

Transplant Activity in the UK



2005-2006



Cover pictures:

Promoting the NHS Organ Donor Register amongst minority ethnic communities.
Skilled surgeons and their teams carry out thousands of transplants every year.
Papworth Hospital has been piloting a new donor care physiologist role.
UK Transplant sponsors the GB Transplant Cricket Club.

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PREFACE

This transplant activity report for the financial year 2005-2006 relates throughout to the UK. All figures quoted are as reported to UK Transplant by 23 May 2006 for the National Transplant Database, maintained on behalf of the transplant community and National Health Service (NHS), or for the NHS Organ Donor Register, maintained on behalf of the UK Health Departments.

The information provided in the tables and figures given in Chapters 2-6 does not distinguish between adult and paediatric transplantation. The data also do not distinguish between patients entitled to NHS treatment (Group 1 patients) and those who are not (Group 2 patients). It should also be noted that not all cornea donors or cornea grafts are necessarily reported to UK Transplant.

The UK definition of a solid organ donor is any donor from whom at least one solid organ has been retrieved with the intention to transplant. Organs retrieved solely for research purposes have not been counted in this Activity Report. Organ donation has been recorded to reflect the number of organs retrieved. For example, if both lungs were retrieved, two lungs are recorded even if they were both used in one transplant. Similarly, if one liver is donated, one liver is recorded even if it results in two transplants. All pancreatic transplants refer to the whole organ.

Information from the British Transplantation Society *Standards for Solid Organ Transplantation in the UK (BTS Standard)* and the Office for National Statistics (ONS) *2001 Census* is quoted in this report.

The number of heartbeating (HB) and non-heartbeating (NHB) donors by hospital are documented in **Appendices IA** and **IB**, respectively. Donation and transplant rates in this report are presented per million population (pmp): population figures used throughout this report are based on ONS *2001 Census* figures and are given in **Appendices IIIA** and **IIIB**.

Following comments received on last year's report, a number of changes and additions have been incorporated. In particular, an overview of numbers of deceased and living donors in the past ten years is included in Chapter 2, and in Chapter 8, patient survival rates are given for cardiothoracic and liver transplants.

Graphics from this publication are available from the Statistics and Audit Directorate, UK Transplant. Please email enquiries@uktransplant.nhs.uk for further details.

This report is available on the UK Transplant website:
<http://www.uktransplant.org.uk/ukt/statistics/statistics.jsp>

1 SUMMARY OF ACTIVITY

During 2005-2006, the number of patients who had their lives saved or improved by an organ transplant was 2,794. Of these, 2,195 received an organ from a deceased donor, and a further 599 received an organ from a living donor. In addition, 2,502 patients had their sight restored through a cornea transplant. There were 764 deceased donors of solid organs and 1,911 donors of ocular tissue. Compared to last year, these figures represent a rise of 3% in the number of solid organ transplants and an increase of 5% in the number of cornea transplants. There was an increase of 24% in the number of living donors and an increase of 2% in the number of deceased donors. The total number of solid organ donors increased by 11%, and the number of donors of ocular tissue increased by 7%.

The number of patients registered for a transplant continues to increase, so that at 31 March 2006 there were 6,698 on the active transplant lists and a further 1,617 patients were on the temporarily suspended transplant lists. This represents an increase of 9% and 6% respectively on the corresponding figures at the end of the previous year. Unfortunately, 483 patients died in 2005-2006 while waiting for their transplant.

Deceased solid organ donation rates continue to vary across the UK, with 9.5 per million population (pmp) in Scotland, 13.3 pmp in England, 14.5 in Wales and 11.8 in Northern Ireland. These rates remain lower than that in the Republic of Ireland, which stands at 19.7 pmp.

Although the total annual number of deceased solid organ donors in the UK has changed little over the last few years, the number of non-heartbeating donors rose from 87 in 2004-2005 to 125 in 2005-2006, an increase of 44%, while the number of deceased heartbeating donors fell from 664 to 639, a decrease of 4%. In addition, the number of living kidney donors rose from 475 to 590, an increase of 24%.

In regard to renal transplantation, the number of kidney only transplants rose by 6% and the number of kidney and pancreas transplants increased to 107, an increase of 35% on last year. This led to an overall increase of 7% in the total number of kidney transplants. Of the heartbeating kidney donors, 97% were white, while 84% of the transplant recipients were white. The greatest percentage of heartbeating donors and recipients were in the 35-49 year age group, and 60% of recipients were male.

Cardiothoracic transplantation fell by 9% in 2005-2006, with decreases of 9% in the number of heart transplants and 3% in the number of lung transplants. The number of deceased cardiothoracic donors fell from 238 to 216 and of these donors, 96% were white, as were 93% of recipients. The greatest percentage of donors was in the 35-49 year age group, while the largest percentage of recipients was in the 50-59 year age group, and 60% of recipients were male.

The total number of liver transplants fell by 7%, due to a decrease of 35 in the number of deceased heartbeating liver donors. Of the liver donors, 96% were white, while 85% of the recipients were white. The greatest percentage of donors came from the 35-49 year age group while the largest percentage of recipients came from the 50-59 year age group. 53% of recipients and 62% of the transplant list were male.

In regard to ocular tissue transplantation, compared to last year, there was an increase of 8% in the number of corneas donated and an increase of 5% in the number grafted. However, both the donor and recipient rates continue to vary considerably across the UK, with donation rates ranging between 4 pmp and 115 pmp, and transplant rates between 23 pmp and 66 pmp.

The figures given for transplant survival rates in adult recipients in this report demonstrate that the one, two and five year survival rates following living and deceased heartbeating donor kidney transplantation continue to rise. For transplants during the calendar years 1998 to 2000, in adult recipients the five year kidney transplant survival rates are 86% and 75% for living and deceased heartbeating donation, respectively. For cardiac transplantation, patient survival is 81% at one year and 70% at five years. The corresponding figures for lung transplantation are now 77% at one year and 51% at five years. The one and five year patient survival rates following liver transplantation are 88% and 71%, respectively. The one year transplant survival rates for pancreas and simultaneous kidney and pancreas transplants are 68% and 80%, respectively. The two year corneal transplant survival rate following a penetrating keratoplasty is 85%.

The number of individuals who have pledged to donate their organs after death by registering on the NHS Organ Donation Register (ODR) has increased to 13.1 million. The majority of new registrants continue to come from driving licence applications and reminders through the DVLA, General Practitioner registration and through applications for a Boots Advantage Card. The percentage of the population registered ranges from 18% in the Midlands to 27% in both Scotland and South West England.

This last financial year saw a record number of kidney transplants from living and non-heartbeating donors, and the highest number of pancreas or combined kidney and pancreas transplants. Unfortunately, the percentage of relatives who refuse consent for organ donation remains at around 40%, and so this factor continues to be the biggest obstacle to the supply of organs for transplantation from deceased donors.

Dave Collett
Director of Statistics and Audit

2 OVERVIEW

2.1 Summary of activity

Deceased donor numbers, transplant activity and numbers on the transplant lists at the year end, for 1 April 1996 to 31 March 2006, are shown in **Figure 2.1**. The total number of transplants in 2005-2006 was 46 lower than that in the previous year.

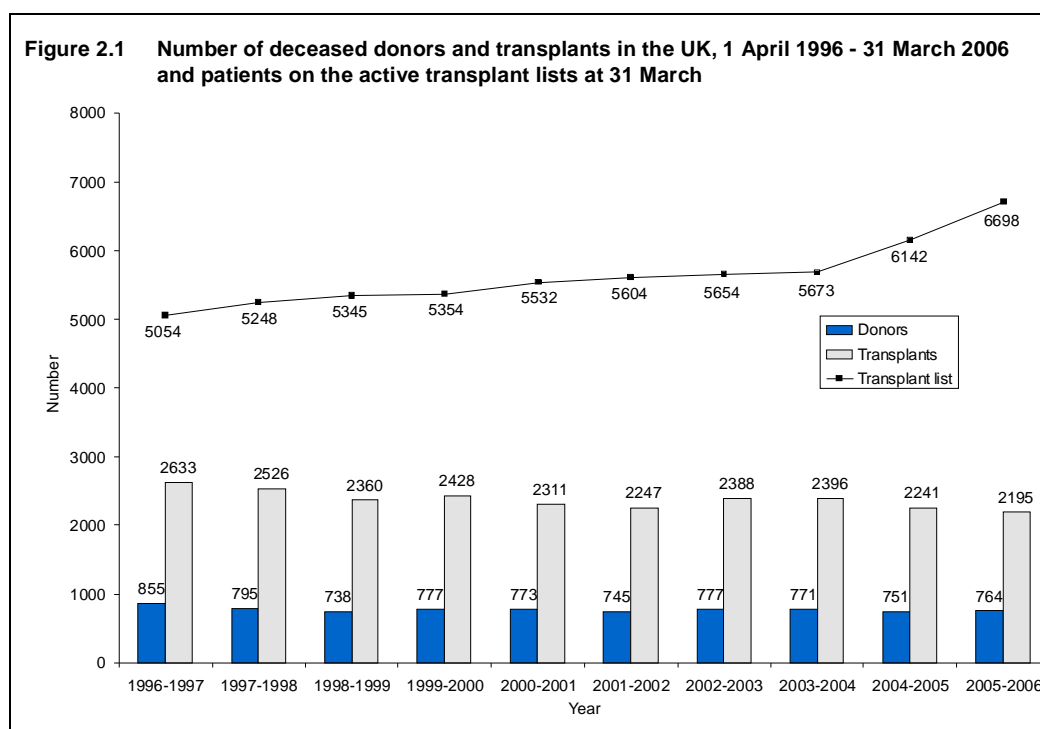
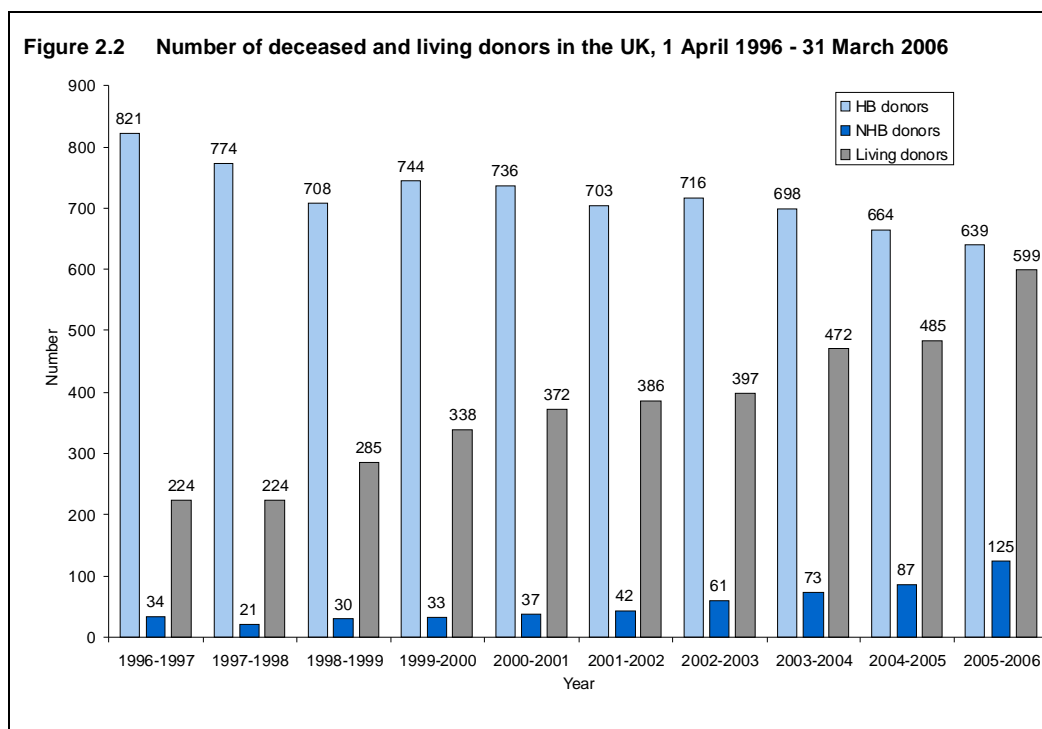


Figure 2.2 shows the number of deceased and living donors for 1996-2006. There was a 4% decrease in the number of heartbeating donors in 2005-2006 compared to 2004-2005 and at 639 this was the lowest number over the ten year period. The number of both living and non-heartbeating donors in 2005-2006 was the highest of the period.



There were 764 deceased solid organ donors reported from the UK in 2005-2006, 13 more than in the previous financial year. A breakdown of the number of donors by organ is given in **Table 2.1**. Of the 764 deceased donors, 125 were non-heartbeating donors: 82 kidney only, 36 kidney and liver, 1 kidney, liver and lung, 2 kidney, liver and pancreas and 4 liver only donors. There were nine living liver lobe donor transplants.

Table 2.1 UK activity summary for 1 April 2005 - 31 March 2006

	Kidney	Pancreas	Heart	Heart/ lung	Lung	Liver	TOTAL
Deceased donors	721	176	140	-	141	612	764
Deceased organs donated	1426	176	140	-	267	612	2621
Deceased transplants	1324	130	141	7	116	601 ¹	2195²
Living donor transplants	590	0	0	-	0	9	599

¹ Includes 7 liver and small bowel transplants

² Includes combined transplants: 107 kidney and pancreas, 12 kidney and liver, 2 kidney and heart, 3 liver and pancreas

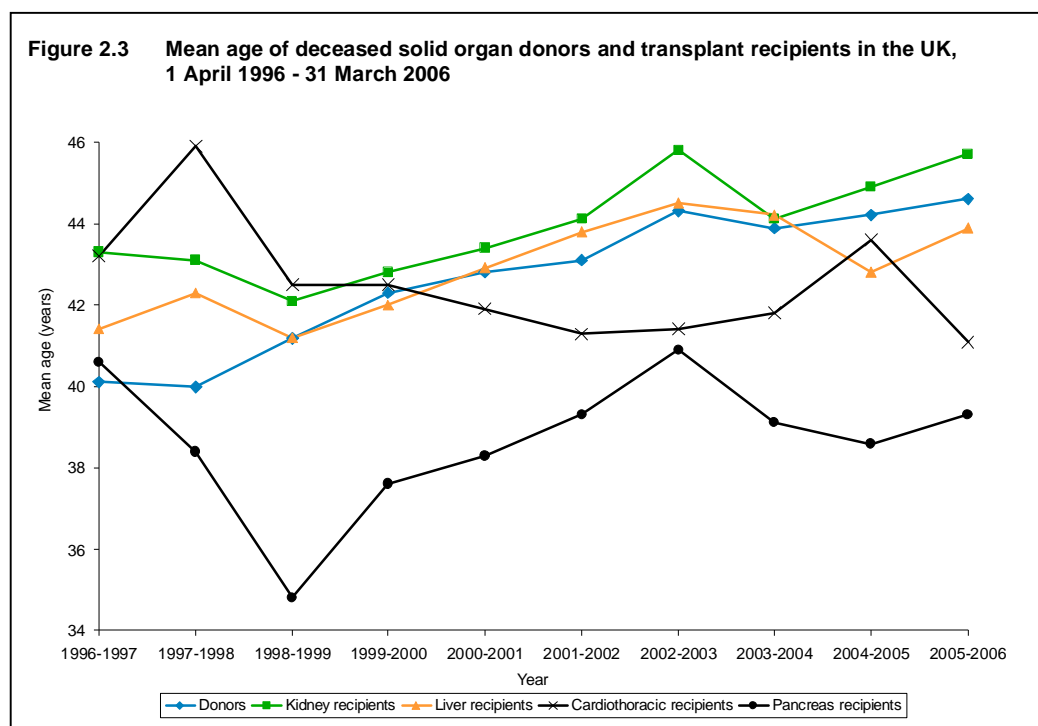
The total number of solid organ transplants in 2005-2006 was 2,794. Of these, 2,195 (79%) transplants were through deceased donations. There were 599 transplants through living donations, 114 (24%) more than in 2004-2005.

Nearly all donors (96%) gave a kidney and of these just under half (45%) also donated at least one other organ. Only 13% of heartbeating donors were single organ donors, most being kidney only donors. Of the 125 non-heartbeating donors 121 (97%) gave a kidney while 43 (34%) donated their livers. **Table 2.2** shows solid organ donors by organ type of donor.

Table 2.2 Solid organ donors in the UK, 1 April 2005 – 31 March 2006, by organ type of donor

	Heartbeating	Non-heartbeating	Living donor	TOTAL
Kidney only	51	82	590	723
Kidney & thoracic	7	-	-	7
Kidney & liver	264	36	-	300
Kidney & pancreas	7	-	-	7
Kidney, thoracic & liver	104	1	-	105
Kidney, thoracic & pancreas	2	-	-	2
Kidney, liver & pancreas	73	2	-	75
Kidney, thoracic, liver & pancreas	92	-	-	92
Thoracic only	3	-	-	3
Thoracic & liver	5	-	-	5
Thoracic, liver & pancreas	2	-	-	2
Liver only	29	4	9	42
TOTAL	639	125	599	1363

Figure 2.3 shows the mean age of deceased solid organ donors and transplant recipients for the last ten years. The mean age of deceased donors has gradually increased over the ten years from 40.1 in 1996-1997 to 44.6 in 2005-2006. In 2005-2006, the mean age of cardiothoracic recipients was the youngest over the ten years at 41.1 years. Pancreas recipients had the lowest mean age of all solid organ transplant recipients in each of the last nine years.



2.2 Transplant list

At 31 March 2006, 8,315 patients were registered on a solid organ transplant list in the UK. Of these 1,617 (19%) patients were temporarily suspended from the active national transplant list. Details of numbers on the transplant lists for each organ type are given in **Table 2.3**.

Table 2.3 shows the numbers of patients on the active waiting list for a transplant at 31 March 2005 and 2006. The total number rose by 556 patients (9%) with increases in most organ transplant lists.

Table 2.3 Active transplant lists in the UK at 31 March 2005 and 2006			
	2005	2006	% Change
Renal patients	5425	5863	+8
Kidney ¹	5331	5773	+8
Kidney & pancreas	94	90	-4
Pancreas patients	38	55	+45
Cardiothoracic patients	415	415	-
Heart ²	106	110	+4
Heart/lung ³	49	41	-16
Lung(s) ⁴	260	264	+2
Liver patients⁵	264	365	+38
ALL ORGANS	6142	6698	+9
¹ Includes patients waiting for kidney & liver transplants (6 in 2005, 10 in 2006) and kidney & heart transplants (2 in 2005, 4 in 2006) ² Includes patients waiting for heart & kidney transplants (2 in 2005, 4 in 2006) ³ Includes patients waiting for liver & heart/lung transplants (2 in 2006) ⁴ Includes patients waiting for liver & lung transplants (1 in 2005, 1 in 2006) ⁵ Includes patients waiting for liver & lung transplants (1 in 2005, 1 in 2006), liver & heart/lung transplants (2 in 2006) and liver & small bowel transplants (5 in 2005, 3 in 2006)			

2.3 Organ donors

In 2005-2006, 764 deceased solid organ donors gave 2,621 solid organs in the UK compared with 751 donors and 2,602 organs in 2004-2005. On average in the UK, 3.4 organs were retrieved per donor in 2005-2006. Overall, 78% of donors gave a kidney and at least one other solid organ.

Solid organ donor rates per million population (pmp) for 2004-2005 and 2005-2006 are given by country in **Table 2.4**. Wales achieved the highest rate in 2005-2006. Scotland and Wales provided organs from non-heartbeating donors in both years as well as England.

Table 2.4 Deceased solid organ donor rates per million population (pmp) in the UK, 1 April 2004 - 31 March 2006, by country of donation

Country of donation	Number of donors							
	2004-2005				2005-2006			
	HB	NHB	TOTAL	(pmp)	HB	NHB	TOTAL	(pmp)
England	529	84	613	(12.4)	539	115	654	(13.3)
Wales	46	1	47	(16.2)	35	7	42	(14.5)
Scotland	59	2	61	(12.1)	45	3	48	(9.5)
Northern Ireland	30	0	30	(17.8)	20	0	20	(11.8)
TOTAL	664	87	751	(12.7)	639	125	764	(12.9)

The ethnicity of deceased solid organ donors in 2004-2005 and 2005-2006 is shown in **Table 2.5**. In 2005-2006, 96.5% of donors were reported as white. The proportion of Black donors increased from 0.8% in 2004-2005 to 1.3% in 2005-2006.

Table 2.5 Ethnicity of deceased solid organ donors in the UK, 1 April 2004 - 31 March 2006

Ethnicity	2004-2005		2005-2006	
	N	(%)	N	(%)
White	723	96.3	737	96.5
Asian	9	1.2	10	1.3
Black	6	0.8	10	1.3
Chinese	7	0.9	-	-
Other	6	0.8	7	0.9
TOTAL	751		764	

2.4 Transplants

Table 2.6 shows that a total of 2,794 transplants were performed in 2005-2006 compared with 2,724 in 2004-2005, an increase of 3%. All multi-organ transplants are identified separately and include 107 kidney and pancreas, 7 heart/lung and 12 kidney and liver transplants.

The deceased heartbeating donor kidney transplants include six double kidneys in 2005-2006 (one in 2004-2005). One non-heartbeating donor double lung transplant in 2005-2006 is reported under double lung transplants (two in 2004-2005).

The total number of kidney transplants increased in 2005-2006 despite a fall of 8% in the number of heartbeating donor kidney transplants; living and non-heartbeating donor transplants increased by 24% and 48%, respectively. The total number of cardiothoracic transplants fell by 9%, the number of liver transplants fell by 7% and the number of pancreas transplants increased by 51%.

Table 2.6 Transplants performed in the UK, 1 April 2004 - 31 March 2006

Transplant	2004-2005	2005-2006	% Change
Deceased heartbeating kidney	1074	991	-8
Deceased non-heartbeating kidney	143	212	48
Living donor kidney	475	590	24
Pancreas	7	20	-
Deceased heart	154	139	-10
Domino heart	1	0	-
Heart/lung	15	7	-
Single lung	42	37	-12
Double lung	78	79	1
Deceased heartbeating liver ¹	530	460	-13
Deceased non-heartbeating liver	19	31	63
Domino liver	0	0	-
Deceased liver lobe	88	95	8
Living donor liver lobe	7	9	-
Kidney & heart	0	2	-
Kidney & liver	12	12	0
Kidney & pancreas	79	107	35
Liver & pancreas ²	0	3	-
TOTAL TRANSPLANTS (SOLID ORGANS)	2724	2794	3
Total kidney transplants	1783	1914	7
Total pancreas transplants	86	130	51
Total cardiothoracic transplants	290	264	-9
Total liver transplants	656	610	-7

Percentage not reported when fewer than 10 in either year

¹ Includes liver & small bowel transplants, 12 in 2004-2005 and 4 in 2005-2006

² Includes liver, pancreas & small bowel transplants, 3 in 2005-2006

3 KIDNEY ACTIVITY

3.1 Overview

A summary of activity for deceased heartbeating and non-heartbeating donor kidney transplants and the transplant list at year end for the last ten years is shown in **Figure 3.1**. The number of patients registered on the active transplant list at 31 March 2006 for a kidney or kidney and pancreas transplant has increased by 36% since 1997.

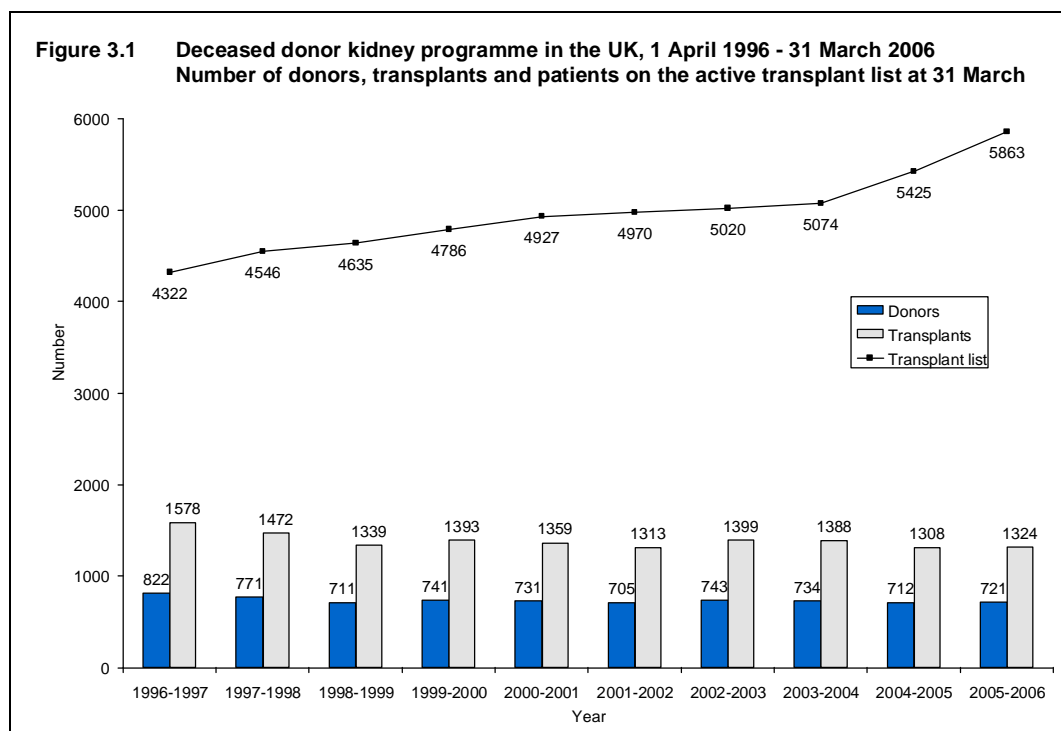


Table 3.1 shows the number of deceased and living donor kidney transplants carried out in 2005-2006 at each centre/alliance. The majority of centres/alliances performed non-heartbeating donor kidney transplants. The number of patients registered on the active kidney or kidney and pancreas transplant list increased to 5,863 at 31 March 2006.

