

# **Chapter 14**

## **Renal Transplantation**

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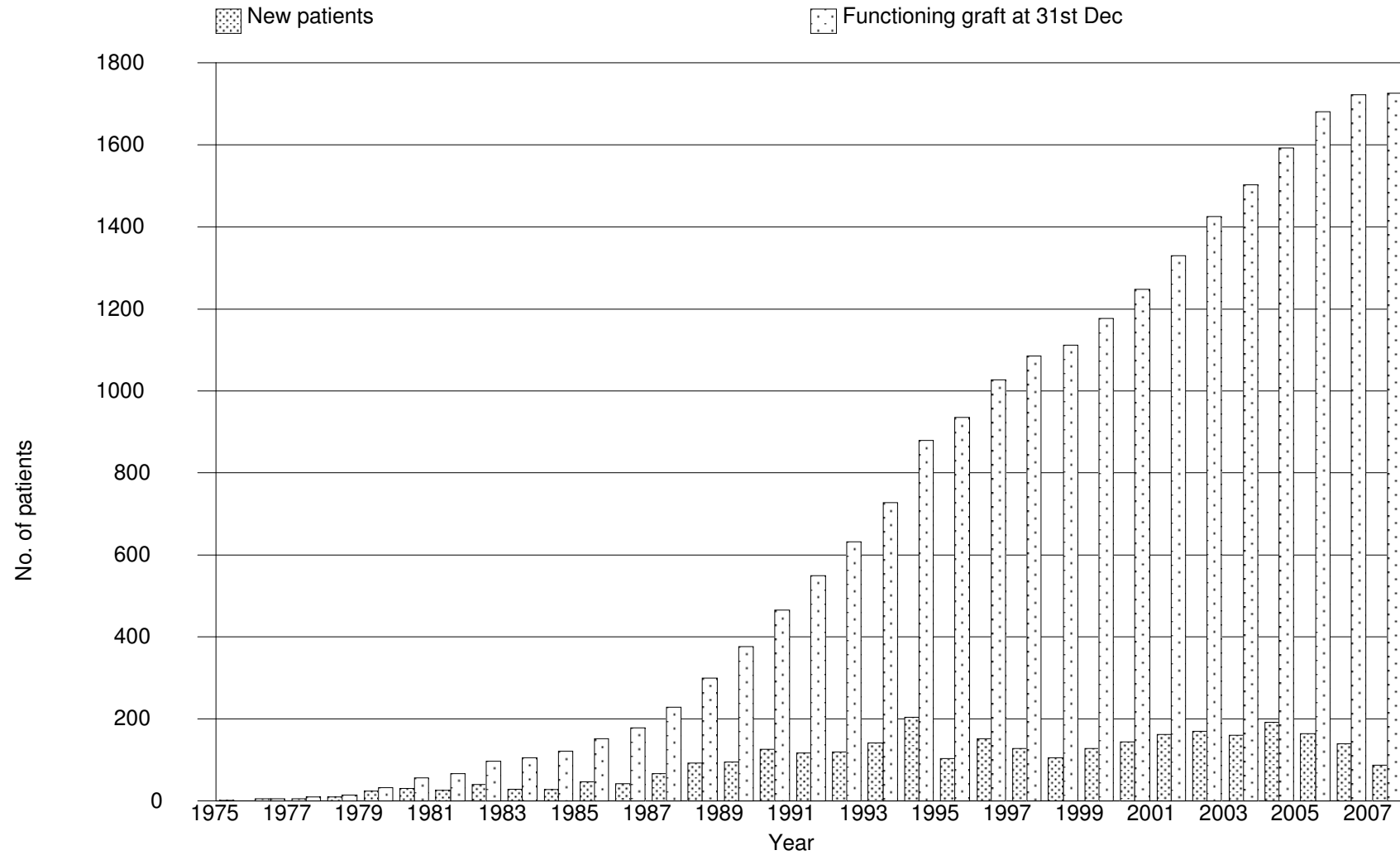
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**Table 14.1.1: Stock and Flow of Renal Transplantation, 1998-2007**

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
New transplant patients	104	127	143	162	169	160	190	163	138	86
Died	26	25	30	37	32	37	41	43	50	34
Graft failure	49	36	32	40	38	41	44	21	36	36
Lost to Follow up	1	1	9	4	5	4	14	11	11	12
Functioning graft at 31st Dec	1112	1177	1249	1330	1424	1502	1593	1681	1722	1726

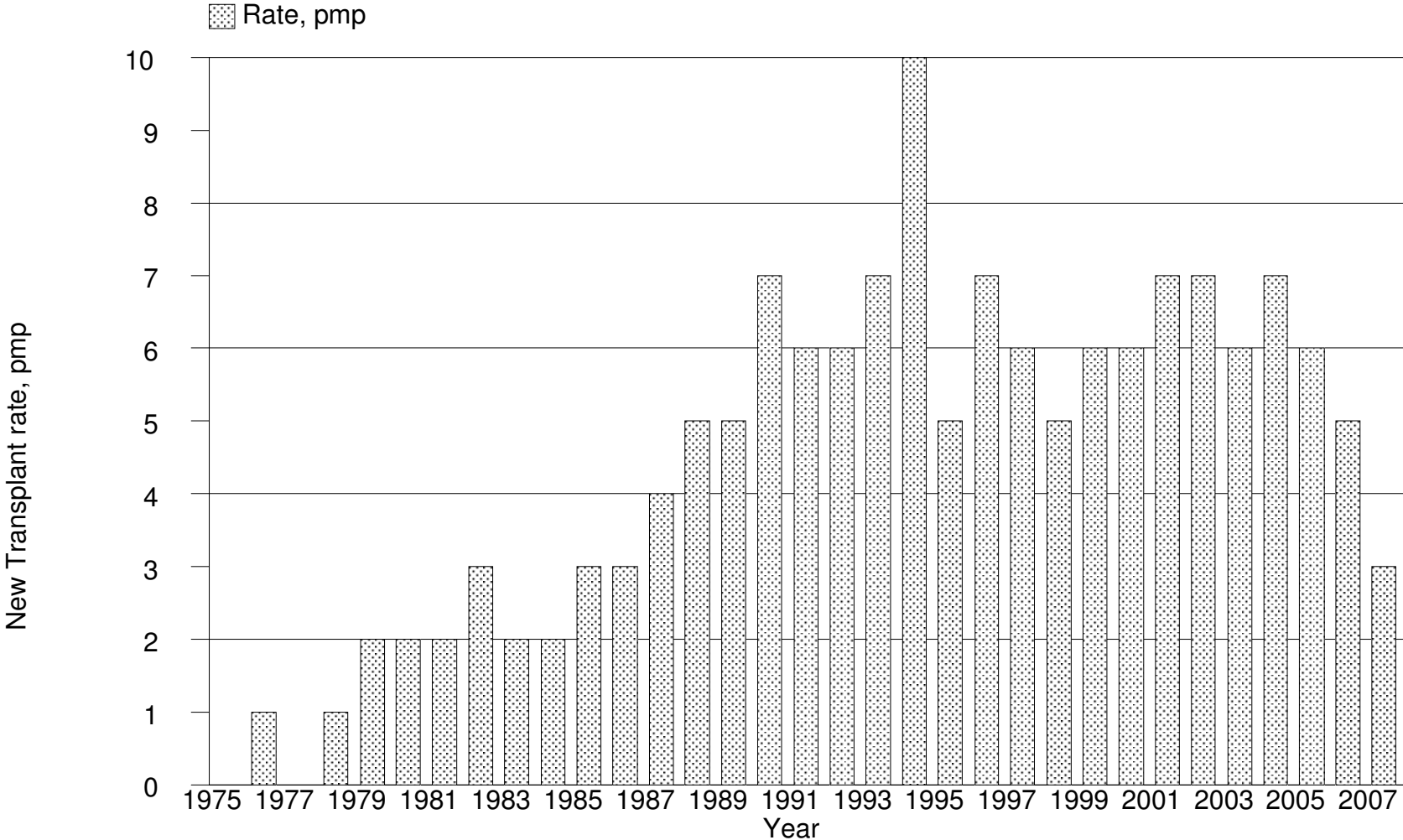
**Figure 14.1.1: Stock and Flow of Renal Transplantation, 1975-2007**



**Table 14.1.2: New transplant rate per million population (pmp), 1998-2007**

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
New transplant patients	104	127	143	162	169	160	190	163	138	86
New transplant rate, pmp	5	6	6	7	7	6	7	6	5	3

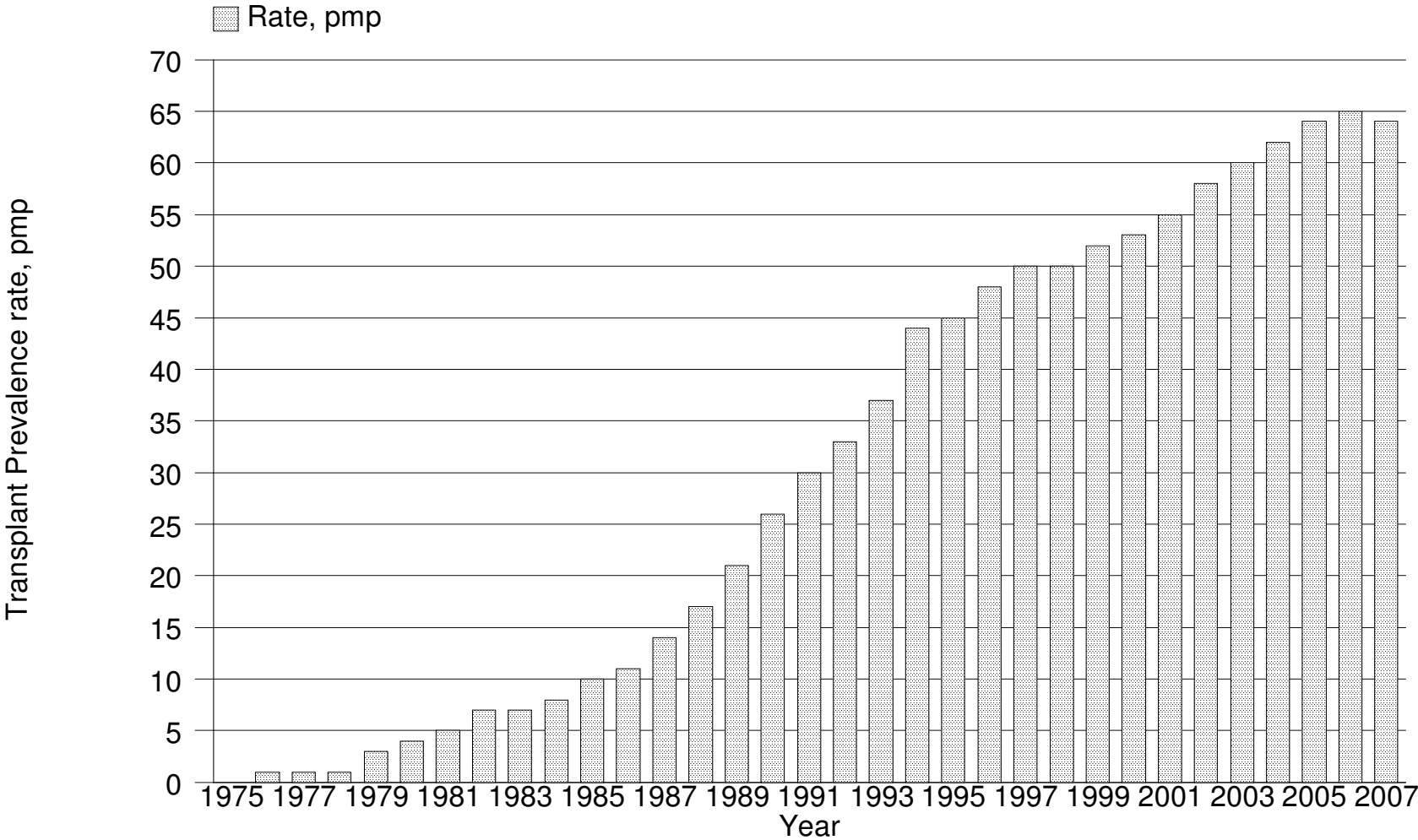
Figure 14.1.2: New transplant rate, 1975-2007



**Table 14.1.3: Transplant prevalence rate per million population (pmp), 1998-2007**

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Functioning graft at 31st Dec	1112	1177	1249	1330	1424	1502	1593	1681	1722	1726
Transplant prevalence rate, pmp	50	52	53	55	58	60	62	64	65	64

Figure 14.1.3: Transplant prevalence rate, 1975-2007



**Table 14.1.4: Place of transplantation, 1998-2007**

Year	1998		1999		2000		2001		2002			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
HKL	33	32	36	28	28	20	33	20	28	17		
UMMC	7	7	16	13	19	13	23	14	14	8		
Selayang Hospital	0	0	0	0	4	3	11	7	11	7		
Other local	0	0	1	1	3	2	4	2	1	1		
China	50	48	62	49	80	56	83	51	103	61		
India	7	7	5	4	9	6	7	4	12	7		
Other overseas	3	3	2	2	0	0	1	1	0	0		
Unknown	4	4	5	4	0	0	0	0	0	0		
<b>TOTAL</b>	<b>104</b>	<b>100</b>	<b>127</b>	<b>100</b>	<b>143</b>	<b>100</b>	<b>162</b>	<b>100</b>	<b>169</b>	<b>100</b>		

