

Cover pictures:

Louisa McGregor-Smith received a life saving transplant at five months, now the face of the Wall of Life Campaign.
The NHS Organ Donor Register celebrates over 16 million names on the register.

Mark Roberts, Donor Transplant Coordinator, Sister Mary Campbell and Jonathan Roberts from University Hospital Wales.
Naomi Smith, liver transplant recipient competes at the 2008 Transplant Games.

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PREFACE

This transplant activity report for the financial year 2008-2009 relates throughout to the UK. All figures quoted are as reported to NHS Blood and Transplant by 10 June 2009 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 always distinguish between adult and paediatric transplantation. For the most part, 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 NHS Blood and 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 or more transplants. All pancreatic transplants refer to the whole organ.

Information from 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 mid-2005 estimates based on ONS *2001 Census* figures and are given in **Appendices IIIA** and **IIIB**.

All figures in this publication can be obtained as pdf files from Statistics and Clinical Audit, NHS Blood and Transplant. Requests should be sent to enquiries@nhsbt.nhs.uk.

This report is available on the NHS Blood and Transplant website:
<http://www.organdonation.nhs.uk/ukt/statistics/statistics.jsp>

1 SUMMARY OF ACTIVITY

In the last financial year, there were increases of 11% and 12%, respectively, in the number of deceased and living donors, and a corresponding 9% increase in both the number of solid organ transplants and the number of cornea transplants. In 2008-2009, the number of patients who had their lives saved or improved by an organ transplant was 3,513. Of these, 2,552 received an organ from a deceased donor, and a further 961 received an organ from a living donor. In addition, 2,711 patients had their sight restored through a cornea transplant. There were 900 deceased donors of solid organs and 2,075 donors of ocular tissue.

The number of patients registered for a transplant continues to increase, so that at 31 March 2009 there were 7,877 on the active transplant lists and a further 2,385 patients were on the temporarily suspended transplant lists. This represents an increase of 3% and 14% respectively on the corresponding figures at the end of the previous year. Sadly, 448 patients died in 2008-2009 while waiting for their transplant.

Deceased solid organ donation rates continue to vary across the UK, with 14.1 per million population (pmp) in Scotland, 12.2 in Northern Ireland, 15.3 pmp in England, and 12.2 in Wales. The corresponding rate in the Republic of Ireland is 16.0 pmp.

Although the total annual number of deceased heartbeating solid organ donors in the UK has changed little over the last few years, the number of non-heartbeating donors rose from 200 in 2007-2008 to 288 in 2008-2009, an increase of 44%, while the number of deceased heartbeating donors rose from 609 to 612. In addition, the number of living donors rose from 858 to 961, an increase of 12%.

In regard to renal transplantation, the number of kidney only transplants rose by 12% and the number of kidney and pancreas transplants decreased to 152, a decrease of 19% on last year. This led to an overall increase of 9% in the total number of kidney transplants. The number of pancreas only transplants decreased, from 58 to 54. Of the heartbeating kidney donors, 95% were white, while 79% of the transplant recipients were white. The greatest percentage of heartbeating donors and recipients were in the 35-49 year age group, and 59% of recipients were male.

Cardiothoracic transplantation increased by 10% in 2008-2009, with increases of 2% in the number of heart transplants and 24% in the number of lung transplants. The number of cardiothoracic donors increased from 207 to 250 and of these donors, 96% were white, as were 92% of recipients. The greatest percentage of donors and recipients were in the 35-49 year age group, and 58% of recipients were male.

The total number of liver transplants increased by 6%, due to an increase of 31 in the number of deceased liver donor transplants and an increase of 10 in the number of living liver donor transplants. Of the liver donors, 93% were white, while 80% 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, and 61% of recipients were male.

In regard to ocular tissue transplantation, compared to last year, the number of corneas donated remained constant but there was an increase of 9% in the number grafted. However, both the donor and recipient rates continue to vary considerably across the UK, with donation rates ranging between 4.1 pmp and 109.3 pmp, and transplant rates between 32.3 pmp and 51.2 pmp.

The figures given for graft and patient survival rates in adult recipients in this report demonstrate that one, two and five year survival rates following deceased heartbeating donor kidney transplantation continue to rise, rates for non-heartbeating donor kidney transplantation have been maintained or improved and rates for living donor kidney transplantation maintained. For transplants during the most recent years, in adult recipients the five year kidney graft survival rates are 89%, 83% and 83% for living, deceased heartbeating and deceased non-heartbeating, respectively. For cardiac transplantation, patient survival is 81% at one year and 71% at five years. The corresponding figures for lung transplantation are 77% at one year and 54% at five years. The one and five year patient survival rates following deceased heartbeating donor liver transplantation are 90% and 76%, respectively. The one year graft survival rates for pancreas and simultaneous kidney and pancreas transplants are 70% and 89%, respectively. The one and five year corneal graft survival rates following a penetrating keratoplasty are 93% and 74%, respectively.

The number of individuals who have pledged to donate their organs after death by registering on the NHS Organ Donor Register (ODR) has increased to 16 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 22% in the West Midlands and London to 32% in the South West and Scotland.

As a result of continuing increases in the number of living donor transplants and the number of non-heartbeating donors, the number of transplants in the last financial year was over 3500. However, there is no evidence of an increase in the number of deceased heartbeating donors, and the percentage of relatives who consent to organ donation remains at around 60%. Both of these factors continue to limit the supply of organs available for transplantation.

Dave Collett
Associate Director Statistics and Clinical Audit

2 OVERVIEW

This overview relates to solid organ transplantation. Corresponding information on corneal transplantation is given in Chapter 7.

2.1 Summary of activity

Deceased donor numbers, transplant activity and numbers on the transplant lists at 31 March, for 1 April 1999 to 31 March 2009, are shown in **Figure 2.1**. The total number of transplants in 2008-2009 was 171 higher than that in the previous year.

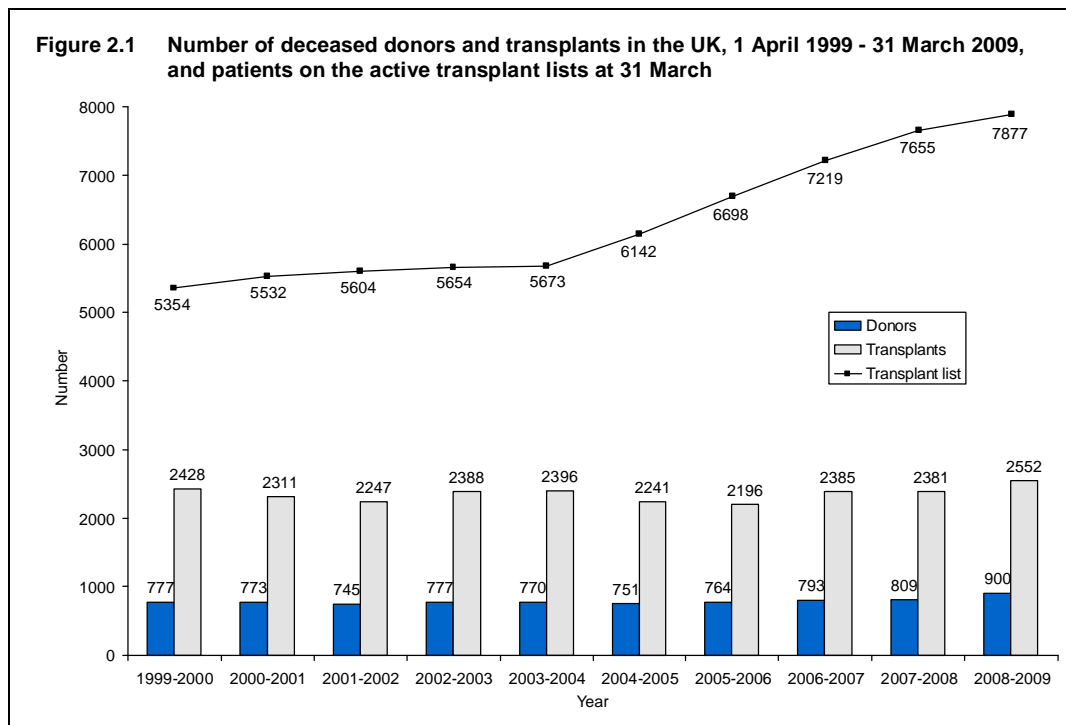
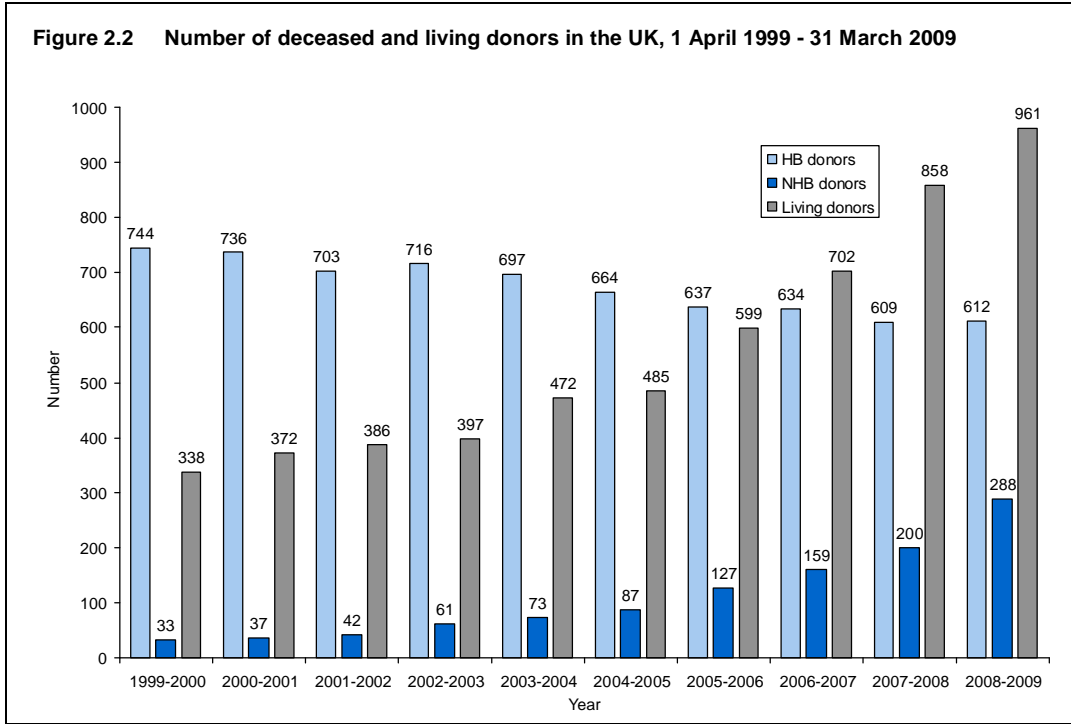


Figure 2.2 shows the number of deceased and living donors for 1999-2009. The number of heartbeating donors was 612 in 2008-2009 compared with 609 in 2007-2008. The number of both living and non-heartbeating donors in 2008-2009 was the highest ever recorded.



There were 900 deceased solid organ donors reported from the UK in 2008-2009, 91 more than in the previous financial year. A breakdown of the number of donors by organ is given in **Table 2.1**. Of the 900 deceased donors, 288 were non-heartbeating donors: 153 kidney only, 46 kidney and liver, 12 kidney and pancreas, 47 kidney, liver and pancreas, 5 kidney, lung and liver, 8 kidney, lung, liver and pancreas, 1 pancreas only and 12 liver only donors. Among living organ donors there were 15 altruistic non-directed living kidney donors, 16 paired living kidney donors, 27 living liver lobe donors and 7 domino liver donors.

Table 2.1 UK activity summary for 1 April 2008 - 31 March 2009

	Kidney	Pancreas	Heart	Heart/ lung	Lung	Liver	TOTAL
Deceased donors	859	376	133	-	169	677	900
Deceased organs donated	1704	376	133	-	326	677	3216
Deceased transplants	1570	216	130	3	143	667	2552¹
Living donor transplants	927	0	0	-	0	34	961

¹ Includes combined transplants: 152 kidney and pancreas, 13 kidney and liver, 1 kidney and heart, and 10 liver, bowel and pancreas/multivisceral transplants (1 including kidney) and 2 modified multivisceral transplants

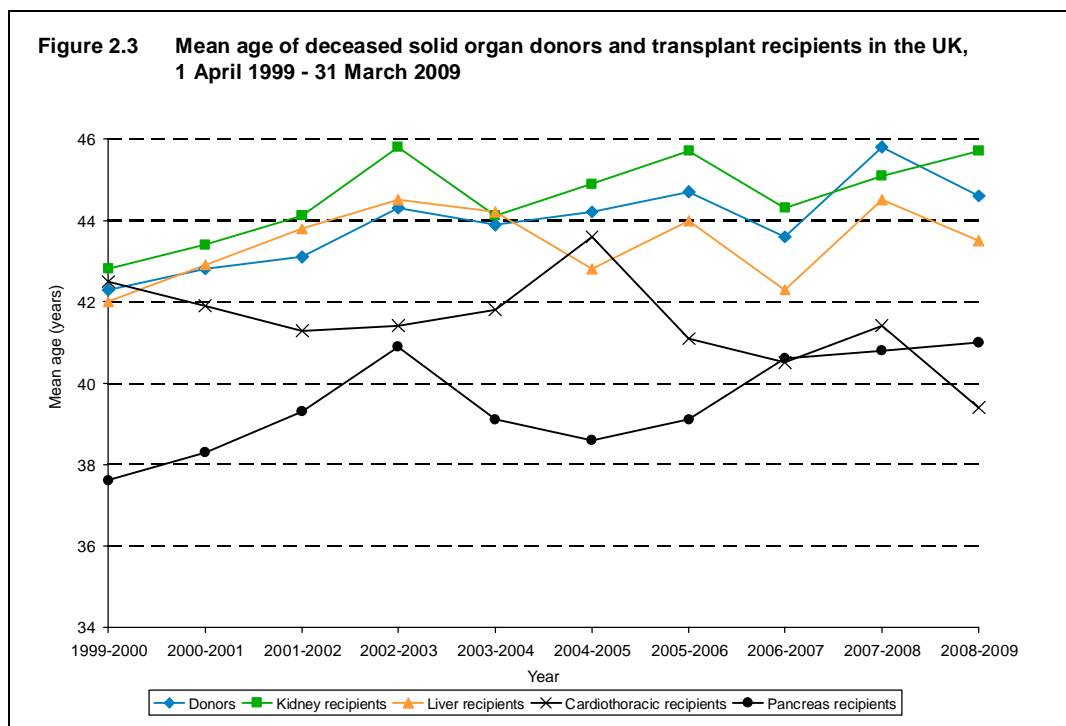
The total number of solid organ transplants in 2008-2009 was 3,513. Of these, 2,552 (73%) transplants were made possible by deceased donations. There were 961 transplants through living donations, 103 (12%) more than in 2007-2008

Nearly all deceased donors (95%) gave a kidney and of these the majority (78%) also donated at least one other organ. Only 9% of heartbeating donors were single organ donors, the majority of which were kidney only donors.

Of the 288 non-heartbeating donors, 275 (95%) gave a kidney while 118 (41%) donated their livers. **Table 2.2** shows solid organ donors by organ types donated.

	Heartbeating	Non-heartbeating	Living donor	TOTAL
Kidney only	39	153	927	1119
Kidney and thoracic	7	4	-	11
Kidney and liver	182	46	-	228
Kidney and pancreas	2	12	-	14
Kidney, thoracic and liver	58	5	-	63
Kidney, thoracic and pancreas	3	-	-	3
Kidney, liver and pancreas	137	47	-	184
Kidney, thoracic, liver and pancreas	156	8	-	164
Thoracic only	2	-	-	2
Thoracic and liver	2	-	-	2
Thoracic, liver and pancreas	5	-	-	5
Liver only	14	12	34	60
Liver and pancreas	5	-	-	5
Pancreas only	-	1	-	1
TOTAL	612	288	961	1861

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 42.3 years in 1999-2000 to 44.6 years in 2008-2009. Pancreas recipients are younger on average than other solid organ transplant recipients.



2.2 Transplant list

At 31 March 2009, 10,262 patients were registered on a solid organ transplant list in the UK. Of these 2,385 (23%) 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 list waiting for a transplant at 31 March 2008 and 2009. The total number rose by 222 patients (3%) due to increases in kidney and combined kidney/pancreas transplant lists.

	2008	2009	% Change
Kidney and pancreas patients	7006	7217	+3
Kidney	6790	6920	+2
Kidney and pancreas ¹	178	254	+43
Pancreas ²	38	43	+13
Cardiothoracic patients	377	320	-15
Heart	91	91	-
Heart/lung	18	12	-33
Lung(s)	268	217	-19
Liver patients³	259	326	+26
Other multi-organ patients⁴	13	14	+8
ALL PATIENTS	7655	7877	+3

¹ Includes patients waiting for a modified multivisceral transplant (1 in 2009)
² Includes patients waiting for a modified multivisceral transplant (3 in 2009)
³ Includes patients waiting for a liver, bowel and pancreas/ multivisceral transplant (5 in 2008, 5 in 2009 (2 including kidney))
⁴ Includes patients waiting for kidney and liver transplant (8 in 2008, 12 in 2009), kidney and heart transplant (4 in 2008, 2 in 2009), liver and lung transplant (1 in 2008)

2.3 Organ donors

In 2008-2009, 900 deceased solid organ donors gave 3,216 solid organs in the UK compared with 809 donors and 2,927 organs in 2007-2008. On average in the UK, 3.6 organs were retrieved per deceased solid organ donor in 2008-2009. Overall, 74% of deceased solid organ donors gave a kidney and at least one other solid organ.

Solid organ donor rates per million population (pmp) for 2007-2008 and 2008-2009 are given by country in **Table 2.4**. England achieved the highest rate in 2008-2009. Northern Ireland is the only country not to have a non-heartbeating donation programme.

Country of donation	Number of donors							
	2007-2008				2008-2009			
	HB	NHB	TOTAL	(pmp)	HB	NHB	TOTAL	(pmp)
England	507	181	688	(13.6)	512	259	771	(15.3)
Wales	39	6	45	(15.2)	28	8	36	(12.2)
Scotland	41	13	54	(10.6)	51	21	72	(14.1)
Northern Ireland	22	0	22	(12.8)	21	0	21	(12.2)
TOTAL	609	200	809	(13.4)	612	288	900	(14.9)

The ethnicity of deceased solid organ donors in 2007-2008 and 2008-2009 is shown in **Table 2.5**. In 2008-2009, 4.7% of donors were from ethnic minorities compared with 4.0% in the previous year.

Ethnicity	2007-2008		2008-2009	
	N	%	N	%
White	777	96.0	857	95.2
Asian	13	1.6	17	1.9
Black	11	1.4	13	1.4
Chinese	1	0.1	2	0.2
Other	7	0.9	11	1.2
TOTAL	809		900	

2.4 Transplants

Table 2.6 shows that a total of 3,513 transplants were performed in 2008-2009 compared with 3,237 in 2007-2008, an increase of 9%. All multi-organ transplants are identified separately and include 152 kidney and pancreas, 10 liver, bowel and pancreas (1 including kidney), 1 kidney and heart, 3 heart/lung and 13 kidney and liver transplants.

The deceased heartbeating donor kidney transplants include three en bloc and one double kidney transplant in 2008-2009 (three and four in 2007-2008). The deceased non-heartbeating donor kidney transplants include two en bloc and one double kidney transplant in 2008-2009 (one and five in 2007-2008).

The total number of kidney transplants increased in 2008-2009; heartbeating, living and non-heartbeating donor transplants increased by 2%, 12% and 42% respectively. The total number of cardiothoracic organ transplants rose by 10%, the number of liver transplants rose by 6% and the number of pancreas transplants (including pancreas only and kidney/pancreas) decreased by 13%.

Table 2.6 Transplants performed in the UK, 1 April 2007 - 31 March 2009

Transplant	2007-2008	2008-2009	% Change
Deceased heartbeating kidney	929	949	+2
Deceased non-heartbeating kidney	320	454	+42
Living donor kidney	831	927	+12
Kidney and pancreas ¹	188	152	-19
Pancreas ²	58	54	-7
Deceased heart	127	129	+2
Heart/lung	7	3	-
Living donor partial lung	1	0	-
Single lung ³	33	31	-6
Double lung ⁴	82	112	+37
Deceased heartbeating liver	453	445	-2
Deceased non-heartbeating liver	67	76	+13
Domino liver	4	7	-
Deceased liver lobe ⁵	99	123	+24
Living donor liver lobe	20	27	+35
Kidney and heart	1	1	-
Kidney and liver	14	13	-7
Liver, bowel and pancreas	2	9	-
Liver, bowel, kidney and pancreas	1	1	-
TOTAL TRANSPLANTS (SOLID ORGANS)	3237	3513	+9
Total kidney transplants⁶	2284	2497	+9
Total pancreas transplants⁶	249	216	-13
Total cardiothoracic transplants	251	276	+10
Total liver transplants⁶	660	701	+6

Percentage not reported when fewer than 10 in either year

¹ Includes non-heartbeating kidney and pancreas transplants, 15 in 2007-2008 and 20 in 2008-2009

² Includes non-heartbeating pancreas transplants, 21 in 2007-2008 and 13 in 2008-2009

³ Includes non-heartbeating single lung transplants, 1 in 2007-2008 and 1 in 2008-2009

⁴ Includes non-heartbeating double lung transplants, 4 in 2007-2008 and 11 in 2008-2009

⁵ Includes non-heartbeating liver lobe transplants, 1 in 2007-2008 and 4 in 2008-2009

⁶ Includes liver, pancreas and small bowel/multivisceral transplants/modified multivisceral, 4 in 2007-2008 (1 including kidney) and 12 in 2008-2009 (1 including kidney)

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 2009 for a kidney or kidney and pancreas transplant continues to increase, and has risen by 50% since 2000.

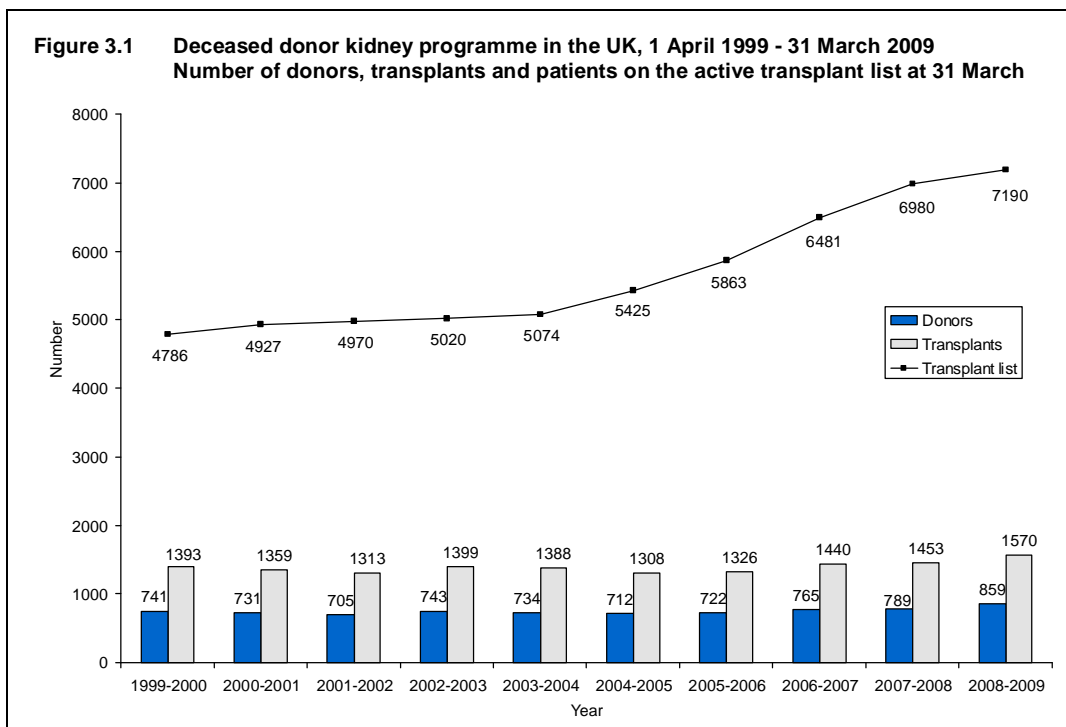


Table 3.1 shows the number of deceased and living donor kidney transplants carried out in 2008-2009 at each centre. The majority of centres performed non-heartbeating donor kidney transplants. The number of patients registered on the active kidney or kidney and pancreas transplant list increased to 7,190 at 31 March 2009. Donation and retrieval figures for centres in North and South Thames are not reported individually as they have shared, rather than discrete, retrieval areas and donor populations.

The total number of deceased kidney donors rose to 859 in 2008-2009 from 789 in 2007-2008 and the number of transplants increased from 1,453 to 1,570. The number of non-heartbeating kidney donors increased to 275 from 195 in 2007-2008 and the number of transplants from such donors increased by 41% to 474.

