NHS
Blood and Transplant

Organ Donation and Transplantation

Activity Report 2017/18

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 8 May 2018 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).

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-2016 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.

A supplementary report on organ donation and transplantation activity for Black, Asian and Minority Ethnic (BAME) groups is published alongside this Activity Report – *Organ Donation and Transplantation data for Black, Asian and Minority Ethnic (BAME) communities*. It provides additional information on trends in organ donation and transplantation for BAME communities.

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

Every transplant is a reflection of the exceptional altruism of the donor and their family and a testament to the care and hard work of many people in the NHS who co-ordinate an incredibly complicated process. Intensive Care, laboratories, the National Organ Retrieval Service, transport, the transplant centres and NHS Blood and Transplant are all involved. Donated organs are sent across the UK to reach the recipient who will benefit the most.

At any time, this is a considerable achievement but during a time of huge pressure on the NHS, it is even more remarkable to see organ donation and transplantation numbers reach an all-time high. 1,574 people donated their organs after they died and a further 1,051 people were living donors. As a result of this generosity, 5,090 people benefitted from a transplant: the first time ever that more than 5,000 people have received a transplant in a single year. As always, we thank the donors and their families but this year, we particularly want to pay tribute to all the people in the NHS who made donation and transplantation possible.

In the ten years since publication of the Organ Donation Taskforce report 'Organs for Transplants', organ donation and transplantation have been transformed. When the report was published, there were few donors and more people were waiting for a transplant each year. While training, clinical and organisational improvements have led to a 95% increase in the number of deceased donors and the transplant waiting list has fallen for eight consecutive years, changes here can only take us so far. We still have not reached the level of many of our peer countries and though the consent rate for donation has improved, it is still far below the aim of 80% of families supporting donation. To continue our progress, we need a transformation in public attitudes.

This is a time of considerable change for the service, with new 'opt out' legislation planned for England, Scotland, Jersey and being considered in the Isle of Man and Guernsey. Although a change in legislation is not a magic wand neither is it business as usual. Everyone involved in organ donation will need to understand the implications and potential of the legislation as we move to a situation where UK citizens are expected to donate unless they have recorded a refusal. We also need to ensure that the system has the capacity, throughout the clinical pathway, to support extra donors and transplants.

A remaining challenge we face is the huge imbalance between the need for transplants in our black and Asian communities and the availability of suitable organs with the right blood and tissue type. We need more people from these communities to be prepared to donate in life or after death and provide suitable organs for the 1,574 black and Asian people on the waiting list. Providing culturally sensitive services, community education, information and engagement, and targeted awareness raising campaigns are all part of the UK's plans to address this important issue.

We commit to working with you to face these challenges in the year ahead.



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Summary of Donor and Transplant Activity

In the financial year to 31 March 2018, compared with the previous year

- there was an 11% increase in the number of deceased donors to 1,574, the highest number ever in the UK
- the number of donors after brain death increased by 15% to 955, while the number of donors after circulatory death increased by 6% to 619
- the number of living donors increased by 1% to 1,051, accounting for 40% of the total number of organ donors
- the total number of patients whose lives were saved or improved by an organ transplant increased by 7% to 5,090

The total number of patients registered for a transplant has fallen slightly (by 5%), so that:

- there were 6,044 patients waiting for a transplant at the end of March 2018, with a further 3,404 temporarily suspended from transplant lists
- 411 patients died while on the active list waiting for their transplant and a further 755 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 7% in the total number of kidney transplants
- an increase of 3% in the total number of pancreas transplants
- an increase of 8% in the total number of liver transplants
- no change in the total number of heart transplants
- an increase of 20% in the total number of lung or heart-lung transplants
- an increase in the overall referral rate of potential donors from 88% to 92% and the proportion of approaches where a Specialist Nurse - Organ donation was present, from 86% to 90%
- an increase in the overall consent/authorisation rate for organ donation from 63% to 66%
- an increase in the number of opt-in registrations on the ODR, from 23.6 to 24.9 million at the end of March 2017. There were 517,124 opt-out registrants

Overview of Organ Donation and Transplantation

A summary of organ donation and transplantation activity in the UK during the financial year from 1 April 2017 to 31 March 2018

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 2018 is 344 fewer than on the same date last year. This drop reflects an increasing number of transplants performed over the last ten years and a reasonably steady number of patients joining the transplant list each year. The increase in donor and transplant numbers (1 April 2008 to 31 March 2018) and the number of patients registered on the transplant lists at 31 March each year are shown in **Figure 2.1**. There were 329 more deceased donor transplants in 2017-2018 than in the previous year, representing a 9% increase. The corresponding increase in the number of deceased donors was 11%.

Figure 2.1 **Number of deceased donors and transplants in the UK, 1 April 2008 - 31 March 2018, and patients on the active transplant list at 31 March**

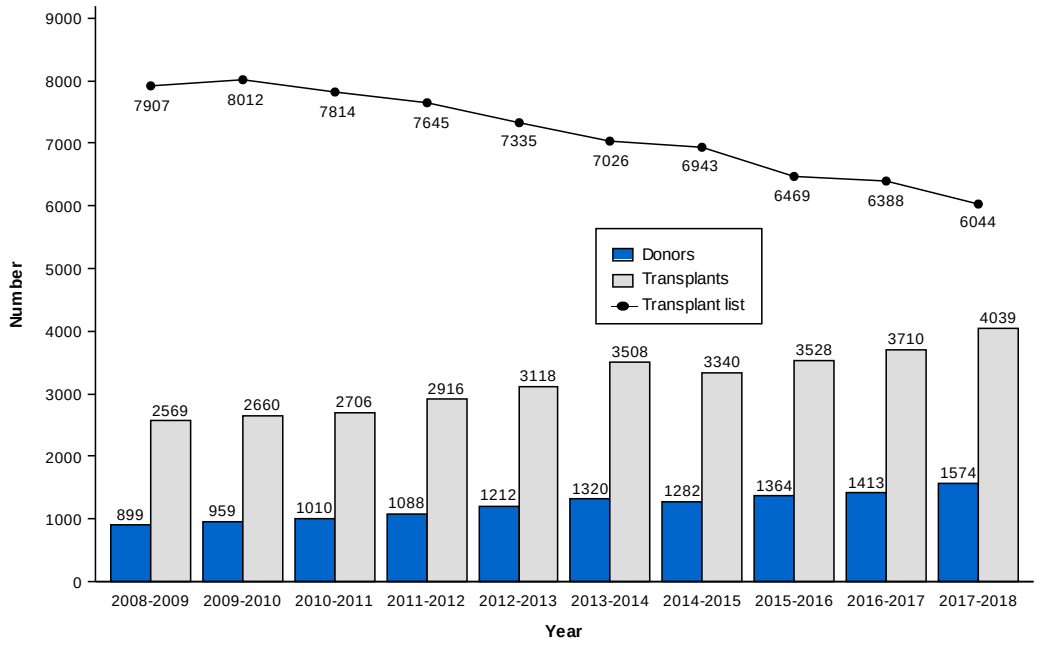


Figure 2.2 shows the number of deceased and living donors for 2008-2018. The numbers of deceased donors after brain death (DBD) and deceased donors after circulatory death (DCD) have both increased year on year, with the exception of 2014-2015. In 2017-2018 the numbers of DBD and DCD donors reached their highest ever, 955 and 619, respectively. The number of living donors has fallen, in the last 5 years, from a peak of 1,148 donors in 2013-2014 to 1,051 in 2017-2018. Compared with last year there was a 1% increase in living donors in 2017-2018.

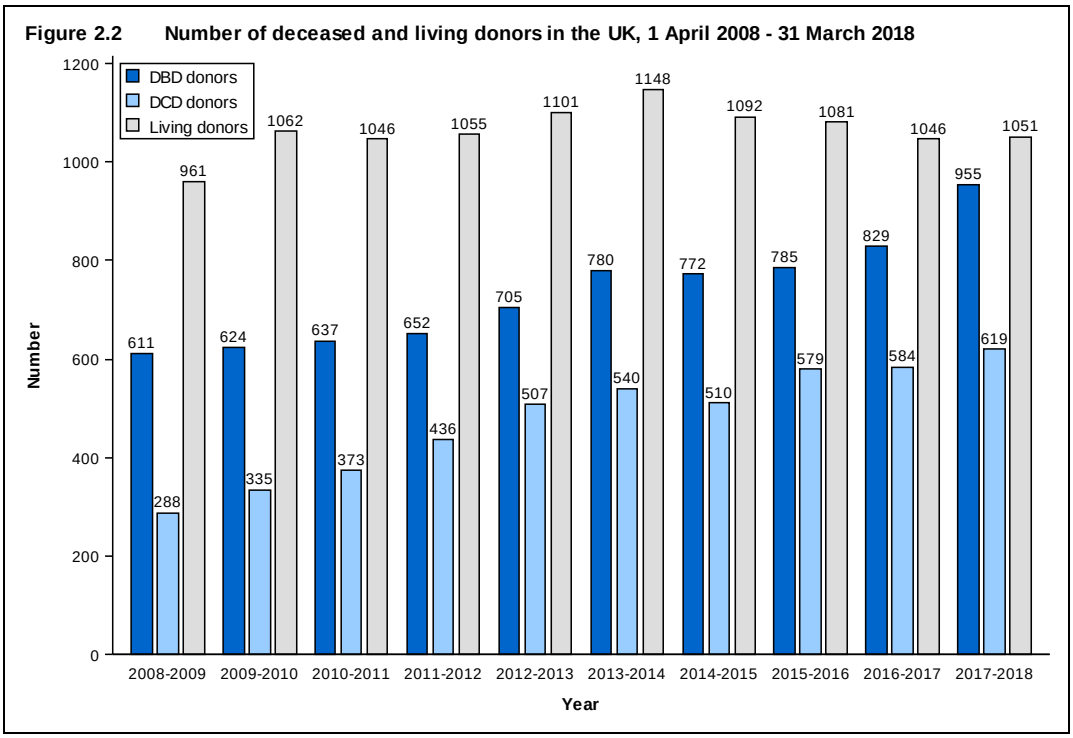
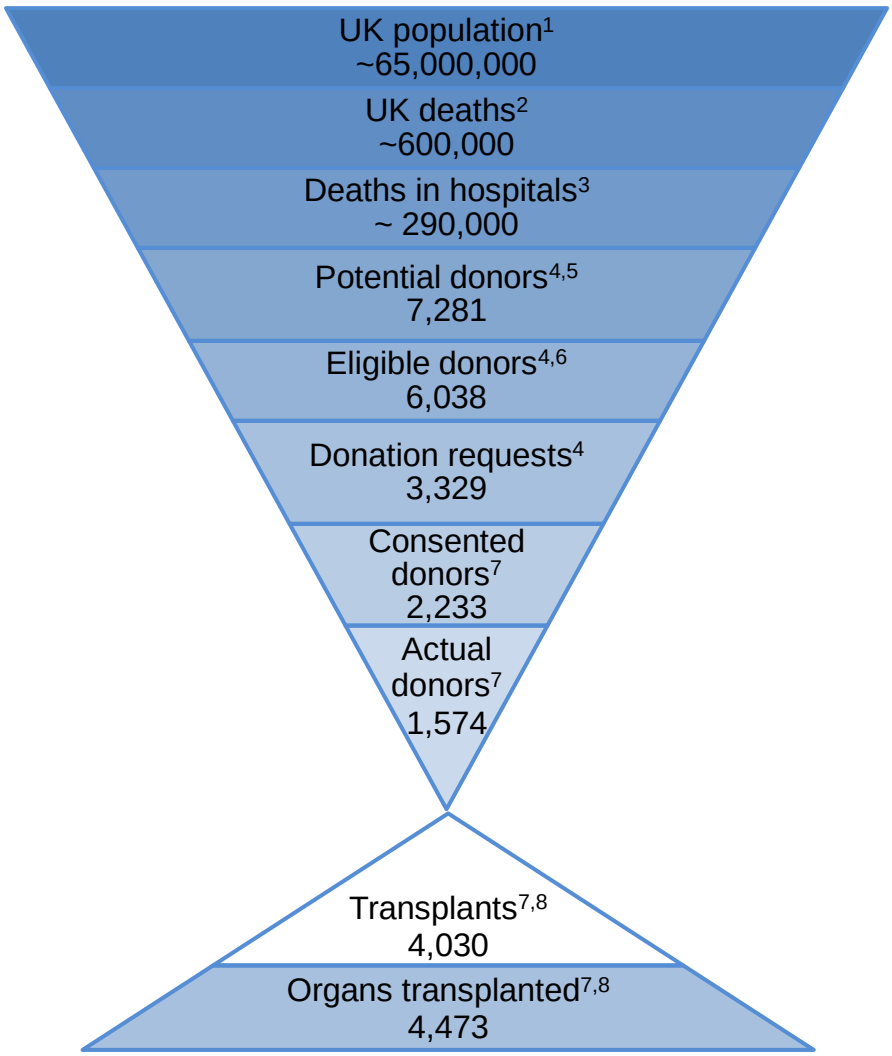


Figure 2.3 shows the potential deceased organ donor population in the UK. Not everyone can be a deceased organ donor and this figure highlights the small proportion of deaths in the UK that represent potential donors. *Please note that the information presented comes from several different sources. The 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 2017 – 31 March 2018



[1] Mid 2016 estimates: www.ons.gov.uk
[2] 2016 data: England & Wales www.ons.gov.uk; Scotland www.gro-scotland.gov.uk; Northern Ireland www.nisra.gov.uk
[3] 2016 data: England & Wales www.ons.gov.uk; Scotland www.isdscotland.org; Northern Ireland www.nisra.gov.uk
[4] 2017/2018 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] 2017/2018 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 2017-2018 and patients on the transplant list at 31 March 2018 for each country in the UK.

Table 2.1 Deceased donors and transplants 1 April 2017 - 31 March 2018, and transplant lists as at 31 March 2018, by country of residence

	Country of residence[1,2]							
	England		Wales		Scotland		Northern Ireland	
Organ	N	(pmp)	N	(pmp)	N	(pmp)	N	(pmp)
Kidney								
Deceased donors	1269	(23.0)	74	(23.8)	97	(18.0)	37	(19.9)
Transplants[3]	2020	(36.5)	69	(22.2)	208	(38.5)	67	(36.0)
Transplant list	4298	(77.8)	189	(60.8)	430	(79.6)	93	(50.0)
Pancreas								
Deceased donors	406	(7.3)	25	(8.0)	36	(6.7)	16	(8.6)
Transplants	172	(3.1)	9	(2.9)	26	(4.8)	3	(1.6)
Transplant list	169	(3.1)	16	(5.1)	30	(5.6)	3	(1.6)
Heart								
Deceased donors	194	(3.5)	11	(3.5)	9	(1.7)	6	(3.2)
Transplants[4]	164	(3.0)	3	(1.0)	16	(3.0)	8	(4.3)
Transplant list	228	(4.1)	10	(3.2)	30	(5.6)	9	(4.8)
Lung								
Deceased donors	202	(3.7)	8	(2.6)	22	(4.1)	6	(3.2)
Transplants	176	(3.2)	13	(4.2)	16	(3.0)	7	(3.8)
Transplant list	293	(5.3)	19	(6.1)	33	(6.1)	11	(5.9)
Liver								
Deceased donors	989	(17.9)	59	(19.0)	73	(13.5)	26	(14.0)
Transplants	807	(14.6)	45	(14.5)	107	(19.8)	29	(15.6)
Transplant list	279	(5.0)	14	(4.5)	36	(6.7)	23	(12.4)
Intestinal								
Deceased donors	22	(0.4)	1	(0.3)	2	(0.4)	0	(0.0)
Transplants	16	(0.3)	0	(0.0)	2	(0.4)	1	(0.5)
Transplant list	5	(0.1)	0	(0.0)	0	(0.0)	0	(0.0)
Total[5]								
Deceased donors	**1349**	**(24.4)**	**79**	**(25.4)**	**104**	**(19.3)**	**39**	**(21.0)**
Transplants	**3353**	**(60.7)**	**139**	**(44.7)**	**375**	**(69.4)**	**115**	**(61.8)**
Transplant list	**5101**	**(92.3)**	**233**	**(74.9)**	**534**	**(98.9)**	**137**	**(73.7)**

[1] Country of residence of donor given for deceased donor numbers, and residence of recipient given for transplant and waiting list numbers
[2] Excludes patients resident in Channel Islands, Isle of Man, overseas and in the Republic of Ireland
[3] Kidney only transplants
[4] Excludes heart-lung transplants
[5] Organ numbers do not add up to total due to multi-organ donors and patients waiting for a multi-organ transplant

2.2 Transplant list

At 31 March 2018, 6,044 patients were registered for an organ transplant in the UK on the active transplant list. A further 3,404 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 2017 and 2018. Between these dates the total number fell by 344 (5%) due to decreases in the number of patients on the kidney, liver and lung transplant lists.

Table 2.2 Active transplant lists in the UK at 31 March 2017 and 2018

	2017	2018	% Change
Kidney & pancreas patients	**5220**	**5038**	**-3**
Kidney	4996	4820	-4
Kidney & pancreas	193	175	-9
Kidney & pancreas islets	2	10	-
Pancreas	10	14	+40
Pancreas islets	19	19	0
Cardiothoracic patients	**624**	**639**	**+2**
Heart	246	282	+15
Heart/lung	18	13	-28
Lung(s)	360	344	-4
Liver patients	**489**	**333**	**-32**
Intestinal patients	**12**	**6**	**-**
Other multi-organ patients[1]	**43**	**28**	**-35**
ALL PATIENTS	**6388**	**6044**	**-5**

Percentages not reported when fewer than 10 in either year

[1] Includes patients waiting for kidney and liver transplants (40 in 2017, 26 in 2018), kidney and heart transplants (2 in 2017, 2 in 2018), liver and heart transplants (1 in 2017)

During 2017-2018, 426 patients died whilst active/suspended on the transplant list or within one year of removal from the list. This information is shown by organ and age group in **Table 2.3**.

