NHS
Blood and Transplant

Organ Donation and Transplantation

Activity Report 2013/14

Preface

This report has been produced by Statistics and Clinical Studies, NHS Blood and Transplant.

All figures quoted in this report are as reported to NHS Blood and Transplant by 15 May 2014 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.

Former Strategic Health Authorities have been used throughout the report for convenience in comparisons with the previous year's figures.

The information provided in the tables and figures given in Chapters 2-10 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 circulatory death (DCD) by hospital are documented in **Appendices I**. Donation and transplant rates in this report are presented per million population (pmp): population figures used throughout this report are mid-2012 estimates based on ONS 2011 Census figures and are given in **Appendix III**.

All charts presented in this report are available as an accompanying slide set available from http://www.odt.nhs.uk.

Acknowledgement

NHS Blood and Transplant would like to thank all those in the donation and transplantation communities responsible for providing data to the UK Transplant Registry and the Potential Donor Audit, without whom this report would not be possible. Thanks also go to NHS Blood and Transplant staff responsible for data entry and accuracy and completeness of the data.

Foreword

We are delighted to be introducing the Organ Donation and Transplantation Activity Report for 2013-14 on behalf of the Intensive Care Society and the British Transplantation Society.

More lives were saved or transformed through an organ transplant than ever before last year, thanks to 1,320 deceased donors and 1,146 living organ donors. In fact, 10% more people received a transplant than in the previous year. There was notably a marked increase in the number of patients benefitting from a cardiothoracic organ transplant (24%).

The deceased organ donor rate per million population in the UK is now 20.6. However, we have a long way still to go if we are to achieve the ambition set out in the UK strategy, *Taking Organ Transplantation to 2020*, to match the best countries in the world for deceased organ donation.

Living kidney and liver donors continue to play a vital role in transplantation. We have once again seen an increase in the number of living kidney donors giving an organ to someone unknown to them. Living donor kidney transplants now account for over a third of the total kidney transplant programme and we welcome the new *Living Donor Kidney Transplantation Strategy*.

Despite the advances we have seen in both living and deceased organ donation and transplantation over the last year, we must not forget the 456 patients who died while waiting for an organ on the active transplant list and the further 828 who were removed from the list due to deteriorating health and ineligibility for transplant. Many of these will have died shortly afterwards.

Deaths among patients who are in need of a transplant will sadly be unavoidable while the consent / authorisation rate for deceased organ donation remains lower than many other countries in the western world. Although the consent/authorisation rate increased slightly from 57% in 2012/13 to 59% in 2013/14, we have to make huge strides if we are to achieve the ambitious 80% target by 2020.

Changing the behaviour of UK society towards organ donation is a tough challenge, but one everyone involved in organ donation and transplantation should embrace. We know that families are much more likely to agree to donating a loved one's organs when his or her wishes are known, so the more we can encourage people to sign up to the NHS Organ Donor Register and to discuss their decision to donate with their families, the better.

We need everyone to be proud to donate, when and if they can, if the NHS is to match the world leaders in the field of organ donation and transplantation and save even more lives in future years.

Professor Anthony Warrens
President,
The British Transplantation Society

Professor Mark Bellamy
President,
The Intensive Care Society

Contents

Summary of Donor and Transplant Activity

In the financial year to 31 March 2014, compared with the previous year

- there was a 9% increase in the number of deceased donors to 1,320, the largest number ever in the UK.
- the number of donors after brain death increased by 11% to 780, while the number of donors after circulatory death increased by 7% to 540
- the number of living donors increased by 4% to 1,146; living donors account for almost half of the total number of organ donors
- the number of patients whose lives were saved or improved by an organ transplant increased by 10% to 4,655
- 3,724 patients had their sight restored through a cornea transplant, comparable with the previous year

The total number of patients registered for a transplant has fallen slightly, so that:

- there were 7,026 patients waiting for a transplant at the end of March 2014, with a further 3,171 temporarily suspended from transplant lists
- 456 patients died while on the active waiting list for their transplant and a further 828 were removed from the transplant list. The removals were mostly as a result of deteriorating health and ineligibility for transplant and many of these patients would have died shortly afterwards.

Some of the other key messages from this report are that, compared with last year, there has been:

- an increase of 8% in the number of pancreas transplants
- an increase of 12% in the total number of liver transplants
- an increase of 24% in the total number of cardiothoracic organ transplants
- an increase of 9% in the total number of kidney transplants
- an increase in the overall referral rate of potential donors from 68% to 76% and the proportion of approaches involving a Specialist Nurse – Organ Donation from 71% to 76%
- an increase in the overall consent/authorisation rate for organ donation from 57% to 59%

Overview of Organ Donation and Transplantation

A summary of the main features of organ donation and transplantation activity in the UK during the financial year from 1 April 2013 to 31 March 2014

2.1 Summary of activity

As the total number of deceased donors and transplants continued to increase this year, the number of patients on the active transplant list at 31 March 2014 is 309 less than on the same date last year. This drop reflects an increasing number of transplants performed coupled with a reasonably steady number of patients joining the transplant list each year. The increase in donor and transplant numbers (1 April 2004 to 31 March 2014) and the number of patients registered on the transplant lists at 31 March each year are shown in **Figure 2.1**. There were 391 more deceased donor transplants in 2013-2014 than in the previous year, representing a 13% increase. The corresponding increase in the number of deceased donors was 9%. The numbers of transplants and transplant list patients in all years now include small bowel only patients, as these are now recorded on the UK Transplant Registry.

Figure 2.1 **Number of deceased donors and transplants in the UK, 1 April 2004 - 31 March 2014, and patients on the active transplant list at 31 March**

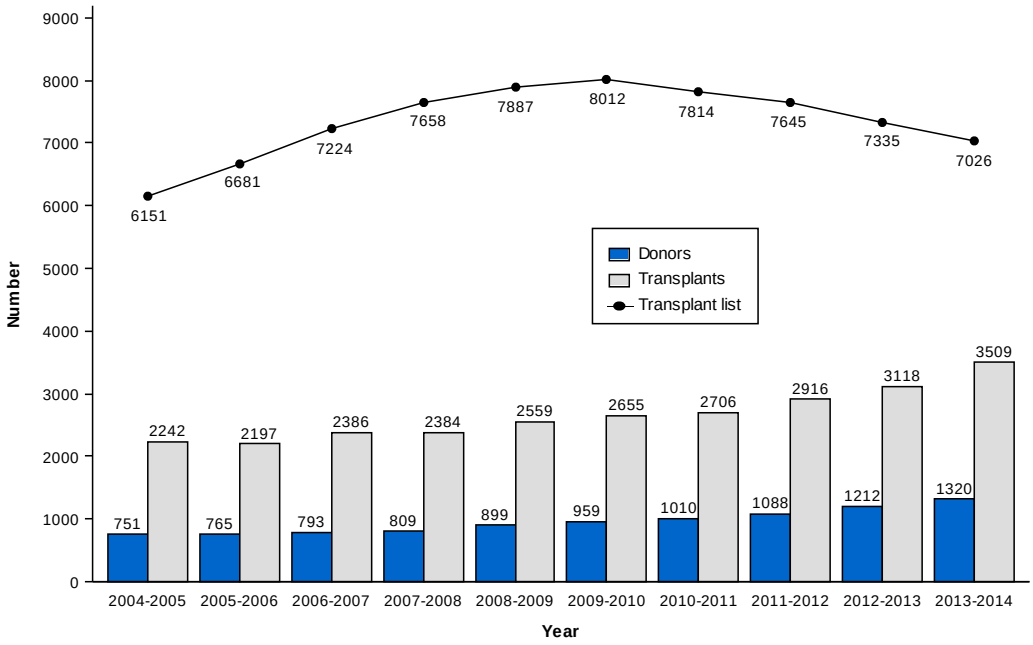


Figure 2.2 shows the number of deceased and living donors for 2004-2014. The number of deceased organ donors in the UK fell over a number of years but following the implementation of the Organ Donation Taskforce recommendations, the numbers rose and are continuing to increase. The number of donors after brain death (DBD) has increased by 28% over the last seven years, reversing the trend which had seen an 8% decrease between 2004-2005 and 2007-2008. Most of this increase has been in the last two years. The number of donors after circulatory death (DCD) has been increasing year-on-year in an effort to bridge the gap between the number of donors and the number of patients waiting for a transplant. In particular the number of these donors has increased by 170% since 2007-2008. Living donors remained relatively stable: 1,146 this year representing a 4% increase on last year.

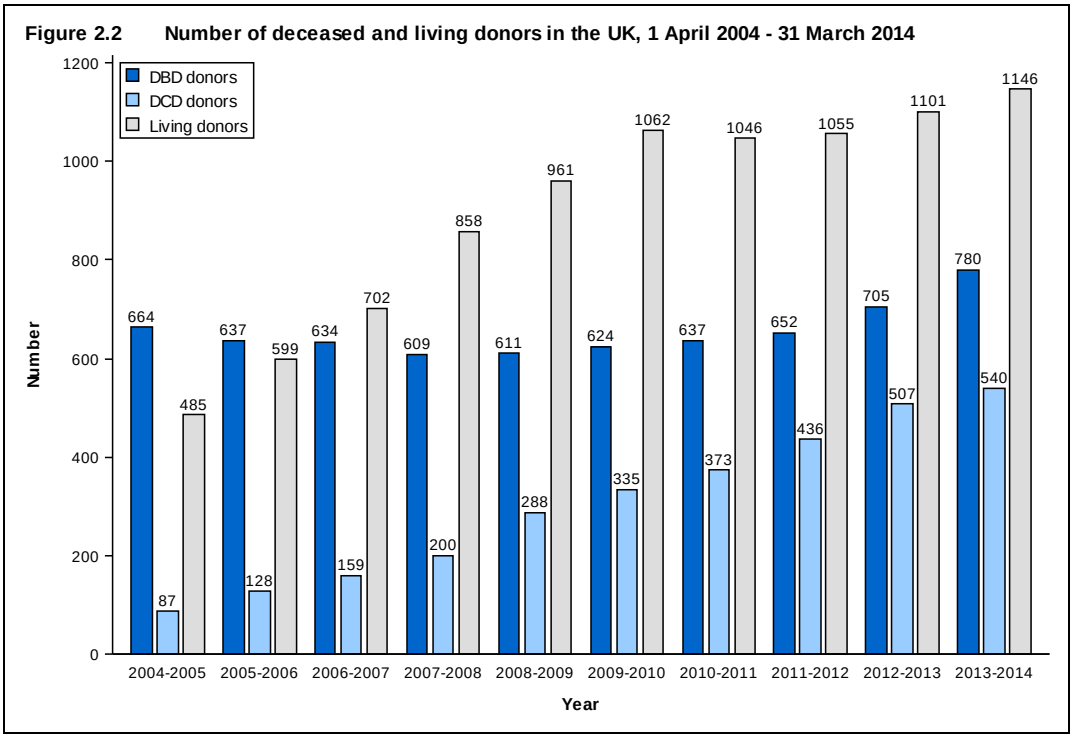
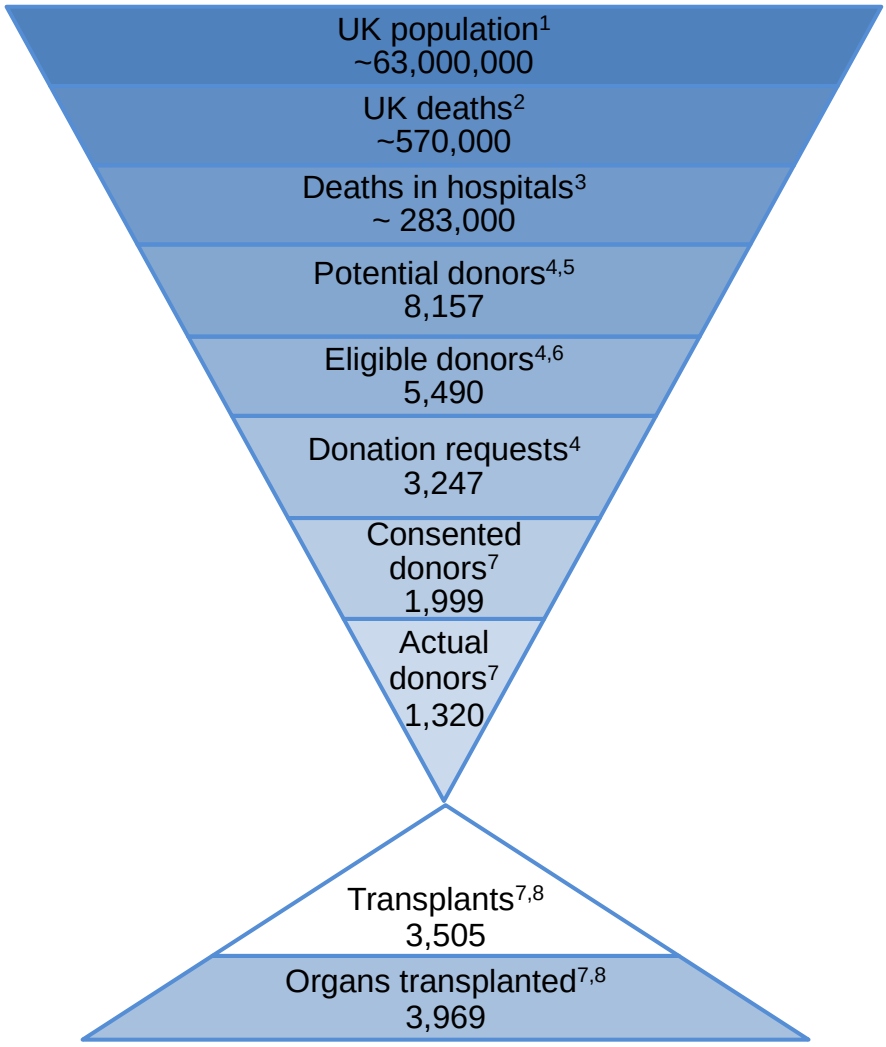


Figure 2.3 shows the potential deceased organ donor population in the UK. Not everyone can be a deceased organ donor and this figure highlights the small proportion of people dying in the UK that are potential organ donors. Please note that the information presented comes from several different sources. The NHSBT Potential Donor Audit, collects information on most but not all actual donors and the potential for donation could therefore be slightly underestimated. The quoted numbers of transplants and organs transplanted are those achieved using organs from deceased actual donors in the UK, some of which may have been performed overseas, and does not reflect the number of deceased donor transplants in the UK, which may have used organs from overseas donors.

Figure 2.3 UK Potential deceased organ donor population, 1 April 2013 – 31 March 2014



[1] Mid 2012 estimates: www.ons.gov.uk
[2] 2012 data: England & Wales www.ons.gov.uk; Scotland www.gro-scotland.gov.uk; Northern Ireland www.nisra.gov.uk
[3] 2012 data: England & Wales www.ons.gov.uk; Scotland www.isdscotland.org; Northern Ireland www.nisra.gov.uk
[4] 2013/2014 data: NHSBT, Potential Donor Audit
[5] Potential donor - patients for whom death was confirmed following neurological tests or patients who had treatment withdrawn and death was anticipated within four hours
[6] Eligible donor - Potential donor with no absolute medical contraindications to solid organ donation
[7] 2013/2014 deceased donor data: NHSBT, UK Transplant Registry
[8] Using organs from actual donors in the UK

Table 2.1 shows the number of deceased donors and transplants in 2013-2014 and patients on the transplant list at 31 March 2014 for each country in the UK.

Table 2.1 Deceased donors and transplants 1 April 2013 - 31 March 2014, and transplant lists as at 31 March 2014, by country of residence

	Country of residence[1]							
	England		Wales		Scotland		Northern Ireland	
Organ	N	(pmp)	N	(pmp)	N	(pmp)	N	(pmp)
Kidney								
Deceased donors	1030	(19.3)	56	(18.2)	105	(19.8)	46	(25.3)
Transplants[2,3]	1624	(30.4)	99	(32.2)	172	(32.4)	40	(22.0)
Transplant list	5084	(95.0)	162	(52.8)	492	(92.7)	123	(67.6)
Pancreas								
Deceased donors	375	(7.0)	20	(6.5)	38	(7.2)	22	(12.1)
Transplants[2]	201	(3.8)	14	(4.6)	26	(4.9)	5	(2.7)
Transplant list	193	(3.6)	18	(5.9)	19	(3.6)	5	(2.7)
Heart								
Deceased donors	166	(3.1)	4	(1.3)	18	(3.4)	14	(7.7)
Transplants[2]	163	(3.0)	4	(1.3)	21	(4.0)	5	(2.7)
Transplant list	223	(4.2)	7	(2.3)	19	(3.6)	8	(4.4)
Lung								
Deceased donors	179	(3.3)	11	(3.6)	27	(5.1)	16	(8.8)
Transplants[2]	179	(3.3)	14	(4.6)	20	(3.8)	3	(1.6)
Transplant list	239	(4.5)	16	(5.2)	19	(3.6)	9	(4.9)
Liver								
Deceased donors	782	(14.6)	43	(14.0)	70	(13.2)	32	(17.6)
Transplants[2]	703	(13.1)	28	(9.1)	100	(18.8)	19	(10.4)
Transplant list	433	(8.1)	16	(5.2)	56	(10.5)	21	(11.5)
Intestinal								
Deceased donors	22	(0.4)	0	(0.0)	1	(0.2)	1	(0.5)
Transplants[2]	24	(0.4)	0	(0.0)	2	(0.4)	0	(0.0)
Transplant list	11	(0.2)	1	(0.3)	0	(0.0)	0	(0.0)
Total								
Deceased donors	**1097**	**(20.5)**	**60**	**(19.5)**	**108**	**(20.3)**	**48**	**(26.4)**
Transplants[2]	**2894**	**(54.1)**	**159**	**(51.8)**	**341**	**(64.2)**	**72**	**(39.6)**
Transplant list	**6009**	**(112.3)**	**211**	**(68.7)**	**594**	**(111.9)**	**160**	**(87.9)**

[1] Excludes patients resident in Channel Islands, Isle of Man, overseas and in the Republic of Ireland
[2] Deceased donor transplants
[3] Kidney only transplants

2.2 Transplant list

At 31 March 2014, 7,026 patients were registered for an organ transplant in the UK on the active transplant list. A further 3,171 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 2.2** for 31 March 2013 and 2014. The total number fell by 308 patients (4%) due to falls in the number of patients on the kidney transplant lists.

Table 2.2 Active transplant lists in the UK at 31 March 2013 and 2014

	2013	2014	% Change
Kidney & pancreas patients	**6386**	**5932**	**-7**
Kidney	6115	5663	-7
Kidney & pancreas	208	201	-3
Pancreas	36	35	0
Pancreas islets	27	33	+22
Cardiothoracic patients	**439**	**531**	**+21**
Heart	197	245	+24
Heart/lung	16	15	0
Lung(s)	226	271	+20
Liver patients	**472**	**531**	**+13**
Intestinal patients	**14**	**13**	**0**
Other multi-organ patients[1]	**23**	**19**	**-17**
ALL PATIENTS	**7334**	**7026**	**-4**

Percentages not reported when fewer than 10 in either year

[1] Includes patients waiting for kidney and liver transplants (18 in 2013, 16 in 2014), kidney and heart transplants (3 in 2013, 1 in 2014), liver and pancreas transplants (2 in 2013, 1 in 2014), liver and lung transplants (1 in 2014)

During 2013-2014, 456 patients died whilst on the transplant list or after being removed from the list due to their condition deteriorating. This information is shown by organ in **Table 2.3**.

Table 2.3	Number of patient deaths on transplant lists in the UK, 1 April 2013 and 31 March 2014
Kidney & pancreas patients	**280**
Kidney	263
Kidney & pancreas	16
Pancreas	1
Cardiothoracic patients	**95**
Heart	35
Heart/lung	4
Lung	56
Liver patients	**81**
Intestinal patients	**0**
ALL PATIENTS	**456**

2.3 Transplants

There was a 10% increase in the total number of organ transplants (from deceased and living donors) last year: 4,655 transplants were performed in 2013-2014 compared with 4,219 in 2012-2013 (**Table 2.4**). All multi-organ transplants are identified separately as are transplants from living donors.

The total number of kidney transplants increased by 9% in 2013-2014; kidney transplants from donors after circulatory death increased by 9%, while the number of living donor kidney transplants increased by 4%. The total number of cardiothoracic organ transplants rose by 24%, the number of liver transplants rose by 12% and the number of pancreas transplants (including pancreas only, kidney/pancreas and pancreas islets) increased by 7%.

Table 2.4 Transplants performed in the UK, 1 April 2012 - 31 March 2014

Transplant	2012-2013	2013-2014	% Change
DBD kidney	1034	1157	+12
DCD kidney	716	784	+9
Living donor kidney	1068	1114	+4
DBD Kidney & pancreas	133	153	+15
DCD Kidney & pancreas	33	35	+6
DBD Pancreas	32	22	-31
DCD Pancreas	5	4	-
Pancreas islets	30	32	+7
Deceased heart[1]	142	197	+39
Heart/lung	3	8	-
DBD Single lung	19	27	+42
DCD Single lung	9	5	-
DBD Double lung	134	148	+10
DCD Double lung	25	30	+20
Partial lung	1	0	-
DBD liver	520	582	+12
DCD liver	135	151	+12
Domino liver	2	4	-
DBD liver lobe	117	135	+15
DCD liver lobe	1	0	-
Living donor liver lobe	31	28	-10
Bowel only[2]	7	11	-
Liver, bowel & pancreas	3	2	-
Multivisceral	4	10	-
Modified multivisceral	1	3	-
Kidney & heart	3	1	-
Kidney & liver	11	12	+9
TOTAL ORGAN TRANSPLANTS	**4219**	**4655**	**+10**
Total kidney transplants[3]	**2998**	**3257**	**+9**
Total pancreas transplants[3]	**241**	**261**	**+8**
Total cardiothoracic transplants	**336**	**416**	**+24**
Total liver transplants[3]	**824**	**924**	**+12**
Total intestinal transplants	**15**	**26**	**+73**

Percentage not reported when fewer than 10 in either year
[1] Including DCD heart (1 in 2013-2014)
[2] Including a kidney (1 in 2013-2014)
[3] Includes intestinal transplants

The total approximate number of patients with a functioning transplant on 31 March 2014 being followed up on the UK Transplant Registry is 43,300 (**Table 2.5**). This excludes those patients who are known to be lost to follow-up. The number of functioning kidney transplants is approximately 31,000.

Table 2.5 Number of transplants functioning at 31 March 2014

	Functioning transplants[1]
Kidney	31000
Pancreas	1800
Cardiothoracic	3600
Liver	8300
Intestinal	100
ALL PATIENTS[2]	**43300**

[1] Approximate number being followed-up
[2] Number of patients with a functioning transplant
Multi-organ transplants (excluding intestinal transplants) are counted in each organ
Excludes those patients known to be lost to follow-up

Organ Donation Activity

Key messages

- **There has been a 9% increase in deceased donors (to 1,320) and a 4% increase in living organ donors (to 1,146) compared with last year**
- **Compared with 809 deceased donors in 2007-2008, there has been an increase of 63% to 1,320 in 2013-2014**
- **There has been an increase in donors after brain death of 11% to 780 and a more modest increase of 7% in donors after circulatory death to 540**
- **Donors after circulatory death provide, on average, one less organ for transplantation than donors after brain death**
- **Donor characteristics are continuing to change: 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 9% increase in the number of deceased organ donors in 2013-2014 (1,320 donors), much higher than the target increase of 5% (1,272 donors) set for the year. This was the result of an increase in donors after brain death (DBD) of 11% and a more modest increase of 7% in donors after circulatory death (DCD). The 1,320 donors represented a 63% increase over the number of organ donors in 2007-2008 (809).

The 1,320 deceased organ donors gave 4,511 organs compared with 1,212 donors and 4,099 organs in 2012-2013. This represents a 10% increase in organs donated. **Table 3.1** shows deceased organ donors according to the organs they donated.

Nearly all deceased donors (94%) gave a kidney and of these the majority (72%) also donated at least one other organ. Only 13% of donors after brain death were single organ donors, with equal proportions being liver only and kidney only donors. By contrast, 58% of donors after circulatory death were single organ donors, the majority (94%) of these donating just their kidneys.

Although the vast majority of living organ donors donated a kidney, 32 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 2013 - 31 March 2014, by organ types donated

	DBD	DCD	Living donor	**TOTAL**
Kidney only	48	294	1114	**1456**
Kidney & thoracic	14	10	-	**24**
Kidney & liver	233	118	-	**351**
Kidney & pancreas	2	11	-	**13**
Kidney, thoracic & liver	67	8	-	**75**
Kidney, thoracic & pancreas	2	2	-	**4**
Kidney, liver & pancreas	136	61	-	**197**
Kidney, liver, pancreas & bowel	8	-	-	**8**
Kidney, thoracic, liver & pancreas	195	17	-	**212**
Kidney, thoracic, liver, pancreas & bowel	17	-	-	**17**
Thoracic only	2	3	-	**5**
Thoracic & liver	2	-	-	**2**
Thoracic, liver & pancreas	4	-	-	**4**
Liver only	49	16	32	**97**
Liver & pancreas	1	-	-	**1**
TOTAL	**780**	**540**	**1146**	**2466**

3.2 Organ donors

Organ donor rates per million population (pmp) for 2013-2014 are given by country and former Strategic Health Authority according to where the donor lived in **Table 3.2** while the number of deceased donors are shown based on location of the hospital in which they died in **Table 3.3**. **Table 3.4** shows the number of deceased donors by Organ Donation Services Team. **Appendix I** shows a more detailed breakdown of the number of donors from the donating hospitals and **Appendix III** details the populations used. Number and rates of utilised donors are given in Chapter 4.

Table 3.2 Organ donation rates per million population (pmp), in the UK, 1 April 2013 - 31 March 2014, by country/ Strategic Health Authority of donor residence[1]

Country of donation/	DBD		DCD		**TOTAL**		Living	
Strategic Health Authority	N	(pmp)	N	(pmp)	N	(pmp)	N	(pmp)
North East	48	(18.5)	35	(13.5)	83	(31.9)	48	(18.5)
North West	81	(11.4)	42	(5.9)	123	(17.4)	119	(16.8)
Yorkshire and The Humber	48	(9.0)	38	(7.1)	86	(16.2)	82	(15.4)
North of England	**177**	**(11.8)**	**115**	**(7.7)**	**292**	**(19.5)**	**249**	**(16.6)**
East Midlands	51	(11.2)	48	(10.5)	99	(21.7)	62	(13.6)
West Midlands	61	(10.8)	41	(7.3)	102	(18.1)	107	(19.0)
East of England	66	(11.2)	58	(9.8)	124	(21.0)	85	(14.4)
Midlands and East	**178**	**(11.0)**	**147**	**(9.1)**	**325**	**(20.2)**	**254**	**(15.8)**
London	**99**	**(11.9)**	**57**	**(6.9)**	**156**	**(18.8)**	**192**	**(23.1)**
South East Coast	66	(14.6)	33	(7.3)	99	(22.0)	73	(16.2)
South Central	59	(14.0)	36	(8.6)	95	(22.6)	74	(17.6)
South West	65	(12.2)	65	(12.2)	130	(24.3)	96	(18.0)
South of England	**190**	**(13.5)**	**134**	**(9.5)**	**324**	**(23.0)**	**243**	**(17.3)**
England	**644**	**(12.0)**	**453**	**(8.5)**	**1097**	**(20.5)**	**938**	**(17.5)**
Isle of Man	**4**	**(50.0)**	**0**	**(0.0)**	**4**	**(50.0)**	**1**	**(12.5)**
Channel Islands	**0**	**(0.0)**	**3**	**(18.8)**	**3**	**(18.8)**	**3**	**(18.8)**
Wales	**37**	**(12.1)**	**23**	**(7.5)**	**60**	**(19.5)**	**55**	**(17.9)**
Scotland	**62**	**(11.7)**	**46**	**(8.7)**	**108**	**(20.3)**	**88**	**(16.6)**
Northern Ireland	**33**	**(18.1)**	**15**	**(8.2)**	**48**	**(26.4)**	**61**	**(33.5)**
TOTAL	**780**	**(12.2)**	**540**	**(8.4)**	**1320**	**(20.6)**	**1146**	**(17.9)**

[1] Includes 102 donors (22 deceased, 80 living) where the hospital postcode was used in place of an unknown donor postcode

Table 3.2 shows variation in the number of DBD and DCD donors pmp across the UK. There were 12.2 DBD donors pmp for the UK as a whole, but across the former English Strategic Health Authorities (SHA) this ranged between 9.0 and 18.5 pmp. Across the four countries of the UK, Northern Ireland had the highest rate of 18.1 pmp. However, the number of eligible donors pmp also varies and further information can be seen in Chapter 13. It should be noted that these figures are not directly comparable, however, because certain categories of patients are excluded from the Potential Donor Audit. For DCD donors the UK rate is 8.4 pmp, ranging from 7.5 to 8.7 pmp across countries of the UK and from 5.9 to 13.5 pmp in the former English SHAs. No adjustment has been made for any differences in demographics of the populations across countries or SHAs.

Table 3.3 Deceased organ donors in the UK, 1 April 2013 - 31 March 2014, by country/ Strategic Health Authority of hospital of donor death

Country of donation/ Strategic Health Authority	DBD N	DCD N	**TOTAL** N
North East	51	40	91
North West	86	44	130
Yorkshire and The Humber	49	38	87
North of England	**186**	**122**	**308**
East Midlands	40	41	81
West Midlands	66	42	108
East of England	60	59	119
Midlands and East	**166**	**142**	**308**
London	**143**	**72**	**215**
South East Coast	40	30	70
South Central	52	31	83
South West	63	62	125
South of England	**155**	**123**	**278**
England	**650**	**459**	**1109**
Isle of Man	**4**	**0**	**4**
Channel Islands	**0**	**1**	**1**
Wales	**32**	**22**	**54**
Scotland	**62**	**44**	**106**
Northern Ireland	**32**	**14**	**46**
TOTAL	**780**	**540**	**1320**

Table 3.4	Deceased organ donors in the UK, 1 April 2013 - 31 March 2014 by Organ Donation Services Team		
Team	DBD N	DCD N	**TOTAL** N
Eastern	67	60	127
London	116	64	180
Midlands	87	71	158
North West	95	47	142
Northern	53	40	93
Northern Ireland	32	14	46
Scotland	62	44	106
South Central	60	47	107
South East	67	39	106
South Wales	25	20	45
South West	56	51	107
Yorkshire	60	43	103
TOTAL	**780**	**540**	**1320**

The mean number of organs retrieved per donor in 2013-2014 is given by country in **Table 3.5**. Overall, an average of 4.0 organs were donated per DBD donor and 2.6 per DCD donor. For DBD donors the rate ranged from 3.8 organs per donor in Wales to 4.5 organs per donor in Northern Ireland.

Table 3.5	Organs retrieved per donor, in the UK, 1 April 2013 - 31 March 2014, by country of donor residence								
Country	Adult			Paediatric			All		
	DBD	DCD	TOTAL	DBD	DCD	TOTAL	DBD	DCD	TOTAL
England	3.9	2.6	**3.4**	4.8	3.3	**4.3**	3.9	2.6	**3.4**
Wales	3.8	2.6	**3.3**	4.0	-	**4.0**	3.8	2.6	**3.3**
Scotland	4.3	2.6	**3.5**	-	2.0	**2.0**	4.3	2.5	**3.5**
Northern Ireland	4.4	2.7	**3.8**	6.0	-	**6.0**	4.5	2.7	**4.0**
TOTAL	**3.9**	**2.6**	**3.4**	**4.8**	**3.2**	**4.3**	**4.0**	**2.6**	**3.4**

3.3 Demographic characteristics

While the number of donors overall is increasing, it is important to be aware that there have been changes over time with regard to donor characteristics (**Table 3.6**). In 2013-2014, 37% of deceased donors were aged 60 years or more compared with 18% in 2004-2005 (**Figure 3.1**). In particular the proportion of these donors aged at least 70 years has increased from 3% to 15% over the same time period. The trend is similar for both DBD and DCD. The proportion of clinically obese donors (Body Mass Index (BMI) of 30 or higher) has increased from 16% to 24% in deceased donors in the last 10 years (**Figure 3.2**) and the trend was similar for both DBD and DCD donors. In addition, the proportion of all deceased donors after a trauma death has decreased from 16% to 8% 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 3.6 also indicates the ethnicity of deceased organ donors, highlighting that 6% of donors are from ethnic minority groups. By contrast, ethnic minority groups represent 11% of the UK population.

Table 3.6 Demographic characteristics of organ donors in the UK 1 April 2013 - 31 March 2014

		DBD		DCD		**TOTAL**	
		N	%	N	%	**N**	**%**
Age	0-17	38	5	17	3	**55**	**4**
	18-49	339	43	154	29	**493**	**37**
	50-59	165	21	119	22	**284**	**22**
	60-69	149	19	135	25	**284**	**22**
	70+	89	11	115	21	**204**	**15**
	Mean (SD)	49	18	55	17	**51**	**18**
BMI	0-19	50	6	33	6	**83**	**6**
	20-29	566	73	352	65	**918**	**70**
	30+	164	21	153	28	**317**	**24**
	Unknown	0	0	2	<1	**2**	**<1**
	Mean (SD)	26	6	27	6	**27**	**6**
Cause of death	Intracranial	673	86	406	75	**1079**	**82**
	Trauma	61	8	39	7	**100**	**8**
	Other	46	6	95	18	**141**	**11**
Ethnicity	White	723	93	522	97	**1245**	**94**
	Asian	24	3	15	3	**39**	**3**
	Black	15	2	2	<1	**17**	**1**
	Other	17	2	1	<1	**18**	**1**
	Unknown	1	<1	0	0	**1**	**<1**
Blood group	O	358	46	247	46	**605**	**46**
	A	305	39	218	40	**523**	**40**
	B	94	12	54	10	**148**	**11**
	AB	23	3	21	4	**44**	**3**
Sex	Male	405	52	328	61	**733**	**56**
	Female	375	48	212	39	**587**	**44**
TOTAL		**780**	**100**	**540**	**100**	1320	100

Figure 3.1 Age of deceased donors in the UK, 1 April 2004 - 31 March 2014

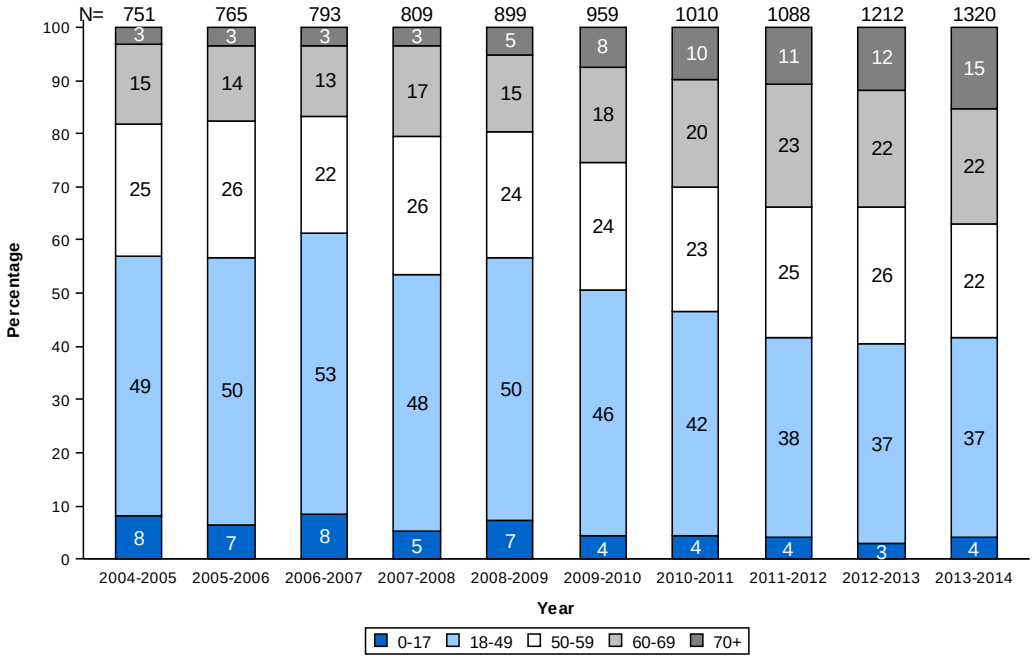
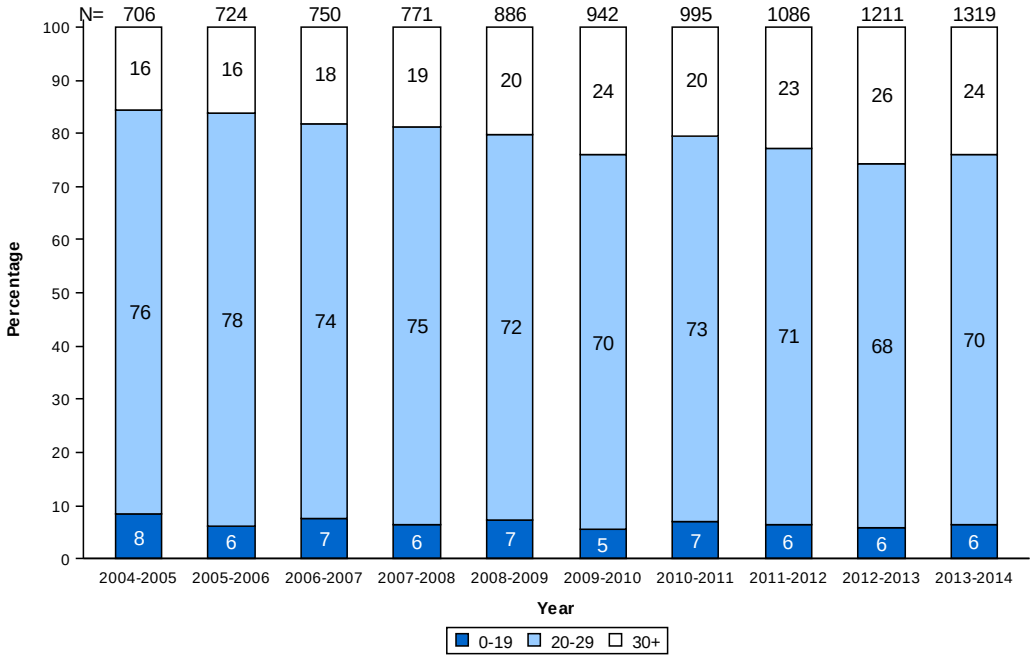


Figure 3.2 BMI of deceased donors in the UK, 1 April 2004 - 31 March 2014



Note that BMI cannot be determined for all deceased donors thus numbers indicated in Figure 3.2 are the numbers of donors for which BMI was available, not total number of donors.

The National Organ Retrieval Service and Usage of Organs

Key messages

- **National Organ Retrieval Service teams attended 797 DBD donors and 941 DCD donors; 2% of DBD donors and 43% of DCD donors attended did not proceed to donation**
- **From the 1,320 proceeding deceased donors, 85% of deceased donor kidneys offered to transplant centres were subsequently transplanted, compared with 65% of livers, 36% of pancreases, 6% of bowels, 37% of hearts and 23% of lungs; the remaining organs were not transplanted due to lack of suitability of the donor or organ for any patient on the transplant list**
- **The UK actual donor rate was 20.6 pmp, while the utilised donor rate was 19.8 pmp reflecting that 4% of organ donors resulted in no organs being transplanted**

4.1 The National Organ Retrieval Service (NORS)

At any one time, 7 abdominal teams and all 6 cardiothoracic teams are on call – 24 hours per day, seven days a week. In two areas of the country, two abdominal retrieval teams share the on call responsibilities, each being on-call for different weeks. If a team is the first on-call for a particular donor hospital, they are required to attend within an agreed timescale if at least one organ has been accepted for transplant when offered to the transplant centres in the UK. Each team has a designated area for which they are first on-call, based on the premise that the travel time to any hospital in their area should be less than three hours. There are some exceptions to this principle for remote hospitals. If a team is already retrieving when they are called to attend a donor, then a second team will be called in to retrieve, and so on.

The number of donors after brain death and donors after circulatory death that were attended by each of the teams is shown in **Table 4.1.** The table also shows the number of proceeding (actual) organ donors and the number that did not proceed to donation. Many of the potential donors after circulatory death prove unsuitable for organ donation due to a prolonged time to death in which time the organs deteriorate. The number of donors attended per team varies according to the number of potential donors identified in each of the areas, as the areas are not of equal size.

A small number of donors are attended by local kidney transplant teams. This is typically for donors after circulatory death when only the donor's kidneys have been accepted for transplant. There is no expectation that local kidney teams retrieve organs, but they are appropriately reimbursed if they are willing and able to do so.

Table 4.1 Number of actual and non-proceeding donors per retrieval team

Retrieval team	Donors after brain death				Donors after circulatory death			
	Actual	Non-proceeding	% non-proc	**No. attended**	Actual	Non-proceeding	% non-proc	**No. attended**
Abdominal								
Birmingham	96	-	-	**96**	67	59	47	**126**
Cambridge	101	5	5	**106**	91	58	39	**149**
Cardiff	43	1	2	**44**	27	25	48	**52**
King's	125	2	2	**127**	75	60	44	**135**
Leeds / Manchester	123	1	1	**124**	77	66	46	**143**
Newcastle	84	3	3	**87**	51	49	49	**100**
Oxford	61	3	5	**64**	48	33	41	**81**
Royal Free	73	1	1	**74**	48	25	34	**73**
Scotland	72	2	3	**74**	49	21	30	**70**
Abdominal total	**778**	**18**	**2**	**796**	**533**	**396**	**43**	**929**
Cardiothoracic								
Birmingham	39	13	25	**52**	6	21	78	**27**
Harefield	81	34	30	**115**	9	30	77	**39**
Manchester	50	17	25	**67**	8	10	56	**18**
Newcastle	43	8	16	**51**	11	18	62	**29**
Papworth	63	27	30	**90**	6	16	73	**22**
Scotland	24	35	59	**59**	-	-	-	**-**
Cardiothoracic total	**300**	**134**	**31**	**434**	**40**	**95**	**70**	**135**
Total donors (abdominal and/or cardiothoracic)	**780**	**17**	**2**	**797**	**540**	**401**	**43**	**941**

Note: There were 11 additional donors attended by a local team (9 abdominal donors were attended by St George's (7), Plymouth (1) and Liverpool (1) and 2 cardiothoracic donors attended by Great Ormond Street (1) and Newcastle scout team (1)). Two donors were attended by an overseas team.

4.2 Retrieval and usage of organs

The number of consented donors and 'offered' donors, where at least one organ was offered for transplant, are shown in **Table 4.2**. The number of organs offered from these 'offered' donors is also shown. Each year, a number of actual organ donors result in no transplants. Donors resulting in at least one transplant are termed 'utilised' donors and the number of actual and utilised donors is shown in **Table 4.2**. The number of donors per million of population is also shown. In 2013/2014, 4% of actual donors resulted in no organ transplants compared with 8% in the previous year.