Year	2003		2004		2005		2006		2007		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
HKL	26	16	20	11	32	20	35	25	35	41	306	21
UMMC	6	4	7	4	7	4	5	4	0	0	104	7
Selayang Hospital	11	7	11	6	5	3	8	6	14	16	75	5
Other local	1	1	2	1	5	3	2	1	3	3	22	2
China	111	69	137	72	108	66	79	57	29	34	842	58
India	4	3	11	6	5	3	7	5	1	1	68	5
Other overseas	1	1	2	1	1	1	2	1	4	5	16	1
Unknown	0	0	0	0	0	0	0	0	0	0	9	1
<b>TOTAL</b>	<b>160</b>	<b>100</b>	<b>190</b>	<b>100</b>	<b>163</b>	<b>100</b>	<b>138</b>	<b>100</b>	<b>86</b>	<b>100</b>	<b>1442</b>	<b>100</b>

**Table 14.2.1: Renal Transplant Recipients' Characteristics, 1998-2007**

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
New Transplant Patients	104	127	143	162	169	160	190	163	138	86
Age at transplant (years), Mean	37	37	39	41	41	42	41	38	37	35
Age at transplant (years), SD	11	13	14	13	12	13	13	14	15	15
% Male	58	62	64	62	57	66	62	70	67	62
% Diabetic (co-morbid/ primary renal disease)	10	11	15	19	15	22	22	20	20	12
% HBsAg positive	6	4	5	5	7	8	5	4	7	5
% Anti-HCV positive	18	11	8	15	9	10	8	2	7	11

**Table 14.2.2: Primary causes of end stage renal failure, 1998-2007**

Year	1998		1999		2000		2001		2002	
	No.	%	No.	%	No.	%	No.	%	No.	%
<b>New transplant patients</b>	<b>104</b>	<b>100</b>	<b>127</b>	<b>100</b>	<b>143</b>	<b>100</b>	<b>162</b>	<b>100</b>	<b>169</b>	<b>100</b>
Glomerulonephritis	28	27	41	32	49	34	43	27	53	31
Diabetes Mellitus	5	5	10	8	16	11	23	14	16	9
Hypertension	5	5	7	6	20	14	17	10	24	14
Obstructive uropathy	4	4	4	3	3	2	3	2	2	1
ADPKD	1	1	1	1	3	2	1	1	3	2
Drugs/ toxic nephropathy	0	0	0	0	0	0	0	0	0	0
Hereditary nephritis	0	0	0	0	0	0	0	0	0	0
Unknown	54	52	62	49	54	38	61	38	68	40
Others	11	11	6	5	12	8	23	14	16	9

Year	2003		2004		2005		2006		2007	
	No.	%	No.	%	No.	%	No.	%	No.	%
<b>New transplant patients</b>	<b>160</b>	<b>100</b>	<b>190</b>	<b>100</b>	<b>163</b>	<b>100</b>	<b>138</b>	<b>100</b>	<b>86</b>	<b>100</b>
Glomerulonephritis	54	34	62	33	45	28	51	37	26	30
Diabetes Mellitus	26	16	32	17	29	18	21	15	6	7
Hypertension	25	16	51	27	38	23	29	21	20	23
Obstructive uropathy	2	1	4	2	3	2	4	3	1	1
ADPKD	5	3	5	3	3	2	1	1	0	0
Drugs/ toxic nephropathy	2	1	2	1	0	0	1	1	0	0
Hereditary nephritis	0	0	1	1	0	0	0	0	0	0
Unknown	58	36	83	44	50	31	42	30	32	37
Others	12	8	27	14	17	10	16	12	12	14

**Table 14.3.1: Type of Renal Transplantation, 1998-2007**

Year	1998		1999		2000		2001		2002	
	No.	%	No.	%	No.	%	No.	%	No.	%
Commercial cadaver	51	51	62	51	80	56	83	51	103	61
Commercial live donor	4	4	4	3	9	6	6	4	11	7
Live donor (genetically related)	28	28	40	33	21	15	32	20	30	18
Live donor (emotionally related)	2	2	5	4	6	4	4	2	3	2
Cadaver	15	15	10	8	27	19	37	23	22	13
<b>Total</b>	<b>100</b>	<b>100</b>	<b>121</b>	<b>100</b>	<b>143</b>	<b>100</b>	<b>162</b>	<b>100</b>	<b>169</b>	<b>100</b>

Year	2003		2004		2005		2006		2007	
	No.	%	No.	%	No.	%	No.	%	No.	%
Commercial cadaver	112	70	143	76	105	64	80	58	28	33
Commercial live donor	3	2	6	3	8	5	5	4	2	2
Live donor (genetically related)	25	16	21	11	38	23	24	17	20	24
Live donor (emotionally related)	5	3	2	1	3	2	4	3	11	13
Cadaver	15	9	17	9	9	6	25	18	24	28
<b>Total</b>	<b>160</b>	<b>100</b>	<b>189</b>	<b>100</b>	<b>163</b>	<b>100</b>	<b>138</b>	<b>100</b>	<b>85</b>	<b>100</b>

\*Commercial Cadaver (China, India, other oversea) \*Commercial live donor (living unrelated) \*Cadaver (local)

**Table 14.3.2: Biochemical data, 2005-2007**

Biochemical parameters	Summary	2005	2006	2007
Creatinine, umol/L	N	1635	1592	1685
	Mean	133.6	135.7	131.9
	SD	65.4	81.3	77.6
	Median	120	120	116
	Minimum	35	21.7	36
	Maximum	763	1152	1186
Hb, g/dL	N	1635	1592	1685
	Mean	12.8	12.7	12.8
	SD	1.9	1.9	1.9
	Median	12.9	12.8	12.8
	Minimum	5.5	3.3	4.4
	Maximum	19	19.8	18.7
Albumin, g/L	N	1635	1592	1685
	Mean	39.9	39.9	39.9
	SD	0.5	0.7	0.8
	Median	39.9	39.9	39.9
	Minimum	34	29	29
	Maximum	46	48	48
Calcium, mmol/L	N	1635	1592	1685
	Mean	2.3	2.3	2.3
	SD	0.2	0.2	0.2
	Median	2.3	2.3	2.3
	Minimum	1.2	1.1	1.4
	Maximum	3.3	3.1	3.2
Phosphate, mmol/L	N	1635	1592	1685
	Mean	1.1	1.1	1.1
	SD	0.2	0.2	0.3
	Median	1.1	1.1	1.1
	Minimum	0.5	0.5	0.5
	Maximum	3.3	3.5	3.9

**Table 14.3.2: Biochemical data, 2005-2007 (cont)**

Biochemical parameters	Summary	2005	2006	2007
Alkaline Phosphate (ALP), U/L	N	1635	1592	1685
	Mean	79	79.1	79.1
	SD	46.5	43.2	38.4
	Median	73	71	72
	Minimum	20	24	22
	Maximum	831	700	439
ALT, U/L	N	1635	1592	1685
	Mean	30.8	29.9	29.9
	SD	30.9	30.4	25.7
	Median	24	22	23
	Minimum	4	4	4
	Maximum	613	433	356
Total cholesterol, mmol/L	N	1635	1592	1685
	Mean	5.3	5.3	5.2
	SD	1	1	1
	Median	5.3	5.3	5.3
	Minimum	1.7	1.5	1.7
	Maximum	10.1	11.1	11.4
LDL cholesterol, mmol/L	N	1635	1592	1685
	Mean	3	3	3
	SD	0.8	0.8	0.8
	Median	3	3	3
	Minimum	0.9	1	1
	Maximum	9.2	11.1	8.9
HDL cholesterol, mmol/L	N	1635	1592	1685
	Mean	1.6	1.6	1.5
	SD	0.5	0.5	0.4
	Median	1.6	1.6	1.6
	Minimum	0.4	0.4	0.4
	Maximum	5.6	5.8	7.5

**Table 14.3.2: Biochemical data, 2005-2007 (cont)**

Biochemical parameters	Summary	2005	2006	2007
Systolic Blood Pressure, mmHg	N	1635	1592	1685
	Mean	133.3	130.8	131.7
	SD	16.9	15.9	15.7
	Median	130	130	130
	Minimum	80	66	80
	Maximum	220	210	210
Diastolic Blood Pressure, mmHg	N	1635	1592	1685
	Mean	80.5	78.9	78.8
	SD	9.2	9.8	9.4
	Median	80	80	80
	Minimum	50	30	20
	Maximum	127	120	116

**Table 14.3.3: Medication data, 2005-2007**

Medication data	Single drug treatment						Combined drug treatment					
	2005		2006		2007		2005		2006		2007	
	N	%	N	%	N	%	N	%	N	%	N	%
All	1563	100	1480	100	1661	100	1563	100	1480	100	1661	100
<b>(i) Immunosuppressive drug(s) treatment</b>												
Prednisolone	12	1	8	1	9	1	1529	98	1442	97	1607	97
Azathioprine	1	0	0	0	0	0	605	39	496	34	478	29
Cyclosporin A	4	0	5	0	8	0	1221	78	1118	76	1188	72
Tacrolimus (FK506)	0	0	0	0	4	0	225	14	254	17	347	21
Mycophenolate Mofetil (MMF)	0	0	0	0	1	0	683	44	708	48	903	54
Rapamycin	0	0	0	0	0	0	8	1	6	0	33	2
Others	0	0	0	0	0	0	10	1	18	1	4	0
<b>(ii) Non-Immunosuppressive drug(s) treatment</b>												
Beta blocker	105	7	77	5	90	5	667	43	597	40	735	44
Calcium channel blocker	195	12	199	13	183	11	822	53	787	53	903	54
ACE inhibitor	60	4	39	3	38	2	342	22	292	20	384	23
AIIRB	20	1	27	2	18	1	161	10	141	10	210	13
Anti-lipid	67	4	155	10	94	6	602	39	678	46	730	44
Other anti-hypertensive	5	0	11	1	6	0	158	10	159	11	140	8

**Table 14.4.1: Post-transplant complications, 2005-2007**

Post transplant complications	Complication developed before transplant (regardless of complication after transplantation)						Complication developed only after transplantation					
	2005		2006		2007		2005		2006		2007	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
<b>All patients</b>	<b>1637</b>	<b>100</b>	<b>1592</b>	<b>100</b>	<b>1685</b>	<b>100</b>	<b>1637</b>	<b>100</b>	<b>1592</b>	<b>100</b>	<b>1685</b>	<b>100</b>
Diabetes (either as Primary Renal Disease or co-morbid)	219	13	215	14	228	14	122	7	125	8	113	7
Cancer	2	0	2	0	3	0	19	1	20	1	21	1
Cardiovascular disease + cerebrovascular disorder	78	5	73	5	72	4	45	3	45	3	54	3
Hypertension	1049	64	1032	65	1059	63	438	27	355	22	453	27

\*Hypertension: BP systolic >140 and BP diastolic >90

OR have either Beta blocker/ Calcium channel blocker / ACE inhibitor / AIIRB / Other anti-hypertensive

**Table 14.4.2: Transplant Patients Death Rate and Graft Loss, 1998-2007**

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
No. at risk	1097	1144	1212	1289	1376	1462	1547	1636	1701	1723
Transplant death	26	25	30	37	32	37	41	43	50	34
Transplant death rate %	2	2	2	3	2	3	3	3	3	2
Graft loss	49	36	32	40	38	41	44	21	36	36
Graft loss rate %	4	3	3	3	3	3	3	1	2	2
Acute rejection	0	0	0	0	0	3	19	14	18	10
Acute rejection rate %	0	0	0	0	0	0	1	1	1	1
All losses	75	61	62	77	70	78	85	64	86	70
All losses rate %	7	5	5	6	5	5	5	4	5	4

\*Graft loss=graft failure

\*All losses=death / graft loss (acute rejection happens concurrently with graft failure / death)

