

Chapter 5

Paediatric Renal Replacement Therapy

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Table 5.1: Stock and Flow of Paediatric Renal Replacement Therapy 2000-2009

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
New HD patients	12	24	29	32	39	34	51	35	43	30
New PD patients	37	40	54	38	41	47	44	50	50	66
New Transplants	17	11	12	11	11	18	23	20	21	17
HD deaths	4	1	11	6	10	9	7	11	11	10
PD deaths	3	8	8	9	5	9	16	8	9	11
Transplant deaths	1	0	1	2	0	1	1	3	4	0
On HD at 31st December	119	143	160	183	216	241	286	313	350	369
On PD at 31st December	109	123	152	163	176	192	189	202	208	236
Functioning transplant at 31st December	92	100	110	115	124	138	156	167	174	191

Figure 5.1 (a): Incidence cases of RRT by modality in children under 20 years old, 2000-2009

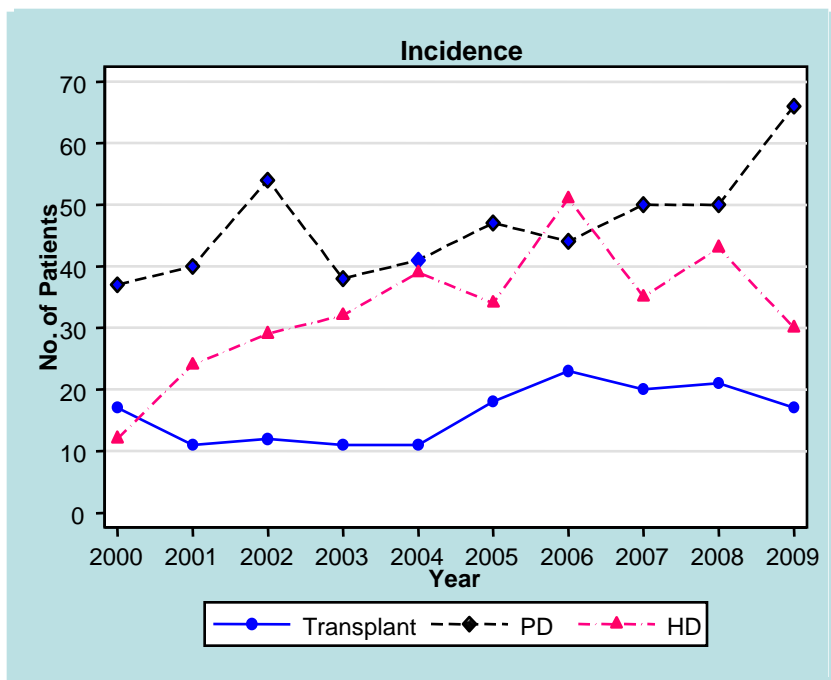


Figure 5.1 (b): Prevalence cases of RRT by modality in children under 20 years old, 2000-2009

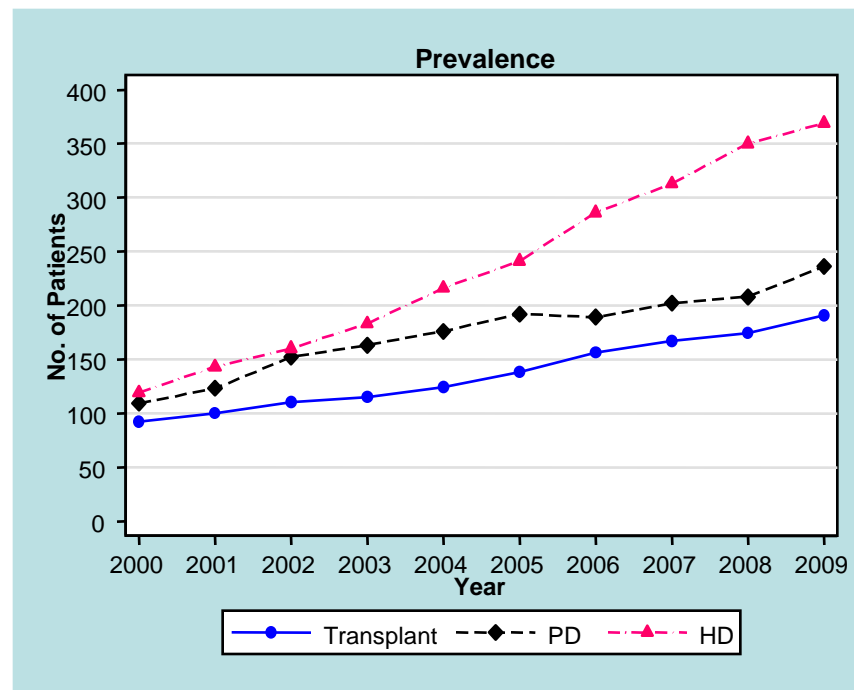


Table 5.2: Paediatric Dialysis and Transplant Rates per million age-group population 2000-2009