There were 1,320 actual deceased organ donors last year, but not all organs from these donors were offered for transplantation. **Table 4.3** shows the number of organs offered, retrieved and transplanted from the 780 DBD and 540 DCD actual donors. The number of organs from these donors that were subsequently used for research purposes is also shown. The number of organs offered for transplant excludes those where the donor did not meet the nationally agreed age criteria for suitability for donation of that specific organ. There are no age cut-offs agreed for kidney and liver donation.

Figures 4.1 and **4.2** show offering, retrieval and transplantation of organs, in terms of percentages. Charts start at 100% for each organ, representing all organs from the 780 DBD and 540 DCD donors. The charts indicate the proportion of those organs following the pathway through each step to transplantation eg meeting national donor age criteria, having consent (authorisation in Scotland), being offered out to transplant centres, being retrieved for transplant and resulting in transplantation. For example, **Figure 4.1** shows that 28% of the pancreases from the 780 DBD donors were transplanted, but that 39% of pancreases from donors within the nationally agreed age limit of 60 years were transplanted. Transplant rates of kidneys and livers are generally high, while other organs, even allowing for the agreed age limits, are less often transplanted.

Reasons for organs not being offered for transplant, being offered but not accepted and retrieved and for being retrieved but not subsequently transplanted are shown in **Table 4.4** for abdominal organs from DBD donors, **Table 4.5** for abdominal organs from DCD donors and in **Table 4.6** for cardiothoracic organs. Reasons for the medical unsuitability of a donor include infections, tumours, anatomy and disease. Non-medical reasons include donor size and donor unstable. Clinical unsuitability of an organ encompasses poor perfusion, prolonged ischaemia time, past history of donor and, in the case of pancreases for islets, insufficiency of viable islet yield. Reasons reported under 'other' include logistical and recipient related issues in addition to un-coded reasons reported of a miscellaneous nature.

These tables also indicate the number of organs from UK donors that were transplanted overseas. These organs were not accepted for transplant by any UK transplant centre, but were accepted for suitable recipients identified elsewhere, usually in Europe. Other than livers fulfilling an arrangement for the transplantation of super-urgent patients in the Republic of Ireland, kidneys, hearts and lungs were exported for transplant outside the UK. Organs from outside the UK are occasionally imported for transplant. Further information on the import and export of organs can be found in **Appendix IV**.

Table 4.2 Consented, offered, actual and utilised deceased donors in the UK, 1 April 2013 - 31 March 2014

	DBD (pmp)		DCD (pmp)		Total (pmp)	
Consented donors[1]	843	(13.2)	1156	(18.1)	1999	(31.3)
Offered donors[2]	821	(12.8)	1077	(16.8)	1898	(29.7)
Kidneys offered	*1601*		*2107*		*3708*	
Livers offered	*798*		*937*		*1735*	
Pancreases offered	*576*		*384*		*960*	
Bowels offered	*262*				*263*	
Hearts offered	*503*		*1*		*507*	
Lungs offered	*1138*		*771*		*1909*	
Actual donors	780	(12.2)	540	(8.4)	1320	(20.6)
Utilised donors[3]	773	(12.1)	493	(7.7)	1266	(19.8)

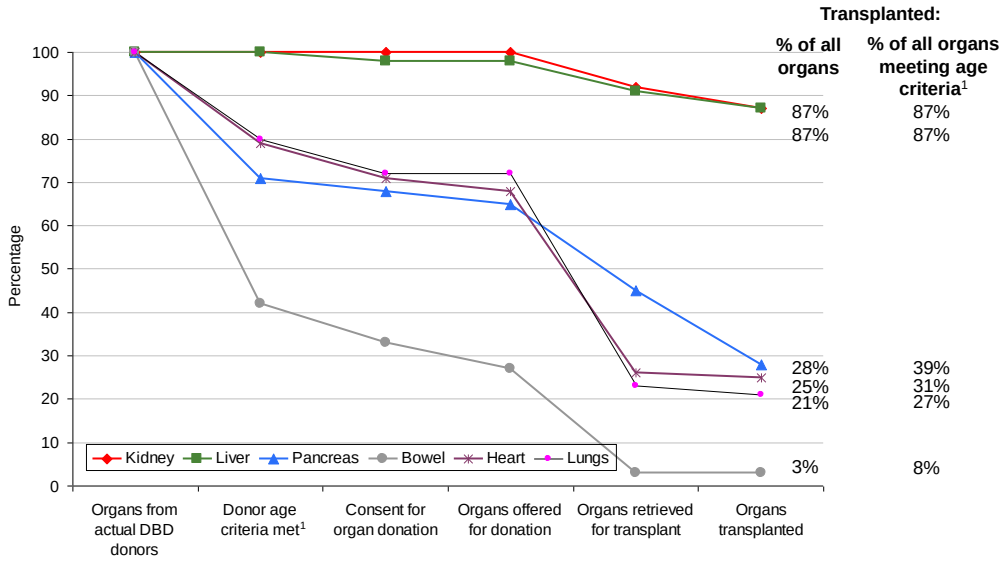
[1] Consented donors defined as patients where consent for at least one organ was given
[2] Offered donors defined as donors where one or more organs were offered for transplantation
[3] Utilised donors defined as donors where one or more organs were retrieved and transplanted

Table 4.3 Donation and transplantation of organs from 1320 deceased donors in the UK, 1 April 2013 – 31 March 2014

Organ	Organs meeting initial suitability criteria and offered for transplant	Organs retrieved for transplant		Organs transplanted			Organs used for research (from actual organ donors)
		N	% of offered	N	% of retrieved	% of offered	
DBD donor organs							
Kidney	1556	1437	92	1351	94	87	56
Liver	768	712	93	677	95	88	24
Pancreas[1]	504	354	70	215	61	43	81
Bowel[2,3]	210	25	12	25	100	12	0
Heart[4]	526	202	38	195	97	37	2
Lung[5]	1124	361	32	334	93	30	2
Total	**4688**	**3091**	**66**	**2797**	**90**	**60**	**165**
DCD donor organs[6]							
Kidney	1076	1032	96	893	87	83	103
Liver	515	220	43	153	70	30	54
Pancreas[1]	221	91	41	43	47	19	27
Lung[5]	628	74	12	63	85	10	0
Total	**2440**	**1417**	**58**	**1152**	**81**	**47**	**184**
Deceased donor organs							
Kidney	2632	2469	94	2244	91	85	159
Liver	1283	932	73	830	89	65	78
Pancreas[1]	725	445	61	258	58	36	108
Bowel[2,3]	210	25	12	25	100	12	0
Heart[4]	526	202	38	195	97	37	2
Lung[5]	1752	435	25	397	91	23	2
Total	**7128**	**4508**	**63**	**3949**	**88**	**55**	**349**

[1] Excludes donors aged > 60 years
[2] Excludes one bowel transplanted from an overseas donor
[3] Excludes donors aged > 55 years or weighing > 80kg
[4] Excludes donors aged > 65 years or died due to myocardial infarction
[5] Excludes donors aged > 65 years
[6] Excludes DCD hearts

Figure 4.1 Donation and transplantation rates of organs from DBD organ donors in the UK, 1 April 2013 – 31 March 2014



[1] Hearts – in addition to age criteria, donors who died due to myocardial infarction are excluded
Bowels – in addition to age criteria, donors who weigh >80kg are excluded

Figure 4.2 Donation and transplantation rates of organs from DCD organ donors in the UK, 1 April 2013 – 31 March 2014

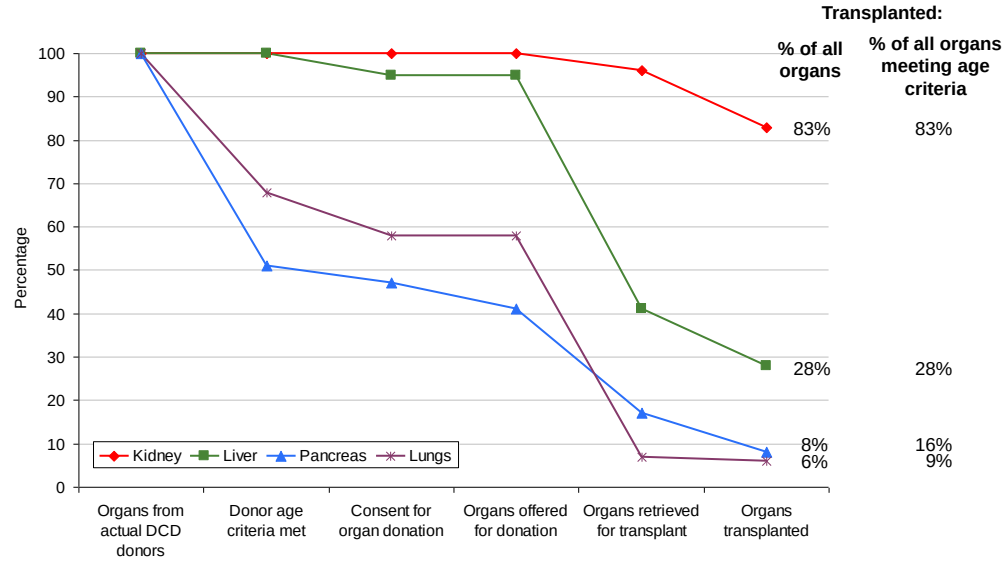


Table 4.4 Reasons for non-retrieval and non-use of abdominal organs from organ donors after brain death (DBD) in the UK, 1 April 2013 – 31 March 2014

	Kidney	Liver	Pancreas	Bowel
All DBD organ donors	**780**	**780**	**780**	**780**
Donors from whom organs not offered for donation	2	12	276	570
Reasons for organs not being offered				
Family permission refused	2	7	23	63
Permission refused by coroner	0	5	1	7
Donor unsuitable – age	0	0	229	4
Donor unsuitable – past history	0	0	15	10
Donor age >55 and donor weight >80kg	0	0	0	449
Other	0	0	8	37
TOTAL DONORS WITH ORGANS NOT OFFERED	**2**	**12**	**276**	**570**
Organs offered for donation	**1556**	**768**	**504**	**210**
Organs not retrieved (% of organs offered for donation)	**119 (8)**	**56 (7)**	**150 (30)**	**185 (88)**
Reasons for non-retrieval				
Donor				
Donor unsuitable – medical	22	1	10	10
Donor unsuitable – non-medical	2	2	13	100
Donor age	12	1	4	3
Organ				
Organ unsuitable – clinical	57	34	96	34
Poor function	19	3	9	7
Other				
Other	7	15	18	31
TOTAL ORGANS NOT RETRIEVED	**119**	**56**	**150**	**185**
Organs retrieved (% of organs offered for donation)	**1437 (92)**	**712 (93)**	**354 (70)**	**25 (12)**
Organs transplanted in the UK	1349	668	215	25[3]
Organs transplanted overseas	2	9[2]	0	0
Organs not transplanted	86	35	139	0
Reasons for organ not being transplanted				
Donor				
Donor unsuitable – medical	29	5	12	0
Donor unsuitable – non-medical	0	0	1	0
Donor age	0	0	1	0
Organ				
Organ unsuitable – clinical	11	25	94	0
Poor function	0	0	0	0
Other				
Other	46	5	31	0
TOTAL ORGANS NOT TRANSPLANTED (Number used for research)	**86 (56)**	**35 (24)**	**139 (81)**	**0 (0)**

[1] One kidney not offered for donation due to permission refused by coroner
[2] Transplanted into super-urgent patients in the Republic of Ireland
[3] Excludes one bowel transplanted from an overseas donor

Table 4.5 Reasons for non-retrieval and non-use of abdominal organs from organ donors after circulatory death (DCD) in the UK, 1 April 2013 – 31 March 2014

	Kidney	Liver	Pancreas
All DCD organ donors	**540**	**540**	**540**
Donors from whom organs not offered for donation	2	25	319
Reasons for organs not being offered			
Family permission refused	1	23	15
Permission refused by coroner	1	2	2
Donor unsuitable – age	0	0	267
Donor unsuitable – past history	0	0	24
Other	0	0	11
TOTAL DONORS WITH ORGANS NOT OFFERED	**2**	**25**	**319**
Organs offered for donation	**1076**	**515**	**221**
Organs not retrieved (% of organs offered for donation)	**44 (4)**	**295 (57)**	**130 (59)**
Reasons for non-retrieval			
Donor			
Donor unsuitable – medical	0	4	3
Donor unsuitable – non-medical	0	11	13
Donor age	4	70	18
Organ			
Organ unsuitable – clinical	18	98	60
Poor function	10	21	12
Other			
Other	12	91	24
TOTAL ORGANS NOT RETRIEVED	**44**	**295**	**130**
Organs retrieved (% of organs offered for donation)	**1032 (96)**	**220 (43)**	**91 (41)**
Organs transplanted in the UK	893	153	43
Organs transplanted overseas	0	0	0
Organs not transplanted	139	67	48
Reasons for organ not being transplanted			
Donor			
Donor unsuitable – medical	51	10	11
Donor unsuitable – non-medical	0	0	0
Donor age	0	0	0
Organ			
Organ unsuitable – clinical	33	41	29
Poor function	1	0	0
Other			
Other	54	16	8
TOTAL ORGANS NOT TRANSPLANTED (Number used for research)	**139 (103)**	**67 (54)**	**48 (27)**

Table 4.6 Reasons for non-retrieval and non-use of cardiothoracic organs from organ donors in the UK, 1 April 2013 – 31 March 2014

	Heart (DBD)	Lung (DBD)	Lung (DCD)
All organ donors	**780**	**780**	**540**
Donors from whom organs not offered for donation	254	218	226
Reasons for organs not being offered			
Family permission refused	61	36	44
Permission refused by coroner	32	24	10
Donor age >65 years	158	158	172
Donor COD of cardiac arrest or MI	3	0	0
TOTAL DONORS WITH ORGANS NOT OFFERED	**254**	**218**	**226**
Organs offered for donation	**526**	**1124**	**628**
Organs not retrieved (% of organs offered for donation)	**324 (62)**	**763 (68)**	**554 (88)**
Reasons for non-retrieval			
Donor			
Donor unsuitable – medical	18	46	31
Donor unsuitable – non-medical	38	51	42
Donor age	16	18	40
Organ			
Organ unsuitable – clinical	84	189	198
Poor function	132	344	171
Other			
Other	36	115	72
TOTAL ORGANS NOT RETRIEVED	**324**	**763**	**554**
Organs retrieved (% of organs offered for donation)	**202 (38)**	**361 (32)**	**74 (12)**
Organs transplanted in the UK	193	322	63
Organs transplanted overseas	2	12	0
Organs not transplanted	7	27	11
Reasons for organ not being transplanted			
Donor			
Donor unsuitable – medical	0	4	2
Donor unsuitable – non-medical	0	0	0
Organ			
Organ unsuitable – clinical	1	4	1
Poor function	1	3	4
Other			
Other	5	16	4
TOTAL ORGANS NOT TRANSPLANTED (Number used for research)	**7 (2)**	**27 (2)**	**11 (0)**

Kidney Activity

Key messages

- **The number of deceased kidney donors increased by 8% to 1,243**
- **Kidney transplants from living donors increased by 4% to 1,114, while transplants from deceased donors increased by 11% to 2,142**
- **72 kidney transplants were made possible by the paired living kidney donation programme**
- **Non-directed altruistic living kidney donation resulted in 118 living donor kidney transplants**
- **The number of patients registered on the kidney transplant list this year fell by 7% from 6,344 to 5,881**

5.1 Overview

The number of deceased kidney donors increased by 8% in 2013-2014 compared to 2012-2013 and the number of deceased donor kidney transplants increased by 11%. These increases are very welcome for the 5881 patients waiting for a kidney transplant and for the fifth year running the number of patients on the national list for a kidney transplant have declined. This is due to an increasing number of transplants and thus people leaving the transplant list, while the number of people joining the list is relatively stable.

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 5.1**. Despite the slight drop in the last 5 years, the number of patients registered on the active transplant list at 31 March 2014 for a kidney or kidney and pancreas transplant has risen by 8% since 2005.

Figure 5.1 **Deceased donor kidney programme in the UK, 1 April 2004 - 31 March 2014, Number of donors, transplants and patients on the active transplant list at 31 March**

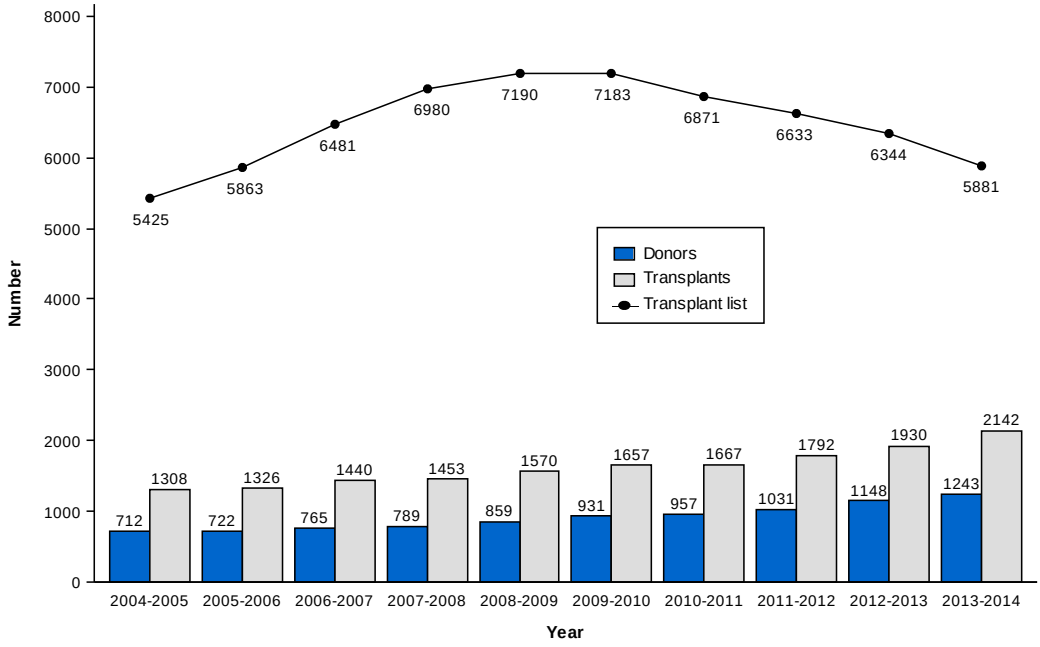


Table 5.1 shows the number of deceased and living donor kidney transplants carried out in 2013-2014 at each centre. Kidney transplants from donors after circulatory death are increasingly common and in this financial year all adult kidney transplant centres performed such transplants. As yet, very few kidneys from donors after circulatory death are transplanted in paediatric patients (<18 years). Donation figures for centres in North and South Thames are not reported individually as they have shared designated areas and donor populations. Multi-organ transplants including a kidney are included in the table.

The total number of deceased kidney donors rose to 1243 in 2013-2014 from 1148 in 2012-2013 and the number of transplants increased from 1930 to 2142. The number of kidney donors after circulatory death increased to 521 from 495 in 2012-2013 and the number of transplants from such donors increased by 10% to 821.

Table 5.1 **Kidney donors and transplants, 1 April 2013 - 31 March 2014 (2012-2013) and transplant list at 31 March 2014 (2013) 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	30	(27)	14	(10)	37	(26)	3	(0)	58	(49)	114	(155)
Birmingham	54	(62)	32	(35)	90	(73)	17	(19)	80	(73)	502	(589)
Bristol	26	(23)	28	(31)	67	(56)	22	(26)	54	(36)	314	(348)
Cambridge	37	(41)	43	(61)	59	(40)	85	(99)	40	(45)	191	(215)
Cardiff	23	(23)	17	(13)	38	(43)	47	(51)	37	(43)	121	(143)
Coventry	8	(5)	9	(13)	22	(15)	8	(8)	26	(22)	107	(108)
Edinburgh	35	(26)	26	(17)	53	(41)	34	(24)	35	(29)	185	(221)
Glasgow	24	(25)	18	(19)	64	(67)	41	(29)	45	(42)	311	(321)
Great Ormond Street	0	(0)	0	(0)	7	(10)	3	(0)	13	(13)	14	(16)
Leeds	30	(38)	31	(24)	61	(78)	98	(61)	44	(50)	262	(287)
Leicester	20	(11)	11	(8)	62	(31)	19	(5)	43	(43)	276	(311)
Liverpool	49	(34)	22	(20)	39	(37)	23	(31)	39	(31)	176	(185)
Manchester	37	(35)	24	(25)	140	(109)	45	(35)	89	(112)	597	(559)
Newcastle	48	(52)	39	(38)	35	(26)	52	(57)	57	(56)	181	(199)
North Thames[1]	98	(86)	54	(57)	-	-	-	-	-	-	-	-
Royal Free	-	-	-	-	38	(45)	37	(32)	35	(31)	274	(276)
Royal London	-	-	-	-	58	(35)	21	(27)	60	(48)	295	(243)
WLRTC	-	-	-	-	85	(71)	18	(11)	64	(72)	474	(499)
Nottingham	16	(10)	22	(15)	39	(33)	34	(31)	21	(15)	122	(156)
Oxford	27	(29)	26	(21)	86	(97)	52	(54)	42	(53)	258	(292)
Plymouth	28	(15)	22	(19)	18	(13)	27	(24)	22	(18)	84	(100)
Portsmouth	26	(23)	21	(14)	44	(34)	17	(17)	26	(27)	228	(235)
Sheffield	22	(10)	7	(12)	41	(26)	7	(13)	20	(22)	188	(203)
South Thames[1]	84	(78)	55	(43)	-	-	-	-	-	-	-	-
Guy's	-	-	-	-	79	(108)	77	(74)	105	(95)	336	(397)
St George's	-	-	-	-	59	(67)	34	(21)	44	(41)	271	(286)
TOTAL	**722**	**(653)**	**521**	**(495)**	**1321**	**(1181)**	**821**	**(749)**	**1114[2,4]**	**(1068[3,5])**	**5881**	**(6344)**

WLRTC - West London Renal and Transplant Centre
[1] Donor figures in this area cannot be linked to individual transplant centres due to shared retrieval areas.
[2] Includes an additional 6 transplant performed at London, The London Clinic, 4 transplant performed at London, Cromwell Hospital and 5 transplant performed at London, London Bridge Hospital
[3] Includes an additional 1 transplant performed at London, The London Clinic and 1 transplant performed at London, London Bridge Hospital
[4] Includes 2 domino donors
[5] Includes 3 domino donors

5.2 Transplant list

The number of patients registered on the kidney or kidney and pancreas transplant list decreased by 7% in the year: on 31 March 2014, 5,881 patients were registered as active, compared with 6,344 at the end of March 2013. The number of patients waiting for a kidney transplant represents 92 patients per million population (pmp).

Of the 5,881 patients on the active transplant list at 31 March 2014, 201 required a kidney and pancreas transplant (208 at 31 March 2013). Additionally, 69 patients were registered for a pancreas only transplant (65 at 31 March 2013).

The outcome of patients registered on the UK kidney and kidney/pancreas transplant list at 1 April 2013, or subsequently registered during the financial year, is shown in **Table 5.2**. A total of 3,436 patients joined the kidney transplant list last year, while a further 236 joined the kidney/pancreas transplant list.

Table 5.2 Kidney transplant list and new registrations in the UK, 1 April 2013 - 31 March 2014

Outcome of patient at 31 March 2014	Active and suspended patients at 1 April 2013		New registrations in 2013-2014[1]		**TOTAL**	
	N	**%**	**N**	**%**	**N**	**%**
Kidney transplant list						
Remained active/suspended	5816	65	2804	82	**8620**	**70**
Transplanted	2322	26	575	17	**2897**	**23**
Removed	518[2]	6	33[3]	1	**551**	**4**
Died	239	3	24	1	**263**	**2**
TOTAL	**8895**		**3436**		**12331**	
Kidney/pancreas transplant list						
Remained active/suspended	128	39	196	83	**324**	**57**
Transplanted	159	48	34	14	**193**	**34**
Removed	28	9	4	2	**32**	**6**
Died	14	4	2	1	**16**	**3**
TOTAL	**329**		**236**		**565**	

[1] Includes re-registrations for second or subsequent transplants
[2] Includes 8 patients removed from kidney list and made active on kidney/pancreas list
[3] Includes 6 patients removed from kidney list and made active on kidney/pancreas list

Table 5.3 shows the active transplant list in the UK at 31 March 2014 and 2013 by country/ former Strategic Health Authority of patient's residence. In 2014, the overall kidney transplant list rate was 92 pmp with rates across the Strategic Health Authorities ranging from 57.3 pmp to 146.5 pmp.

Table 5.3 Active kidney transplant list at 31 March, by country/ Strategic Health Authority of patient residence

Country/ Strategic Health Authority of residence	Kidney transplant list (pmp) 2014		2013	
North East	149	(57.3)	152	(58.5)
North West	720	(101.7)	713	(100.7)
Yorkshire and The Humber	436	(82.0)	465	(87.4)
North of England	**1305**	**(87.0)**	**1330**	**(88.7)**
East Midlands	460	(100.7)	530	(116.0)
West Midlands	624	(110.6)	704	(124.8)
East of England	375	(63.5)	396	(67.0)
Midlands and East	**1459**	**(90.5)**	**1630**	**(101.1)**
London	**1217**	**(146.5)**	**1232**	**(148.3)**
South East Coast	265	(58.8)	314	(69.6)
South Central	389	(92.4)	413	(98.1)
South West	449	(84.1)	514	(96.3)
South of England	**1103**	**(78.4)**	**1241**	**(88.3)**
England	**5084**	**(95.0)**	**5433**	**(101.6)**
Isle of Man	**7**	**(87.5)**	**6**	**(75.0)**
Channel Islands	**8**	**(50.0)**	**10**	**(62.5)**
Wales	**162**	**(52.8)**	**189**	**(61.6)**
Scotland	**492**	**(92.7)**	**539**	**(101.5)**
Northern Ireland	**123**	**(67.6)**	**162**	**(89.0)**
TOTAL[1]	**5881**	**(92.0)**	**6344**	**(99.2)**

[1]Includes patients in 2014 (2013) resident in: Unspecified UK 1 (4); Republic of Ireland 1 (0); Overseas 3 (1)

An indication of outcomes for adult patients listed for a kidney only transplant is summarised in **Figure 5.2**. 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 19% of patients are transplanted within one year, while five years after listing 64% of patients have received a transplant.

The median (average) waiting time for a kidney only transplant is 1,114 days for an adult patient and is shown by blood group in **Table 5.4** and patient ethnicity in **Table 5.5**. Because of the need to match donor and recipient blood groups and tissue types, waiting times to transplant differ according to patient blood groups and ethnicity due to differences between the donor pool and patients awaiting a kidney transplant. Note that these waiting times are not adjusted for other relevant factors which may be influential and which may differ across blood or ethnic groups.

Figure 5.2 **Post-registration outcome for 3002 new adult kidney only registrations made in the UK, 1 April 2008 - 31 March 2009**

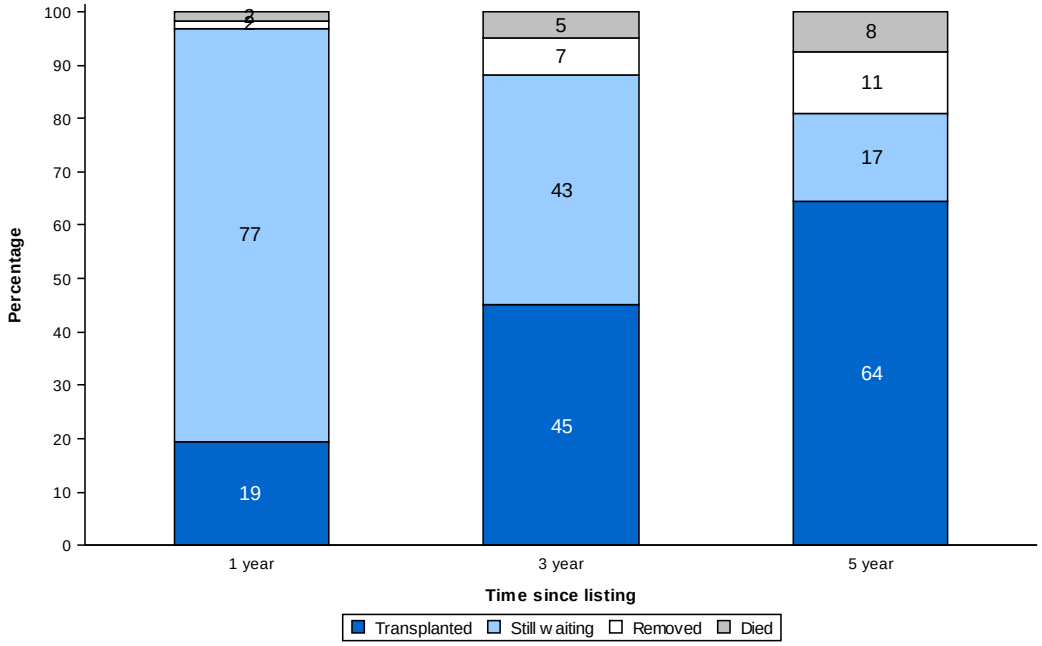


Table 5.4 **Median waiting time to kidney only transplant in the UK, for patients registered 1 April 2007 - 31 March 2011**

Blood group	Number of patients registered	Waiting time (days) Median	95% Confidence interval
Adult			
O	4051	1313	1274 - 1352
A	3285	902	873 - 931
B	1229	1330	1271 - 1389
AB	362	550	468 - 632
TOTAL	**8927**	**1114**	**1091 - 1137**
Paediatric			
O	155	433	331 - 535
A	114	295	192 - 398
B	52	241	167 - 315
AB	11	238	0 - 623
TOTAL	**332**	**354**	**271 - 437**

Table 5.5 Median waiting time to kidney only transplant in the UK, for patients registered 1 April 2007 - 31 March 2011

Ethnicity	Number of patients registered	Waiting time (days)	
		Median	95% Confidence interval
Adult			
White	6685	1047	1021 - 1073
Asian	1296	1330	1263 - 1397
Black	701	1363	1278 - 1448
Other	245	1147	1005 - 1289
TOTAL	**8927**	**1114**	**1091 - 1137**
Paediatric			
White	227	252	195 - 309
Asian	75	556	394 - 718
Black	20	502	356 - 648
Other	10	639	0 - 1412
TOTAL	**332**	**354**	**271 - 437**

5.3 Donor and organ supply

Of the 780 organ donors after brain death in the UK in 2013-2014, 722 (93%) were kidney donors. From these donors, 1,437 kidneys were retrieved. There were 521 kidney donors after circulatory death in 2013-2014. From these donors, 1,032 kidneys were retrieved. **Table 5.6** shows this activity by donor country/Strategic Health Authority of donor's residence. No adjustments have been made for potential demographic differences in populations.

The overall rate for kidney donors after brain death is 11.3 pmp, with rates across the Strategic Health Authorities ranging from 8.8 to 16.9 pmp. The number of kidneys retrieved from donors after brain death in the UK is 22.5 pmp and varies from 17.7 to 33.8 pmp.

The overall rate for kidney donors after circulatory death is 8.1 pmp, with rates across the Strategic Health Authorities ranging from 5.8 to 13.1 pmp. The number of kidneys retrieved from donors after circulatory death is 16.1 pmp and varies from 11.4 to 26.2 pmp.

Table 5.6 Kidney donation and retrieval rates for deceased donors in the UK, 1 April 2013 - 31 March 2014, by country/ Strategic Health Authority of residence

Country/ Strategic Health Authority of residence	Kidney donors (pmp)				Kidneys retrieved (pmp)			
	DBD		DCD		DBD		DCD	
North East	44	(16.9)	34	(13.1)	88	(33.8)	68	(26.2)
North West	73	(10.3)	41	(5.8)	144	(20.3)	81	(11.4)
Yorkshire and The Humber	47	(8.8)	36	(6.8)	94	(17.7)	70	(13.2)
North of England	**164**	**(10.9)**	**111**	**(7.4)**	**326**	**(21.7)**	**219**	**(14.6)**
East Midlands	50	(10.9)	47	(10.3)	100	(21.9)	93	(20.4)
West Midlands	56	(9.9)	39	(6.9)	110	(19.5)	78	(13.8)
East of England	62	(10.5)	58	(9.8)	123	(20.8)	115	(19.5)
Midlands and East	**168**	**(10.4)**	**144**	**(8.9)**	**333**	**(20.7)**	**286**	**(17.7)**
London	**88**	**(10.6)**	**56**	**(6.7)**	**176**	**(21.2)**	**111**	**(13.4)**
South East Coast	64	(14.2)	30	(6.7)	128	(28.4)	60	(13.3)
South Central	50	(11.9)	33	(7.8)	100	(23.8)	66	(15.7)
South West	60	(11.2)	62	(11.6)	119	(22.3)	123	(23.0)
South of England	**174**	**(12.4)**	**125**	**(8.9)**	**347**	**(24.7)**	**249**	**(17.7)**
England	**594**	**(11.1)**	**436**	**(8.2)**	**1182**	**(22.1)**	**865**	**(16.2)**
Isle of Man	**3**	**(37.5)**	**0**	**(0.0)**	**6**	**(75.0)**	**-**	
Channel Islands	**0**	**(0.0)**	**3**	**(18.8)**	**-**		**6**	**(37.5)**
Wales	**35**	**(11.4)**	**21**	**(6.8)**	**70**	**(22.8)**	**41**	**(13.4)**
Scotland	**59**	**(11.1)**	**46**	**(8.7)**	**117**	**(22.0)**	**90**	**(16.9)**
Northern Ireland	**31**	**(17.0)**	**15**	**(8.2)**	**62**	**(34.1)**	**30**	**(16.5)**
TOTAL[1]	**722**	**(11.3)**	**521**	**(8.1)**	**1437**	**(22.5)**	**1032**	**(16.1)**

[1] Includes 19 donors where the hospital postcode was used in place of an unknown donor postcode

5.4 Transplants

The number of kidney transplants by recipient country/Strategic Health Authority of residence is shown in **Table 5.7**. No adjustments have been made for potential demographic differences in populations. The deceased donor transplant rate ranged from 23.5 to 40.1 pmp across Strategic Health Authorities and overall was 30.4 pmp. The living donor transplant rate ranged from 13.7 to 20.7 pmp across the Strategic Health Authorities and overall was 17.1 pmp.

Table 5.7 Kidney only transplant rates per million population (pmp), in the UK, 1 April 2013 - 31 March 2014, by country and English Strategic Health Authority

Country/ Strategic Health Authority of residence	DBD		DCD		**TOTAL**		Living	
	N	(pmp)	N	(pmp)	N	(pmp)	N	(pmp)
North East	24	(9.2)	37	(14.2)	61	(23.5)	45	(17.3)
North West	144	(20.3)	66	(9.3)	210	(29.7)	119	(16.8)
Yorkshire and The Humber	91	(17.1)	105	(19.7)	196	(36.8)	73	(13.7)
North of England	**259**	**(17.3)**	**208**	**(13.9)**	**467**	**(31.1)**	**237**	**(15.8)**
East Midlands	104	(22.8)	55	(12.0)	159	(34.8)	65	(14.2)
West Midlands	109	(19.3)	25	(4.4)	134	(23.8)	104	(18.4)
East of England	77	(13.0)	91	(15.4)	168	(28.4)	86	(14.6)
Midlands and East	**290**	**(18.0)**	**171**	**(10.6)**	**461**	**(28.6)**	**255**	**(15.8)**
London	**211**	**(25.4)**	**122**	**(14.7)**	**333**	**(40.1)**	**172**	**(20.7)**
South East Coast	60	(13.3)	52	(11.5)	112	(24.8)	79	(17.5)
South Central	64	(15.2)	48	(11.4)	112	(26.6)	67	(15.9)
South West	86	(16.1)	53	(9.9)	139	(26)	85	(15.9)
South of England	**210**	**(14.9)**	**153**	**(10.9)**	**363**	**(25.8)**	**231**	**(16.4)**
England	**970**	**(18.1)**	**654**	**(12.2)**	**1624**	**(30.4)**	**895**	**(16.7)**
Isle of Man	**1**	**(12.5)**	**0**	**(0.0)**	**1**	**(12.5)**	**0**	**(0.0)**
Channel Islands	**2**	**(12.5)**	**3**	**(18.8)**	**5**	**(31.3)**	**2**	**(12.5)**
Wales	**50**	**(16.3)**	**49**	**(16)**	**99**	**(32.2)**	**49**	**(16.0)**
Scotland	**97**	**(18.3)**	**75**	**(14.1)**	**172**	**(32.4)**	**81**	**(15.3)**
Northern Ireland	**37**	**(20.3)**	**3**	**(1.6)**	**40**	**(22)**	**61**	**(33.5)**
TOTAL	**1157**	**(18.1)**	**784**	**(12.3)**	**1941**	**(30.4)**	**1091**[1]	**(17.1)**

[1] Excludes 23 recipients of a living donor kidney who reside outside of the UK.

The number of kidney only transplants from deceased donors at each transplant centre is shown in **Table 5.8** for adult patients only. Kidney transplants from donors after brain death include 5 en bloc kidneys and 25 double kidney transplants in 2013-2014 (4 and 9 in 2012-2013). Kidney transplants from donors after circulatory death include 4 en bloc and 66 double kidney transplants in 2013-2014 (5 and 43 in 2012-2013). This table excludes multi-organ transplants: 9 kidney and liver, 1 kidney and heart, 188 kidney and pancreas and 1 bowel only.

Table 5.8 Adult kidney only transplants from deceased donors in the UK, 1 April 2013 - 31 March 2014, by transplant centre/region

Transplant centre/region	2012-2013		2013-2014	
	DBD	DCD	DBD	DCD
Belfast	25	0	37	3
Birmingham	62	16	79	17
Bristol	46	26	61	22
Cambridge	31	99	41	78
Cardiff	40	44	31	44
Coventry	15	8	22	8
Edinburgh	21	23	33	34
Glasgow	65	29	58	41
Guys	90	63	47	69
Leeds	74	60	52	98
Leicester	31	5	62	19
Liverpool	37	31	39	23
Manchester	75	32	111	37
Newcastle	21	57	27	51
Royal Free	44	32	37	35
Royal London	35	27	58	21
Nottingham	26	29	30	34
Oxford	46	46	34	42
Plymouth	12	24	18	27
Portsmouth	34	17	44	17
Sheffield	26	13	41	7
St George's	67	21	59	34
WLRTC	64	8	81	18
TOTAL	**987**	**710**	**1102**	**779**

WLRTC - West London Renal and Transplant Centre

Living donor kidney transplants increased by 4% to 1114 in 2013-2014, representing 34% of the total kidney transplant programme. The total number of living donor adult transplants performed by each transplant centre is shown in **Table 5.9**. 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 a 1% decrease in these transplants. In addition there are now a number of 'undirected' living donor transplants (also known as altruistic donor transplants). Last year 118 such donors donated a kidney to a recipient, 117 transplanted into an adult recipient and one transplanted into a paediatric recipient.

In 2013-2014, there were also 72 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), or between three pairs.

As a percentage of the number of patients on the active transplant list at 31 March 2014, the number of living donor adult transplants in the year was 18% and ranged from 11% to 50% 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 5.9 Adult living donor kidney transplants in the UK, 1 April 2012 - 31 March 2014, and percentage of active transplant list at 31 March, by transplant centre/region

Transplant centre/ region	2012-2013			TOTAL		2013-2014			TOTAL	
	Directed	Paired/ pooled	Non-directed	**N**	**% list**	Directed	Paired/ pooled	Non-directed	**N**	**% list**
Belfast	39	5	2	**46**	**30**	44	9	4	**57**	**50**
Birmingham	56	3	6	**65**	**11**	58	8	11	**77**	**16**
Bristol	29	1	2	**32**	**9**	37	4	8	**49**	**16**
Cambridge	42	1	2	**45**	**21**	34	0	6	**40**	**21**
Cardiff	40	1	1	**42**	**29**	32	3	2	**37**	**31**
Coventry	21	0	1	**22**	**20**	23	1	2	**26**	**24**
Edinburgh	22	3	4	**29**	**13**	23	6	6	**35**	**19**
Glasgow	36	1	1	**38**	**12**	32	4	5	**41**	**13**
Guy's	73	5	5	**83**	**21**	75	4	9	**88**	**27**
Leeds	41	2	3	**46**	**16**	36	5	3	**44**	**17**
Leicester	37	3	3	**43**	**14**	32	3	8	**43**	**16**
Liverpool	25	2	4	**31**	**17**	33	2	4	**39**	**22**
Manchester	81	10	9	**100**	**18**	67	2	7	**76**	**13**
Newcastle	47	0	5	**52**	**27**	48	2	4	**54**	**30**
Royal Free	28	1	2	**31**	**11**	30	1	4	**35**	**13**
Royal London	47	1	1	**49**	**20**	48	2	4	**54**	**30**
WLRTC	58	8	6	**72**	**14**	56	2	6	**64**	**14**
Nottingham	11	0	3	**14**	**10**	16	0	1	**17**	**15**
Oxford	45	4	4	**53**	**18**	33	3	6	**42**	**16**
Plymouth	16	0	2	**18**	**18**	17	2	3	**22**	**26**
Portsmouth	22	1	4	**27**	**11**	18	2	6	**26**	**11**
Sheffield	21	0	1	**22**	**11**	18	1	1	**20**	**11**
St George's	34	3	4	**41**	**14**	35	4	5	**44**	**16**
TOTAL	**872**[1]	**55**	**75**[2]	**1002**[1]	**16**	**859**[3]	**72**	**119**[4]	**1050**[3]	**18**

[1] Includes 1 transplants performed at The London Clinic and 1 transplant performed at London, London Bridge.
[2] Includes 3 domino donor transplants
[3] Includes 6 transplants performed at The London Clinic, 4 transplants at London Cromwell Hospital and 4 transplants performed at London, London Bridge.
[4] Includes 2 domino donor transplants

Non-directed, altruistic donor kidneys are matched either to a suitable recipient on a national basis or within the paired/ pooled scheme and thus are rarely used in the transplant centre responsible for the 'work-up' of the donor. The number of non-directed donors according to donor hospital (rather than transplant hospital) and whether the altruistic donor donated as part of a chain within the paired/ pooled scheme or directly to the deceased donor list is shown in **Table 5.10**.

Table 5.10 Altruistic kidney donors in the UK, 1 April 2012 - 31 March 2014, by donor centre

	2012-2013				2013-2014			
Donor centre	No chain	Chain	**Total**	**%**	No chain	Chain	**Total**	**%**
Belfast	4	0	4	5	5	1	6	5
Birmingham	1	0	1	1	2	1	3	3
Bristol	3	0	3	4	2	1	3	3
Cambridge	1	0	1	1	6	1	7	6
Cardiff	0	0	0	0	1	2	3	3
Coventry	2	0	2	3	0	0	0	0
Edinburgh	5	0	5	7	9	1	10	8
Glasgow	0	0	0	0	3	0	3	3
Guy's	3	1	4	5	11	1	12	10
Leeds	5	2	7	9	2	2	4	3
Leicester	1	0	1	1	0	0	0	0
Liverpool	2	1	3	4	3	0	3	3
Manchester	7	1	8	11	8	5	13	11
Newcastle	4	0	4	5	1	0	1	1
Nottingham	1	0	1	1	2	0	2	2
Oxford	6	0	6	8	7	4	11	9
Plymouth	3	2	5	7	10	4	14	12
Portsmouth	15	0	15	20	10	2	12	10
Royal Free	5	0	5	7	2	0	2	2
Royal London	0	0	0	0	1	0	1	1
WLRTC	0	0	0	0	1	0	1	1
Sheffield	0	0	0	0	1	1	2	2
St George's	1	0	1	1	4	1	5	4
Total	**69**	**7**	**76**	**100**	**91**	**27**	**118**	**100**

WLRTC – West London Renal and Transplant Centre

The number of deceased donor and living donor transplants in paediatric patients (<18 years) performed by each paediatric transplant centre is shown in **Table 5.11**. There were 64 living donor transplants and 60 deceased donor transplants in paediatric patients in 2013-2014. The paediatric transplant list has decreased by 7% from 75 patients at 31 March 2013 to 70 at the end of March 2014.

