

## **CHAPTER 8**

### **CADAVERIC ORGAN AND TISSUE DONATION**

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## CADAVERIC ORGAN AND TISSUE DONATION

There was an increase in the number of potential cadaveric donors referred to the National Transplant Procurement Unit (NTPMU) nationwide from 112 the previous year to 143 in 2009. The number of actual donors was 39 for the year, which translated to a conversion rate of 27% and a donation rate of 1.38 per million population (Table 8.1), the highest recorded in Malaysia so far in a calendar year. Of these 18 (46%) were brain dead donors who donated organs and tissues which were procured in the operating theatre, while another 21 were tissue donations after cardiac death (Table 8.3, Table 8.11). In total 126 organs and tissues were procured, comprising 50 corneas, 1 heart, 36 kidneys, 7 livers, 20 pairs of heart valves, 9 sets of long bones and 3 skin donations.

The number of donations throughout the year did not conform to any particular trend (Table 8.3). There were 6 paediatric donors (age 0 – 9 years) and 7 teenage donors which together constitute 33% of the total number of donors (Table 8.4). Another 18% (7/39) were in their twenties which means that 51% of donors were under the age of thirty. The mean age was 28.8 years, age range 25 days – 68 years. Male donors outnumber female three to one (Table 8.5).

Two thirds of donors were Chinese, 26% Indian and 8% Malay by ethnicity (Table 8.6), 59% were Buddhist by religion (Table 8.7). 100% of donors were Malaysian (Table 8.8). Majority of the donors came from the Selangor (36%) followed by Johor (15%), Federal Territory of Kuala Lumpur (13%) and Penang (13%) (Table 8.9). Only three out of the 39 actual donors (8%) had pledged to donate before and carried the donor card (Table 8.10).

Injury from motor vehicle accident was the most common cause of death, accounting for 44% of the brain death and 43% of the cardiac death. Another 33% of brain dead donors and 29% of post-cardiac death tissue donors died from medical conditions (Table 8.12). In 2009, the most common blood group among the 18 organ donors was group O rhesus positive (50%), followed by A positive (33%), B positive (11%) and AB (5%) (Table 8.13). When considered in totality since 1997, blood group O positive remained the most common group (42%) followed by B positive and A positive.

Most of the donations (77%) took place in Ministry of Health hospitals with 4 (10%) from University hospitals and 3 (8%) from private hospitals (Table 8.14a). Forty-six percent of the donors were found in the ICU, but there were also 9 direct referrals for tissue donation from the mortuary with 7 from the ward and 4 from emergency department (“brought in dead” BID) (Table 8.14b).

Organ donors were sent to the operating theatre for procurement of organs (18/18) while tissues were mainly procured in the mortuary (17/21) (Table 8.14c). For the organ donors all were on inotropic support before procurement with the commonest drug being dopamine (7/18) (Table 8.15).

Table 8.1: Number of Donations by Year, 1997-2009

Number of procurement by year N=252													
Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Number of donors	5	7	4	13	24	30	25	16	13	25	25	26	39
Rate of procurement (per million population)	0.23	0.32	0.18	0.55	1	1.22	1	0.63	0.5	0.94	0.92	0.94	1.38

Figure 8.1: Number of Donations by Year, 1997-2009

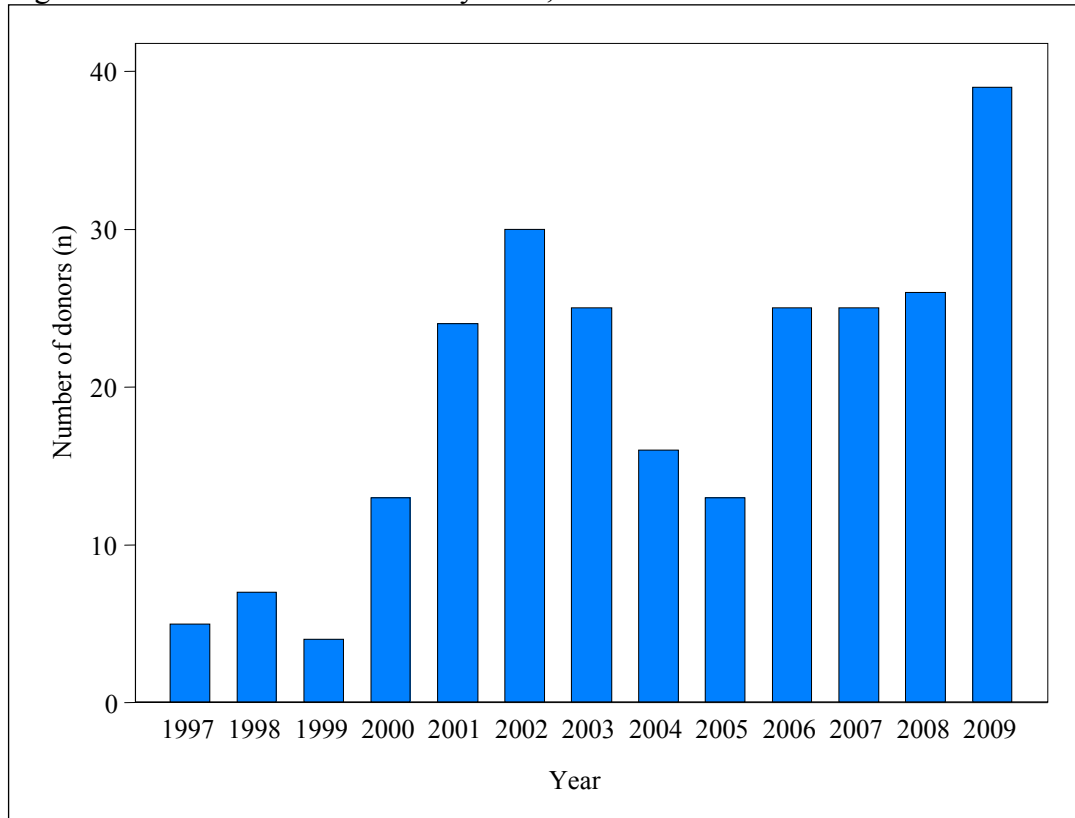


Table 8.2: Number of Organs procured by Year, 1997-2009

Number of procurement by year N=252													
Organs procured	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Cornea	4	10	6	18	32	48	40	20	22	38	32	40	50
Heart	1	3	2	3	4	0	2	0	1	1	3	0	1
Liver	0	0	2	2	1	2	1	3	3	6	5	5	7
Kidney	8	10	6	22	38	26	16	18	8	26	28	26	36
Heart valve	0	1	2	8	10	10	10	10	6	16	8	12	20
Bone	0	1	0	3	2	6	4	5	2	5	5	4	9
Skin	0	0	0	2	2	2	0	1	0	3	0	0	3
Lung	0	0	0	0	0	0	0	0	1	1	2	0	0

Table 8.3: Potential Donor Referrals and Actual Donations by Month, 2009

Month	Potential Donor Referrals	Actual donors	
		Brain Death Donors (BD)	Cardiac Death Tissue Donors (CD)
	No.	No.	No.
January	15	1	2
February	9	1	0
March	8	0	2
April	10	0	2
May	15	3	3
June	10	1	2
July	11	0	3
August	12	2	2
September	10	4	0
October	12	3	2
November	12	0	2
December	19	3	1
<b>TOTAL</b>	<b>143</b>	<b>18</b>	<b>21</b>

