

CHAPTER 11

**HAEMODIALYSIS  
PRACTICES**

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## SECTION 11.1: VASCULAR ACCESS AND ITS COMPLICATIONS

The proportion of patients with native vascular access has declined from 96% in 2001 to 90% in 2010. The number of patients on cuffed or non-cuffed central venous catheters has increased over the past 10 years.

**Table 11.1.1:** Vascular Access on Haemodialysis, 2001-2010

Access types	2001		2002		2003		2004		2005	
	n	%	n	%	n	%	n	%	n	%
Wrist AVF	4049	79	4680	78	5249	75	5891	73	6405	69
BCF*	897	17	1068	18	1359	20	1693	21	2169	23
Venous graft	19	0	14	0	23	0	41	1	30	0
Artificial graft	64	1	78	1	113	2	149	2	221	2
Permanent CVC	25	1	43	1	61	1	99	1	179	2
Temporary CVC*	90	2	138	2	179	3	233	3	266	3
Temporary FVC*	0	0	0	0	0	0	0	0	4	0
TOTAL	5144	100	6021	100	6984	100	8106	100	9274	100

Access types	2006		2007		2008		2009		2010	
	n	%	n	%	n	%	n	%	n	%
Wrist AVF	7798	68	8309	65	9491	62	10665	61	10985	58
BCF*	2856	25	3421	27	4403	29	5243	30	6016	32
Venous graft	22	0	37	0	19	0	32	0	49	0
Artificial graft	284	3	305	2	351	2	379	2	379	2
Permanent CVC	235	2	261	2	298	2	465	3	507	3
Temporary CVC*	298	3	424	3	579	4	770	4	803	4
Temporary FVC*	19	0	25	0	59	0	46	0	71	0
TOTAL	11512	100	12782	100	15200	100	17600	100	18810	100

\*CVC = central venous catheter, FVC = femoral venous catheter,

BCF = brachiocephalic fistula

No increase in difficulties was reported with vascular access since 2008.

**Table 11.1.2:** Difficulties report with Vascular Access, 2001-2010

Access difficulty	2001		2002		2003		2004		2005	
	n	%	n	%	n	%	n	%	n	%
Difficulty with needle placement	217	5	215	4	217	3	255	3	319	4
Difficulty in obtaining desired blood flow rate	239	5	235	4	243	4	301	4	354	4
Other difficulties	39	1	57	1	60	1	67	1	58	1
No difficulties	4276	90	5073	91	5970	92	6957	92	8339	92
TOTAL	4771	100	5580	100	6490	100	7580	100	9070	100

Access difficulty	2006		2007		2008		2009		2010	
	n	%	n	%	n	%	n	%	n	%
Difficulty with needle placement	394	4	478	4	417	3	522	3	550	3
Difficulty in obtaining desired blood flow rate	356	3	368	3	420	3	473	3	427	2
Other difficulties	45	0	57	1	81	1	101	1	78	0
No difficulties	10592	93	11577	93	14076	94	16483	94	17828	94
TOTAL	11387	100	12480	100	14994	100	17579	100	18883	100

Complication rates for vascular access have reduced over the years from 17% in 2001 to 8% in 2010.

**Table 11.1.3:** Complications reported with Vascular Access, 2001-2010

Complication	2001		2002		2003		2004		2005	
	n	%	n	%	n	%	n	%	n	%
Thrombosis	209	4	202	4	220	3	284	4	289	3
Bleed	62	1	66	1	54	1	67	1	73	1
Aneurysmal dilatation	212	4	211	4	199	3	193	2	179	2
Swollen limb	67	1	56	1	55	1	77	1	84	1
Access related infection, local/systemic	49	1	52	1	43	1	70	1	63	1
Distal limb ischaemia	22	0	17	0	13	0	37	1	35	0
Venous outflow obstruction	123	2	101	2	119	2	151	2	170	2
Carpal tunnel	41	1	44	1	63	1	49	1	55	1
Others	74	2	118	2	118	2	133	2	109	1
No complications	4204	83	4988	85	5963	87	6896	87	8113	89
TOTAL	5063	100	5855	100	6847	100	7957	100	9170	100

Complication	2006		2007		2008		2009		2010	
	n	%	n	%	n	%	n	%	n	%
Thrombosis	317	3	405	3	436	3	481	3	460	2
Bleed	69	1	58	1	76	1	72	0	78	0
Aneurysmal dilatation	246	2	385	3	396	3	452	3	319	2
Swollen limb	89	1	101	1	98	1	162	1	150	1
Access related infection, local/systemic	78	1	97	1	92	1	133	1	123	1
Distal limb ischaemia	30	0	27	0	31	0	25	0	33	0
Venous outflow obstruction	202	2	196	2	250	2	299	2	234	1
Carpal tunnel	48	0	46	0	48	0	48	0	44	0
Others	116	1	152	1	165	1	119	1	122	1
No complications	10154	90	11052	88	13517	90	15867	90	17356	92
TOTAL	11349	100	12519	100	15109	100	17658	100	18919	100