Table 3.1 Kidney donors and transplants, 1 April 2008 - 31 March 2009 (2007-2008) and transplant list at 31 March 2009 (2008) in the UK, by centre/alliance

Centre/alliance	Deceased kidney donors				Deceased donor transplants				Living donor transplants		Active transplant list	
	HB		NHB		HB		NHB					
Belfast	20	(21)	0	(0)	31	(35)	0	(0)	8	(10)	239	(241)
Birmingham	43	(48)	18	(11)	66	(85)	20	(19)	68	(66)	627	(535)
Bristol	15	(21)	13	(14)	42	(47)	22	(24)	42	(38)	328	(300)
Cambridge	27	(27)	45	(19)	53	(47)	77	(34)	44	(24)	272	(280)
Cardiff	21	(31)	7	(6)	44	(73)	18	(13)	32	(30)	270	(267)
Coventry	5	(9)	2	(3)	16	(12)	3	(1)	38	(28)	151	(138)
Edinburgh	28	(27)	11	(7)	63	(61)	21	(11)	20	(29)	300	(319)
Glasgow	22	(13)	10	(6)	48	(46)	11	(9)	36	(40)	308	(315)
Great Ormond Street	0	(0)	0	(0)	9	(10)	0	(0)	12	(10)	21	(22)
Leeds	15	(29)	22	(14)	75	(82)	45	(25)	41	(40)	371	(418)
Leicester	12	(4)	2	(0)	43	(19)	1	(1)	46	(43)	348	(386)
Liverpool	35	(39)	8	(1)	43	(39)	13	(0)	28	(24)	224	(234)
Manchester	32	(39)	12	(15)	92	(69)	22	(26)	54	(53)	562	(547)
Newcastle	40	(45)	11	(15)	39	(63)	21	(25)	42	(36)	255	(233)
North Thames ¹	94	(76)	33	(24)	-	-	-	-	-	-	-	-
Royal Free	-	-	-	-	28	(32)	22	(22)	19	(28)	255	(245)
Royal London	-	-	-	-	61	(36)	19	(7)	40	(25)	274	(294)
WLRTC	-	-	-	-	65	(39)	17	(15)	89	(78)	498	(451)
Nottingham	11	(9)	3	(0)	37	(36)	2	(0)	19	(19)	239	(205)
Oxford	34	(25)	14	(10)	76	(99)	31	(21)	44	(31)	435	(402)
Plymouth	15	(27)	31	(14)	9	(23)	57	(21)	16	(19)	102	(110)
Portsmouth	19	(17)	9	(16)	27	(21)	16	(24)	21	(18)	206	(191)
Sheffield	19	(22)	4	(2)	29	(46)	8	(2)	20	(17)	211	(219)
South Thames ¹	77	(65)	20	(18)	-	-	-	-	-	-	-	-
Guy's	-	-	-	-	69	(74)	15	(17)	103	(79)	396	(333)
St George's	-	-	-	-	31	(24)	13	(18)	43	(46)	298	(295)
TOTAL	584	(594)	275	(195)	1096	(1118)	474	(335)	927²	(831)	7190	(6980)

¹ Donor figures in this area cannot be linked to individual transplant centres due to shared retrieval areas.

² Includes 2 transplants performed at The London Clinic.

3.2 Transplant list

The number of patients registered on the kidney or kidney and pancreas transplant list increased by 3% in the year: on 31 March 2009, 7,190 patients were registered as active, compared with 6,980 at the end of March 2008. The number of patients waiting for a kidney transplant represents 119 patients per million population (pmp).

Of the 7,190 patients on the active transplant list at 31 March 2009, 256 required a kidney and pancreas transplant (178 at 31 March 2008). Additionally, 40 patients were registered for a pancreas only transplant (38 at 31 March 2008).

The outcome of patients registered on the UK kidney and kidney/pancreas transplant list at 1 April 2008, or subsequently registered during the financial year, is shown in **Table 3.2**. Overall, 18% and 28% of patients waiting on the kidney transplant list and kidney/pancreas transplant list, respectively, during 2008-2009, had received a transplant by 31 March 2009.

Outcome of patient at 31 March 2009	Active and suspended patients at 1 April 2008		New registrations in 2008-2009 ¹		TOTAL	
	N	%	N	%	N	%
Kidney transplant list						
Remained active/suspended	6225	72	2929	87	9154	76
Transplanted	1806	21	366	11	2172	18
Removed	430 ²	5	52 ³	2	482	4
Died	234	3	25	1	259	2
TOTAL	8695		3372		12067	
Kidney/pancreas transplant list						
Remained active/suspended	152	57	224	74	376	66
Transplanted	87	32	72	24	159	28
Removed	20	7	0	0	20	4
Died	9	3	5	2	14	2
TOTAL	268		301		569	

¹ Includes re-registrations for second or subsequent transplants
² Includes 25 patients removed from kidney list and made active on kidney/pancreas list
³ Includes 10 patients removed from kidney list and made active on kidney/pancreas list

3.3 Donor and organ supply

Of the 612 deceased heartbeating solid organ donors in the UK in 2008-2009, 584 (95%) donated kidney(s). From these donors, 1,160 kidneys were retrieved, 1,096 (94%) of which were transplanted. **Table 3.3** shows this activity by centre.

The overall heartbeating kidney donor rate is 9.7 pmp, with retrieval centre/region rates ranging from 4.0 to 13.8 pmp. The kidney retrieval rate for the UK is 19.3 pmp and varies from 7.9 to 27.7 pmp. Organ usage rates of at least 95% were observed for 13 of the 20 retrieval centres.

Table 3.3 Kidney donation and retrieval rates for heartbeating donors in the UK, 1 April 2008 - 31 March 2009, by centre/alliance

Centre/region	Heartbeating kidney donors (pmp)		Kidneys retrieved (pmp)		Kidneys used (%)	
Belfast	20	(11.6)	40	(23.3)	38	(95)
Birmingham	43	(9.5)	86	(18.9)	81	(94)
Bristol	15	(7.5)	30	(14.9)	26	(87)
Cambridge	27	(10.5)	52	(20.3)	49	(94)
Cardiff	21	(9.2)	41	(17.9)	41	(100)
Coventry	5	(6.0)	10	(12.0)	7	(70)
Edinburgh	28	(11.6)	56	(23.2)	55	(98)
Glasgow	22	(8.2)	43	(16.0)	41	(95)
Leeds	15	(4.0)	30	(7.9)	29	(97)
Leicester	12	(5.5)	23	(10.6)	23	(100)
Liverpool	35	(10.6)	70	(21.1)	68	(97)
Manchester	32	(7.9)	64	(15.8)	61	(95)
Newcastle	40	(13.8)	80	(27.7)	79	(99)
North Thames	94	(12.6)	186	(24.9)	176	(95)
Nottingham	11	(7.8)	22	(15.6)	22	(100)
Oxford	34	(11.1)	68	(22.1)	63	(93)
Plymouth	15	(8.2)	30	(16.5)	28	(93)
Portsmouth	19	(7.8)	38	(15.6)	38	(100)
Sheffield	19	(10.2)	38	(20.3)	36	(95)
South Thames	77	(11.2)	153	(22.2)	135	(88)
TOTAL	584	(9.7)	1160	(19.3)	1096	(94)

There were 275 non-heartbeating kidney donors in 2008-2009. From these donors, 544 kidneys were retrieved, 477 (88%) of which were transplanted. **Table 3.4** shows this activity by centre/region.

The overall non-heartbeating kidney donor rate is 4.6 pmp, with centre/region rates ranging from 0.9 to 17.6 pmp. The non-heartbeating donor kidney retrieval rate is 9.0 pmp and varies from 1.8 to 35.2 pmp. Organ usage rates of at least 95% were observed for 8 of the 19 retrieval centres. Only one centre (Belfast) has no non-heartbeating donor retrieval scheme.

Table 3.4 Kidney donation and retrieval rates for non-heartbeating donors in the UK, 1 April 2008 - 31 March 2009, by centre/region

Centre/region	Non-heartbeating kidney donors (pmp)		Kidneys retrieved (pmp)		Kidneys used (%)	
Birmingham	18	(4.0)	36	(7.9)	29	(81)
Bristol	13	(6.5)	26	(12.9)	22	(85)
Cambridge	45	(17.6)	90	(35.2)	73	(81)
Cardiff	7	(3.1)	14	(6.1)	14	(100)
Coventry	2	(2.4)	4	(4.8)	2	(50)
Edinburgh	11	(4.6)	20	(8.3)	17	(85)
Glasgow	10	(3.7)	20	(7.5)	18	(90)
Leeds	22	(5.8)	44	(11.6)	44	(100)
Leicester	2	(0.9)	4	(1.8)	4	(100)
Liverpool	8	(2.4)	14	(4.2)	14	(100)
Manchester	12	(3.0)	23	(5.7)	22	(96)
Newcastle	11	(3.8)	22	(7.6)	21	(95)
North Thames	33	(4.4)	65	(8.7)	52	(80)
Nottingham	3	(2.1)	6	(4.3)	6	(100)
Oxford	14	(4.6)	28	(9.1)	27	(96)
Plymouth	31	(17.0)	62	(34.1)	57	(92)
Portsmouth	9	(3.7)	18	(7.4)	16	(89)
Sheffield	4	(2.1)	8	(4.3)	7	(88)
South Thames	20	(2.9)	40	(5.8)	32	(80)
TOTAL	275	(4.6)	544	(9.0)	477	(88)

3.4 Transplants

The number of deceased heartbeating donor kidney transplants per million population at each transplant centre is shown in **Table 3.5** for adult patients only. This table includes multi-organ transplants: one kidney and heart, one liver, kidney and pancreas, 13 kidney and liver and 132 kidney and pancreas. The transplant rate ranged from 4.9 to 26.1 pmp across centres and overall was 17.0 pmp.

Table 3.5 Deceased heartbeating donor adult kidney transplants in the UK, 1 April 2007 - 31 March 2009, by transplant centre/region

Transplant centre/region	2007-2008		2008-2009	
	Transplants	pmp	Transplants	pmp
Belfast	33	19.2	26	15.1
Birmingham	73	16.0	56	12.3
Bristol	44	21.9	33	16.4
Cambridge	46	18.0	52	20.3
Cardiff	72	31.4	44	19.2
Coventry	12	14.5	16	19.3
Edinburgh	60	24.9	63	26.1
Glasgow	44	16.4	41	15.3
Leeds	74	19.6	64	16.9
Leicester	19	8.8	42	19.4
Liverpool	39	11.8	43	13.0
Manchester	65	16.1	88	21.8
Newcastle	60	20.8	37	12.8
North Thames	107	14.3	152	20.3
Nottingham	29	20.6	27	19.1
Oxford	98	31.9	75	24.4
Plymouth	23	12.6	9	4.9
Portsmouth	21	8.6	27	11.1
Sheffield	46	24.6	28	15.0
South Thames	91	13.2	98	14.2
TOTAL	1056	17.5	1021	17.0

Living donor kidney transplants increased by 12% to 927 in 2008-2009, and now represent 37% of the total kidney transplant programme. The total number of living donor adult transplants performed by each transplant centre is shown in **Table 3.6**. Also shown are the number of living donor adult transplants 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 5% in the number of living related donor adult transplants and an increase of 20% in living unrelated donor adult transplants.

In 2008-2009, there were 16 paired living kidney donor transplants and 15 altruistic non-directed living kidney donor transplants.

As a percentage of the number of patients on the active transplant list at 31 March 2009, the number of living donor adult transplants in the year was 13% and ranged from 3% to 28% at individual transplant centres. The high rate for Coventry is at least partly attributable to their antibody incompatible kidney transplant programme; a number of patients are referred to Coventry for such transplants.

Table 3.6 Adult living donor kidney transplants in the UK, 1 April 2007 - 31 March 2009, and percentage of active transplant list at 31 March, by transplant centre/alliance

Transplant centre/alliance	2007-2008				2008-2009			
	Related donor	Unrelated donor	TOTAL N	% list	Related donor	Unrelated donor	TOTAL N	% list
Belfast	9	1	10	4	5	3	8	3
Birmingham	45	19	64	11	32	30	62	12
Bristol	20	14	34	11	18	18	36	13
Cambridge	15	9	24	9	15	29	44	16
Cardiff	18	12	30	11	25	6	31	12
Coventry	9	16	25	17	19	19	38	28
Edinburgh	17	12	29	10	13	6	19	6
Glasgow	23	11	34	11	21	7	28	9
Leeds	24	12	36	10	22	17	39	10
Leicester	27	16	43	12	22	24	46	12
Liverpool	18	6	24	11	24	4	28	12
Manchester	37	12	49	9	27	15	42	8
Newcastle	23	8	31	12	24	17	41	18
North Thames	73	58	131	13	93	56	149	15
Nottingham	7	7	14	6	11	4	15	8
Oxford	18	13	31	7	29	15	44	11
Plymouth	10	9	19	19	7	9	16	15
Portsmouth	11	7	18	9	11	10	21	11
Sheffield	10	7	17	8	12	8	20	9
South Thames	69	48	117	17	76	58	134	22
TOTAL	483	297¹	780	11	507	356²	863³	13

¹ Includes 4 paired/pooled kidney transplants and 6 altruistic kidney transplants

² Includes 16 paired/pooled kidney transplants and 15 altruistic kidney transplants

³ Includes 2 transplants performed at The London Clinic.

The number of deceased heartbeating and living donor transplants in paediatric patients (<18 years) performed by each paediatric transplant centre is shown in **Table 3.7**. The number of living donor paediatric transplants, at 64 in 2008-2009, is slightly higher than last year. The number of deceased heartbeating donor transplants increased to 75 from 62 in 2007-2008. The paediatric transplant list has decreased by 10% from 119 patients at 31 March 2008 to 107 at the end of March 2009.

At 31 March 2009, there were about 25,000 recipients with a functioning kidney transplant (or multi-organ including a kidney) being followed-up.

Table 3.7 Paediatric patient kidney transplants in the UK, 1 April 2007 - 31 March 2009, by transplant centre

Paediatric transplant centre	2007-2008				2008-2009			
	HB donor	NHB donor	Living donor	TOTAL	HB donor	NHB donor	Living donor	TOTAL
Belfast	2	0	1	3	5	0	0	5
Birmingham	12	0	3	15	10	0	6	16
Bristol	3	1	4	8	9	0	6	15
Glasgow	2	0	6	8	7	0	8	15
Great Ormond Street	10	0	10	20	9	0	11	20
Guy's	7	0	7	14	2	0	12	14
Leeds	8	0	4	12	11	2	2	15
Manchester	4	0	5	9	4	0	12	16
Newcastle	3	0	5	8	2	0	1	3
Nottingham	7	0	5	12	10	0	4	14
Adult centres	4	0	1	5	6	0	2	8
TOTAL	62	1	51	114	75	2	64	141

Rates of pre-emptive kidney only transplantation are shown in **Table 3.8**. Of the 2,330 kidney only transplant recipients in 2008-2009, dialysis status at transplant was reported for 2,220 (95.3%). Of these 2,220 transplants, 372 (17%) were carried out in pre-dialysis patients. Pre-emptive transplants accounted for 25% of all paediatric kidney only transplants with reported dialysis status, compared with 16% of those in adults. Pre-emptive transplants also accounted for a higher proportion of living donor transplants than deceased donor transplants: 31% and 8% respectively.

Table 3.8 Pre-emptive kidney only transplants in the UK, 1 April 2008 - 31 March 2009

	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	1329	1312 (98.7)	7.3
Living donor transplant	863	788 (91.3)	28.4
Paediatric			
Deceased donor transplant	74	69 (93.2)	14.9
Living donor transplant	64	51 (79.7)	29.7

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 all percentages quoted are based only on data where ethnicity information was available. Differences in ethnicity of heartbeating donors, transplant recipients and patients listed for transplant are clear.

Ethnicity	Donors		Transplant recipients				Active transplant list patients					
	2007-2008		2008-2009		2007-2008		2008-2009		2008		2009	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
White	568	(95.6)	554	(94.9)	934	(83.5)	867	(79.1)	5298	(76.0)	5378	(74.8)
Asian	10	(1.7)	12	(2.1)	101	(9.0)	138	(12.6)	998	(14.3)	1077	(15.0)
Black	11	(1.9)	7	(1.2)	62	(5.5)	70	(6.4)	507	(7.3)	552	(7.7)
Chinese	1	(0.2)	2	(0.3)	10	(0.9)	8	(0.7)	74	(1.1)	78	(1.1)
Other	4	(0.7)	9	(1.5)	11	(1.0)	13	(1.2)	98	(1.4)	104	(1.4)
Not reported	0	-	0	-	0	-	0	-	5	-	1	-
TOTAL	594		584		1118		1096		6980		7190	

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 and patients listed for transplant than female, 59% compared with 41%. Over 30% of donors, recipients and patients on the transplant list were aged 35-49 years.

	Age group (years)					TOTAL	
	0-17	18-34	35-49	50-59	60+		
Donors							
Male	24	70	85	73	56	308	(53%)
Female	16	48	92	67	53	276	(47%)
TOTAL	40 (7%)	118 (20%)	177 (30%)	140 (24%)	109 (19%)	584 (100%)	
Recipients							
Male	40	114	263	119	110	646	(59%)
Female	35	82	169	105	59	450	(41%)
TOTAL	75 (7%)	196 (18%)	432 (39%)	224 (20%)	169 (15%)	1096 (100%)	
Transplant list							
Male	61	489	1298	1149	1296	4293	(60%)
Female	46	357	862	748	884	2897	(40%)
TOTAL	107 (1%)	846 (12%)	2160 (30%)	1897 (26%)	2180 (30%)	7190 (100%)	

4 PANCREAS ACTIVITY

4.1 Overview

Throughout this section, multivisceral transplants that used a pancreas are not included in the pancreas transplant activity reported. Any pancreata retrieved and used for such transplants are however included in the pancreas donor activity. In 2008/2009 there were 12 (10 liver, bowel and pancreas/multivisceral transplants (1 including kidney) and 2 modified multivisceral transplants).

A summary of activity for deceased heartbeating donor pancreas transplants and the transplant list for 1 April 1999 to 31 March 2009 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 increased significantly over the ten-year period, from 59 patients in 2000 to 293 patients in 2009. The number of pancreas donors and transplants has also increased steadily since 1999-2000 from 34 donors, resulting in 29 transplants, to 308 donors and 171 transplants in 2008-2009, although the actual number of transplants is less than in 2007-2008.

The proportion of pancreata retrieved that cannot be used for transplantation, is greater than in kidney, liver or heart transplantation. However, these pancreata also resulted in an additional 10 pancreas islet transplants.

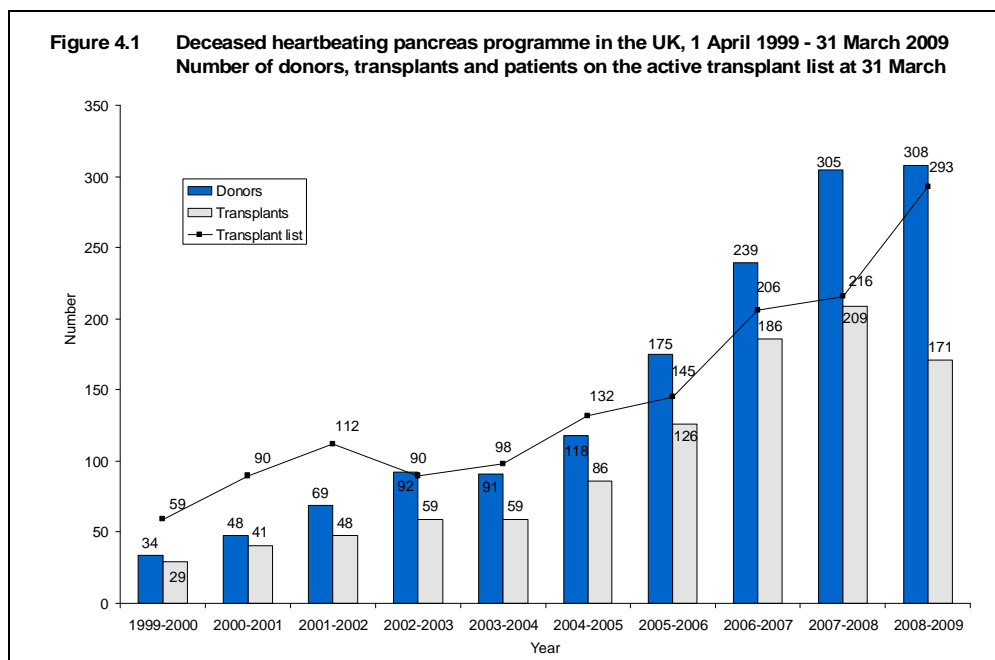


Table 4.1 shows the number of deceased pancreas donors and the number of pancreas transplants carried out in 2008-2009 at each centre by type of pancreas transplant. Compared with the previous financial year, the total number of deceased heartbeating pancreas donors increased to 308 in 2008-2009 from 305 in 2007-2008 and the number of deceased heartbeating donor transplants decreased to 171 from 209.

Table 4.1 Pancreas donors and transplants, 1 April 2008 - 31 March 2009 (2007-2008) and transplant list at 31 March 2009 (2008) in the UK, by centre

Centre	Deceased donors ¹				Deceased donor transplants ²						Active transplant list							
	HB		NHB		SPK		HB Pancreas only		Total				SPK		NHB Pancreas only		Total	
Cambridge	33	(22)	14	(3)	15	(20)	0	(0)	15	(20)	3	(0)	0	(0)	0	0	15	(9)
Cardiff	15	(20)	2	(2)	4	(16)	4	(7)	8	(23)	4	(2)	0	(1)	4	(3)	7	(3)
Edinburgh	24	(34)	3	(1)	16	(20)	0	(1)	16	(21)	0	(0)	0	(0)	0	0	15	(11)
Manchester	39	(46)	11	(11)	18	(23)	9	(5)	27	(28)	3	(3)	1	(5)	4	(8)	54	(48)
WLRTC	45	(26)	7	(8)	12	(6)	3	(8)	15	(14)	3	(2)	0	(1)	3	(3)	21	(17)
Newcastle	27	(20)	1	(1)	8	(11)	8	(0)	16	(11)	0	(0)	0	(0)	0	0	13	(10)
Oxford	71	(94)	25	(16)	38	(60)	13	(13)	51	(73)	3	(1)	12	(14)	15	(15)	146	(101)
Guy's	54	(43)	5	(11)	20	(17)	3	(2)	23	(19)	4	(7)	0	(0)	4	(7)	22	(17)
TOTAL	308	(305)	68	(53)	131	(173)	40	(36)	171	(209)	20	(15)	13	(21)	33	(36)	293	(216)

WLRTC - West London Renal and Transplant Centre

¹ Includes 18 (19) donors aged less than 8 or greater than 60 years in 2008-2009 (2007-2008)

² Includes 1 (4) transplants using organs from donors aged less than 8 or greater than 60 years in 2008-2009 (2007-2008)

4.2 Transplant list

The number of patients registered on the pancreas transplant list increased by 36% in the year: on 31 March 2009, 293 patients were registered active, compared with 216 at the end of March 2008

Of the 293 patients on the active transplant list at 31 March 2009, 253 required a SPK transplant (178 at 31 March 2008) and 40 patients were actively registered for a pancreas only transplant (38 at 31 March 2008).

The outcome of patients registered on the UK pancreas transplant list at 1 April 2008, or subsequently registered during the financial year, is shown in **Table 4.2**. Overall, 28% of patients waiting for a SPK transplant and 29% waiting for a pancreas only transplant had received a transplant by 31 March 2009.

Outcome of patient at 31 March 2009	Active and suspended patients at 1 April 2008		New registrations in 2008-2009 ¹		TOTAL	
	N	%	N	%	N	%
Pancreas transplant list						
Remained active/suspended	84	69	37	47	121	60
Transplanted	23	19	36	46	59	29
Removed	13 ²	11	4 ³	5	17	8
Died	2	2	2	3	4	2
TOTAL	122		79		201	
Kidney/pancreas transplant list						
Remained active/suspended	152	57	224	74	376	66
Transplanted	87	32	72	24	159	28
Removed	20	7	0	0	20	4
Died	9	3	5	2	14	2
TOTAL	268		301		569	

¹ Includes re-registrations for second or subsequent transplants
² Includes 2 registrations removed from pancreas list but active on kidney/pancreas list
³ Includes 3 registration removed from pancreas list but active on kidney/pancreas list

4.3 Donor and organ supply

In 2008-2009, there were 292 deceased heartbeating pancreas donors aged between 8 and 60 years, the age range where donor organs are generally suitable for pancreas transplantation. Note that prior to February 2008, 50 was the upper age limit for pancreas transplantation. This represents 58% of all deceased heartbeating solid organ donors aged between 8 and 60 years. Of 292 pancreata donated, 170 (58%) resulted in pancreas transplants. **Table 4.3** shows this activity by transplant centre.

Table 4.3 Pancreas donation and retrieval rates for deceased donors (aged 8 to 60 years) in the UK, 1 April 2008 - 31 March 2009, by centre

Centre	Donors		Pancreas donors (% of donors) ¹				Pancreas used (% of retrieved) ²			
	HB	NHB	HB		NHB		HB		NHB	
Cambridge	50	32	31	(62)	13	(41)	16	(52)	5	(38)
Cardiff	22	5	15	(68)	2	(40)	9	(60)	2	(100)
Edinburgh	54	20	24	(44)	3	(15)	16	(67)	2	(67)
Manchester	81	40	38	(47)	11	(28)	23	(61)	6	(55)
WLRTC	65	24	44	(68)	7	(29)	25	(57)	5	(71)
Newcastle	43	10	27	(63)	1	(10)	17	(63)	0	(0)
Oxford	113	78	65	(58)	24	(31)	37	(57)	11	(46)
Guy's	75	19	48	(64)	5	(26)	27	(56)	2	(40)
TOTAL	503	228	292	(58)	66	(29)	170	(58)	33	(50)

WLRTC - West London Renal and Transplant Centre

¹ There were an additional 16 HB and 2 NHB pancreas donors outside of the 8 - 60 age range

² There was an additional 1 HB pancreata transplanted from a donor outside of the 8 - 60 age range

4.4 Transplants

There were 171 deceased heartbeating donor pancreas transplants in 2008-2009 a decrease of 18% on the 209 transplants performed in 2007-2008. Of these 171, 131 (77%) were SPK transplants. The number of transplants performed at each centre is shown in **Table 4.3**.

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 4.4% of the active pancreas transplant list at 31 March 2009 and 4.7% of pancreas transplant recipients in 2008-2009.