Figure 8.3: Potential Donor Referrals and Actual Donations by Month, 2009

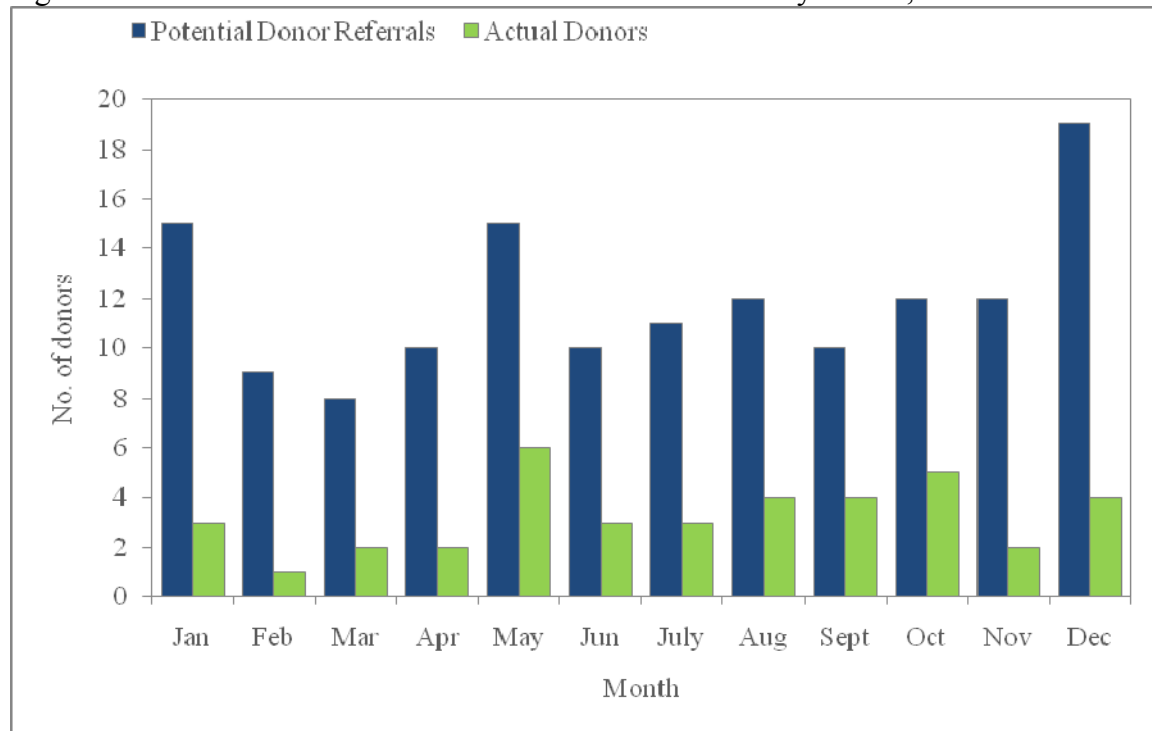


Table 8.4: Distribution of Donors by Age, 1997-2009

Donor's age (years)	1997 N=5		1998 N=7		1999 N=4		2000 N=13		2001 N=24		2002 N=30		2003 N=25		2004 N=16		2005 N=13		2006 N=25		2007 N=25		2008 N=26		2009 N=39		Total N=252		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
<1	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0	0	0	0	0	0	0	0	0	0	0	2	5	3	1
1-9	1	20	0	0	0	0	1	8	1	4	1	3	1	4	1	6	1	8	2	8	3	12	4	15	4	10	20	8	
10-19	0	0	1	14	2	50	7	54	2	8	3	10	4	16	3	19	1	8	9	36	6	24	4	15	7	18	49	19	
20-29	1	20	3	43	2	50	1	8	6	25	6	20	4	16	3	19	2	15	2	8	6	24	6	23	7	18	49	19	
30-39	1	20	0	0	0	0	0	0	5	21	1	3	2	8	2	13	1	8	1	4	1	4	3	12	10	26	27	11	
40-49	0	0	1	14	0	0	2	15	4	17	8	27	4	16	4	25	2	15	3	12	5	20	5	19	3	8	41	16	
50-59	1	20	2	29	0	0	1	8	4	17	7	23	3	12	3	19	1	8	2	8	2	8	2	8	5	13	33	13	
60-69	0	0	0	0	0	0	1	8	2	8	0	0	3	12	0	0	3	23	4	16	2	8	1	4	1	3	17	7	
70-79	0	0	0	0	0	0	0	0	0	0	4	13	3	12	0	0	1	8	2	8	0	0	1	4	0	0	11	4	
80-89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	8	0	0	0	0	0	0	0	0	0	1	0
No data	1	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
<b>Total</b>	5	7	4	13	4	13	13	24	24	30	30	25	25	25	16	16	13	13	25	25	25	25	26	26	39	39	252	252	
Mean	27.25	34.43	20.50	25.23	20.50	25.23	36.83	42.37	36.83	42.37	42.37	39.36	39.36	39.36	32.50	32.50	46.38	46.38	35.64	35.64	29.60	29.60	30.75	30.75	28.79	28.79	34.17	34.17	
SD	21.06	17.12	4.43	18.71	4.43	18.71	15.71	19.61	15.71	19.61	19.61	22.26	22.26	22.26	15.57	15.57	24.78	24.78	23.42	23.42	18.75	18.75	19.06	19.06	16.75	16.75	19.72	19.72	
Median	28.00	25.00	21.00	17.00	21.00	17.00	37.00	46.00	37.00	46.00	46.00	40.00	40.00	40.00	31.50	31.50	48.00	48.00	23.00	23.00	23.00	23.00	27.00	27.00	29	29	32	32	
Minimum	2	16	15	5	15	5	8	4	8	4	4	<1*	<1*	<1*	8	8	3	3	3	3	1**	1**	2	2	<1*	<1*	<1*	<1*	
Maximum	51	57	25	60	25	60	66	79	66	79	79	77	77	77	55	55	81***	81***	77	77	68	68	71	71	68	68	81***	81***	

\* The youngest tissue donor was 25-days-old donated heart valves in 2009 and 37-days-old donated heart valves in 2003.

\*\* The youngest organ donor was 14.5-month old donated kidneys 2007.

\*\*\* The oldest tissue donor was 81-years-old donated eyes in 2005; the oldest organ donor was 65-years-old donated kidneys in 2001.

Figure 8.4: Distribution of Donors by Age, 1997-2009

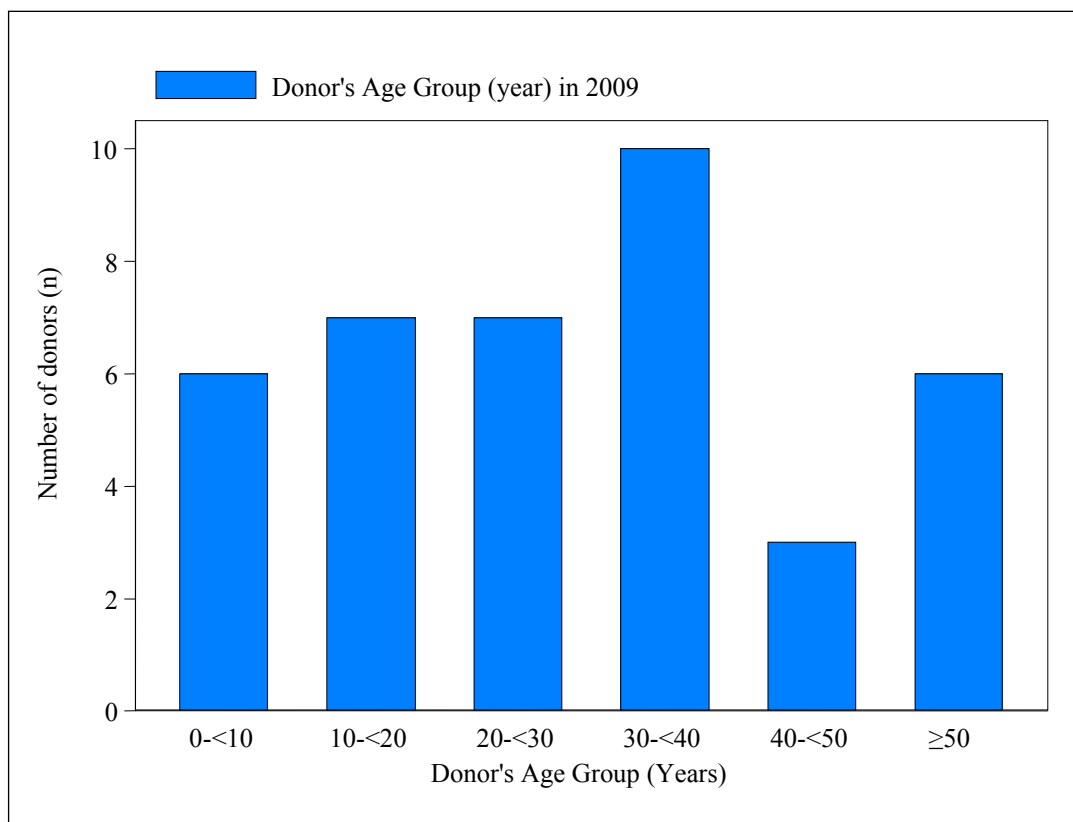
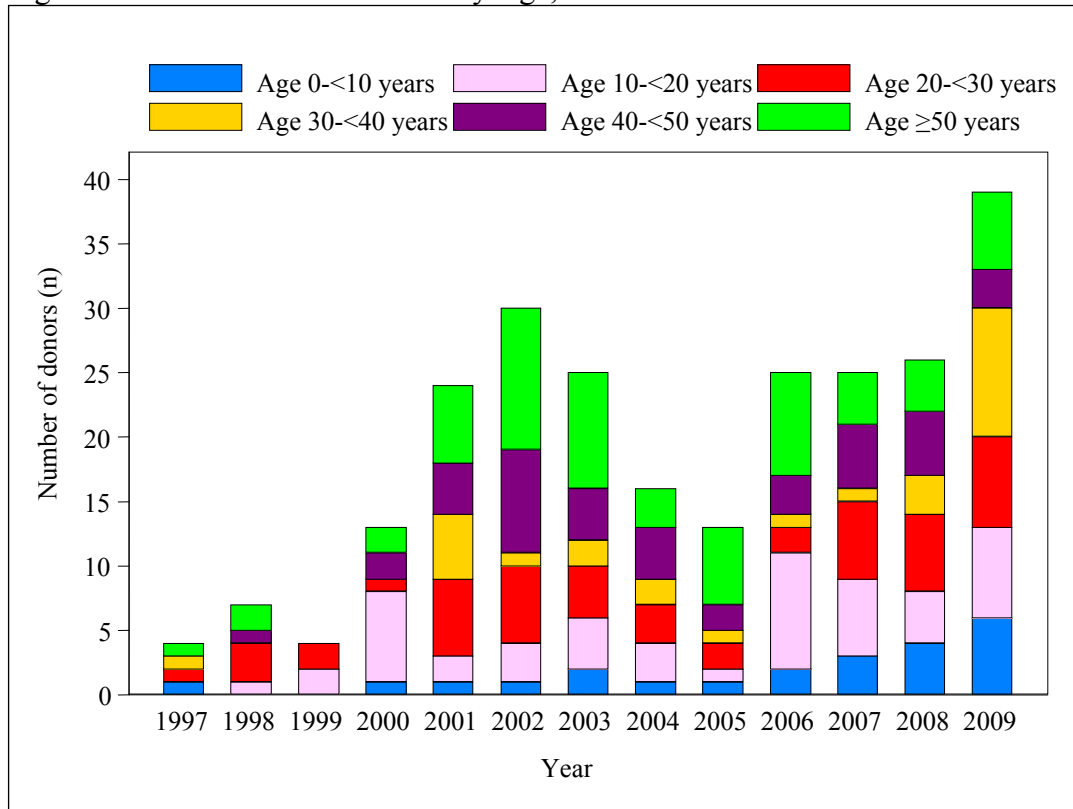


