

Activity Report 2009/10

TRANSPLANT ACTIVITY IN THE UK



Preface

All figures quoted in this report are as reported to NHS Blood and Transplant by 28 June 2010 for the UK Transplant Registry, 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 2-8 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 an organ donor is any donor from whom at least one 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.

The number of donors after brain death (DBD) and donors after cardiac death (DCD) by hospital are documented in **Appendix I**. Donation and transplant rates in this report are presented per million population (pmp): population figures used throughout this report are estimates based on figures supplied by Strategic Health Authorities and are given in **Appendices IIIA** and **IIIB**.

Cover image top: Jaya, Jay Sean and Sonia Deol joined NHSBT to show their support for the launch of the BME Organ Donation Campaign in February 2010.

Bottom: Louisa McGregor-Smith was diagnosed with an acute heart condition at three months old. She received a heart transplant two months later and is now happy and healthy.

Foreword

The number of organ transplants carried out across the UK has risen again, for the fifth year in succession, reaching a record high of 3,706 last year.

At the same time, we saw the highest ever number of deceased organ donors in the UK – 959, a 7% increase compared with the previous 12 months.

These figures are hugely encouraging, and an indicator that the energies of NHS Blood and Transplant and others across the NHS that have been channelled into transforming the systems that support donation and transplant processes are having a positive effect.

The number waiting for transplant however continues to grow, albeit at a slower rate last year, so consolidating and building on these foundations to help save greater numbers of lives is our overriding objective.

In this, the annual report of Transplant Activity in the UK for 2009-10, we present a wealth of statistical data for organ and cornea donation and transplantation.

But one must never forget that behind these figures are real people – sick and dying people whose chance of receiving a transplant depends on the generosity of others, and those who have sadly died and given the ultimate gift so that someone else's life can go on.

The contribution that living organ donation continues to make to transplant numbers cannot be ignored – more than half of the total number of organ donors last year were healthy living people donating either a kidney or part of their liver, and more than one in three of all kidney transplants now comes from a living donor.

But it is in deceased organ donation that the NHS has been striving for years to deliver increases. Since 2007/2008, which became a baseline year following publication of the Organ Donation Taskforce report, deceased donation has increased by 19% and the donation rate for the UK now rests at 15.5 pmp, up from 13.1 pmp in 2007/08.

Increasing the number of nurses specialising in organ donation, together with the appointment of a new network of doctors working as clinical leads for organ donation, is fundamental to this success. Other developments recommended by the Taskforce are also coming to fruition and I believe their combined effect is now helping to deliver the step change in culture and professional practice throughout the donation and transplant community that will help us to deliver on the original promise of a 50% increase in donation by 2013.

My thanks go to all those across the NHS who are working to help make organ donation part of normal, everyday work. I especially want to honour all donors and their families whose agreement to organ donation gives life and hope to so many.

E. Sally Johnson
Director of Organ Donation and Transplantation, NHSBT

CONTENTS

1	Summary of Transplant Activity	1
2	Overview of Organ Donation and Transplantation	2
2.1	Summary of activity	2
2.2	Transplant list	3
2.3	Transplants	4
3	Organ Donation Activity	6
3.1	Summary of activity	6
3.2	Organ donors	7
3.3	Demographic characteristics	9
4	Kidney Activity	11
4.1	Overview	11
4.2	Transplant list	14
4.3	Donor and organ supply	15
4.4	Transplants	17
4.5	Demographic characteristics	21
5	Pancreas Activity	22
5.1	Overview	22
5.2	Transplant list	24
5.3	Donor and organ supply	25
5.4	Transplants	26
5.5	Demographic characteristics	27
6	Cardiothoracic Activity	29
6.1	Overview	29
6.2	Transplant list	30
6.3	Donor and organ supply	35
6.4	Transplants	36
6.5	Demographic characteristics	37
7	Liver Activity	38
7.1	Overview	38
7.2	Transplant list	41
7.3	Donor and organ supply	42
7.4	Transplants	43
7.5	Demographic characteristics	44
7.6	Intestinal transplant activity	45
8	Cornea Activity	46
8.1	Overview	46
8.2	Donor and tissue supply	47
8.3	CTS Eye Bank activity	49
8.4	Transplants	49
8.5	Demographic characteristics	52

9	Survival rates following transplantation	53
9.1	Kidney graft and patient survival	54
9.1.1	<i>Adult kidney recipients – donor after brain death (DBD)</i>	54
9.1.2	<i>Adult kidney recipients – donor after cardiac death (DCD)</i>	55
9.1.3	<i>Adult kidney recipients – living donor</i>	56
9.1.4	<i>Paediatric kidney recipients – donor after brain death (DBD)</i>	57
9.1.5	<i>Paediatric kidney recipients – living donor</i>	58
9.2	Pancreas graft and patient survival	59
9.2.1	<i>Simultaneous kidney/pancreas transplants</i>	59
9.2.2	<i>Pancreas only transplants</i>	60
9.3	Cardiothoracic patient survival	61
9.3.1	<i>Adult recipients – heart transplants</i>	61
9.3.2	<i>Adult recipients – heart/lung block transplants</i>	62
9.3.3	<i>Adult recipients – lung transplants</i>	63
9.3.4	<i>Paediatric recipients – heart transplants</i>	64
9.4	Liver patient survival	65
9.4.1	<i>Adult recipients – donor after brain death (DBD)</i>	65
9.4.2	<i>Adult recipients – donor after cardiac death (DCD)</i>	66
9.4.3	<i>Paediatric recipients – donor after brain death (DBD)</i>	67
9.5	Cornea graft survival	68
10	NHS Organ Donor Register	69
11	National Audit of potential donors	72
11.1	Introduction	72
11.2	Definitions	72
11.3	Breakdown of audited deaths in ICUs	72
11.4	Potential donors	74
11.5	Consent rates	75
	Appendices	76

1 SUMMARY OF TRANSPLANT ACTIVITY

In the financial year to 31 March 2010:

- there was a 7% increase in the number of deceased donors to 959 , the largest number there has ever been
- the number of donors after brain death increased by 2% to 623, while the number of donors after cardiac death increased by 17% to 336
- the number of living donors increased by 10% to 1061, so that living donors account for more than half of the total number of organ donors
- the number of patients whose lives were saved or improved by an organ transplant increased by 5% to just over 3,700
- 3,061 patients had their sight restored through a cornea transplant, an increase of 12% on last year

The number of patients registered for a transplant has continued to increase, although at a slower rate than in previous years, so that:

- there were just under 8,000 patients waiting for a transplant at the end of March 2010, and a further 2,545 were temporarily suspended from transplant lists
- 552 patients died while waiting for their transplant

Some of the other key messages from this report are that there has been:

- an 8% increase in the number of kidney transplants
- a 3% increase in the total number of deceased liver transplants
- a decrease of 1% in both the number of pancreas transplants and cardiothoracic organ transplants
- no change in the consent rate for organ donation which remains at around 60%

2 OVERVIEW OF ORGAN DONATION AND TRANSPLANTATION

This overview summarises the main features of organ donation and transplantation activity in the UK during the financial year from 1 April 2009 to 31 March 2010.

2.1 Summary of activity

As the number of deceased donors and transplants continued to increase this year, the number of patients waiting for a transplant at 31 March 2010 is only 120 more than on the same date last year. The increase in donor and transplant numbers (1 April 2000 to 31 March 2010) and the change in the transplant lists at 31 March each year are shown in **Figure 2.1**. There were 93 more transplants in 2009-2010 than in the previous year, representing a 4% increase. The corresponding increase in the number of donors was 7%.

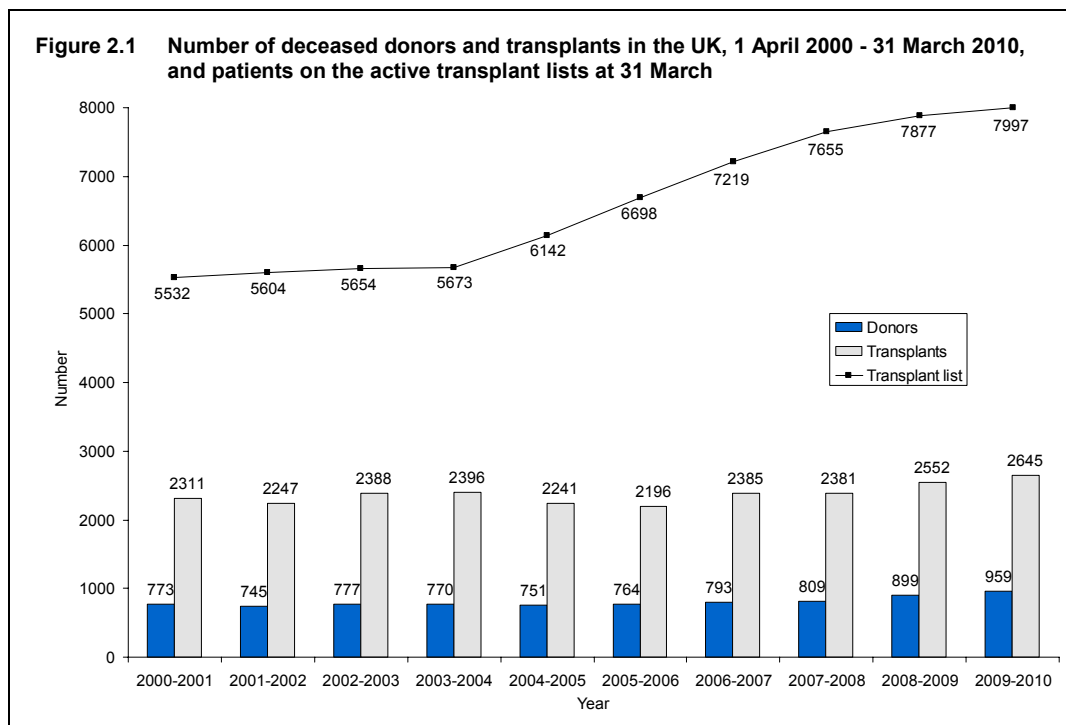
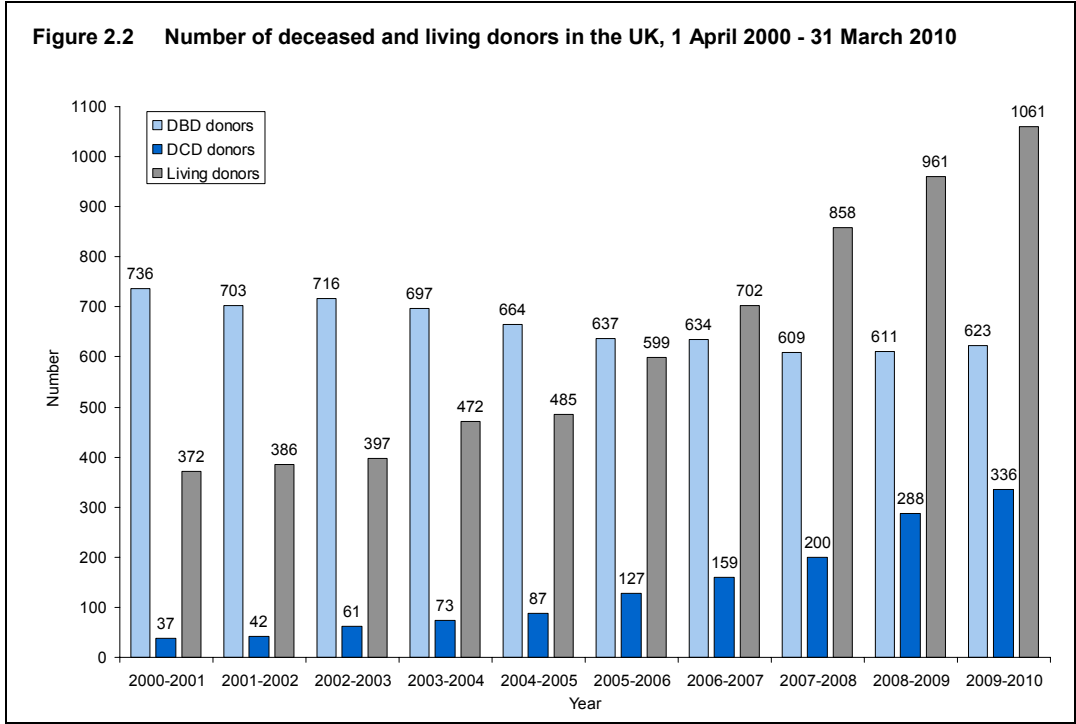


Figure 2.2 shows the number of deceased and living donors for 2000 to 2010. The number of deceased organ donors in the UK continued to fall over a number of years but following the implementation of the Organ Donation Taskforce recommendations, the numbers are increasing. The number of donors after brain death (DBD) has increased by 2% over the last three years reversing the trend which has seen a 17% decrease between 2000/2001 and 2007/2008. The number of donors after cardiac death (DCD) has been increasing year-on-year as an effort to bridge the gap between the number of deceased donor organs available for transplant and the number of patients waiting for a transplant. In particular the number of these donors has increased by 68% since 2007/2008. Living donors also continue to increase: 1061 this year representing a 10% increase on last year.



2.2 Transplant list

At 31 March 2010, 10,542 patients were registered for an organ transplant in the UK. Of these, 2,545 (24%) patients were temporarily suspended from the active national transplant list because they were unfit or otherwise unavailable for transplant. Details of numbers of patients on each of the organ transplant lists are given in **Table 2.1** for 31 March 2009 and 2010. The total number rose by 120 patients (2%), which is less than the increases seen in recent years.

	2009	2010	% Change
Kidney & pancreas patients	7217	7232	0
Kidney	6920	6892	0
Kidney & pancreas ¹	254	275	+8
Pancreas ²	43	48	+12
Pancreas islets	-	17	-
Cardiothoracic patients	320	388	+21
Heart	91	122	+34
Heart/lung	12	12	0
Lung(s)	217	254	+17
Liver patients³	326	360	+10
Other multi-organ patients⁴	14	17	+21
ALL PATIENTS	7877	7997	+2

¹ Includes patients waiting for an intestinal transplant (1 in 2009)
² Includes patients waiting for an intestinal transplant (3 in 2009, 5 in 2010)
³ Includes patients waiting for an intestinal transplant (5 in 2009 (2 incl. kidney), 3 in 2010)
⁴ Includes patients waiting for kidney and liver transplants (12 in 2009, 13 in 2010), kidney and heart transplant (2 in 2009, 3 in 2010), heart and liver transplant (1 in 2010)

2.3 Transplants

There was a 5% increase in the total number of organ transplants (from deceased and living donors) last year: 3,706 transplants were performed in 2009-2010 compared with 3,513 in 2008-2009 (**Table 2.2**). All multi-organ transplants are identified separately as are transplants from living donors.

The total number of kidney transplants increased by 8% in 2009-2010; living donor kidney transplants and kidney transplants from donors after cardiac death increased by 12% and 17% respectively. The total number of cardiothoracic organ transplants fell by 1%, the number of liver transplants rose by 1% and the number of pancreas transplants (including pancreas only, kidney/pancreas and pancreas islets) decreased by 1%. The decline in the number of some organ transplants may reflect changing donor patterns which are described in Chapter 3.

Table 2.2 Transplants performed in the UK, 1 April 2008 - 31 March 2010

Transplant	2008-2009	2009-2010	% Change
DBD kidney	949	952	+0
DCD kidney	454	530	+17
Living donor kidney	927	1037	+12
DBD Kidney & pancreas	132	138	+5
DCD Kidney & pancreas	20	22	+10
DBD Pancreas	41	30	-27
DCD Pancreas	13	10	-23
Pancreas islets	-	9	-
Deceased heart	129	120	-7
Domino heart	0	1	-
Heart/lung	3	5	-
DBD Single lung	30	33	+10
DCD Single lung	1	3	-
DBD Double lung	101	97	-4
DCD Double lung	11	12	+9
DBD liver	445	472	+6
DCD liver	76	97	+28
Domino liver	7	3	-
DBD liver lobe	119	92	-23
DCD liver lobe	4	2	-
Living donor liver lobe	27	20	-26
Kidney & heart	1	0	-
Kidney & liver	13	15	+15
Liver, bowel and pancreas	9	5	-
Liver, bowel, kidney and pancreas	1	0	-
Liver & lung	0	1	-
TOTAL ORGAN TRANSPLANTS	3513	3706	+5
Total kidney transplants¹	2497	2694	+8
Total pancreas transplants¹	216	214	-1
Total cardiothoracic transplants	276	272	-1
Total liver transplants¹	701	707	+1

Percentage not reported when fewer than 10 in either year

¹ Includes intestinal transplants, 12 in 2008-2009 (1 including kidney, 5 including liver) and 14 in 2009-2010 (10 including liver), excludes bowel only transplants, see Table 7.9 in Chapter 7

3 ORGAN DONATION ACTIVITY

Key messages

- There has been a 7% increase in deceased organ donors (to 959) and a 10% increase in living organ donors (to 1061)
- The number of donors after brain death increased by 2% and there was a 17% increase in donors after cardiac death
- Donors after cardiac death provide, on average, one less organ for transplantation than donors after brain death
- Donor characteristics are changing: donors are older, more obese and less likely to have suffered a trauma-related death, all of which have adverse effects on transplant outcomes

3.1 Summary of activity

There was a 7% increase in the number of deceased organ donors in 2009-2010. This was a result of 2% more donors after brain death (DBD) and 17% more donors after cardiac death (DCD). The 959 deceased solid organ donors gave 3,361 solid organs in the UK compared with 899 donors and 3,218 organs in 2008-2009. This represents a 4% increase in organs donated. This is lower than the increase in the number of donors because fewer organs can be used from donors after cardiac death, which is where the greatest increase was seen. In particular DCD cannot provide hearts for transplant. **Table 3.1** shows deceased organ donors according to the organs they donated. On average in the UK, 3.9 organs were retrieved per DBD and 2.6 per DCD in 2009-2010.

Nearly all deceased donors (97%) gave a kidney and of these the majority (77%) also donated at least one other organ. Only 9% of donors after brain death were single organ donors, the majority of which were kidney only donors. By contrast, 54% of donors after cardiac death donated only their kidneys, although many were also liver donors.

Although the vast majority of living organ donors donated a kidney, one donor donated part of a lung while a further 23 donated part of their liver. All living donations are approved by the Human Tissue Authority.

Table 3.1 Solid organ donors in the UK, 1 April 2009 - 31 March 2010, by organs donated

	DBD	DCD	Living donor	TOTAL
Kidney only	36	180	1037	1253
Kidney & thoracic	8	2	-	10
Kidney & liver	185	68	-	253
Kidney & pancreas	7	17	-	24
Kidney, thoracic & liver	63	4	-	67
Kidney, thoracic & pancreas	1	1	-	2
Kidney, liver & pancreas	170	46	-	216
Kidney, thoracic, liver & pancreas	132	11	-	143
Thoracic only	1	-	1	2
Thoracic & liver	1	-	-	1
Liver only	18	7	23	48
Liver & pancreas	1	-	-	1
TOTAL	623	336	1061	2020

3.2 Organ donors

Organ donor rates per million population (pmp) for 2009-2010 are given by Strategic Health Authority and country in **Table 3.2**. There is variation in the number of DBD and DCD pmp across the UK. There are 10.1 DBD pmp for the UK as a whole, but across the English Strategic Health Authorities this ranges between 5.7 and 14.8 pmp. However, the number of potential donors pmp also varies and further information can be seen in Chapter 11. For DCD the UK rate is 5.4 pmp, ranging from 0 to 5.9 across countries of the UK and from 2.8 to 9.6 in the English Strategic Health Authorities. Northern Ireland is alone in not having a programme for donors after cardiac death in this time period.

Table 3.2 Organ donation rates per million population (pmp), in the UK, 1 April 2009 - 31 March 2010, by country and English Strategic Health Authority

Country of donation/ Strategic Health Authority	DBD		DCD		TOTAL		Living	
	N	(pmp)	N	(pmp)	N	(pmp)	N	(pmp)
North East	33	(12.8)	19	(7.4)	52	(20.2)	43	(16.7)
North West	76	(11.0)	44	(6.4)	120	(17.4)	103	(14.9)
Yorkshire and The Humber	50	(9.6)	30	(5.8)	80	(15.4)	70	(13.4)
East Midlands	25	(5.7)	7	(1.6)	32	(7.3)	58	(13.2)
West Midlands	59	(10.9)	21	(3.9)	80	(14.8)	115	(21.3)
East of England	40	(7.0)	55	(9.6)	95	(16.6)	43	(7.5)
London	113	(14.8)	61	(8.0)	174	(22.8)	386	(50.7)
South East Coast	34	(7.9)	12	(2.8)	46	(10.7)	2	(0.5)
South Central	48	(11.8)	15	(3.7)	63	(15.5)	71	(17.4)
South West	47	(9.0)	41	(7.9)	88	(16.9)	61	(11.7)
England	525	(10.2)	305	(5.9)	830	(16.1)	952	(18.5)
Isle of Man	0	(0)	1	(12.5)	1	(12.5)	0	(0)
Channel Islands	5	(33.3)	1	(6.7)	6	(40.0)	0	(0)
Wales	28	(9.4)	13	(4.3)	41	(13.7)	39	(13.0)
Scotland	47	(9.1)	16	(3.1)	63	(12.1)	50	(9.6)
Northern Ireland	18	(9.7)	0	(0)	18	(9.7)	20	(10.8)
TOTAL	623	(10.1)	336	(5.4)	959	(15.5)	1061	(17.2)

The number of organs retrieved per donor in 2009-2010 is given by country in **Table 3.3**. Overall for adult donors, 3.9 organs were donated per DBD and 2.6 per DCD. For adult DBD, the rate ranged from 3.4 organs per donor in Wales to 4.2 in Northern Ireland.

Table 3.3 Organs retrieved per donor in the UK, 1 April 2009 - 31 March 2010, by country and English Strategic Health Authority

Country of donation	Adult			Paediatric		
	DBD	DCD	TOTAL	DBD	DCD	TOTAL
England	3.9	2.6	3.4	4.6	3.0	4.1
Wales	3.4	2.6	3.2	4.0	-	4.0
Scotland	3.9	2.3	3.5	5.0	-	5.0
Northern Ireland	4.2	-	4.2	-	-	-
TOTAL¹	3.9	2.6	3.5	4.6	3.0	4.1

¹ Includes Channel Islands and Isle of Man

3.3 Demographic characteristics

While the number of donors overall is increasing, it is important to be aware that there are changes over time with regard to donor characteristics (**Table 3.4**). In 2009-2010, 26% of deceased donors were aged 60 years or more compared with 14% in 2000-2001 (**Figure 3.1**). In particular the proportion of these donors aged at least 70 years has increased from 2% to 8% over the same time period. The trend was similar for both DBD and DCD. The proportion of clinically obese donors (Body Mass Index (BMI) of 30 or higher) has increased from 13% to 24% in deceased donors in the last 10 years (**Figure 3.2**) and the trend was similar for both DBD and DCD. In addition, the proportion of all deceased donors after a trauma death has decreased from 20% to 11% over the same time period. All of these changes may have an adverse impact on the quality of the organs and the subsequent transplant outcome for the recipient.

Table 3.4 also indicates the ethnicity of deceased organ donors, highlighting that 5% of donors are from ethnic minority groups. By contrast, ethnic minority groups represent 8% of the UK population.

		DBD		DCD		TOTAL	
		N	%	N	%	N	%
Age	0-17	28	4	13	4	41	4
	18-49	298	48	146	43	444	46
	50-59	157	25	72	21	229	24
	60-69	97	16	76	23	173	18
	70+	43	7	29	9	72	8
BMI	0-19	31	5	20	6	51	5
	20-29	438	70	226	67	664	69
	30+	153	25	74	22	227	24
	Not reported	1	0	16	5	17	2
Cause of death	Intracranial	522	84	240	71	762	79
	Trauma	57	9	47	14	104	11
	Other	44	7	49	15	93	10
Ethnicity	White	595	96	319	95	914	95
	Asian	6	1	9	3	15	2
	Black	10	2	3	1	13	1
	Other	12	2	5	1	17	2
TOTAL	623		336		959		

Figure 3.1 Age of deceased donors in the UK, 1 April 2000 - 31 March 2010

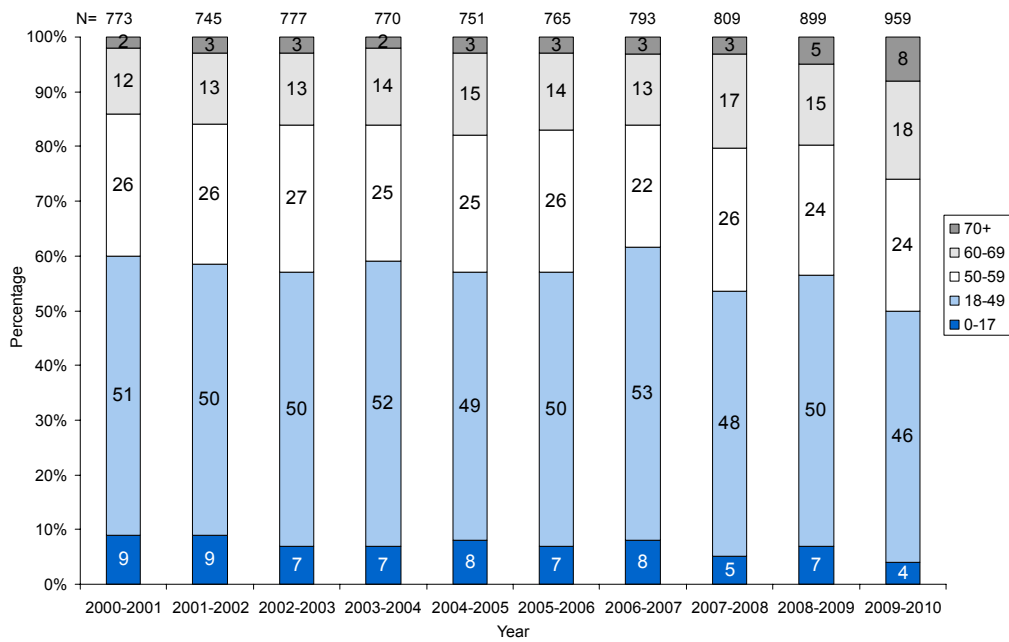
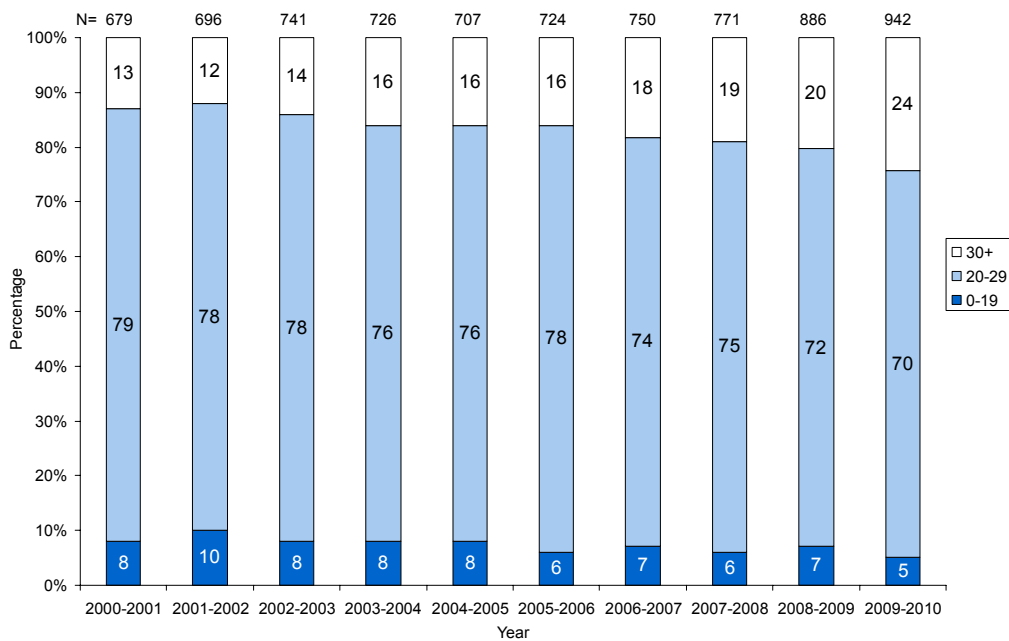


Figure 3.2 BMI of deceased donors in the UK, 1 April 2000 - 31 March 2010



4 KIDNEY ACTIVITY

Key messages

- The number of deceased kidney donors increased by 8% to 931
- Kidney transplants from living donors increased by 12% to 1037, while transplants from deceased donors increased by 6% to 1657
- 32 kidney transplants were made possible by the paired living kidney donation programme
- Non-directed living kidney donation resulted in 16 living donor kidney transplants
- There was no change in the number of patients registered on the kidney transplant list this year (almost 7200)

4.1 Overview

The number of deceased kidney donors increased by 8% in 2009-2010 compared to 2008-2009 and the number of deceased donor kidney transplants increased by 6%. These increases are very welcome for the 7000 patients waiting for a kidney transplant and for the first time in the last 10 years the number of patients on the national list for a kidney transplant has declined. This is unlikely to reflect a true decline in demand for transplantation, however, since if there was an unlimited supply of organs for transplant, many more patients with kidney failure could receive a transplant than is currently the case.