## SECTION 11.2: HD PRESCRIPTION

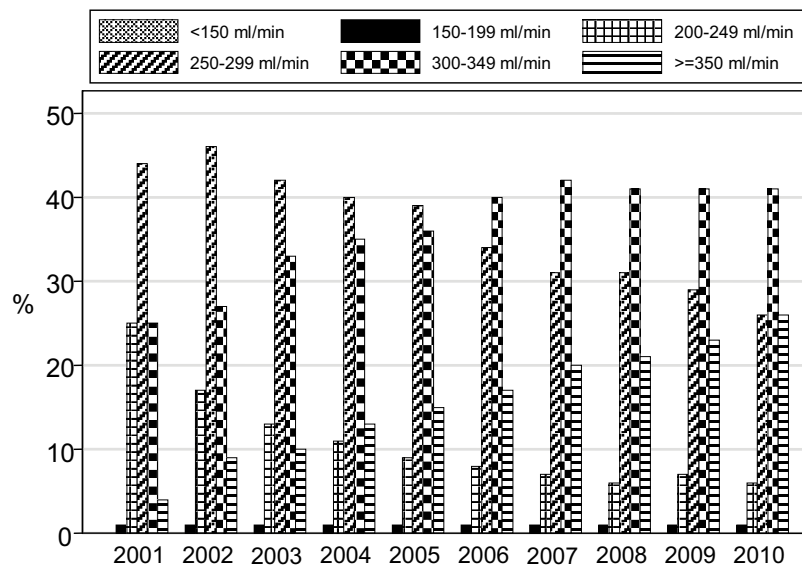
There is an increase in proportion of patients with blood flow rate above 350mls from year 2001 at 4% to 26% in 2010. Percentage of patients with blood flow rate of 300-349mls/min remained the same at 41%. There were 16 patients with blood flow rate of less than 150mls/min.

**Table 11.2.1:** Blood Flow Rates in HD centers, 2001-2010

Blood flow rates (ml/min)	2001		2002		2003		2004		2005	
	n	%	n	%	n	%	n	%	n	%
<150	7	0	9	0	4	0	11	0	7	0
150-199	69	1	69	1	84	1	86	1	94	1
200-249	1233	25	973	17	882	13	879	11	814	9
250-299	2229	44	2692	46	2865	42	3112	40	3523	39
300-349	1276	25	1590	27	2241	33	2711	35	3226	36
>=350	216	4	505	9	690	10	1020	13	1328	15
TOTAL	5030	100	5838	100	6766	100	7819	100	8992	100

Blood flow rates (ml/min)	2006		2007		2008		2009		2010	
	n	%	n	%	n	%	n	%	n	%
<150	5	0	10	0	10	0	14	0	16	0
150-199	103	1	87	1	120	1	126	1	111	1
200-249	923	8	929	7	928	6	1179	7	1174	6
250-299	3818	34	3821	31	4638	31	5050	29	4944	27
300-349	4529	40	5214	42	6127	41	7093	41	7610	41
>=350	1920	17	2451	20	3094	21	3977	23	4807	26
TOTAL	11298	100	12512	100	14917	100	17439	100	18662	100

**Figure 11.2.1:** Blood Flow Rates in HD centers, 2001-2010



The majority of patients (98%) were on 3 dialysis sessions per week. Three hundred sixteen patients were dialysed less than 3 times per week.

**Table 11.2.2:** Number of HD Sessions per week, 2001-2010

HD sessions per week	2001		2002		2003		2004		2005	
	n	%	n	%	n	%	n	%	n	%
1	8	0	10	0	15	0	11	0	7	0
2	337	7	369	6	343	5	281	4	265	3
3	4761	92	5603	93	6585	95	7751	96	9011	97
4	50	1	18	0	9	0	30	0	31	0
TOTAL	5156	100	6000	100	6952	100	8073	100	9314	100

HD sessions per week	2006		2007		2008		2009		2010	
	n	%	n	%	n	%	n	%	n	%
1	25	0	14	0	5	0	6	0	9	0
2	273	2	256	2	259	2	269	2	307	2
3	11326	97	12602	98	15054	98	17575	98	18828	98
4	34	0	31	0	61	0	88	1	47	0
TOTAL	11658	100	12903	100	15379	100	17938	100	19191	100

Majority of patients (99%) were on 4 hours HD sessions. A small number of patients (122) were dialysed more than 4 hours.

**Table 11.2.3:** Duration of HD, 2001-2010

Duration of HD per session (hours)	2001		2002		2003		2004		2005	
	n	%	n	%	n	%	n	%	n	%
<=3	8	0	18	0	14	0	25	0	31	0
3.5	12	0	15	0	3	0	11	0	9	0
4	4988	97	5854	98	6798	98	7885	98	9175	99
4.5	93	2	60	1	66	1	106	1	46	1
5	59	1	47	1	63	1	45	1	52	1
>5	0	0	0	0	0	0	3	0	0	0
TOTAL	5160	100	5994	100	6944	100	8075	100	9313	100

Duration of HD per session	2006		2007		2008		2009		2010	
	n	%	n	%	n	%	n	%	n	%
<=3	28	0	37	0	54	0	66	0	60	0
3.5	6	0	11	0	10	0	25	0	36	0
4	11507	99	12792	99	15200	99	17733	99	18985	99
4.5	66	1	23	0	74	1	78	0	72	0
5	42	0	31	0	42	0	42	0	50	0
>5	1	0	1	0	0	0	1	0	0	0
TOTAL	11650	100	12895	100	15380	100	17945	100	19203	100

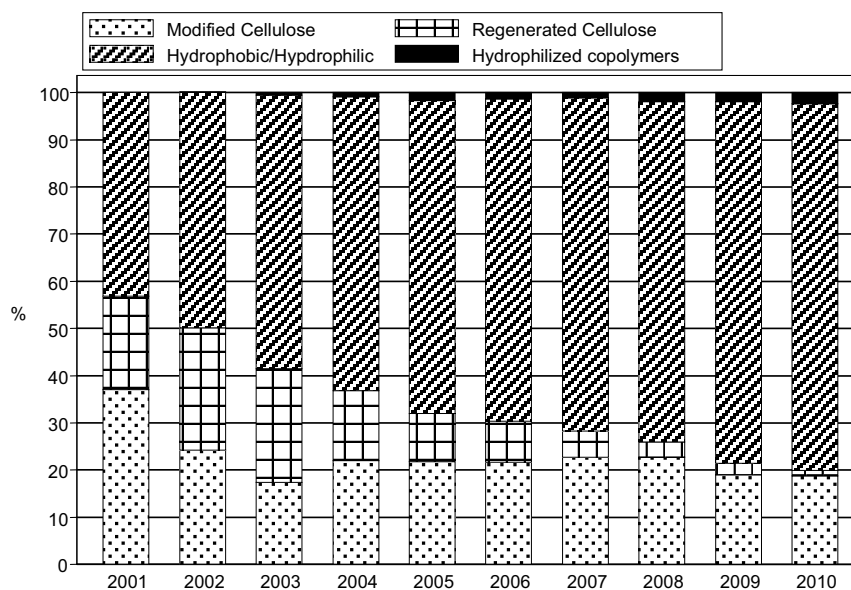
Eighty percent of the dialysers used were made from synthetic membrane (hydrophobic/ hydrophilic and hydrophilised co-polymer) in 2010.