Table 2.3 Number of patient deaths on transplant lists in the UK, 1 April 2017 – 31 March 2018

	Total	Adult	Paediatric
Kidney & pancreas patients	**270**	**266**	**4**
Kidney	247	243	4
Kidney & pancreas	20	20	0
Pancreas	3	3	0
Cardiothoracic patients	**92**	**83**	**9**
Heart	23	16	7
Heart/lung	4	4	0
Lung(s)	65	63	2
Liver patients	**59**	**56**	**3**
Intestinal patients	**2**	**1**	**1**
Other multi-organ patients[1]	**3**	**3**	**0**
ALL PATIENTS	**426**	**409**	**17**

[1] Includes patients waiting for kidney and liver transplants (3 adults)

2.3 Transplants

There was a 7% increase in the total number of organ transplants (from deceased and living donors) last year: 5,090 transplants were performed in 2017-2018 compared with 4,756 in 2016-2017 (**Table 2.4**). All multi-organ transplants are identified separately as are transplants from living donors.

The total number of kidney transplants increased by 7% in 2017-2018; kidney transplants from donors after circulatory death increased by 6%, while the number of living donor kidney transplants increased by 1%. The total number of cardiothoracic organ transplants rose by 10%, the number of liver transplants (including liver only, intestinal and other multi-organ transplants) rose by 8% and the number of pancreas transplants (including pancreas only, intestinal, kidney/pancreas and pancreas islets) increased by 3%.

Table 2.4 Transplants performed in the UK, 1 April 2016 - 31 March 2018

Transplant	2016-2017	2017-2018	% Change
DBD kidney	1270	1436	+13
DCD kidney	890	943	+6
Living donor kidney	1012	1020	+1
DBD Kidney & pancreas	119	120	+1
DCD Kidney & pancreas	43	48	+12
Kidney & Pancreas islets	1	4	-
DBD Pancreas	14	13	-7
DCD Pancreas	3	4	-
Pancreas islets	33	22	-33
DBD heart	184	172	-7
DCD heart	13	25	+92
Heart/lung	2	12	-
DBD Single lung	20	21	+5
DCD Single lung	2	2	-
DBD Double lung	127	142	+12
DCD Double lung	27	36	+33
DBD liver	596	692	+16
DCD liver	208	200	-4
Domino liver	3	1	-
DBD liver lobe	127	98	-23
DCD liver lobe	1	0	-
Living donor liver lobe	31	29	-6
Bowel only	4	6	-
Liver, bowel & pancreas	1	2	-
Multivisceral[1]	4	12	-
Modified multivisceral	6	5	-
Living liver & bowel	0	1	-
Kidney & heart	1	0	-
Kidney & liver	14	22	+57
Heart & liver	0	1	-
Liver & lung	0	1	-
TOTAL ORGAN TRANSPLANTS	**4756**	**5090**	**+7**
Total kidney transplants[2]	**3351**	**3597**	**+7**
Total pancreas transplants[2]	**224**	**230**	**+3**
Total cardiothoracic transplants	**376**	**412**	**+10**
Total liver transplants[2]	**985**	**1059**	**+8**
Total intestinal transplants	**15**	**26**	**+73**

Percentage not reported when fewer than 10 in either year
[1] Including a kidney (1 in 2016-2017, 4 in 2017-2018)
[2] Includes intestinal transplants

The total approximate number of patients with a functioning transplant on 31 March 2018 is 52,200 (**Table 2.5**). This reflects information held on the UK transplant registry database and excludes those patients who are known to be lost to follow-up.

Table 2.5 Number of transplants reported as functioning at 31 March 2018

	Functioning transplants[1]
Kidney	37900
Pancreas	1900
Cardiothoracic	4000
Liver	10100
Intestinal	100
ALL PATIENTS[2]	**52200**

[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 11% increase in deceased donors (to 1,574) and a 1% increase in living organ donors (to 1,036) compared with last year**
- **There has been an increase in donors after brain death of 15% to 955 and an increase of 6% in donors after circulatory death to 619, compared with last year**
- **Donors after brain death provide, on average, one more organ for transplantation than donors after circulatory 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 an 11% increase in the number of deceased organ donors in 2017-2018 (1,574), 50 more than the target of 1,524 donors set for the year. There was an increase in donors after brain death (DBD) of 15% and a more modest increase of 6% in donors after circulatory death (DCD).

The 1,574 deceased organ donors gave 5,269 organs compared with 1,413 donors and 4,730 organs in 2016-2017. This represents an 11% 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 (76%) also donated at least one other organ. Only 15% of donors after brain death were single organ donors, with equal proportions being liver only and kidney only donors. By contrast, 49% of donors after circulatory death were single organ donors, the majority (93%) of these donating just their kidneys.

Although the vast majority of living organ donors donated a kidney, 30 donated part of their liver, and 1 donated part of their small bowel and liver. All living donations are approved by the Human Tissue Authority.

Table 3.1 Solid organ donors in the UK, 1 April 2017 - 31 March 2018, by organ types donated

	DBD	DCD	Living donor	**TOTAL**
Kidney only	76	284	1020	**1365**
Kidney & thoracic	13	11	-	**24**
Kidney & liver	340	170	-	**510**
Kidney & pancreas	6	18	-	**24**
Kidney, thoracic & liver	94	11	-	**105**
Kidney, thoracic & pancreas	4	4	-	**8**
Kidney, liver & pancreas	159	62	-	**221**
Kidney, liver, pancreas & bowel	11	-	-	**11**
Kidney, thoracic, liver & pancreas	167	36	-	**203**
Kidney, thoracic, liver, pancreas & bowel	14	-	-	**14**
Thoracic only	6	3	-	**9**
Thoracic & liver	5	1	-	**6**
Thoracic, liver & pancreas	1	-	-	**1**
Liver only	57	19	30	**106**
Liver & pancreas	2	-	-	**2**
Liver & bowel	-	-	1	**1**
TOTAL	**955**	**619**	**1051**	**2610**

Bowel may include abdominal wall/colon/stomach/spleen

3.2 Organ donors

Organ donor rates per million population (pmp) for 2017-2018 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 2017 - 31 March 2018, 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	38	(14.4)	25	(9.5)	63	(23.9)	68	(25.8)
North West	143	(19.8)	81	(11.2)	224	(31.0)	119	(16.5)
Yorkshire and The Humber	66	(12.2)	64	(11.8)	130	(23.9)	73	(13.4)
North of England	**247**	**(16.2)**	**170**	**(11.1)**	**417**	**(27.3)**	**260**	**(17.0)**
East Midlands	48	(10.2)	44	(9.3)	92	(19.5)	48	(10.2)
West Midlands	64	(11.0)	54	(9.3)	118	(20.3)	88	(15.2)
East of England	103	(16.8)	91	(14.8)	194	(31.6)	75	(12.2)
Midlands and East	**215**	**(12.9)**	**189**	**(11.4)**	**404**	**(24.3)**	**211**	**(12.7)**
London	**150**	**(17.1)**	**40**	**(4.6)**	**190**	**(21.6)**	**165**	**(18.8)**
South East Coast	78	(16.7)	46	(9.9)	124	(26.6)	66	(14.2)
South Central	58	(13.3)	38	(8.7)	96	(22.1)	60	(13.8)
South West	71	(12.9)	47	(8.5)	118	(21.4)	87	(15.8)
South of England	**207**	**(14.2)**	**131**	**(9.0)**	**338**	**(23.3)**	**213**	**(14.7)**
England	**819**	**(14.8)**	**530**	**(9.6)**	**1349**	**(24.4)**	**849**	**(15.4)**
Isle of Man	**0**	**(0.0)**	**1**	**(12.5)**	**1**	**(12.5)**	**0**	**(0.0)**
Channel Islands	**2**	**(12.5)**	**0**	**(0.0)**	**2**	**(12.5)**	**2**	**(12.5)**
Wales	**49**	**(15.8)**	**30**	**(9.6)**	**79**	**(25.4)**	**40**	**(12.9)**
Scotland	**61**	**(11.3)**	**43**	**(8.0)**	**104**	**(19.3)**	**90**	**(16.7)**
Northern Ireland	**24**	**(12.9)**	**15**	**(8.1)**	**39**	**(21.0)**	**70**	**(37.6)**
TOTAL	**955**	**(14.5)**	**619**	**(9.4)**	**1574**	**(23.9)**	**1051**	**(16.0)**

[1] Includes 169 donors (31 deceased, 138 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 14.5 DBD donors pmp for the UK as a whole, but across the former English Strategic Health Authorities (SHA) this ranged between 10.2 and 19.8 pmp. Across the four countries of the UK, Wales had the highest rate of 15.8 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, since not all donors are reported in the Potential Donor Audit. For DCD donors the UK rate is 9.4 pmp, ranging from 8.0 to 9.6 pmp across countries of the UK and from 4.6 to 14.8 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 2017 - 31 March 2018, by country/ Strategic Health Authority of hospital of donor death

Country of donation/ Strategic Health Authority	DBD N	DCD N	**TOTAL** N
North East	44	29	73
North West	142	76	218
Yorkshire and The Humber	67	67	134
North of England	**253**	**172**	**425**
East Midlands	33	38	71
West Midlands	67	58	125
East of England	84	78	162
Midlands and East	**184**	**174**	**358**
London	**201**	**67**	**268**
South East Coast	55	31	86
South Central	56	44	100
South West	72	46	118
South of England	**183**	**121**	**304**
England	**821**	**534**	**1355**
Isle of Man	**0**	**0**	**0**
Channel Islands	**3**	**0**	**3**
Wales	**45**	**29**	**74**
Scotland	**61**	**41**	**102**
Northern Ireland	**25**	**15**	**40**
TOTAL	**955**	**619**	**1574**

Table 3.4	Deceased organ donors in the UK, 1 April 2017 - 31 March 2018 by Organ Donation Services Team		
Team	DBD N	DCD N	**TOTAL** N
Eastern	99	87	186
London	148	46	194
Midlands	88	86	174
North West	149	78	227
Northern	47	30	77
Northern Ireland	25	15	40
Scotland	61	41	102
South Central	65	51	116
South East	99	46	145
South Wales	36	26	62
South West	65	42	107
Yorkshire	73	71	144
TOTAL	**955**	**619**	**1574**

The mean number of organs retrieved per donor in 2017-2018 is given by country in **Table 3.5**. Overall, an average of 3.7 organs were donated per DBD donor and 2.8 per DCD donor. For DBD donors, the rate ranged from 3.6 organs per donor in Wales to 4.0 in Scotland.

Table 3.5	Organs retrieved per donor, in the UK, 1 April 2017 - 31 March 2018, by country of donor residence								
Country	Adult			Paediatric			All		
	DBD	DCD	**TOTAL**	DBD	DCD	**TOTAL**	DBD	DCD	**TOTAL**
England	3.7	2.8	**3.3**	4.6	3.2	**4.1**	3.7	2.8	**3.3**
Wales	3.6	2.7	**3.2**	-	4.0	**4.0**	3.6	2.7	**3.2**
Scotland	4.1	2.3	**3.3**	3.0	2.0	**2.7**	4.0	2.3	**3.3**
Northern Ireland	3.7	2.6	**3.3**	5.0	-	**5.0**	3.8	2.6	**3.3**
TOTAL	**3.7**	**2.7**	**3.3**	**4.5**	**3.2**	**4.0**	**3.7**	**2.8**	**3.3**

3.3 Demographic characteristics

While the number of donors overall has increased over the last 10 years, it is important to be aware that there have been changes over time with regard to donor characteristics (**Table 3.6**). In 2017-2018, 36% of deceased donors were aged 60 years or more compared with 20% in 2008-2009 (**Figure 3.1**). In particular the proportion of donors aged at least 70 years has increased from 5% to 14% over the same time period. The proportion of clinically obese donors (Body Mass Index (BMI) of 30 or higher) has increased from 20% to 28% in deceased donors in the last 10 years (**Figure 3.2**). In addition, the proportion of all deceased donors after a trauma death has decreased from 13% to 3% over the same time period. All of these changes may have an adverse impact on the quality and utilisation of the organs, and the subsequent transplant outcome for the recipient.

Table 3.6 also indicates the ethnicity of deceased organ donors, highlighting that 7% 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 2017 - 31 March 2018

		DBD		DCD		**TOTAL**	
		N	%	N	%	N	%
Age	0-17	36	4	21	3	57	4
	18-49	358	37	184	30	542	34
	50-59	246	26	165	27	411	26
	60-69	183	19	156	25	339	22
	70+	132	14	93	15	225	14
	Mean (SD)	51	17	53	16	52	17
BMI	0-19	55	6	42	7	97	6
	20-29	639	67	404	65	1043	66
	30+	260	27	173	28	433	28
	Unknown	1	-	0	-	1	-
	Mean (SD)	27	5	27	6	27	6
Cause of death	Intracranial	830	87	489	79	1319	84
	Trauma	31	3	23	4	54	3
	Other	94	10	107	17	201	13
Ethnicity	White	862	91	579	95	1441	93
	Asian	25	3	12	2	37	2
	Black	22	2	3	0	25	2
	Other	36	4	16	3	52	3
	Unknown	10	-	9	-	19	-
Blood group	O	479	50	286	46	765	49
	A	349	37	261	42	610	39
	B	97	10	50	8	147	9
	AB	30	3	22	4	52	3
Donor gender	Male	506	53	387	63	893	57
	Female	449	47	232	37	681	43
TOTAL		**955**	**100**	**619**	**100**	**1574**	**100**

Figure 3.1 Age of deceased donors in the UK, 1 April 2008 - 31 March 2018

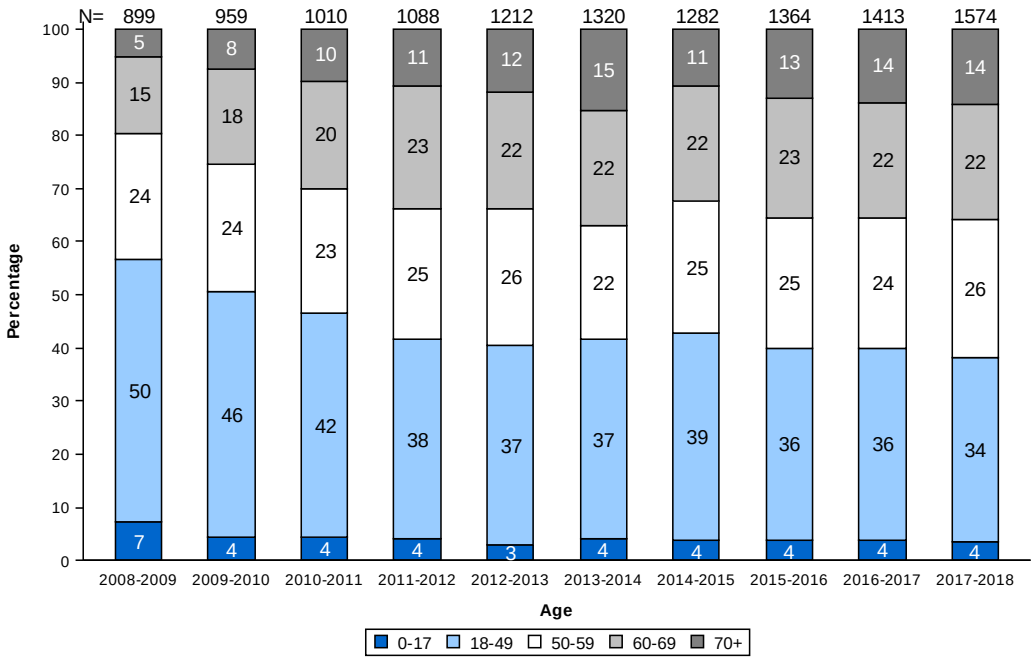
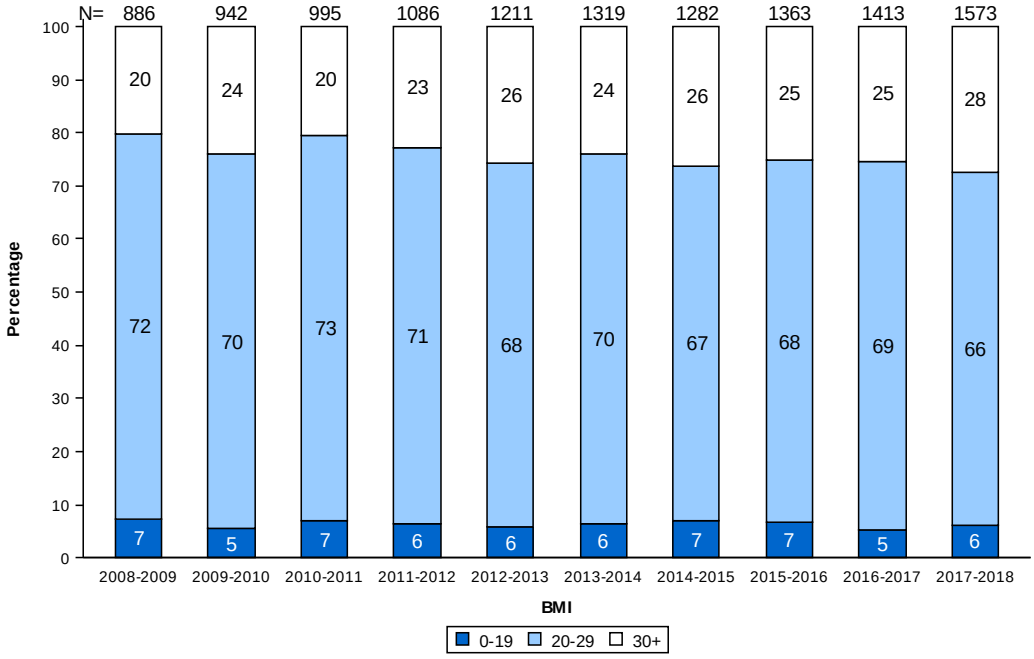


Figure 3.2 BMI of deceased donors in the UK, 1 April 2008 - 31 March 2018



*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 980 possible DBD donors and 929 possible DCD donors; 97% of these DBD donors and 67% of these DCD donors attended proceeded to donation**
- **Overall, 58% of organs offered from those donors that did proceed were transplanted, but individually, these rates were 85% for kidneys, 66% for livers, 28% for pancreases, 33% for hearts, 25% for lungs and 14% for bowels**
- **The number of deceased donors per million of population was 23.9, however 5% of actual donors resulted in no organ transplants, the same as the previous year**

4.1 The National Organ Retrieval Service (NORS)

As of 4 April 2016 there have been 7 abdominal and 3 cardiothoracic NORS teams available at any given time to retrieve organs from deceased donors in the UK for transplantation. This represents a change in the service which was implemented as a result of a review of the National Organ Retrieval Service, which recommended the reduction in the number of cardiothoracic teams from 6 to 3. Occasionally an off duty team will be called out when all 3 cardiothoracic on-call teams are out attending a donor. The first on-call NORS team is the closest available team to the donor, whereas before this was previously based on designated areas of the UK.