The total number of deceased kidney donors rose slightly to 721 in 2005-2006 from 712 in 2004-2005 and the number of transplants increased from 1,308 to 1,324. The number of non-heartbeating kidney donors increased to 121 from 85 in 2004-2005 and the number of transplants from such donors increased by 49% to 213.

Many kidney transplant centres have joined other neighbouring centres to form an alliance to maintain a combined transplant list for the allocation of locally retained donor kidneys. At 31 March 2006, 81% of the transplant list comprised patients at an alliance centre; 85% of deceased heartbeating, 89% of deceased non-heartbeating and 81% of living donor kidney transplants were carried out by centres in an alliance.

Table 3.1 Kidney donors and transplants, 1 April 2005 - 31 March 2006 (2004-2005) and transplant list at 31 March 2006 (2005) in the UK, by centre/alliance												
Centre/alliance	Deceased kidney donors				Deceased donor transplants				Living donor transplants		Active transplant list	
	HB		NHB		HB		NHB					
North Thames	78	(66)	9	(10)	114	(111)	14	(13)	86	(71)	775	(730)
South Thames	67	(64)	9	(10)	121	(112)	16	(16)	83	(58)	516	(434)
Leeds	42	(40)	21	(11)	79	(107)	39	(26)	34	(28)	356	(314)
Liverpool	32	(42)	0	(0)	69	(47)	1	(0)	13	(25)	179	(208)
Manchester	44	(51)	9	(7)	110	(111)	16	(9)	31	(27)	516	(506)
Newcastle	42	(40)	11	(16)	76	(56)	13	(24)	27	(15)	223	(203)
North of England	160	(173)	41	(34)	334	(321)	69	(59)	105	(95)	1274	(1231)
Edinburgh	26	(32)	1	(1)	39	(44)	1	(1)	16	(15)	311	(257)
Glasgow	16	(24)	2	(1)	44	(58)	4	(1)	22	(18)	252	(246)
Scotland	42	(56)	3	(2)	83	(102)	5	(2)	38	(33)	563	(503)
Leicester	10	(14)	0	(0)	25	(35)	0	(0)	34	(26)	266	(232)
Nottingham	15	(10)	0	(0)	27	(24)	0	(0)	16	(16)	193	(162)
Sheffield	15	(24)	0	(0)	29	(25)	0	(0)	12	(4)	218	(230)
Trent	40	(48)	0	(0)	81	(84)	0	(0)	62	(46)	677	(624)
Bristol	24	(21)	15	(9)	44	(50)	26	(13)	35	(29)	252	(235)
Cardiff	28	(40)	7	(1)	39	(63)	12	(3)	26	(18)	214	(202)
Oxford	28	(29)	11	(6)	71	(55)	21	(13)	22	(17)	227	(184)
Plymouth	16	(14)	9	(1)	20	(28)	18	(2)	9	(5)	92	(98)
Portsmouth	19	(18)	4	(2)	33	(35)	8	(4)	13	(11)	150	(128)
South, West & Wales	115	(122)	46	(19)	207	(231)	85	(35)	105	(80)	935	(847)
Belfast	19	(27)	0	(0)	23	(37)	0	(0)	9	(10)	234	(223)
Birmingham	41	(33)	5	(1)	70	(83)	8	(2)	44	(36)	504	(476)
Cambridge	25	(28)	8	(9)	51	(57)	16	(16)	19	(13)	262	(243)
Coventry	13	(10)	0	(0)	18	(16)	0	(0)	24	(19)	99	(93)
Great Ormond Street	0	(0)	0	(0)	9	(11)	0	(0)	15	(14)	24	(21)
TOTAL	600	(627)	121	(85)	1111	(1165)	213	(143)	590	(475)	5863	(5425)

At 31 March there were six alliances in the UK: North of England, North Thames, South Thames, Scotland, Trent, and South, West and Wales. Four adult transplant centres remained independent of any alliance: Belfast, Birmingham, Cambridge and Coventry. Until 3 April 2006, each alliance had their own allocation scheme run on their behalf by UK Transplant for deceased heartbeating donor kidneys not allocated through the national scheme. From 3 April all deceased heartbeating donor kidneys are allocated through a new national scheme.

Centres within a kidney transplant alliance have a combined transplant list but, with the exception of those in the North and South Thames alliances, they have separate retrieval arrangements. Most centres are therefore identified separately throughout this report.

3.2 Transplant list

The number of patients registered on the kidney or kidney and pancreas transplant list increased by 8% in the year: on 31 March 2006, 5,863 patients were registered as active, compared with 5,425 at the end of March 2005. The number of patients waiting for a kidney transplant represents 99 patients per million population (pmp).

Of the 5,863 patients on the active transplant list at 31 March 2006, 90 required a kidney and pancreas transplant (94 at 31 March 2005). Additionally, 55 patients were registered for a pancreas only transplant (38 at 31 March 2005).

The outcome of patients registered on the UK kidney and kidney/pancreas transplant lists at 1 April 2005, or subsequently registered during the financial year, is shown in **Table 3.2**. Overall, 18% and 39% of patients waiting on the kidney transplant list and kidney/pancreas transplant list, respectively, during 2005-2006, had received a transplant by 31 March 2006.

Table 3.2 Transplant list and new registrations in the UK, 1 April 2005 - 31 March 2006

Outcome of patient at 31 March 2006	Active and suspended patients at 1 April 2005		New registrations in 2005-2006 ¹		TOTAL	
Kidney transplant list	N	%	N	%	N	%
Remained active/suspended	5023	73	2441	83	7464	76
Transplanted	1288	19	445	15	1733	18
Removed	337	5	25	1	362	4
Died	258	4	28	1	286	3
TOTAL	6906		2939		9845	
Kidney/pancreas transplant list						
Remained active/suspended	64	47	91	58	155	53
Transplanted	53	39	60	38	113	39
Removed	9	7	4	3	13	4
Died	9	7	2	1	11	4
TOTAL	135		157		292	

¹ Includes re-registrations for second or subsequent transplants

3.3 Donor and organ supply

Of the 639 deceased heartbeating solid organ donors in the UK in 2005-2006, 600 (94%) donated kidney(s). From these donors, 1,188 kidneys were retrieved, 1,121 (94%) of which were transplanted. **Table 3.3** shows this activity by centre/alliance.

The overall heartbeating kidney donor rate is 10.2 pmp, with retrieval centre/alliance rates ranging from 6.0 to 16.0 pmp. The kidney retrieval rate for the UK is 20.1 pmp and varies from 9.0 to 32.1 pmp. Organ usage rates of at least 90% were observed for 17 (85%) retrieval centres.

Table 3.3 Kidney donation and retrieval rates for heartbeating donors in the UK, 1 April 2005 - 31 March 2006, by centre/alliance					
Centre/alliance	Heartbeating kidney donors (pmp)		Kidneys retrieved (pmp)		Kidneys used (%)
Belfast	19	(11.2)	38	(22.5)	33 (87)
Birmingham	41	(9.2)	80	(17.9)	71 (89)
Bristol	24	(12.2)	47	(23.9)	45 (96)
Cambridge	25	(10.0)	50	(20.0)	43 (86)
Cardiff	28	(12.5)	55	(24.6)	52 (95)
Coventry	13	(16.0)	26	(32.1)	24 (92)
Edinburgh	26	(10.8)	51	(21.3)	50 (98)
Glasgow	16	(6.0)	32	(12.0)	30 (94)
Leeds	42	(11.4)	84	(22.7)	84 (100)
Leicester	10	(4.7)	19	(9.0)	19 (100)
Liverpool	32	(9.9)	64	(19.8)	62 (97)
Manchester	44	(11.1)	86	(21.8)	85 (99)
Newcastle	42	(14.8)	83	(29.3)	80 (96)
North Thames	78	(10.7)	156	(21.3)	144 (92)
Nottingham	15	(10.9)	30	(21.7)	30 (100)
Oxford	28	(9.3)	56	(18.7)	56 (100)
Plymouth	16	(9.0)	32	(18.0)	30 (94)
Portsmouth	19	(7.9)	38	(15.9)	35 (92)
Sheffield	15	(8.2)	30	(16.4)	27 (90)
South Thames	67	(10.0)	131	(19.5)	121 (92)
TOTAL	600	(10.2)	1188	(20.1)	1121 (94)

There were 121 non-heartbeating kidney donors in 2005-2006. From these donors, 238 kidneys were retrieved, 219 (92%) of which were transplanted. **Table 3.4** shows this activity by centre/alliance.

The overall non-heartbeating kidney donor rate is 2.1 pmp, with centre/alliance rates ranging from 0.4 to 7.6 pmp. The non-heartbeating donor kidney retrieval rate is 4.0 pmp and varies from 0.4 to 15.2 pmp. Organ usage rates of 100% were observed for 5 (36%) retrieval centres. Portsmouth is the only centre that provides for non-heartbeating donation without funding from UK Transplant.

Table 3.4 Kidney donation and retrieval rates for non-heartbeating donors in the UK, 1 April 2005 - 31 March 2006, by centre/alliance

Centre/alliance	Non-heartbeating kidney donors (pmp)		Kidneys retrieved (pmp)		Kidneys used (%)	
Birmingham	5	(1.1)	10	(2.2)	8	(80)
Bristol	15	(7.6)	30	(15.2)	26	(87)
Cambridge	8	(3.2)	16	(6.4)	16	(100)
Cardiff	7	(3.1)	13	(5.8)	12	(92)
Edinburgh	1	(0.4)	1	(0.4)	1	(100)
Glasgow	2	(0.8)	4	(1.5)	4	(100)
Leeds	21	(5.7)	41	(11.1)	39	(95)
Manchester	9	(2.3)	17	(4.3)	16	(94)
Newcastle	11	(3.9)	22	(7.8)	19	(86)
North Thames	9	(1.2)	18	(2.5)	15	(83)
Oxford	11	(3.7)	22	(7.3)	20	(91)
Plymouth	9	(5.1)	18	(10.1)	18	(100)
Portsmouth	4	(1.7)	8	(3.3)	8	(100)
South Thames	9	(1.3)	18	(2.7)	17	(94)
TOTAL	121	(2.1)	238	(4.0)	219	(92)

3.4 Transplants

The number of deceased heartbeating donor adult kidney transplants per million population at each transplant centre is shown in **Table 3.5**. This table includes multi-organ transplants: two kidney and heart, 12 kidney and liver and 106 kidney and pancreas. The transplant rate ranged from 11.2 to 26.9 pmp across centres and overall was 17.8 pmp, compared with the *BTS Standard* of 23 heartbeating kidney transplants pmp per year.

**Table 3.5 Deceased heartbeating donor adult kidney transplants in the UK,
1 April 2004 - 31 March 2006, by transplant centre/alliance**

Transplant centre/alliance	2004-2005		2005-2006	
	Transplants	pmp	Transplants	pmp
Belfast	34	20.1	22	13.0
Birmingham	69	15.5	57	12.8
Bristol	46	23.4	37	18.8
Cambridge	56	22.4	51	20.4
Cardiff	63	28.1	39	17.4
Coventry	16	19.8	18	22.2
Edinburgh	44	18.3	39	16.3
Glasgow	54	20.3	40	15.0
Leeds	94	25.4	70	18.9
Leicester	35	16.5	25	11.8
Liverpool	47	14.5	69	21.3
Manchester	100	25.3	100	25.3
Newcastle	53	18.7	76	26.9
North Thames	111	15.2	114	15.6
Nottingham	17	12.3	23	16.7
Oxford	54	18.0	71	23.7
Plymouth	27	15.2	20	11.2
Portsmouth	35	14.6	33	13.8
Sheffield	25	13.7	29	15.8
South Thames	109	16.2	118	17.5
TOTAL	1089	18.5	1051	17.8

Living donor kidney transplants increased by 24% to 590 in 2005-2006, and now represent 31% of the total kidney transplant programme. The total number of living donor adult transplants and the number of related and unrelated donor adult transplants performed by each transplant centre/alliance is shown in **Table 3.6**. Also shown are the number of living donor adult transplants per million population and the number as a percentage of patients listed at the end of the year, to indicate the size of the living donor programme relative to the centre's transplant list.

There has been an increase of 29% in the number of living related donor adult transplants and an increase of 20% in living unrelated donor adult transplants. The living donor adult transplant rate was 9.2 pmp in 2005-2006 and ranged from 4.0 to 28.4 pmp at individual transplant centres, compared with the *BTS Standard* of 6.2 living donors pmp. As a percentage of the number of patients on the active transplant list at 31 March 2006, the number of living donor adult transplants in the year was 9% and ranged from 1% to 23% at individual transplant centres.

Table 3.6 **Adult living donor kidney transplants in the UK, 1 April 2004 - 31 March 2006, per million population (pmp) and percentage of active transplant list at 31 March, by transplant centre/alliance**

Transplant centre/ alliance	2004-2005					2005-2006				
	Related donor	Unrelated donor	N	TOTAL pmp	% list	Related donor	Unrelated donor	N	TOTAL pmp	% list
Belfast	7	1	8	4.7	4	9	0	9	5.3	4
Birmingham	25	8	33	7.4	7	32	10	42	9.4	8
Bristol	12	12	24	12.2	10	19	13	32	16.2	13
Cambridge	7	6	13	5.2	5	13	6	19	7.6	7
Cardiff	17	1	18	8.0	9	25	1	26	11.6	12
Coventry	14	5	19	23.5	20	17	6	23	28.4	23
Edinburgh	10	5	15	6.3	6	12	4	16	6.7	5
Glasgow	11	2	13	4.9	5	8	10	18	6.8	7
Leeds	20	7	27	7.3	9	26	6	32	8.6	9
Leicester	17	9	26	12.3	11	21	12	33	15.6	12
Liverpool	20	5	25	7.7	12	13	0	13	4.0	7
Manchester	19	4	23	5.8	5	22	1	23	5.8	4
Newcastle	11	2	13	4.6	6	16	4	20	7.1	9
North Thames	51	19	70	9.6	10	62	22	84	11.5	11
Nottingham	9	3	12	8.7	7	13	2	15	10.9	8
Oxford	12	5	17	5.7	9	14	8	22	7.3	10
Plymouth	5	0	5	2.8	5	7	2	9	5.1	10
Portsmouth	9	2	11	4.6	9	9	4	13	5.4	9
Sheffield	2	2	4	2.2	2	6	5	11	6.0	5
South Thames	36	15	51	7.6	12	62	20	82	12.2	16
TOTAL	314	113	427	7.2	8	406	136	542	9.2	9

The number of deceased heartbeating and living donor paediatric transplants performed by each transplant centre/alliance is shown in **Table 3.7**. The number of living donor paediatric (<18 years) transplants, at 48 in 2005-2006, is the same as last year. However, the number of deceased heartbeating donor transplants decreased to 60 from 76 in 2004-2005. The paediatric transplant list has increased slightly from 111 at 31 March 2005 to 116 at the end of March 2006.

**Table 3.7 Paediatric patient kidney transplants in the UK,
1 April 2004 - 31 March 2006, by transplant centre**

Paediatric transplant centre	2004-2005			2005-2006		
	HB donor	Living donor	TOTAL	HB donor	Living donor	TOTAL
Belfast	3	2	5	1	0	1
Birmingham	14	3	17	13	2	15
Bristol	4	5	9	7	3	10
Glasgow	4	5	9	4	4	8
Great Ormond Street	11	14	25	9	15	24
Guy's	3	7	10	3	1	4
Leeds	13	1	14	9	2	11
Manchester	11	4	15	10	8	18
Newcastle	3	2	5	0	7	7
Nottingham	7	4	11	4	1	5
Adult centres	3	1	4	0	5	5
TOTAL	76	48	124	60	48	108

Pre-emptive kidney only transplants are shown in **Table 3.8**. Of the 1,793 kidney transplant recipients in 2005-2006, dialysis status at transplant was known for 1,771 (98.8%). Of these 1,771 transplants, 254 (14%) were carried out in pre-dialysis patients. Pre-emptive transplants accounted for 30% of all paediatric kidney only transplants with known dialysis status, compared with 13% of those in adults. Pre-emptive transplants also accounted for a higher proportion of living donor transplants than deceased donor transplants: 26% and 9% respectively.

Table 3.8 Pre-emptive kidney only transplants in the UK, 1 April 2005 – 31 March 2006

	Number of kidney only transplants	Number of transplants with known dialysis status at transplant (% of all)	Percentage of patients transplanted prior to the need for dialysis (of those with known status)
Adult			
Deceased donor transplant	1145	1133 (99.0)	7.9
Living donor transplant	542	535 (98.7)	24.9
Paediatric			
Deceased donor transplant	58	57 (98.3)	26.3
Living donor transplant	48	46 (95.8)	34.8

3.5 Demographic characteristics

The ethnicity of heartbeating donors, transplant recipients and patients on the transplant list is shown in **Table 3.9**. Note that the percentages quoted are based only on data where ethnicity information was available. Differences in ethnicity of donors, transplant recipients and patients listed for transplant are clear.

Table 3.9 Ethnicity of heartbeating kidney donors and recipients, 1 April 2004 - 31 March 2006 and transplant list patients at 31 March in the UK												
Ethnicity	Donors				Transplant recipients				Active transplant list patients			
	2004-2005		2005-2006		2004-2005		2005-2006		2005		2006	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
White	599	(95.5)	579	(96.5)	989	(85.0)	932	(84.0)	4175	(77.2)	4515	(77.2)
Asian	9	(1.4)	6	(1.0)	118	(10.1)	104	(9.4)	721	(13.3)	763	(13.0)
Black	6	(1.0)	8	(1.3)	41	(3.5)	55	(5.0)	380	(7.0)	417	(7.1)
Chinese	7	(1.1)	0	(0.0)	4	(0.3)	8	(0.7)	55	(1.0)	58	(1.0)
Other	6	(1.0)	7	(1.2)	12	(1.0)	11	(1.0)	74	(1.4)	98	(1.7)
Not reported	0	-	0	-	1	-	1	-	20	-	12	-
TOTAL	627		600		1165		1111		5425		5863	

Table 3.10 shows the age group and sex of heartbeating kidney donors, transplant recipients and patients waiting for a kidney transplant. There was a greater proportion of male transplant recipients than female, 60% compared with 40%. Over 30% of donors, recipients and patients on the transplant list were aged 35-49 years.

Table 3.10								Age and sex of heartbeating kidney donors and transplant recipients, 1 April 2005 - 31 March 2006, and transplant list patients at 31 March 2006				
		Age group (years)										
		0-17	18-34	35-49	50-59	60+	TOTAL					
Donors												
Male		16	62	101	72	52	303	(51%)				
Female		22	44	94	89	48	297	(50%)				
TOTAL		38 (6%)	106 (18%)	195 (33%)	161 (27%)	100 (17%)	600	(100%)				
Recipients												
Male		27	108	247	157	127	666	(60%)				
Female		33	82	178	86	66	445	(40%)				
TOTAL		60 (5%)	190 (17%)	425 (38%)	243 (22%)	193 (17%)	1111	(100%)				
Transplant list												
Male		60	534	1151	851	795	3391	(58%)				
Female		56	368	890	614	544	2472	(42%)				
TOTAL		116 (2%)	902 (15%)	2041 (35%)	1465 (25%)	1339 (23%)	5863	(100%)				

4 PANCREAS ACTIVITY

4.1 Overview

A summary of activity for deceased heartbeating pancreas donor transplants and the transplant list for 1 April 1996 to 31 March 2006 is shown in **Figure 4.1**. The number of patients registered on the active transplant list at 31 March for a pancreas only or simultaneous kidney/pancreas (SPK) transplant has more than tripled over the ten-year period, from 44 patients in 1996 to 145 patients in 2006. The number of pancreas donors and transplants has increased steadily since 1998-1999 from 30 donors, resulting in 24 transplants, to 176 donors and 129 transplants in 2005-2006.

The proportion of pancreata retrieved that cannot be used for transplantation, is greater than in kidney, liver or heart transplantation. However, these pancreata are generally used in islet cell research for the benefit of diabetic patients.

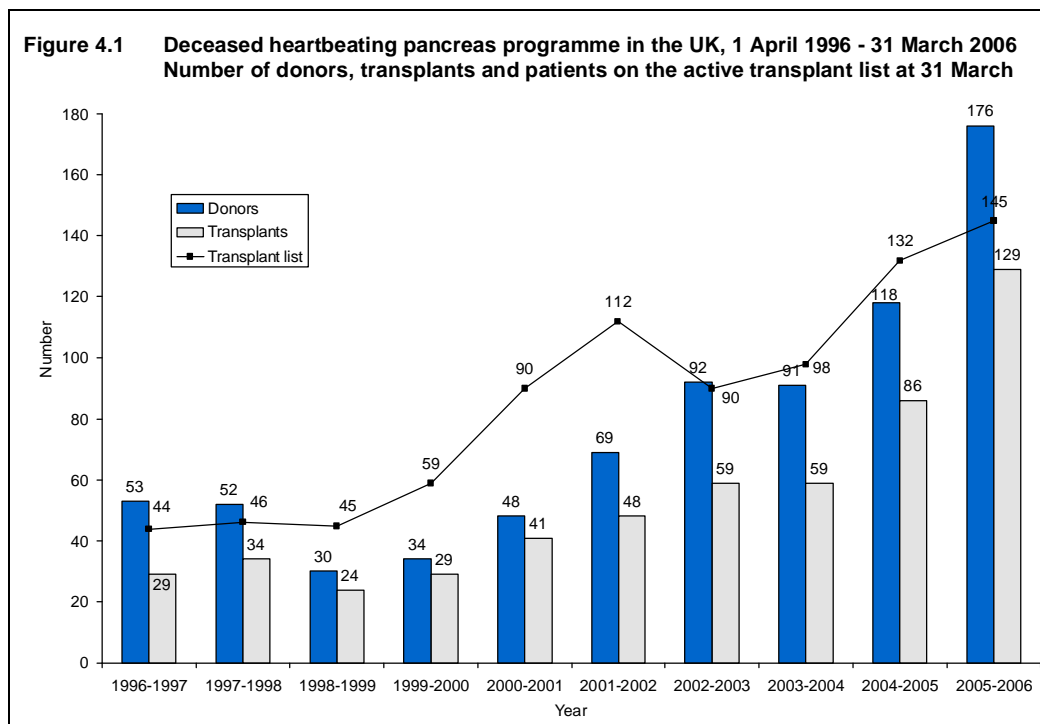


Table 4.1 shows the number of deceased heartbeating pancreas donors and the number of pancreas transplants carried out in 2005-2006 at each centre and by type of pancreas transplant. Compared with the previous financial year, the total number of deceased heartbeating pancreas donors increased to 176 in 2005-2006 from 118 in 2004-2005 and the number of transplants increased to 129 from 86.

Note that after ceasing to transplant pancreata in 1999, Cardiff recommenced transplanting pancreata in December 2004. On the 1 December 2004, a national pancreas zonal sharing scheme was introduced. Prior to this, hospitals within Northern Ireland, Birmingham, Coventry and the Trent kidney alliance area were not designated to a pancreas transplant centre and have for the purposes of this report been defined as donors from a 'non-designated' area.

Table 4.1 Pancreas donors and transplants, 1 April 2005 - 31 March 2006 (2004-2005) and transplant list at 31 March 2006 (2005) in the UK, by centre

Centre	Deceased heartbeating donors ¹						Deceased heartbeating transplants ²						Active transplant list	
	SPK		Pancreas only		Total		SPK		Pancreas only		Total			
Cambridge	24	(12)	1	(1)	25	(13)	7	(6)	0	(0)	7	(6)	3	(2)
Cardiff	6	(2)	0	(0)	6	(2)	5	(2)	2	(2)	7	(4)	11	(5)
Edinburgh	19	(16)	0	(0)	19	(16)	8	(16)	6 ³	(0)	14	(16)	14	(12)
Liverpool	14	(3)	0	(0)	14	(3)	5	(4)	0	(1)	5	(5)	9	(17)
Manchester	26	(19)	0	(0)	26	(19)	19	(17)	1	(1)	20	(18)	40	(35)
WLRTC	17	(11)	0	(1)	17	(12)	4	(6)	4	(2)	8	(8)	26	(27)
Newcastle	11	(8)	0	(0)	11	(8)	10	(3)	1	(0)	11	(3)	8	(6)
Oxford	38	(26)	0	(0)	38	(26)	32	(14)	6	(1)	38	(15)	9	(1)
Guy's	19	(11)	1	(0)	20	(11)	16	(11)	2	(0)	18	(11)	24	(27)
Non-designated	0	(8 ⁴)	0	(0)	0	(8 ⁴)	0	(0)	1 ⁵	(0)	1 ⁵	(0)	1	(-)
TOTAL	174	(116)	2	(2)	176	(118)	106	(79)	23	(7)	129	(86)	145	(132)

WLRTC - West London Renal and Transplant Centre

¹ Includes 12 (1) donors aged less than 8 or greater than 50 years in 2005-2006 (2004-2005)

² Includes 4 (1) transplants using organs from donors aged less than 8 or greater than 50 years in 2005-2006 (2004-2005)

³ Includes 2 liver and pancreas transplants performed at Queen Elizabeth Hospital, Birmingham

⁴ Includes donors from hospitals in non-designated areas: Plymouth, Birmingham, or the kidney Trent Alliance area

⁵ Includes 1 liver and pancreas transplants performed at Queen Elizabeth Hospital, Birmingham using organs from an overseas donor

4.2 Transplant list

The number of patients registered on the pancreas transplant list increased by 10% in the year: on 31 March 2006, 145 patients were registered active, compared with 132 at the end of March 2005.

