

CHAPTER 1

BLOOD AND MARROW TRANSPLANTATION

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Table 1.1.1: Stock and Flow of Blood and Marrow Transplantation, 1987-2009

Year	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
New transplant patients	8	6	22	5	12	21	19	25	30	28	33
Deaths	1	1	6	6	1	2	9	5	17	11	15
Lost to follow-up	0	0	0	0	0	0	0	0	0	0	0
Alive at 31 st December	7	12	28	27	38	57	67	87	100	117	135

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
New transplant patients	49	62	94	108	114	128	140	148	136	149	181	213
Deaths	17	16	31	47	34	56	52	63	42	50	70	43
Lost to follow-up	0	0	0	0	0	0	0	0	0	0	0	0
Alive at 31 st December	167	213	276	337	417	489	577	662	756	855	966	1136

Figure 1.1.1: Stock and Flow of Blood and Marrow Transplantation, 1987-2009

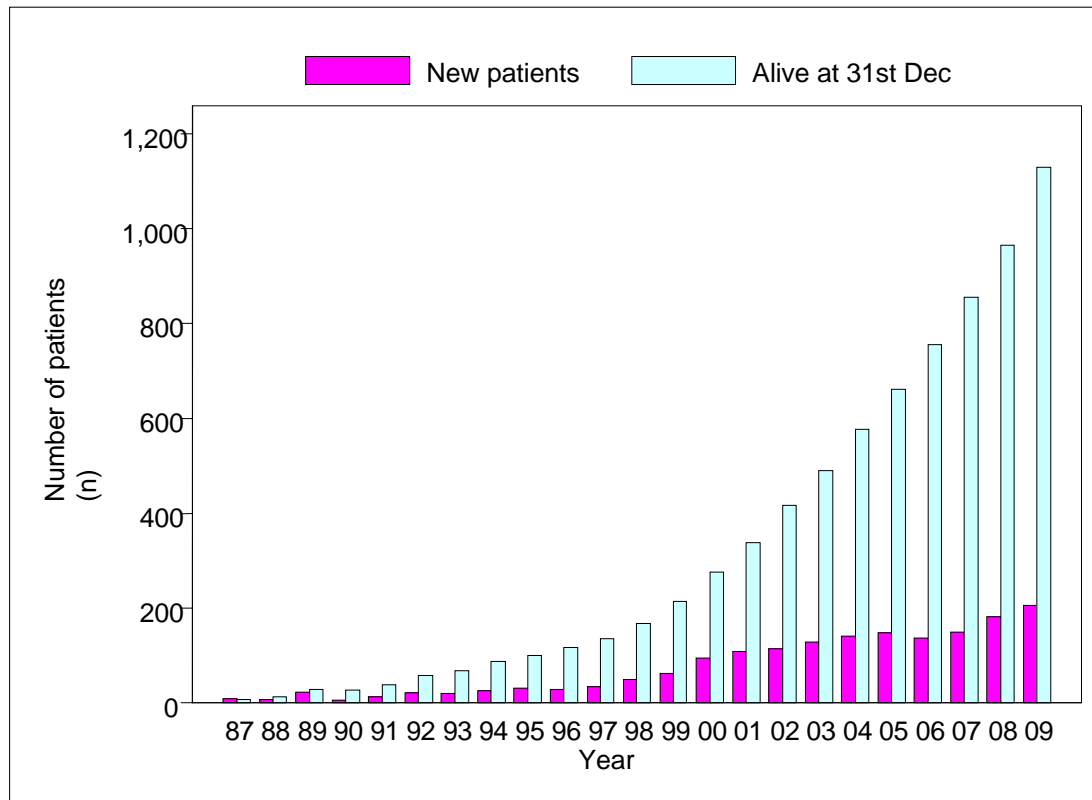


Table 1.1.2: New Transplant Rate per million population (pmp), 1987-2009

Year	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
New transplant patients	8	6	22	5	12	21	19	25	30	28	33
New transplant rate pmp	1	0	1	0	1	1	1	1	1	1	2

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
New transplant patients	49	62	94	108	114	128	140	148	136	149	181	213
New transplant rate pmp	2	3	4	5	5	5	5	6	5	5	7	8

Figure 1.1.2: New Transplant Rate per million population (pmp), 1987-2009

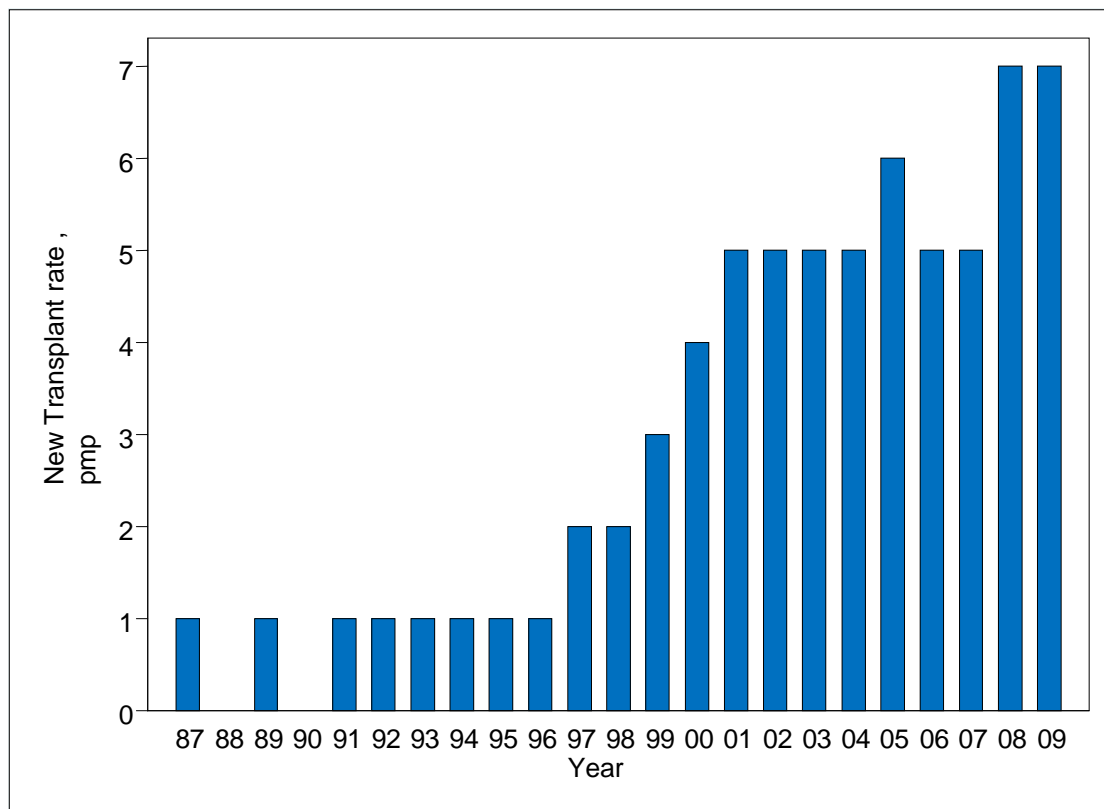


Table 1.1.3: Distribution of Patients by Transplant Centre, 1987-2009

Year	1987		1988		1989		1990		1991		1992		1993	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
KLA	0	0	0	0	0	0	0	0	0	0	0	0	0	0
KLP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UKM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SJMCA	0	0	0	0	1	5	0	0	0	0	0	0	0	0
UMA	0	0	0	0	0	0	0	0	0	0	0	0	1	5
UMP	8	100	6	100	21	95	5	100	12	100	21	100	18	95
GMC	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LWE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SJMCP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HUSM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APSH	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HA	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HPP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Others	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	8	100	6	100	22	100	5	100	12	100	21	100	19	100

Year	1994		1995		1996		1997		1998		1999		2000	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
KLA	0	0	0	0	0	0	0	0	0	0	6	10	15	16
KLP	4	16	10	33	10	36	9	27	16	33	19	31	16	17
UKM	0	0	0	0	0	0	0	0	0	0	2	3	9	10
SJA	0	0	0	0	0	0	0	0	0	0	5	8	19	20
UMA	4	16	7	23	6	21	9	27	15	30	11	18	13	14
UMP	17	68	13	43	11	39	15	46	18	37	19	31	22	23
GMC	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LWE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SJP	0	0	0	0	1	4	0	0	0	0	0	0	0	0
HUSM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APSH	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HA	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HPP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Others	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	25	100	30	100	28	100	33	100	49	100	62	100	94	100

Table 1.1.3: Distribution of Patients by Transplant Centre, 1987-2009

Year	2001		2002		2003		2004		2005		2006		2007	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
KLA	20	19	28	25	36	28	42	30	45	30	31	23	0	0
KLP	18	17	20	18	19	15	22	16	21	14	26	19	26	17
UKM	12	11	9	8	11	9	14	10	17	11	9	7	21	14
SJA	17	16	20	18	23	18	21	15	23	16	22	16	21	14
UMA	19	18	16	14	10	8	10	7	14	9	9	7	12	8
UMP	22	20	20	18	20	16	16	11	13	9	18	13	16	11
GMC	0	0	0	0	0	0	2	1	2	1	4	3	2	1
LWE	0	0	0	0	0	0	6	4	1	1	2	1	1	1
SJP	0	0	1	1	9	7	6	4	12	8	6	4	5	3
HUSM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APSH	0	0	0	0	0	0	0	0	0	0	1	1	1	1
HA	0	0	0	0	0	0	0	0	0	0	8	6	44	30
HPP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Others	0	0	0	0	0	0	1	1	0	0	0	0	0	0
TOTAL	108	100	114	100	128	100	140	100	148	100	136	100	149	100

Year	2008		2009		Total	
	No.	%	No.	%	No.	%
KLA	0	0	0	0	223	13
KLP	29	16	26	12	291	17
UKM	24	13	19	9	147	8
SJA	25	14	24	11	221	13
UMA	17	9	19	9	192	11
UMP	16	9	17	8	364	21
GMC	1	1	1	0	12	1
LWE	0	0	0	0	10	1
SJP	4	2	0	0	44	3
HUSM	6	3	10	5	16	1
APSH	0	0	1	0	3	0
HA	57	31	86	40	195	11
HPP	2	1	10	5	12	1
Others	0	0	0	0	1	0
TOTAL	181	100	213	100	1731	100

KLA	Hospital Kuala Lumpur, (Adult)
KLP	Hospital Kuala Lumpur, Institute Paediatrics (Paed)
UKM	Pusat Perubatan Universiti Kebangsaan Malaysia
SJA	Sime Darby Medical Centre, Subang Jaya (Adult)
UMA	University of Malaya Medical Centre (Adult)
UMP	University of Malaya Medical Centre (Paed)
GMC	Gleneagles Medical Centre, Penang
LWE	Lam Wah Ee Hospital, Penang
SJP	Sime Darby Medical Centre, Subang Jaya (Paed)
HUSM	Hospital Universiti Sains Malaysia
APSH	Ampang Puteri Specialist Hospital
HA	Hospital Ampang
HPP	Hospital Pulau Pinang

Figure 1.1.3: Distribution of Patients by Centre, 1987-2009

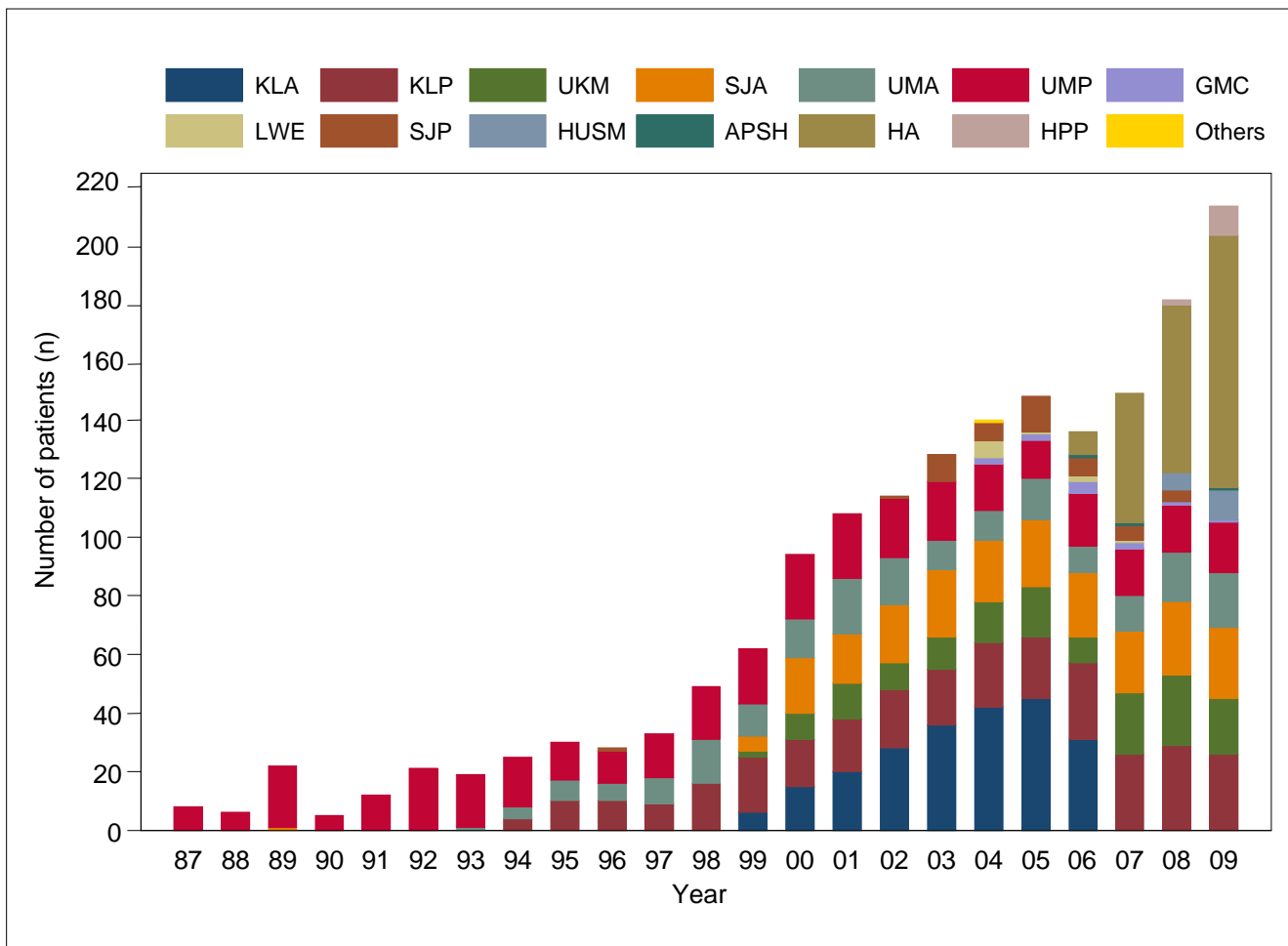


Table 1.2.1: Distribution of Patients by Gender, 1987-2009

Year	1987		1988		1989		1990		1991		1992		1993		1994	
Gender	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Male	7	88	4	67	12	55	3	60	7	58	13	62	13	68	16	64
Female	1	13	2	33	10	45	2	40	5	42	8	38	6	32	9	36
TOTAL	8	100	6	100	22	100	5	100	12	100	21	100	19	100	25	100