If a team is first on-call for a particular donor hospital, they are required to attend possible donors at that hospital within an agreed timescale if at least one organ has been accepted for transplantation. If the team is already retrieving when they are called to attend, then a second team is called in to retrieve and so on. In three areas of the country, two abdominal teams share the on-call responsibilities, each being on-call for different weeks of the year, which means there are in fact 10 abdominal teams in total.

The number of possible DBD and DCD donors that were attended by each of the teams in 2017-2018 is shown in **Table 4.1**. The geographical distribution of donors and the on-call arrangements lead to variation in these numbers across teams. The figures are broken down by whether the possible donor proceeded to organ donation (actual donors) or not. Non-proceeding donors are more common in the pool of potential DCD donors as prolonged time to death after treatment withdrawal can result in unsuitability of organs for transplantation. A small number of possible donors are attended by local kidney transplant teams. This is typically for DCD donors when only the kidneys have been accepted for transplantation and the teams are appropriately reimbursed if they are willing and able to retrieve.

Table 4.1 Number of actual and non-proceeding donors attended by each NORS team

NORS team	DBD				DCD			
	Actual	Non-proceeding	% non-proc	**No. attended**	Actual	Non-proceeding	% non-proc	**No. attended**
Abdominal								
Birmingham[1]	111	2	2	**113**	80	44	35	**124**
Cambridge	139	3	2	**142**	100	42	30	**142**
Cardiff[1]	32	1	3	**33**	27	16	37	**43**
Edinburgh	72	1	1	**73**	47	27	36	**74**
King's	185	8	4	**193**	102	44	30	**146**
Leeds[2]	78	1	1	**79**	68	29	30	**97**
Manchester[2]	83	1	1	**84**	45	34	43	**79**
Newcastle	94	3	3	**97**	62	36	37	**98**
Oxford[3]	80	1	1	**81**	44	22	33	**66**
Royal Free[3]	74	1	1	**75**	41	16	28	**57**
Abdominal total	**948**	**22**	**2**	**970**	**616**	**310**	**33**	**926**
Cardiothoracic[4]								
Birmingham	47	22	32	**69**	8	17	68	**25**
Glasgow	21	15	42	**36**	1	6	86	**7**
Harefield	67	35	34	**102**	11	22	67	**33**
Manchester	57	29	34	**86**	12	15	56	**27**
Newcastle	45	15	25	**60**	9	11	55	**20**
Papworth	68	41	38	**109**	25	24	49	**49**
Cardiothoracic total	**305**	**157**	**34**	**462**	**66**	**95**	**59**	**161**
Total donors attended	**955**	**25**	**3**	**980**	**619**	**310**	**33**	**929**

Note: there was 1 additional donor attended by a local abdominal team (Belfast)
[1,2,3,4] Share on-call responsibilities

4.2 Retrieval and usage of organs

The number of ‘consented’ donors (‘authorised’ donors in Scotland) and 'offered' donors (where at least one organ was offered for transplant) are shown in **Table 4.2**. On occasion a ‘consented’ donor may not have organs offered because the donor’s condition deteriorates or it is discovered the donor is unsuitable for organ donation. 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 (pmp) is also shown. In 2017-2018, 5% of actual donors resulted in no organ transplants, the same as the previous year.

Table 4.2 Consented, offered, actual and utilised deceased donors in the UK, 1 April 2017 - 31 March 2018

	DBD	(pmp)	DCD	(pmp)	Total	(pmp)
Consented donors[1]	1073	(16.3)	1160	(17.6)	2233	(33.9)
Offered donors[2]	1027	(15.6)	1038	(15.8)	2065	(31.3)
Kidneys offered	*1974*		*1995*		*3969*	
Livers offered	*972*		*961*		*1933*	
Pancreases offered	*694*		*349*		*1043*	
Bowels offered	*218*		*0*		*218*	
Hearts offered	*587*		*128*		*715*	
Lungs offered	*1260*		*732*		*1992*	
Actual donors[3]	955	(14.5)	619	(9.4)	1574	(23.9)
Utilised donors[4]	930	(14.1)	565	(8.6)	1495	(22.7)

[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] Actual donors defined as donors where one or more organs were retrieved
[4] Utilised donors defined as donors where one or more organs were retrieved and transplanted

There were 1,574 actual deceased organ donors in 2017-2018, 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 955 DBD and 619 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 transplantation excludes those where the donor did not meet the nationally agreed age criteria for suitability for donation of that specific organ. There are no nationally agreed age criteria for kidney and liver donation.

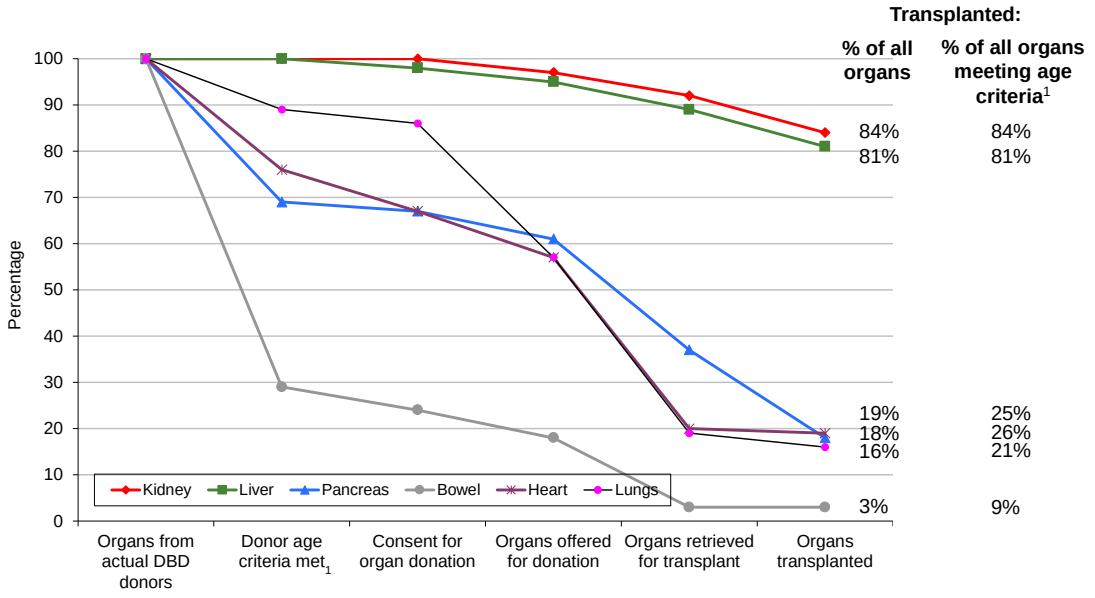
Table 4.3 Donation and transplantation of organs from 1574 deceased donors in the UK, 1 April 2017 – 31 March 2018

Organ	Organs meeting initial suitability criteria and offered for transplantation	Organs retrieved for transplantation N	Organs retrieved for transplantation % of offered	Organs transplanted N	Organs transplanted % of retrieved	Organs transplanted % of offered	Organs used for research (from actual organ donors)
DBD donor organs							
Kidney	1857	1748	94	1598	91	86	79
Liver	912	850	93	774	91	85	44
Pancreas[1]	581	356	61	174	49	30	111
Bowel[2,3]	176	25	14	24	96	14	0
Heart[4]	545	190	35	181	95	33	5
Lung[5]	1080	354	33	313	88	29	37
Total	**5151**	**3523**	**68**	**3064**	**87**	**59**	**276**
DCD donor organs[6]							
Kidney	1210	1179	97	1024	87	85	73
Liver	576	299	52	201	67	35	59
Pancreas[1]	243	116	48	55	47	23	31
Lung[6]	444	82	18	74	90	17	2
Total	**2473**	**1676**	**68**	**1354**	**81**	**55**	**165**
Deceased donor organs							
Kidney	3067	2927	95	2622	90	85	152
Liver	1488	1149	77	975	85	66	103
Pancreas[1]	824	472	57	229	49	28	142
Bowel[2,3]	176	25	14	24	96	14	0
Heart[4]	545	190	35	181	95	33	5
Lung[5]	1524	436	29	387	89	25	39
Total	**7624**	**5199**	**68**	**4418**	**85**	**58**	**441**

[1] Excludes donors aged > 60 years
[2] Excludes 1 bowel transplant from an overseas donor
[3] Excludes donors aged >= 56 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 because this is not part of the national service, see cardiothoracic section for DCD heart detail

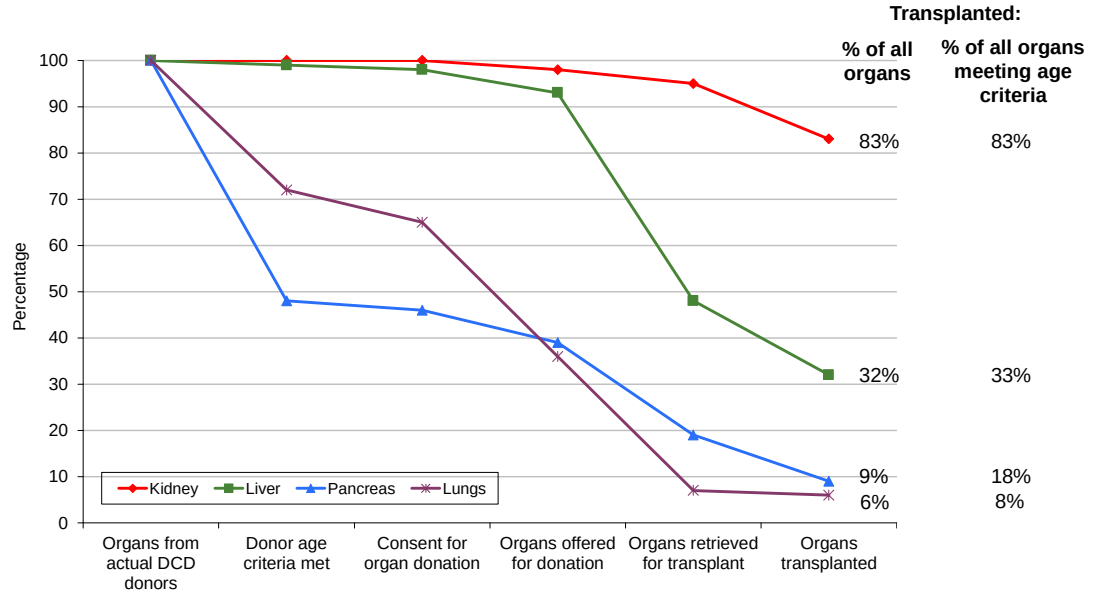
Figures 4.1 and 4.2 show line graphs of the pathway for all donor organs through to transplantation. The charts start at 100% for each organ, representing all organs from the 955 DBD and 619 DCD donors. The proportion of these organs where any national donor age criteria are met is then shown, followed by the proportion with consent, the proportion offered, the proportion retrieved and finally the proportion transplanted. For example, **Figure 4.2** shows that 83% of the kidneys from the 619 DCD donors were transplanted, a slight fall from 84% in the previous year. Transplantation rates for kidneys and livers are generally high, while for other organs, even after allowing for the agreed age criteria, the rates are generally low.

Figure 4.1 Donation and transplantation rates of organs from DBD organ donors in the UK, 1 April 2017 – 31 March 2018



[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 2017 – 31 March 2018



Reasons for organs not being offered for transplantation, being offered but not accepted and being retrieved but not subsequently transplanted are shown in **Table 4.4** and **Table 4.5** for abdominal organs from DBD and DCD donors, respectively. **Table 4.6** shows the same information for cardiothoracic organs. Reasons for the medical unsuitability of an organ include infections, tumours, anatomy and disease. Non-medical reasons include donor size and donor instability. Clinical unsuitability of an organ encompasses poor perfusion, prolonged ischaemia, past history of the donor and, in the case of pancreases for islet usage, 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 show the number of organs from UK donors that were transplanted overseas. These organs were not accepted for transplantation by any UK transplant centre, but were accepted for suitable recipients identified elsewhere, usually in Europe. In 2017-2018 only a small number of livers, hearts and lungs were exported for transplantation 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.**

The percentage of organs retrieved that were not transplanted are shown in **Figure 4.3**, **Figure 4.4, Figure 4.5. Figure 4.6** and **Figure 4.7** for kidneys, livers, pancreases, hearts and lungs respectively. The rates are shown over the last decade. Some organs are found not to be suitable for transplantation after they have been retrieved and this 'non-utilisation rate' is generally increasing over time for each organ, reflecting the ageing donor population. Many organs retrieved but found not to be suitable for transplantation are instead used for research (with appropriate consent).

Table 4.4 Reasons for non-retrieval and non-use of abdominal organs from DBD donors in the UK, 1 April 2017 – 31 March 2018

	Kidney	Liver	Pancreas	Bowel
All actual DBD organ donors	**955**	**955**	**955**	**955**
Donors from whom organs not offered for donation	23	43	374	779
Reasons for organs not being offered				
Family permission refused	3	11	18	40
Permission refused by coroner	0	9	6	4
Donor unsuitable – age	0	1	293[1]	0
Donor unsuitable – past history	10	19	31	12
Poor function	9	0	1	1
Donor age >=56 or donor weight >=80kg	0	0	0	679
Other	1	3	25	43
TOTAL DONORS WITH ORGANS NOT OFFERED	**23**	**43**	**374**	**779**
Organs offered for donation	**1857**	**912**	**581**	**176**
Organs not retrieved (% of organs offered for donation)	**109 (6)**	**62 (7)**	**225 (39)**	**151 (86)**
Reasons for non-retrieval				
Donor				
Donor unsuitable – medical	12	0	7	4
Donor unsuitable – non-medical	1	0	19	101
Donor age	21	3	16	7
Organ				
Organ unsuitable – clinical	50	34	140	19
Poor function	20	11	13	2
Other				
Other	5	14	30	18
TOTAL ORGANS OFFERED, NOT RETRIEVED	**127**	**62**	**225**	**151**
Organs retrieved (% of organs offered for donation)	**1748 (94)**	**850 (93)**	**356 (61)**	**25 (14)**
Organs transplanted in the UK	1598	770	174	24
Organs transplanted overseas	0	4[2]	0	0
Organs not transplanted	150	76	182	1
Reasons for organ not being transplanted				
Donor				
Donor unsuitable – medical	24	6	6	0
Donor unsuitable – non-medical	0	1	0	0
Donor age	0	0	0	0
Organ				
Organ unsuitable – clinical	16	11	39	0
Poor function	0	0	0	0
Other				
Other	110	58	137	1
TOTAL ORGANS RETRIEVED, NOT TRANSPLANTED (Number used for research)	**150 (79)**	**76 (44)**	**182 (111)**	**1 (0)**

[1] Includes donors whose organs may have been offered but are outside of organ specific criteria
[2] 3 transplanted into super-urgent patients in the Republic of Ireland, 1 transplanted in Europe

Table 4.5 Reasons for non-retrieval and non-use of abdominal organs from DCD donors in the UK, 1 April 2017 – 31 March 2018

	Kidney	Liver	Pancreas
All actual DCD organ donors	**619**	**619**	**619**
Donors from whom organs not offered for donation	11	43	376
Reasons for organs not being offered			
Family permission refused	0	6	9
Permission refused by coroner	0	1	3
Donor unsuitable – age	0	4	320[1]
Donor unsuitable – past history	8	22	19
Poor function	3	5	4
Other	0	5	21
TOTAL DONORS WITH ORGANS NOT OFFERED	**11**	**43**	**376**
Organs offered for donation	**1210**	**576**	**243**
Organs not retrieved (% of organs offered for donation)	**31 (3)**	**277 (48)**	**127 (52)**
Reasons for non-retrieval			
Donor			
Donor unsuitable – medical	1	1	2
Donor unsuitable – non-medical	0	13	16
Donor age	2	57	15
Organ			
Organ unsuitable – clinical	12	85	70
Poor function	8	33	7
Other			
Other	8	88	17
TOTAL ORGANS OFFERED, NOT RETRIEVED	**31**	**277**	**127**
Organs retrieved (% of organs offered for donation)	**1179 (97)**	**299 (52)**	**116 (48)**
Organs transplanted in the UK	1024	201	55
Organs transplanted overseas	0	0	0
Organs not transplanted	155	98	61
Reasons for organ not being transplanted			
Donor			
Donor unsuitable – medical	30	1	2
Donor unsuitable – non-medical	0	0	0
Donor age	0	0	0
Organ			
Organ unsuitable – clinical	17	16	17
Poor function	0	1	0
Other			
Other	108	80	42
TOTAL ORGANS RETRIEVED, NOT TRANSPLANTED (Number used for research)	**155 (73)**	**98 (59)**	**61 (31)**

[1] Includes donors whose organs may have been offered but are outside of organ specific criteria

Table 4.6 Reasons for non-retrieval and non-use of cardiothoracic organs from organ donors in the UK, 1 April 2017 – 31 March 2018

	Heart (DBD)	Lung (DBD)	Lung (DCD)
All actual organ donors	**955**	**955**	**619**
Donors from whom organs not offered for donation	410	415	397
Reasons for organs not being offered			
Family permission refused	35	27	21
Permission refused by coroner	51	36	21
Donor unsuitable – age[1]	215	200	172
Donor unsuitable – cause of death	10[1]	0	1
Poor function	29	71	70
Other	70	81	112
TOTAL DONORS WITH ORGANS NOT OFFERED	**410**	**415**	**397**
Organs offered for donation	**545**	**1080**	**444**
Organs not retrieved (% of organs offered for donation)	**355 (65)**	**726 (67)**	**362 (82)**
Reasons for non-retrieval			
Donor			
Donor unsuitable – medical	14	14	6
Donor unsuitable – non-medical	37	57	34
Donor age	28	26	6
Organ			
Organ unsuitable – clinical	92	200	120
Poor function	143	341	128
Other			
Other	41	88	68
TOTAL ORGANS OFFERED, NOT RETRIEVED	**355**	**726**	**362**
Organs retrieved (% of organs offered for donation)	**190 (35)**	**354 (33)**	**82 (18)**
Organs transplanted in the UK	177	304	74
Organs transplanted overseas	4	9	0
Organs not transplanted	9	41	8
Reasons for organ not being transplanted			
Donor			
Donor unsuitable – medical	0	1	2
Donor unsuitable – non-medical	0	0	0
Organ			
Organ unsuitable – clinical	1	0	0
Poor function	2	0	0
Other			
Other	6	40	6
TOTAL ORGANS RETRIEVED, NOT TRANSPLANTED (Number used for research)	**9 (5)**	**41 (37)**	**8 (2)**