Table 8.5: Distribution of Donors by Gender, 1997-2009

Donor's gender	1997 N=5		1998 N=7		1999 N=4		2000 N=13		2001 N=24		2002 N=30		2003 N=25	
	No.	%	No.	%	No.	No.	%	No.	%	%	No.	%	No.	%
Male	3	60	7	100	3	75	11	85	20	83	27	90	21	84
Female	2	40	0	0	1	25	2	15	4	17	3	10	4	16

Donor's gender	2004 N=16		2005 N=13		2006 N=25		2007 N=25		2008 N=26		2009 N=39		Total N=252	
	No.	%	No.	No.	%	No.	No.	No.	%	No.	%	No.	%	
Male	12	75	8	62	19	76	20	80	18	69	26	67	195	77
Female	4	25	5	38	6	24	5	20	8	31	13	33	57	23

Figure 8.5: Distribution of Donors by Gender, 1997-2009

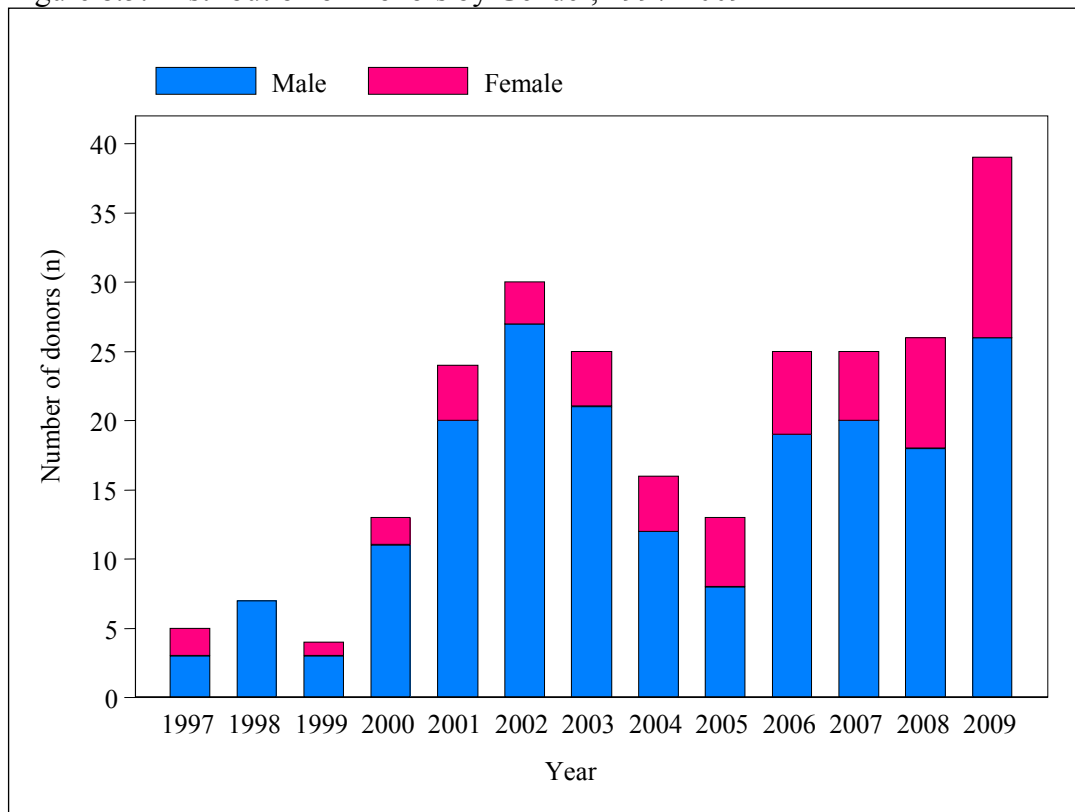




Table 8.6: Distribution of Donors by Ethnic Group, 1997-2009

Donor's ethnic group	1997 N=5		1998 N=7		1999 N=4		2000 N=13		2001 N=24		2002 N=30		2003 N=25	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Malay	1	20	0	0	0	0	2	15	1	4	0	0	0	0
Chinese	3	60	4	57	4	100	7	54	17	71	13	43	14	56
Indian	1	20	3	43	0	0	3	23	4	17	15	50	9	36
Others	0	0	0	0	0	0	1	8	2	8	2	7	2	8

Donor's ethnic group	2004 N=16		2005 N=13		2006 N=25		2007 N=25		2008 N=26		2009 N=39		Total N=252	
	No.	No.	%	No.	No.	No.	%	No.	%	No.	%	No.	%	
Malay	1	6	1	8	1	4	5	20	0	0	3	8	15	6
Chinese	14	88	5	38	12	48	14	56	17	65	26	66	150	60
Indian	1	6	7	54	11	44	3	12	6	23	10	26	73	29
Others	0	0	0	0	1	4	3	12	3	12	0	0	14	6

Figure 8.6: Distribution of Donors by Ethnic Group, 1997-2009

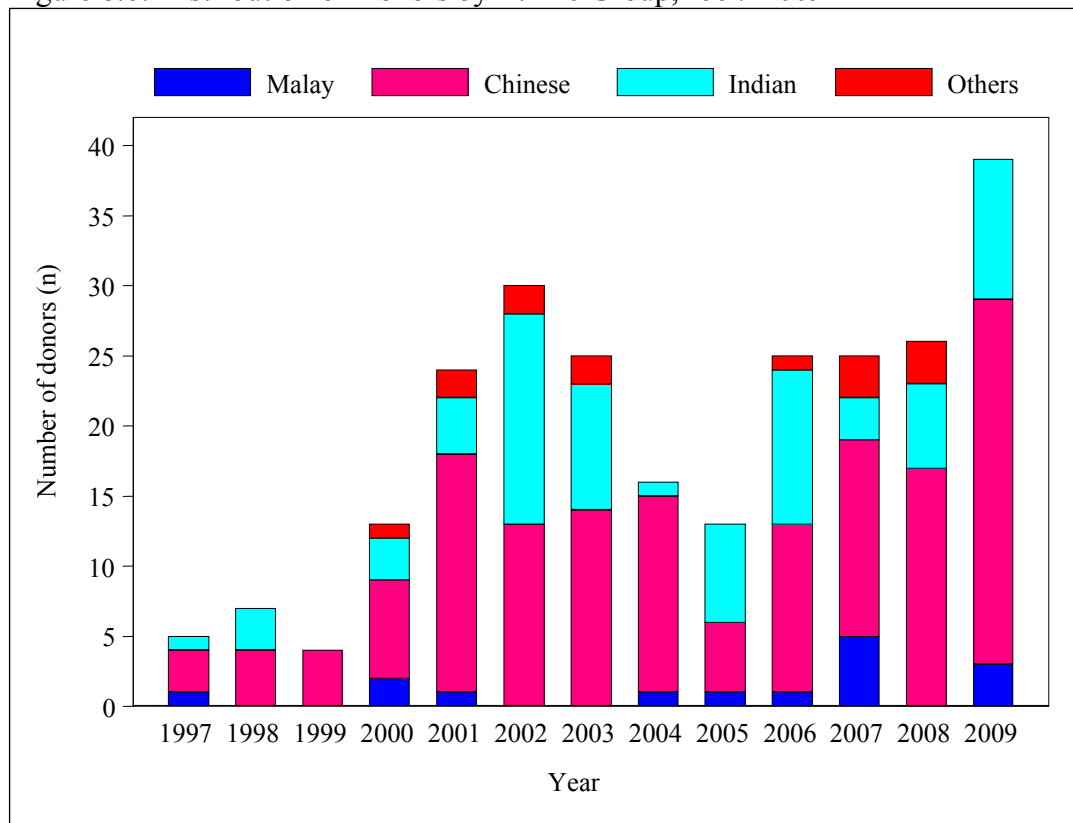


Table 8.7: Distribution of Donors by Religion, 1997-2009

Donor's religion	1997 N=5		1998 N=7		1999 N=4		2000 N=13		2001 N=24		2002 N=30		2003 N=25	
	No.	%	No.	%	No.	No.	%	No.	%	%	No.	%	No.	%
Islam	1	20	0	0	0	0	2	15	1	4	0	0	1	4
Buddhism	3	60	3	43	0	0	0	0	1	4	5	17	14	56
Hinduism	1	20	3	43	0	0	3	23	3	13	13	43	8	32
Christianity	0	0	0	0	0	0	1	8	0	0	1	3	0	0
Others	0	0	0	0	0	0	0	0	0	0	0	0	2	8
Unknown	0	0	1	14	4	100	7	54	19	79	11	37	0	0

