max
1998	45	0	46	57	67	73	83	88
1999	67	29	45	64	73	84	94	100
2000	99	26	43	64	78	85	94	100
2001	114	33	42	66	74.5	83	93	100
2002	132	26	43	65	74.5	83	92	98
2003	150	30	48	72	81	89	95	100
2004	181	28	58	74	83	91	98	100
2005	224	32	56	73	82	90	98	100
2006	281	0	46	67	79	87	96	100
2007	301	21	50	67	80	89	96	100

Figure 12.2.8(e): Variation in proportion of patients with prescribed $KT/V \geq 1.3$ among HD centres 2007



In 2007, half the centres had 80% of their patients with a prescribed $KT/V > 1.3$. However there was still a wide variation in proportion of patients with $KT/V > 1.3$ among the centres.

Table 12.2.8(f): Median delivered KT/V in HD patients, HD centres

Year	No. of centres	Min	5th Centile	LQ	Median	UQ	95th Centile	Max
2005	52	1.1	1.2	1.3	1.4	1.5	1.7	1.7
2006	142	1	1.2	1.3	1.4	1.5	1.6	1.7
2007	156	1.1	1.2	1.3	1.4	1.5	1.7	1.8

In 2007, 156 centres reported delivered KT/V compared to only 52 centres in 2005. The median delivered KT/V was 1.4. The variation of median delivered KT/V ranged from 1.1 to 1.8 in 2007.

Figure 12.2.8(f): Variation in median delivered KT/V in HD patients among HD centres 2007

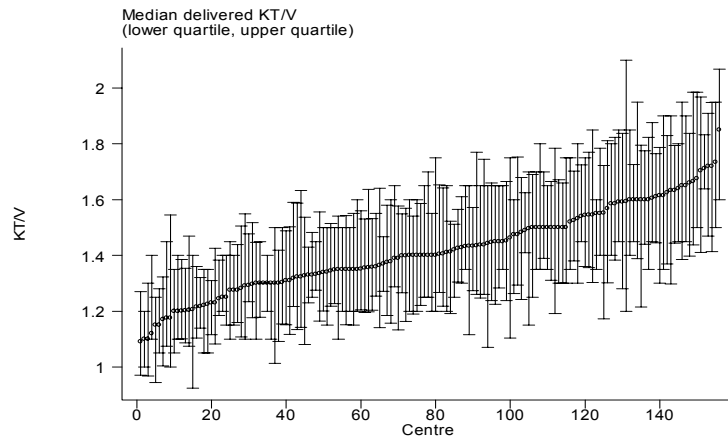


Table 12.2.8(g): Proportion of patients with delivered KT/V ≥ 1.2

Year	No. of centres	Min	5th Centile	LQ	Median	UQ	95th Centile	Max
2005	52	36	40	69	81.5	90	100	100
2006	142	0	43	65	76.5	86	94	100
2007	156	34	46	69.5	79	89	97	100

In 2007, 50% of centres had 79% of their patients with a delivered KT/V > 1.2. There were 3 centres with < 40% of their patients with a delivered KT/V > 1.2.

Figure 12.2.8(g): Variation in proportion of patients with delivered KT/V ≥ 1.2

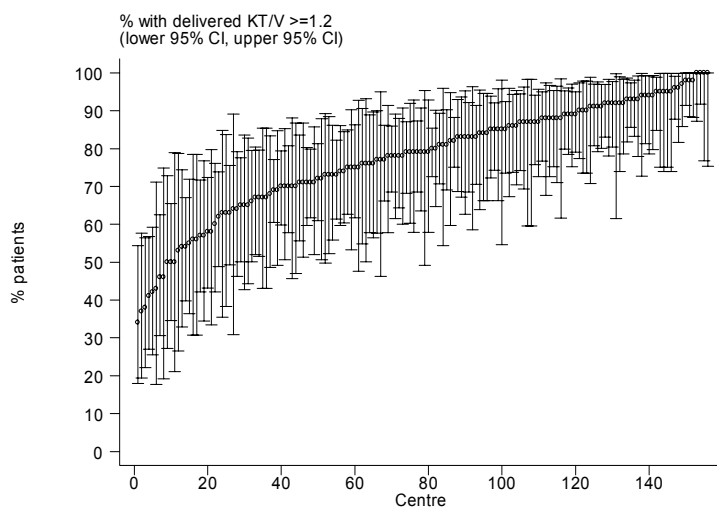


Table 12.2.8(h): Median URR among HD patients, HD centres

Year	No.of centres	Min	5th Centile	LQ	Median	UQ	95th Centile	Max
2005	73	61.3	66.6	69.8	71.9	74.4	85.9	96.2
2006	214	55.4	64.2	69	71.4	74.2	78.2	94.4
2007	244	56.1	65.4	69.5	71.8	74.7	78.1	95.5

Figure 12.2.8(h): Variation in median URR among HD patients, HD centres 2007

The median URR for 2007 was 71.8%. The number of centres reporting URR has increased from 73 in 2005 to 244 in 2007.