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Incidence Rate										
New HD	1	2	3	3	4	3	5	3	4	3
New PD	4	4	5	4	4	4	4	4	4	6
New Transplant	2	1	1	1	1	2	2	2	2	1
All RRT	5	6	8	7	7	8	8	8	8	8
Prevalence Rate at 31st December										
On HD	12	14	15	17	20	22	26	28	30	32
On PD	11	12	14	15	16	17	17	18	18	20
Functioning Graft	9	10	10	11	11	12	14	15	15	16
All RRT	31	34	39	42	47	51	55	59	63	67

Figure 5.2: Incidence and prevalence rate per million age related population years old on RRT, 2000-2009

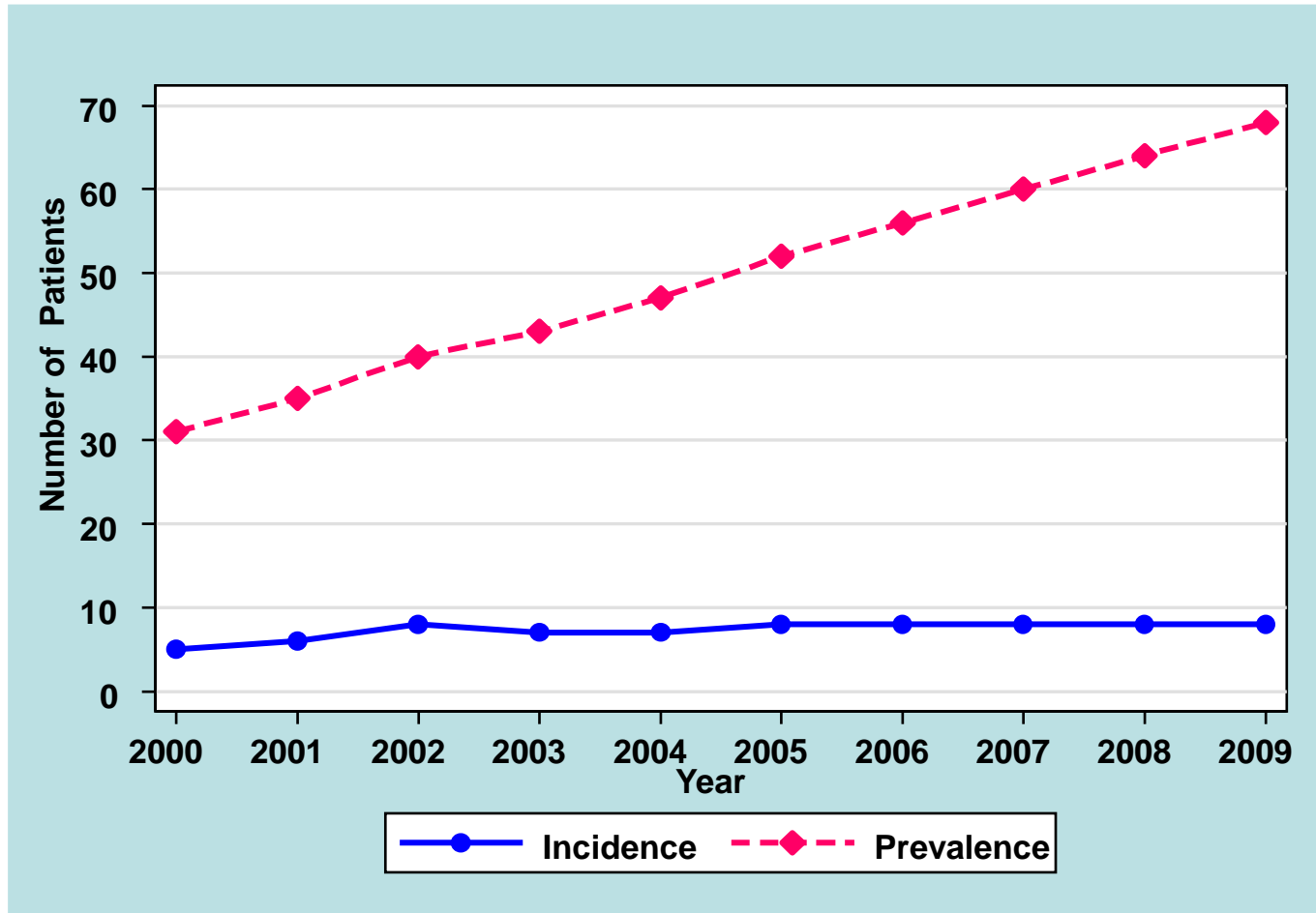


Table 5.3 (a): Dialysis Treatment Rate by State, per million state age group populations; 2000-2009

State	2000-2004	2005-2009
Pulau Pinang	10	17
Melaka	12	12
Johor	11	11
Perak	7	10
Selangor & Putrajaya	7	9
Kuala Lumpur	13	13
Negeri Sembilan	9	13
Kedah	9	6
Perlis	16	10
Terengganu	9	11
Pahang	7	11
Kelantan	8	7
Sarawak	5	8
Sabah & WP Labuan	4	7