[1] Includes donors whose organs may have been offered but are outside of organ specific criteria

Figure 4.3 Percentage of kidneys retrieved that were not transplanted from deceased organ donors in the UK, 1 April 2008 – 31 March 2018

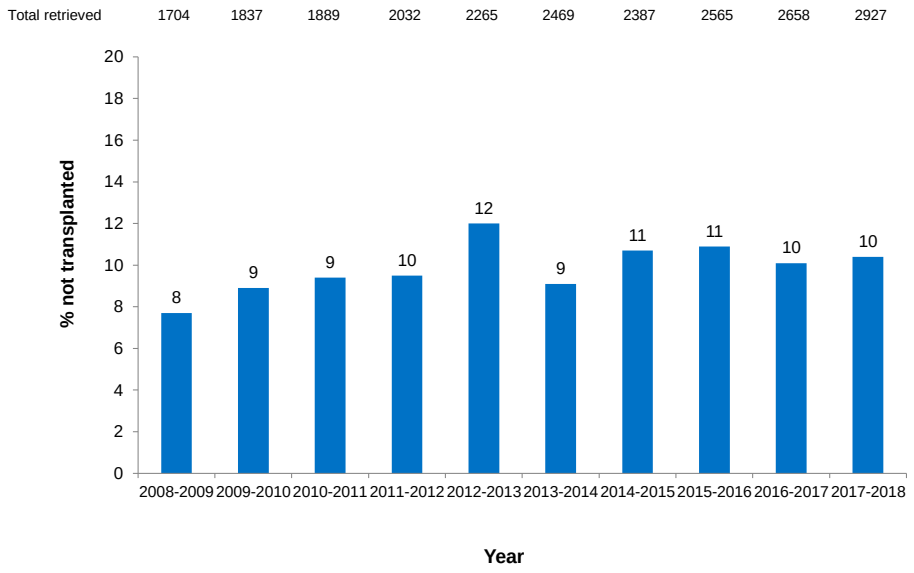


Figure 4.4 Percentage of livers retrieved that were not transplanted from deceased organ donors in the UK, 1 April 2008 – 31 March 2018

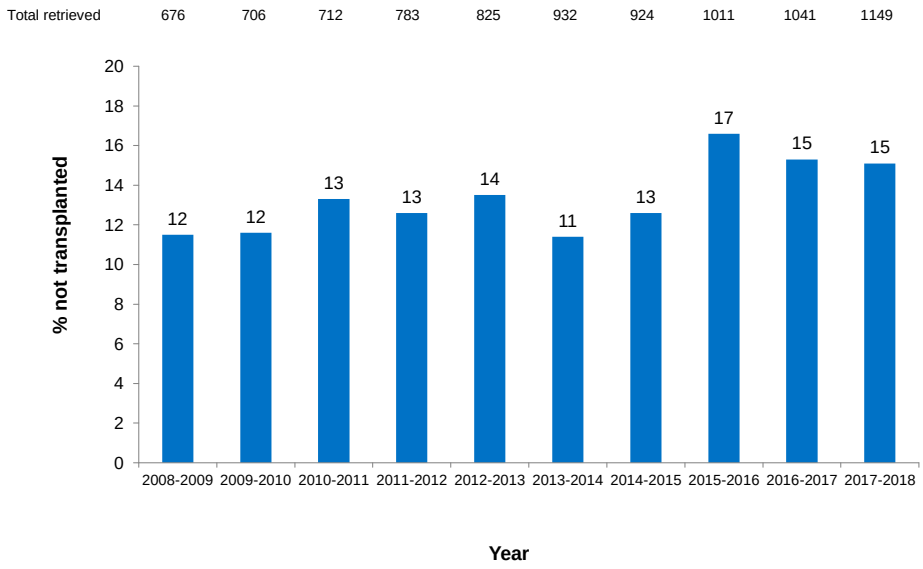
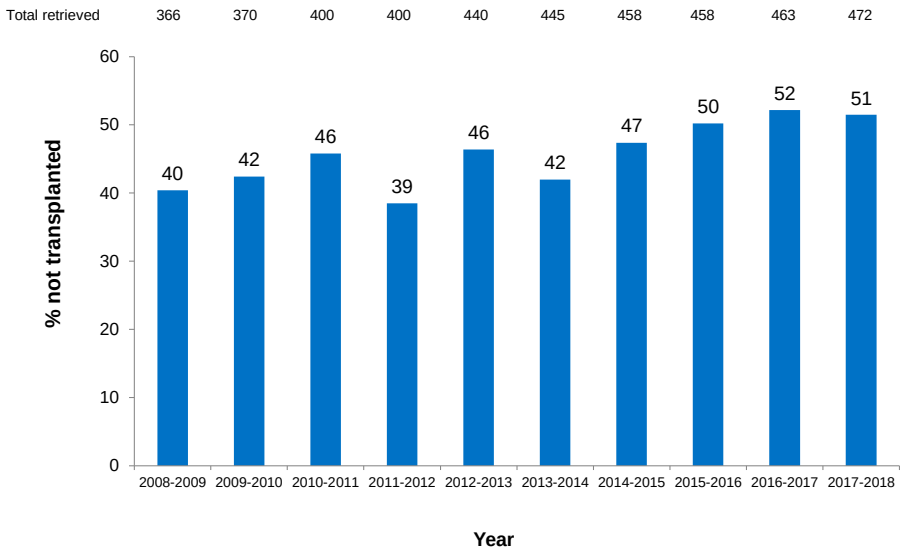
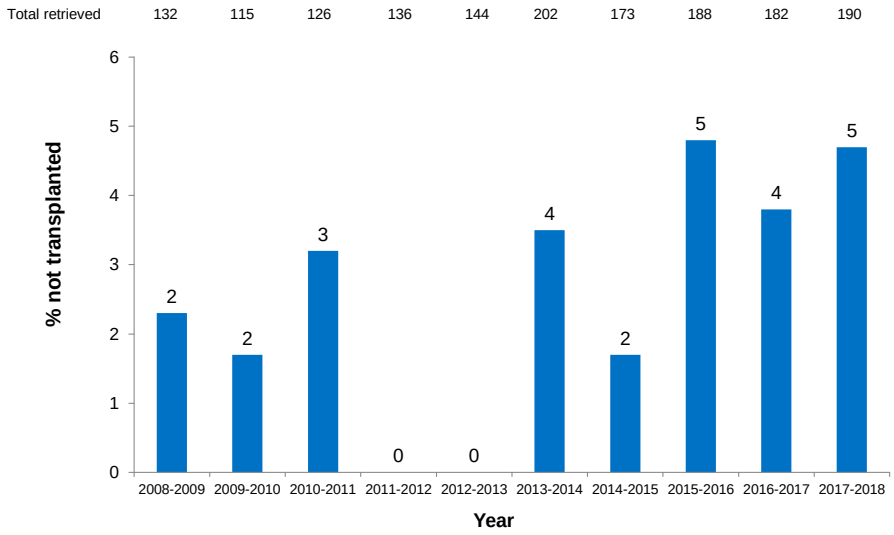


Figure 4.5 Percentage of pancreases[1] retrieved that were not transplanted from deceased organ donors in the UK, 1 April 2008 – 31 March 2018



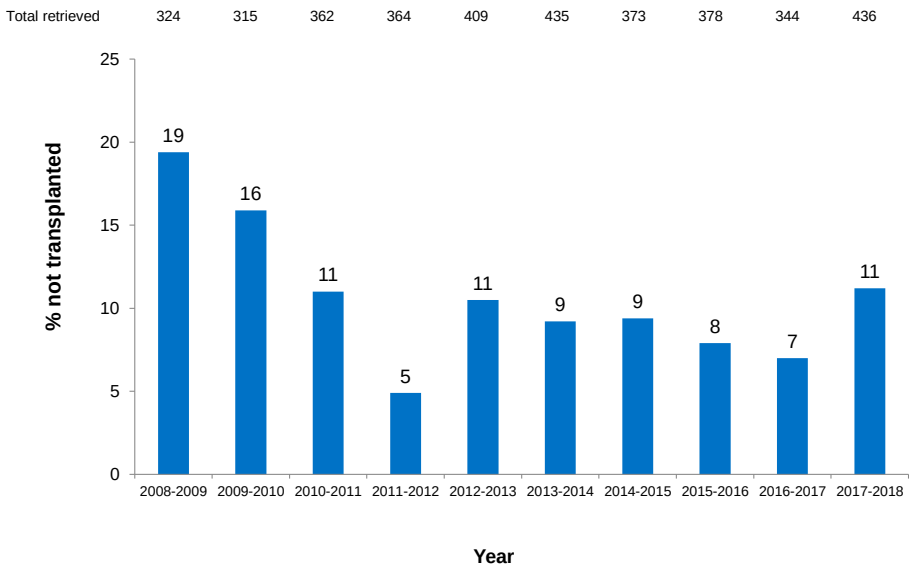
[1] Excludes donors aged > 60 years

Figure 4.6 Percentage of hearts[1] retrieved that were not transplanted from deceased organ donors[2] in the UK, 1 April 2008 – 31 March 2018



[1] Excludes donors aged > 65 years or died due to myocardial infarction
[2] Excludes DCD hearts

Figure 4.7 Percentage of lungs[1] retrieved that were not transplanted from deceased organ donors in the UK, 1 April 2008 – 31 March 2018



[1] Excludes donors aged > 65 years

Kidney Activity

Key messages

The number of patients registered on the kidney transplant list this year fell by 4% from 5,233 to 5,033

- **The number of deceased kidney donors increased by 11% to 1,480**
- **Kidney transplants from living donors increased by 1% to 1,020, while transplants from deceased donors increased by 10% to 2,573**
- **78 kidney transplants were made possible by the paired living kidney donation programme**
- **There were 89 non-directed altruistic living kidney donors, this led to 138 patients benefitting from a living donor transplant**

5.1 Overview

The number of deceased kidney donors increased by 11% in 2017-2018 compared to 2016-2017 and the number of deceased donor kidney transplants increased by 10%. There were 5,033 patients waiting for a kidney transplant at 31 March 2018, and for the 9th year running the number of patients on the national list for a kidney transplant has declined.

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**. The number of patients registered on the active transplant list at 31 March 2018 for a kidney only or multi-organ kidney transplant has fallen by 30% since 2009. These registrations include patients suspended on the kidney waiting list but active on the liver waiting list for a combined liver and kidney transplant.

Figure 5.1 **Deceased donor kidney programme in the UK, 1 April 2008 - 31 March 2018, Number of donors, transplants and patients on the active transplant list at 31 March**

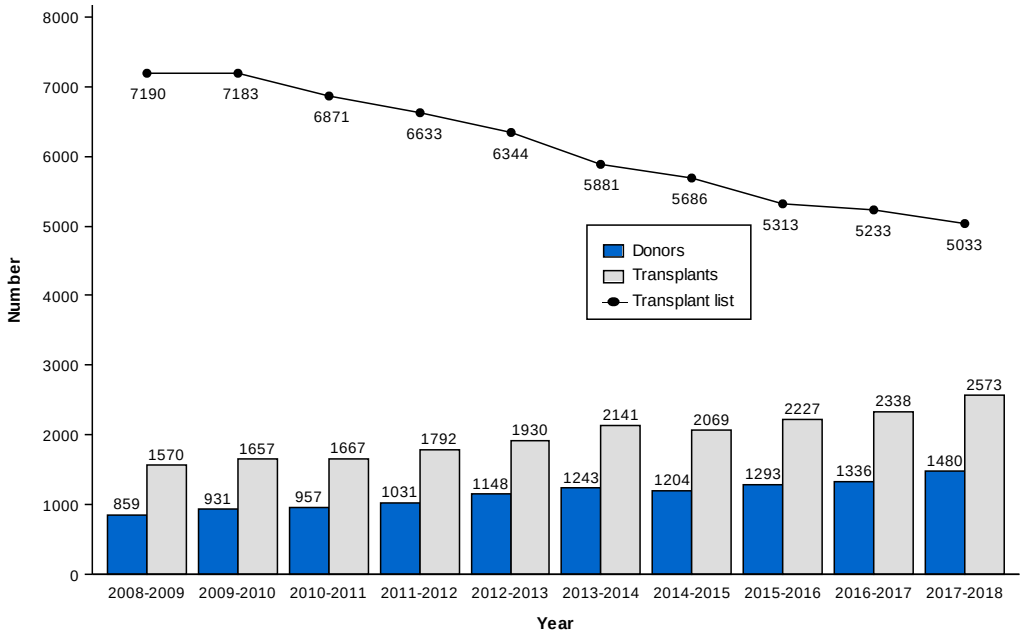


Table 5.1 shows the number of deceased and living donor kidney transplants carried out in 2017-2018 at each centre. As yet, very few kidneys from donors after circulatory death are transplanted in paediatric patients (<18 years). Donation figures for centres in North and South Thames are not reported 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 1,480 in 2017-2018 from 1,336 in 2016-2017 and the number of transplants increased from 2,338 to 2,573. The number of kidney donors after circulatory death increased to 596 from 567 in 2016-2017 and the number of transplants from such donors increased by 6% to 992.

Throughout this chapter, intestinal transplants involving a kidney are not included in the kidney transplant activity reported. Any kidneys retrieved and used for such transplants are however used in the kidney donor activity.

Table 5.1 **Kidney donors and transplants, 1 April 2017 - 31 March 2018 (2016-2017) and transplant list at 31 March 2018 (2017) in the UK, by centre**

Centre	Deceased kidney donors				Deceased donor transplants				Living donor transplants		Active transplant list	
	DBD		DCD		DBD		DCD					
Belfast	24	(31)	14	(10)	38	(35)	28	(10)	65	(79)	91	(120)
Birmingham	54	(47)	48	(44)	111	(96)	53	(31)	67	(65)	346	(413)
Bristol	37	(32)	22	(19)	60	(63)	44	(31)	29	(30)	210	(227)
Cambridge	52	(36)	64	(51)	72	(58)	84	(87)	37	(41)	218	(211)
Cardiff	32	(27)	25	(15)	25	(29)	29	(24)	30	(38)	135	(135)
Coventry[1]	9	(10)	7	(5)	39	(19)	12	(11)	22	(22)	70	(84)
Edinburgh	23	(29)	28	(34)	63	(46)	32	(33)	38	(36)	187	(169)
Glasgow	33	(43)	11	(19)	85	(61)	46	(45)	54	(47)	245	(271)
Great Ormond Street	0	(0)	0	(0)	10	(4)	0	(0)	14	(18)	11	(12)
Leeds	45	(42)	52	(33)	79	(87)	72	(57)	35	(46)	271	(216)
Leicester	9	(10)	16	(10)	43	(59)	32	(25)	27	(26)	171	(154)
Liverpool	60	(46)	22	(32)	47	(35)	34	(38)	42	(41)	161	(155)
Manchester	81	(56)	52	(42)	131	(139)	121	(105)	80	(78)	362	(395)
Newcastle	44	(50)	30	(31)	55	(63)	34	(48)	73	(58)	220	(244)
North Thames[2]	123	(90)	39	(52)	-	-	-	-	-	-	-	-
Royal Free	-	-	-	-	83	(60)	29	(33)	30	(34)	247	(243)
Royal London	-	-	-	-	69	(77)	21	(38)	40	(33)	286	(295)
WLRTC	-	-	-	-	103	(86)	38	(44)	45	(49)	448	(429)
Nottingham	17	(16)	23	(18)	45	(40)	44	(32)	21	(10)	115	(145)
Oxford[1]	33	(34)	21	(25)	120	(97)	80	(72)	49	(54)	258	(273)
Plymouth	28	(19)	19	(19)	23	(18)	19	(22)	22	(17)	89	(90)
Portsmouth	32	(35)	30	(18)	47	(58)	38	(26)	33	(23)	163	(188)
Sheffield	24	(18)	13	(11)	33	(27)	26	(20)	22	(22)	129	(151)
South Thames[2]	124	(98)	60	(79)	-	-	-	-	-	-	-	-
Guy's	-	-	-	-	130	(93)	46	(72)	93	(79)	336	(343)
St George's	-	-	-	-	70	(53)	30	(31)	41	(54)	264	(270)
TOTAL	**884**	**(769)**	**596**	**(567)**	**1581**	**(1403)**	**992**	**(935)**	**1020[3,5]**	**(1012[4,6])**	**5033**	**(5233)**

WLRTC - West London Renal and Transplant Centre
[1] As of 1 June 2016 Coventry and Oxford began working in partnership as a transplant network.
[2] Donor figures in this area cannot be linked to individual transplant centres due to shared retrieval areas.
[3] Includes an additional 6 transplants performed at London Cromwell Hospital and 5 transplants performed at London Bridge
[4] Includes an additional 1 transplant performed at Newcastle, Royal Victoria Infirmary, 1 transplant performed at London Clinic, 1 transplant performed at London Independent, 5 transplants performed at London Cromwell Hospital and 4 transplants performed at London Bridge
[5] Includes 2 domino donor; [6] Includes 1 domino donor

5.2 Transplant list

The number of patients registered on the kidney or kidney and pancreas transplant list fell by 4% in the year: on 31 March 2018, 5,033 patients were registered as active, compared with 5,233 at the end of March 2017. The number of patients waiting for a kidney transplant represents 76.4 patients per million population (pmp).

Of the 5,033 patients on the active transplant list at 31 March 2018, 185 required a kidney and pancreas transplant (195 at 31 March 2017). Additionally, 33 patients were registered for a pancreas only transplant (29 at 31 March 2017).

The outcome of patients registered on the UK kidney and kidney/pancreas transplant list at 1 April 2017, or subsequently registered during the financial year, is shown in **Table 5.2**. A total of 3,779 patients joined the kidney transplant list last year, while a further 211 joined the kidney/pancreas transplant list.