Figure 14.4.2(i): Transplant Recipient Death Rate, 1976-2007

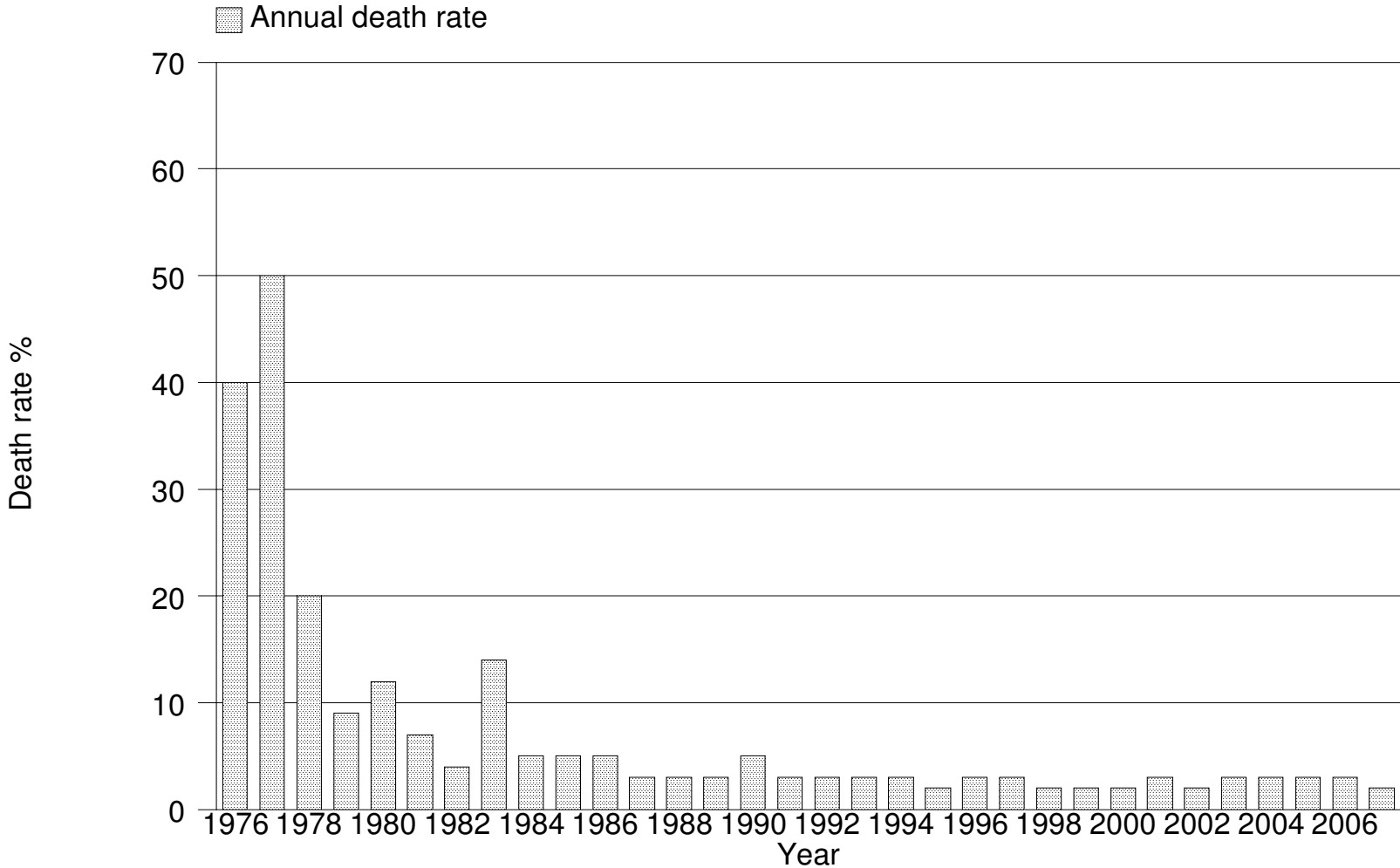
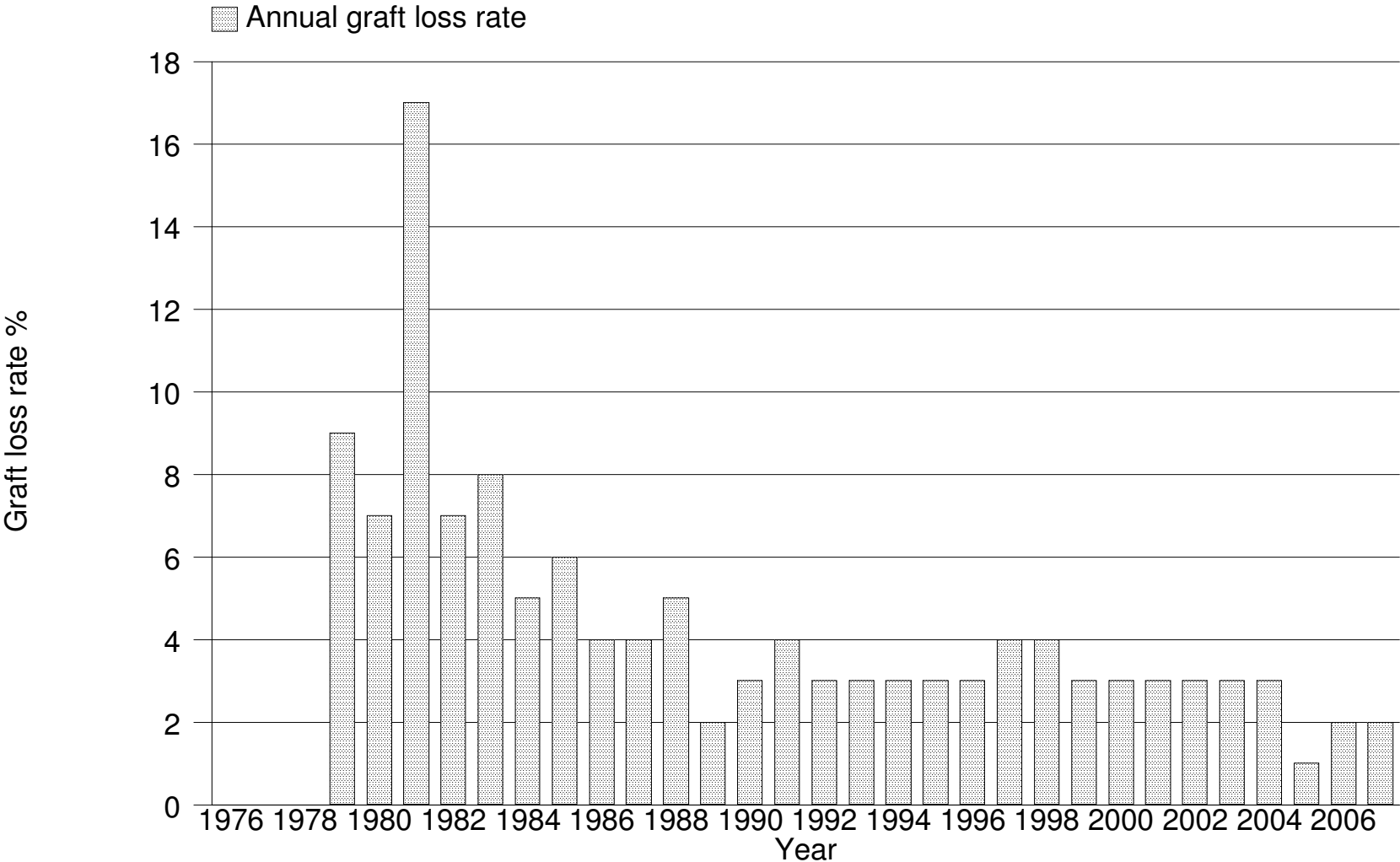


Figure 14.4.2(ii): transplant Recipient Graft Loss Rate, 1976-2007



**Table 14.4.3: Causes of Death in Transplant Recipients, 1998-2007**

Year	1998		1999		2000		2001		2002	
	No.	%	No.	%	No.	%	No.	%	No.	%
Cardiovascular	3	11	4	13	10	29	7	16	5	16
Died at home	4	15	6	19	1	3	5	12	5	16
Infection	10	37	7	23	12	35	20	47	9	28
Graft failure	0	0	0	0	2	6	0	0	0	0
Cancer	3	11	3	10	2	6	6	14	4	13
Liver disease	2	7	3	10	1	3	1	2	3	9
Accidental death	0	0	1	3	1	3	1	2	1	3
Others	2	7	5	16	3	9	2	5	3	9
Unknown	3	11	2	6	2	6	1	2	2	6
<b>TOTAL</b>	<b>27</b>	<b>100</b>	<b>31</b>	<b>100</b>	<b>34</b>	<b>100</b>	<b>43</b>	<b>100</b>	<b>32</b>	<b>100</b>

Year	2003		2004		2005		2006		2007	
	No.	%	No.	%	No.	%	No.	%	No.	%
Cardiovascular	9	23	4	9	5	11	10	18	7	18
Died at home	5	12	6	13	5	11	7	13	4	10
Infection	11	28	11	24	22	50	22	40	13	33
Graft failure	0	0	2	4	0	0	0	0	3	8
Cancer	6	15	8	18	5	11	4	7	6	15
Liver disease	2	5	3	7	3	7	5	9	0	0
Accidental death	0	0	0	0	0	0	0	0	0	0
Others	5	12	10	22	3	7	4	7	2	5
Unknown	2	5	1	2	1	2	3	5	4	10
<b>TOTAL</b>	<b>40</b>	<b>100</b>	<b>45</b>	<b>100</b>	<b>44</b>	<b>100</b>	<b>55</b>	<b>100</b>	<b>39</b>	<b>100</b>

**Table 14.4.4: Causes of Graft Failure, 1998-2007**

Year	1998		1999		2000		2001		2002	
	No.	%	No.	%	No.	%	No.	%	No.	%
Rejection	28	53	23	64	19	59	25	61	22	55
Calcineurin toxicity	0	0	0	0	0	0	0	0	0	0
Other drug toxicity	0	0	0	0	0	0	0	0	0	0
Ureteric obstruction	0	0	0	0	0	0	0	0	0	0
Infection	1	2	0	0	1	3	2	5	0	0
Vascular causes	3	6	1	3	3	9	1	2	0	0
Recurrent/ de novo renal disease	1	2	0	0	0	0	2	5	2	5
Others	5	9	0	0	2	6	0	0	4	10
Unknown	15	28	12	33	7	22	11	27	12	30
<b>TOTAL</b>	<b>53</b>	<b>100</b>	<b>36</b>	<b>100</b>	<b>32</b>	<b>100</b>	<b>41</b>	<b>100</b>	<b>40</b>	<b>100</b>

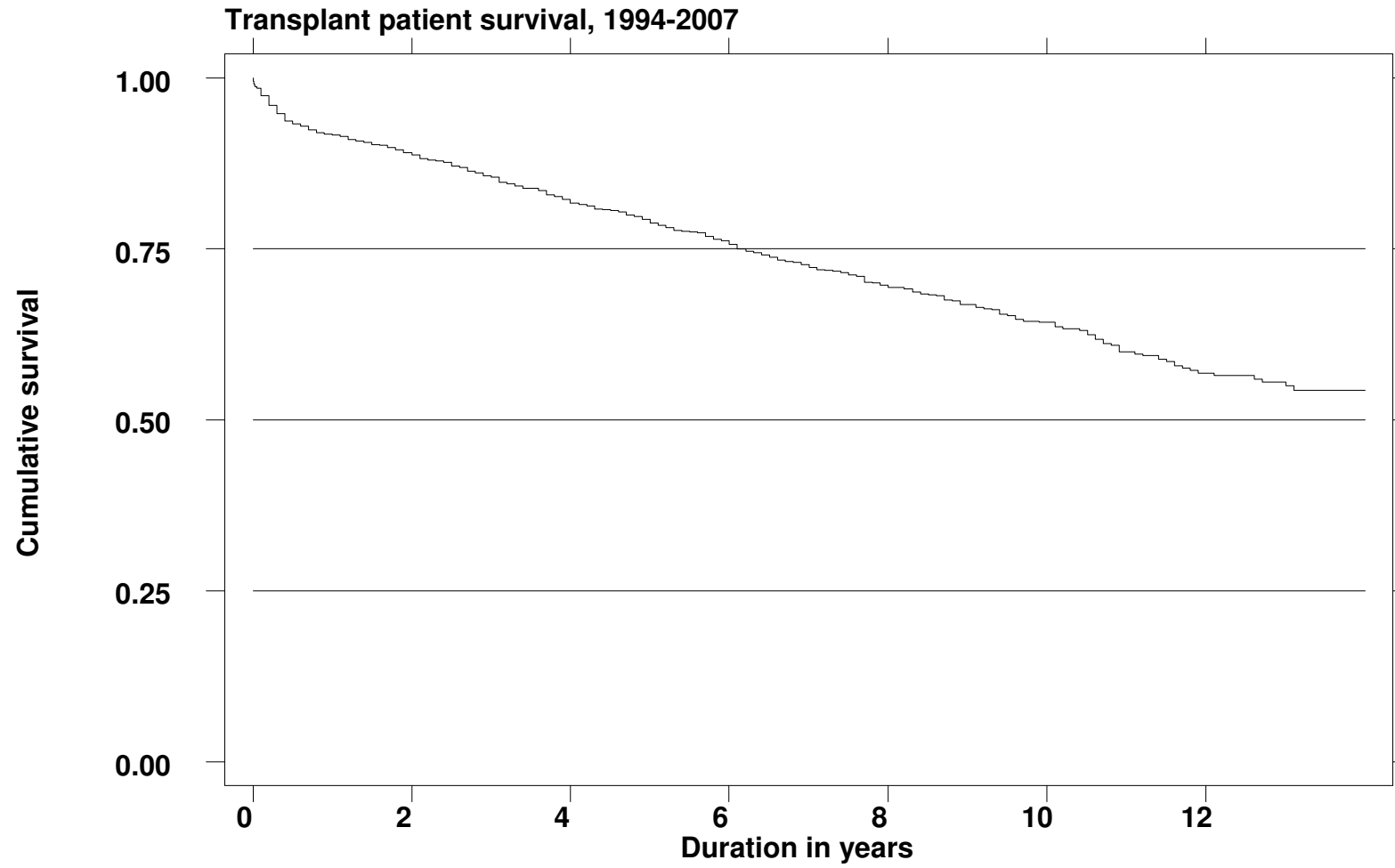
Year	2003		2004		2005		2006		2007	
	No.	%	No.	%	No.	%	No.	%	No.	%
Rejection	21	48	33	70	18	75	28	68	25	69
Calcineurin toxicity	0	0	0	0	0	0	1	2	0	0
Other drug toxicity	0	0	1	2	0	0	0	0	0	0
Ureteric obstruction	0	0	0	0	0	0	0	0	1	3
Infection	2	5	1	2	1	4	3	7	1	3
Vascular causes	3	7	4	9	2	8	3	7	1	3
Recurrent/ de novo renal disease	2	5	1	2	0	0	1	2	0	0
Others	1	2	0	0	1	4	3	7	4	11
Unknown	15	34	7	15	2	8	2	5	4	11
<b>TOTAL</b>	<b>44</b>	<b>100</b>	<b>47</b>	<b>100</b>	<b>24</b>	<b>100</b>	<b>41</b>	<b>100</b>	<b>36</b>	<b>100</b>

**Table 14.5.1: Patient survival, 1994-2007**

Interval (years)	No.	% Survival	SE
1	1777	95	1
3	1380	91	1
5	993	88	1
10	349	81	1
12	151	76	2

\*No.=at risk SE=standard error

Figure 14.5.1: Patient survival, 1994-2007



**Table 14.5.2: Graft survival, 1994-2007**

Interval (years)	No.	% Survival	SE
1	1777	92	1
3	1380	85	1
5	993	79	1
10	349	64	1
12	151	57	2