Donor's religion	2004 N=16		2005 N=13		2006 N=25		2007 N=25		2008 N=26		2009 N=39		Total N=252	
	No.	%	No.	No.	%	No.	No.	%	No.	%	No.	%	No.	%
Islam	2	13	1	8	2	8	5	20	0	0	3	8	18	7
Buddhism	14	88	5	38	12	48	13	52	16	62	23	59	109	43
Hinduism	0	0	5	38	10	40	2	8	6	23	9	23	63	25
Christianity	0	0	0	0	0	0	4	16	3	12	4	10	13	5
Others	0	0	2	15	0	0	1	4	0	0	0	0	5	2
Unknown	0	0	0	0	1	4	0	0	1	4	0	0	44	17

Figure 8.7: Distribution of Donors by Religion, 1997-2009

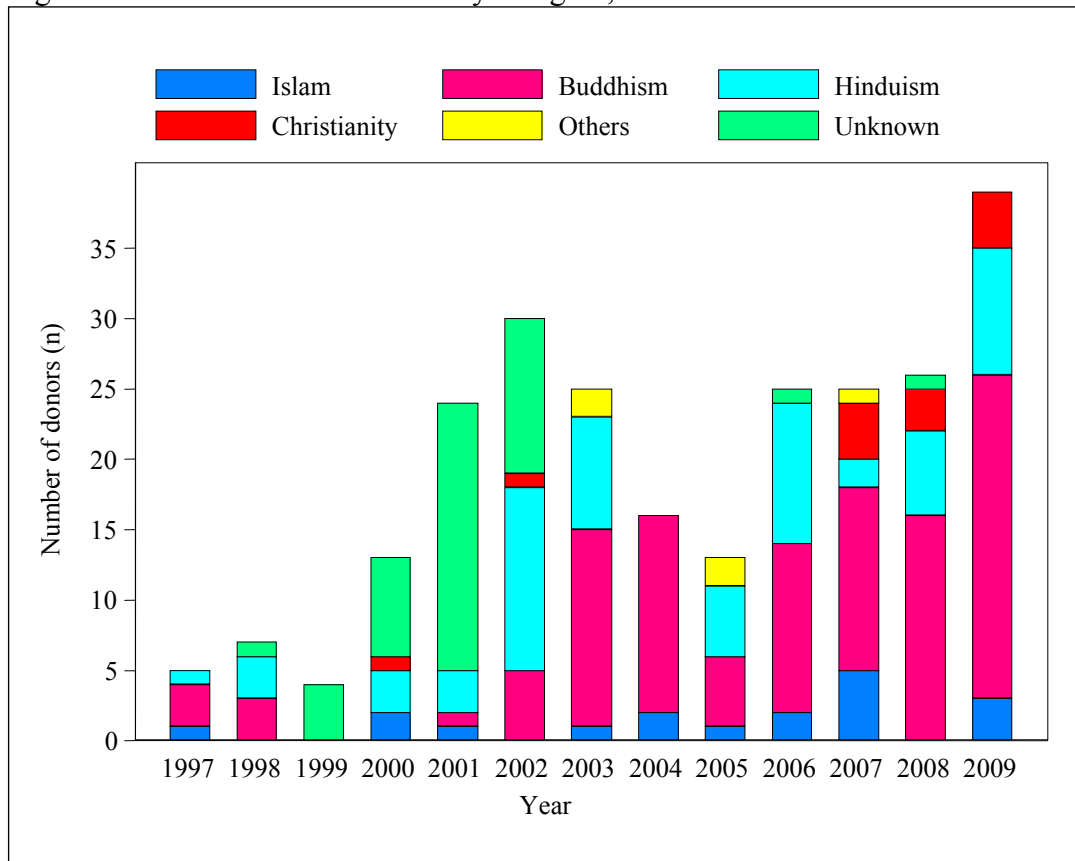


Table 8.8: Distribution of Donors by Nationality, 1997-2009

Donor's nationality	1997 N=5		1998 N=7		1999 N=4		2000 N=13		2001 N=24		2002 N=30		2003 N=25	
	No.	%	No.	%	No.	No.	%	No.	%	%	No.	%	No.	%
Malaysian	5	100	7	100	4	100	13	100	21	88	29	97	24	96
Non-Malaysian	0	0	0	0	0	0	0	0	3	13	1	3	1	4

Donor's nationality	2004 N=16		2005 N=13		2006 N=25		2007 N=25		2008 N=26		2009 N=39		Total N=252	
	No.	%	No.	No.	%	No.	%	No.	%	No.	%	No.	%	
Malaysian	16	100	13	100	24	96	24	96	24	92	39	100	243	96
Non-Malaysian	0	0	0	0	1	4	1	4	2	8	0	0	9	4

Figure 8.8: Distribution of Donors by Nationality, 1997-2009

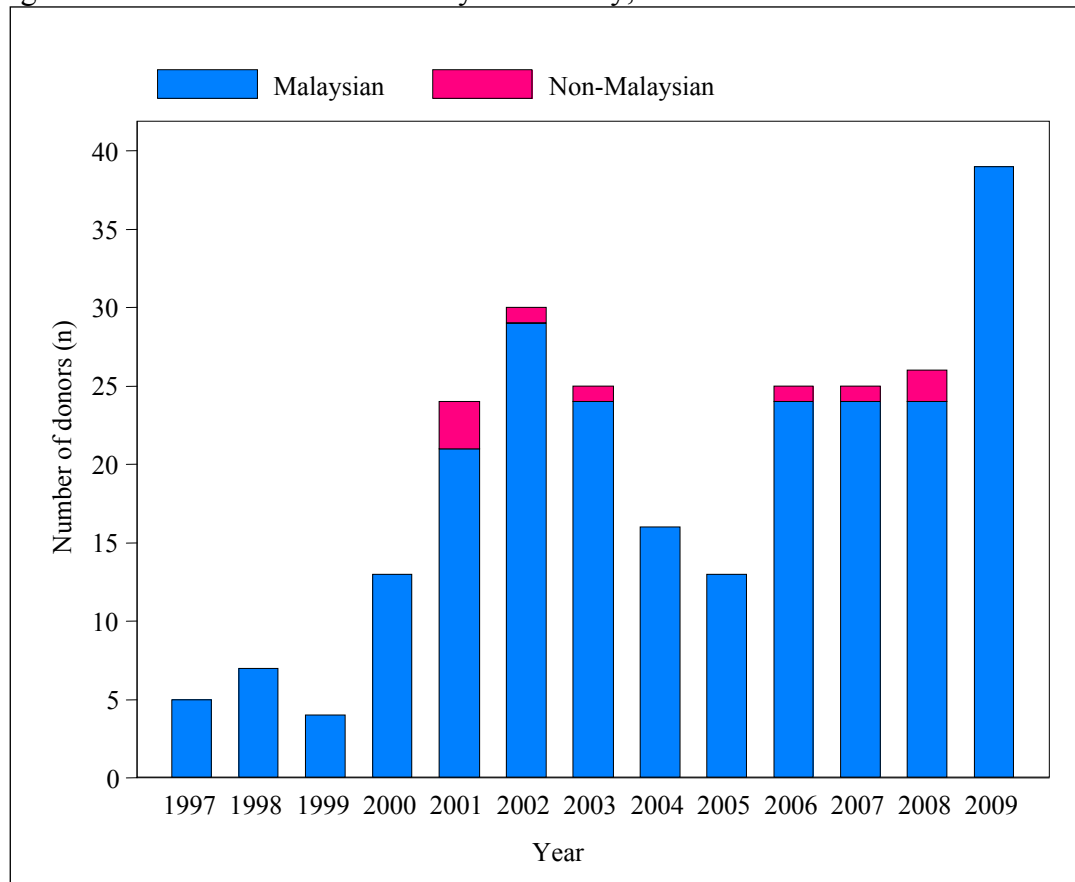


Table 8.9: Distribution of Donors by State, 1997-2009

Donor's state of residence*	1997 N=5		1998 N=7		1999 N=4		2000 N=13			2001 N=24			2002 N=30		2003 N=25	
	No.	%	No.	%	No.	No.	%	No.	%	%	No.	%	No.	%		
Johor	0	0	0	0	0	0	3	23	0	0	2	7	3	12		
Malacca	0	0	1	14	1	25	0	0	0	0	1	3	2	8		
Negeri Sembilan	0	0	1	14	0	0	1	8	0	0	1	3	4	16		
Selangor	2	40	1	14	0	0	0	0	3	13	9	30	6	24		
WP Kuala Lumpur	1	20	1	14	2	50	0	0	0	0	5	17	2	8		
WP Putrajaya	0	0	0	0	0	0	0	0	0	0	1	3	0	0		
Perak	1	20	2	29	1	25	3	23	0	0	4	13	0	0		
Kedah	0	0	0	0	0	0	2	15	3	13	1	3	0	0		
Perlis	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Pulau Pinang	0	0	0	0	0	0	1	8	3	13	1	3	3	12		
Pahang	0	0	1	14	0	0	0	0	3	13	2	7	2	8		
Terengganu	0	0	0	0	0	0	0	0	1	4	0	0	0	0		
Kelantan	0	0	0	0	0	0	1	8	0	0	0	0	0	0		
Sabah	0	0	0	0	0	0	2	15	1	4	0	0	1	4		
Sarawak	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	1	4		
Unknown	1	20	0	0	0	0	0	0	10	42	3	10	1	4		