Table 5.2 Kidney transplant list and new registrations in the UK, 1 April 2017 - 31 March 2018

Outcome of patient at 31 March 2017	Active and suspended patients at 1 April 2017		New registrations in 2017-2018[1]		**TOTAL**	
	N	**%**	**N**	**%**	**N**	**%**
Kidney transplant list						
Remained active/suspended	4963	62	2908	77	**7871**	**66**
Transplanted	2462	31	822	22	**3284**	**28**
Removed	414[2]	5	25	1	**439**	**4**
Died	221	3	24	1	**245**	**2**
TOTAL	**8060**		**3779**		**11839**	
Kidney/pancreas transplant list						
Remained active/suspended	158	48	172	82	**330**	**61**
Transplanted	139	42	35	17	**174**	**32**
Removed	15	5	2	1	**17**	**3**
Died	17	5	2	1	**19**	**4**
TOTAL	**329**		**211**		**540**	

[1] Includes re-registrations for second or subsequent transplants
[2] Includes 4 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 2018 and 2017 by country/ former Strategic Health Authority of patient's residence. In 2018, the overall kidney transplant list rate was 76.4 pmp with rates across the Strategic Health Authorities ranging from 53.9 pmp to 133.4 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) 2018		2017	
North East	195	(73.9)	206	(78.0)
North West	473	(65.5)	520	(72.0)
Yorkshire and The Humber	384	(70.7)	342	(63.0)
North of England	**1052**	**(68.8)**	**1068**	**(69.8)**
East Midlands	325	(68.9)	359	(76.1)
West Midlands	435	(75.0)	509	(87.8)
East of England	377	(61.5)	384	(62.6)
Midlands and East	**1137**	**(68.3)**	**1252**	**(75.2)**
London	**1173**	**(133.4)**	**1129**	**(128.4)**
South East Coast	251	(53.9)	269	(57.7)
South Central	302	(69.4)	356	(81.8)
South West	383	(69.4)	389	(70.5)
South of England	**936**	**(64.4)**	**1014**	**(69.8)**
England	**4298**	**(77.8)**	**4463**	**(80.7)**
Isle of Man	**7**	**(87.5)**	**6**	**(75.0)**
Channel Islands	**9**	**(56.3)**	**11**	**(68.8)**
Wales	**189**	**(60.8)**	**185**	**(59.5)**
Scotland	**430**	**(79.6)**	**437**	**(80.9)**
Northern Ireland	**93**	**(50.0)**	**125**	**(67.2)**
TOTAL[1]	**5033**	**(76.4)**	**5233**	**(79.4)**

[1]Includes patients in 2018 (2017) residing in: Unspecified UK 4 (6); Overseas 3 (0)

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 26% of patients are transplanted within one year, while five years after listing 72% of patients have received a transplant.

The median (average) waiting time for a kidney only transplant has fallen from 864 days reported last year to 782 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 2873 new adult kidney only registrations made in the UK, 1 April 2012 - 31 March 2013**

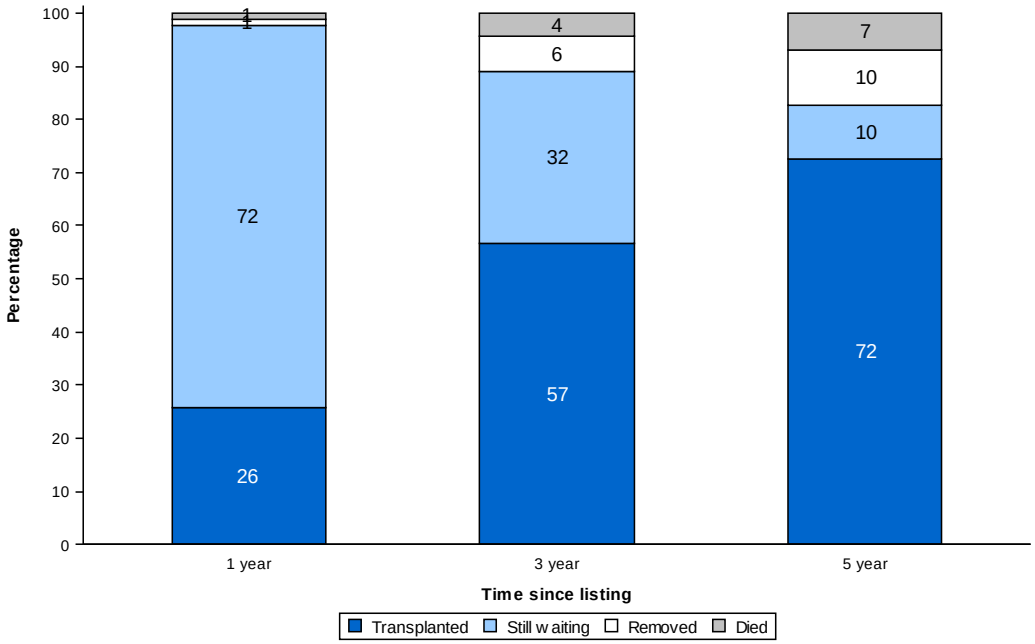


Table 5.4 **Median waiting time to kidney only transplant in the UK, for patients registered 1 April 2011 - 31 March 2015, by blood group**

Blood group	Number of patients registered	Waiting time (days) Median	95% Confidence interval
Adult			
O	4234	957	932 - 982
A	3313	578	557 - 599
B	1344	980	935 - 1025
AB	415	231	183 - 279
TOTAL	**9306**	**782**	**764 - 800**
Paediatric			
O	111	343	258 - 428
A	82	251	170 - 332
B	35	202	114 - 290
AB	15	281	149 - 413
TOTAL	**243**	**277**	**212 - 342**

Table 5.5 Median waiting time to kidney only transplant in the UK, for patients registered 1 April 2011 - 31 March 2015, by ethnicity

Ethnicity	Number of patients registered	Waiting time (days)	
		Median	95% Confidence interval
Adult			
White	6492	723	703 - 743
Asian	1515	891	846 - 936
Black	879	985	926 - 1044
Other	274	871	796 - 946
TOTAL[1]	**9303**	**782**	**764 - 800**
Paediatric			
White	143	228	176 - 280
Asian	68	366	209 - 523
Black	18	323	0 - 668
Other	10	498	181 - 815
TOTAL[2]	**243**	**277**	**212 - 342**

[1] Includes 143 patients whose ethnicity was not reported
[2] Includes 4 patients whose ethnicity was not reported

5.3 Donor and organ supply

Of the 955 organ donors after brain death in the UK in 2017-2018, 884 (93%) were kidney donors. From these donors, 1,748 kidneys were retrieved. There were 596 kidney donors after circulatory death in 2017-2018. From these donors, 1,179 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 13.4 pmp, with rates across the Strategic Health Authorities ranging from 9.5 to 19.0 pmp. The number of kidneys retrieved from donors after brain death in the UK is 26.5 pmp and varies from 18.9 to 37.3 pmp.

The overall rate for kidney donors after circulatory death is 9 pmp, with rates across the Strategic Health Authorities ranging from 4.3 to 14.5 pmp. The number of kidneys retrieved from donors after circulatory death is 17.9 pmp and varies from 8.3 to 28.4 pmp.

Table 5.6 Kidney donation and retrieval rates for deceased donors in the UK, 1 April 2017 - 31 March 2018, by Country/ Strategic Health Authority

Country/ Strategic Health Authority of residence	Kidney donors (pmp)				Kidneys retrieved (pmp)			
	DBD		DCD		DBD		DCD	
North East	35	(13.3)	25	(9.5)	69	(26.1)	50	(18.9)
North West	137	(19.0)	77	(10.7)	269	(37.3)	153	(21.2)
Yorkshire and The Humber	64	(11.8)	62	(11.4)	127	(23.4)	124	(22.8)
North of England	**236**	**(15.4)**	**164**	**(10.7)**	**465**	**(30.4)**	**327**	**(21.4)**
East Midlands	45	(9.5)	43	(9.1)	89	(18.9)	86	(18.2)
West Midlands	59	(10.2)	52	(9.0)	117	(20.2)	103	(17.8)
East of England	97	(15.8)	89	(14.5)	193	(31.5)	174	(28.4)
Midlands and East	**201**	**(12.1)**	**184**	**(11.1)**	**399**	**(24.0)**	**363**	**(21.8)**
London	**128**	**(14.6)**	**38**	**(4.3)**	**253**	**(28.8)**	**73**	**(8.3)**
South East Coast	71	(15.2)	41	(8.8)	140	(30.0)	82	(17.6)
South Central	56	(12.9)	38	(8.7)	112	(25.7)	76	(17.5)
South West	66	(12.0)	46	(8.3)	132	(23.9)	91	(16.5)
South of England	**193**	**(13.3)**	**125**	**(8.6)**	**384**	**(26.4)**	**249**	**(17.1)**
England	**758**	**(13.7)**	**511**	**(9.2)**	**1501**	**(27.2)**	**1012**	**(18.3)**
Isle of Man	**-**		**1**	**(12.5)**	**-**		**2**	**(25.0)**
Channel Islands	**2**	**(12.5)**	**-**		**4**	**(25.0)**	**-**	
Wales	**45**	**(14.5)**	**29**	**(9.3)**	**88**	**(28.3)**	**58**	**(18.6)**
Scotland	**56**	**(10.4)**	**41**	**(7.6)**	**110**	**(20.4)**	**79**	**(14.6)**
Northern Ireland	**23**	**(12.4)**	**14**	**(7.5)**	**45**	**(24.2)**	**28**	**(15.1)**
TOTAL[1]	**884**	**(13.4)**	**596**	**(9.0)**	**1748**	**(26.5)**	**1179**	**(17.9)**

[1]Includes 26 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 21.5 to 45.4 pmp across Strategic Health Authorities and overall was 36.1 pmp. The living donor transplant rate ranged from 10.1 to 25.4 pmp across the Strategic Health Authorities and overall was 15.2 pmp.

Table 5.7 Kidney only transplant rates per million population (pmp), in the UK, 1 April 2017 - 31 March 2018, 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	42	(15.9)	27	(10.2)	69	(26.1)	67	(25.4)
North West	151	(20.9)	124	(17.2)	275	(38.1)	119	(16.5)
Yorkshire and The Humber	104	(19.2)	90	(16.6)	194	(35.7)	55	(10.1)
North of England	**297**	**(19.4)**	**241**	**(15.8)**	**538**	**(35.2)**	**241**	**(15.8)**
East Midlands	91	(19.3)	85	(18.0)	176	(37.3)	55	(11.7)
West Midlands	150	(25.9)	71	(12.2)	221	(38.1)	79	(13.6)
East of England	111	(18.1)	96	(15.7)	207	(33.8)	82	(13.4)
Midlands and East	**352**	**(21.1)**	**252**	**(15.1)**	**604**	**(36.3)**	**216**	**(13.0)**
London	**291**	**(33.1)**	**108**	**(12.3)**	**399**	**(45.4)**	**119**	**(13.5)**
South East Coast	71	(15.2)	29	(6.2)	100	(21.5)	77	(16.5)
South Central	99	(22.8)	86	(19.8)	185	(42.5)	66	(15.2)
South West	112	(20.3)	82	(14.9)	194	(35.1)	78	(14.1)
South of England	**282**	**(19.4)**	**197**	**(13.6)**	**479**	**(33.0)**	**221**	**(15.2)**
England	**1222**	**(22.1)**	**798**	**(14.4)**	**2020**	**(36.5)**	**797**	**(14.4)**
Isle of Man	**2**	**(25.0)**	**2**	**(25.0)**	**4**	**(50.0)**	**0**	**(0.0)**
Channel Islands	**6**	**(37.5)**	**2**	**(12.5)**	**8**	**(50.0)**	**4**	**(25.0)**
Wales	**32**	**(10.3)**	**37**	**(11.9)**	**69**	**(22.2)**	**41**	**(13.2)**
Scotland	**133**	**(24.6)**	**75**	**(13.9)**	**208**	**(38.5)**	**92**	**(17.0)**
Northern Ireland	**39**	**(21.0)**	**28**	**(15.1)**	**67**	**(36.0)**	**66**	**(35.5)**
TOTAL[1,2]	**1436**	**(21.8)**	**943**	**(14.3)**	**2379**	**(36.1)**	**797**	**(14.4)**

[1] Excludes 17 recipients of a living donor kidney who reside outside of the UK (17 living donors)
[2] Includes 4 recipients with an unknown UK postcode (3 deceased donors, 1 living donor)

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 2 en bloc kidneys and 13 double kidney transplants in 2017-2018 (5 and 17 in 2016-2017). Kidney transplants from donors after circulatory death include 6 en bloc and 26 double kidney transplants in 2017-2018 (8 and 36 in 2016-2017). This table excludes multi-organ transplants: 19 kidney and liver, 168 kidney and pancreas, 4 kidney and islets, and 2 multivisceral.

Table 5.8 Adult kidney only transplants in the UK, 1 April 2016 - 31 March 2018, by transplant centre

Transplant centre	2016-2017 DBD	DCD	Living donor	TOTAL	2017-2018 DBD	DCD	Living donor	TOTAL
Belfast	34	10	74	118	38	27	65	130
Birmingham	82	31	56	169	101	53	61	215
Bristol	55	31	29	115	55	44	28	127
Cambridge	39	79	41	159	55	77	37	169
Cardiff	24	24	35	83	20	27	29	76
Coventry[1]	19	11	22	52	39	12	22	73
Edinburgh	25	33	36	94	48	29	38	115
Glasgow	60	45	43	148	80	46	46	172
Guy's	75	64	68	207	90	40	77	207
Leeds	79	57	44	180	70	72	30	172
Leicester	59	25	26	110	43	32	27	102
Liverpool	35	38	41	114	47	34	42	123
Manchester	118	91	68	277	110	98	68	276
Newcastle	52	48	53	153	45	34	71	150
Nottingham	30	30	8	68	39	44	18	101
Oxford[1]	59	59	54	172	80	72	49	201
Plymouth	18	22	16	56	23	19	22	64
Portsmouth	58	26	23	107	46	38	33	117
Sheffield	27	20	22	69	33	26	21	80
St George's	53	31	54	138	70	30	41	141
The Royal Free	58	33	34	125	82	29	30	141
The Royal London	77	38	33	148	68	21	39	128
WLRTC	82	41	49	172	97	36	45	178
TOTAL	**1218**	**887**	**940[2]**	**3045**	**1379**	**940**	**950[3]**	**3269**

WLRTC - West London Renal and Transplant Centre
[1] As of 1 June 2016 Coventry and Oxford began working in partnership as a transplant network
[2] Includes 1 transplant performed at London Clinic, 1 at London Independent, 5 at London Cromwell Hospital and 4 at London Bridge
[3] Includes an additional 6 transplants performed at London, Cromwell Hospital and 5 transplants performed at London, London Bridge Hospital

Living donor kidney transplants increased by 1% to 1,020 in 2017-2018, representing 28% 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 2% decrease in these transplants. In addition there are now a number of 'undirected' living donor transplants (also known as altruistic donor transplants). Last year 89 such donors donated a kidney to a recipient, 85 transplanted into an adult recipient and 4 transplanted into a paediatric recipient. Of the 89 altruistic donors, 33 went into an altruistic donor chain (17 short (2 transplants each) and 16 long chains (3 transplants each)) benefiting 48 adult and 1 paediatric patient in the paired/pooled scheme. The kidneys from the paired donors of these recipients led to 30 adult and 3 paediatric transplant for patients on the deceased donor transplant list. Thus 33 altruistic donors creating chains benefited 78 adult and 4 paediatric patients in total.

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. The scheme also includes compatible pairs that would like a better match. This type of exchange is known as paired donation and most exchanges are between two pairs (i.e. two donors and their respective incompatible recipients), or between three pairs. In 2017-2018, there were also 78 paired living kidney donor transplants (77 adult and 1 paediatric recipients).

As a percentage of the number of patients on the active transplant list at 31 March 2018, the number of living donor adult transplants in the year was 19% and ranged from 10% to 72% at individual transplant centres.

Table 5.9 Adult living donor kidney transplants in the UK, 1 April 2017 - 31 March 2018, and percentage of active transplant list at 31 March, by transplant centre

	2017-2018				TOTAL	
Transplant centre	Directed	Non-directed (altruistic) to waiting list	Paired/ pooled exchanges	Altruistic donor chain[4]	**N**	**% list**
Belfast	49	0	13	3	**65**	**72**
Birmingham	48	4	2	7	**61**	**19**
Bristol	26	0	0	2	**28**	**14**
Cambridge	33	3	1	0	**37**	**17**
Cardiff	23	2	3	1	**29**	**21**
Coventry[1]	12	0	4	6	**22**	**31**
Edinburgh	29	4	3	2	**38**	**20**
Glasgow	37	3	3	3	**46**	**19**
Guy's	63	4	5	5	**77**	**24**
Leeds	23	2	1	4	**30**	**11**
Leicester	24	0	1	2	**27**	**16**
Liverpool	34	5	3	0	**42**	**26**
Manchester	54	7	2	5	**68**	**19**
Newcastle	55	4	7	5	**71**	**32**
Nottingham	15	0	3	0	**18**	**16**
Oxford[1]	30	4	7	8	**49**	**19**
Plymouth	19	2	0	1	**22**	**25**
Portsmouth	22	4	2	5	**33**	**20**
Sheffield	16	0	3	2	**21**	**16**
St George's	29	1	6	5	**41**	**16**
The Royal Free	23	2	2	3	**30**	**12**
The Royal London	30	1	4	4	**39**	**14**
WLRTC	35	3	2	5	**45**	**10**
TOTAL	**740[2]**	**55[3]**	**77**	**78**	**950[2]**	**19**

WLRTC – West London Renal and Transplant Centre
[1] As of 1 June 2016 Coventry and Oxford began working in partnership as a transplant network
[2] Includes 6 transplants performed at London Cromwell Hospital and 5 transplants performed at London Bridge
[3] Includes 2 domino donor transplants
[4] Includes transplants for paired pooled and deceased donor transplant list patients

Non-directed, altruistic donor kidneys are matched to a suitable recipient on a national basis 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 2016 - 31 March 2018, by donor centre

	2016-2017				2017-2018			
Donor centre	Transplant list	Chain	**Total**	**%**	Transplant list	Chain	**Total**	**%**
Belfast	2	2	4	5	0	4	4	4
Birmingham	3	2	5	6	1	1	2	2
Bristol	2	0	2	2	1	0	1	1
Cambridge	4	2	6	7	0	1	1	1
Cardiff	2	0	2	2	3	1	4	4
Coventry[1]	1	0	1	1	2	0	2	2
Edinburgh	9	2	11	13	5	1	6	7
Glasgow	1	4	5	6	1	2	3	3
Guy's	3	1	4	5	5	8	13	15
Leeds	2	0	2	2	6	1	7	8
Leicester	1	0	1	1	1	0	1	1
Liverpool	4	1	5	6	2	2	4	4
Manchester	5	2	7	8	9	1	10	11
Newcastle	1	0	1	1	4	3	7	8
Nottingham	2	2	4	5	0	0	0	0
Oxford[1]	4	2	6	7	5	0	5	6
Plymouth	1	0	1	1	7	3	10	11
Portsmouth	7	0	7	8	1	2	3	3
Sheffield	2	1	3	3	0	1	0	1
St George's	0	2	2	2	0	1	1	1
The Royal Free	0	0	0	0	2	0	2	2
The Royal London	4	1	5	6	0	1	1	1
WLRTC	2	0	2	2	1	0	1	1
Total donors	**62**	**24**	**86**	**100**	**56**	**33**	**89**	**100**

WLRTC – West London Renal and Transplant Centre
[1] As of 1 June 2016 Coventry and Oxford began working in partnership as a transplant network

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 70 living donor transplants and 60 deceased donor transplants in paediatric patients in 2017-2018. The paediatric transplant list has fallen by 24% from 84 patients at 31 March 2017 to 64 at the end of March 2018.