\*No.=Number at risk

SE=standard error

Figure 14.5.2: Graft survival, 1994-2007



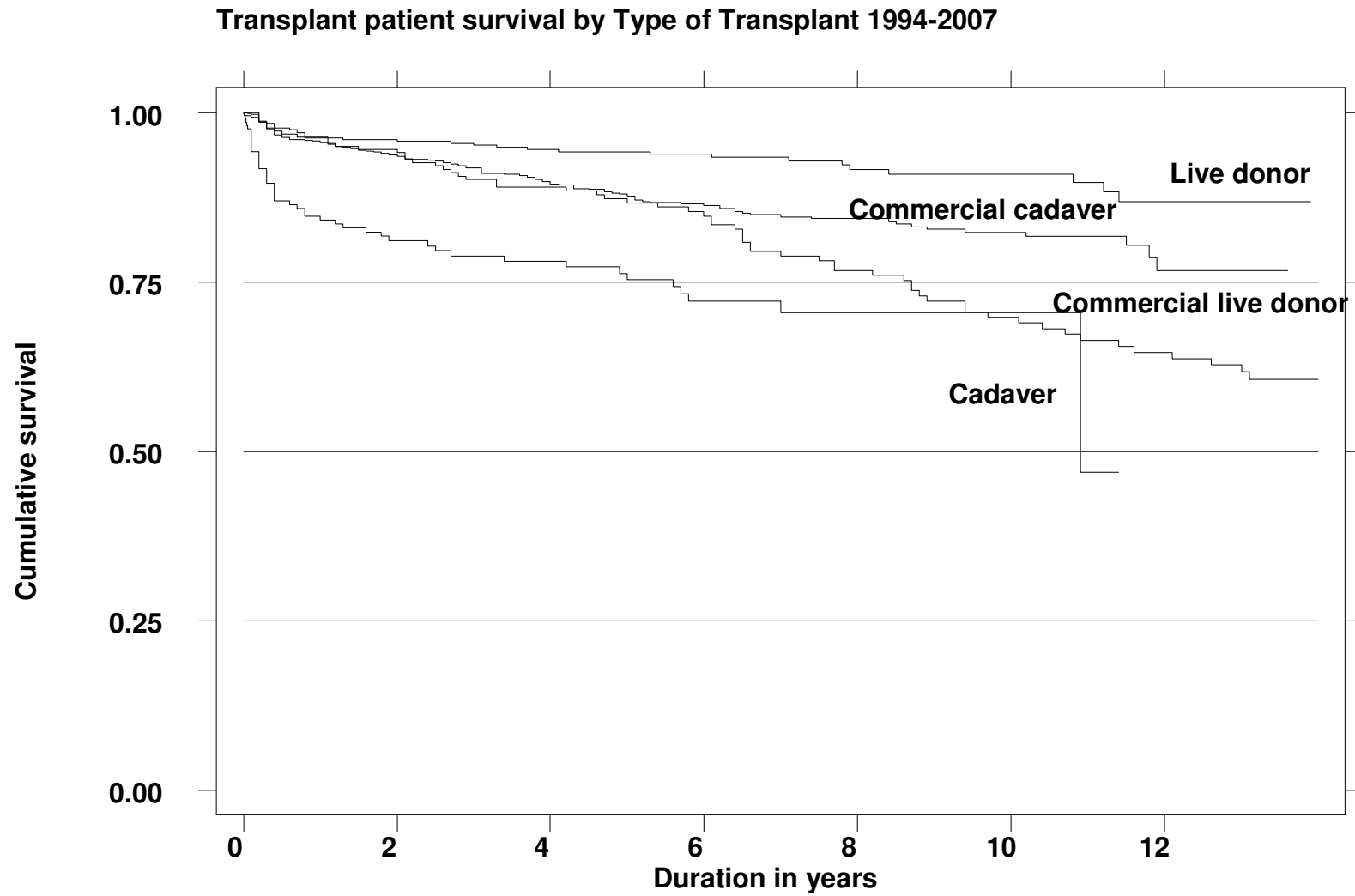
**Table 14.5.3: Patient survival by type of transplant, 1994-2007**

Type of Transplant Interval (years)	Commercial Cadaver			Commercial Live Donor			Live Donor			Cadaver		
	No.	% Survival	SE	No.	% Survival	SE	No.	% Survival	SE	No.	% Survival	SE
1	997	96	1	212	96	1	395	96	1	146	84	3
3	770	92	1	174	90	2	312	95	1	104	79	3
5	500	88	1	144	87	2	254	94	1	80	75	3
10	161	82	2	86	70	4	91	91	2	7	70	4
12	34	77	3	70	65	4	45	87	3	2	-	-

\*No.=Number at risk

SE=standard error

Figure 14.5.3: Patient survival by type of transplant, 1994-2007

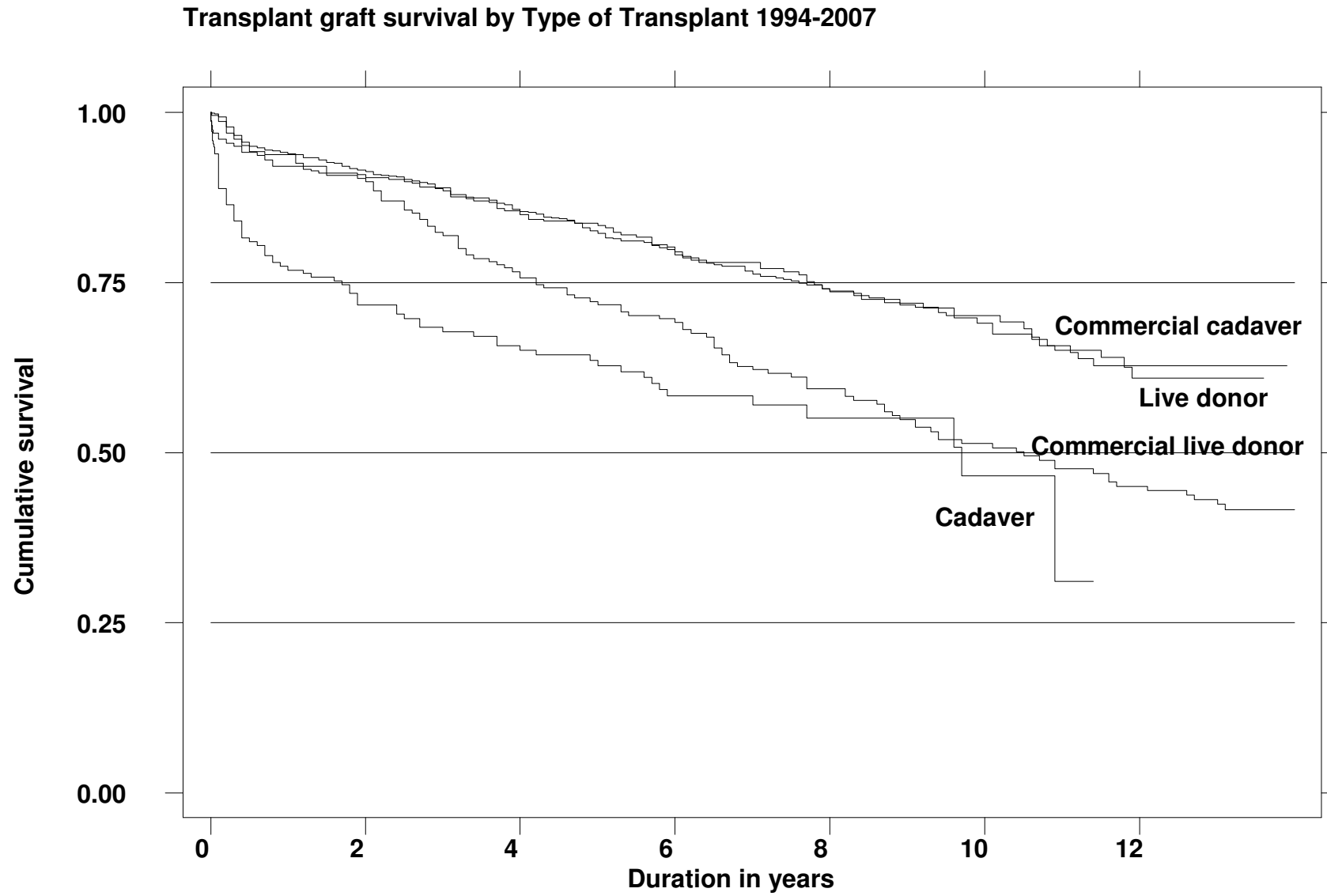


**Table 14.5.4: Graft survival by type of transplant, 1994-2007**

Type of Transplant Interval (years)	Commercial Cadaver			Commercial Live Donor			Live Donor			Cadaver		
	No.	% Survival	SE	No.	% Survival	SE	No.	% Survival	SE	No.	% Survival	SE
1	997	94%	1%	212	94%	2%	395	92%	1%	146	77%	3%
3	770	89%	1%	174	82%	3%	312	88%	2%	104	68%	3%
5	500	82%	1%	144	72%	3%	254	83%	2%	80	63%	4%
10	161	70%	2%	86	51%	4%	91	69%	3%	7	47%	7%
12	34	61%	3%	70	45%	4%	45	63%	4%	2	.	.

\*No.=Number at risk      SE=standard error

Figure 14.5.4: Graft survival by type of transplants, 1994-2007



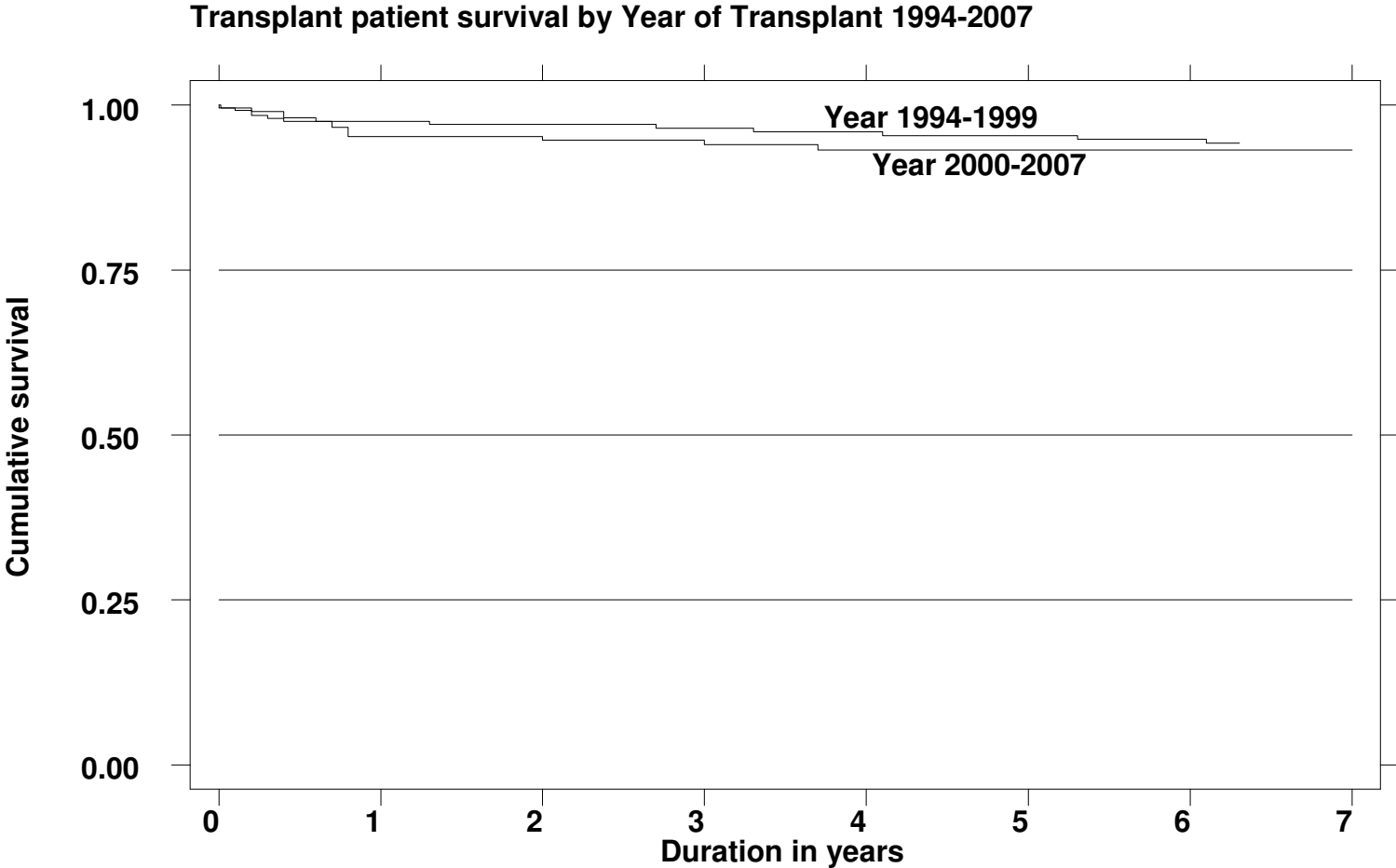
**Table 14.5.5: Patient survival by year of transplant (Living related transplant, 1994-2007)**

Year of Transplant Interval (years)	1994-1999			2000-2007		
	No.	% Survival	SE	No.	% Survival	SE
1	192	98	1	204	95	1
3	181	96	1	132	94	2
5	169	95	2	86	93	2
7	159	94	2	21	93	2

\*No.=Number at risk

SE=standard error

Figure 14.5.5: Patient survival by year of transplant (Living related transplant, 1994-2007)