A summary of activity for deceased donor kidney transplants and the transplant list at year end for the last ten years is shown in **Figure 4.1**. Despite the slight drop in the latest year, the number of patients registered on the active transplant list at 31 March 2010 for a kidney or kidney and pancreas transplant has risen by 46% since 2001.

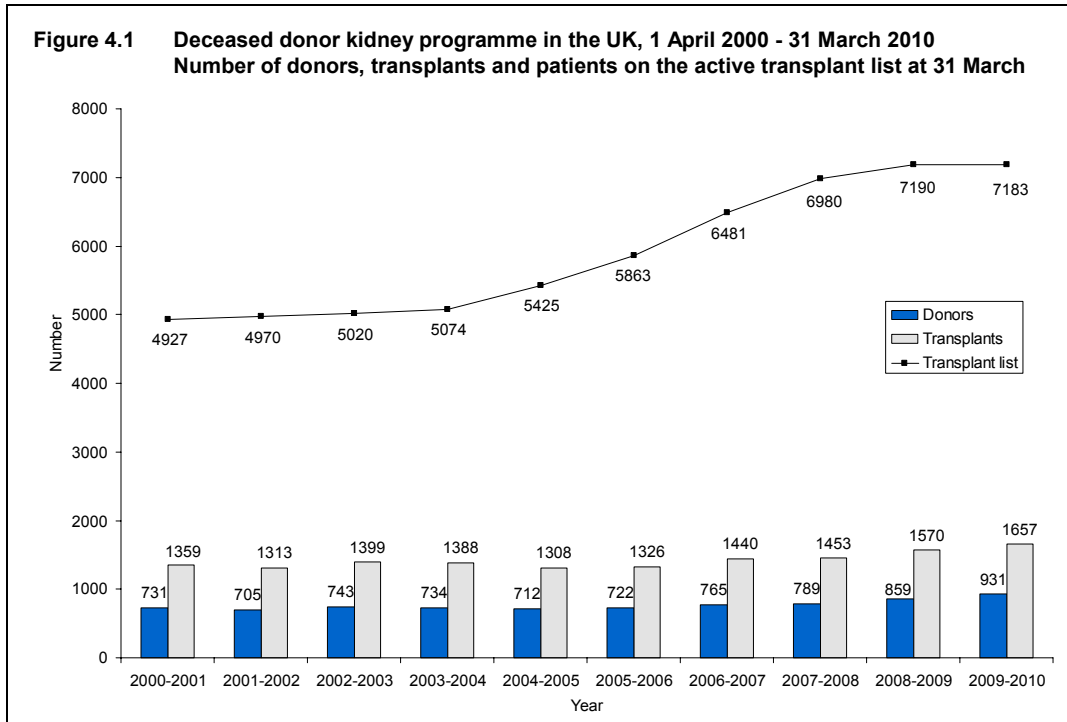


Table 4.1 shows the number of deceased and living donor kidney transplants carried out in 2009-2010 at each centre. Kidney transplants from donors after cardiac death are increasingly common and in this financial year only two adult kidney transplant centres did not perform any such transplants. As yet, very few kidneys from donors after cardiac death are transplanted in paediatric patients (<18 years). Donation and retrieval figures for centres in North and South Thames are not reported individually as they have shared retrieval areas and donor populations. Multi-organ transplants including a kidney are included in the table.

The total number of deceased kidney donors rose to 931 in 2009-2010 from 859 in 2008-2009 and the number of transplants increased from 1570 to 1657. The number of kidney donors after cardiac death increased to 329 from 275 in 2008-2009 and the number of transplants from such donors increased by 16% to 552.

Table 4.1 Kidney donors and transplants, 1 April 2009 - 31 March 2010 (2008-2009), and transplant list at 31 March 2010 (2009) in the UK, by centre/alliance

Centre/alliance	Deceased kidney donors				Deceased donor transplants				Living donor transplants		Active transplant list	
	DBD		DCD		DBD		DCD					
Belfast	17	(20)	0	(0)	42	(31)	0	(0)	20	(8)	197	(239)
Birmingham	45	(43)	16	(18)	70	(66)	16	(20)	81	(68)	647	(627)
Bristol	15	(15)	17	(13)	46	(42)	19	(22)	41	(42)	356	(328)
Cambridge	22	(27)	47	(45)	47	(53)	85	(77)	43	(44)	273	(272)
Cardiff	22	(21)	10	(7)	34	(44)	20	(18)	38	(32)	224	(270)
Coventry	12	(5)	3	(2)	10	(16)	5	(3)	34	(38)	137	(151)
Edinburgh	26	(28)	8	(11)	68	(63)	15	(21)	26	(20)	281	(300)
Glasgow	21	(22)	8	(10)	64	(48)	13	(11)	22	(36)	303	(308)
Great Ormond Street	0	(0)	0	(0)	12	(9)	0	(0)	23	(12)	18	(21)
Leeds	38	(15)	24	(22)	44	(75)	41	(45)	43	(41)	360	(371)
Leicester	9	(12)	2	(2)	36	(43)	0	(1)	42	(46)	398	(348)
Liverpool	31	(35)	19	(8)	32	(43)	31	(13)	32	(28)	244	(224)
Manchester	47	(32)	27	(12)	81	(92)	51	(22)	70	(54)	590	(562)
Newcastle	35	(40)	21	(11)	37	(39)	40	(21)	44	(42)	250	(255)
North Thames ¹	95	(94)	51	(32)	-	-	-	-	-	-	-	-
Royal Free	-	-	-	-	34	(28)	28	(23)	43	(19)	251	(255)
Royal London	-	-	-	-	59	(61)	30	(18)	45	(39)	259	(274)
WLRTC	-	-	-	-	98	(65)	24	(17)	84	(89)	451	(498)
Nottingham	11	(11)	5	(3)	46	(37)	8	(2)	16	(19)	260	(239)
Oxford	33	(34)	8	(14)	98	(76)	30	(31)	52	(44)	424	(435)
Plymouth	22	(15)	20	(31)	13	(9)	34	(57)	18	(16)	89	(102)
Portsmouth	23	(19)	10	(9)	19	(27)	21	(16)	19	(21)	233	(206)
Sheffield	12	(19)	6	(4)	20	(29)	8	(8)	23	(20)	229	(211)
South Thames ¹	66	(77)	27	(21)	-	-	-	-	-	-	-	-
Guy's	-	-	-	-	69	(69)	19	(15)	122	(103)	426	(396)
St George's	-	-	-	-	26	(31)	14	(13)	53	(43)	283	(298)
TOTAL	602	(584)	329	(275)	1105	(1096)	552	(474)	1037²	(927²)	7183	(7190)

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

² Includes 3 transplants performed at The London Clinic.

4.2 Transplant list

The number of patients registered on the kidney or kidney and pancreas transplant list fell very slightly this year: on 31 March 2010, 7,183 patients were registered on the active transplant list, compared with 7,190 at the end of March 2009. The number of patients waiting for a kidney transplant represents 119 patients per million population (pmp).

Of the 7,183 patients on the active transplant list at 31 March 2010, 275 (4%) required a kidney and pancreas transplant (256 at 31 March 2009). Additionally, 43 patients were registered for a pancreas only transplant (40 at 31 March 2009).

The outcome of patients registered on the UK kidney and kidney/pancreas transplant list at 1 April 2009, or subsequently registered during the financial year, is shown in **Table 4.2**. A total of 3256 patients joined the kidney transplant list last year, while a further 234 joined the kidney/pancreas transplant list.

Outcome of patient at 31 March 2010	Active and suspended patients at 1 April 2009		New registrations in 2009-2010 ¹		TOTAL	
	N	%	N	%	N	%
Kidney transplant list						
Remained active/suspended	6456	71	2758	85	9214	75
Transplanted	1915	21	422	13	2337	19
Removed	435 ²	5	54 ³	2	489	4
Died	305	3	22	1	327	3
TOTAL	9111		3256		12367	
Kidney/pancreas transplant list						
Remained active/suspended	218	59	178	76	396	66
Transplanted	122	33	42	18	164	27
Removed	12	3	13	6	25	4
Died	17	5	1	0	18	3
TOTAL	369		234		603	

¹ Includes re-registrations for second or subsequent transplants
² Includes 11 patients removed from kidney list and made active on kidney/pancreas list
³ Includes 8 patients removed from kidney list and made active on kidney/pancreas list

An indication of outcomes for patients listed for a kidney transplant is summarised in **Figure 4.2**. This shows the proportion of patients transplanted or still waiting one, three and five years after joining the list. It also shows the proportion removed from the transplant list (typically because they become too unwell for transplant) and those dying while on the transplant list. Only 25% of patients are transplanted within one year, while five years after listing 63% of patients have received a transplant.

The median (average) waiting time for a kidney transplant is 1088 days for an adult patient and is shown by blood group in **Table 4.3**. Because of the need to match donor and recipient blood groups, waiting times to transplant differ according to patient blood groups.

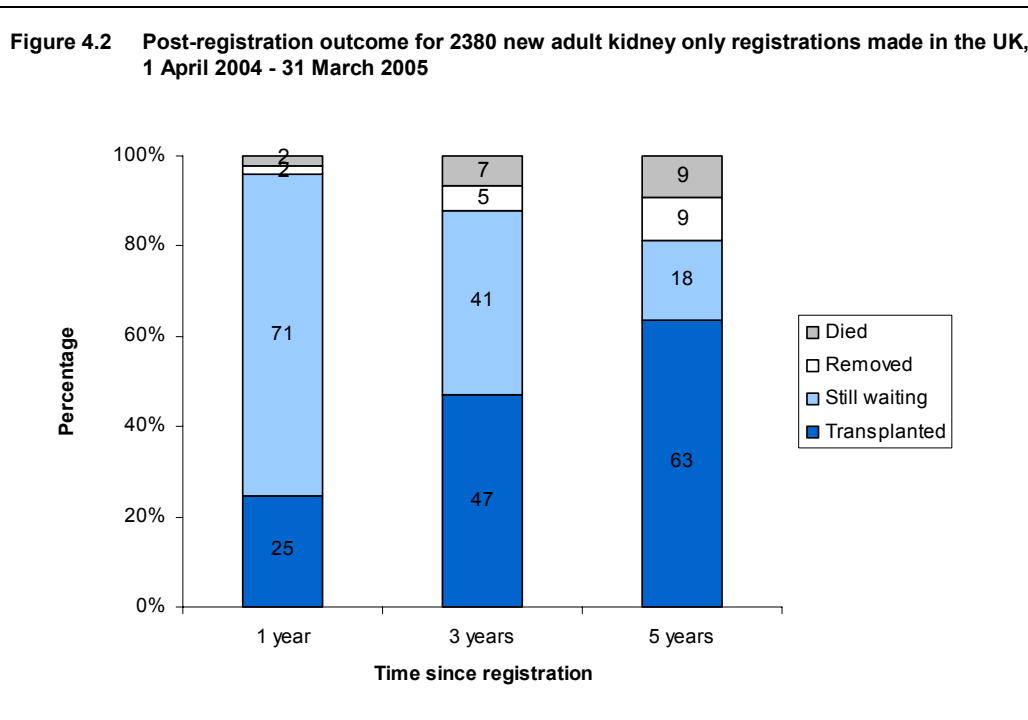


Table 4.3 Median waiting time to kidney only transplant in the UK, for patients registered 1 April 2003 – 31 March 2007

Blood group	Number of patients registered	Waiting time (days)	
		Median	95% Confidence interval
Adult			
O	3753	1304	1265 – 1343
A	3082	881	844 – 918
B	1096	1186	1088 – 1284
AB	342	635	543 – 727
TOTAL	8273	1088	1060 – 1116
Paediatric	351	276	224 – 328

4.3 Donor and organ supply

Of the 623 organ donors after brain death in the UK in 2009-2010, 602 (97%) donated one or both kidney(s). From these donors, 1,193 kidneys were retrieved, 1,113 (93%) of which were transplanted. **Table 4.4** shows this activity by centre/region.

The overall rate for kidney donors after brain death is 9.8 pmp, with regional rates ranging from 4.1 to 14.3 pmp. The kidney retrieval rate for the UK is 19.3 pmp and varies from 8.2 to 28.6 pmp. Organ usage rates of at least 95% were observed for 7 of the 20 retrieval centres.

Table 4.4 Kidney donation and retrieval rates for donors after brain death in the UK, 1 April 2009 - 31 March 2010, by centre/region

Centre/region	DBD kidneys (pmp)		Kidneys retrieved (pmp)		Kidneys used (%)	
Belfast	17	(9.2)	33	(17.8)	31	(94)
Birmingham	45	(9.8)	87	(19.0)	80	(92)
Bristol	15	(6.6)	30	(13.3)	29	(97)
Cambridge	22	(7.9)	44	(15.9)	41	(93)
Cardiff	22	(9.5)	44	(19.0)	40	(91)
Coventry	12	(14.3)	24	(28.6)	23	(96)
Edinburgh	26	(10.3)	51	(20.2)	48	(94)
Glasgow	21	(7.9)	42	(15.7)	39	(93)
Leeds	38	(9.7)	74	(19.0)	72	(97)
Leicester	9	(4.1)	18	(8.2)	17	(94)
Liverpool	31	(9.5)	62	(19.0)	61	(98)
Manchester	47	(11.5)	94	(23.1)	88	(94)
Newcastle	35	(12.0)	70	(24.1)	65	(93)
North Thames	95	(12.7)	188	(25.1)	171	(91)
Nottingham	11	(9.2)	22	(18.3)	22	(100)
Oxford	33	(10.9)	66	(21.7)	62	(94)
Plymouth	22	(10.9)	44	(21.9)	38	(86)
Portsmouth	23	(9.2)	44	(17.5)	42	(95)
Sheffield	12	(5.6)	24	(11.2)	23	(96)
South Thames	66	(9.2)	132	(18.4)	121	(92)
TOTAL	602	(9.8)	1193	(19.3)	1113	(93)

There were 329 kidney donors after cardiac death in 2009-2010. From these donors, 644 kidneys were retrieved, 560 (87%) of which were transplanted. **Table 4.5** shows this activity by centre/region.

The overall rate for kidney donors after cardiac death is 5.3 pmp, with centre/region rates ranging from 0.9 to 17.0 pmp. The retrieval rate for kidney donors after cardiac death is 10.4 pmp and varies from 1.8 to 32.9 pmp. Organ usage rates of at least 95% were observed for 4 of the 19 retrieval centres. Only one centre (Belfast) had no retrieval scheme for donors after cardiac death in this time period.

Table 4.5 Kidney donation and retrieval rates for donors after cardiac death in the UK, 1 April 2009 - 31 March 2010, by centre/region

Centre/region	DCD kidneys (pmp)		Kidneys retrieved (pmp)		Kidneys used (%)	
Birmingham	16	(3.5)	32	(7.0)	31	(97)
Bristol	17	(7.5)	33	(14.6)	28	(85)
Cambridge	47	(17.0)	91	(32.9)	79	(87)
Cardiff	10	(4.3)	20	(8.6)	16	(80)
Coventry	3	(3.6)	6	(7.1)	6	(100)
Edinburgh	8	(3.2)	13	(5.2)	12	(92)
Glasgow	8	(3.0)	16	(6.0)	15	(94)
Leeds	24	(6.2)	47	(12.1)	41	(87)
Leicester	2	(0.9)	4	(1.8)	2	(50)
Liverpool	19	(5.8)	38	(11.7)	34	(89)
Manchester	27	(6.6)	53	(13.0)	53	(100)
Newcastle	21	(7.2)	42	(14.4)	42	(100)
North Thames	51	(6.8)	101	(13.5)	76	(75)
Nottingham	5	(4.2)	10	(8.3)	9	(90)
Oxford	8	(2.6)	16	(5.3)	11	(69)
Plymouth	20	(10.0)	39	(19.4)	36	(92)
Portsmouth	10	(4.0)	18	(7.2)	15	(83)
Sheffield	6	(2.8)	12	(5.6)	10	(83)
South Thames	27	(3.6)	53	(7.1)	44	(84)
TOTAL	329	(5.3)	644	(10.4)	560	(87)

4.4 Transplants

The number of kidney transplants per million population from donors after brain death at each transplant centre is shown in **Table 4.6** for adult patients only. This table includes multi-organ transplants: 15 kidney and liver and 138 kidney and pancreas. The transplant rate ranged from 6.5 to 27.5 pmp across centres and overall was 14.5 pmp.

Kidney transplants from donors after brain death include five en bloc kidneys and seven double kidney transplants in 2009-2010 (three and one in 2008-2009). Kidney transplants from donors after cardiac death include one en bloc and seven double kidney transplants in 2009-2010 (two and one in 2008-2009).

Table 4.6 Adult kidney only transplants from donors after brain death in the UK, 1 April 2008 - 31 March 2010, by transplant centre/region

Transplant centre/region	2008-2009		2009-2010	
	Transplants	pmp	Transplants	pmp
Belfast	26	14.1	36	19.5
Birmingham	56	12.3	56	12.3
Bristol	33	14.6	38	16.8
Cambridge	34	12.3	31	11.2
Cardiff	40	17.2	31	13.4
Coventry	16	19.0	10	11.9
Edinburgh	47	18.7	56	22.2
Glasgow	41	15.4	61	22.8
Leeds	64	16.4	37	9.5
Leicester	42	19.2	36	16.4
Liverpool	43	13.2	32	9.8
Manchester	70	17.2	59	14.5
Newcastle	29	10.0	23	7.9
North Thames	140	18.7	177	23.6
Nottingham	27	22.5	33	27.5
Oxford	37	12.2	50	16.4
Plymouth	9	4.5	13	6.5
Portsmouth	27	10.8	19	7.6
Sheffield	28	13.0	20	9.3
South Thames	78	10.9	74	10.3
TOTAL	887	14.4	892	14.5

Living donor kidney transplants increased by 12% to 1,037 in 2009-2010, and now represent 38% of the total kidney transplant programme. The total number of living donor adult transplants performed by each transplant centre is shown in **Table 4.7**. Also shown is the number as a percentage of patients listed at the end of the year, to indicate the size of the living donor programme relative to the centre's transplant list.

Most living donor transplants are 'directed'. This means that a kidney is donated to a specific recipient known to the donor – a close family member or friend. There has been an 11% increase in these transplants. In addition there are now a number of 'undirected' living donor transplants (also known as altruistic donor transplants). Last year 16 such donors donated a kidney to a recipient unknown to them who was selected as the most appropriate recipient by the national Kidney Allocation Scheme for deceased donor kidneys.

In 2009-2010, there were also 32 paired living kidney donor transplants. When a potential donor and recipient are biologically incompatible (blood group or tissue type), they may consider joining a list of others in the same situation with the hope that an exchange of kidneys between them can lead to a compatible living donor transplant. This is known as paired donation and most exchanges are between two pairs (ie two donors and their respective incompatible recipients), but exchanges between three pairs are now also taking place.

As a percentage of the number of patients on the active transplant list at 31 March 2010, the number of living donor adult transplants in the year was 14% and ranged from 7% 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 4.7 Adult living donor kidney transplants in the UK, 1 April 2008 - 31 March 2010, and percentage of active transplant list at 31 March, by transplant centre/region

Transplant centre/region	2008-2009			TOTAL		2009-2010			TOTAL	
	Directed	Paired/pooled	Non-directed	N	% list	Directed	Paired/pooled	Non-directed	N	% list
Belfast	8	0	0	8	4	15	2	0	17	7
Birmingham	61	0	1	62	10	76	0	1	77	13
Bristol	36	0	0	36	10	35	1	2	38	12
Cambridge	40	4	0	44	16	40	1	1	42	15
Cardiff	31	0	0	31	14	37	1	0	38	14
Coventry	35	2	1	38	28	33	1	0	34	23
Edinburgh	18	0	1	19	7	21	2	2	25	8
Glasgow	27	0	1	28	9	20	1	0	21	7
GOS	1	0	0	1	0	0	0	0	0	0
Leeds	37	2	0	39	11	37	1	1	39	11
Leicester	45	0	1	46	12	42	0	0	42	12
Liverpool	28	0	0	28	12	29	1	2	32	14
Manchester	37	4	0	41	7	53	5	0	58	10
Newcastle	39	0	2	41	17	41	0	1	42	17
Royal Free	19	0	0	19	8	43	0	0	43	17
Royal London	38	0	1	39	15	44	0	1	45	16
WLRTC	87	0	2	89	20	81	2	1	84	17
Nottingham	15	0	0	15	6	15	0	0	15	7
Oxford	42	1	1	44	10	48	3	1	52	12
Plymouth	15	0	1	16	18	17	0	1	18	18
Portsmouth	20	1	0	21	9	16	3	0	19	9
Sheffield	19	0	1	20	9	22	0	1	23	11
Guy's	88	1	2	91	22	103	5	1	109	28
St George's	42	1	0	43	15	49	3	0	52	17
TOTAL	831¹	16	15	862¹	12	920¹	32	16	968¹	14

¹ Includes 3 transplants performed at The London Clinic

The number of deceased donor and living donor transplants in paediatric patients (<18 years) performed by each paediatric transplant centre is shown in **Table 4.8**. There were 69 living donor transplants and 76 deceased donor transplants in paediatric patients in 2009-2010. The paediatric transplant list has increased by 8% from 107 patients at 31 March 2009 to 116 at the end of March 2010.

Occasionally older paediatric patients are listed and/or transplanted at adult kidney transplant centres and these are indicated in **Table 4.8**.

At 31 March 2010, there were approximately 26,500 recipients with a functioning kidney transplant (including multi-organ transplants) being followed-up as reported to the UK Transplant Registry.

Paediatric transplant centre	2008-2009			TOTAL	2009-2010			TOTAL
	DBD	DCD	Living donor		DBD	DCD	Living donor	
Belfast	5	0	0	5	6	0	3	9
Birmingham	10	0	6	16	14	0	4	18
Bristol	9	0	6	15	8	0	3	11
Glasgow	7	0	8	15	3	0	1	4
Great Ormond Street	9	0	11	20	12	0	23	35
Guy's	2	0	12	14	5	1	13	19
Leeds	11	2	2	15	7	0	4	11
Manchester	4	0	13	17	3	0	12	15
Newcastle	2	0	1	3	2	0	2	4
Nottingham	10	0	4	14	13	0	1	14
Adult centres	6	0	2	8	2	0	3	5
TOTAL	75	2	65	142	75	1	69	145

Rates of pre-emptive kidney only transplantation are shown in **Table 4.9**. Of the 2,519 kidney only transplant recipients in 2009-2010, dialysis status at time of transplant was reported for 2,479 (96%). Of these 2,479 transplants, 449 (18%) were carried out in pre-dialysis patients. Pre-emptive transplants accounted for 29% of all paediatric kidney only transplants with reported dialysis status, compared with 17% of those in adults. Living donor transplants are more likely to be carried out before the need for dialysis than deceased donor transplants: 31% and 8% respectively. This is because a living donor transplant can often be carried out more quickly than a deceased donor kidney transplant as the latter often necessitates a long waiting time.

	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	1409	1401 (99)	7.6
Living donor transplant	968	940 (97)	31.8
Paediatric			
Deceased donor transplant	73	72 (99)	19.5
Living donor transplant	69	66 (96)	39.4

4.5 Demographic characteristics

The ethnicity of deceased donors, transplant recipients and patients on the transplant list is shown in **Table 4.10**. Note that all percentages quoted are based only on data where ethnicity information was available. There are differences in ethnicity of deceased donors, transplant recipients and patients listed for transplant. Changes made to the Kidney Allocation Scheme in 2006 mean that tissue matching criteria between donor and recipient are less strict than previously and waiting time to transplant is now more important than it was. These changes have an indirect benefit for patients from ethnic minority groups, who are less often a good tissue match with the predominantly white donor pool. As a result, access to transplantation is becoming more equitable.

Ethnicity	Donors		Transplant recipients				Active transplant list patients					
	2008-2009		2009-2010		2008-2009		2009-2010		2009		2010	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
White	822	(95.7)	886	(95.2)	1254	(79.9)	1307	(78.9)	5378	(74.8)	5314	(74.0)
Asian	15	(1.7)	15	(1.6)	184	(11.7)	197	(11.9)	1077	(15.0)	1097	(15.3)
Black	11	(1.3)	13	(1.4)	100	(6.4)	106	(6.4)	552	(7.7)	582	(8.1)
Chinese	2	(0.2)	2	(0.2)	11	(0.7)	11	(0.7)	78	(1.1)	91	(1.3)
Other	9	(1.0)	15	(1.6)	21	(1.3)	36	(2.2)	104	(1.4)	98	(1.4)
Not reported	0	-	0	-	0	-	0	-	1	-	1	-
TOTAL	859		931		1570		1657		7190		7183	

Table 4.11 shows the age group and sex of deceased kidney donors, transplant recipients and patients waiting for a kidney transplant. Seven percent of donors and transplant list patients are aged at least 70 years.

Age group (years)	Donors		Transplant recipients		Active transplant list patients	
	N	(%)	N	(%)	N	(%)
0 - 17	40	(4)	76	(5)	116	(2)
18 - 34	152	(16)	207	(12)	835	(12)
35 - 49	282	(30)	578	(35)	2163	(30)
50 - 59	222	(24)	401	(24)	1868	(26)
60 - 69	168	(18)	310	(19)	1696	(24)
70+	67	(7)	85	(5)	505	(7)
TOTAL	931	(100)	1657	(100)	7183	(100)
% Male		(52)		(63)		(59)

5 PANCREAS ACTIVITY

Key messages

- The number of patients waiting on the pancreas transplant list increased by 14% to 335 at 31 March 2010
- The number of pancreas donors and transplants was very similar to the numbers in the previous year
- The number of pancreas donors after cardiac death increased by 10% to 75, while transplants from donors after cardiac death increased by 3% to 34
- 9 islet transplants were made possible by the pancreas islet transplant programme that was introduced on 1 July 2009

5.1 Overview

The number of patients registered on the active transplant list at 31 March for a pancreas only or simultaneous kidney/pancreas (SPK) transplant has increased significantly over the last ten years from 90 patients in 2001 to 335 patients in 2010. The number of pancreas donors and transplants has also increased steadily from 48 donors resulting in 41 transplants in 2000-2001, to 386 donors and 200 transplants in 2009-2010, although the actual number of transplants is less than in 2008-2009. A summary of activity for deceased donor pancreas transplants and the transplant list for 1 April 2000 to 31 March 2010 is shown in **Figure 5.1**.

Throughout this chapter, intestinal transplants involving a pancreas are not included in the pancreas transplant activity reported. Any pancreases retrieved and used for such transplants are however included in the pancreas donor activity. In 2009/2010 there were 14 intestinal transplants. Data on pancreatic islet activity are only available for 1 July 2009 to 31 March 2010; comparative figures for the previous year are not presented.