Year	1995		1996		1997		1998		1999		2000		2001		2002	
Gender	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Male	11	37	15	54	18	55	33	67	36	58	54	57	66	61	62	54
Female	19	63	13	46	15	45	16	33	26	42	40	43	42	39	52	46
TOTAL	30	100	28	100	33	100	49	100	62	100	94	100	108	100	114	100

Year	2003		2004		2005		2006		2007		2008		2009		Total	
Gender	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Male	71	55	84	60	71	48	80	59	90	60	99	55	124	58	989	57
Female	57	45	56	40	77	52	56	41	59	40	82	45	89	42	742	43
TOTAL	128	100	140	100	148	100	136	100	149	100	181	100	213	100	1731	100

Figure 1.2.1: Distribution of Patients by Gender, 1987-2009

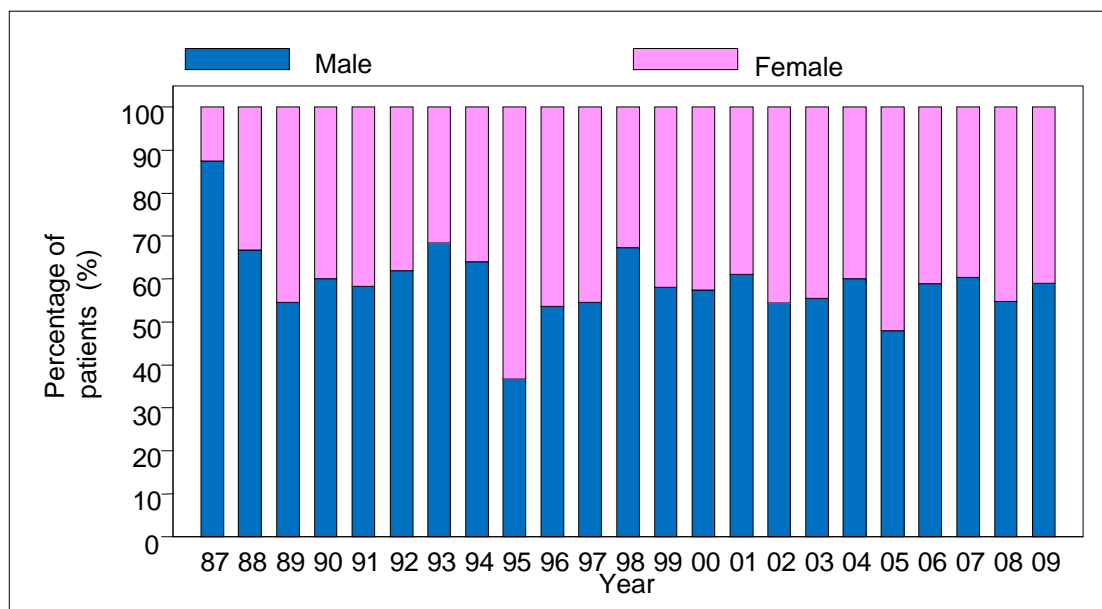


Table 1.2.2: Distribution of Patients by Ethnic Group, 1987-2009

Year	1987		1988		1989		1990		1991		1992		1993		1994	
Race	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Malay	2	25	4	67	13	59	2	40	4	33	4	19	3	16	9	36
Chinese	5	63	2	33	8	36	3	60	7	58	10	48	10	53	12	48
Indian	1	13	0	0	0	0	0	0	1	8	4	19	1	5	0	0
Bumiputra Sabah	0	0	0	0	1	5	0	0	0	0	2	10	3	16	4	16
Bumiputra Sarawak	0	0	0	0	0	0	0	0	0	0	0	0	2	10	0	0
Others	0	0	0	0	0	0	0	0	0	0	1	5	0	0	0	0
TOTAL	8	100	6	100	22	100	5	100	12	100	21	100	19	100	25	100

Year	1995		1996		1997		1998		1999		2000		2001		2002	
Race	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Malay	7	23	8	29	9	27	20	41	31	50	33	35	47	44	37	32
Chinese	14	47	11	39	20	61	24	49	26	42	48	51	48	44	65	57
Indian	3	10	6	21	0	0	4	8	4	6	7	7	8	7	8	7
Bumiputra Sabah	1	3	0	0	1	3	0	0	0	0	3	3	1	1	1	1
Bumiputra Sarawak	0	0	3	11	0	0	0	0	0	0	0	0	1	1	1	1
Others	5	17	0	0	3	9	1	2	1	2	3	3	3	3	2	2
TOTAL	30	100	28	100	33	100	49	100	62	100	94	100	108	100	114	100

Year	2003		2004		2005		2006		2007		2008		2009		Total	
Race	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Malay	46	36	51	36	53	36	61	45	59	40	77	43	99	46	679	39
Chinese	65	51	63	45	69	47	50	37	59	40	71	39	79	37	769	44
Indian	6	5	9	6	14	9	11	8	18	12	12	7	14	7	131	8
Bumiputra Sabah	4	3	9	6	5	3	7	5	6	4	14	8	9	4	71	4
Bumiputra Sarawak	4	3	7	5	5	3	2	1	1	1	5	3	7	3	38	2
Others	3	2	1	1	2	1	5	4	6	4	2	1	5	2	43	2
TOTAL	128	100	140	100	148	100	136	100	149	100	181	100	213	100	1731	100

Figure 1.2.2: Distribution of Patients by Ethnic Group, 1987-2009

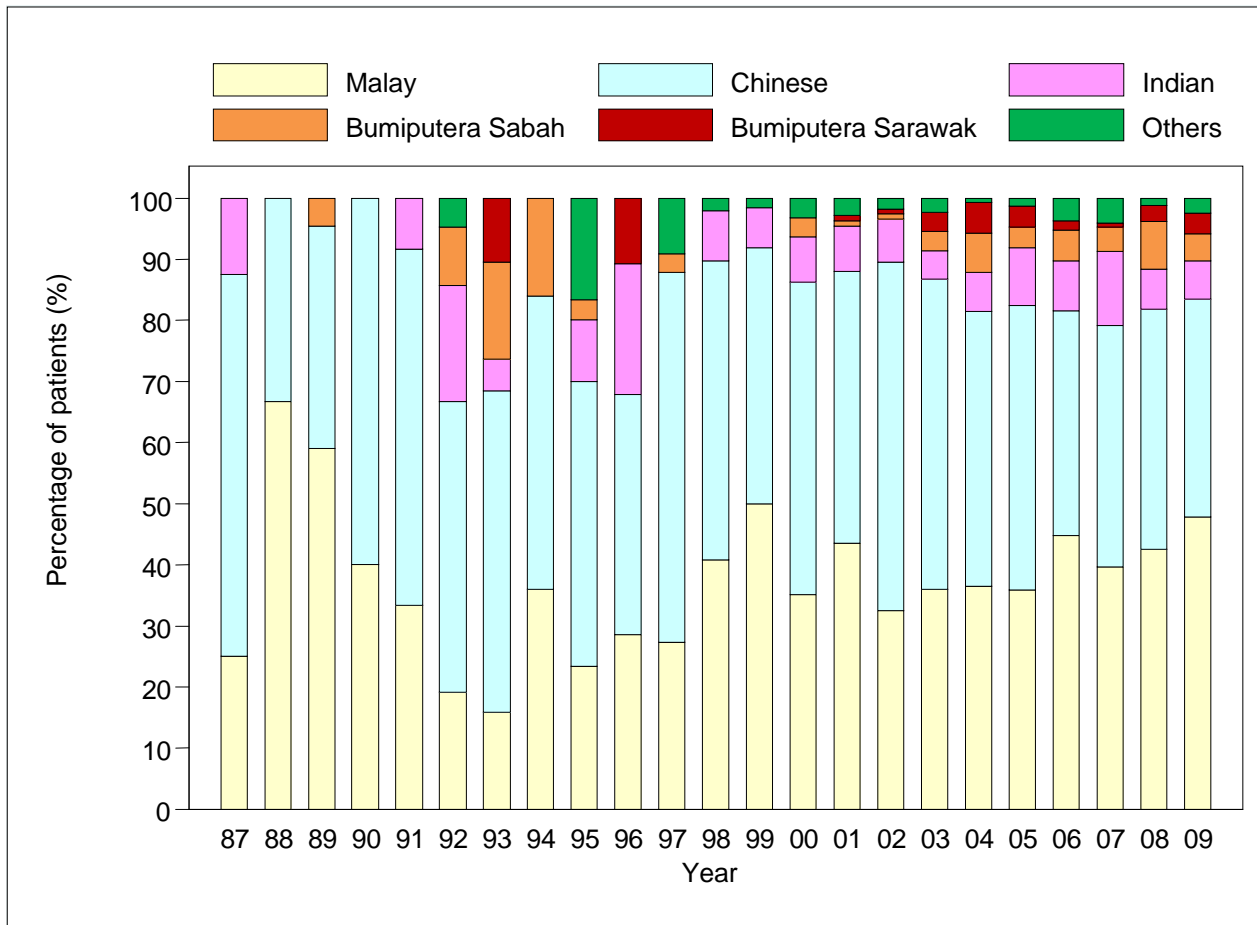


Table 1.2.3: Distribution of Patients by Age Group, 1987-2009

Year	1987		1988		1989		1990		1991		1992		1993		1994	
Age group	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
0-9	4	50	4	67	17	77	5	100	10	83	15	71	9	47	11	44
10-19	4	50	2	33	5	23	0	0	2	17	6	29	10	53	11	44
20-39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	12
40-59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
≥60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	8	100	6	100	22	100	5	100	12	100	21	100	19	100	25	100
Mean	9		7		8		6		6		7		9		11	
SD	4		3		3		3		4		4		5		7	
Median	9		8		8		6		6		6		10		11	
Minimum	2		2		1		2		1		1		1		1	
Maximum	15		10		13		9		13		14		17		29	

Year	1995		1996		1997		1998		1999		2000		2001		2002	
Age group	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
0-9	12	40	13	46	19	58	21	43	28	45	27	29	23	21	30	26
10-19	13	43	12	43	8	24	16	33	15	24	27	29	28	26	25	22
20-39	4	13	3	11	5	15	12	24	12	19	19	20	40	37	36	32
40-59	1	3	0	0	1	3	0	0	7	11	20	21	16	15	23	20
≥60	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0
TOTAL	30	100	28	100	33	100	49	100	62	100	94	100	108	100	114	100
Mean	13		11		12		13		17		23		23		23	
SD	9		9		12		10		15		17		16		16	
Median	11		11		6		10		11		18		22		22	
Minimum	3		1		1		5 months		1		1		1 month		1	
Max	41		37		45		39		57		61		64		55	

Year	2003		2004		2005		2006		2007		2008		2009		Total	
Age group	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
0-9	42	33	26	19	29	20	40	29	38	26	25	14	36	17	484	28
10-19	18	14	41	29	32	22	29	21	22	15	42	23	26	12	394	23
20-39	47	37	52	37	50	34	38	28	35	23	63	35	76	36	495	29
40-59	21	16	19	14	36	24	25	18	43	29	47	26	67	31	326	19
≥60	0	0	2	1	1	1	4	3	11	7	4	2	8	4	32	2
TOTAL	128	100	140	100	148	100	136	100	149	100	181	100	213	100	1731	100
Mean	22		23		26		24		29		28		31		23	
SD	15		15		16		18		20		17		18		17	
Median	23		20		24		19		28		25		28		19	
Minimum	5 months		1		1		1		1		2		1		1 month	
Max	52		70		66		69		68		66		72		72	