Donor's state of residence*	2004 N=16		2005 N=13		2006 N=25		2007 N=25		2008 N=26		2009 N=39		Total N=252	
	No.	%	No.	No.	%	No.	No.	%	No.	%	No.	%	No.	%
Johor	1	6	1	8	1	4	5	20	3	12	6	15	25	10
Malacca	0	0	1	8	2	8	1	4	0	0	1	3	10	4
Negeri Sembilan	0	0	1	8	2	8	1	4	2	8	3	8	16	6
Selangor	6	38	7	54	2	8	6	24	3	12	14	36	59	23
WP Kuala Lumpur	3	19	2	15	6	24	3	12	8	31	5	13	38	15
WP Putrajaya	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Perak	2	13	1	8	4	16	2	8	3	12	4	10	27	11
Kedah	1	6	0	0	1	4	2	8	1	4	0	0	11	4
Perlis	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pulau Pinang	2	13	0	0	4	16	2	8	2	8	5	13	23	9
Pahang	0	0	0	0	1	4	1	4	2	8	1	3	13	5
Terengganu	0	0	0	0	0	0	1	4	0	0	0	0	2	1
Kelantan	0	0	0	0	1	4	0	0	0	0	0	0	2	1
Sabah	1	6	0	0	0	0	0	0	2	8	0	0	7	3
Sarawak	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Others**	0	0	0	0	1	4	1	4	0	0	0	0	3	1
Unknown	0	0	0	0	0	0	0	0	0	0	0	0	15	6

Table 8.10: Donor's Pledged Status, 1997-2009

Donor's pledged status	1997 N=5		1998 N=7		1999 N=4		2000 N=13		2001 N=24		2002 N=30		2003 N=25	
	No.	%	No.	%	No.	No.	%	No.	%	%	No.	%	No.	%
Pledged donors	0	0	0	0	0	0	0	0	0	0	5	17	6	24
Non-pledged donors	5	100	7	100	4	100	13	100	24	100	25	83	19	76

Donor's pledged status	2004 N=16		2005 N=13		2006 N=25		2007 N=25		2008 N=26		2009 N=39		Total N=252	
	No.	%	No.	No.	%	No.	No.	%	No.	%	No.	%	No.	%
Pledged donors	2	13	3	23	1	4	6	24	2	8	3	8	28	11
Non-pledged donors	14	88	10	77	24	96	19	76	24	92	36	92	224	89

Figure 8.10: Donor's Pledged Status, 1997-2009

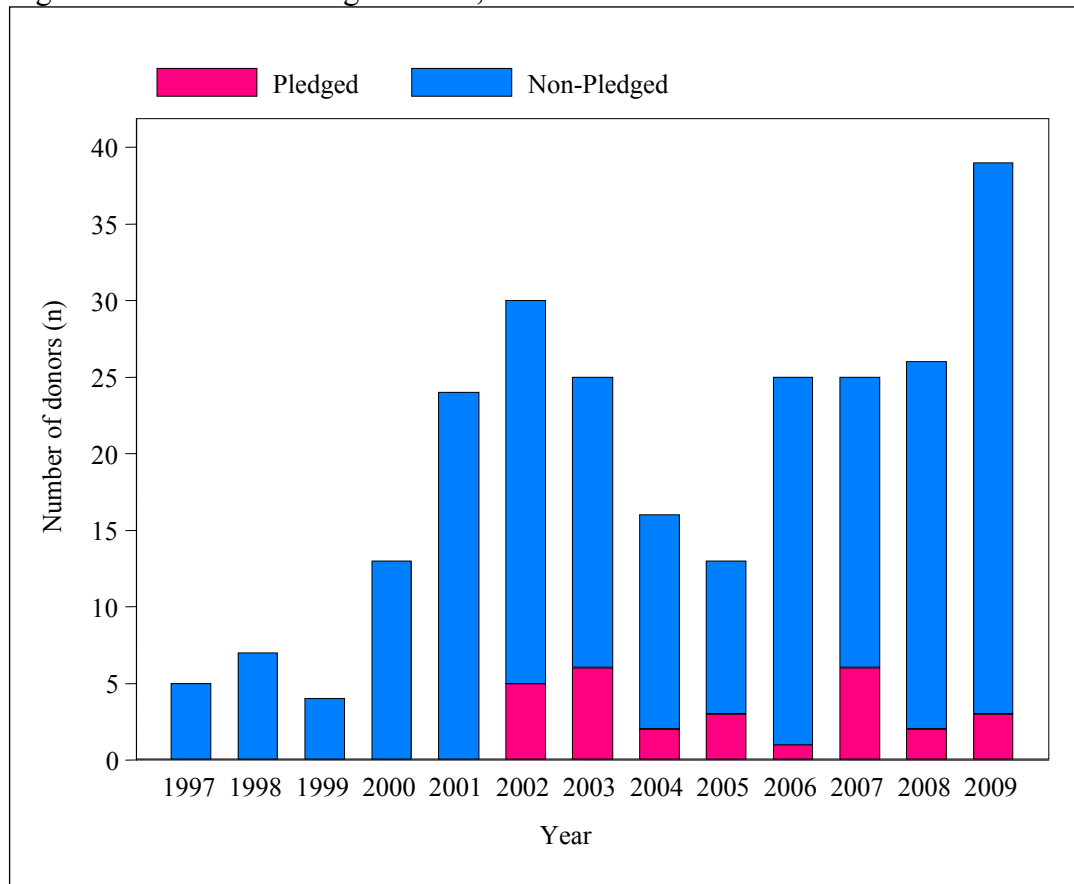


Table 8.11: Distribution of Donors by Type, 1997-2009

Type of donors	1997 N=5		1998 N=7		1999 N=4		2000 N=13		2001 N=24		2002 N=30		2003 N=25	
	No.	%	No.	%	No.	No.	%	No.	%	%	No.	%	No.	%
BD (Brain Death donor)	4	80	6	86	4	100	11	85	20	83	17	57	8	32
CD (tissue donors after Cardiac Death)*	1	20	1	14	0	0	2	15	4	17	13	43	17	68

Type of donors	2004 N=16		2005 N=13		2006 N=25		2007 N=25		2008 N=26		2009 N=39		Total N=252	
	No.	%	No.	No.	%	No.	No.	%	No.	%	No.	%	No.	%
BD (Brain Death donor)	10	63	5	38	14	56	15	60	14	54	18	46	146	58
CD (tissue donors after Cardiac Death)*	6	38	8	62	11	44	10	40	12	46	21	54	106	42