Figure 5.1 Deceased pancreas programme in the UK, 1 April 2000 - 31 March 2010
Number of donors, transplants and patients on the active transplant list at 31 March

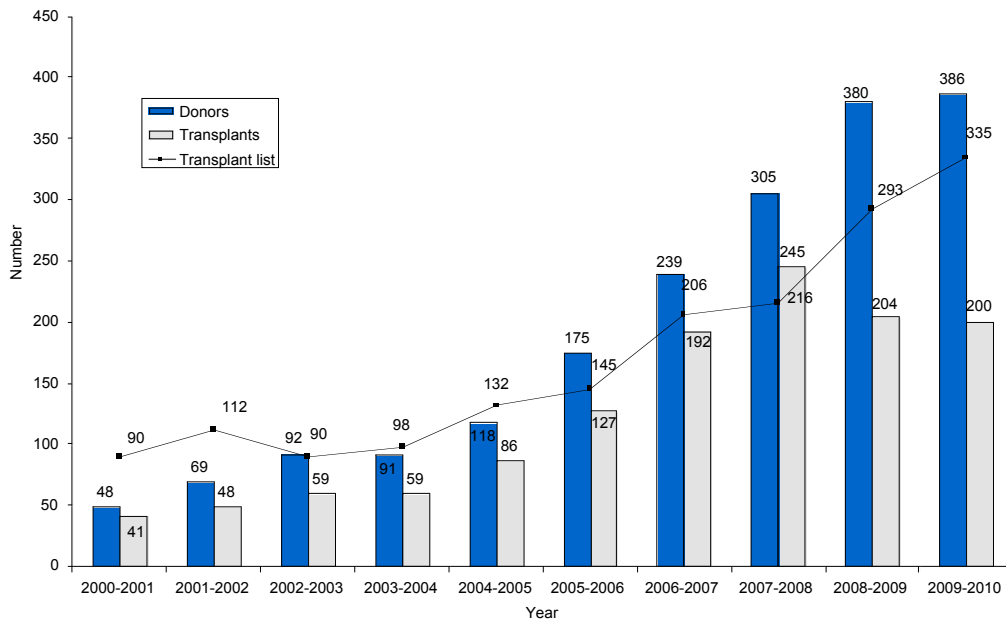


Table 5.1 shows the number of deceased pancreas donors and the number of pancreas transplants carried out in 2009-2010 at each centre. Compared with the previous financial year, the total number of pancreas donors after brain death remained constant at 311 in 2009-2010 and the number of transplants from donors after brain death decreased to 166 from 171.

Table 5.1 Pancreas donors and transplants, 1 April 2009 - 31 March 2010 (2008-2009), and transplant list at 31 March 2010 (2009) in the UK, by centre

Centre	Deceased donors ¹		Deceased donor transplants ²		Active transplant list					
	DBD	DCD	DBD	DCD						
Cambridge	30	(33)	22	(14)	15	(15)	11	(15)		
Cardiff	9	(15)	3	(2)	4	(8)	3	(4)		
Edinburgh	22	(24)	0	(3)	12	(16)	0	(0)		
Manchester	49	(40)	3	(11)	25	(27)	3	(4)		
WLRTC	44	(45)	10	(7)	14	(15)	1	(3)		
Newcastle	21	(27)	1	(1)	12	(16)	0	(0)		
Oxford	98	(73)	24	(25)	66	(51)	12	(15)		
Guy's	38	(55)	12	(5)	16	(23)	5	(4)		
Royal Free	0	(-)	0	(-)	1	(-)	1	(-)		
King's College	0	(-)	0	(-)	1	(-)	0	(-)		
TOTAL	311	(312)	75	(68)	166	(171)	34	(33)	335	(293)

WLRTC - West London Renal and Transplant Centre

¹ Includes 16 (14) donors aged greater than 60 years in 2009-2010 (2008-2009)

² Includes 3 (1) transplants using organs from donors aged greater than 60 years in 2009-2010 (2008-2009)

Royal Free and King's College are islet transplant centres

5.2 Transplant list

The number of patients registered on the pancreas transplant list increased by 14% last year: on 31 March 2010 335 patients were registered active, compared with 293 at the end of March 2009.

Of the 335 patients on the active transplant list at 31 March 2010, 275 (82%) required a simultaneous pancreas kidney (SPK) transplant (256 at 31 March 2009), 43 (13%) patients required a pancreas only transplant (40 at 31 March 2009) and 17 (5%) were registered for a pancreas islet transplant.

The outcome of patients registered on the UK pancreas transplant list at 1 April 2009, or subsequently registered during the financial year, is shown in **Table 5.2**. Sixty-six patients joined the pancreas transplant list while 234 joined the list for kidney and pancreas.

Outcome of patient at 31 March 2010	Active and suspended patients at 1 April 2009		New registrations in 2009-2010 ¹		TOTAL	
	N	%	N	%	N	%
Pancreas transplant list						
Remained active/suspended	89	68	42	64	131	66
Transplanted	20	15	24	36	44	22
Removed	21 ²	16	0	0	21	11
Died	1	1	0	0	1	1
TOTAL	131		66		197	
Kidney/pancreas transplant list						
Remained active/suspended	218	59	178	76	396	66
Transplanted	122	33	42	18	164	27
Removed	12	3	13	6	25	4
Died	17	5	1	<1	18	3
TOTAL	369		234		603	

¹ Includes re-registrations for second or subsequent transplants

² Includes 3 registrations removed from pancreas list but active on kidney/pancreas list

An indication of longer term outcomes for patients listed for a pancreas or kidney/pancreas transplant are summarised in **Figure 5.2**. This shows the proportion of patients transplanted or still waiting six months, one year, two years and three years after joining the list. It also shows the proportion removed from the transplant list (typically because they become too unwell for transplant) and those dying while on the transplant list. 64% of patients are transplanted within one year, while three years after listing 78% of patients have received a transplant. The median (average) waiting time for a pancreas transplant is 215 days and is shown by blood group in **Table 5.3**.

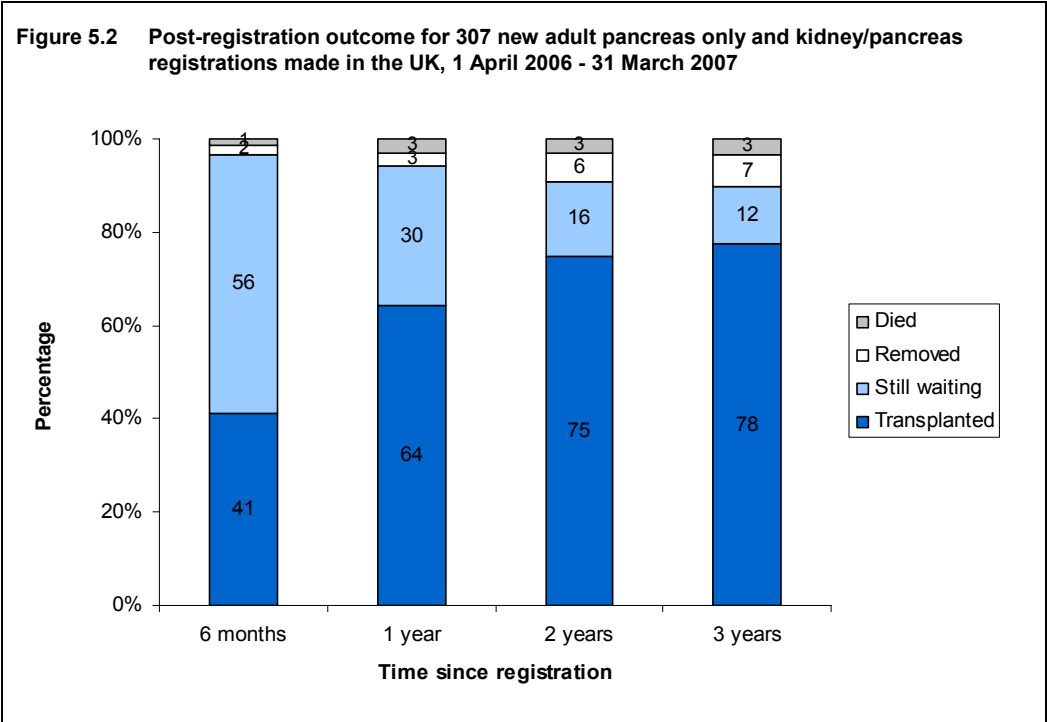


Table 5.3 Median waiting time to pancreas only and kidney/pancreas transplant in the UK, for patients registered 1 April 2004 – 31 March 2008

Blood group	Number of patients registered	Waiting time (days)	
		Median	95% Confidence interval
Adult			
O	445	280	241 – 319
A	366	152	113 – 191
B	87	146	106 – 186
AB	31	102	53 – 151
TOTAL	929	215	192 – 238

5.3 Donor and organ supply

In 2009-2010, there were 311 pancreas donors after brain death; 298 were aged up to 60 years, representing 61% of all organ donors after brain death aged 60 years or under. Potential pancreas donors over 60 years are often not suitable for transplant.

Of 298 pancreases donated from donors aged ≤60 years, 163 (55%) resulted in pancreas transplants. **Table 5.4** shows this activity by transplant centre.

Centre	Donors		Pancreas donors (% of donors) ¹				Pancreas used (% of retrieved) ²			
	DBD	DCD	DBD	DCD	DBD	DCD	DBD	DCD		
Cambridge	39	36	29	(74)	21	(58)	12	(41)	9	(43)
Cardiff	25	9	9	(36)	3	(33)	5	(56)	2	(67)
Edinburgh	36	10	21	(58)	0	(0)	12	(57)	0	(0)
Manchester	98	56	47	(48)	3	(5)	26	(55)	2	(67)
WLRTC	59	25	41	(69)	9	(36)	14	(34)	5	(56)
Newcastle	35	22	20	(57)	1	(5)	16	(80)	0	(0)
Oxford	143	58	95	(66)	23	(40)	61	(64)	9	(39)
Guy's	57	22	36	(63)	12	(55)	17	(47)	7	(58)
TOTAL	492	238	298	(61)	72	(30)	163	(55)	34	(47)

WLRTC - West London Renal and Transplant Centre
¹ There were an additional 13 DBD and 3 DCD pancreas donors aged > 60 years
² There were an additional 3 DBD pancreases transplanted from donors aged > 60 years

5.4 Transplants

There were 200 deceased donor pancreas transplants in 2009-2010 representing a decrease of 2% on the 204 transplants performed in 2008-2009. Of these 200, 159 (80%) were SPK transplants, 32 (16%) were pancreas only transplants (pancreas transplants alone (PTA) or pancreas after kidney (PAK)) and 9 (4%) were islet transplants. The number of transplants performed at each centre is shown in **Table 5.5**.

Table 5.5 Pancreas transplants, 1 April 2009 - 31 March 2010 (2008-2009) by centre

Centre	Transplant type ¹							
	SPK		PTA		PAK		Islet ²	
Cambridge	24	(18)	0	(0)	0	(0)	0	(-)
Cardiff	5	(8)	2	(0)	0	(4)	0	(-)
Edinburgh	12	(16)	0	(0)	0	(0)	0	(-)
Manchester	20	(21)	3	(4)	4	(6)	1	(-)
WLRTC	12	(15)	1	(0)	2	(3)	0	(-)
Newcastle	12	(8)	0	(2)	0	(6)	0	(-)
Oxford	54	(41)	13	(18)	6	(7)	5	(-)
Guy's	20	(24)	0	(0)	1	(3)	0	(-)
Royal Free	-	(-)	-	(-)	-	(-)	2	(-)
King's College	-	(-)	-	(-)	-	(-)	1	(-)
TOTAL	159	(151)	19	(24)	13	(29)	9	(-)

WLRTC - West London Renal and Transplant Centre

¹ Includes 3 (1) transplants using organs from donors aged greater than 60 years in 2009-2010 (2008-2009)

² Islet transplants reported since 1 July 2009

Royal Free and King's College are islet transplant centres

5.5 Demographic characteristics

The ethnicity of deceased donors, transplant recipients and patients on the transplant list is shown in **Table 5.6**. Patients from ethnic minority groups represent 7% of the transplant list and 8% of transplants.

Table 5.6 Ethnicity of deceased pancreas donors and recipients, 1 April 2008 - 31 March 2010, and transplant list patients at 31 March in the UK

Ethnicity	Donors				Transplant recipients				Active transplant list patients			
	2008-2009		2009-2010		2008-2009		2009-2010		2009		2010	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
White	366	(96.3)	368	(95.3)	189	(92.6)	184	(92.0)	274	(93.5)	312	(93.1)
Asian	3	(0.8)	3	(0.8)	9	(4.4)	9	(4.5)	13	(4.4)	18	(5.4)
Black	4	(1.1)	8	(2.1)	3	(1.5)	5	(2.5)	2	(0.7)	3	(0.9)
Chinese	1	(0.3)	2	(0.5)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Other	6	(1.6)	5	(1.3)	3	(1.5)	2	(1.0)	4	(1.4)	2	(0.6)
TOTAL	380		386		204		200		293		335	

Table 5.7 shows the age group and sex of deceased pancreas donors, transplant recipients and patients waiting for a pancreas transplant. There was a greater proportion of male transplant recipients than female, 61% compared with 39%. There were 16 pancreas donors outside the preferred age range of 0 to 60 years, 3 of which resulted in a transplant.

Table 5.7 Age of deceased pancreas donors and transplant recipients,
1 April 2009 - 31 March 2010, and transplant list patients at 31 March in the UK

Age group (years)	Donors		Transplant recipients		Active transplant list patients	
	N	(%)	N	(%)	N	(%)
0 - 17	22	(6)	0	(-)	1	(0)
18 - 34	97	(25)	39	(20)	47	(14)
35 - 49	153	(40)	122	(61)	210	(63)
50 - 59	91	(24)	36	(18)	67	(20)
60 - 69	22	(6)	3	(2)	9	(3)
70+	1	(0)	0	(-)	1	(<1)
TOTAL	386	(100)	200	(100)	335	(100)
% Male		(49)		(61)		(56)

6 CARDIOTHORACIC ACTIVITY

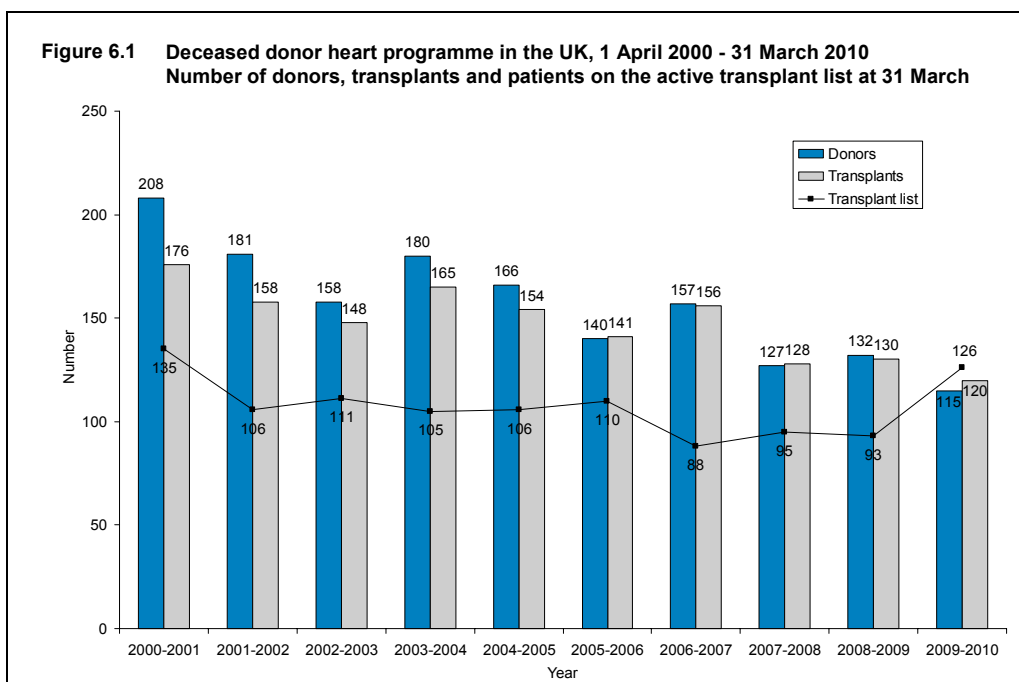
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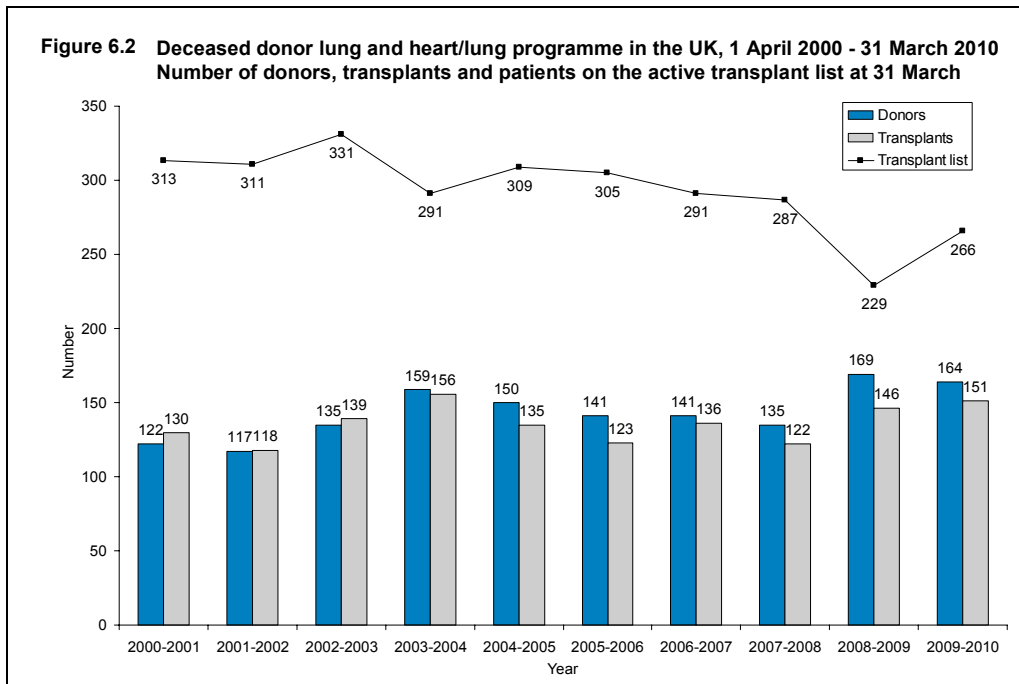
- At 31 March 2010, there were 126 patients on the active heart transplant list, 254 on the lung list and 12 on the heart/lung list
- Of the 623 solid organ donors after brain death, 206 (33%) donated cardiothoracic organs
- The number of heart transplants from deceased donors decreased by 7% to 120; just over half of these were urgent heart transplants
- The number of lung or heart/lung transplants from deceased donors increased by 3% to 151

6.1 Overview

Last year the number of heart transplants fell by 8% to 120 while the number of lung or heart/lung transplants increased by 3% to 151. There were increases in both the heart and the lung transplant lists since March 2009 although the number of patients registered on the active heart transplant list has decreased by 7% since 2001, and the number of patients registered for a lung or heart/lung transplant has decreased by 15%.

A summary of the deceased donor cardiothoracic activity from 1 April 2000 to 31 March 2010 is shown in **Figure 6.1** for heart activity and **Figure 6.2** 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 6.2**.





6.2 Transplant list

Table 6.1 shows the number of patients on the active transplant lists at 31 March 2010 by centre. The lung transplant list accounts for 65% of the patients waiting for a cardiothoracic transplant. Overall, Newcastle and Harefield have the largest cardiothoracic transplant lists.

During 2009-2010, 216 patients joined the heart transplant list while 12 joined the heart/lung list and 257 joined the lung transplant list. Outcomes for patients on the list at 1 April 2009 and those joining the list during the year are shown in **Table 6.2**.

An indication of longer term outcomes for adult patients listed for a cardiothoracic organ transplant is summarised in **Figure 6.3** and **Figure 6.4**. This shows the proportion of patients transplanted or still waiting six months, one year, two years and three years after joining the non-urgent heart list or the lung list, respectively. It also shows the proportion removed from the transplant list and those dying while on the transplant list. Within six months of listing, 53% of non-urgent heart patients are transplanted while 7% have died. By two years 69% of patients have received a transplant while 16% have died while waiting. For patients listed for a lung transplant, only 20% are transplanted within six months, rising to 51% after three years. The patients removed from these lists may also subsequently have died.

Table 6.1 Patients on the cardiothoracic transplant lists at 31 March 2010 (2009) in the UK, by centre

Centre	Active transplant lists								TOTAL	
	Heart		Urgent		Heart/lung		Lung			
	Non-urgent									
Birmingham	14	(6)	0	(0)	3	(1)	21	(10)	38	(17)
Glasgow	7	(2)	0	(0)	0	(0)	1	(0)	8	(2)
Great Ormond Street	7	(9)	3	(2)	0	(0)	6	(9)	16	(20)
Harefield	31	(23)	0	(0)	2	(3)	77	(58)	110	(84)
Manchester	17	(13)	1	(1)	0	(1)	45	(45)	63	(60)
Newcastle ¹	18	(13)	3	(2)	1	(3)	78	(73)	100	(91)
Papworth	24	(22)	1	(0)	6	(4)	26	(22)	57	(48)
TOTAL	118	(88)	8	(5)	12	(12)	254	(217)	392	(322)

¹ Adult and paediatric patients on the transplant list

Table 6.2 Cardiothoracic transplant lists and new registrations in the UK, 1 April 2009 - 31 March 2010

Outcome of patient at 31 March 2010	Active and suspended patients at 1 April 2009		New registrations in 2009-2010 ¹		TOTAL	
	N	%	N	%	N	%
Heart transplant list						
Remained active/suspended	47	49	85	39	132	42
Transplanted	26	27	93	43	119	38
Removed	13	14	14	6	27	9
Died	9	9	24	11	33	11
TOTAL	95		216		311	
Heart/lung transplant list						
Remained active/suspended	4	31	9	75	13	52
Transplanted ²	3	23	2	17	5	20
Removed	4	31	0	0	4	16
Died	2	15	1	8	3	12
TOTAL	13		12		25	
Lung transplant list						
Remained active/suspended	100	47	146	57	246	53
Transplanted	65	31	80	31	145	31
Removed	13	6	4	2	17	4
Died	33	16	27	11	60	13
TOTAL	211		257		468	

¹ Includes re-registrations for second or subsequent transplants

² Heart, lung or heart/lung

Figure 6.3 Post-registration outcome for 103 new adult non-urgent heart only registrations made in the UK, 1 April 2006 - 31 March 2007

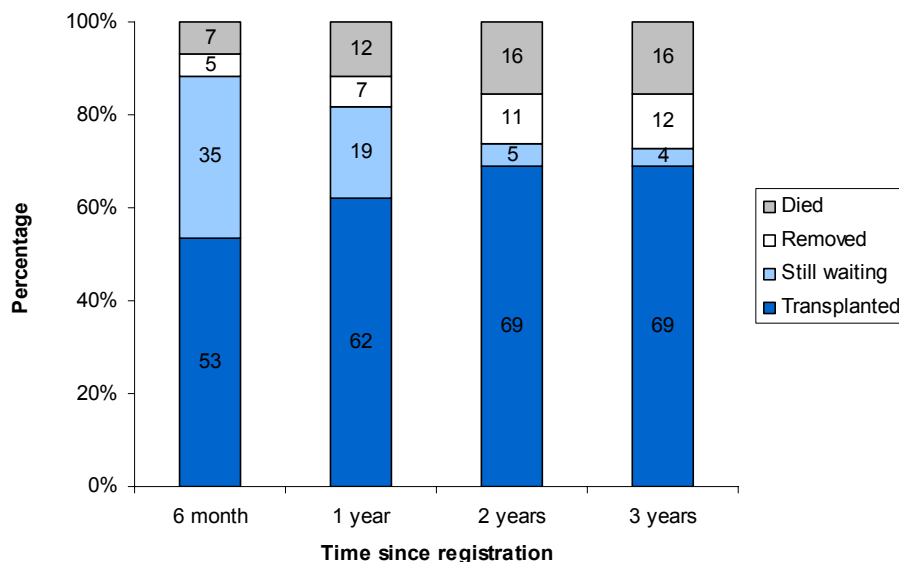


Figure 6.4 Post-registration outcome for 194 new adult lung only registrations made in the UK, 1 April 2006 - 31 March 2007

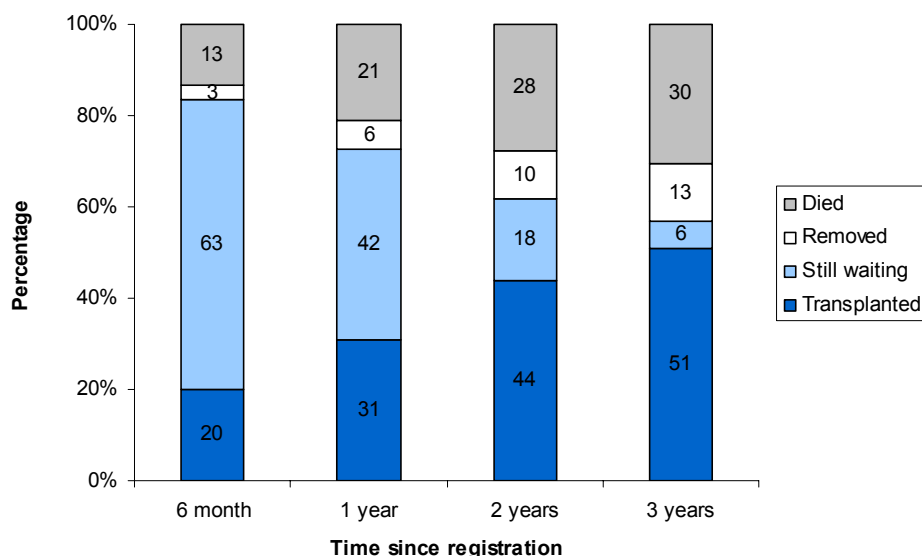


Table 6.3 shows median waiting time to cardiothoracic transplant by blood group for patients registered between April 2006 and March 2009. Median waiting time for adult non-urgent heart patients is 183 days overall, compared with 511 days for adult lung patients. The median waiting time for paediatric non-urgent heart patients is 93 days, and this is not broken down by blood group due to low numbers.