Table 4.4 Ethnicity of deceased heartbeating pancreas donors and recipients, 1 April 2007 - 31 March 2009, and transplant list patients at 31 March in the UK

Ethnicity	Donors				Transplant recipients				Active transplant list patients			
	2007-2008		2008-2009		2007-2008		2008-2009		2008		2009	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
White	287	(94.1)	294	(95.5)	195	(93.3)	158	(92.4)	200	(92.6)	274	(93.5)
Asian	6	(2.0)	3	(1.0)	9	(4.3)	8	(4.7)	15	(6.9)	13	(4.4)
Black	8	(2.6)	4	(1.3)	2	(1.0)	3	(1.8)	1	(0.5)	2	(0.7)
Chinese	1	(0.3)	1	(0.3)	2	(1.0)	0	(0.0)	0	(0.0)	0	(0.0)
Other	3	(1.0)	6	(1.9)	1	(0.5)	2	(1.2)	0	(0.0)	4	(1.4)
TOTAL	305		308		209		171		216		293	

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, 53% compared with 47%. There were 16 pancreas donors outside the preferred age range of 8 to 60 years, 1 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.

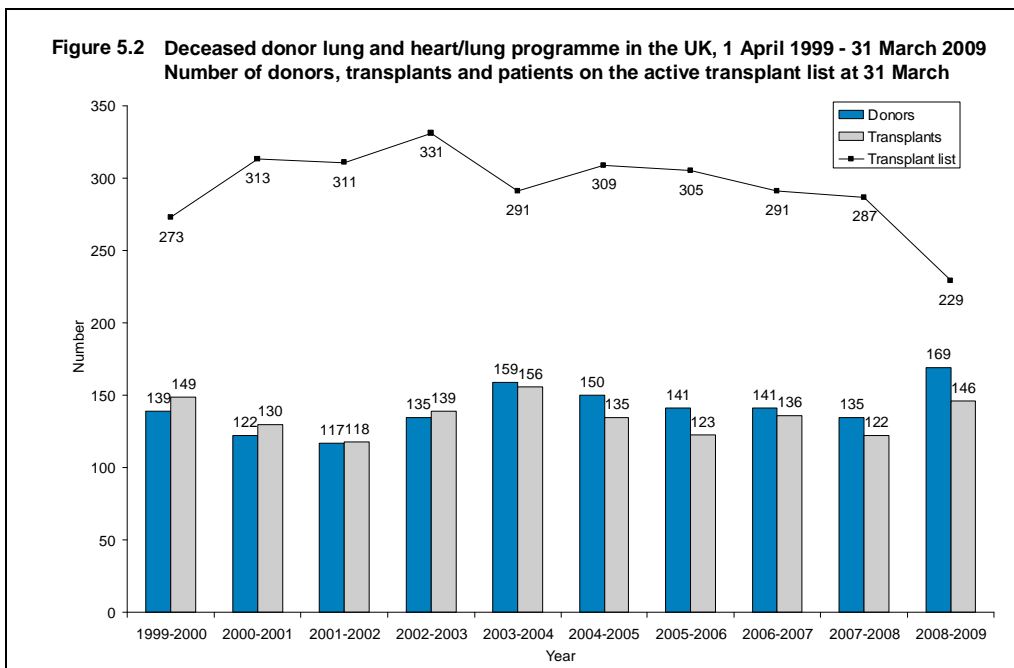
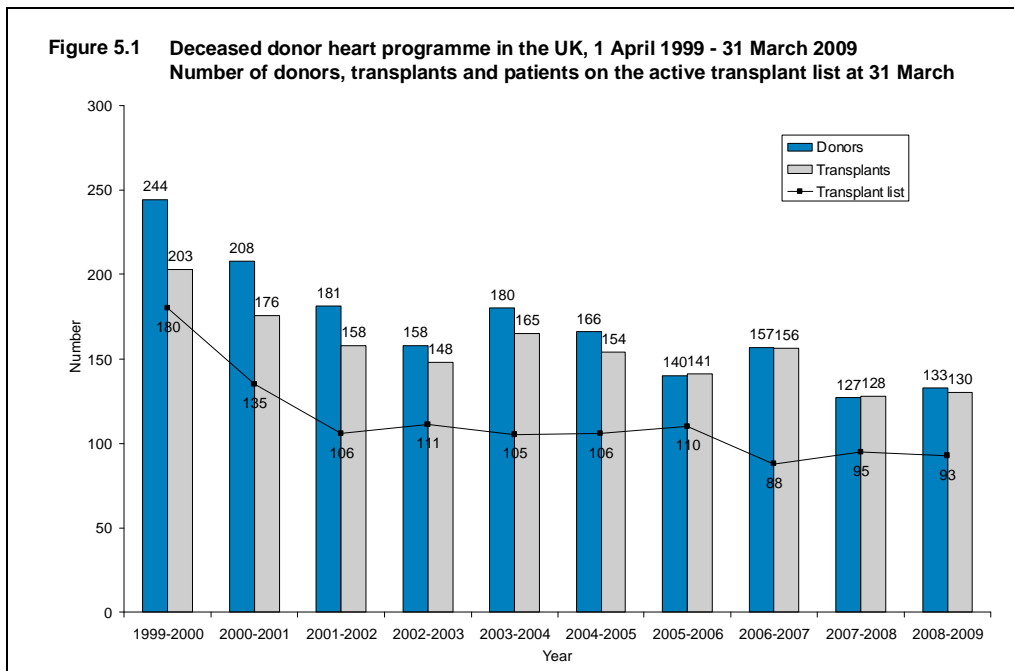
Table 4.5 Age and sex of deceased heartbeating pancreas donors and transplant recipients, 1 April 2008 - 31 March 2009, and transplant list patients at 31 March 2009

	Age group (years)						TOTAL
	<8	8-17	18-34	35-50	51-60	60+	
Donors							
Male	5	15	50	48	24	7	149 (48%)
Female	0	11	43	72	29	4	159 (52%)
TOTAL	5 (2%)	26 (8%)	93 (30%)	120 (39%)	53 (17%)	11 (4%)	308 (100%)
Recipients							
Male	0	0	13	68	8	2	91 (53%)
Female	0	0	14	49	16	1	80 (47%)
TOTAL	0 (-)	0 (-)	27 (16%)	117 (68%)	24 (14%)	3 (2%)	171 (100%)
Transplant list							
Male	0	0	25	117	30	3	175 (60%)
Female	0	0	20	77	20	1	118 (40%)
TOTAL	0 (-)	0 (-)	45 (15%)	194 (66%)	50 (17%)	4 (1%)	293 (100%)

5 CARDIOTHORACIC ACTIVITY

5.1 Overview

A summary of the deceased donor cardi thoracic activity from 1 April 1999 to 31 March 2009 is shown in **Figure 5.1** for heart activity and **Figure 5.2** for lung activity. Donors who donate both heart and lung(s) are included in both figures, but heart/lung block transplants and patients active on the transplant list for a heart/lung block are only included in **Figure 5.2**.



The number of patients registered on the active transplant list at 31 March for a heart transplant has decreased by 48% since 2000, and the number of patients registered for a lung or heart/lung transplant has decreased by 27%. In 2008-2009 there were 130 heart transplants and 146 lung or heart/lung transplants from deceased donors. This represents a 2% and 20% increase, respectively, 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 2009 by centre. The lung transplant list accounts for 67% of the patients waiting for a cardiothoracic transplant. Overall, Newcastle and Harefield have the largest cardiothoracic lists.

The outcome of patients registered at 1 April 2008 and throughout the subsequent year is shown in **Table 5.2**. Of the 760 patients on the transplant list for a cardiothoracic organ in 2008-2009, 330 (43%) were still waiting at the end of the year, 271 (36%) had received a transplant and 159 (21%) had either died or been removed from the transplant list.

Centre	Active transplant lists						TOTAL	
	Heart		Heart/lung		Lung			
Birmingham	6	(8)	1	(3)	10	(11)	17	(22)
Glasgow	2	(1)	0	(0)	0	(0)	2	(1)
Great Ormond Street	11	(9)	0	(2)	9	(9)	20	(20)
Harefield	23	(22)	3	(4)	58	(85)	84	(111)
Manchester	14	(6)	1	(2)	45	(60)	60	(68)
Newcastle ¹	15	(24)	3	(5)	73	(87)	91	(116)
Papworth	22	(25)	4	(2)	22	(17)	48	(44)
TOTAL	93	(95)	12	(18)	217	(269)	322	(382)

¹ Adult and paediatric patients on the transplant list

**Table 5.2 Cardiothoracic transplant lists and new registrations in the UK,
1 April 2008 - 31 March 2009**

Outcome of patient at 31 March 2009	Active and suspended patients at 1 April 2008		New registrations in 2008-2009 ¹		TOTAL	
	N	%	N	%	N	%
Heart transplant list						
Remained active/suspended	29	30	68	36	97	34
Transplanted	42	43	82	44	124	44
Removed	17	18	28	15	45	16
Died	9	9	9	5	18	6
TOTAL	97		187		284	
Heart/lung transplant list						
Remained active/suspended	8	53	6	60	14	56
Transplanted ²	2	13	4	40	6	24
Removed	3	20	0	0	3	12
Died	2	13	0	0	2	8
TOTAL	15		10		25	
Lung transplant list						
Remained active/suspended	102	40	117	60	219	49
Transplanted	88	34	53	27	141	31
Removed	28	11	8	4	36	8
Died	39	15	16	8	55	12
TOTAL	257		194		451	

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 2008 - 31 March 2009 (2007-2008), by age group and retrieval centre

Retrieval centre	Type of cardiothoracic donor						TOTAL	
	Heart only		Heart and lung		Lung(s) only			
Adult								
Birmingham	15	(10)	5	(10)	18	(12)	38	(32)
Glasgow	4	(9)	7	(2)	8	(3)	19	(14)
Harefield	7	(8)	6	(7)	26	(18)	39	(33)
Manchester	8	(11)	7	(9)	4	(10)	19	(30)
Newcastle	10	(11)	6	(11 ²)	23	(16)	39	(38 ²)
Papworth	26	(16)	18	(12 ²)	31	(13)	75	(41 ²)
Other European countries	1	(0)	1	(1)	0	(1)	2	(2)
TOTAL	73¹	(65)	50	(52^{1,2})	115^{1,3}	(78^{1,4})	238^{1,3}	(195^{1,2,4})
Paediatric								
Birmingham	1	(0)	0	(0)	0	(0)	1	(0)
Glasgow	1	(0)	0	(3)	0	(0)	1	(3)
Great Ormond Street	1	(2)	1	(0)	0	(0)	2	(2)
Manchester	1	(0)	0	(0)	1	(1)	2	(1)
Newcastle	4	(3)	0	(2)	0	(1)	4	(6)
Papworth	0	(0)	0	(0)	1	(0)	1	(0)
Other European countries	0	(0)	1	(0)	0	(0)	1	(0)
TOTAL	8	(5)	2	(5)	2	(2⁵)	12	(12⁵)

Paediatric donors are aged 14 years or under

¹ Includes organs retrieved by other centres

² Includes 1 heart and lung donor whose heart was retrieved by Papworth and lung retrieved by Newcastle

³ Includes 17 non-heartbeating donors

⁴ Includes 2 living lung donors and 6 non-heartbeating donors

⁵ Includes 1 non-heartbeating donor

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**. 17 of the 115 adult lung only donors were non-heartbeating donors, and there were no living donors. Of the 221 adult deceased heartbeating cardiothoracic donors, 33% donated only the heart, 23% heart and lung and 44% lung only. Of the 12 paediatric deceased heartbeating cardiothoracic donors, 67% donated only the heart, 17% heart and lung and 17% 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 612 heartbeating solid organ donors, 38% donated cardiothoracic organs. Overall, 86% of the 426 organs retrieved were transplanted: 97% of hearts and 81% of lungs.

Donation zone	Number of donors		Number of organs retrieved (used)				TOTAL retrieved (used)	
	Heartbeating solid organ	Cardiothoracic	Hearts		Lungs			
Birmingham	97	41	22	(22)	47	(42)	69	(64)
Glasgow	51	20	12	(12)	28	(26)	40	(38)
Harefield	132	36	15	(15)	55	(36)	70	(51)
Manchester	79	24	17	(16)	26	(22)	43	(38)
Newcastle ¹	81	35	20	(19)	42	(38)	62	(57)
Papworth	172	77	47	(45)	95	(74)	142	(119)
TOTAL	612	233	133	(129)	293	(238)	426	(367)

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 3.9 pmp in 2008-2009 and varied across the donation zones from 2.7 pmp to 5.1 pmp.

Table 5.5 Deceased heartbeating cardiothoracic organ donation rates per million population (pmp) in the UK, 1 April 2008 - 31 March 2009, by donation zone

Donation zone	Heartbeating solid organ donors pmp	Cardiothoracic donors pmp		
		Heart	Lung	Total
Birmingham	9.9	2.2	2.4	4.2
Glasgow	10.0	2.4	2.9	3.9
Harefield	9.8	1.1	2.1	2.7
Manchester	9.8	2.1	1.7	3.0
Newcastle	9.4	2.3	2.5	4.0
Papworth	11.3	3.1	3.2	5.1
TOTAL	10.2	2.2	2.5	3.9

5.4 Transplants

Table 5.6 shows cardiothoracic transplant activity for each centre. In 2008-2009, 276 transplants were carried out, an increase of 10% on 2007-2008. Of these, 47% were deceased donor heart transplants. Four adult non-heartbeating lung transplants were performed by Harefield, seven by Newcastle and one by Papworth.

Table 5.6 Cardiothoracic transplants, 1 April 2008 - 31 March 2009 (2007-2008), by age group and centre

Transplant centre	Transplant type								TOTAL	
	Heart		Urgent		Heart/lung		Lung(s)			
	Non-urgent									
Adult										
Birmingham	10	(12)	3	(6)	0	(3)	10	(9)	23	(30)
Glasgow	0	(5)	6	(4)	0	(0)	0	(0)	6	(9)
Great Ormond Street	1	(1)	0	(0)	0	(0)	2	(1)	3	(2)
Harefield	4	(14)	8	(8)	0	(0)	34	(29)	46	(51)
Manchester	8	(7)	6	(6)	0	(0)	20	(18)	34	(31)
Newcastle	10	(13)	9	(8)	0	(3)	45	(34)	64	(58)
Papworth	21	(9)	10	(8)	2	(1)	26	(19)	59	(37)
TOTAL	54¹	(61)	42	(40)	2	(7)	137²	(110³)	235²	(218³)
Paediatric										
Great Ormond Street	9	(7)	11 ⁴	(6)	1	(0)	6	(5)	27	(18)
Newcastle	8	(3)	6	(11)	0	(0)	0	(1)	14	(15)
TOTAL	17	(10)	17	(17)	1	(0)	6	(6⁵)	41	(33⁵)

Paediatric recipients are aged under 16 years at time of transplant

¹ Includes 1 heart and kidney transplant

² Includes 12 NHB donor transplants

³ Includes 1 living lung donor transplant and 4 NHB donor transplants

⁴ Excludes 1 transplant performed by Great Ormond Street in Dublin

⁵ Includes 1 NHB donor transplant

There were 42 adult urgent heart transplants in 2008-2009, representing 44% of all adult heart transplants and ranging from 23% at Birmingham to 100% at Glasgow. There were 17 paediatric urgent heart transplants in 2008-2009, representing 50% of all paediatric heart transplants.

At 31 March 2009 there were about 3,500 recipients with a functioning cardiothoracic organ (or multi-organ including a heart and/or lung) transplant being followed-up.

5.5 Demographic characteristics

The ethnicity of cardiothoracic donors, transplant recipients and patients on the transplant list is shown in **Table 5.7**. While 4.4% of donors in 2008-2009 were non-white, 5.9% of the transplant list at 31 March 2009 was non-white.

Ethnicity	Donors		Transplant recipients				Active transplant list patients					
	2007-2008		2008-2009		2007-2008		2008-2009		2008		2009	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
White	194	(93.7)	239	(95.6)	237	(94.4)	254	(92.0)	357	(93.5)	303	(94.1)
Asian	3	(1.4)	4	(1.6)	8	(3.2)	11	(4.0)	11	(2.9)	12	(3.7)
Black	5	(2.4)	2	(0.8)	4	(1.6)	6	(2.2)	10	(2.6)	4	(1.2)
Chinese	0	(0.0)	1	(0.4)	1	(0.4)	3	(1.1)	1	(0.3)	1	(0.3)
Other	5	(2.4)	4	(1.6)	1	(0.4)	2	(0.7)	3	(0.8)	2	(0.6)
TOTAL	207		250		251		276		382		322	

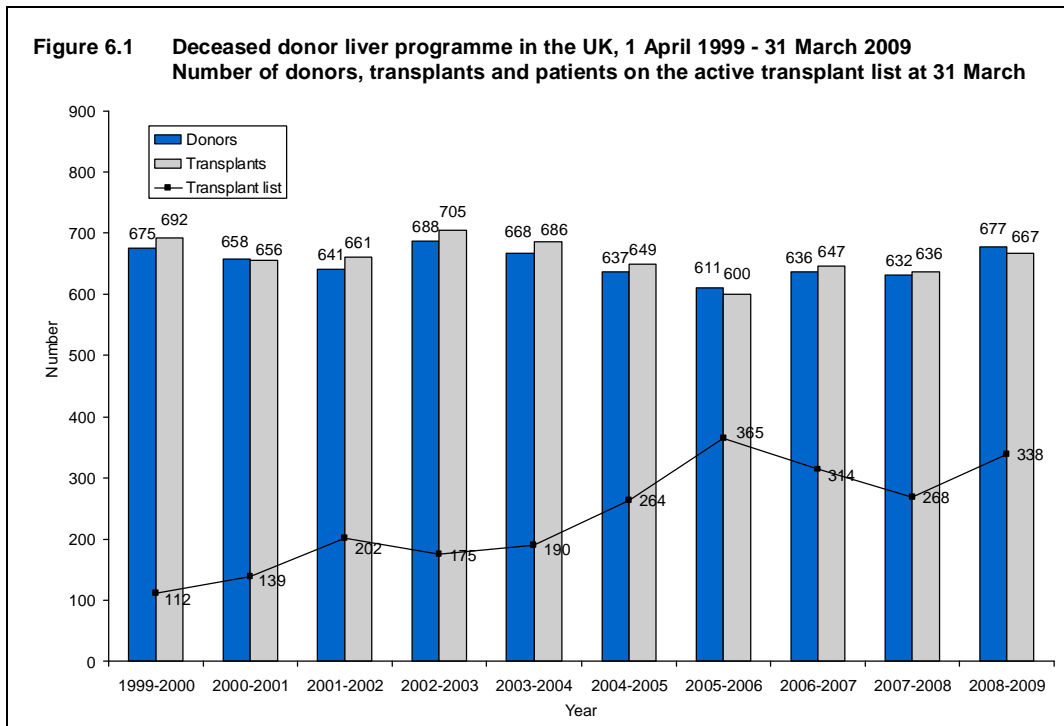
Of the 276 cardiothoracic recipients, 58% were male compared with 50% of donors and 56% of the transplant list; see **Table 5.8**. Of the 250 cardiothoracic donors, 35% were in the 35 to 49 years age group compared with 24% of recipients and 26% of the transplant list.

	Age group (years)					TOTAL	
	0-17	18-34	35-49	50-59	60+		
Donors							
Male	15	46	33	24	6	124	(50%)
Female	8	28	54	27	9	126	(50%)
TOTAL	23 (9%)	74 (30%)	87 (35%)	51 (20%)	15 (6%)	250 (100%)	
Recipients							
Male	16	27	42	45	31	161	(58%)
Female	29	34	25	18	9	115	(42%)
TOTAL	45 (16%)	61 (22%)	67 (24%)	63 (23%)	40 (14%)	276 (100%)	
Transplant list							
Male	10	32	50	57	30	179	(56%)
Female	14	35	35	45	14	143	(44%)
TOTAL	24 (7%)	67 (21%)	85 (26%)	102 (32%)	44 (14%)	322 (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**. Although there has been an overall increase in the number of patients on the active transplant list since 2000, the number of patients on the list at 31 March has decreased by 7% since 2006.



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 2008-2009, 677 solid organ donors donated their liver for transplant: 559 heartbeating and 118 non-heartbeating. There were 338 patients on the active transplant list at 31 March 2009, including five for liver, bowel and pancreas/multivisceral transplants, an increase of 26% from 2008.

Overall, the number of heartbeating donor liver transplants, including 10 liver, bowel and pancreas/multivisceral transplants, increased by 3% to 587, and the number of non-heartbeating donor transplants increased by 18% to 80, compared with the previous financial year. Additionally, there were 27 living liver lobe donor transplants in NHS Group 1 (19) and Group 2 (8) paediatric and adult recipients and 7 domino donor transplants in NHS Group 1 (5) and Group 2 (2) adult recipients. There were 81 adult super-urgent transplants in 2008-2009, representing 14% of all adult transplants, ranging from 9% at Leeds to 21% at Newcastle. There were 15 paediatric super-urgent transplants in 2008-2009, representing 17% of all paediatric transplants, ranging from 6% at Leeds to 22% at King's College.

Table 6.1 Deceased and living liver donors and transplants, 1 April 2008 - 31 March 2009 (2007-2008) and transplant list patients at 31 March 2009 (2008) in the UK, by age group and centre

Retrieval/ transplant centre	Deceased donors						Deceased transplants						Living donor transplants		Active transplant list	
	HB		NHB		TOTAL		HB		NHB		TOTAL					
Adult																
Birmingham	103	(126)	23	(10)	126	(136)	98	(120)	22	(9)	120	(129)	1	(0)	50	(35)
Cambridge	72	(63)	11	(6)	83	(69)	66	(57)	6	(3)	72	(60)	0	(0)	25	(22)
Edinburgh	55	(39)	10	(5)	65	(44)	57	(53)	5	(6)	62	(59)	0	(1)	17	(22)
King's College	134	(136)	37	(42)	171	(178)	118	(127)	20	(28)	138	(155)	9	(6)	92	(71)
Leeds	61	(55)	9	(11)	70	(66)	60	(57)	6	(13)	66	(70)	2	(3)	90	(51)
Newcastle	38	(42)	6	(2)	44	(44)	39	(22)	4	(2)	43	(24)	0	(0)	17	(8)
Royal Free	72	(62)	12	(4)	84	(66)	70	(58)	10	(4)	80	(62)	4	(0)	24	(23)
TOTAL	536¹	(525¹)	110¹	(80)	646¹	(605¹)	508	(494)	73	(65)	581	(559)	16²	(10³)	315	(232)
Paediatric																
Birmingham	11	(8)	1	(2)	12	(10)	31	(26)	1	(1)	32	(27)	0	(0)	9	(10)
Cambridge	2	(2)	0	(0)	2	(2)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
Edinburgh	1	(3)	0	(0)	1	(3)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
King's College	3	(1)	3	(2)	6	(3)	32	(35)	5	(2)	37	(37)	16	(12)	13	(21)
Leeds	3	(2)	3	(3)	6	(5)	16	(13)	1	(0)	17	(13)	2	(2)	1	(5)
Newcastle	3	(2)	0	(0)	3	(2)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
Royal Free	0	(2)	1	(0)	1	(2)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
TOTAL	23	(20)	8	(7)	31	(27)	79	(74)	7	(3)	86	(77)	18⁴	(14⁵)	23	(36)

¹ Includes donors whose livers were retrieved by other teams

² Includes 4 and 5 living liver lobe transplants, and 5 and 2 domino transplants in NHS Group 1 and Group 2 recipients, respectively

³ Includes 3 and 3 living liver lobe transplants, and 1 and 3 domino transplants in NHS Group 1 and Group 2 recipients, respectively

⁴ Includes 15 and 3 living liver lobe transplants in NHS Group 1 and Group 2 recipients, respectively

⁵ Includes 10 and 4 living liver lobe transplants in NHS Group 1 and Group 2 recipients, respectively

6.2 Transplant list

The outcome of patients registered at 1 April 2008 and patients registered during the year is shown in **Table 6.2**. This includes patients registered for a liver, bowel and pancreas/multivisceral transplant. Of the 1,266 patients waiting on the list during 2008-2009, 55% were transplanted and 27% were still waiting at 31 March 2009.

Table 6.2 Liver transplant list and new registrations in the UK, 1 April 2008 – 31 March 2009

Outcome of patient at 31 March 2009	Active and suspended patients at 1 April 2008		New registrations in 2008-2009 ¹		TOTAL	
	N	%	N	%	N	%
	Remained active/suspended	37	14	306	31	343
Transplanted	168	62	532	53	700	55
Removed	50	19	77	8	127	10
Died	14	5	82	8	96	8
TOTAL	269		997		1266	

¹ Includes re-registrations for second or subsequent transplants

6.3 Donor and organ supply

Of the 900 solid organ donors, 677 (75%) donated their liver and 607 (90%) of these donated livers were transplanted; see **Table 6.3**. Of livers retrieved from heartbeating and non-heartbeating donors, 94% and 68% were transplanted, respectively.

Table 6.3 Deceased liver retrieval rates in the UK, 1 April 2008 - 31 March 2009, 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	HB	NHB	TOTAL
Birmingham	116	36	152	110	22	132	110	(104)	22	(17)	132	(121)
Cambridge	70	48	118	67	14	81	67	(58)	14	(7)	81	(65)
Edinburgh	63	21	84	58	10	68	58	(57)	10	(6)	68	(63)
King's College	151	94	245	138	38	176	138	(127)	38	(25)	176	(152)
Leeds	72	39	111	64	12	76	64	(63)	12	(8)	76	(71)
Newcastle	45	11	56	39	6	45	39	(39)	6	(4)	45	(43)
Royal Free	95	39	134	83	16	99	83	(79)	16	(13)	99	(92)
TOTAL	612	288	900	559	118	677	559	(527)	118	(80)	677	(607)

Table 6.4 shows the deceased solid organ and liver donor rates per million population for 2008-2009. Overall, the liver donor rate was 11.2 pmp and ranged from 8.6 to 16.9 pmp across the donation zones.