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

Table 5.11 Paediatric patient kidney transplants in the UK, 1 April 2016 - 31 March 2018, by transplant centre

	2016-2017				2017-2018			
Paediatric transplant centre	DBD	DCD	Living donor	**TOTAL**	DBD	DCD	Living donor	**TOTAL**
Belfast	1	0	5	**6**	0	1	0	**1**
Birmingham	7	0	9	**16**	6	0	6	**12**
Bristol	8	0	1	**9**	5	0	1	**6**
Glasgow	1	0	4	**5**	5	0	8	**13**
Great Ormond Street	4	0	18	**22**	10	0	14	**24**
Guy's	2	0	11	**13**	9	0	16	**25**
Leeds	8	0	2	**10**	4	0	5	**9**
Manchester	6	1	10	**17**	7	2	12	**21**
Newcastle	3	0	5	**8**	2	0	2	**4**
Nottingham	10	2	2	**14**	6	0	3	**9**
Adult centres	2	0	5	**7**	3	0	3	**6**
TOTAL	**52**	**3**	**72[1]**	**127**	**57**	**3**	**70[2]**	**130**

[1] Includes 3 non-directed donor transplants, 2 paired living donor transplants and 2 altruistic donor chains (1 as a patient on transplant list at end of chain, and 1 as part of a paired programme)
[2] Includes 3 non-directed donor transplants, 1 paired living donor transplant and 4 altruistic donor chains (3 as a patient on transplant list at end of chain, and 1 as part of a paired programme)

At 31 March 2018, there were approximately 37,900 recipients with a functioning kidney transplant (including multi-organ transplants) being followed-up as reported to the UK Transplant Registry.

Rates of pre-emptive kidney only transplantation are shown in **Table 5.12**. Of the 3,399 kidney only transplant recipients in 2017-2018, dialysis status at time of transplant was reported for 3,267 (96%). Of these 3,267 transplants, 773 (24%) were carried out in pre-dialysis patients.

Pre-emptive transplants accounted for 29% of all paediatric kidney only transplants with reported dialysis status, compared with 23% of those in adults. Living donor transplants are more likely to be carried out before the need for dialysis than deceased donor transplants: 40% and 12% 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 2017 - 31 March 2018

	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	2319	2222	(95.8)	16.5
Living donor transplant	950	919	(96.7)	40.2
Paediatric				
Deceased donor transplant	60	58	(96.7)	22.4
Living donor transplant	70	68	(97.1)	35.3

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 2017 - 31 March 2018

	Number of kidney only transplants[1]	Median (hours)	Inter-quartile range[2] Q1	Q3
Adult				
DBD donor transplant	1379	13.1	9.9	16.8
DCD donor transplant	940	12.6	9.6	15.9
Total	**2319**	**12.9**	**9.9**	**16.4**
Paediatric				
DBD donor transplant	57	13.3	10.1	16.8
DCD donor transplant	3	11.1	8.7	13.5
Total	**60**	**13.3**	**10.1**	**16.6**
TOTAL	**2379**	**12.9**	**9.9**	**16.5**

[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 and some kidneys from donors after cardiothoracic 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 scheme, 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. 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

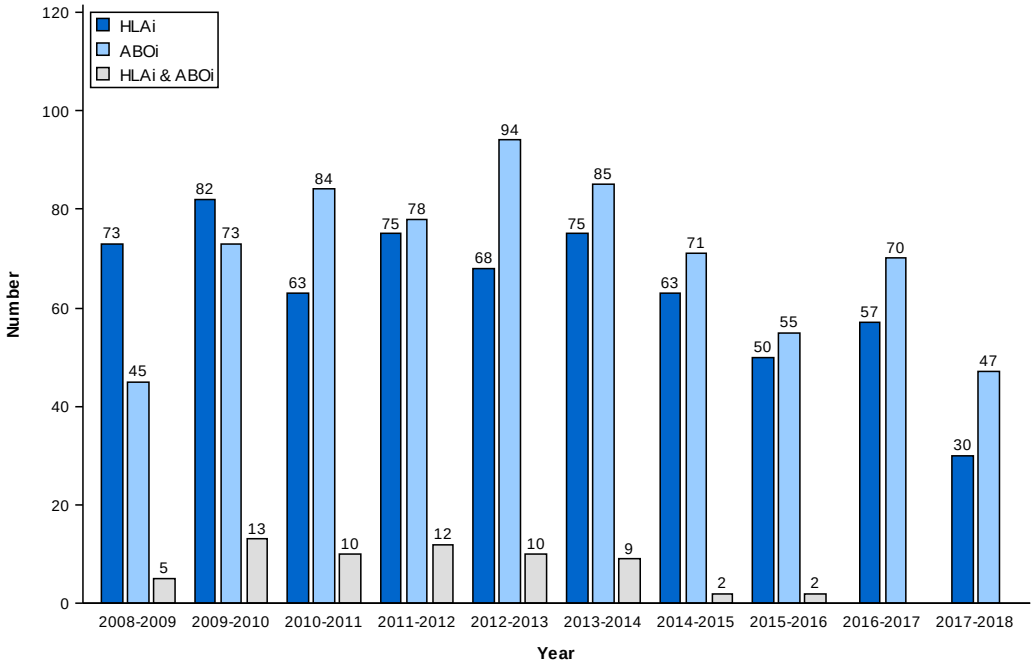
Level	HLA mismatch summary	HLA mismatch combinations included
1	000	000
2	[0 DR and 0/1 B]	100, 010, 110, 200, 210
3	[0 DR and 2 B] or [1 DR and 0/1 B]	020, 120, 220, 001, 101, 201, 011, 111, 211
4	[1 DR and 2 B] or [2 DR]	021, 121, 221, 002, 102, 202, 012, 112, 212, 022, 122, 222

Table 5.15 HLA matching for kidney only transplants in the UK, 1 April 2017 - 31 March 2018

	DBD		DCD		Living	
	N	(%)	N	(%)	N	(%)
Adult						
Level 1 (Best match)	181	(13)	46	(5)	99	(11)
Level 2	524	(38)	257	(27)	133	(15)
Level 3	635	(46)	542	(58)	439	(48)
Level 4	39	(3)	95	(10)	240	(26)
Not reported					39	
Paediatric						
Level 1 (Best match)	2	(4)	0	(0)	7	(11)
Level 2	44	(77)	0	(0)	14	(21)
Level 3	11	(19)	2	(67)	45	(68)
Level 4	0	(0)	1	(33)	0	(0)
Not reported					4	

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 636 HLA incompatible (HLAi) transplants performed; 201 used kidneys from deceased donors and 435 used living donor kidneys whilst the vast majority of ABO incompatible (ABOi) transplants used living donor kidneys (698 of 702). Due to the 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 2008 - 31 March 2018



5.5 Demographic characteristics

The age group, sex, ethnicity and blood group of deceased donors, transplant recipients and patients on the transplant list are shown in **Table 5.16** and for 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 2017 - 31 March 2018, and transplant list patients at 31 March

Age group (years)	Donors		Transplant recipients		Active transplant list patients	
	N	(%)	N	(%)	N	(%)
0 - 17	51	(3)	63	(2)	64	(1)
18 - 34	194	(13)	335	(13)	560	(11)
35 - 49	323	(22)	731	(28)	1323	(26)
50 - 59	393	(27)	628	(24)	1490	(30)
60 - 69	323	(22)	589	(23)	1185	(24)
70+	196	(13)	227	(9)	411	(8)
mean (SD)	52	(17)	51	(15)	52	(14)
Male	829	(56)	1602	(62)	2899	(58)
Female	651	(44)	971	(38)	2134	(42)
White	1363	(93)	1815	(72)	3223	(65)
Asian	30	(2)	417	(16)	897	(18)
Black	19	(1)	207	(8)	590	(12)
Chinese	9	(1)	33	(1)	67	(1)
Other	41	(3)	65	(3)	173	(3)
Not reported	18	-	36	-	83	-
O	716	(48)	1126	(44)	2666	(53)
A	577	(39)	975	(38)	1325	(26)
B	138	(9)	336	(13)	924	(18)
AB	49	(3)	136	(5)	118	(2)
First graft			2222	(86)	3805	(76)
Re-graft			351	(14)	1228	(24)
TOTAL	**1480**	**(100)**	**2573**	**(100)**	**5033**	**(100)**

Table 5.17 Demographic characteristics of living kidney donors and transplant recipients, 1 April 2017 - 31 March 2018

Age group (years)	Donors		Transplant recipients	
	N	(%)	N	(%)
0 - 17	0	(0)	70	(7)
18 - 34	148	(15)	227	(22)
35 - 49	373	(37)	307	(30)
50 - 59	305	(30)	237	(23)
60 - 69	164	(16)	132	(13)
70+	30	(3)	47	(5)
mean (SD)	49	(12)	44	(17)
Male	454	(45)	649	(64)
Female	566	(55)	371	(36)
White	895	(88)	845	(85)
Asian	66	(6)	83	(8)
Black	17	(2)	24	(2)
Chinese	9	(1)	10	(1)
Other	31	(3)	38	(4)
Not reported	2		20	
O	591	(58)	420	(41)
A	307	(30)	406	(40)
B	97	(10)	153	(15)
AB	22	(2)	41	(4)
Not reported	3		0	
First graft			858	(84)
Re-graft			162	(16)
TOTAL	**1020**	**(100)**	**1020**	**(100)**

Pancreas Activity

Key messages

- **The number of patients waiting on the pancreas transplant list fell by 3% during the year, to 218 at 31 March 2018**
- **The number of pancreas donors after brain death increased by 1% to 364, while transplants from donors after brain death fell by 4% to 157**
- **The number of pancreas donors after circulatory death increased by 2% to 120, while transplants from donors after circulatory death increased by 8% to 54**
- **26 islet transplants were made possible by the pancreas islet transplant programme, a fall of 24% compared with last year**

6.1 Overview

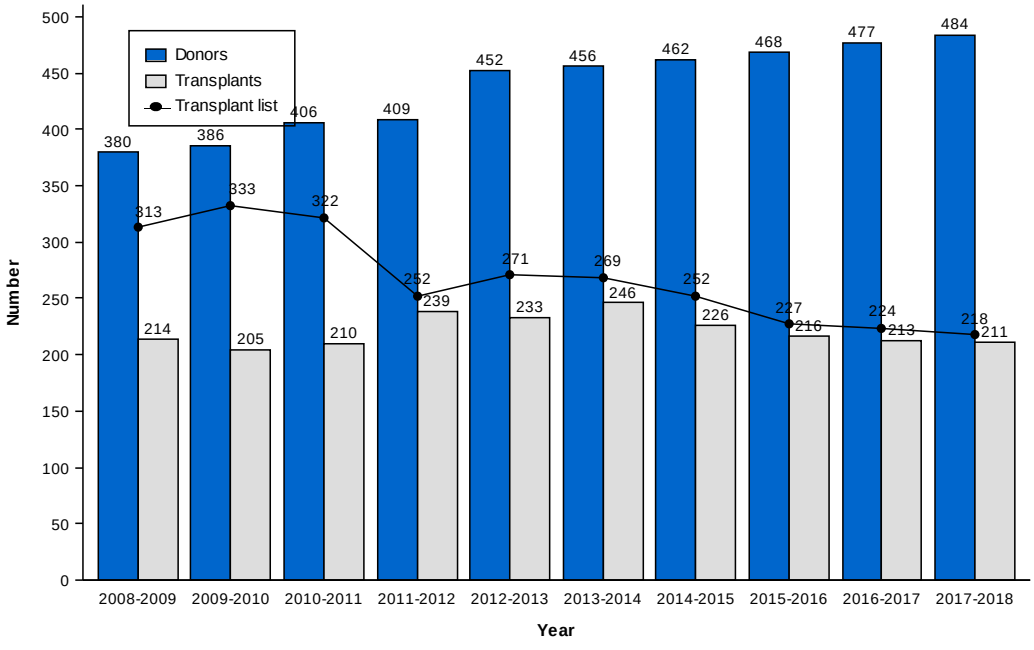
The number of patients registered on the active transplant list at 31 March for a pancreas, simultaneous kidney/pancreas (SPK) or islet transplant has decreased over the last ten years from 313 patients in 2009 to 218 patients in 2018. The number of pancreas donors has increased steadily from 380 to 484. However the number of transplants has decreased in the last 5 years to 211 transplants in 2017-2018. A summary of activity for deceased donor pancreas transplants and the transplant list for 1 April 2008 - 31 March 2018 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.

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 2017-2018 there were 19 intestinal transplants including a pancreas.

Figure 6.1 **Deceased pancreas and islet programme in the UK, 1 April 2008 - 31 March 2018, 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 2018 by centre. The number of patients registered on the pancreas transplant list fell by 3% in the year: on 31 March 2018, 218 patients were registered active, compared with 224 at the end of March 2017.

Of the 218 patients on the active transplant list at 31 March 2018, 175 required a SPK transplant (193 at 31 March 2017), 14 (6%) patients required a pancreas only transplant (10 at 31 March 2017) and 29 (13%) were registered for a pancreas islet transplant (including ten for a simultaneous islet and kidney (SIK) transplant).

The outcome of patients registered on the UK pancreas transplant list at 1 April 2017, or subsequently registered during the financial year, is shown in **Table 6.2**. 23 patients joined the pancreas transplant list while 211 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 2018 (2017) in the UK, by centre

Centre	Active transplant lists											
	Kidney/ pancreas		Kidney/islet		Pancreas alone		Islet				**TOTAL**	
							Routine		Priority			
Bristol	9	(16)	0	(0)	0	(1)	0	(0)	0	(0)	**9**	**(17)**
Cambridge	9	(10)	0	(0)	2	(1)	0	(0)	0	(0)	**11**	**(11)**
Cardiff	25	(27)	2	(2)	0	(0)	3	(6)	3	(0)	**33**	**(35)**
Edinburgh	38	(36)	0	(0)	0	(0)	0	(0)	0	(0)	**38**	**(36)**
Guys	0	(0)	0	(0)	0	(0)	1	(0)	0	(0)	**1**	**(0)**
King's College	18	(21)	7	(0)	2	(1)	1	(2)	1	(1)	**29**	**(25)**
Manchester	6	(11)	1	(0)	2	(2)	7	(2)	1	(1)	**17**	**(16)**
Newcastle	64	(62)	0	(0)	6	(5)	2	(4)	0	(3)	**72**	**(74)**
Oxford	6	(10)	0	(0)	2	(0)	0	(0)	0	(0)	**8**	**(10)**
Royal Free	-	-	0	(0)	-	-	0	(0)	0	(0)	**0**	**(0)**
WLRTC	10	(2)	0	(0)	0	(2)	0	(0)	0	(0)	**10**	**(4)**
TOTAL	**175**	**(193)**	**10**	**(2)**	**14**	**(10)**	**14**	**(14)**	**5**	**(5)**	**218**	**(224)**

WLRTC - West London Renal and Transplant Centre

Table 6.2 Whole pancreas transplant list and new registrations in the UK, 1 April 2017 - 31 March 2018

Outcome of patient at 31 March 2018	Active and suspended patients at 1 April 2017		New registrations in 2017-2018[1]		TOTAL	
	N	%	N	%	N	%
Pancreas transplant list						
Remained active/suspended	66	90	9	39	**75**	**78**
Transplanted	4	5	13	57	**17**	**18**
Removed	1	1	0	0	**1**	**1**
Died	2	3	1	4	**3**	**3**
TOTAL	**73**		**23**		**96**	
Kidney/pancreas transplant list						
Remained active/suspended	157	48	172	82	**330**	**61**
Transplanted	139	42	35	17	**174**	**32**
Removed	15	5	2	1	**17**	**3**
Died	17	5	2	1	**19**	**4**
TOTAL	**329**		**211**		**540**	

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

The active pancreas transplant list rates by country/ Strategic Health Authority of patient's residence are shown in **Table 6.3**. At 31 March 2018, the overall transplant list rate was 3.3 pmp and across the Strategic Health Authorities ranged from 1.5 to 6.0 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)**			
	2018		2017	
North East	11	(4.2)	10	(3.8)
North West	11	(1.5)	15	(2.1)
Yorkshire and The Humber	10	(1.8)	7	(1.3)
North of England	**32**	**(2.1)**	**32**	**(2.1)**
East Midlands	12	(2.5)	14	(3.0)
West Midlands	20	(3.4)	22	(3.8)
East of England	10	(1.6)	18	(2.9)
Midlands and East	**42**	**(2.5)**	**54**	**(3.2)**
London	**34**	**(3.9)**	**30**	**(3.4)**
South East Coast	17	(3.6)	17	(3.6)
South Central	26	(6.0)	26	(6.0)
South West	18	(3.3)	15	(2.7)
South of England	**61**	**(4.2)**	**58**	**(4.0)**
England	**169**	**(3.1)**	**174**	**(3.1)**
Isle of Man	**0**	**(0.0)**	**0**	**(0.0)**
Channel Islands	**0**	**(0.0)**	**0**	**(0.0)**
Wales	**16**	**(5.1)**	**15**	**(4.8)**
Scotland	**30**	**(5.6)**	**32**	**(5.9)**
Northern Ireland	**3**	**(1.6)**	**3**	**(1.6)**
TOTAL	**218**	**(3.3)**	**224**	**(3.4)**

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. 32% of patients are transplanted within one year, while three years after listing 75% of patients have received a transplant. The median (average) waiting time for a pancreas transplant is 348 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 255 new pancreas only and kidney/pancreas registrations made in the UK, 1 April 2014 - 31 March 2015**