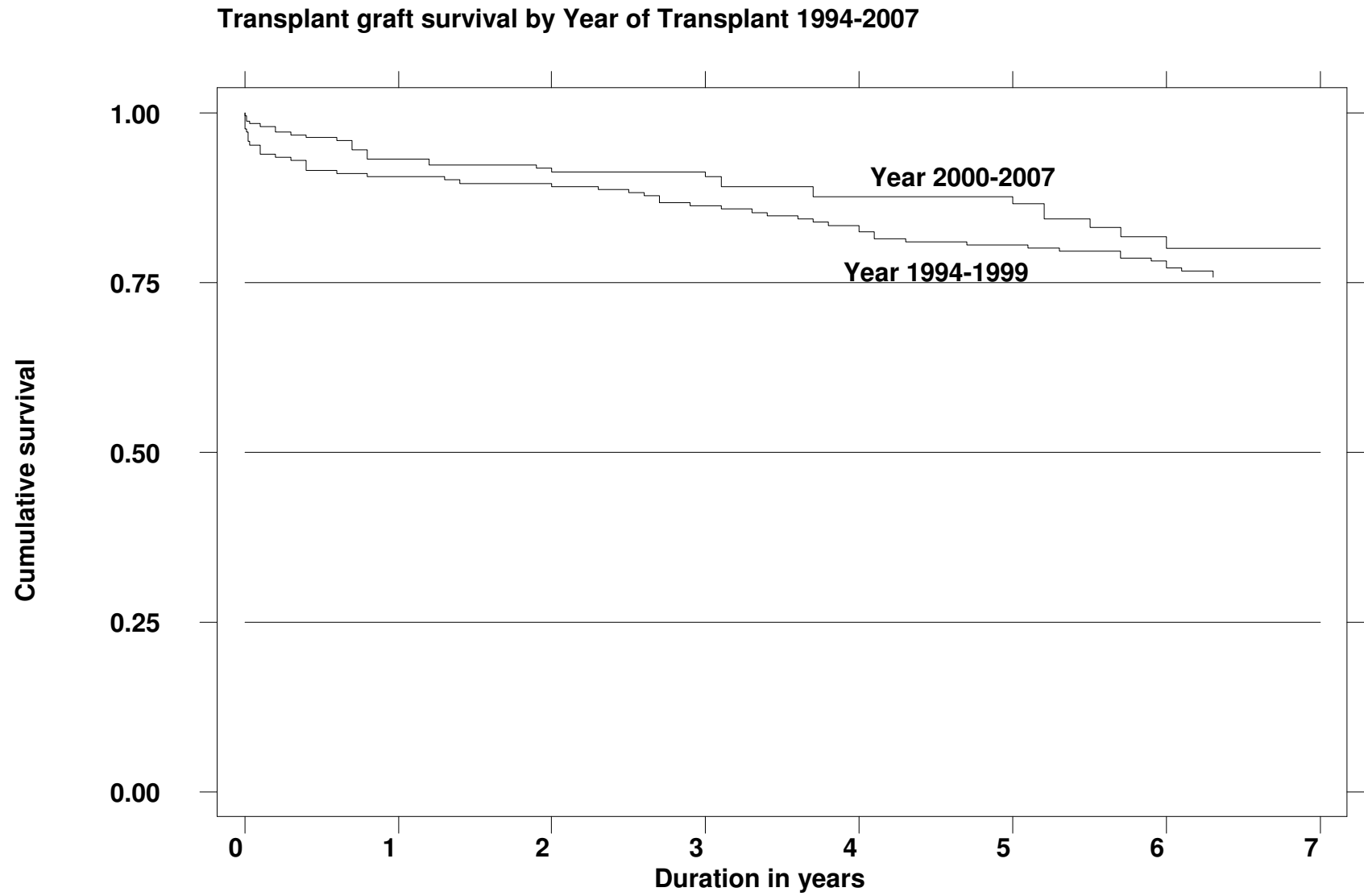
**Table14.5.6: Graft survival by year of transplant (Living related transplant, 1994-2007)**

Year of Transplant Interval (years)	1994-1999			2000-2007		
	No.	% Survival	SE	No.	% Survival	SE
1	192	91	2	204	93	2
3	181	86	2	132	91	2
5	169	81	3	86	87	3
7	159	76	3	21	80	4

\*No.=Number at risk

SE=standard error

Figure 14.5.6: Graft survival by year of transplant (Living related transplant, 1994-2007)



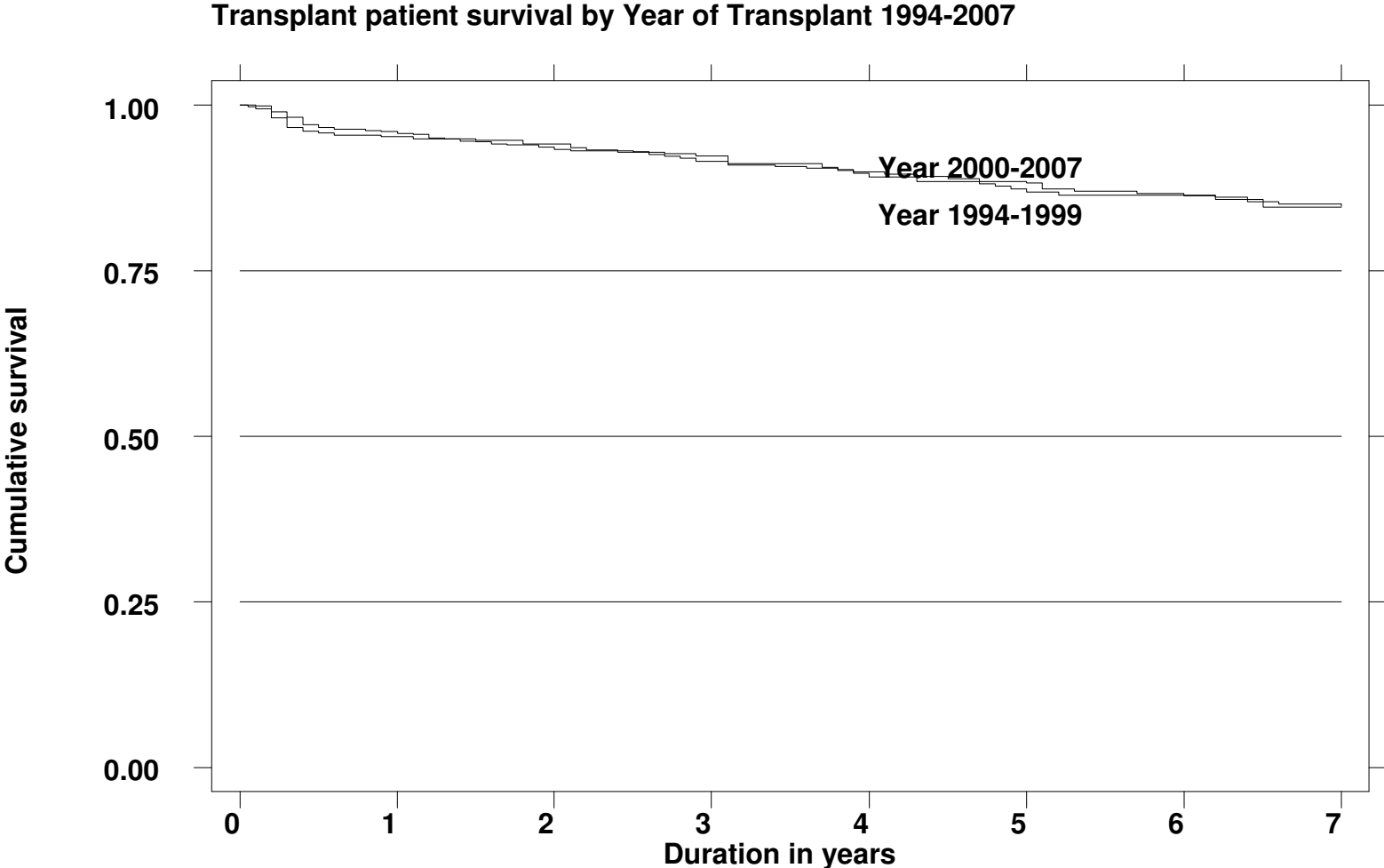
**Table 14.5.7: Patient survival by year of transplant (Commercial cadaver transplant, 1994-2007)**

Year of Transplant Interval (years)	1994-1999			2000-2007		
	No.	% Survival	SE	No.	% Survival	SE
1	335	95	1	663	96	1
3	317	92	1	453	92	1
5	289	88	2	211	87	2
7	262	85	2	59	85	2

\*No.=Number at risk

SE=standard error

Figure 14.5.7: Patient survival by year of transplant (Commercial cadaver transplant, 1994-2007)



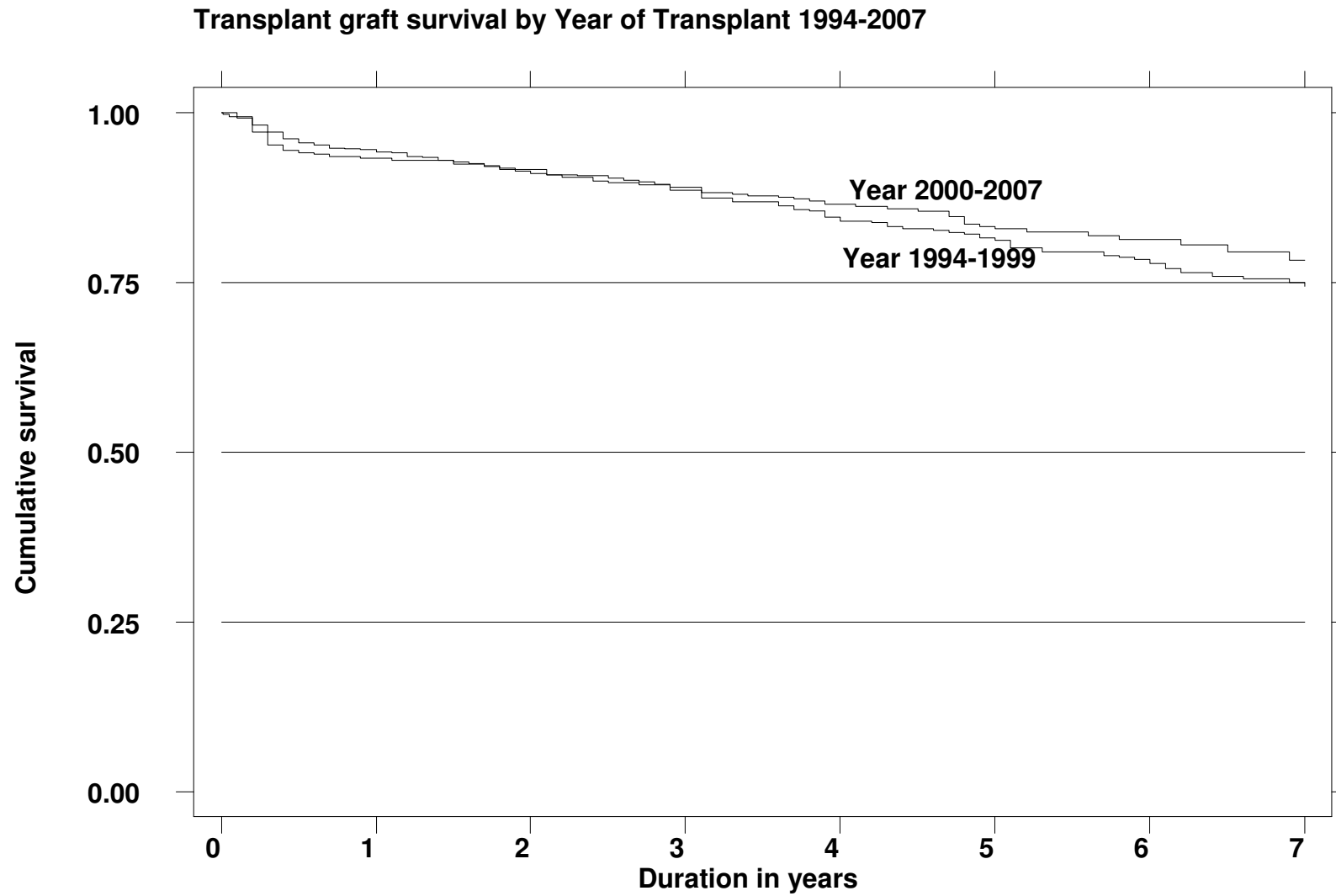
**Table 14.5.8: Graft survival by year of transplant (Commercial cadaver transplant, 1994-2007)**

Year of Transplant Interval (years)	1994-1999			2000-2007		
	No.	% Survival	SE	No.	% Survival	SE
1	335	93	1	663	94	1
3	317	89	2	453	89	1
5	289	81	2	211	83	2
7	262	74	2	59	78	3

\*No.=Number at risk

SE=standard error

Figure 14.5.8: Graft survival by year of transplant (Commercial cadaver transplant, 1994-2007)



**Table 14.6.1: Risk factors for IHD in renal transplant recipients at year 2005, 2006 and 2007**

	2005	2006	2007
Diabetes	19 (1.2)	21 (1.4)	25 (1.6)
Hypertension**	511 (33.4)	456 (31.2)	590 (37.5)
CKD	142 (9.3)	177 (12.1)	126 (8.0)
Diabetes + Hypertension**	160 (10.4)	154 (10.5)	174 (11.1)
Diabetes + CKD	20 (1.3)	18 (1.2)	11 (0.7)
CKD + Hypertension**	538 (35.1)	490 (33.5)	517 (32.8)
Diabetes + CKD + Hypertension**	142 (9.3)	147 (10.0)	131 (8.3)

\*\*Hypertension: BP systolic > 140 and BP diastolic > 90

OR have either Beta blocker / Calcium channel blocker / ACE inhibitor / AIIIRB / Other anti-hypertensive drugs

GFR (mL/min/1.73m<sup>2</sup>) = 1.2\*(140-age(year))\*weight(kg) / creatinine (µmol/L) if male

GFR (mL/min/1.73m<sup>2</sup>) = 0.85\*(1.2\*(140-age(year))\*weight(kg) / creatinine (µmol/L) if female