Table 6.4 Deceased liver donation rates per million population (pmp), 1 April 2008 - 31 March 2009, by donation zone

Donation zone	Solid organ donor pmp	Liver donor pmp
Birmingham	11.4	9.9
Cambridge	12.5	8.6
Edinburgh	16.5	13.4
King's College	16.4	11.8
Leeds	13.9	9.5
Newcastle	16.1	13.0
Royal Free	22.8	16.9
TOTAL	14.9	11.2

6.4 Transplants

The number of whole, reduced and split liver transplants, by urgency status of the transplant (elective, super-urgent) in 2008-2009 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 deceased donor liver transplants rose by 5% in 2008-2009. There were 667 deceased donor liver transplants performed in 2008-2009: 537 whole liver, including 8 liver and kidney, 8 liver, bowel and pancreas/multivisceral (1 including the kidney); and 130 deceased liver lobe, including 5 liver and kidney and 2 liver, bowel and pancreas/multivisceral. Split liver transplants accounted for 82% of liver lobe transplant activity.

Table 6.5 Deceased liver transplants performed in the UK, 1 April 2007 - 31 March 2009

Transplant centre	2007 - 2008								2008 - 2009							
	Whole liver		Reduced liver		Split liver		TOTAL		Whole liver		Reduced liver		Split liver		TOTAL	
	E	SU	E	SU	E	SU	E	SU	E	SU	E	SU	E	SU	E	SU
Birmingham	92	21	4	3	34	2	130	26	89	17	4	4	36	2	129	23
Cambridge	48	10	0	0	2	0	50	10	56	8	0	0	8	0	64	8
Edinburgh	42	8	1	0	8	0	51	8	47	8	0	0	7	0	54	8
King's College	128	26	2	3	27	6	157	35	104	22	4	7	36	2	144	31
Leeds	53	19	2	0	8	1	63	20	60	6	4	0	12	1	76	7
Newcastle	22	2	0	0	0	0	22	2	34	9	0	0	0	0	34	9
Royal Free	51	9	0	0	2	0	53	9	67	10	0	0	3	0	70	10
TOTAL	436	95	9	6	81	9	526	110	457	80	12	11	102	5	571	96

E=Elective, SU=Super-urgent
Birmingham, King's College and Leeds transplant paediatric patients

At 31 March 2009 there were about 7,600 recipients with a functioning liver transplants (or multi-organ including the liver) being followed-up.

6.5 Demographic characteristics

The ethnicity of liver donors, transplant recipients and transplant list patients is shown in **Table 6.6**. In 2008-2009, the proportion of Asian patients waiting on the transplant list was much greater than that of Asian donors, 10.1% compared with 3.2%, respectively.

Ethnicity	Donors		Transplant recipients				Active transplant list patients					
	2007-2008		2008-2009		2007-2008		2008-2009		2008		2009	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
White	621	(94.5)	661	(93.0)	549	(83.2)	559	(79.7)	222	(82.8)	284	(84.0)
Asian	14	(2.1)	23	(3.2)	65	(9.8)	91	(13.0)	28	(10.4)	34	(10.1)
Black	13	(2.0)	9	(1.3)	28	(4.2)	26	(3.7)	9	(3.4)	9	(2.7)
Chinese	1	(0.2)	1	(0.1)	6	(0.9)	6	(0.9)	0	(0.0)	2	(0.6)
Other	8	(1.2)	17	(2.4)	12	(1.8)	19	(2.7)	9	(3.4)	9	(2.7)
TOTAL	657		711		660		701		268		338	

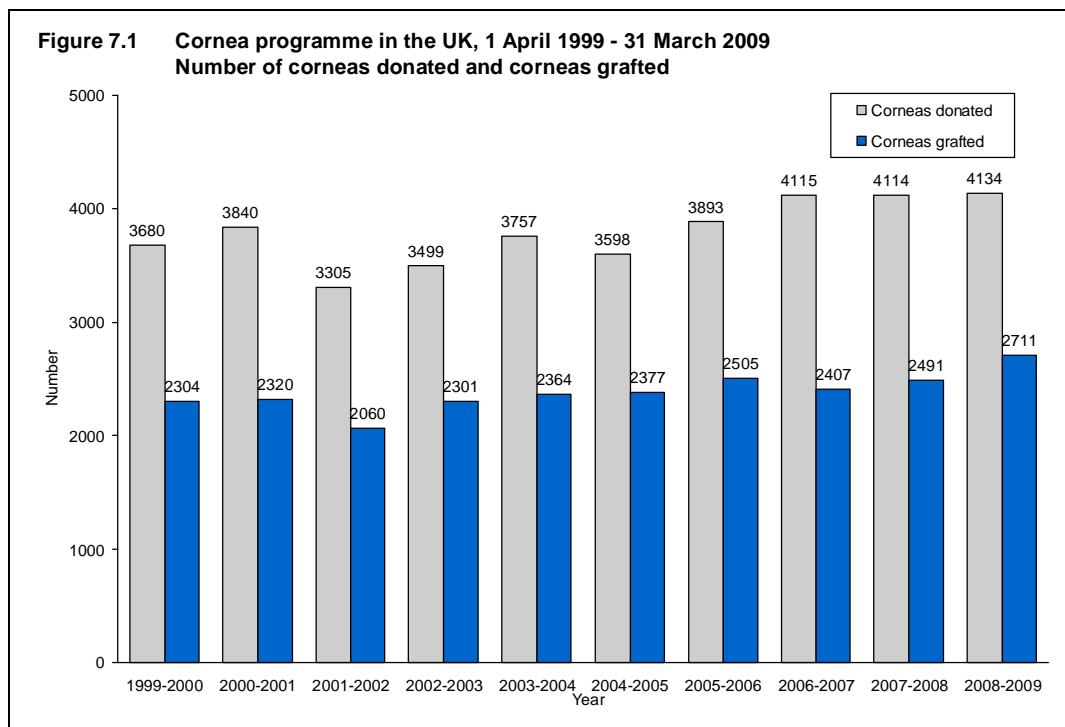
The age and sex distribution of donors and recipients in 2008-2009, and patients on the transplant list at 31 March 2009, are shown in **Table 6.7**. The 35-49 year age group had the largest proportion of donors (29%), and the 50-59 year age group had the largest proportion of patients transplanted (30%) and patients on the transplant list (36%).

	Age group (years)						TOTAL
	0-17	18-34	35-49	50-59	60+		
Donors							
Male	31	112	98	76	62	380	(53%)
Female	24	68	106	80	53	331	(47%)
TOTAL	55	(8%)	180	(25%)	204	(29%)	156
							(22%)
							115
							(16%)
							711
							(100%)
Recipients							
Male	52	44	103	133	94	426	(61%)
Female	56	40	58	80	41	275	(39%)
TOTAL	108	(15%)	84	(12%)	161	(23%)	213
							(30%)
							135
							(19%)
							701
							(100%)
Transplant list							
Male	13	12	56	75	56	212	(63%)
Female	11	13	28	47	27	126	(37%)
TOTAL	24	(7%)	25	(7%)	84	(25%)	122
							(36%)
							83
							(25%)
							338
							(100%)

7 CORNEA ACTIVITY

7.1 Overview

The number of corneas donated in 2008-2009 was 4,134, a 9% increase on last year, as shown in **Figure 7.1**. Additionally, 256 sclera were issued and used.



In 2008-2009 there were 2,075 cornea donors, of whom 1,826 donated corneas only and 249 donated corneas and solid organs: see **Table 7.1**. Compared to 2007-2008, the number of cornea only donors decreased by 35, and the number of cornea and solid organ donors increased by 49. In 2007-2008, corneas were retrieved from 23% of deceased heartbeating solid organ donors compared with 27% in 2008-2009. Of the 288 non-heartbeating solid organ donors in 2008-2009, 83 also donated corneas, 29% compared with 30% in 2007-2008

Table 7.1 also shows the number and rate per million population (pmp) of donors in 2008-2009 by country and English Strategic Health Authority (StHA), with figures for 2007-2008 in parentheses. England had the highest cornea donor rate in the UK in 2008-2009 (37.6 pmp). In 2008-2009, the cornea donor rate increased in Scotland but fell in Wales and Northern Ireland and remained constant in England. Across the StHAs the cornea donor rate ranged from 11.8 pmp to 109.3 pmp.

Table 7.1 Cornea donation rates per million population, pmp, in the UK, 1 April 2008 - 31 March 2009 (2007 - 2008), by country and English Strategic Health Authority

Country of residence/ Strategic Health Authority	Cornea only		Solid organ and cornea		TOTAL		TOTAL pmp	
North East	181	(206)	13	(15)	194	(221)	75.8	(86.3)
North West	387	(389)	28	(21)	415	(410)	60.6	(59.9)
Yorkshire and The Humber	74	(120)	16	(7)	90	(127)	17.8	(25.1)
East Midlands	117	(149)	6	(8)	123	(157)	28.5	(36.4)
West Midlands	53	(67)	12	(14)	65	(81)	12.1	(15.1)
East of England	140	(122)	24	(14)	164	(136)	29.6	(24.5)
London	47	(22)	42	(32)	89	(54)	11.8	(7.2)
South East Coast	85	(136)	16	(14)	101	(150)	24.0	(35.6)
South Central	79	(77)	20	(19)	99	(96)	25.1	(24.3)
South West	515	(425)	39	(32)	554	(457)	109.3	(90.1)
England	1678	(1713)	216	(176)	1894	(1889)	37.6	(37.5)
Isle of Man	0	(0)	0	(0)	0	(0)	0.0	(0.0)
Channel Islands	0	(1)	0	(0)	0	(1)	0.0	(6.7)
Wales	48	(55)	9	(9)	57	(64)	19.3	(21.6)
Scotland	97	(90)	20	(8)	117	(98)	23.0	(19.3)
Northern Ireland	3	(2)	4	(7)	7	(9)	4.1	(5.2)
TOTAL	1826	(1861)	249	(200)	2075	(2061)	34.5	(34.2)

7.2 Donor and tissue supply

In 2008-2009, 97.0% (97.4% in 2007-2008) of retrieved corneas reported to NHSBT 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 2008-2009. 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 2008 - 31 March 2009**

Centre	Corneas supplied	Suitable for PK (%)		Corneas taken	Balance
Bristol, Eye Hospital	377	248	(66)	58	319
Exeter, Royal Devon and Exeter Hospital	377	250	(66)	0	377
Newcastle, Royal Victoria Infirmary	232	157	(68)	41	191
Bolton, Royal Bolton Hospital	227	158	(70)	7	220
Norfolk and Norwich University Hospital	202	150	(74)	30	172
East Grinstead, Queen Victoria Hospital	164	106	(65)	21	143
Nottingham, University Hospital	158	108	(68)	69	89
Prescot, Whiston Hospital	156	85	(54)	0	156
Middlesbrough, James Cook University Hospital	152	104	(68)	7	145
Liverpool, Royal Liverpool University Hospital	115	66	(57)	101	14
London, Moorfields Eye Hospital	106	52	(49)	254	-148
Plymouth, Royal Eye Infirmary	105	70	(67)	29	76
Preston, Royal Preston Hospital	82	67	(82)	11	71
Edinburgh, Royal Infirmary	81	63	(78)	31	50
Manchester, Royal Eye Hospital	62	45	(73)	124	-62
Southampton, University Hospitals	50	43	(86)	45	5
Glasgow, Gartnavel General Hospital	42	34	(81)	82	-40
Reading, Royal Berkshire Hospital	40	31	(78)	24	16
Birmingham, Birmingham and Midland Eye Centre	40	32	(80)	75	-35
Newport, Royal Gwent Hospital	38	21	(55)	12	26
Leicester, Royal Infirmary	36	30	(83)	51	-15
Liverpool, Fazakerley Hospital	36	25	(69)	1	35
Swindon, Great Western Hospital	34	19	(56)	4	30
Oxford, John Radcliffe Hospital	34	26	(76)	30	4
Cambridge, Addenbrookes Hospital	32	19	(59)	8	24
Glasgow, Southern General Hospital	30	29	(97)	4	26
Hull, East Yorkshire Eye Hospital	28	18	(64)	39	-11
Torquay, Torbay Hospital	28	20	(71)	3	25
Lancaster, Royal Lancaster Hospital	28	13	(46)	0	28
Truro, Royal Cornwall Hospital (Treliske)	26	21	(81)	10	16
Stoke, North Staffordshire Royal Infirmary	26	19	(73)	5	21
Centres supplying more than 25 corneas	3144	2129	(68)	1176	1968
All other centres	866	619	(71)	1535	-669
TOTAL	4010	2748	(69)	2711	1299

PK - Penetrating keratoplasty

Of the 4,010 corneas supplied to the CTS Eye Banks, 2,748 (69%) were suitable for a PK. This was an increase compared with 2007-2008, when 66% of corneas supplied to the CTS Eye Banks were suitable for a PK.

7.3 CTS Eye Bank activity

The activity levels for the Bristol and Manchester Eye Banks are shown in **Table 7.3**. The numbers of corneas received by the CTS Eye Banks remained constant in 2008-2009, whereas the number of corneas issued increased by 7%. In 2008-2009, 4,010 corneas were received into the CTS Eye Banks, of which 2,881 (72%) were subsequently issued for grafting. The difference equates to corneas unsuitable for transplantation.

	Total received		Number issued ¹		% issued		Difference between number received and issued	
Bristol	1954	(1855)	1411	(1283)	72	(69)	543	(572)
Manchester	2056	(2155)	1470	(1415)	71	(66)	586	(740)
Total	4010	(4010)	2881	(2698)	72	(67)	1129	(1312)

¹ Number issued of those received in each year

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 2008-2009, 64% were issued with an endothelium suitable for penetrating keratoplasty (these corneas may have been used for penetrating keratoplasty, deep anterior lamellar keratoplasty or endothelial keratoplasty), 1% were issued that were suitable for lamellar grafts, 3% were issued for other types of grafts and 4% were issued but not used. Of the corneas supplied to the Eye Banks, 15% were unsuitable because of medication contraindications, 8% had endothelial deficiencies or stromal opacity and 4% 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 when permission had been given by the relatives.

7.4 Transplants

Corneal transplant activity by country of residence and Strategic Health Authority in England for the years 2007-2008 and 2008-2009 is detailed in **Table 7.5** for corneas supplied through the CTS Eye Banks. The overall transplant rate was 41.3 pmp in 2007-2008; this increased to 45.0 pmp in 2008-2009. The transplant rates increased in England, Scotland and Northern Ireland, but remained constant in Wales. England had the second highest transplant rate in the UK: 45.3 pmp, this ranged from 32.3 pmp to 68.4 pmp across the StHAs.

Table 7.4 Outcome of corneas received into the Bristol and Manchester Eye Banks, 1 April 2008 - 31 March 2009 (2007 - 2008), by year

Outcome of cornea	Bristol				Manchester				TOTAL			
	N		%		N		%		N		%	
Used												
Penetrating keratoplasty	1226	(1170)	63	(63)	1342	(1310)	65	(61)	2568	(2480)	64	(62)
Lamellar keratoplasty	14	(11)	1	(1)	25	(19)	1	(1)	39	(30)	1	(1)
Lathed lamellar lenticule	0	(0)	0	(0)	0	(1)	0	(<1)	0	(1)	0	(<1)
Other/ not reported	86	(19)	4	(1)	21	(11)	1	(1)	107	(30)	3	(1)
Total used	1326	(1200)	68	(65)	1388	(1341)	68	(62)	2714	(2541)	68	(63)
Not used												
Issued, not used	85	(83)	4	(4)	82	(74)	4	(3)	167	(157)	4	(4)
Unsuitable - endothelium, stromal, opacity, other	118	(184)	6	(10)	217	(220)	11	(10)	335	(404)	8	(10)
Medical reason - virology	198	(163)	10	(9)	175	(234)	9	(11)	373	(397)	9	(10)
Medical reason - other	120	(121)	6	(7)	118	(134)	6	(6)	238	(255)	6	(6)
Contaminated	107	(90)	5	(5)	61	(115)	3	(5)	168	(205)	4	(5)
Other/not reported	0	(14)	0	(1)	15	(37)	1	(2)	15	(51)	<1	(1)
Total not used	628	(655)	32	(35)	668	(814)	32	(38)	1296	(1469)	32	(37)
TOTAL	1954	(1855)			2056	(2155)			4010	(4010)		

Table 7.5 Cornea transplants¹ performed per million population (pmp) in the UK, 1 April 2007 - 31 March 2009, by country of residence and English Strategic Health Authority

Country of residence/ Strategic Health Authority	Number of transplants (pmp)			
	2007-2008		2008-2009	
North East	110	(43.0)	111	(43.4)
North West	318	(46.4)	351	(51.2)
Yorkshire and The Humber	309	(61.1)	346	(68.4)
East Midlands	205	(47.6)	208	(48.3)
West Midlands	188	(35.0)	222	(41.3)
East of England	231	(41.7)	220	(39.7)
London	279	(37.1)	326	(43.4)
South East Coast	138	(32.8)	165	(39.2)
South Central	187	(47.3)	173	(43.8)
South West	173	(34.1)	164	(32.3)
England	2138	(42.4)	2286	(45.3)
Isle of Man	3	(37.5)	4	(50.0)
Channel Islands	11	(73.3)	7	(46.7)
Wales	105	(35.5)	105	(35.5)
Scotland	142	(27.9)	192	(37.7)
Northern Ireland	63	(36.6)	86	(50.0)
TOTAL²	2489	(41.3)	2711	(45.0)

¹ Corneas supplied through the CTS Eye Banks

² Includes UK recipients where the postcode was unspecified and non-UK recipients

8 TRANSPLANT SURVIVAL

This chapter shows graft survival estimates for kidney, pancreas and cornea transplants, and patient survival for kidney, pancreas, 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, and for heartbeating and non-heartbeating donor organ recipients.

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. Graft survival is defined as time from transplant to graft failure, censoring for death with a functioning graft and grafts still functioning at time of analysis. Patient survival is defined as time from transplant to patient death, censoring for patients still alive at time of analysis.

8.1 Kidney graft and patient survival

8.1.1 Adult recipients

8.1.1.1 Deceased heartbeating donor transplants

Figure 8.1 shows long-term graft survival in adult (≥ 18 years) recipients for first deceased heartbeating donor kidney only transplants in the UK. **Table 8.1** shows the graft survival estimates and confidence intervals for one, two, five and ten years post-transplant. There have been significant improvements in one, two and five year survival over the year groups, $p < 0.001$ in each case.

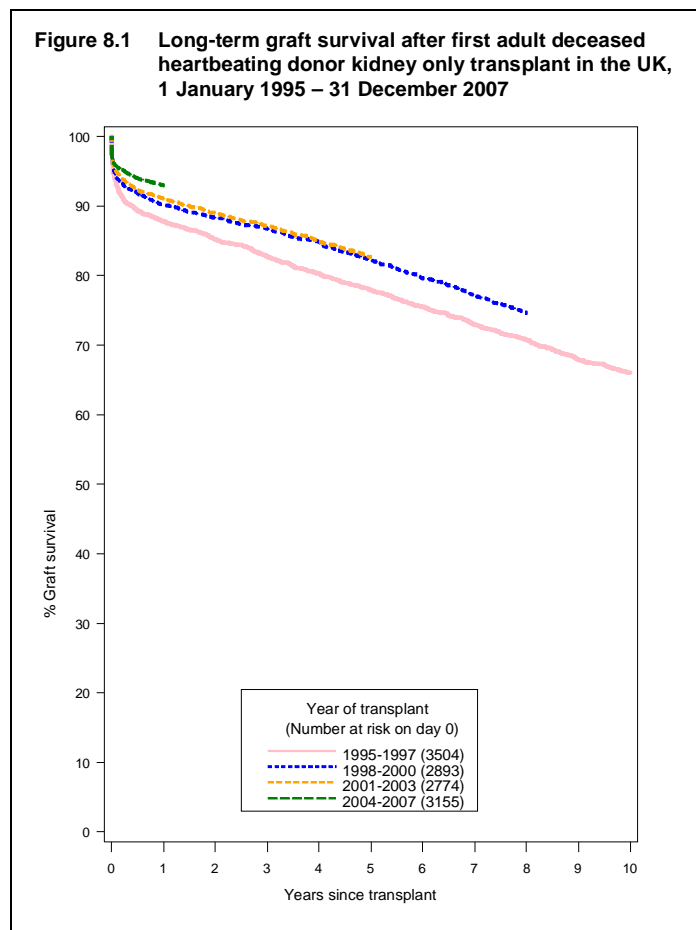


Table 8.1 Long-term graft survival after first adult deceased heartbeating donor kidney only transplant in the UK, 1 January 1995 - 31 December 2007

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval)							
		One year		Two year		Five year		Ten year	
1995-1997	3504	88	(87-89)	85	(84-86)	78	(76-79)	66	(64-68)
1998-2000	2893	90	(89-91)	88	(87-89)	82	(81-84)		
2001-2003	2773	91	(90-92)	89	(88-90)	83	(81-84)		
2004-2007	3155	93	(92-94)						

Table 8.2 shows the patient survival estimates and confidence intervals for one, two, five and ten years post-transplant. There have been significant improvements in one, two and five year survival over the year groups, $p < 0.001$ in each case.

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval)							
		One year		Two year		Five year		Ten year	
1995-1997	3504	93	(92-94)	91	(90-92)	83	(82-84)	68	(67-70)
1998-2000	2893	95	(94-96)	93	(92-94)	87	(86-88)		
2001-2003	2773	95	(94-96)	93	(92-94)	88	(86-89)		
2004-2007	3155	97	(96-97)						

8.1.1.2 Deceased non-heartbeating donor transplants

Long-term graft survival in adult recipients for non-heartbeating donor kidney transplants in the UK is shown in **Figure 8.2**.

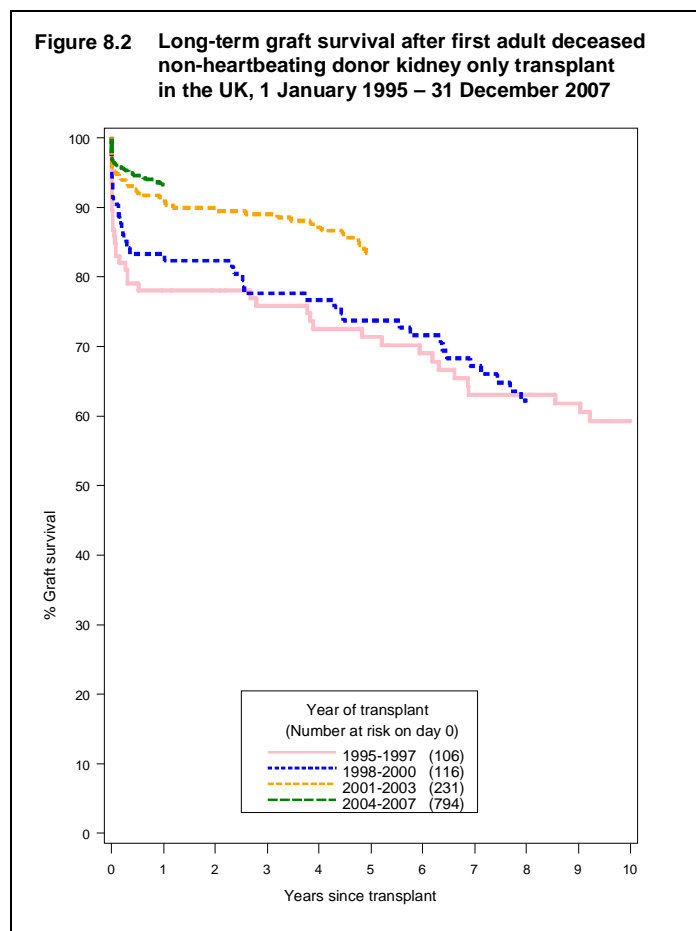


Table 8.3 shows the graft survival estimates and confidence intervals for one, two, five and ten years post-transplant. There has been a significant improvement in one, two and five year survival over the year groups, $p < 0.01$. One, two and five year graft survival is comparable with that for heartbeating donor transplants in the most recent time periods.

Table 8.3 Long-term graft survival after first adult deceased non-heartbeating donor kidney only transplant in the UK, 1 January 1995 - 31 December 2007									
Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval)							
		One year		Two year		Five year		Ten year	
1995-1997	106	78	(69-85)	78	(69-85)	71	(61-79)	59	(49-69)
1998-2000	116	83	(75-89)	82	(74-88)	74	(64-81)		
2001-2003	231	91	(87-94)	90	(85-93)	83	(78-88)		
2004-2007	794	93	(91-95)						

Table 8.4 shows the patient survival estimates and confidence intervals for each year group. There has been a significant improvement in one and two year survival over the year groups, $p < 0.05$.

Table 8.4 Long-term patient survival after first adult deceased non-heartbeating donor kidney only transplant in the UK, 1 January 1995 - 31 December 2007									
Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval)							
		One year		Two year		Five year		Ten year	
1995-1997	106	88	(80-93)	85	(76-91)	76	(67-84)	66	(55-74)
1998-2000	116	92	(85-96)	90	(83-95)	84	(75-89)		
2001-2003	231	95	(92-98)	94	(90-96)	86	(80-90)		
2004-2007	794	96	(94-97)						

8.1.1.3 Living donor transplants

Long-term graft survival in adult recipients for living donor kidney transplants in the UK is shown in **Figure 8.3**. **Table 8.5** shows graft survival estimates and confidence intervals for each year group. There were no statistically significant differences in graft survival across the year groups ($p>0.05$), although the difference was of borderline significance at 5 years ($p=0.053$).