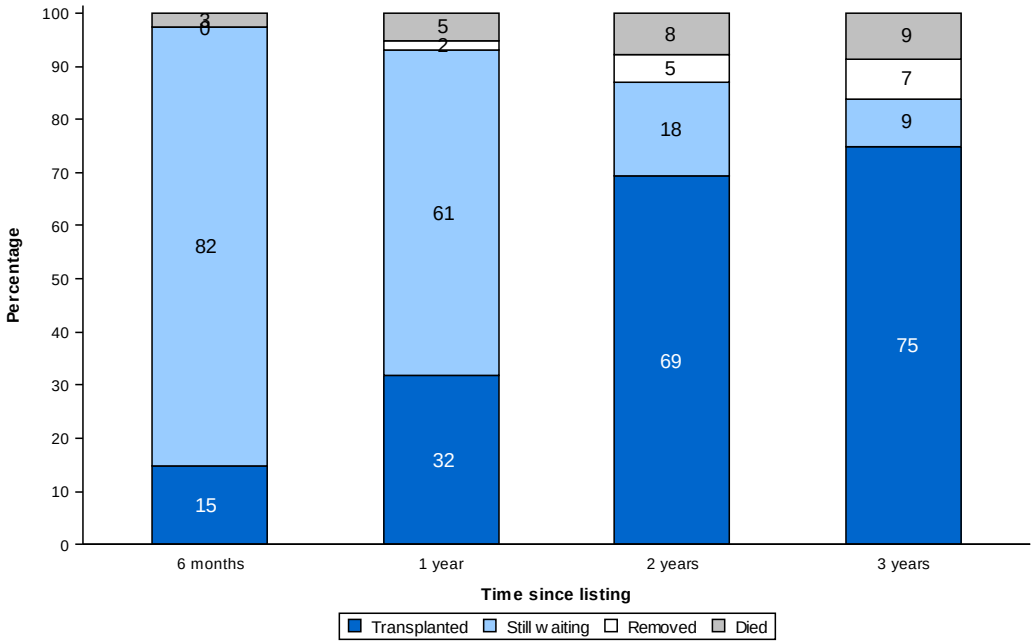


Table 6.4 **Median waiting time to pancreas only and kidney/pancreas transplant in the UK, for patients registered 1 April 2012 - 31 March 2016, by blood group**

Blood group	Number of patients registered	Waiting time (days) Median	95% Confidence interval
Adult			
O	453	449	429 – 469
A	381	287	267 – 307
B	118	254	166 – 342
AB	45	149	103 – 195
TOTAL	**997**	**348**	**332 – 364**

Table 6.5 **Median waiting time to pancreas only and kidney/pancreas transplant in the UK, for patients registered 1 April 2012 - 31 March 2016, by ethnicity**

Ethnicity	Number of patients registered	Waiting time (days) Median	95% Confidence interval
Adult			
White	870	353	334 – 374
Asian	57	279	204 – 354
Black	42	316	220 – 412
Other	13	278	78 – 478
TOTAL[1]	**997**	**348**	**332 – 364**

[1] Includes 15 patients whose ethnicity was not reported

6.3 Donor and organ supply

Of the 955 organ donors after brain death in the UK in 2017-2018, 364 (38%) donated a pancreas. There were 120 pancreas donors after circulatory death in 2017-2018. **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 5.5 pmp, with rates ranging from 3.8 to 7.1 pmp across the Strategic Health Authorities and for donors after circulatory death is 1.8 pmp, with rates ranging from 0.9 to 2.9 pmp across the Strategic Health Authorities.

Table 6.6 Pancreas donation rates for deceased donors in the UK, 1 April 2017 - 31 March 2018, by country/ Strategic Health Authority

Country/ Strategic Health Authority of residence	Pancreas donors (pmp)					
	DBD		DCD		TOTAL	
North East	12	(4.5)	6	(2.3)	**18**	**(6.8)**
North West	51	(7.1)	13	(1.8)	**64**	**(8.9)**
Yorkshire and The Humber	27	(5.0)	13	(2.4)	**40**	**(7.4)**
North of England	**90**	**(5.9)**	**32**	**(2.1)**	**122**	**(8.0)**
East Midlands	18	(3.8)	11	(2.3)	**29**	**(6.1)**
West Midlands	31	(5.3)	8	(1.4)	**39**	**(6.7)**
East of England	40	(6.5)	18	(2.9)	**58**	**(9.5)**
Midlands and East	**89**	**(5.3)**	**37**	**(2.2)**	**126**	**(7.6)**
London	**50**	**(5.7)**	**8**	**(0.9)**	**58**	**(6.6)**
South East Coast	32	(6.9)	4	(0.9)	**36**	**(7.7)**
South Central	20	(4.6)	8	(1.8)	**28**	**(6.4)**
South West	25	(4.5)	11	(2.0)	**36**	**(6.5)**
South of England	**77**	**(5.3)**	**23**	**(1.6)**	**100**	**(6.9)**
England	**306**	**(5.5)**	**100**	**(1.8)**	**406**	**(7.3)**
Isle of Man	**0**	**(0.0)**	**1**	**(12.5)**	**1**	**(12.5)**
Channel Islands	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**
Wales	**17**	**(5.5)**	**8**	**(2.6)**	**25**	**(8.0)**
Scotland	**30**	**(5.6)**	**6**	**(1.1)**	**36**	**(6.7)**
Northern Ireland	**11**	**(5.9)**	**5**	**(2.7)**	**16**	**(8.6)**
TOTAL[1]	**364**	**(5.5)**	**120**	**(1.8)**	**484**	**(7.3)**

[1] There were 5 donors where hospital postcode was used in place of an unknown postcode

6.4 Transplants

The number of pancreas transplants by recipient country/ Strategic Health Authority of residence 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 1.3 to 3.4 pmp across Strategic Health Authorities and overall was 2.4 pmp. For donors after circulatory death the overall rate was 0.8 pmp and ranged from 0 to 1.4 pmp across Strategic Health Authorities.

Table 6.7 Pancreas transplant rates per million population (pmp), in the UK, 1 April 2017 - 31 March 2018, by country and English Strategic Health Authority

Country/ Strategic Health Authority of residence	DBD N	DBD (pmp)	DCD N	DCD (pmp)	TOTAL N	TOTAL (pmp)
North East	5	(1.9)	0	(0.0)	**5**	**(1.9)**
North West	12	(1.7)	10	(1.4)	**22**	**(3.0)**
Yorkshire and The Humber	7	(1.3)	7	(1.3)	**14**	**(2.6)**
North of England	**24**	**(1.6)**	**17**	**(1.1)**	**41**	**(2.7)**
East Midlands	13	(2.8)	3	(0.6)	**16**	**(3.4)**
West Midlands	20	(3.4)	2	(0.3)	**22**	**(3.8)**
East of England	12	(2.0)	6	(1.0)	**18**	**(2.9)**
Midlands and East	**45**	**(2.7)**	**11**	**(0.7)**	**56**	**(3.4)**
London	**20**	**(2.3)**	**7**	**(0.8)**	**27**	**(3.1)**
South East Coast	15	(3.2)	2	(0.4)	**17**	**(3.6)**
South Central	14	(3.2)	5	(1.1)	**19**	**(4.4)**
South West	10	(1.8)	2	(0.4)	**12**	**(2.2)**
South of England	**39**	**(2.7)**	**9**	**(0.6)**	**48**	**(3.3)**
England	**128**	**(2.3)**	**44**	**(0.8)**	**172**	**(3.1)**
Isle of Man	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**
Channel Islands	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**
Wales	**4**	**(1.3)**	**5**	**(1.6)**	**9**	**(2.9)**
Scotland	**23**	**(4.3)**	**3**	**(0.6)**	**26**	**(4.8)**
Northern Ireland	**2**	**(1.1)**	**1**	**(0.5)**	**3**	**(1.6)**
TOTAL[1]	**157**	**(2.4)**	**54**	**(0.8)**	**211**	**(3.2)**

[1] Includes 1 recipient with an unknown UK postcode

There were 211 deceased donor pancreas transplants in 2017-2018 representing a fall of 1% on the 213 transplants performed in 2016-2017. Of these 211, 168 (80%) were SPK transplants, 17 (8%) were pancreas only transplants (pancreas alone (PTA) or pancreas after kidney (PAK)) and 26 (12%) were islet transplants (including four simultaneous islet and kidney transplant SIK). 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, The Royal Free and Bristol only perform islet transplants. Cambridge, Guy's, WLRTC and Cardiff only perform pancreas 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 10.4 hours (Inter-Quartile (IQ) range 9.2 – 11.8) and for a DCD donor transplant is 9.9 hours (IQ range 8.5 – 11.7) and overall is 10.2 hours (IQ range 9.2 – 11.7).

At 31 March 2018, there were approximately 1,900 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 2017 - 31 March 2018 (2016-2017) by centre

Centre	Transplant type											
	SPK		SIK		PTA		PAK		Islet			
									Routine		Priority	
Bristol	-	-	0	(0)	-	-	-	-	0	(0)	0	(1)
Cambridge	22	(24)	-	-	0	(0)	1	(0)	-	-	-	-
Cardiff	6	(4)	-	-	1	(1)	0	(0)	-	-	-	-
Edinburgh	16	(20)	2	(0)	0	(0)	0	(0)	7	(9)	4	(8)
Guys	27	(22)	-	-	0	(0)	0	(0)	-	-	-	-
King's College	-	-	-	-	-	-	-	-	1	(2)	0	(1)
Manchester	33	(27)	2	(1)	1	(0)	2	(4)	1	(1)	3	(1)
Newcastle	8	(7)	0	(0)	0	(0)	0	(1)	0	(1)	0	(2)
Oxford	48	(51)	0	(0)	6	(6)	4	(5)	3	(6)	3	(1)
Royal Free	-	-	0	(0)	-	-	-	-	0	(0)	0	(0)
WLRTC	8	(7)	-	-	2	(0)	0	(0)	-	-	-	-
TOTAL	**168**	**(162)**	**4**	**(1)**	**10**	**(7)**	**7**	**(10)**	**12**	**(19)**	**10**	**(14)**

WLRTC - West London Renal and Transplant Centre

Table 6.9 Pancreas transplants, 1 April 2017 - 31 March 2018 by centre

Centre	Transplant and donor type									
	SPK		SIK		PTA		Islet		**TOTAL**	
	DBD	DCD	DBD	DCD	DBD	DCD	DBD	DCD	**DBD**	**DCD**
Bristol	-	-	0	0	-	-	0	0	**0**	**0**
Cambridge	15	7	-	-	0	1	-	-	**15**	**8**
Cardiff	4	2	-	-	1	0	-	-	**5**	**2**
Edinburgh	13	3	2	0	0	0	10	1	**25**	**4**
Guys	21	6	-	-	0	0	-	-	**21**	**6**
King's College	-	-	0	0	-	-	1	0	**1**	**0**
Manchester	13	20	1	1	2	1	4	0	**20**	**22**
Newcastle	8	0	0	0	0	0	0	0	**8**	**0**
Oxford	40	8	0	0	8	2	6	0	**54**	**10**
Royal Free	-	-	0	0	-	-	0	0	**0**	**0**
WLRTC	6	2	-	-	2	0	-	-	**8**	**2**
TOTAL	**120**	**48**	**3**	**1**	**13**	**4**	**21**	**1**	**157**	**54**

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 are shown in **Table 6.10**.

Table 6.10 Demographic characteristics of deceased pancreas donors and transplant recipients, 1 April 2017 - 31 March 2018, and transplant list patients at 31 March

Age group (years)	Donors		Transplant recipients		Active transplant list patients	
	N	(%)	N	(%)	N	(%)
0 - 17	35	(7)		-		-
18 - 34	133	(27)	42	(20)	49	(22)
35 - 49	164	(34)	103	(49)	112	(51)
50 - 59	133	(27)	51	(24)	46	(21)
60 - 69	19	(4)	15	(7)	10	(5)
70+	0	(0)	0	(0)	1	(0)
mean (SD)	40	(14)	44	(10)	43	(10)
Male	257	(53)	119	(56)	106	(49)
Female	227	(47)	92	(44)	112	(51)
White	443	(92)	185	(89)	187	(86)
Asian	7	(1)	16	(8)	10	(5)
Black	8	(2)	5	(2)	18	(8)
Chinese	4	(1)	1	(0)	0	(0)
Other	17	(4)	2	(1)	3	(1)
Not reported	5	-	2	-	0	-
O	246	(51)	100	(47)	112	(51)
A	184	(38)	81	(38)	64	(29)
B	49	(10)	25	(12)	39	(18)
AB	5	(1)	5	(2)	3	(1)
First graft			190	(90)	191	(88)
Re-graft			21	(10)	27	(12)
TOTAL	**484**	**(100)**	**211**	**(100)**	**218**	**(100)**

Cardiothoracic Activity

Key messages

- **At 31 March 2018, there were 284 patients on the active heart transplant list, 344 on the lung list and 13 on the heart-lung list**
- **Of the 955 organ donors after brain death during 2017-2018, 304 (32%) were cardiothoracic organ donors**
- **As of 18 May 2017, patients can now be registered as urgent or super-urgent for a lung transplant**
- **The number of heart transplants remained the same at 198; 60% of these were urgent heart transplants, 18% were super-urgent and 22% were non-urgent**
- **The number of lung and heart-lung transplants from deceased donors increased by 20% this year to 214**
- **There were 25 DCD heart transplants in 2017-2018**

7.1 Overview

Last year the number of heart transplants remained the same as the previous year, at 198, and the number of lung or heart-lung transplants increased by 20% to 214. There has been an increase in the heart transplant list and a fall in the lung transplant list since March 2017. The number of patients waiting on the active heart transplant list at year end has increased by 205% since 2009, while the number of patients registered for a lung or heart-lung transplant has increased by 56% since 2009.

A summary of the deceased donor cardiothoracic activity from 1 April 2008 to 31 March 2018 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 2008 - 31 March 2018, Number of donors, transplants and patients on the active transplant list at 31 March

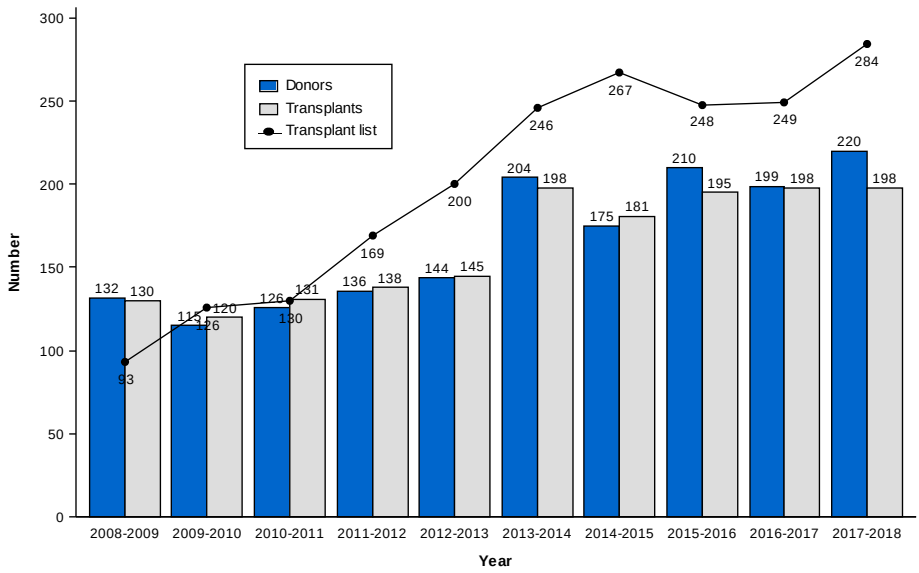
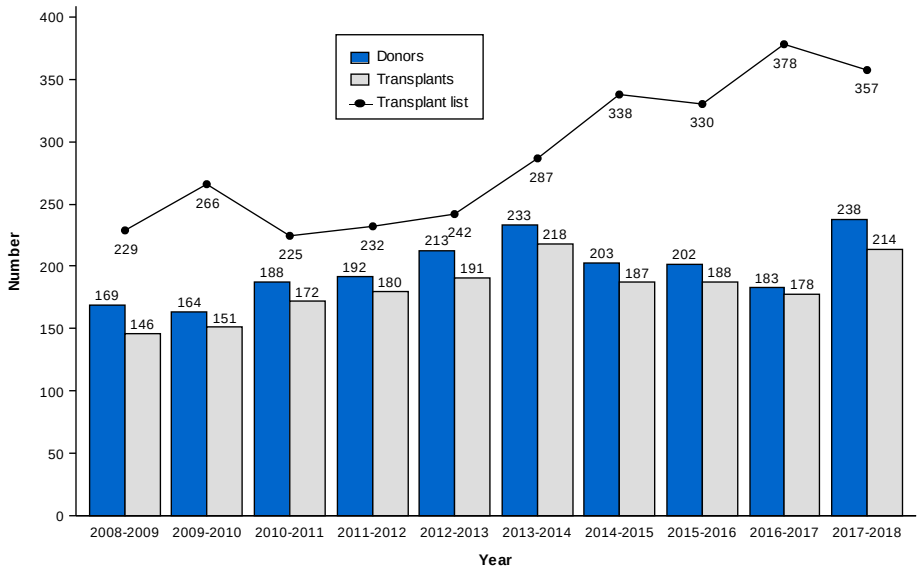


Figure 7.2 Deceased donor lung and heart-lung programme in the UK, 1 April 2008 - 31 March 2018, Number of donors, transplants and patients on the active transplant list at 31 March



7.2 Transplant list

As of 18 May 2017, patients can be registered urgently and super-urgently on the lung transplant waiting list. These two new tiers were introduced with the primary aim to improve access to transplant for the sickest patients on the transplant list.

Table 7.1 shows the number of patients on the active transplant lists at 31 March 2018 by centre. There were two patients waiting on the super-urgent heart transplant list. There were no patients waiting on the super-urgent lung transplant list, and two patients waiting on the urgent lung transplant list. The lung transplant list accounts for 54% of the patients waiting for a cardiothoracic organ transplant. Overall, Newcastle and Harefield had the largest cardiothoracic lists on 31 March 2018.