Occasionally older paediatric patients are listed and/or transplanted at adult kidney transplant centres and these are indicated in **Table 5.11**.

At 31 March 2014, there were approximately 31,000 recipients with a functioning kidney transplant (including multi-organ transplants) being followed-up as reported to the UK Transplant Registry.

Table 5.11 Paediatric patient kidney transplants in the UK, 1 April 2012 - 31 March 2014, by transplant centre

	2012-2013				2013-2014			
Paediatric transplant centre	DBD	DCD	Living donor	**TOTAL**	DBD	DCD	Living donor	**TOTAL**
Belfast	1	0	3	**4**	0	0	1	**1**
Birmingham	4	3	8	**15**	6	0	3	**9**
Bristol	10	0	4	**14**	6	0	5	**11**
Glasgow	2	0	4	**6**	6	0	4	**10**
Great Ormond Street	10	0	13	**23**	7	3	17	**27**
Guy's	3	0	12	**15**	4	1	13	**18**
Leeds	3	1	4	**8**	8	0	0	**8**
Manchester	6	0	12	**18**	6	1	13	**20**
Newcastle	0	0	4	**4**	2	0	3	**5**
Nottingham	7	2	1	**10**	9	0	4	**13**
Adult centres	1	0	1	**2**	1	0	1	**2**
TOTAL	**47**	**6**	**66**[1]	**119**	**55**	**5**	**64**[2]	**124**

[1] Includes 4 non-directed donor transplants
[2] Includes 1 non-directed donor transplant

Rates of pre-emptive kidney only transplantation are shown in **Table 5.12**. Of the 3,056 kidney only transplant recipients in 2013-2014, dialysis status at time of transplant was reported for 2,996 (98%). Of these 2,996 transplants, 687 (23%) were carried out in pre-dialysis patients.

Pre-emptive transplants accounted for 31% of all paediatric kidney only transplants with reported dialysis status, compared with 23% of those in adults. Living donor transplants are more likely to be carried out before the need for dialysis than deceased donor transplants: 36% and 16% 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.

Table 5.12 Pre-emptive kidney only transplants in the UK, 1 April 2013 - 31 March 2014

	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	1881	1864	(99.1)	15.4
Living donor transplant	1050	1011	(96.3)	34.3
Paediatric				
Deceased donor transplant	60	60	(100.0)	23.3
Living donor transplant	64	64	(100.0)	39.1

The length of time that elapses between a kidney being removed from the donor to its transplantation into the recipient is called Cold Ischaemia Time (CIT). Generally, the shorter this time, the more likely the kidney is to work immediately and the better the long-term outcome. The factors which determine CIT include a) transportation of the kidney from the retrieval hospital to the hospital where the transplant is performed, b) the need to tissue type the donor and cross-match the donor and potential recipients, c) the occasional necessity of moving the kidney to another hospital if a transplant cannot go ahead, d) contacting and preparing the recipient for the transplant and e) access to the operating theatre. Median CITs are shown in addition to inter-quartile ranges in **Table 5.13**.

Table 5.13 Median cold ischaemia time for kidney only transplants in the UK, 1 April 2013 - 31 March 2014

	Number of kidney only transplants[1]	Median (hours)	Inter-quartile range[2] Q1	Q3
Adult				
DBD donor transplant	1102	14.4	11.4	17.9
DCD donor transplant	779	13.3	10.6	16.4
Total	**1881**	**13.9**	**11.0**	**17.3**
Paediatric				
DBD donor transplant	55	13.3	10.8	16.1
DCD donor transplant	5	9.8	6.2	13.6
Total	**60**	**13.3**	**10.0**	**15.9**
TOTAL	**1941**	**13.9**	**11.0**	**17.3**

[1] Not all cold ischaemia times are reported
[2] 25% of times are shorter than Q1, 25% are longer than Q3

Kidneys from donors after brain death are allocated on the basis of a national Kidney Allocation Scheme which incorporates HLA matching between donor and recipient. These HLA matches are based on four levels which are described in **Table 5.14**. Patients with 000 HLA-A, B, DR mismatch (Level 1) are prioritised in the schemes, whereas kidneys are rarely transplanted as a Level 4 match. More information about the allocation scheme can be found at www.odt.nhs.uk. **Table 5.15** gives the HLA mismatch group for adult and paediatric patients for DBD donor transplants but also for DCD and living donor transplants. DCD kidneys are currently allocated according to local transplant centre policies and on a local basis and consequently the levels of HLA match are inferior. For living donor transplantation, many transplants have a less good HLA match between donor and recipient. Very often there is no genetic relationship between donor and recipient.

Table 5.14 HLA mismatch groups

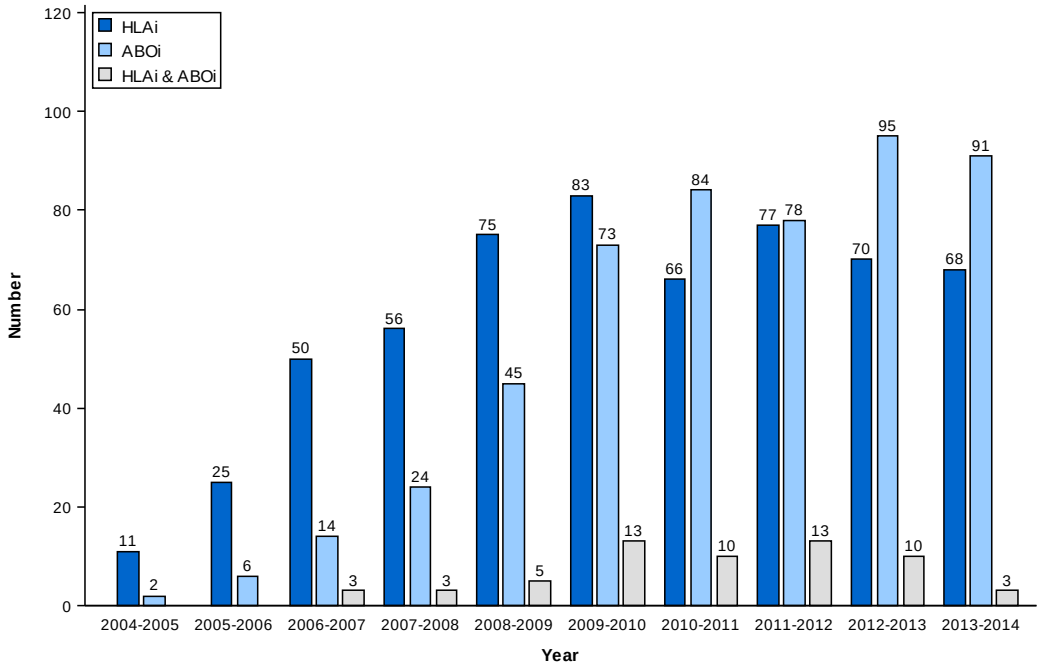
Level	HLA mismatch summary	HLA mismatch combinations included
1	000	000
2	[0 DR and 0/1 B]	100, 010, 110, 200, 210
3	[0 DR and 2 B] or [1 DR and 0/1 B]	020, 120, 220, 001, 101, 201, 011, 111, 211
4	[1 DR and 2 B] or [2 DR]	021, 121, 221, 002, 102, 202, 012, 112, 212, 022, 122, 222

Table 5.15 HLA matching for kidney only transplants in the UK, 1 April 2013 - 31 March 2014,

	DBD		DCD		Living	
	N	(%)	N	(%)	N	(%)
Adult						
Level 1	188	(17)	15	(2)	113	(11)
Level 2	397	(36)	174	(22)	155	(15)
Level 3	486	(44)	437	(56)	469	(45)
Level 4	31	(3)	153	(20)	307	(29)
Not reported					6	
Paediatric						
Level 1	4	(7)	0	(0)	5	(8)
Level 2	40	(73)	1	(20)	25	(39)
Level 3	10	(18)	1	(20)	32	(50)
Level 4	1	(2)	3	(60)	2	(3)

Often potential living donors and their recipients are HLA or blood group incompatible. Increasingly it is possible to proceed with transplantation across the incompatibilities with appropriate management. The number of HLA and ABO blood group incompatible transplants over the last ten years is shown in **Figure 5.3**. Of the 581 HLA incompatible (HLAi) transplants performed; 160 used kidneys from deceased donors and 421 used living donor kidneys whilst the vast majority of ABO incompatible (ABOi) transplants used living donor kidneys (508 of 512). Due to nature of reporting HLA incompatible transplants the numbers presented may be subject to change over time.

Figure 5.3 Incompatible kidney only transplants in the UK, 1 April 2004 - 31 March 2014



5.5 Demographic characteristics

The age group, sex, ethnicity and blood group of deceased donors, transplant recipients and patients on the transplant list is shown in **Table 5.16** and living donors and transplants in **Table 5.17**. Note that all percentages quoted are based only on data where relevant information was available. 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 in deciding kidney allocation. 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.

Table 5.16 Demographic characteristics of deceased kidney donors and transplant recipients, 1 April 2013 - 31 March 2014, and transplant list patients at 31 March

	Donors		Transplant recipients		Active transplant list patients	
	N	(%)	N	(%)	N	(%)
Age group (years)						
0 - 17	54	(4)	63	(3)	70	(1)
18 - 34	182	(15)	288	(13)	678	(12)
35 - 49	288	(23)	612	(29)	1715	(29)
50 - 59	268	(22)	563	(26)	1609	(27)
60 - 69	266	(21)	458	(21)	1354	(23)
70+	185	(15)	158	(7)	455	(8)
mean (SD)	51	(18)	50	(15)	51	(14)
Sex						
Male	693	(56)	1362	(64)	3481	(59)
Female	550	(44)	780	(36)	2400	(41)
Ethnicity						
White	1174	(94)	1592	(74)	3942	(67)
Asian	35	(3)	311	(15)	1039	(18)
Black	15	(1)	171	(8)	605	(10)
Chinese	2	(0)	28	(1)	87	(1)
Other	16	(1)	31	(1)	95	(2)
Not reported	1	(0)	9	(0)	113	(2)
Blood group						
O	572	(46)	931	(43)	3066	(52)
A	491	(40)	831	(39)	1734	(29)
B	139	(11)	284	(13)	937	(16)
AB	41	(3)	96	(4)	144	(2)
Graft number						
First graft			1872	(87)	4544	(77)
Re-graft			270	(13)	1337	(23)
TOTAL	**1243**	**(100)**	**2142**	**(100)**	**5881**	**(100)**

Table 5.17 Demographic characteristics of living kidney donors and transplant recipients, 1 April 2013 - 31 March 2014

	Donors		Transplant recipients	
	N	(%)	N	(%)
Age group (years)				
0 - 17	0	(0)	64	(6)
18 - 34	202	(18)	236	(21)
35 - 49	386	(35)	363	(33)
50 - 59	274	(25)	248	(22)
60 - 69	205	(18)	179	(16)
70+	47	(4)	24	(2)
mean (SD)	48	(13)	44	(16)
Sex				
Male	539	(48)	635	(57)
Female	575	(52)	479	(43)
Ethnicity				
White	947	(85)	881	(79)
Asian	83	(7)	116	(10)
Black	38	(3)	51	(5)
Chinese	4	(0)	6	(1)
Other	33	(3)	23	(2)
Not reported	9	(1)	37	(3)
Blood group				
O	586	(53)	471	(42)
A	358	(32)	454	(41)
B	132	(12)	153	(14)
AB	28	(3)	36	(3)
Not reported	10	(1)		
Graft number				
First graft			945	(85)
Re-graft			169	(15)
TOTAL	**1114**	**(100)**	**1114**	**(100)**

Pancreas Activity

Key messages

- **The number of patients waiting on the pancreas transplant list decreased by 1% during the year, to 270 at 31 March 2014**
- **The number of pancreas donors after brain death increased by 1% to 365, while transplants from donors after brain death increased by 6% to 203**
- **The number of pancreas donors after circulatory death decreased by 1% to 91, while transplants from donors after circulatory death increased by 5% to 43**
- **32 islet transplants were made possible by the pancreas islet transplant programme**

6.1 Overview

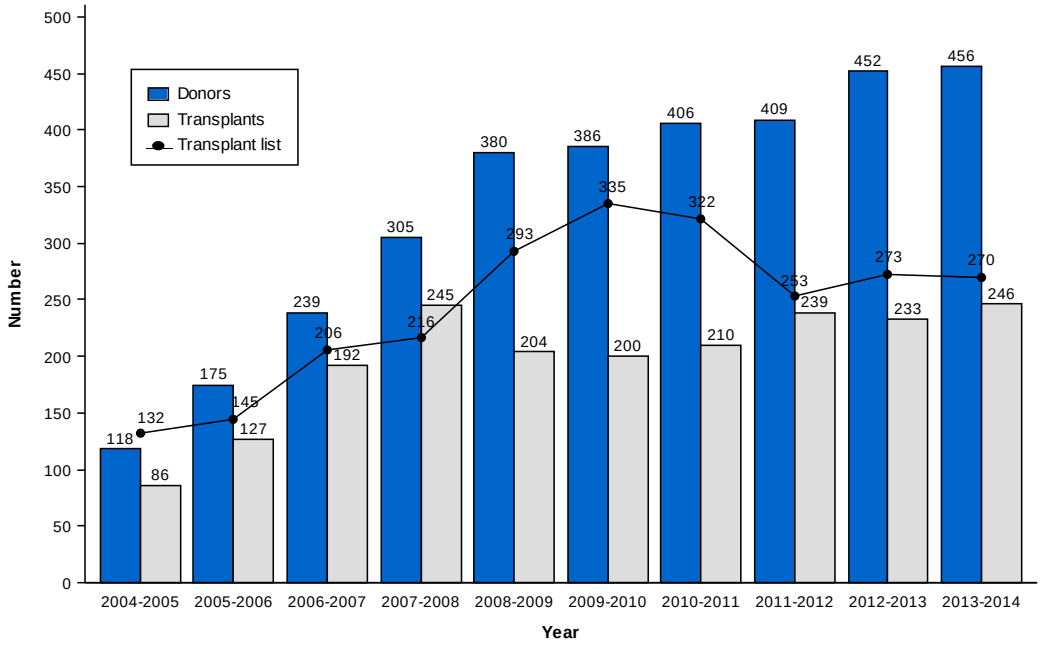
The number of patients registered on the active transplant list at 31 March for a pancreas only, simultaneous kidney/pancreas (SPK) and islet transplant has increased significantly over the last ten years from 132 patients in 2005 to 270 patients in 2014. The number of pancreas donors and transplants has also increased steadily from 118 donors resulting in 86 transplants in 2004-2005, to 456 donors and 246 transplants in 2013-2014. A summary of activity for deceased donor pancreas transplants and the transplant list for 1 April 2004 - 31 March 2014 is shown in **Figure 6.1**.

A National Pancreas Allocation Scheme was introduced on 1 December 2010. Patients are prioritised according to a points system based on a range of clinical factors. A score is calculated for every potentially suitable patient on the national active transplant list and the pancreas is allocated preferentially to the patient with the most points. This differs from the previous system in which donor organs were allocated so that transplant centres selected suitable recipients rather than individual patients being identified centrally.

Pancreases from donors after brain death and donors after circulatory death are allocated through this scheme. Patients listed for a vascularised pancreas or islet transplant are prioritised through one combined national transplant list. The scheme has reduced the incidence of long waiting patients and is improving equity in access to transplant irrespective of where in the UK each patient resides.

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 2013/2014 there were 16 intestinal transplants including a pancreas.

Figure 6.1 **Deceased pancreas and islet programme in the UK, 1 April 2004 - 31 March 2014, Number of donors, transplants and patients on the active transplant list at 31 March**



6.2 Transplant list

Table 6.1 shows the number of patients on the active transplant lists at 31 March 2014 by centre. The number of patients registered on the pancreas transplant list decreased by 1% in the year: on 31 March 2014, 270 patients were registered active, compared with 273 at the end of March 2013.

Of the 270 patients on the active transplant list at 31 March 2014, 201 required a SPK transplant (208 at 31 March 2013), 36 (13%) patients required a pancreas only transplant (38 at 31 March 2013) and 33 (12%) were registered for a pancreas islet transplant.

The outcome of patients registered on the UK pancreas transplant list at 1 April 2013, or subsequently registered during the financial year, is shown in **Table 6.2**. 42 patients joined the pancreas transplant list while 236 joined the list for kidney and pancreas.

Patients listed for a routine islet transplant are generally waiting for their first islet graft. The majority of islet transplant recipients are likely to require more than one graft to complete their treatment. To optimise transplant outcome the follow-up graft should be performed within six to twelve months of the first. Patients requiring follow-up grafts are priority listed.

Table 6.1 Patients on the pancreas transplant lists at 31 March 2014 (2013) in the UK, by centre

	Active transplant lists									
Centre	Kidney/pancreas		Pancreas alone		Islet				**TOTAL**	
					Routine		Priority			
Bristol	0	(0)	0	(0)	2	(0)	0	(0)	**2**	**(0)**
Cambridge	21	(26)	2	(3)	0	(0)	0	(0)	**23**	**(29)**
Cardiff	6	(4)	9	(6)	0	(0)	0	(0)	**15**	**(10)**
Edinburgh	24	(28)	0	(1)	10	(8)	0	(0)	**34**	**(37)**
Guys	26	(29)	2	(4)	0	(0)	0	(0)	**28**	**(33)**
King's College	0	(0)	0	(0)	1	(2)	1	(1)	**2**	**(3)**
Manchester	44	(35)	2	(2)	9	(6)	1	(0)	**56**	**(43)**
Newcastle	10	(9)	3	(4)	6	(3)	0	(1)	**19**	**(17)**
Oxford	59	(67)	16	(15)	0	(1)	2	(4)	**77**	**(87)**
Royal Free	0	(0)	0	(0)	1	(0)	0	(1)	**1**	**(1)**
WLRTC	11	(10)	2	(3)	0	(0)	0	(0)	**13**	**(13)**
TOTAL	**201**	**(208)**	**36[1]**	**(38[2])**	**29**	**(20)**	**4**	**(7)**	**270**	**(273)**

[1] Includes one patient waiting for a pancreas and liver transplant
[2] Includes two patients waiting for a pancreas and liver transplant

Table 6.2 Pancreas transplant list and new registrations in the UK, 1 April 2013 - 31 March 2014

Outcome of patient at 31 March 2014	Active and suspended patients at 1 April 2013		New registrations in 2013-2014[1]		TOTAL	
	N	**%**	**N**	**%**	**N**	**%**
Pancreas transplant list						
Remained active/suspended	95	68	27	64	**122**	**67**
Transplanted	22	16	9	21	**31**	**17**
Removed	21[2]	15	6[3]	14	**27**	**15**
Died	1	1	0	0	**1**	**1**
TOTAL	**139**		**42**		**181**	
Kidney/pancreas transplant list						
Remained active/suspended	128	39	196	83	**324**	**57**
Transplanted	159	48	34	14	**193**	**34**
Removed	28	9	4	2	**32**	**6**
Died	14	4	2	1	**16**	**3**
TOTAL	**329**		**236**		**565**	

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

The active pancreas transplant list rates by country/Strategic Health Authority of patient's residence are shown in **Table 6.3**. At 31 March 2014, the overall transplant list rate was 3.7 pmp and across the Strategic Health Authorities ranged from 2.6 to 4.3 pmp.

Table 6.3	Active pancreas alone and kidney/pancreas transplant list at 31 March, by country/ Strategic Health Authority of patient residence			
Country/ Strategic Health Authority of residence	**Pancreas transplant list (pmp)**			
	2014		2013	
North East	10	(3.8)	9	(3.5)
North West	20	(2.8)	22	(3.1)
Yorkshire and The Humber	22	(4.1)	15	(2.8)
North of England	**52**	**(3.5)**	**46**	**(3.1)**
East Midlands	18	(3.9)	22	(4.8)
West Midlands	23	(4.1)	17	(3.0)
East of England	20	(3.4)	25	(4.2)
Midlands and East	**61**	**(3.8)**	**64**	**(4.0)**
London	**31**	**(3.7)**	**31**	**(3.7)**
South East Coast	15	(3.3)	13	(2.9)
South Central	11	(2.6)	18	(4.3)
South West	23	(4.3)	33	(6.2)
South of England	**49**	**(3.5)**	**64**	**(4.6)**
England	**193**	**(3.6)**	**205**	**(3.8)**
Isle of Man	**2**	**(25.0)**	**0**	**(0.0)**
Channel Islands	**0**	**(0.0)**	**0**	**(0.0)**
Wales	**18**	**(5.9)**	**12**	**(3.9)**
Scotland	**19**	**(3.6)**	**24**	**(4.5)**
Northern Ireland	**5**	**(2.7)**	**5**	**(2.7)**
TOTAL	**237**	**(3.7)**	**246**	**(3.8)**

An indication of longer term outcomes for patients listed for a pancreas or kidney/pancreas transplant are summarised in **Figure 6.2**. 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. 34% of patients are transplanted within one year, while three years after listing 70% of patients have received a transplant. The median (average) waiting time for a pancreas transplant is 392 days and is shown by blood group in **Table 6.4** and ethnicity in **Table 6.5**. Note that these waiting times are not adjusted for other relevant factors which may be influential and which may differ across blood or ethnic groups.

Figure 6.2 **Post-registration outcome for 271 new pancreas only and kidney/pancreas registrations made in the UK, 1 April 2010 - 31 March 2011**

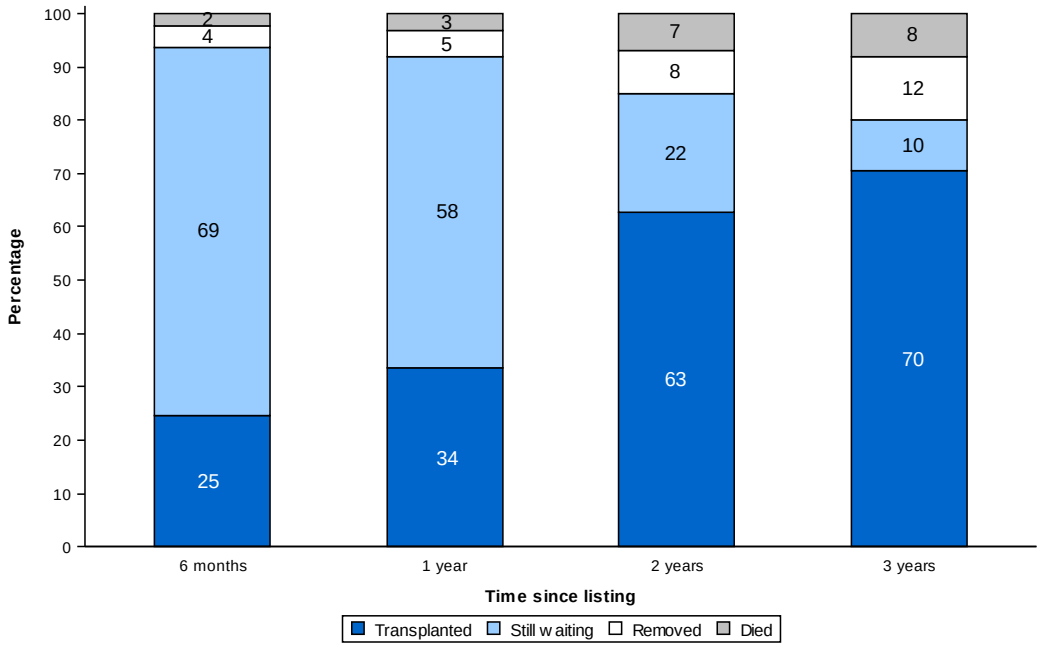


Table 6.4 **Median waiting time to pancreas only and kidney/pancreas transplant in the UK, for patients registered 1 April 2008 - 31 March 2012**

Blood group	Number of patients registered	Waiting time (days) Median	95% Confidence interval
Adult			
O	536	485	448 - 522
A	486	328	279 - 377
B	107	327	236 - 418
AB	28	66	29 - 103
TOTAL	**1157**	**392**	**362 - 422**

Table 6.5 **Median waiting time to pancreas only and kidney/pancreas transplant in the UK, for patients registered 1 April 2008 - 31 March 2012**

Ethnicity	Number of patients registered	Waiting time (days) Median	95% Confidence interval
Adult			
White	1055	402	370 - 434
Asian	56	387	326 - 448
Black	28	243	143 - 343
Other	16	188	144 - 232
TOTAL	**1157**	**392**	**362 - 422**

6.3 Donor and organ supply

Of the 780 organ donors after brain death in the UK in 2013-2014, 365 (47%) donated a pancreas. There were 91 pancreas donors after circulatory death in 2013-2014. **Table 6.6** shows this activity by country/Strategic Health Authority of the donor's residence. No adjustments have been made for potential demographic differences in populations.

The overall rate for pancreas donors after brain death is 5.7 pmp, with rates ranging from 3.4 to 7.3 pmp across the Strategic Health Authorities and for donors after circulatory death is 1.4 pmp, with rates ranging from 0.7 to 2.7 pmp across the Strategic Health Authorities.

Table 6.6 Pancreas donation rates for deceased donors in the UK, 1 April 2013 - 31 March 2014, by country/ Strategic Health Authority of residence

Country/ Strategic Health Authority of residence	Pancreas donors (pmp)					
	DBD		DCD		TOTAL	
North East	19	(7.3)	7	(2.7)	**26**	**(10.0)**
North West	40	(5.6)	7	(1.0)	**47**	**(6.6)**
Yorkshire and The Humber	23	(4.3)	4	(0.8)	**27**	**(5.1)**
North of England	**82**	**(5.5)**	**18**	**(1.2)**	**100**	**(6.7)**
East Midlands	20	(4.4)	9	(2.0)	**29**	**(6.3)**
West Midlands	19	(3.4)	6	(1.1)	**25**	**(4.4)**
East of England	33	(5.6)	16	(2.7)	**49**	**(8.3)**
Midlands and East	**72**	**(4.5)**	**31**	**(1.9)**	**103**	**(6.4)**
London	**49**	**(5.9)**	**8**	**(1.0)**	**57**	**(6.9)**
South East Coast	29	(6.4)	3	(0.7)	**32**	**(7.1)**
South Central	30	(7.1)	8	(1.9)	**38**	**(9.0)**
South West	38	(7.1)	7	(1.3)	**45**	**(8.4)**
South of England	**97**	**(6.9)**	**18**	**(1.3)**	**115**	**(8.2)**
England	**300**	**(5.6)**	**75**	**(1.4)**	**375**	**(7.0)**
Isle of Man	**1**	**(12.5)**	**0**	**(0.0)**	**1**	**(12.5)**
Channel Islands	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**
Wales	**16**	**(5.2)**	**4**	**(1.3)**	**20**	**(6.5)**
Scotland	**30**	**(5.6)**	**8**	**(1.5)**	**38**	**(7.2)**
Northern Ireland	**18**	**(9.9)**	**4**	**(2.2)**	**22**	**(12.1)**
TOTAL[1]	**365**	**(5.7)**	**91**	**(1.4)**	**456**	**(7.1)**

[1] Includes 8 donors where the hospital postcode was used in place of an unknown donor postcode

6.4 Transplants

The number of pancreas transplants by recipient country of residence/ Strategic Health Authority is shown in **Table 6.7**. No adjustments have been made for potential demographic differences in populations. For donors after brain death the transplant rate ranged from 1.7 to 4.6 pmp across Strategic Health Authorities and overall was 3.2 pmp. For donors after circulatory death the overall rate was 0.7 pmp and ranged from 0.4 to 1.2 pmp across Strategic Health Authorities.

Table 6.7 Pancreas transplant rates per million population (pmp), in the UK, 1 April 2013 - 31 March 2014, by country and English Strategic Health Authority

Country/ Strategic Health Authority of residence	DBD		DCD		TOTAL	
	N	(pmp)	N	(pmp)	N	(pmp)
North East	12	(4.6)	1	(0.4)	**13**	**(5.0)**
North West	16	(2.3)	6	(0.8)	**22**	**(3.1)**
Yorkshire and The Humber	9	(1.7)	2	(0.4)	**11**	**(2.1)**
North of England	**37**	**(2.5)**	**9**	**(0.6)**	**46**	**(3.1)**
East Midlands	14	(3.1)	3	(0.7)	**17**	**(3.7)**
West Midlands	22	(3.9)	3	(0.5)	**25**	**(4.4)**
East of England	16	(2.7)	7	(1.2)	**23**	**(3.9)**
Midlands and East	**52**	**(3.2)**	**13**	**(0.8)**	**65**	**(4.0)**
London	**26**	**(3.1)**	**6**	**(0.7)**	**32**	**(3.9)**
South East Coast	11	(2.4)	4	(0.9)	**15**	**(3.3)**
South Central	19	(4.5)	2	(0.5)	**21**	**(5.0)**
South West	19	(3.6)	3	(0.6)	**22**	**(4.1)**
South of England	**49**	**(3.5)**	**9**	**(0.6)**	**58**	**(4.1)**
England	**164**	**(3.1)**	**37**	**(0.7)**	**201**	**(3.8)**
Isle of Man	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**
Channel Islands	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**
Wales	**9**	**(2.9)**	**5**	**(1.6)**	**14**	**(4.6)**
Scotland	**25**	**(4.7)**	**1**	**(0.2)**	**26**	**(4.9)**
Northern Ireland	**5**	**(2.7)**	**0**	**(0.0)**	**5**	**(2.7)**
TOTAL	**203**	**(3.2)**	**43**	**(0.7)**	**246**	**(3.8)**

There were 246 deceased donor pancreas transplants in 2013-2014 representing an increase of 6% on the 233 transplants performed in 2012-2013. Of these 246, 188 (76%) were SPK transplants, 26 (11%) were pancreas only transplants (pancreas alone (PTA) or pancreas after kidney (PAK)) and 32 (13%) were islet transplants. The number of transplants performed at each centre is shown in **Table 6.8** by transplant type and **Table 6.9** by donor type. Note that King's College and The Royal Free only perform islet transplants.

The length of time that elapses between a pancreas being removed from the donor to its transplantation into the recipient is called the Cold Ischaemia Time (CIT). Generally, the shorter this time, the more likely the pancreas is to work immediately and the better the long-term outcome. The median CIT for a DBD donor whole pancreas transplant is 10.6 hours (Inter-Quartile (IQ) range 9.0 – 12.8) and for a DCD donor transplant is 10.2 hours (IQ range 8.6 – 11.6) and overall is 10.6 hours (IQ range 9.0 – 12.5).

At 31 March 2014, there were approximately 1,800 recipients with a functioning pancreas transplant (including multi-organ transplants) being followed-up, as reported to the UK Transplant Registry.

Table 6.8 Pancreas transplants, 1 April 2013 - 31 March 2014 (2012-2013) by centre

Centre	Transplant type									
	SPK		PTA		PAK		Islet[1]			
							Routine		Priority	
Bristol	0	(0)	0	(0)	0	(0)	0	(1)	0	(0)
Cambridge	24	(8)	0	(0)	3	(1)	0	(0)	0	(0)
Cardiff	9	(10)	2	(2)	1	(4)	0	(0)	0	(0)
Edinburgh	20	(20)	0	(0)	1	(0)	6	(5)	4	(5)
Guys	33	(24)	1	(2)	1	(5)	0	(0)	0	(0)
King's College	-	-	-	-	-	-	2	(1)	2	(0)
Manchester	30	(31)	1	(0)	0	(2)	2	(0)	1	(1)
Newcastle	6	(4)	1	(0)	2	(0)	4	(2)	3	(3)
Oxford	62	(59)	8	(15)	4	(1)	2	(7)	5	(0)
Royal Free	-	-	-	-	-	-	0	(3)	1	(2)
WLRTC	4	(10)	0	(0)	1	(5)	0	(0)	0	(0)
TOTAL	**188**	**(166)**	**13**	**(19)**	**13**	**(18)**	**16**	**(19)**	**16**	**(11)**

WLRTC - West London Renal and Transplant Centre
[1] Islet transplants reported since 1 July 2009

Table 6.9 Pancreas transplants, 1 April 2013 - 31 March 2014 by centre

Centre	Transplant and donor type							
	SPK		PTA		Islet		**TOTAL**	
	DBD	DCD	DBD	DCD	DBD	DCD	**DBD**	**DCD**
Cambridge	17	7	3	0	0	0	**20**	**7**
Cardiff	6	3	2	1	0	0	**8**	**4**
Edinburgh	20	0	1	0	9	1	**30**	**1**
Guys	26	7	0	2	0	0	**26**	**9**
King's College	-	-	-	-	4	0	**4**	**0**
Manchester	23	7	1	0	3	0	**27**	**7**
Newcastle	5	1	3	0	5	2	**13**	**3**
Oxford	52	10	11	1	7	0	**70**	**11**
Royal Free	-	-	-	-	0	1	**0**	**1**
WLRTC	4	0	1	0	0	0	**5**	**0**
TOTAL	**153**	**35**	**22**	**4**	**28**	**4**	**203**	**43**

WLRTC - West London Renal and Transplant Centre

6.5 Demographic characteristics

The age group, sex, ethnicity and blood group of deceased donors, transplant recipients and patients on the transplant list is shown in **Table 6.10**.

Table 6.10 Demographic characteristics of deceased pancreas donors and transplant recipients, 1 April 2013 - 31 March 2014, and transplant list patients at 31 March

	Donors		Transplant recipients		Active transplant list patients	
	N	(%)	N	(%)	N	(%)
Age group (years)						
0 - 17	40	(9)	0	(0)	-	-
18 - 34	137	(30)	49	(20)	48	(18)
35 - 49	161	(35)	133	(54)	150	(56)
50 - 59	104	(23)	57	(23)	59	(22)
60 - 69	14	(3)	7	(3)	12	(4)
70+	0	(0)	0	(0)	1	(0)
mean (SD)	38	(14)	43	(9)	44	(9)
Sex						
Male	252	(55)	135	(55)	130	(48)
Female	204	(45)	111	(45)	140	(52)
Ethnicity						
White	428	(94)	220	(89)	243	(90)
Asian	13	(3)	12	(5)	14	(5)
Black	5	(1)	9	(4)	6	(2)
Chinese	2	(0)	0	(0)	0	(0)
Other	8	(2)	3	(1)	1	(0)
Not reported			2	(1)	6	(2)
Blood group						
O	222	(49)	114	(46)	158	(59)
A	177	(39)	94	(38)	81	(30)
B	47	(10)	26	(11)	20	(7)
AB	10	(2)	12	(5)	11	(4)
Graft number						
First graft			220	(89)	235	(87)
Re-graft			26	(11)	35	(13)
TOTAL	**456**	**(100)**	**246**	**(100)**	**270**	**(100)**

Cardiothoracic Activity

Key messages

- **At 31 March 2014, there were 246 patients on the active heart transplant list, 272 on the lung list and 15 on the heart/lung list**
- **Of the 780 organ donors after brain death, 303 (39%) were cardiothoracic organ donors**
- **The number of heart transplants from deceased donors increased by 37% to 198 this year; three quarters of these were urgent heart transplants**
- **The number of lung or heart/lung transplants from deceased donors increased by 14% to 218**

7.1 Overview

Last year the number of heart transplants rose by 37% to 198 and the number of lung or heart/lung transplants increased by 14% to 218. There were increases in both the heart and the lung transplant lists since March 2013. The number of patients registered on the active heart transplant list at year end has increased by 132% since 2005, while the number of patients registered for a lung or heart/lung transplant has decreased by 7% since 2005.

A summary of the deceased donor cardiothoracic activity from 1 April 2004 to 31 March 2014 is shown in **Figure 7.1** for heart activity and **Figure 7.2** 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 7.2**.

Figure 7.1 Deceased donor heart programme in the UK, 1 April 2004 - 31 March 2014, Number of donors, transplants and patients on the active transplant list at 31 March

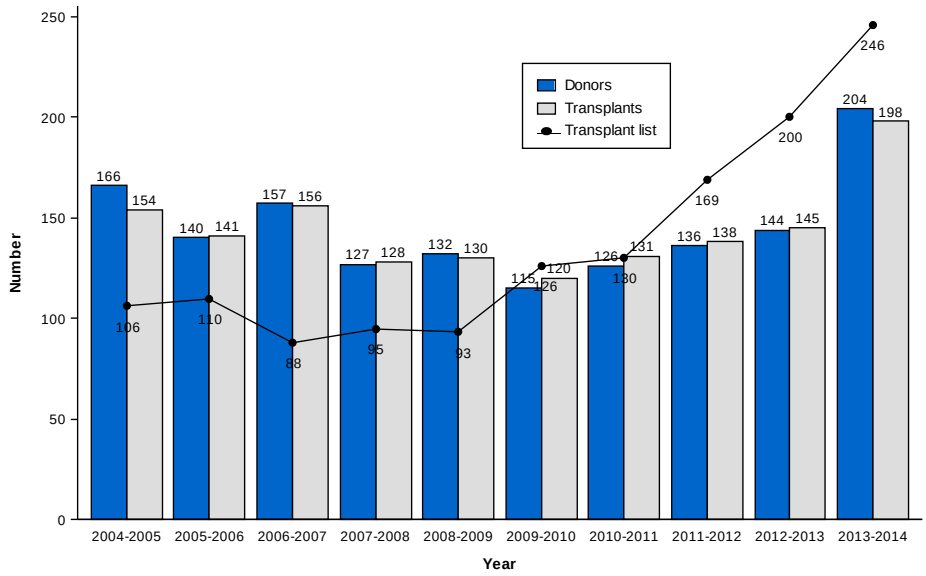
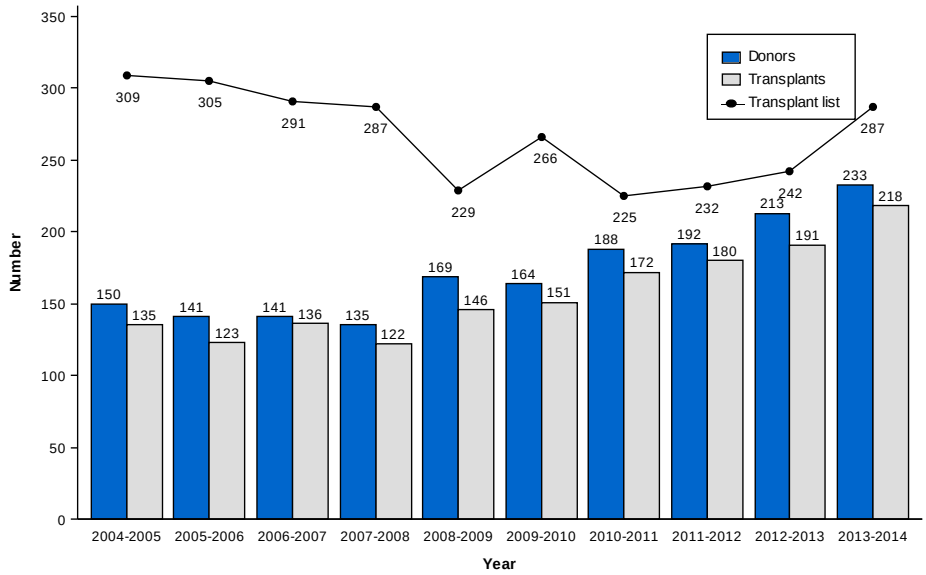


Figure 7.2 Deceased donor lung and heart/lung programme in the UK, 1 April 2004 - 31 March 2014, Number of donors, transplants and patients on the active transplant list at 31 March



7.2 Transplant list

Table 7.1 shows the number of patients on the active transplant lists at 31 March 2014 by centre. The lung transplant list accounts for 51% of the patients waiting for a cardiothoracic transplant. Overall, Newcastle and Harefield have the largest cardiothoracic lists.

During 2013-2014, 334 patients joined the heart transplant list while 12 joined the heart/lung list and 321 joined the lung transplant list. Outcomes for patients on the list at 1 April 2013 and those joining the list during the year are shown in **Table 7.2**.

Table 7.3 shows the transplant list rate per million population by country/Strategic Health Authority of patient's residence. The overall heart transplant list rate at 31 March 2014 was 4.1 pmp and ranged from 2.2 to 9.2 across the Strategic Health Authorities. The overall lung transplant list rate was 4.5 pmp and ranged from 2.5 to 6.2 across the Strategic Health Authorities.

An indication of longer term outcomes for adult patients listed for a cardiothoracic organ transplant is summarised in **Figure 7.3** and **Figure 7.4**. 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, 31% of non-urgent heart patients are transplanted while 5% have died while waiting. For patients listed for a lung transplant, 39% are transplanted within six months, rising to 68% after three years. The patients removed from these lists may also subsequently have died.