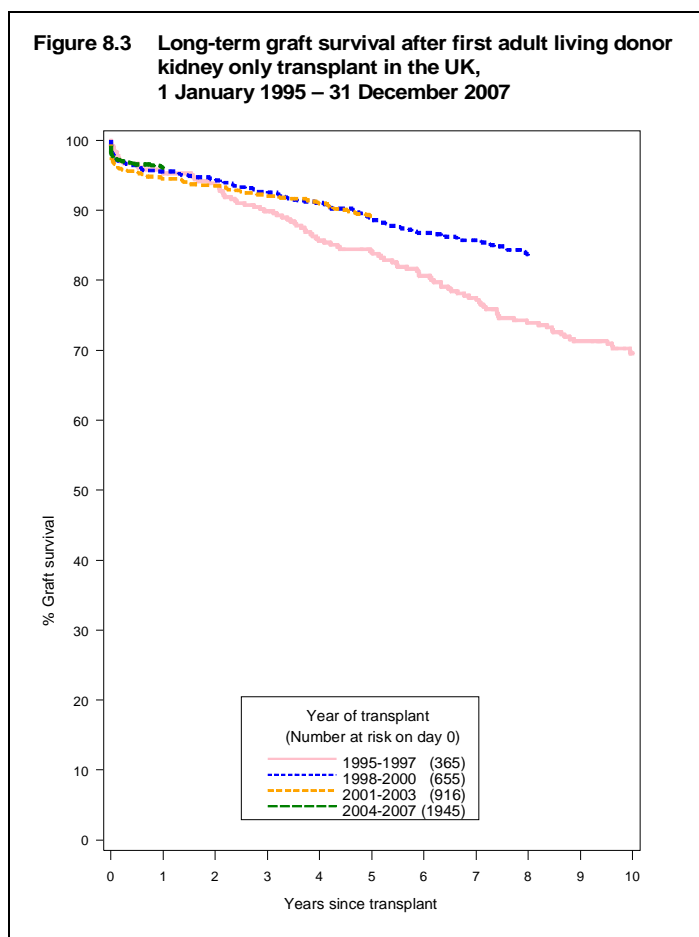


Table 8.5 Long-term graft survival after first adult living donor kidney transplant in the UK, 1 January 1995 - 31 December 2007

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval)							
		One year		Two year		Five year		Ten year	
1995-1997	365	95	(93-97)	94	(91-96)	84	(80-88)	70	(64-74)
1998-2000	655	96	(94-97)	94	(92-96)	89	(86-91)		
2001-2003	916	95	(93-96)	94	(92-95)	89	(87-91)		
2004-2007	1945	96	(95-97)						

Table 8.6 shows the patient survival estimates and confidence intervals for one, two, five and ten years post transplant. There were no statistically significant differences in patient survival across the year groups ($p>0.1$).

Table 8.6 Long-term patient survival after first adult living donor kidney transplant in the UK, 1 January 1995 - 31 December 2007

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval)							
		One year		Two year		Five year		Ten year	
1995-1997	365	98	(96-99)	97	(95-99)	94	(91-96)	87	(82-90)
1998-2000	655	98	(96-99)	98	(96-98)	95	(93-97)		
2001-2003	916	98	(97-99)	97	(96-98)	95	(94-97)		
2004-2007	1945	99	(98-99)						

8.1.2 Paediatric recipients

8.1.2.1 Deceased heartbeating donor transplants

Figure 8.4 shows long-term graft survival in paediatric (<18 years) recipients for first deceased heartbeating donor kidney only transplants in the UK. Graft survival estimates and confidence intervals are shown for each year group in **Table 8.7**. There have been significant improvements in one and two year survival over the year groups, $p < 0.05$.

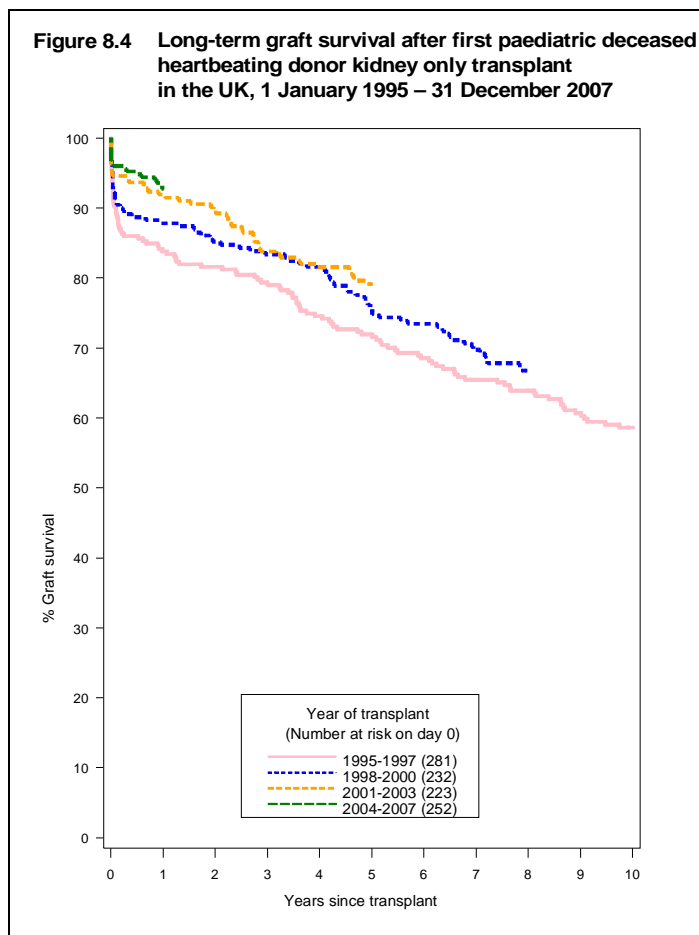


Table 8.7 Long-term graft survival after first paediatric deceased heartbeating donor kidney only transplant in the UK, 1 January 1995 - 31 December 2007									
Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval)							
		One year		Two year		Five year		Ten year	
1995-1997	281	84	(79-88)	82	(77-86)	72	(66-77)	59	(52-64)
1998-2000	232	88	(83-91)	85	(80-89)	76	(70-81)		
2001-2003	223	92	(87-95)	90	(85-93)	79	(73-84)		
2004-2007	252	93	(89-95)						

Table 8.8 shows the patient survival estimates and confidence intervals for one, two, five and ten years post-transplant. There have been improvements in one, two and five year survival over the year groups ($p=0.02$, $p=0.03$ and $p=0.01$, respectively).

Table 8.8 Long-term patient survival after first paediatric deceased heartbeating donor kidney only transplant in the UK, 1 January 1995 - 31 December 2007									
Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval)							
		One year		Two year		Five year		Ten year	
1995-1997	281	97	(94-99)	97	(94-98)	94	(91-96)	89	(84-92)
1998-2000	232	98	(95-99)	98	(95-99)	97	(94-99)		
2001-2003	223	100	(-)	100	(-)	99	(96-100)		
2004-2007	252	100	(-)						

8.1.2.2 Living donor transplants

Long-term graft survival in paediatric recipients for living donor kidney transplants in the UK is shown in **Figure 8.5**. **Table 8.9** shows graft survival estimates and confidence intervals for each year group. There were no statistically significant differences in graft survival across the year groups ($p>0.05$).

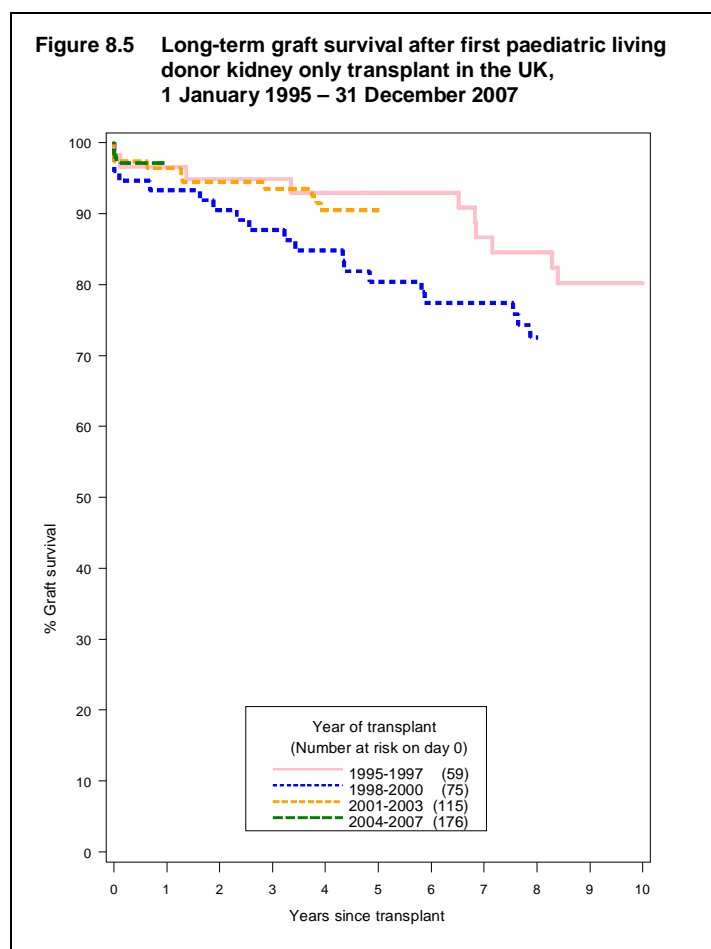


Table 8.9 Long-term graft survival after first paediatric living donor kidney transplant in the UK, 1 January 1995 – 31 December 2007

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval)							
		One year		Two year		Five year		Ten year	
1995-1997	59	97	(87-99)	95	(85-98)	93	(82-97)	80	(66-89)
1998-2000	75	93	(85-97)	91	(81-95)	80	(69-88)		
2001-2003	115	96	(91-99)	94	(88-97)	91	(83-95)		
2004-2007	176	97	(93-99)						

Table 8.10 shows the patient survival estimates and confidence intervals for one, two, five and ten years post-transplant. There were no statistically significant differences in patient survival across the year groups ($p>0.1$).

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval)							
		One year		Two year		Five year		Ten year	
1995-1997	59	98	(89-100)	98	(89-100)	98	(89-100)	96	(86-99)
1998-2000	76	99	(91-100)	97	(89-99)	96	(87-99)		
2001-2003	115	96	(91-99)	96	(91-99)	95	(89-98)		
2004-2007	176	100	(-)						

There were insufficient paediatric recipients of first deceased non-heartbeating donor kidney only transplants to permit reliable analysis by year of transplant.

8.2 Pancreas graft and patient survival

National pancreas follow-up data are only available for transplants performed since 1 January 2001. There are insufficient data available to analyse long-term survival effects. **Figure 8.6** shows pancreas graft survival in recipients receiving their first deceased heartbeating donor simultaneous kidney/pancreas (SPK) transplant performed in the UK between 1 January 2001 and 31 December 2007, by year of transplant. Graft and patient survival estimates and confidence intervals are shown by transplant type at 30 days, 90 days and one year in **Table 8.11** and **Table 8.12** respectively.

Figure 8.7 shows pancreas graft survival in recipients receiving their first deceased heartbeating donor pancreas only transplant performed in the UK between 1 January 2004 and 31 December 2007. Graft and patient survival estimates and confidence intervals are shown by transplant type at 30 days, 90 days and one year in **Table 8.13** and **Table 8.14** respectively.

Figure 8.6 Pancreas graft survival after first deceased heartbeating donor SPK transplant in the UK, 1 January 2001 – 31 December 2007

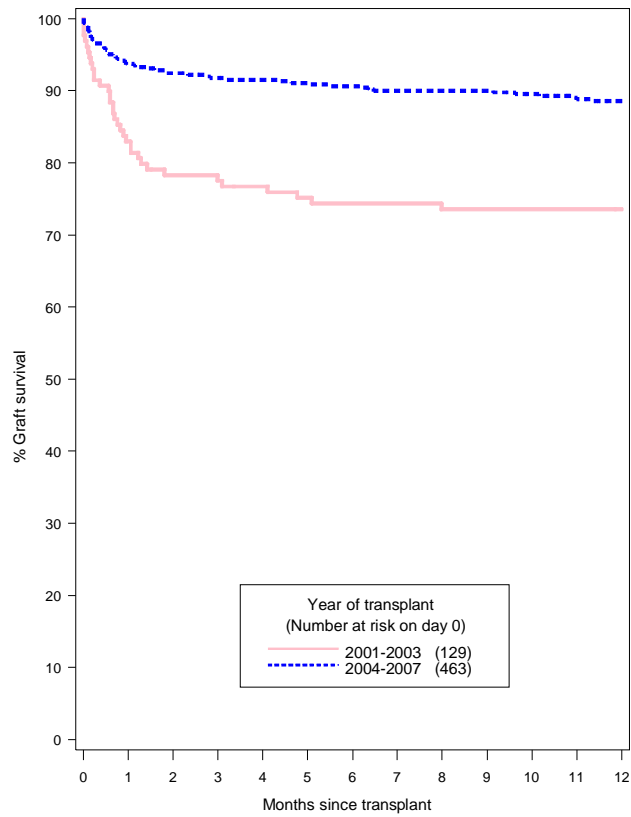


Table 8.11 Pancreas graft survival after first deceased heartbeating donor SPK transplant in the UK, 1 January 2001 - 31 December 2007

Year of Transplant	No. at risk on day 0	% Graft survival (95% confidence interval)			
		30-day	90-day	One year	
2001-2003	129	83 (75-88)	78 (69-84)	74 (65-80)	
2004-2007	463	94 (91-96)	92 (89-94)	89 (85-91)	

Table 8.12 Pancreas patient survival after first deceased heartbeating donor SPK transplant in the UK, 1 January 2001 - 31 December 2007

Year of Transplant	No. at risk on day 0	% Patient survival (95% confidence interval)			
		30-day	90-day	One year	
2001-2003	130	98 (93-99)	94 (87-97)	89 (81-93)	
2004-2007	464	99 (98-100)	97 (95-98)	95 (93-97)	

Figure 8.7 Pancreas graft survival after first deceased heartbeating donor pancreas only transplant in the UK, 1 January 2004 – 31 December 2007

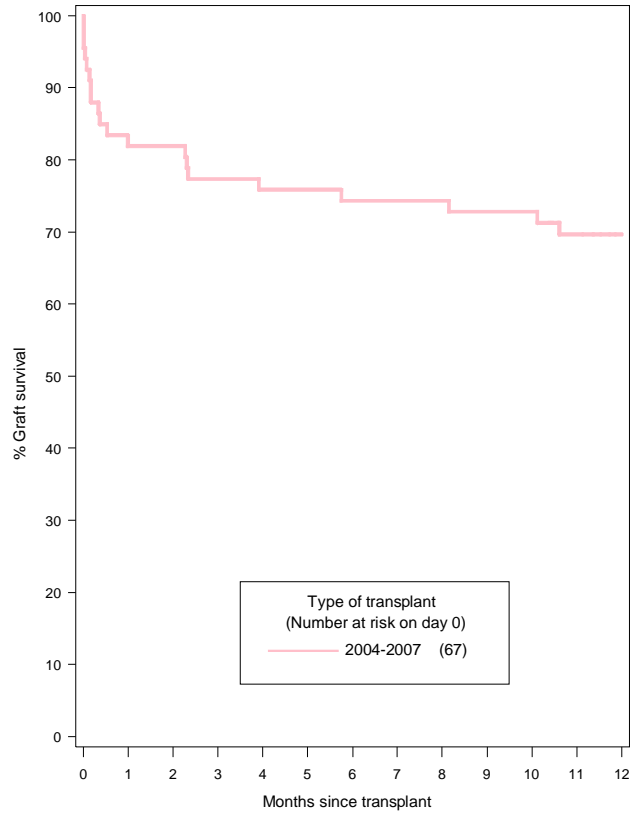


Table 8.13 Pancreas graft survival after first deceased heartbeating donor pancreas only transplant in the UK, 1 January 2001 - 31 December 2007

Year of Transplant	No. at risk on day 0	% Graft survival (95% confidence interval)			
		30-day	90-day	One year	
2004-2007	67	82 (70-89)	77 (65-86)	70 (57-79)	

Table 8.14 Pancreas graft survival after first deceased heartbeating donor pancreas only transplant in the UK, 1 January 2001 - 31 December 2007

Year of Transplant	No. at risk on day 0	% Patient survival (95% confidence interval)			
		30-day	90-day	One year	
2004-2007	68	97 (88-99)	97 (88-99)	97 (88-99)	

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 8.8**. Domino and deceased donor transplants are included as well as urgent and heterotopic transplants. **Table 8.15** shows the survival estimates and confidence intervals for one, two, five and ten years post-transplant. There were no statistically significant differences in one, two or five year survival over the year groups ($p > 0.1$).

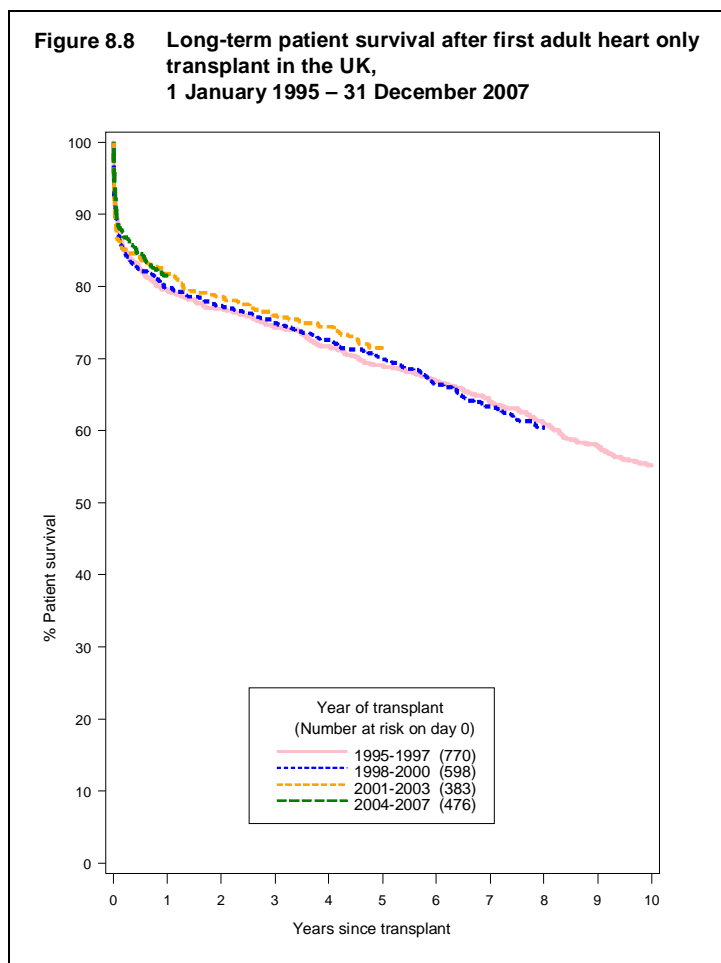


Table 8.15 Long-term patient survival after first adult heart only transplant in the UK, 1 January 1995 - 31 December 2007

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval)							
		One year		Two year		Five year		Ten year	
1995-1997	770	79	(76-82)	77	(74-80)	69	(66-72)	55	(52-59)
1998-2000	598	80	(76-83)	77	(74-80)	70	(66-73)		
2001-2003	383	82	(77-85)	79	(74-82)	71	(67-76)		
2004-2007	476	81	(78-85)						

Patient survival for adult recipients after first heart/lung block transplants is shown in **Figure 8.9**. Patient survival estimates and confidence intervals for each year group are shown in **Table 8.16**. There were no statistically significant differences in patient survival across the year groups ($p>0.1$).

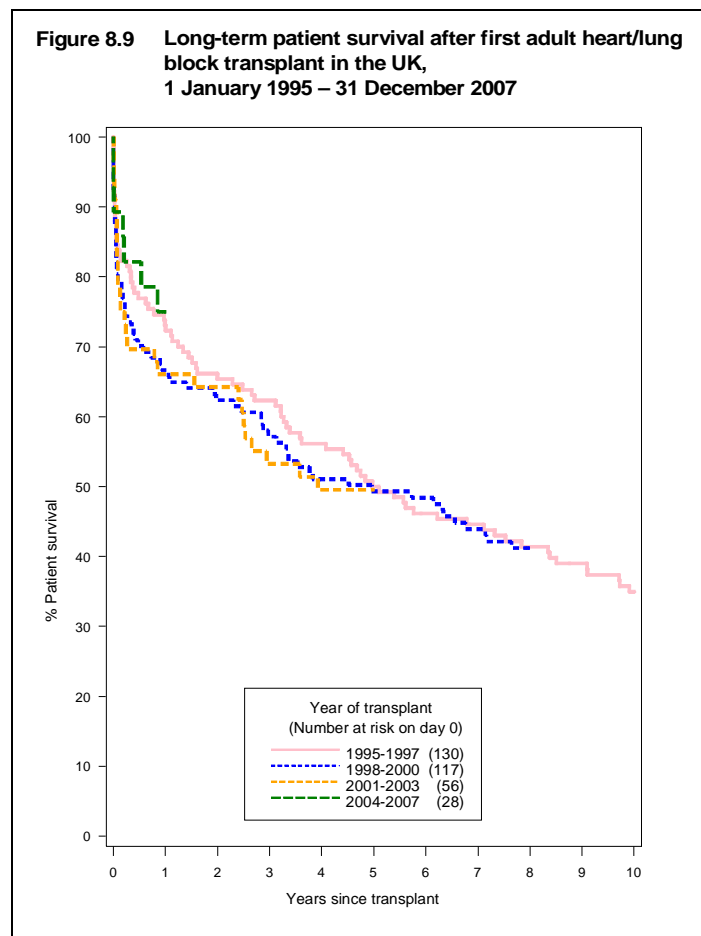


Table 8.16 Long-term patient survival after first adult heart/lung block transplant in the UK, 1 January 1995 - 31 December 2007

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval)			
		One year	Two year	Five year	Ten year
1995-1997	130	73 (65-80)	65 (57-73)	50 (41-58)	35 (27-43)
1998-2000	117	67 (57-74)	62 (53-70)	49 (40-58)	
2001-2003	56	66 (52-77)	64 (50-75)	50 (36-62)	
2004-2007	28	75 (55-87)			

Patient survival for first deceased heartbeating lung only transplant for adult recipients is shown in **Figure 8.10**, with survival estimates and confidence intervals shown in **Table 8.17**. There is evidence of differences in one and five year patient survival across the year groups, $p < 0.05$.

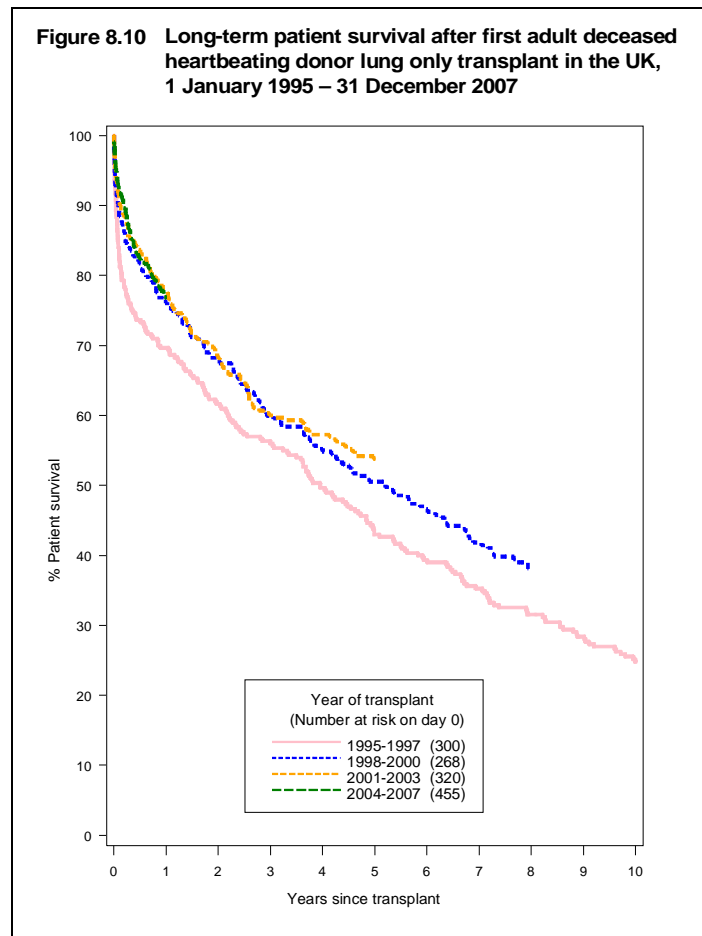


Table 8.17 Long-term patient survival after first adult deceased heartbeating donor lung only transplant in the UK, 1 January 1995 - 31 December 2007

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval)			
		One year	Two year	Five year	Ten year
1995-1997	300	70 (64-75)	62 (56-67)	43 (37-49)	25 (20-30)
1998-2000	268	76 (71-81)	68 (62-73)	51 (44-56)	
2001-2003	320	78 (73-82)	68 (63-73)	54 (48-59)	
2004-2007	455	77 (73-81)			

8.3.2 Paediatric recipients

Long-term patient survival for paediatric recipients after first heart only transplant is shown in **Figure 8.11**. Domino and deceased donor transplants are included as well as urgent and heterotopic transplants. **Table 8.18** shows the survival estimates and confidence intervals for one, two, five and ten years post-transplant. There is evidence of differences in one, two and five year survival over the year groups, $p < 0.001$, $p = 0.02$ and $p = 0.02$ respectively.