**Table 11.2.4:** Dialyser membrane types in HD centres, 2001-2010

Dialyser membrane	2001		2002		2003		2004		2005	
	n	%	n	%	n	%	n	%	n	%
Modified Cellulose	1666	37	1377	24	1150	17	1719	22	1974	22
Regenerated Cellulose	890	20	1474	26	1599	24	1150	15	930	10
Hydrophobic/Hypdrophilic	1944	43	2828	50	3841	58	4846	62	6020	66
Hydrophilized copolymers	0	0	1	0	35	1	74	1	150	2
TOTAL	4500	100	5680	100	6625	100	7789	100	9074	100

Dialyser membrane	2006		2007		2008		2009		2010	
	n	%	n	%	n	%	n	%	n	%
Modified Cellulose	2489	22	2890	23	3431	23	3241	19	3242	19
Regenerated Cellulose	997	9	699	6	486	3	418	3	202	1
Hydrophobic/Hypdrophilic	7860	68	8984	71	10886	72	13053	77	13410	78
Hydrophilized copolymers	161	1	137	1	286	2	335	2	409	2
TOTAL	11507	100	12710	100	15089	100	17047	100	17263	100

**Figure 11.2.4:** Dialyser membrane types in HD centres, 2001-2010



Re-use of dialysers is common practice whereby 90% re-used the dialyser. Nineteen percent of patients re-used more than 13 times. The practice of single use dialyser is growing over the years from 3% in 2001 to 10% in 2010.

**Table 11.2.5:** Dialyser Re-use Frequency in HD centres, 2001-2010

Dialyser Reuse Frequency	2001		2002		2003		2004		2005	
	n	%	n	%	n	%	n	%	n	%
1	152	3	197	4	251	4	319	5	196	5
2	15	0	41	1	19	0	42	1	1	0
3	232	5	316	6	349	6	194	3	81	2
4	416	9	337	7	339	6	192	3	85	2
5	357	8	318	6	267	5	192	3	137	3
6	1413	31	1216	24	915	16	806	13	555	13
7	85	2	124	2	71	1	89	1	44	1
8	793	17	866	17	852	15	809	13	477	11
9	132	3	59	1	87	2	50	1	46	1
10	400	9	538	11	880	15	1160	19	770	18
11	43	1	36	1	25	0	42	1	12	0
12	470	10	879	17	1511	26	1916	31	1353	31
≥ 13	84	2	175	3	280	5	458	7	565	13
TOTAL	4592	100	5102	100	5846	100	6269	100	4322	100

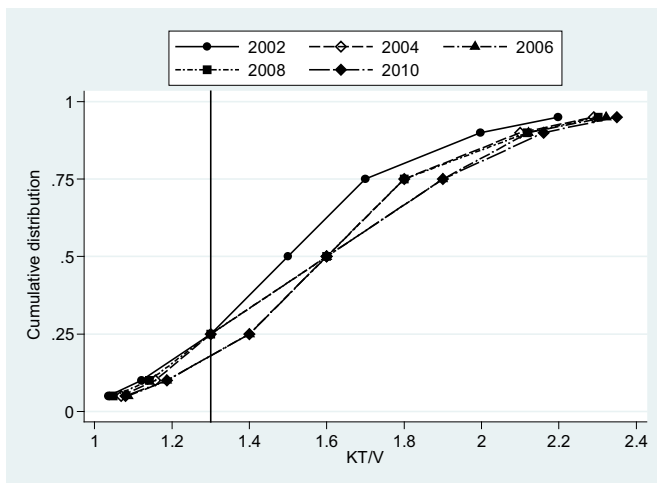
Dialyser Re-use Frequency	2006		2007		2008		2009		2010	
	n	%	n	%	n	%	n	%	n	%
1	400	6	568	6	810	7	1175	8	1493	10
2	5	0	24	0	29	0	29	0	22	0
3	36	1	117	1	87	1	115	1	53	0
4	75	1	151	2	120	1	89	1	72	1
5	190	3	128	1	168	1	184	1	100	1
6	593	9	809	8	699	6	743	5	561	4
7	63	1	141	1	156	1	193	1	285	2
8	422	7	797	8	844	7	774	6	858	6
9	115	2	107	1	247	2	294	2	345	2
10	959	15	1530	15	2009	16	2651	19	2389	16
11	100	2	94	1	101	1	58	0	120	1
12	2243	35	4075	41	5266	43	5691	41	5858	39
≥ 13	1185	19	1440	14	1783	15	2010	14	2819	19
TOTAL	6386	100	9981	100	12319	100	14006	100	14975	100

The mean and median prescribed Kt/V is 1.6. The percentage of patients with prescribed Kt/V  $\geq 1.3$  in 2010 is 80 (Table & Figure 11.2.6(a)). The median and mean delivered Kt/V was 1.4 in 2010. The percentage of patients with a delivered Kt/V  $\geq 1.3$  was 62%. There was a small decline in the percentage of patients achieving delivered Kt/V  $\geq 1.3$  compared to last year.