CKD stage III-GFR, 30-60

CKD stage IV-GFR, 15-30

CKD stage V-GFR, <15

Figure 14.6.1(a); Venn Diagram for Pre and Post Transplant Complications (in %) at year 2005

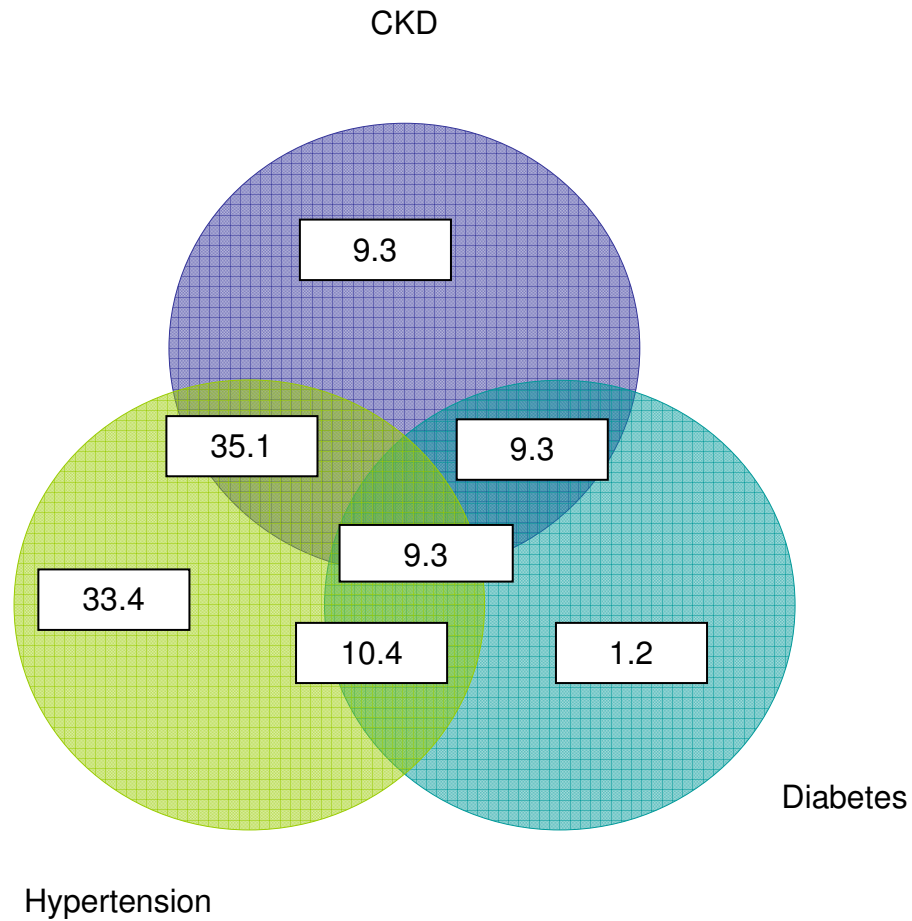


Figure 14.6.1(b); Venn Diagram for Pre and Post Transplant Complications (in %) at year 2006

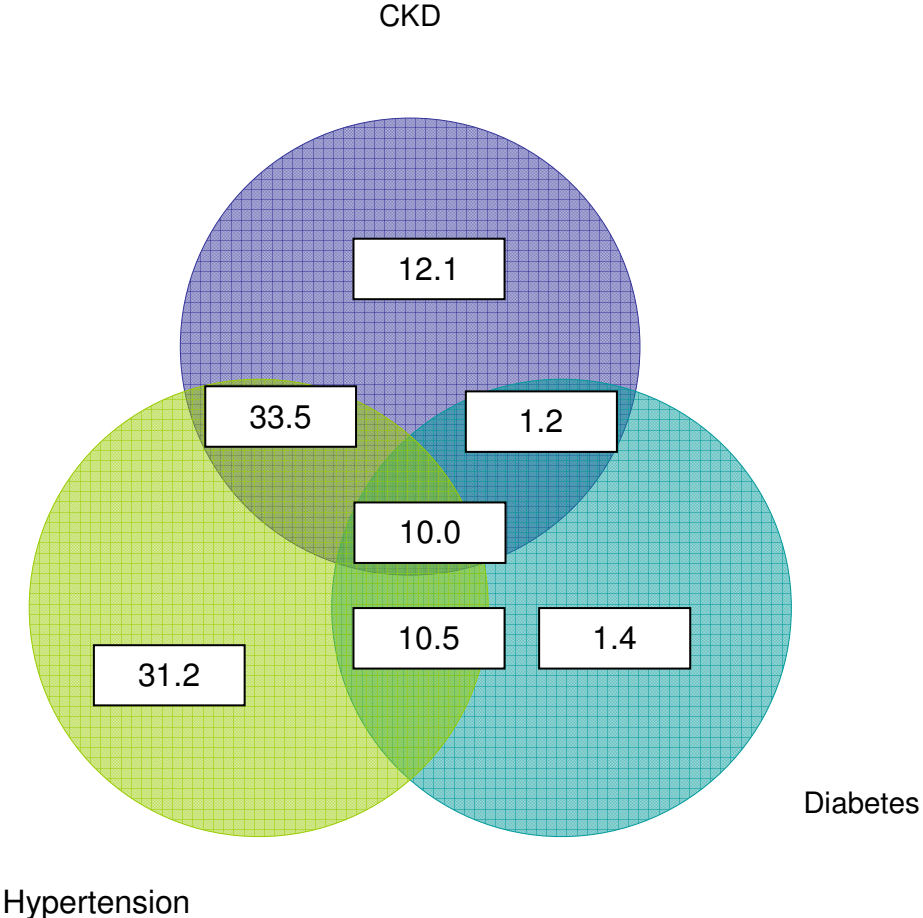
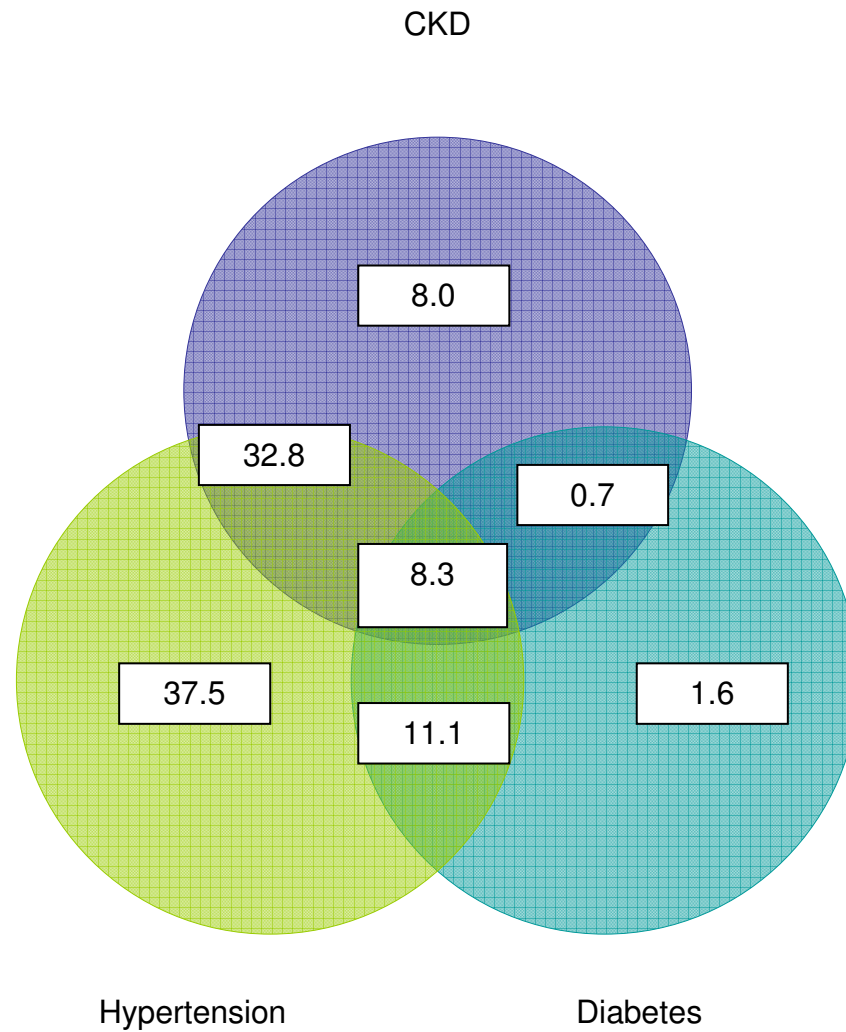


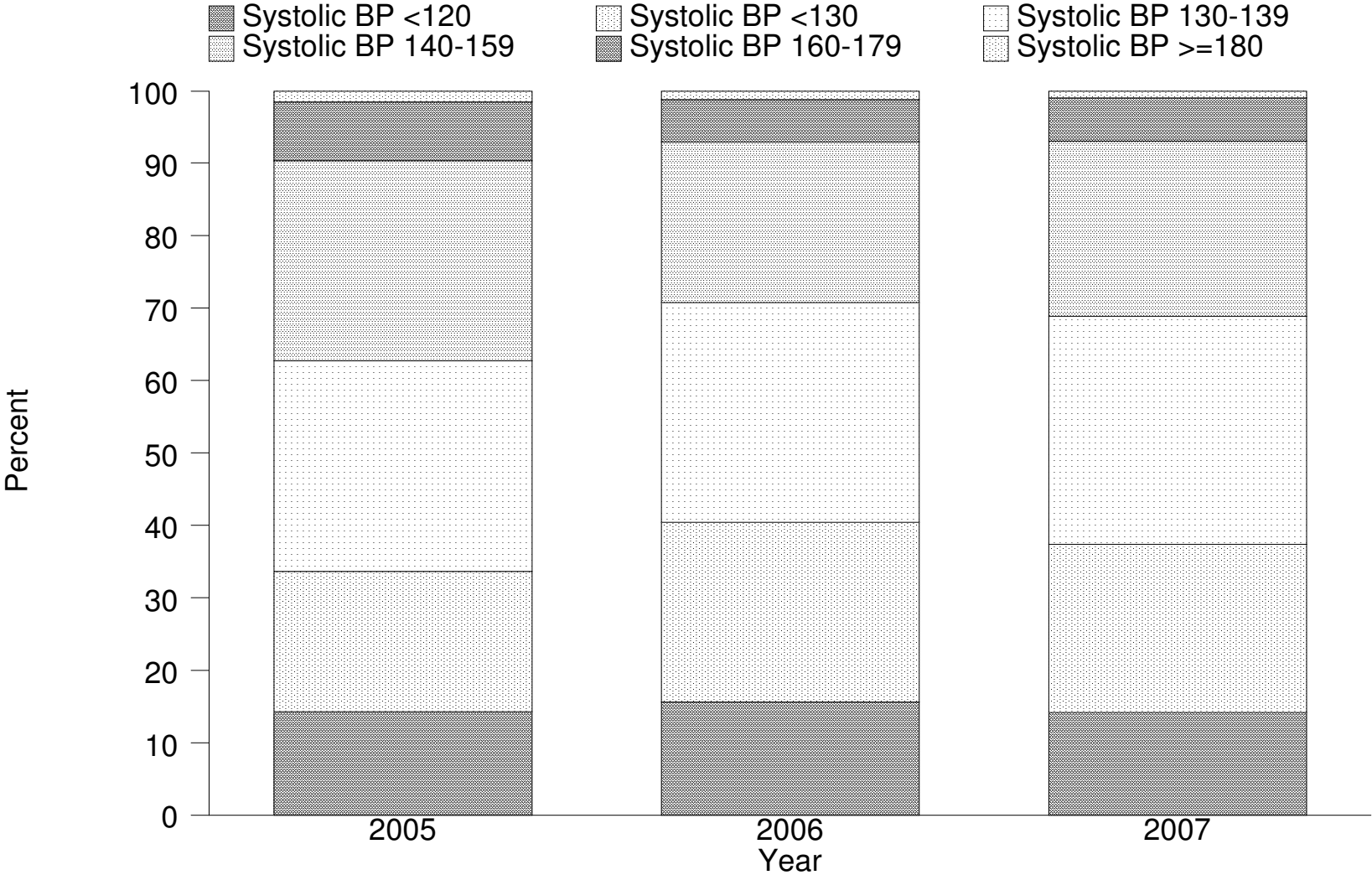
Figure 14.6.1(c); Venn Diagram for Pre and Post Transplant Complications (in %) at year 2007



**Table 14.6.2(a): Systolic BP, 2005-2007**

Year	2005		2006		2007	
	No.	(%)	No.	(%)	No.	(%)
Systolic BP<120	233	(14.25)	249	(15.64)	239	(14.18)
Systolic BP <130	318	(19.45)	395	(24.81)	392	(23.26)
Systolic BP 130-139	475	(29.05)	483	(30.34)	529	(31.39)
Systolic BP 140-159	452	(27.65)	353	(22.17)	409	(24.27)
Systolic BP 160-179	133	(8.13)	93	(5.84)	99	(5.88)
Systolic BP >=180	24	(1.47)	19	(1.19)	17	(1.01)