Of the 145 patients on the active transplant list at 31 March 2006, 90 required a SPK transplant (94 at 31 March 2005). Additionally, 55 patients were actively registered for a pancreas only transplant (38 at 31 March 2005).

The outcome of patients registered on the UK pancreas transplant list at 1 April 2005, or subsequently registered during the financial year, is shown in **Table 4.2**. Overall, 39% of patients waiting for a SPK transplant and 4% waiting for a pancreas only transplant had received a transplant by 31 March 2006.

Table 4.2 Transplant list and new registrations in the UK, 1 April 2005 - 31 March 2006

Outcome of patient at 31 March 2006	Active and suspended patients at 1 April 2005		New registrations in 2005-2006 ¹		TOTAL	
	N	%	N	%	N	%
Pancreas transplant list						
Remained active/suspended	75	91	25	83	100	89
Transplanted	0	0	4	13	4	4
Removed	6	7	1	3	7	6
Died	1	1	0	0	1	1
TOTAL	82		30		112	
Kidney/pancreas transplant list						
Remained active/suspended	64	47	91	58	155	53
Transplanted	53	39	60	38	113	39
Removed	9	7	4	3	13	4
Died	9	7	2	1	11	4
TOTAL	135		157		292	

¹ Includes re-registrations for second or subsequent transplants

4.3 Donor and organ supply

In 2005-2006, there were 164 deceased heartbeating pancreas donors aged between 8 and 50 years, the age range where donor organs are generally suitable for pancreas transplantation. This represents 44% of all deceased heartbeating solid organ donors. Of 164 pancreata donated, 115 (70%) resulted in pancreas transplants. **Table 4.3** shows this activity by transplant centre.

Table 4.3 Pancreas donation and retrieval rates for heartbeating donors (aged 8 to 50 years) in the UK, 1 April 2005 - 31 March 2006, by centre

Centre	HB donors	HB pancreas donors (% of HB donors)		Pancreas used (% of retrieved)	
Cambridge	39	22	(56)	15	(68)
Cardiff	13	6	(46)	4	(67)
Edinburgh	48	18	(38)	16	(89)
Liverpool	51	13	(25)	9	(69)
Manchester	53	24	(45)	20	(83)
WLRTC	34	15	(44)	11	(73)
Newcastle	27	11	(41)	8	(73)
Oxford	65	35	(54)	28	(82)
Guy's	40	20	(50)	13	(68)
Non-designated	0	0	(-)	1 ¹	(-)
TOTAL	370	164²	(44)	125³	(76)

WLRTC - West London Renal and Transplant Centre

¹ There was 1 additional pancreas transplanted in the UK using a donor from overseas, performed at Queen Elizabeth Hospital, Birmingham

² There were an additional 12 pancreas donors outside of the 8 – 50 age range

³ There were an additional 3 pancreata transplanted from donors outside of the 8 – 50 age range

4.4 Transplants

There were 129 pancreas transplants in 2005-2006 an increase of 50% on the 86 transplants performed in 2004-2005. Of these 129, 106 (82%) were SPK transplants. The number of transplants performed at each centre is shown in **Table 4.1**.

4.5 Demographic characteristics

The ethnicity of deceased heartbeating donors, transplant recipients and patients on the transplant list is shown in **Table 4.4**. Asian patients represented 3.0% and 4.8% of the active pancreas transplant list at 31 March 2005 and 2006, respectively, and 3.1% of pancreas transplant recipients in 2005-2006. There was only one Asian pancreas donor in the last financial year and none in the previous two financial years.

Table 4.4 Ethnicity of deceased heartbeating pancreas donors and recipients, 1 April 2004 - 31 March 2006 and transplant list patients at 31 March in the UK

Ethnicity	Donors				Transplant recipients				Active transplant list patients			
	2004-2005		2005-2006		2004-2005		2005-2006		2005		2006	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
White	113	(95.8)	169	(96.0)	81	(94.2)	118	(91.5)	125	(94.7)	136	(93.8)
Asian	0	(0)	1	(0.6)	3	(3.5)	4	(3.1)	4	(3)	7	(4.8)
Black	1	(0.8)	4	(2.3)	1	(1.2)	6	(4.7)	2	(1.5)	1	(0.7)
Chinese	2	(1.7)	0	(0.0)	0	(0)	0	(0)	0	(0)	0	(0)
Other	2	(1.7)	2	(1.1)	1	(1.2)	1	(0.8)	1	(0.8)	1	(0.7)
TOTAL	118		176		86		129		132		145	

Table 4.5 shows the age group and sex of deceased heartbeating pancreas donors, transplant recipients and patients waiting for a pancreas transplant. There was a greater proportion of male transplant recipients than female, 57% compared with 43%. There were 12 pancreas donors outside the preferred age range of 8 to 50 years, three of which resulted in a transplant, and the age group 35-50 years had the highest proportion of pancreas donors, recipients and patients on the transplant list.

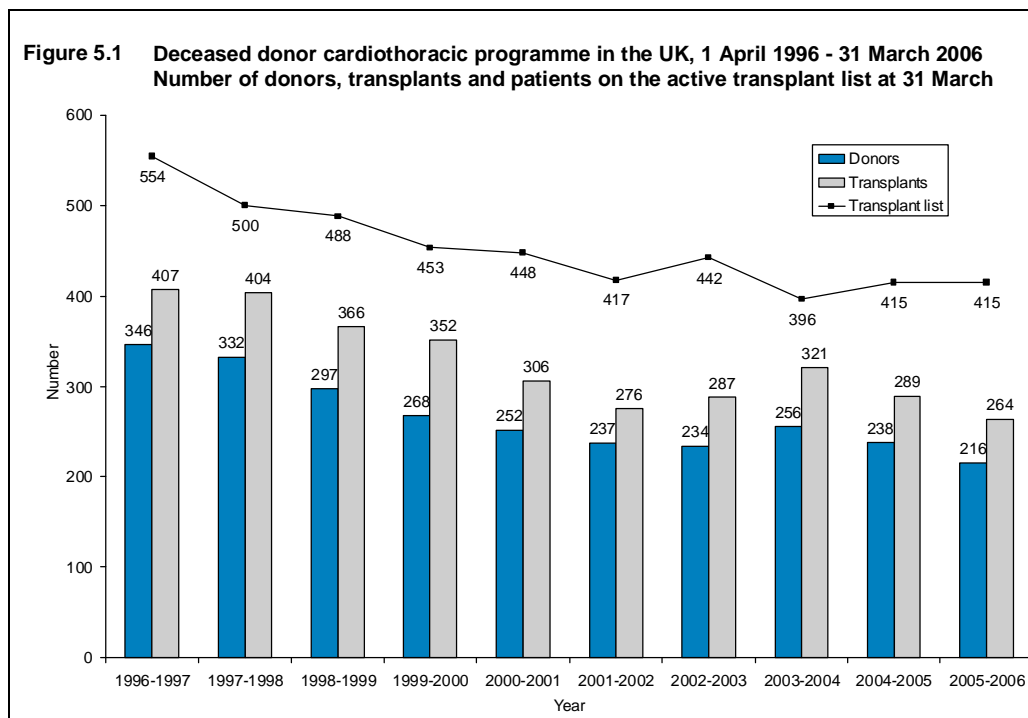
Table 4.5 Deceased heartbeating pancreas donors and transplant recipients, 1 April 2005 - 31 March 2006, and transplant list patients at 31 March 2006 by gender and age group

	Age group (years)											
	<8		8-17		18-34		35-50		51-60		61+	
Donors												
Male	0		8		31		38		3		1	
Female	1		10		24		53		7		0	
TOTAL	1	(1%)	18	(10%)	55	(31%)	91	(52%)	10	(6%)	1	(1%)
Recipients												
Male	1		0		17		51		5		0	
Female	1		1		17		32		3		1	
TOTAL	2	(2%)	1	(1%)	34	(26%)	83	(64%)	8	(6%)	1	(1%)
Transplant list												
Male	0		0		11		46		8		1	
Female	0		2		19		54		4		0	
TOTAL	0	(-)	2	(1%)	30	(21%)	100	(69%)	12	(8%)	1	(1%)

5 CARDIOTHORACIC ACTIVITY

5.1 Overview

A summary of the deceased donor cardiorthoracic activity from 1 April 1996 to 31 March 2006 is shown in **Figure 5.1**. The number of patients registered on the active transplant list at 31 March for a cardiorthoracic transplant has decreased by 25% since 1996. In 2005-2006 the number of deceased donor transplants was 264, a 9% decrease from the previous financial year.



5.2 Transplant list

Table 5.1 shows the number of patients on the active transplant lists at 31 March 2006 by centre. The lung transplant list accounts for 64% of the patients waiting for a cardiorthoracic transplant. Overall, Harefield has the largest cardiorthoracic list, with 122 patients waiting.

The outcome of patients registered at 1 April 2005 and throughout the subsequent year is shown in **Table 5.2**. Of the 870 patients on the transplant list for a cardiorthoracic organ in 2005-2006, 423 (49%) were still waiting at the end of the year, 252 (29%) had received a transplant and 195 (22%) had either died or been removed from the transplant list.

Table 5.1 Patients on the cardiothoracic transplant lists at 31 March 2006 (2005) in the UK, by centre

Centre	Active transplant lists						TOTAL	
	Heart		Heart/lung		Lung			
Birmingham	5	(7)	4	(1)	11	(11)	20	(19)
Glasgow	4	(2)	0	(0)	0	(0)	4	(2)
Great Ormond Street	6	(10)	0	(5)	1	(0)	7	(15)
Harefield	34	(27)	11	(15)	77	(66)	122	(108)
Manchester	16	(7)	3	(7)	45	(44)	64	(58)
Newcastle ¹	22	(36)	8	(6)	83	(115)	113	(157)
Papworth	23	(17)	15	(15)	47	(24)	85	(56)
TOTAL	110	(106)	41	(49)	264	(260)	415	(415)

¹ Adult and paediatric patients on transplant list

Table 5.2 Cardiothoracic transplant lists and new registrations in the UK, 1 April 2005 - 31 March 2006

Outcome of patient at 31 March 2006	Active and suspended patients at 1 April 2005		New registrations in 2005-2006 ¹		TOTAL	
	N	%	N	%	N	%
Heart transplant list						
Remained active/suspended	30	29	83	37	113	34
Transplanted	30	29	101	44	131	40
Removed	37	36	24	11	61	19
Died	5	5	19	8	24	7
TOTAL	102		227		329	
Heart/lung transplant list						
Remained active/suspended	27	59	14	54	41	57
Transplanted ²	9	20	7	27	16	22
Removed	5	11	0	0	5	7
Died	5	11	5	19	10	14
TOTAL	46		26		72	
Lung transplant list						
Remained active/suspended	97	44	172	69	269	57
Transplanted	55	25	50	20	105	22
Removed	26	12	6	2	32	7
Died	41	19	22	9	63	13
TOTAL	219		250		469	

¹ Includes re-registrations for second or subsequent transplants

² Heart, lung or heart/lung

Table 5.3 Cardiothoracic organ donors in the UK, 1 April 2005 - 31 March 2006 (2004-2005), by retrieval centre

Retrieval centre	Type of cardiothoracic donor									
	Heart only		Domino heart		Heart & lung		Lung(s) only		TOTAL	
Birmingham	11	(19)	0	(0)	13	(16)	18	(20)	42	(55)
Glasgow	9	(8)	0	(0)	6	(6)	9	(4)	24	(18)
Great Ormond Street	4	(0)	0	(2)	2	(2)	0	(0)	6	(4)
Harefield	12	(9)	0	(0)	13	(12)	12	(15)	37	(36)
Manchester	8	(9)	0	(0)	8	(9)	8	(7)	24	(25)
Newcastle ¹	10	(13)	0	(0)	6	(14)	13	(20)	29	(47)
Papworth	20	(29)	0	(0)	16	(18)	11	(3)	47	(50)
Other European countries	0	(1)	0	(0)	1	(1)	1	(2)	2	(4)
TOTAL	75 ²	(88)	0	(2)	65	(78)	76 ²	(72) ²	216 ²	(240) ²

¹ Newcastle retrieve organs from paediatric donors from other centres

² Includes organs retrieved by other centres

5.3 Donor and organ supply

The number of cardiothoracic organ donors classified by retrieval centre, rather than geographical zone, is summarised in **Table 5.3**. One of the 76 lung only donors was a non-heartbeating donor. Of the 215 deceased heartbeating cardiothoracic donors, 35% donated only the heart, 30% heart and lung and 35% lung only.

Table 5.4 shows the number of deceased heartbeating solid organ donors identified in each cardiothoracic zone, the number that donated cardiothoracic organs and the number of organs retrieved. The numbers in this table reflect the number of organs retrieved from within each zone (by any centre) rather than the number of retrievals made by that centre.

Of the 639 heartbeating solid organ donors, 34% donated cardiothoracic organs. Overall, 83% of the 405 organs retrieved were transplanted: 97% of hearts and 76% of lungs.

Table 5.4 Deceased heartbeating cardiothoracic organ donation and retrieval rates in the UK, 1 April 2005 - 31 March 2006, by donation zone

Donation zone	Number of donors		Number of organs retrieved (used)				TOTAL retrieved (used)	
	Heartbeating solid organ	Cardiothoracic	Hearts		Lungs			
Birmingham	116	39	24	(23)	54	(40)	78	(63)
Glasgow	45	24	15	(15)	26	(22)	41	(37)
Harefield	123	39	26	(25)	52	(35)	78	(60)
Manchester	87	29	16	(15)	41	(26)	57	(41)
Newcastle ¹	113	30	18	(18)	33	(28)	51	(46)
Papworth	155	54	41	(40)	59	(50)	100	(90)
TOTAL	639	215	140	(136)	265	(201)	405	(337)

¹ Newcastle transplant adult and paediatric patients

Deceased heartbeating donation rates per million population are shown in **Table 5.5**. The overall cardiothoracic donor rate was 3.6 pmp in 2005-2006 and varied across the donation zones from 3.0 pmp to 4.7 pmp.

Table 5.5 Deceased heartbeating cardiothoracic organ donation rates per million population (pmp) in the UK, 1 April 2005 - 31 March 2006, by donation zone

Donation zone	Heartbeating solid organ donors pmp	Cardiothoracic donors pmp		
		Heart	Lung	Total
Birmingham	12.1	2.5	2.9	4.1
Glasgow	8.9	3.0	3.0	4.7
Harefield	9.4	2.0	2.1	3.0
Manchester	11.0	2.0	2.7	3.7
Newcastle	13.3	2.1	2.2	3.5
Papworth	10.4	2.8	2.0	3.6
TOTAL	10.8	2.4	2.4	3.6

5.4 Transplants

Table 5.6 shows cardiothoracic transplant activity for each centre. In 2005-2006, 264 transplants were carried out, a decrease of 9% on 2004-2005. Of these, 53% were deceased donor heart transplants. Newcastle performed one non-heartbeating lung transplant. There were two heart and kidney transplants in 2005-2006, shown in the 2005-2006 deceased heart column.

The overall cardiothoracic transplant rate was 4.5 per million population (pmp) in 2005-2006. However, the heart transplant rate was 2.4 pmp, below the *BTS Standard* of 4 pmp for cardiac transplantation in the UK.

Table 5.6 Cardiothoracic transplants, 1 April 2005 - 31 March 2006 (2004-2005), by centre

Transplant centre	Deceased heart		Transplant type				Deceased lung(s)		TOTAL	
			Domino heart		Heart/ lung					
Birmingham	20	(18)	0	(0)	0	(2)	10	(13)	30	(33)
Glasgow	7	(9)	0	(0)	0	(0)	0	(0)	7	(9)
Great Ormond Street	21	(16)	0	(1)	1	(5)	6	(3)	28	(25)
Harefield	21	(26)	0	(0)	1	(1)	19	(23)	41	(50)
Manchester	18	(14)	0	(0)	0	(0)	17	(18)	35	(32)
Newcastle ¹	24	(25)	0	(0)	1	(5)	40	(42)	65	(72)
Papworth	30	(46)	0	(0)	4	(2)	24	(21)	58	(69)
TOTAL	141	(154)	0	(1)	7	(15)	116	(120)	264	(290)

¹ Newcastle transplant adult and paediatric patients

5.5 Demographic characteristics

The ethnicity of cardiothoracic donors, transplant recipients and patients on the transplant list is shown in **Table 5.7**. While 4.2% of donors in 2005-2006 were non-white, 6.3% of the transplant list at 31 March 2006 was non-white.

Table 5.7 Ethnicity of cardiothoracic donors and recipients, 1 April 2004 - 31 March 2006 and transplant list patients at 31 March in the UK

Ethnicity	Donors				Transplant recipients				Active transplant list patients			
	2004-2005		2005-2006		2004-2005		2005-2006		2005		2006	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
White	232	(96.7)	207	(95.8)	264	(91.0)	245	(92.8)	387	(93.3)	388	(93.5)
Asian	0	(0)	2	(0.9)	17	(5.9)	10	(3.8)	22	(5.3)	17	(4.1)
Black	2	(0.8)	3	(1.4)	8	(2.8)	5	(1.9)	5	(1.2)	8	(1.9)
Chinese	2	(0.8)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
Other	4	(1.7)	4	(1.9)	1	(0.3)	4	(1.5)	1	(0.2)	2	(0.5)
TOTAL	240		216		290		264		415		415	

Of the 264 cardiothoracic recipients, 60% were male compared with 53% of donors and 54% of the transplant list; see **Table 5.8**. Of the 216 cardiothoracic donors, 41% were in the 35 to 49 years age group.

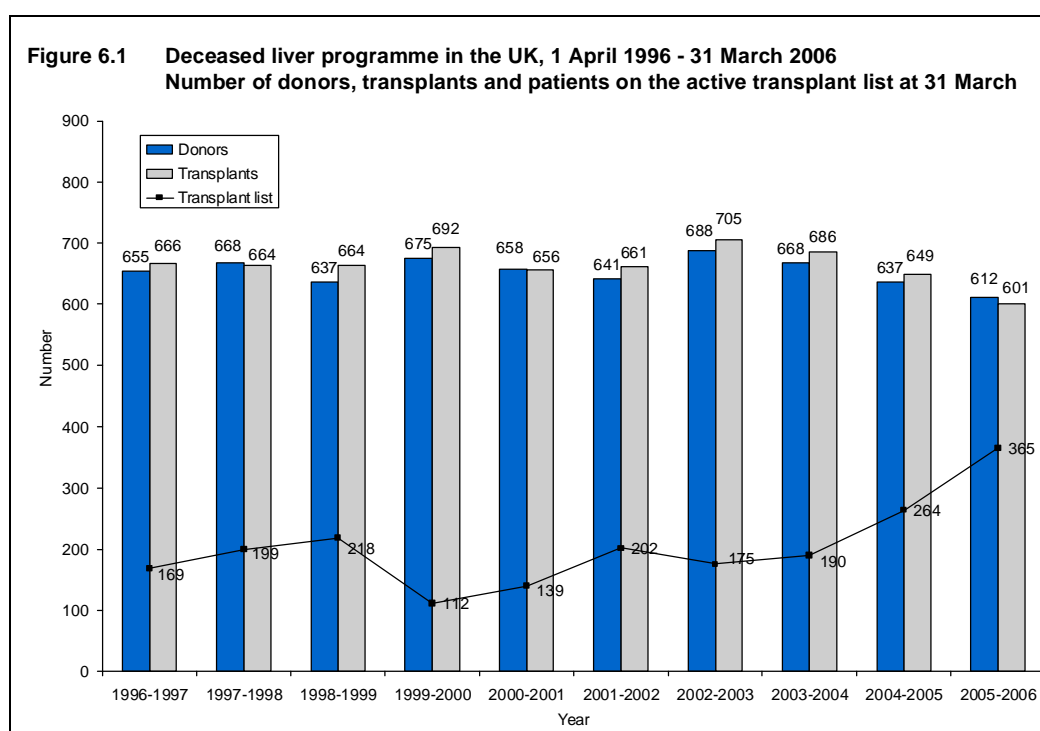
Table 5.8 Age and sex of cardiothoracic donors and transplant recipients, 1 April 2005 - 31 March 2006, and transplant list patients at 31 March 2006

Age group (years)												
	0-17		18-34		35-49		50-59		60+		TOTAL	
Donors												
Male	9		31		48		25		1		114	(53%)
Female	9		22		40		27		4		102	(47%)
TOTAL	18	(8%)	53	(25%)	88	(41%)	52	(24%)	5	(2%)	216	(100%)
Recipients												
Male	14		29		38		52		25		158	(60%)
Female	25		22		21		28		10		106	(40%)
TOTAL	39	(15%)	51	(19%)	59	(22%)	80	(30%)	35	(13%)	264	(100%)
Transplant list												
Male	11		48		57		72		35		223	(54%)
Female	8		64		48		63		9		192	(46%)
TOTAL	19	(5%)	112	(27%)	105	(25%)	135	(33%)	44	(11%)	415	(100%)

6 LIVER ACTIVITY

6.1 Overview

The number of deceased liver donors and transplants in the UK has remained relatively constant in the last ten years as shown in **Figure 6.1**. The number of patients actively waiting for a transplant at 31 March increased steadily until 1999, followed by a decrease in 2000. At 31 March 2006, the number on the active transplant list was 38% greater than the previous year.



The number of deceased donors, deceased and living donor transplants and patients on the active or suspended transplant list, by centre, is shown in **Table 6.1**. In 2005-2006, 612 solid organ donors donated their liver for transplant: 569 heartbeating and 43 non-heartbeating.

Overall, the number of heartbeating donor liver transplants, including four liver and small bowel transplants and three liver, pancreas and small bowel transplants, fell by 9% to 570, but the number of non-heartbeating donor transplants increased by 41% to 31. Additionally, there were nine living liver lobe donor transplants in NHS Group 1 (three) and Group 2 (six) recipients, all performed at King's College.

There were 365 patients, including three patients registered for a liver and small bowel transplant, on the active transplant list at 31 March 2006, an increase of 38% from 2005.

Table 6.1 Deceased and living liver donors and transplants, 1 April 2005 - 31 March 2006 (2004-2005) and transplant list patients at 31 March 2006 (2005) in the UK, by centre

Retrieval/ transplant centre	Deceased donors						Deceased transplants						Living donor transplants		Active transplant list	
	HB		NHB		TOTAL		HB		NHB		TOTAL					
Birmingham	131	(152)	4	(1)	135	(153)	141	(164)	3	(2)	144	(166)	0	(1)	76	(52)
Cambridge	82	(76)	1	(0)	83	(76)	72	(64)	1	(0)	73	(64)	0	(0)	20	(19)
Edinburgh	43	(53)	1	(0)	44	(53)	41	(52)	1	(0)	42	(52)	0	(0)	27	(22)
King's College	137	(133)	19	(20)	156	(153)	149	(173)	15	(11)	164	(184)	9	(6)	145	(115)
Leeds	85	(95)	15	(8)	100	(103)	94	(91)	8	(6)	102	(97)	0	(0)	51	(23)
Newcastle	39	(39)	2	(4)	41	(43)	30	(36)	2	(3)	32	(39)	0	(0)	11	(16)
The Royal Free	50	(55)	1	(0)	51	(55)	43	(47)	1	(0)	44	(47)	0	(0)	30	(17)
TOTAL	569 ¹	(604 ¹)	43	(33)	612 ¹	(637 ¹)	570	(627)	31	(22)	601	(649)	9 ²	(7 ³)	365	(264)

¹ Includes donors whose livers were retrieved by other teams

² Includes 3 and 6 living liver lobe transplants in NHS group 1 and group 2 recipients, respectively

³ Includes 4 and 3 living liver lobe transplants in NHS group 1 and group 2 recipients respectively

Note: Birmingham, King's College and Leeds retrieve from paediatric donors and transplant paediatric patients

6.2 Transplant list

The outcome of patients registered at 1 April 2005 and patients registered during the year is shown in **Table 6.2**. Of the 1,152 patients waiting on the list during 2005-2006, 52% were transplanted and 34% were still waiting at 31 March 2006.

Table 6.2 Liver transplant list and new registrations in the UK, 1 April 2005 - 31 March 2006

Outcome of patient at 31 March 2006	Active and suspended patients at 1 April 2005		New registrations in 2005-2006 ¹		TOTAL	
	N	%	N	%	N	%
Remained active/suspended	44	15	342	39	386	34
Transplanted	181	64	413	48	594	52
Removed	35	12	48	6	83	7
Died	24	8	65	7	89	8
TOTAL	284		868		1152	

¹ Includes re-registrations for second or subsequent transplants

6.3 Donor and organ supply

Of 764 solid organ donors, 612 (80%) donated their liver and 551 (90%) of these donated livers were transplanted; see **Table 6.3**. Of livers retrieved from heartbeating and non-heartbeating donors, 92% and 70% were transplanted, respectively.