Table 6.3**Median waiting time to cardiothoracic transplant in the UK,
for patients registered 1 April 2006 – 31 March 2009**

Blood group	Number of patients registered	Waiting time (days)	
		Median	95% Confidence interval
Adult non-urgent heart			
O	106	469	217 – 721
A	123	120	60 – 180
B	32	82	0 – 191
AB	12	54	0 – 124
TOTAL	273	183	119 – 247
Paediatric non-urgent heart	57	93	39 – 147
Adult lung			
O	265	599	523 – 675
A	215	318	200 – 436
B	65	1190	466 – 1914
AB	24	162	0 – 438
TOTAL	569	511	449 – 573

Table 6.4 Cardiothoracic organ donors in the UK, 1 April 2009 - 31 March 2010 (2008-2009), by age group and retrieval centre

Retrieval centre	Type of cardiothoracic donor						TOTAL	
	Heart only		Heart & lung		Lung(s) only			
Adult								
Birmingham	10	(15)	6	(5)	8	(18)	24	(38)
Glasgow	8	(4)	3	(7)	6	(8)	17	(19)
Harefield	10	(7)	7	(6)	28	(26)	45	(39)
Manchester	3	(8)	7	(7)	18	(4)	28	(19)
Newcastle	10	(9)	12	(6)	22	(23)	44	(38)
Papworth	11	(26)	17	(18)	22	(31)	50	(75)
Other European countries	1	(1)	0	(1)	3	(0)	4	(2)
TOTAL	54^{1,2}	(72)¹	52	(50)	108^{1,3}	(115^{1,4})	214^{1,2,3}	(237^{1,4})
Paediatric								
Birmingham	0	(1)	1	(0)	0	(0)	1	(1)
Glasgow	0	(1)	0	(0)	0	(0)	0	(1)
Great Ormond Street	2	(1)	0	(1)	0	(0)	2	(2)
Harefield	0	(0)	0	(0)	1	(0)	1	(0)
Manchester	0	(1)	0	(0)	0	(1)	0	(2)
Newcastle	4	(4)	2	(0)	0	(0)	6	(4)
Papworth	1	(0)	0	(0)	0	(1)	1	(1)
Other European countries	0	(0)	0	(1)	0	(0)	0	(1)
TOTAL	7	(8)	3	(2)	1	(2)	11	(12)

Paediatric donors are aged 15 years or under

¹ Includes organs retrieved by other centres

² 1 domino donor

³ 18 donors after cardiac death

⁴ 17 donors after cardiac death

6.3 Donor and organ supply

The number of cardiothoracic organ donors classified by retrieving transplant centre, rather than geographical location of the donor hospital, is summarised in **Table 6.4**. 18 of the 108 adult lung only donors were donors after cardiac death, one of the 54 adult heart only donors was a domino donor and there were no living lung donors. Of the 196 adult cardiothoracic donors after brain death, 28% donated only the heart, 27% heart and lung and 46% lung only. Of the 11 paediatric cardiothoracic donors after brain death, 64% donated only the heart, 27% heart and lung and 9% lung only.

Table 6.5 shows the number of solid organ donors after brain death 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 623 solid organ donors after brain death, 33% donated cardiothoracic organs. Overall, 89% of the 395 organs retrieved were transplanted: 98% of hearts and 85% of lungs.

Donation zone	Number of donors		Number of organs retrieved (used)				TOTAL retrieved (used)	
	DBD solid organ	Cardiothoracic	Hearts		Lungs			
Birmingham	98	26	18	(18)	30	(23)	48	(41)
Glasgow	47	19	12	(12)	18	(10)	30	(22)
Harefield	136	39	18	(16)	55	(51)	73	(67)
Manchester	84	28	12	(12)	44	(30)	56	(42)
Newcastle ¹	97	43	24	(24)	63	(60)	87	(84)
Papworth	161	51	31	(31)	70	(64)	101	(95)
TOTAL	623	206	115	(113)	280	(238)	395	(351)

¹ Newcastle transplant adult and paediatric patients

The rates per million population for donors after brain death are shown in **Table 6.6**. The overall cardiothoracic donor rate was 3.3 pmp in 2009-2010 and varied across the donation zones from 2.6 pmp to 4.8 pmp.

Table 6.6 Cardiothoracic organ donation rates from donors after brain death per million population (pmp) in the UK, 1 April 2009 - 31 March 2010, by donation zone

Donation zone	DBD solid organ donors pmp	Cardiothoracic donors pmp		
		Heart	Lung	Total
Birmingham	9.7	1.8	1.6	2.6
Glasgow	9.1	2.3	2.1	3.7
Harefield	9.9	1.3	2.0	2.8
Manchester	10.6	1.5	2.9	3.5
Newcastle	10.8	2.7	3.6	4.8
Papworth	10.2	2.0	2.3	3.2
TOTAL	10.1	1.9	2.4	3.3

6.4 Transplants

Table 6.7 shows cardiothoracic transplant activity for each centre. In 2009-2010, a total of 272 cardiothoracic organ transplants were carried out, a decrease of 1% on 2008-2009. Of these, 44% were deceased donor heart transplants. The 138 adult lung transplants include 15 (11%) from donors after cardiac death: 7 were performed by Harefield, 3 by Newcastle, 3 by Manchester and 2 by Papworth.

Table 6.7 Cardiothoracic transplants, 1 April 2009 - 31 March 2010 (2008-2009), by age group and centre

Transplant centre	Transplant type								TOTAL	
	Heart		Urgent		Heart/lung		Lung(s)			
	Non-urgent									
Adult										
Birmingham	10	(10)	8	(3)	0	(0)	6	(10)	24	(23)
Glasgow	0	(0)	4	(6)	0	(0)	0	(0)	4	(6)
Great Ormond Street	1	(1)	0	(0)	0	(0)	0	(2)	1	(3)
Harefield	9	(4)	4	(8)	0	(0)	35	(34)	48	(46)
Manchester	6	(8)	4	(6)	0	(0)	24	(20)	34	(34)
Newcastle	10	(10)	7	(9)	0	(0)	44	(45)	61	(64)
Papworth	13	(21)	10	(10)	5	(2)	29	(26)	57	(59)
TOTAL	49	(54)¹	37	(42)	5	(2)	138²	(137)³	229²	(235)³
Paediatric										
Great Ormond Street	7	(9)	12	(11 ⁴)	0	(1)	7	(6)	26	(27)
Newcastle	2 ⁵	(8)	14	(6)	0	(0)	1	(0)	17	(14)
TOTAL	9⁵	(17)	26	(17)	0	(1)	8	(6)	43	(41)

Paediatric recipients are aged under 16 years at time of transplant

¹ Includes 1 heart and kidney transplant

² Includes 15 DCD donor transplants

³ Includes 12 DCD donor transplants

⁴ Excludes one transplant performed by Great Ormond Street in Dublin

⁵ Includes one domino donor transplant

There were 37 adult urgent heart transplants in 2009-2010, representing 43% of all adult heart transplants (44% in 2008-2009). There were 26 paediatric urgent heart transplants in 2009-2010, representing 74% of all paediatric heart transplants (50% in 2008-2009).

At 31 March 2010 there were approximately 3,500 recipients with a functioning cardiothoracic organ transplant being followed-up as reported to the UK Transplant Registry.

6.5 Demographic characteristics

The ethnicity of cardiothoracic donors, transplant recipients and patients on the transplant list is shown in **Table 6.8**. While 5.8% of donors in 2009-2010 were non-white, 6.6% of the transplant list at 31 March 2010 and 10.3% of transplant recipients in the year were non-white.

Ethnicity	Donors		Transplant recipients				Active transplant list patients					
	2008-2009		2009-2010		2008-2009		2009-2010		2009		2010	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
White	238	(95.6)	212	(94.2)	254	(92.0)	244	(89.7)	303	(94.1)	366	(93.4)
Asian	4	(1.6)	2	(0.9)	11	(4.0)	17	(6.3)	12	(3.7)	13	(3.3)
Black	2	(0.8)	5	(2.2)	6	(2.2)	4	(1.5)	4	(1.2)	9	(2.3)
Chinese	1	(0.4)	2	(0.9)	3	(1.1)	0	(0.0)	1	(0.3)	0	(0.0)
Other	4	(1.6)	4	(1.8)	2	(0.7)	7	(2.6)	2	(0.6)	4	(1.0)
TOTAL	249		225		276		272		322		392	

Of the 272 cardiothoracic recipients, 62% were male compared with 47% of donors and 54% of the transplant list; see **Table 6.9**. Of the 225 cardiothoracic donors, 3% were aged ≥60 years compared with 12% of recipients and 15% of the transplant list.

Age group (years)	Donors		Transplant recipients		Active transplant list patients	
	N	(%)	N	(%)	N	(%)
0 - 17	18	(8)	49	(18)	26	(7)
18 - 34	65	(29)	45	(17)	81	(21)
35 - 49	91	(40)	76	(28)	108	(28)
50 - 59	44	(20)	69	(25)	120	(31)
60 - 69	7	(3)	33	(12)	57	(15)
TOTAL	225	(100)	272	(100)	392	(100)
% Male		(47)		(62)		(54)

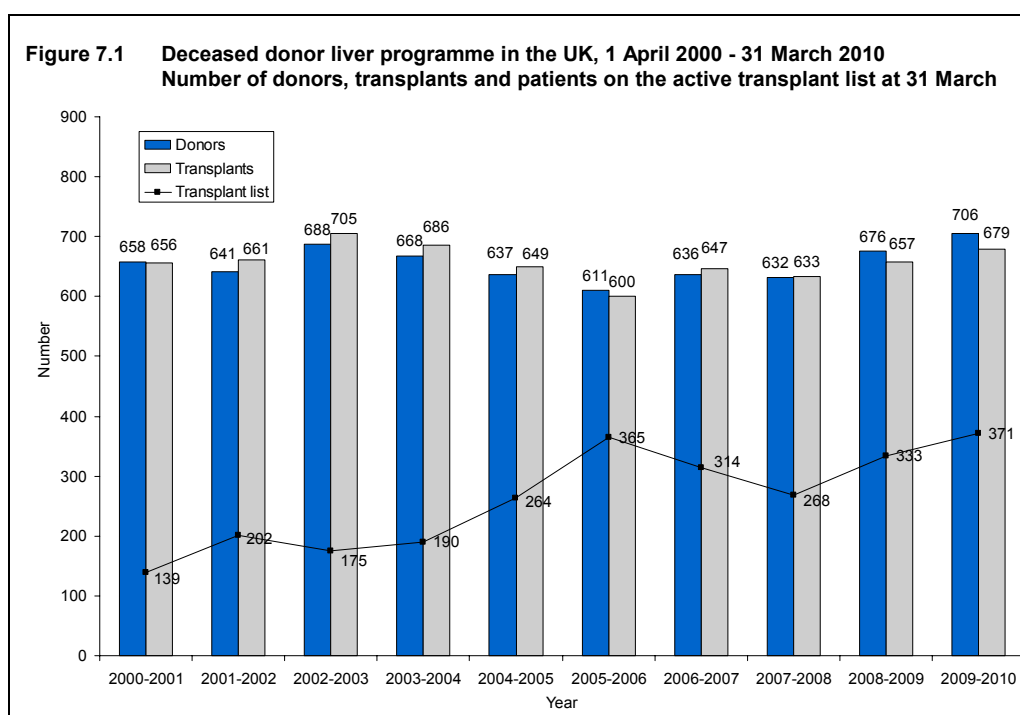
7 LIVER ACTIVITY

Key messages

- The number of patients actively waiting on the liver transplant list at 31 March 2010 was 371, an increase of 11% from 2009
- There were 706 deceased liver donors, an increase of 4% on the previous year, and a 3% increase in the number of transplants to 679
- The total number of deceased donor split liver transplants fell from 107 to 84
- There was a total of 21 intestinal transplants, 9 adult and 12 paediatric transplants

7.1 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 7.1**. Over this period, there has been a steady increase in the number of patients registered on the active transplant list at 31 March 2010.



Intestinal transplants that used a liver are not included in the liver transplant activity reported. However, any livers retrieved and used for such transplants are included in the liver donor activity. Intestinal transplant activity is reported at the end of this Chapter in Section 7.6.

The number of deceased donors, deceased and living donor transplants, and patients on the active transplant list, by centre, is shown in **Table 7.1**. In 2009-2010, 706 solid organ donors donated their liver for transplant: 570 donors after brain death and 136 donors after cardiac death. There were 371 patients on the active transplant list at 31 March 2010, an increase of 11% from 2009.

Overall, the number of liver transplants from donors after brain death increased by 1% to 580, and the number of transplants from donors after cardiac death increased by 24% to 99, compared with the previous financial year. Additionally, there were 20 living liver lobe donor transplants in NHS Group 1 (8) and Group 2 (12) paediatric and adult recipients, and 3 domino donor transplants all in NHS Group 1 adult recipients. There were 84 adult super-urgent transplants in 2009-2010, representing 14% of all adult transplants. There were 17 paediatric super-urgent transplants in 2009-2010, representing 24% of all paediatric transplants.

Patients are prioritised as super-urgent if they require a new liver as soon as possible due to rapid failure of the native organ. Other patients are referred to as elective.

Table 7.1 Deceased and living liver donors and transplants, 1 April 2009 - 31 March 2010 (2008-2009), and transplant list patients at 31 March 2010 (2009) in the UK, by age group and centre

Retrieval/ transplant centre	Deceased donors						Deceased transplants						Living donor transplants		Active transplant list	
	DBD		DCD		TOTAL		DBD		DCD		TOTAL					
Adult																
Birmingham	99	(103)	28	(23)	127	(126)	100	(98)	29	(22)	129	(120)	1	(1)	62	(50)
Cambridge	76	(72)	17	(11)	93	(83)	61	(63)	9	(6)	70	(69)	0	(0)	39	(23)
Edinburgh	58	(55)	6	(9)	64	(64)	67	(57)	7	(5)	74	(62)	0	(0)	38	(17)
King's College	124	(134)	52	(37)	176	(171)	120	(118)	36	(20)	156	(138)	6	(9)	86	(92)
Leeds	83	(61)	11	(9)	94	(70)	81	(60)	4	(6)	85	(66)	2	(2)	61	(90)
Newcastle	41	(38)	0	(6)	41	(44)	33	(39)	0	(4)	33	(43)	0	(0)	23	(17)
Royal Free	74	(72)	12	(12)	86	(84)	51	(70)	9	(10)	60	(80)	3	(4)	35	(24)
TOTAL	555	(536¹)	129¹	(109¹)	684¹	(645¹)	513	(505)	94	(73)	607	(578)	12²	(16³)	344	(313)
Paediatric																
Birmingham	8	(11)	2	(1)	10	(12)	22	(24)	1	(1)	23	(25)	0	(0)	4	(6)
Cambridge	0	(2)	1	(0)	1	(2)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
Edinburgh	0	(1)	0	(0)	0	(1)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
King's College	6	(3)	1	(3)	7	(6)	32	(32)	4	(5)	36	(37)	10	(16)	18	(13)
Leeds	1	(3)	2	(3)	3	(6)	12	(16)	0	(1)	12	(17)	1	(2)	4	(1)
Newcastle	0	(3)	0	(0)	0	(3)	1	(0)	0	(0)	1	(0)	0	(0)	0	(0)
Royal Free	0	(0)	1	(1)	1	(1)	0	(0)	0	(0)	0	(0)	0	(0)	1	(0)
TOTAL	15	(23)	7	(8)	22	(31)	67	(72)	5	(7)	72	(79)	11⁴	(18⁵)	27	(20)

¹ Includes donors whose livers were retrieved by other teams

² Includes 4 and 5 living liver lobe transplants, and 3 and 0 domino transplants in NHS Group 1 and Group 2 recipients, respectively

³ Includes 4 and 5 living liver lobe transplants, and 5 and 2 domino transplants in NHS Group 1 and Group 2 recipients, respectively

⁴ Includes 4 and 7 living liver lobe transplants in NHS Group 1 and Group 2 recipients, respectively

⁵ Includes 15 and 3 living liver lobe transplants in NHS Group 1 and Group 2 recipients, respectively

7.2 Transplant list

During 2009-2010, 962 patients joined the liver transplant list. Outcomes for patients on the list at 1 April 2009 and those joining the list during the year are shown in **Table 7.2**.

Outcome of patient at 31 March 2010	Active and suspended patients at 1 April 2009		New registrations in 2009-2010 ¹		TOTAL	
	N	%	N	%	N	%
	Remained active/suspended	61	19	315	33	376
Transplanted	192	58	510	53	702	54
Removed	40	12	63	7	103	8
Died	36	11	74	8	110	9
TOTAL	329		962		1291	

¹ Includes re-registrations for second or subsequent transplants

An indication of longer term outcomes for patients listed for a liver transplant is summarised in **Figure 7.2**. This shows the proportion of patients transplanted or still waiting six months, one year and two years after joining the transplant list. It also shows the proportion removed from the transplant list (typically because they become too unwell for transplant) and those dying while on the transplant list. At one year post-registration, 69% of patients had received a liver transplant while 10% of patients had died whilst waiting and 9% had been removed. Removal from the list may result from the patient's condition deteriorating or improving or as a result of non-compliance or at the request of the patient or family.

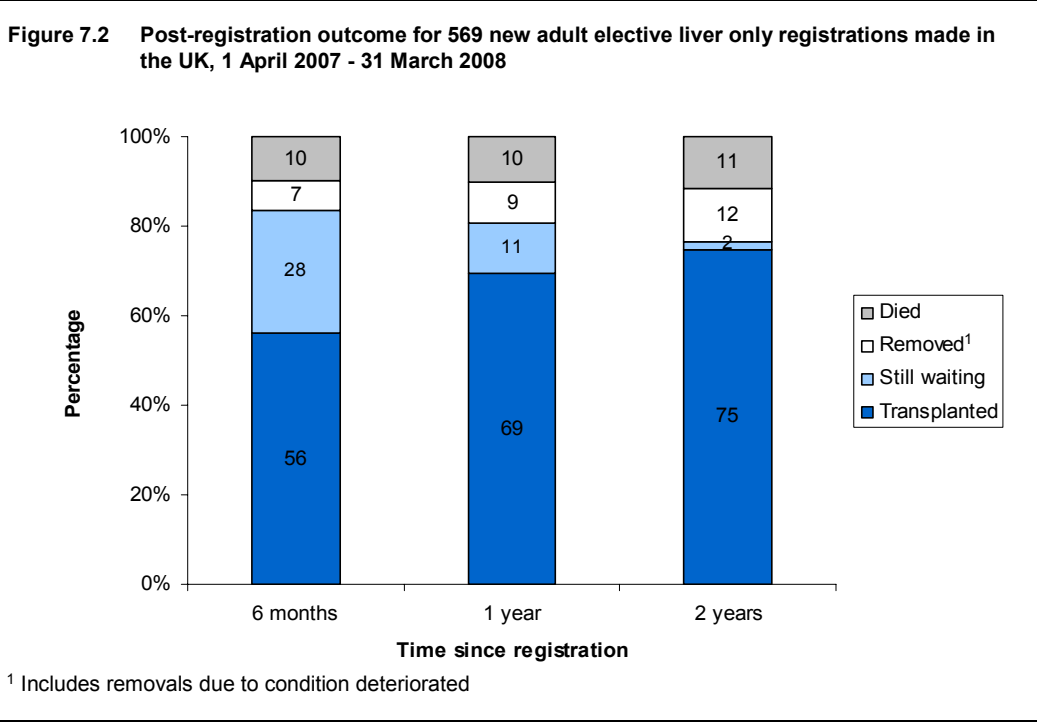


Table 7.3 shows the median waiting time to liver transplant for adult and paediatric elective registrations, separately, and for adult elective registrations only by blood group. On average, adult patients wait 138 days for a transplant while paediatric patients wait an average of 93 days.

Blood group	Number of transplants	Waiting time (days)	
		Median	95% Confidence interval
Adult			
O	766	172	150 – 194
A	660	102	89 – 115
B	207	152	114 – 190
AB	74	91	64 – 118
TOTAL	1707	138	127 – 149
Paediatric	197	93	69 – 117

7.3 Donor and organ supply

Of the 959 solid organ donors, 706 (74%) donated their liver and 631 (89%) of these donated livers were transplanted; see **Table 7.4**. Of livers retrieved from donors after brain death and donors after cardiac death, 93% and 73% were transplanted, respectively.

Table 7.4 Deceased liver retrieval rates in the UK, 1 April 2009 - 31 March 2010, by donation zone

Donation zone	Number of donors						Number of livers retrieved (used)					
	Solid organ			Liver			DBD			DCD		
	DBD	DCD	TOTAL	DBD	DCD	TOTAL	DBD	DCD	TOTAL	DBD	DCD	TOTAL
Birmingham	122	55	177	111	24	135	111	(109)	24	(19)	135	(128)
Cambridge	76	59	135	70	18	88	70	(65)	18	(13)	88	(78)
Edinburgh	59	16	75	56	7	63	56	(53)	7	(7)	63	(60)
King's College	148	82	230	133	51	184	133	(115)	51	(37)	184	(152)
Leeds	107	58	165	98	19	117	98	(95)	19	(12)	117	(107)
Newcastle	35	21	56	34	0	34	34	(33)	0	0	34	(33)
Royal Free	76	45	121	68	17	85	68	(62)	17	(11)	85	(73)
TOTAL	623	336	959	570	136	706	570	(532)	136	(99)	706	(631)

Table 7.5 shows the deceased solid organ and liver donor rates per million population (pmp) for 2009-2010. Overall, the liver donor rate was 11.4 pmp and ranged from 10.3 to 17.6 pmp across the donation zones.

Table 7.5 Deceased liver donation rates per million population (pmp), 1 April 2009 - 31 March 2010, by donation zone

Donation zone	Solid organ donor pmp	Liver donor pmp
Birmingham	13.8	10.5
Cambridge	16.1	10.5
Edinburgh	12.3	10.3
King's College	14.5	11.6
Leeds	15.2	10.8
Newcastle	19.1	11.6
Royal Free	25.1	17.6
TOTAL	15.5	11.4

7.4 Transplants

The number of whole, reduced and split liver transplants by urgency status of the transplant (elective, super-urgent) in 2009-2010 is shown in **Table 7.6**. 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 3% in 2009-2010. There were 679 deceased donor liver transplants performed in 2009-2010: 581 whole liver, including 11 liver and kidney and 1 liver and lung; and 98 deceased liver lobe, including 4 liver and kidney. Split liver transplants accounted for 86% of liver lobe transplant activity.

Table 7.6 Deceased liver transplants performed in the UK, 1 April 2008 - 31 March 2010

Transplant centre	2008 - 2009						2009 - 2010						TOTAL			
	Whole liver		Reduced liver		Split liver		Whole liver		Reduced liver		Split liver					
	E	SU	E	SU	E	SU	E	SU	E	SU	E	SU	E	SU		
Birmingham	84	17	2	4	36	2	122	23	96	25	0	1	29	1	125	27
Cambridge	53	8	1	0	8	0	61	8	63	4	0	0	3	0	66	4
Edinburgh	47	8	0	0	7	0	54	8	54	12	0	0	8	0	62	12
King's College	104	22	4	7	36	2	144	31	132	26	3	7	23	1	158	34
Leeds	60	6	4	0	12	1	76	7	72	6	1	2	16	0	89	8
Newcastle	34	9	0	0	0	0	34	9	24	9 ¹	0	0	1	0	25	9
Royal Free	67	10	0	0	3	0	70	10	51	7	0	0	2	0	53	7
TOTAL	449	80	11	11	101	5	561	96	492	89	4	10	82	2	578	101

E=Elective, SU=Super-urgent

Birmingham, King's College and Leeds transplant paediatric patients

¹ Includes 1 patient age 16 at time of transplant

At 31 March 2010 there were approximately 8,000 recipients with a functioning liver transplant (or multi-organ including the liver) being followed-up as reported to the UK Transplant Registry.

7.5 Demographic characteristics

The ethnicity of liver donors, transplant recipients and transplant list patients is shown in **Table 7.7**. In 2009-2010, the proportion of minority patients waiting on the transplant list was much greater than that of minority donors, 17% compared with 6%, respectively. Of transplant recipients, 18% were from ethnic minority groups.

Table 7.7 Ethnicity of liver donors and recipients, 1 April 2008 - 31 March 2010, and transplant list patients at 31 March in the UK

Ethnicity	Donors				Transplant recipients				Active transplant list patients			
	2008-2009		2009-2010		2008-2009		2009-2010		2009		2010	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
White	659	(92.8)	684	(93.8)	550	(79.6)	575	(82.0)	278	(83.7)	307	(83.0)
Asian	23	(3.2)	13	(1.8)	91	(13.2)	80	(11.4)	34	(10.2)	41	(11.1)
Black	9	(1.3)	9	(1.2)	26	(3.8)	21	(3.0)	9	(2.7)	8	(2.2)
Chinese	1	(0.1)	2	(0.3)	6	(0.9)	5	(0.7)	2	(0.6)	1	(0.3)
Other	18	(2.5)	21	(2.9)	18	(2.6)	20	(2.9)	9	(2.7)	13	(3.5)
Not reported	0	-	0	-	0	-	1	-	1	-	1	-
TOTAL	710		729		691		702		333		371	

The age and sex distribution of donors and recipients in 2009-2010, and patients on the transplant list at 31 March 2010, are shown in **Table 7.8**. Of the 729 donors, 6% were aged ≥ 70 years, compared with only 1% of both the transplant list and transplant recipients.

Table 7.8 Age of deceased liver donors and transplant recipients, 1 April 2009 - 31 March 2010, and transplant list patients at 31 March in the UK

Age group (years)	Donors		Transplant recipients		Active transplant list patients	
	N	(%)	N	(%)	N	(%)
0 - 17	34	(5)	85	(12)	27	(7)
18 - 34	150	(21)	71	(10)	31	(8)
35 - 49	223	(31)	161	(23)	99	(27)
50 - 59	167	(23)	216	(31)	129	(35)
60 - 69	108	(15)	161	(23)	83	(22)
70+	47	(6)	8	(1)	2	(1)
TOTAL	729	(100)	702	(100)	371	(100)
% Male		(49)		(61)		(64)

7.6 Intestinal transplant activity

Table 7.9 shows intestinal transplant activity by transplant centre and transplant type for financial years 2008-2009 and 2009-2010. In 2009-2010, there were a total of 21 transplants, 9 adult and 12 paediatric transplants.

Table 7.9 Intestinal transplants in the UK, 1 April 2009 - 31 March 2010 (2008-2009)

Transplant centre	Transplant type								TOTAL	
	BO		LBP		MV		MMV			
Adult										
Cambridge	1	(0)	0	(0)	1	(3)	3	(1)	5	(4)
Oxford	1	(1)	0	(0)	0	(0)	3	(1)	4	(2)
TOTAL	2	(1)	0	(0)	1	(3)	6	(2)	9	(6)
Paediatric										
Birmingham	3	(3)	3	(5)	0	(2)	3	(0)	9	(10)
King's College	1	(0)	0	(0)	1	(0)	1	(0)	3	(0)
TOTAL	4	(3)	3	(5)	1	(2)	4	(0)	12	(10)

BO = Bowel only (with or without large bowel)

LBP = Liver, bowel and pancreas – liver or part thereof, small bowel (with or without large bowel), pancreas

MV = Multivisceral – liver or part thereof, small bowel (with or without large bowel), pancreas, stomach and/or spleen and/or abdominal wall and/or kidney and/or heart and/or lung

MMV = Modified multivisceral – small bowel (with or without large bowel), pancreas, stomach and/or spleen and/or abdominal wall and/or kidney and/or heart and/or lung

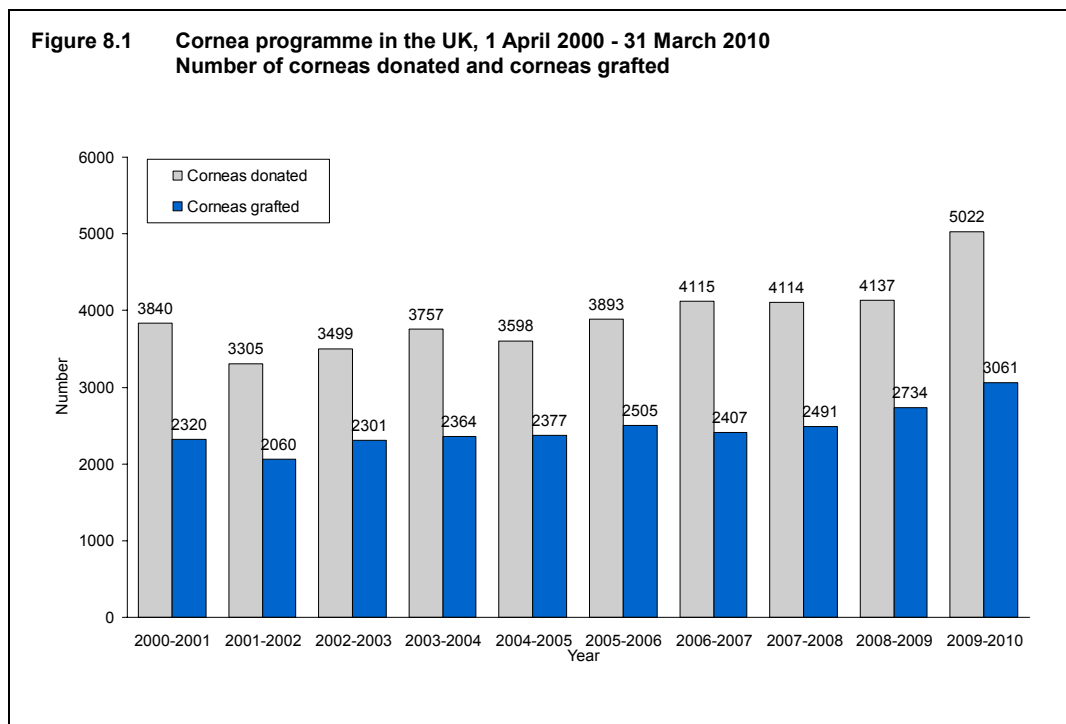
8 CORNEA ACTIVITY

Key messages

- 4820 corneas were supplied to the Corneal Transplant Service (CTS) eye banks, leading to a 12% increase in the number of transplants to 3061
- Corneas were retrieved from 27% of solid organ donors after brain death and 30% of solid organ donors after cardiac death
- 60% of cornea only donors were 70 years of age or over
- Cornea donation and transplant rates continue to vary considerably across the countries of the UK, with donation rates ranging from 5.4 to 44.7 per million population (pmp), and transplant rates ranging from 32.4 pmp to 50.9 pmp

8.1 Overview

The number of corneas donated in 2009-2010 was 5022, representing a 21% increase on last year, as shown in **Figure 8.1**. This increase is mainly due to the new Eye Retrieval Scheme but also due to the fact that corneas from Moorfields Eye Bank are now reported to the UK Transplant Registry. Additionally, 310 sclera were issued and used.