Figure 1.2.3: Distribution of Patients by Age Group, 1987-2009

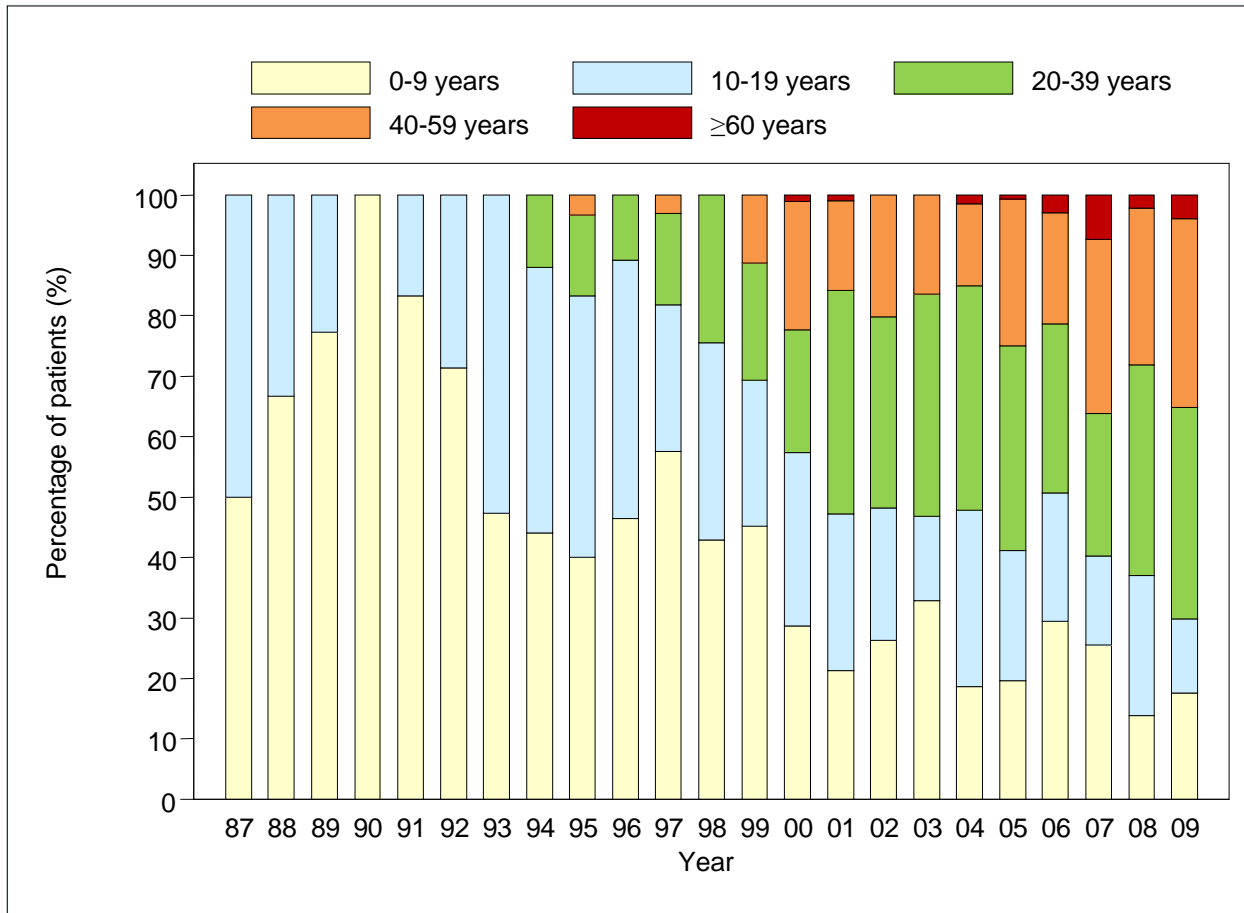


Table 1.2.4: Distribution of Patients by Primary Diagnosis, 1987-2009

Year	1987		1988		1989		1990		1991		1992		1993		1994	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Acute leukaemia	5	63	4	67	8	36	2	40	1	8	4	19	6	32	8	32
Chronic leukaemia	0	0	0	0	1	5	1	20	1	8	4	19	2	11	4	16
Hypoplastic anaemia	2	25	0	0	4	18	0	0	4	33	5	24	4	21	5	20
Erythrocytic disorders	0	0	0	0	1	5	1	20	1	8	1	5	0	0	0	0
Lymphoma	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solid tumors	0	0	0	0	0	0	0	0	0	0	3	14	2	11	1	4
Myelodysplasia	0	0	0	0	0	0	0	0	0	0	0	0	1	5	2	8
Haemoglobinopathy	1	13	2	33	7	32	1	20	4	33	4	19	2	11	5	20
Multiple myeloma	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Others	0	0	0	0	1	5	0	0	1	8	0	0	2	11	0	0
TOTAL	8	100	6	100	22	100	5	100	12	100	21	100	19	100	25	100

Year	1995		1996		1997		1998		1999		2000		2001		2002	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Acute leukaemia	10	33	13	46	11	33	23	47	28	45	37	39	48	44	48	42
Chronic leukaemia	5	17	5	18	6	18	7	14	7	11	13	14	18	17	19	17
Hypoplastic anaemia	8	27	4	14	5	15	4	8	5	8	11	12	7	6	5	4
Erythrocytic disorders	0	0	1	4	0	0	0	0	0	0	0	0	0	0	1	1
Lymphoma	0	0	0	0	2	6	5	10	6	10	19	20	23	21	20	18
Solid tumors	1	3	0	0	2	6	5	10	7	11	2	2	1	1	4	4
Myelodysplasia	0	0	0	0	0	0	1	2	0	0	1	1	4	4	4	4
Haemoglobinopathy	5	17	5	18	6	18	2	4	4	6	7	7	4	4	8	7
Multiple myeloma	0	0	0	0	0	0	0	0	3	5	1	1	1	1	4	4
Others	1	3	0	0	1	3	2	4	2	3	3	3	2	2	1	1
TOTAL	30	100	28	100	33	100	49	100	62	100	94	100	108	100	114	100

Year	2003		2004		2005		2006		2007		2008		2009		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Acute leukaemia	44	34	46	33	58	39	45	33	57	38	68	38	83	39	657	38
Chronic leukaemia	18	14	22	16	13	9	9	7	7	5	4	2	9	4	175	10
Hypoplastic anaemia	5	4	12	9	6	4	15	11	13	9	19	10	13	6	156	9
Erythrocytic disorders	2	2	0	0	0	0	0	0	0	0	1	1	1	0	10	1
Lymphoma	28	22	36	26	38	26	33	24	36	24	50	28	69	32	365	21
Solid tumors	3	2	2	1	2	1	6	4	5	3	1	1	2	1	49	3
Myelodysplasia	3	2	5	4	4	3	3	2	2	1	6	3	3	1	39	2
Haemoglobinopathy	17	13	9	6	17	11	12	9	13	9	12	7	12	6	159	9
Multiple myeloma	5	4	3	2	8	5	10	7	16	11	18	10	17	8	86	5
Others	3	2	5	4	2	1	3	2	0	0	2	1	4	2	35	2
TOTAL	128	100	140	100	148	100	136	100	149	100	181	100	213	100	1731	100

Table 1.3.1: Distribution of Patients by Graft Number, 1987-2009

Year	1987		1988		1989		1990		1991		1992		1993		1994	
Graft number	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1	8	100	6	100	19	86	4	80	9	75	19	91	18	95	24	96
2	0	0	0	0	2	9	1	20	3	25	2	10	1	5	1	4
3	0	0	0	0	1	5	0	0	0	0	0	0	0	0	0	0
TOTAL	8	100	6	100	22	100	5	100	12	100	21	100	19	100	25	100

Year	1995		1996		1997		1998		1999		2000		2001		2002	
Graft number	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1	29	97	28	100	31	94	47	96	61	98	91	97	103	95	113	99
2	1	3	0	0	1	3	1	2	1	2	3	3	5	5	1	1
3	0	0	0	0	1	3	1	2	0	0	0	0	0	0	0	0
TOTAL	30	100	28	100	33	100	49	100	62	100	94	100	108	100	114	100

Year	2003		2004		2005		2006		2007		2008		2009		Total	
Graft number	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1	125	98	135	98	137	99	132	98	122	98	159	92	205	97	1625	97
2	3	2	3	2	2	1	2	2	2	2	13	8	6	3	54	3
3	0	0	0	0	0	0	1	1	0	0	0	0	0	0	4	0
TOTAL	128	100	138	100	139	100	135	100	124	100	172	100	211	100	1683	100

Note: Data not available for graft number = 48 cases (3%)

Figure 1.3.1: Distribution of Patients by Graft Number, 1987-2009

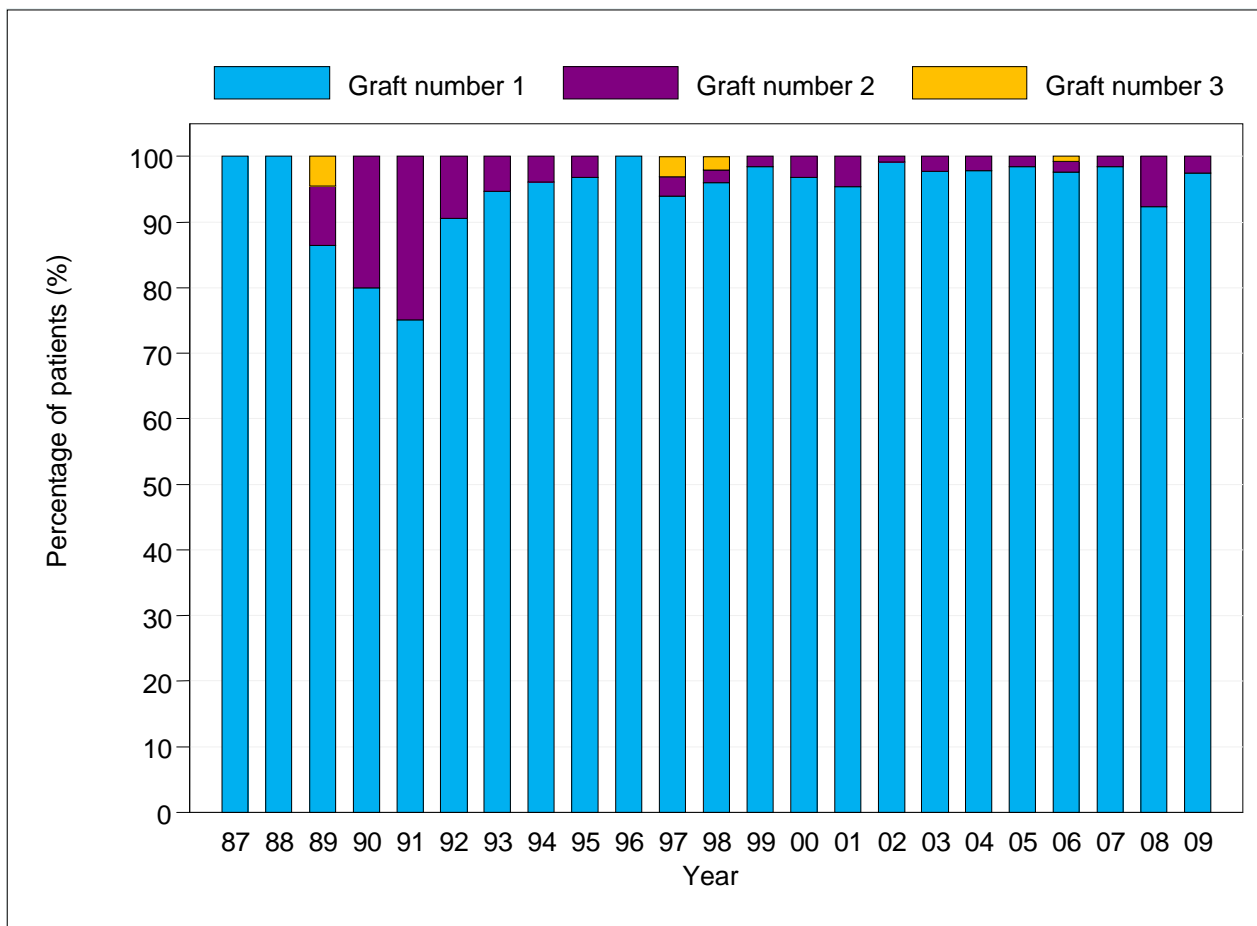


Table 1.3.2: Distribution of Patients by Transplantation Type, 1987-2009

Year	1987		1988		1989		1990		1991		1992		1993		1994	
Type of transplant	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Allogeneic + Syngeneic	8	100	6	100	21	95	5	100	12	100	20	95	18	95	24	96
Autologous	0	0	0	0	1	5	0	0	0	0	1	5	1	5	1	4
TOTAL	8	100	6	100	22	100	5	100	12	100	21	100	19	100	25	100

Year	1995		1996		1997		1998		1999		2000		2001		2002	
Type of transplant	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Allogeneic + Syngeneic	29	97	26	93	27	82	32	65	44	71	56	60	75	69	75	66
Autologous	1	3	2	7	6	18	17	35	18	29	38	40	33	31	39	34
TOTAL	30	100	28	100	33	100	49	100	62	100	94	100	108	100	114	100

Year	2003		2004		2005		2006		2007		2008		2009		Total	
Type of transplant	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Allogeneic + Syngeneic	83	65	90	64	91	61	87	64	75	50	115	64	110	52	1129	65
Autologous	45	35	50	36	57	39	49	36	74	50	66	36	103	48	602	35
TOTAL	128	100	140	100	148	100	136	100	149	100	181	100	213	100	1731	100