Table 6.3 Deceased liver retrieval rates in the UK, 1 April 2005 - 31 March 2006, by donation zone

Donation zone	Number of donors						Number of livers retrieved (used)					
	Solid organ			Liver			HB			NHB		
	HB	NHB	TOTAL	HB	NHB	TOTAL	HB			NHB		TOTAL
Birmingham	140	8	148	129	4	133	129	(121)		4	(4)	133 (125)
Cambridge	88	12	100	82	4	86	82	(74)		4	(4)	86 (78)
Edinburgh	45	3	48	42	1	43	42	(42)		1	(1)	43 (43)
King's College	155	52	207	140	13	153	140	(123)		13	(8)	153 (131)
Leeds	95	29	124	84	14	98	84	(74)		14	(9)	98 (83)
Newcastle	51	13	64	40	3	43	40	(38)		3	(2)	43 (40)
The Royal Free	65	8	73	52	4	56	52	(49)		4	(2)	56 (51)
TOTAL	639	125	764	569	43	612	569	(521)		43	(30)	612 (551)

Table 6.4 shows the deceased solid organ and liver donor rates per million population for 2005-2006. Overall, the liver donor rate was 10.4 pmp and ranged from 8.5 to 12.6 pmp across the donation zones.

Table 6.4 Deceased liver donation rates per million population (pmp), 1 April 2005 - 31 March 2006, by donation zone

Donation zone	Solid organ donor pmp	Liver donor pmp
Birmingham	11.3	10.2
Cambridge	10.8	9.3
Edinburgh	9.5	8.5
King's College	14.1	10.5
Leeds	15.8	12.5
Newcastle	18.8	12.6
The Royal Free	12.7	9.8
TOTAL	12.9	10.4

6.4 Transplants

The number of whole, split and reduced liver transplants in 2005-2006 is shown in **Table 6.5**. The term "reduced" is used when only one lobe of the liver is transplanted and the term "split" applies when both lobes of the liver are transplanted into two different recipients.

Overall, the number of liver transplants fell by 7% in 2005-2006. There were 601 deceased liver transplants performed in 2005-2006: 503 whole liver, including 11 liver and kidney, 1 liver, pancreas and small bowel and 4 liver and small bowel; and 98 deceased liver lobe, including 1 liver and kidney, and 2 liver, pancreas and small bowel. Split liver transplants accounted for 88% of liver lobe transplant activity. The transplant rate overall was 10.2 pmp and varied between centres from 7.7 to 13.0. The *BTS Standard* states that each centre should aim to achieve at least 12 liver transplants pmp per year.

Table 6.5 Deceased liver transplants performed in the UK, 1 April 2004 - 31 March 2006

Transplant centre	2004-2005				2005-2006			
	Whole liver	Reduced liver	Split liver	TOTAL (pmp)	Whole liver	Reduced liver	Split liver	TOTAL (pmp)
Birmingham	132	7	27	166 (12.7)	113	4	27	144 (11.0)
Cambridge	63	0	1	64 (6.9)	72	0	1	73 (7.9)
Edinburgh	50	0	2	52 (10.3)	38	0	4	42 (8.3)
King's College	142	7	35	184 (12.6)	123	6	35	164 (11.2)
Leeds	86	4	7	97 (12.4)	82	2	18	102 (13.0)
Newcastle	39	0	0	39 (11.5)	32	0	0	32 (9.4)
The Royal Free	47	0	0	47 (8.2)	43	0	1	44 (7.7)
TOTAL	559	18	72	649 (11.0)	503	12	86	601 (10.2)

Note: Birmingham, King's College and Leeds transplant paediatric patients

6.5 Demographic characteristics

The ethnicity of liver donors, transplant recipients and transplant list patients is shown in **Table 6.6**. In 2005-2006, the proportion of Asian patients waiting on the transplant list was much greater than that of donors, 9.3% compared with 1.0%, respectively.

Table 6.6 Ethnicity of liver donors and recipients, 1 April 2004 - 31 March 2006 and transplant list patients at 31 March in the UK

Ethnicity	Donors				Transplant recipients				Active transplant list patients			
	2004-2005		2005-2006		2004-2005		2005-2006		2005		2006	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
White	614	(95.3)	594	(95.7)	557	(84.9)	520	(85.2)	225	(85.2)	309	(84.7)
Asian	9	(1.4)	6	(1.0)	65	(9.9)	56	(9.2)	17	(6.4)	34	(9.3)
Black	5	(0.8)	10	(1.6)	15	(2.3)	15	(2.5)	6	(2.3)	8	(2.2)
Chinese	7	(1.1)	0	(0.0)	1	(0.2)	4	(0.7)	0	(0.0)	0	(0.0)
Other	9	(1.4)	11	(1.8)	18	(2.7)	15	(2.5)	16	(6.1)	14	(3.8)
TOTAL	644		621		656		610		264		365	

The age and sex distribution of donors and recipients in 2005-2006, and patients on the transplant list at 31 March 2006, are shown in **Table 6.7**. The 35-49 year age group had the largest proportion of donors (33%), and the 50-59 year age group had the largest proportion of patients transplanted (33%) and patients on the transplant list (29%).

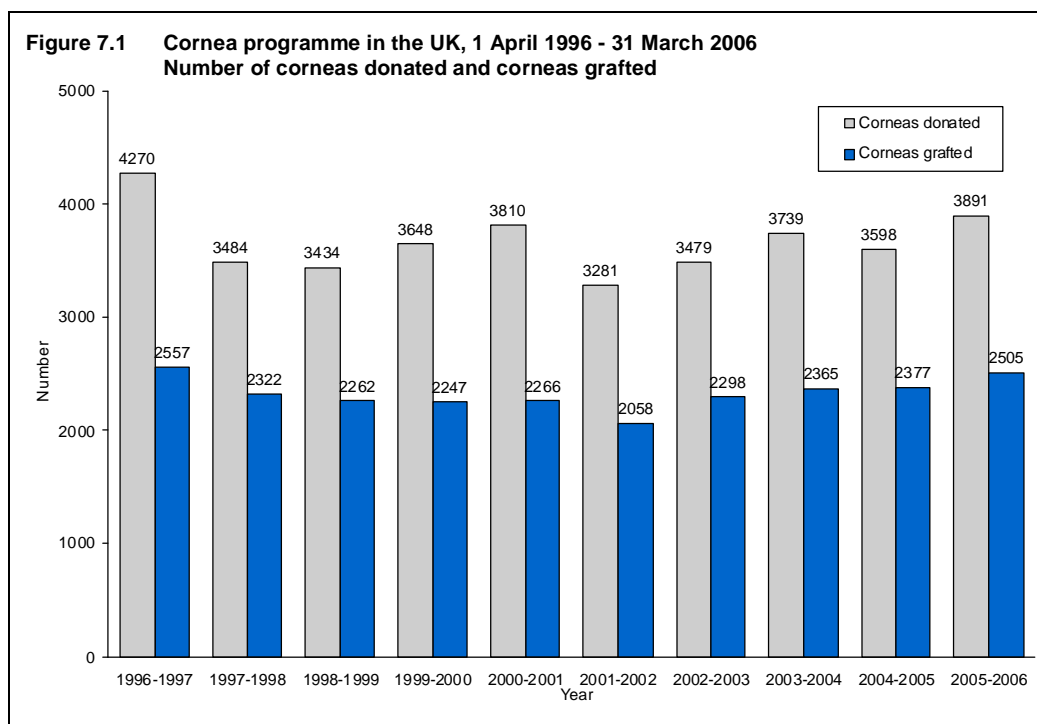
Table 6.7 Liver donors and transplant recipients, 1 April 2005 - 31 March 2006, and transplant list patients at 31 March 2006, by sex and age group

Age group (years)													
		0-17		18-34		35-49		50-59		60+		TOTAL	
Donors													
Male	20		70		99		72		49		310	(50%)	
Female	21		47		103		86		54		311	(50%)	
TOTAL	41	(7%)	117	(19%)	202	(33%)	158	(25%)	103	(17%)	621	(100%)	
Recipients													
Male	37		22		83		121		62		325	(53%)	
Female	49		44		64		78		50		285	(47%)	
TOTAL	86	(14%)	66	(11%)	147	(24%)	199	(33%)	112	(18%)	610	(100%)	
Transplant list													
Male	21		15		65		76		50		227	(62%)	
Female	22		17		36		31		32		138	(38%)	
TOTAL	43	(12%)	32	(9%)	101	(28%)	107	(29%)	82	(22%)	365	(100%)	

7 CORNEA ACTIVITY

7.1 Overview

Both the number of corneas donated and the number of corneas grafted increased in 2005-2006, by 8% and 5% respectively and were both higher than in any of the previous eight years, as shown in **Figure 7.1**. Additionally, 171 sclera were issued and used.



In 2005-2006 there were 1,953 cornea donors, of whom 1,768 donated corneas only and 185 donated corneas and solid organs: see **Table 7.1**. Compared with 2004-2005, the number of cornea only donors increased by 128 (8%) and the number of cornea and solid organ donors decreased by 7 (4%). In 2004-2005, corneas were retrieved from 26% of deceased heartbeating solid organ donors; this fell to 23% in 2005-2006. Of the 128 non-heartbeating solid organ donors in 2005-2006, 38 also donated corneas, 30% compared with 28% in 2004-2005.

Table 7.1 also shows the number and rate per million population (pmp) of donors in 2005-2006 by country and English Strategic Health Authority (StHA), with figures for 2004-2005 in parentheses. England had the highest cornea donor rate in the UK in 2005-2006 (36 pmp), whereas Wales had the highest donor rate in 2004-2005 (41 pmp). In 2005-2006, the cornea donor rate increased in England and Northern Ireland, but fell in Wales and Scotland. Across the StHAs the cornea donor rate ranged from 4.0 pmp to 115.3 pmp.

Table 7.1 Cornea donation rates per million population (pmp) in the UK, 1 April 2005 - 31 March 2006 (2004-2005), by country and English Strategic Health Authority

Country/Strategic Health Authority	Cornea only		Solid organ and cornea		TOTAL		TOTAL pmp	
Avon, Gloucestershire and Wiltshire	90	(123)	17	(11)	107	(132)	49.5	(62.0)
Bedfordshire and Hertfordshire	8	(15)	6	(5)	14	(19)	8.8	(12.5)
Birmingham and The Black Country	40	(23)	4	(2)	44	(25)	19.5	(11.1)
Cheshire and Merseyside	29	(59)	7	(7)	36	(66)	15.4	(28.2)
County Durham and Tees Valley	81	(64)	4	(2)	85	(66)	75.1	(58.3)
Coventry, Warwickshire, Hereford and Worcs	28	(32)	2	(1)	28	(32)	19.7	(21.7)
Cumbria and Lancashire	67	(69)	7	(7)	74	(76)	38.9	(40.0)
Essex	29	(37)	4	(5)	30	(42)	20.4	(26.0)
Greater Manchester	120	(71)	9	(7)	129	(78)	51.3	(31.0)
Hampshire and Isle of Wight	39	(69)	6	(5)	44	(74)	25.3	(41.7)
Kent and Medway	180	(117)	4	(1)	182	(117)	116.5	(74.7)
Leicestershire, Northamptonshire and Rutland	18	(29)	1	(4)	19	(33)	12.2	(21.2)
Norfolk, Suffolk and Cambridgeshire	197	(156)	9	(9)	206	(165)	94.8	(75.9)
North and East Yorkshire and Northern Lincs	20	(28)	6	(4)	25	(30)	16.0	(19.8)
North Central London	11	(46)	1	(4)	12	(50)	10.2	(42.4)
North East London	2	(4)	4	(4)	6	(8)	4.0	(5.4)
North West London	3	(8)	4	(10)	7	(18)	4.0	(10.4)
Northumberland, Tyne and Wear	45	(51)	2	(6)	47	(57)	34.0	(41.2)
Shropshire and Staffordshire	34	(38)	3	(2)	37	(40)	24.8	(26.9)
Somerset and Dorset	64	(57)	4	(4)	49	(54)	57.1	(51.2)
South East London	7	(27)	5	(5)	12	(31)	8.1	(21.5)
South West London	8	(10)	0	(5)	6	(15)	6.3	(11.7)
South West Peninsula	146	(117)	10	(8)	153	(124)	99.0	(79.3)
South Yorkshire	15	(12)	2	(2)	17	(13)	13.4	(11.1)
Surrey and Sussex	90	(87)	10	(8)	100	(95)	39.2	(37.2)
Thames Valley	47	(33)	6	(6)	53	(39)	25.3	(18.7)
Trent	69	(33)	5	(6)	71	(39)	28.6	(15.1)
West Yorkshire	169	(38)	8	(8)	173	(46)	85.1	(22.1)
England	1656	(1453)	150	(148)	1766	(1584)	36.8	(32.6)
Isle of Man	0	(0)	0	(0)	0	(0)	0.0	(0.0)
Channel Islands	0	(0)	0	(0)	0	(0)	0.0	(0.0)
Wales	51	(100)	11	(19)	61	(118)	21.4	(41.0)
Scotland	54	(61)	16	(19)	69	(80)	13.8	(15.8)
Northern Ireland	7	(2)	8	(6)	15	(8)	8.9	(4.7)
TOTAL	1768	(1616)	185	(192)	1911	(1790)	33.1	(30.6)

7.2 Donor and tissue supply

In 2005-2006, 98% (98% in 2004-2005) of retrieved corneas reported to the National Transplant Database were supplied to the Corneal Transplant Service (CTS) Eye Banks in Bristol and Manchester. **Table 7.2** shows the number of corneas supplied to and taken from the CTS Eye Banks for those centres that supplied more than 25 corneas in 2005-2006. The difference between the number supplied and number taken is also shown, together with the number of corneas that were deemed suitable for a penetrating keratoplasty (PK), which is where donor and

tissue selection criteria were met. Centres with a negative balance have taken more corneas than they supplied to the CTS Eye Banks.

**Table 7.2 Corneas supplied to and taken from the CTS eye banks,
1 April 2005 - 31 March 2006**

Centre	Corneas supplied	Suitable for PK (%)	Corneas taken	Balance
East Grinstead, Queen Victoria Hospital	549	356 (65)	74	475
Norwich, West Norwich Hospital	298	243 (82)	23	275
Bolton, Royal Bolton Hospital	198	130 (66)	10	188
Exeter, Royal Devon & Exeter Hospital	170	94 (55)	5	165
Leeds, National Blood Service	157	102 (65)	0	157
Middlesbrough, South Cleveland Hospital	152	91 (60)	11	141
Bristol, Eye Hospital	146	87 (60)	52	94
Leeds, General Infirmary	126	83 (66)	76	50
Nottingham, University Hospital	99	71 (72)	112	-13
London, Moorfields Eye Hospital	72	27 (38)	128	-56
Newcastle, Royal Victoria Infirmary	70	51 (73)	32	38
Birmingham & Midland Eye Centre	66	41 (62)	77	-11
Reading, Royal Berkshire Hospital	65	32 (49)	29	36
Preston, Royal Preston Hospital	64	41 (64)	0	64
Plymouth, Royal Eye Infirmary	62	37 (60)	19	43
Newport, Royal Gwent Hospital	56	41 (73)	9	47
Stoke, North Staffordshire Royal Infirmary	49	39 (80)	3	46
Ipswich Hospital	41	27 (66)	19	22
Manchester, Royal Eye Hospital	41	36 (88)	91	-50
Truro, Royal Cornwall Hospital	40	30 (75)	10	30
Southampton, University Hospitals	39	24 (62)	37	2
Carlisle, Cumberland Infirmary	32	22 (69)	8	24
Sunderland, Eye Infirmary	32	23 (72)	34	-2
Southend Hospital	30	15 (50)	26	4
Leeds, St James University Hospital	29	18 (62)	6	23
Cambridge, Addenbrookes Hospital	29	21 (72)	21	8
Peterborough, District Hospital	28	17 (61)	0	28
Barnstaple, North Devon District Hospital	26	17 (65)	1	25
Yeovil District Hospital	26	15 (58)	0	26
Hereford, Victoria Eye Hospital	26	20 (77)	7	19
Centres supplying more than 25 corneas	2818	1851 (66)	920	1898
All other centres	1001	719 (72)	1573	-572
TOTAL	3819	2570 (67)	2493	1326

Note: PK - Penetrating keratoplasty

Of the 3,819 corneas supplied to the CTS Eye Banks, 2,570 (67%) were suitable for a PK. This was a slight decrease compared with 2004-2005, when 71% of corneas supplied to the CTS Eye Banks were suitable for a PK. The main reason for this decline was because the Eye Banks experienced problems with serology testing kits, which showed that some corneas were reactive for HTLV when in fact the result was negative when the blood was sent elsewhere for confirmatory tests. The problem with the kit is that it is for "living" blood, not for deceased

blood. A new type of kit is being looked into for use by the Eye Banks, which will hopefully resolve this problem.

7.3 CTS Eye Bank activity

The activity levels for the Bristol and Manchester Eye Banks are shown in **Table 7.3**. Both the numbers of corneas received and issued by the CTS Eye Banks increased in 2005-2006 by 8% and 2.5% respectively. In 2005-2006, 3,819 corneas were received into the CTS Eye Banks, of which 2,622 (69%) were subsequently issued for grafting. The balance equates to corneas unsuitable for transplantation.

Table 7.3 Corneas received into the Bristol and Manchester eye banks, 1 April 2005 - 31 March 2006 (2004-2005), by year

	Total received		Number issued ¹		% issued		Balance ²	
Bristol	1953	(1866)	1279	(1291)	65	(69)	674	(575)
Manchester	1866	(1675)	1343	(1266)	72	(76)	523	(409)
TOTAL	3819	(3541)	2622	(2557)	69	(72)	1197	(984)

¹ Number issued of those received in each year

² Corneas unsuitable for transplantation

The outcome of corneas received into the CTS Eye Banks is given in **Table 7.4**. Of the corneas supplied to the Eye Banks in 2005-2006, 63% were used for a penetrating graft, 1% were used for lamellar grafts and 4% were issued not used. Of the corneas supplied to the Eye Banks, 14% were unsuitable because of medication contraindications, 10% had endothelial deficiencies or stromal opacity and 6% were discarded because of bacterial or fungal contamination. Less than 1% of corneas became outdated, that is, they exceeded 28 days storage. Corneas that were unsuitable for transplantation were, where possible, used for research where permission had been given by the relatives.

7.4 Transplants

Transplant activity by country of residence and Strategic Health Authority in England for the years 2004-2005 and 2005-2006 is detailed in **Table 7.5**. The overall transplant rate was 40.3 pmp in 2004-2005; this increased to 42.4 pmp in 2005-2006. The transplant rates increased in each of the four countries. England had the highest transplant rate in the UK: 43.1 pmp and this ranged from 22.9 pmp to 66.1 pmp across the StHAs.

Table 7.4 Outcome of corneas received into the Bristol and Manchester eye banks, 1 April 2005 - 31 March 2006 (2004-2005), by year

Outcome of cornea	Bristol				Manchester				TOTAL			
	N		%		N		%		N		%	
Used												
Penetrating keratoplasty	1172	(1158)	60	(62)	1227	(1147)	66	(68)	2399	(2305)	63	(65)
Lamellar keratoplasty	30	(24)	2	(1)	16	(18)	1	(1)	46	(42)	1	(1)
Lathed lamellar lenticule	0	(0)	0	(0)	0	(1)	0	(< 1)	0	(1)	0	(< 1)
Other/not reported	3	(1)	< 1	(< 1)	16	(4)	1	(< 1)	19	(5)	< 1	(< 1)
Total used	1205	(1183)	62	(63)	1259	(1170)	67	(70)	2464	(2353)	65	(66)
Not used												
Issued, not used	74	(108)	4	(6)	84	(96)	5	(6)	158	(204)	4	(6)
Unsuitable - endothelium, stromal opacity, other	197	(214)	10	(11)	170	(161)	9	(10)	367	(375)	10	(11)
Medical reason - virology	278	(154)	14	(8)	150	(72)	8	(4)	428	(226)	11	(6)
Medical reason - other	78	(108)	4	(6)	50	(62)	3	(4)	128	(170)	3	(5)
Contaminated	105	(96)	5	(5)	118	(97)	6	(6)	223	(193)	6	(5)
Other/not reported	16	(3)	< 1	(< 1)	35	(17)	2	(1)	51	(20)	1	(< 1)
Total not used	748	(683)	38	(37)	607	(505)	33	(30)	1355	(1188)	35	(34)
TOTAL	1953	(1866)			1866	(1675)			3819	(3541)		

Table 7.5 Cornea transplants performed per million population (pmp) in the UK, 1 April 2004 - 31 March 2006, by country of residence and English Strategic Health Authority

Country of residence/Strategic Health Authority	Number of transplants (pmp)			
	2004-2005		2005-2006	
Avon, Gloucestershire and Wiltshire	84	(38.9)	90	(41.6)
Bedfordshire and Hertfordshire	64	(40.0)	58	(36.3)
Birmingham and The Black Country	104	(46.1)	122	(54.1)
Cheshire and Merseyside	83	(35.4)	101	(43.1)
County Durham and Tees Valley	43	(38.0)	39	(34.5)
Coventry, Warwickshire, Herefordshire and Worcestershire	48	(31.5)	54	(35.4)
Cumbria and Lancashire	110	(57.8)	77	(40.5)
Essex	74	(45.8)	52	(32.2)
Greater Manchester	89	(35.4)	104	(41.4)
Hampshire and Isle of Wight	52	(29.3)	73	(41.1)
Kent and Medway	55	(34.8)	68	(43.1)
Leicestershire, Northamptonshire and Rutland	87	(56.0)	85	(54.7)
Norfolk, Suffolk and Cambridgeshire	96	(44.2)	90	(41.4)
North and East Yorkshire and Northern Lincolnshire	68	(42.0)	83	(51.2)
North Central London	39	(33.1)	27	(22.9)
North East London	46	(30.8)	45	(30.1)
North West London	92	(53.1)	61	(35.2)
Northumberland, Tyne and Wear	43	(31.1)	50	(36.2)
Shropshire and Staffordshire	40	(26.9)	52	(34.9)
Somerset and Dorset	42	(35.3)	54	(45.3)
South East London	55	(37.0)	35	(23.5)
South West London	54	(42.2)	62	(48.5)
South West Peninsula	62	(39.3)	55	(34.9)
South Yorkshire	47	(37.1)	43	(34.0)
Surrey and Sussex	104	(40.7)	125	(49.0)
Thames Valley	115	(55.0)	103	(49.3)
Trent	106	(41.0)	171	(66.1)
West Yorkshire	130	(62.5)	137	(65.9)
England	2032	(41.4)	2116	(43.1)
Isle of Man	1	(14.3)	6	(85.7)
Channel Islands	7	(50.0)	4	(28.6)
Wales	98	(33.8)	107	(36.9)
Scotland	155	(30.6)	174	(34.4)
Northern Ireland	53	(31.4)	64	(37.9)
TOTAL¹	2378	(40.3)	2502	(42.4)

¹ Includes UK recipients where the postcode was unspecified and non-UK recipients

8 TRANSPLANT SURVIVAL

This chapter shows transplant survival estimates for kidney, pancreas, liver and cornea transplants, and patient survival for cardiothoracic and liver transplants, performed in the UK, by organ type and, where appropriate, by calendar year group. Separate estimates are presented for adult and paediatric patients, using organ specific age definitions where the data were available.

In all cases, the Kaplan-Meier estimate of the survivor function was used and groups were compared using the log-rank test. The analyses do not take account of risk factors, which may change over time. For transplant survival, the outcome event is the earlier of graft failure or death of the recipient and thus recipient death with a functioning graft is treated as transplant failure. For patient survival the outcome event is death of the recipient.

8.1 Kidney transplant survival

8.1.1 Adult recipients

Figure 8.1 shows long-term transplant survival in adult (≥ 18 years) recipients for first deceased heartbeating donor kidney only transplants in the UK. **Table 8.1** shows the survival estimates and confidence intervals for one, two, five and ten years post-transplant. There has been a significant improvement in one, two and five year survival over the year groups, with $p < 0.0001$ in each case.