Table 5.3 (b): New Dialysis Patients by State, 2000-2009

State	2000-2004	2005-2009
Pulau Pinang	26	45
Melaka	18	18
Johor	67	70
Perak	31	46
Selangor & Putrajaya	62	90
Kuala Lumpur	35	39
Negeri Sembilan	18	25
Kedah	34	27
Perlis	8	5
Terengganu	22	28
Pahang	21	33
Kelantan	29	29
Sarawak	23	43
Sabah & WP Labuan	24	49

Table 5.4: Number of New Dialysis and Transplant Patients by Gender 2000-2009

a) New Dialysis

Year	Male		Female	
	No.	%	No.	%
2000-2004	197	57	149	43
2005-2009	248	55	202	45

b) New Transplant

Year	Male		Female	
	No.	%	No.	%
2000-2004	41	66	21	34
2005-2009	58	59	41	41

Figure 5.4: Number of New Dialysis and Transplant Patients by gender 2000-2009

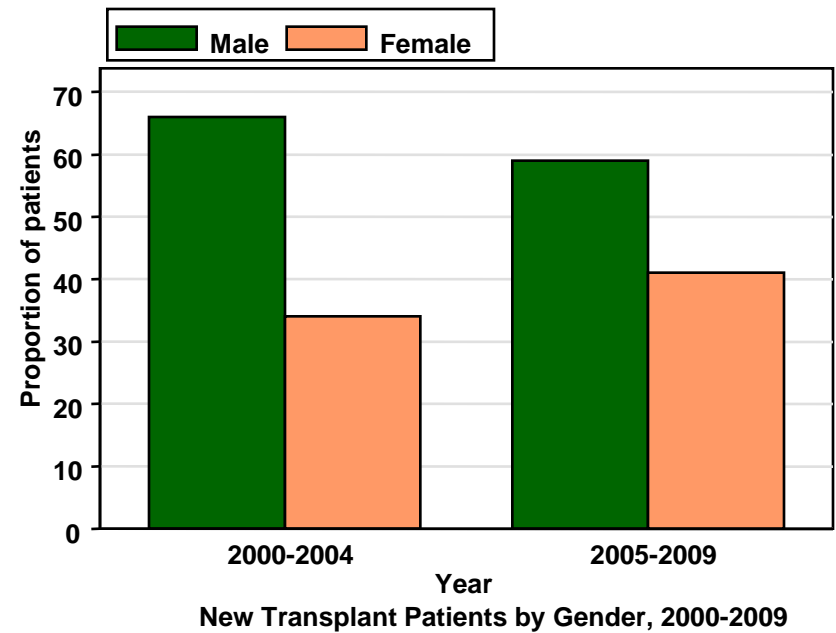
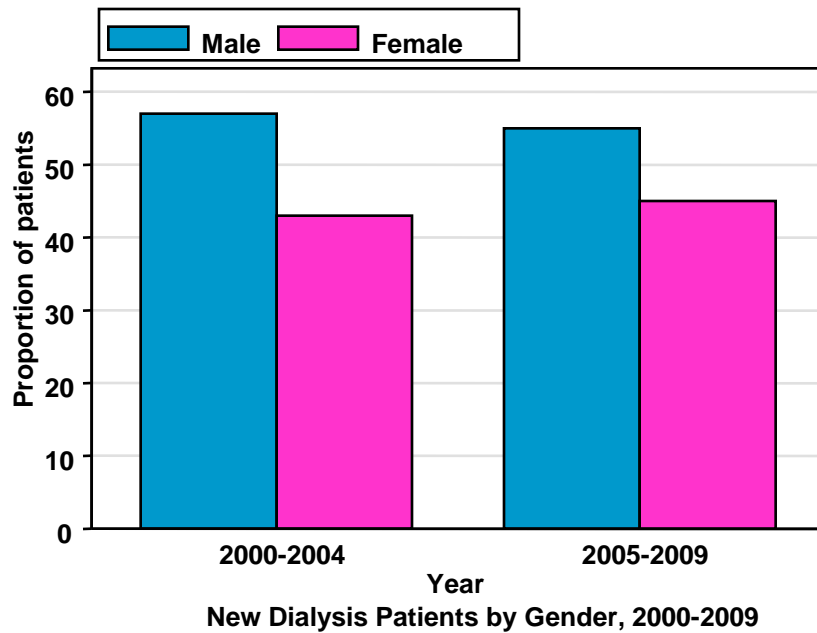


Table 5.5: New RRT Rate, Per Million Age Related Population by Age Group 2000-2009

Year	New RRT rate, pmp			
	Age group (years)			
	0-4	5-9	10-14	15-19
2000	0	5	4	12
2001	1	3	9	14
2002	2	2	10	19
2003	0	3	8	17
2004	1	2	9	20
2005	1	5	9	17
2006	1	4	9	23
2007	1	4	10	18
2008	0	5	9	21
2009	1	5	11	19