In 2009-2010 there were 2,518 tissue donors, of whom 2,249 donated corneas only and 269 donated corneas and solid organs: see **Table 8.1**. Compared to 2008-2009, the number of cornea only donors increased by 422, and the number of cornea and organ donors increased by 19. In 2009-2010, corneas were retrieved from 27% of organ donors after brain death, the same percentage as in 2008-2009. Of the 336 organ donors after cardiac death in 2009-2010, 100 also donated corneas.

Table 8.1 also shows the number and rate per million population (pmp) of donors in 2009-2010 by country and English Strategic Health Authority (SHA), with figures for 2008-2009 in parentheses. England had the highest cornea donor rate in the UK in 2009-2010 (44.7 pmp). In 2009-2010, the cornea donor rate increased in England, Scotland, Wales and Northern Ireland. Across the SHAs the cornea donor rate ranged from 10.9 pmp to 105.0 pmp.

Country of residence/ Strategic Health Authority	Cornea only		Solid organ and cornea		TOTAL		TOTAL pmp	
North East	181	(181)	9	(13)	190	(194)	73.6	(75.2)
North West	622	(387)	31	(28)	653	(415)	94.5	(60.1)
Yorkshire and The Humber	80	(73)	16	(16)	96	(89)	18.4	(17.1)
East Midlands	191	(117)	4	(6)	195	(123)	44.3	(28.0)
West Midlands	46	(53)	13	(12)	59	(65)	10.9	(12.0)
East of England	201	(141)	19	(24)	220	(165)	38.4	(28.8)
London	27	(48)	60	(43)	87	(91)	11.4	(11.9)
South East Coast	69	(85)	17	(16)	86	(101)	20.0	(23.4)
South Central	144	(79)	23	(20)	167	(99)	41.0	(24.3)
South West	510	(515)	37	(39)	547	(554)	105.0	(106.3)
England	2071	(1679)	229	(217)	2300	(1896)	44.7	(36.9)
Isle of Man	0	(0)	0	(0)	0	(0)	0	(0.0)
Channel Islands	0	(0)	0	(0)	0	(0)	0	(0.0)
Wales	59	(48)	15	(9)	74	(57)	24.7	(19.1)
Scotland	114	(97)	20	(20)	134	(117)	25.8	(22.5)
Northern Ireland	5	(3)	5	(4)	10	(7)	5.4	(3.8)
TOTAL	2249	(1827)	269	(250)	2518	(2077)	40.8	(33.7)

8.2 Donor and tissue supply

In 2009-2010, 96.0% (97.0% in 2008-2009) of retrieved corneas reported to the UK Transplant Registry were supplied to the Corneal Transplant Service (CTS) Eye Banks in Bristol and Manchester. **Table 8.2** shows the number of corneas supplied to, and taken from, the CTS Eye Banks for those centres that supplied more than 25 corneas in 2009-2010. 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). Centres with a negative balance have taken more corneas than they supplied to the CTS Eye Banks.

**Table 8.2 Corneas supplied to and taken from the CTS Eye Banks,
1 April 2009 - 31 March 2010**

Centre	Corneas supplied	Suitable for PK (%)	Corneas taken	Balance
ERS Merseyside	492	287 (58)	137	355
ERS Exeter	364	226 (62)	11	353
ERS Bristol	360	246 (68)	53	307
ERS Norfolk	328	232 (71)	33	295
ERS Bolton	320	183 (57)	25	295
ERS Nottingham	292	198 (68)	108	184
ERS Newcastle	261	171 (66)	56	205
ERS Preston	234	140 (60)	9	225
ERS Southampton	174	103 (59)	49	125
ERS Glasgow	142	109 (77)	131	11
East Grinstead, Queen Victoria Hospital	113	63 (56)	4	109
Middlesbrough, James Cook University Hospital	105	57 (54)	2	103
Manchester, Royal Eye Hospital	88	58 (66)	138	-50
Plymouth, Royal Eye Infirmary	73	49 (67)	51	22
Leeds, St James University Hospital	62	44 (71)	122	-60
Leicester, Royal Infirmary	50	37 (74)	56	-6
Barnstaple, North Devon District Hospital	50	31 (62)	1	49
Cardiff, University of Wales Hospital	50	28 (56)	16	34
Yeovil District Hospital	42	28 (67)	0	42
London, Moorfields Eye Hospital	41	18 (44)	224	-183
Swindon, Great Western Hospital	36	23 (64)	7	29
Newport, Royal Gwent Hospital	36	30 (83)	7	29
Reading, Royal Berkshire Hospital	34	25 (74)	38	-4
Edinburgh, Royal Infirmary	34	27 (79)	0	34
Portsmouth, Queen Alexandra Hospital	32	17 (53)	0	32
Newport, St Marys Hospital(Isle of Wight)	30	22 (73)	0	30
Ipswich Hospital	28	22 (79)	15	13
Poole General Hospital	28	18 (64)	0	28
Dundee, Ninewells Hospital	28	16 (57)	0	28
Princess Alexandra Eye Pavillion	27	24 (89)	30	-3
Oxford, John Radcliffe Hospital	26	14 (54)	29	-3
Taunton, Taunton & Somerset Hospital	26	18 (69)	8	18
Coventry & Warwickshire Hospital	26	15 (58)	18	8
Lancaster, Royal Lancaster Hospital	26	22 (85)	0	26
Eye retrieval scheme centres	2967	1895 (64)	612	2355
Centres supplying more than 25 corneas	1091	706 (65)	766	325
All other centres	762	476 (62)	1560	-798
TOTAL	4820	3077 (64)	2938	1882

PK - Penetrating keratoplasty
ERS - Eye Retrieval Scheme

Of the 4,820 corneas supplied to the CTS Eye Banks, 3,077 (64%) were suitable for a PK. This was a decrease compared with 2008-2009, when 69% of corneas supplied to the CTS Eye Banks were suitable for a PK.

8.3 CTS Eye Bank activity

The activity levels for the Bristol and Manchester Eye Banks are shown in **Table 8.3**. The numbers of corneas received by the CTS Eye Banks increased in 2009-2010 by 20%, and the number of corneas issued increased by 12%. In 2009-2010, 4,820 corneas were received into the CTS Eye Banks, of which 3,228 (67%) were subsequently issued for grafting. The remaining corneas were unsuitable for transplantation.

	Total received		Number issued ¹		% issued		Difference between number received and issued	
Bristol	2226	(1954)	1517	(1416)	68	(72)	709	(538)
Manchester	2594	(2056)	1711	(1471)	66	(72)	883	(585)
Total	4820	(4010)	3228	(2887)	67	(72)	1592	(1123)

¹ Number issued of those received in each year

The outcome of corneas received by the CTS Eye Banks is given in **Table 8.4**. Of the corneas supplied to the Eye Banks in 2009-2010, 59% 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, 2% were issued for other types of graft and 5% were issued but not used. Of the corneas supplied to the Eye Banks, 16% were unsuitable because of medication contraindications, 11% had endothelial deficiencies or stromal opacity and 4% were discarded because of bacterial or fungal contamination. 2% 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 donor's relatives.

8.4 Transplants

Corneal transplant activity by country of residence and Strategic Health Authority in England for the years 2008-2009 and 2009-2010 is detailed in **Table 8.5** for corneas supplied through the CTS Eye Banks. The overall transplant rate was 44.3 pmp in 2008-2009; this increased to 49.6 pmp in 2009-2010. The transplant rates increased in England and Scotland, but decreased in Wales and Northern Ireland. England had the highest transplant rate in the UK: 50.9 pmp, this ranged from 41.3 pmp to 77.9 pmp across the SHAs.

Table 8.4 Outcome of corneas received into the Bristol and Manchester Eye Banks, 1 April 2009 - 31 March 2010 (2008 - 2009), by year

Outcome of cornea	Bristol				Manchester				TOTAL			
	N		%		N		%		N		%	
Used												
Penetrating keratoplasty	1338	(1226)	60	(63)	1489	(1354)	57	(66)	2827	(2580)	59	(64)
Lamellar keratoplasty	17	(13)	1	(1)	30	(25)	1	(1)	47	(38)	1	(1)
Other/ not reported	49	(90)	2	(5)	64	(10)	2	(<1)	113	(100)	2	(2)
Total used	1404	(1329)	63	(68)	1583	(1389)	61	(68)	2987	(2718)	62	(68)
Not used												
Issued, not used	113	(87)	5	(4)	128	(82)	5	(4)	241	(169)	5	(4)
Unsuitable - endothelium, stromal, opacity, other	216	(111)	10	(6)	296	(214)	11	(10)	512	(325)	11	(8)
Medical reason - virology	216	(198)	10	(10)	246	(175)	9	(9)	462	(373)	10	(9)
Medical reason - other	132	(122)	6	(6)	153	(120)	6	(6)	285	(242)	6	(6)
Contaminated	102	(107)	5	(5)	112	(61)	4	(3)	214	(168)	4	(4)
Other/not reported	43	(0)	2	(0)	76	(15)	3	(1)	119	(15)	2	(<1)
Total not used	822	(625)	37	(32)	1011	(667)	39	(32)	1833	(1292)	38	(32)
TOTAL	2226	(1954)			2594	(2056)			4820	(4010)		

Table 8.5 Cornea transplants¹ performed per million population (pmp) in the UK, 1 April 2008 - 31 March 2010, by country of residence and English Strategic Health Authority

Country of residence/ Strategic Health Authority	Number of transplants (pmp)			
	2008-2009		2009-2010	
North East	111	(43.0)	114	(44.2)
North West	351	(50.8)	404	(58.5)
Yorkshire and The Humber	346	(66.4)	406	(77.9)
East Midlands	208	(47.3)	227	(51.6)
West Midlands	223	(41.2)	248	(45.8)
East of England	221	(38.6)	213	(37.2)
London	335	(44.0)	402	(52.8)
South East Coast	168	(39.0)	178	(41.3)
South Central	176	(43.2)	197	(48.4)
South West	166	(31.9)	230	(44.1)
England	2305	(44.8)	2619	(50.9)
Isle of Man	4	(50.0)	4	(50.0)
Channel Islands	7	(46.7)	4	(26.7)
Wales	104	(34.8)	97	(32.4)
Scotland	192	(37.0)	201	(38.7)
Northern Ireland	86	(46.5)	74	(40.0)
TOTAL²	2734	(44.3)	3061	(49.6)

¹ Corneas supplied through the CTS Eye Banks

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

8.5 Demographic characteristics

The ethnicity of cornea donors and transplant recipients is shown in **Table 8.6**. While 1.0% of donors in 2009-2010 were non-white, 16.1% of transplant recipients were non-white.

Ethnicity	Cornea only donors				Solid organ and cornea donors				Transplant recipients			
	2008-2009		2009-2010		2008-2009		2009-2010		2008-2009		2009-2010	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
White	1819	(99.6)	2232	(99.3)	245	(98.0)	260	(96.7)	2320	(85.8)	2520	(83.9)
Asian	7	(0.4)	12	(0.5)	1	(0.4)	5	(1.9)	242	(8.9)	323	(10.8)
Black	1	(0.1)	2	(0.1)	1	(0.4)	2	(0.7)	117	(4.3)	130	(4.3)
Chinese	0	(0.0)	0	(0.0)	1	(0.4)	0	(0.0)	11	(0.4)	5	(0.2)
Other	0	(0.0)	2	(0.1)	2	(0.8)	2	(0.7)	14	(0.5)	24	(0.8)
Not reported	0	-	1	-	0	-	0	-	30	-	59	-
TOTAL	1827		2249		250		269		2734		3061	

The age and sex distribution of donors and recipients in 2009-2010 are shown in **Table 8.7**. Of the 2249 cornea only donors, 32% were aged ≥ 80 years. In contrast, only 19% of transplant recipients were aged ≥ 80 years although 23% of transplants were in patients aged 70-79 years.

Age group (years)	Cornea only donors		Solid organ and cornea donors		Transplant recipients	
	N	(%)	N	(%)	N	(%)
0 - 17	13	(1)	3	(1)	74	(2)
18 - 34	51	(2)	27	(10)	485	(16)
35 - 49	148	(7)	68	(25)	466	(15)
50 - 59	244	(11)	78	(29)	293	(10)
60 - 69	451	(20)	64	(24)	471	(15)
70 - 79	628	(28)	24	(9)	693	(23)
80+	714	(32)	5	(2)	579	(19)
TOTAL	2249	(100)	269	(100)	3061	(100)
% Male		(59)		(49)		(53)

9 SURVIVAL RATES FOLLOWING TRANSPLANTATION

This chapter shows graft survival rates over time for kidney, pancreas and cornea transplants, and patient survival estimates for kidney, pancreas, cardiothoracic and liver transplants, performed in the UK. Separate rates are presented for adult and paediatric patients (using organ-specific age definitions) and for transplants from donors after brain death and donors after cardiac death.

In all cases, the Kaplan-Meier estimate of the survivor function was used to provide the survival rate and groups (years) 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.

9.1 Kidney graft and patient survival

9.1.1 Adult kidney recipients – donor after brain death (DBD)

Figure 9.1 shows long-term graft survival in adult (>=18 years) recipients for first kidney only transplant from donors after brain death. **Table 9.1** 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 time periods shown, $p < 0.001$ in each case. **Table 9.2** 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 time periods shown, $p < 0.01$ in each case.

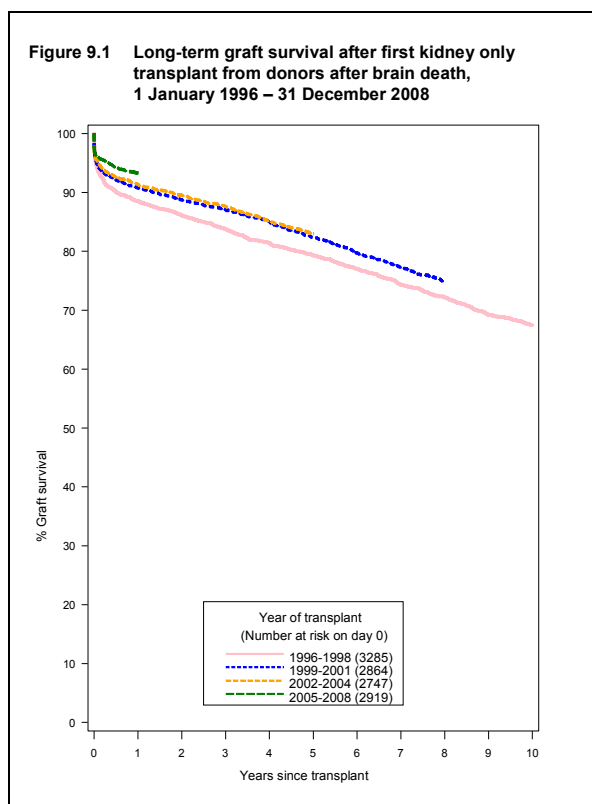


Table 9.1 Graft survival after first adult kidney only transplant from a DBD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval)			
		One year	Two year	Five year	Ten year
1996-1998	3285	89 (87-90)	86 (85-87)	79 (78-81)	67 (66-69)
1999-2001	2864	91 (90-92)	89 (88-90)	82 (81-84)	
2002-2004	2747	91 (90-92)	90 (88-91)	83 (81-84)	
2005-2008	2919	93 (92-94)			

Table 9.2 Patient survival after first adult kidney only transplant from a DBD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval)			
		One year	Two year	Five year	Ten year
1996-1998	3288	94 (93-95)	92 (91-92)	84 (83-86)	71 (69-73)
1999-2001	2869	95 (94-96)	93 (92-94)	87 (86-88)	
2002-2004	2749	96 (95-96)	94 (93-95)	88 (87-89)	
2005-2008	2921	97 (96-97)			

9.1.2 Adult kidney recipients – donor after cardiac death (DCD)

Long-term graft survival in adult recipients for kidney transplants from donors after cardiac death is shown in **Figure 9.2**. **Table 9.3** 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 year survival over the time periods shown, $p < 0.01$. One year graft and patient survival are comparable for DBD and DCD donor transplants in the most recent time periods. **Table 9.4** shows the patient survival estimates and confidence intervals for each time period analysed. There was a significant improvement in patient survival at one following transplant ($p = 0.05$) but no significant improvements in longer term outcome ($p > 0.05$).

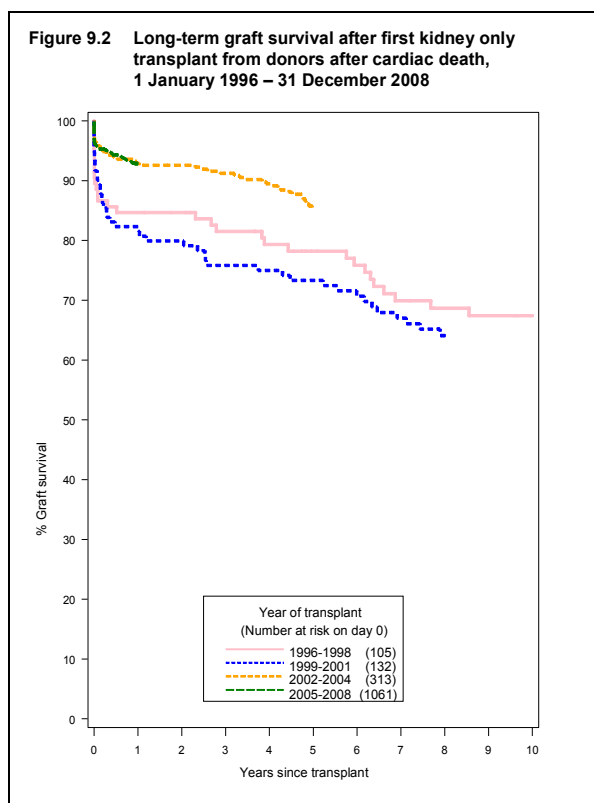


Table 9.3 Graft survival after first adult kidney only transplant from a DCD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval)			
		One year	Two year	Five year	Ten year
1996-1998	105	85 (76-90)	85 (76-90)	78 (69-85)	67 (57-76)
1999-2001	132	82 (75-88)	80 (72-86)	73 (65-80)	
2002-2004	313	93 (89-95)	93 (89-95)	85 (81-89)	
2005-2008	1061	93 (91-94)			

Table 9.4 Patient survival after first adult kidney only transplant from a DCD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval)			
		One year	Two year	Five year	Ten year
1996-1998	105	93 (86-97)	91 (84-95)	80 (71-87)	69 (59-77)
1999-2001	132	91 (85-95)	90 (83-94)	84 (76-89)	
2002-2004	314	97 (94-98)	95 (92-97)	87 (82-90)	
2005-2008	1061	96 (94-97)			

9.1.3 Adult kidney recipients – living donor

Long-term graft survival in adult recipients for living donor kidney transplants in the UK is shown in **Figure 9.3**. **Table 9.5** shows graft survival estimates and confidence intervals for each time period analysed. **Table 9.6** shows the patient survival estimates and confidence intervals for one, two, five and ten years post transplant. There was no statistically significant change in graft or patient survival over time ($p>0.1$).

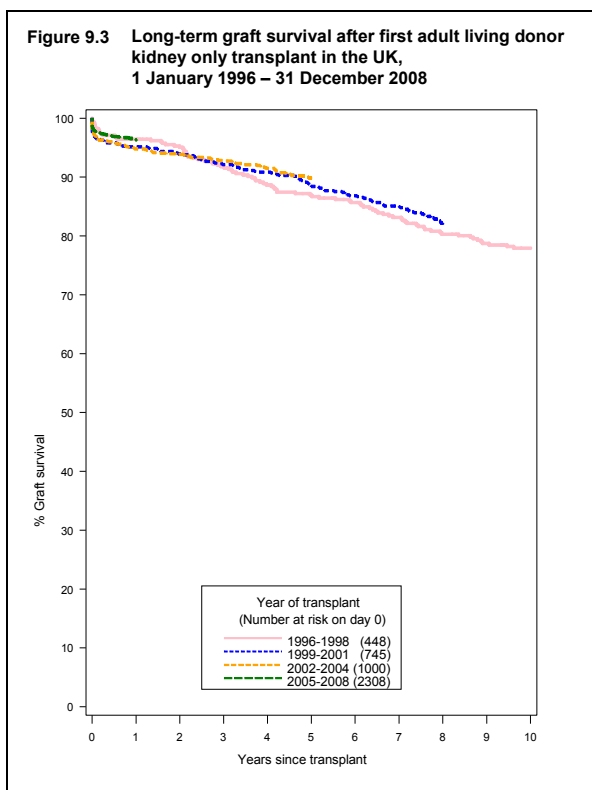


Table 9.5 Graft survival after first adult living donor kidney transplant

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval)				
		One year	Two year	Five year	Ten year	
1996-1998	448	96 (94-98)	95 (93-97)	87 (83-90)	78 (74-82)	
1999-2001	745	95 (93-96)	94 (92-95)	89 (86-91)	-	
2002-2004	1000	95 (93-96)	94 (92-95)	90 (88-92)	-	
2005-2008	2308	96 (95-97)	-	-	-	

Table 9.6 Patient survival after first adult living donor kidney transplant

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval)				
		One year	Two year	Five year	Ten year	
1996-1998	447	99 (97-99)	98 (96-99)	96 (93-97)	89 (85-91)	
1999-2001	747	98 (97-99)	97 (96-98)	95 (93-96)	-	
2002-2004	1000	98 (97-99)	98 (96-98)	96 (94-97)	-	
2005-2008	2308	99 (98-99)	-	-	-	

9.1.4 Paediatric kidney recipients – donor after brain death (DBD)

Figure 9.4 shows long-term graft survival in paediatric (<18 years) recipients for first kidney only transplants from donors after brain death. Graft survival estimates and confidence intervals are shown for each time period analysed in **Table 9.7**. There have been significant improvements in one year survival over time, $p < 0.01$. **Table 9.8** shows the patient survival estimates and confidence intervals for one, two, five and ten years post-transplant. There have been improvements in one and two year survival ($p = 0.01$) but there was no statistically significant difference in five year survival over the period analysed ($p > 0.05$).

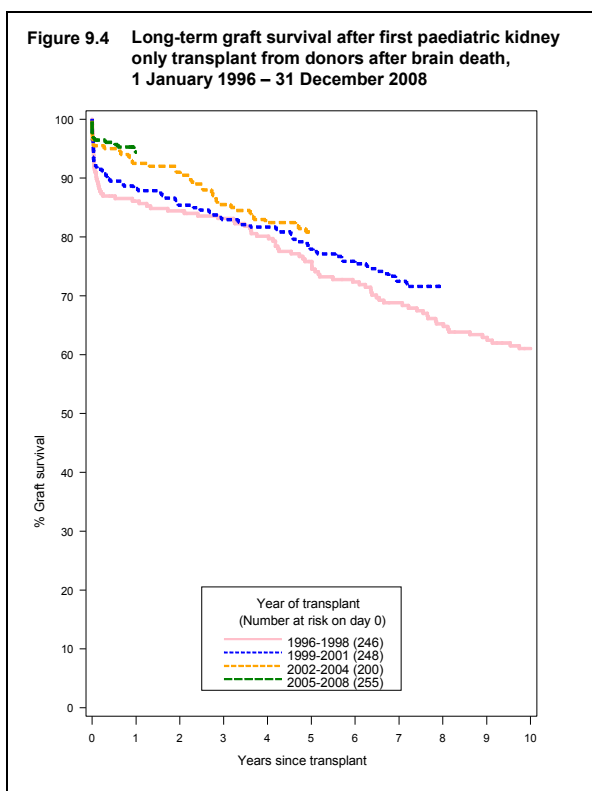


Table 9.7 Graft survival after first paediatric kidney only transplant from a DBD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval)				
		One year	Two year	Five year	Ten year	
1996-1998	246	86 (81-90)	84 (79-88)	76 (70-81)	61 (54-67)	
1999-2001	248	88 (84-92)	85 (80-89)	78 (72-83)		
2002-2004	200	93 (88-95)	91 (86-94)	81 (75-86)		
2005-2008	255	94 (91-97)				

Table 9.8 Patient survival after first paediatric kidney only transplant from a DBD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval)			
		One year	Two year	Five year	Ten year
1996-1998	246	97 (94-99)	97 (93-98)	95 (91-97)	90 (85-93)
1999-2001	248	99 (97-100)	99 (97-100)	98 (95-99)	
2002-2004	201	100 (-)	100 (-)	98 (95-99)	
2005-2008	254	100 (97-100)			

9.1.5 Paediatric kidney recipients – living donor

Long-term graft survival in paediatric recipients for living donor kidney transplants in the UK is shown in **Figure 9.5**. **Table 9.9** shows graft survival estimates and confidence intervals for each time period analysed. **Table 9.10** shows the patient survival estimates and confidence intervals for one, two, five and ten years post-transplant. There were no statistically significant differences in graft or patient survival over time ($p>0.1$). There were insufficient paediatric recipients of first kidney only transplants from donors after cardiac death to permit reliable analysis.