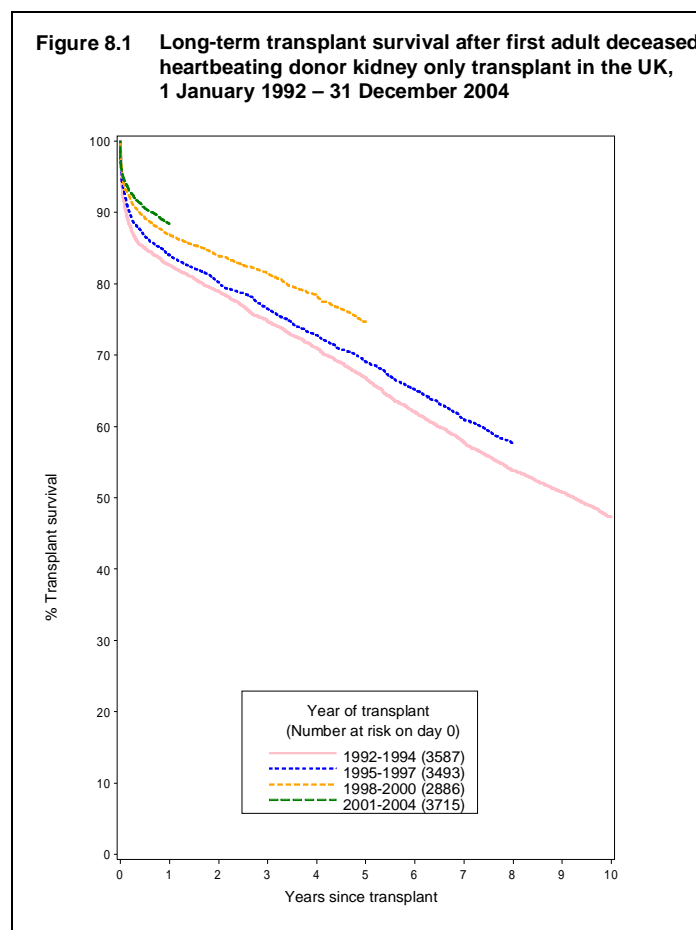


Table 8.1 Long-term transplant survival after first adult deceased heartbeating donor kidney only transplant in the UK, 1 January 1992 - 31 December 2004

Year of transplant	No. at risk on day 0	% Transplant survival (95% confidence interval)			
		One year	Two year	Five year	Ten year
1992-1994	3587	83 (81-84)	79 (78-80)	67 (65-68)	47 (46-49)
1995-1997	3493	84 (83-85)	80 (79-81)	69 (68-71)	
1998-2000	2886	87 (86-88)	84 (82-85)	75 (73-76)	
2001-2004	3715	88 (87-89)			

Long-term transplant survival in adult recipients for living donor kidney transplants in the UK is shown in **Figure 8.2**. **Table 8.2** shows transplant survival estimates and confidence intervals for each year group. There has been a significant improvement in five year survival over the year groups, with $p < 0.03$.

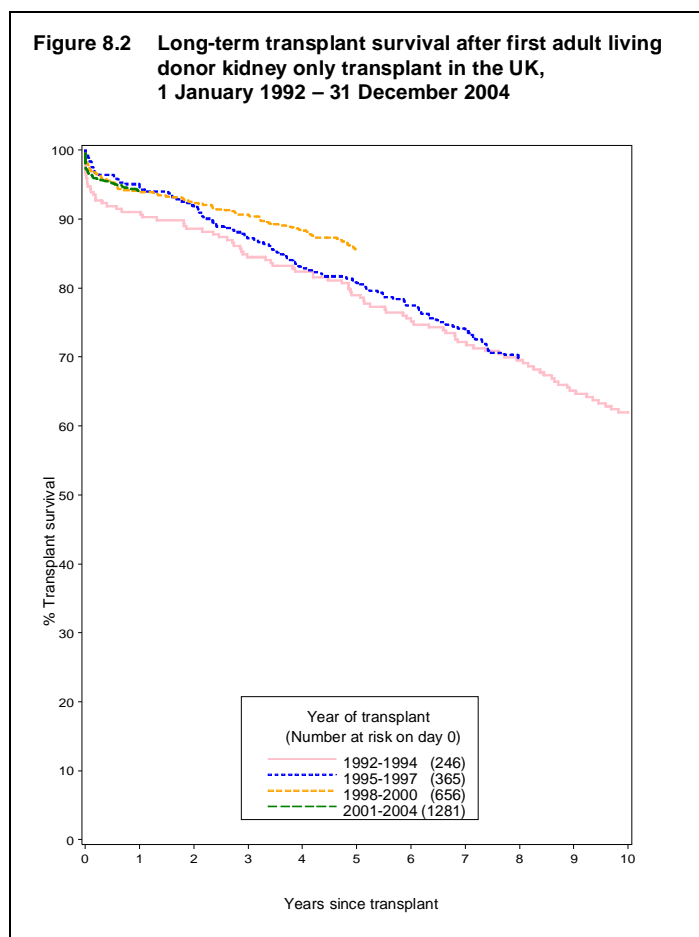


Table 8.2 Long-term transplant survival after first adult living donor kidney transplant in the UK, 1 January 1992 - 31 December 2004									
Year of transplant	No. at risk on day 0	% Transplant survival (95% confidence interval)							
		One year		Two year		Five year		Ten year	
1992-1994	246	91	(87-94)	89	(84-92)	79	(73-84)	62	(55-68)
1995-1997	365	94	(92-96)	92	(88-94)	81	(76-85)		
1998-2000	656	94	(92-95)	93	(90-94)	86	(83-88)		
2001-2004	1281	94	(93-95)						

8.1.2 Paediatric recipients

Figure 8.3 shows long-term transplant survival in paediatric (<18 years) recipients for first deceased heartbeating donor kidney only transplants in the UK. Transplant survival estimates and confidence intervals are shown for each year group in **Table 8.3**. There has been a significant improvement in one year survival over the year groups, $p=0.002$. Two and five year survival estimates do not differ significantly, ($p>0.1$).

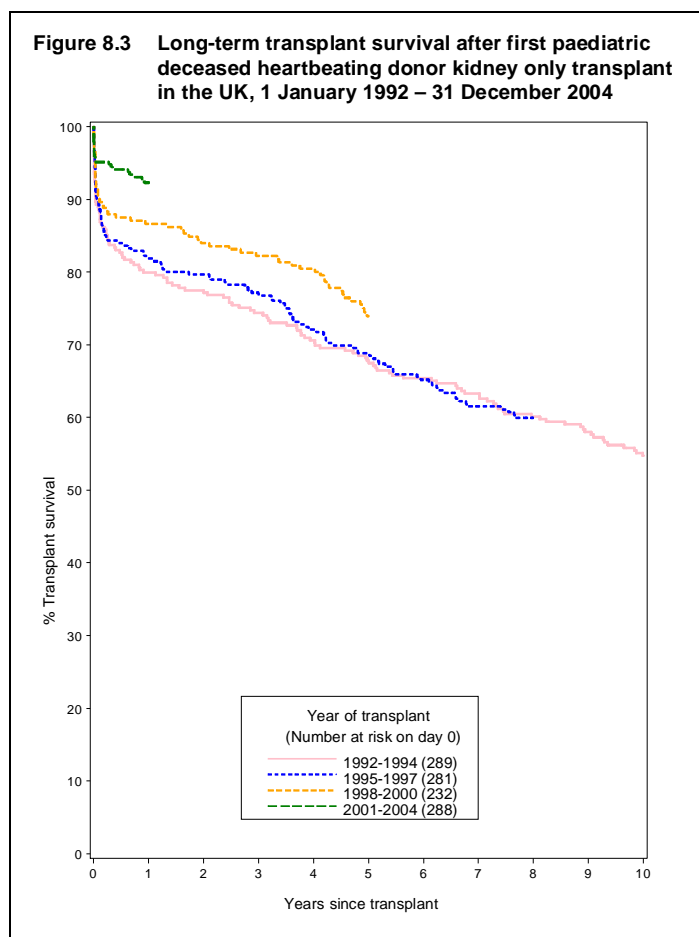


Table 8.3 Long-term transplant survival after first paediatric deceased heartbeating donor kidney only transplant in the UK, 1 January 1992 - 31 December 2004

Year of transplant	No. at risk on day 0	% Transplant survival (95% confidence interval)			
		One year	Two year	Five year	Ten year
1992-1994	289	80 (75-84)	77 (72-82)	68 (62-73)	55 (49-60)
1995-1997	281	82 (77-86)	80 (74-84)	69 (63-74)	
1998-2000	232	87 (82-90)	84 (79-88)	74 (68-79)	
2001-2004	288	92 (89-95)			

Long-term transplant survival in paediatric recipients for living donor kidney transplants in the UK is shown in **Figure 8.4**. **Table 8.4** shows transplant survival estimates and confidence intervals for each year group. There were no statistically significant differences in transplant survival across the year groups, ($p>0.1$).

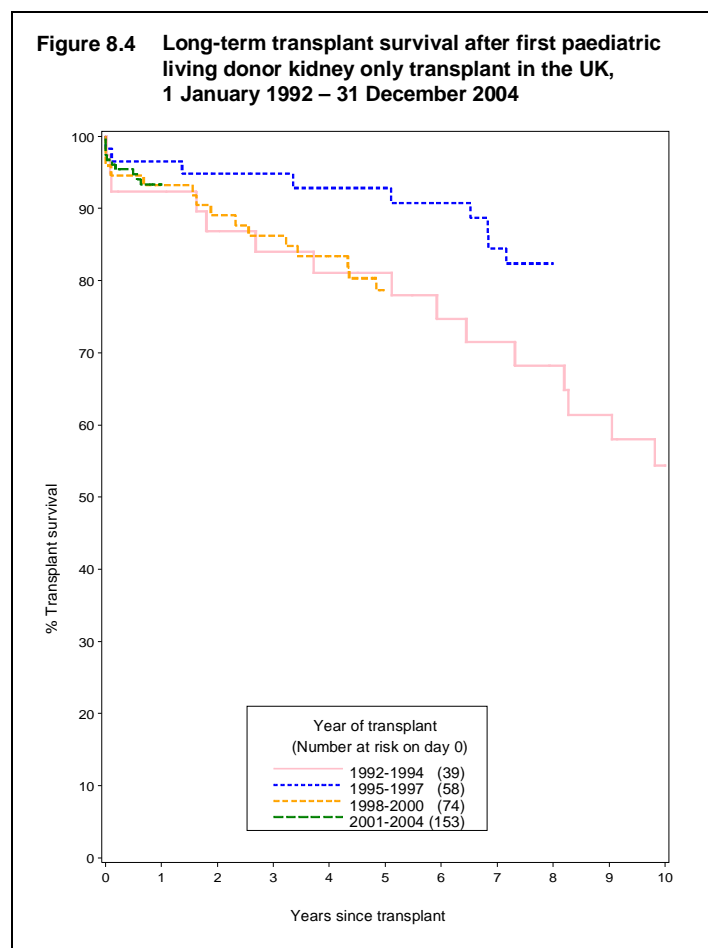


Table 8.4 Long-term transplant survival after first paediatric living donor kidney transplant in the UK, 1 January 1992 - 31 December 2004									
Year of transplant	No. at risk on day 0	% Transplant survival (95% confidence interval)							
		One year		Two year		Five year		Ten year	
1992-1994	39	92	(78-97)	87	(71-94)	81	(64-91)	54	(36-70)
1995-1997	58	97	(87-99)	95	(85-98)	93	(82-97)		
1998-2000	74	93	(84-97)	89	(79-94)	79	(67-87)		
2001-2004	153	93	(88-96)						

8.2 Pancreas transplant survival

National pancreas follow-up data was only available for transplants performed since 1 January 2001. There is insufficient data available to analyse long-term survival effects. **Figure 8.5** shows

pancreas transplant survival in recipients receiving their first deceased heartbeating donor pancreas transplant performed in the UK between 1 January 2001 and 31 December 2005, by type of transplant (simultaneous kidney/pancreas (SPK) and pancreas only). Transplant survival estimates and confidence intervals are shown by transplant type at 30-days, 90-days and one-year in **Table 8.5**.

Whilst there is statistical evidence to suggest that SPK pancreas transplant survival is superior to that of pancreas only transplants, $p=0.007$, one-year patient survival estimates are similar: 97% (95% confidence interval (C.I.) 81% - 99%) for pancreas only transplants compared with 93% (95% C.I. 89% - 95%) for SPK transplants ($p=0.7$).

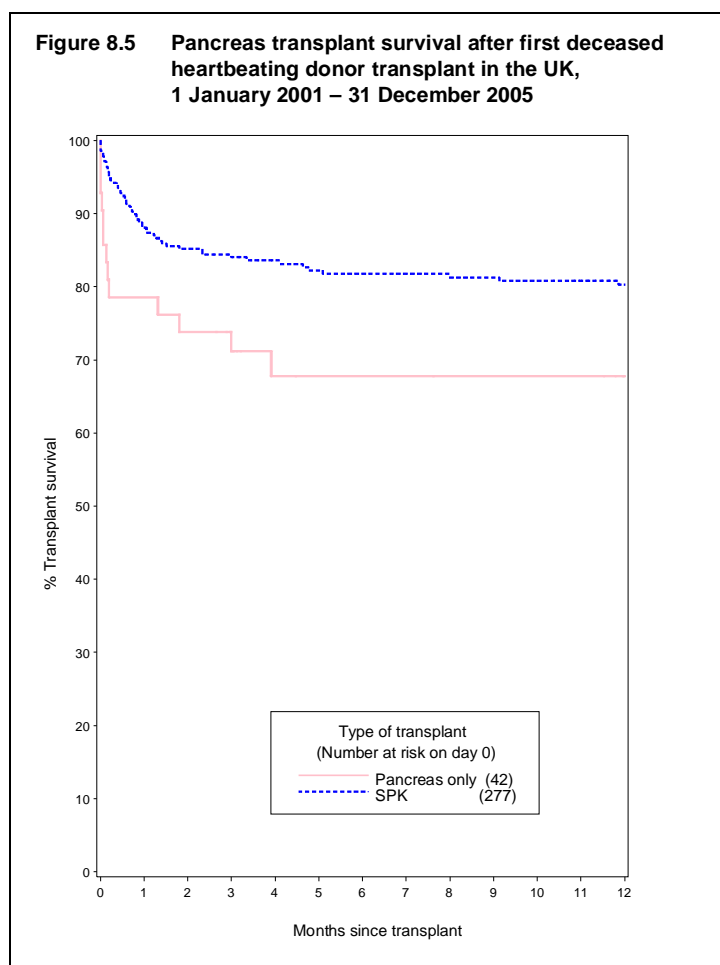


Table 8.5 Pancreas transplant survival after first heartbeating donor transplant in the UK, 1 January 2001 - 31 December 2005

Transplant	No. at risk on day 0	% Transplant survival (95% confidence interval)					
		30-day		90-day		One year	
Pancreas only	42	79	(63-88)	74	(57-85)	68	(51-80)
SPK	277	88	(84-91)	84	(80-88)	80	(75-85)

8.3 Cardiothoracic patient survival

8.3.1 Adult recipients

Long-term patient survival for adult (≥ 16 years) recipients after first heart only transplants is shown in **Figure 8.6**. Domino and deceased donor transplants are included as well as urgent and heterotopic transplants. **Table 8.6** shows the survival estimates and confidence intervals for one, two, five and ten years post-transplant. There was no evidence of statistically significant differences in patient survival across the year groups ($p > 0.3$).

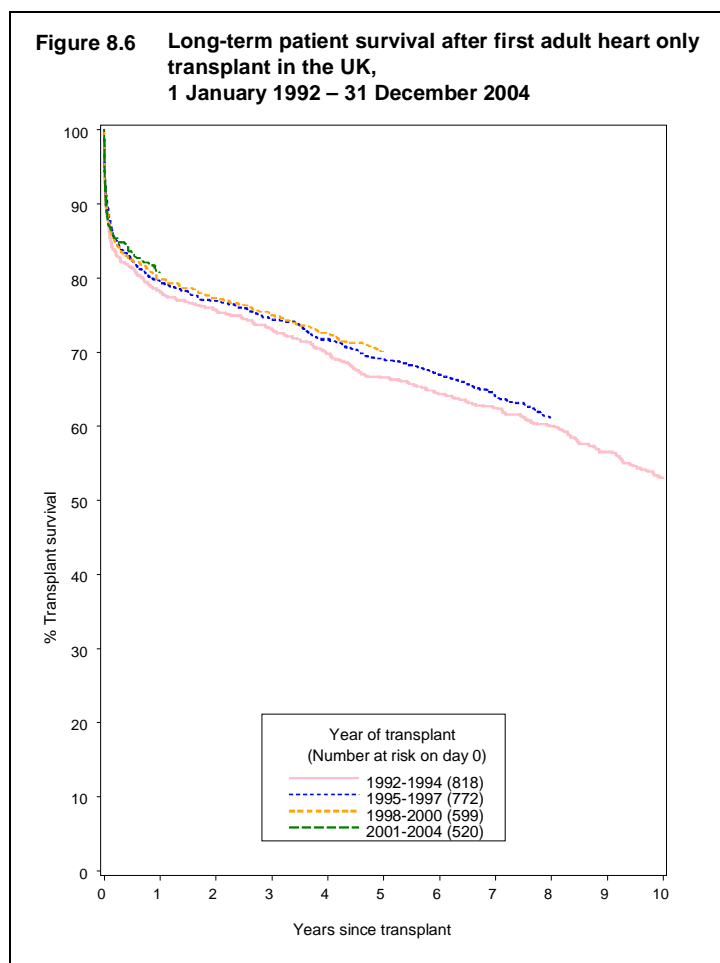


Table 8.6 Long-term patient survival after first adult heart only transplant in the UK, 1 January 1992 - 31 December 2004

Year of transplant	No. at risk on day 0	% Transplant survival (95% confidence interval)			
		One year	Two year	Five year	Ten year
1992-1994	818	78 (75-81)	76 (73-78)	67 (63-70)	53 (50-56)
1995-1997	772	80 (77-82)	77 (74-80)	69 (66-72)	
1998-2000	599	80 (76-83)	77 (74-80)	70 (66-74)	
2001-2004	520	81 (77-84)			

Patient survival for adult recipients after first heart/lung block transplants is shown in **Figure 8.7**. Patient survival estimates and confidence intervals for each year group are shown in **Table 8.7**. There were no statistically significant differences in patient survival across the year groups, ($p>0.3$).

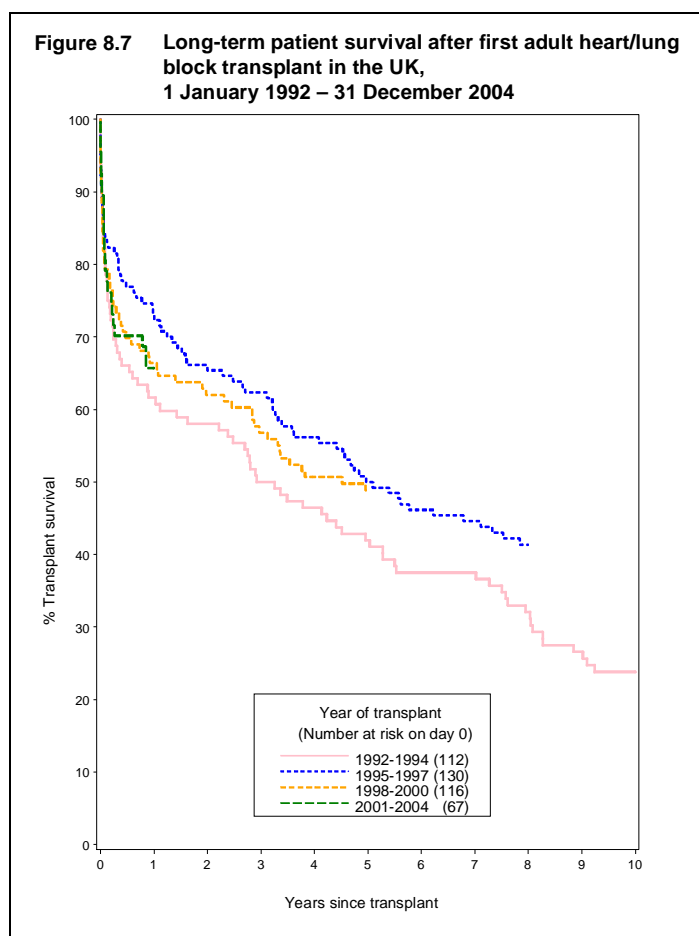


Table 8.7 Long-term patient survival after first adult heart/lung block transplant in the UK, 1 January 1992 - 31 December 2004

Year of transplant	No. at risk on day 0	% Transplant survival (95% confidence interval)			
		One year	Two year	Five year	Ten year
1992-1994	112	62 (52-70)	58 (48-67)	42 (33-51)	24 (16-32)
1995-1997	130	73 (65-80)	65 (57-73)	50 (41-58)	
1998-2000	116	66 (57-74)	62 (53-70)	49 (39-58)	
2001-2004	67	66 (53-76)			

Patient survival for first deceased heartbeating lung only transplants for adult recipients is shown in **Figure 8.8**, with survival estimates and confidence intervals shown in **Table 8.8**. There is some evidence of an improvement in one year patient survival, $p=0.07$, but two and five year estimates do not differ significantly ($p>0.1$).

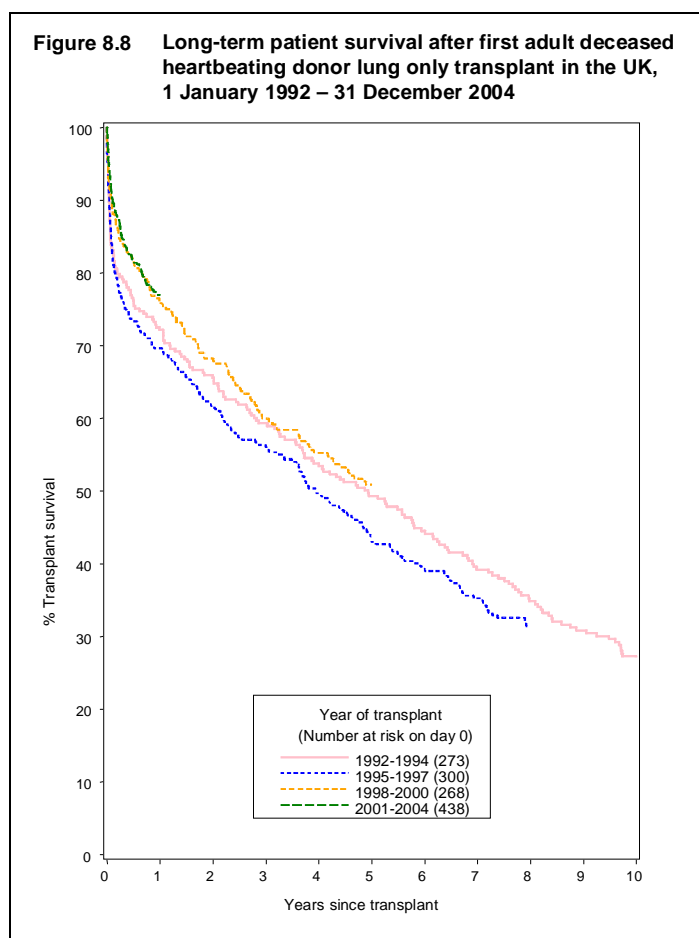


Table 8.8 Long-term patient survival after first adult deceased heartbeating donor lung only transplant in the UK, 1 January 1992 - 31 December 2004

Year of transplant	No. at risk on day 0	% Transplant survival (95% confidence interval)							
		One year		Two year		Five year		Ten year	
1992-1994	273	72	(66-77)	66	(60-71)	49	(43-55)	27	(22-33)
1995-1997	300	70	(64-75)	62	(56-67)	43	(37-49)		
1998-2000	268	76	(71-81)	68	(62-73)	51	(45-57)		
2001-2004	438	77	(73-81)						

8.3.2 Paediatric recipients

Long-term patient survival for paediatric recipients after first heart only transplant is shown in **Figure 8.9**. Domino and deceased donor transplants are included as well as urgent and heterotopic transplants. **Table 8.9** shows the survival estimates and confidence intervals for one, two, five and ten years post-transplant. There has been a statistically significant improvement in one year survival over the year groups, $p < 0.002$, but two and five year estimates do not differ significantly, ($p > 0.2$).

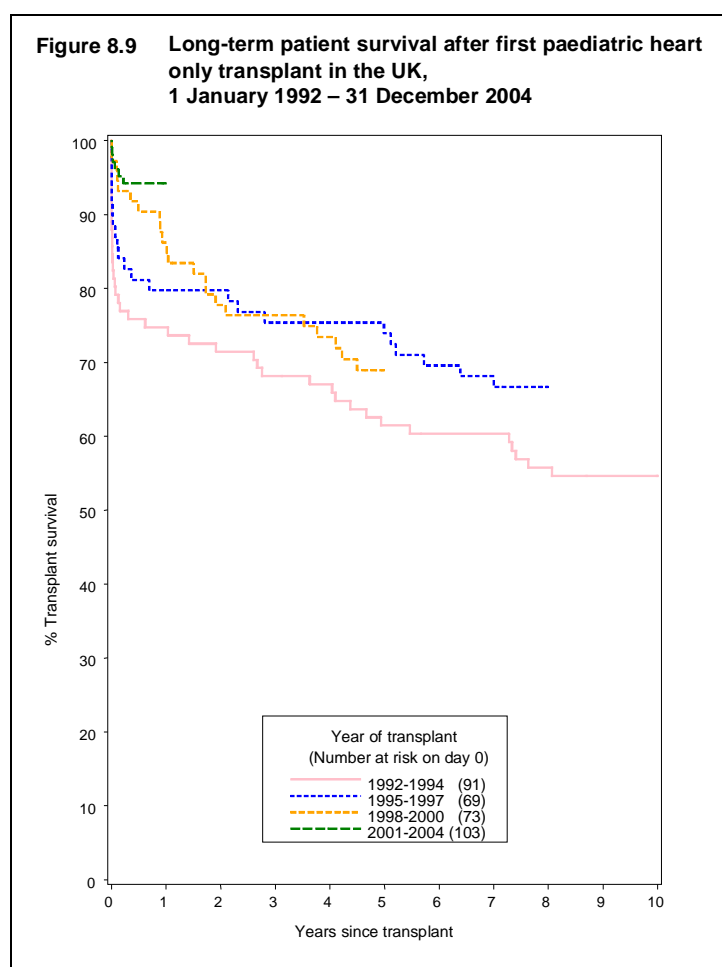


Table 8.9 Long-term patient survival after first paediatric heart only transplant in the UK, 1 January 1992 - 31 December 2004

Year of transplant	No. at risk on day 0	% Transplant survival (95% confidence interval)			
		One year	Two year	Five year	Ten year
1992-1994	91	75 (64-82)	71 (61-80)	61 (51-71)	55 (44-64)
1995-1997	69	80 (68-87)	80 (68-87)	74 (62-83)	
1998-2000	73	86 (76-92)	78 (66-86)	69 (57-78)	
2001-2004	103	94 (87-97)			

The number of paediatric lung and heart/lung transplant recipients was too small to perform the analysis by year of transplant.