Figure 5.5: New RRT Rate by Age group 2000-2009

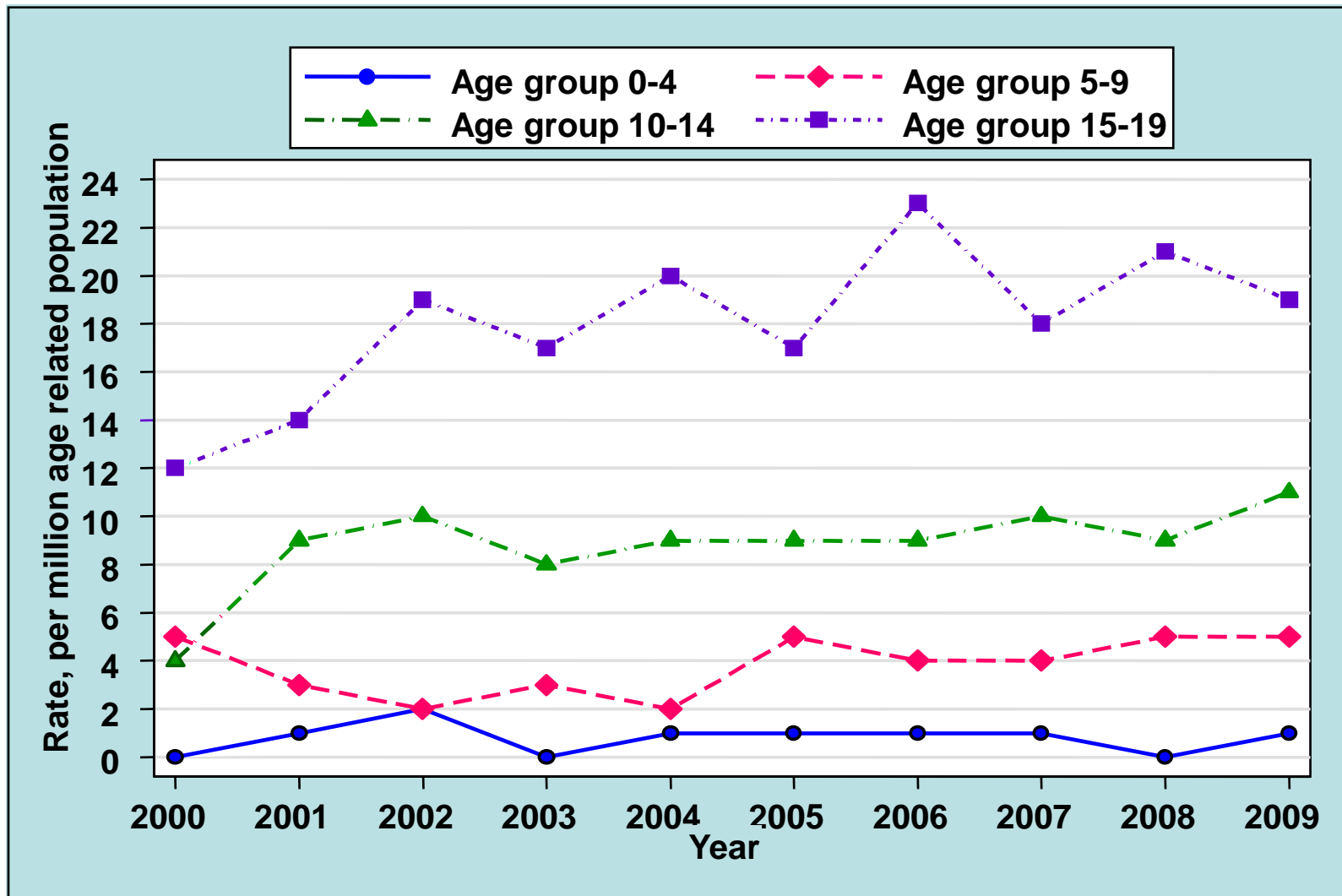


Table 5.6: New Dialysis by treatment modality 2000-2009

Year	HD		CAPD		CCPD	
	No.	%	No.	%	No.	%
2000	12	24	36	73	1	2
2001	24	38	39	61	1	2
2002	29	35	53	64	1	1
2003	32	46	37	53	1	1
2004	39	49	41	51	0	0
2005	34	42	32	40	15	19
2006	51	54	35	37	9	9
2007	35	41	45	53	5	6
2008	43	46	46	49	4	4
2009	30	31	61	64	5	5