Figure 1.3.2: Distribution of Patients by Transplantation Type, 1987-2009

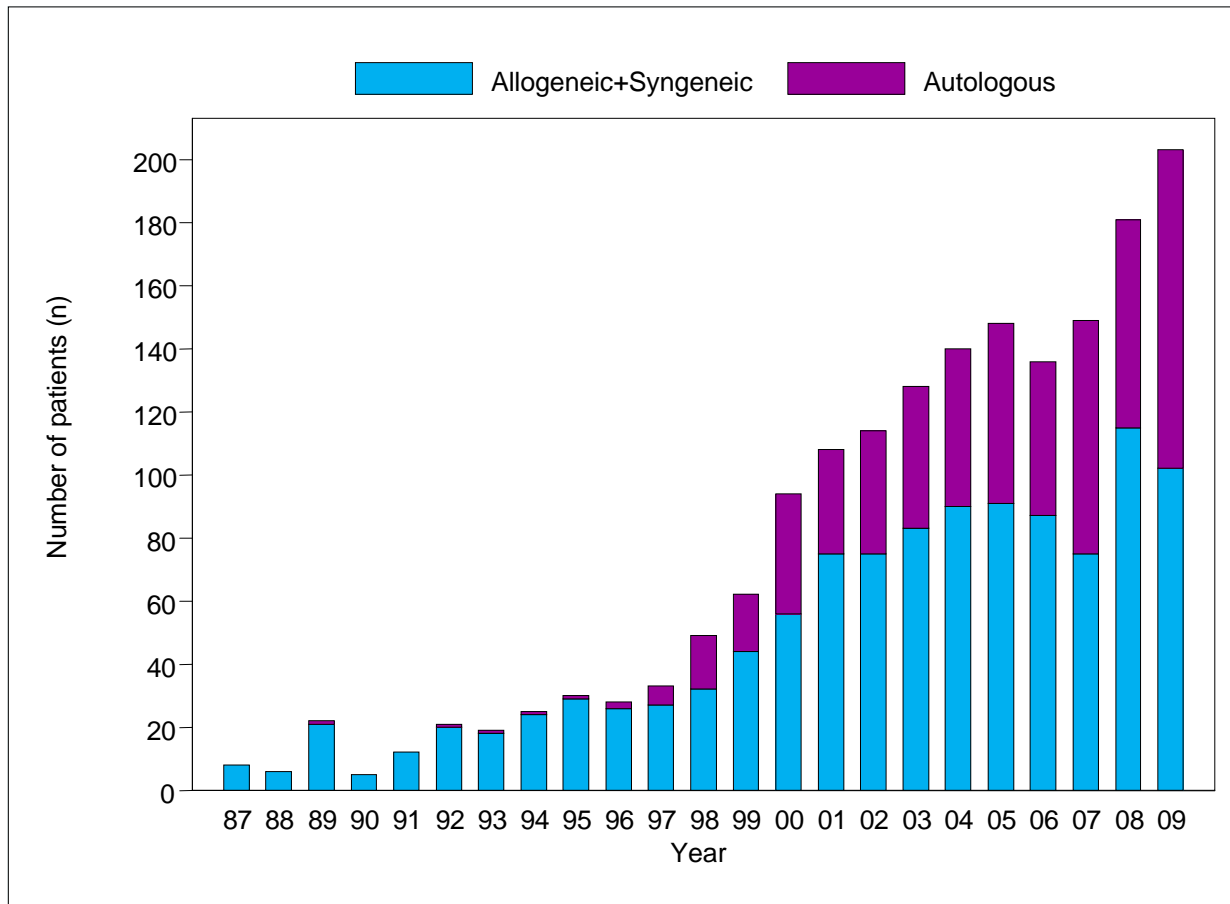


Table 1.3.3: Type of Transplant by Centre, 1987-2009

Type of transplant Centre	Allogeneic + Syngeneic		Autologous		TOTAL	
	No.	%	No.	%	No.	%
KLA	112	10	111	18	223	13
KLP	262	23	29	5	291	17
UKM	75	7	72	12	147	8
SJA	84	7	137	23	221	13
UMA	131	12	61	10	192	11
UMP	321	28	43	7	364	21
GMC	5	0	7	1	12	1
LWE	9	1	1	0	10	1
SJP	38	3	6	1	44	3
HUSM	0	0	16	3	16	1
APSH	2	0	1	0	3	0
HA	89	8	106	18	195	11
HPP	0	0	12	2	12	1
Other	1	0	0	0	1	0
TOTAL	1129	100	602	100	1731	100

Figure 1.3.3: Type of Transplant by Centre, 1987-2009

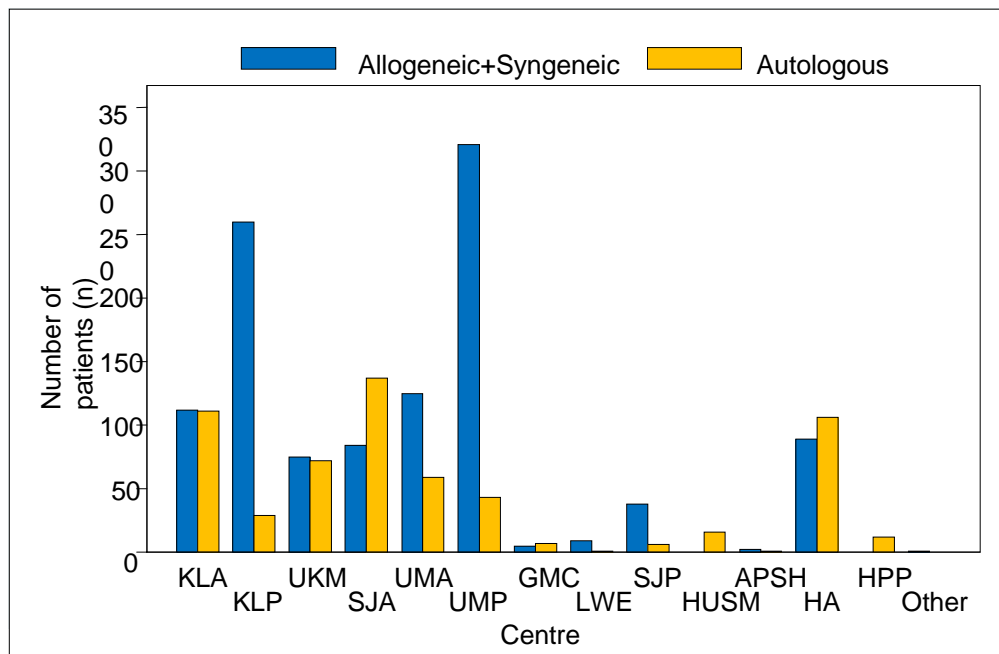


Table 1.3.4: Source of Stem Cells, 1987-2009

Year	1987		1988		1989		1990		1991		1992		1993		1994	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Transplant source																
Marrow	8	100	6	100	22	100	5	100	12	100	21	100	19	100	25	100
PBSC / Marrow + PBSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cord blood / Marrow + cord	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	8	100	6	100	22	100	5	100	12	100	21	100	19	100	25	100

Year	1995		1996		1997		1998		1999		2000		2001		2002	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Transplant source																
Marrow	30	100	28	100	24	73	25	51	37	60	31	33	30	28	31	27
PBSC / Marrow + PBSC	0	0	0	0	7	21	23	47	23	37	57	61	74	69	79	69
Cord blood / Marrow + cord	0	0	0	0	2	6	1	2	2	3	6	6	4	4	4	4
TOTAL	30	100	28	100	33	100	49	100	62	100	94	100	108	100	114	100

Year	2003		2004		2005		2006		2007		2008		2009		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Transplant source																
Marrow	44	34	30	21	25	17	17	13	23	15	20	11	23	11	536	31
PBSC / Marrow + PBSC	79	62	101	72	116	78	109	80	119	80	152	84	181	85	1120	65
Cord blood / Marrow + cord	5	4	9	6	7	5	10	7	7	5	9	5	9	4	75	4
TOTAL	128	100	140	100	148	100	136	100	149	100	181	100	213	100	1731	100

Figure 1.3.4: Source of Stem Cells, 1987-2009

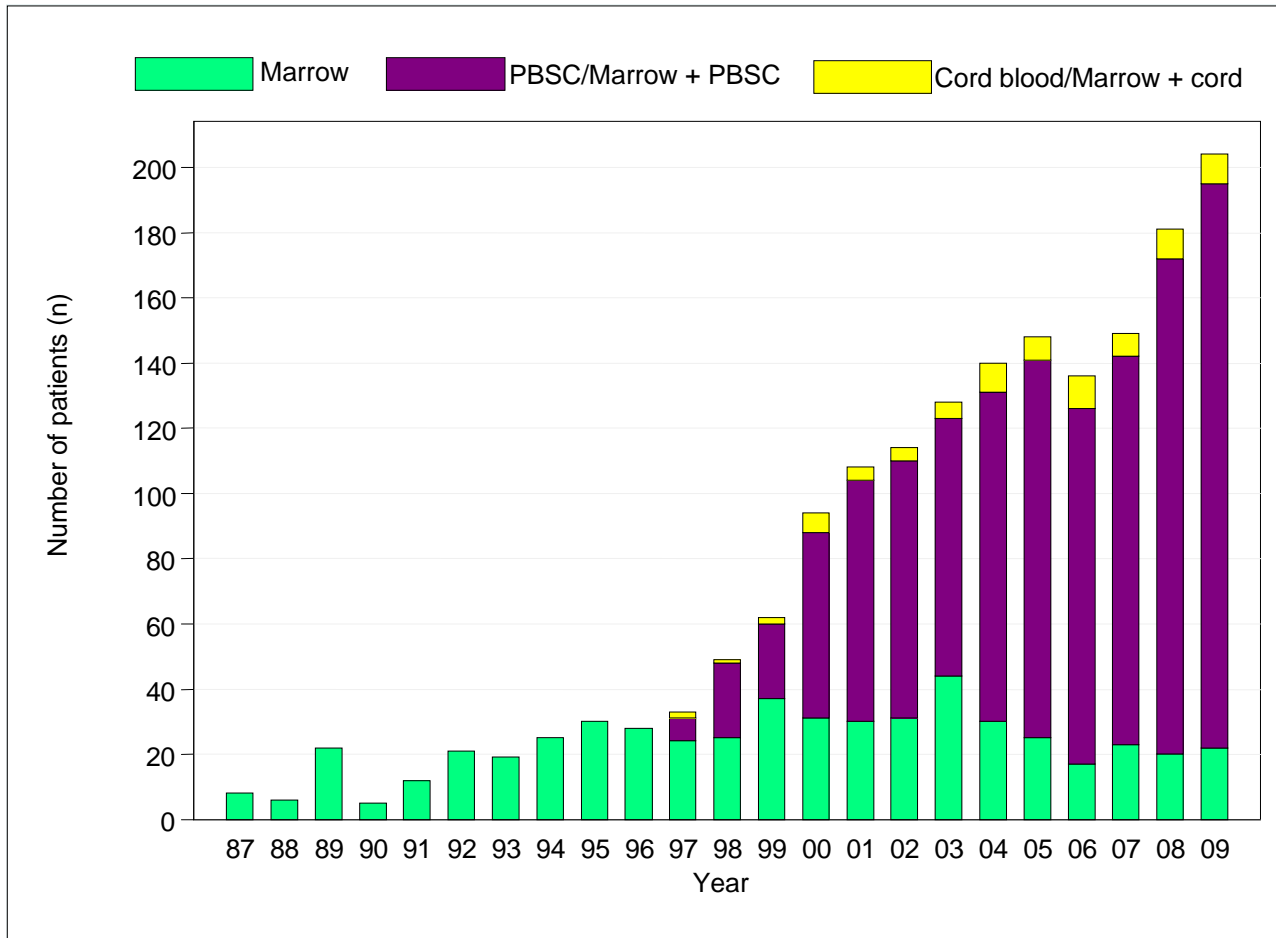


Table 1.3.5: Distribution of Patients by HLA Match, 1987-2009

Year	1987		1988		1989		1990		1991	
HLA Match	No.	%	No.	%	No.	%	No.	%	No.	%
Identical	8	100	6	100	21	100	5	100	12	100
1 AG	0	0	0	0	0	0	0	0	0	0
2 AG	0	0	0	0	0	0	0	0	0	0
≥3 AG Disparate	0	0	0	0	0	0	0	0	0	0
TOTAL	8	100	6	100	21	100	5	100	12	100

Year	1992		1993		1994		1995		1996	
HLA Match	No.	%	No.	%	No.	%	No.	%	No.	%
Identical	20	100	18	100	23	96	29	100	26	100
1 AG	0	0	0	0	1	4	0	0	0	0
2 AG	0	0	0	0	0	0	0	0	0	0
≥3 AG Disparate	0	0	0	0	0	0	0	0	0	0
TOTAL	20	100	18	100	24	100	29	100	26	100

Year	1997		1998		1999		2000		2001	
HLA Match	No.	%	No.	%	No.	%	No.	%	No.	%
Identical	25	93	31	97	40	91	52	93	69	92
1 AG	2	7	0	0	3	7	0	0	4	5
2 AG	0	0	1	3	1	2	4	7	1	1
≥3 AG Disparate	0	0	0	0	0	0	0	0	1	1
TOTAL	27	100	32	100	44	100	56	100	75	100

Year	2002		2003		2004		2005		2006	
HLA Match	No.	%	No.	%	No.	%	No.	%	No.	%
Identical	70	93	78	94	83	92	86	95	81	93
1 AG	3	4	3	4	3	3	4	4	4	5
2 AG	2	3	2	2	4	4	1	1	2	2
≥3 AG Disparate	0	0	0	0	0	0	0	0	0	0
TOTAL	75	100	83	100	90	100	91	100	87	100

Year	2007		2008		2009		Total	
HLA Match	No.	%	No.	%	No.	%	No.	%
Identical	68	91	102	89	104	95	1057	94
1 AG	4	5	7	6	2	2	40	4
2 AG	2	3	6	5	3	3	29	3
≥3 AG Disparate	1	1	0	0	1	1	3	0
TOTAL	75	100	115	100	110	100	1129	100

Table 1.3.6: Distribution of Patients by Allogeneic Donor Relationship, 1987-2009

Year	1987		1988		1989		1990		1991	
Allogeneic Donor Relationship	No.	%	No.	%	No.	%	No.	%	No.	%
Sibling	8	100	6	100	21	100	5	100	11	92
Unrelated	0	0	0	0	0	0	0	0	0	0
▪ Marrow	0	0	0	0	0	0	0	0	0	0
▪ PBSC / Marrow + PBSC	0	0	0	0	0	0	0	0	0	0
▪ Cord blood / Marrow + cord	0	0	0	0	0	0	0	0	0	0
Others	0	0	0	0	0	0	0	0	1	8
TOTAL	8	100	6	100	21	100	5	100	12	100

Year	1992		1993		1994		1995		1996	
Allogeneic Donor Relationship	No.	%	No.	%	No.	%	No.	%	No.	%
Sibling	20	100	18	100	22	92	29	100	26	100
Unrelated	0	0	0	0	0	0	0	0	0	0
▪ Marrow	0	0	0	0	0	0	0	0	0	0
▪ PBSC / Marrow + PBSC	0	0	0	0	0	0	0	0	0	0
▪ Cord blood / Marrow + cord	0	0	0	0	0	0	0	0	0	0
Others	0	0	0	0	2	8	0	0	0	0
TOTAL	20	100	18	100	24	100	29	100	26	100

Year	1997		1998		1999		2000		2001	
Allogeneic Donor Relationship	No.	%	No.	%	No.	%	No.	%	No.	%
Sibling	26	96	32	100	44	100	55	98	72	96
Unrelated	1	4	0	0	0	0	1	2	3	4
▪ Marrow	0	0	0	0	0	0	0	0	0	0
▪ PBSC / Marrow + PBSC	0	0	0	0	0	0	0	0	0	0
▪ Cord blood / Marrow + cord	1	100	0	0	0	0	1	100	3	100
Others	0	0	0	0	0	0	0	0	0	0
TOTAL	27	100	32	100	44	100	56	100	75	100