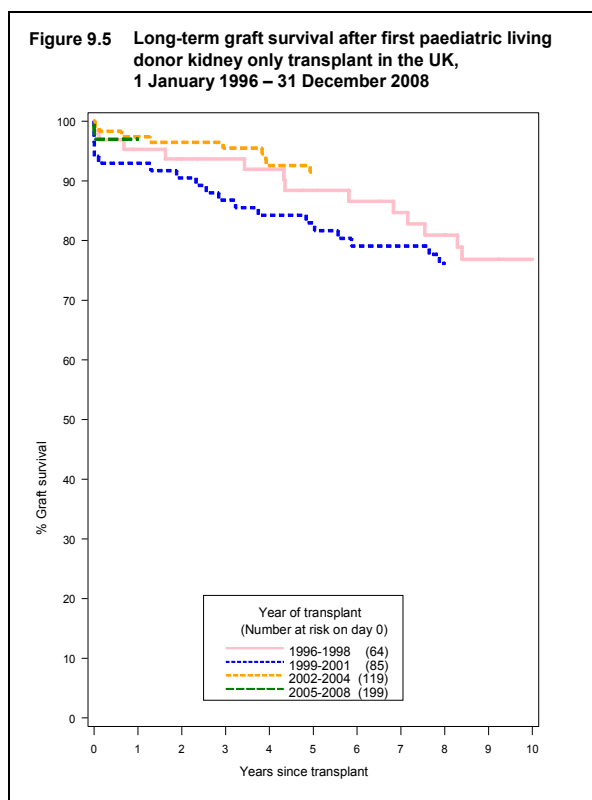


Table 9.9 Graft survival after first paediatric living donor kidney transplant

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval)				
		One year	Two year	Five year	Ten year	
1996-1998	64	95 (86-98)	94 (84-98)	88 (77-94)	77 (63-86)	
1999-2001	85	93 (85-97)	90 (82-95)	83 (73-90)		
2002-2004	119	97 (92-99)	96 (91-99)	91 (84-95)		
2005-2008	199	97 (93-99)				

Table 9.10 Patient survival after first paediatric living donor kidney transplant

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval)				
		One year	Two year	Five year	Ten year	
1996-1998	64	100 (-)	100 (-)	100 (-)	96 (86-99)	
1999-2001	86	98 (91-99)	96 (89-99)	95 (87-98)		
2002-2004	119	97 (92-99)	97 (92-99)	96 (91-99)		
2005-2008	199	99 (96-100)				

9.2 Pancreas graft and patient survival

9.2.1 Simultaneous kidney/pancreas transplants

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. **Figure 9.6** shows pancreas graft survival in recipients receiving their first simultaneous kidney/pancreas (SPK) transplant performed from donors after brain death, 2002 - 2004 and 2005 - 2008. Graft and patient survival estimates and confidence intervals are shown by transplant type at one year, two years and three years in **Table 9.11** and **Table 9.12** respectively. Results relate to adults only as there are no paediatric pancreas transplant recipients.

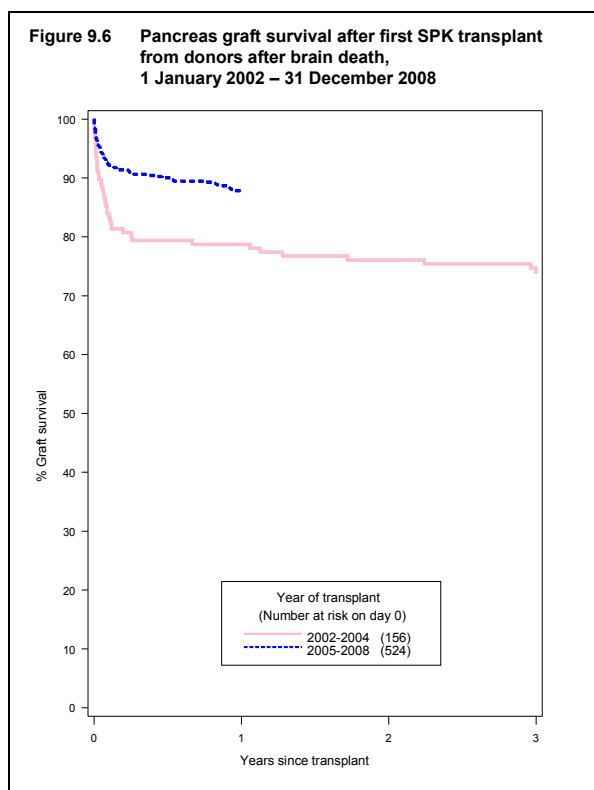


Table 9.11 Graft survival after first SPK transplant from a DBD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval)			
		One year	Two year	Three year	
2002-2004	156	79 (71-84)	76 (69-82)	74 (66-80)	
2005-2008	524	88 (85-90)			

Table 9.12 Patient survival after first SPK transplant from a DBD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval)			
		One year	Two year	Three year	
2002-2004	156	91 (85-95)	90 (84-94)	88 (81-92)	
2005-2008	524	96 (93-97)			

9.2.2 Pancreas only transplants

Figure 9.7 shows pancreas graft survival in recipients receiving their first pancreas only transplant performed from donors after brain death, 2002 - 2004 and 2005 - 2008. Graft and patient survival estimates and confidence intervals are shown by transplant type at one year, two years and three years in **Table 9.13** and **Table 9.14** respectively. Results are for adult patients only.

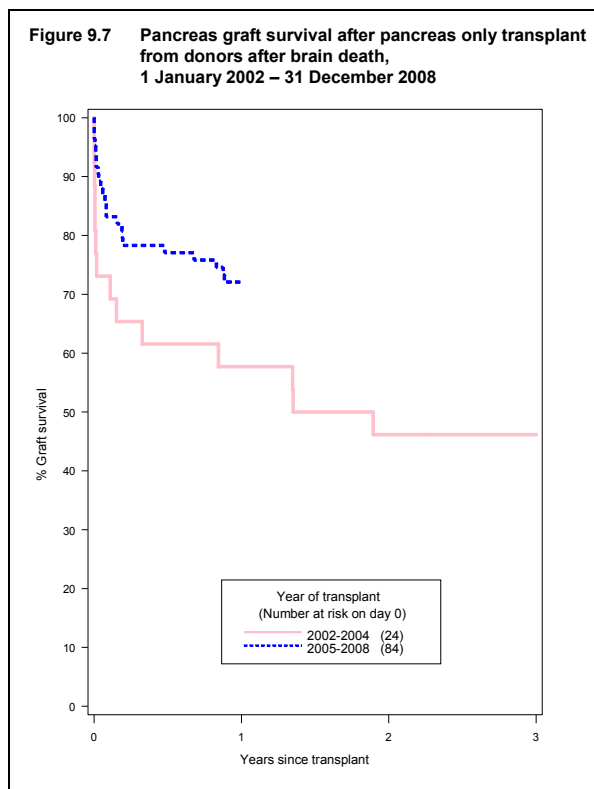


Table 9.13 Graft survival after first pancreas only transplant from a DBD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval)			
		One year	Two year	Three year	
2002-2004	26	58 (37-74)	46 (27-64)	46 (27-64)	
2005-2008	84	72 (61-80)			

Table 9.14 Patient survival after first pancreas only transplant from a DBD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval)			
		One year	Two year	Three year	
2002-2004	26	100 (-)	100 (-)	89 (62-97)	
2005-2008	86	95 (87-98)			

9.3 Cardiothoracic patient survival

9.3.1 Adult recipients – heart transplants

Long-term patient survival for adult (≥ 16 years) recipients after first heart only transplant is shown in **Figure 9.8**. Domino and deceased donor (DBD only) transplants are included as well as transplants for urgent patients. **Table 9.15** shows the patient survival estimates and confidence intervals for one, two, five and ten years post-transplant. There were no statistically significant changes in survival rates over the time periods analysed ($p > 0.1$).

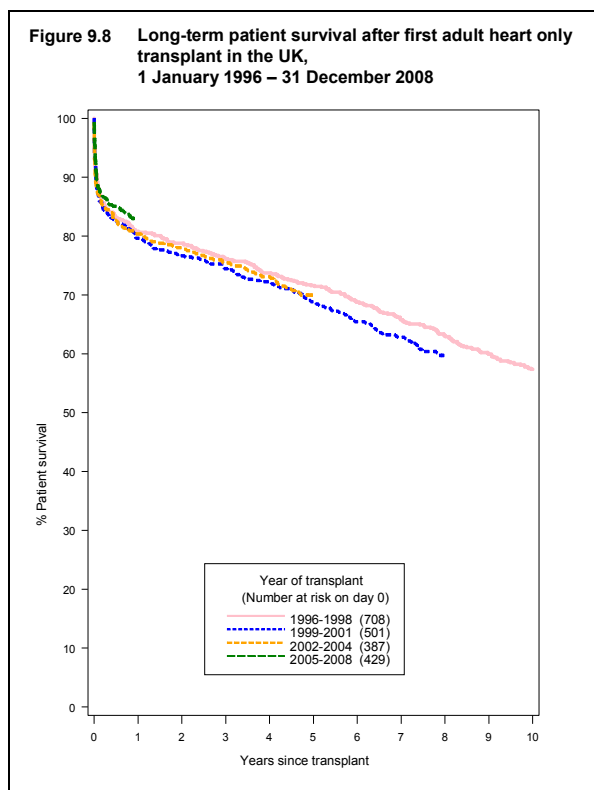


Table 9.15 Patient survival after first adult heart only transplant

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval)				
		One year	Two year	Five year	Ten year	
1996-1998	708	81 (78-84)	79 (76-82)	72 (68-75)	57 (54-61)	
1999-2001	501	80 (76-83)	77 (73-80)	69 (65-73)	57 (54-61)	
2002-2004	387	80 (76-84)	78 (74-82)	70 (65-74)	57 (54-61)	
2005-2008	429	83 (79-86)	79 (76-82)	70 (65-74)	57 (54-61)	

9.3.2 Adult recipients – heart/lung block transplants

Patient survival for adult recipients after first heart/lung block transplants is shown in **Figure 9.9**. Patient survival estimates and confidence intervals for each time period analysed are shown in **Table 9.16**. There were no statistically significant differences in patient survival over time ($p>0.1$).

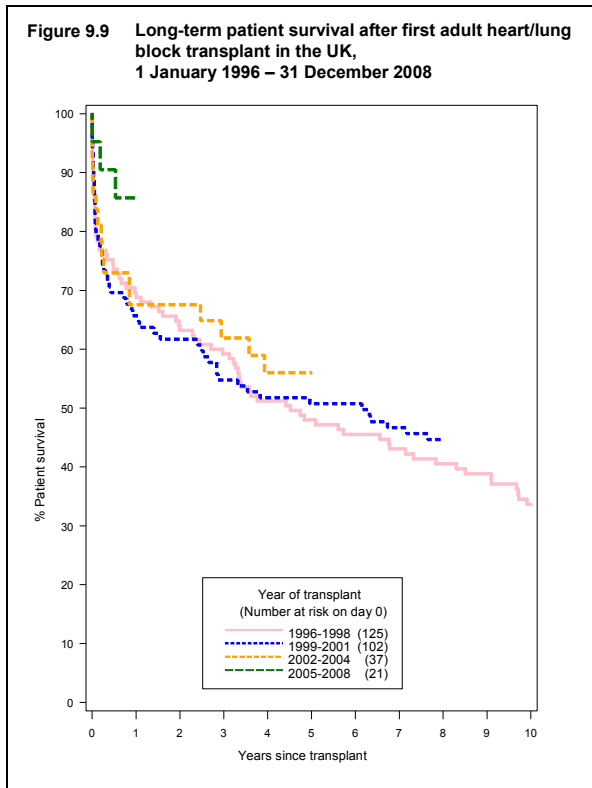


Table 9.16 Patient survival after first adult heart/lung block transplant

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval)							
		One year		Two year		Five year		Ten year	
1996-1998	125	70	(61-77)	63	(54-71)	48	(39-56)	34	(25-42)
1999-2001	102	66	(56-74)	62	(52-70)	51	(41-60)		
2002-2004	37	68	(50-80)	68	(50-80)	56	(38-70)		
2005-2008	21	86	(62-95)						

9.3.3 Adult recipients – lung transplants

Patient survival for adult recipients after first lung only transplant from donors after brain death is shown in **Figure 9.10**, with survival estimates and confidence intervals shown in **Table 9.17**. There is evidence of improvement in one and five year patient survival over the period analysed, $p < 0.01$. The difference was of borderline significance at two years ($p = 0.057$).

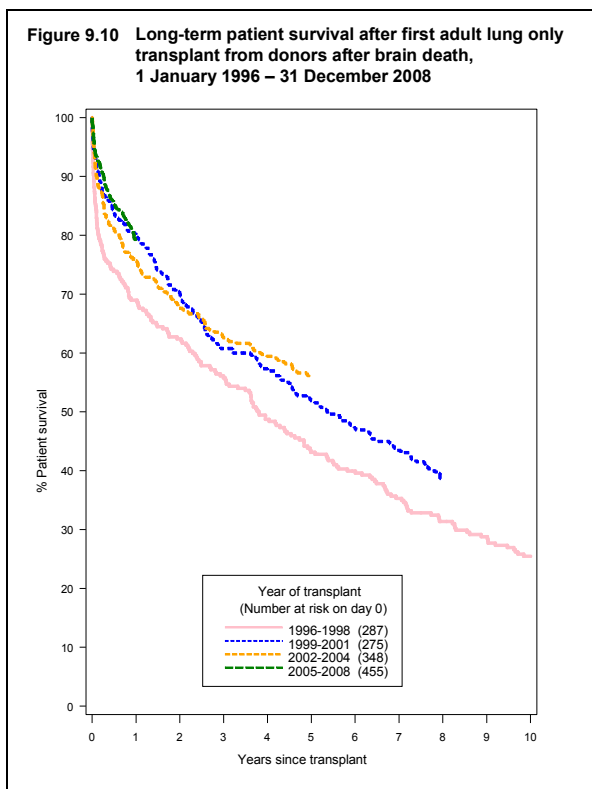
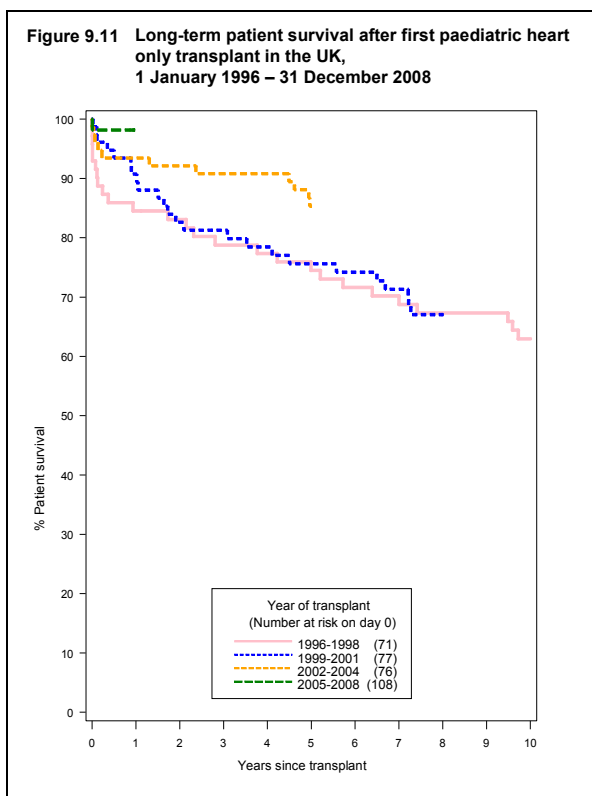


Table 9.17 Patient survival after first adult lung only transplant from a DBD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval)				
		One year	Two year	Five year	Ten year	
1996-1998	287	69 (63-74)	62 (56-68)	43 (37-49)	25 (21-31)	
1999-2001	275	80 (75-84)	70 (64-75)	52 (46-58)		
2002-2004	348	76 (71-80)	68 (62-72)	56 (50-61)		
2005-2008	455	79 (75-83)				

9.3.4 Paediatric recipients – heart transplants

Long-term patient survival for paediatric recipients after first heart only transplant is shown in **Figure 9.11**. Domino and deceased donor transplants (DBD donors only) are included as well as transplants for urgent patients. **Table 9.18** shows the patient survival estimates and confidence intervals for one, two, five and ten years post-transplant. There is evidence of improvement in one year patient survival over the time period analysed, $p < 0.01$. The number of paediatric lung and heart/lung transplant recipients was too small for analysis.



Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval)			
		One year	Two year	Five year	Ten year
1996-1998	71	85 (74-91)	83 (72-90)	74 (63-83)	63 (51-73)
1999-2001	77	91 (82-95)	83 (72-90)	76 (64-84)	63 (51-73)
2002-2004	76	93 (85-97)	92 (83-96)	85 (75-92)	-
2005-2008	108	98 (93-100)	-	-	-

9.4 Liver patient survival

9.4.1 Adult recipients – donor after brain death (DBD)

Long-term patient survival for adult (≥ 17 years) recipients after first elective liver only transplants from donors after brain death is shown in **Figure 9.12**. **Table 9.19** 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 time period analysed, $p < 0.001$, $p < 0.001$ and $p < 0.01$, respectively.

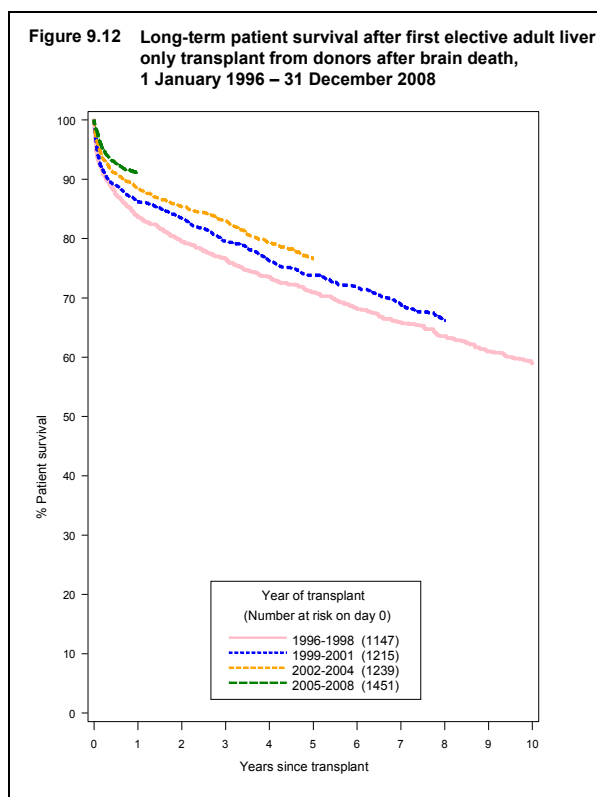


Table 9.19 Patient survival after first elective adult liver only transplant from a DBD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval)				
		One year	Two year	Five year	Ten year	
1996-1998	1147	84 (81-86)	80 (77-82)	71 (68-74)	59 (56-62)	
1999-2001	1215	86 (84-88)	83 (81-85)	74 (71-76)		
2002-2004	1239	89 (87-90)	85 (83-87)	77 (74-79)		
2005-2008	1451	91 (89-92)				

9.4.2 Adult recipients – donor after cardiac death (DCD)

Patient survival for adult (>=17 years) recipients after first elective liver only transplants from donors after cardiac death is shown in **Figure 9.13**. The majority of these liver transplants have been performed since 1 January 2002, so it is not possible to estimate long-term patient survival. **Table 9.20** shows patient survival estimates at one, two, and three years post-transplant.

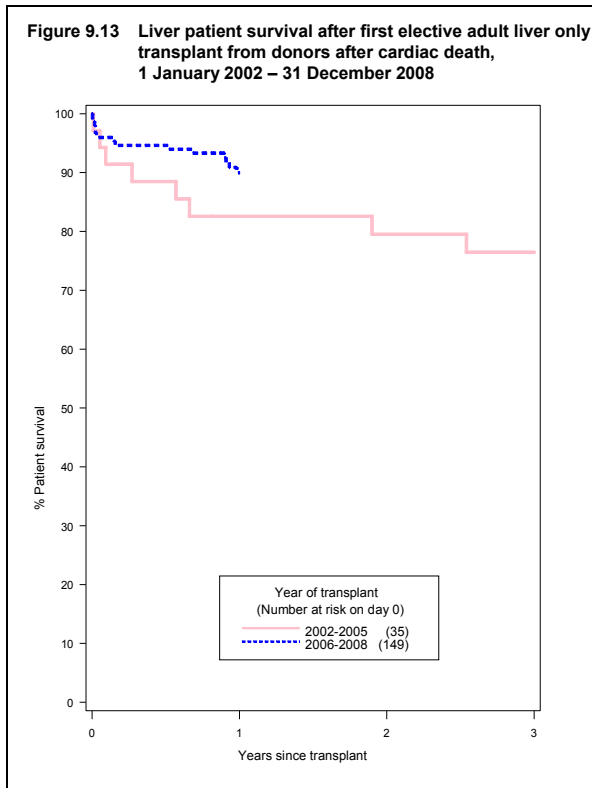


Table 9.20 Patient survival after first elective adult liver only transplant from a DCD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval)					
		One year		Two year		Three year	
2002-2005	35	83	(65-92)	80	(62-90)	76	(58-87)
2006-2008	149	90	(84-94)				

9.4.3 Paediatric recipients – donor after brain death (DBD)

Figure 9.14 and **Table 9.21** show long-term patient survival estimates for first elective liver only transplants from donors after brain death in paediatric (<17 years) recipients. There have been no statistically significant improvements in one, two or five year patient survival over the time period analysed ($p>0.1$). The number of paediatric liver transplants from donors after cardiac death was too small to estimate patient survival.

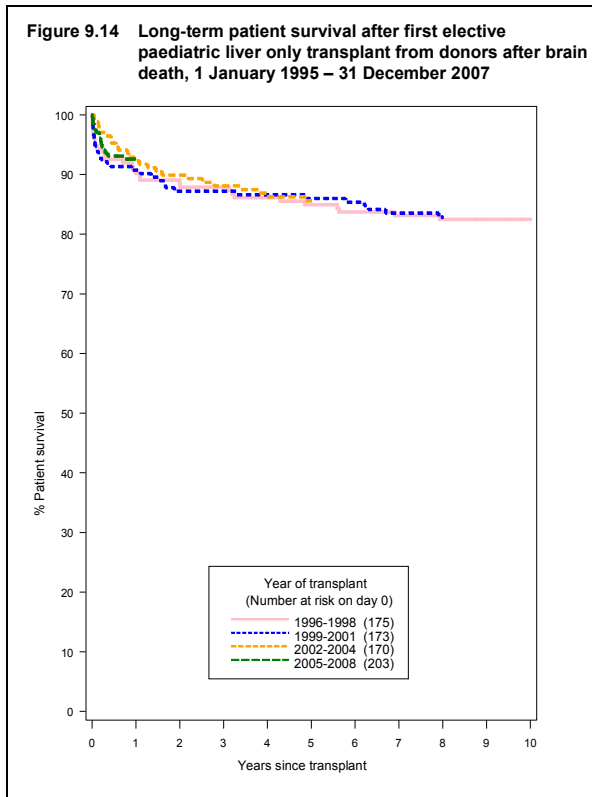


Table 9.21 Patient survival after first elective paediatric liver only transplant from a DBD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval)				
		One year	Two year	Five year	Ten year	
1996-1998	175	90 (85-94)	88 (83-92)	85 (79-89)	82 (76-87)	
1999-2001	173	91 (85-94)	87 (81-91)	86 (80-90)	82 (76-87)	
2002-2004	170	92 (87-95)	90 (84-94)	86 (79-90)	82 (76-87)	
2005-2008	203	93 (88-95)				

9.5 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 9.15** shows graft survival estimates for first penetrating keratoplasty (PK) for grafts 1999 – 2001, 2002 – 2004 and 2005 - 2008. Graft survival estimates and confidence intervals are shown by transplant year at one, two and five years in **Table 9.22**

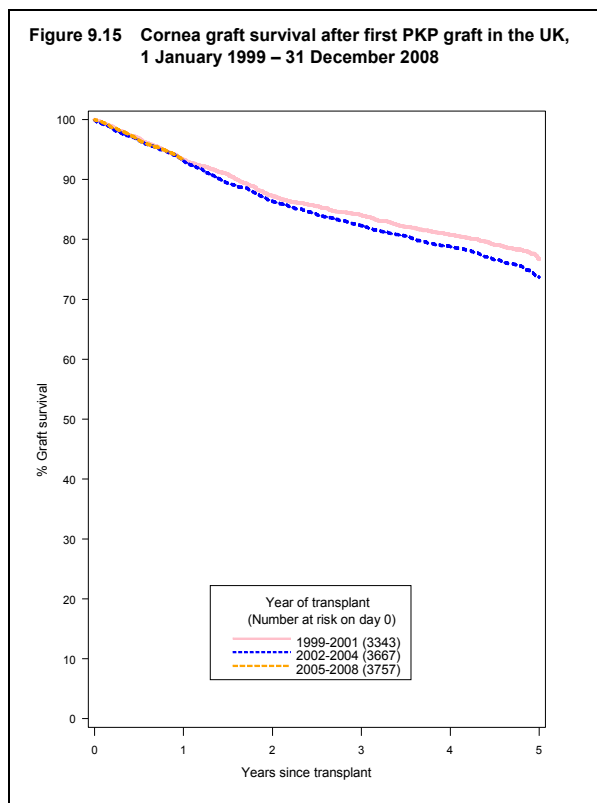


Table 9.22 Cornea graft survival after first PK

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval)			
		One year	Two year	Five year	
1999-2001	3343	93 (92-94)	87 (86-88)	77 (75-78)	
2002-2004	3667	93 (92-94)	86 (85-87)	74 (72-75)	
2005-2008	3757	93 (92-94)			

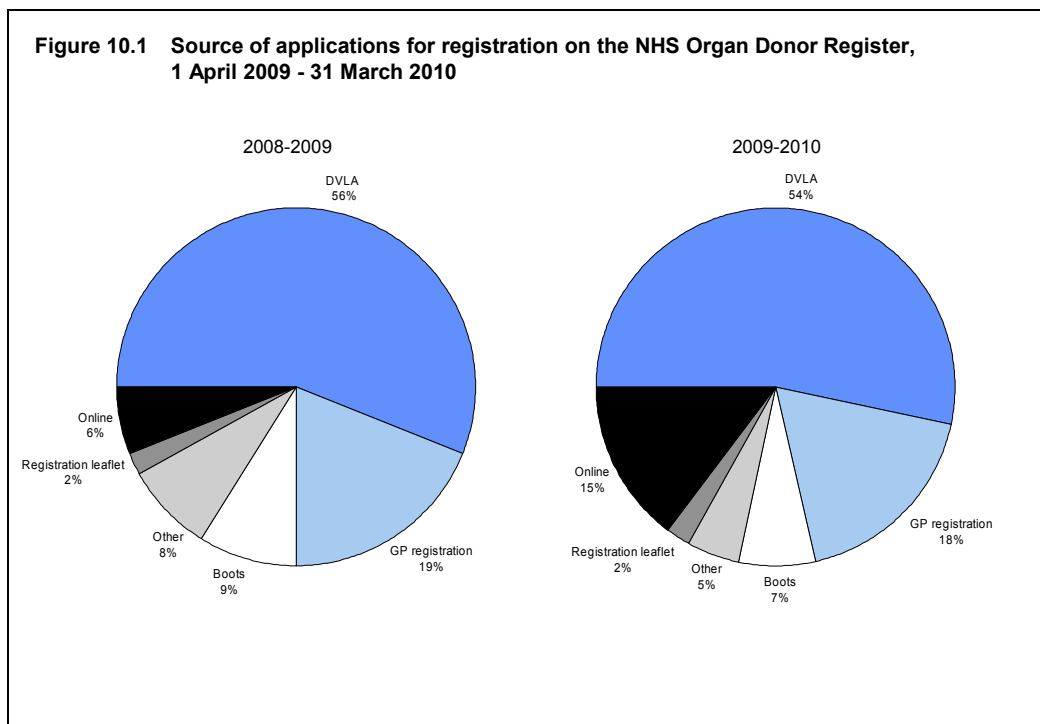
10 NHS ORGAN DONOR REGISTER

By the end of March 2010 the NHS Organ Donor Register (ODR) held just over 17 million registrations. During the year data on the register were continually reviewed and validated.

Of the 959 deceased organ donors in 2009-2010, 30% were registered on the ODR compared with 37% of organ donors in 2008-2009. Similarly, 38% of cornea-only donors in 2009-2010 were registered on the ODR compared with 39% in 2008-2009.

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 Organ Donation and Transplantation (ODT) website (www.organdonation.nhs.uk) and by telephone.

The source of applications for registration on the ODR is illustrated in **Figure 10.1**. This figure shows that 18% of registrations in 2009-2010 arrived by means of the Family Health Services Authorities / GP, 54% from driving licence applications and reminders through the DVLA and 15% online through the ODT website.



At the end of March 2010 87% of registrations, where the information was available, indicated a willingness to donate all organs and tissue (kidneys, pancreas, heart,

lungs, liver and corneas). However, of those who were not willing to donate all organs, the majority (72%) 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 10.1**.