Table 7.1 Patients on the cardiothoracic transplant lists at 31 March 2014 (2013) in the UK, by centre

	Active transplant lists									
Centre	Heart				Heart/lung		Lung		**TOTAL**	
	Non-urgent		Urgent							
Adult										
Birmingham	18	(17)	0	(2)	1	(0)	28	(20)	**47**	**(39)**
Glasgow	12	(6)	1	(2)	0	(0)	0	(0)	**13**	**(8)**
Great Ormond Street	1	(2)	0	(0)	0	(0)	3	(2)	**4**	**(4)**
Harefield	65	(51)	4	(2)	2	(2)	81	(68)	**152**	**(123)**
Manchester	15	(13)	1	(2)	3	(0)	50	(39)	**69**	**(54)**
Newcastle	47	(37)	4	(4)	2	(2)	71	(55)	**124**	**(98)**
Papworth	45	(44)	3	(4)	4	(10)	30	(29)	**82**	**(87)**
TOTAL	**203**	**(170)**	**13**	**(16)**	**12**	**(14)**	**263**	**(213)**	**491**	**(413)**
Paediatric										
Great Ormond Street	19	(7)	3	(3)	3	(2)	9	(11)	**34**	**(23)**
Newcastle	1	(2)	7	(2)	0	(0)	0	(2)	**8**	**(6)**
TOTAL	**20**	**(9)**	**10**	**(5)**	**3**	**(2)**	**9**	**(13)**	**42**	**(29)**

Table 7.2 Cardiothoracic transplant lists and new registrations in the UK, 1 April 2013 - 31 March 2014

Outcome of patient at 31 March 2014	Active and suspended patients at 1 April 2013		New registrations in 2013-2014[1]		TOTAL	
	N	%	N	%	**N**	**%**
Heart transplant list						
Remained active/suspended	113	55	142	43	**255**	**47**
Transplanted	56	27	139	42	**195**	**36**
Removed	26	13	30	9	**56**	**10**
Died	12	6	23	7	**35**	**6**
TOTAL	**207**		**334**		**541**	
Heart/lung transplant list						
Remained active/suspended	7	47	8	67	**15**	**56**
Transplanted[2]	5	33	3	25	**8**	**30**
Removed	0	-	0	-	**0**	**-**
Died	3	20	1	8	**4**	**15**
TOTAL	**15**		**12**		**27**	
Lung transplant list						
Remained active/suspended	85	38	175	55	**260**	**48**
Transplanted	88	39	115	36	**203**	**37**
Removed	21	9	4	1	**25**	**5**
Died	29	13	27	8	**56**	**10**
TOTAL	**223**		**321**		**544**	

[1] Includes re-registrations for second or subsequent transplants
[2] Heart, lung or heart/lung

Table 7.3 Active cardiothoracic transplant list at 31 March, by country/ Strategic Health Authority of patient residence

Country/ Strategic Health Authority of residence	Heart transplant list (pmp)				Lung transplant list (pmp)			
	2014		2013		2014		2013	
North East	24	(9.2)	19	(7.3)	13	(5.0)	5	(1.9)
North West	23	(3.2)	19	(2.7)	41	(5.8)	36	(5.1)
Yorkshire and The Humber	17	(3.2)	17	(3.2)	33	(6.2)	19	(3.6)
North of England	**64**	**(4.3)**	**55**	**(3.7)**	**87**	**(5.8)**	**60**	**(4.0)**
East Midlands	10	(2.2)	15	(3.3)	17	(3.7)	17	(3.7)
West Midlands	21	(3.7)	19	(3.4)	26	(4.6)	22	(3.9)
East of England	28	(4.7)	27	(4.6)	29	(4.9)	24	(4.1)
Midlands and East	**59**	**(3.7)**	**61**	**(3.8)**	**72**	**(4.5)**	**63**	**(3.9)**
London	**35**	**(4.2)**	**28**	**(3.4)**	**21**	**(2.5)**	**20**	**(2.4)**
South East Coast	26	(5.8)	17	(3.8)	18	(4.0)	13	(2.9)
South Central	20	(4.8)	12	(2.9)	15	(3.6)	20	(4.8)
South West	19	(3.6)	20	(3.7)	26	(4.9)	16	(3.0)
South of England	**65**	**(4.6)**	**49**	**(3.5)**	**59**	**(4.2)**	**49**	**(3.5)**
England	**223**	**(4.2)**	**193**	**(3.6)**	**239**	**(4.5)**	**192**	**(3.6)**
Isle of Man	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**
Channel Islands	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**	**2**	**(12.5)**
Wales	**7**	**(2.3)**	**6**	**(2.0)**	**16**	**(5.2)**	**15**	**(4.9)**
Scotland	**19**	**(3.6)**	**9**	**(1.7)**	**19**	**(3.6)**	**17**	**(3.2)**
Northern Ireland	**8**	**(4.4)**	**4**	**(2.2)**	**9**	**(4.9)**	**3**	**(1.6)**
TOTAL[1,2]	**261**	**(4.1)**	**216**	**(3.4)**	**287**	**(4.5)**	**242**	**(3.8)**

[1] Includes heart patients in 2014 (2013) resident in: Republic of Ireland 4(3); Overseas 0(1)
[2] Includes lung patients in 2014 (2013) resident in: Republic of Ireland 4(13)

Figure 7.3 **Post-registration outcome for 87 new non-urgent heart only registrations made in the UK, 1 April 2010 - 31 March 2011**

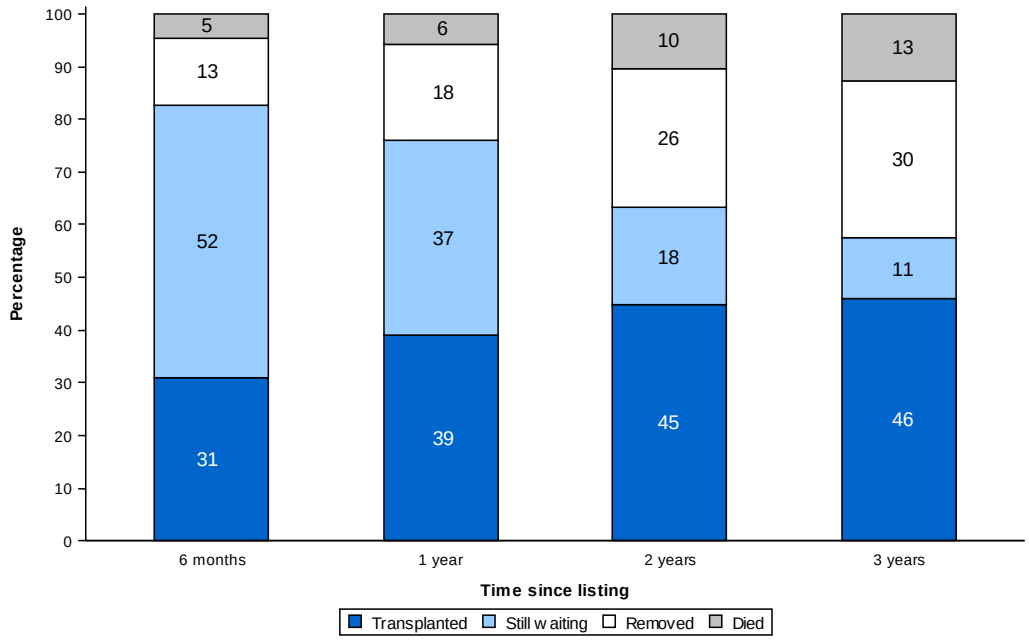


Figure 7.4 **Post-registration outcome for 222 new lung only registrations made in the UK, 1 April 2010 - 31 March 2011**

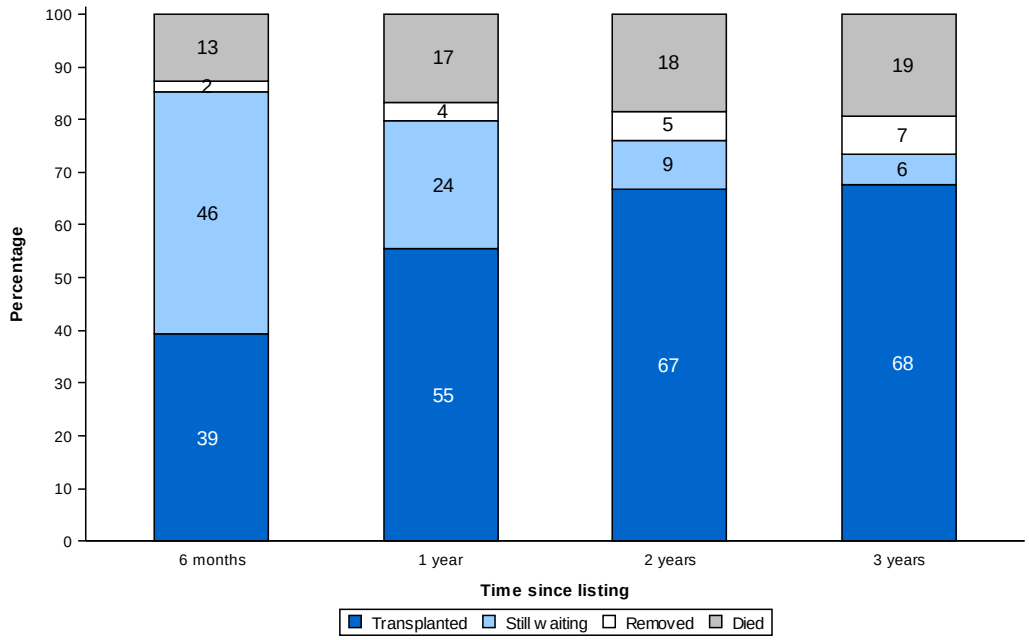


Table 7.4 and **Table 7.5** show the median waiting time to cardiothoracic transplant by blood group and ethnicity, respectively, for patients registered between April 2009 and March 2012. Median waiting time for adult non-urgent heart patients is 441 days overall, compared with 265 days for adult lung patients. The median waiting time for paediatric non-urgent heart patients is 214 days; this is not broken down by blood group or ethnicity due to low numbers. Paediatric recipients are aged less than 16 years at time of listing. Note that these waiting times are not adjusted for other relevant factors which may be influential and which may differ across blood or ethnic groups.

Table 7.4 Median waiting time to cardiothoracic transplant in the UK, for patients registered 1 April 2009 - 31 March 2012

Blood group	Number of patients registered	Waiting time (days) Median	95% Confidence interval
Adult non-urgent heart			
O[1]	106	1187	-
A	107	179	73 - 285
B	29	293	125 - 461
AB	16	193	0 - 393
TOTAL	**258**	**441**	**268 - 614**
Paediatric non-urgent heart	**37**	**214**	**0 - 494**
Adult lung			
O	332	425	343 - 507
A	272	155	116 - 194
B	64	264	97 - 431
AB	22	112	24 - 200
TOTAL	**690**	**265**	**232 - 298**

[1] Unable to estimate 95% confidence interval

Table 7.5 Median waiting time to cardiothoracic transplant in the UK, for patients registered 1 April 2009 - 31 March 2012

Ethnicity	Number of patients registered	Waiting time (days) Median	95% Confidence interval
Adult non-urgent heart			
White	226	395	265 - 525
Asian[1]	14	512	-
Black[1]	11	119	-
Other[2]	7	-	-
TOTAL	**258**	**441**	**268 - 614**
Paediatric non-urgent heart	**37**	**214**	**0 - 494**
Adult lung			
White	655	258	227 - 289
Asian	18	299	115 - 483
Black[2]	9	-	-
Other[2]	8	-	-
TOTAL	**690**	**265**	**232 - 298**

[1] Unable to estimate 95% confidence interval
[2] Median waiting time not reported for fewer than 10 patients

Table 7.6 Cardiothoracic organ donors in the UK, 1 April 2013 - 31 March 2014 (2012-2013), by age group and allocation zone

Allocation zone	Type of cardiothoracic donor									
	Heart only		Heart & lung		Lung(s) only				**TOTAL**	
					DBD		DCD			
Adult										
Birmingham	13	(17)	10	(8)	16	(15)	6	(7)	45	(47)
Glasgow	8	(9)	8	(2)	14	(13)	4	(4)	34	(28)
Harefield	22	(10)	23	(11)	23	(21)	10	(5)	78	(47)
Manchester	14	(9)	9	(4)	14	(16)	2	(5)	39	(34)
Newcastle	16	(12)	17	(11)	15	(29)	10	(8)	58	(60)
Papworth	26	(20)	23	(18)	18	(23)	5	(8)	72	(69)
TOTAL	**99**	**(77)**	**90**	**(54)**	**100**	**(117)**	**37**	**(37)**	**326**	**(285)**
Paediatric										
Birmingham	1	(4)	0	(0)	0	(0)	0	(1)	1	(5)
Glasgow	0	(0)	0	(1)	0	(0)	0	(0)	0	(1)
Harefield	0	(3)	0	(0)	0	(0)	1	(0)	1	(3)
Manchester	1	(1)	0	(0)	0	(0)	0	(0)	1	(1)
Newcastle	1	(0)	4	(3)	0	(0)	1	(0)	6	(3)
Papworth	8	(1)	0	(0)	0	(0)	0	(0)	8	(1)
TOTAL	**11**[1]	**(9)**	**4**	**(4)**	**0**	**(0)**	**2**	**(1)**	**17**	**(14)**

[1] Includes one donor after circulatory death
Paediatric donors are aged 15 years or under

7.3 Donor and organ supply

The number of cardiothoracic organ donors classified by allocation zone of the donor hospital is summarised in **Table 7.6**. The numbers reflect the number of organs retrieved from within each zone (by any retrieval team) rather than the number of retrievals made by that centre. 37 of the 137 adult lung only donors were donors after circulatory death and there were no living donors. There were no domino heart donors. Of the 289 adult cardiothoracic donors after brain death, 34% donated only the heart, 31% heart and lung and 35% lung only. Of the 14 paediatric cardiothoracic donors after brain death, 71% donated only the heart and 29% donated heart and lung.

Table 7.7 shows the number of organ donors after brain death identified in each allocation zone, the number that donated cardiothoracic organs and the number of organs retrieved.

Of the 780 organ donors after brain death, 39% donated cardiothoracic organs. Overall, 94% of the 577 organs retrieved were transplanted: 97% of hearts and 93% of lungs.

Table 7.7 Cardiothoracic organ donation and retrieval rates from donors after brain death in the UK, 1 April 2013 - 31 March 2014, by donation zone

Allocation zone	Number of donors		Number of organs retrieved (used)				TOTAL retrieved (used)	
	DBD solid organ	Cardiothoracic	Hearts		Lungs			
Birmingham	114	40	24	(23)	49	(43)	**73**	**(66)**
Glasgow	62	30	16	(16)	43	(36)	**59**	**(52)**
Harefield	171	68	45	(43)	90	(88)	**135**	**(131)**
Manchester	107	38	24	(23)	44	(42)	**68**	**(65)**
Newcastle[1]	118	53	38	(37)	69	(67)	**107**	**(104)**
Papworth	208	74	56	(54)	79	(71)	**135**	**(125)**
TOTAL	**780**	**303**	**203**	**(196)**	**374**	**(347)**	**577**	**(543)**

[1] Newcastle transplant adult and paediatric patients

The rates per million population for cardiothoracic donors are shown in **Table 7.8** by donor country/Strategic Health Authority of residence. No adjustments have been made for potential demographic differences in populations. The overall cardiothoracic donor rate was 5.4 pmp in 2013-2014 and varied across the Strategic Health Authorities from 3.9 pmp to 9.6 pmp, while the rate in Northern Ireland was 12.1 pmp.

Table 7.8 Cardiothoracic donation and retrieval rates for deceased donors in the UK, 1 April 2013 - 31 March 2014, by country/ Strategic Health Authority of residence

Country/ Strategic Health Authority	Heart (pmp)		Lungs (pmp) DBD		Lungs (pmp) DCD		Total (pmp)	
North East	15	(5.8)	9	(3.5)	6	(2.3)	25	(9.6)
North West	16	(2.3)	17	(2.4)	2	(0.3)	28	(4.0)
Yorkshire and The Humber	10	(1.9)	15	(2.8)	5	(0.9)	24	(4.5)
North of England	**41**	**(2.7)**	**41**	**(2.7)**	**13**	**(0.9)**	**77**	**(5.1)**
East Midlands	12	(2.6)	11	(2.4)	2	(0.4)	18	(3.9)
West Midlands	15	(2.7)	16	(2.8)	3	(0.5)	29	(5.1)
East of England	18	(3.0)	13	(2.2)	4	(0.7)	28	(4.7)
Midlands and East	**45**	**(2.8)**	**40**	**(2.5)**	**9**	**(0.6)**	**75**	**(4.7)**
London	**29**	**(3.5)**	**16**	**(1.9)**	**0**	**(0.0)**	**35**	**(4.2)**
South East Coast	16	(3.5)	17	(3.8)	**0**	**(0.0)**	26	(5.8)
South Central	15	(3.6)	19	(4.5)	7	(1.7)	30	(7.1)
South West	20	(3.7)	15	(2.8)	2	(0.4)	29	(5.4)
South of England	**51**	**(3.6)**	**51**	**(3.6)**	**9**	**(0.6)**	**85**	**(6.0)**
England	**166**	**(3.1)**	**148**	**(2.8)**	**31**	**(0.6)**	**272**	**(5.1)**
Isle of Man	**2**	**(25.0)**	**0**	**(0.0)**	**0**	**(0.0)**	**2**	**(25.0)**
Channel Islands	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**
Wales	**4**	**(1.3)**	**8**	**(2.6)**	**3**	**(1.0)**	**11**	**(3.6)**
Scotland	**18**	**(3.4)**	**23**	**(4.3)**	**4**	**(0.8)**	**36**	**(6.8)**
Northern Ireland	**14**	**(7.7)**	**15**	**(8.2)**	**1**	**(0.5)**	**22**	**(12.1)**
TOTAL[1]	**204**[2]	**(3.2)**	**194**	**(3.0)**	**39**	**(0.6)**	**343**	**(5.4)**

[1] Includes 8 donors where the hospital postcode was used in place of an unknown donor postcode
[2] Includes 1donor after circulatory death

7.4 Transplants

The number of cardiothoracic transplants by recipient country/Strategic Health Authority of residence is shown in **Table 7.9**. No adjustments have been made for potential demographic differences in populations. The transplant rate ranged from 5.0 to 8.3 pmp across Strategic Health Authorities and overall was 6.4 pmp. Lung transplants include the small number of heart/lung transplants performed.

Table 7.9 Cardiothoracic transplant rates per million population (pmp) in the UK, 1 April 2013 - 31 March 2014, by country/ Strategic Health Authority

Country/ Strategic Health Authority	Heart (pmp)		Lungs (pmp) DBD		Lungs (pmp) DCD		Total (pmp)	
North East	10	(3.8)	6	(2.3)	1	(0.4)	17	(6.5)
North West	33	(4.7)	23	(3.2)	3	(0.4)	59	(8.3)
Yorkshire and The Humber	14	(2.6)	12	(2.3)	5	(0.9)	31	(5.8)
North of England	**57**	**(3.8)**	**41**	**(2.7)**	**9**	**(0.6)**	**107**	**(7.1)**
East Midlands	15	(3.3)	17	(3.7)	2	(0.4)	34	(7.4)
West Midlands	15	(2.7)	20	(3.5)	3	(0.5)	38	(6.7)
East of England	14	(2.4)	22	(3.7)	4	(0.7)	40	(6.8)
Midlands and East	**44**	**(2.7)**	**59**	**(3.7)**	**9**	**(0.6)**	**112**	**(6.9)**
London	**30**	**(3.6)**	**12**	**(1.4)**	**3**	**(0.4)**	**45**	**(5.4)**
South East Coast	8	(1.8)	14	(3.1)	2	(0.4)	24	(5.3)
South Central	7	(1.7)	10	(2.4)	4	(1.0)	21	(5.0)
South West	17	(3.2)	14	(2.6)	2	(0.4)	33	(6.2)
South of England	**32**	**(2.3)**	**38**	**(2.7)**	**8**	**(0.6)**	**78**	**(5.5)**
England	**163**	**(3.0)**	**150**	**(2.8)**	**29**	**(0.5)**	**342**	**(6.4)**
Isle of Man	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**
Channel Islands	**0**	**(0.0)**	**1**	**(6.3)**	**0**	**(0.0)**	**1**	**(6.3)**
Wales	**4**	**(1.3)**	**12**	**(3.9)**	**2**	**(0.7)**	**18**	**(5.9)**
Scotland	**21**	**(4.0)**	**16**	**(3.0)**	**4**	**(0.8)**	**41**	**(7.7)**
Northern Ireland	**5**	**(2.7)**	**3**	**(1.6)**	**0**	**(0.0)**	**8**	**(4.4)**
TOTAL[1,2]	**193[3]**	**(3.0)**	**182**	**(2.8)**	**35**	**(0.5)**	**410**	**(6.4)**

[1] Excludes 5 recipients who reside in the Republic of Ireland
[2] Excludes 1 recipient whose postcode was unknown
[3] Includes 1 transplant from a donor after circulatory death.

Table 7.10 shows cardiothoracic transplant activity for each centre. In 2013-2014, a total of 416 transplants were carried out, an increase of 24% on 2012-2013. Of these, 48% were deceased donor heart transplants. The 204 adult lung transplants include 33 (16%) from donors after circulatory death: 12 were performed by Harefield, 11 by Newcastle, 4 by Papworth, 3 by Manchester and 3 by Birmingham.

Table 7.10 Cardiothoracic transplants, 1 April 2013 - 31 March 2014 (2012-2013), by age group and centre

Transplant centre	Transplant type										TOTAL	
	Heart				Heart/ lung		Lung(s)					
	Non-urgent		Urgent				DBD		DCD			
Adult												
Birmingham	3	(8)	17	(12)	1	(0)	18	(15)	3	(1)	42	(36)
Glasgow	5	(4)	14	(5)	0	(0)	0	(0)	0	(0)	19	(9)
Great Ormond Street	1	(0)	2	(1)	0	(0)	1	(1)	0	(0)	4	(2)
Harefield	3	(7)	23	(14)	0	(0)	50	(34)	12	(14)	88	(69)
Manchester	5	(8)	26	(14)	0	(0)	28	(24)	3	(2)	62	(48)
Newcastle	8	(2)	20	(20)	1	(1)	45	(46)	11	(12)	85	(81)
Papworth	17	(11)	27	(15)	5	(2)	29	(31)	4	(5)	82	(64)
TOTAL	**42**	**(40)**	**129**	**(81)**	**7**	**(3)**	**171**	**(151)**	**33**	**(34)**	**382**	**(309)**
Paediatric												
Glasgow	0	(0)	0	(1)	0	(0)	0	(0)	0	(0)	0	(1)
Great Ormond Street	2	(1)	13	(8)	0	(0)	3	(2)	2	(0)	20	(11)
Newcastle	2	(1)	10[1]	(13)	1	(0)	1	(1)	0	(0)	14	(15)
TOTAL	**4**	**(2)**	**23[1]**	**(22)**	**1**	**(0)**	**4**	**(3)**	**2**	**(0)**	**34**	**(27)**

[1] Includes one transplant from a donor after circulatory death
Paediatric recipients are aged under 16 years at time of transplant

There were 152 adult urgent heart transplants in 2013-2014, representing 77% of all adult heart transplants (71% in 2012-2013). There were 23 paediatric urgent heart transplants in 2013-2014, representing 85% of all paediatric heart transplants (92% in 2012-2013). A small number of hearts and lungs were imported from outside the UK for transplantation in the UK: 7 hearts from the Republic of Ireland (ROI) and 4 from elsewhere (1 into a non-UK resident recipient), 1 lung from ROI and 1 from elsewhere. Further information is provided in the Appendix.

The length of time that elapses between cardiothoracic organs being removed from the donor to its transplantation into the recipient is called the Cold Ischaemia Time (CIT). Generally, the shorter this time, the more likely the organ is to work immediately and the better the long-term outcome. In 2013/2014 the median CIT for a heart transplant was 3.2 hours (Inter-Quartile (IQ) range 2.6-3.9). The median CIT for DBD donor lung transplant was 5.0 hours (IQ range 4.2-6.3) and for a DCD donor lung transplant was 5.4 hours (IQ range 4.6-7.0) and overall was 5.1 hours (IQ range 4.2-6.3).

At 31 March 2014 there were approximately 3,600 recipients with a functioning cardiothoracic organ transplant being followed-up as reported to the UK Transplant Registry.

7.5 Demographic characteristics

The age group, sex, ethnicity and blood group of deceased donors, transplant recipients and patients on the transplant list is shown in **Table 7.11**.

Table 7.11 Demographic characteristics of deceased cardiothoracic donors and transplant recipients 1 April 2013 - 31 March 2014, and transplant list patients at 31 March in the UK

Age group (years)	Donors		Transplant recipients		Active transplant list patients	
	N	(%)	N	(%)	N	(%)
Age group (years)						
0 - 17	25	(7)	43	(10)	48	(9)
18 - 34	92	(27)	83	(20)	94	(18)
35 - 49	116	(34)	99	(24)	137	(26)
50 - 59	83	(24)	113	(27)	156	(29)
60 - 69	26	(8)	78	(19)	97	(18)
70+	1	(0)	0	(0)	1	(0)
mean (SD)	41	(15)	43	(18)	44	(17)
Sex						
Male	182	(53)	265	(64)	310	(58)
Female	161	(47)	151	(36)	223	(42)
Ethnicity						
White	320	(93)	377	(91)	473	(89)
Asian	8	(2)	19	(5)	28	(5)
Black	6	(2)	7	(2)	15	(3)
Chinese	2	(1)	1	(0)	2	(0)
Other	6	(2)	5	(1)	7	(1)
Not reported	1	(0)	7	(2)	8	(2)
Blood group						
O	154	(45)	147	(35)	319	(60)
A	151	(44)	206	(50)	154	(29)
B	36	(10)	47	(11)	53	(10)
AB	2	(1)	16	(4)	7	(1)
Graft number						
First graft			409	(98)	525	(98)
Re-graft			7	(2)	8	(2)
TOTAL	**343**	**(100)**	**416**	**(100)**	**533**	**(100)**

Liver Activity

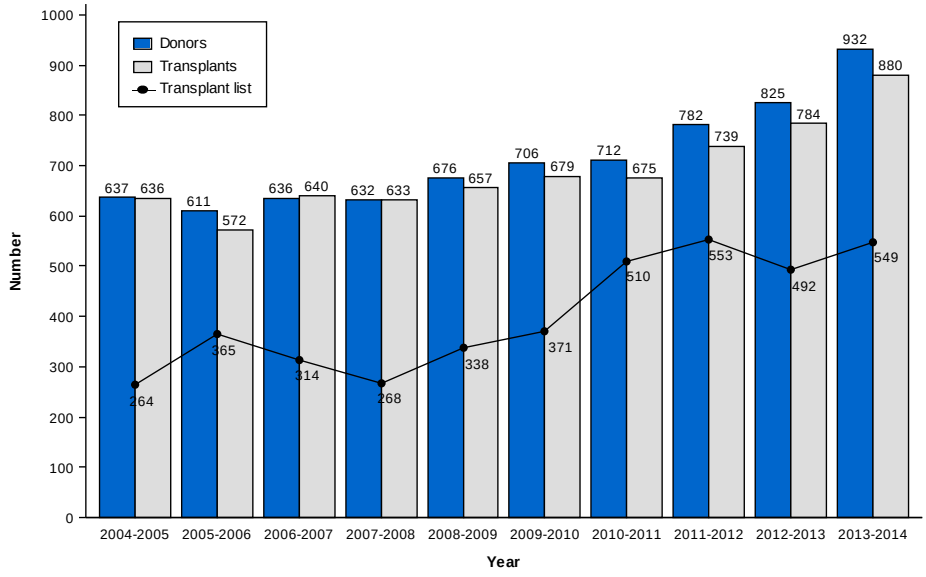
Key messages

- **The number of patients on the active liver transplant list at 31 March 2014 was 549, an increase of 12% from 2013**
- **The number of liver donors after brain death increased by 11% to 712, while transplants from donors after brain death increased by 12% to 727**
- **The number of liver donors after circulatory death increased by 19% to 220, while transplants from donors after circulatory death increased by 13% to 153**

8.1 Overview

The number of deceased liver donors and transplants in the UK in the last ten years is shown in **Figure 8.1**. Over this period, there has been a steady increase in the number of patients registered on the active transplant list at 31 March and a recent increase in the numbers of donors and transplants.

Figure 8.1 **Deceased donor liver programme in the UK, 1 April 2004 - 31 March 2014, Number of donors, transplants and patients on the active transplant list at 31 March**



Intestinal transplants that used a liver are not included in the liver activity reported. However, any livers retrieved and used for such transplants are included in the liver donor activity. Liver only transplants in intestinal failure patients are included in the liver transplant activity. Intestinal transplant activity is reported in the Chapter 9.

The number of deceased donors, deceased and living donor transplants, and patients on the active transplant list, by centre, is shown in **Table 8.1**. The numbers of liver donors reflect the number of organs retrieved from within each zone (by any retrieval team) rather than the number of retrievals made by that centre. In 2013-2014, 932 organ donors donated their liver for transplant: 712 donors after brain death and 220 donors after circulatory death. There were 549 patients on the active transplant list at 31 March 2014, an increase of 12% from 2013.

Overall, the number of liver transplants (either whole liver or liver lobe transplants) from donors after brain death increased by 12% to 727, and from donors after circulatory death increased by 13% to 153, compared with the previous financial year. Additionally, there were 28 living liver lobe donor transplants in NHS Group 1 (24) and Group 2 (4) paediatric and adult recipients and 4 domino donor transplants in NHS Group 1 adult recipients. One of the living donors was an altruistic non-directed donor.

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. There were 105 deceased donor adult super-urgent transplants in 2013-2014, representing 13% of all adult transplants. There were 16 deceased donor paediatric super-urgent transplants in 2013-2014, representing 16% of all paediatric transplants.

Table 8.1 **Deceased and living liver donors and transplants, 1 April 2013 - 31 March 2014 (2012-2013) and transplant list patients at 31 March 2014 (2013) in the UK, by age group and centre**

Allocation zone/ transplant centre	Deceased donors[1]						Deceased donor transplants						Living donor transplants		Active transplant list	
	DBD		DCD		**TOTAL**		DBD		DCD		**TOTAL**					
Adult																
Birmingham	153	(139)	50	(53)	203	(192)	138	(124)	44	(49)	182	(173)	7	(2)	110	(76)
Cambridge	64	(87)	26	(24)	90	(111)	58	(72)	19	(13)	77	(85)	2	(0)	51	(45)
Edinburgh	92	(79)	18	(15)	110	(94)	84	(79)	11	(9)	95	(88)	0	(0)	53	(47)
King's College	152	(150)	55	(44)	207	(194)	138	(124)	36	(25)	174	(149)	5	(6)	139	(108)
Leeds	112	(79)	29	(27)	141	(106)	100	(73)	21	(22)	121	(95)	2	(1)	81	(88)
Newcastle	41	(45)	17	(5)	58	(50)	42	(40)	6	(1)	48	(41)	0	(0)	19	(22)
Royal Free	78	(45)	17	(13)	95	(58)	80	(61)	14	(13)	94	(74)	2	(2)	68	(75)
TOTAL	**692**	**(624)**	**212**	**(181)**	**904**	**(805)**	**640**	**(573)**	**151**	**(132)**	**791**	**(705)**	**18[2]**	**(11)[3]**	**521**	**(461)**
Paediatric																
Birmingham	4	(6)	1	(2)	5	(8)	29	(28)	1	(1)	30	(29)	2	(2)	13	(8)
Cambridge	2	(2)	0	(0)	2	(2)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
Edinburgh	1	(2)	0	(0)	1	(2)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
King's College	3	(3)	3	(1)	6	(4)	44	(35)	1	(3)	45	(38)	7	(14)	14	(18)
Leeds	7	(1)	1	(1)	8	(2)	12	(12)	0	(0)	12	(12)	5	(6)	1	(4)
Newcastle	0	(1)	2	(0)	2	(1)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
Royal Free	3	(1)	1	(0)	4	(1)	2	(0)	0	(0)	2	(0)	0	(0)	0	(1)
TOTAL	**20**	**(16)**	**8**	**(4)**	**28**	**(20)**	**87**	**(75)**	**2**	**(4)**	**89**	**(79)**	**14[4]**	**(22)[5]**	**28**	**(31)**

[1] Includes donors whose livers were retrieved by other teams
[2] Includes 10 and 4 living liver lobe transplants, and 4 and 0 domino transplants in NHS Group 1 and Group 2 recipients, respectively
[3] Includes 4 and 5 living liver lobe transplants, and 2 and 0 domino transplants in NHS Group 1 and Group 2 recipients, respectively
[4] Includes 13 and 0 living liver lobe transplants, 1 and 0 altruistic donor transplants in NHS Group 1 and Group 2 recipients, respectively
[5] Includes 12 and 9 living liver lobe transplants, 1 and 0 altruistic donor transplants in NHS Group 1 and Group 2 recipients, respectively

8.2 Transplant list

During 2013-2014, 1,186 patients joined the liver transplant list. Outcomes for patients on the list at 1 April 2013 and those joining the list during the year are shown in **Table 8.2**. Of the 1,186 new registrations, 152 (13%) were super-urgent.

Table 8.2 Liver transplant list and new registrations in the UK, 1 April 2013 – 31 March 2014

Outcome of patient at 31 March 2014	Active and suspended patients at 1 April 2013		New registrations in 2013-2014[1]		**TOTAL**	
	N	%	N	%	**N**	**%**
Remained active/suspended	149	30	403	34	**552**	**33**
Transplanted	243	49	669	56	**912**	**54**
Removed	79	16	55	5	**134**	**8**
Died	22	4	59	5	**81**	**5**
TOTAL	**493**		**1186**		**1679**	

[1] Includes re-registrations for second or subsequent transplants

Table 8.3 shows the transplant list rate per million population in the UK, by country/Strategic Health Authority of patient's residence. At 31 March 2014, the overall rate was 8.6 pmp and ranged from 4.8 to 9.2 pmp across the Strategic Health Authorities.

Table 8.3 Active liver transplant list at 31 March, by country/ Strategic Health Authority of patient residence

Country/ Strategic Health Authority of residence	Liver transplant list (pmp) 2014		2013	
North East	16	(6.2)	17	(6.5)
North West	59	(8.3)	63	(8.9)
Yorkshire and The Humber	41	(7.7)	44	(8.3)
North of England	**116**	**(7.7)**	**124**	**(8.3)**
East Midlands	32	(7.0)	24	(5.3)
West Midlands	52	(9.2)	29	(5.1)
East of England	48	(8.1)	44	(7.4)
Midlands and East	**132**	**(8.2)**	**97**	**(6.0)**
London	**76**	**(9.1)**	**68**	**(8.2)**
South East Coast	41	(9.1)	35	(7.8)
South Central	20	(4.8)	28	(6.7)
South West	48	(9.0)	38	(7.1)
South of England	**109**	**(7.8)**	**101**	**(7.2)**
England	**433**	**(8.1)**	**390**	**(7.3)**
Isle of Man	**1**	**(12.5)**	**0**	**(0.0)**
Channel Islands	**0**	**(0.0)**	**0**	**(0.0)**
Wales	**16**	**(5.2)**	**11**	**(3.6)**
Scotland	**56**	**(10.5)**	**48**	**(9.0)**
Northern Ireland	**21**	**(11.5)**	**21**	**(11.5)**
TOTAL[1]	**549**	**(8.6)**	**492**	**(7.7)**

[1]Includes patients in 2014 (2013) resident in: Republic of Ireland - 5 (2); Overseas - 17 (20)

An indication of longer term outcomes for patients listed for a liver transplant is summarised in **Figure 8.2**. 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 and those dying while on the transplant list (which includes those patients removed due to condition deteriorated). At one year post-registration, 65% of patients had received a liver transplant while 12% of patients had died whilst waiting or had been removed due to their condition deteriorating. 6% had been removed for other reasons such as the patient's condition improving, as a result of non-compliance or at the request of the patient or family.

Figure 8.2 **Post-registration outcome for 940 new elective liver only registrations made in the UK, 1 April 2011 - 31 March 2012**

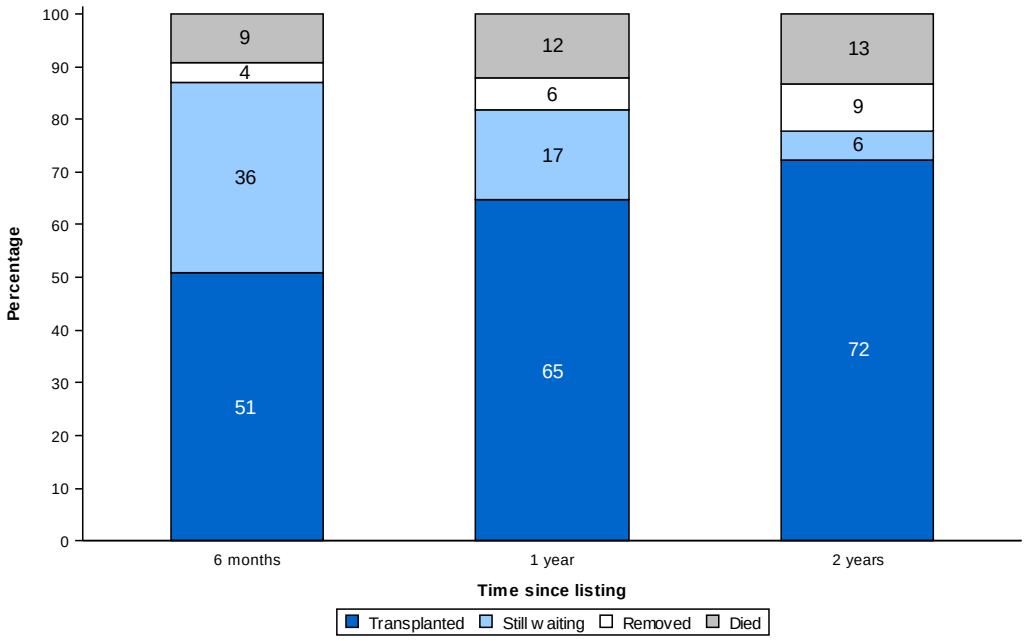


Table 8.4 and **Table 8.5** show the median waiting time to liver transplant for adult and paediatric elective registrations, separately, including a breakdown by blood group and ethnicity for adult elective registrations only. On average, adult patients wait 145 days for a transplant while paediatric patients wait an average of 72 days. Note that these waiting times are not adjusted for other relevant factors which may be influential and which may differ across blood or ethnic groups.

Table 8.4 **Median waiting time to liver transplant in the UK, for patients registered 1 April 2009 - 31 March 2012**

Blood group	Number of patients registered	Waiting time (days) Median	95% Confidence interval
Adult			
O	1093	228	201 - 255
A	901	86	76 - 96
B	296	226	178 - 274
AB	101	60	38 - 82
TOTAL	**2391**	**145**	**134 - 156**
Paediatric	**208**	**72**	**53 - 91**

Table 8.5 Median waiting time to liver transplant in the UK, for patients registered 1 April 2009 - 31 March 2012

Ethnicity	Number of patients registered	Waiting time (days)	
		Median	95% Confidence interval
Adult			
White	2084	143	131 - 155
Asian	182	157	123 - 191
Black	56	214	82 - 346
Other	67	185	111 - 259
TOTAL	**2391**	**145**	**134 - 156**
Paediatric	**208**	**72**	**53 - 91**

8.3 Donor and organ supply

Of the 1,320 organ donors, 932 (71%) donated their liver and 830 (89%) of these donated livers were used; see **Table 8.6**. Of livers retrieved from donors after brain death and donors after circulatory death, 95% and 70% were used, respectively. One liver can be used in more than one transplant, see **Table 8.9**.

Table 8.6 Deceased liver donation and retrieval in the UK, 1 April 2013 - 31 March 2014, by allocation zone

Allocation zone	**Number of donors**						**Number of livers retrieved (used)**					
	Solid organ			Liver								
	DBD	DCD	**TOTAL**	DBD	DCD	**TOTAL**	DBD		DCD		**TOTAL**	
Birmingham	170	125	**295**	157	51	**208**	157	(147)	51	(42)	**208**	**(189)**
Cambridge	69	65	**134**	66	26	**92**	66	(61)	26	(18)	**92**	**(79)**
Edinburgh	104	60	**164**	93	18	**111**	93	(93)	18	(14)	**111**	**(107)**
King's College	166	117	**283**	155	58	**213**	155	(145)	58	(32)	**213**	**(177)**
Leeds	128	92	**220**	119	30	**149**	119	(114)	30	(27)	**149**	**(141)**
Newcastle	47	39	**86**	41	19	**60**	41	(40)	19	(12)	**60**	**(52)**
Royal Free	96	42	**138**	81	18	**99**	81	(77)	18	(8)	**99**	**(85)**
TOTAL	**780**	**540**	**1320**	**712**	**220**	**932**	**712**	**(677)**	**220**	**(153)**	**932**	**(830)**

The rates per million population (pmp) for liver donors are shown in **Table 8.7** by donor country/Strategic Health Authority of residence. No adjustments have been made for potential demographic differences in populations. The overall deceased liver donor rate was 14.6 pmp in 2013-2014 and varied across the Strategic Health Authorities from 10.5 pmp to 23.1 pmp.

Table 8.7 Liver donor rates in the UK, 1 April 2013 - 31 March 2014, by country/ Strategic Health Authority of residence

Country/ Strategic Health Authority	Deceased donors (pmp)					
	DBD		DCD		**Total**	
North East	42	(16.2)	18	(6.9)	**60**	**(23.1)**
North West	72	(10.2)	15	(2.1)	**87**	**(12.3)**
Yorkshire and The Humber	46	(8.6)	10	(1.9)	**56**	**(10.5)**
North of England	**160**	**(10.7)**	**43**	**(2.9)**	**203**	**(13.5)**
East Midlands	49	(10.7)	23	(5.0)	**72**	**(15.8)**
West Midlands	55	(9.8)	17	(3.0)	**72**	**(12.8)**
East of England	61	(10.3)	23	(3.9)	**84**	**(14.2)**
Midlands and East	**165**	**(10.2)**	**63**	**(3.9)**	**228**	**(14.1)**
London	**89**	**(10.7)**	**24**	**(2.9)**	**113**	**(13.6)**
South East Coast	61	(13.5)	18	(4.0)	**79**	**(17.5)**
South Central	55	(13.1)	19	(4.5)	**74**	**(17.6)**
South West	60	(11.2)	25	(4.7)	**85**	**(15.9)**
South of England	**176**	**(12.5)**	**62**	**(4.4)**	**238**	**(16.9)**
England	**590**	**(11.0)**	**192**	**(3.6)**	**782**	**(14.6)**
Isle of Man	**3**	**(37.5)**	**0**	**(0.0)**	**3**	**(37.5)**
Channel Islands	**0**	**(0.0)**	**2**	**(12.5)**	**2**	**(12.5)**
Wales	**35**	**(11.4)**	**8**	**(2.6)**	**43**	**(14.0)**
Scotland	**57**	**(10.7)**	**13**	**(2.4)**	**70**	**(13.2)**
Northern Ireland	**27**	**(14.8)**	**5**	**(2.7)**	**32**	**(17.6)**
TOTAL[1]	**712**	**(11.1)**	**220**	**(3.4)**	**932**	**(14.6)**

[1] Includes 17 donors where the hospital postcode was used in place of an unknown donor postcode

8.4 Transplants

The number of liver transplants by recipient country/Strategic Health Authority of residence are shown in **Table 8.8**. No adjustments have been made for potential demographic differences in populations. The deceased donor transplant rate ranged from 9.0 to 15.5 pmp across the Strategic Health Authorities and overall was 13.4 pmp.