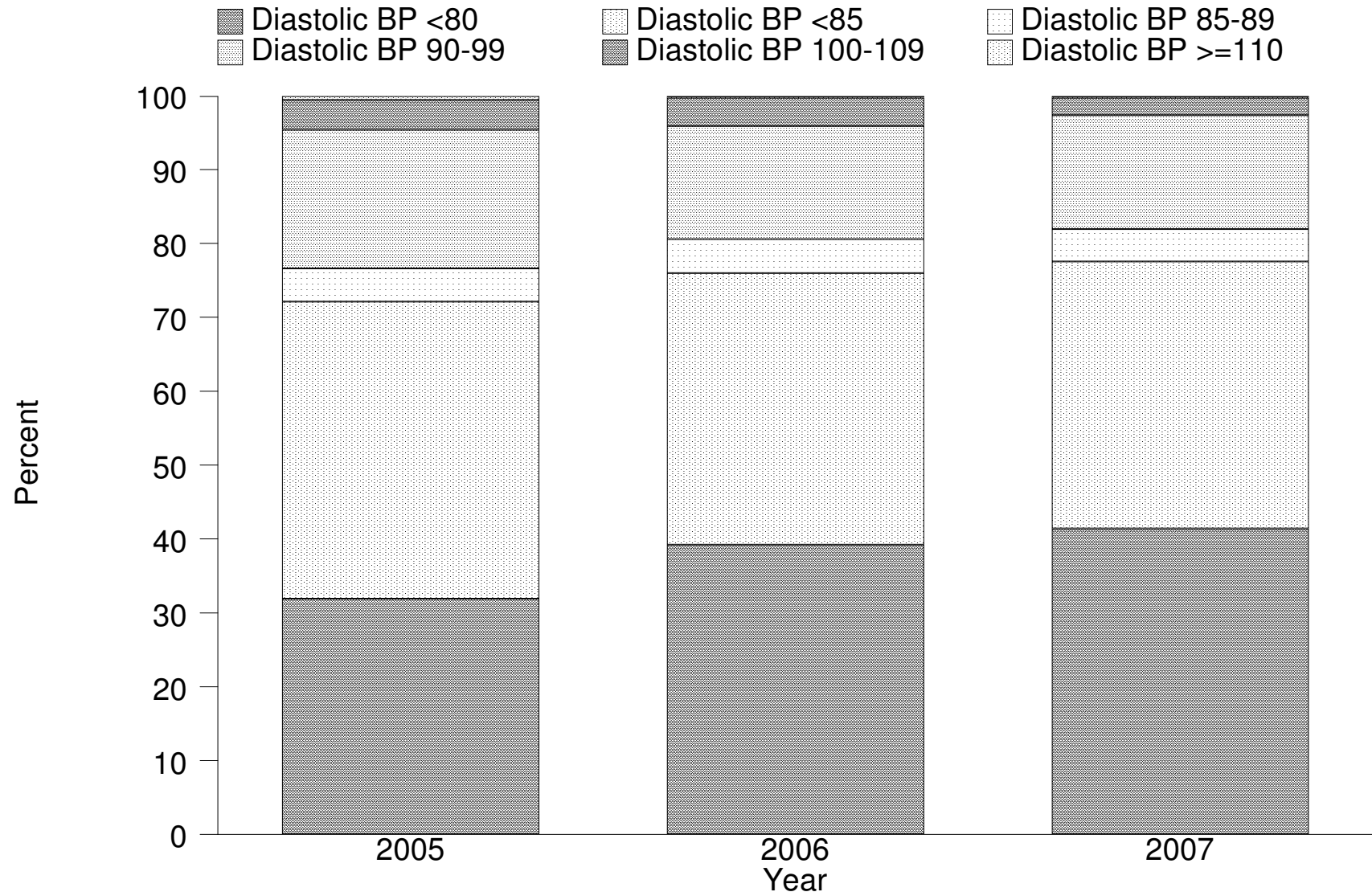
Figure 14.6.2(a): Systolic BP, 2005-2007



**Table 14.6.2(b): Diastolic BP, 2005-2007**

Year	2005		2006		2007	
	No.	(%)	No.	(%)	No.	(%)
Diastolic BP<80	522	(31.93)	624	(39.20)	697	(41.36)
Diastolic BP <85	657	(40.18)	586	(36.81)	609	(36.14)
Diastolic BP 85-89	73	(4.46)	73	(4.59)	74	(4.39)
Diastolic BP 90-99	308	(18.84)	244	(15.33)	261	(15.49)
Diastolic BP 100-109	65	(3.98)	61	(3.83)	39	(2.31)
Diastolic BP >=110	10	(0.61)	4	(0.25)	5	(0.30)

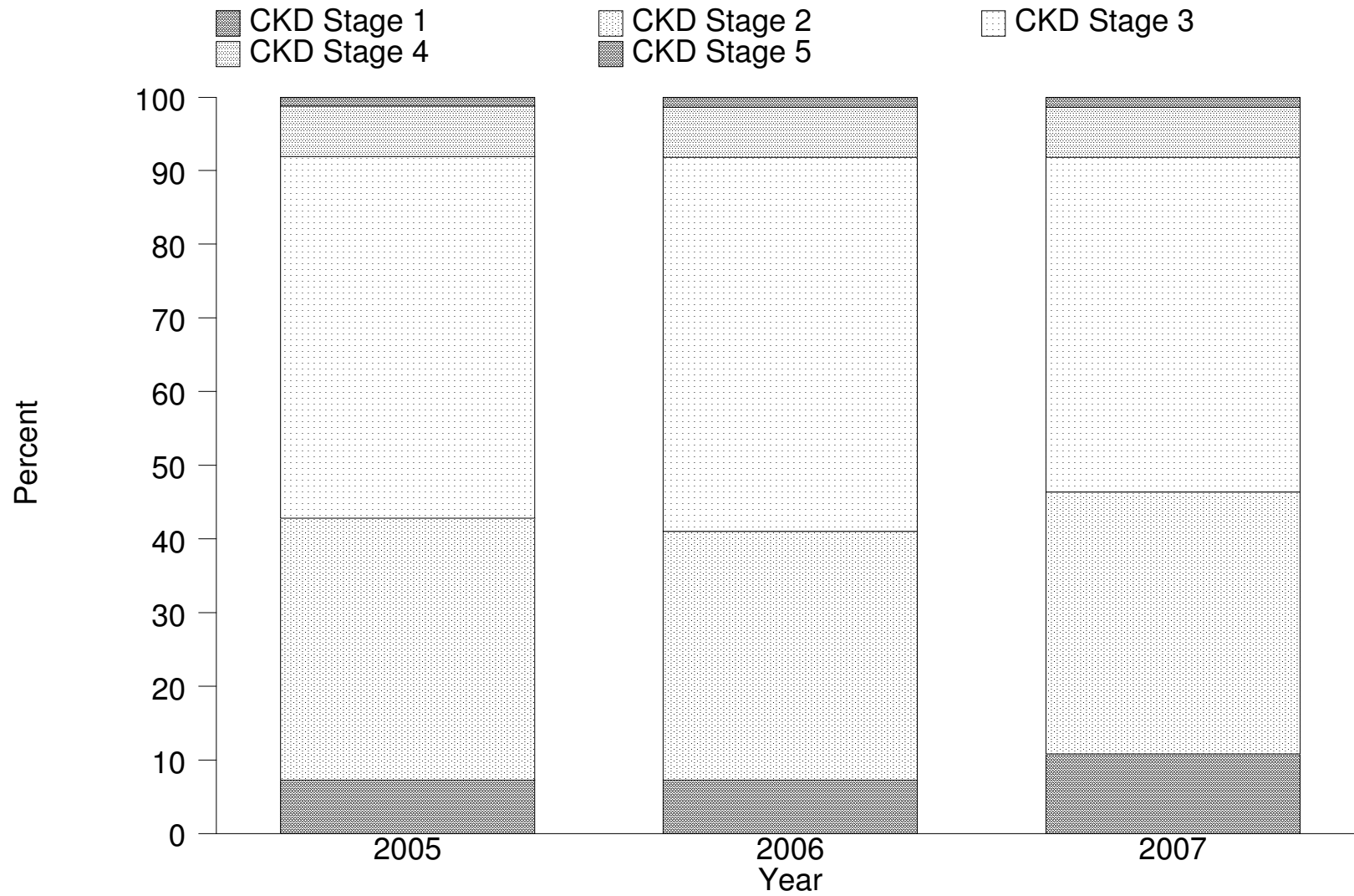
**Figure 14.6.2(b): Diastolic BP, 2005-2007**



**Table 14.6.3: CKD stages, 2005-2007**

Year	2005		2006		2007	
	No.	(%)	No.	(%)	No.	(%)
CKD stage 1	118	(7.25)	116	(7.33)	180	(10.80)
CKD stage 2	579	(35.59)	534	(33.73)	593	(35.57)
CKD stage 3	799	(49.11)	804	(50.79)	758	(45.47)
CKD stage 4	112	(6.88)	107	(6.76)	113	(6.78)
CKD stage 5	19	(1.17)	22	(1.39)	23	(1.38)

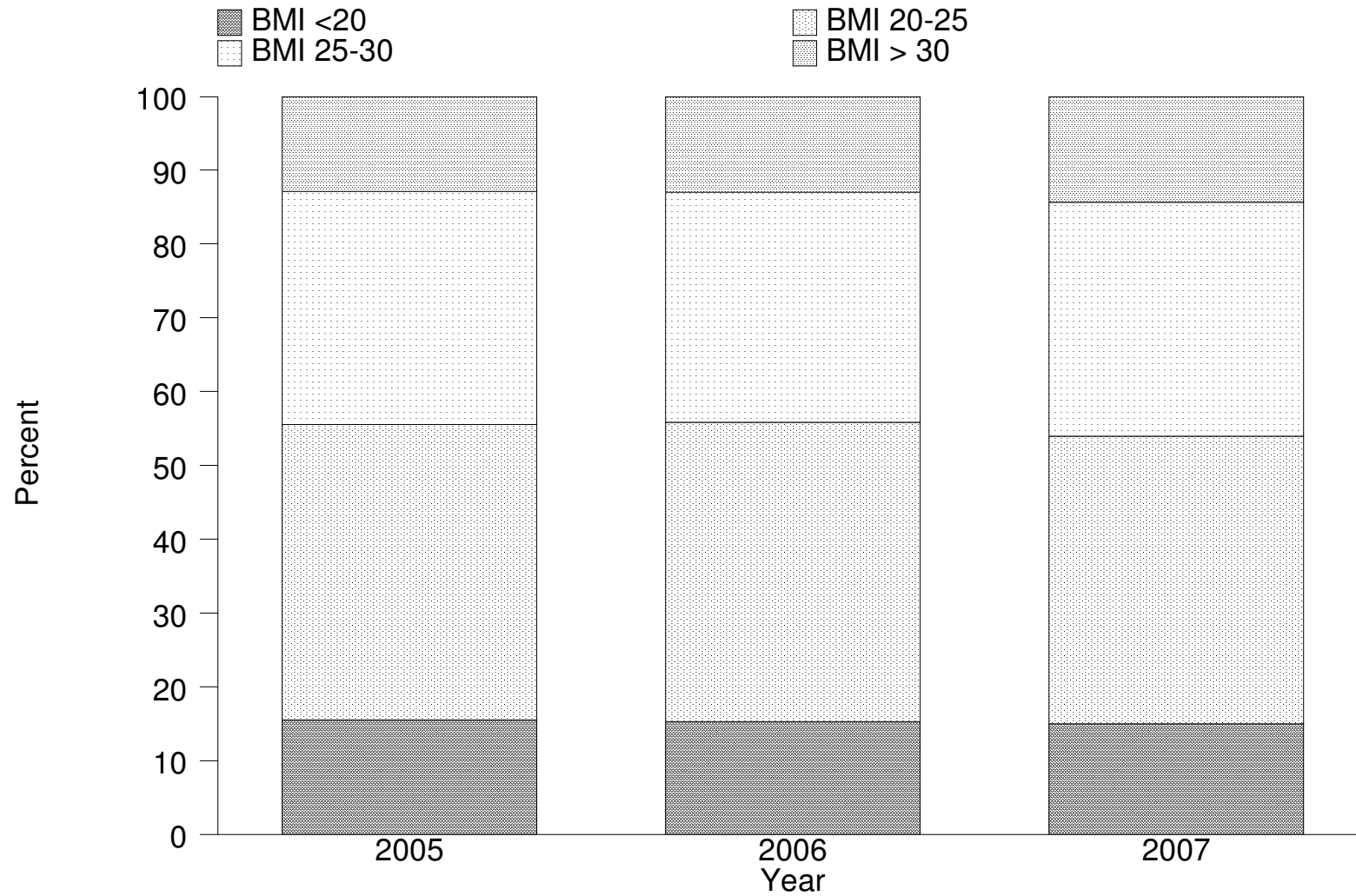
Figure 14.6.3: CKD stages by year



**Table 14.6.4: BMI, 2005-2007**

Year	2005		2006		2007	
	No.	(%)	No.	(%)	No.	(%)
BMI <20	254	(15.54)	243	(15.26)	253	(15.01)
BMI 20-25	655	(40.06)	646	(40.58)	657	(38.99)
BMI 25-30	515	(31.50)	497	(31.22)	534	(31.69)
BMI > 30	211	(12.91)	206	(12.94)	241	(14.30)