Figure 8.11: Distribution of Donors by Type, 1997-2009

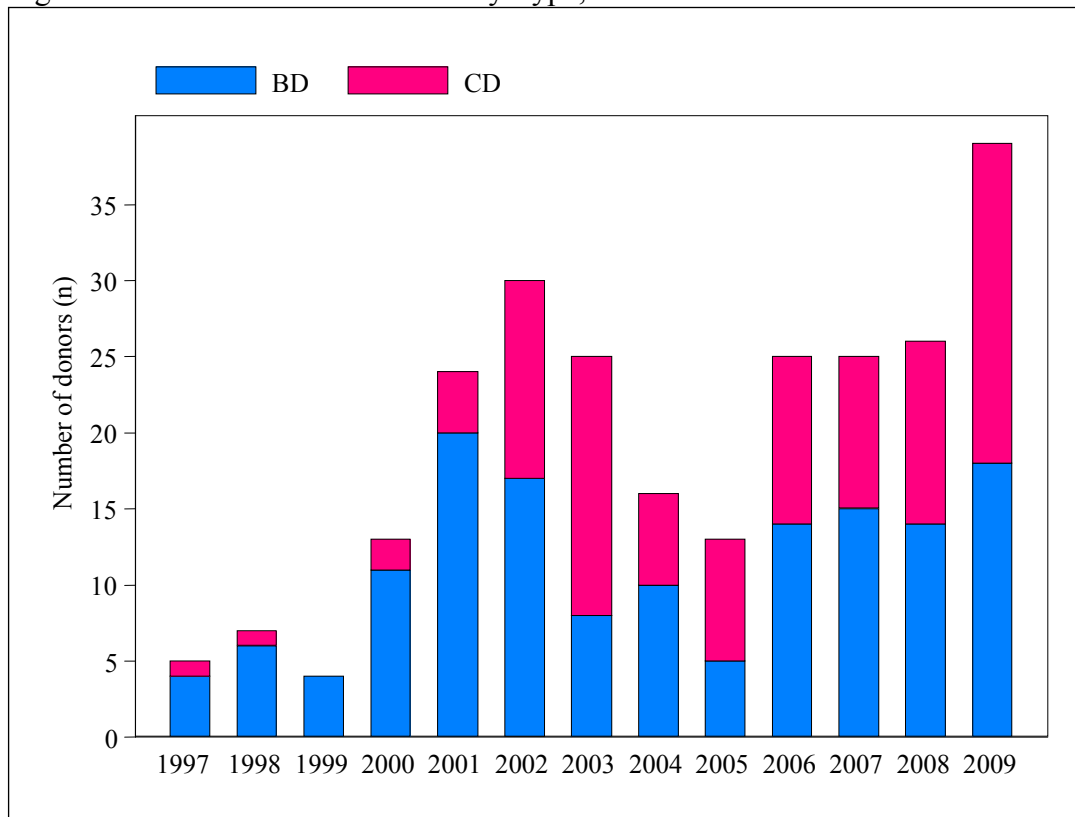


Table 8.12: Distribution of Donors by Cause of Death, 1997-2009

Causes of death	1997 N=5		1998 N=7		1999 N=4		2000 N=13		2001 N=24		2002 N=30													
	Brain dead donors N=4	Cardiac death tissue donors N=1	Brain dead donors N=6	Cardiac death tissue donors N=1	Brain dead donors N=4	Cardiac death tissue donors N=0	Brain dead donors N=11	Cardiac death tissue donors N=2	Brain dead donors N=20	Cardiac death tissue donors N=4	Brain dead donors N=17	Cardiac death tissue donors N=13												
													No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Injury from MVA	1	25	0	0	5	83	0	0	3	75	0	0	2	100	13	65	1	25	10	59	7	54		
Injury from fall	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Injury from assault	0	0	0	0	1	17	0	0	0	0	0	0	0	0	1	5	0	0	0	0	0	0		
Injury from industrial accident	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Spontaneous hypertensive intracranial bleed	2	50	0	0	0	0	0	0	0	0	0	2	18	0	0	3	15	1	25	2	12	0	0	
Spontaneous AVM/Aneurysm intracranial bleed	0	0	0	0	0	0	0	0	0	0	0	1	9	0	0	1	5	0	0	2	12	0	0	
Asphyxia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Brain Tumor	1	25	0	0	0	0	0	0	0	0	0	1	9	0	0	0	0	0	0	0	0	0	0	
Stroke	0	0	0	0	0	0	0	0	0	0	0	1	9	0	0	0	0	1	25	1	6	0	0	
Died at home	0	0	1	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Drowning	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Medical Conditions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	38
Unknown	0	0	0	0	0	0	0	0	1	25	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	0	0	0	0	1	5	0	0	1	8
Suicidal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Causes of death	2003 N=25		2004 N=16		2005 N=13		2006 N=25		2007 N=25		2008 N=26		2009 N=39		Total N=252																			
	Brain dead donors N=8		Brain dead donors N=10		Brain dead donors N=5		Brain dead donors N=14		Brain dead donors N=15		Brain dead donors N=14		Brain dead donors N=18		Brain dead donors N=146																			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%																
Injury from MVA	6	75	3	18	2	20	3	50	1	20	2	25	7	50	1	9	4	40	3	21	2	17	8	44	9	43	73	50	34	32				
Injury from fall	1	13	0	0	2	20	0	0	0	0	1	7	1	7	1	7	2	20	1	7	1	8	1	6	1	5	9	6	5	5				
Injury from assault	0	0	0	0	1	10	1	17	1	20	0	0	1	7	1	9	1	7	0	0	0	2	17	0	0	0	0	6	4	4				
Injury from industrial accident	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7	0	0	0	0	0	2	1	0	0				
Spontaneous hypertensive intracranial bleed	0	0	1	6	1	10	2	33	1	20	0	0	1	7	0	0	1	7	0	0	1	7	0	0	1	5	14	10	5	5				
Spontaneous AVM/Artery-intracranial bleed	0	0	1	6	3	30	0	0	0	0	0	0	0	0	0	0	0	0	2	13	0	0	1	7	1	8	2	11	0	0	2	8	2	2
Asphyxia	0	0	1	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	
Brain Tumor	0	0	0	0	0	0	0	0	0	0	0	0	2	14	0	0	0	0	0	0	2	14	0	0	1	6	1	5	7	5	1	1		
Stroke	1	13	0	0	0	0	0	0	1	20	0	0	0	0	0	0	2	18	0	0	0	0	0	0	0	0	0	4	3	4	4			
Died at home	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1		
Drowning	0	0	1	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	0	0	2	2			
Medical Conditions	0	0	7	41	1	10	0	0	1	20	3	38	2	14	5	45	0	0	4	40	4	29	6	50	6	33	6	29	14	10	36	34		
Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7	0	0	1	5	2	1	1	1	1			
Others	0	0	3	18	0	0	0	0	0	0	3	38	0	0	0	0	0	0	1	7	0	0	0	0	0	0	1	5	2	1	9	8		
Suicidal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	9	0	0	0	0	0	0	0	0	0	0	0	1	1	1		



Table 8.13: Distribution of Organ Donors by Blood Group, 1997-2009

Blood group	No. (%)						
	1997 N=4	1998 N=6	1999 N=4	2000 N=11	2001 N=20	2002 N=15	2003 N=7
A positive	1 (25)	2 (33)	0 (0)	1 (9)	5 (25)	4 (27)	4 (57)
B positive	0 (0)	1 (17)	1 (25)	5 (45)	4 (20)	4 (27)	2 (29)
AB positive	1 (25)	1 (17)	0 (0)	0 (0)	1 (5)	0 (0)	0 (0)
O positive	2 (50)	2 (33)	3 (75)	5 (45)	10 (50)	7 (47)	1 (14)
A negative	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Unknown	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

Blood group	No. (%)						
	2004 N=10	2005 N=5	2006 N=14	2007 N=15	2008 N=13	2009 N=18	Total N=142
A positive	2 (20)	1 (20)	4 (29)	6 (40)	4 (31)	6 (33)	40 (28)
B positive	4 (40)	2 (40)	5 (36)	3 (20)	2 (15)	2 (11)	35 (25)
AB positive	0 (0)	0 (0)	2 (14)	0 (0)	0 (0)	1 (6)	6 (4)
O positive	4 (40)	2 (40)	3 (21)	5 (33)	6 (46)	9 (50)	59 (42)
A negative	0 (0)	0 (0)	0 (0)	1 (7)	1 (8)	0 (0)	2 (1)
Unknown	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

Blood group is only ascertained in brain dead donors and is not done for tissue donors post -cardiac deaths

Figure 8.13a: Distribution of Organ Donors by Blood Group, 1997-2009

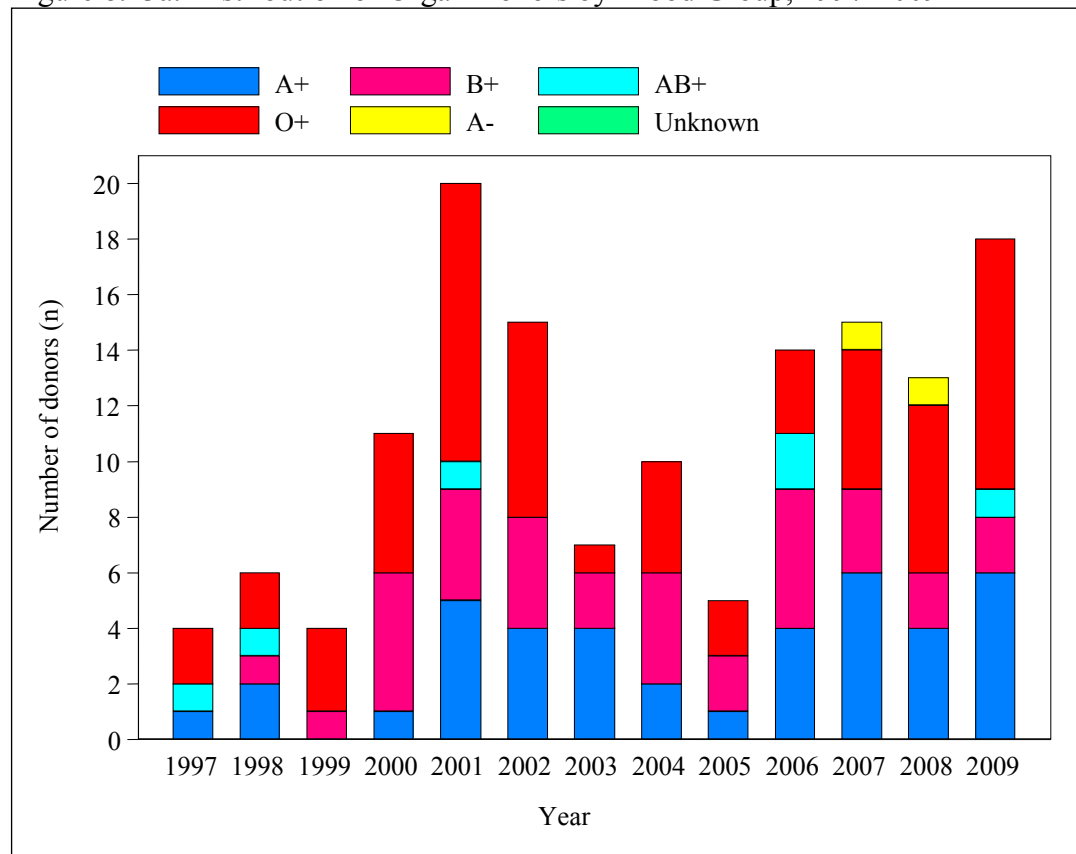


Figure 8.13b: Distribution of Organ Donors by Blood Group Type (pie chart), 1997-2009