Table 8.8 Liver transplant rates per million population (pmp) in the UK, 1 April 2013 - 31 March 2014, by country/ Strategic Health Authority

Country/ Strategic Health Authority	Deceased transplants (pmp)						Living transplants (pmp)	
	DBD		DCD		Total			
North East	30	(11.5)	5	(1.9)	**35**	**(13.5)**	2	(0.8)
North West	94	(13.3)	16	(2.3)	**110**	**(15.5)**	3	(0.4)
Yorkshire and The Humber	56	(10.5)	9	(1.7)	**65**	**(12.2)**	3	(0.6)
North of England	**180**	**(12.0)**	**30**	**(2.0)**	210	**(14.0)**	**8**	**(0.5)**
East Midlands	30	(6.6)	11	(2.4)	**41**	**(9.0)**	3	(0.7)
West Midlands	60	(10.6)	20	(3.5)	**80**	**(14.2)**	3	(0.5)
East of England	62	(10.5)	13	(2.2)	**75**	**(12.7)**	3	(0.5)
Midlands and East	**152**	**(9.4)**	**44**	**(2.7)**	196	**(12.2)**	**9**	**(0.6)**
London	**103**	**(12.4)**	**20**	**(2.4)**	123	**(14.8)**	**0**	**(0.0)**
South East Coast	39	(8.6)	14	(3.1)	**53**	**(11.8)**	3	(0.7)
South Central	42	(10.0)	8	(1.9)	**50**	**(11.9)**	2	(0.5)
South West	57	(10.7)	14	(2.6)	**71**	**(13.3)**	1	(0.2)
South of England	**138**	**(9.8)**	**36**	**(2.6)**	174	**(12.4)**	**6**	**(0.4)**
England	**573**	**(10.7)**	**130**	**(2.4)**	703	**(13.1)**	**23**	**(0.4)**
Isle of Man	**0**	**(0.0)**	**1**	**(12.5)**	**1**	**(12.5)**	**0**	**(0.0)**
Channel Islands	**3**	**(18.8)**	**1**	**(6.3)**	4	**(25.0)**	**0**	**(0.0)**
Wales	**23**	**(7.5)**	**5**	**(1.6)**	28	**(9.1)**	**1**	**(0.3)**
Scotland	**89**	**(16.8)**	**11**	**(2.1)**	100	**(18.8)**	**2**	**(0.4)**
Northern Ireland	**18**	**(9.9)**	**1**	**(0.5)**	19	**(10.4)**	**0**	**(0.0)**
TOTAL[1]	**706**	**(11.0)**	**149**	**(2.3)**	855	**(13.4)**	**26**	**(0.4)**

[1] Excludes 31 recipients who reside outside the UK (21 DBD, 4 DCD, 6 Living).

The number of whole, reduced and split liver transplants by urgency status of the transplant (elective, super-urgent) in 2013-2014 is shown in **Table 8.9**. 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 increased by 12% in 2013-2014. There were 880 deceased donor liver transplants performed in 2013-2014: 742 whole liver, including 9 liver and kidney; and 138 deceased liver lobe, including 3 liver and kidney. Split liver transplants accounted for 93% of liver lobe transplant activity.

Table 8.9 Deceased liver transplants performed in the UK, 1 April 2012 - 31 March 2014

Transplant centre	2012 - 2013 Whole liver		Reduced liver		Split liver		TOTAL		2013 - 2014 Whole liver		Reduced liver		Split liver		TOTAL	
	E	SU	E	SU	E	SU	E	SU	E	SU	E	SU	E	SU	E	SU
Birmingham	151	14	0	1	31	5	**182**	**20**	148	24	2	1	31	6	**181**	**31**
Cambridge	70	13	0	0	2	0	**72**	**13**	63	11	0	0	3	0	**66**	**11**
Edinburgh	70	12	0	0	6	0	**76**	**12**	70	14	0	0	11	0	**81**	**14**
King's College	124	16	3	4	36	4	**163**	**24**	141	22	2	3	47	4	**190**	**29**
Leeds	81	8	1	0	16	1	**98**	**9**	99	13	1	0	19	1	**119**	**14**
Newcastle	34	3	0	0	4	0	**38**	**3**	37	10	0	0	1	0	**38**	**10**
Royal Free	54	13	0	0	7	0	**61**	**13**	78	12	0	0	6	0	**84**	**12**
TOTAL	**584**	**79**	**4**	**5**	**102**	**10**	**690**	**94**	**636**	**106**	**5**	**4**	**118**	**11**	**759**	**121**

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

The length of time that elapses between a liver being removed from the donor to its transplantation into the recipient is called the Cold Ischaemia Time (CIT). Generally, the shorter this time, the more likely the liver is to work immediately and the better the long-term outcome. In 2013/2014, the median CIT for a DBD donor whole liver only transplant was 8.6 hours (Inter-Quartile (IQ) range 7.1 – 11.0) and for a DCD donor whole liver only transplant was 7.5 hours (IQ range 6.5 – 8.8) and overall was 8.3 hours (IQ range 7.0 – 10.5).

At 31 March 2014 there were approximately 8,300 recipients with a functioning liver transplant (or multi-organ including the liver) being followed-up as reported to the UK Transplant Registry.

8.5 Demographic characteristics

The age group, sex, ethnicity and blood group of liver donors, transplant recipients and transplant list patients is shown in **Table 8.10**.

Table 8.10 Demographic characteristics of deceased liver donors and transplant recipients 1 April 2013 - 31 March 2014, and transplant list patients at 31 March in the UK

	Donors		Transplant recipients		Active transplant list patients	
	N	(%)	N	(%)	N	(%)
Age group(years)						
0 - 17	47	(5)	91	(10)	30	(5)
18 - 34	166	(18)	99	(11)	50	(9)
35 - 49	230	(25)	211	(24)	118	(21)
50 - 59	197	(21)	256	(29)	190	(35)
60 - 69	180	(19)	211	(24)	151	(28)
70+	112	(12)	12	(1)	10	(2)
mean (SD)	49	(18)	46	(19)	50	(15)
Sex						
Male	500	(54)	541	(61)	325	(59)
Female	432	(46)	339	(39)	224	(41)
Ethnicity						
White	876	(94)	748	(85)	466	(85)
Asian	27	(3)	72	(8)	55	(10)
Black	13	(1)	34	(4)	19	(3)
Chinese	2	(<1)	10	(1)	3	(1)
Other	13	(1)	15	(2)	6	(1)
Not reported	1	(<1)	1	(<1)		
Blood group						
O	431	(46)	359	(41)	357	(65)
A	373	(40)	364	(41)	127	(23)
B	106	(11)	127	(14)	57	(10)
AB	22	(2)	30	(3)	8	(1)
Graft number						
First graft			782	(89)	496	(90)
Re-graft			98	(11)	53	(10)
TOTAL	**932**	**(100)**	**880**	**(100)**	**549**	**(100)**

Intestinal Activity

Key messages

- **A new Intestinal Allocation Scheme was introduced in July 2013**
- **31 patients were registered for an intestinal transplant during 2013-2014 (20 adults, 11 paediatric patients)**
- **The number of patients on the active intestinal transplant list at 31 March 2014 was 13**
- **26 intestinal transplants were carried out in 2013-2014 (15 in the previous year)**
- **On average, patients wait around 6 months for a transplant**

9.1 Overview

A new Intestinal Allocation Scheme was introduced in July 2013. Patients are prioritised according to a points system based on a range of clinical factors including donor-recipient age matching, loss of intravenous line access, liver failure, diagnosis of malignancy, in-hospital status, additional organs required, sensitisation and waiting time. A score is calculated for every potentially suitable patient on the national active transplant list and the intestine is allocated preferentially to the patient with the most points. This differs from the previous system in which donor intestines were allocated to patients purely on waiting time.

Over the last two years (between 1 April 2012 and 31 March 2014), the number of intestinal transplants has increased with 26 transplants carried out in 2013-2014 compared to 15 in 2012-2013.

During 2013-2014, there were 31 registrations for an intestinal transplant. As at 31 March 2014, 10 (32%) registrations remained active/suspended, 18 (58%) resulted in a transplant and 3 (10%) were removed from the transplant list, respectively.

9.2 Transplant list

In 2013-2014, there were 31 registrations for an intestinal transplant. The outcome of these registrations for paediatric (aged <18 years) and adult patients, as at 31 March 2014, broken down by transplant centre can be found in **Table 9.1**.

Table 9.1 Outcome of intestinal registrations in the UK, 1 April 2013 and 31 March 2014

Transplant centre	Outcome of registrations as at 31 March 2014								TOTAL
	Transplanted		Died		Removed		Active/Susp		
	N	%	N	%	N	%	N	%	
Adult									
Cambridge	12	80	0	0	3	20	0	0	15
Oxford	4	80	0	0	0	0	1	20	5
TOTAL	**16**	**80**	**0**	**0**	**3**	**15**	**1**	**5**	**20**
Paediatric									
Birmingham	2	33	0	0	0	0	4	67	6
King's College	0	0	0	0	0	0	5	100	5
TOTAL	**2**	**18**	**0**	**0**	**0**	**0**	**9**	**82**	**11**

Table 9.2 shows the intestinal transplant list rate in the UK by country/Strategic Health Authority of patient's residence. At 31 March 2014, the overall transplant list rate was 0.2 pmp and ranged from 0.1 to 0.7 pmp across the Strategic Health Authorities, although numbers are very small so these are not meaningful differences.

Table 9.2 Active intestinal transplant list at 31 March, by country/ Strategic Health Authority of patient residence

Country/ Strategic Health Authority of residence	Intestinal transplant list (pmp) 2014		2013	
North East	1	(0.4)	2	(0.8)
North West	2	(0.3)	2	(0.3)
Yorkshire and The Humber	0	(0.0)	0	(0.0)
North of England	**3**	**(0.2)**	**4**	**(0.3)**
East Midlands	1	(0.2)	3	(0.7)
West Midlands	1	(0.2)	0	(0.0)
East of England	1	(0.2)	2	(0.3)
Midlands and East	**3**	**(0.2)**	**5**	**(0.3)**
London	**1**	**(0.1)**	**2**	**(0.2)**
South East Coast	1	(0.2)	1	(0.2)
South Central	3	(0.7)	2	(0.5)
South West	0	(0.0)	0	(0.0)
South of England	**4**	**(0.3)**	**3**	**(0.2)**
England	**11**	**(0.2)**	**14**	**(0.3)**
Isle of Man	**0**	**(0.0)**	**0**	**(0.0)**
Channel Islands	**0**	**(0.0)**	**0**	**(0.0)**
Wales	**1**	**(0.3)**	**0**	**(0.0)**
Scotland	**0**	**(0.0)**	**0**	**(0.0)**
Northern Ireland	**0**	**(0.0)**	**0**	**(0.0)**
TOTAL[1]	**13**	**(0.2)**	**14**	**(0.2)**

[1]Includes patients in 2014 (2013) resident Overseas 1 (0)

Table 9.3 shows median waiting time to elective intestinal transplant by registration type. On average, patients wait 188 days for a transplant.

Table 9.3 Median waiting time to elective intestinal transplant in the UK, for patients registered 1 April 2010 - 31 March 2013

Registration type	Number of patients registered	Waiting time (days) Median	95% Confidence interval
Bowel only[1]	22	125	22 – 228
Liver, bowel and pancreas[1]	33	272	214 – 330
Bowel and pancreas[1]	15	215	4 – 426
TOTAL	**70**	**188**	**127 – 249**

[1] May also include any of; stomach, spleen, abdominal wall, kidney, colon

9.3 Donor and Organ Supply

The rates per million population (pmp) for intestinal donors are shown in **Table 9.4** by donor country/Strategic Health Authority of residence. The overall DBD intestinal donor rate was 0.4 pmp and ranged from 0.2 to 0.9 pmp across the Strategic Health Authorities. Of the 780 DBD solid organ donors, 25 (3%) donated their small bowel.

Table 9.4 Intestinal donation rates for deceased donors after brain death in the UK, 1 April 2013 - 31 March 2014, by country/Strategic Health Authority of residence

Country/ Strategic Health Authority of residence	Solid organ donors (pmp)		Intestinal donors (pmp)		% of solid organ donors	Intestine used
North East	48	(18.5)	2	(0.8)	4.2	2
North West	81	(11.4)	1	(0.1)	1.2	1
Yorkshire and The Humber	48	(9.0)	1	(0.2)	2.1	1
North of England	**177**	**(11.8)**	**4**	**(0.3)**	**2.3**	**4**
East Midlands	51	(11.2)	1	(0.2)	2.0	1
West Midlands	61	(10.8)	0	(0.0)	-	-
East of England	66	(11.2)	3	(0.5)	4.5	3
Midlands and East	**178**	**(11.0)**	**4**	**(0.2)**	**2.2**	**4**
London	**99**	**(11.9)**	**3**	**(0.4)**	**3.0**	**3**
South East Coast	66	(14.6)	4	(0.9)	6.1	4
South Central	59	(14.0)	0	(0.0)	-	-
South West	65	(12.2)	7	(1.3)	10.8	7
South of England	**190**	**(13.5)**	**11**	**(0.8)**	**5.8**	**11**
England	**644**	**(12.0)**	**22**	**(0.4)**	**3.4**	**22**
Isle of Man	**4**	**(50.0)**	**1**	**(12.5)**	**25.0**	**1**
Channel Islands	**0**	**(0.0)**	**0**	**(0.0)**	**-**	**-**
Wales	**37**	**(12.1)**	**0**	**(0.0)**	**-**	**-**
Scotland	**62**	**(11.7)**	**1**	**(0.2)**	**1.6**	**1**
Northern Ireland	**33**	**(18.1)**	**1**	**(0.5)**	**3.0**	**1**
TOTAL[1]	**780**	**(12.2)**	**25**	**(0.4)**	**3.2**	**25**

[1] Includes 14 donors where the hospital postcode was used in place of an unknown donor postcode

9.4 Transplants

Table 9.5 shows intestinal transplant activity by transplant centre and transplant type for financial years 2012-2013 and 2013-2014. In 2013-2014, there were a total of 26 transplants, 23 adult and 3 paediatric transplants.

At 31 March 2014 there were approximately 100 recipients with a functioning intestinal transplant (or multi-organ including the intestine) being followed-up as reported to the UK Transplant Registry.

Table 9.5 Intestinal transplants in the UK, by age group, centre and type, 1 April 2013 - 31 March 2014 (2012-2013)

Transplant centre	Transplant type									
	BO		LBP		MV		MMV		**TOTAL**	
Adult										
Cambridge	5	(0)	1	(1)	9	(4)	1	(1)	16	(6)
Oxford	5	(5)	0	(0)	0	(0)	2	(0)	7	(5)
TOTAL	**10**	**(5)**	**1**	**(1)**	**9**	**(4)**	**3**	**(1)**	**23**	**(11)**
Paediatric										
Birmingham	1	(1)	1	(1)	1	(0)	0	(0)	3	(2)
King's College	0	(1)	0	(1)	0	(0)	0	(0)	0	(2)
TOTAL	**1**	**(2)**	**1**	**(2)**	**1**	**(0)**	**0**	**(0)**	**3**	**(4)**

BO = Bowel only (may also include stomach/spleen/abdominal wall/kidney/colon)
LBP = Liver, bowel and pancreas
MV = Multivisceral – liver, bowel and pancreas plus stomach/spleen/abdominal wall/kidney/colon
MMV = Modified multivisceral – bowel and pancreas plus stomach/spleen/abdominal wall/kidney/colon

9.5 Demographic Characteristics

The age group, sex, ethnicity and blood group of intestinal donors, transplant recipients and transplant list patients is shown in **Table 9.6**.

Table 9.6 Demographic characteristics of deceased intestinal donors and transplant recipients 1 April 2013 - 31 March 2014, and transplant list patients at 31 March in the UK

	Donors		Transplant recipients		Active transplant list patients	
	N	(%)	N	(%)	N	(%)
Age group (years)						
0 - 17	5	(20)	3	(12)	10	(77)
18 - 34	12	(48)	3	(12)	0	(0)
35 - 49	7	(28)	10	(38)	3	(23)
50 - 59	1	(4)	6	(23)	0	(0)
60 - 69	0	(0)	4	(15)	0	(0)
70+	0	(0)	0	(0)	0	(0)
mean (SD)	29	(14)	42	(18)	13	(16)
Sex						
Male	9	(36)	11	(42)	7	(54)
Female	16	(64)	15	(58)	6	(46)
Ethnicity						
White	23	(92)	21	(81)	10	(77)
Asian	0	(0)	2	(8)	1	(8)
Black	0	(0)	3	(12)	1	(8)
Other	2	(8)	0	(0)	1	(8)
Blood group						
O	16	(64)	11	(42)	6	(46)
A	7	(28)	9	(35)	6	(46)
B	2	(8)	6	(23)	1	(8)
AB	0	(0)	0	(0)	0	(0)
Graft number						
First graft			24	(92)	11	(85)
Re-graft			2	(8)	2	(15)
TOTAL	**25**	**(100)**	**26**[1]	**(100)**	**13**	**(100)**

[1] Includes 1 overseas donor

Cornea Activity

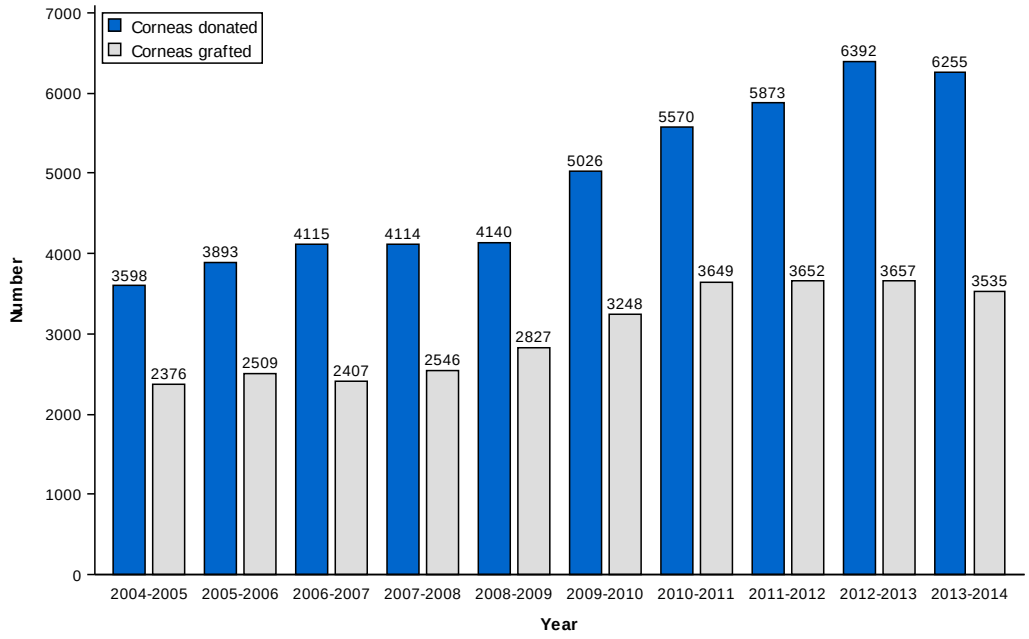
Key messages

- **5,440 corneas were supplied to the Corneal Transplant Service (CTS) eye banks**
- **The number of transplants remained stable at 3,313**
- **Corneas were retrieved from 31% of solid organ donors after brain death and 40% of solid organ donors after circulatory death**
- **12% of cornea only donors were 80 years of age or over**

10.1 Overview

The number of corneas donated in 2013-2014 was 6,255, representing a decrease of 2% on last year, as shown in **Figure 10.1**. Additionally, 213 sclera were issued and used. This increase is mainly due to the new Eye Retrieval Scheme (ERS) but also due to the fact that more corneas are being donated from organ donors. The ERS consists of 10 teams embedded in the selected NHS Trusts/Boards across the UK, that are funded by NHSBT for the purpose of promoting, procuring and retrieving ocular tissue for clinical use. **It should be noted that not all cornea donors and transplants in the UK are reported to the UK Transplant Registry and thus the data reported are not the full national data.**

Figure 10.1 Cornea programme in the UK, 1 April 2004 - 31 March 2014, Number of corneas donated and corneas grafted



In 2013-2014 there were 3,146 tissue donors, of whom 2,685 donated corneas only and 460 donated corneas and solid organs: see **Table 10.1**. Compared to 2012-2013, the number of cornea only donors decreased by 5%, and the number of cornea and solid organ donors increased by 22%. In 2013-2014, corneas were retrieved from 31% of organ donors after brain death, the same percentage as in 2012-2013. Of the 540 organ donors after cardiac death in 2013-2014, 216 (40%) also donated corneas, higher than the rate in 2012-2013 (32%).

Table 10.1 also shows the number and rate per million population (pmp) of donors in 2013-2014 by country and English Strategic Health Authority (SHA), with figures for 2012-2013 in parentheses. No adjustments have been made for potential demographic differences in populations. England had the highest cornea donor rate of the countries in the UK in 2013-2014 (52.5 pmp). In 2013-2014, the cornea donor rate increased in Northern Ireland but fell in the other countries. Across the SHAs the cornea donor rate ranged from 19.7 pmp to 106.4 pmp, reflecting locations of the Eye Retrieval Scheme Trusts.

Table 10.1 Cornea donation rates per million population, pmp, in the UK, 1 April 2013 - 31 March 2014 (2012 - 2013), by country/ Strategic Health Authority

Country/ Strategic Health Authority of residence	Cornea only		Solid organ and cornea		**TOTAL**		**TOTAL pmp**	
North East	178	(224)	30	(19)	208	(243)	80	(93.5)
North West	716	(799)	37	(31)	753	(830)	106.4	117.2)
Yorkshire and The Humber	79	(91)	26	(24)	105	(115)	19.7	(21.6)
North of England	**973**	**(1114)**	**93**	**(74)**	**1066**	**(1188)**	**71.1**	**(79.2)**
East Midlands	219	(213)	23	(18)	242	(231)	53	(50.5)
West Midlands	78	(72)	25	(35)	103	(107)	18.3	(19.0)
East of England	192	(178)	50	(46)	242	(224)	40.9	(37.9)
Midlands and East	**489**	**(463)**	**98**	**(99)**	**587**	**(562)**	**36.4**	**(34.9)**
London	**120**	**(125)**	**77**	**(56)**	**197**	**(181)**	**23.7**	**(21.8)**
South East Coast	169	(55)	24	(19)	193	(74)	42.8	(16.4)
South Central	244	(281)	33	(30)	277	(311)	65.8	(73.9)
South West	430	(502)	56	(46)	486	(548)	91	102.6)
South of England	**843**	**(838)**	**113**	**(95)**	**956**	**(933)**	**68**	**(66.4)**
England	**2425**	**(2540)**	**381**	**(324)**	**2806**	**(2864)**	**52.5**	**(53.5)**
Isle of Man	**0**	**(0)**	**0**	**(0)**	**0**	**(0)**	**0**	**(0.0)**
Channel Islands	**0**	**(0)**	**0**	**(0)**	**0**	**(0)**	**0**	**(0.0)**
Wales	**75**	**(93)**	**24**	**(21)**	**99**	**(114)**	**32.2**	**(37.1)**
Scotland	**140**	**(160)**	**42**	**(23)**	**182**	**(183)**	**34.3**	**(34.5)**
Northern Ireland	**40**	**(43)**	**13**	**(9)**	**53**	**(52)**	**29.1**	**(28.6)**
TOTAL[1]	**2685**	**(2840)**	**461**	**(378)**	**3146**	**(3218)**	**49.2**	**(50.3)**

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

10.2 Donor and tissue supply

In 2013-2014, 87.0% (93.5% in 2012-2013) of retrieved corneas reported to the UK Transplant Registry were supplied to the Corneal Transplant Service (CTS) Eye Banks in Bristol and Manchester. **Table 10.2** shows the number of corneas supplied to, and taken from, the CTS Eye Banks for those centres that supplied more than 25 corneas in 2013-2014. 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). Corneas that are not suitable for PK may be suitable for other types of corneal transplant. Centres with a negative balance have taken more corneas than they supplied to the CTS Eye Banks.

Of the 5,440 corneas supplied to the CTS Eye Banks, 3,580 (66%) were suitable for a PK. This was an increase compared with 2012-2013, when 60% of corneas supplied to the CTS Eye Banks were suitable for a PK.

Table 10.2 Corneas supplied to and taken from the CTS Eye Banks, 1 April 2013 - 31 March 2014

Centre	Corneas supplied	Suitable for PK	(%)	Corneas taken	Balance
ERS Preston	419	266	(63)	7	412
ERS Nottingham	402	256	(64)	115	287
ERS Merseyside	396	250	(63)	151	245
ERS Royal Devon	378	221	(58)	14	364
ERS Southampton	338	201	(59)	63	275
ERS Newcastle	328	234	(71)	55	273
ERS Norfolk	324	224	(69)	20	304
ERS Bristol	278	200	(72)	103	175
ERS Bolton	232	126	(54)	21	211
ERS Glasgow	220	173	(79)	154	66
Manchester, Royal Eye Hospital	170	110	(65)	158	12
Belfast, Royal Victoria Hospital	88	67	(76)	39	49
Middlesbrough, James Cook University Hospital	80	46	(58)	10	70
Oxford, John Radcliffe Hospital	66	49	(74)	31	35
Cardiff, University of Wales Hospital	62	44	(71)	11	51
Lancaster, Royal Lancaster Hospital	60	40	(67)	0	60
Cambridge, Addenbrookes Hospital	58	41	(71)	58	0
Barnstaple, North Devon District Hospital	58	35	(60)	1	57
Blackburn, Royal Infirmary	54	35	(65)	0	54
Edinburgh, Royal Infirmary	52	38	(73)	0	52
Coventry & Warwickshire Hospital	50	26	(52)	41	9
Plymouth, Royal Eye Infirmary	46	26	(57)	45	1
Stoke, North Staffordshire Royal Infirmary	46	25	(54)	12	34
Birmingham, Birmingham & Midland Eye Centre	44	28	(64)	76	-32
Portsmouth, Queen Alexandra Hospital	40	27	(68)	28	12
Yeovil District Hospital	36	18	(50)	0	36
Taunton, Taunton & Somerset Hospital	32	25	(78)	3	29
Leicester, Royal Infirmary	30	21	(70)	84	-54
Swindon, Great Western Hospital	30	21	(70)	13	17
Leeds, General Infirmary	28	21	(75)	0	28
Aberdeen, Royal Infirmary	26	15	(58)	40	-14
Dundee, Ninewells Hospital	26	23	(88)	21	5
Swansea, Morriston Hospital	26	20	(77)	0	26
Ipswich Hospital	25	19	(76)	10	15
Eye retrieval scheme centres	**3315**	**2151**	**(65)**	**703**	**2612**
Centres supplying more than 25 corneas	**1233**	**820**	**(67)**	**681**	**552**
All other centres	**892**	**609**	**(68)**	**1938**	**-1046**
TOTAL	**5440**	**3580**	**(66)**	**3322**	**2118**

PK - Penetrating keratoplasty

10.3 CTS Eye Bank activity

The activity levels for the Bristol and Manchester Eye Banks are shown in **Table 10.3**. The numbers of corneas received by the CTS Eye Banks decreased in 2013-2014 by 9%, and the number of corneas issued decreased by 2%. In 2013-2014, 5,440 corneas were received into the CTS Eye Banks, of which 3,594 (66%) were subsequently issued for grafting. The remaining corneas were unsuitable for transplantation.

Table 10.3 Corneas received into the Bristol and Manchester Eye Banks, 1 April 2013 - 31 March 2014 (2012-2013), by year

	Total received		Number issued[1]		% issued		Difference between number received and issued	
Bristol	2325	(2472)	1504	(1459)	65	(59)	821	(1013)
Manchester	3115	(3506)	2090	(2193)	67	(63)	1025	(1313)
Total	**5440**	**(5978)**	**3594**	**(3652)**	**66**	**(61)**	**1846**	**(2326)**

[1] Number issued of those received in each year

The outcome of corneas received into the CTS Eye Banks is given in **Table 10.4**. Of the corneas supplied to the Eye Banks in 2013-2014, 61% were issued and used and 5% were issued but not used. Of the corneas supplied to the Eye Banks, 11% were unsuitable because of medication contraindications, 14% were unsuitable due to tissue quality and 4% were discarded because of bacterial or fungal contamination. 5% of corneas became outdated, that is, they exceeded 28 days storage. Corneas that were unsuitable for transplantation were, where possible, used for research when permission had been given by the relatives.

10.4 Transplants

Corneal transplant activity by country of residence and Strategic Health Authority in England for the years 2012-2013 and 2013-2014 is detailed in **Table 10.5** for corneas supplied through the CTS Eye Banks and others that have been reported to the UK Transplant Registry by Moorfields and East Grinstead Eye Banks. No adjustments have been made for potential demographic differences in populations. The overall transplant rate was 58.5 pmp in 2012-2013; this decreased slightly to 58.3 pmp in 2013-2014. The transplant rates increased in Scotland and Northern Ireland, but remained constant in England and Wales. England had the second highest transplant rate in the UK: 60.2 pmp, this ranged from 50.1 pmp to 75.3 pmp across the SHAs.

Table 10.4 Outcome of corneas received into the Bristol and Manchester Eye Banks, 1 April 2013 - 31 March 2014 (2012 - 2013), by year

Outcome of cornea	Bristol				Manchester				TOTAL			
	N		%		N		%		N		%	
Total used	**1381**	**(1329)**	**59**	**(54)**	**1932**	**(2035)**	**62**	**(58)**	**3313**	**(3364)**	**61**	**(56)**
Not used												
Issued, not used	123	(130)	5	(5)	158	(158)	5	(5)	281	(288)	5	(5)
Unsuitable - tissue quality	418	(554)	18	(22)	367	(496)	12	(14)	785	(1050)	14	(18)
Medical reason - virology	75	(86)	3	(3)	90	(117)	3	(3)	165	(203)	3	(3)
Medical reason - other	191	(208)	8	(8)	219	(270)	7	(8)	410	(478)	8	(8)
Contaminated	62	(97)	3	(4)	133	(167)	4	(5)	195	(264)	4	(4)
Outdated	65	(57)	3	(2)	203	(216)	7	(6)	268	(273)	5	(5)
Other/not reported	10	(11)	<1	(<1)	13	(47)	<1	(1)	23	(58)	<1	(1)
Total not used	**944**	**(1143)**			**1183**	**(1471)**			**2127**	**(2614)**		
TOTAL	**2325**	**(2472)**			**3115**	**(3506)**			**5440**	**(5978)**		

Table 10.5 Cornea transplants[1] performed per million population (pmp) in the UK, 1 April 2012 - 31 March 2014, by country/ Strategic Health Authority of residence

Country/Strategic Health Authority of residence	Number of transplants (pmp)			
	2012-2013		2013-2014	
North East	109	(41.9)	141	(54.2)
North West	521	(73.6)	533	(75.3)
Yorkshire and The Humber	395	(74.2)	334	(62.8)
North of England	**1025**	**(68.3)**	**1008**	**(67.2)**
East Midlands	308	(67.4)	242	(53.0)
West Midlands	274	(48.6)	324	(57.4)
East of England	343	(58.0)	325	(55.0)
Midlands and East	**925**	**(57.4)**	**891**	**(55.3)**
London	**553**	**(66.5)**	**519**	**(62.5)**
South East Coast	329	(72.9)	310	(68.7)
South Central	176	(41.8)	211	(50.1)
South West	235	(44.0)	279	(52.2)
South of England	**740**	**(52.6)**	**800**	**(56.9)**
England	**3243**	**(60.6)**	**3218**	**(60.2)**
Isle of Man	**2**	**(25.0)**	**7**	**(87.5)**
Channel Islands	**4**	**(25.0)**	**2**	**(12.5)**
Wales	**139**	**(45.3)**	**135**	**(44.0)**
Scotland	**244**	**(46.0)**	**265**	**(49.9)**
Northern Ireland	**68**	**(37.4)**	**72**	**(39.6)**
TOTAL[2]	**3739**	**(58.5)**	**3724**	**(58.3)**

[1] Corneas supplied through the CTS Eye Banks
[2] Includes UK recipients where the postcode was unspecified and non-UK recipients

10.5 Demographic characteristics

The age group, sex and ethnicity of cornea donors and transplant recipients are shown in **Table 10.6**.

Table 10.6 Demographic characteristics of deceased cornea donors and transplant recipients 1 April 2013 - 31 March 2014, in the UK

	Cornea only donors		Solid organ and cornea donors		Transplant recipients	
	N	(%)	N	(%)	N	(%)
Age group (years)						
0 - 17	11	(<1)	10	(2)	64	(2)
18 - 34	50	(2)	36	(8)	554	(15)
35 - 49	184	(7)	83	(18)	469	(13)
50 - 59	368	(14)	111	(24)	372	(10)
60 - 69	749	(28)	125	(27)	662	(18)
70-79	1001	(37)	90	(20)	867	(23)
80+	321	(12)	5	(1)	736	(20)
Not reported	1	(<1)				
mean (SD)	67	(13)	57	(16)	61	(21)
Sex						
Male	1644	(61)	249	(54)	1977	(53)
Female	1037	(39)	211	(46)	1746	(47)
Not reported	4	(<1)			1	(<1)
Ethnicity						
White	1438	(54)	419	(91)	3028	(81)
Asian	5	(<1)	10	(2)	323	(9)
Black	0	(0)	2	(<1)	155	(4)
Chinese	0	(0)	1	(<1)	5	(<1)
Other	0	(0)	3	(1)	24	(1)
Not reported	1242	(46)	25	(5)	189	(5)
TOTAL	**2685**	**(100)**	**460**	**(100)**	**3724**	**(100)**

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, liver and intestinal transplants, performed in the UK. Separate estimates are presented for adult and paediatric patients (using organ specific age definitions) and for transplants from donors after brain death and donors after circulatory 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. Both analyses consider only first transplants.

11.1 Kidney graft and patient survival

11.1.1 Adult kidney recipients - donor after brain death (DBD)

Figure 11.1 shows long-term graft survival in adult (≥18 years) recipients for first kidney only transplant from donors after brain death. **Table 11.1** shows the graft survival estimates and confidence intervals for one, two, five and ten years post-transplant. There have been significant improvements in one and two year survival over the time periods shown, p<0.02 in each case. **Table 11.2** 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<0.04 in each case.

Figure 11.1 Long-term graft survival after first adult kidney only transplant from donors after brain death, 1 January 2000 – 31 December 2012

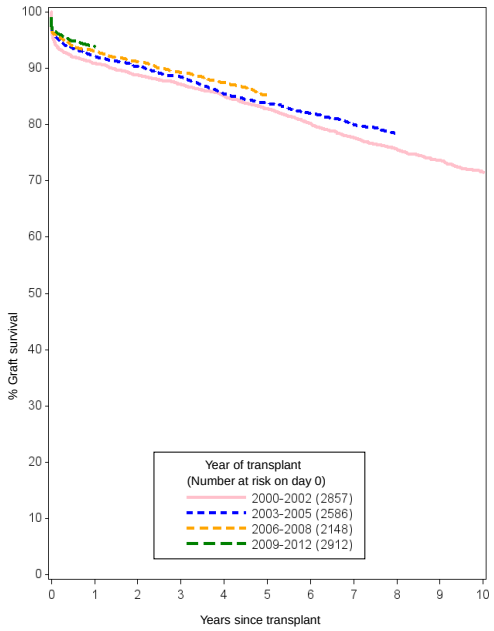


Table 11.1 Graft survival after first adult kidney only transplant from a DBD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2000-2002	2857	91	(90-92)	89	(88-90)	83	(81-84)	72	(70-73)
2003-2005	2586	92	(91-93)	90	(89-91)	84	(82-85)		
2006-2008	2148	93	(92-94)	91	(90-92)	85	(84-87)		
2009-2012	2912	94	(93-95)						

Table 11.2 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	
2000-2002	2859	95	(94-96)	93	(92-94)	87	(86-88)	73	(71-75)
2003-2005	2588	96	(96-97)	95	(94-95)	89	(88-90)		
2006-2008	2149	96	(96-97)	95	(94-96)	89	(88-90)		
2009-2012	2912	96	(95-97)						

11.1.2 Adult kidney recipients - donor after circulatory death (DCD)

Long-term graft survival in adult recipients for kidney transplants from donors after circulatory death is shown in **Figure 11.2**. **Table 11.3** shows the graft survival estimates and confidence intervals for one, two, five and ten years post-transplant. There has been a significant improvement in one, two and five year survival over the 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 11.4** shows the patient survival estimates and confidence intervals for each time period analysed. There was a significant improvement in patient survival at two and five years following transplant (p<0.04).

Figure 11.2 Long-term graft survival after first adult kidney only transplant from donors after circulatory death, 1 January 2000 – 31 December 2012

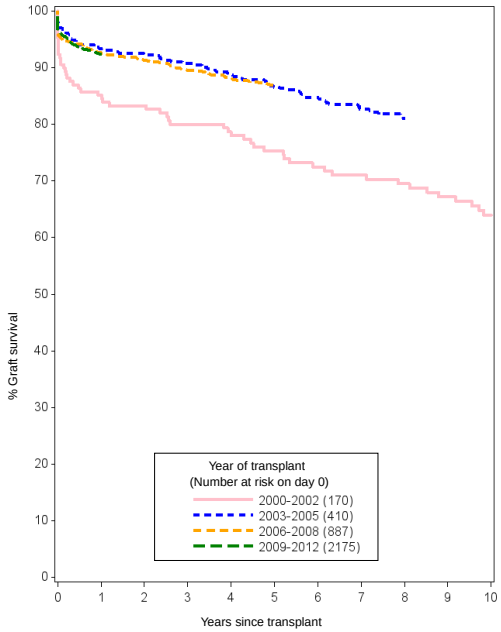


Table 11.3 Graft survival after first adult kidney only transplant from a DCD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2000-2002	170	85	(79-90)	83	(77-88)	75	(68-81)	64	(56-71)
2003-2005	410	93	(90-95)	92	(89-95)	87	(83-90)		
2006-2008	887	93	(91-94)	91	(89-93)	87	(84-89)		
2009-2012	2175	92	(91-93)						

Table 11.4 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	
2000-2002	170	92	(87-95)	90	(84-93)	81	(74-87)	67	(59-74)
2003-2005	411	97	(94-98)	95	(92-97)	89	(85-91)		
2006-2008	888	96	(95-97)	95	(93-96)	88	(86-90)		
2009-2012	2174	95	(94-96)						

11.1.3 Adult kidney recipients - living donor

Long-term graft survival in adult recipients for living donor kidney transplants in the UK is shown in **Figure 11.3**. **Table 11.5** shows graft survival estimates and confidence intervals for each time period analysed. There has been a significant improvement in one, two and five year survival over the time periods shown, p<0.02. **Table 11.6** shows the patient survival estimates and confidence intervals for one, two, five and ten years post transplant. There were no statistically significant change in patient survival over time (p>0.2).

Figure 11.3 Long-term graft survival after first adult living donor kidney only transplant in the UK, 1 January 2000 – 31 December 2012

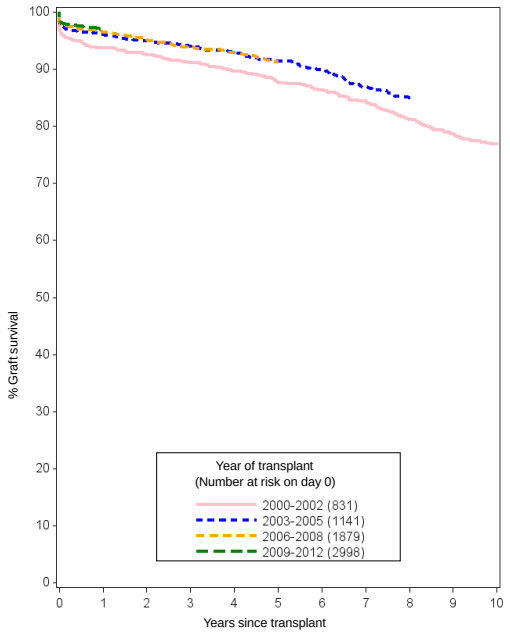


Table 11.5 Graft survival after first adult living donor kidney transplant

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2000-2002	831	94	(92-95)	93	(91-94)	88	(85-90)	77	(74-80)
2003-2005	1141	96	(95-97)	95	(94-96)	91	(90-93)		
2006-2008	1879	96	(96-97)	95	(94-96)	91	(90-93)		
2009-2012	2998	97	(96-98)						

Table 11.6 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	
2000-2002	831	98	(97-99)	97	(96-98)	95	(93-96)	89	(87-91)
2003-2005	1140	99	(98-99)	98	(97-99)	96	(95-97)		
2006-2008	1879	99	(98-99)	98	(97-99)	95	(94-96)		
2009-2012	2997	99	(98-99)						

11.1.4 Paediatric kidney recipients - donor after brain death (DBD)

Figure 11.4 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 11.7**. There have been improvements in one and five year survival over the period analysed (p<0.03). **Table 11.8** shows the patient survival estimates and confidence intervals for one, two, five and ten years post-transplant. There were no statistically significant changes in patient survival over time (p>0.6).

Figure 11.4 Long-term graft survival after first paediatric kidney only transplant from donors after brain death, 1 January 2000 – 31 December 2012

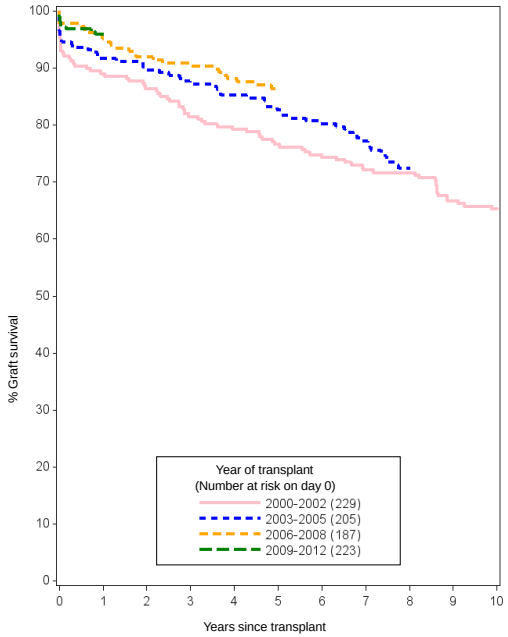


Table 11.7 Graft survival after first paediatric kidney only transplant from a DBD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2000-2002	229	89	(84-92)	86	(81-90)	77	(71-82)	65	(59-71)
2003-2005	205	92	(87-95)	90	(85-94)	83	(77-87)		
2006-2008	187	95	(91-97)	92	(87-95)	86	(81-91)		
2009-2012	223	96	(92-98)						

Table 11.8 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	
2000-2002	230	100	(97-100)	100	(97-100)	99	(96-100)	96	(93-98)
2003-2005	205	100	(97-100)	100	(97-100)	98	(95-100)		
2006-2008	188	100	(-)	99	(96-100)	99	(96-100)		
2009-2012	223	99	(96-100)						

11.1.5 Paediatric kidney recipients - living donor

Long-term graft survival in paediatric recipients for living donor kidney transplants in the UK is shown in **Figure 11.5**. **Table 11.9** shows graft survival estimates and confidence intervals for each time period analysed. There has been a significant improvement in five year survival over the time period, p<0.03. **Table 11.10** shows the patient survival estimates and confidence intervals for one, two, five and ten years post-transplant. There were no statistically significant differences in patient survival over time (p>0.3). There were insufficient paediatric recipients of first kidney only transplants from donors after circulatory death to permit reliable analysis.