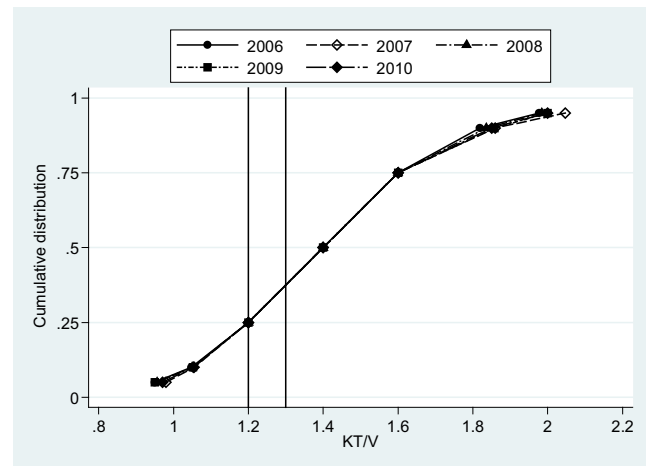
**Table 11.2.6(a):** Distribution of prescribed Kt/V, HD patients 2001-2010

Year	Number of patients	Mean	SD	Median	LQ	UQ	% patients $\geq 1.3$
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	6525	1.6	0.4	1.6	1.3	1.8	79
2004	7457	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	12354	1.6	0.4	1.6	1.3	1.8	78
2008	14752	1.6	0.4	1.6	1.3	1.8	79
2009	17253	1.6	0.4	1.6	1.4	1.9	82
2010	18478	1.6	0.4	1.6	1.4	1.9	80

**Figure 11.2.6(a):** Cumulative distribution of prescribed Kt/V, HD patients 2001-2010



**Figure 11.2.6 (b):** Cumulative distribution of delivered Kt/V, HD patients 2006-2010



**Table 11.2.6(b):** Distribution of delivered Kt/V, HD patients 2006-2010

Year	Number of patients	Mean	SD	Median	LQ	UQ	% patients $\geq 1.2$	% patients $\geq 1.3$	Variance*
2006	5555	1.4	1.3	1.4	1.2	1.6	76	59	0.2
2007	6360	1.5	0.6	1.4	1.2	1.6	78	62	0.2
2008	8529	1.4	0.3	1.4	1.2	1.6	78	61	0.2
2009	10468	1.5	0.7	1.4	1.2	1.6	81	64	0.2
2010	11609	1.4	0.4	1.4	1.2	1.6	79	62	0.2

\*Variance = (prescribed Kt/V – delivered Kt/V)/ Prescribed Kt/V

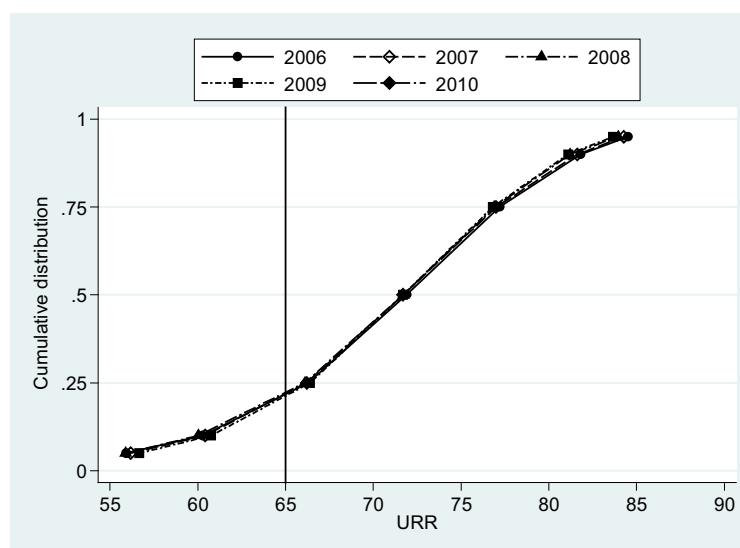


The median URR remains the same at 71.7% over the last 3 years. The percentage of patients with URR  $\geq$  65% had risen to 80% in 2010 compared to 79% in 2009.

**Table 11.2.6(c):** Distribution of URR, HD patients 2006-2010

Year	Number of patients	Mean	SD	Median	LQ	UQ	% patients $\geq$ 65%
2006	8267	71.4	9.2	71.8	66.3	77.1	79
2007	9945	71.3	9.2	71.9	66.3	77.2	79
2008	12601	71.2	9	71.7	66.2	77	79
2009	14948	71	9	71.7	66.1	76.9	79
2010	16543	71.2	8.6	71.7	66.4	76.8	80

**Figure 11.2.6 (c):** Cumulative distribution of URR, HD patients 2006-2010



The median blood flow rates among centres had remained the same since 2005 at 300mls/min. There is still a wide variation in practices with regards to median blood flow rates among centres ranging, from 150mls/min to 400mls/min. One centre had a median blood flow rate of 150mls/min.

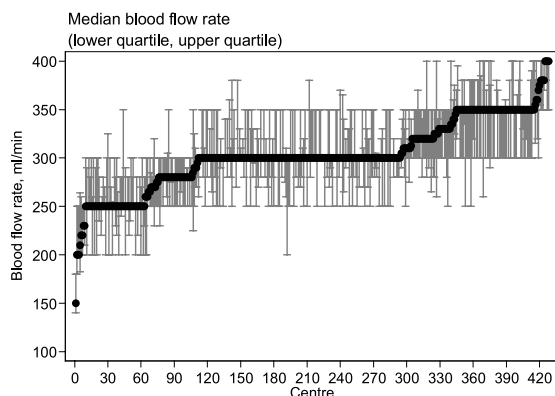
The current report had changed the target blood flow rate from 250 ml/min to > 300 ml/min & median blood flow rates of  $\geq 300$  ml/min. Fifty percent of centres had 75 % of their patients with blood flow rates of > 300 ml/min in 2010 compared to only 25.5% in 2001.