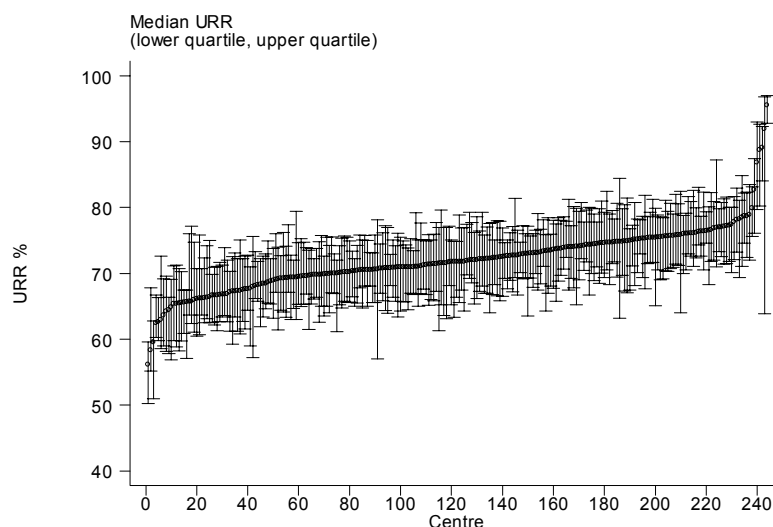
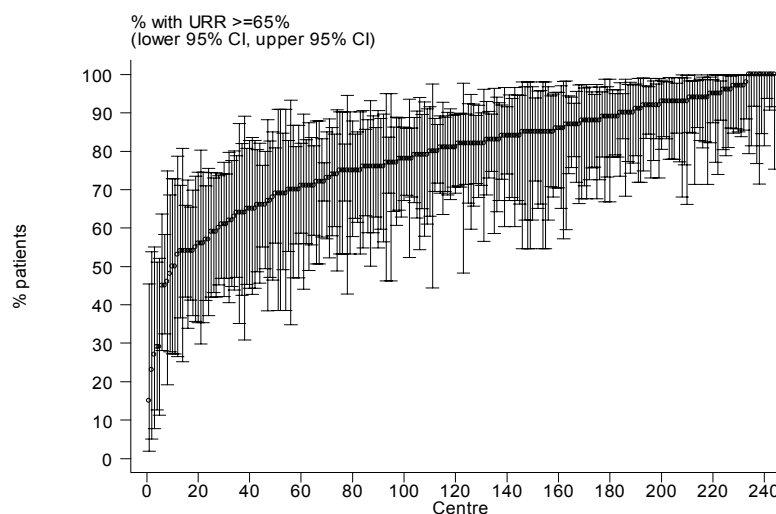


Table 12.2.8 (i): Proportion of HD patients with URR \geq 65%, HD centres

Year	No.of centres	Min	5th Centile	LQ	Median	UQ	95th Centile	Max
2005	73	40	53	70	81	88	100	100
2006	214	0	50	69	80	88	97	100
2007	244	15	54	71	82	89.5	97	100

Figure 12.2.8(i): Variation in proportion of patients with URR \geq 65% among HD centres 2007

In 2007, 50% of centres had 82% of their patients with a URR $>$ 65%. There were 4 centres with less than 40% of their patients with URR $>$ 65%



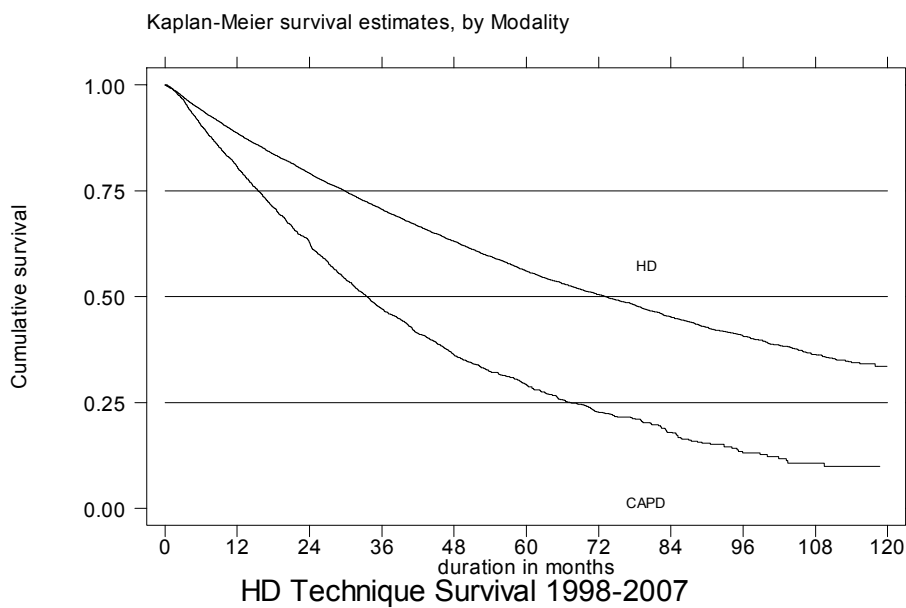
SECTION 12.3: TECHNIQUE SURVIVAL ON DIALYSIS