Year	2002		2003		2004		2005		2006	
Allogeneic Donor Relationship	No.	%	No.	%	No.	%	No.	%	No.	%
Sibling	71	95	80	96	81	90	83	91	76	87
Unrelated	4	5	3	4	9	10	8	9	11	13
▪ Marrow	0	0	0	0	1	11	2	25	2	18
▪ PBSC / Marrow + PBSC	0	0	0	0	2	22	1	13	1	9
▪ Cord blood / Marrow + cord	4	100	3	100	6	67	5	63	8	73
Others	0	0	0	0	0	0	0	0	0	0
TOTAL	75	100	83	100	90	100	91	100	87	100

Year	2007		2008		2009		Total	
Allogeneic Donor Relationship	No.	%	No.	%	No.	%	No.	%
Sibling	65	87	102	89	98	89	1051	93
Unrelated	10	13	13	11	11	10	74	7
▪ Marrow	1	10	0	0	0	0	6	8
▪ PBSC / Marrow + PBSC	2	20	5	38	2	18	13	18
▪ Cord blood / Marrow + cord	7	70	8	62	9	82	55	74
Others	0	0	0	0	1	1	4	0
TOTAL	75	100	115	100	110	100	1129	100

Table 1.4.1: Distribution of Patients by Cause of Death, 1987-2009

Year	1987		1988		1989		1990		1991	
	No.	%	No.	%	No.	%	No.	%	No.	%
Sepsis	1	100	0	0	0	0	0	0	1	100
GVHD	0	0	0	0	0	0	1	17	0	0
Underlying disease	0	0	0	0	6	100	5	83	0	0
Haemorrhage	0	0	1	100	0	0	0	0	0	0
VOD	0	0	0	0	0	0	0	0	0	0
Organ Failure	0	0	0	0	0	0	0	0	0	0
Interstitial pneumonitis	0	0	0	0	0	0	0	0	0	0
Secondary malignancy	0	0	0	0	0	0	0	0	0	0
Others	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0
TOTAL	1	100	1	100	6	100	6	100	1	100

Year	1992		1993		1994		1995		1996	
	No.	%	No.	%	No.	%	No.	%	No.	%
Sepsis	1	50	2	22	1	20	4	24	6	55
GVHD	0	0	0	0	0	0	4	24	0	0
Underlying disease	0	0	6	67	3	60	3	18	3	27
Haemorrhage	0	0	1	11	0	0	2	12	1	9
VOD	0	0	0	0	0	0	1	6	1	9
Organ Failure	1	50	0	0	1	20	2	12	0	0
Interstitial pneumonitis	0	0	0	0	0	0	0	0	0	0
Secondary malignancy	0	0	0	0	0	0	1	6	0	0
Others	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0
TOTAL	2	100	9	100	5	100	17	100	11	100

Table 1.4.1: Distribution of Patients by Cause of Death, 1987-2009

Year	1997		1998		1999		2000		2001	
	No.	%	No.	%	No.	%	No.	%	No.	%
Sepsis	5	33	1	6	6	38	2	6	4	9
GVHD	0	0	2	12	1	6	2	6	4	9
Underlying disease	9	60	11	65	7	44	22	71	33	70
Haemorrhage	0	0	1	6	0	0	3	10	2	4
VOD	0	0	0	0	0	0	1	3	2	4
Organ Failure	1	7	0	0	1	6	0	0	0	0
Interstitial pneumonitis	0	0	1	6	0	0	1	3	2	4
Secondary malignancy	0	0	0	0	0	0	0	0	0	0
Others	0	0	1	6	1	6	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0
TOTAL	15	100	17	100	16	100	31	100	47	100

Year	2002		2003		2004		2005		2006	
	No.	%	No.	%	No.	%	No.	%	No.	%
Sepsis	6	18	15	27	11	21	14	22	8	19
GVHD	3	9	5	9	9	17	7	11	2	5
Underlying disease	21	62	31	55	28	54	35	56	28	67
Haemorrhage	0	0	0	0	2	4	2	3	1	2
VOD	0	0	0	0	0	0	0	0	3	7
Organ Failure	3	9	2	4	0	0	2	3	0	0
Interstitial pneumonitis	0	0	1	2	0	0	2	3	0	0
Secondary malignancy	0	0	0	0	0	0	0	0	0	0
Others	0	0	0	0	0	0	0	0	0	0
Unknown	1	3	2	4	2	4	1	2	0	0
TOTAL	34	100	56	100	52	100	63	100	42	100

Year	2007		2008		2009		Total	
	No.	%	No.	%	No.	%	No.	%
Sepsis	10	20	14	20	12	28	124	21
GVHD	3	6	7	10	1	2	51	9
Underlying disease	29	58	37	53	27	63	344	58
Haemorrhage	1	2	5	7	1	2	23	4
VOD	0	0	3	4	0	0	11	2
Organ Failure	0	0	0	0	1	2	14	2
Interstitial pneumonitis	0	0	2	3	1	2	10	2
Secondary malignancy	0	0	0	0	0	0	1	0
Others	6	12	1	1	0	0	9	2
Unknown	1	2	1	1	0	0	8	1
TOTAL	50	100	70	100	43	100	595	100

Figure 1.4.1: Patient Survival by Year of Transplant, 1987-2009

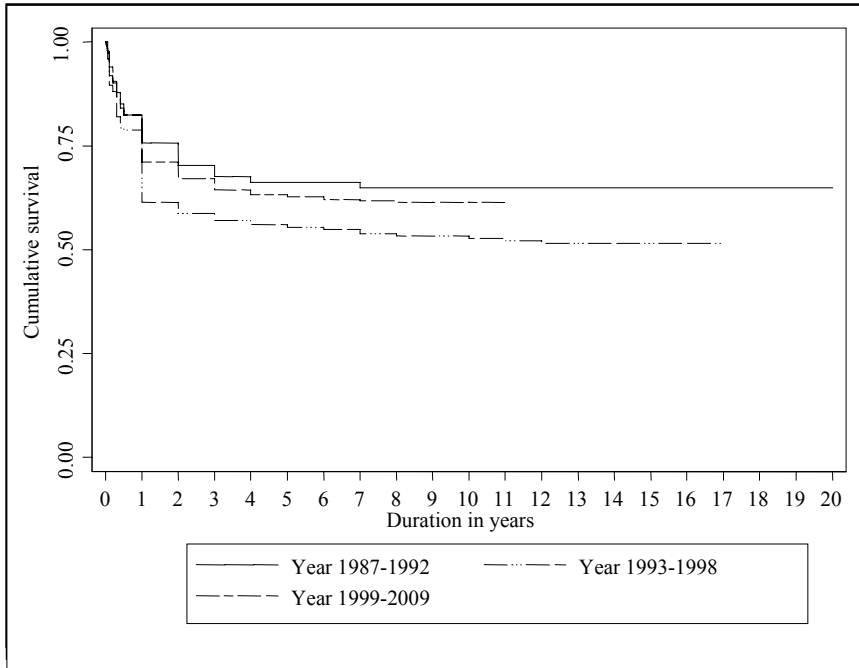


Figure 1.4.2: Patient Survival by Gender, 1987-2009

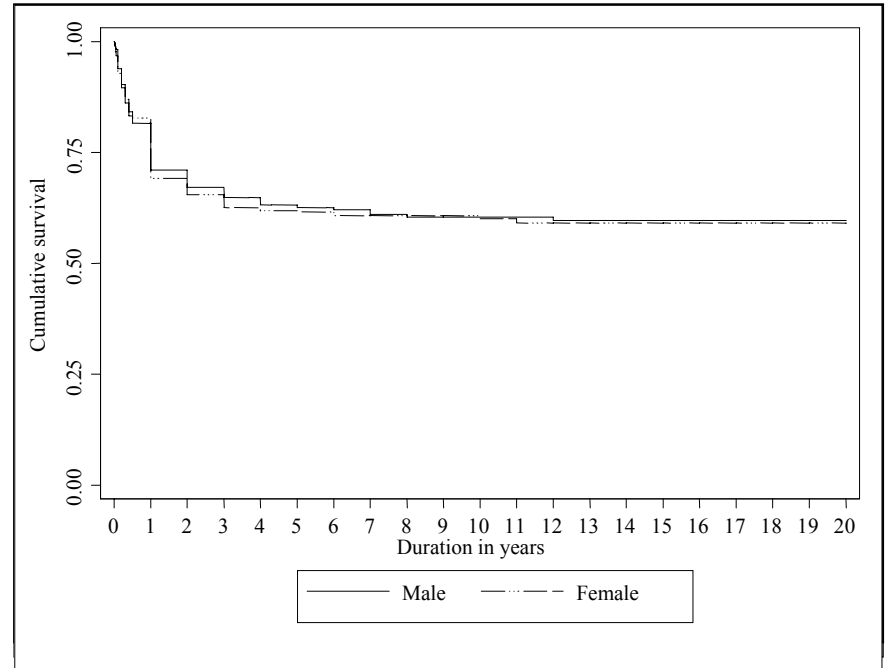


Figure 1.4.3: Patient Survival by Age Group, 1987-2009

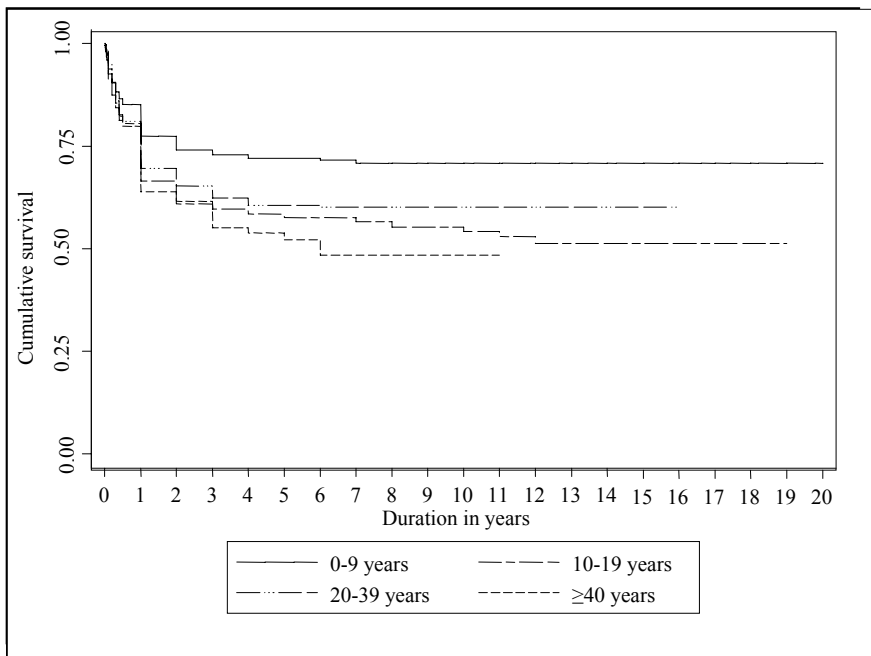


Figure 1.4.4: Patient Survival by Type of Transplant, 1987-2009

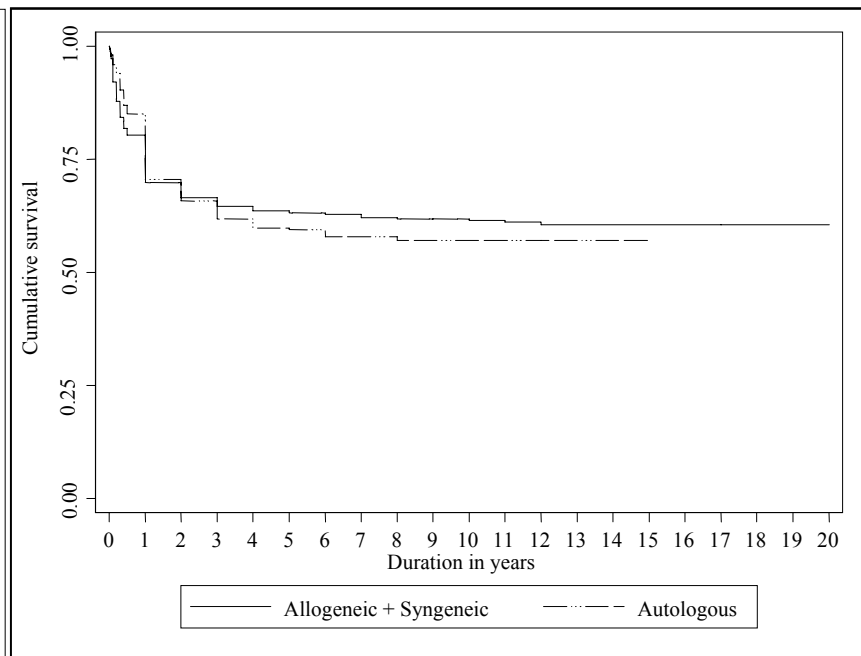


Figure 1.5.1: Disease-free Survival for Acute Myeloid Leukaemia, 1987-2009 (Allogeneic vs. Autologous)