**Table 11.2.7: Variation HD prescription among HD centres, 2001-2010**

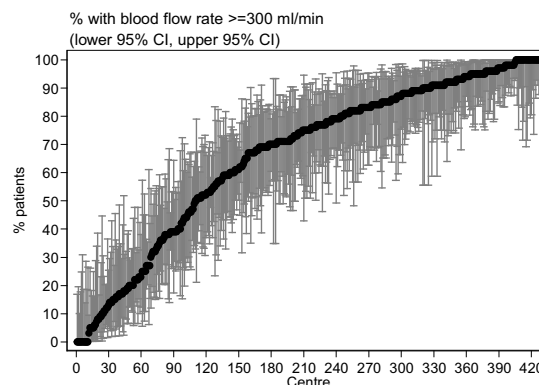
(a) Median blood flow rates in HD patients, HD centres

Year	Number of centers	Min	5 <sup>th</sup> Centile	LQ	Median	UQ	95 <sup>th</sup> Centile	Max
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	302	200	250	280	300	300	350	400
2008	355	200	250	280	300	300	350	400
2009	404	180	250	280	300	320	350	400
2010	428	150	250	287.5	300	320	350	400

**Figure 11.2.7 (a):** Variation in median blood flow rates in HD patients among centres 2010



**Figure 11.2.7 (b):** Variation in Proportion of patients with blood flow rates  $\geq 300$  ml/min among HD centres 2010



**Table 11.2.7 (b)** Proportion of patients with blood flow rates > 300 ml/min, HD centres 2001-2010

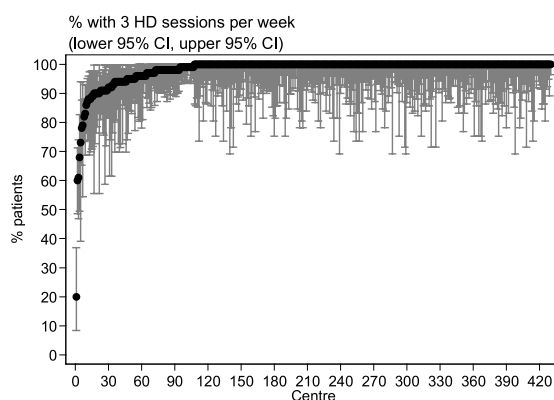
Year	Number of centers	Min	5 <sup>th</sup> Centile	LQ	Median	UQ	95 <sup>th</sup> Centile	Max
2001	116	0	0	8	25.5	51.5	81	100
2002	137	0	0	13	33	61	90	100
2003	155	0	0	21	45	69	91	100
2004	184	0	4	23.5	48.5	73	93	100
2005	228	0	0	28	53	77	94	100
2006	283	0	5	30	63	83	94	100
2007	302	0	7	37	68	84	96	100
2008	355	0	9	40	70	86	99	100
2009	404	0	11	42.5	72	88	99	100
2010	428	0	9	47	75	90	100	100

The majority of centres had 100% of their patients with 3 HD sessions/ week. There was one centre with 50% of their patients on less than 3 HD session/ week compared to last year.

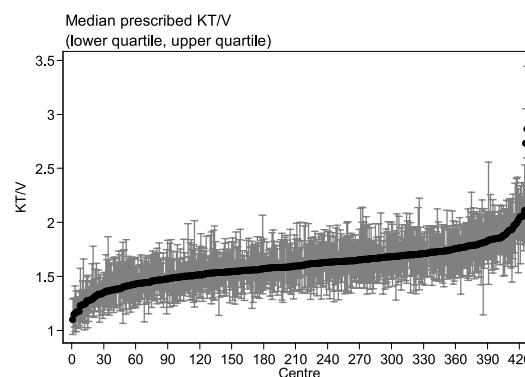
**Table 11.2.7 (c):** Proportion of patients with 3 HD sessions per week, HD centres 2001-2010

Year	Number of centers	Min	5 <sup>th</sup> Centile	LQ	Median	UQ	95 <sup>th</sup> Centile	Max
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	309	51	87	98	100	100	100	100
2008	359	51	89	98	100	100	100	100
2009	404	18	88	100	100	100	100	100
2010	430	20	90	100	100	100	100	100

**Figure 11.2.7 (c):** Variation in proportion of patients with 3 HD sessions per week among HD centres 2010



**Figure 11.2.7 (d):** Variation in median prescribed Kt/V in HD patients among HD centres 2010



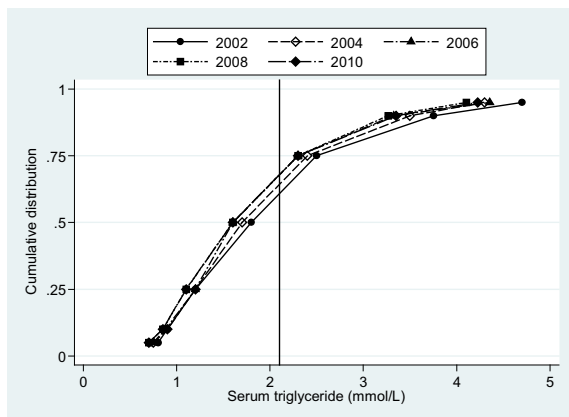
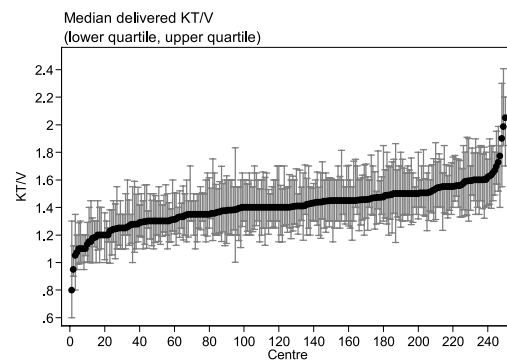
The median prescribed Kt/V was 1.6. In 2010, half the centres had 83% of their patients with a prescribed Kt/V  $\geq 1.3$ . However there is still a wide variation in proportion of patients with Kt/V  $\geq 1.3$  among the centres. One centre was noted to have less than 20% of their patients with a prescribed Kt/V  $\geq 1.3$ .