Figure 11.5 Long-term graft survival after first paediatric living donor kidney only transplant in the UK, 1 January 2000 – 31 December 2012

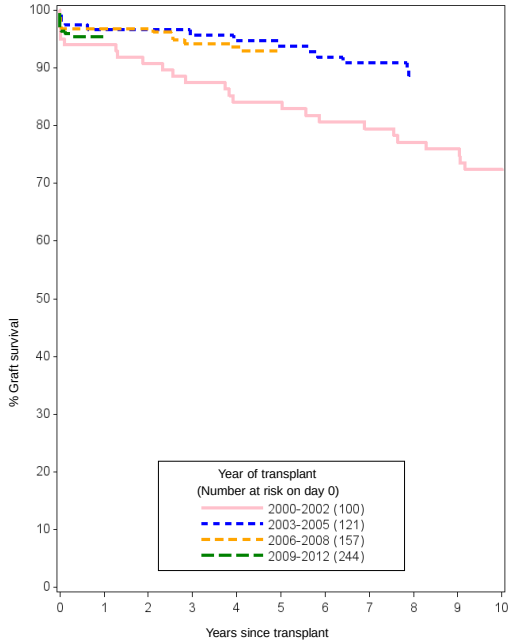


Table 11.9 Graft survival after first paediatric living donor kidney transplant

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2000-2002	100	94	(87-97)	91	(83-95)	84	(75-90)	72	(62-80)
2003-2005	121	97	(91-99)	97	(91-99)	94	(87-97)		
2006-2008	157	97	(93-99)	97	(93-99)	93	(88-96)		
2009-2012	244	95	(91-97)						

Table 11.10 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	
2000-2002	101	97	(91-99)	97	(91-99)	96	(89-98)	92	(85-96)
2003-2005	121	98	(93-100)	98	(93-100)	98	(93-100)		
2006-2008	157	99	(96-100)	99	(96-100)	99	(95-100)		
2009-2012	244	99	(97-100)						

11.2 Pancreas graft and patient survival

11.2.1 Simultaneous kidney/pancreas transplants - donor after brain death (DBD)

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 11.6** shows pancreas graft survival in recipients receiving their first simultaneous kidney/pancreas (SPK) transplant performed from donors after brain death, 2003 – 2005, 2006 - 2008 and 2009 - 2012. Graft and patient survival estimates and confidence intervals are shown at one year, two years and five years in **Table 11.11** and **Table 11.12** respectively. Results relate to adults only as there are no paediatric pancreas transplant recipients.

Figure 11.6 Pancreas graft survival after first SPK transplant from donors after brain death, 1 January 2003 – 31 December 2012

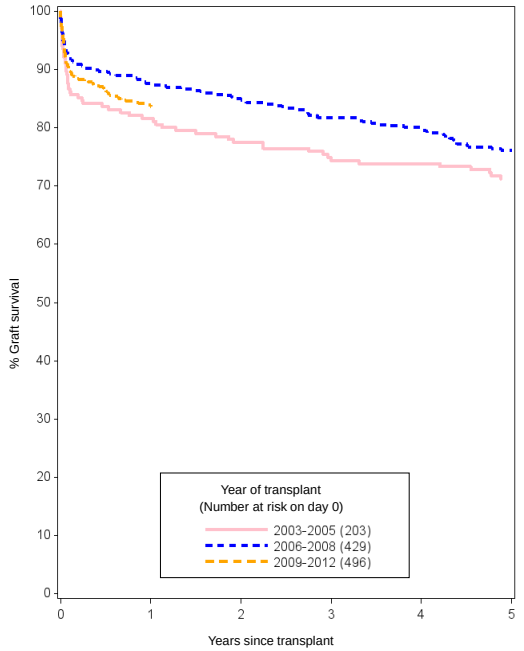


Table 11.11 Graft survival after first SPK transplant from a DBD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year	
2003-2005	203	82	(75-86)	77	(71-83)	71	(64-77)
2006-2008	429	88	(84-90)	85	(81-88)	76	(72-80)
2009-2012	496	84	(80-87)				

Table 11.12 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		Five year	
2003-2005	204	94	(89-96)	92	(87-95)	86	(80-90)
2006-2008	430	96	(93-97)	94	(91-96)	90	(87-93)
2009-2012	497	96	(94-98)				

11.2.2 Simultaneous kidney/pancreas transplants - donor after circulatory death (DCD)

The majority of simultaneous kidney/pancreas (SPK) transplants from a DCD have been performed since 1 January 2007, so there are insufficient data available to analyse long-term survival. **Figure 11.7** shows pancreas graft survival in recipients receiving their first SPK transplant performed from donors after circulatory death, 2009 - 2012. Graft and patient survival estimates and confidence intervals are shown at one year in **Table 11.13** and **Table 11.14** respectively. Results are for adult patients only.

Figure 11.7 Pancreas graft survival after first SPK transplant from donors after circulatory death, 1 January 2009 – 31 December 2012

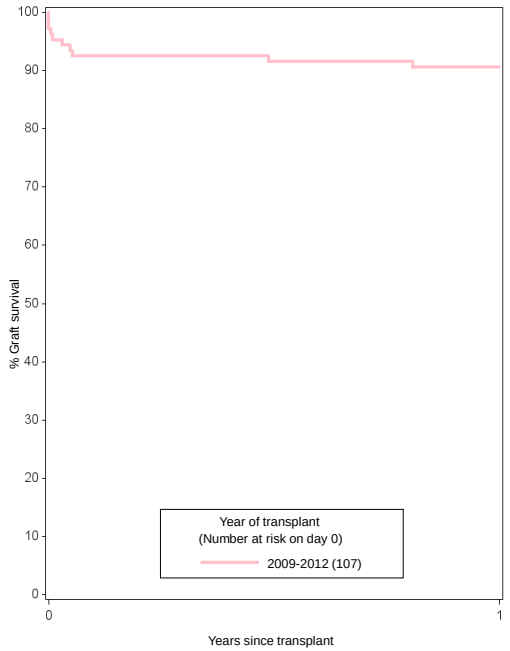


Table 11.13 Graft survival after first SPK transplant from a DCD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year	
2009-2012	107	91	(83-95)

Table 11.14 Patient survival after first SPK transplant from a DCD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year	
2009-2012	107	98	(93-100)

11.2.3 Pancreas only transplants - donor after brain death (DBD)

Figure 11.8 shows pancreas graft survival in recipients receiving their first pancreas only transplant performed from donors after brain death, 2003 - 2005, 2006 - 2008 and 2009 - 2012. Graft and patient survival estimates and confidence intervals are shown at one year, two years and five years in **Table 11.15** and **Table 11.16** respectively. Results are for adult patients only.

Figure 11.8 Pancreas graft survival after pancreas only transplant from donors after brain death, 1 January 2003 – 31 December 2012

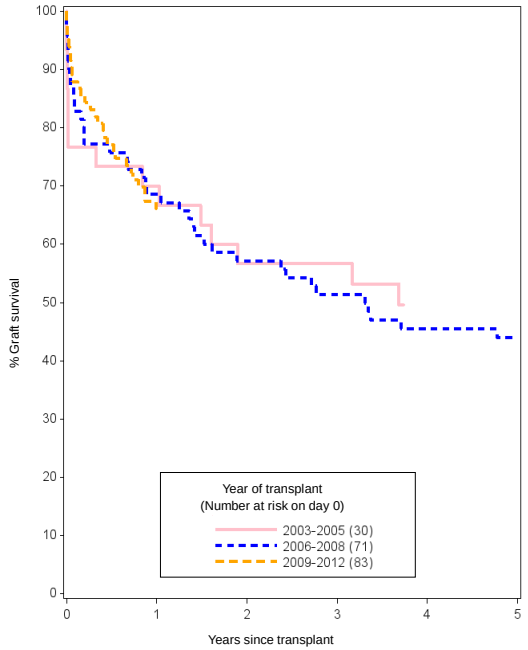


Table 11.15 Graft survival after first pancreas only transplant from a DBD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year	
2003-2005	30	70	(50-83)	57	(37-72)	50	(31-66)
2006-2008	71	69	(56-78)	57	(45-68)	44	(32-55)
2009-2012	83	66	(55-75)				

Table 11.16 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		Five year	
2003-2005	31	100	(-)	100	(-)	92	(72-98)
2006-2008	71	94	(85-98)	91	(81-96)	85	(73-92)
2009-2012	84	97	(88-99)				

11.2.4 Pancreas only transplants - donor after circulatory death (DCD)

Figure 11.9 shows pancreas graft survival in recipients receiving their first pancreas only transplant performed from donors after brain death, 2009 - 2012. Graft and patient survival estimates and confidence intervals are shown at one year in **Table 11.17** and **Table 11.18** respectively. Results are for adult patients only.

Figure 11.9 Pancreas graft survival after pancreas only transplant from donors after circulatory death, 1 January 2009 – 31 December 2012

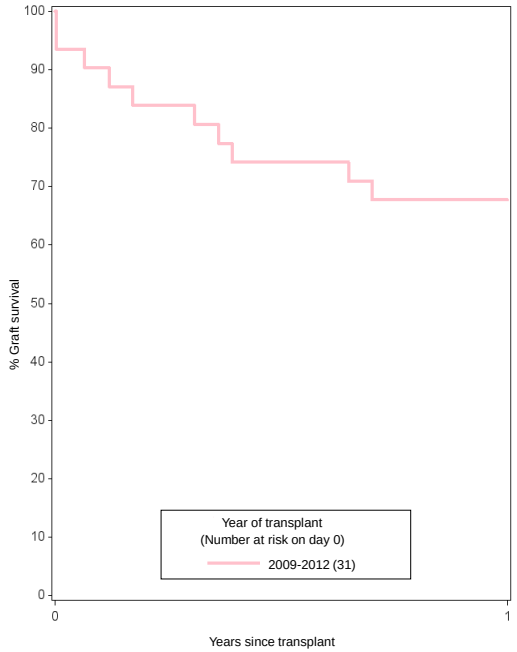


Table 11.17 Graft survival after first pancreas only transplant from a DCD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year	
2009-2012	31	68	(48-81)

Table 11.18 Patient survival after first pancreas only transplant from a DCD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year	
2009-2012	31	97	(78-100)

11.3 Cardiothoracic patient survival

11.3.1 Adult heart recipients

Long-term patient survival for adult (>=16 years) recipients after first heart only transplants is shown in **Figure 11.10**. Domino and deceased donor (DBD only) transplants are included as well as urgent patients. **Table 11.19** shows the patient survival estimates and confidence intervals for one, two, five and ten years post-transplant. There has been a significant improvement in five year survival rates over the time period (p<0.02).

Figure 11.10 Long-term patient survival after first adult heart only transplant in the UK, 1 January 2000 – 31 December 2012

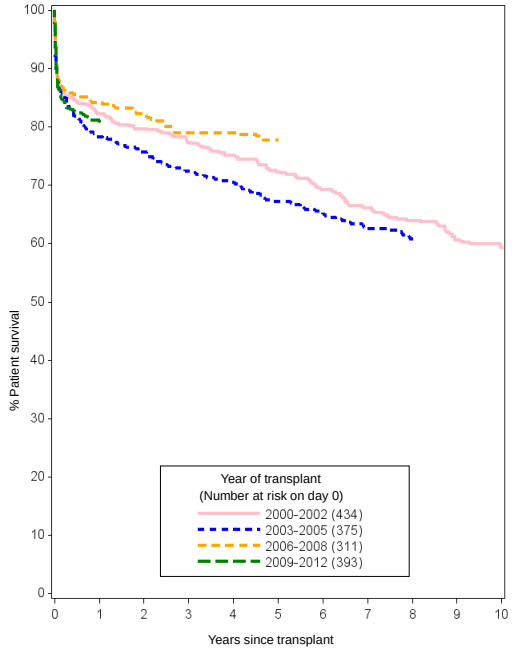


Table 11.19 Patient survival after first adult heart only transplant

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year		Ten year	
2000-2002	434	82	(78-86)	80	(76-83)	72	(68-76)	59	(54-64)
2003-2005	375	78	(74-82)	76	(71-80)	67	(62-72)		
2006-2008	311	84	(80-88)	82	(78-86)	78	(73-82)		
2009-2012	393	81	(77-84)						

11.3.2 Adult heart/lung block recipients

Patient survival for adult recipients after first heart/lung block transplants is shown in **Figure 11.11**. Patient survival estimates and confidence intervals for each time period analysed are shown in **Table 11.20**. There were no statistically significant differences in patient survival over time (p>0.09).

Figure 11.11 Long-term patient survival after first adult heart/lung block transplant in the UK, 1 January 2000 – 31 December 2012

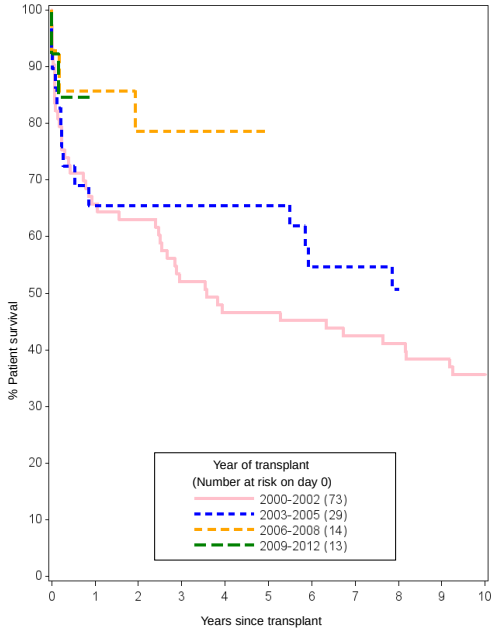


Table 11.20 Patient survival after first adult heart/lung block transplant

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year	Two year	Five year	Ten year
2000-2002	73	66 (54-75)	63 (51-73)	47 (35-57)	36 (25-46)
2003-2005	29	66 (45-80)	66 (45-80)	66 (45-80)	
2006-2008	14	86 (54-96)	79 (47-93)	79 (47-93)	
2009-2012	13	85 (51-96)			

11.3.3 Adult lung recipients - donors after brain death (DBD)

Patient survival for adult recipients after first lung only transplant from donors after brain death is shown in **Figure 11.12**, with survival estimates and confidence intervals shown in **Table 11.21**. There is significant evidence of improvement in one year patient survival over the period analysed, p=0.008. There were no statistically significant differences in two or five year patient survival over time (p>0.3).

Figure 11.12 Long-term patient survival after first adult lung only transplant from donors after brain death, 1 January 2000 – 31 December 2012

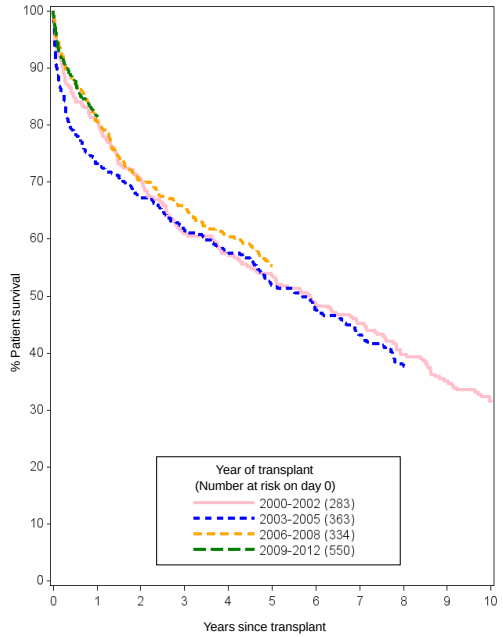


Table 11.21 Patient survival after first adult lung only transplant from a DBD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year		Ten year	
2000-2002	283	81	(75-85)	70	(65-75)	54	(48-59)	32	(26-37)
2003-2005	363	73	(68-78)	67	(62-72)	52	(47-57)		
2006-2008	334	81	(76-85)	70	(65-75)	55	(50-61)		
2009-2012	550	82	(78-85)						

11.3.4 Adult lung recipients - donors after circulatory death (DCD)

The majority of lung transplants from a DCD have been performed since 1 January 2007, so there is insufficient data available to analyse long-term patient survival. Patient survival for adult recipients after first lung only transplant from donors after circulatory death is shown in **Figure 11.13**, with survival estimates and confidence intervals shown in **Table 11.22**.

Figure 11.13 Patient survival after first adult lung only transplant from donors after circulatory death, 1 January 2009 – 31 December 2012

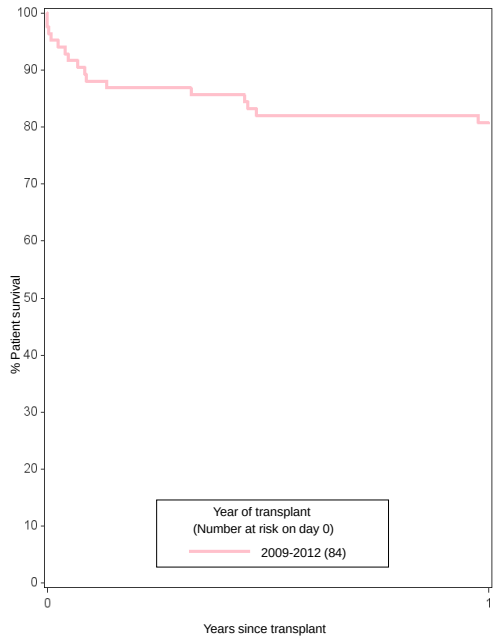


Table 11.22 Patient survival after first adult lung only transplant from a DCD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year	
2009-2012	84	81	(70-88)

11.3.5 Paediatric heart recipients

Long-term patient survival for paediatric recipients after first heart only transplant is shown in **Figure 11.14**. Domino and deceased donor transplants (DBD donors only) are included as well as transplants for urgent patients. **Table 11.23** shows the patient survival estimates and confidence intervals for one, two, five and ten years post-transplant. There is no evidence of an improvement in one, two or five year survival over the time period analysed, p>0.06. The number of paediatric lung and heart/lung transplant recipients was too small for analysis.

Figure 11.14 Long-term patient survival after first paediatric heart only transplant in the UK, 1 January 2000 – 31 December 2012

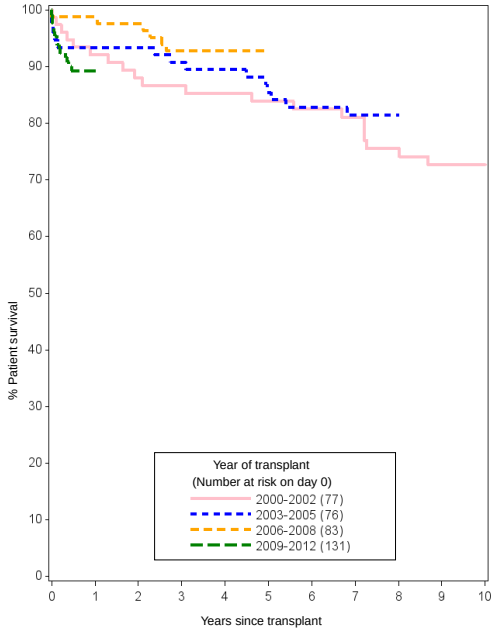


Table 11.23 Patient survival after first paediatric heart only transplant

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year		Ten year	
2000-2002	77	92	(83-96)	88	(78-94)	84	(73-91)	73	(61-81)
2003-2005	76	93	(85-97)	93	(85-97)	85	(75-92)		
2006-2008	83	99	(92-100)	98	(91-99)	93	(85-97)		
2009-2012	131	89	(83-94)						

11.4 Liver patient survival

11.4.1 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 11.15**. **Table 11.24** shows patient survival estimates at one, two, five and ten years post-transplant. There have been significant improvements in one and five year patient survival over the time periods analysed, p<0.001 and p<0.006, respectively.

Figure 11.15 Long-term patient survival after first elective adult liver only transplant from donors after brain death, 1 January 2000 – 31 December 2012

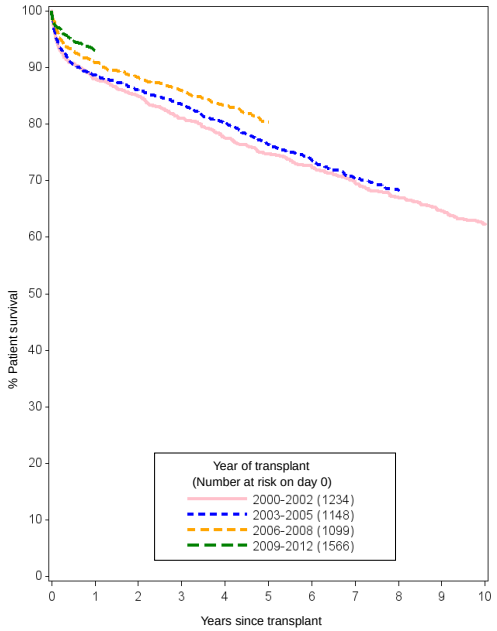


Table 11.24 Patient survival after first elective adult liver only transplant from a DBD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year		Ten year	
2000-2002	1234	88	(86-90)	85	(83-87)	75	(72-77)	62	(59-65)
2003-2005	1148	89	(87-90)	86	(84-88)	76	(74-79)		
2006-2008	1099	91	(89-93)	88	(86-90)	80	(78-83)		
2009-2012	1566	93	(92-94)						

11.4.2 Adult recipients - donor after circulatory death (DCD)

Patient survival for adult (>=17 years) recipients after first elective liver only transplants from donors after circulatory death is shown in **Figure 11.16**. Between 1 January 2002 and 31 December 2005 there were only 34 of these liver transplants, so it is not possible to estimate long term patient survival. **Table 11.25** shows patient survival estimates at one, two and three years post transplant.

Figure 11.16 Liver patient survival after first elective adult liver only transplant from donors after circulatory death, 1 January 2006 – 31 December 2012

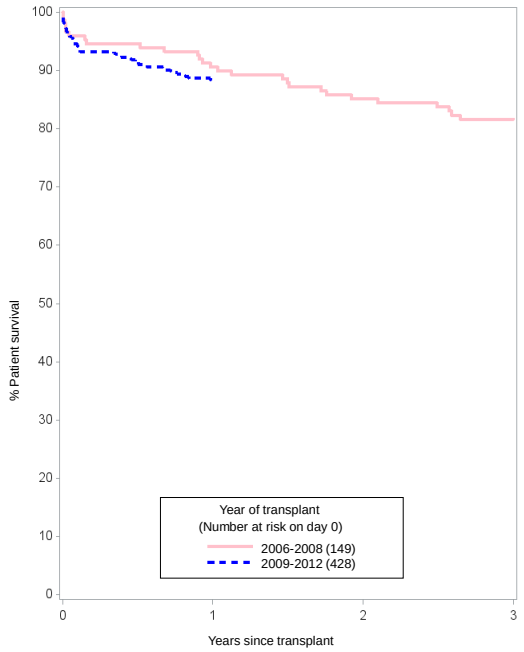


Table 11.25 Patient survival after first elective adult liver only transplant from a DCD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Three year	
2006-2008	149	91	(85-94)	85	(78-90)	82	(74-87)
2009-2012	428	88	(85-91)				

11.4.3 Paediatric recipients - donor after brain death (DBD)

Figure 11.17 and **Table 11.26** 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>0.5). The number of paediatric transplants from donors after circulatory death was too small to estimate meaningful patient survival.

Figure 11.17 Long-term patient survival after first elective paediatric liver only transplant from donors after brain death, 1 January 2000 – 31 December 2012

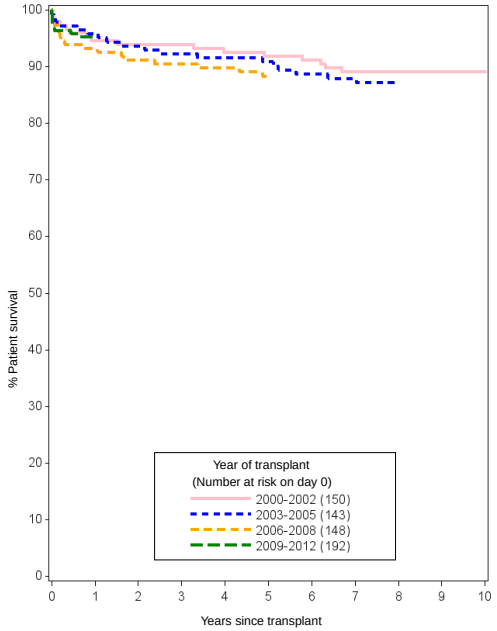


Table 11.26 Patient survival after first elective paediatric liver only transplant from a DBD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year		Ten year	
2000-2002	150	95	(90-97)	94	(89-97)	92	(86-95)	89	(83-93)
2003-2005	143	96	(91-98)	94	(88-97)	91	(85-95)		
2006-2008	148	93	(88-96)	91	(85-95)	88	(82-93)		
2009-2012	192	95	(91-98)						

11.5 Intestinal patient survival

The majority of intestinal transplants have been performed since 1 January 2006, so there are insufficient data available to analyse long-term patient survival. **Figure 11.18** and **Table 11.27** show one-year patient survival estimates for recipients receiving their first intestinal transplant, 2008 – 2012, by recipient age group (adults aged ≥ 18 years).

Figure 11.18 Patient survival after first intestinal graft in the UK, 1 January 2008 – 31 December 2012

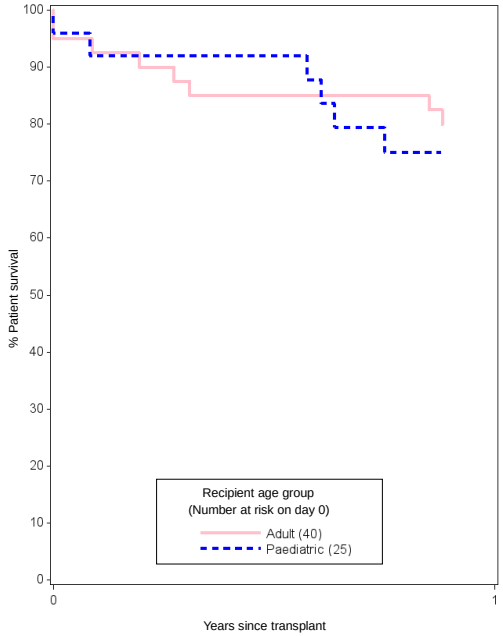


Table 11.27 Patient survival after first intestinal transplant in the UK, 1 January 2008 - 31 December 2012

Recipient age group	No. at risk on day 0	% Patient survival (95% confidence interval) One year	
Adult	40	80	(64-89)
Paediatric	25	75	(53-88)

11.6 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 11.19** shows graft survival estimates for first penetrating keratoplasty (PK) for grafts 2003 - 2005, 2006 - 2008 and 2009 - 2012. Graft survival estimates and confidence intervals are shown by transplant year at one, two and five years in **Table 11.28.**

Figure 11.19 Cornea graft survival after first PKP graft in the UK, 1 January 2003 – 31 December 2012

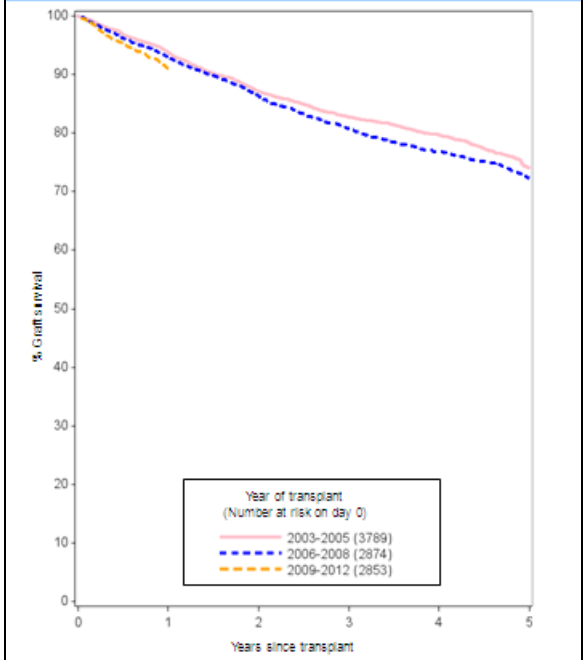


Table 11.28 Cornea graft survival after first PK in the UK

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year	
2003-2005	3789	94	(93-94)	87	(86-88)	74	(72-76)
2006-2008	2874	93	(92-94)	86	(85-88)	72	(70-74)
2009-2012	2853	91	(90-92)				

NHS Organ Donor Register

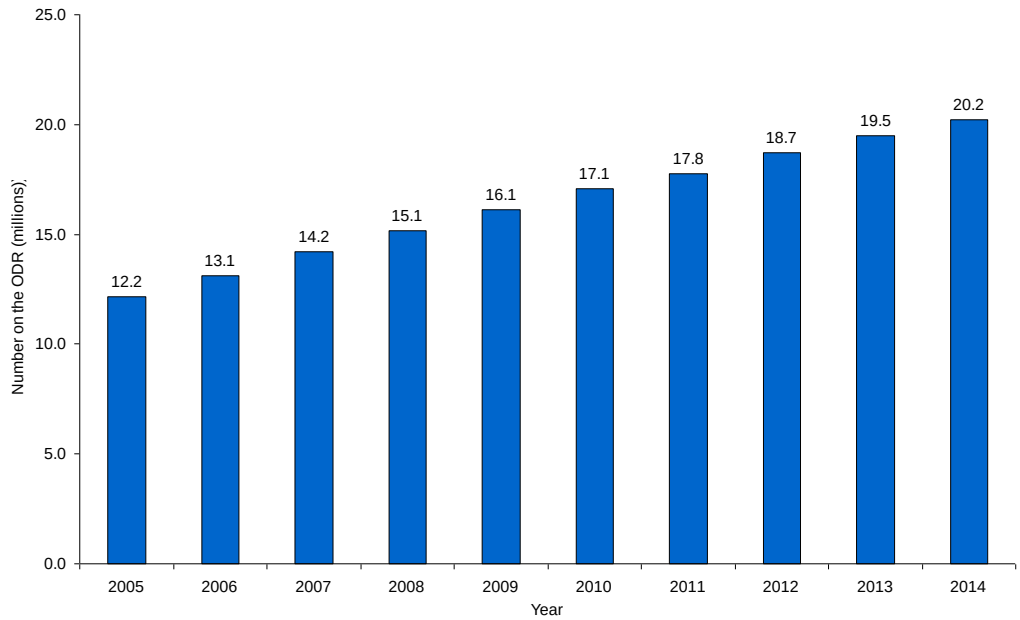
Key messages

- **20.2 million people on the ODR at March 2014 (32% of the population)**
- **41% of the 1,320 deceased organ donors last year were on the ODR**
- **53% of 1,050,116 registrations last year were through the Driver and Vehicle Licensing Agency (DVLA)**

By the end of March 2014 the NHS Organ Donor Register (ODR) held just over 20.2 million registrations. A summary of the number of registrations at the end of each financial year from 31 March 2005 to 31 March 2014 is shown **Figure 12.1**. During the year data on the register were continually reviewed and validated with people known to have died, withdrawn from the list and duplicate registrations resolved.

Of the 1,320 deceased organ donors in 2013-2014, 41% were registered on the ODR compared with 38% of organ donors in 2012-2013. Similarly, 43% of cornea-only donors in 2013-2014 were registered on the ODR compared with 39% in 2012-2013.

Figure 12.1 Number on the NHS Organ Donor Register at 31 March



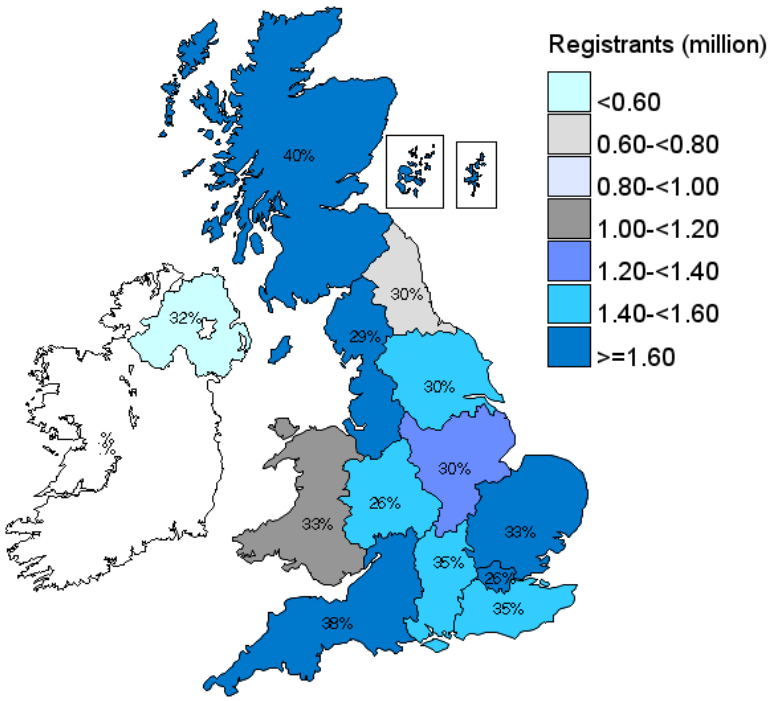
Those registered on the ODR come from all parts of the UK. **Table 12.1** shows the percentage of the population registered in each country/former Strategic Health Authority at 31 March 2014, and the number of registrants. This information is also illustrated in **Figure 12.2**. No adjustment has been made for any differences in demographics of the populations.

Table 12.1 Registrations on the NHS Organ Donor Register by 31 March 2014, by country/ Strategic Health Authority

Country/ Strategic Health Authority	Registrants N	Registrants pmp	Proportion registered
North East	786,075	302,337	30%
North West	2,062,154	291,265	29%
Yorkshire and The Humber	1,595,287	299,866	30%
North of England	**4,443,516**	**296,234**	**30%**
East Midlands	1,368,360	299,422	30%
West Midlands	1,470,130	260,661	26%
East of England	1,955,161	330,823	33%
Midlands and East	**4,793,651**	**297,373**	**30%**
London	2,132,220	256,585	26%
South East Coast	1,568,298	347,738	35%
South Central	1,476,410	350,691	35%
South West	2,035,708	381,219	38%
South of England	**5,080,416**	**361,338**	**36%**
England	**16,449,803**	**307,530**	**31%**
Isle of Man	**11,629**	**145,363**	**15%**
Channel Islands	**15,923**	**99,519**	**10%**
Wales	**1,004,593**	**327,229**	**33%**
Scotland	**2,110,395**	**397,438**	**40%**
Northern Ireland	**582,554**	**320,085**	**32%**
TOTAL[1]	**20,239,715**	**316,592**	**32%**

[1] Includes 64,818 registrants where the postcode was unknown

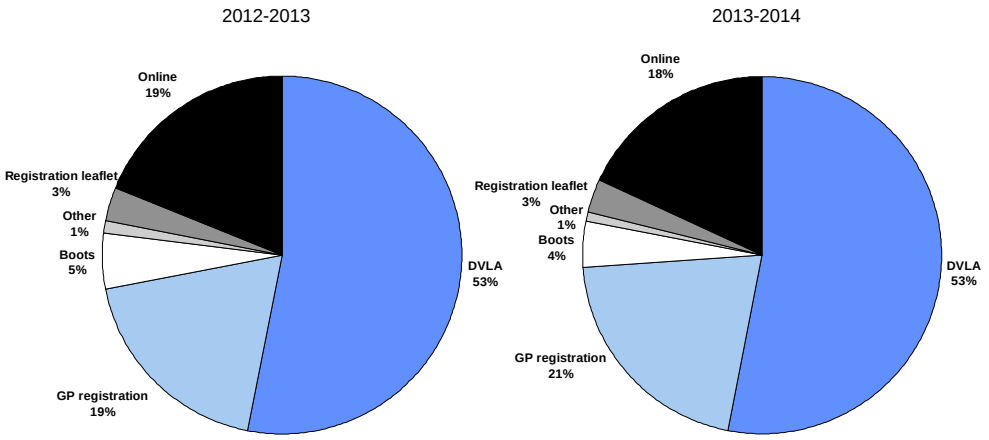
Figure 12.2 Proportion of population registered on the NHS Organ Donor Register by 31 March 2014, by Strategic Health Authority



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 12.3**. This figure shows that 21% of registrations in 2013-2014 arrived by means of registering through a GP, 53% from driving licence applications and reminders through the DVLA and 18% online through the ODT website.

Figure 12.3 Source of applications for registration on the NHS Organ Donor Register, 1 April 2012 - 31 March 2014



At the end of March 2014, 88% of registrants, where the information was available, indicated a willingness to donate all organs and tissue (kidneys, pancreas, heart, lungs, liver and corneas). However, of those who were not willing to donate all organs, the majority (88%) 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 12.2**.

Table 12.2 Preparedness of those registered on the NHS Organ Donor Register at 31 March 2014 to donate different organs[1]

Registrants prepared to donate all organs 88%

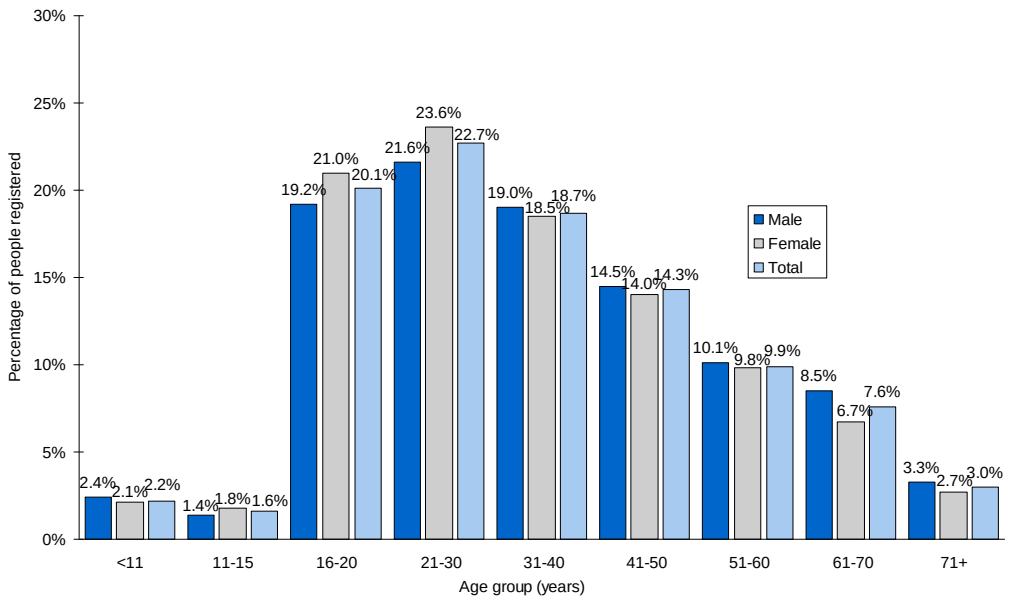
Of those not prepared to donate all organs ('restricted donors'):

Not prepared to donate:	% of 'Restricted donors'	% of all registrants
Kidney	7	0.8
Pancreas	23	2.7
Heart	23	2.8
Lungs	21	2.5
Liver	13	1.5
Corneas	88	10.6

[1] This information was not available for approximately 5% of the total register

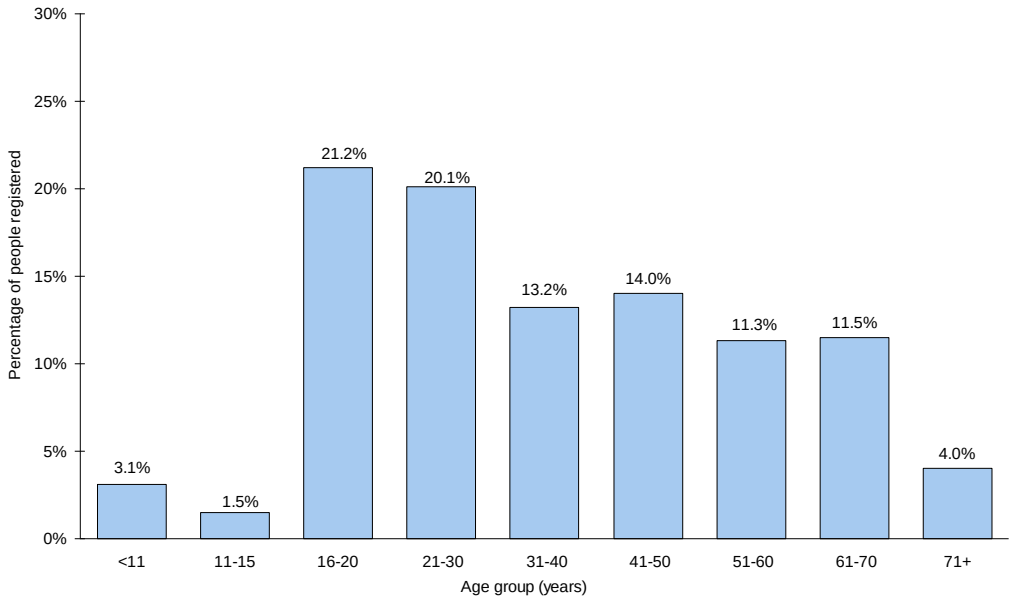
People of all ages are eligible for organ donor registration: the distribution of age by sex at time of registration is shown in **Figure 12.4**. The highest proportion of registrations (21.6% of males and 23.6% of females) are in the 21-30 years age group. The lowest proportions are in the under 11 and 11-15 age groups. Of all people registered on the NHS Organ Donor Register, 46% are male and 54% are female.

Figure 12.4 Age and gender of people registered on the NHS Organ Donor Register by 31 March 2014



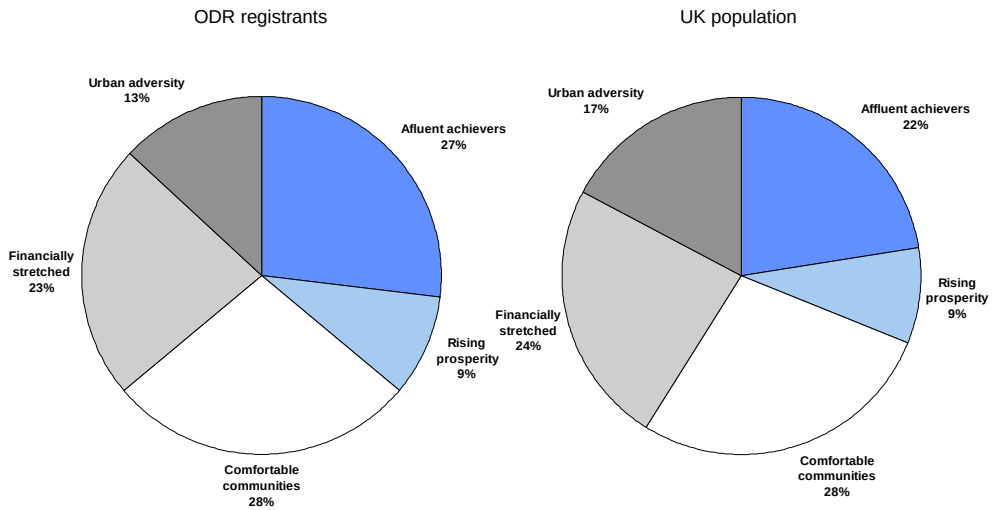
Additionally, the distribution of age of people registering on the ODR during the latest financial year, 2013-2014, is shown in **Figure 12.5**. The highest proportion of registrations in this year were in the 16-20 years age group. Of the registrants in 2013/2014, 49% were male and 51% were female.

Figure 12.5 Age of people registered on the NHS Organ Donor Register between 1 April 2013 and 31 March 2014



The breakdown of registrants on the ODR during 2013-2014 by socio-economic group (using the ACORN[1] classification, based on postcode) is shown in **Figure 12.6**, where it is compared with the general UK population. Though having basically similar distributions, there were proportionately more 'affluent achievers' and less 'urban adversity' on the ODR than in the general population.