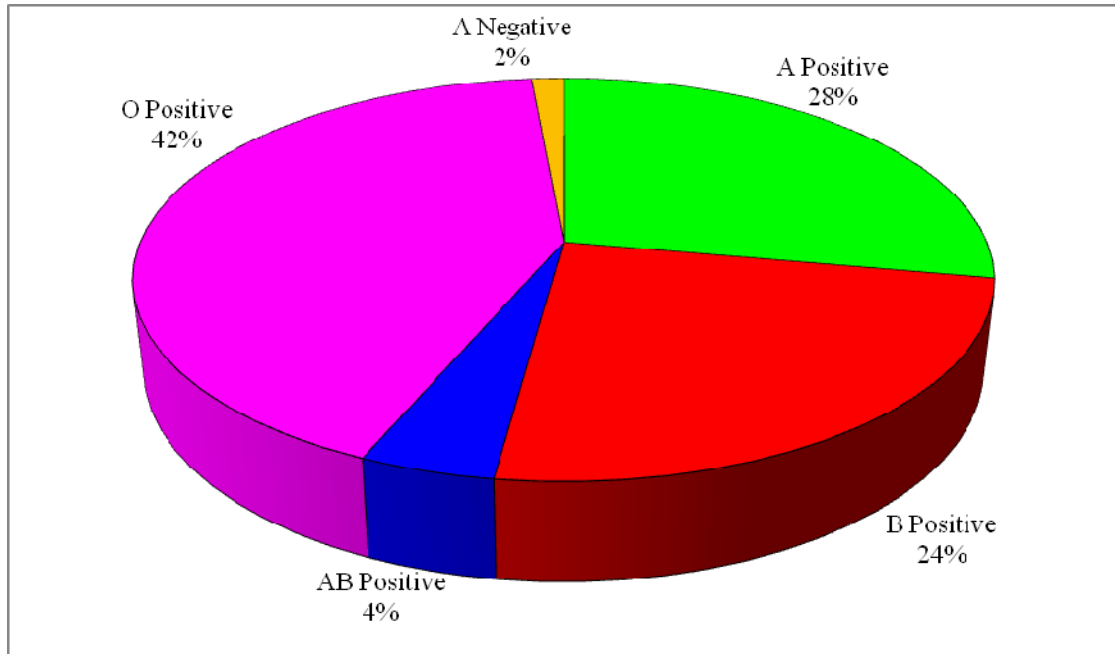


Figure 8.13c: Distribution of Organ Donors by Blood Group Type (pie chart), 2009

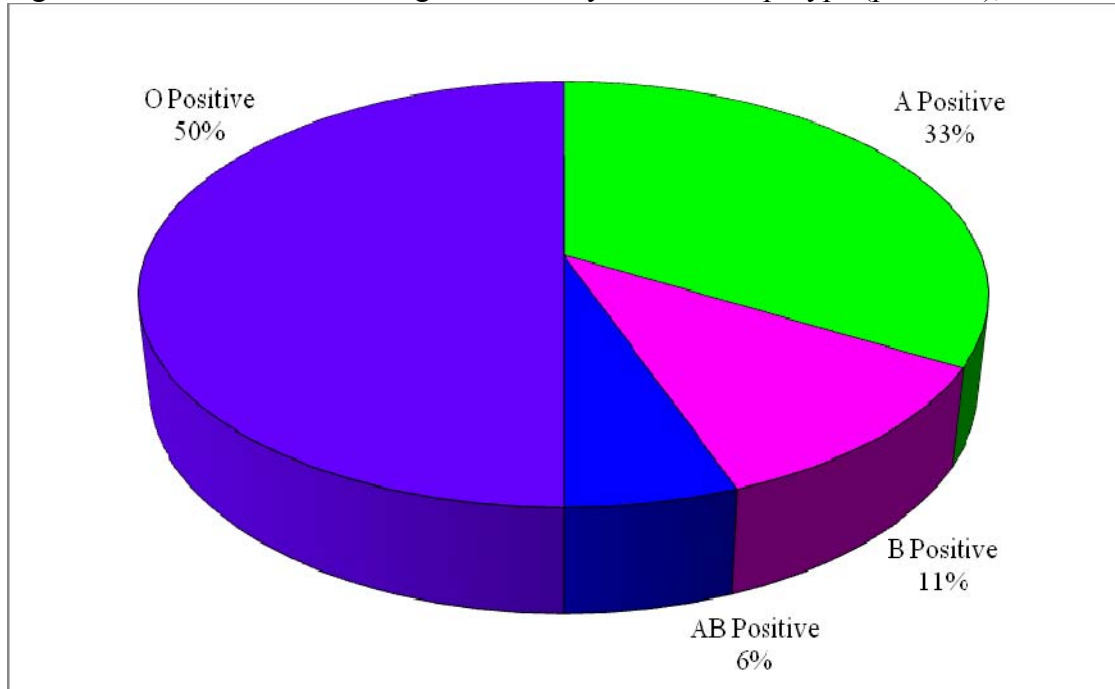


Table 8.14a: Distribution of Donors by Institution of Origin, 1997-2009

Donors' Institution of Origin	1997 N=5		1998 N=7		1999 N=4		2000 N=13			2001 N=24		2002 N=30		2003 N=25	
	No.	%	No.	%	No.	No.	%	No.	%	%	No.	%	No.	%	
MOH state/general hospitals	2	40	5	71	1	25	10	77	16	67	19	63	15	60	
MOH district hospitals	0	0	0	0	0	0	2	15	0	0	3	10	4	16	
University hospitals	1	20	1	14	0	0	0	0	6	25	3	10	3	12	
Private hospitals	1	20	1	14	3	75	1	8	2	8	4	13	3	12	
Home	1	20	0	0	0	0	0	0	0	0	1	3	0	0	

Donors' Institution of Origin	2004 N=16		2005 N=13		2006 N=25		2007 N=25		2008 N=26		2009 N=39		Total N=252	
	No.	%	No.	No.	%	No.	No.	%	No.	%	No.	%	No.	%
MOH state/general hospitals	12	75	8	62	20	80	18	72	15	58	30	77	171	68
MOH district hospitals	2	13	0	0	0	0	3	12	0	0	2	5	16	6
University hospitals	1	6	1	8	3	12	2	8	3	12	4	10	28	11
Private hospitals	1	6	4	31	2	8	2	8	6	23	3	8	33	13
Home	0	0	0	0	0	0	0	0	2	8	0	0	4	2

Figure 8.14a: Distribution of Donors by Institution of Origin, 1997-2009

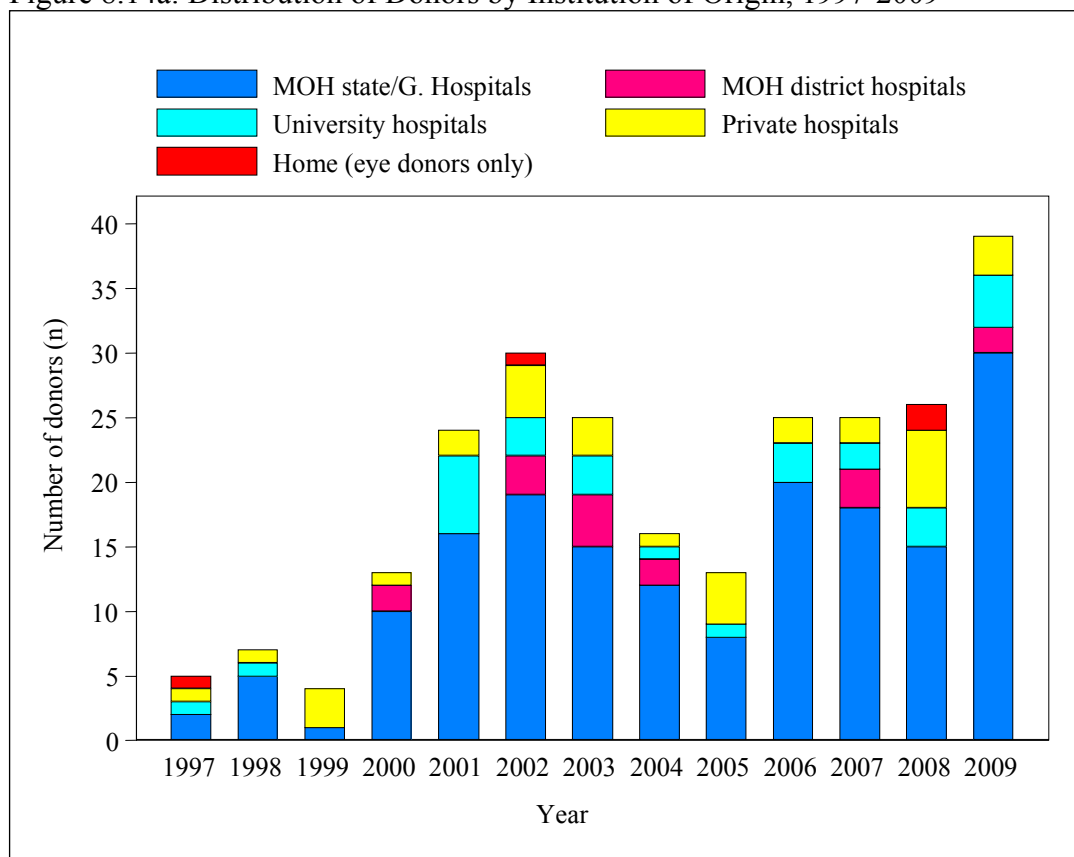


Table 8.14b: Distribution of Donors by Referral Site, 1997-2009

Donor Referral Site	1997 N=5		1998 N=7		1999 N=4		2000 N=13			2001 N=24			2002 N=30		2003 N=25	
	No.	%	No.	%	No.	No.	%	No.	%	%	No.	%	No.	%		
ICU	1	20	0	0	0	0	1	8	14	58	16	53	13	52		
Ward	0	0	0	0	0	0	0	0	0	0	1	3	3	12		
Emergency department	0	0	0	0	0	0	0	0	3	13	4	13	1	4		
Mortuary	0	0	0	0	0	0	0	0	0	0	3	10	6	24		
Home	0	0	0	0	0	0	0	0	0	0	1	3	0	0		
Data not available	4	80	7	100	4	100	12	92	7	29	5	17	2	8		