**Table 11.2.7 (d):** Median prescribed Kt/V in HD patients, HD centres 2001-2010

Year	Number of centers	Min	5 <sup>th</sup> Centile	LQ	Median	UQ	95 <sup>th</sup> Centile	Max
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	1.4	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	302	1.1	1.3	1.4	1.6	1.7	1.8	2.1
2008	353	1.1	1.3	1.4	1.6	1.7	1.9	2.1
2009	400	1.1	1.3	1.5	1.6	1.7	1.9	2.2
2010	427	1.1	1.3	1.5	1.6	1.7	1.9	2.9

**Table 11.2.7 (e):** Proportion of patients with prescribed Kt/V  $\geq 1.3$ , 2001-2010

Year	Number of centers	Min	5 <sup>th</sup> Centile	LQ	Median	UQ	95 <sup>th</sup> Centile	Max
2001	114	33	42	67	75	83	93	100
2002	132	26	43	65	74.5	83	92	98
2003	150	30	48	71	81	89	96	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	302	21	50	67	80	89	96	100
2008	353	14	47	69	83	89	98	100
2009	400	26	53	74	83	91	97	100
2010	427	18	54	73	83	91	100	100

**Figure 11.2.7 (e):** Variation in proportion of patients with prescribed Kt/V  $\geq 1.3$  among HD centres 2010**Figure 11.2.7 (f):** Variation in median delivered Kt/V in HD patients among HD centres 2010

The median delivered Kt/V was 1.4. The variation of median delivered Kt/V ranges from 0.8 to 2. The number of centres reporting delivered Kt/V has escalated from 142 in 2006 to 250 in 2010.

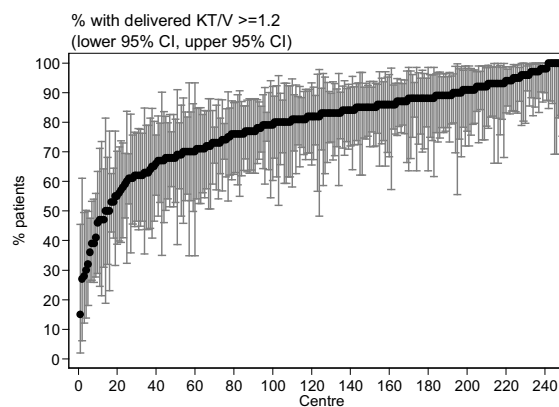
Fifty percent of centres had 83% of their patients with a delivered Kt/V  $\geq 1.2$ . There was one centre with  $< 20\%$  of their patients with a delivered Kt/V  $\geq 1.2$ .

**Table 11.2.7 (f):** Median delivered Kt/V in HD patients, HD centres 2006-2010

Year	Number of centers	Min	5 <sup>th</sup> Centile	LQ	Median	UQ	95 <sup>th</sup> Centile	Max
2006	142	1	1.2	1.3	1.4	1.5	1.6	1.7
2007	157	1.1	1.2	1.3	1.4	1.5	1.7	1.8
2008	199	1	1.2	1.3	1.4	1.5	1.7	1.8
2009	239	1	1.2	1.3	1.4	1.5	1.6	2
2010	250	0.8	1.2	1.3	1.4	1.5	1.6	2

**Table 11.2.7 (g):** Proportion of patients with delivered Kt/V  $\geq 1.2$ , HD centres 2006-2010

Year	Number of centers	Min	5 <sup>th</sup> Centile	LQ	Median	UQ	95 <sup>th</sup> Centile	Max
2006	142	0	43	65	76	86	94	100
2007	157	34	46	70	79	89	97	100
2008	199	21	49	68	81	89	100	100
2009	239	16	51	74	83	89	97	100
2010	250	15	47	71	83	89	98	100

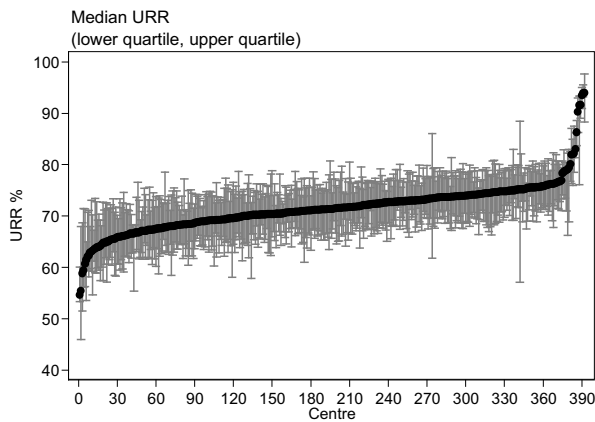
**Figure 11.2.7 (g):** Variation in proportion of patients with delivered Kt/V  $\geq 1.2$ , HD centres 2010

The median URR for 2010 is 71.4%. The variation of URR ranges from 22% to 100%. In 2010, 50% of centres had 82% of their patients with URR  $\geq$ 65%, an increased from 2009. There were 2 centres with less than 20% of their patients with URR  $\geq$  65%.