Figure 5.6: New Dialysis by treatment modality 2000-2009

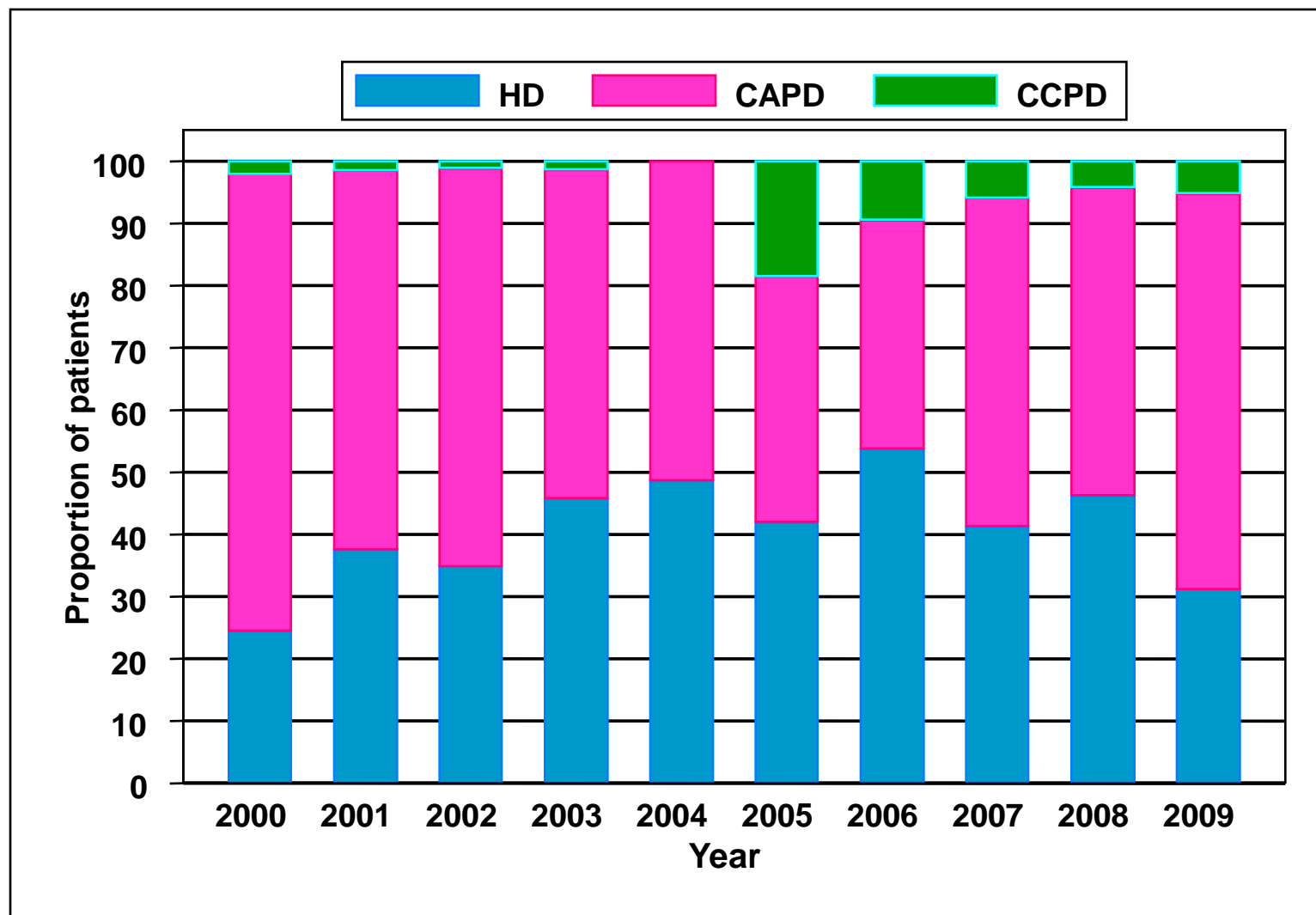


Table 5.7: New Dialysis by sector 2000-2009

Year	Government		NGO		Private	
	No.	%	No.	%	No.	%
2000	45	92	3	6	1	2
2001	57	89	5	8	2	3
2002	75	90	3	4	5	6
2003	61	87	4	6	5	7
2004	71	89	4	5	5	6
2005	75	93	5	6	1	1
2006	79	83	8	8	8	8
2007	77	91	6	7	2	2
2008	85	91	0	0	8	9
2009	88	92	1	1	7	7