Figure 12.6 Registrants on the NHS Organ Donor Register, 1 April 2013 - 31 March 2014, and the general population, by socio-economic group



[1] ACORN data supplied by CACI Ltd.

National Potential Donor Audit

Key messages

- **There were 35,454 audited deaths reported through the Potential Donor Audit in the financial year to 31 March 2014, including 1,310 (99%) of the 1,320 deceased organ donors**
- **The neurological death testing rate has increased since last year from 78% to 80% and improvements have been observed in the overall referral rate of potential donors (from 68% to 76%) and the proportion of approaches involving a Specialist Nurse – Organ Donation (from 71% to 76%). The rate of approach to DCD donor families has decreased (from 58% to 48%)**
- **An increase in the overall consent/authorisation rate has been observed since last year (from 57% to 59%). A significant difference in the consent/authorisation rates for white patients and patients from ethnic minority groups is still apparent (63% and 36%, respectively)**
- **The consent/authorisation rate is 89% when a patient's wish is known at the time of potential donation, but 119 families overruled their loved one's known wish to be an organ donor**

13.1 Introduction

In this chapter, summary data from the national Potential Donor Audit (PDA) are shown for 1 April 2013 to 31 March 2014 and data from the previous three financial years are also provided for comparison purposes. The data comprise all audited patient deaths in UK Intensive Care Units (ICUs) and emergency departments, excluding wards and patients over 80 years of age, in the time period. The data are based on information received by 12 May 2014. **The number of solid organ donors reported in this chapter will differ from that shown in the rest of the report, due to the national PDA excluding specific patients**.

13.2 Definitions

All data shown in this chapter use the following definitions.

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

Eligible donors after circulatory death (DCD) are defined as patients who had treatment withdrawn and death was anticipated within four hours, with no absolute medical contraindications to solid organ donation.

Absolute medical contraindications to organ donation are listed here: http://www.odt.nhs.uk/pdf/contraindications_to_organ_donation.pdf

Imminent death anticipated patients who are not confirmed dead using neurological criteria, receiving assisted ventilation, a clinical decision to withdraw treatment has been made and death is anticipated within four hours.

The referral rate is the percentage of patients for whom neurological death was suspected, or imminent death was anticipated, that were discussed with the Specialist Nurse - Organ Donation (SN-OD).

The approach rate is the percentage of eligible donor families approached for consent to/authorisation for donation.

The proportion of approaches involving a SN-OD is the percentage of eligible donor families approached where a SN-OD was involved.

The consent/authorisation rate is the percentage of eligible donor families approached about donation that consented to/authorised donation.

13.3 Breakdown of audited deaths in ICUs and emergency departments

In the 12-month period there were a total of 35,454 audited patient deaths in the UK. **Figures 13.1** and **13.2** show a detailed breakdown from the number of audited patient deaths to the number of solid organ donors for potential DBD and DCD donors, respectively. In total, 5,690 patients meeting the PDA criteria died in circumstances that would enable donation.

Table 13.1 shows the key percentages calculated from the flow chart information. Consent/authorisation rates have also been provided for cases where the SN-OD was/was not involved in the approach to the family and/or whether the patient's wish to be a donor was known at the time of potential donation. **Figure 13.3** uses the flow chart information to illustrate the stages where opportunities were lost pre-donation.

Figure 13.1 Donation after brain death

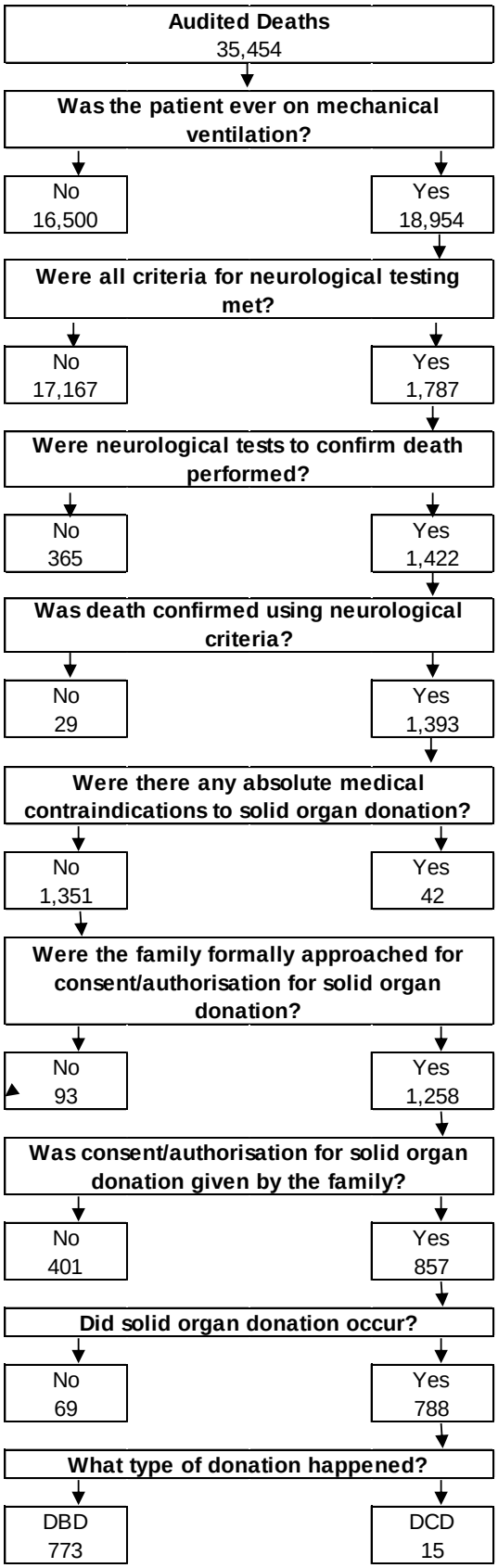


Figure 13.2 Donation after circulatory death

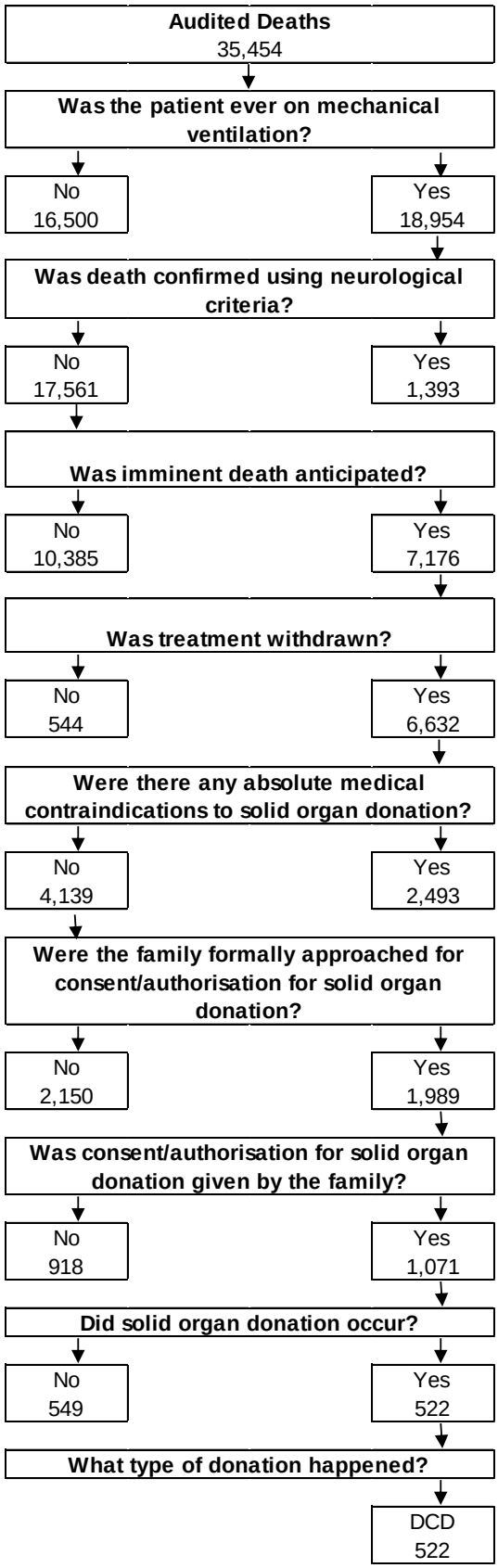
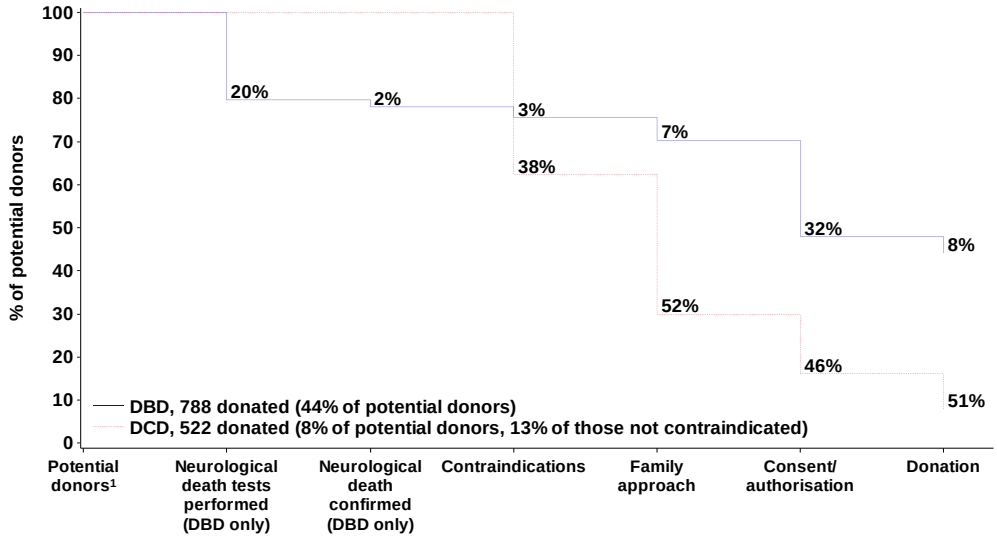


Table 13.1 Summary of key percentages, 1 April 2013 to 31 March 2014

	DBD	DCD	ALL
Neurological death testing rate	79.6%		
Referral rate	94.5%	70.9%	75.6%
Approach rate	93.1%	48.1%	59.1%
Proportion of approaches involving a SN-OD	84.4%	71.4%	76.4%
Consent/authorisation rate	68.1%	53.8%	59.4%
- when SN-OD not involved in approach	58.2%	25.5%	33.9%
- when SN-OD involved in approach	70.0%	65.2%	67.2%
- when patient had not expressed a wish to donate or the patient's ODR status was not known at the time of potential donation	54.6%	39.0%	44.9%
- when patient on ODR and status known at time of potential donation	93.1%	85.9%	88.9%
- when patient's wish (by any method) is known at time of potential donation*	93.4%	85.7%	88.9%
- when SN-OD involved in approach and patient known to be on ODR at time of potential donation	93.6%	89.8%	91.4%

* 119 families overruled their loved one's known wish to be an organ donor (29 DBD and 90 DCD)

Figure 13.3 Stages at which potential organ donors lost the opportunity to become actual donors, 1 April 2013 to 31 March 2014



[1] Potential DBD donor - A patient who meets all four criteria for neurological death testing
Potential DCD donor - A patient who had treatment withdrawn and death was anticipated within four hours

13.4 Eligible donors

The number of eligible donors (as defined earlier) and rates per million population (pmp) are shown in **Table 13.2**, by country and former English Strategic Health Authority (SHA). The number of actual donors pmp can be found in Table 3.2 of Chapter 3. Eligible DBD ranged from 14.4 pmp in the South East Coast SHA to 37.5 pmp in the London SHA. Eligible DCD ranged from 50.8 pmp in the South East Coast SHA to 104.2 pmp in the North East SHA. Across the countries, there was a range of 61.8 eligible donors pmp in Scotland to 119.2 eligible donors pmp in Wales. Overall, there were 1,351 eligible DBD (21.1 pmp) and 4,139 eligible DCD (64.7 pmp) in the UK, resulting in a total of 85.9 eligible donors per million population. **Tables 13.3** and **13.4** show more detailed information by country and former English SHA for DBD and DCD data, respectively.

Table 13.2 Eligible donor rates per million population (pmp), in the UK, 1 April 2013 to 31 March 2014, by country and former English Strategic Health Authority

	Eligible DBD		Eligible DCD		**TOTAL**	
Country/ Strategic Health Authority of donation	N	(pmp)	N	(pmp)	**N**	**(pmp)**
North East	75	(28.8)	271	(104.2)	**346**	**(133.1)**
North West	139	(19.6)	438	(61.9)	**577**	**(81.5)**
Yorkshire and the Humber	86	(16.2)	295	(55.5)	**381**	**(71.6)**
North of England	**300**	**(20.0)**	**1004**	**(66.9)**	**1304**	**(86.9)**
East Midlands	72	(15.8)	248	(54.3)	**320**	**(70.0)**
West Midlands	113	(20.0)	441	(78.2)	**554**	**(98.2)**
East of England	94	(15.9)	383	(64.8)	**477**	**(80.7)**
Midlands and East	**279**	**(17.3)**	**1072**	**(66.5)**	**1351**	**(83.8)**
London	**312**	**(37.5)**	**526**	**(63.3)**	**838**	**(100.8)**
South East Coast	65	(14.4)	229	(50.8)	**294**	**(65.2)**
South Central	92	(21.9)	264	(62.7)	**356**	**(84.6)**
South West	91	(17.0)	343	(64.2)	**434**	**(81.3)**
South of England	**248**	**(17.6)**	**836**	**(59.5)**	**1084**	**(77.1)**
England	**1139**	**(21.3)**	**3438**	**(64.3)**	**4577**	**(85.6)**
Isle of Man	**4**	**(50.0)**	**3**	**(37.5)**	**7**	**(87.5)**
Channel Islands	**1**	**(6.3)**	**5**	**(31.3)**	**6**	**(37.5)**
Wales	**55**	**(17.9)**	**311**	**(101.3)**	**366**	**(119.2)**
Scotland	**100**	**(18.8)**	**228**	**(42.9)**	**328**	**(61.8)**
Northern Ireland	**52**	**(28.6)**	**154**	**(84.6)**	**206**	**(113.2)**
TOTAL	**1351**	**(21.1)**	**4139**	**(64.7)**	**5490**	**(85.9)**

Table 13.3 DBD key metrics from the Potential Donor Audit, 1 April 2013 to 31 March 2014, by country and former English Strategic Health Authority

Country/ Strategic Health Authority of donation	Number of patients where neurological death was suspected	Neurological death testing rate (%)	DBD referral rate (%)	Number of eligible DBD donors	Number of eligible DBD donors whose family were approached	DBD approach rate (%)	Percentage of DBD approaches that involved a SN-OD (%)	DBD consent/ authorisation rate (%)
North East	90	85.6	97.8	75	70	93.3	81.4	78.6
North West	179	81.0	98.9	139	135	97.1	89.6	69.6
Yorkshire and the Humber	115	78.3	92.2	86	78	90.7	88.5	69.2
North of England	**384**	**81.3**	**96.6**	**300**	**283**	**94.3**	**87.3**	**71.7**
East Midlands	99	74.7	91.9	72	70	97.2	80.0	67.1
West Midlands	160	78.8	93.8	113	106	93.8	62.3	66.0
East of England	124	79.0	94.4	94	92	97.9	89.1	73.9
Midlands and East	**383**	**77.8**	**93.5**	**279**	**268**	**96.1**	**76.1**	**69.0**
London	**392**	**84.2**	**96.9**	**312**	**281**	**90.1**	**95.4**	**57.3**
South East Coast	95	70.5	93.7	65	61	93.8	85.2	75.4
South Central	127	76.4	90.6	92	83	90.2	89.2	69.9
South West	126	74.6	96.8	91	88	96.7	72.7	73.9
South of England	**348**	**74.1**	**93.7**	**248**	**232**	**93.5**	**81.9**	**72.8**
England	**1507**	**79.5**	**95.2**	**1139**	**1064**	**93.4**	**85.4**	**67.5**
Isle of Man	**4**	**100.0**	**100.0**	**4**	**4**	**100.0**	**0.0**	**100.0**
Channel Islands	**1**	**100.0**	**100.0**	**1**	**1**	**100.0**	**0.0**	**0.0**
Wales	**86**	**67.4**	**88.4**	**55**	**51**	**92.7**	**88.2**	**66.7**
Scotland	**116**	**89.7**	**90.5**	**100**	**88**	**88.0**	**70.5**	**75.0**
Northern Ireland	**73**	**78.1**	**91.8**	**52**	**50**	**96.2**	**84.0**	**70.0**
TOTAL	**1787**	**79.6**	**94.5**	**1351**	**1258**	**93.1**	**84.4**	**68.1**

Table 13.4 DCD key metrics from the Potential Donor Audit, 1 April 2013 to 31 March 2014, by country and former English Strategic Health Authority

Country/ Strategic Health Authority of donation	Number of patients for whom imminent death was anticipated	DCD referral rate (%)	Number of eligible DCD donors	Number of eligible DCD donors whose family were approached	DCD approach rate (%)	Percentage of DCD approaches that involved a SN-OD (%)	DCD consent/ authorisation rate (%)
North East	439	87.9	271	133	49.1	75.9	59.4
North West	1048	68.7	438	191	43.6	81.7	50.3
Yorkshire and the Humber	684	75.7	295	145	49.2	73.1	49.0
North of England	**2171**	**74.8**	**1004**	**469**	**46.7**	**77.4**	**52.5**
East Midlands	438	63.7	248	117	47.2	59.8	51.3
West Midlands	656	64.8	441	185	42.0	49.7	49.7
East of England	531	79.8	383	203	53.0	74.9	54.7
Midlands and East	**1625**	**69.4**	**1072**	**505**	**47.1**	**62.2**	**52.1**
London	**887**	**75.3**	**526**	**295**	**56.1**	**86.8**	**59.3**
South East Coast	427	67.2	229	109	47.6	79.8	58.7
South Central	448	60.9	264	120	45.5	79.2	53.3
South West	571	76.4	343	192	56.0	53.1	57.8
South of England	**1446**	**68.9**	**836**	**421**	**50.4**	**67.5**	**56.8**
England	**6129**	**72.1**	**3438**	**1690**	**49.2**	**72.0**	**54.6**
Isle of Man	**8**	**0.0**	**3**	**0**	**0.0**	**-**	**-**
Channel Islands	**5**	**40.0**	**5**	**1**	**20.0**	**0.0**	**100.0**
Wales	**490**	**68.6**	**311**	**117**	**37.6**	**79.5**	**47.9**
Scotland	**318**	**63.8**	**228**	**128**	**56.1**	**55.5**	**52.3**
Northern Ireland	**226**	**58.8**	**154**	**53**	**34.4**	**73.6**	**45.3**
TOTAL	**7176**	**70.9**	**4139**	**1989**	**48.1**	**71.4**	**53.8**

Tables 13.5 and **13.6** show more detailed information on the key metrics by Organ Donation Services Team (ODST) for DBD and DCD data, respectively. Specialist Nurses for Organ Donation (SN-ODs) work within an ODST, which covers an area of the UK. As seen in **Table 13.5**, the neurological death testing rate was highest for the Scotland team, the DBD referral rate was highest for the Northern team, the DBD approach rate was highest for the Eastern team and the proportion of DBD approaches involving a SN-OD was highest for the London team. **Table 13.6** indicates that for DCD patients, the highest referral rate was for the Northern team, the highest approach rate was for the South West team and the proportion of DCD approaches involving a SN-OD was highest for the London team. No account has been taken of the demographics of the populations within the teams which may impact on the rates presented.

Table 13.5 DBD key metrics from the Potential Donor Audit, 1 April 2013 to 31 March 2014, by Organ Donation Services Team (ODST)

ODST	Number of patients where neurological death was suspected	Neurological death testing rate (%)	DBD referral rate (%)	Number of eligible DBD donors	Number of eligible DBD donors whose family were approached	DBD approach rate (%)	Percentage of DBD approaches that involved a SN-OD (%)	DBD consent/ authorisation rate (%)
Eastern	134	80.6	94.8	104	102	98.1	90.2	74.5
London	323	84.8	97.2	258	236	91.5	94.9	55.5
Midlands	226	76.1	92.9	157	148	94.3	64.2	64.2
North West	195	81.0	97.4	151	148	98.0	89.2	69.6
Northern	94	85.1	97.9	78	72	92.3	81.9	79.2
Northern Ireland	73	78.1	91.8	52	50	96.2	84.0	70.0
Scotland	116	89.7	90.5	100	88	88.0	70.5	75.0
South Central	151	74.2	91.4	105	96	91.4	90.6	70.8
South East	165	75.2	94.5	120	107	89.2	90.7	71.0
South Wales	70	65.7	90.0	44	40	90.9	87.5	67.5
South West	106	77.4	96.2	81	78	96.3	69.2	74.4
Yorkshire	134	78.4	92.5	101	93	92.1	89.2	69.9
TOTAL	**1787**	**79.6**	**94.5**	**1351**	**1258**	**93.1**	**84.4**	**68.1**

Table 13.6	DCD key metrics from the Potential Donor Audit, 1 April 2013 to 31 March 2014, by Organ Donation Services Team (ODST)						
ODST	Number of patients for whom imminent death was anticipated	DCD referral rate (%)	Number of eligible DCD donors	Number of eligible DCD donors whose family were approached	DCD approach rate (%)	Percentage of DCD approaches that involved a SN-OD (%)	DCD consent/ authorisation rate (%)
Eastern	550	79.8	396	205	51.8	75.1	55.1
London	749	77.0	458	254	55.5	87.0	61.0
Midlands	947	66.1	623	281	45.1	51.2	48.4
North West	1139	69.1	461	202	43.8	84.2	51.0
Northern	472	86.2	296	142	48.0	73.2	56.3
Northern Ireland	226	58.8	154	53	34.4	73.6	45.3
Scotland	318	63.8	228	128	56.1	55.5	52.3
South Central	584	62.0	348	153	44.0	81.0	55.6
South East	570	66.7	302	151	50.0	80.8	56.3
South Wales	381	66.7	271	100	36.9	79.0	50.0
South West	472	77.8	273	165	60.4	47.3	57.6
Yorkshire	768	72.3	329	155	47.1	73.5	50.3
TOTAL	**7176**	**70.9**	**4139**	**1989**	**48.1**	**71.4**	**53.8**

Table 13.7 shows key metrics separately for patients meeting the PDA criteria who were referred in an ICU or an emergency department (irrespective of where the patient died), for DBD and DCD, respectively. Note that the total number of patients in this table and the associated rates do not match the other tables throughout this chapter as **Table 13.7** is based on the subset of patients who were referred to the ODST.

Table 13.8 shows key metrics separately for adult and paediatric patients, for DBD and DCD, respectively. Note that of the 117 paediatric patients for whom neurological death was suspected, tests were not performed on 47 patients, 6 of whom were less than two months post term.

Table 13.7 DBD and DCD key metrics from the Potential Donor Audit, 1 April 2013 to 31 March 2014, by unit where patient referred from, for patients who met the PDA criteria and were referred

Eligible donor type	Unit where patient was referred from	Number of patients who were referred[1]	Neurological death testing rate (%)	Number of eligible donors	Number of eligible donors whose family were approached	Approach rate (%)	Percentage of approaches involving a SN-OD (%)	Consent/ authorisation rate (%)	Number of actual donors[2]
DBD	Critical care	1491	84.3	1191	1111	93.3	85.7	66.4	676
	Emergency dept.	197	74.6	145	140	96.6	78.6	85.0	112
	TOTAL	**1688**	**83.2**	**1336**	**1251**	**93.6**	**84.9**	**68.5**	**788**
DCD	Critical care	4714		2852	1686	59.1	74.7	56.1	458
	Emergency dept.	376		297	234	78.8	68.4	53.4	64
	TOTAL	**5090**		**3149**	**1920**	**61.0**	**74.0**	**55.8**	**522**

[1] DBD referral criteria: patients where neurological death was suspected; DCD referral criteria: patients for whom imminent death was anticipated
[2] Actual donors resulting from eligible DBD donors includes 12 DCD donors referred from critical care and 3 DCD donors referred from emergency departments

Table 13.8 DBD and DCD key metrics from the Potential Donor Audit, 1 April 2013 to 31 March 2014, by age group

Eligible donor type	Age group	Number of patients who met referral criteria[1]	Neurological death testing rate (%)	Referral rate (%)	Number of eligible donors	Number of eligible donors whose family were approached	Approach rate (%)	Percentage of approaches involving a SN-OD (%)	Consent/ authorisation rate (%)	Number of actual donors[2]
DBD	Adult (>=18)	1670	81.0	94.9	1283	1200	93.5	84.9	67.9	748
	Paediatric (<18)	117	59.8	88.0	68	58	85.3	74.1	72.4	40
	TOTAL	**1787**	**79.6**	**94.5**	**1351**	**1258**	**93.1**	**84.4**	**68.1**	**788**
DCD	Adult (>=18)	6946		71.4	3986	1918	48.1	72.0	54.5	506
	Paediatric (<18)	230		56.5	153	71	46.4	54.9	36.6	16
	TOTAL	**7176**		**70.9**	**4139**	**1989**	**48.1**	**71.4**	**53.8**	**522**

[1] DBD referral criteria: patients where neurological death was suspected; DCD referral criteria: patients for whom imminent death was anticipated
[2] Actual donors resulting from eligible DBD donors includes 1 DCD donor under 18 years of age and 14 DCD donors aged 18 years and over

13.5 Consent/ authorisation rates

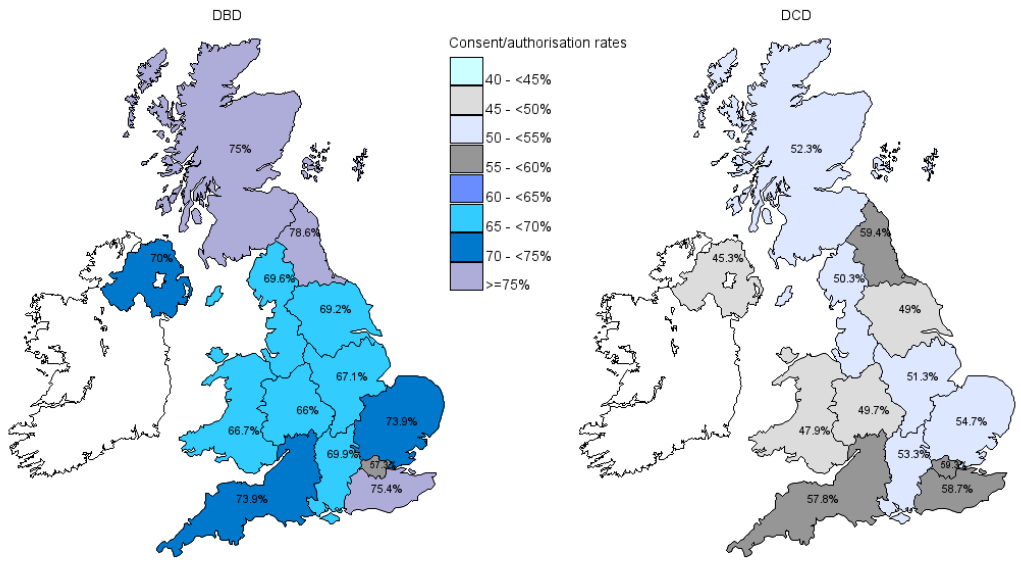
The overall DBD consent/authorisation rate was 68.1% and the 95% confidence limits for this percentage are 65.5% - 70.7%. For DCD, the overall rate was 53.8% and the 95% confidence limits are 51.6% - 56.0%.

Consent/authorisation rates by former English SHA or country are illustrated in **Figure 13.4** and by Organ Donation Services Team in **Figure 13.5** for both DBD and DCD. Caution should be applied when interpreting these consent/authorisation rates as no adjustment has been made for the mix of patients in terms of age, sex and ethnicity.

Across the former English SHA and countries, the DBD consent/authorisation rates range from 57.3% in London to 78.6% in the North East. DCD consent/authorisation rates range from 45.3% in Northern Ireland to 59.4% in the North East.

The overall consent/authorisation rates (combining DBD and DCD) for England, Wales, Scotland and Northern Ireland were 59.6%, 53.6%, 61.6% and 57.3%, respectively.

Figure 13.4 Consent/authorisation rates by English SHA/country



Across the Organ Donation Services Teams, the DBD consent/authorisation rates range from 55.5% in the London team to 79.2% in the Northern team. DCD consent/authorisation rates range from 45.3% in the Northern Ireland team to 61% in the London team.

Figure 13.5 Consent/authorisation rates by Organ Donation Services Team

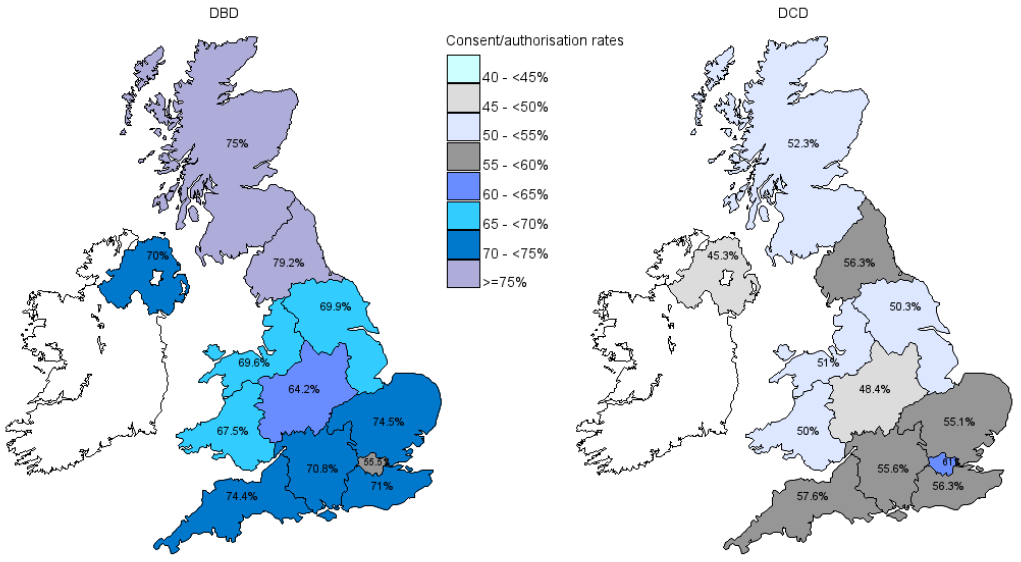


Table 13.9 shows the consent/authorisation rate separately for white patients and patients from ethnic minority groups. The DBD consent/authorisation rates for white patients and patients from ethnic minority groups were 73.6% and 38.1%, respectively. A smaller, but still significant, difference was observed for DCD consent/authorisation rates: 57.0% and 35.9%, respectively. Note that there were an additional 22 DBD and 89 DCD families approached where the ethnicity was not known or not reported.

The Northern Ireland team approached no families from ethnic minority groups during the time period. The Northern, Scotland, South Wales and South West teams each accounted for only 1-2% of families from ethnic minority groups approached for a decision about organ donation, whereas London accounted for 47%. Most teams had a very small proportion, therefore accounting for some of the variation observed in overall consent/authorisation rates between teams. Note that consent/authorisation rates have not been provided where the number of families approached is less than ten.

Table 13.9 DBD and DCD consent/authorisation rates from the Potential Donor Audit, 1 April 2013 to 31 March 2014, by Organ Donation Services Team (ODST) and ethnicity

	White eligible donors					Eligible donors from ethnic minority groups					All
ODST	Number of eligible DBD donors whose family were approached	DBD consent/ authorisation rate (%)	Number of eligible DCD donors whose family were approached	DCD consent/ authorisation rate (%)	Overall consent/ authorisation rate (%)	Number of eligible DBD donors whose family were approached	DBD consent/ authorisation rate (%)	Number of eligible DCD donors whose family were approached	DCD consent/ authorisation rate (%)	Overall consent/ authorisation rate (%)	Overall consent/ authorisation rate (%) [1]
Eastern	93	78.5	189	58.7	**65.2**	7	-	9	-	**25.0**	**61.6**
London	148	66.9	192	68.2	**67.6**	85	34.1	60	40.0	**36.6**	**58.4**
Midlands	121	70.2	236	51.7	**58.0**	26	38.5	29	34.5	**36.4**	**53.8**
North West	134	72.4	177	55.4	**62.7**	13	46.2	8	-	**42.9**	**58.9**
Northern	67	85.1	130	61.5	**69.5**	3	-	2	-	**-**	**64.0**
Northern Ireland	49	71.4	53	45.3	**57.8**	0	-	0	-	**-**	**57.3**
Scotland	83	78.3	116	54.3	**64.3**	2	-	4	-	**-**	**61.6**
South Central	84	73.8	142	57.7	**63.7**	10	50.0	8	-	**33.3**	**61.4**
South East	93	73.1	136	56.6	**63.3**	13	53.8	11	54.5	**54.2**	**62.4**
South Wales	35	65.7	94	51.1	**55.0**	3	-	1	-	**-**	**55.0**
South West	76	76.3	152	59.9	**65.4**	1	-	3	-	**-**	**63.0**
Yorkshire	85	75.3	142	53.5	**61.7**	5	-	6	-	**9.1**	**57.7**
TOTAL	**1068**	**73.6**	**1759**	**57.0**	**63.3**	**168**	**38.1**	**141**	**33.3**	**35.9**	**59.4**

[1] Includes 111 families approached where the ethnicity was not known or not reported

13.6 Specialist Nurse - Organ Donation (SN-OD) involvement

Table 13.10 shows the proportion of family approaches that involved a SN-OD, for DBD and DCD separately, and overall. Nationally, 84.4% of DBD and 71.4% of DCD family approaches involved a SN-OD, but there is wide variation between teams. **Table 13.11** shows the effect on the consent/authorisation rate when a SN-OD is involved or not involved in the approach to a family for a decision about organ donation. Evidence shows that the family is more likely to consent to/ authorise donation when a trained SN-OD is involved in the approach and this is particularly apparent for eligible DCD donors. Again, there is wide variation between teams.

Caution should be applied when interpreting these rates as no account has been taken of approaches initiated by the family, ODR status or ethnicity.

Table 13.10 Percentage of family approaches involving a Specialist Nurse - Organ Donation (SN-OD) from the Potential Donor Audit, 1 April 2013 to 31 March 2014, by Organ Donation Services Team (ODST)

	DBD			DCD			All
ODST	Number of eligible DBD donors whose family were approached	Number of eligible DBD donors where SN-OD involved in approach	Percentage of DBD approaches that involved a SN-OD (%)	Number of eligible DCD donors whose family were approached	Number of eligible DCD donors where SN-OD involved in approach	Percentage of DCD approaches that involved a SN-OD (%)	Overall percentage of DBD/DCD approaches that involved a SN-OD (%)
Eastern	102	92	90.2	205	154	75.1	**80.1**
London	236	224	94.9	254	221	87.0	**90.8**
Midlands	148	95	64.2	281	144	51.2	**55.7**
North West	148	132	89.2	202	170	84.2	**86.3**
Northern	72	59	81.9	142	104	73.2	**76.2**
Northern Ireland	50	42	84.0	53	39	73.6	**78.6**
Scotland	88	62	70.5	128	71	55.5	**61.6**
South Central	96	87	90.6	153	124	81.0	**84.7**
South East	107	97	90.7	151	122	80.8	**84.9**
South Wales	40	35	87.5	100	79	79.0	**81.4**
South West	78	54	69.2	165	78	47.3	**54.3**
Yorkshire	93	83	89.2	155	114	73.5	**79.4**
TOTAL	**1258**	**1062**	**84.4**	**1989**	**1420**	**71.4**	**76.4**

Table 13.11 DBD and DCD consent/authorisation rates with/without SN-OD involvement from the Potential Donor Audit, 1 April 2013 to 31 March 2014, by Organ Donation Services Team (ODST)

	SN-OD involved in approach					SN-OD not involved in approach					All
ODST	Number of eligible DBD donors whose family were approached	DBD consent/ authorisation rate (%)	Number of eligible DCD donors whose family were approached	DCD consent/ authorisation rate (%)	Overall consent/ authorisation rate (%)	Number of eligible DBD donors whose family were approached	DBD consent/ authorisation rate (%)	Number of eligible DCD donors whose family were approached	DCD consent/ authorisation rate (%)	Overall consent/ authorisation rate (%)	Overall consent/ authorisation rate (%)
Eastern	92	77.2	154	64.3	**69.1**	10	50.0	51	27.5	**31.1**	**61.6**
London	224	56.3	221	66.5	**61.3**	12	41.7	33	24.2	**28.9**	**58.4**
Midlands	95	62.1	144	68.8	**66.1**	53	67.9	137	27.0	**38.4**	**53.8**
North West	132	73.5	170	58.2	**64.9**	16	37.5	32	12.5	**20.8**	**58.9**
Northern	59	86.4	104	72.1	**77.3**	13	46.2	38	13.2	**21.6**	**64.0**
Northern Ireland	42	69.0	39	48.7	**59.3**	8	75.0	14	35.7	**50.0**	**57.3**
Scotland	62	80.6	71	74.6	**77.4**	26	61.5	57	24.6	**36.1**	**61.6**
South Central	87	72.4	124	66.1	**68.7**	9	55.6	29	10.3	**21.1**	**61.4**
South East	97	71.1	122	64.8	**67.6**	10	70.0	29	20.7	**33.3**	**62.4**
South Wales	35	74.3	79	59.5	**64.0**	5	20.0	21	14.3	**15.4**	**55.0**
South West	54	77.8	78	71.8	**74.2**	24	66.7	87	44.8	**49.5**	**63.0**
Yorkshire	83	72.3	114	62.3	**66.5**	10	50.0	41	17.1	**23.5**	**57.7**
TOTAL	**1062**	**70.0**	**1420**	**65.2**	**67.2**	**196**	**58.2**	**569**	**25.5**	**33.9**	**59.4**

13.7 Comparison with previous years

Table 13.12 and **Figure 13.6** show the key metrics from the PDA for the last four financial years. Changes were made to the PDA on 1 April 2013 so caution should be applied when comparing time periods. Although the key metrics differ slightly when the data is subset based on the old PDA inclusion criteria the direction of change (increase/decrease), and therefore the key messages, are the same.

Table 13.12 DBD and DCD key metrics from the Potential Donor Audit, by financial year

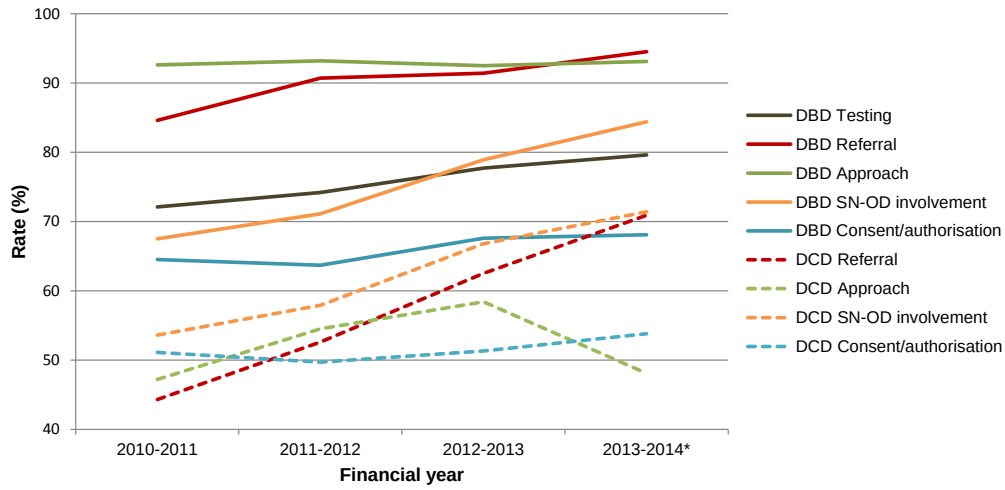
Eligible donor type	Financial year	Number of patients who met referral criteria [1]	Neurological death testing rate (%)	Referral rate (%)	Number of eligible donors	Number of eligible donors whose family were approached	Approach rate (%)	Proportion of family approaches involving a SN-OD (%)	Number of families who consented to/ authorised donation	Consent/ authorisation rate (%)	Number of actual donors [2]
DBD	**2010-2011**	1675	72.1	84.6	1143	1058	92.6	67.5	682	64.5	617
	2011-2012	1662	74.2	90.7	1169	1090	93.2	71.1	694	63.7	636
	2012-2013	1633	77.7	91.4	1189	1100	92.5	78.9	744	67.6	676
	2013-2014[3]	1787	79.6	94.5	1351	1258	93.1	84.4	857	68.1	788
DCD	**2010-2011**	7223		44.3	2885	1361	47.2	53.6	695	51.1	343
	2011-2012	6904		52.6	2934	1599	54.5	57.9	794	49.7	390
	2012-2013	6961		62.5	3113	1818	58.4	66.8	932	51.3	449
	2013-2014[3]	7176		70.9	4139	1989	48.1	71.4	1071	53.8	522
TOTAL	**2010-2011**	8898		51.9	4028	2419	60.1	59.7	1377	56.9	960
	2011-2012	8566		60.0	4103	2689	65.5	63.3	1488	55.3	1026
	2012-2013	8594		68.0	4302	2918	67.8	71.4	1676	57.4	1125
	2013-2014[3]	8963		75.6	5490	3247	59.1	76.4	1928	59.4	1310

[1] DBD referral criteria: patients where neurological death was suspected; DCD referral criteria: patients for whom imminent death was anticipated
[2] Actual donors resulting from eligible DBD donors includes 6 DCD donors in 2010-2011, 11 DCD donors in 2011-2012, 18 DCD donors in 2012-2013 and 15 DCD donors in 2013-2014
[3] Changes were made to the PDA on 1 April 2013 so caution should be applied when comparing time periods. The main changes involved the introduction of cardiothoracic ICUs to the audit, increasing the upper age limit from 75 to 80 years, bringing absolute medical contraindications in line with current practice and changing the imminent death definition to be clear that death was anticipated within four hours.

An increase has been observed in the neurological death testing rate, but 20% of patients who met the criteria were not tested in 2013-2014. Details, such as the reasons for not testing, can be found in the accompanying PDA Annual Report available at http://www.odt.nhs.uk/odt/potential-donor-audit/. Increases have been observed in the rates of referral to the SN-ODs, especially for DCD. The DBD approach rate has remained static at 93%, but a decrease has been observed in the DCD approach rate. Increases have also been observed in the proportion of approaches involving a SN-OD for both DBD and DCD.

There has been no real change in the DBD consent/ authorisation rate, but the actual number of families consenting to/ authorising donation has increased. Sixty-three of the 113 extra consents/authorisations are not due to the change in the PDA inclusion criteria. An increase in the consent/authorisation rate has been observed for DCD, however although there has been an increase in the actual number of families consenting to/ authorising donation, this increase is due to changes in the PDA inclusion criteria.