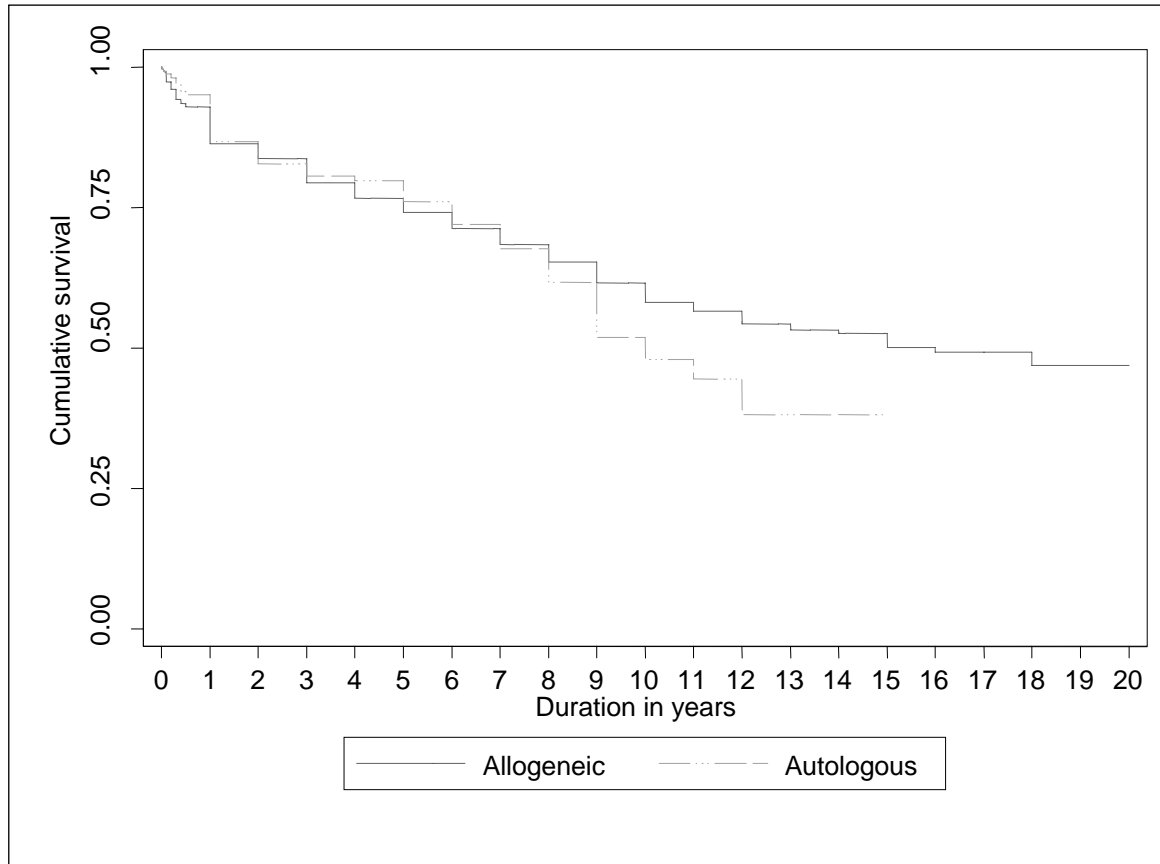


Figure 1.5.2: Disease-free Survival for Acute Lymphoblastic Leukaemia, 1987-2009 (Allogeneic)

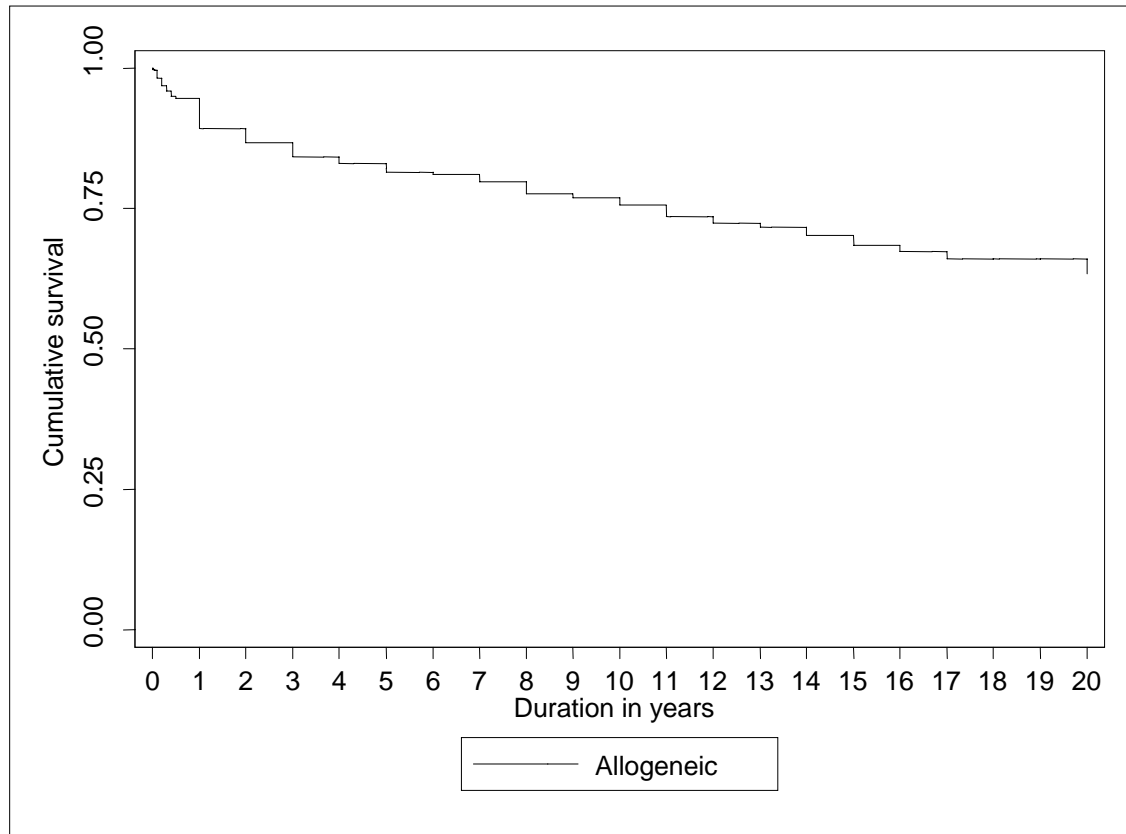


Figure 1.5.3: Disease-free Survival for Thalassaemia, 1987-2009 (Allogeneic)

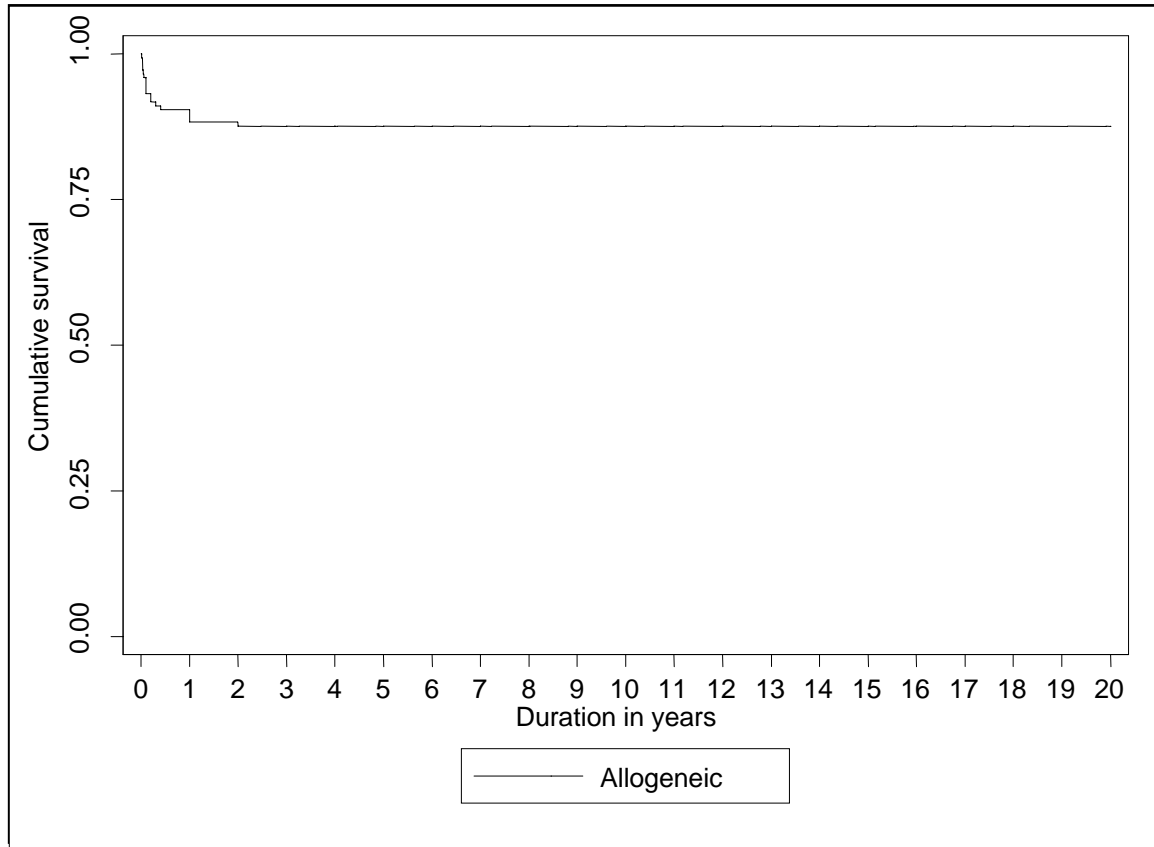


Figure 1.5.4: Disease-free Survival for Non-Hodgkin's Lymphoma, 1987-2009 (Allogeneic vs. Autologous)

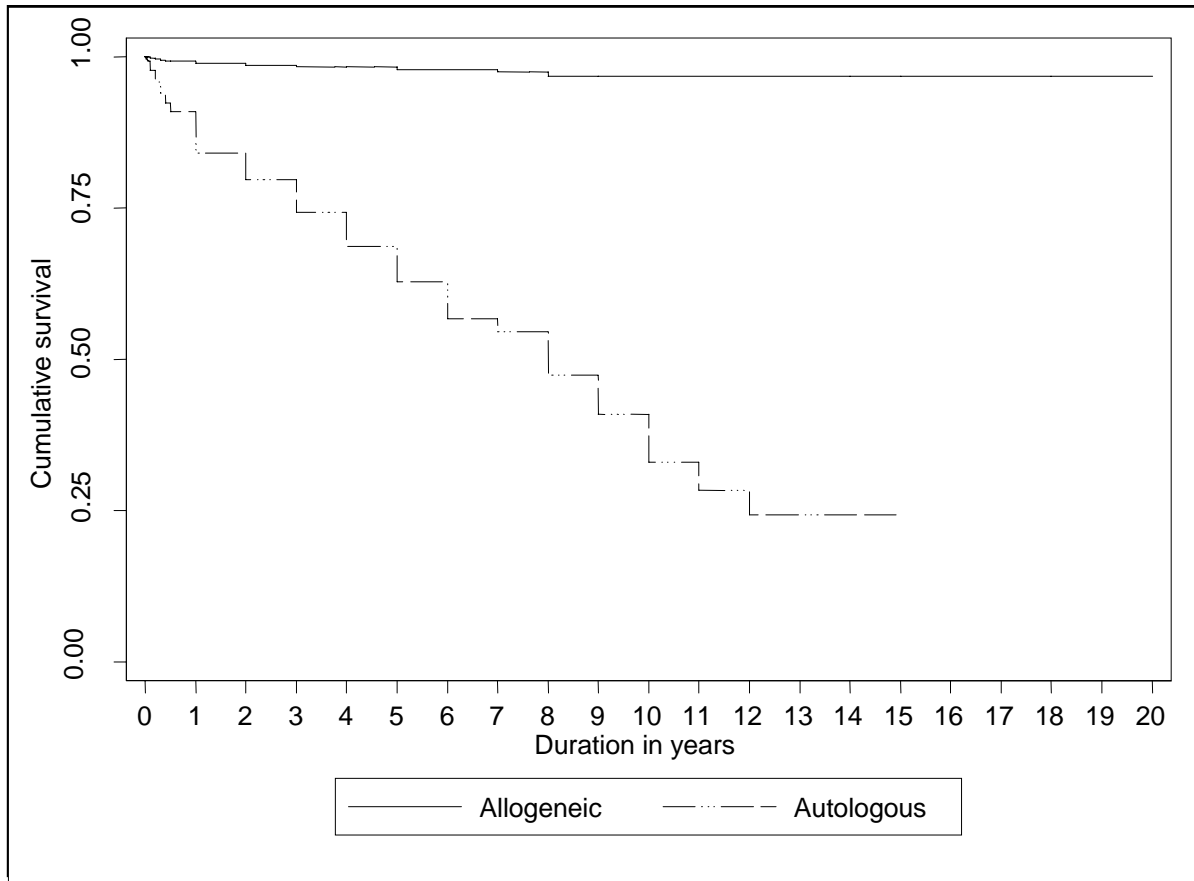


Figure 1.5.5: Disease-free Survival for Hodgkin's Disease, 1987-2009 (Autologous)

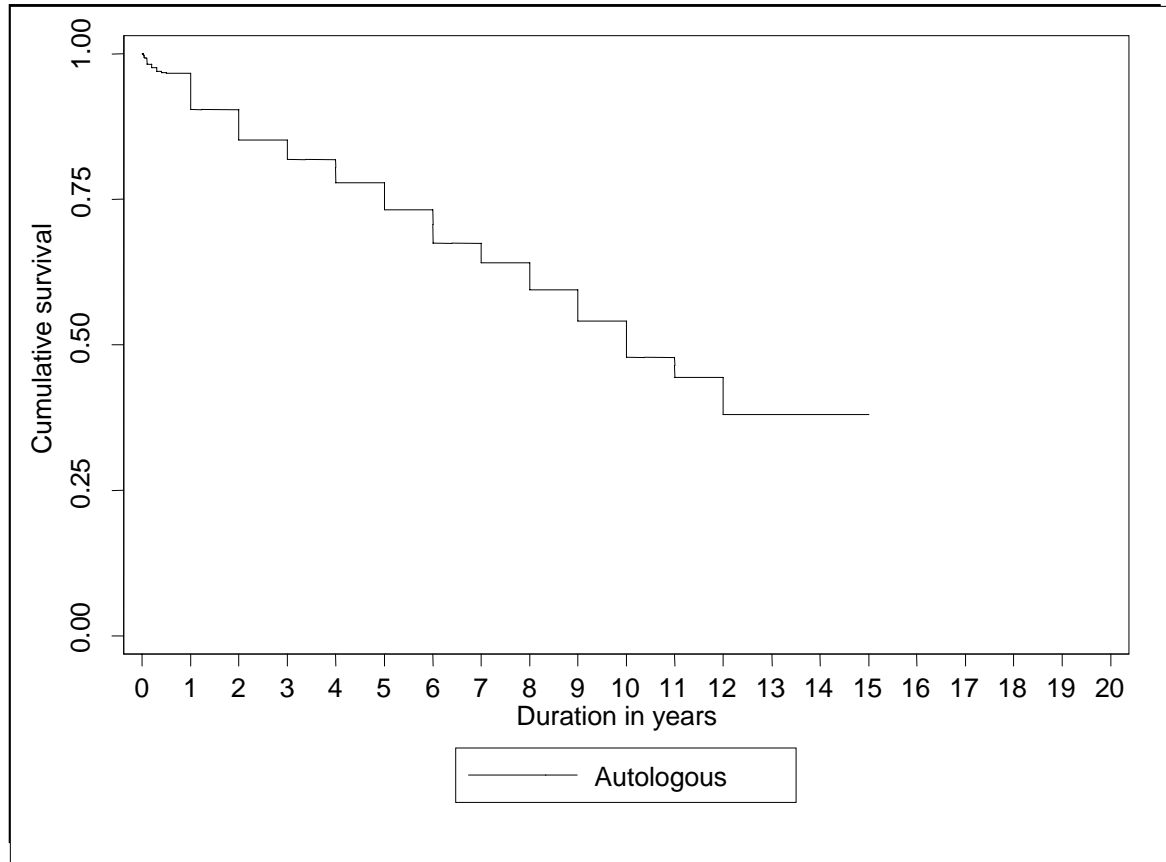


Figure 1.5.6: Disease-free Survival for Chronic Myeloid Leukaemia, 1987-2009 (Allogeneic)