Figure 5.7: New Dialysis by sector 2000-2009

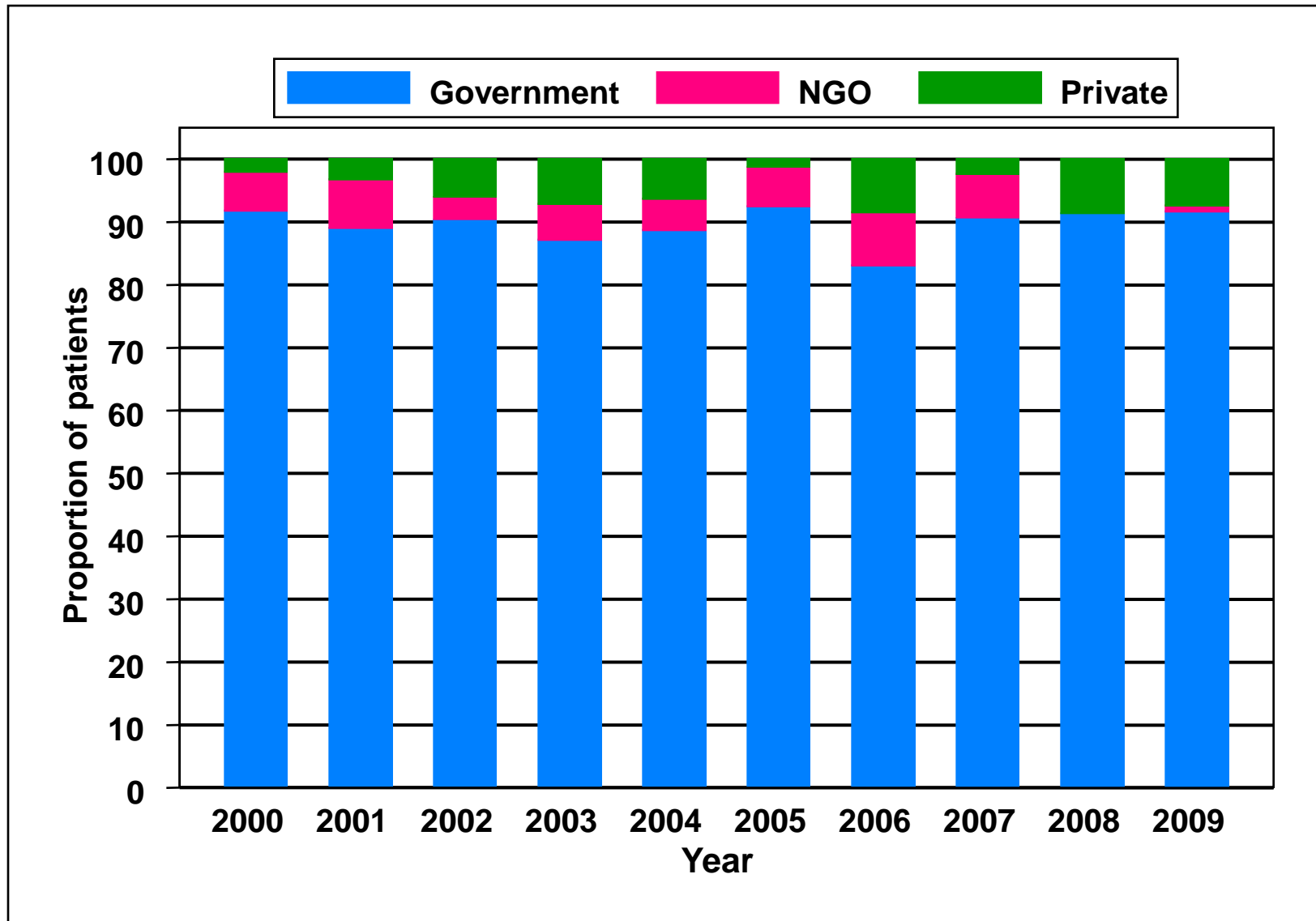


Table 5.8: Primary renal disease by sex, 2000-2009

Primary Renal Disease	Male		Female		All	
	No.	%	No.	%	No.	%
Glomerulonephritis	107	24	75	21	182	22
FSGS	31	7	32	9	63	8
Refux nephropathy	25	6	8	2	33	4
SLE	9	2	44	12	53	7
Obstructive uropathy	42	9	19	5	61	8
Renal dysplasia	14	3	10	3	24	3
Hereditary nephritis	11	2	3	1	14	1
Cystic kidney disease	3	1	5	1	8	1
Metabolic	5	1	3	1	8	1
Others	36	8	42	12	78	10
Unknown	170	38	115	32	285	35

Table 5.9: Types of Renal Transplantation, 2000-2009

Year	2000-2004		2005-2009	
	No.	%	No.	%
Commercial cadaver	16	26	15	15
Commercial living donor	3	5	2	2
Living related donor	19	31	34	35
Cadaver	23	38	47	48
Living emotionally related	0	0	0	0
TOTAL	61	100	98	100

Table 5.10 (a): Patient survival by dialysis modality analysis (not censored with change of modality)

Modality	Transplant			PD			HD		
	Interval (months)	No.	% survival	SE	No.	% survival	SE	No.	% survival
0	232	100	-	609	100	-	460	100	-
6	221	99	1	554	97	1	427	96	1
12	210	98	1	507	94	1	403	95	1
24	188	96	1	426	88	1	348	91	1
36	166	95	2	366	85	2	303	88	2
48	145	95	2	319	82	2	255	86	2
60	126	93	2	276	80	2	225	85	2
72	117	92	2	234	77	2	189	84	2
84	109	92	2	201	74	2	162	82	2
96	100	92	2	156	72	2	139	81	2
108	93	91	2	123	69	3	119	79	2
120	78	88	3	93	66	3	110	79	2

Figure 5.10 (a): Patient survival by dialysis modality analysis, 2000-2009 (not censored with change of modality)