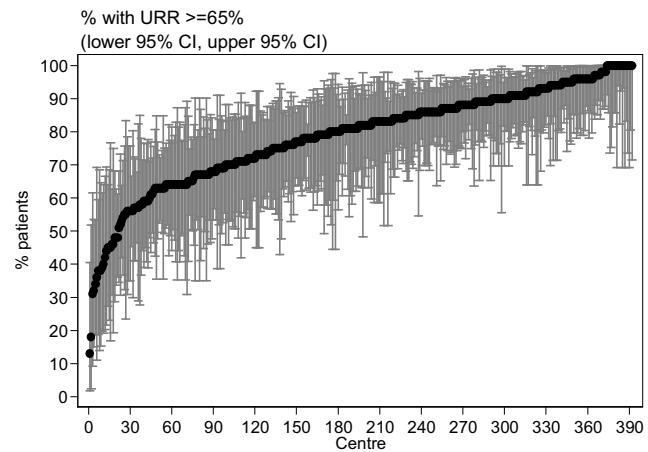
**Table 11.2.7 (h):** Median URR among HD patients, HD centres 2006-2010

Year	Number of centers	Min	5 <sup>th</sup> Centile	LQ	Median	UQ	95 <sup>th</sup> Centile	Max
2006	214	55.4	64.2	68.9	71.5	74.3	78.2	94.4
2007	245	56.1	65.3	69.6	71.8	74.8	78	95.5
2008	310	40.4	63.5	68.5	71.7	74.4	77.9	93.6
2009	350	60	64.4	68.7	71.8	74.1	77	93.3
2010	392	54.6	64.8	69	71.4	73.8	76.7	94

**Figure 11.2.7 (h):** Variation in median URR among HD patients, HD centres 2010



**Figure 11.2.7 (i):** Variation in proportion of patients with URR  $\geq$  65% among HD centres 2010



**Table 11.2.7 (i):** Proportion of HD patients with URR  $\geq$  65%, HD centres 2006-2010

Year	Number of centers	Min	5 <sup>th</sup> Centile	LQ	Median	UQ	95 <sup>th</sup> Centile	Max
2006	214	0	50	69	79.5	88	97	100
2007	245	15	51	71	82	89	97	100
2008	310	0	43	69	82.5	90	98	100
2009	350	22	45	69	81	89	97	100
2010	392	13	48	69.5	82	90	98	100

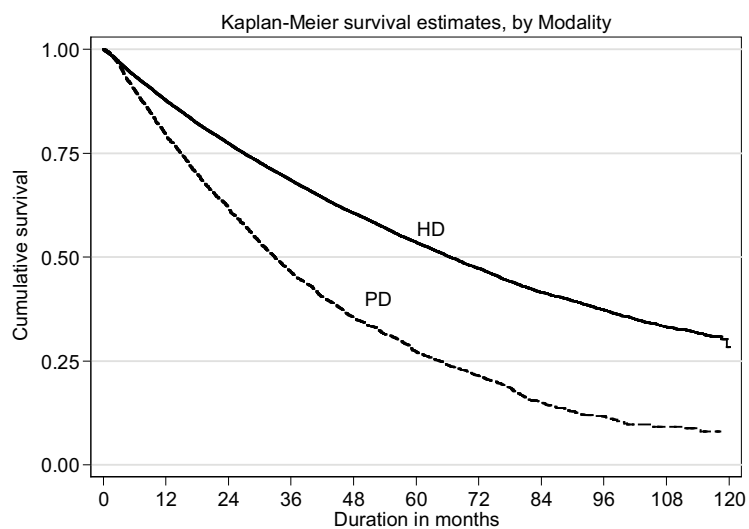
### SECTION 11.3: TECHNIQUE SURVIVAL ON DIALYSIS

The unadjusted HD technique survival at 1, 5, and 9 years was 88%, 53% and 33% respectively. The PD unadjusted technique survival was 79% at 1 year, 27% at 5 years and 9 % at 9 years.

**Table 11.3.1:** Unadjusted technique survival by Dialysis modality, 2001-2010

Dialysis modality Interval (month)	PD			HD			All Dialysis		
	n	% Survival	SE	n	% Survival	SE	n	% Survival	SE
0	4800	100	-	31940	100	-	36740	100	-
6	4041	90	0	28012	94	0	32053	93	0
12	3270	79	1	23915	88	0	27185	87	0
24	2107	62	1	17500	77	0	19607	75	0
36	1307	46	1	12701	68	0	14008	66	0
48	786	35	1	8913	61	0	9699	57	0
60	474	27	1	6048	53	0	6522	50	0
72	301	21	1	4022	47	0	4322	44	0
84	153	15	1	2456	41	0	2608	38	0
96	69	12	1	1394	37	0	1462	34	0
108	28	9	1	568	33	1	595	30	1
120	-	-	-	-	-	-	-	-	-

**Figure 11.3.1:** Unadjusted technique survival by Dialysis modality, 2001-2010



There was no apparent difference in the unadjusted technique survival by years of starting dialysis for the years 2001 to 2010.

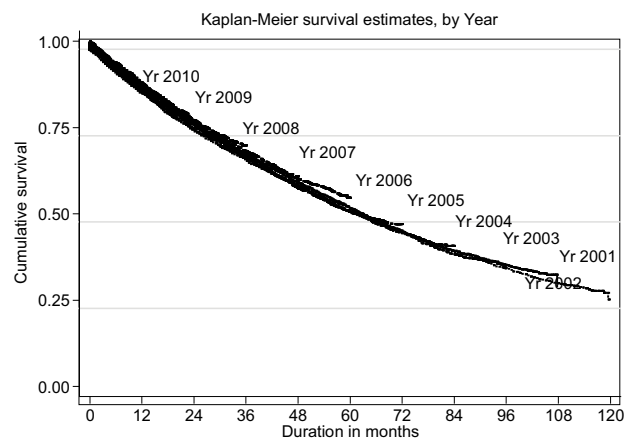
**Table 11.3.2:** Unadjusted technique survival by year of entry, 2001-2010

Year Interval (month)	2001			2002			2003		
	n	% Survival	SE	n	% Survival	SE	n	% Survival	SE
0	1901	100	-	2149	100	-	2339	100	-
6	1771	93	1	2015	94	1	2170	94	0
12	1625	87	1	1883	89	1	2004	88	1
24	1404	77	1	1613	78	1	1755	78	1
36	1232	68	1	1427	70	1	1534	69	1
48	1086	61	1	1256	61	1	1346	61	1
60	945	53	1	1099	54	1	1183	54	1
72	832	47	1	959	47	1	1031	47	1
84	736	41	1	838	41	1	882	40	1
96	646	37	1	748	37	1	-	-	-
108	568	32	1	-	-	-	-	-	-
120	-	-	-	-	-	-	-	-	-