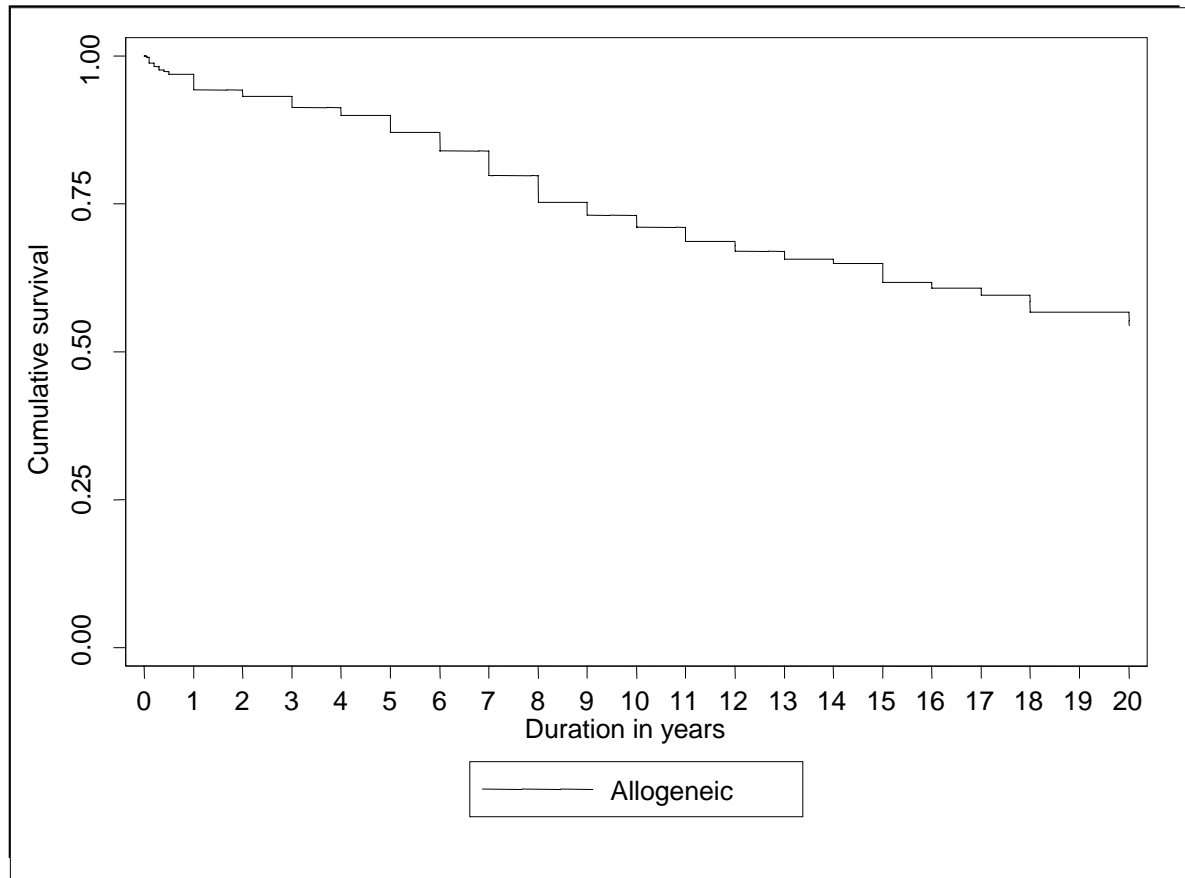


Figure 1.5.7: Disease-free Survival for Aplastic Anaemia, 1987-2009 (Allogeneic)

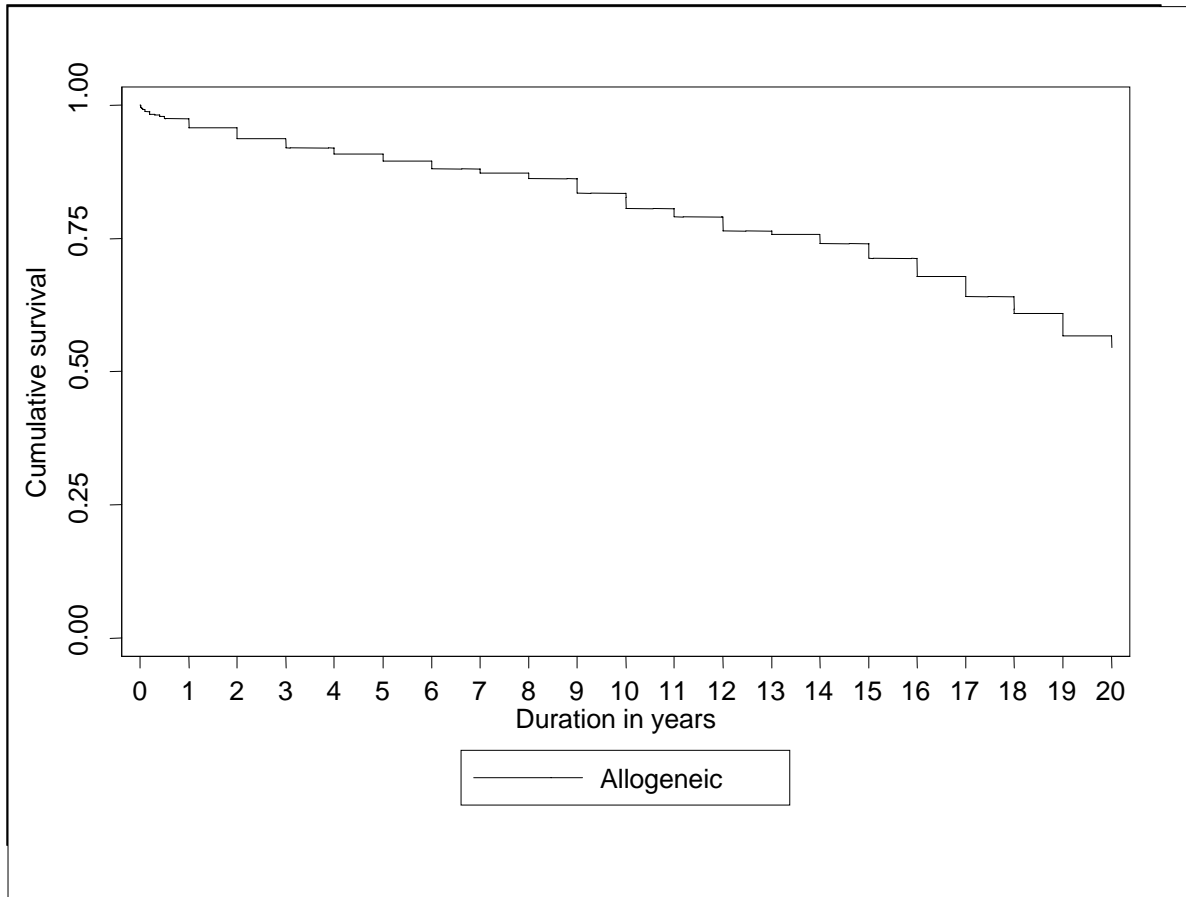


Figure 1.5.8: Disease-free Survival by Age Group for Acute Myeloid Leukaemia, 1987-2009

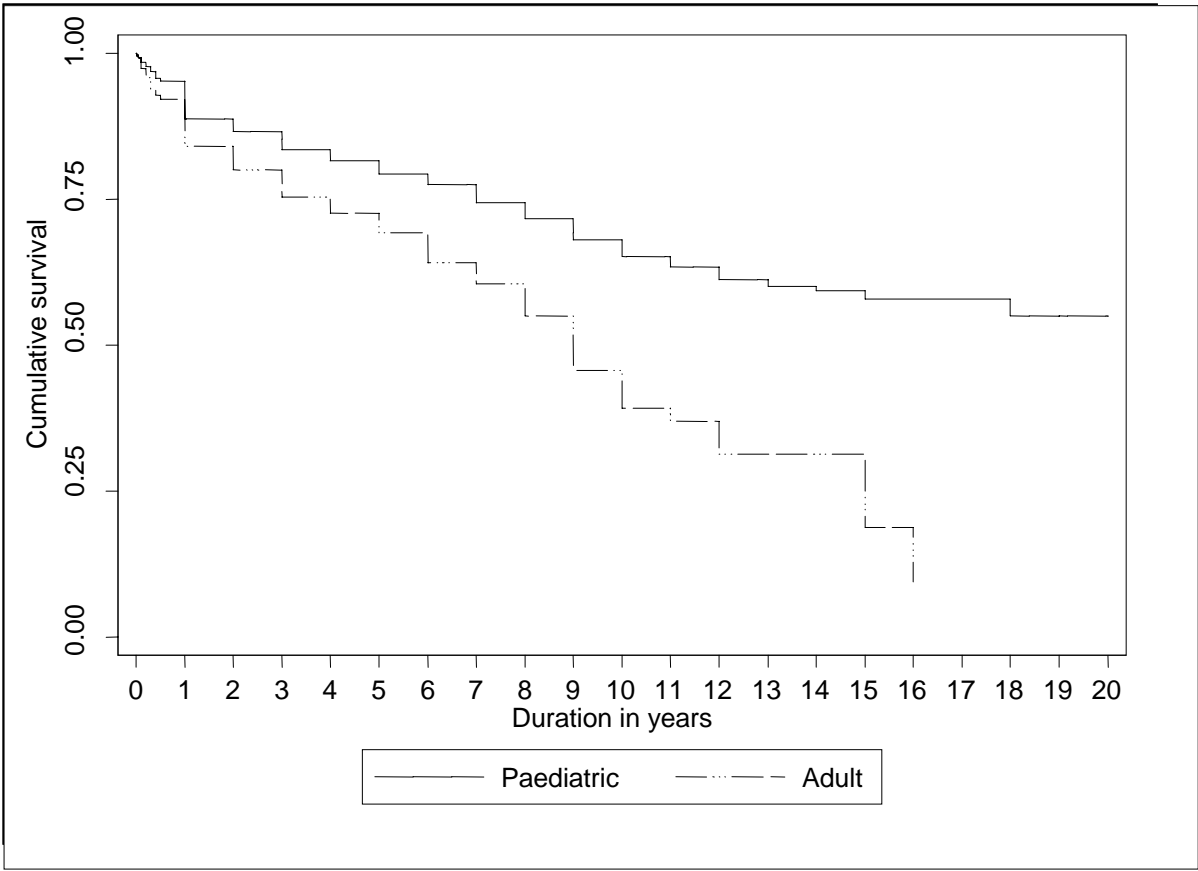


Figure 1.5.9: Disease-free Survival by Age Group for Acute Lymphoblastic Leukaemia, 1987-2009