8.4 Liver transplant and patient survival

8.4.1 Adult recipients

Figure 8.10 and **Table 8.10** show long-term transplant survival estimates for first elective deceased heartbeating donor liver only transplants in adult (≥ 17 years) recipients. There has been a significant improvement in one and two year transplant survival over the year groups, with $p < 0.001$ in each case and there is some evidence that the five year estimates differ significantly ($p = 0.07$). This improvement has mainly been due to fewer graft losses in the first year post-transplant.

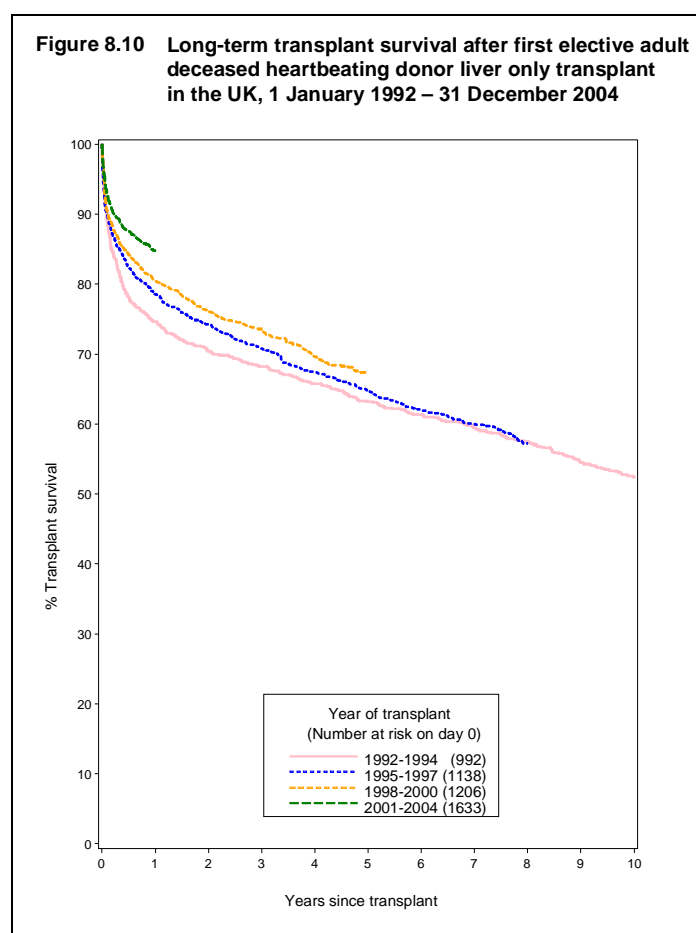


Table 8.10 Long-term transplant survival after first elective adult deceased heartbeating donor liver only transplant in the UK, 1 January 1992 - 31 December 2004

Year of transplant	No. at risk on day 0	% Transplant survival (95% confidence interval)			
		One year	Two year	Five year	Ten year
1992-1994	992	75 (72-77)	70 (67-73)	63 (60-66)	52 (49-56)
1995-1997	1138	79 (76-81)	74 (72-77)	65 (62-67)	
1998-2000	1206	80 (78-83)	76 (74-78)	67 (65-70)	
2001-2004	1633	85 (83-86)			

Long term patient survival after first elective deceased heartbeating donor liver only transplants in adults is shown in **Figure 8.11**. **Table 8.11** shows patient survival estimates at one, two, five and ten years post-transplant. There has been a significant improvement in one year patient survival over the year groups, with $p < 0.0001$ but two and five year estimates do not differ significantly ($p > 0.1$).

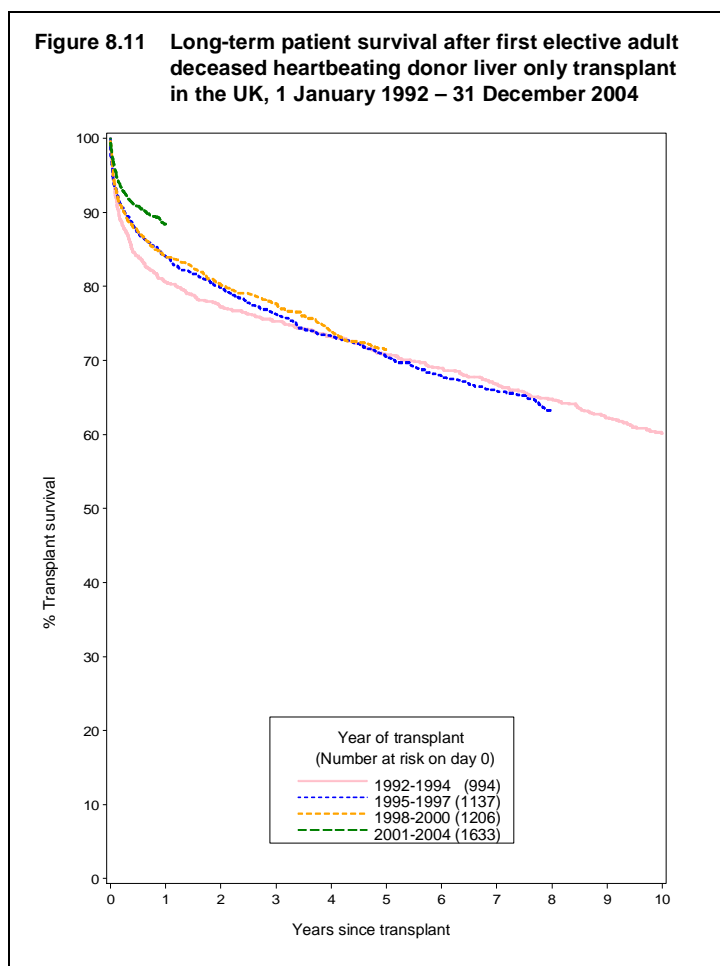


Table 8.11 Long-term patient survival after first elective adult deceased heartbeating donor liver only transplant in the UK, 1 January 1992 - 31 December 2004

Year of transplant	No. at risk on day 0	% Transplant survival (95% confidence interval)			
		One year	Two year	Five year	Ten year
1992-1994	994	81 (78-83)	77 (74-80)	71 (68-74)	60 (57-63)
1995-1997	1137	84 (82-86)	80 (77-82)	70 (68-73)	
1998-2000	1206	84 (82-86)	80 (78-82)	71 (69-74)	
2001-2004	1633	88 (87-90)			

8.4.2 Paediatric recipients

Figure 8.12 and **Table 8.12** show long-term transplant survival estimates for first elective deceased heartbeating donor liver only transplants in paediatric (<17 years) recipients. One, two and five year transplant survival has improved over the year groups, with $p < 0.01$ in each case. This improvement has mainly been due to fewer graft losses in the first year post-transplant.

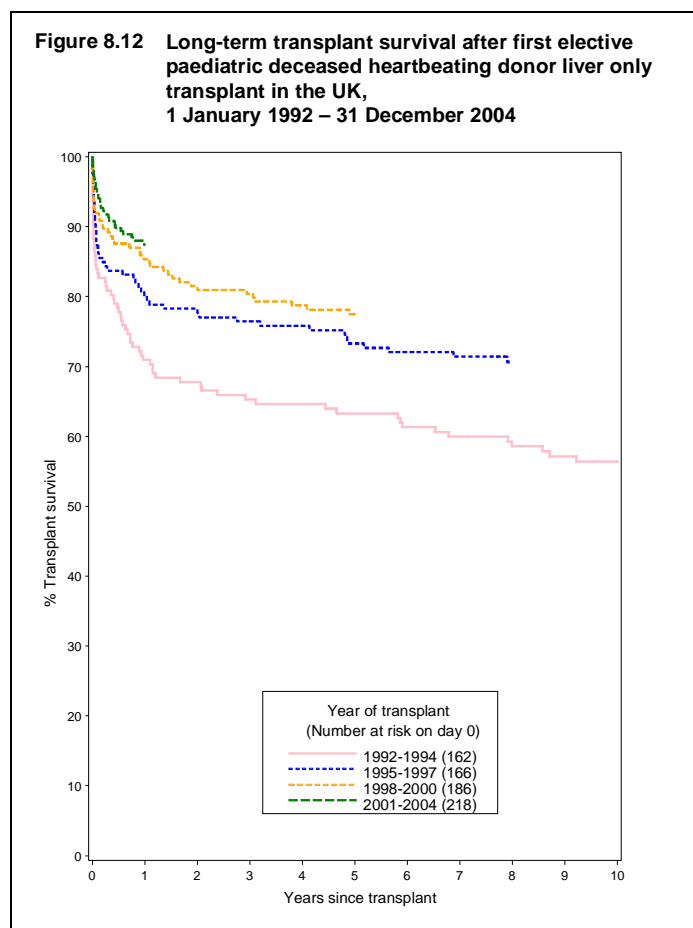


Table 8.12 Long-term transplant survival after first elective paediatric deceased heartbeating donor liver only transplant in the UK, 1 January 1992 – 31 December 2004							
Year of transplant	No. at risk on day 0	% Transplant survival (95% confidence interval)					
		One year	Two year	Five year	Ten year		
1992-1994	162	71 (63-77)	68 (60-74)	63 (55-70)	56 (48-64)		
1995-1997	166	80 (73-85)	78 (71-84)	73 (66-79)			
1998-2000	186	85 (79-90)	81 (74-86)	77 (71-83)			
2001-2004	218	87 (82-91)					

Patient survival is shown in **Figure 8.13** and **Table 8.13** show long-term patient survival estimates for first elective deceased heartbeating donor liver only transplants in paediatric (<17 years) recipients. One and five year patient survival has improved over the year groups, with $p < 0.06$ in both cases. There has been no statistically significant improvement in two year patient survival over the year groups ($p > 0.1$).

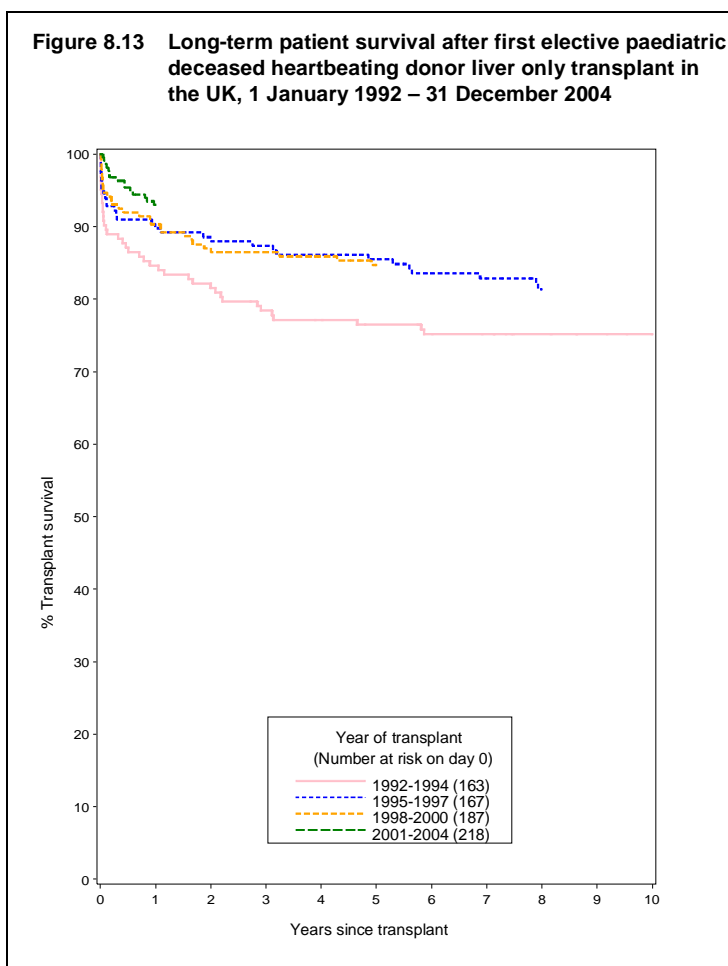


Table 8.13 Long-term patient survival after first elective paediatric deceased heartbeating donor liver only transplant in the UK, 1 January 1992 – 31 December 2004

Year of transplant	No. at risk on day 0	% Transplant survival (95% confidence interval)			
		One year	Two year	Five year	Ten year
1992-1994	163	85 (78-89)	82 (75-87)	76 (69-82)	75 (68-81)
1995-1997	167	90 (84-94)	89 (83-93)	85 (79-90)	
1998-2000	187	90 (85-94)	86 (81-91)	85 (79-89)	
2001-2004	218	93 (89-96)			

8.5 Cornea transplant survival

Short-term transplant survival estimates for first penetrating keratoplasty (PKP) are presented in **Figure 8.14** and **Table 8.14**. The two year transplant survival estimate is 85% for grafts between 1 January 2000 and 31 December 2005. Good quality cornea follow-up data was only available for transplants performed since 1 April 1999, so there are insufficient data available to analyse long-term survival effects.

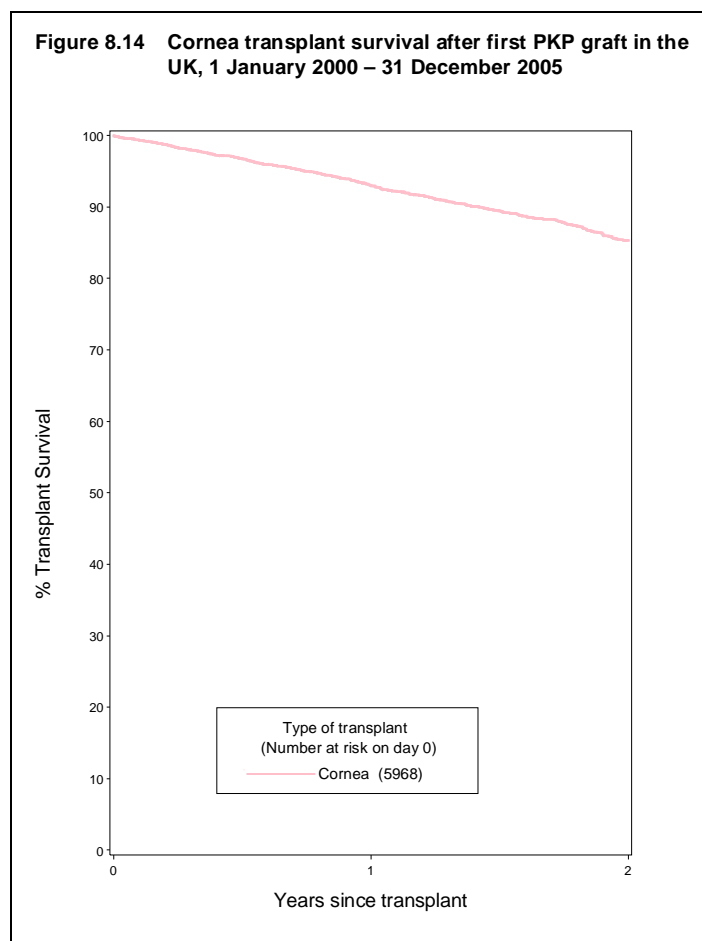


Table 8.14 Cornea transplant survival after first PKP graft in the UK, 1 January 2000 - 31 December 2005

No. at risk on day 0	% Transplant survival (95% confidence interval)	
	One year	Two year
5968	93 (92-93)	85 (84-86)

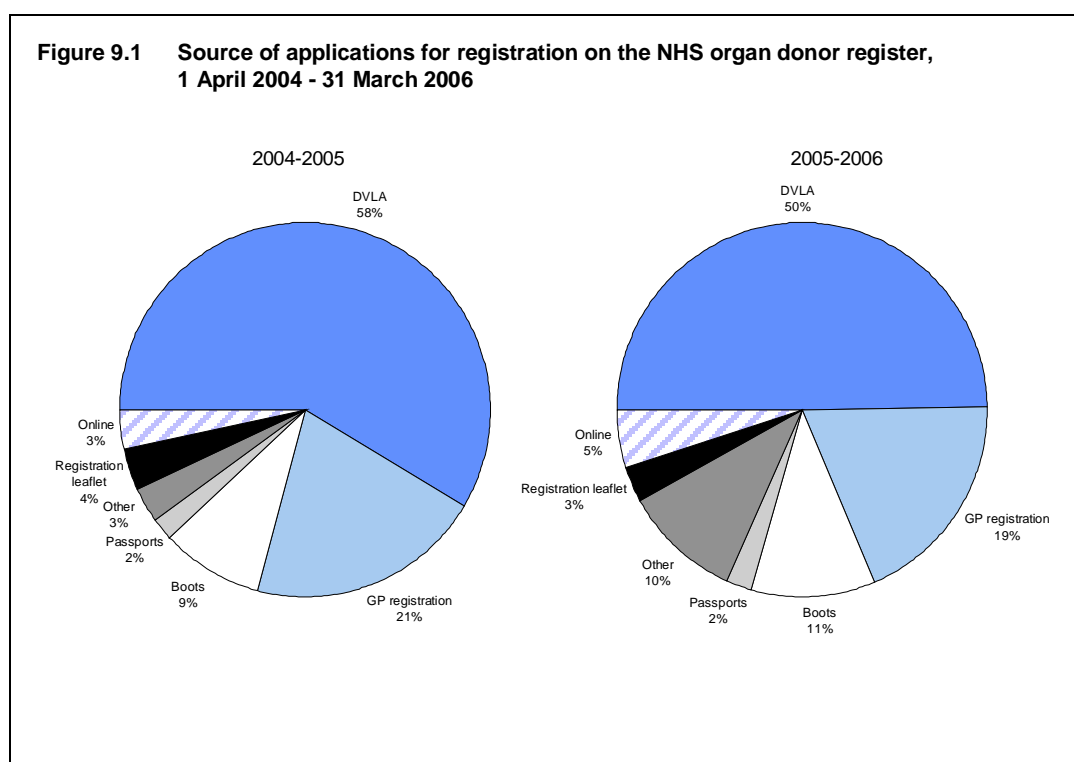
9 NHS ORGAN DONOR REGISTER

By the end of March 2006 the NHS Organ Donor Register (ODR) held 13,122,056 registrations. During the year data on the register were continually reviewed and validated.

Of the 764 deceased donors in 2005-2006, 23% were registered on the ODR compared with 21% in 2004-2005.

There are a number of registration routes: Health Department registration leaflets readily available in the community; campaigns in both national and regional newspapers and by community groups; the European Health Insurance Card; when registering as a patient with a General Practitioner (via the Family Health Services Authorities); with driving licence applications and reminders (via the Driver and Vehicle Licensing Agency (DVLA)); from the Passport Agency when applying for a new passport; when applying for a Boots Advantage Card, online registrations via the UK Transplant website and by telephone.

The source of applications for registration on the ODR is illustrated in **Figure 9.1**. This figure shows that 19% of registrations in 2005-2006 arrived by means of the Family Health Services Authorities, 50% from driving licence applications and reminders through the DVLA and 11% through the Boots Advantage Card route.



At the end of March 2006 89% of registrations, where the information was available, indicated a willingness to donate all organs and tissue (kidneys, pancreas, heart, lungs, liver and corneas). However, of those who were not willing to donate all organs, the majority (68%) did not wish to donate their corneas. Of the restricted registrations, only 8% (less than 1% of the total register) did not wish to donate their kidneys. Willingness to donate, by organ type, is shown in **Table 9.1**.

Table 9.1 Preparedness of those registered on the NHS Organ Donor Register at 31 March 2006 to donate different organs*

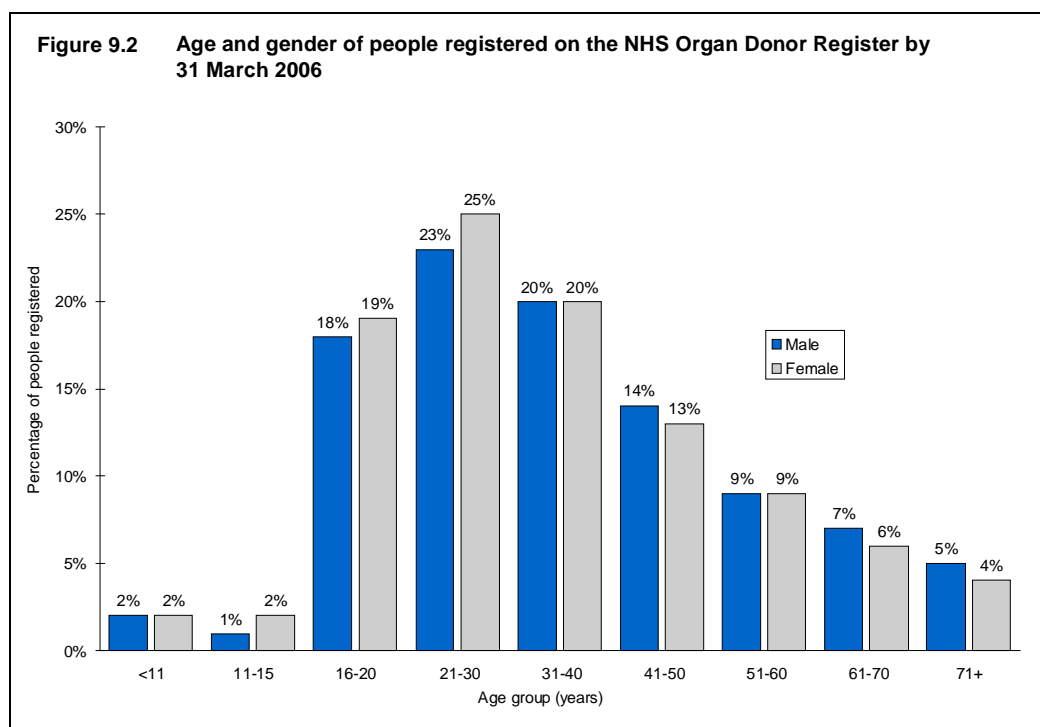
Registrants prepared to donate all organs 89%

Of those not prepared to donate all organs (“restricted donors”):

Not prepared to donate:	“Restricted donors”	% of all Registrants
Kidneys	8	0.9
Pancreas	29	3.1
Heart	42	4.4
Lungs	23	2.5
Liver	17	1.9
Corneas	68	7.2

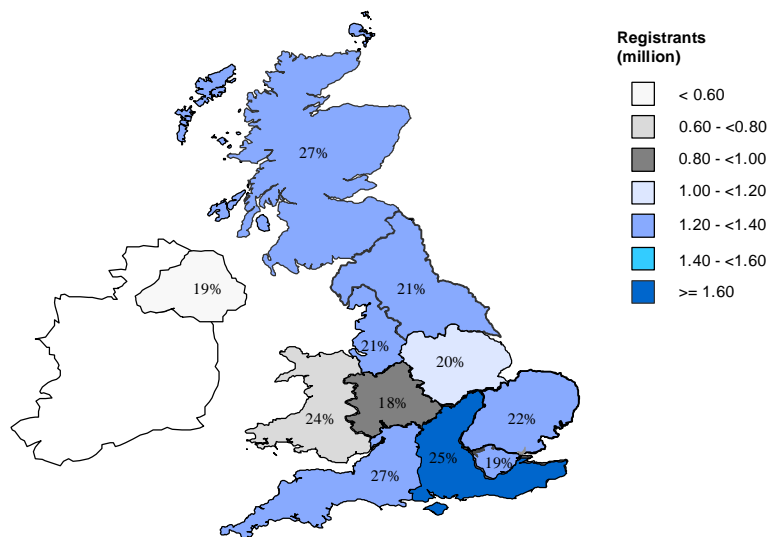
* This information was not available for 6% of the total registered

People of all ages are eligible for organ donor registration: the distribution of age by sex at time of registration is shown in **Figure 9.2**. The highest proportion of males and females, representing 23% and 25%, respectively, of registrations, are registered in the 21-30 years age group. The lowest proportions are in the under 11 and 11-15 age groups. Of all the registrations on the NHS Organ Donor Register, 46% were male and 54% were female.



Those registered on the ODR come from all parts of the UK. **Figure 9.3** illustrates the percentage of the population registered in each region at 31 March 2006, and the number of registrations.

Figure 9.3 Proportion of population registered on the NHS organ donor register by 31 March 2006, by region



10.1 Introduction

In this chapter, summary data from the national Potential Donor Audit (PDA) covering the 33-month period from 1 April 2003 to 31 December 2005 are presented. The data comprise all audited patient deaths in UK Intensive Care Units (ICUs) in the time period, based on PDA forms received by UK Transplant on or before 5 May 2006, validated and input onto the National Transplant Database.