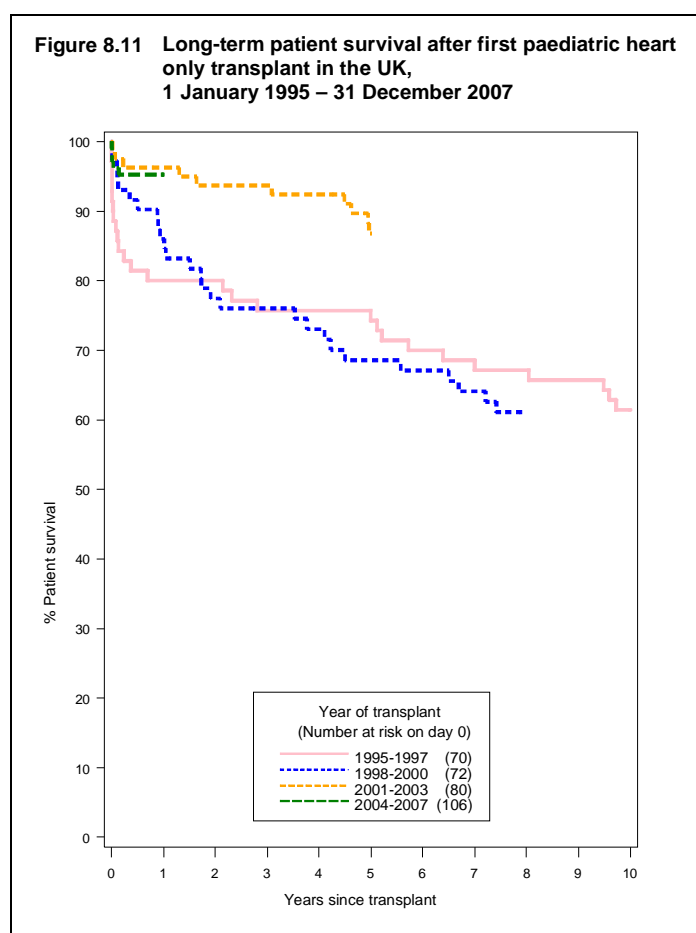


Table 8.18 Long-term patient survival after first paediatric heart only transplant in the UK, 1 January 1995 - 31 December 2007

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval)							
		One year		Two year		Five year		Ten year	
1995-1997	70	80	(69-88)	80	(69-88)	74	(62-83)	61	(49-72)
1998-2000	72	86	(76-92)	77	(66-86)	69	(56-78)		
2001-2003	80	96	(89-99)	94	(85-97)	87	(77-93)		
2004-2007	106	95	(89-98)						

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

8.4 Liver patient survival

8.4.1 Adult recipients

Long-term patient survival for adult (≥ 17 years) recipients after first elective deceased heartbeating donor liver only transplants is shown in **Figure 8.12**. **Table 8.19** shows patient survival estimates at one, two, five and ten years post-transplant. There have been significant improvements in one, two and five year patient survival over the year groups, $p < 0.001$, $p < 0.001$ and $p < 0.01$ respectively.

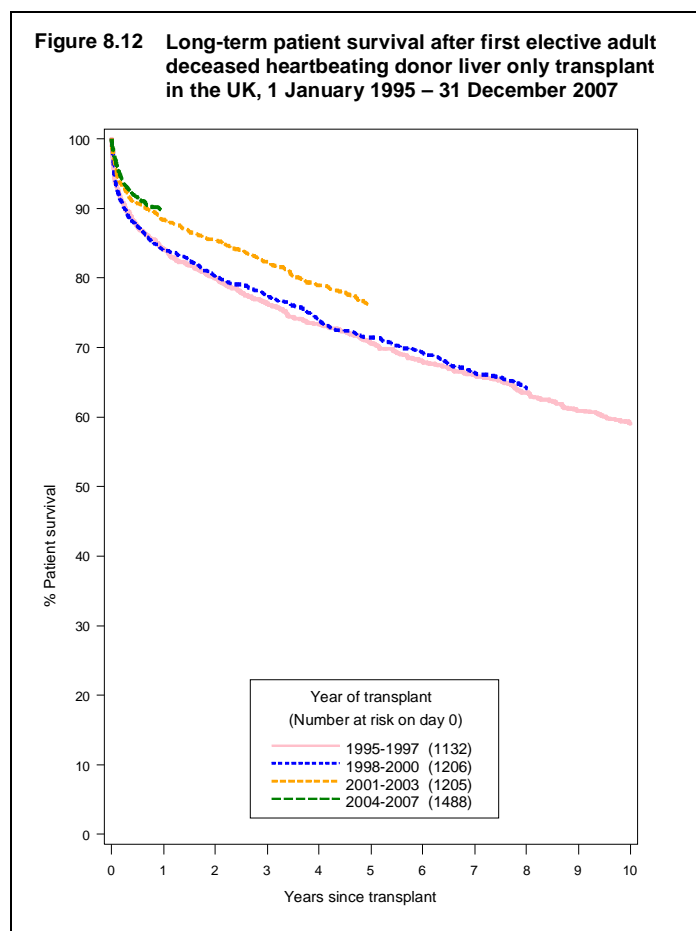
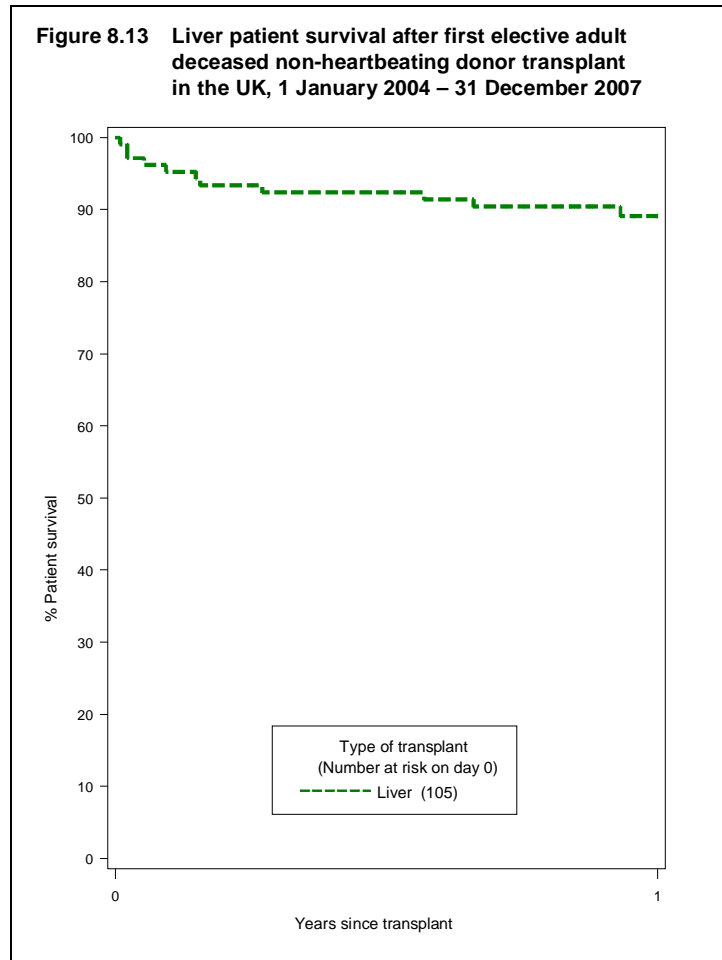


Table 8.19 Long-term patient survival after first elective adult deceased heartbeating donor liver only transplant in the UK, 1 January 1995 - 31 December 2007

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval)			
		One year	Two year	Five year	Ten year
1995-1997	1132	84 (82-86)	80 (77-82)	71 (68-73)	59 (56-62)
1998-2000	1206	84 (82-86)	80 (78-82)	71 (69-74)	
2001-2003	1205	88 (86-90)	85 (83-87)	76 (74-78)	
2004-2007	1488	90 (88-91)			

Patient survival for adult (≥ 17 years) recipients after first elective deceased non-heartbeating donor liver only transplants is shown in **Figure 8.13**. The majority of non-heartbeating liver transplants have been performed since 1 January 2002, so there are insufficient data available to analyse long-term patient survival, but patient survival at one year is 89% (95% confidence interval: 81-94).



8.4.2 Paediatric recipients

Figure 8.14 and **Table 8.20** show long-term patient survival estimates for first elective deceased heartbeating donor liver only transplants in paediatric (<17 years) recipients. There were no statistically significant differences in one, two or five year patient survival over the year groups ($p>0.1$).

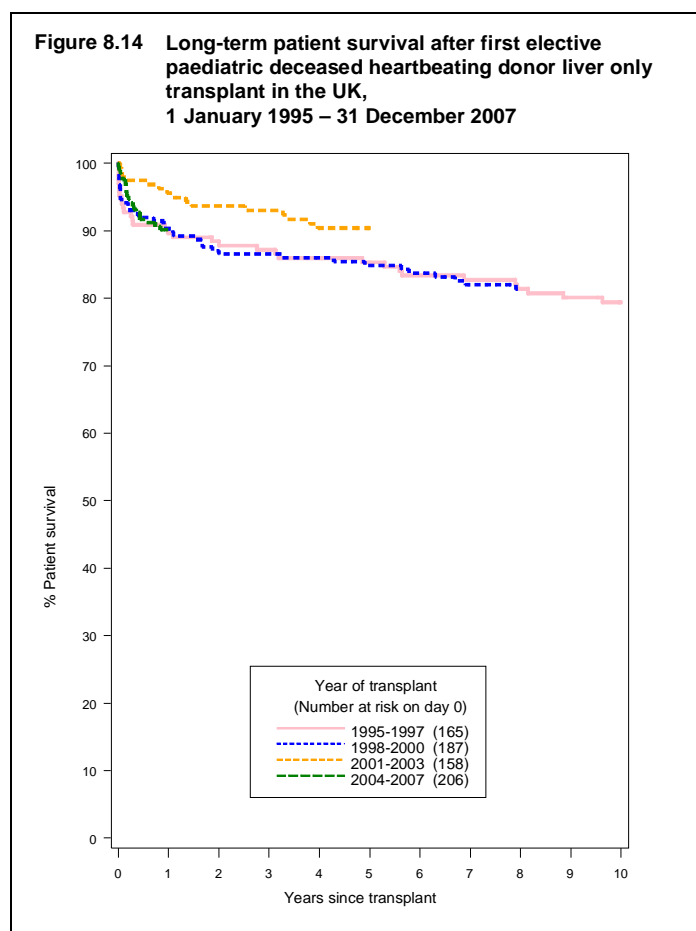


Table 8.20 Long-term patient survival after first elective paediatric deceased heartbeating donor liver only transplant in the UK, 1 January 1995 - 31 December 2007

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval)			
		One year	Two year	Five year	Ten year
1995-1997	165	90 (84-93)	88 (82-92)	85 (79-90)	79 (72-85)
1998-2000	187	90 (85-94)	87 (81-91)	85 (79-89)	
2001-2003	158	96 (91-98)	94 (89-97)	90 (85-94)	
2004-2007	206	90 (85-94)			

The number of paediatric non-heartbeating donor liver transplant recipients was too small to estimate patient survival.

8.5 Cornea graft survival

Good quality cornea follow-up data were only available for transplants performed since 1 April 1999. There are insufficient data available to analyse long-term survival effects. **Figure 8.15** shows graft survival estimates for first penetrating keratoplasty (PK) for grafts between 1 January 2001 and 31 December 2007, by year of transplant. Graft survival estimates and confidence intervals are shown by transplant year at one, two and five years in **Table 8.21**

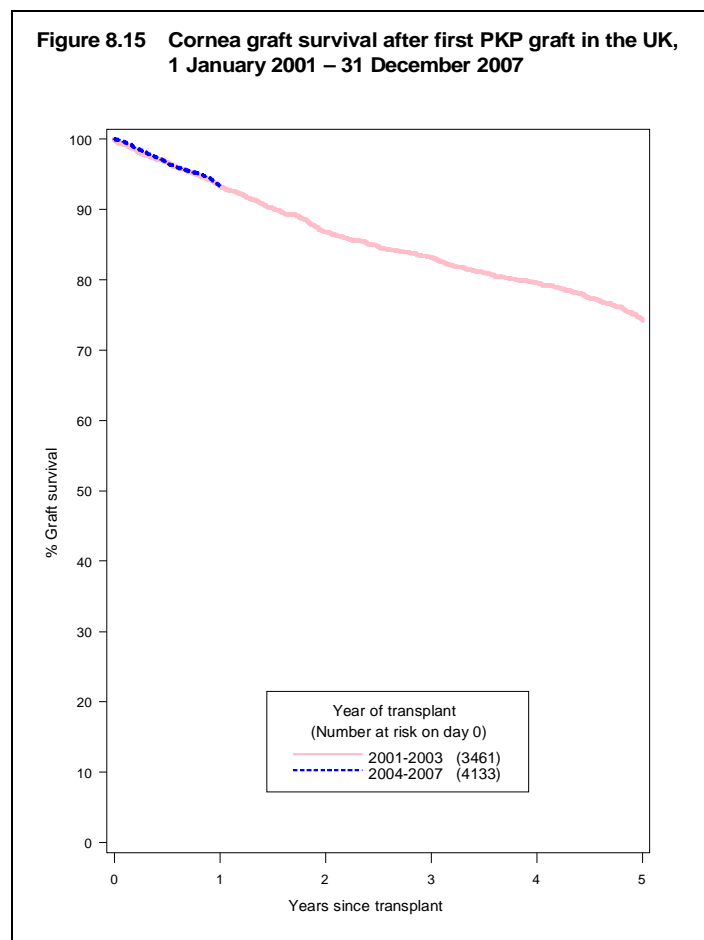


Table 8.21 Cornea graft survival after first PK in the UK, 1 January 2001 - 31 December 2007

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval)		
		One year	Two year	Five year
2001-2003	3461	93 (92-94)	87 (86-88)	74 (72-76)
2004-2007	4133	93 (92-94)		

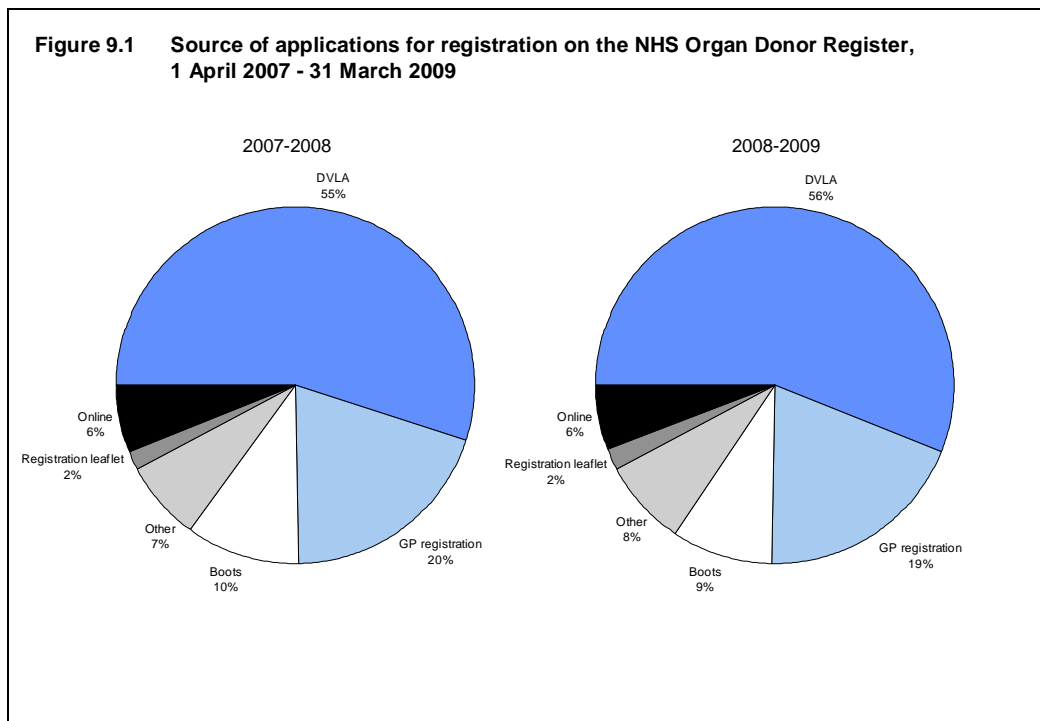
9 NHS ORGAN DONOR REGISTER

By the end of March 2009 the NHS Organ Donor Register (ODR) held just over 16 million registrations. During the year data on the register were continually reviewed and validated.

Of the 900 deceased organ donors in 2008-2009, 37% were registered on the ODR compared with 30% in 2007-2008. Similarly, 39% of cornea-only donors in 2008-2009 were registered on the ODR compared with 32% in 2007-2008.

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 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 2008-2009 arrived by means of the Family Health Services Authorities, 56% from driving licence applications and reminders through the DVLA and 9% through the Boots Advantage Card route.



At the end of March 2009 87% of registrants, 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 (55%) did not wish to donate their corneas. Of the restricted registrations, only 7% (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 2009 to donate different organs*

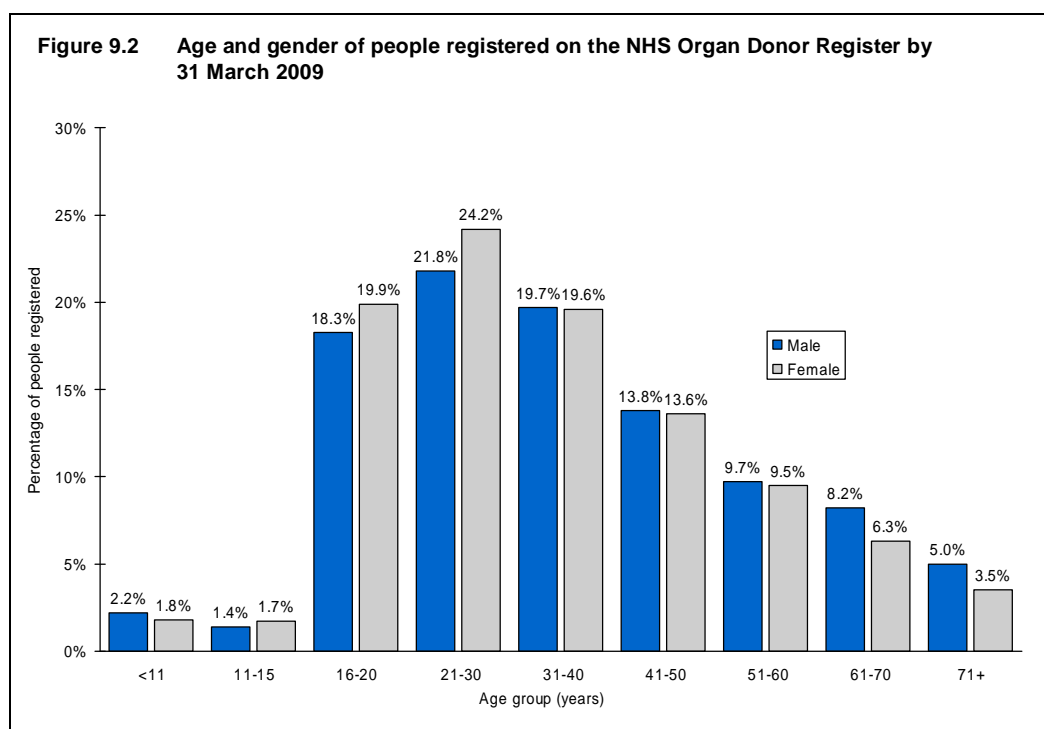
Registrants prepared to donate all organs 87%

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

Not prepared to donate:	% of all “Restricted donors”	Registrants
Kidneys	7	0.9
Pancreas	24	3.0
Heart	40	5.1
Lungs	18	2.4
Liver	15	1.9
Corneas	55	7.1

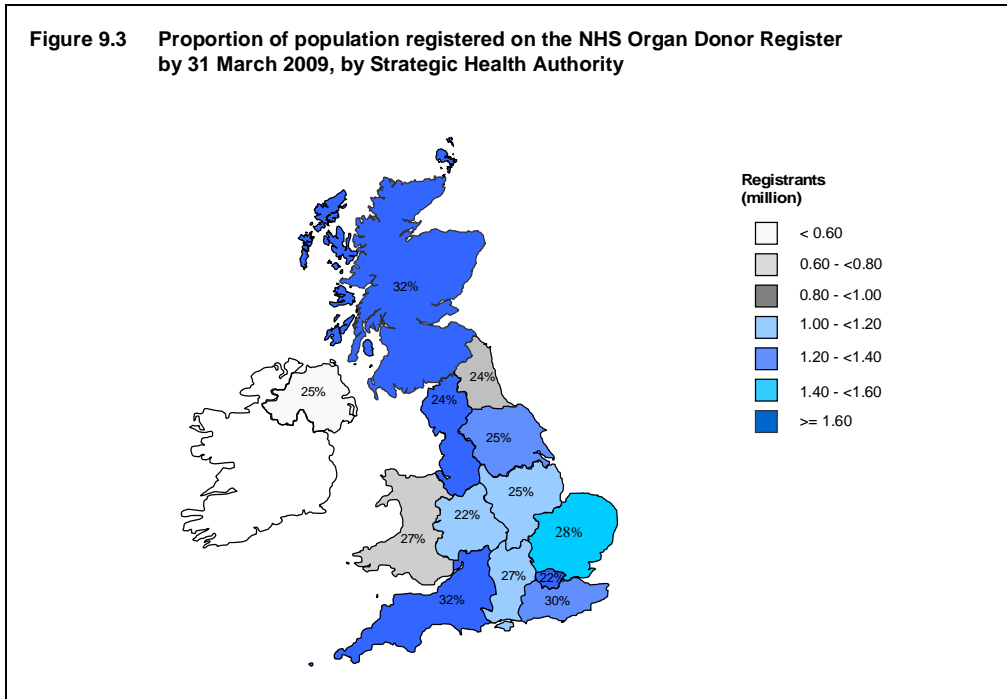
* This information was not available for approximately 7% of the total registered

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 22% and 24%, respectively, of registrations, are registered in the 21-30 years age group. Of all the registrations on the NHS Organ Donor Register, 46% were male and 54% were female.

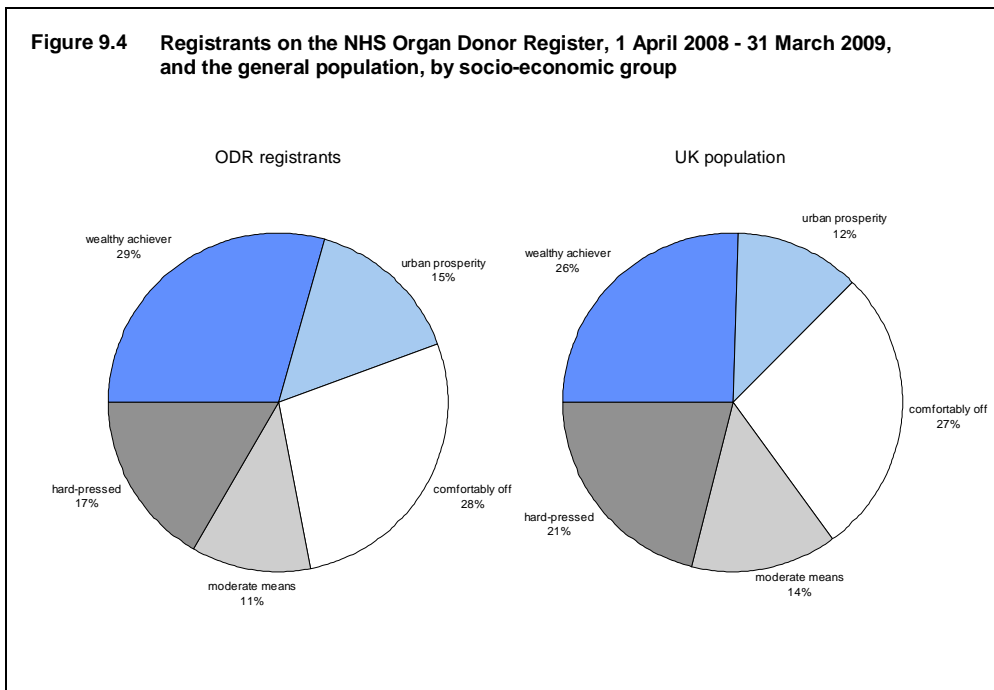


Those registered on the ODR come from all parts of the UK. **Figure 9.3** illustrates the percentage of the population registered in each Strategic Health Authority at 31 March 2009, and the number of registrations.

Figure 9.3 Proportion of population registered on the NHS Organ Donor Register by 31 March 2009, by Strategic Health Authority



The breakdown of registrants on the ODR during 2008/2009 by socio-economic group (using the ACORN¹ classifications, based on postcode) is shown in **Figure 9.4**, where it is compared with the general UK population. Though having basically similar distributions, there were proportionately more 'wealthy achievers' and less 'hard-pressed' on the ODR than in the general population.



¹ ACORN data supplied by CACI Ltd.

10 NATIONAL POTENTIAL DONOR AUDIT

10.1 Introduction

In this chapter, summary data from the national Potential Donor Audit (PDA) covering the 24-month period from 1 January 2007 to 31 December 2008 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 4 May 2009, 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.

Potential non-heartbeating (NHB) donors are defined as patients suitable for NHB donation, with no absolute medical contraindications and for whom treatment was withdrawn.

The referral rate is the percentage of potential donors referred to a coordinator.