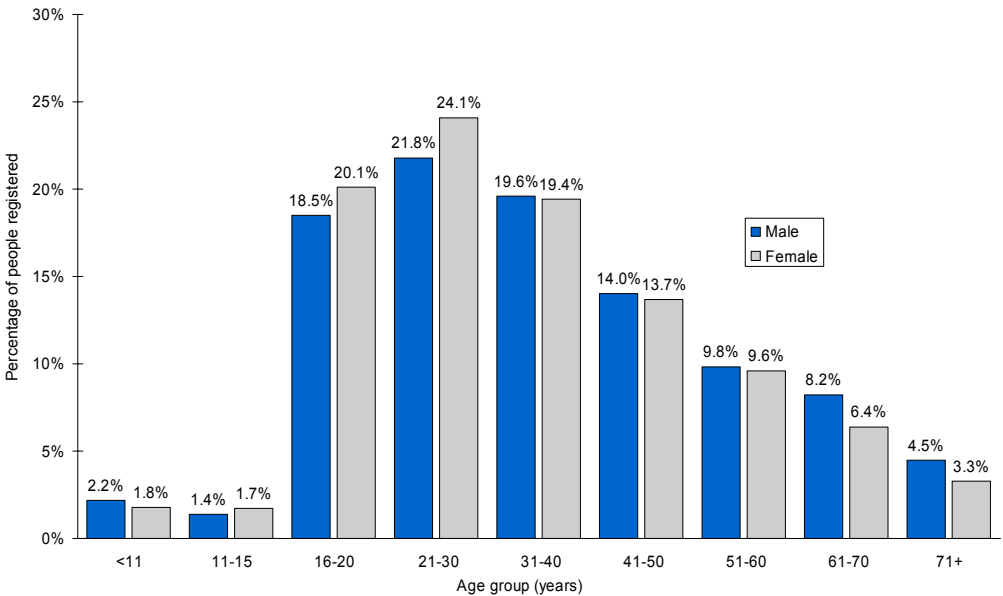
Table 10.1 Preparedness of those registered on the NHS Organ Donor Register at 31 March 2010 to donate different organs*

Registrants prepared to donate all organs	87%	
Of those not prepared to donate all organs (“restricted donors”):		
Not prepared to donate:	% of “Restricted donors”	% of all registrants
Kidneys	7	0.8
Pancreas	24	2.9
Heart	22	3.0
Lungs	20	2.6
Liver	13	1.6
Corneas	72	9.3

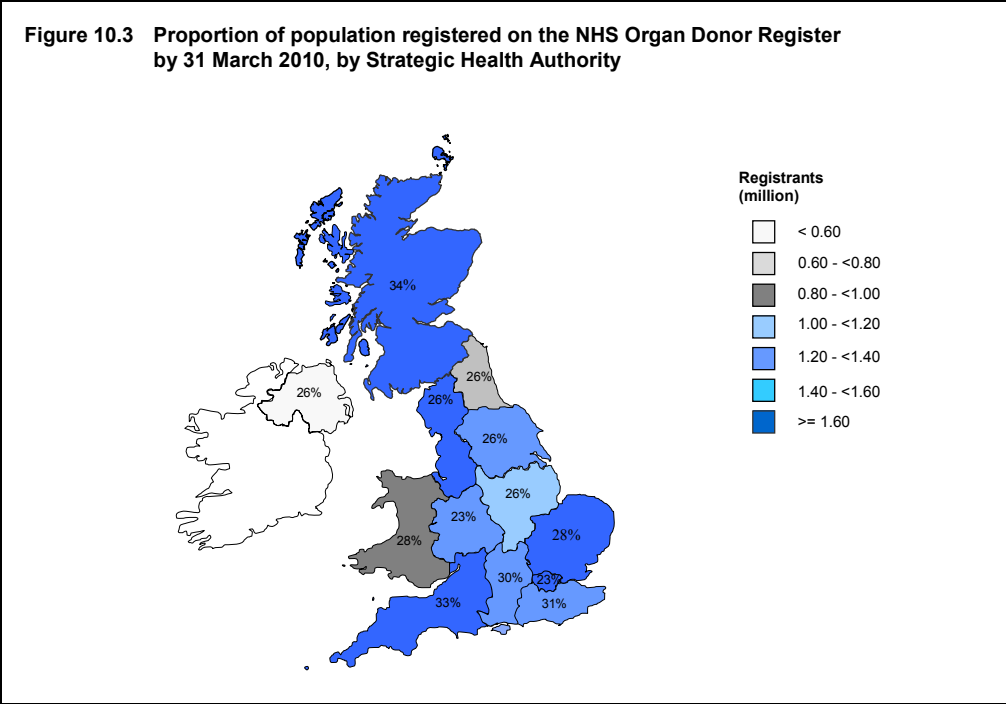
* This information was not available for approximately 7% of the total registered

People of all ages are eligible for organ donor registration: the distribution of age by sex at time of registration is shown in **Figure 10.2**. The highest proportion of registrations (22% of males and 24% of females) are in the 21-30 years age group. The lowest proportions are in the under 11 and 11-15 age groups. Of all people registered on the NHS Organ Donor Register, 46% are male and 54% are female.

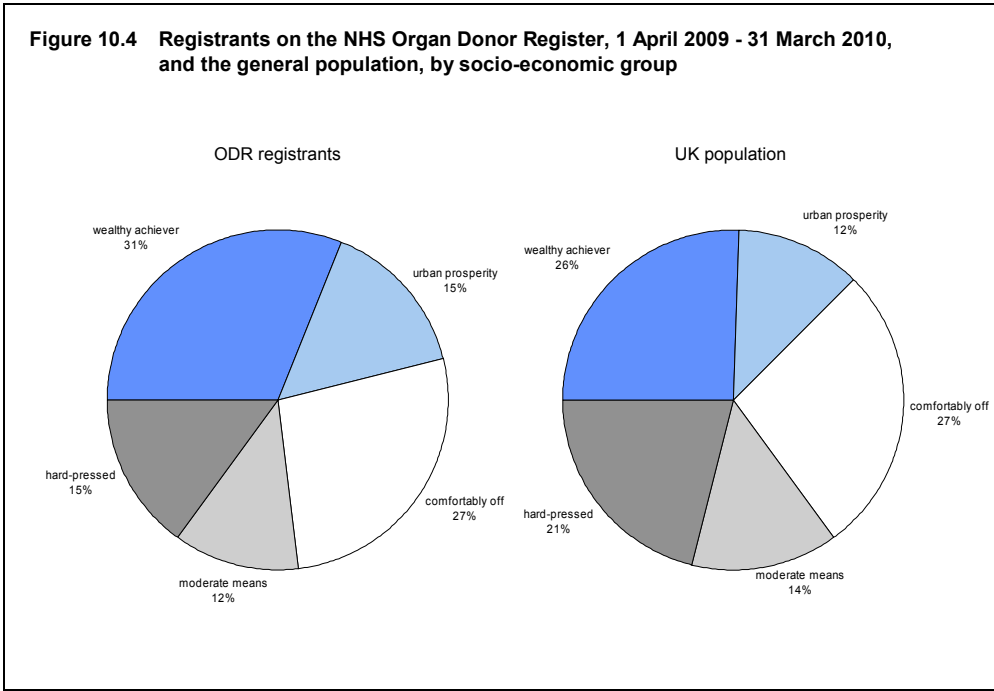
Figure 10.2 Age and gender of people registered on the NHS Organ Donor Register by 31 March 2010



Those registered on the ODR come from all parts of the UK. **Figure 10.3** illustrates the percentage of the population registered in each Strategic Health Authority at 31 March 2010, and the number of registrations.



The breakdown of registrants on the ODR during 2007-2008 by socio-economic group (using the ACORN¹ classification, based on postcode) is shown in **Figure 10.4**, 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.

11.1 Introduction

In this chapter, summary data from the national Potential Donor Audit (PDA) covering the 9-month period from 1 January 2009 to 30 September 2009 are presented. The data comprise all audited patient deaths in UK Intensive Care Units (ICUs), excluding cardiothoracic ICUs and patients aged over 75 years. The data are based on PDA forms received on or before 28 June 2010, validated and input onto the UK Transplant Registry. A new PDA data collection commenced on 1 October 2009 incorporating some different definitions and thus these data are not included.

11.2 Definitions

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

Potential donors after cardiac death (DCD) are defined as patients suitable for donation after cardiac death, with no absolute medical contraindications and for whom treatment was withdrawn.

The **referral rate** is the percentage of potential donors referred to a Specialist Nurse for Organ Donation.

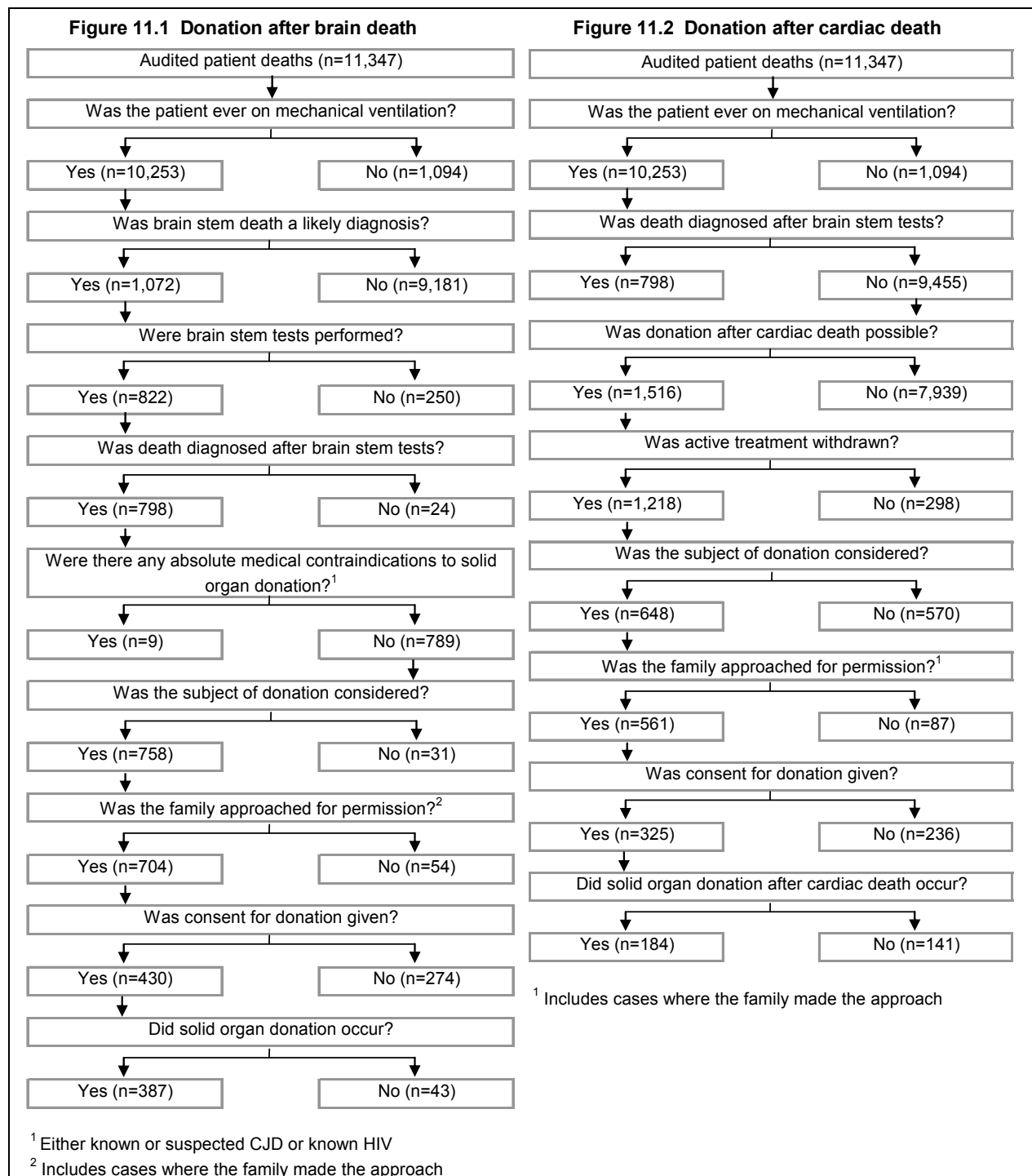
The **approach rate** is the percentage of potential donors for whom solid organ donation was considered whose family were approached for consent to donation.

The **consent rate** is the percentage of potential donors whose families gave consent following approach, or after making the approach, for consent to donation.

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

11.3 Breakdown of audited deaths in ICUs

In the 9-month period there were 11,347 audited patient deaths in UK ICUs. **Figures 11.1** and **11.2** show a detailed breakdown from the number of audited patient deaths to the number of solid organ DBD and DCD, respectively. **Table 11.1** shows the key percentages calculated from the flow chart information.



	DBD	DCD
Potential donors	789	1,218
Referral rate	88%	48%
Approach rate	93%	87%
Consent rate	61%	58%
Conversion rate	49%	15%

11.4 Potential donors

The number of potential donors and rates per million population (pmp) are shown in **Table 11.2**, by country and English Strategic Health Authority (SHA). Potential DBD ranged from 7.9 pmp in the East of England SHA to 21.4 pmp in the North East SHA. Potential DCD ranged from 7.0 pmp in Northern Ireland to 40.7 pmp in Yorkshire and The Humber SHA. Overall, there were 789 potential DBD (12.8 pmp) and 1218 potential DCD (19.7 pmp) in the UK.

Table 11.2 Potential donor rates per million population (pmp) in the UK, 1 January - 30 September 2009, by country and English Strategic Health Authority

Country of donation/ Strategic Health Authority	Potential DBD		Potential DCD		TOTAL	
	N	(pmp)	N	(pmp)	N	(pmp)
North East	55	(21.4)	39	(15.1)	94	(36.5)
North West	80	(11.6)	175	(25.3)	255	(36.9)
Yorkshire and The Humber	57	(10.9)	212	(40.7)	269	(51.6)
East Midlands	36	(8.2)	34	(7.7)	70	(15.9)
West Midlands	67	(12.4)	93	(17.2)	160	(29.6)
East of England	45	(7.9)	167	(29.2)	212	(37.0)
London	150	(19.7)	139	(18.2)	289	(37.9)
South East Coast	52	(12.1)	37	(8.6)	89	(20.7)
South Central	51	(12.5)	62	(15.2)	113	(27.8)
South West	56	(10.7)	112	(21.5)	168	(32.2)
England	649	(12.6)	1070	(20.8)	1719	(33.4)
Wales	36	(12.0)	49	(16.4)	85	(28.4)
Scotland	69	(13.3)	80	(15.4)	149	(28.7)
Northern Ireland	33	(17.8)	13	(7.0)	46	(24.9)
TOTAL ¹	789	(12.8)	1218	(19.7)	2007	(32.5)

¹ Includes Channel Islands and Isle of Man

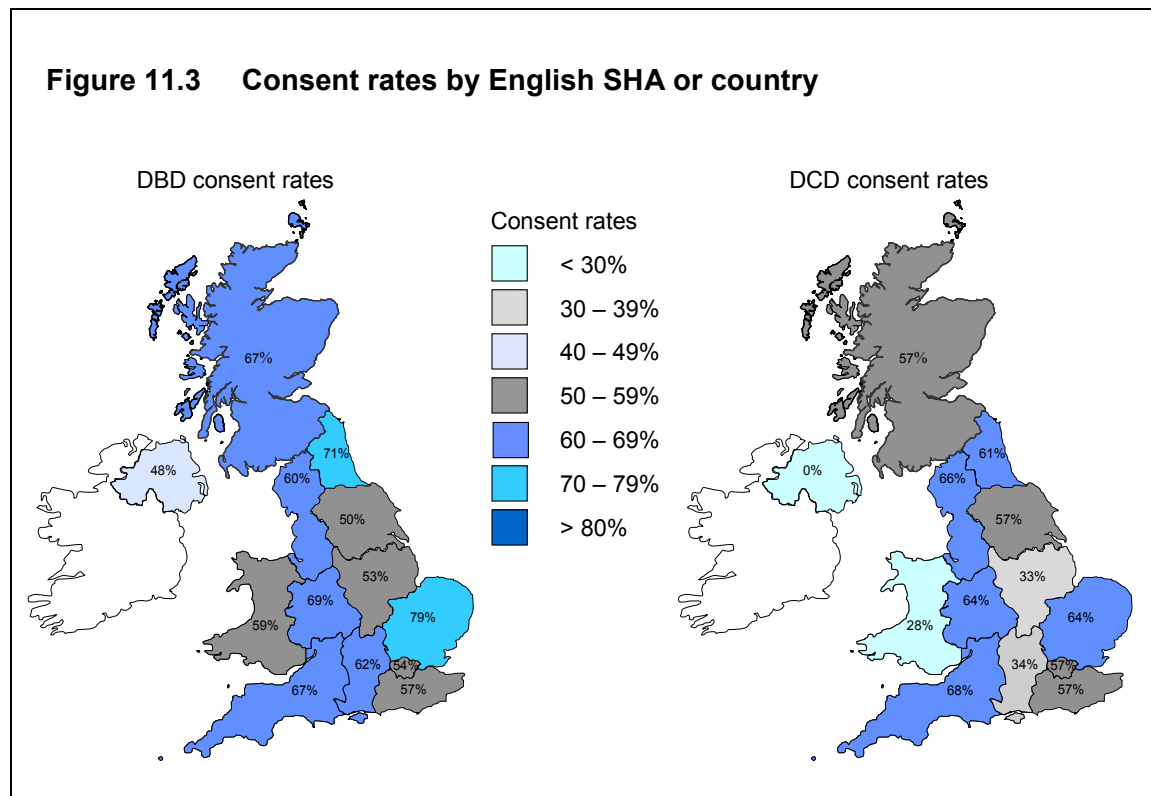
11.5 Consent rates

The overall DBD consent rate was 61% and the 95% confidence limits for this percentage range from 57% to 65%. For DCD, the overall consent rate was 58% and the 95% confidence limits range from 54% to 62%.

Consent rates by English SHA or country are illustrated in **Figure 11.3** for both DBD and DCD. 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 of potential donors after cardiac death are very small, so additional caution should be applied when interpreting the rates.

The DBD consent rates range from 48% in Northern Ireland to 79% in the East of England SHA. DCD consent rates range from 28% in Wales to 68% in the South West of England SHA, excluding Northern Ireland where there was only one potential DCD family approached.

Appendix IV contains the number of families approached and the DBD and DCD consent rates for each English SHA and country.



APPENDICES

Appendix I provides details of the 959 deceased solid organ donors reported in 2009-2010. 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.

The number of donors per designated kidney 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 population figures are based on figures supplied by Strategic Health Authorities.

Appendix IV gives the consent rate for each English Strategic Health Authority and country from the national Potential Donor Audit.

Appendix 1

Deceased solid organ donors and donated organs in the UK, 1 April 2009 - 31 March 2010 (2008-2009), by donating hospital

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
East Midlands													
Boston, Pilgrim Hospital	1	(1)	0	(0)	1	(1)	1	(1)	2	0	0	1	1
Chesterfield, Chesterfield Royal Hospital	2	(4)	1	(0)	3	(4)	2	(4)	6	0	0	2	1
Derby, Derbyshire Royal Infirmary	0	(2)	0	(0)	0	(2)	0	(2)	0	0	0	0	0
Derby, Royal Derby Hospital	3	(0)	1	(1)	4	(1)	3	(0)	8	0	2	3	1
Kettering, Kettering General Hospital	1	(1)	0	(0)	1	(1)	1	(1)	2	1	2	0	1
Leicester, Glenfield General Hospital	1	(3)	0	(0)	1	(3)	1	(3)	2	0	0	1	0
Leicester, Leicester Royal Infirmary	3	(7)	0	(0)	3	(7)	2	(7)	6	1	0	2	2
Lincoln, Lincoln County Hospital	2	(0)	1	(1)	3	(1)	2	(1)	6	1	4	2	2
Northampton, Northampton General Hospital	3	(1)	0	(2)	3	(3)	3	(1)	6	2	2	3	1
Nottingham, Nottingham University Hospital	6	(8)	3	(2)	9	(10)	8	(9)	18	3	8	8	6
Sutton-In-Ashfield, King's Mill Hospital	2	(1)	1	(0)	3	(1)	2	(1)	6	0	0	2	1
Worksop, Bassetlaw District General Hospital	1	(0)	0	(0)	1	(0)	0	(0)	0	0	0	1	0
Total	25	(28)	7	(6)	32	(34)	25	(30)	62	8	18	25	16
East of England													
Basildon, Basildon Hospital	3	(4)	1	(0)	4	(4)	2	(4)	6	0	0	3	2
Bedford, Bedford Hospital	5	(0)	3	(8)	8	(8)	6	(2)	16	0	0	6	1
Bury St Edmunds, West Suffolk Hospital	2	(2)	3	(1)	5	(3)	2	(2)	10	1	0	2	1
Cambridge, Addenbrooke's Hospital	8	(16)	20	(17)	28	(33)	18	(25)	52	1	8	17	12
Chelmsford, Broomfield Hospital	4	(3)	0	(0)	4	(3)	3	(3)	8	1	0	3	3
Colchester, Colchester General Hospital	1	(2)	2	(2)	3	(4)	1	(3)	6	1	2	1	1
Great Yarmouth, James Paget Hospital	1	(1)	3	(4)	4	(5)	2	(2)	7	0	0	2	2
Harlow, Princess Alexandra Hospital	1	(0)	2	(2)	3	(2)	2	(0)	5	0	2	2	1
Hemel Hempstead, Hemel Hempstead General Hospital	0	(1)	0	(1)	0	(2)	0	(1)	0	0	0	0	0
Huntingdon, Hinchingsbrooke Hospital	0	(0)	1	(2)	1	(2)	0	(1)	2	0	0	0	0
Ipswich, Ipswich Hospital	3	(0)	3	(2)	6	(2)	4	(0)	12	0	2	4	3
Kings Lynn, The Queen Elizabeth Hospital	0	(3)	1	(0)	1	(3)	0	(3)	2	0	0	0	0
Luton, Luton And Dunstable Hospital	2	(1)	7	(9)	9	(10)	6	(3)	16	0	2	5	5
Norwich, Norfolk And Norwich University Hospital	3	(3)	6	(2)	9	(5)	4	(3)	18	0	0	4	2
Papworth, Papworth Hospital	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0
Peterborough, Peterborough District Hospital	1	(0)	1	(1)	2	(1)	2	(1)	4	0	0	2	2
Stevenage, Lister Hospital	1	(2)	0	(0)	1	(2)	1	(2)	2	1	2	1	1
Watford, Watford General Hospital	0	(0)	1	(1)	1	(1)	0	(0)	2	0	0	0	0
Welwyn Garden City, Queen Elizabeth Hospital	4	(4)	0	(1)	4	(5)	3	(3)	8	0	0	3	1

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
Westcliff-On-Sea, Southend Hospital	1	(4)	1	(0)	2	(4)	1	(4)	4	0	0	1	0
Total	40	(47)	55	(53)	95	(100)	57	(63)	180	5	18	56	37
London													
Barnet, Barnet General Hospital	1	(1)	0	(0)	1	(1)	1	(1)	2	0	0	1	0
Carshalton, St Helier Hospital	1	(1)	1	(1)	2	(2)	1	(1)	4	0	0	1	0
Croydon, Mayday University Hospital	1	(1)	0	(0)	1	(1)	1	(0)	2	1	2	0	0
Enfield, Chase Farm Hospital	0	(4)	0	(0)	0	(4)	0	(4)	0	0	0	0	0
Evelina Childrens Hospital	0	(2)	0	(0)	0	(2)	0	(2)	0	0	0	0	0
Harefield, Harefield Hospital	3	(0)	1	(1)	4	(1)	2	(0)	8	0	0	2	2
Harrow, Northwick Park Hospital	1	(3)	0	(0)	1	(3)	1	(3)	2	0	0	1	0
Ilford, King George Hospital	2	(0)	0	(0)	2	(0)	2	(0)	4	0	0	1	1
Isleworth, West Middlesex University Hospital	2	(4)	2	(1)	4	(5)	3	(4)	8	0	0	3	1
Kingston, Kingston Hospital	1	(5)	1	(0)	2	(5)	1	(5)	2	0	0	2	0
London, Central Middlesex Hospital	1	(0)	0	(1)	1	(1)	1	(0)	2	0	0	1	1
London, Charing Cross Hospital	14	(17)	5	(0)	19	(17)	17	(11)	38	3	4	16	12
London, Great Ormond Street Hospital For Children	3	(1)	1	(2)	4	(3)	4	(2)	8	2	0	4	2
London, Guy's Hospital	1	(0)	0	(0)	1	(0)	0	(0)	0	0	0	1	0
London, King's College Hospital	11	(10)	7	(3)	18	(13)	18	(11)	34	2	4	17	10
London, National Hospital For Neurology And Neurosurgery	9	(10)	4	(1)	13	(11)	8	(10)	25	1	4	8	6
London, Newham General Hospital	0	(1)	1	(1)	1	(2)	1	(1)	2	0	0	1	0
London, North Middlesex Hospital	1	(2)	1	(1)	2	(3)	1	(2)	4	0	0	1	0
London, Queen Elizabeth Hospital	2	(1)	1	(0)	3	(1)	3	(1)	6	0	0	3	1
London, Royal Brompton Hospital	1	(0)	0	(0)	1	(0)	1	(0)	2	0	0	1	0
London, Royal Free Hospital	9	(5)	7	(3)	16	(8)	11	(7)	32	2	4	10	6
London, St Bartholomew's Hospital	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0
London, St George's Hospital	12	(11)	4	(6)	16	(17)	15	(14)	32	2	14	15	8
London, St Mary's Hospital	2	(1)	2	(0)	4	(1)	3	(1)	8	1	0	3	2
London, St Thomas' Hospital	2	(2)	1	(5)	3	(7)	2	(4)	4	0	0	3	2
London, The London Chest Hospital	0	(3)	1	(0)	1	(3)	1	(2)	2	0	0	1	1
London, The Royal London Hospital (Whitechapel)	13	(15)	7	(9)	20	(24)	14	(21)	36	6	6	15	10
London, The Whittington Hospital	6	(0)	0	(0)	6	(0)	6	(0)	12	1	2	6	4
London, University College Hospital	4	(1)	2	(3)	6	(4)	5	(1)	11	1	0	4	2
London, University Hospital Lewisham	1	(1)	1	(1)	2	(2)	1	(1)	4	1	2	1	1
London, Whipps Cross Hospital	0	(0)	1	(1)	1	(1)	0	(0)	2	0	0	0	0
Orpington, Princess Royal University Hospital	0	(3)	0	(0)	0	(3)	0	(3)	0	0	0	0	0
Romford, Queens Hospital	7	(11)	8	(2)	15	(13)	10	(11)	30	0	0	8	7