Table 12.3.1: Unadjusted technique survival by Dialysis modality, 1998-2007

Dialysis modality Interval (month)	CAPD			HD			All Dialysis		
	No	% Survival	SE	No	% Survival	SE	No	% Survival	SE
6	2865	90	1	19841	94	0	22706	94	0
12	2289	81	1	16940	89	0	19229	88	0
24	1456	63	1	12328	79	0	13784	77	0
36	910	47	1	8947	71	0	9857	68	0
48	565	36	1	6322	63	0	6887	6	0
60	332	29	1	4343	56	0	4675	53	0
72	178	23	1	2885	50	0	3063	47	0
84	91	18	1	1785	45	1	1875	42	1
96	36	13	1	1008	41	1	1043	37	1
108	16	11	1	419	36	1	434	33	1

* No.=Number at risk SE = standard error

Figure 12.3.1: Unadjusted technique survival by Dialysis modality, 1998 – 2007



The unadjusted HD technique survival at 1 year, 5 years and 9 years was 89%, 56% and 36% respectively. The unadjusted CAPD technique survival was 81% at 1 year, 29% at 5 years and 11% at 8 years.

Table 12.3.2: Unadjusted technique survival by year of entry, 1998-2007

Year Interval (month)	1998			1999			2000		
	No.	% Survival	SE	No.	% Survival	SE	No.	% Survival	SE
6	1102	95	1	1322	95	1	1602	94	1
12	1052	92	1	1237	90	1	1482	89	1
24	944	84	1	1098	82	1	1278	79	1
36	841	76	1	961	73	1	1125	71	1
48	746	68	1	838	64	1	982	63	1
60	666	61	1	740	57	1	853	55	1
72	604	56	1	667	52	1	754	49	1
84	527	49	2	597	47	1	663	44	1
96	477	45	2	532	42	1	.	.	.
108	419	40	1	.	.	.	.	.	.

Year Interval (month)	2001			2002			2003			2004		
	No.	% Survival	SE	No.	% Survival	SE	No.	% Survival	SE	No.	% Survival	SE
6	1769	93	1	2011	94	1	2162	94	0	2543	94	0
12	1623	87	1	1883	89	1	2003	88	1	2351	88	1
24	1407	77	1	1617	79	1	1768	7	1	2056	79	1
36	1238	69	1	1433	70	1	1563	71	1	1790	70	1
48	1101	62	1	1268	62	1	1392	63	1	.	.	.
60	967	54	1	1120	55	1	.	.	.	.	.	.
72	864	49	1	.	.	.	.	.	.	.	.	.

Year Interval (month)	2005			2006			2007		
	No.	% Survival	SE	No.	% Survival	SE	No.	% Survival	SE
6	2691	93	0	3028	93	0	1617	95	0
12	2488	87	1	2824	88	1	.	.	.
24	2164	77	1	.	.	.	.	.	.

No.=Number at risk SE = standard error

There was no apparent difference in the unadjusted HD technique survival by year of starting dialysis for the years 1998 to 2007.