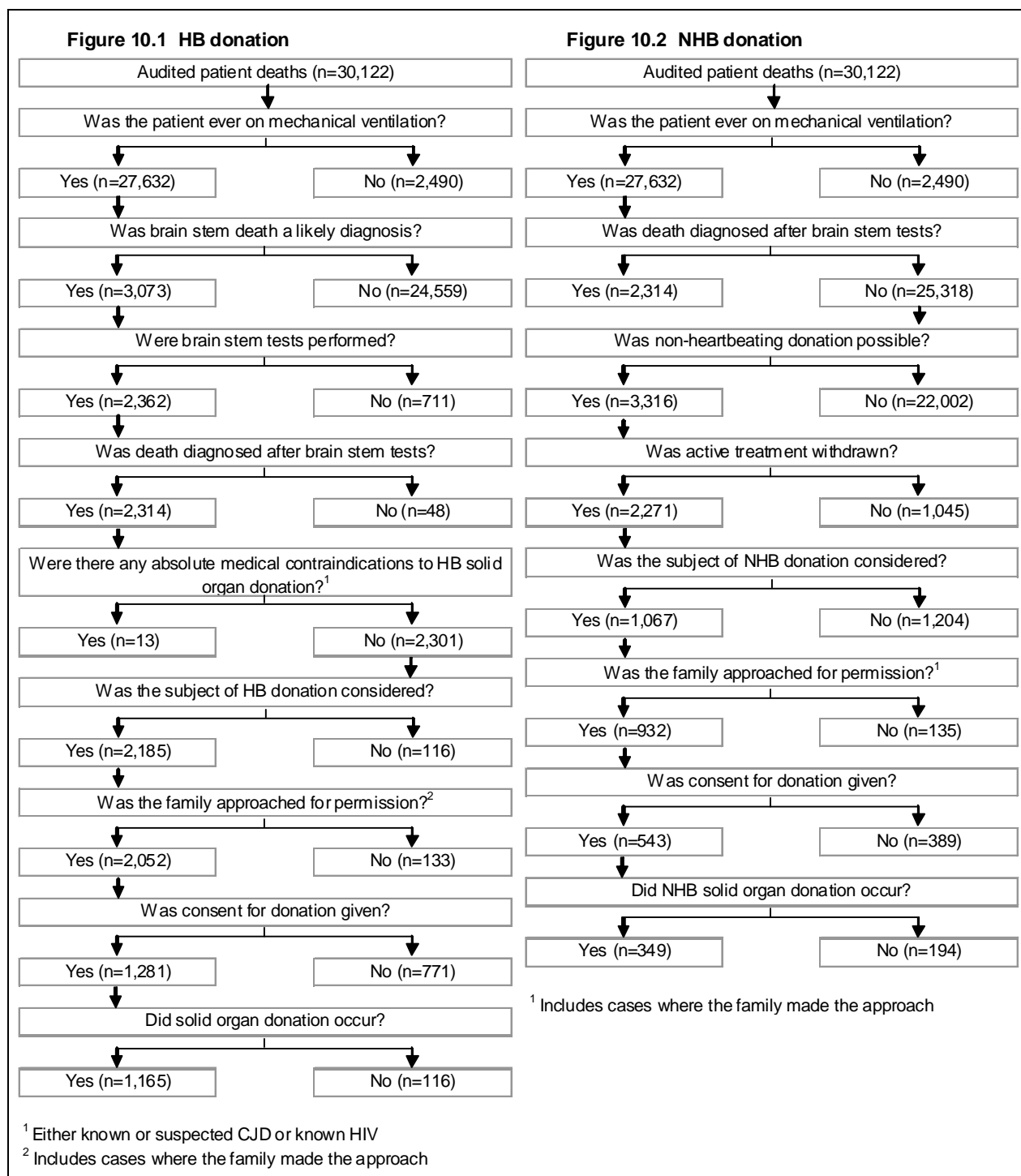
The approach rate is the percentage of potential donors for whom solid organ donation was considered, whose family were approached for consent to donation.

The consent rate is the percentage of potential donors whose families were approached or made the approach for consent to donation who gave consent.

The conversion rate is the percentage of potential donors who became actual donors.

10.3 Breakdown of audited deaths in ICUs

In the 24-month period there were a total of 30,122 audited patient deaths in UK ICUs. **Figures 10.1** and **10.2** show a detailed breakdown from the number of audited patient deaths to the number of HB and NHB solid organ donors, respectively. **Table 10.1** shows the key percentages calculated from the flow chart information.



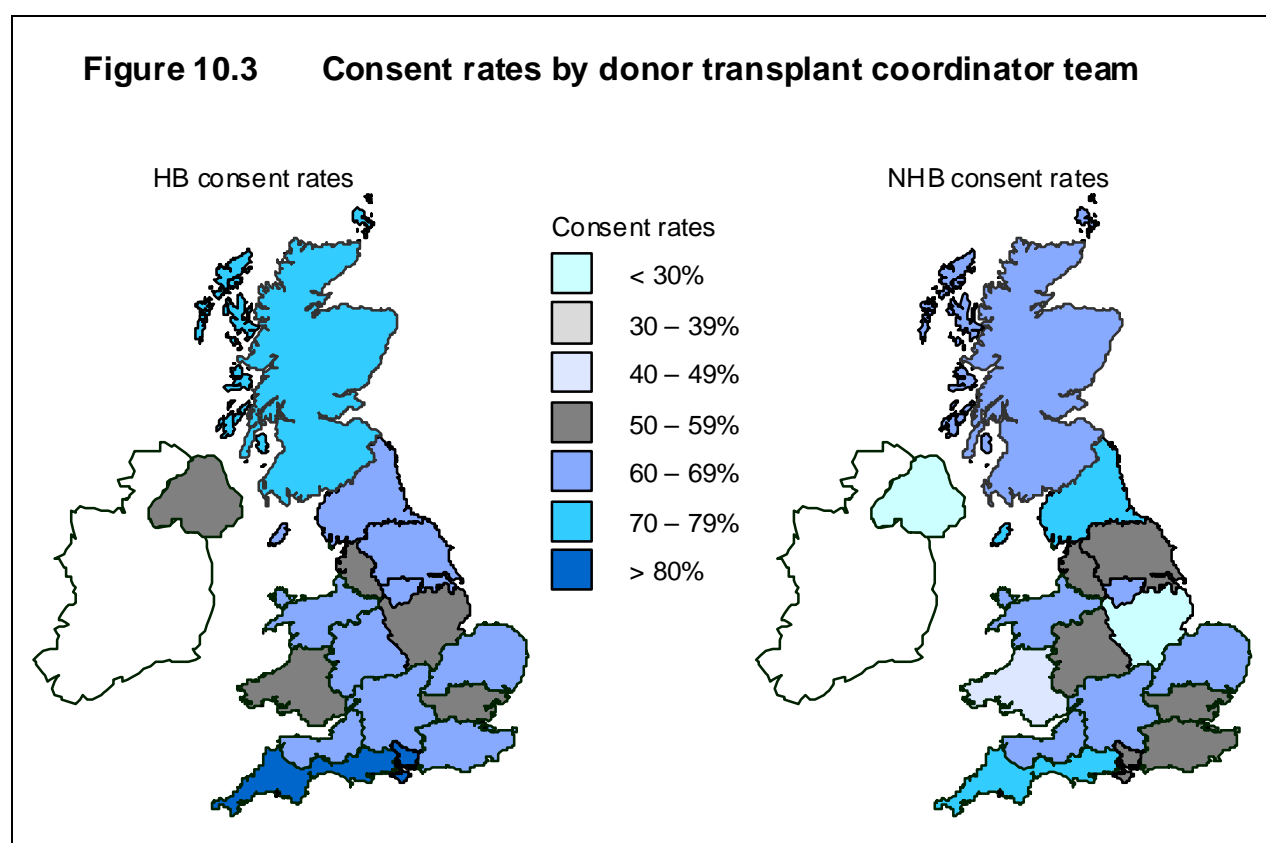
	HB	NHB
Potential donors	2,301	2,271
Referral rate	86%	42%
Approach rate	94%	87%
Consent rate	62%	58%
Conversion rate	51%	15%

10.4 Consent rates

The overall HB consent rate was 62% and the 95% confidence limits for this percentage range from 60% to 64%. For NHB donation, the overall consent rate was 58% and the 95% confidence limits range from 55% to 61%.

Consent rates by donor transplant coordinator team are illustrated in **Figure 10.3** for both HB and NHB donation. Caution should be applied when interpreting these consent rates as no adjustment has been made for the mix of patients in terms of age, sex and ethnicity. The numbers used in the NHB analysis are very small, so additional caution should be applied when interpreting the rates.

The HB consent rates range from 53% in East Midlands to 88% in Portsmouth. For transplant coordinator teams with more than ten NHB donor families approached, the NHB consent rates range from 45% in Cardiff to 79% in Plymouth. There are two transplant coordinator teams with less than ten NHB donor families approached in this time period. **Appendix IV** contains the number of families approached and the precise HB and NHB consent rates for each donor transplant co-ordinator team, including the two teams with less than ten families approached.



APPENDICES

Appendix IA provides details of the 612 deceased heartbeating solid organ donors reported in 2008-2009. 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 288 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 1A

Deceased heartbeating solid organ donors and donated organs in the UK,
1 April 2008 - 31 March 2009 (2007-2008), by donating hospital

Donating hospital	All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
East Midlands									
Boston, Pilgrim Hospital	1	(0)	1	(0)	2	1	2	1	1
Chesterfield, Chesterfield Royal Hospital	4	(5)	4	(4)	8	0	4	4	2
Derby, Derbyshire Royal Infirmary	2	(3)	2	(3)	4	0	2	2	2
Kettering, Kettering General Hospital	1	(1)	1	(1)	2	0	0	1	0
Leicester, Glenfield General Hospital	3	(1)	3	(0)	6	0	0	3	2
Leicester, Leicester General Hospital	0	(1)	0	(1)	0	0	0	0	0
Leicester, Leicester Royal Infirmary	7	(2)	7	(2)	13	2	6	7	4
Northampton, Northampton General Hospital	1	(1)	1	(1)	2	1	0	0	0
Nottingham, Nottingham University Hospital	8	(4)	8	(3)	16	2	7	8	3
Sutton-In-Ashfield, King's Mill Hospital	1	(2)	1	(2)	2	0	0	1	1
Worksop, Bassetlaw District General Hospital	0	(2)	0	(2)	0	0	0	0	0
Total	28	(22)	28	(19)	55	6	21	27	15
East of England									
Basildon, Basildon Hospital	4	(1)	4	(1)	8	2	6	4	3
Bedford, Bedford Hospital	0	(1)	0	(0)	0	0	0	0	0
Bury St Edmunds, West Suffolk Hospital	2	(2)	2	(2)	4	0	2	2	1
Cambridge, Addenbrooke's Hospital	16	(14)	15	(13)	31	6	5	15	6
Chelmsford, Broomfield Hospital	3	(1)	3	(1)	6	2	4	3	1
Colchester, Colchester General Hospital	2	(0)	2	(0)	2	0	0	2	1
Great Yarmouth, James Paget Hospital	1	(0)	1	(0)	2	0	2	1	1
Harlow, Princess Alexandra Hospital	0	(1)	0	(1)	0	0	0	0	0
Hemel Hempstead, Hemel Hempstead General Hospital	1	(1)	1	(1)	2	0	0	1	1
Ipswich, Ipswich Hospital	0	(1)	0	(1)	0	0	0	0	0
Kings Lynn, The Queen Elizabeth Hospital	3	(1)	3	(1)	6	1	0	3	2
Luton, Luton And Dunstable Hospital	1	(2)	1	(2)	2	0	0	1	1
Norwich, Norfolk And Norwich University Hospital	3	(5)	3	(5)	5	1	4	3	2
Papworth, Papworth Hospital	1	(0)	1	(0)	2	1	0	1	1
Stevenage, Lister Hospital	2	(3)	2	(3)	4	1	4	2	2
Watford, Watford General Hospital	0	(2)	0	(2)	0	0	0	0	0

Donating hospital	All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
Welwyn Garden City, Queen Elizabeth Hospital	4	(2)	3	(2)	8	1	4	3	1
Westcliff On Sea, Southend Hospital	4	(1)	4	(1)	8	2	2	4	4
Total	47	(38)	45	(36)	90	17	33	45	27
London									
Barnet, Barnet General Hospital	1	(2)	1	(2)	2	0	2	1	0
Carshalton, St Helier Hospital	1	(4)	1	(4)	2	0	0	1	1
Croydon, Mayday University Hospital	1	(1)	0	(1)	2	0	0	0	0
Enfield, Chase Farm Hospital	4	(1)	4	(1)	8	1	2	4	2
Evelina Childrens Hospital	2	(0)	2	(0)	4	1	0	1	1
Harrow, Northwick Park Hospital	3	(0)	3	(0)	6	0	0	3	2
Isleworth, West Middlesex University Hospital	4	(3)	4	(3)	8	0	2	4	2
Kingston, Kingston Hospital	5	(2)	5	(1)	10	0	2	5	2
London, Charing Cross Hospital	17	(12)	11	(11)	26	1	2	12	5
London, Great Ormond Street Hospital For Children	1	(0)	1	(0)	2	1	2	1	1
London, Hammersmith Hospital	0	(2)	0	(0)	0	0	0	0	0
London, King's College Hospital	10	(9)	9	(9)	19	5	0	8	6
London, National Hospital For Neurology And Neurosurgery	10	(3)	9	(3)	18	2	6	10	6
London, Newham General Hospital	1	(2)	0	(2)	2	0	0	0	0
London, North Middlesex Hospital	2	(3)	2	(3)	4	0	0	2	1
London, Queen Elizabeth Hospital	1	(2)	1	(2)	2	0	2	1	1
London, Royal Free Hospital	5	(10)	5	(10)	8	0	0	5	0
London, St Bartholomew's Hospital	1	(0)	1	(0)	2	0	0	0	1
London, St George's Hospital	11	(6)	11	(6)	22	2	7	11	7
London, St Mary's Hospital	1	(1)	1	(1)	2	1	0	1	1
London, St Thomas' Hospital	2	(4)	1	(3)	2	0	0	1	1
London, The London Chest Hospital	3	(0)	2	(0)	6	0	0	2	0
London, The Royal London Hospital (Whitechapel)	15	(12)	15	(8)	30	6	12	14	13
London, The Whittington Hospital	0	(2)	0	(2)	0	0	0	0	0
London, University College Hospital	1	(2)	1	(2)	2	0	0	1	0
London, University Hospital Lewisham	1	(0)	1	(0)	2	0	1	1	1
Orpington, Princess Royal University Hospital	3	(4)	3	(4)	6	1	4	3	2
Romford, Queens Hospital	11	(11)	10	(10)	22	5	10	10	7
Sidcup, Queen Mary's Hospital	3	(2)	2	(2)	6	1	0	1	2

Donating hospital	All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
Southall, Ealing Hospital	0	(2)	0	(0)	0	0	0	0	0
Total	120	(102)	106	(90)	225	27	54	103	65
North East									
Ashington, Wansbeck Hospital	1	(0)	1	(0)	2	0	0	1	1
Bishop Auckland, Bishop Auckland General Hospital	0	(1)	0	(1)	0	0	0	0	0
Darlington, Darlington Memorial Hospital	3	(4)	2	(4)	6	0	0	2	1
Durham, University Hospital Of North Durham	0	(3)	0	(3)	0	0	0	0	0
Gateshead, Queen Elizabeth Hospital	1	(1)	1	(1)	2	0	2	1	0
Hartlepool, University Hospital Of Hartlepool	3	(3)	3	(1)	6	1	0	3	2
Middlesbrough, The James Cook University Hospital	7	(11)	7	(11)	12	2	4	7	6
Newcastle, Freeman Hospital	2	(1)	1	(1)	2	0	0	2	0
Newcastle, Newcastle General Hospital	22	(19)	18	(19)	40	6	12	18	11
North Shields, North Tyneside General Hospital	1	(0)	1	(0)	2	1	2	1	1
South Shields, South Tyneside District General Hospital	0	(1)	0	(1)	0	0	0	0	0
Stockton-On-Tees, University Hospital Of North Tees	2	(2)	1	(1)	4	1	2	1	1
Sunderland, Sunderland Royal Hospital	0	(1)	0	(1)	0	0	0	0	0
Total	42	(47)	35	(44)	76	11	22	36	23
North West									
Ashton-Under-Lyme, Tameside General Hospital	1	(1)	1	(1)	2	0	2	1	1
Barrow-In-Furness, Furness General Hospital	1	(2)	1	(2)	2	0	0	1	1
Blackburn, Royal Blackburn Hospital	3	(1)	3	(0)	6	1	0	3	2
Blackpool, Blackpool Victoria Hospital	2	(7)	2	(6)	4	0	0	2	1
Bolton, Royal Bolton Hospital	3	(3)	2	(2)	6	0	0	2	1
Burnley, Burnley General Hospital	0	(1)	0	(1)	0	0	0	0	0
Bury, Fairfield General Hospital	2	(3)	2	(2)	4	0	0	2	2
Carlisle, Cumberland Infirmary	1	(0)	1	(0)	2	0	0	1	0
Cheadle, The Alexandra Hospital	0	(1)	0	(1)	0	0	0	0	0
Chester, Countess Of Chester Hospital	2	(7)	2	(6)	4	0	0	2	1
Crewe, Leighton Hospital	1	(1)	1	(1)	2	0	0	1	0
Lancaster, Royal Lancaster Infirmary	1	(0)	0	(0)	0	0	0	1	0
Liverpool, Alder Hey Children's Hospital	2	(1)	1	(1)	4	1	0	1	1
Liverpool, Broadgreen Hospital	0	(1)	0	(0)	0	0	0	0	0

Donating hospital	All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
Liverpool, Royal Liverpool University Hospital	1	(1)	1	(1)	2	0	0	1	0
Liverpool, University Hospital Aintree	0	(4)	0	(4)	0	0	0	0	0
Liverpool, Walton Centre For Neurology And Neurosurgery	6	(10)	6	(9)	12	2	2	6	2
Liverpool, Walton Hospital	2	(1)	2	(1)	4	0	0	2	1
Manchester, Manchester Royal Infirmary	2	(1)	1	(1)	4	0	0	1	1
Manchester, Royal Manchester Childrens Hospital (Pendlebury)	0	(1)	0	(1)	0	0	0	0	0
Manchester, Trafford General Hospital	1	(0)	1	(0)	2	0	0	1	1
Manchester, Wythenshawe Hospital	0	(2)	0	(2)	0	0	0	0	0
Oldham, Royal Oldham Hospital (Rochdale Road)	0	(1)	0	(1)	0	0	0	0	0
Prescot, Whiston Hospital	9	(3)	8	(3)	18	1	2	8	2
Preston, Royal Preston Hospital	6	(1)	5	(1)	12	1	2	5	3
Rochdale, Rochdale Infirmary	4	(0)	2	(0)	6	0	2	3	0
Salford, Hope Hospital	5	(11)	5	(10)	10	4	4	5	4
Southport, Southport District General Hospital	2	(1)	2	(1)	4	2	3	2	1
Stockport, Stepping Hill Hospital	1	(1)	1	(1)	2	1	0	1	0
Warrington, Warrington Hospital	2	(0)	2	(0)	4	0	2	2	0
Whitehaven, West Cumberland Hospital	1	(1)	1	(0)	2	0	0	1	1
Wigan, Royal Albert Edward Infirmary	3	(1)	3	(1)	4	0	2	3	1
Wirral, Arrowe Park Hospital	1	(2)	1	(2)	2	1	1	1	1
Total	65	(71)	57	(62)	124	14	22	59	28
South Central									
Aylesbury, Stoke Mandeville Hospital	2	(2)	2	(1)	4	0	0	2	0
Banbury, Horton General Hospital	1	(0)	1	(0)	2	0	0	1	1
Basingstoke, North Hampshire Hospital	4	(2)	4	(2)	8	1	2	4	2
Milton Keynes, Milton Keynes General Hospital	1	(1)	1	(1)	2	0	0	1	1
Newport, St Mary's Hospital	1	(2)	1	(2)	2	0	0	1	0
Oxford, John Radcliffe Hospital	16	(13)	13	(13)	30	5	6	14	8
Portsmouth, Queen Alexandra Hospital	3	(3)	3	(3)	6	1	0	3	2
Reading, Royal Berkshire Hospital	4	(1)	4	(1)	8	0	4	3	2
Slough, Wexham Park Hospital	5	(2)	4	(2)	6	1	2	5	3
Southampton, Southampton University Hospitals	11	(7)	11	(7)	22	0	2	11	5
Wycombe, Wycombe General Hospital	2	(0)	2	(0)	4	0	2	2	1
Total	50	(33)	46	(32)	94	8	18	47	25

Donating hospital	All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
South East Coast									
Ashford, William Harvey Hospital	3	(4)	3	(4)	6	0	2	3	1
Brighton, Royal Sussex County Hospital	4	(1)	3	(1)	6	0	0	4	3
Camberley, Frimley Park Hospital	4	(3)	4	(3)	8	0	2	4	4
Canterbury, Kent And Canterbury Hospital	1	(4)	1	(3)	2	0	0	1	1
Chertsey, St Peter's Hospital	3	(0)	2	(0)	4	1	4	3	2
Chichester, St Richard's Hospital	0	(2)	0	(2)	0	0	0	0	0
Dartford, Darent Valley Hospital	2	(1)	2	(1)	4	0	2	2	1
Eastbourne, Eastbourne District General Hospital	1	(2)	1	(2)	2	0	0	1	0
Epsom General Hospital	1	(0)	1	(0)	2	0	0	1	0
Gillingham, Medway Hospital	4	(3)	4	(3)	8	0	2	4	1
Guildford, Royal Surrey County Hospital	0	(2)	0	(2)	0	0	0	0	0
Hastings, Conquest Hospital	2	(1)	2	(1)	4	0	0	2	0
Haywards Heath, Hurstwood Park Hospital	3	(1)	3	(1)	6	0	0	3	1
Haywards Heath, Princess Royal Hospital	1	(0)	1	(0)	2	1	0	1	1
Maidstone, Maidstone District General Hospital	1	(0)	1	(0)	2	0	0	1	1
Margate, Queen Elizabeth The Queen Mother Hospital	4	(3)	4	(2)	8	0	2	4	3
Redhill, East Surrey Hospital	1	(3)	1	(1)	2	0	0	1	0
Tunbridge Wells, Kent And Sussex Hospital	2	(4)	2	(3)	4	0	0	2	2
Worthing, Worthing Hospital	2	(1)	2	(1)	4	0	0	2	1
Total	39	(35)	37	(30)	74	2	14	39	22
South West									
Barnstaple, North Devon District Hospital	1	(2)	1	(2)	2	0	2	1	1
Bath, Royal United Hospital	1	(0)	1	(0)	2	0	0	1	1
Bournemouth, Royal Bournemouth General Hospital	0	(5)	0	(5)	0	0	0	0	0
Bristol, Bristol Royal Hospital For Children	1	(0)	1	(0)	0	1	0	1	1
Bristol, Bristol Royal Infirmary	3	(0)	3	(0)	6	2	4	3	3
Bristol, Frenchay Hospital	7	(12)	7	(12)	14	1	4	7	5
Cheltenham, Cheltenham General Hospital	3	(3)	3	(3)	6	2	4	3	3
Dorchester, Dorset County Hospital	0	(2)	0	(2)	0	0	0	0	0
Exeter, Royal Devon And Exeter Hospital (Wonford)	1	(0)	1	(0)	2	0	2	1	1
Gloucester, Gloucestershire Royal Hospital	1	(4)	1	(4)	2	0	0	1	0
Plymouth, Derriford Hospital	5	(9)	4	(9)	10	0	4	4	3

Donating hospital	All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
Poole, Poole General Hospital	3	(5)	2	(5)	6	0	0	2	2
Salisbury, Salisbury District Hospital	0	(1)	0	(1)	0	0	0	0	0
Swindon, Great Western Hospital	2	(2)	2	(2)	4	0	2	2	1
Taunton, Taunton And Somerset Hospital (Musgrove Park)	1	(2)	1	(2)	0	0	2	1	1
Torquay, Torbay Hospital	2	(2)	1	(2)	4	1	0	0	0
Truro, Royal Cornwall Hospital (Treliske)	4	(4)	4	(4)	8	0	2	3	2
Weston-Super-Mare, Weston Super Mare General Hospital	1	(1)	1	(1)	2	0	0	1	1
Yeovil, Yeovil District Hospital	1	(1)	1	(0)	2	0	0	1	1
Total	37	(55)	34	(54)	70	7	26	32	26
West Midlands									
Birmingham, Birmingham Heartlands Hospital	2	(4)	2	(4)	4	0	0	2	1
Birmingham, City Hospital	2	(0)	2	(0)	4	0	0	2	1
Birmingham, Diana Princess Of Wales Children Hospital	1	(2)	1	(2)	2	1	0	1	1
Birmingham, Queen Elizabeth Hospital	10	(10)	9	(8)	20	1	8	9	4
Birmingham, Selly Oak Hospital	4	(6)	3	(6)	6	0	0	4	1
Burton-On-Trent, Queen's Hospital	1	(3)	1	(3)	2	1	0	0	1
Coventry, University Hospital	5	(8)	4	(7)	10	2	2	4	2
Dudley, Russells Hall Hospital	2	(2)	2	(2)	4	0	0	2	1
Hereford, Hereford County	0	(1)	0	(1)	0	0	0	0	0
Hereford, The County Hospital	1	(2)	1	(2)	2	0	2	1	1
Nuneaton, George Eliot Hospital	0	(1)	0	(0)	0	0	0	0	0
Redditch, The Alexandra Hospital	0	(1)	0	(1)	0	0	0	0	0
Shrewsbury, Royal Shrewsbury Hospital	3	(5)	2	(5)	4	1	0	3	1
Stafford, Stafford District General Hospital	0	(1)	0	(1)	0	0	0	0	0
Stoke, North Staffordshire Royal Infirmary	9	(2)	8	(2)	16	3	4	9	4
Sutton Coldfield, Good Hope District General Hosp.	5	(0)	5	(0)	10	3	2	5	3
Telford, The Princess Royal Hospital	1	(1)	1	(1)	2	0	0	1	0
Walsall, Manor Hospital	3	(2)	3	(2)	6	0	2	3	1
West Bromwich, Sandwell General Hospital	0	(4)	0	(4)	0	0	0	0	0
Wolverhampton, New Cross Hospital	1	(2)	1	(2)	2	0	0	1	1
Worcestershire Royal Hospital	1	(0)	1	(0)	2	0	0	1	1
Total	51	(57)	46	(53)	96	12	20	48	24