Year Interval (month)	2004			2005			2006			2007		
	n	% Survival	SE	n.	% Survival	SE	n.	% Survival	SE	n	% Survival	SE
0	2746	100	-	2954	100	-	3412	100	-	3669	100	-
6	2570	94	0	2725	93	0	3131	93	0	3438	94	0
12	2373	88	1	2516	87	1	2908	87	1	3192	88	1
24	2071	78	1	2176	76	1	2550	77	1	2796	78	1
36	1791	68	1	1917	67	1	2240	68	1	2459	69	1
48	1567	60	1	1661	59	1	2001	61	1	-	-	-
60	1366	52	1	1457	52	1	-	-	-	-	-	-
72	1202	46	1	-	-	-	-	-	-	-	-	-
84	-	-	-	-	-	-	-	-	-	-	-	-

Year Interval (month)	2008			2009			2010		
	n	% Survival	SE	n	% Survival	SE	n	% Survival	SE
0	4149	100	-	4391	100	-	4230	100	-
6	3869	94	0	4092	94	0	2243	93	0
12	3610	88	1	3806	88	0	-	-	-
24	3141	77	1	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-	-

**Figure 11.3.2:** Unadjusted technique survival by year of entry, 2001-2010





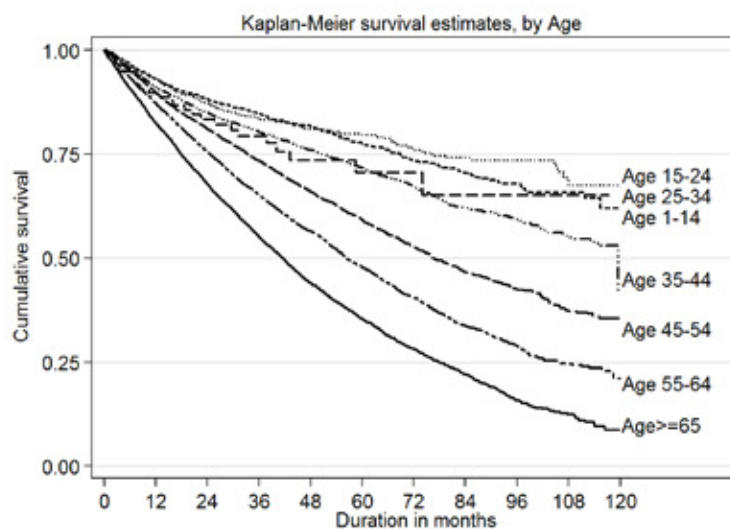
The unadjusted technique survival was better in the younger age groups than the older age group. At 9 years unadjusted technique survival in the age group of <14, 15-24, 25-34, 35-44, 44-54, 55-64 and  $\geq 65$  years old was 65%, 69%, 66%, 55 %, 37%, 24% and 12% respectively.

**Table 11.3.3:** Unadjusted technique survival by age, 2001-2010

Age group (year) Interval (month)	$\leq 14$			15-24			25-34			35-44		
	n	% Survival	SE	n	% Survival	SE	n	% Survival	SE	n	% Survival	SE
0	121	100	-	1013	100	-	2111	100	-	3754	100	-
6	110	95	2	915	96	1	1888	96	0	3346	95	0
12	96	90	3	812	93	1	1643	93	1	2912	91	0
24	74	83	4	619	87	1	1283	88	1	2274	85	1
36	50	79	4	500	83	1	1008	85	1	1749	80	1
48	33	73	5	383	81	1	779	81	1	1367	76	1
60	25	71	6	291	80	2	576	77	1	1006	72	1
72	19	71	6	216	76	2	430	73	1	742	67	1
84	10	65	7	144	74	2	297	70	2	474	62	1
96	7	65	7	90	74	2	179	68	2	306	59	1
108	3	65	7	41	69	3	67	66	2	138	55	2
120	-	-	-	-	-	-	-	-	-	-	-	-

Age group (year) Interval (month)	45-54			55-64			$\geq 65$		
	n	% Survival	SE	n	% Survival	SE	n	% Survival	SE
0	7965	100	-	9270	100	-	7706	100	-
6	7108	95	0	8089	93	0	6559	91	0
12	6114	90	0	6884	87	0	5456	82	0
24	4614	81	0	4942	76	0	3695	68	1
36	3436	73	1	3510	65	1	2449	55	1
48	2466	66	1	2393	56	1	1524	44	1
60	1683	59	1	1553	48	1	916	35	1
72	1118	53	1	961	40	1	545	28	1
84	704	47	1	545	34	1	289	22	1
96	416	42	1	276	29	1	122	16	1
108	175	37	1	106	24	1	42	12	1
120	-	-	-	-	-	-	-	-	-

**Figure 11.3.3:** Unadjusted technique survival by age, 2001-2010



Unadjusted technique survival in non-diabetics at 1, 5, and 9 years was 90%, 66% and 48% respectively. Unadjusted technique survival for diabetics was worse than non-diabetics; 86% at 1 year, 43% at 5 years and only 20% at 9 years.

**Table 11.3.4:** Unadjusted technique survival by Diabetes status, 2001-2010

Diabetes status Interval (month)	Non-Diabetic			Diabetic		
	n	% Survival	SE	n	% Survival	SE
0	13763	100	-	18177	100	-
6	12108	94	0	15904	93	0
12	10523	90	0	13392	86	0
24	8090	83	0	9410	73	0
36	6219	77	0	6482	62	0
48	4640	72	0	4273	52	0
60	3411	66	1	2637	43	1
72	2426	61	1	1596	36	1
84	1573	56	1	886	30	1
96	952	52	1	442	25	1
108	420	48	1	148	20	1
120	-	-	-	-	-	-

**Figure 11.3.4:** Unadjusted technique survival by Diabetes status, 2001-2010