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
Sidcup, Queen Mary's Hospital	0	(3)	0	(0)	0	(3)	0	(2)	0	0	0	0	0
Southall, Ealing Hospital	2	(0)	0	(0)	2	(0)	1	(0)	4	0	0	1	0
Uxbridge, Hillingdon Hospital	0	(0)	2	(0)	2	(0)	1	(0)	4	0	0	1	1
Total	113	(120)	61	(42)	174	(162)	136	(126)	334	23	42	132	80
North East													
Ashington, Wansbeck Hospital	1	(1)	0	(0)	1	(1)	1	(1)	2	0	2	1	0
Bishop Auckland, Bishop Auckland General Hospital	1	(0)	0	(0)	1	(0)	1	(0)	2	0	2	1	0
Darlington, Darlington Memorial Hospital	0	(3)	0	(0)	0	(3)	0	(2)	0	0	0	0	0
Durham, University Hospital Of North Durham	3	(0)	0	(1)	3	(1)	3	(1)	6	1	0	3	2
Gateshead, Queen Elizabeth Hospital	3	(1)	0	(1)	3	(2)	3	(1)	6	1	2	3	1
Hartlepool, University Hospital Of Hartlepool	1	(3)	0	(0)	1	(3)	1	(3)	2	0	0	1	1
Middlesbrough, The James Cook University Hospital	10	(7)	5	(4)	15	(11)	10	(8)	30	4	3	10	6
Newcastle, Freeman Hospital	1	(2)	1	(0)	2	(2)	1	(1)	4	0	0	1	0
Newcastle, Newcastle General Hospital	11	(21)	9	(4)	20	(25)	12	(21)	40	4	10	10	6
North Shields, North Tyneside General Hospital	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0
South Shields, South Tyneside District General Hospital	1	(0)	0	(0)	1	(0)	1	(0)	2	0	0	1	0
Stockton-On-Tees, University Hospital Of North Tees	1	(2)	2	(0)	3	(2)	1	(1)	6	1	2	1	1
Sunderland, Sunderland Royal Hospital	0	(0)	2	(1)	2	(1)	0	(1)	4	0	0	0	0
Total	33	(41)	19	(11)	52	(52)	34	(41)	104	11	21	32	17
North West													
Ashton-Under-Lyne, Tameside General Hospital	2	(1)	0	(0)	2	(1)	2	(1)	4	0	0	2	1
Barrow-In-Furness, Furness General Hospital	4	(1)	0	(0)	4	(1)	4	(1)	8	1	2	4	2
Blackburn, Royal Blackburn Hospital	5	(3)	0	(1)	5	(4)	5	(4)	10	2	6	5	3
Blackpool, Blackpool Victoria Hospital	2	(2)	0	(0)	2	(2)	2	(2)	4	0	0	2	0
Bolton, Bolton Royal Infirmary	1	(0)	0	(0)	1	(0)	1	(0)	2	0	0	1	0
Bolton, Royal Bolton Hospital	2	(3)	1	(2)	3	(5)	2	(2)	6	0	1	2	0
Bury, Fairfield General Hospital	2	(2)	0	(0)	2	(2)	2	(2)	4	0	0	2	2
Carlisle, Cumberland Infirmary	0	(1)	2	(0)	2	(1)	0	(1)	4	0	0	0	0
Chester, Countess Of Chester Hospital	1	(2)	0	(0)	1	(2)	1	(2)	2	0	0	1	0
Chorley And South Ribble Hospital	0	(0)	1	(0)	1	(0)	1	(0)	2	0	0	1	0
Crewe, Leighton Hospital	3	(1)	1	(1)	4	(2)	4	(2)	8	1	2	4	2
Lancaster, Royal Lancaster Infirmary	1	(1)	2	(0)	3	(1)	1	(0)	6	0	0	1	0
Liverpool, Alder Hey Children's Hospital	3	(2)	0	(0)	3	(2)	2	(1)	6	1	2	2	2
Liverpool, Liverpool Heart And Chest Hospital	2	(0)	2	(0)	4	(0)	2	(0)	6	0	0	3	0
Liverpool, Royal Liverpool University Hospital	3	(1)	5	(1)	8	(2)	4	(1)	16	0	0	4	1

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
Liverpool, University Hospital Aintree	2	(0)	0	(3)	2	(3)	2	(1)	4	0	0	2	2
Liverpool, Walton Centre For Neurology And Neurosurgery	6	(8)	2	(3)	8	(11)	6	(9)	16	1	2	6	4
Macclesfield, Macclesfield District General Hospital	0	(0)	1	(0)	1	(0)	0	(0)	2	0	0	0	0
Manchester, Manchester Royal Infirmary	1	(2)	0	(1)	1	(3)	0	(1)	2	0	0	0	0
Manchester, North Manchester General Hospital	0	(0)	2	(0)	2	(0)	0	(0)	4	0	0	0	0
Manchester, Royal Manchester Children's Hospital	2	(0)	1	(0)	3	(0)	2	(0)	6	2	4	2	2
Manchester, Trafford General Hospital	1	(1)	0	(0)	1	(1)	1	(1)	2	0	0	1	1
Manchester, Wythenshawe Hospital	1	(0)	2	(0)	3	(0)	1	(0)	6	0	2	1	1
Oldham, Royal Oldham Hospital (Rochdale Road)	3	(0)	0	(0)	3	(0)	2	(0)	6	0	2	2	0
Prescot, Whiston Hospital	1	(9)	0	(0)	1	(9)	1	(8)	2	0	0	1	0
Preston, Royal Preston Hospital	5	(6)	13	(6)	18	(12)	8	(7)	35	1	4	8	3
Rochdale, Rochdale Infirmary	0	(4)	0	(0)	0	(4)	0	(2)	0	0	0	0	0
Salford, Salford Royal	11	(5)	2	(1)	13	(6)	13	(5)	26	2	14	12	7
Southport, Southport District General Hospital	2	(2)	2	(1)	4	(3)	1	(3)	8	1	2	1	0
Stockport, Stepping Hill Hospital	3	(1)	0	(1)	3	(2)	2	(2)	6	0	2	2	1
Warrington, Warrington Hospital	1	(2)	0	(0)	1	(2)	1	(2)	2	0	0	1	1
Whitehaven, West Cumberland Hospital	2	(1)	0	(0)	2	(1)	2	(1)	4	0	0	2	1
Wigan, Royal Albert Edward Infirmary	1	(3)	3	(2)	4	(5)	3	(3)	8	0	0	2	1
Wirral, Arrowe Park Hospital	3	(1)	2	(0)	5	(1)	3	(1)	10	0	0	3	2
Total	76	(65)	44	(23)	120	(88)	81	(65)	237	12	45	80	39
South Central													
Aylesbury, Stoke Mandeville Hospital	1	(2)	0	(0)	1	(2)	1	(2)	2	1	2	1	1
Banbury, Horton General Hospital	1	(1)	0	(0)	1	(1)	1	(1)	2	0	0	1	1
Basingstoke, North Hampshire Hospital	1	(4)	0	(0)	1	(4)	0	(4)	2	0	0	0	0
Milton Keynes, Milton Keynes General Hospital	4	(1)	0	(1)	4	(2)	4	(1)	8	1	4	4	3
Newport, St Mary's Hospital	3	(1)	0	(0)	3	(1)	3	(1)	6	0	2	3	2
Oxford, John Radcliffe Hospital	14	(16)	3	(7)	17	(23)	14	(18)	32	3	6	12	9
Portsmouth, Queen Alexandra Hospital	2	(3)	2	(1)	4	(4)	4	(4)	6	0	0	4	2
Reading, Royal Berkshire Hospital	1	(4)	2	(3)	3	(7)	2	(6)	6	0	0	2	2
Slough, Wexham Park Hospital	4	(5)	0	(1)	4	(6)	3	(5)	6	0	2	4	3
Southampton, Southampton University Hospitals	13	(11)	7	(7)	20	(18)	16	(13)	38	0	12	15	10
Southampton, Wessex Neurological Unit	1	(0)	1	(1)	2	(1)	2	(1)	4	0	0	2	1
Winchester, Royal Hampshire County Hospital	1	(0)	0	(0)	1	(0)	1	(0)	2	0	0	1	0
Wycombe, Wycombe General Hospital	2	(2)	0	(0)	2	(2)	2	(2)	4	1	2	2	1
Total	48	(50)	15	(21)	63	(71)	53	(58)	118	6	30	51	35

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
South East Coast													
Ashford, William Harvey Hospital	1	(3)	1	(0)	2	(3)	2	(3)	4	0	0	2	0
Brighton, Royal Sussex County Hospital	4	(4)	0	(0)	4	(4)	4	(3)	8	0	4	3	2
Camberley, Frimley Park Hospital	1	(4)	2	(0)	3	(4)	3	(4)	6	0	2	3	1
Canterbury, Kent And Canterbury Hospital	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0
Chertsey, St Peter's Hospital	2	(3)	2	(1)	4	(4)	4	(3)	8	0	0	4	0
Chichester, St Richard's Hospital	0	(0)	0	(1)	0	(1)	0	(0)	0	0	0	0	0
Dartford, Darent Valley Hospital	4	(2)	0	(1)	4	(3)	3	(3)	6	0	2	4	2
Eastbourne, Eastbourne District General Hospital	2	(1)	0	(0)	2	(1)	2	(1)	4	0	2	2	1
Epsom General Hospital	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0
Gillingham, Medway Hospital	4	(4)	0	(0)	4	(4)	4	(4)	8	0	6	4	0
Hastings, Conquest Hospital	2	(2)	0	(0)	2	(2)	1	(2)	4	1	2	1	0
Haywards Heath, Hurstwood Park Hospital	4	(3)	3	(1)	7	(4)	6	(4)	14	0	4	6	4
Haywards Heath, Princess Royal Hospital	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0
Maidstone, Maidstone District General Hospital	2	(1)	1	(1)	3	(2)	3	(2)	6	0	2	3	3
Margate, Queen Elizabeth The Queen Mother Hospital	3	(4)	1	(2)	4	(6)	2	(4)	6	0	0	2	1
Redhill, East Surrey Hospital	5	(1)	0	(1)	5	(2)	5	(1)	10	0	3	4	2
Tunbridge Wells, Kent And Sussex Hospital	0	(2)	1	(0)	1	(2)	1	(2)	1	0	0	1	0
Worthing, Worthing Hospital	0	(2)	1	(1)	1	(3)	1	(2)	2	0	0	1	0
Total	34	(39)	12	(9)	46	(48)	41	(41)	87	1	27	40	16
South West													
Barnstaple, North Devon District Hospital	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0
Bath, Royal United Hospital	1	(1)	4	(2)	5	(3)	2	(2)	10	0	0	2	2
Bournemouth, Royal Bournemouth General Hospital	5	(0)	1	(4)	6	(4)	4	(1)	10	1	0	5	4
Bristol, Bristol Royal Hospital For Children	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0
Bristol, Bristol Royal Infirmary	3	(3)	3	(2)	6	(5)	5	(4)	11	0	1	5	3
Bristol, Frenchay Hospital	2	(7)	6	(10)	8	(17)	3	(15)	14	1	2	4	2
Bristol, Southmead Hospital	1	(0)	0	(1)	1	(1)	0	(0)	0	0	0	1	0
Cheltenham, Cheltenham General Hospital	2	(3)	0	(0)	2	(3)	1	(3)	4	0	0	1	1
Dorchester, Dorset County Hospital	1	(0)	2	(0)	3	(0)	2	(0)	6	0	0	2	0
Exeter, Royal Devon And Exeter Hospital (Wonford)	3	(1)	1	(5)	4	(6)	3	(1)	8	1	4	3	2
Gloucester, Gloucestershire Royal Hospital	2	(1)	2	(0)	4	(1)	2	(1)	8	0	0	2	2
Plymouth, Derriford Hospital	8	(5)	9	(18)	17	(23)	12	(10)	33	1	0	9	6
Poole, Poole General Hospital	1	(3)	2	(1)	3	(4)	3	(2)	6	0	2	3	2
Salisbury, Salisbury District Hospital	2	(0)	0	(0)	2	(0)	1	(0)	4	0	0	1	0
Swindon, Great Western Hospital	3	(2)	3	(0)	6	(2)	4	(2)	12	0	0	3	2
Taunton, Taunton And Somerset Hospital (Musgrove Park)	2	(1)	2	(0)	4	(1)	3	(1)	8	1	2	3	3

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
Torquay, Torbay Hospital	1	(2)	1	(3)	2	(5)	2	(1)	4	0	0	2	1
Truro, Royal Cornwall Hospital (Treliske)	4	(4)	4	(0)	8	(4)	5	(4)	16	1	2	5	2
Weston-Super-Mare, Weston General Hospital	4	(1)	0	(0)	4	(1)	4	(1)	8	0	2	4	2
Yeovil, Yeovil District Hospital	2	(1)	1	(0)	3	(1)	2	(1)	4	0	2	3	2
Total	47	(37)	41	(46)	88	(83)	58	(51)	166	6	17	58	36
West Midlands													
Birmingham, Birmingham Heartlands Hospital	6	(2)	1	(0)	7	(2)	6	(2)	12	0	0	6	5
Birmingham, City Hospital	2	(2)	1	(0)	3	(2)	3	(2)	6	0	0	3	3
Birmingham, Diana Princess Of Wales Children Hospital	1	(1)	0	(1)	1	(2)	1	(1)	2	0	0	1	1
Birmingham, Queen Elizabeth Hospital	10	(10)	1	(7)	11	(17)	11	(12)	21	1	6	11	7
Birmingham, Selly Oak Hospital	3	(4)	1	(4)	4	(8)	4	(5)	8	2	4	4	2
Burton-On-Trent, Queen's Hospital	0	(1)	1	(1)	1	(2)	1	(2)	2	0	0	1	0
Coventry, University Hospital	7	(5)	2	(2)	9	(7)	6	(5)	18	1	2	6	3
Dudley, Russells Hall Hospital	0	(2)	0	(0)	0	(2)	0	(2)	0	0	0	0	0
Hereford, The County Hospital	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0
Nuneaton, George Eliot Hospital	3	(0)	1	(0)	4	(0)	4	(0)	8	1	2	4	3
Redditch, The Alexandra Hospital	1	(0)	1	(0)	2	(0)	2	(0)	4	0	0	2	1
Shrewsbury, Royal Shrewsbury Hospital	3	(3)	0	(0)	3	(3)	2	(2)	3	1	0	2	2
Stafford, Stafford Hospital	2	(0)	0	(0)	2	(0)	2	(0)	4	0	0	2	1
Stoke-On-Trent, Stoke City General Hospital	3	(0)	1	(0)	4	(0)	4	(0)	8	3	2	4	3
Stoke, North Staffordshire Royal Infirmary	7	(9)	6	(4)	13	(13)	11	(11)	23	1	2	10	7
Sutton Coldfield, Good Hope District General Hosp.	3	(5)	0	(0)	3	(5)	3	(5)	6	0	1	3	1
Telford, The Princess Royal Hospital	0	(1)	1	(0)	1	(1)	1	(1)	2	0	0	1	1
Walsall, Manor Hospital	1	(3)	0	(0)	1	(3)	1	(3)	2	0	0	1	1
Warwick, Warwick Hospital	2	(0)	0	(0)	2	(0)	2	(0)	4	0	0	2	1
West Bromwich, Sandwell General Hospital	1	(0)	0	(1)	1	(1)	1	(0)	2	0	2	1	0
Wolverhampton, New Cross Hospital	2	(1)	0	(0)	2	(1)	2	(1)	4	2	2	2	2
Worcester, Worcestershire Royal Hospital	2	(1)	4	(3)	6	(4)	4	(4)	10	0	0	5	2
Total	59	(51)	21	(23)	80	(74)	71	(59)	149	12	23	71	46
Yorkshire and the Humber													
Barnsley, Barnsley District General Hospital	1	(3)	1	(0)	2	(3)	1	(3)	4	0	0	1	0
Bradford, Bradford Royal Infirmary	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0
Dewsbury, Dewsbury And District Hospital	1	(1)	1	(0)	2	(1)	1	(1)	4	0	0	1	0
Doncaster, Doncaster Royal Infirmary	0	(3)	0	(0)	0	(3)	0	(2)	0	0	0	0	0
Grimsby, Diana Princess Of Wales Hospital	1	(0)	0	(0)	1	(0)	1	(0)	2	0	0	1	0

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
Halifax, Calderdale Royal Hospital	1	(0)	1	(2)	2	(2)	1	(1)	4	1	2	1	0
Harrogate, Harrogate District Hospital	2	(0)	0	(0)	2	(0)	2	(0)	4	1	2	2	1
Huddersfield, Huddersfield Royal Infirmary	3	(0)	0	(0)	3	(0)	3	(0)	6	1	4	2	1
Hull, Hull Royal Infirmary	6	(3)	5	(5)	11	(8)	9	(6)	22	2	4	9	5
Keighley, Airedale General Hospital	2	(2)	0	(0)	2	(2)	2	(2)	4	0	0	2	0
Leeds, Leeds General Infirmary	14	(7)	15	(12)	29	(19)	15	(9)	52	3	12	17	5
Leeds, St James's University Hospital	4	(0)	1	(0)	5	(0)	5	(0)	10	1	2	5	1
Pontefract, Pontefract General Infirmary	0	(0)	0	(1)	0	(1)	0	(0)	0	0	0	0	0
Rotherham, Rotherham District General Hospital	0	(2)	2	(1)	2	(3)	0	(2)	4	0	0	0	0
Scarborough, Scarborough General Hospital	1	(0)	0	(0)	1	(0)	1	(0)	2	0	0	1	1
Scunthorpe, Scunthorpe General Hospital	2	(0)	0	(0)	2	(0)	1	(0)	2	0	0	2	0
Sheffield, Northern General Hospital	3	(3)	1	(1)	4	(4)	3	(3)	8	1	1	3	0
Sheffield, Royal Hallamshire Hospital	6	(5)	1	(2)	7	(7)	6	(6)	14	0	4	5	2
Wakefield, Pinderfields General Hospital	1	(0)	0	(1)	1	(1)	0	(0)	2	0	0	0	0
York, York District Hospital	2	(1)	2	(1)	4	(2)	3	(1)	7	0	2	3	1
Total	50	(31)	30	(26)	80	(57)	54	(37)	151	10	33	55	17
Channel Islands													
Guernsey, Princess Elizabeth Hospital	2	(1)	1	(0)	3	(1)	3	(1)	6	0	4	3	3
St Helier, Jersey General Hospital	3	(0)	0	(0)	3	(0)	3	(0)	6	1	0	3	3
Total	5	(1)	1	(0)	6	(1)	6	(1)	12	1	4	6	6
Isle of Man													
Douglas, Nobles I-O-M Hospital	0	(1)	1	(0)	1	(1)	1	(1)	2	0	0	1	0
Total	0	(1)	1	(0)	1	(1)	1	(1)	2	0	0	1	0
England	530	(511)	307	(260)	837	(771)	617	(573)	1602	95	278	607	345
Northern Ireland													
Belfast, Antrim Hospital	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0
Belfast, Belfast City Hospital	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0
Belfast, Mater Infirmorum Hospital	1	(0)	0	(0)	1	(0)	1	(0)	2	0	2	1	1
Belfast, Royal Victoria Hospital	10	(13)	0	(0)	10	(13)	10	(13)	18	3	10	10	4
Belfast, The Ulster Hospital	5	(1)	0	(0)	5	(1)	5	(1)	10	0	2	5	1
Enniskillen, Erne Hospital	1	(2)	0	(0)	1	(2)	0	(2)	1	0	0	0	0
Londonderry, Altnagelvin Area Hospital	1	(3)	0	(0)	1	(3)	1	(3)	2	0	0	1	1
Total	18	(21)	0	(0)	18	(21)	17	(21)	33	3	14	17	7

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
Scotland													
Aberdeen, Aberdeen Royal Infirmary	5	(6)	0	(0)	5	(6)	5	(6)	10	3	3	5	2
Ayr, The Ayr Hospital	3	(1)	0	(0)	3	(1)	3	(1)	6	0	1	3	1
Dumfries, Dumfries And Galloway Royal Infirmary	2	(1)	0	(0)	2	(1)	2	(1)	4	1	0	2	1
Dundee, Ninewells Hospital	2	(6)	0	(1)	2	(7)	2	(5)	4	0	0	2	1
Dunfermline, Queen Margaret Hospital	2	(1)	3	(0)	5	(1)	3	(0)	8	1	1	3	1
East Kilbride, Hairmyres Hospital	3	(1)	0	(1)	3	(2)	3	(1)	6	0	2	3	2
Edinburgh, Royal Infirmary Of Edinburgh	3	(3)	3	(4)	6	(7)	5	(5)	12	1	0	5	1
Edinburgh, Western General Hospital	11	(9)	1	(4)	12	(13)	11	(10)	23	3	8	11	7
Glasgow, Victoria Infirmary	2	(4)	2	(0)	4	(4)	3	(4)	8	1	0	3	0
Glasgow, Golden Jubilee National Hospital	0	(0)	1	(0)	1	(0)	1	(0)	2	0	0	1	0
Glasgow, Royal Hospital For Sick Children	1	(0)	0	(0)	1	(0)	1	(0)	2	0	0	1	1
Glasgow, Southern General Hospital	4	(3)	2	(6)	6	(9)	5	(5)	12	1	3	5	2
Glasgow, Stobhill General Hospital	0	(2)	0	(0)	0	(2)	0	(2)	0	0	0	0	0
Glasgow, Western Infirmary	1	(3)	2	(1)	3	(4)	0	(3)	6	0	0	0	0
Greenock, Inverclyde Royal Hospital	0	(0)	0	(1)	0	(1)	0	(1)	0	0	0	0	0
Glasgow, Golden Jubilee National Hospital	1	(0)	0	(0)	1	(0)	1	(0)	2	0	0	1	0
Inverness, Raigmore Hospital	2	(0)	0	(1)	2	(1)	2	(1)	4	0	0	2	0
Kilmarnock, Crosshouse Hospital	0	(3)	1	(0)	1	(3)	0	(3)	2	0	0	0	0
Kirkcaldy, Victoria Hospital	0	(2)	0	(0)	0	(2)	0	(2)	0	0	0	0	0
Livingston, St John's Hospital	0	(1)	0	(1)	0	(2)	0	(1)	0	0	0	0	0
Paisley, Royal Alexandra Hospital	1	(5)	0	(1)	1	(6)	1	(5)	2	0	0	1	1
Perth, Perth Royal Infirmary	1	(0)	1	(0)	2	(0)	2	(0)	3	1	1	2	1
Stirling, Stirling Royal Infirmary	1	(0)	0	(0)	1	(0)	1	(0)	2	0	0	1	0
Wishaw, Wishaw General Hospital	2	(0)	0	(0)	2	(0)	1	(0)	4	0	0	1	1
Total	47	(51)	16	(21)	63	(72)	52	(56)	122	12	19	52	22
Wales													
Abergavenny, Nevill Hall Hospital	1	(1)	1	(0)	2	(1)	2	(1)	4	0	0	2	1
Aberystwyth, Bronglais Hospital	0	(2)	0	(0)	0	(2)	0	(2)	0	0	0	0	0
Bangor, Ysbyty Gwynedd District General Hospital	1	(3)	0	(0)	1	(3)	1	(3)	2	0	0	1	0
Bodelwyddan, Glan Clwyd District General Hospital	3	(0)	2	(0)	5	(0)	3	(0)	10	0	2	3	0
Bridgend, Princess Of Wales Hospital	2	(2)	1	(0)	3	(2)	2	(2)	4	0	0	3	2
Cardiff, University Of Wales Hospital	9	(5)	6	(4)	15	(9)	10	(6)	30	2	2	9	2
Carmarthen, West Wales General Hospital	1	(2)	1	(0)	2	(2)	1	(1)	4	0	0	0	1
Haverford West, Withybush General Hospital	1	(0)	1	(0)	2	(0)	2	(0)	4	0	0	2	1
Llanelli, Prince Philip Hospital	2	(0)	0	(0)	2	(0)	2	(0)	4	1	0	2	0
Merthyr Tydfil, Prince Charles Hospital	1	(0)	0	(0)	1	(0)	1	(0)	2	0	0	1	0

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas
Newport, Royal Gwent Hospital	2	(0)	0	(2)	2	(2)	2	(1)	4	1	0	2	1
Pontypridd, Royal Glamorgan Hospital	1	(0)	0	(0)	1	(0)	1	(0)	2	0	0	1	1
Swansea, Morriston Hospital	3	(10)	0	(1)	3	(11)	3	(10)	6	1	0	3	3
Wrexham, Maelor General Hospital	1	(3)	1	(0)	2	(3)	1	(3)	4	0	0	1	0
Total	28	(28)	13	(7)	41	(35)	31	(29)	80	5	4	30	12

Appendix II Numbers of donors after brain death and organs retrieved in the UK, 1 April 2009 - 31 March 2010, by kidney designated area

Kidney designated area	All donors	Donors		pmp	Kidney	Heart	Organs		
		pmp	Multi-organ donors				Lung	Liver	Pancreas
Belfast	18	9.7	17	9.2	33	3	14	17	7
Birmingham	47	10.3	45	9.8	87	10	19	45	30
Bristol	17	7.5	15	6.6	30	2	7	17	12
Cambridge	24	8.7	22	7.9	44	2	8	24	13
Cardiff	23	9.9	20	8.6	44	5	2	20	9
Coventry	12	14.3	11	13.1	24	2	4	11	7
Edinburgh	26	10.3	26	10.3	51	9	12	26	13
Glasgow	21	7.9	19	7.1	42	3	6	19	9
Leeds	40	10.3	35	9.0	74	9	26	36	14
Leicester	9	4.1	8	3.7	18	3	6	7	7
Liverpool	32	9.8	28	8.6	62	4	8	29	14
Manchester	47	11.5	43	10.6	94	8	33	43	22
Newcastle	35	12.0	35	12.0	70	11	21	34	17
North Thames	97	13.0	86	11.5	188	21	24	86	52
Nottingham	11	9.2	10	8.3	22	3	8	10	5
Oxford	35	11.5	31	10.2	66	8	18	31	21
Plymouth	23	11.4	20	10.0	44	4	4	20	12
Portsmouth	23	9.2	20	8.0	44	0	8	19	10
Sheffield	13	6.0	12	5.6	24	1	5	12	3
South Thames	70	9.7	65	9.1	132	7	47	64	34
TOTAL	623	10.1	568	9.2	1193	115	280	570	311

Appendix IIIA		Retrieval populations for kidney centres, 2009-2010 estimates based on figures supplied by SHAs	
Kidney centre		Retrieval population million	
Birmingham		4.57	
Bristol		2.26	
Cambridge		2.77	
Coventry		0.84	
Leeds		3.90	
Leicester		2.19	
Liverpool		3.26	
Manchester		4.07	
Newcastle		2.91	
North Thames		7.49	
Nottingham		1.20	
Oxford		3.04	
Plymouth		2.01	
Portsmouth		2.51	
Sheffield		2.15	
South Thames		7.18	
Total (England)		52.35	
Cardiff		2.32	
Total (Wales)		2.32	
Edinburgh		2.52	
Glasgow		2.67	
Total (Scotland)		5.19	
Belfast		1.85	
Total (Northern Ireland)		1.85	
TOTAL (UK)		61.71	

Appendix IIIB		Retrieval populations for SHAs, 2009-2010 estimates based on figures supplied by SHAs	
SHA		Retrieval population million	
North East		2.58	
North West		6.91	
Yorkshire and the Humber		5.21	
East Midlands		4.40	
West Midlands		5.41	
East of England		5.73	
London		7.62	
South East Coast		4.31	
South Central		4.07	
South West		5.21	
England		51.45	
Isle of Man		0.15	
Channel Islands		0.08	
Wales		2.96	
Scotland		5.19	
Northern Ireland		1.85	
TOTAL (UK)		61.71	

Appendix IIIC**Retrieval population for liver and cardiothoracic zones, 2009-2010 estimates based on figures supplied by SHAs****Liver zone****Retrieval population (million)**


Birmingham	12.84
Cambridge	8.37
Edinburgh	6.12
King's College	15.81
Leeds	10.83
Newcastle	2.93
Royal Free	4.83

Cardiothoracic zone**Retrieval population (million)**

Birmingham	10.09
Glasgow	5.19
Harefield	13.74
Manchester	7.92
Newcastle	8.96
Papworth	15.81

Appendix IV**Number of families approached and unadjusted consent rates by English Strategic Health Authority (SHA) and country****English SHA/
Country****DBD****DCD**

	No. families approached	Unadjusted consent rate	No. families approached	Unadjusted consent rate
North East	48	71%	28	61%
North West	68	60%	67	66%
Yorkshire and the Humber	52	50%	47	57%
East Midlands	34	53%	12	33%
West Midlands	62	69%	56	64%
East of England	42	79%	74	64%
London	132	54%	90	57%
South East Coast	42	57%	14	57%
South Central	50	62%	44	34%
South West	51	67%	71	68%
Scotland	60	67%	37	57%
Wales	34	59%	18	28%
Northern Ireland	27	48%	1	0%



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