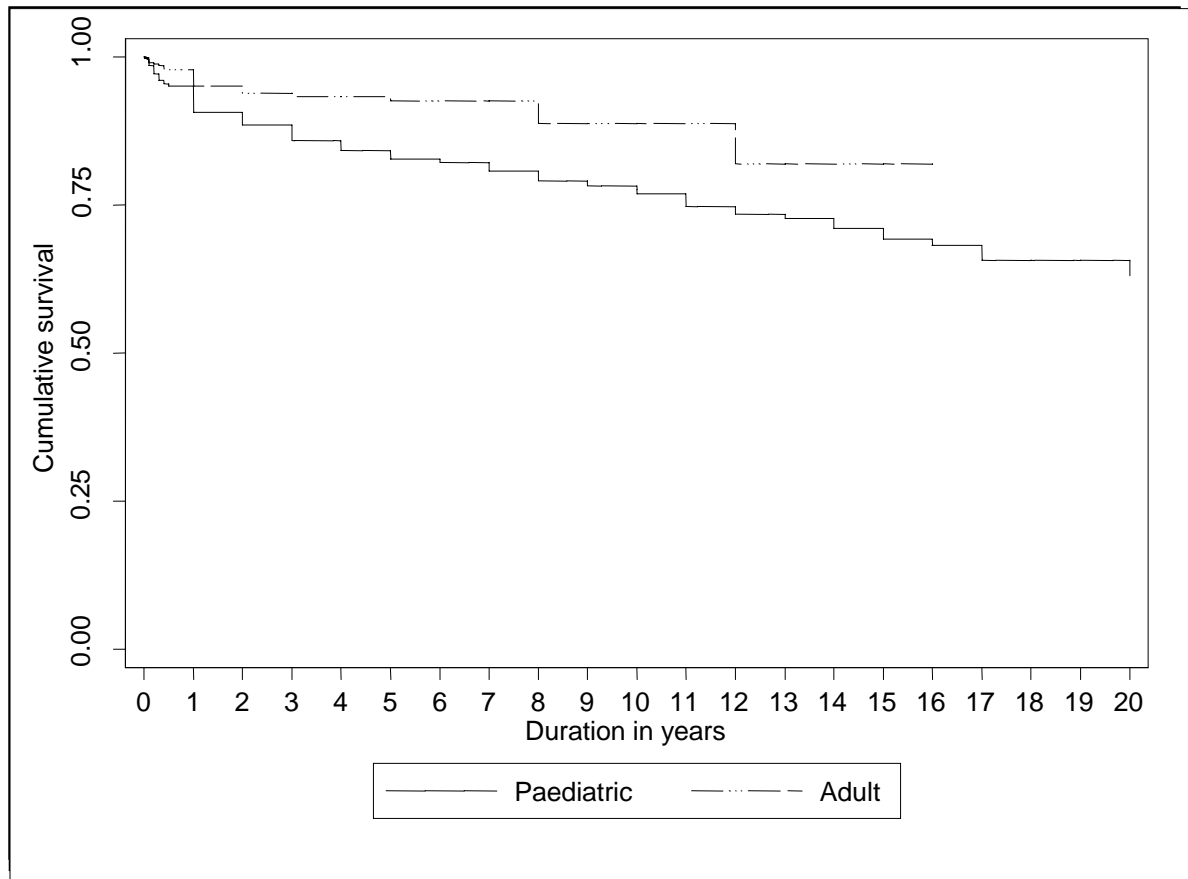


Figure 1.5.10: Disease-free Survival by Age Group for Thalassaemia, 1987-2009

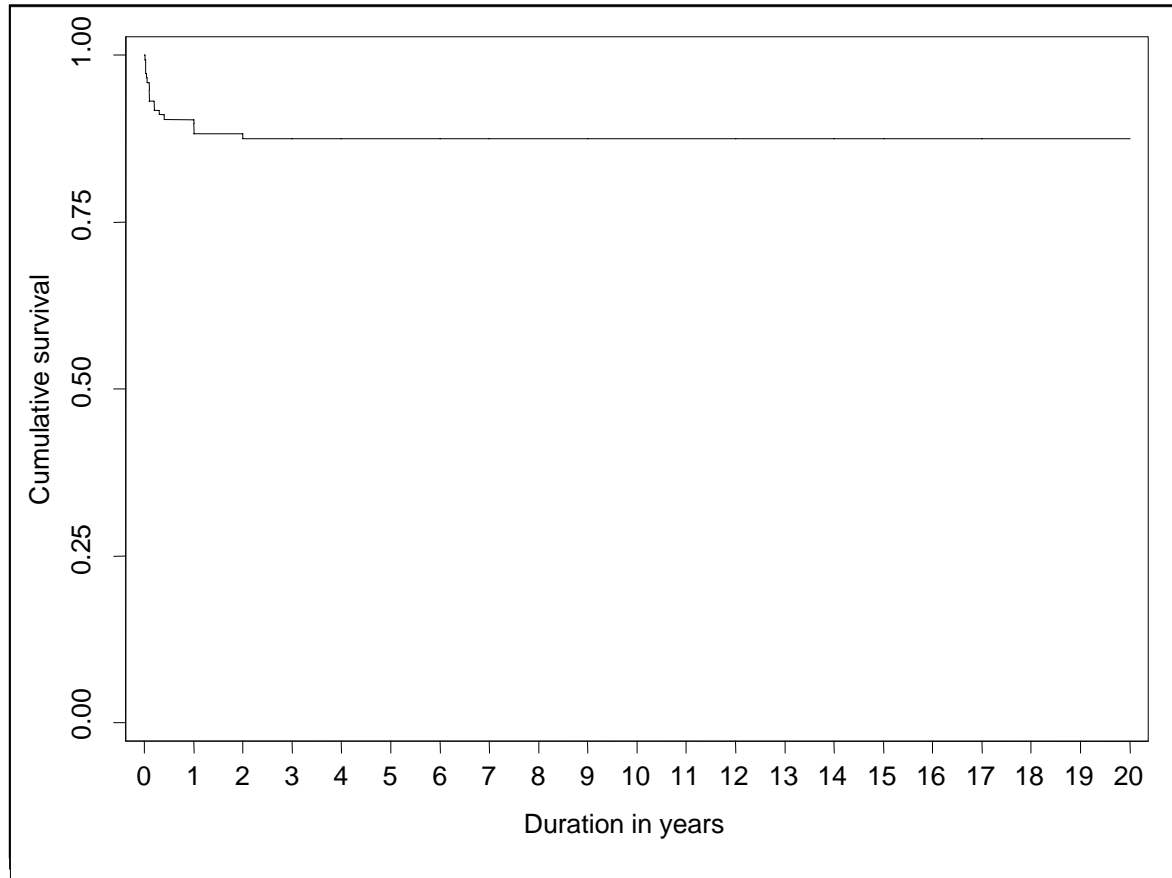


Figure 1.5.11: Disease-free Survival by Age Group for Non-Hodgkin's Lymphoma, 1987-2009

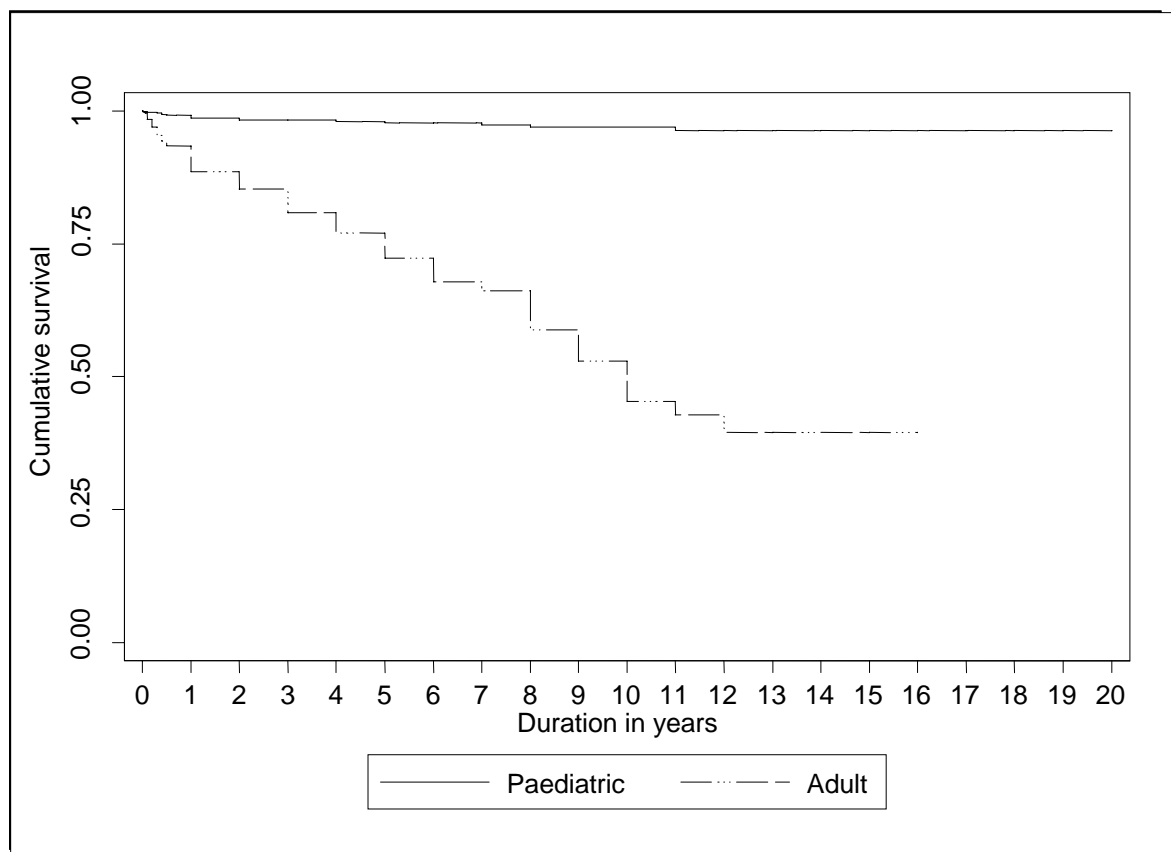


Figure 1.5.12: Disease-free Survival by Age Group for Hodgkin's Disease, 1987-2009

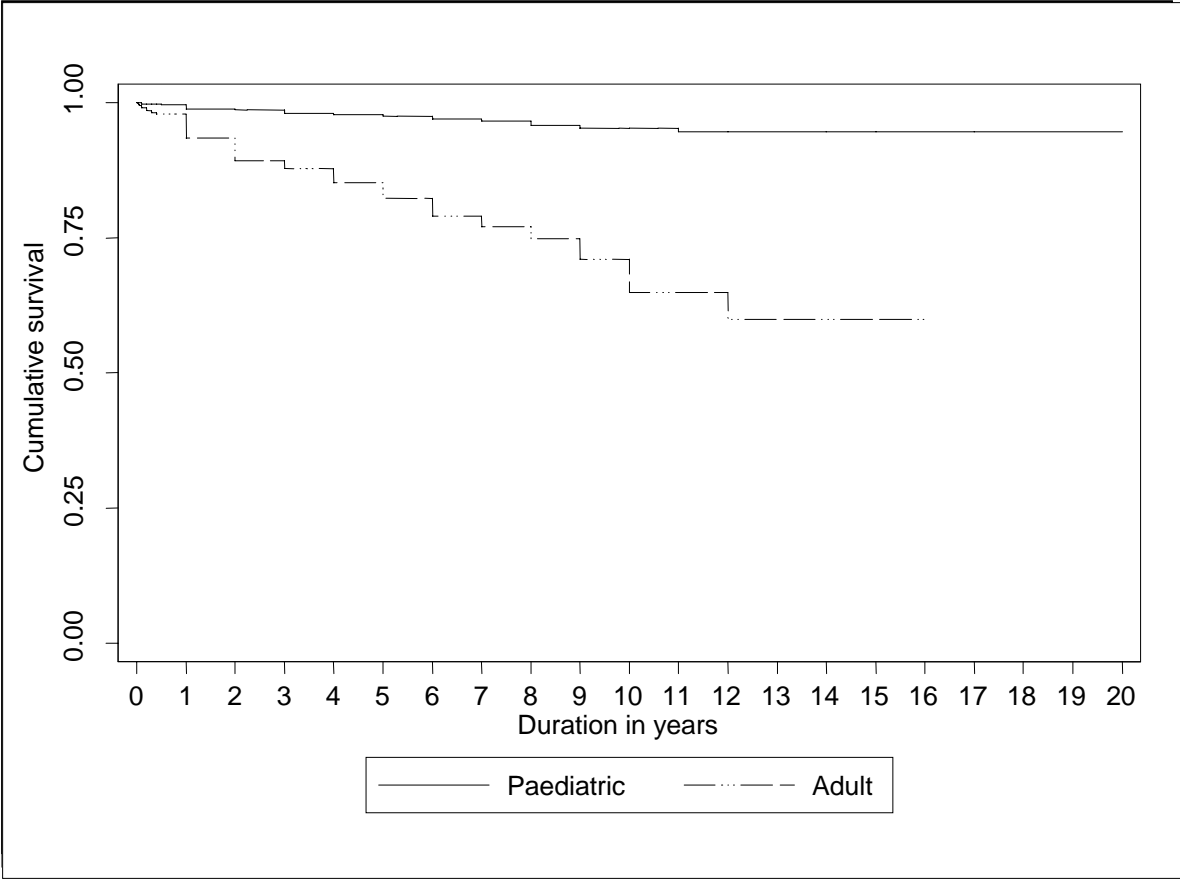


Figure 1.5.13: Disease-free Survival by Age Group for Chronic Myeloid Leukaemia, 1987-2009

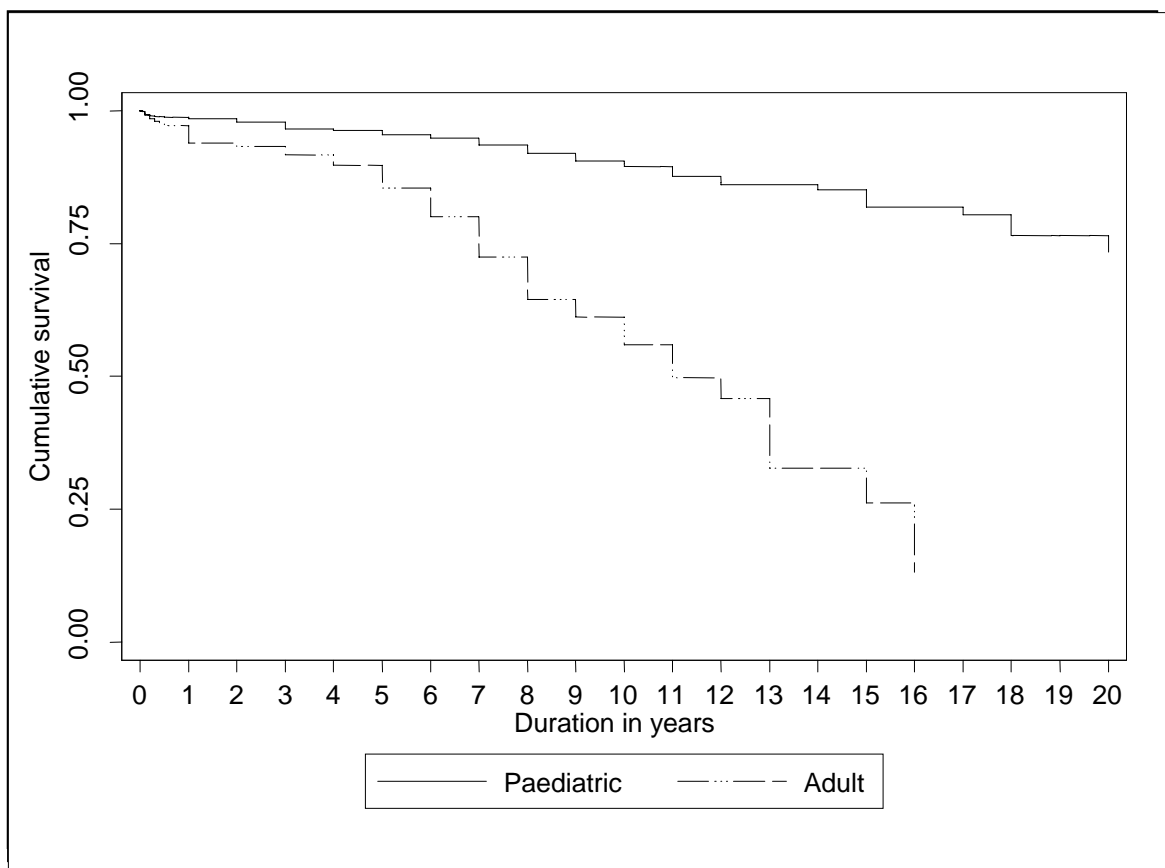


Figure 1.5.14: Disease-free Survival by Age Group for Aplastic Anaemia, 1987-2009