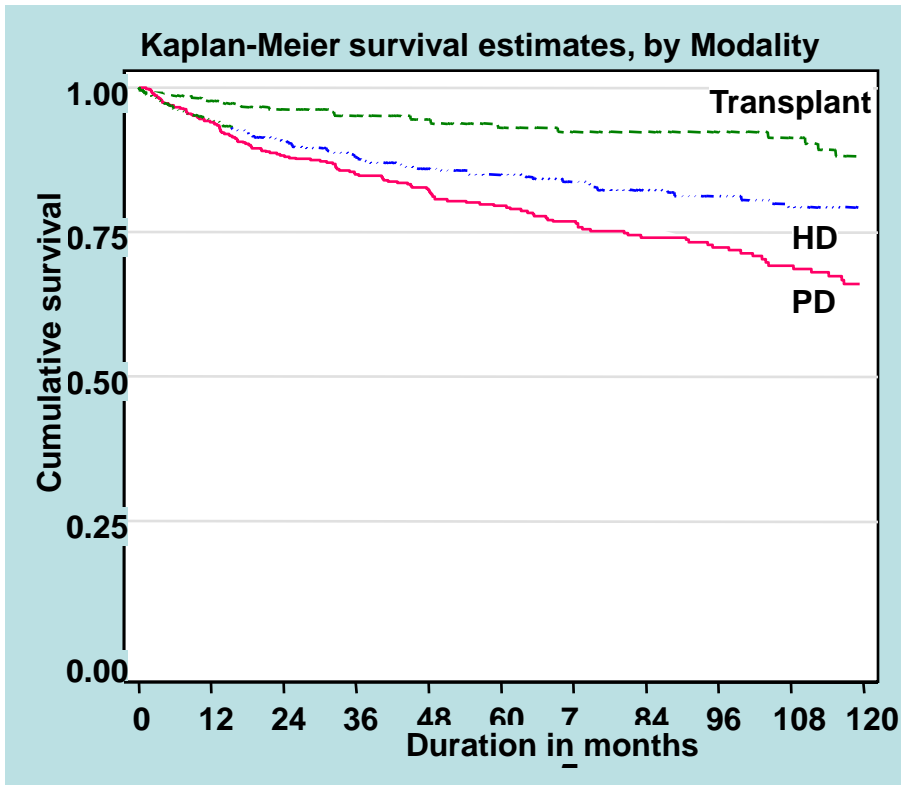
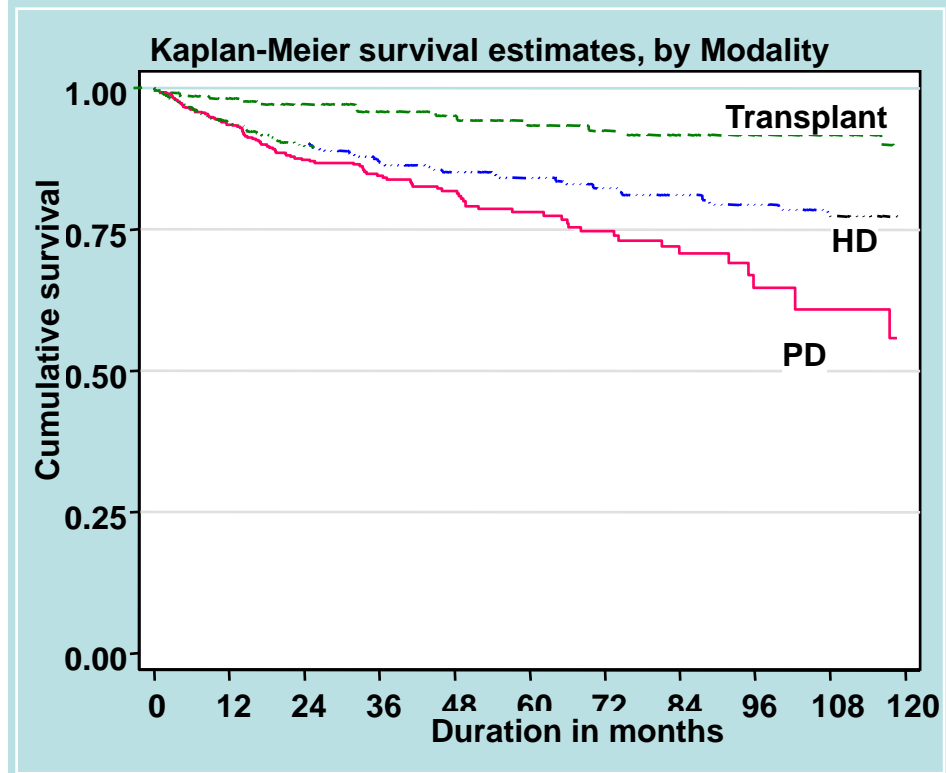


Figure 5.10 (b): Patient survival by dialysis modality analysis, 2000-2009 (censored with change of modality)



**Table 5.10 (b): Patient survival by dialysis modality analysis
(censored with change of modality)**

Modality	Transplant			PD			HD		
	Interval (months)	No.	% survival	SE	No.	% survival	SE	No.	% survival
0	232	100	-	609	100	-	460	100	-
6	205	99	1	541	97	1	408	96	1
12	195	98	1	465	94	1	361	94	1
24	171	97	1	335	88	1	289	91	1
36	149	96	1	239	85	2	238	87	2
48	123	95	2	184	82	2	191	85	2
60	106	93	2	132	79	2	160	84	2
72	95	92	2	97	75	3	129	82	2
84	82	92	2	58	72	3	106	81	2
96	71	92	2	30	65	4	89	79	3
108	65	92	2	14	62	6	74	77	3
120	55	91	3	9	56	7	63	77	3