Donor Referral Site	2004 N=16		2005 N=13		2006 N=25		2007 N=25			2008 N=26		2009 N=39		Total N=252	
	No.	%	No.	No.	%	No.	No.	%	No.	%	No.	%	No.	%	
ICU	12	75	8	62	16	64	17	68	17	65	18	46	133	53	
Ward	1	6	3	23	3	12	1	4	3	12	7	18	22	9	
Emergency department	0	0	0	0	3	12	1	4	1	4	4	10	17	7	
Mortuary	3	19	1	8	3	12	5	20	4	15	9	23	34	13	
Home	0	0	0	0	0	0	0	0	1	4	0	0	2	1	
Data not available	0	0	1	8	0	0	1	4	0	0	1	3	44	17	

Figure 8.14b: Distribution of Donors by Referral Site, 1997-2009

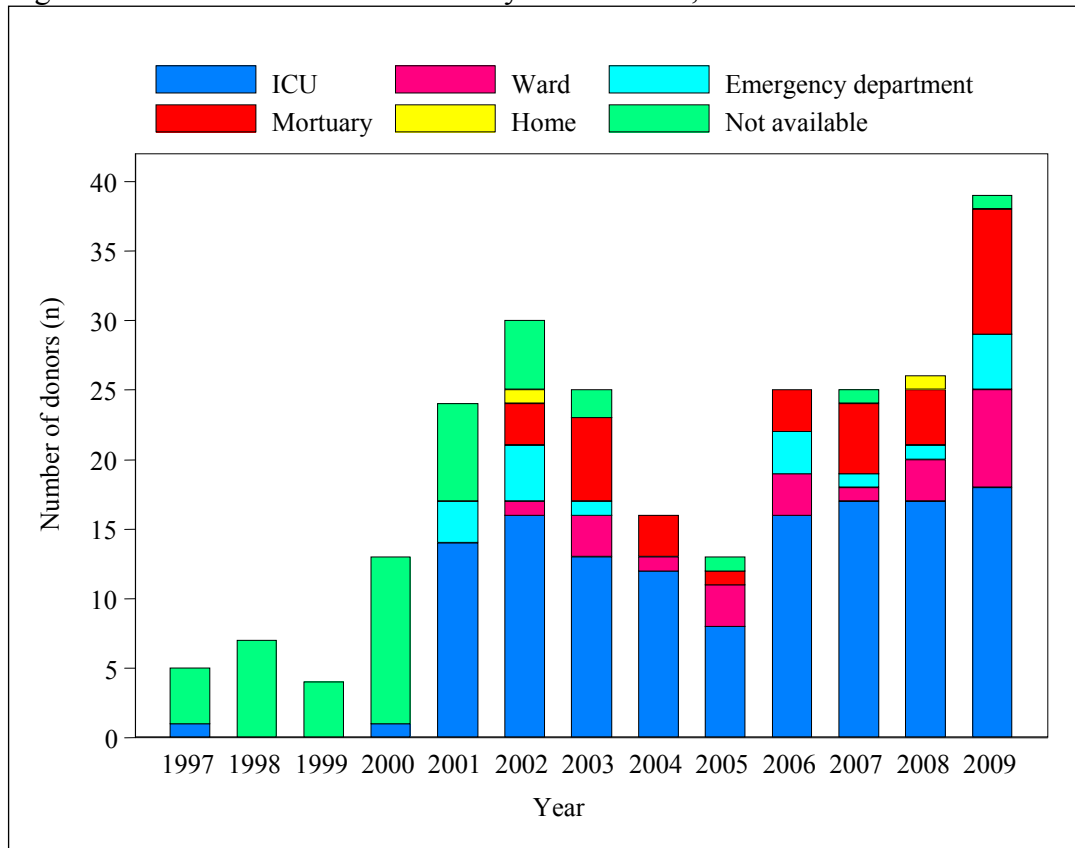


Table 8.14c: Distribution of Donors by Procurement Site, 1997-2009

Donor Procurement Site	1997 N=5		1998 N=7		1999 N=4		2000 N=13			2001 N=24			2002 N=30		2003 N=25	
	No.	%	No.	%	No.	No.	%	No.	%	%	No.	%	No.	%	No.	%
Operation theatre	4	80	6	86	4	100	11	85	21	88	13	43	8	32		
Mortuary	0	0	1	14	0	0	2	15	3	13	17	57	17	68		
Ward	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Home	1	20	0	0	0	0	0	0	0	0	0	0	0	0		
ICU Isolation Room	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
A & E	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Donor Procurement Site	2004 N=16		2005 N=13		2006 N=25		2007 N=25		2008 N=26		2009 N=39		Total N=252	
	No.	%	No.	No.	%	No.	No.	%	No.	%	No.	%	No.	%
Operation theatre	9	56	5	38	13	52	14	56	15	58	18	46	141	56
Mortuary	7	44	8	62	12	48	11	44	10	38	17	44	105	42
Ward	0	0	0	0	0	0	0	0	0	0	1	3	1	0
Home	0	0	0	0	0	0	0	0	1	4	0	0	2	1
ICU Isolation Room	0	0	0	0	0	0	0	0	0	0	2	5	2	1
A & E	0	0	0	0	0	0	0	0	0	0	1	3	1	0

Figure 8.14c: Distribution of Donors by Procurement Site, 1997-2009

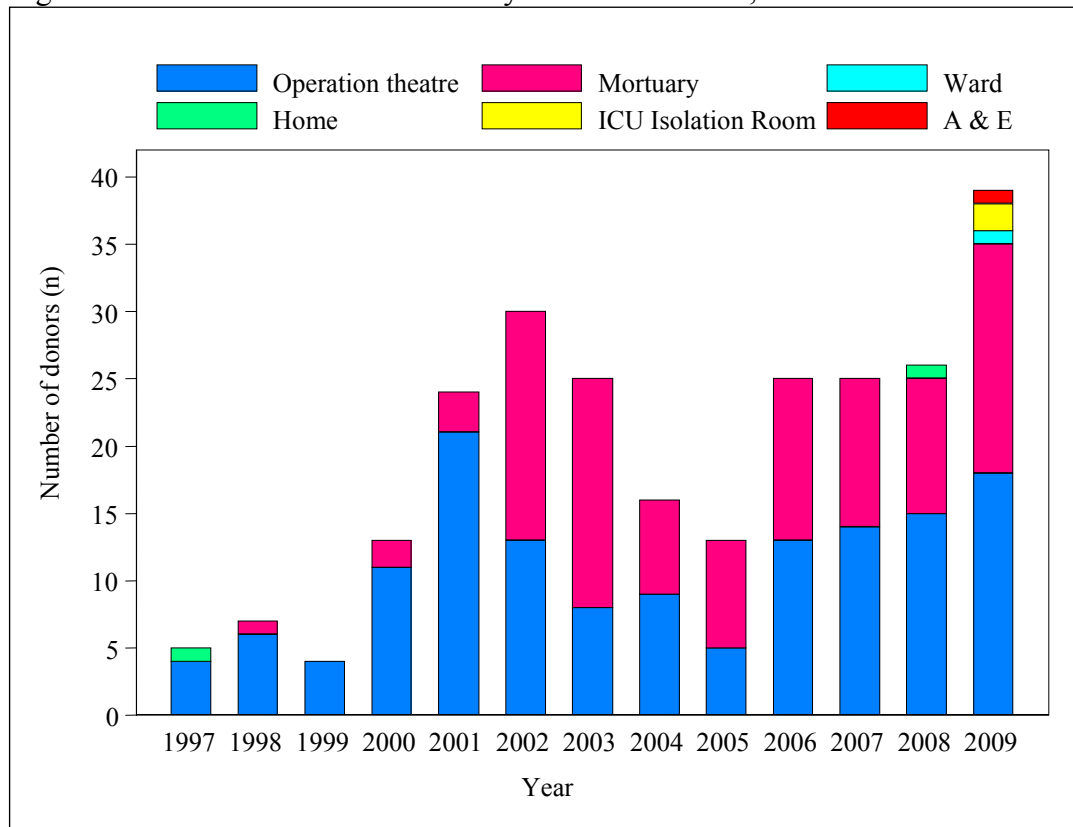


Table 8.15: Distribution of Donors by Inotrope, 2009

<b>Inotrope</b>	<b>No.</b>	<b>%</b>
Dopamine	7	39
Dopamine/Noradrenaline	5	28
Dopamine/Adrenaline	2	11
Dopamine/Dobutamine/Adrenaline	0	0
Dopamine/Dobutamine/Adrenaline/Noradrenaline	1	6
Noradrenaline	1	6
Noradrenaline/Vasopressin	1	6
Missing	1	6
Total	18	100