10.2 Definitions

Potential heartbeating (HB) donors are defined as patients for whom death was diagnosed following brain stem tests and who had no absolute medical contraindications to HB solid organ donation.

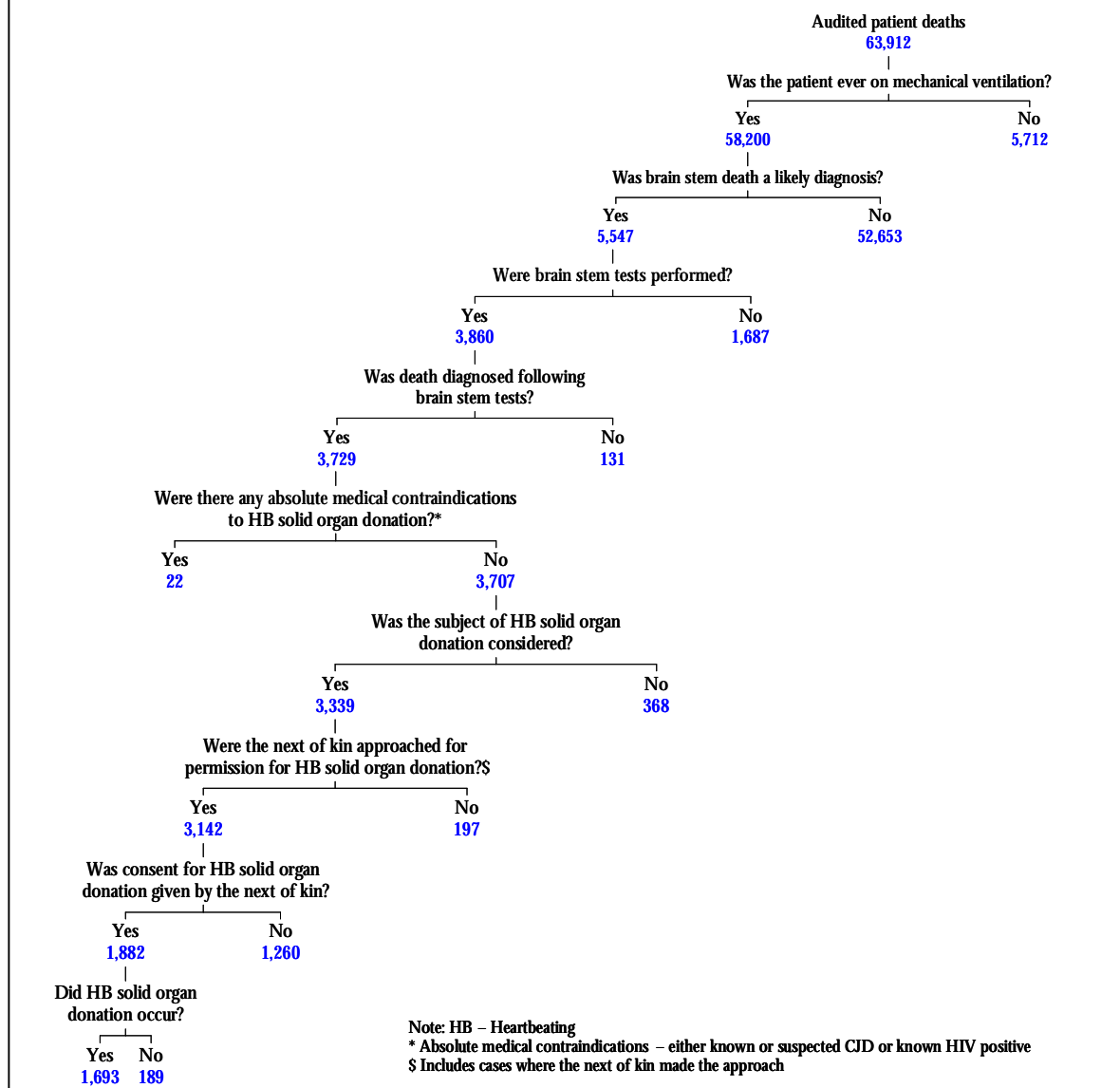
10.3 Breakdown of audited deaths in ICUs

In the 33-month period there were a total of 63,912 audited patient deaths in UK ICUs. **Table 10.1** summarises the key percentages and a detailed breakdown from the number of audited patient deaths to the number of HB solid organ donors is given in **Figure 10.1**. Overall, 46% of the 3,707 potential donors became HB solid organ donors.

Table 10.1 Summary of key percentages from ventilated patients to HB donors

	N	%
Patients on mechanical ventilation at some point during their stay in ICU	58,200	91% of 63,912 audited patient deaths
Potential donors	3,707	6% of 58,200 patients on mechanical ventilation
No record of discussion/approach regarding HB solid organ donation with the next of kin	565	15% of 3,707 potential donor families
Consent given for HB solid organ donation	1,882	60% of 3,142 families who were approached
Consent not given for HB solid organ donation	1,260	40% of 3,142 families who were approached
Actual HB solid organ donors (based on data provided through the PDA)	1,693	90% of 1,882 patients with family consent; 46% of 3,707 potential donors

Figure 10.1 A breakdown from audited patient deaths to HB donors

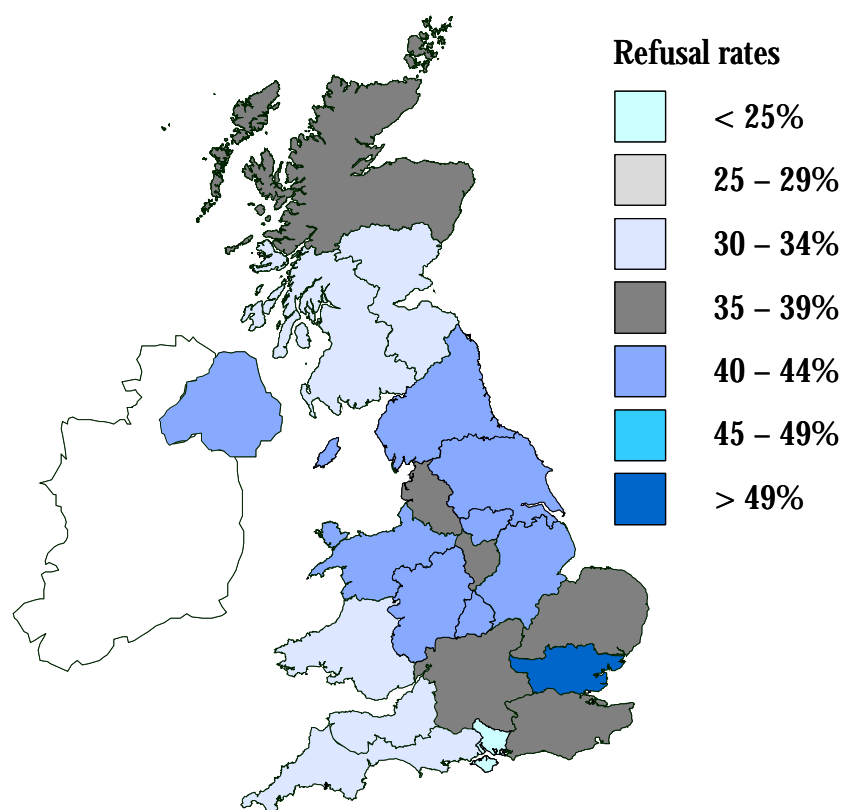


10.4 Refusal rates

The refusal rate is based on potential donors, for whom HB solid organ donation was considered and the next of kin were approached for permission or made the approach. The refusal rate is the proportion of these families who did not consent to HB solid organ donation. The overall refusal rate was 40% and the 95% confidence limits for this percentage range from 38% to 42%.

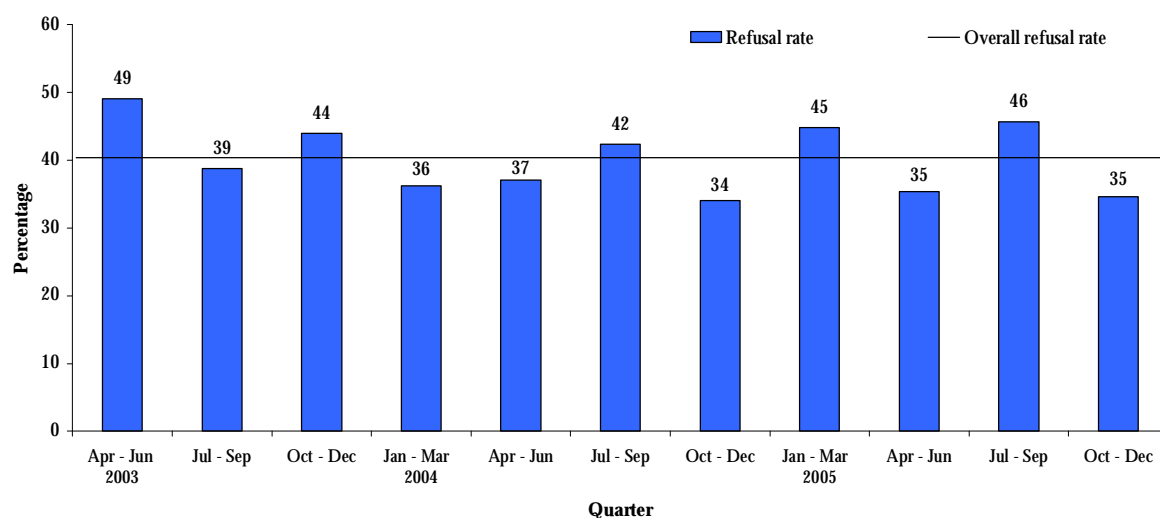
Refusal rates by donor transplant co-ordinator team are illustrated in **Figure 10.2** and range from 20% in Portsmouth to 51% in North Thames, but caution should be applied when interpreting these refusal rates as no adjustment has been made for the mix of patients in terms of age, sex, ethnicity and temporal effects. **Appendix IV** contains the precise refusal rate for each donor transplant co-ordinator team.

Figure 10.2 Unadjusted HB refusal rates by donor transplant co-ordinator team



The quarter-to-quarter variation in refusal rate is illustrated in **Figure 10.3**. The refusal rate was highest in April to June 2003, the first quarter of the audit (49%), and lowest in October to December 2004 (34%).

Figure 10.3 Quarter-to-quarter variation in HB refusal rate



APPENDICES

Appendix IA provides details of the 639 deceased heartbeating solid organ donors reported in 2005-2006. Details are given for each donating hospital and the hospitals have been grouped by English Strategic Health Authority and country. This appendix does not reflect regional retrieval rates: for example, in Wales three of the donating hospitals reported are listed under Liverpool for kidney retrievals. **Appendix IB** gives similar information for the 126 deceased non-heartbeating solid organ donors.

The number of donors per kidney designated area is given in **Appendix II**; where the kidneys were not retrieved, donors and organs have been assigned to the designated area that would normally have retrieved the kidney.

The populations used for kidney, liver and cardiothoracic retrievals per million population are given in **Appendices IIIA** and **IIIB**; these populations are based on ONS *2001 Census* figures.

Appendix IV gives the refusal rate for each donor transplant co-ordinator team from the national Potential Donor Audit.

Appendix IA Deceased heartbeating solid organ donors and donated organs in the UK, 1 April 2005 - 31 March 2006 (2004-2005), by donating hospital

Donating hospital	All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
Avon, Gloucestershire and Wiltshire									
Bath, Royal United Hospital	2	(1)	1	(1)	2	0	2	2	1
Bristol, Bristol Royal Infirmary	1	(2)	1	(2)	2	0	2	1	0
Bristol, Frenchay Hospital	9	(13)	8	(11)	18	0	2	7	6
Bristol, Southmead Hospital	3	(0)	3	(0)	6	1	0	3	1
Cheltenham, Cheltenham General Hospital	1	(3)	1	(2)	2	0	2	1	1
Gloucester, Gloucestershire Royal Hospital	2	(4)	2	(4)	4	1	2	2	1
Salisbury, Salisbury District Hospital	3	(1)	3	(0)	6	1	2	3	2
Swindon, Great Western Hospital	4	(1)	3	(1)	6	0	0	4	1
Taunton, Taunton And Somerset Hospital (Musgrove Park)	4	(4)	2	(4)	7	0	0	2	1
Weston-Super-Mare, Weston-Super-Mare General Hospital	3	(0)	3	(0)	6	0	0	3	1
Total	32	(29)	27	(25)	59	3	12	28	15
Bedfordshire and Hertfordshire									
Bedford, Bedford Hospital	0	(2)	0	(2)	0	0	0	0	0
Hemel Hempstead, Hemel Hempstead General Hospital	4	(3)	3	(3)	6	0	2	4	0
Luton, Luton And Dunstable Hospital	1	(3)	1	(3)	2	1	2	1	0
Stevenage, Lister Hospital	7	(1)	7	(1)	14	0	4	7	0
Watford, Watford General Hospital	2	(0)	2	(0)	4	0	2	2	0
Welwyn Garden City, Queen Elizabeth II Hospital	3	(1)	3	(1)	6	1	0	3	2
Total	17	(10)	16	(10)	32	2	10	17	2
Birmingham and The Black Country									
Birmingham, Birmingham Heartlands Hospital	1	(2)	0	(2)	0	0	0	1	0
Birmingham, City Hospital	1	(2)	1	(2)	0	1	2	1	0
Birmingham, Diana Princess Of Wales Children Hospital	0	(1)	0	(1)	0	0	0	0	0
Birmingham, Queen Elizabeth Hospital	8	(6)	6	(5)	12	2	4	7	2
Birmingham, Selly Oak Hospital	10	(4)	8	(4)	15	2	5	10	3

Donating hospital	All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
Dudley, Russells Hall Hospital	3	(2)	3	(2)	6	0	2	3	1
Solihull, Solihull Hospital	0	(1)	0	(1)	0	0	0	0	0
Sutton Coldfield, Good Hope District General Hosp.	1	(0)	1	(0)	2	0	2	1	0
Walsall, Manor Hospital	1	(3)	1	(2)	2	0	0	1	0
West Bromwich, Sandwell General Hospital	2	(1)	2	(1)	4	0	0	2	0
Wolverhampton, New Cross Hospital	2	(2)	2	(2)	4	0	0	2	0
Total	29	(24)	24	(22)	45	5	15	28	6
Cheshire and Merseyside									
Chester, Countess Of Chester Hospital	3	(6)	3	(6)	6	0	0	3	1
Crewe, Leighton Hospital	1	(4)	1	(3)	2	0	0	1	1
Liverpool, Alder Hey Children's Hospital	2	(2)	1	(1)	2	1	0	2	0
Liverpool, Royal Liverpool University Hospital	0	(1)	0	(1)	0	0	0	0	0
Liverpool, The Cardiothoracic Centre	0	(1)	0	(1)	0	0	0	0	0
Liverpool, University Hospital Aintree	2	(0)	0	(0)	4	0	0	0	0
Liverpool, Walton Centre For Neurology And Neurosurgery	8	(7)	8	(6)	16	4	7	8	1
Macclesfield, Macclesfield District General Hospital	0	(3)	0	(3)	0	0	0	0	0
Prescot, Whiston Hospital	5	(2)	5	(2)	10	1	2	5	0
Runcorn, Halton General Hospital	1	(0)	1	(0)	2	0	0	1	0
Southport, Southport District General Hospital	0	(1)	0	(1)	0	0	0	0	0
Warrington, Warrington Hospital	4	(3)	4	(2)	8	0	4	4	1
Wirral, Arrowe Park Hospital	1	(6)	1	(5)	2	0	2	1	1
Total	27	(36)	24	(31)	52	6	15	25	5
County Durham and Tees Valley									
Bishop Auckland, Bishop Auckland General Hospital	0	(1)	0	(0)	0	0	0	0	0
Darlington, Darlington Memorial Hospital	0	(2)	0	(0)	0	0	0	0	0
Durham, University Hospital Of North Durham	1	(0)	1	(0)	2	0	1	1	0
Hartlepool, University Hospital Of Hartlepool	4	(3)	4	(2)	8	0	0	4	1
Middlesbrough, The James Cook University Hospital	13	(11)	9	(11)	24	3	6	10	4
Stockton-On-Tees, University Hospital of North Tees	3	(0)	3	(0)	6	1	0	3	0
Total	21	(17)	17	(16)	40	4	7	18	5

Donating hospital	All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
Coventry, Warwickshire, Herefordshire and Worcestershire									
Coventry, Walsgrave Hospital	10	(9)	9	(9)	20	4	2	9	1
Hereford, The Country Hospital	3	(0)	3	(0)	6	0	0	3	0
Nuneaton, George Eliot Hospital	1	(0)	1	(0)	2	0	2	1	0
Redditch, The Alexandra Hospital	2	(2)	2	(2)	4	1	2	2	1
Warwick, Warwick Hospital	2	(2)	2	(2)	4	1	2	2	1
Worcestershire Royal Hospital	3	(0)	2	(0)	4	0	0	3	0
Total	21	(13)	19	(13)	40	6	8	20	3
Cumbria and Lancashire									
Barrow-In-Furness, Furness General Hospital	1	(2)	1	(1)	2	0	0	1	1
Blackburn, Blackburn Royal Infirmary	2	(2)	1	(2)	3	1	2	1	1
Blackpool, Blackpool Victoria Hospital	4	(4)	3	(3)	4	1	2	3	0
Burnley, Burnley General Hospital	1	(2)	1	(2)	2	0	2	1	0
Carlisle, Cumberland Infirmary	1	(0)	1	(0)	2	0	1	1	0
Lancaster, Royal Lancaster Infirmary	1	(2)	0	(2)	2	0	0	0	0
Preston, Royal Preston Hospital	11	(10)	8	(6)	20	1	6	9	2
Whitehaven, West Cumberland Hospital	0	(1)	0	(1)	0	0	0	0	0
Total	21	(23)	15	(17)	35	3	13	16	4
Essex									
Basildon, Basildon Hospital	0	(1)	0	(1)	0	0	0	0	0
Chelmsford, Broomfield Hospital	3	(3)	3	(3)	6	0	2	3	1
Colchester, Colchester General Hospital	1	(1)	1	(1)	2	0	0	1	1
Harlow, Princess Alexandra Hospital	3	(0)	3	(0)	6	0	0	3	2
Westcliff On Sea, Southend Hospital	0	(2)	0	(1)	0	0	0	0	0
Total	7	(7)	7	(6)	14	0	2	7	4
Greater Manchester									
Ashton-Under-Lyme, Tameside General Hospital	2	(0)	2	(0)	4	0	0	2	0
Bolton, Royal Bolton Hospital	4	(3)	4	(2)	8	0	0	3	1

Donating hospital	All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
Bury, Fairfield General Hospital	1	(3)	0	(3)	0	1	0	0	0
Manchester, Manchester Royal Infirmary	0	(5)	0	(5)	0	0	0	0	0
Manchester, North Manchester General Hospital	2	(0)	2	(0)	4	0	0	1	1
Manchester, Royal Manchester Childrens Hospital (Pendlebury)	2	(3)	2	(2)	3	1	4	2	2
Manchester, Trafford General Hospital	0	(2)	0	(2)	0	0	0	0	0
Manchester, Wythenshawe Hospital	0	(2)	0	(2)	0	0	0	0	0
Oldham, Royal Oldham Hospital (Rochdale Road)	3	(1)	3	(1)	6	1	2	2	1
Rochdale, Rochdale Infirmary	1	(1)	1	(1)	2	0	0	1	0
Salford, Hope Hospital	10	(11)	10	(11)	20	3	4	9	4
Stockport, Stepping Hill Hospital	2	(1)	2	(0)	4	0	0	2	1
Wigan, Royal Albert Edward Infirmary	1	(0)	1	(0)	2	0	0	1	0
Total	28	(32)	27	(30)	53	6	10	24	10
Hampshire and Isle of Wight									
Basingstoke, North Hampshire Hospital	2	(4)	2	(3)	4	0	0	2	1
Newport, St Mary's Hospital	1	(1)	1	(1)	2	1	2	1	1
Portsmouth, Queen Alexandra Hospital	4	(2)	4	(2)	8	2	2	4	2
Southampton, Southampton University Hospitals	7	(11)	7	(8)	14	3	4	7	2
Winchester, Royal Hampshire County Hospital	0	(1)	0	(1)	0	0	0	0	0
Total	14	(19)	14	(15)	28	6	8	14	6
Kent and Medway									
Ashford, William Harvey Hospital	2	(5)	2	(5)	4	0	0	2	1
Canterbury, Kent And Canterbury Hospital	1	(1)	1	(1)	2	0	0	1	0
Dartford, Darent Valley Hospital	2	(2)	2	(2)	4	0	0	1	1
Gillingham, Medway Hospital	2	(1)	2	(1)	4	1	0	2	1
Maidstone, Maidstone District General Hospital	3	(0)	3	(0)	6	1	2	3	1
Margate, Queen Elizabeth The Queen Mother Hospital	1	(4)	1	(3)	2	1	0	1	1
Tunbridge Wells, Kent And Sussex Hospital	2	(2)	2	(2)	4	1	0	2	1
Total	13	(15)	13	(14)	26	4	2	12	6
Leicestershire, Northamptonshire and Rutland									

Donating hospital	All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
Kettering, Kettering General Hospital	4	(4)	4	(2)	7	1	2	4	1
Leicester, Leicester Royal Infirmary	3	(4)	2	(4)	6	0	0	2	0
Northampton, Northampton General Hospital	1	(3)	1	(2)	2	0	0	1	0
Total	8	(11)	7	(8)	15	1	2	7	1
Norfolk, Suffolk and Cambridgeshire									
Cambridge, Addenbrooke's Hospital	12	(17)	11	(16)	24	4	5	10	7
Great Yarmouth, James Paget Hospital	2	(0)	2	(0)	4	0	0	2	0
Huntingdon, Hinchingsbrooke Hospital	2	(0)	1	(0)	4	0	0	1	0
Ipswich, Ipswich Hospital	4	(5)	4	(4)	6	1	2	4	2
Kings Lynn, The Queen Elizabeth Hospital	2	(0)	1	(0)	4	0	2	1	1
Norwich, Norfolk And Norwich University Hospital	3	(2)	3	(2)	6	1	2	3	1
Peterborough, Peterborough District Hospital	0	(4)	0	(3)	0	0	0	0	0
Total	25	(28)	22	(25)	48	6	11	21	11
North Central London									
Barnet, Barnet General Hospital	1	(0)	0	(0)	2	0	0	0	0
Enfield, Chase Farm Hospital	1	(2)	0	(1)	0	0	0	1	0
London, Great Ormond Street Hospital For Children	4	(1)	3	(1)	8	3	2	3	1
London, Nat. Hosp. For Neurology And Neurosurgery	5	(3)	5	(2)	10	1	2	4	2
London, North Middlesex Hospital	1	(1)	1	(0)	2	0	0	1	0
London, Royal Free Hospital	9	(7)	8	(7)	18	3	2	7	3
London, The Whittington Hospital	0	(2)	0	(0)	0	0	0	0	0
London, University College Hospital	1	(0)	1	(0)	2	1	2	1	1
Total	22	(16)	18	(11)	42	8	8	17	7
North East London									
Ilford, King George Hospital	0	(2)	0	(2)	0	0	0	0	0
London, The London Chest Hospital	0	(1)	0	(1)	0	0	0	0	0
London, The Royal London Hospital (Whitechapel)	9	(7)	9	(7)	18	4	4	7	3
Romford, Oldchurch Hospital	9	(9)	8	(7)	16	3	4	9	1
Total	18	(19)	17	(17)	34	7	8	16	4

Donating hospital	All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
North and East Yorkshire and Northern Lincolnshire									
Cottingham, Castle Hill Hospital	0	(1)	0	(1)	0	0	0	0	0
Grimsby, Diana Princess Of Wales Hospital	4	(3)	4	(2)	8	0	2	4	2
Harrogate, Harrogate District Hospital	2	(0)	2	(0)	4	0	2	2	0
Hull, Hull Royal Infirmary	7	(7)	6	(7)	12	1	2	6	2
Scunthorpe, Scunthorpe General Hospital	5	(5)	3	(4)	8	1	0	4	0
York, York District Hospital	3	(0)	3	(0)	6	1	4	3	1
Total	21	(16)	18	(14)	38	3	10	19	5
Northumberland, Tyne and Wear									
Ashington, Wansbeck General Hospital	1	(0)	1	(0)	2	0	0	1	0
Gateshead, Queen Elizabeth Hospital	1	(1)	1	(1)	2	0	0	0	1
Newcastle, Freeman Hospital	0	(2)	0	(2)	0	0	0	0	0
Newcastle, Newcastle General Hospital	19	(19)	12	(17)	35	2	0	13	3
North Shields, North Tyneside General Hospital	1	(1)	1	(1)	2	0	0	1	0
South Shields, South Tyneside Dist. Gen. Hospital	0	(1)	0	(0)	0	0	0	0	0
Total	22	(24)	15	(21)	41	2	0	15	4
North West London									
Ashford, Ashford Hospital (Middlesex)	0	(1)	0	(1)	0	0	0	0	0
Harefield, Harefield Hospital	3	(1)	2	(0)	6	1	0	2	0
Harrow, Northwick Park Hospital	1	(4)	1	(3)	2	0	0	1	1
Isleworth, West Middlesex University Hospital	1	(0)	1	(0)	2	0	0	1	0
London, Central Middlesex Hospital	1	(3)	1	(3)	2	0	0	1	1
London, Charing Cross Hospital	7	(5)	6	(4)	14	2	4	6	1
London, Hammersmith Hospital	0	(1)	0	(1)	0	0	0	0	0
London, Royal Brompton Hospital	2	(0)	1	(0)	4	0	0	1	0
London, St Mary's Hospital	2	(3)	2	(2)	4	0	2	2	2
Southall, Ealing Hospital	0	(2)	0	(2)	0	0	0	0	0
Uxbridge, Hillingdon Hospital	0	(1)	0	(1)	0	0	0	0	0
Total	17	(21)	14	(17)	34	3	6	14	5