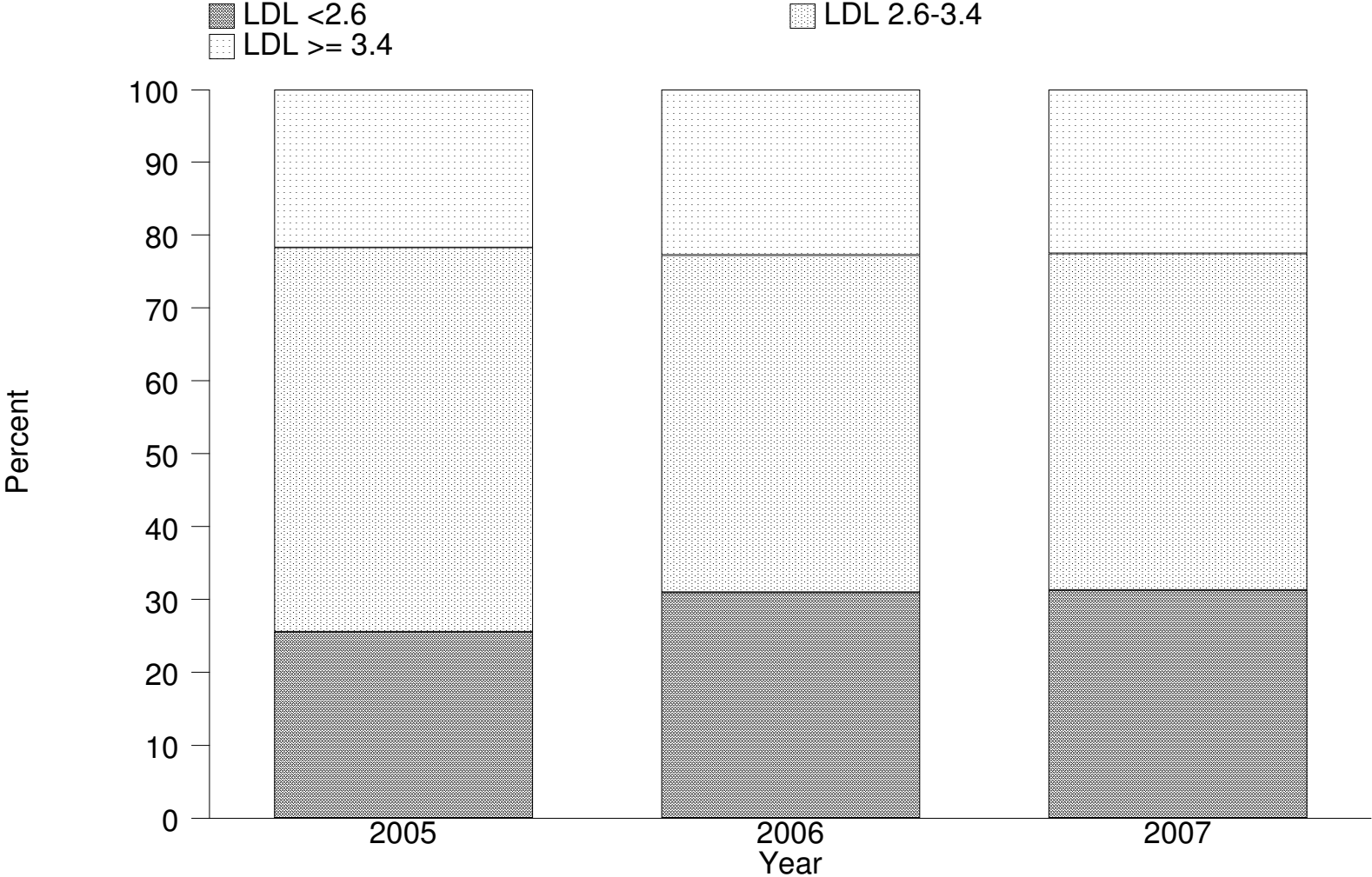
Figure 14.6.4: BMI by year



**Table 14.6.5(a): LDL, 2005-2007**

Year	2005		2006		2007	
	No.	(%)	No.	(%)	No.	(%)
LDL < 2.6	418	(25.57)	492	(30.90)	527	(31.28)
LDL 2.6-3.4	862	(52.72)	738	(46.36)	777	(46.11)
LDL $\geq$ 3.4	355	(21.71)	362	(22.74)	381	(22.61)

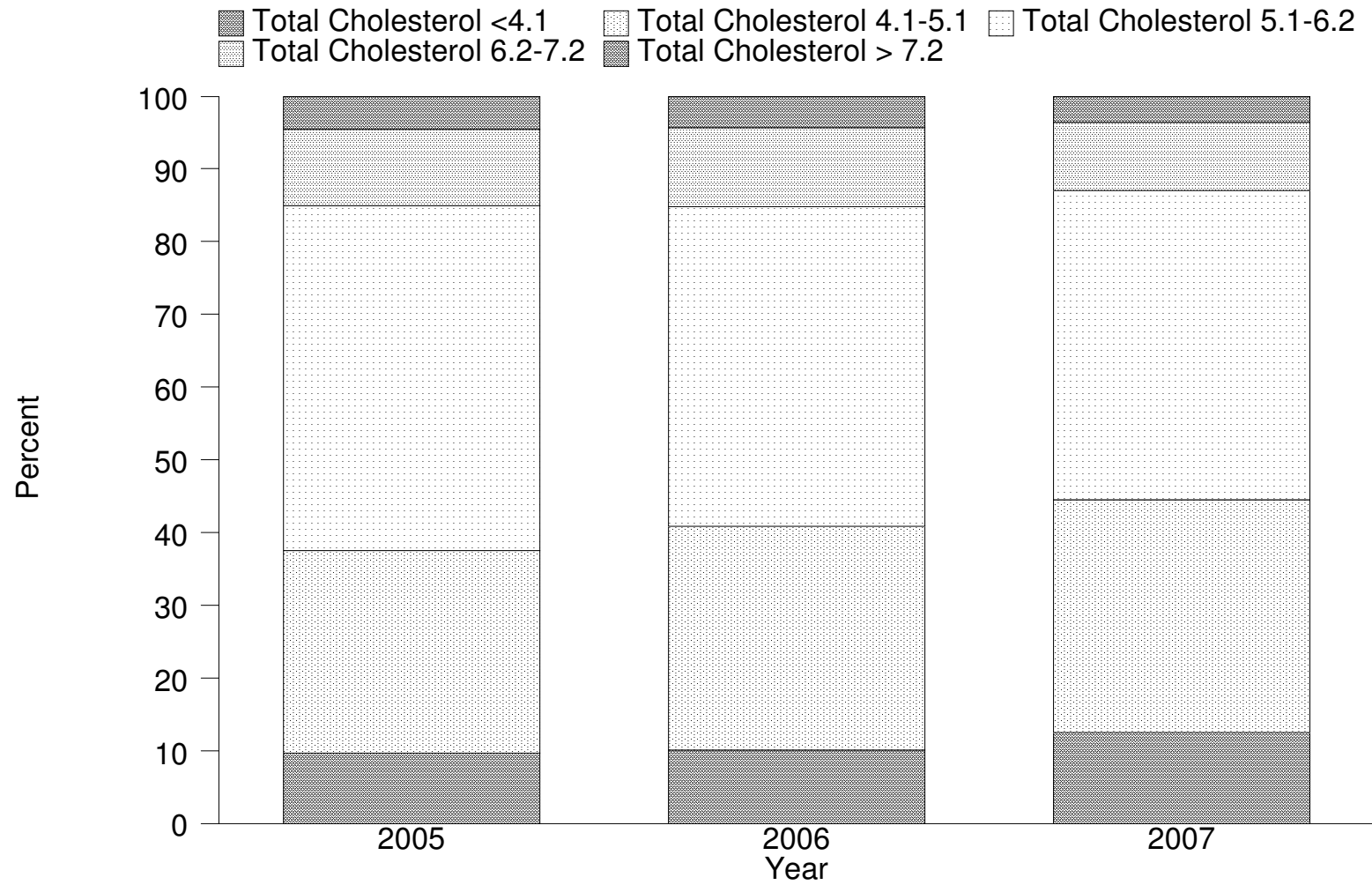
Figure 14.6.5(a): LDL, 2005-2007



**Table 14.6.5(b): Total Cholesterol, 2005-2007**

Year	2005		2006		2007	
	No.	(%)	No.	(%)	No.	(%)
Total Cholesterol <4.1	159	(9.72)	160	(10.05)	210	(12.46)
Total Cholesterol 4.1-5.1	455	(27.83)	490	(30.78)	539	(31.99)
Total Cholesterol 5.1-6.2	774	(47.34)	700	(43.97)	717	(42.55)
Total Cholesterol 6.2- 7.2	173	(10.58)	173	(10.87)	159	(9.44)
Total Cholesterol > 7.2	74	(4.53)	69	(4.33)	60	(3.56)

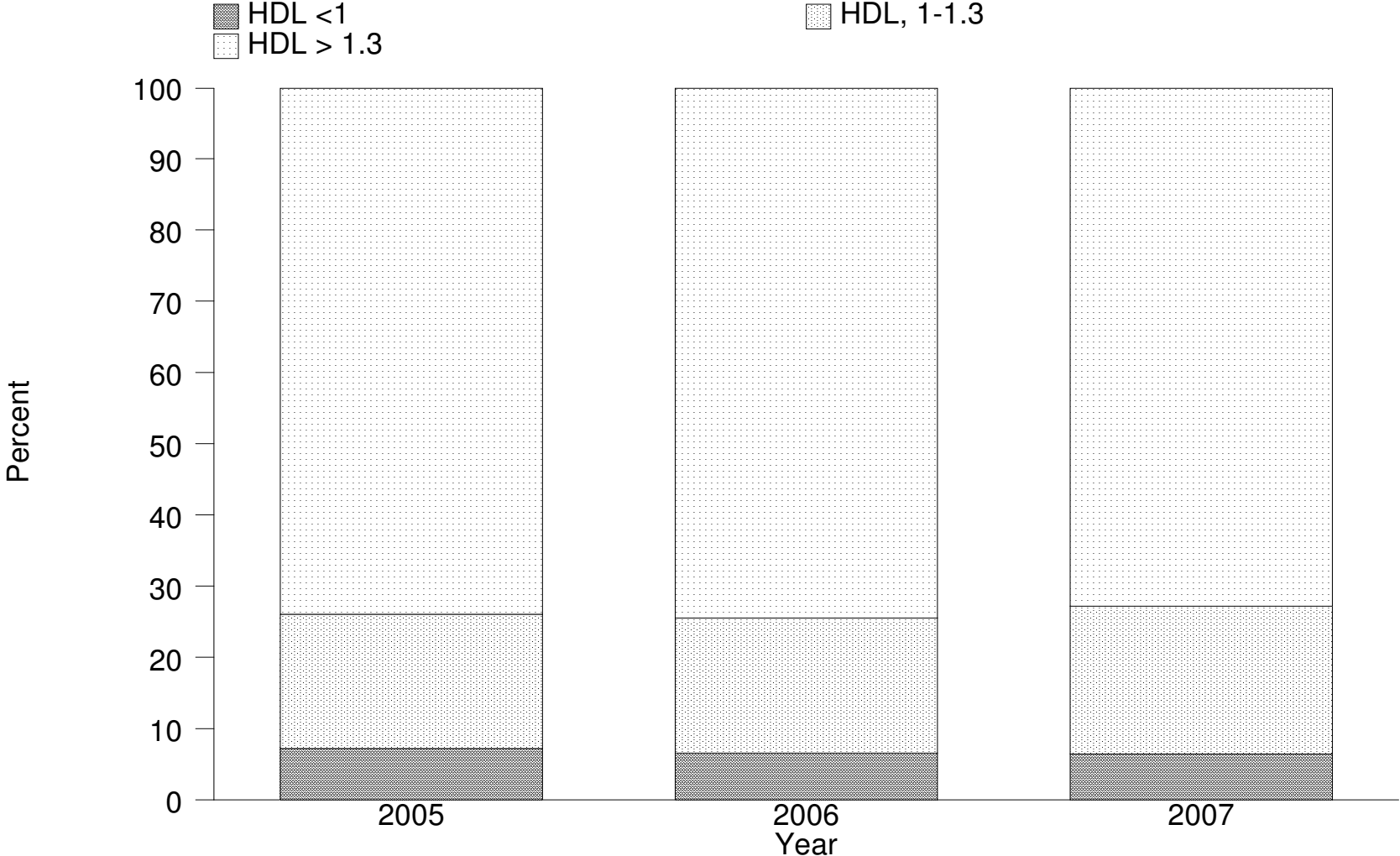
**Figure 14.6.5(b): Total Cholesterol, 2005-2007**



**Table 14.6.5(c): HDL, 2005-2007**

Year	2005		2006		2007	
	No.	(%)	No.	(%)	No.	(%)
HDL <1	118	7.217125	104	6.532663	108	6.409495
HDL 1-1.3	308	18.83792	302	18.96985	350	20.77151
HDL >1.3	1209	73.94495	1186	74.49749	1227	72.81899

Figure 14.6.5(c): HDL by year



**Table 14.6.6(a): Treatment for hypertension, 2005-2007**

Year	No.	% on anti-hypertensives	% no 1 anti-hypertensive drug	% on 2 anti-hypertensives	% on 3 anti-hypertensives
2005	1635	85	28	30	19
2006	1592	86	34	26	17
2007	1685	85	25	31	21

**Table 14.6.6(b): Distribution of Systolic BP without anti-hypertensives, 2005-2007**

Year	No.	Mean	SD	Median	LQ	UQ	% Patients $\geq$ 160mmHg
2005	229	126.9	15	130	120	137	3
2006	189	123.8	14.4	120	117	130	4
2007	195	125.3	16.5	120	114	134	4

**Table 14.6.6(c): Distribution of Diastolic BP without anti-hypertensives, 2005-2007**

Year	No.	Mean	SD	Median	LQ	UQ	% patients $\geq$ 90mmHg
2005	229	79	9	80	70	80	18
2006	189	76.4	10.3	80	70	80	11
2007	195	76.6	10	80	70	80	12

**Table 14.6.6(d): Distribution of Systolic BP on anti-hypertensives, 2005-2007**

Year	No.	Mean	SD	Median	LQ	UQ	% Patients $\geq$ 160mmHg
2005	1350	134.5	17.3	130	120	143	11
2006	1334	131.7	16.3	130	120	140	8
2007	1388	132.6	16	130	120	140	8

**Table 14.6.6(e): Distribution of Diastolic BP on anti-hypertensives, 2005-2007**

Year	No.	Mean	SD	Median	LQ	UQ	% Patients $\geq$ 90 mmHg
2005	1350	80.8	9.4	80	76	90	25
2006	1334	79.2	9.9	80	70	86	22
2007	1387	79.1	9.6	80	70	85	20