Donating hospital	All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
Yorkshire and the Humber									
Barnsley, Barnsley District General Hospital	3	(2)	3	(2)	6	1	0	3	1
Bradford, Bradford Royal Infirmary	1	(3)	1	(2)	2	0	0	1	0
Dewsbury, Dewsbury And District Hospital	1	(0)	1	(0)	2	1	0	1	1
Doncaster, Doncaster Royal Infirmary	3	(1)	2	(1)	6	1	2	2	1
Grimsby, Diana Princess Of Wales Hospital	0	(2)	0	(1)	0	0	0	0	0
Huddersfield, Huddersfield Royal Infirmary	0	(2)	0	(2)	0	0	0	0	0
Hull, Hull Royal Infirmary	3	(2)	2	(1)	6	1	0	2	2
Keighley, Airedale General Hospital	2	(1)	2	(1)	4	1	0	2	0
Leeds, Leeds General Infirmary	7	(13)	6	(10)	14	1	5	6	2
Leeds, St James's University Hospital	0	(2)	0	(2)	0	0	0	0	0
Rotherham, Rotherham District General Hospital	2	(2)	2	(1)	4	0	0	2	0
Scarborough, Scarborough General Hospital	0	(1)	0	(1)	0	0	0	0	0
Scunthorpe, Scunthorpe General Hospital	0	(1)	0	(1)	0	0	0	0	0
Sheffield, Northern General Hospital	3	(2)	3	(2)	6	0	0	3	0
Sheffield, Royal Hallamshire Hospital	5	(9)	5	(8)	8	2	4	4	2
Sheffield, Sheffield Children's Hospital	0	(1)	0	(1)	0	0	0	0	0
Wakefield, Pinderfields General Hospital	0	(1)	0	(1)	0	0	0	0	0
York, York District Hospital	1	(1)	1	(1)	2	0	2	1	1
Total	31	(46)	28	(38)	60	8	13	27	10
Channel Islands									
St Martins, Princess Elizabeth Hospital	1	(0)	1	(0)	2	0	0	1	1
Total	1	(0)	1	(0)	2	0	0	1	1
Isle of Man									
Douglas, Nobles I-O-M Hospital	1	(1)	1	(1)	2	0	0	1	0
Total	1	(1)	1	(1)	2	0	0	1	0
England	512	(507)	464	(459)	968	112	243	465	266
Northern Ireland									
Belfast, Antrim Hospital	1	(0)	1	(0)	2	0	2	1	1
Belfast, Belfast City Hospital	1	(2)	1	(1)	2	1	2	1	1

Donating hospital	All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
Belfast, Royal Belfast Hospital For Sick Children	0	(1)	0	(1)	0	0	0	0	0
Belfast, Royal Victoria Hospital	13	(7)	13	(4)	24	2	7	13	1
Belfast, The Ulster Hospital	1	(6)	1	(6)	2	0	0	1	0
Enniskillen, Erne Hospital	2	(1)	2	(1)	4	1	2	2	2
Londonderry, Altnagelvin Area Hospital	3	(3)	3	(3)	6	1	0	3	0
Portadown, Craigavon Area Hospital	0	(2)	0	(1)	0	0	0	0	0
Total	21	(22)	21	(17)	40	5	13	21	5
Scotland									
Aberdeen, Aberdeen Royal Infirmary	6	(4)	6	(4)	12	2	7	6	3
Ayr, The Ayr Hospital	1	(0)	1	(0)	2	0	0	1	0
Dumfries, Dumfries And Galloway Royal Infirmary	1	(2)	1	(2)	2	1	2	1	1
Dundee, Ninewells Hospital	6	(1)	5	(1)	12	4	2	5	3
Dunfermline, Queen Margaret Hospital	1	(1)	0	(1)	2	0	0	0	0
East Kilbride, Hairmyres Hospital	1	(1)	1	(1)	2	0	2	1	0
Edinburgh, Royal Infirmary Of Edinburgh	3	(6)	2	(4)	6	0	2	2	1
Edinburgh, Western General Hospital	9	(8)	8	(7)	18	1	6	8	4
Glasgow, Victoria Infirmary	4	(0)	4	(0)	8	1	3	4	2
Glasgow, Royal Hospital For Sick Children	0	(1)	0	(1)	0	0	0	0	0
Glasgow, Southern General Hospital	3	(3)	3	(3)	6	1	0	3	1
Glasgow, Stobhill General Hospital	2	(0)	2	(0)	4	0	0	2	0
Glasgow, Western Infirmary	3	(2)	3	(2)	3	2	2	3	0
Inverness, Raigmore Hospital	0	(7)	0	(7)	0	0	0	0	0
Kilmarnock, Crosshouse Hospital	3	(2)	3	(2)	6	0	2	3	3
Kirkcaldy, Victoria Hospital	2	(0)	2	(0)	4	0	0	2	2
Livingston, St John's Hospital	1	(0)	1	(0)	2	0	0	1	1
Paisley, Royal Alexandra Hospital	5	(1)	4	(0)	10	0	0	4	1
Perth, Perth Royal Infirmary	0	(1)	0	(1)	0	0	0	0	0
Stirling, Stirling Royal Infirmary	0	(1)	0	(1)	0	0	0	0	0
Total	51	(41)	46	(37)	99	12	28	46	22
Wales									
Abergavenny, Nevill Hall Hospital	1	(1)	1	(1)	2	0	0	1	1
Aberystwyth, Bronglais Hospital	2	(1)	2	(1)	4	0	0	2	1

Donating hospital	All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
Bangor, Ysbyty Gwynedd District General Hospital	3	(3)	3	(3)	6	0	0	3	1
Bodelwyddan, Glan Clwyd District General Hospital	0	(1)	0	(1)	0	0	0	0	0
Bridgend, Princess Of Wales Hospital	2	(1)	2	(1)	2	0	2	2	1
Cardiff, University Of Wales Hospital	5	(8)	5	(6)	10	1	0	5	3
Carmarthen, West Wales General Hospital	2	(1)	1	(1)	4	0	0	1	0
Haverford West, Withybush General Hospital	0	(2)	0	(1)	0	0	0	0	0
Merthyr Tydfil, Prince Charles Hospital	0	(4)	0	(3)	0	0	0	0	0
Newport, Royal Gwent Hospital	0	(1)	0	(0)	0	0	0	0	0
Penarth, Llandough Hospital	0	(3)	0	(3)	0	0	0	0	0
Pontypridd, Royal Glamorgan Hospital	0	(1)	0	(1)	0	0	0	0	0
Swansea, Morriston Hospital	10	(8)	10	(7)	19	2	7	10	6
Swansea, Singleton Hospital	0	(1)	0	(1)	0	0	0	0	0
Wrexham, Maelor General Hospital	3	(3)	3	(3)	6	1	0	3	2
Total	28	(39)	27	(33)	53	4	9	27	15

Appendix 1B

Deceased non-heartbeating solid organ donors and donated organs in the UK,
1 April 2008 - 31 March 2009 (2007-2008), by donating hospital

Donating hospital	All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
East Midlands									
Derby, Derby City General Hospital	1	(0)	0	(0)	2	0	0	0	0
Lincoln, Lincoln County Hospital	1	(0)	1	(0)	2	0	0	1	1
Northampton, Northampton General Hospital	2	(1)	0	(0)	4	0	0	0	0
Nottingham, Nottingham University Hospital	2	(0)	1	(0)	4	0	0	1	0
Total	6	(1)	2	(0)	12	0	0	2	1
East of England									
Bedford, Bedford Hospital	8	(1)	2	(1)	16	0	2	2	2
Bury St Edmunds, West Suffolk Hospital	1	(0)	0	(0)	2	0	0	0	0
Cambridge, Addenbrooke's Hospital	17	(10)	10	(4)	34	0	6	9	5
Colchester, Colchester General Hospital	2	(0)	1	(0)	4	0	0	0	1
Great Yarmouth, James Paget Hospital	4	(1)	1	(0)	8	0	0	0	1
Harlow, Princess Alexandra Hospital	2	(2)	0	(2)	4	0	0	0	0
Hemel Hempstead, Hemel Hempstead General Hospital	1	(1)	0	(1)	2	0	0	0	0
Huntingdon, Hinchingsbrooke Hospital	2	(0)	1	(0)	4	0	2	0	0
Ipswich, Ipswich Hospital	2	(2)	0	(1)	4	0	0	0	0
Luton, Luton And Dunstable Hospital	9	(4)	2	(1)	18	0	0	1	2
Norwich, Norfolk And Norwich University Hospital	2	(1)	0	(1)	4	0	0	0	0
Peterborough, Peterborough District Hospital	1	(0)	1	(0)	2	0	0	1	1
Stevenage, Lister Hospital	0	(1)	0	(0)	0	0	0	0	0
Watford, Watford General Hospital	1	(0)	0	(0)	2	0	0	0	0
Welwyn Garden City, Queen Elizabeth Hospital	1	(0)	0	(0)	2	0	0	0	0
Total	53	(23)	18	(11)	106	0	10	13	12
London									
Carshalton, St Helier Hospital	1	(1)	0	(1)	2	0	0	0	0
Enfield, Chase Farm Hospital	0	(1)	0	(1)	0	0	0	0	0
Harefield, Harefield Hospital	1	(0)	0	(0)	2	0	0	0	0
Isleworth, West Middlesex University Hospital	1	(0)	0	(0)	0	0	0	1	0
London, Central Middlesex Hospital	1	(0)	0	(0)	2	0	0	0	0

Donating hospital	All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
London, Charing Cross Hospital	0	(4)	0	(3)	0	0	0	0	0
London, Great Ormond Street Hospital For Children	2	(1)	1	(1)	4	0	0	1	1
London, King's College Hospital	3	(1)	2	(1)	6	0	0	1	1
London, National Hospital For Neurology And Neurosurgery	1	(5)	1	(3)	2	0	0	1	0
London, Newham General Hospital	1	(0)	1	(0)	2	0	0	1	0
London, North Middlesex Hospital	1	(1)	0	(1)	1	0	0	0	0
London, Royal Free Hospital	3	(0)	2	(0)	6	0	2	1	1
London, St George's Hospital	6	(3)	3	(2)	10	0	0	4	2
London, St Thomas' Hospital	5	(2)	3	(0)	8	0	0	4	0
London, The Royal London Hospital (Whitechapel)	9	(4)	6	(2)	18	0	0	6	5
London, University College Hospital	2	(1)	0	(0)	4	0	0	0	0
London, University Hospital Lewisham	1	(0)	0	(0)	0	0	0	1	0
London, Whipps Cross Hospital	1	(0)	0	(0)	2	0	0	0	0
Romford, Queens Hospital	2	(3)	1	(0)	4	0	0	1	1
Sidcup, Queen Mary's Hospital	0	(1)	0	(1)	0	0	0	0	0
Uxbridge, Hillingdon Hospital	0	(1)	0	(1)	0	0	0	0	0
Total	41	(29)	20	(17)	73	0	2	22	11
North East									
Durham, University Hospital Of North Durham	1	(0)	1	(0)	2	0	0	1	0
Gateshead, Queen Elizabeth Hospital	1	(0)	0	(0)	2	0	0	0	0
Middlesbrough, The James Cook University Hospital	4	(3)	1	(1)	8	0	0	1	0
Newcastle, Freeman Hospital	0	(2)	0	(0)	0	0	0	0	0
Newcastle, Newcastle General Hospital	4	(9)	3	(1)	8	0	2	3	1
Sunderland, Sunderland Royal Hospital	1	(1)	1	(0)	2	0	2	1	0
Total	11	(15)	6	(2)	22	0	4	6	1
North West									
Blackburn, Royal Blackburn Hospital	1	(1)	1	(0)	2	0	0	0	1
Bolton, Royal Bolton Hospital	2	(2)	0	(0)	4	0	0	0	0
Chester, Countess Of Chester Hospital	0	(1)	0	(1)	0	0	0	0	0
Crewe, Leighton Hospital	1	(0)	1	(0)	1	0	0	1	1
Liverpool, Royal Liverpool University Hospital	1	(0)	0	(0)	2	0	0	0	0
Liverpool, University Hospital Aintree	3	(0)	1	(0)	4	0	0	2	0

Donating hospital	All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
Liverpool, Walton Centre For Neurology And Neurosurgery	3	(0)	1	(0)	5	0	0	1	1
Manchester, Manchester Royal Infirmary	1	(0)	0	(0)	2	0	0	0	0
Manchester, Royal Manchester Childrens Hospital (Pendlebury)	0	(2)	0	(1)	0	0	0	0	0
Oldham, Royal Oldham Hospital (Rochdale Road)	0	(1)	0	(0)	0	0	0	0	0
Preston, Royal Preston Hospital	6	(4)	2	(3)	10	0	0	3	2
Salford, Hope Hospital	0	(3)	0	(0)	0	0	0	0	0
Salford, Salford Royal Hospital	1	(0)	0	(0)	0	0	0	1	0
Southport, Southport District General Hospital	1	(0)	1	(0)	2	0	0	1	1
Stockport, Stepping Hill Hospital	1	(2)	1	(2)	2	0	0	1	1
Wigan, Royal Albert Edward Infirmary	2	(0)	0	(0)	3	0	0	0	0
Total	23	(16)	8	(7)	37	0	0	10	7
South Central									
Basingstoke, North Hampshire Hospital	0	(4)	0	(0)	0	0	0	0	0
Milton Keynes, Milton Keynes General Hospital	1	(1)	0	(0)	2	0	0	0	0
Newport, St Mary's Hospital	0	(1)	0	(0)	0	0	0	0	0
Oxford, John Radcliffe Hospital	7	(2)	5	(0)	14	0	0	5	3
Portsmouth, Queen Alexandra Hospital	1	(2)	1	(1)	2	0	0	1	0
Reading, Royal Berkshire Hospital	3	(2)	2	(0)	6	0	0	2	2
Slough, Wexham Park Hospital	1	(0)	1	(0)	2	0	0	1	1
Southampton, Southampton University Hospitals	7	(7)	2	(4)	12	0	0	3	1
Southampton, Wessex Neurological Unit	1	(0)	1	(0)	2	0	0	1	0
Winchester, Royal Hampshire County Hospital	0	(1)	0	(1)	0	0	0	0	0
Wycombe, Wycombe General Hospital	0	(1)	0	(1)	0	0	0	0	0
Total	21	(21)	12	(7)	40	0	0	13	7
South East Coast									
Ashford, William Harvey Hospital	0	(1)	0	(0)	0	0	0	0	0
Camberley, Frimley Park Hospital	0	(2)	0	(1)	0	0	0	0	0
Chertsey, St Peter's Hospital	1	(1)	1	(0)	2	0	0	1	0
Chichester, St Richard's Hospital	1	(1)	0	(0)	2	0	0	0	0
Dartford, Darent Valley Hospital	1	(0)	1	(0)	2	0	2	1	0
Gillingham, Medway Hospital	0	(1)	0	(1)	0	0	0	0	0
Haywards Heath, Hurstwood Park Hospital	1	(3)	1	(2)	2	0	0	1	1

Donating hospital	All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
Maidstone, Maidstone District General Hospital	1	(0)	1	(0)	2	0	0	1	0
Margate, Queen Elizabeth The Queen Mother Hospital	2	(2)	0	(1)	4	0	0	0	0
Redhill, East Surrey Hospital	1	(4)	0	(3)	2	0	0	0	0
Worthing, Worthing Hospital	1	(0)	0	(0)	2	0	0	0	0
Total	9	(15)	4	(8)	18	0	2	4	1
South West									
Bath, Royal United Hospital	2	(2)	1	(2)	4	0	0	0	1
Bournemouth, Royal Bournemouth General Hospital	4	(0)	1	(0)	8	0	0	1	1
Bristol, Bristol Royal Hospital For Children	0	(1)	0	(0)	0	0	0	0	0
Bristol, Bristol Royal Infirmary	2	(2)	1	(1)	2	0	0	1	1
Bristol, Frenchay Hospital	10	(7)	8	(4)	18	0	2	6	6
Bristol, Southmead Hospital	1	(0)	0	(0)	2	0	0	0	0
Cheltenham, Cheltenham General Hospital	0	(1)	0	(0)	0	0	0	0	0
Exeter, Royal Devon And Exeter Hospital (Wonford)	5	(1)	0	(0)	10	0	0	0	0
Plymouth, Derriford Hospital	18	(9)	6	(2)	36	0	4	6	3
Poole, Poole General Hospital	1	(2)	0	(0)	2	0	0	0	0
Swindon, Great Western Hospital	0	(2)	0	(1)	0	0	0	0	0
Taunton, Taunton And Somerset Hospital (Musgrove Park)	0	(1)	0	(0)	0	0	0	0	0
Torquay, Torbay Hospital	3	(1)	0	(1)	6	0	0	0	0
Truro, Royal Cornwall Hospital (Treliske)	0	(1)	0	(1)	0	0	0	0	0
Weston-Super-Mare, Weston Super Mare General Hospital	0	(1)	0	(0)	0	0	0	0	0
Total	46	(31)	17	(12)	88	0	6	14	12
West Midlands									
Birmingham, Diana Princess Of Wales Children Hospital	1	(2)	0	(2)	2	0	0	0	0
Birmingham, Queen Elizabeth Hospital	7	(0)	3	(0)	12	0	0	4	1
Birmingham, Selly Oak Hospital	4	(1)	2	(1)	4	0	0	4	0
Burton-On-Trent, Queen's Hospital	1	(0)	1	(0)	2	0	0	1	1
Coventry, University Hospital	2	(3)	1	(2)	4	0	0	1	1
Hereford, The County Hospital	0	(1)	0	(1)	0	0	0	0	0
Shrewsbury, Royal Shrewsbury Hospital	0	(1)	0	(1)	0	0	0	0	0
Stoke, North Staffordshire Royal Infirmary	4	(5)	3	(4)	8	0	0	3	2
Telford, The Princess Royal Hospital	0	(1)	0	(1)	0	0	0	0	0

Donating hospital	All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
West Bromwich, Sandwell General Hospital	1	(0)	0	(0)	2	0	0	0	0
Worcester, Worcester Royal Hospital	2	(0)	2	(0)	4	0	2	2	0
Worcestershire Royal Hospital	1	(0)	1	(0)	2	0	0	1	1
Total	23	(14)	13	(12)	40	0	2	16	6
Yorkshire and the Humber									
Barnsley, Barnsley District General Hospital	0	(1)	0	(1)	0	0	0	0	0
Halifax, Calderdale Royal Hospital	2	(0)	1	(0)	4	0	0	0	1
Harrogate, Harrogate District Hospital	0	(1)	0	(1)	0	0	0	0	0
Hull, Hull Royal Infirmary	5	(0)	4	(0)	10	0	2	4	2
Leeds, Leeds General Infirmary	12	(9)	3	(6)	24	0	0	2	2
Leeds, St James's University Hospital	0	(1)	0	(1)	0	0	0	0	0
Pontefract, Pontefract General Infirmary	1	(0)	0	(0)	2	0	0	0	0
Rotherham, Rotherham District General Hospital	1	(0)	0	(0)	2	0	0	0	0
Scarborough, Scarborough General Hospital	0	(1)	0	(1)	0	0	0	0	0
Sheffield, Northern General Hospital	1	(1)	0	(0)	2	0	0	0	0
Sheffield, Royal Hallamshire Hospital	2	(0)	1	(0)	4	0	0	1	0
Wakefield, Pinderfields General Hospital	1	(1)	0	(1)	2	0	0	0	0
York, York District Hospital	1	(1)	0	(1)	2	0	0	0	0
Total	26	(16)	9	(12)	52	0	2	7	5
England	259	(181)	109	(88)	488	0	28	107	63
Scotland									
Dundee, Ninewells Hospital	1	(0)	0	(0)	2	0	0	0	0
East Kilbride, Hairmyres Hospital	1	(0)	0	(0)	2	0	0	0	0
Edinburgh, Royal Infirmary Of Edinburgh	4	(1)	3	(1)	7	0	0	3	0
Edinburgh, Western General Hospital	4	(4)	3	(3)	7	0	2	2	1
Glasgow, Southern General Hospital	6	(4)	2	(0)	12	0	2	2	1
Glasgow, Western Infirmary	1	(0)	0	(0)	2	0	0	0	0
Greenock, Inverclyde Royal Hospital	1	(1)	1	(0)	2	0	0	1	0
Inverness, Raigmore Hospital	1	(0)	1	(0)	2	0	0	1	1
Livingston, St John's Hospital	1	(1)	0	(0)	2	0	0	0	0
Melrose, Borders General Hospital	0	(1)	0	(0)	0	0	0	0	0

Donating hospital	All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
Paisley, Royal Alexandra Hospital	1	(0)	1	(0)	2	0	1	1	0
Wishaw, Wishaw General Hospital	0	(1)	0	(1)	0	0	0	0	0
Total	21	(13)	11	(5)	40	0	5	10	3
Wales									
Cardiff, University Of Wales Hospital	5	(4)	1	(2)	10	0	0	1	1
Newport, Royal Gwent Hospital	2	(0)	1	(0)	4	0	0	0	1
Pontypridd, Royal Glamorgan Hospital	0	(1)	0	(0)	0	0	0	0	0
Swansea, Morriston Hospital	1	(1)	0	(0)	2	0	0	0	0
Total	8	(6)	2	(2)	16	0	0	1	2

Appendix II Numbers of heartbeating donors and organs retrieved in the UK, 1 April 2008 - 31 March 2009, by kidney designated area

Kidney designated area	All donors	Donors		pmp	Kidney	Heart	Organs		
		pmp	Multi-organ donors				Lung	Liver	Pancreas
Belfast	21	12.2	21	12.2	40	5	13	21	5
Birmingham	46	10.1	42	9.2	86	10	18	44	22
Bristol	17	8.5	17	8.5	30	4	12	17	14
Cambridge	27	10.5	26	10.2	52	9	13	26	14
Cardiff	22	9.6	21	9.2	41	3	9	21	12
Coventry	5	6.0	4	4.8	10	2	2	4	2
Edinburgh	28	11.6	24	10.0	56	7	17	24	14
Glasgow	23	8.6	22	8.2	43	5	11	22	8
Leeds	15	4.0	13	3.4	30	4	7	13	6
Leicester	12	5.5	12	5.5	23	3	8	12	7
Liverpool	35	10.6	33	10.0	70	8	10	33	12
Manchester	35	8.7	29	7.2	64	7	12	31	18
Newcastle	44	15.2	37	12.8	80	11	22	38	24
North Thames	100	13.4	89	11.9	186	25	58	89	54
Nottingham	11	7.8	11	7.8	22	2	9	11	6
Oxford	37	12.1	33	10.7	68	9	20	33	20
Plymouth	15	8.2	12	6.6	30	1	8	10	8
Portsmouth	19	7.8	19	7.8	38	2	4	19	9
Sheffield	20	10.7	19	10.2	38	4	10	18	6
South Thames	80	11.6	74	10.8	153	12	30	73	47
TOTAL	612	10.2	558	9.3	1160	133	293	559	308

Appendix IIIA		Retrieval populations for kidney centres, 2008-2009	
		Mid-2005 estimates based on ONS 2001 Census figures	
Kidney centre		Retrieval population million	
Birmingham		4.55	
Bristol		2.01	
Cambridge		2.56	
Coventry		0.83	
Leeds		3.78	
Leicester		2.17	
Liverpool		3.31	
Manchester		4.04	
Newcastle		2.89	
North Thames		7.48	
Nottingham		1.41	
Oxford		3.07	
Plymouth		1.82	
Portsmouth		2.44	
Sheffield		1.87	
South Thames		6.88	
Total (England)		51.11	(50.44)
Cardiff		2.29	
Total (Wales)		2.29	(2.96)
Edinburgh		2.41	
Glasgow		2.68	
Total (Scotland)		5.09	(5.09)
Belfast		1.72	
Total (Northern Ireland)		1.72	(1.72)
TOTAL (UK)		60.21	(60.21)

Appendix IIIB**Retrieval population for liver and cardiothoracic zones 2008-2009
Mid-2005 estimates based on ONS 2001 Census figures****Liver zone****Retrieval population (million)**

Birmingham	13.38
Cambridge	9.43
Edinburgh	5.09
King's College	14.96
Leeds	8.01
Newcastle	3.47
Royal Free	5.87

Cardiothoracic zone**Retrieval population (million)**

Birmingham	9.8
Glasgow	5.09
Harefield	13.41
Manchester	8.08
Newcastle	8.66
Papworth	15.17

Appendix IV**Number of families approached and unadjusted consent rates
by donor transplant co-ordinator team**

Donor transplant co-ordinator team	HB		NHB	
	No. families approached	Unadjusted consent rate	No. families approached	Unadjusted consent rate
Belfast	88	58%	1	0%
Bristol	51	69%	68	63%
Cambridge	81	62%	79	67%
Cardiff	102	58%	42	45%
East Midlands	77	53%	7	29%
Leeds	80	69%	68	53%
Liverpool	125	62%	13	69%
Manchester	133	59%	66	53%
Newcastle	146	62%	46	72%
North Thames	328	55%	88	55%
Oxford	113	61%	47	60%
Plymouth	47	81%	53	79%
Portsmouth	42	88%	69	55%
Scotland	131	72%	73	62%
Sheffield	65	66%	12	67%
South Thames	263	64%	114	51%
West Midlands	180	63%	86	53%

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Blood and Transplant

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