Table 5.11: Dialysis Technique Survival by Modality, 2000-2009

Modality	PD			HD		
	No.	% survival	SE	No.	% survival	SE
0	652	100	-	609	100	-
6	580	95	1	537	94	1
12	500	90	1	474	90	1
24	359	78	2	368	85	2
36	256	66	2	300	81	2
48	197	59	2	237	80	2
60	141	51	3	198	79	2
72	105	43	3	156	77	2
84	65	34	3	128	74	2
96	35	25	3	102	72	3
108	16	20	3	81	70	3
120	11	17	3	65	69	3

Figure 5.11: Dialysis Technique Survival by Modality, 2000-2009

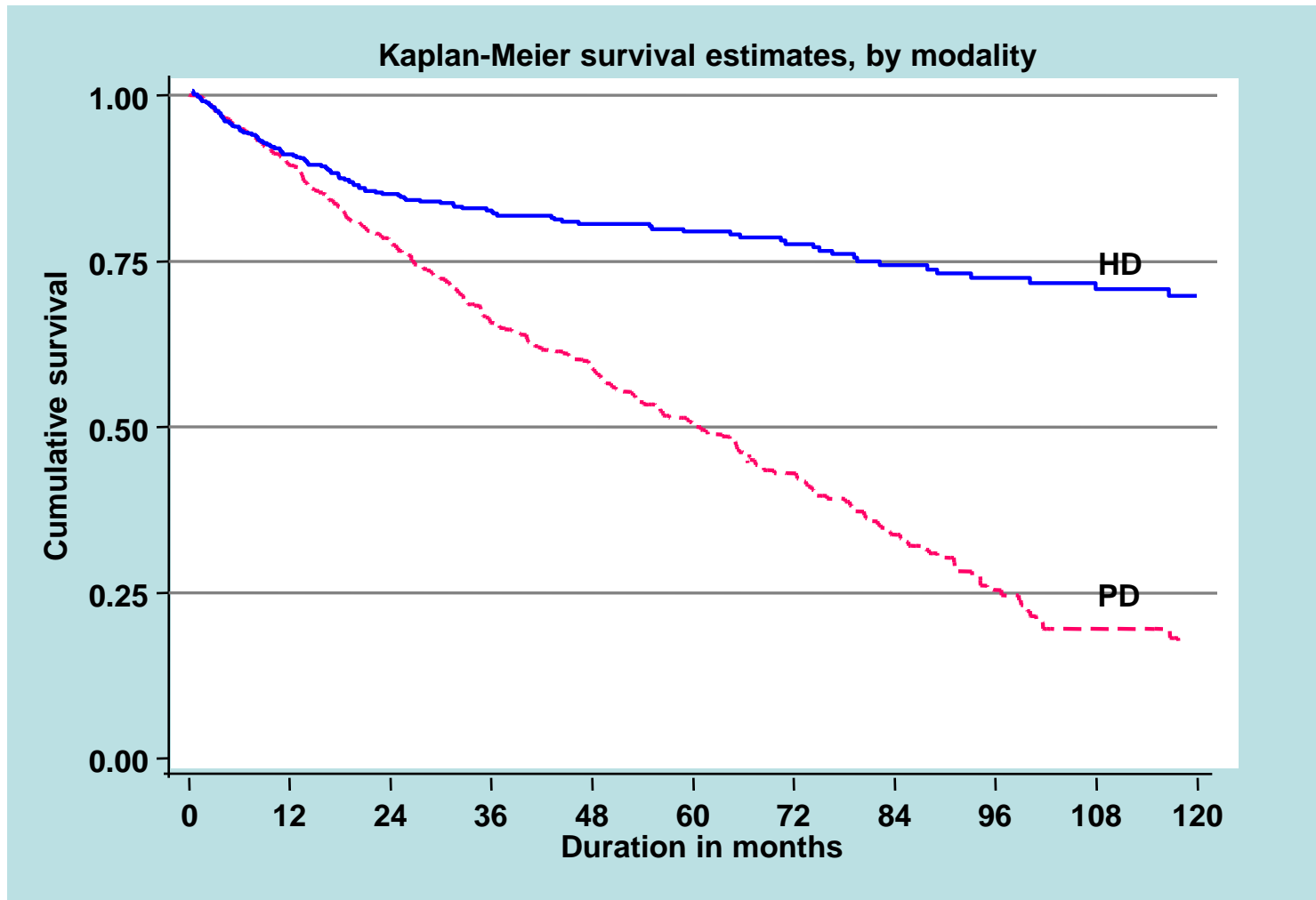


Table 5.12: Transplant Graft Survival, 2000-2009

Interval (month)	No.	% survival	SE
0	237	100	-
6	209	91	2
12	199	91	2
24	175	87	2
36	153	84	2
48	127	80	3
60	110	78	3
72	98	75	3
84	84	70	4
96	72	68	4
108	65	65	4
120	55	61	4

Figure 5.12: Transplant Graft Survival, 2000-2009