Figure 13.6 DBD and DCD key metrics from the Potential Donor Audit



* Changes were made to the PDA on 1 April 2013 so caution should be applied when comparing time periods. The main changes involved the introduction of cardiothoracic ICUs to the audit, increasing the upper age limit from 75 to 80 years, bringing absolute medical contraindications in line with current practice and changing the imminent death definition to be clear that death was anticipated within four hours.

Appendices

Appendix I provides details of the 1,320 deceased solid organ donors reported in 2013-2014. Details are given for each donating hospital and the hospitals have been grouped by former 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 by donor country/ former Strategic Health Authority of residence is given for donors after brain death in **Appendix IIA** and donors after circulatory death in **Appendix IIB**.

The populations used for country/ former Strategic Health Authority per million population are given in **Appendix III** these populations are mid-2012 estimates based on ONS 2011 Census figures.

Appendix IV shows the import and export of organs to and from the UK in the last three financial years. **Appendix IVA** and **Appendix IVB** show the number and type of transplants resulting from the export from and import to the UK, respectively. **Appendix IVC** shows the number and type of transplants in the UK into non-UK residents. When organs are donated from deceased donors and cannot be used in that country, the organs are offered for use in other countries. This is usually because there is no suitable recipient because of blood group or size. The current EU Directive ensures that all organs that are imported into the UK are evaluated to the same high standards as in the UK. The UK has special arrangements with the Republic of Ireland so that some patients from Ireland will come to the UK for the transplant procedure where units in the UK have particular expertise. For those with fulminant hepatic failure, the UK and Ireland will also share livers. International sharing of organs represents a very small proportion of the UK transplant activity and is set up to ensure that all donated organs are used whenever appropriate.

Appendix 1 Deceased solid organ donors and donated organs in the UK, 1 April 2013 - 31 March 2014 (2012-2013), by donating hospital

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas	Bowel
East Midlands														
Boston, Pilgrim Hospital	2	(1)	0	(0)	2	(1)	2	(1)	4	0	0	2	1	0
Chesterfield, Chesterfield Royal Hospital	3	(1)	2	(0)	5	(1)	4	(1)	10	1	0	4	1	0
Derby, Royal Derby Hospital	1	(2)	2	(2)	3	(4)	1	(3)	6	1	2	1	1	0
Kettering, Kettering General Hospital	7	(7)	1	(1)	8	(8)	8	(7)	16	1	0	7	3	0
Leicester, Glenfield General Hospital	3	(1)	5	(2)	8	(3)	4	(2)	14	2	0	4	3	2
Leicester, Leicester Royal Infirmary	1	(4)	2	(2)	3	(6)	3	(5)	6	1	4	3	2	0
Lincoln, Lincoln County Hospital	6	(0)	3	(2)	9	(2)	8	(0)	18	2	7	8	3	0
Northampton, Northampton General Hospital	1	(0)	5	(2)	6	(2)	4	(1)	12	0	0	4	0	0
Nottingham, Nottingham City Hospital	0	(1)	2	(1)	2	(2)	0	(0)	2	0	0	1	0	0
Nottingham, Nottingham University Hospital	15	(5)	18	(10)	33	(15)	22	(9)	64	1	6	23	8	0
Sutton-In-Ashfield, King's Mill Hospital	1	(3)	1	(2)	2	(5)	1	(4)	4	0	0	1	0	0
Total	**40**	**(25)**	**41**	**(24)**	**81**	**(49)**	**57**	**(33)**	**156**	**9**	**19**	**58**	**22**	**2**
East of England														
Basildon, Basildon Hospital	7	(5)	3	(3)	10	(8)	5	(4)	16	1	2	7	3	0
Bedford, Bedford Hospital	1	(3)	1	(3)	2	(6)	0	(3)	4	0	0	0	0	0
Bury St Edmunds, West Suffolk Hospital	1	(1)	2	(3)	3	(4)	1	(2)	6	0	0	1	0	0
Cambridge, Addenbrooke's Hospital	17	(20)	19	(25)	36	(45)	27	(28)	71	7	13	25	18	2
Chelmsford, Broomfield Hospital	1	(6)	1	(0)	2	(6)	1	(6)	4	1	0	1	0	0
Colchester, Colchester General Hospital	3	(0)	2	(6)	5	(6)	3	(2)	8	1	0	4	1	0
Great Yarmouth, James Paget Hospital	0	(3)	1	(7)	1	(10)	0	(4)	2	0	0	0	0	0
Harlow, Princess Alexandra Hospital	0	(5)	2	(0)	2	(5)	1	(5)	4	0	0	1	0	0
Huntingdon, Hinchingbrooke Hospital	1	(1)	3	(1)	4	(2)	2	(1)	8	1	2	2	2	0
Ipswich, Ipswich Hospital	4	(2)	2	(4)	6	(6)	6	(4)	12	0	0	5	3	0
Kings Lynn, The Queen Elizabeth Hospital	2	(1)	6	(2)	8	(3)	6	(2)	16	0	0	6	3	0
Luton, Luton And Dunstable Hospital	4	(4)	3	(5)	7	(9)	3	(6)	12	0	0	4	1	0
Norwich, Norfolk And Norwich University Hospital	7	(6)	6	(10)	13	(16)	9	(10)	26	2	2	9	6	0
Papworth, Papworth Hospital	0	(1)	1	(3)	1	(4)	0	(2)	2	0	0	0	0	0
Peterborough, Peterborough City Hospital	2	(0)	1	(1)	3	(1)	1	(1)	4	0	2	2	0	0
Stevenage, Lister Hospital	5	(3)	3	(3)	8	(6)	6	(4)	16	1	2	6	1	0
Watford, Watford General Hospital	4	(1)	2	(1)	6	(2)	4	(2)	12	0	0	4	2	0
Welwyn Garden City, Queen Elizabeth Hospital	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0	0
Westcliff On Sea, Southend Hospital	1	(4)	1	(2)	2	(6)	1	(5)	4	0	2	0	0	0
Total	**60**	**(67)**	**59**	**(79)**	**119**	**(146)**	**76**	**(92)**	**227**	**14**	**25**	**77**	**40**	**2**

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas	Bowel
London														
Barnet, Barnet General Hospital	0	(0)	0	(3)	0	(3)	0	(1)	0	0	0	0	0	0
Carshalton, St Helier Hospital	2	(1)	0	(0)	2	(1)	2	(1)	4	0	0	2	0	0
Chelsea, Chelsea And Westminster Hospital	1	(1)	0	(1)	1	(2)	1	(1)	2	0	2	1	0	0
Croydon, Mayday University Hospital	0	(0)	1	(1)	1	(1)	1	(1)	2	0	0	1	1	0
Enfield, Chase Farm Hospital	1	(1)	0	(2)	1	(3)	1	(3)	2	0	2	1	0	0
Epsom General Hospital	1	(0)	0	(0)	1	(0)	1	(0)	2	0	0	1	0	0
Evelina Childrens Hospital	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0	0
Harefield, Harefield Hospital	1	(1)	4	(4)	5	(5)	4	(3)	8	0	6	4	4	0
Harrow, Northwick Park Hospital	2	(6)	3	(1)	5	(7)	3	(6)	10	0	2	3	2	0
Ilford, King George Hospital	0	(1)	0	(1)	0	(2)	0	(0)	0	0	0	0	0	0
Isleworth, West Middlesex University Hospital	3	(3)	0	(0)	3	(3)	2	(3)	4	0	2	2	1	0
Kingston, Kingston Hospital	0	(2)	1	(1)	1	(3)	1	(3)	2	0	0	1	0	0
London, Central Middlesex Hospital	0	(0)	1	(0)	1	(0)	0	(0)	2	0	0	0	0	0
London, Charing Cross Hospital	6	(3)	1	(2)	7	(5)	3	(4)	14	2	4	3	3	0
London, Cromwell Hospital	1	(0)	0	(0)	1	(0)	1	(0)	2	1	0	1	0	0
London, Great Ormond Street Hospital For Children	2	(0)	1	(1)	3	(1)	3	(0)	6	2	0	2	0	0
London, Hammersmith Hospital	0	(0)	3	(0)	3	(0)	2	(0)	6	0	0	2	0	0
London, Homerton Hospital	1	(0)	1	(0)	2	(0)	1	(0)	4	0	2	1	0	0
London, King's College Hospital	22	(22)	14	(13)	36	(35)	27	(26)	70	8	14	27	20	1
London, National Hospital For Neurology And Neurosurgery	11	(15)	2	(1)	13	(16)	8	(14)	22	3	2	10	5	0
London, Newham General Hospital	1	(0)	0	(0)	1	(0)	1	(0)	2	0	0	1	1	0
London, North Middlesex Hospital	4	(1)	2	(1)	6	(2)	5	(1)	12	1	2	4	1	0
London, Queen Elizabeth Hospital	1	(3)	0	(3)	1	(6)	1	(5)	2	0	0	1	0	0
London, Royal Brompton Hospital	2	(1)	1	(0)	3	(1)	1	(1)	4	0	0	2	1	1
London, Royal Free Hospital	1	(4)	1	(1)	2	(5)	2	(4)	4	1	2	2	1	0
London, St George's Hospital	23	(19)	4	(2)	27	(21)	22	(19)	50	7	10	22	12	1
London, St Mary's Hospital	7	(2)	1	(4)	8	(6)	5	(4)	14	1	2	6	4	0
London, St Thomas' Hospital	3	(3)	4	(2)	7	(5)	4	(4)	14	0	0	4	1	0
London, The London Chest Hospital	2	(0)	7	(1)	9	(1)	5	(1)	17	0	0	4	1	0
London, The Royal London Hospital (Whitechapel)	29	(12)	7	(5)	36	(17)	30	(15)	65	13	5	32	23	3
London, The Whittington Hospital	1	(0)	1	(1)	2	(1)	0	(0)	4	0	0	0	0	0
London, University College Hospital	1	(1)	1	(1)	2	(2)	0	(0)	2	0	0	1	0	0
London, University Hospital Lewisham	0	(0)	2	(0)	2	(0)	0	(0)	4	0	0	0	0	0
London, Whipps Cross Hospital	0	(1)	0	(3)	0	(4)	0	(3)	0	0	0	0	0	0
Orpington, Princess Royal University Hospital	1	(2)	3	(1)	4	(3)	2	(3)	8	0	0	2	0	0
Romford, Queens Hospital	10	(12)	5	(9)	15	(21)	9	(12)	26	4	4	11	6	0
Southall, Ealing Hospital	0	(0)	1	(1)	1	(1)	1	(0)	2	0	0	1	0	0
Uxbridge, Hillingdon Hospital	3	(2)	0	(1)	3	(3)	2	(2)	6	0	0	2	2	0

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas	Bowel
Total	**143**	**(120)**	**72**	**(67)**	**215**	**(187)**	**151**	**(141)**	**398**	**43**	**61**	**157**	**89**	**6**
North East														
Ashington, Wansbeck Hospital	1	(2)	3	(3)	4	(5)	2	(2)	8	0	0	2	0	0
Darlington, Darlington Memorial Hospital	1	(3)	1	(2)	2	(5)	1	(3)	4	0	0	1	0	0
Durham, University Hospital Of North Durham	5	(4)	1	(0)	6	(4)	3	(4)	6	1	2	6	1	0
Gateshead, Queen Elizabeth Hospital	2	(1)	0	(4)	2	(5)	2	(1)	4	0	0	2	0	0
Hartlepool, University Hospital Of Hartlepool	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0	0
Middlesbrough, The James Cook University Hospital	15	(13)	6	(5)	21	(18)	17	(14)	40	5	4	18	7	1
Newcastle, Freeman Hospital	0	(2)	1	(2)	1	(4)	0	(2)	2	0	0	0	0	0
Newcastle, Royal Victoria Infirmary	17	(23)	16	(11)	33	(34)	25	(25)	66	8	22	22	11	1
North Shields, North Tyneside General Hospital	1	(0)	0	(5)	1	(5)	0	(1)	2	0	0	0	0	0
Northallerton, Friarage Hospital	1	(0)	0	(0)	1	(0)	1	(0)	2	0	0	1	1	0
South Shields, South Tyneside District General Hospital	1	(0)	2	(3)	3	(3)	3	(0)	6	0	2	3	2	0
Stockton-On-Tees, University Hospital Of North Tees	7	(3)	1	(1)	8	(4)	6	(3)	16	3	4	6	5	0
Sunderland, Sunderland Royal Hospital	0	(2)	9	(1)	9	(3)	3	(2)	16	0	0	3	1	0
Total	**51**	**(54)**	**40**	**(37)**	**91**	**(91)**	**63**	**(58)**	**172**	**17**	**34**	**64**	**28**	**2**
North West														
Ashton-Under-Lyne, Tameside General Hospital	2	(1)	1	(0)	3	(1)	1	(1)	6	1	0	1	0	0
Barrow-In-Furness, Furness General Hospital	1	(3)	0	(0)	1	(3)	1	(3)	2	1	2	1	1	0
Blackburn, Royal Blackburn Hospital	1	(2)	3	(0)	4	(2)	2	(1)	8	0	0	2	0	0
Blackpool, Blackpool Victoria Hospital	5	(2)	2	(1)	7	(3)	5	(1)	14	1	2	5	2	0
Bolton, Royal Bolton Hospital	1	(1)	0	(1)	1	(2)	1	(1)	2	0	0	1	1	0
Bury, Fairfield General Hospital	1	(3)	1	(2)	2	(5)	1	(3)	4	0	0	1	1	0
Carlisle, Cumberland Infirmary	1	(0)	0	(3)	1	(3)	1	(2)	2	0	0	1	0	0
Chester, Countess Of Chester Hospital	5	(0)	0	(0)	5	(0)	5	(0)	10	0	1	5	2	0
Crewe, Leighton Hospital	4	(0)	3	(2)	7	(2)	5	(1)	12	1	0	6	2	0
Lancaster, Royal Lancaster Infirmary	0	(1)	2	(1)	2	(2)	1	(0)	4	0	0	1	0	0
Liverpool, Alder Hey Children's Hospital	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0	0
Liverpool, Liverpool Heart And Chest Hospital	1	(0)	0	(0)	1	(0)	1	(0)	2	0	0	1	1	0
Liverpool, Royal Liverpool University Hospital	5	(4)	1	(2)	6	(6)	5	(5)	12	0	3	5	4	0
Liverpool, University Hospital Aintree	3	(2)	2	(2)	5	(4)	3	(2)	10	0	0	3	1	0
Liverpool, Walton Centre For Neurology And Neurosurgery	13	(8)	5	(1)	18	(9)	15	(8)	33	1	4	15	6	0
Macclesfield, Macclesfield District General Hospital	1	(0)	0	(2)	1	(2)	1	(1)	2	0	0	1	0	0
Manchester, Manchester Royal Infirmary	6	(3)	1	(2)	7	(5)	3	(4)	8	2	2	5	1	0
Manchester, North Manchester General Hospital	0	(0)	1	(2)	1	(2)	0	(0)	2	0	0	0	0	0

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas	Bowel
Manchester, Royal Manchester Children's Hospital	1	(0)	1	(0)	2	(0)	1	(0)	4	0	0	1	1	0
Manchester, Trafford General Hospital	1	(1)	0	(0)	1	(1)	1	(1)	2	1	0	1	1	0
Manchester, Wythenshawe Hospital	5	(1)	1	(0)	6	(1)	5	(1)	12	2	4	5	2	0
Oldham, Royal Oldham Hospital (Rochdale Road)	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0	0
Prescot, Whiston Hospital	1	(4)	1	(3)	2	(7)	1	(4)	4	1	0	0	0	0
Preston, Royal Preston Hospital	11	(5)	3	(4)	14	(9)	8	(8)	24	3	10	9	5	0
Salford, Salford Royal	4	(12)	5	(9)	9	(21)	6	(14)	16	0	2	6	3	0
Southport, Southport District General Hospital	3	(1)	0	(0)	3	(1)	2	(1)	6	0	2	2	1	1
Stockport, Stepping Hill Hospital	2	(1)	0	(0)	2	(1)	2	(0)	4	0	0	2	1	0
Warrington, Warrington Hospital	1	(3)	3	(3)	4	(6)	2	(4)	6	0	0	3	2	0
Whitehaven, West Cumberland Hospital	1	(0)	0	(1)	1	(1)	1	(0)	2	0	0	1	1	0
Wigan, Royal Albert Edward Infirmary	1	(1)	4	(3)	5	(4)	3	(2)	10	1	2	3	2	0
Wirral, Arrowe Park Hospital	5	(5)	4	(1)	9	(6)	5	(3)	16	3	2	6	3	0
Total	**86**	**(66)**	**44**	**(45)**	**130**	**(111)**	**88**	**(73)**	**239**	**18**	**36**	**93**	**44**	**1**
South Central														
Aylesbury, Stoke Mandeville Hospital	3	(0)	0	(2)	3	(2)	3	(0)	6	2	4	3	1	0
Basingstoke, North Hampshire Hospital	2	(1)	1	(1)	3	(2)	3	(1)	6	1	2	3	1	0
Milton Keynes, Milton Keynes General Hospital	0	(3)	2	(1)	2	(4)	1	(3)	4	0	0	1	0	0
Newport, St Mary's Hospital	1	(0)	4	(1)	5	(1)	2	(1)	8	0	2	2	0	0
Oxford, John Radcliffe Hospital	13	(16)	8	(4)	21	(20)	17	(14)	42	4	10	15	13	0
Portsmouth, Queen Alexandra Hospital	4	(5)	6	(3)	10	(8)	6	(5)	18	0	2	7	2	0
Reading, Royal Berkshire Hospital	4	(3)	1	(4)	5	(7)	5	(3)	8	1	4	4	4	0
Slough, Wexham Park Hospital	4	(1)	0	(2)	4	(3)	3	(1)	8	1	4	3	1	0
Southampton, Southampton University Hospitals	18	(14)	7	(8)	25	(22)	22	(19)	46	4	12	22	16	2
Winchester, Royal Hampshire County Hospital	2	(2)	0	(0)	2	(2)	2	(2)	4	2	4	2	1	0
Wycombe, Wycombe General Hospital	1	(3)	2	(0)	3	(3)	2	(3)	6	0	2	2	1	0
Total	**52**	**(48)**	**31**	**(26)**	**83**	**(74)**	**66**	**(52)**	**156**	**15**	**46**	**64**	**40**	**2**
South East Coast														
Ashford, William Harvey Hospital	3	(4)	2	(1)	5	(5)	3	(2)	10	1	2	3	1	0
Brighton, Royal Sussex County Hospital	8	(4)	4	(4)	12	(8)	10	(6)	24	1	2	10	4	0
Camberley, Frimley Park Hospital	8	(3)	0	(4)	8	(7)	6	(3)	12	1	4	7	4	0
Canterbury, Kent And Canterbury Hospital	0	(0)	1	(1)	1	(1)	1	(0)	2	0	0	1	0	0
Chertsey, St Peter's Hospital	1	(1)	2	(1)	3	(2)	0	(1)	2	0	0	2	0	0
Chichester, St Richard's Hospital	2	(2)	2	(1)	4	(3)	3	(3)	8	0	2	3	0	0
Dartford, Darent Valley Hospital	0	(2)	2	(3)	2	(5)	1	(2)	4	0	0	1	1	0
Eastbourne, Eastbourne District General Hospital	0	(1)	1	(1)	1	(2)	1	(1)	2	0	0	1	0	0
Gillingham, Medway Hospital	5	(4)	2	(1)	7	(5)	6	(3)	14	0	6	6	1	0

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas	Bowel
Guildford, Royal Surrey County Hospital	2	(1)	1	(0)	3	(1)	1	(1)	4	0	0	2	0	0
Hastings, Conquest Hospital	2	(1)	0	(0)	2	(1)	2	(1)	4	0	0	2	0	0
Haywards Heath, Hurstwood Park Hospital	1	(3)	2	(1)	3	(4)	1	(4)	6	0	0	1	0	0
Haywards Heath, Princess Royal Hospital	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0	0
Maidstone, Maidstone District General Hospital	2	(2)	0	(1)	2	(3)	2	(2)	4	0	0	2	1	0
Margate, Queen Elizabeth The Queen Mother Hospital	0	(0)	1	(0)	1	(0)	0	(0)	2	0	0	0	0	0
Redhill, East Surrey Hospital	5	(2)	2	(1)	7	(3)	6	(3)	14	3	6	6	4	0
Tunbridge Wells, Tunbridge Wells Hospital	1	(0)	1	(2)	2	(2)	1	(1)	2	1	2	2	0	0
Worthing, Worthing Hospital	0	(1)	7	(0)	7	(1)	2	(1)	10	0	0	4	0	0
Total	**40**	**(32)**	**30**	**(22)**	**70**	**(54)**	**46**	**(35)**	**124**	**7**	**24**	**53**	**16**	**0**
South West														
Barnstaple, North Devon District Hospital	1	(2)	1	(3)	2	(5)	1	(3)	4	0	0	1	1	0
Bath, Royal United Hospital	4	(4)	3	(4)	7	(8)	4	(5)	14	3	4	4	3	2
Bournemouth, Royal Bournemouth General Hospital	2	(2)	3	(4)	5	(6)	5	(5)	10	0	0	5	0	0
Bristol, Bristol Royal Hospital For Children	1	(0)	2	(2)	3	(2)	2	(2)	6	1	0	2	1	0
Bristol, Bristol Royal Infirmary	3	(4)	3	(3)	6	(7)	4	(4)	12	1	0	4	2	0
Bristol, Frenchay Hospital	12	(7)	10	(9)	22	(16)	14	(11)	40	1	2	16	5	1
Cheltenham, Cheltenham General Hospital	0	(2)	3	(2)	3	(4)	1	(1)	6	0	0	1	0	0
Dorchester, Dorset County Hospital	3	(2)	7	(3)	10	(5)	4	(3)	16	2	2	5	2	0
Exeter, Royal Devon And Exeter Hospital (Wonford)	4	(1)	1	(0)	5	(1)	4	(1)	10	3	0	4	4	0
Gloucester, Gloucestershire Royal Hospital	3	(5)	2	(5)	5	(10)	2	(7)	10	1	2	1	1	0
Plymouth, Derriford Hospital	12	(8)	8	(7)	20	(15)	17	(13)	35	4	6	18	7	1
Poole, Poole General Hospital	3	(2)	3	(3)	6	(5)	3	(3)	10	1	2	4	2	1
Salisbury, Salisbury District Hospital	2	(0)	1	(0)	3	(0)	2	(0)	4	0	2	2	1	0
Swindon, Great Western Hospital	2	(7)	5	(4)	7	(11)	4	(7)	14	1	3	4	2	0
Taunton, Taunton And Somerset Hospital (Musgrove Park)	2	(1)	3	(2)	5	(3)	4	(1)	10	0	0	4	1	0
Torquay, Torbay Hospital	4	(0)	0	(1)	4	(1)	3	(0)	8	0	0	3	2	0
Truro, Royal Cornwall Hospital (Treliske)	3	(1)	2	(1)	5	(2)	3	(1)	10	0	2	3	2	0
Weston-Super-Mare, Weston General Hospital	1	(0)	3	(1)	4	(1)	3	(1)	7	0	0	3	1	0
Yeovil, Yeovil District Hospital	1	(2)	2	(2)	3	(4)	1	(3)	4	1	3	1	1	0
Total	**63**	**(50)**	**62**	**(56)**	**125**	**(106)**	**81**	**(71)**	**230**	**19**	**28**	**85**	**38**	**5**
West Midlands														
Birmingham, Birmingham Children's Hospital	0	(4)	0	(0)	0	(4)	0	(4)	0	0	0	0	0	0
Birmingham, Birmingham Heartlands Hospital	5	(3)	0	(1)	5	(4)	5	(3)	10	2	1	5	1	0
Birmingham, City Hospital	0	(3)	0	(0)	0	(3)	0	(3)	0	0	0	0	0	0

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas	Bowel
Birmingham, Queen Elizabeth Hospital Birmingham	13	(18)	10	(8)	23	(26)	17	(25)	39	4	11	19	6	0
Burton-On-Trent, Queen's Hospital	4	(0)	0	(0)	4	(0)	4	(0)	8	0	1	4	1	0
Coventry, University Hospital	8	(4)	7	(13)	15	(17)	11	(11)	26	2	8	13	8	2
Dudley, Russells Hall Hospital	3	(1)	1	(1)	4	(2)	3	(2)	8	2	0	2	1	0
Hereford, The County Hospital	0	(2)	1	(3)	1	(5)	1	(3)	2	0	2	1	1	0
Nuneaton, George Eliot Hospital	1	(1)	1	(0)	2	(1)	1	(1)	4	0	2	1	0	0
Redditch, The Alexandra Hospital	0	(2)	1	(2)	1	(4)	0	(2)	2	0	0	0	0	0
Shrewsbury, Royal Shrewsbury Hospital	0	(1)	1	(1)	1	(2)	1	(2)	2	0	0	1	0	0
Stafford, Stafford Hospital	1	(1)	1	(0)	2	(1)	1	(1)	4	0	0	1	1	0
Stoke-On-Trent, University Hospital North Staffordshire	14	(14)	8	(10)	22	(24)	17	(22)	44	2	8	16	7	0
Sutton Coldfield, Good Hope District General Hosp.	2	(3)	2	(1)	4	(4)	2	(3)	8	1	0	2	0	0
Telford, The Princess Royal Hospital	1	(1)	2	(2)	3	(3)	1	(1)	6	0	0	1	1	0
Walsall, Manor Hospital	4	(0)	0	(1)	4	(1)	4	(0)	8	2	2	4	3	0
Warwick, Warwick Hospital	1	(0)	1	(0)	2	(0)	1	(0)	4	0	0	1	1	0
West Bromwich, Sandwell General Hospital	3	(2)	0	(0)	3	(2)	3	(2)	6	0	4	3	1	0
Wolverhampton, New Cross Hospital	5	(6)	2	(1)	7	(7)	4	(5)	13	1	2	4	1	0
Worcester, Worcestershire Royal Hospital	1	(5)	4	(5)	5	(10)	3	(6)	10	0	0	3	0	0
Total	**66**	**(71)**	**42**	**(49)**	**108**	**(120)**	**79**	**(96)**	**204**	**16**	**41**	**81**	**33**	**2**
Yorkshire and the Humber														
Barnsley, Barnsley District General Hospital	1	(2)	1	(2)	2	(4)	1	(1)	3	0	2	1	0	0
Bradford, Bradford Royal Infirmary	1	(4)	2	(2)	3	(6)	1	(3)	5	0	0	1	1	0
Cottingham, Castle Hill Hospital	1	(0)	0	(1)	1	(1)	1	(0)	2	0	0	1	0	0
Dewsbury, Dewsbury And District Hospital	1	(1)	2	(2)	3	(3)	2	(1)	6	0	0	2	0	0
Doncaster, Doncaster Royal Infirmary	4	(2)	0	(1)	4	(3)	4	(1)	8	1	2	4	2	0
Grimsby, Diana Princess Of Wales Hospital	0	(2)	4	(0)	4	(2)	1	(2)	7	0	0	1	1	0
Halifax, Calderdale Royal Hospital	4	(3)	1	(0)	5	(3)	4	(3)	10	0	0	4	1	0
Harrogate, Harrogate District Hospital	0	(1)	0	(2)	0	(3)	0	(1)	0	0	0	0	0	0
Huddersfield, Huddersfield Royal Infirmary	3	(2)	1	(4)	4	(6)	3	(4)	6	0	0	4	2	0
Hull, Hull Royal Infirmary	1	(3)	3	(1)	4	(4)	1	(3)	8	0	0	1	0	0
Leeds, Leeds General Infirmary	11	(11)	10	(5)	21	(16)	13	(14)	40	4	12	12	9	0
Leeds, St James's University Hospital	1	(2)	2	(2)	3	(4)	2	(3)	6	0	2	1	0	0
Rotherham, Rotherham District General Hospital	1	(0)	1	(1)	2	(1)	1	(1)	4	0	0	1	0	0
Scarborough, Scarborough General Hospital	2	(3)	1	(0)	3	(3)	2	(2)	6	0	4	2	2	0
Sheffield, Northern General Hospital	5	(2)	2	(5)	7	(7)	4	(4)	14	3	2	4	3	1
Sheffield, Royal Hallamshire Hospital	6	(4)	1	(3)	7	(7)	6	(3)	14	1	4	6	4	0
Sheffield, Sheffield Children's Hospital	2	(0)	0	(0)	2	(0)	2	(0)	4	2	4	2	2	0
Wakefield, Pinderfields General Hospital	0	(3)	5	(4)	5	(7)	2	(4)	8	0	2	3	0	0
Worksop, Bassetlaw District General Hospital	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0	0

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas	Bowel
York, York District Hospital	5	(4)	2	(1)	7	(5)	6	(3)	14	1	2	6	1	0
Total	**49**	**(50)**	**38**	**(36)**	**87**	**(86)**	**56**	**(54)**	**165**	**12**	**36**	**56**	**28**	**1**
Channel Islands														
Guernsey, Princess Elizabeth Hospital	0	(0)	1	(0)	1	(0)	1	(0)	2	0	0	1	0	0
St Helier, Jersey General Hospital	0	(2)	0	(0)	0	(2)	0	(2)	0	0	0	0	0	0
Total	**0**	**(2)**	**1**	**(0)**	**1**	**(2)**	**1**	**(2)**	**2**	**0**	**0**	**1**	**0**	**0**
Isle of Man														
Douglas, Nobles I-O-M Hospital	4	(0)	0	(0)	4	(0)	2	(0)	6	2	0	3	1	1
Total	**4**	**(0)**	**0**	**(0)**	**4**	**(0)**	**2**	**(0)**	**6**	**2**	**0**	**3**	**1**	**1**
England	**654**	**(585)**	**460**	**(441)**	**1114**	**(1026)**	**766**	**(707)**	**2079**	**172**	**350**	**792**	**379**	**24**
Northern Ireland														
Belfast, Antrim Hospital	0	(2)	0	(1)	0	(3)	0	(2)	0	0	0	0	0	0
Belfast, Belfast City Hospital	2	(0)	2	(0)	4	(0)	1	(0)	6	1	2	2	1	0
Belfast, Mater Infirmorum Hospital	2	(0)	1	(1)	3	(1)	1	(0)	6	0	2	1	1	0
Belfast, Royal Belfast Hospital For Sick Children	1	(0)	0	(0)	1	(0)	1	(0)	2	1	2	1	1	0
Belfast, Royal Victoria Hospital	11	(13)	6	(3)	17	(16)	14	(11)	34	5	9	13	7	0
Belfast, The Ulster Hospital	2	(2)	1	(3)	3	(5)	2	(4)	6	0	3	2	2	0
Coleraine, Causeway Hospital	1	(3)	0	(1)	1	(4)	1	(2)	2	0	0	1	0	0
Enniskillen, South West Acute Hospital	2	(0)	0	(0)	2	(0)	1	(0)	2	1	0	2	1	0
Londonderry, Altnagelvin Area Hospital	8	(2)	2	(0)	10	(2)	8	(2)	20	4	5	6	4	0
Portadown, Craigavon Area Hospital	3	(7)	2	(2)	5	(9)	4	(7)	10	1	6	3	4	0
Total	**32**	**(29)**	**14**	**(11)**	**46**	**(40)**	**33**	**(28)**	**88**	**13**	**29**	**31**	**21**	**0**
Scotland														
Aberdeen, Aberdeen Royal Infirmary	6	(3)	8	(5)	14	(8)	7	(4)	27	1	2	7	3	0
Airdrie, Monklands District General Hospital	0	(2)	0	(1)	0	(3)	0	(2)	0	0	0	0	0	0
Ayr, The Ayr Hospital	1	(1)	1	(2)	2	(3)	1	(3)	4	0	0	1	0	0
Dumfries, Dumfries And Galloway Royal Infirmary	1	(1)	1	(2)	2	(3)	1	(2)	4	1	2	1	1	0
Dundee, Ninewells Hospital	4	(5)	4	(2)	8	(7)	5	(5)	14	2	2	6	5	0
East Kilbride, Hairmyres Hospital	0	(2)	1	(0)	1	(2)	0	(2)	2	0	0	0	0	0
Edinburgh, Royal Infirmary Of Edinburgh	1	(2)	5	(5)	6	(7)	3	(5)	11	0	2	3	2	0
Edinburgh, Western General Hospital	15	(11)	7	(1)	22	(12)	18	(8)	44	5	16	18	13	0
Glasgow, Victoria Infirmary	0	(3)	0	(0)	0	(3)	0	(3)	0	0	0	0	0	0
Glasgow, Golden Jubilee National Hospital	0	(1)	1	(1)	1	(2)	1	(2)	2	0	0	1	0	0
Glasgow, Southern General Hospital	11	(4)	5	(4)	16	(8)	11	(5)	30	3	9	12	5	0

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas	Bowel
Glasgow, Western Infirmary	2	(1)	3	(0)	5	(1)	3	(1)	10	0	2	3	1	1
Greenock, Inverclyde Royal Hospital	1	(4)	0	(2)	1	(6)	1	(4)	2	0	0	1	0	0
Glasgow, Golden Jubilee National Hospital	4	(1)	2	(1)	6	(2)	5	(1)	10	2	8	3	2	0
Inverness, Raigmore Hospital	1	(4)	0	(0)	1	(4)	0	(4)	2	0	0	0	0	0
Kilmarnock, Crosshouse Hospital	0	(1)	0	(1)	0	(2)	0	(1)	0	0	0	0	0	0
Kirkcaldy, Victoria Hospital	4	(0)	1	(2)	5	(2)	4	(1)	10	0	0	4	1	0
Larbert, Forth Valley Royal Hospital	1	(2)	2	(1)	3	(3)	2	(2)	6	0	4	1	0	0
Livingston, St John's Hospital	4	(1)	0	(3)	4	(4)	3	(2)	8	1	4	3	1	0
Paisley, Royal Alexandra Hospital	4	(4)	1	(0)	5	(4)	5	(3)	9	0	0	5	3	0
Perth, Perth Royal Infirmary	1	(2)	1	(1)	2	(3)	1	(3)	4	0	0	1	1	0
Wishaw, Wishaw General Hospital	1	(1)	1	(4)	2	(5)	1	(2)	4	1	0	1	1	0
Total	**62**	**(56)**	**44**	**(38)**	**106**	**(94)**	**72**	**(65)**	**203**	**16**	**51**	**71**	**39**	**1**
Wales														
Abergavenny, Nevill Hall Hospital	2	(0)	2	(0)	4	(0)	3	(0)	5	0	0	3	2	0
Aberystwyth, Bronglais Hospital	4	(1)	1	(1)	5	(2)	4	(1)	10	0	0	4	2	0
Bangor, Ysbyty Gwynedd District General Hospital	3	(1)	2	(0)	5	(1)	4	(1)	10	0	0	4	1	0
Bodelwyddan, Glan Clwyd District General Hospital	4	(1)	0	(2)	4	(3)	4	(2)	8	1	6	4	1	0
Bridgend, Princess Of Wales Hospital	4	(2)	2	(1)	6	(3)	4	(3)	10	0	0	5	0	0
Cardiff, University Of Wales Hospital	9	(11)	6	(5)	15	(16)	12	(14)	30	1	12	10	9	0
Carmarthen, Glangwili General Hospital	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0	0
Haverford West, Withybush General Hospital	1	(0)	0	(0)	1	(0)	1	(0)	2	0	0	1	0	0
Merthyr Tydfil, Prince Charles Hospital	0	(1)	0	(1)	0	(2)	0	(0)	0	0	0	0	0	0
Newport, Royal Gwent Hospital	1	(6)	1	(1)	2	(7)	1	(4)	4	0	0	1	0	0
Pontypridd, Royal Glamorgan Hospital	0	(1)	1	(1)	1	(2)	0	(2)	2	0	0	0	0	0
Swansea, Morriston Hospital	4	(4)	6	(3)	10	(7)	5	(2)	16	1	2	6	2	0
Wrexham, Maelor General Hospital	0	(6)	1	(2)	1	(8)	0	(6)	2	0	0	0	0	0
Total	**32**	**(35)**	**22**	**(17)**	**54**	**(52)**	**38**	**(36)**	**99**	**3**	**20**	**38**	**17**	**0**

Appendix IIA Numbers of donors after brain death and organs retrieved in the UK, 1 April 2013 - 31 March 2014, by country/ SHA

	Donors				Organs					
Country/ Strategic Health Authority	**All donors**	**pmp**	**Multi-organ donors**	**pmp**	**Kidney**	**Heart**	**Lung**	**Liver**	**Pancreas**	**Bowel**
North East	48	18.5	39	15.0	88	15	18	42	19	2
North West	81	11.4	66	9.3	144	16	30	72	40	1
Yorkshire and The Humber	48	9.0	45	8.5	94	10	30	46	23	1
East Midlands	51	11.2	49	10.7	100	12	22	49	20	1
West Midlands	61	10.8	52	9.2	110	15	30	55	19	0
East of England	66	11.2	59	10.0	123	18	24	61	33	3
London	99	11.9	80	9.6	176	29	32	89	49	3
South East Coast	66	14.6	62	13.7	128	16	34	61	29	4
South Central	59	14.0	49	11.6	100	15	38	55	30	0
South West	65	12.2	58	10.9	119	19	28	60	38	7
England	**644**	**12.0**	**559**	**10.5**	**1182**	**165**	**286**	**590**	**300**	**22**
Isle of Man	**4**	**50.0**	**2**	**25.0**	**6**	**2**	**0**	**3**	**1**	**1**
Channel Islands	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Wales	**37**	**12.1**	**35**	**11.4**	**70**	**4**	**16**	**35**	**16**	**0**
Scotland	**62**	**11.7**	**57**	**10.7**	**117**	**18**	**45**	**57**	**30**	**1**
Northern Ireland	**33**	**18.1**	**29**	**15.9**	**62**	**14**	**27**	**27**	**18**	**1**
TOTAL	**780**	**12.2**	**682**	**10.7**	**1437**	**203**	**374**	**712**	**365**	**25**

Appendix IIB Numbers of donors after circulatory death and organs retrieved in the UK, 1 April 2013 - 31 March 2014, by country/ SHA

	Donors				Organs					
Country/ Strategic Health Authority	**All donors**	**pmp**	**Multi-organ donors**	**pmp**	**Kidney**	**Heart**	**Lung**	**Liver**	**Pancreas**	**Bowel**
North East	35	13.5	20	7.7	68	0	12	18	7	0
North West	42	5.9	15	2.1	81	0	4	15	7	0
Yorkshire and The Humber	38	7.1	12	2.3	70	0	10	10	4	0
East Midlands	48	10.5	23	5.0	93	0	3	23	9	0
West Midlands	41	7.3	17	3.0	78	0	6	17	6	0
East of England	58	9.8	26	4.4	115	0	7	23	16	0
London	57	6.9	25	3.0	111	0	0	24	8	0
South East Coast	33	7.3	15	3.3	60	0	0	18	3	0
South Central	36	8.6	20	4.8	66	0	14	19	8	0
South West	65	12.2	25	4.7	123	1	4	25	7	0
England	**453**	**8.5**	**198**	**3.7**	**865**	**1**	**60**	**192**	**75**	**0**
Isle of Man	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Channel Islands	**3**	**18.8**	**2**	**12.5**	**6**	**0**	**0**	**2**	**0**	**0**
Wales	**23**	**7.5**	**8**	**2.6**	**41**	**0**	**6**	**8**	**4**	**0**
Scotland	**46**	**8.7**	**14**	**2.6**	**90**	**0**	**8**	**13**	**8**	**0**
Northern Ireland	**15**	**8.2**	**5**	**2.7**	**30**	**0**	**2**	**5**	**4**	**0**
TOTAL	**540**	**8.4**	**227**	**3.6**	**1032**	**1**	**76**	**220**	**91**	**0**

Appendix III	Populations for SHA's, 2013-2014 Mid-2012 estimates based on ONS 2011 Census figures
SHA	**Retrieval population million**
North East	2.60
North West	7.08
Yorkshire and The Humber	5.32
East Midlands	4.57
West Midlands	5.64
East of England	5.91
London	8.31
South East Coast[1]	4.51
South Central[1]	4.21
South West	5.34
England	**53.49**
Isle of Man	**0.08**
Channel Islands	**0.16**
Wales	**3.07**
Scotland	**5.31**
Northern Ireland	**1.82**
TOTAL	**63.93**

[1] Population obtained by proportionally dividing population of South East (8.72 million) based on previous data.

Appendix IVA **Non-UK solid organ transplants from deceased UK donors[1] to non-UK hospitals, 1 April 2011 to 31 March 2014**

Transplant type by year

Year	Transplant type	Residency of recipient ROI	Other EU	Non-EU	Total
2011/12	Kidney	1	0	0	1
	Heart	1	0	0	1
	Liver	10	11	1	22
	Double lung	5	0	0	5
	Total	**17**	**11**	**1**	**29**
2012/13	Heart	1	0	0	1
	Liver	7	8	4	19
	Double lung	4	0	0	4
	Partial lung	1	0	0	1
	Total	**13**	**8**	**4**	**25**
2013/14	Heart	3	0	0	3
	Liver	5	15	5	25
	Double lung	1	0	0	1
	Total	**9**	**15**	**5**	**29**

[1] based on country of donor hospital

Appendix IVB **UK solid organ transplants from deceased non-UK donors[1] to UK residents, 1 April 2011 to 31 March 2014**

Transplant type by year

Year	Transplant type	Country of donation ROI	Other EU	Non-EU	Total
2011/12	Heart	4	6	0	10
	Liver	10	4	0	14
	Lung	1	0	0	1
	Bowel only	0	1	0	1
	Total	**15**	**11**	**0**	**26**
2012/13	Heart	1	5	0	6
	Liver	21	2	0	23
	Liver, bowel & pancreas	0	1	0	1
	Total	**22**	**8**	**0**	**30**
2013/14	Kidney	2	1	0	3
	Heart	7	3	0	10
	Liver	4	4	0	8
	Double lung	1	1	0	2
	Bowel only	0	1	0	1
	Total	**14**	**10**	**0**	**24**

[1] based on country of donor hospital

Appendix IVC **UK solid organ transplants from deceased UK donors[1] to non-UK residents, 1 April 2011 to 31 March 2014**

Transplant type by year

Year	Transplant type	Country of transplant ROI	Other EU	Non-EU	Total
2011/12	Heart	0	4	0	4
	Liver	5	0	0	5
	Double lung	0	10	0	10
	Total	**5**	**14**	**0**	**19**
2012/13	Heart	0	3	0	3
	Liver	7	0	0	7
	Double lung	0	9	0	9
	Total	**7**	**12**	**0**	**19**
2013/14	Kidney	0	2	0	2
	Heart	0	2	0	2
	Liver	7	2	0	9
	Double lung	0	6	0	6
	Total	**7**	**12**	**0**	**19**

[1] based on country of donor hospital

NHS Blood and Transplant

NHS Blood and Transplant (NHSBT) saves and improves lives by providing a safe and reliable supply of blood components, organs, stem cells, tissues and related services to the NHS, and other UK health services.

For more information

Visit nhsbt.nhs.uk
Email enquiries@nhsbt.nhs.uk
Call 0300 123 23 23