Figure 12.3.2: Unadjusted technique survival by year of entry, 1998-2007

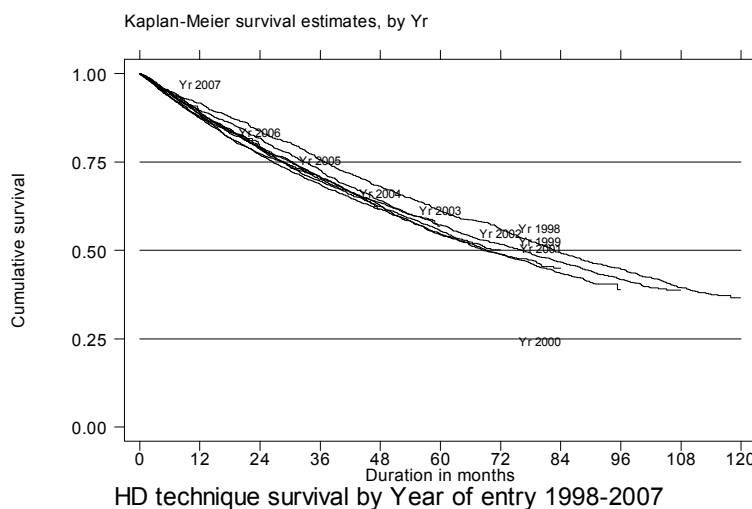


Table 12.3.3: Unadjusted technique survival by age, 1998 – 2007

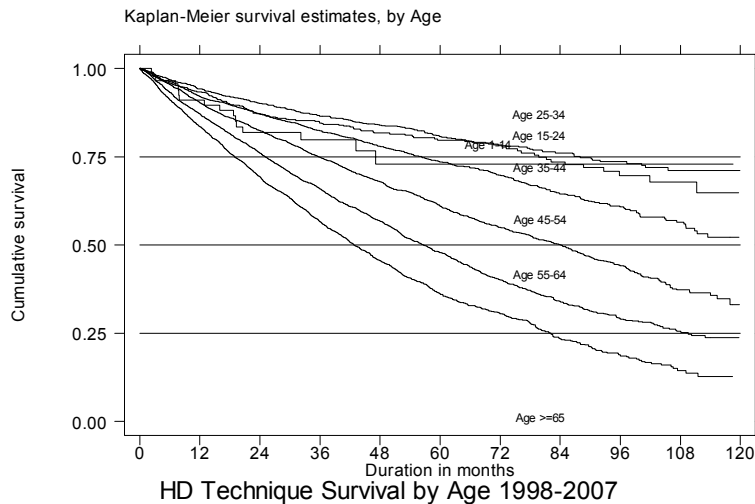
Age group (years) Interval (month)	<= 14			15-24			25-34			35-44		
	No.	% Survival	SE	No	% Survival	SE	No.	% Survival	SE	No	% Survival	SE
6	74	96	2	738	96	1	1503	97	0	2677	96	0
12	66	91	3	644	93	1	1326	94	1	2331	92	1
24	49	82	5	475	87	1	1024	90	1	1837	87	1
36	36	80	5	373	85	1	817	86	1	1452	82	1
48	21	73	6	278	82	2	655	84	1	1113	78	1
60	16	73	6	210	80	2	495	81	1	850	74	1
72	11	73	6	152	78	2	350	78	1	622	70	1
84	9	73	6	100	74	2	258	76	2	403	64	1
96	6	73	6	59	70	3	161	74		235	61	2
108	3	73	6	25	68	3	72	71	2	111	56	2

Age group (years) Interval (month)	45-54			55-64			>=65		
	No.	% Survival	SE	No	% Survival	SE	No	% Survival	SE
6	5102	95	0	5544	93	0	4204	91	0
12	4384	90	0	4728	87	0	3480	84	1
24	3244	82	1	3389	76	1	2314	69	1
36	2423	7	1	2354	66	1	1497	57	1
48	1749	68	1	1598	57	1	915	46	1
60	1238	61	1	1014	48	1	522	36	1
72	826	5	1	617	40	1	312	31	1
84	525	50	1	354	34	1	144	24	1
96	292	44	1	193	29	1	68	18	1
108	111	37	2	76	26	1	27	15	2

* No.=Number at risk SE = standard error

The unadjusted HD technique survival was better in the younger age groups than the older age group, 9-years unadjusted HD technique survival in the age group of 25-34, 35-44, 44-54, 55-64 and > 65 years old was 71%, 56 %, 37%, 26% and 15% respectively.

Figure 12.3.3: Unadjusted technique survival by age, 1998 – 2007



Unadjusted HD technique survival in non diabetics at 1 year, 5 years and 9 years was 91%, 69% and 51% respectively. Unadjusted HD technique survival for diabetics was worse than non diabetics with 86% at 1 year, 44% at 5 years and only 21% at 9 years.

Table 12.3.4: Unadjusted technique survival by Diabetes status, 1998-2007

Diabetes status Interval (month)	Non-Diabetic			Diabetic		
	No.	% Survival	SE	No.	% Survival	SE
6	9468	95	0	10373	93	0
12	8253	91	0	8687	78	0
24	6398	85	0	5930	74	0
36	4990	79	0	3957	62	1
48	3785	74	1	2537	52	1
60	2794	69	1	1549	44	1
72	1968	64	1	917	37	1
84	1284	59	1	503	31	1
96	764	55	1	244	25	1
108	319	51	1	101	20	1

* No.=Number at risk

SE = standard error

Figure 12.3.4: Unadjusted technique survival by Diabetes status, 1998 – 2007