Donating hospital	All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
Shropshire and Staffordshire									
Burton-On-Trent, Queen's Hospital	0	(2)	0	(2)	0	0	0	0	0
Shrewsbury, Royal Shrewsbury Hospital	2	(4)	2	(3)	4	1	2	2	0
Stafford, Stafford District General Hospital	3	(0)	3	(0)	5	2	2	3	0
Stoke On Trent, Stoke City General Hospital	1	(0)	1	(0)	2	0	0	1	0
Stoke, North Staffordshire Royal Infirmary	5	(3)	3	(3)	8	2	2	4	1
Telford, The Princess Royal Hospital	1	(0)	1	(0)	2	0	0	1	0
Total	12	(9)	10	(8)	21	5	6	11	1
Somerset and Dorset									
Bournemouth, Royal Bournemouth General Hospital	1	(0)	1	(0)	2	0	0	1	1
Dorchester, Dorset County Hospital	3	(1)	3	(1)	6	0	2	3	1
Poole, Poole General Hospital	3	(4)	3	(4)	6	1	0	3	1
Total	7	(5)	7	(5)	14	1	2	7	3
South East London									
London, King's College Hospital	8	(13)	7	(12)	14	4	2	6	1
London, Queen Elizabeth Hospital	6	(3)	5	(3)	12	0	0	5	2
London, St Thomas' Hospital	3	(2)	3	(2)	6	1	4	3	2
London, University Hospital Lewisham	2	(1)	1	(1)	4	0	0	1	0
Orpington, Princess Royal University Hospital	0	(2)	0	(1)	0	0	0	0	0
Sidcup, Queen Mary's Hospital	2	(1)	2	(1)	2	0	2	2	0
Total	21	(22)	18	(20)	38	5	8	17	5
South West London									
Croydon, Mayday University Hospital	0	(2)	0	(0)	0	0	0	0	0
Kingston, Kingston Hospital	1	(0)	1	(0)	2	0	0	1	0
London, St George's Hospital	9	(10)	9	(8)	15	6	6	9	4
Total	10	(12)	10	(8)	17	6	6	10	4
South West Peninsula									

Donating hospital	All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
Barnstaple, North Devon District Hospital	1	(1)	1	(1)	2	0	0	1	0
Exeter, Royal Devon And Exeter Hospital (Wonford)	2	(2)	2	(2)	4	0	2	2	0
Plymouth, Derriford Hospital	8	(3)	7	(3)	14	2	4	8	2
Torquay, Torbay Hospital	1	(0)	1	(0)	2	0	0	1	0
Truro, Royal Cornwall Hospital (Treliske)	1	(6)	1	(6)	2	1	2	1	0
Total	13	(10)	12	(10)	24	3	8	13	2
South Yorkshire									
Barnsley, Barnsley District General Hospital	0	(4)	0	(4)	0	0	0	0	0
Doncaster, Doncaster Royal Infirmary	1	(1)	1	(1)	2	1	2	1	0
Rotherham, Rotherham District General Hospital	2	(5)	2	(5)	4	0	0	2	0
Sheffield, Northern General Hospital	2	(3)	1	(3)	4	0	0	1	0
Sheffield, Royal Hallamshire Hospital	5	(4)	5	(4)	10	1	2	5	0
Sheffield, Sheffield Children's Hospital	1	(3)	0	(2)	0	0	0	1	0
Total	11	(20)	9	(19)	20	2	4	10	2
Surrey and Sussex									
Brighton, Royal Alexandra Hospital For Sick Childr	0	(1)	0	(1)	0	0	0	0	0
Brighton, Royal Sussex County Hospital	4	(3)	3	(3)	8	0	0	3	1
Camberley, Frimley Park Hospital	4	(0)	4	(0)	8	1	2	4	1
Chichester, St Richard's Hospital	2	(1)	1	(1)	4	1	0	1	1
Eastbourne, Eastbourne District General Hospital	2	(1)	2	(0)	4	0	0	2	0
Epsom, Epsom District Hospital	2	(0)	2	(0)	3	0	2	2	1
Guildford, Royal Surrey County Hospital	2	(5)	2	(4)	4	1	2	2	1
Hastings, Conquest Hospital	2	(1)	2	(0)	4	0	2	2	0
Haywards Heath, Hurstwood Park Hospital	2	(3)	2	(3)	3	0	0	2	0
Haywards Heath, Princess Royal Hospital	0	(1)	0	(1)	0	0	0	0	0
Redhill, East Surrey Hospital	5	(4)	3	(3)	10	0	2	3	1
Worthing, Worthing Hospital	1	(3)	1	(3)	2	1	0	1	0
Total	23	(23)	22	(19)	50	4	10	22	6

Donating hospital	All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
Trent									
Boston, Pilgrim Hospital	2	(1)	2	(1)	4	1	2	2	0
Chesterfield, Chesterfield And N Derbyshire Royal Hospital	4	(2)	4	(2)	8	0	2	4	0
Derby, Derby Royal Infirmary	1	(3)	1	(3)	2	0	0	1	0
Lincoln, Lincoln County Hospital	1	(2)	1	(2)	2	0	2	1	1
Nottingham, Nottingham University Hospital	13	(7)	12	(7)	26	3	4	12	5
Sutton-In-Ashfield, King's Mill Hospital	1	(0)	1	(0)	2	1	0	1	0
Worksop, Bassetlaw District General Hospital	1	(3)	1	(3)	2	0	0	1	0
Total	23	(18)	22	(18)	46	5	10	22	6
Thames Valley									
Aylesbury, Stoke Mandeville Hospital	1	(1)	1	(1)	2	0	0	1	0
Banbury, Horton General Hospital	1	(2)	1	(2)	2	0	0	1	0
Milton Keynes, Milton Keynes General Hospital	3	(2)	3	(2)	6	2	0	3	1
Oxford, John Radcliffe Hospital	6	(1)	4	(1)	12	0	0	4	4
Oxford, Radcliffe Infirmary	7	(9)	6	(9)	14	2	4	5	2
Reading, Royal Berkshire Hospital	4	(3)	3	(3)	6	0	0	4	2
Slough, Wexham Park Hospital	1	(2)	1	(2)	2	0	0	1	0
Wycombe, Wycombe General Hospital	0	(1)	0	(1)	0	0	0	0	0
Total	23	(21)	19	(21)	44	4	4	19	9
West Yorkshire									
Bradford, Bradford Royal Infirmary	4	(0)	4	(0)	8	0	0	4	2
Dewsbury, Dewsbury And District Hospital	1	(1)	1	(1)	2	0	0	1	0
Halifax, Calderdale Royal Hospital	3	(2)	3	(2)	6	1	0	3	1
Huddersfield, Huddersfield Royal Infirmary	2	(2)	1	(2)	4	0	0	1	1
Leeds, Leeds General Infirmary	11	(14)	11	(14)	20	3	4	11	4
Leeds, St James's University Hospital	3	(4)	2	(3)	4	0	0	3	0
Pontefract, Pontefract General Infirmary	2	(2)	2	(2)	2	1	4	2	1
Wakefield, Pinderfields General Hospital	0	(2)	0	(1)	0	0	0	0	0
Total	26	(27)	24	(25)	46	5	8	25	9

Donating hospital	All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
Guernsey									
St Martins, Princess Elizabeth Hospital	1	(0)	1	(0)	2	0	2	1	0
Total	1	(0)	1	(0)	2	0	2	1	0
Isle of Man									
Douglas, Nobles I-O-M Hospital	2	(2)	2	(2)	4	0	0	2	1
Total	2	(2)	2	(2)	4	0	0	2	1
Jersey									
St Helier, Jersey General Hospital	1	(0)	1	(0)	2	0	0	1	0
Total	1	(0)	1	(0)	2	0	0	1	0
England	539	(529)	471	(467)	1008	115	215	478	151
Wales									
Abergavenny, Nevill Hall Hospital	0	(2)	0	(1)	0	0	0	0	0
Aberystwyth, Bronglais Hospital	0	(1)	0	(1)	0	0	0	0	0
Bangor, Ysbyty Gwynedd District General Hospital	1	(1)	1	(1)	2	0	0	1	0
Bodelwyddan, Glan Clwyd District General Hospital	1	(2)	1	(2)	2	0	2	1	0
Bridgend, Princess Of Wales Hospital	2	(5)	2	(3)	4	0	2	2	0
Cardiff, University Of Wales Hospital	9	(14)	8	(10)	17	1	7	8	1
Carmarthen, West Wales General Hospital	2	(1)	2	(1)	4	1	2	2	0
Haverford West, Withybush General Hospital	1	(0)	0	(0)	0	0	0	1	0
Llanelli, Prince Philips Hospital	1	(2)	1	(2)	2	0	0	1	0
Merthyr Tydfil, Prince Charles Hospital	2	(1)	1	(1)	2	0	0	2	0
Neath, Neath And Port Talbot Hospital	1	(0)	1	(0)	2	1	0	1	1
Newport, Royal Gwent Hospital	3	(2)	3	(2)	6	2	4	3	2
Penarth, Llandough Hospital	1	(1)	0	(1)	2	0	0	0	0
Pontypridd, Royal Glamorgan Hospital	0	(2)	0	(2)	0	0	0	0	0
Swansea, Morriston Hospital	8	(10)	7	(9)	16	1	0	7	2

Donating hospital	All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
Wrexham, Maelor General Hospital	3	(2)	2	(1)	4	0	0	3	0
Total	35	(46)	29	(37)	63	6	17	32	6
Scotland									
Aberdeen, Aberdeen Royal Infirmary	10	(5)	8	(5)	17	1	4	8	6
Airdrie, Monklands District General Hospital	0	(1)	0	(0)	0	0	0	0	0
Dumfries, Dumfries And Galloway Royal Infirmary	1	(0)	1	(0)	2	1	0	1	1
Dundee, Ninewells Hospital	4	(3)	4	(3)	8	2	6	4	3
Dunfermline, Queen Margaret Hospital	3	(2)	2	(2)	4	1	3	3	1
East Kilbride, Hairmyres Hospital	0	(1)	0	(1)	0	0	0	0	0
Edinburgh, Royal Infirmary Of Edinburgh	2	(4)	2	(3)	4	0	0	2	0
Edinburgh, Western General Hospital	6	(18)	6	(18)	12	4	2	6	2
Falkirk, Falkirk Royal Infirmary	1	(0)	1	(0)	2	0	0	1	0
Glasgow, Victoria Infirmary	1	(3)	1	(2)	2	0	0	1	0
Glasgow, Glasgow Royal Infirmary	3	(0)	3	(0)	6	0	0	3	3
Glasgow, Southern General Hospital	7	(8)	7	(6)	14	2	8	7	1
Glasgow, Western Infirmary	3	(2)	2	(1)	4	1	0	3	1
Inverness, Raigmore Hospital	0	(1)	0	(1)	0	0	0	0	0
Kilmarnock, Crosshouse Hospital	1	(2)	1	(2)	2	1	1	1	0
Kirkcaldy, Victoria Hospital	2	(0)	2	(0)	4	0	2	1	0
Livingston, St John's Hospital	0	(1)	0	(1)	0	0	0	0	0
Melrose, Borders General Hospital	1	(0)	1	(0)	2	1	0	1	1
Paisley, Royal Alexandra Hospital	0	(2)	0	(2)	0	0	0	0	0
Stirling, Stirling Royal Infirmary	2	(3)	2	(2)	4	1	0	2	0
Wishaw, Wishaw General Hospital	0	(3)	0	(3)	0	0	0	0	0
Total	47	(59)	43	(52)	87	15	26	44	19
Northern Ireland									
Belfast, Antrim Hospital	1	(4)	1	(4)	2	0	0	1	0
Belfast, Belfast City Hospital	0	(5)	0	(5)	0	0	0	0	0
Belfast, Mater Infirmorum Hospital	1	(1)	1	(1)	2	0	0	1	0
Belfast, Royal Belfast Hospital For Sick Children	2	(0)	2	(0)	4	1	0	2	1

Donating hospital	All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
Belfast, Royal Victoria Hospital	12	(15)	9	(13)	22	3	5	10	1
Enniskillen, Erne Hospital	3	(0)	2	(0)	6	0	2	2	0
Londonderry, Altnagelvin Area Hospital	1	(4)	1	(4)	2	0	0	1	0
Portadown, Craigavon Area Hospital	0	(1)	0	(1)	0	0	0	0	0
Total	20	(30)	16	(28)	38	4	7	17	2

**Appendix IB Deceased non-heartbeating solid organ donors and donated organs in the UK,
1 April 2005 - 31 March 2006 (2004-2005), by donating hospital**

Donating hospital	All donors		Multi-organ donor		Kidney	Lung	Liver
Avon, Gloucestershire and Wiltshire							
Bath, Royal United Hospital	4	(2)	0	(0)	8	0	0
Bristol, Bristol Royal Hospital for Children	1	(0)	0	(0)	2	0	0
Bristol, Frenchay Hospital	6	(7)	0	(0)	12	0	0
Cheltenham, Cheltenham General Hospital	1	(1)	0	(0)	2	0	0
Gloucester, Gloucestershire Royal Hospital	2	(1)	0	(0)	4	0	0
Swindon, Great Western Hospital	1	(1)	0	(0)	2	0	0
Weston-Super-Mare, Weston-Super-Mare General Hospital	1	(0)	0	(0)	2	0	0
Total	16	(12)	0	(0)	32	0	0
Bedfordshire and Hertfordshire							
Bedford, Bedford Hospital	0	(1)	0	(0)	0	0	0
Luton, Luton and Dunstable Hospital	1	(2)	0	(0)	2	0	0
Stevenage, Lister Hospital	0	(1)	0	(1)	0	0	0
Welwyn Garden City, Queen Elizabeth II Hospital	0	(1)	0	(1)	0	0	0
Total	1	(3)	0	(2)	2	0	0
Birmingham and the Black Country							
Birmingham, Queen Elizabeth Hospital	3	(1)	2	(1)	6	0	2
Total	3	(1)	2	(1)	6	0	2
County Durham and Tees Valley							
Hartlepool, University Hospital Of Hartlepool	0	(1)	0	(0)	0	0	0
Middlesbrough, The James Cook University Hospital	6	(3)	1	(3)	10	0	2
Stockton-On-Tees, University Hospital Of North Tees	0	(2)	0	(0)	0	0	0
Total	6	(6)	1	(3)	10	0	2

Donating hospital	All donors		Multi-organ donor		Kidney	Lung	Liver
Cumbria and Lancashire							
Preston, Royal Preston Hospital	2	(3)	0	(2)	4	0	0
Total	2	(3)	0	(2)	4	0	0
Essex							
Colchester, Colchester General Hospital	1	(1)	1	(0)	2	0	1
Total	1	(1)	1	(0)	2	0	1
Greater Manchester							
Bolton, Royal Bolton Hospital	2	(0)	1	(0)	3	0	1
Bury, Fairfield General Hospital	0	(1)	0	(0)	0	0	0
Manchester, Manchester Royal Infirmary	0	(1)	0	(1)	0	0	0
Manchester, North Manchester General Hospital	1	(0)	0	(0)	2	0	0
Salford, Hope Hospital	3	(1)	1	(0)	6	0	1
Wigan, Royal Albert Edward Infirmary	1	(1)	1	(0)	2	0	1
Total	7	(4)	3	(1)	13	0	3
Hampshire and Isle of Wight							
Basingstoke, North Hampshire Hospital	0	(1)	0	(0)	0	0	0
Portsmouth, Queen Alexandra Hospital	1	(0)	1	(0)	2	0	1
Southampton, Southampton University Hospitals	3	(1)	2	(0)	6	0	2
Total	4	(2)	3	(0)	8	0	3
Kent and Medway							
Ashford, William Harvey Hospital	1	(0)	1	(0)	2	0	1
Canterbury, Kent And Canterbury Hospital	0	(1)	0	(0)	0	0	0
Total	1	(1)	1	(0)	2	0	1
Leicestershire, Northamptonshire and Rutland							
Northampton, Northampton General Hospital	0	(1)	0	(0)	0	0	0
Total	0	(1)	0	(0)	0	0	0

Donating hospital	All donors		Multi-organ donor		Kidney	Lung	Liver
North Central London							
London, Great Ormond Street Hospital For Children	1	(0)	1	(0)	2	0	1
London, Nat. Hosp. For Neurology And Neurosurgery	0	(1)	0	(1)	0	0	0
London, Royal Free Hospital	0	(1)	0	(1)	0	0	0
London, The Whittington Hospital	0	(1)	0	(1)	0	0	0
Total	1	(3)	1	(3)	2	0	1
North East London							
London, Newham General Hospital	1	(0)	1	(0)	2	0	1
London, The Royal London Hospital (Whitechapel)	3	(4)	2	(4)	6	0	2
Romford, Oldchurch hospital	2	(0)	2	(0)	4	0	2
Total	6	(4)	5	(4)	12	0	5
North and East Yorkshire and Northern Lincolnshire							
Cottingham, Castle Hill Hospital	0	(1)	0	(0)	0	0	0
Grimsby, Diana Princess Of Wales Hospital	0	(1)	0	(1)	0	0	0
Hull, Hull Royal Infirmary	8	(3)	5	(1)	16	0	5
York, York District Hospital	1	(0)	1	(0)	2	0	1
Total	9	(5)	6	(2)	18	0	6
Norfolk, Suffolk and Cambridgeshire							
Cambridge, Addenbrooke's Hospital	7	(4)	1	(0)	14	0	1
Huntingdon, Hinchingbrooke Hospital	0	(1)	0	(0)	0	0	0
Norwich, Norfolk And Norwich University Hospital	0	(3)	0	(0)	0	0	0
Total	7	(8)	1	(0)	14	0	1
Northumberland, Tyne and Wear							
Gateshead, Queen Elizabeth Hospital	0	(1)	0	(0)	0	0	0
Newcastle, Freeman Hospital	0	(1)	0	(0)	0	0	0
Newcastle, Newcastle General Hospital	3	(4)	0	(2)	6	0	0

Donating hospital	All donors		Multi-organ donor		Kidney	Lung	Liver
Sunderland, Sunderland Royal Hospital	3	(3)	0	(0)	6	0	0
Total	6	(9)	0	(2)	12	0	0
North West London							
London, Charing Cross Hospital	0	(1)	0	(1)	0	0	0
Total	0	(1)	0	(1)	0	0	0
Shropshire and Staffordshire							
Shrewsbury, Royal Shrewsbury Hospital	2	(0)	2	(0)	4	0	2
Total	2	(0)	2	(0)	4	0	2
South East London							
London, King's College Hospital	2	(2)	1	(1)	2	0	2
London, St Thomas' Hospital	0	(1)	0	(1)	0	0	0
London, University Hospital Lewisham	1	(0)	0	(0)	2	0	0
Sidcup, Queen Mary's Hospital	1	(0)	1	(0)	2	0	1
Total	4	(3)	2	(2)	6	0	2
South West London							
Croydon, Mayday University Hospital	0	(1)	0	(1)	0	0	0
Kingston, Kingston Hospital	0	(1)	0	(1)	0	0	0
London, St George's Hospital	4	(5)	3	(4)	8	0	3
Total	4	(7)	3	(6)	8	0	3
South West Peninsula							
Barnstaple, North Devon District Hospital	2	(0)	0	(0)	4	0	0
Plymouth, Derriford Hospital	8	(1)	0	(0)	16	0	0
Truro, Royal Cornwall Hospital (Treliske)	1	(0)	0	(0)	2	0	0
Total	11	(1)	0	(0)	22	0	0
Surrey and Sussex							
Chertsey, St Peter's Hospital	1	(0)	0	(0)	0	0	1

Donating hospital	All donors		Multi-organ donor		Kidney	Lung	Liver
Hastings, Conquest Hospital	1	(0)	1	(0)	2	0	1
Worthing, Worthing Hospital	1	(0)	0	(0)	0	0	1
Total	3	(0)	1	(0)	2	0	3
Thames Valley							
Aylesbury, Stoke Mandeville Hospital	1	(0)	0	(0)	2	0	0
Banbury, Horton General Hospital	1	(0)	0	(0)	2	0	0
Oxford, Radcliffe Infirmary	0	(1)	0	(0)	0	0	0
Reading, Royal Berkshire Hospital	3	(1)	0	(0)	6	0	0
Slough, Wexham Park Hospital	1	(0)	0	(0)	2	0	0
Wycombe, Wycombe General Hospital	2	(0)	0	(0)	4	0	0
Total	8	(2)	0	(0)	16	0	0
West Yorkshire							
Halifax, Calderdale Royal Hospital	1	(0)	1	(0)	2	0	1
Leeds, Leeds General Infirmary	10	(6)	5	(3)	19	2	5
Leeds, St James's' University Hospital	1	(0)	0	(0)	2	0	0
Total	12	(6)	6	(3)	23	2	6
England	115	(83)	38	(32)	220	2	42
Scotland							
Edinburgh, Western General Hospital	1	(1)	1	(0)	1	0	1
Glasgow, Southern General Hospital	2	(1)	0	(0)	4	0	0
Total	3	(2)	1	(0)	5	0	1
Wales							
Cardiff, University Of Wales Hospital	5	(1)	0	(0)	10	0	0
Newport, Royal Gwent Hospital	2	(0)	0	(0)	3	0	0
Total	7	(1)	0	(0)	13	0	0

Appendix II Numbers of heartbeating donors and organs retrieved in the UK, 1 April 2005 - 31 March 2006, by kidney designated area									
Kidney designated area	All donors	Donors pmp	Multi-organ donors	pmp	Kidney	Heart	Organs Lung	Liver	Pancreas
Belfast	20	11.8	16	9.5	38	4	7	17	2
Birmingham	49	11.0	41	9.2	80	11	23	47	8
Bristol	25	12.7	21	10.7	47	1	8	21	10
Cambridge	26	10.4	23	9.2	50	7	13	22	11
Cardiff	30	13.4	25	11.2	55	6	15	27	6
Coventry	13	16.0	12	14.8	26	5	6	12	2
Edinburgh	28	11.7	25	10.4	51	9	17	25	13
Glasgow	17	6.4	16	6.0	32	6	9	17	4
Leeds	47	12.7	42	11.4	84	8	18	44	14
Leicester	10	4.7	9	4.2	19	2	6	9	2
Liverpool	34	10.5	30	9.3	64	6	17	32	6
Manchester	48	12.2	41	10.4	86	9	22	39	14
Newcastle	44	15.5	33	11.7	83	6	8	34	9
North Thames	81	11.1	72	9.8	156	19	32	71	22
Nottingham	15	10.9	14	10.1	30	4	4	14	5
Oxford	30	10.0	25	8.3	56	5	8	26	12
Plymouth	17	9.6	16	9.0	32	4	8	17	5
Portsmouth	19	7.9	18	7.5	38	8	10	18	9
Sheffield	16	8.7	14	7.7	30	2	6	15	2
South Thames	70	10.4	64	9.5	131	18	28	62	20
Total	639	10.8	557	9.4	1188	140	265	569	176

Appendix IIIA Retrieval populations for kidney centres, 2004-2005 (based on ONS 2001 census figures)	
Kidney centre	Retrieval population (million)
Birmingham	4.46
Bristol	1.97
Cambridge	2.50
Coventry	0.81
Leeds	3.70
Leicester	2.12
Liverpool	3.24
Manchester	3.95
Newcastle	2.83
North Thames	7.32
Nottingham	1.38
Oxford	3.00
Plymouth	1.78
Portsmouth	2.39
Sheffield	1.83
South Thames	6.73
Total (England)	50.01
Cardiff	2.24
Total (Wales)	2.24
Edinburgh	2.40
Glasgow	2.66
Total (Scotland)	5.06
Belfast	1.69
Total (Northern Ireland)	1.69
TOTAL (UK)	59.00

Appendix IIIB Retrieval population for liver and cardiothoracic zones 2004-2005 (based on *ONS 2001 Census* figures)

Liver Zone	Retrieval population (million)
Birmingham	13.09
Cambridge	9.23
Edinburgh	5.06
King's College	14.64
Leeds	7.84
Newcastle	3.40
The Royal Free	5.74
Cardiothoracic Zone	Retrieval population (million)
Birmingham	9.59
Glasgow	5.06
Harefield	13.13
Manchester	7.91
Newcastle	8.47
Papworth	14.85

Appendix IV Unadjusted refusal rates by donor transplant co-ordinator team

Donor transplant co-ordinator team	Unadjusted refusal rate (%)
Belfast	44
Birmingham	43
Bristol	30
Cambridge	38
Cardiff	30
Coventry	44
East of Scotland	30
Leeds	43
Leicester	38
Liverpool	40
Manchester	37
Newcastle	44
North of Scotland	37
North Thames	51
Nottingham	43
Oxford	38
Plymouth	33
Portsmouth	20
Sheffield	41
South Thames	39
West of Scotland	33



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