Table 7.1 Patients on the cardiothoracic transplant lists at 31 March 2018 (2017) in the UK, by centre

Centre	Active transplant lists															
	Heart						Heart-lung		Lung						TOTAL	
	Non-urgent		Urgent		Super-urgent				Non-urgent		Urgent		Super-urgent			
Adult																
Birmingham	33	(26)	5	(4)	1	(0)	2	(2)	41	(44)	0	(0)	0	(0)	**82**	**(76)**
Glasgow	22	(13)	1	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	**23**	**(13)**
Great Ormond Street[1]	0	(1)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	**0**	**(1)**
Harefield	68	(51)	11	(9)	0	(0)	3	(3)	132	(141)	0	(0)	0	(0)	**214**	**(204)**
Manchester	30	(23)	3	(1)	1	(0)	4	(4)	44	(42)	0	(0)	0	(0)	**82**	**(70)**
Newcastle	61	(50)	7	(5)	0	(0)	2	(5)	88	(95)	0	(0)	0	(0)	**158**	**(155)**
Papworth	14	(35)	1	(2)	0	(0)	2	(2)	34	(30)	1	(0)	0	(0)	**52**	**(69)**
TOTAL	**228**	**(199)**	**28**	**(21)**	**2**	**(0)**	**13[2]**	**(16)**	**339**	**(352)**	**1**	**(0)**	**0**	**(0)**	**611**	**(588)**
Paediatric																
Great Ormond Street	15	(14)	8	(4)	0	(0)	0	(2)	1	(3)	1	(0)	0	(0)	**25**	**(23)**
Newcastle	1	(7)	2	(4)	0	(0)	0	(0)	2	(5)	0	(0)	0	(0)	**5**	**(16)**
TOTAL	**16**	**(21)**	**10**	**(8)**	**0**	**(0)**	**0**	**(2)**	**3**	**(8)**	**1**	**(0)**	**0**	**(0)**	**30**	**(39)**

[1] Paediatric patients are aged under 16 years at 31 March 2018 (2017). Note that 1 patient active at 31 March 2017 at Great Ormond Street had turned 16 whilst on the list and so is categorised here as adult.
[2] All non-urgent

During 2017-2018, 332 patients joined the heart transplant list while 12 joined the heart-lung transplant list and 284 joined the lung transplant list. Registration outcomes as at 31 March 2018 for patients on the list at 1 April 2017 and those joining the list during the year are shown in **Table 7.2**.

Table 7.2 Cardiothoracic organ transplant lists and new registrations in the UK, 1 April 2017 - 31 March 2018

Outcome of patient at 31 March 2018	Active and suspended patients at 1 April 2017		New registrations in 2017-2018[1]		**TOTAL**	
	N	%	N	%	**N**	**%**
Heart transplant list						
Remained active/suspended	162	60	138	42	**300**	**50**
Transplanted	60	22	137	41	**197**	**33**
Removed	35	13	46	14	**81**	**14**
Died	11	4	11	3	**22**	**4**
TOTAL	**268**		**332**		**600**	
Heart-lung transplant list						
Remained active/suspended	9	53	5	38	**14**	**47**
Transplanted[2]	6	35	6	46	**12**	**40**
Removed	1	6	0	0	**1**	**3**
Died	2	12	1	8	**3**	**10**
TOTAL	**18**		**12**		**30**	
Lung transplant list						
Remained active/suspended	191	53	155	55	**346**	**54**
Transplanted	98	27	99	35	**197**	**31**
Removed	35	10	5	2	**40**	**6**
Died	36	10	25	9	**61**	**9**
TOTAL	**360**		**284**		**644**	

[1] Includes re-registrations for second or subsequent transplants
[2] Patient may have received heart, lung or heart-lung

Table 7.3 shows the transplant list rates per million population by country/Strategic Health Authority of patient's residence. The overall UK heart transplant list rate at 31 March 2018 was 4.3 pmp and ranged from 1.5 to 6.4 across the Strategic Health Authorities. The overall UK lung transplant list rate was 5.4 pmp and ranged from 3.8 to 7.7 across the Strategic Health Authorities.

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) 2018		2017		Lung transplant list (pmp)[1] 2018		2017	
North East	17	(6.4)	16	(6.1)	10	(3.8)	13	(4.9)
North West	36	(5.0)	36	(5.0)	35	(4.8)	38	(5.3)
Yorkshire and The Humber	25	(4.6)	14	(2.6)	40	(7.4)	37	(6.8)
North of England	**78**	**(5.1)**	**66**	**(4.3)**	**85**	**(5.6)**	**88**	**(5.8)**
East Midlands	7	(1.5)	12	(2.5)	21	(4.4)	17	(3.6)
West Midlands	29	(5.0)	28	(4.8)	34	(5.9)	39	(6.7)
East of England	20	(3.3)	16	(2.6)	32	(5.2)	23	(3.8)
Midlands and East	**56**	**(3.4)**	**56**	**(3.4)**	**87**	**(5.2)**	**79**	**(4.7)**
London	**34**	**(3.9)**	**32**	**(3.6)**	**33**	**(3.8)**	**35**	**(4.0)**
South East Coast	24	(5.2)	20	(4.3)	36	(7.7)	37	(7.9)
South Central	17	(3.9)	16	(3.7)	21	(4.8)	25	(5.7)
South West	19	(3.4)	14	(2.5)	31	(5.6)	37	(6.7)
South of England	**60**	**(4.1)**	**50**	**(3.4)**	**88**	**(6.1)**	**99**	**(6.8)**
England	**228**	**(4.1)**	**204**	**(3.7)**	**293**	**(5.3)**	**301**	**(5.4)**
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)**	**0**	**(0.0)**
Wales	**10**	**(3.2)**	**7**	**(2.3)**	**19**	**(6.1)**	**25**	**(8.0)**
Scotland	**30**	**(5.6)**	**24**	**(4.4)**	**33**	**(6.1)**	**34**	**(6.3)**
Northern Ireland	**9**	**(4.8)**	**8**	**(4.3)**	**11**	**(5.9)**	**14**	**(7.5)**
TOTAL[2,3]	**284**	**(4.3)**	**249**	**(3.8)**	**357**	**(5.4)**	**378**	**(5.7)**

[1] Includes patients waiting for both heart and lungs
[2] Includes heart patients in 2018 (2017) resident in: UK unknown 2 (1); Republic of Ireland 1(2); Overseas 4(3)
[3] Includes lung patients in 2018 (2017) resident in: UK unknown 1 (1); Republic of Ireland 0(3)

The transplant list outcomes for adult patients listed for a cardiothoracic organ transplant between 1 April 2014 and 31 March 2015 are summarised in **Figure 7.3**, **Figure 7.4** and **Figure 7.5**. These show the proportion of patients transplanted, still waiting, removed and those who died within six months, one year, two years and three years after joining the non-urgent or urgent heart list or the lung list, respectively. Within six months of listing, 13% of non-urgent heart patients were transplanted while 7% had died, compared with 70% transplanted and 8% died for urgent heart patients. Of those listed for a non-urgent lung transplant, 33% were transplanted within six months, rising to 56% after three years. The patients removed from these lists may have subsequently died.

Figure 7.3 **Post-registration outcome for 151 first non-urgent heart only registrations made in the UK, 1 April 2014 - 31 March 2015**

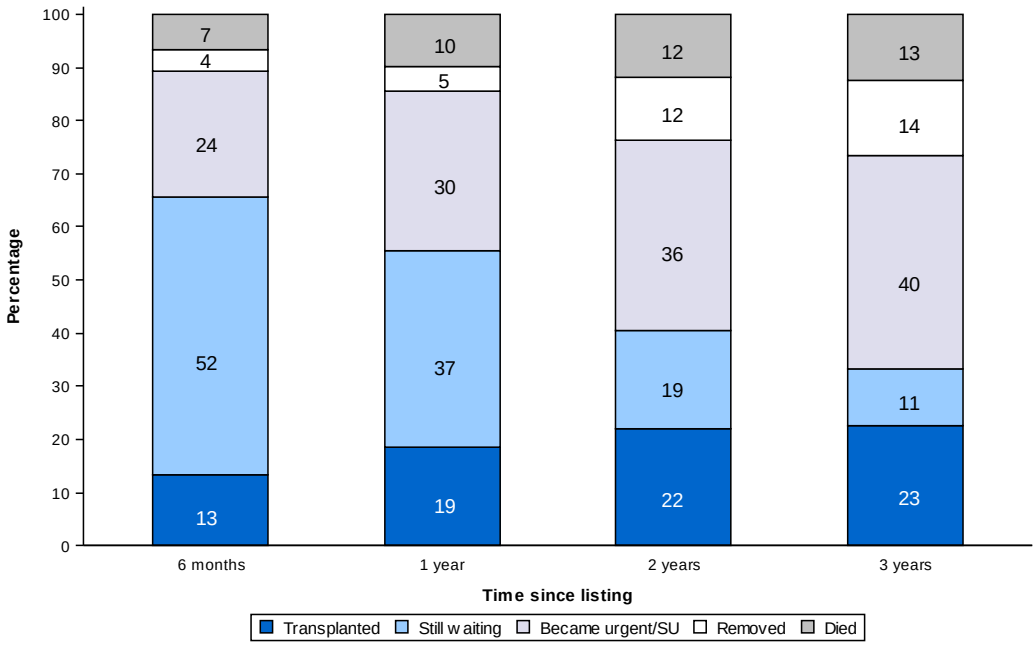


Figure 7.4 **Post-registration outcome for 214 first urgent heart only registrations made in the UK, 1 April 2014 - 31 March 2015**

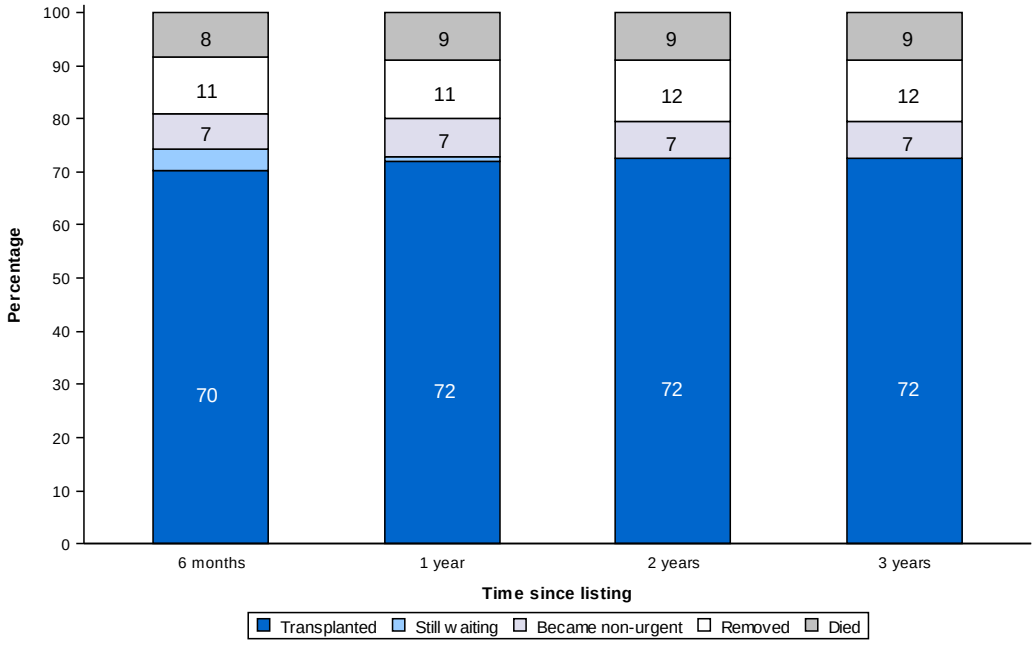


Figure 7.5 **Post-registration outcome for 309 first lung only registrations made in the UK, 1 April 2014 - 31 March 2015**

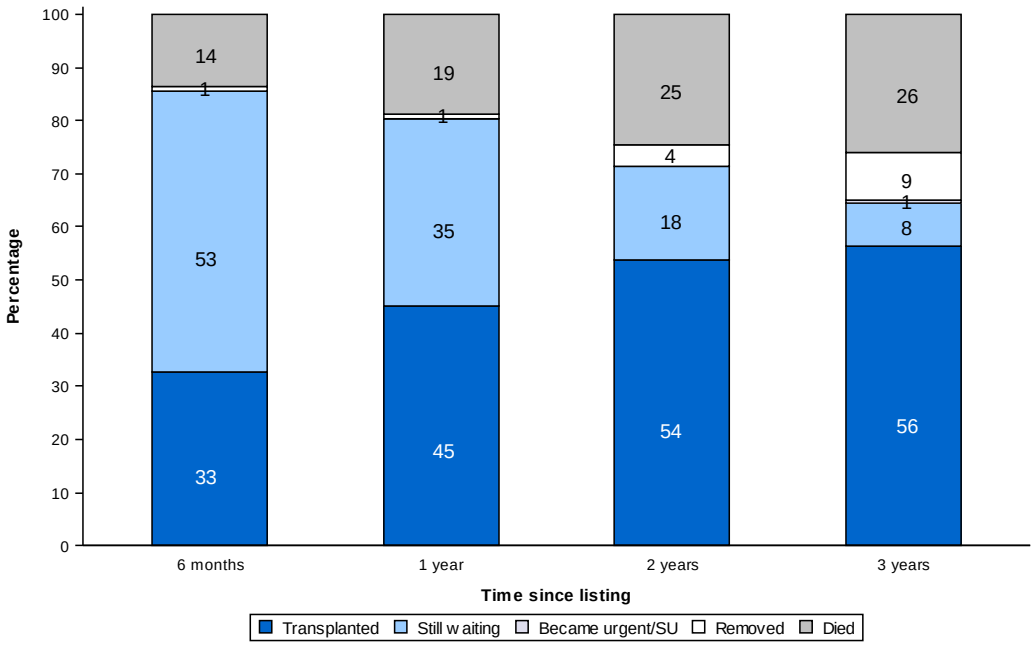


Table 7.4 and **Table 7.5** show the median waiting time to cardiothoracic organ transplant by blood group and ethnicity of patient, respectively, for patients registered between 1 April 2011 and 31 March 2015. The overall median waiting time to heart transplantation, for adults, was 1,065 days for patients who had never been on the urgent waiting list ('never urgent'). For patients who had been on the urgent list ('ever urgent'), the overall median time on the urgent list before transplant was 29 days. The overall median waiting time to lung transplantation, for adults, was 274 days, but for blood group O patients alone was 436 days. For paediatric heart patients, the median waiting time was 463 days for non-urgent registrations and 70 days for urgent registrations (this is not broken down by blood group or ethnicity due to low numbers). Median waiting time is not calculated for paediatric lung patients due to the small number of registrations. 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 2011 - 31 March 2015, by blood group

Blood group	Number of patients registered	Waiting time (days) Median	95% Confidence interval
Adult never urgent heart			
O[1]	143	-	-
A	164	395	266 - 524
B	37	497	117 - 877
AB	17	58	15 - 101
TOTAL	**361**	**1065**	**548 - 1582**
Adult ever urgent heart (urgent waiting time only)			
O	251	47	38 - 56
A	221	17	14 - 20
B	71	32	19 - 45
AB	25	18	9 - 27
TOTAL	**568**	**29**	**25 - 33**
Paediatric never urgent heart	**32**	**463**	**0 - 1642**
Paediatric ever urgent heart (urgent waiting time only)	**160**	**70**	**46 - 94**
Adult lung			
O	496	436	358 - 514
A	451	158	131 - 185
B	113	231	195 - 267
AB	27	176	116 - 236
TOTAL	**1087**	**274**	**239 - 309**

[1] Median and/or 95% confidence interval cannot be estimated

Table 7.5 Median waiting time to cardiothoracic transplant in the UK, for patients registered 1 April 2011 - 31 March 2015, by ethnicity

Ethnicity	Number of patients registered	Waiting time (days) Median	95% Confidence interval
Adult never urgent heart			
White	321	1280	707 - 1853
Asian	17	344	188 - 500
Black[1]	15	-	-
Other[2]	7	-	-
TOTAL[3]	**361**	**1065**	**548 - 1582**
Adult ever urgent heart (urgent waiting time only)			
White	494	27	23 - 31
Asian	41	43	29 - 57
Black	16	71	64 - 78
Other	12	38	24 - 52
TOTAL[3]	**568**	**29**	**25 - 33**
Paediatric never urgent heart	**32**	**463**	**0 - 1642**
Paediatric ever urgent heart	**160**	**70**	**46 - 94**
Adult lung			
White	1027	261	227 - 295
Asian	38	1191	284 - 2098
Black	11	603	385 - 821
Other[2]	5	-	-
TOTAL[3]	**1087**	**274**	**239 - 309**

[1] Median and/or 95% confidence interval cannot be estimated
[2] Median waiting time not calculated for fewer than 10 patients
[3] Totals do not add up where we do not have ethnicity reported for all patients

7.3 Donor and organ supply

Table 7.6 shows the number of deceased organ donors identified in each heart allocation zone, and the number of donors that had their heart retrieved and transplanted, by donor type. It also shows the number in each zone who donated their lung(s) as well as their heart. Of the 955 DBD donors, 191 (20%) donated their heart, resulting in 183 transplants. Of the 619 DCD donors, 29 (5%) donated their heart, resulting in 25 transplants.

Table 7.7 shows the number of deceased organ donors identified in each lung allocation zone, and the number of donors that had their lungs retrieved and transplanted, by donor type. It also shows the number in each zone who donated their heart as well as their lung(s). Of the 955 DBD donors, 196 (21%) donated at least one lung, with 177 proceeding to transplantation. Of the 619 DCD donors, 42 (7%) donated at least one lung, with 38 proceeding to transplantation.

Note that from May 2017, hearts and lungs have had separate allocation zones and so the number of donors in zones does not match between heart and lung allocation zones. Prior to this, there were joint cardiothoracic allocation zones.

Table 7.6 Heart organ donation and retrieval rates in the UK, 1 April 2017 - 31 March 2018, by heart allocation zone and donor type

	DBD				DCD			
Heart Allocation Zone	**Number of donors**	**Number of heart donors (utilised)**		**Number donated heart and lungs**	**Number of donors**	**Number of heart donors (utilised)**		**Number donated heart and lungs**
Birmingham	130	33	(32)	12	89	2	(1)	0
Glasgow	66	10	(10)	8	43	0	(0)	0
Harefield	238	44	(41)	19	124	3	(3)	0
Manchester	200	33	(31)	12	120	5	(5)	1
Newcastle	129	23	(22)	12	112	7	(6)	2
Papworth	192	48	(47)	20	131	12	(10)	2
TOTAL	**955**	**191**	**(183)**	**83**	**619**	**29**	**(25)**	**5**

Table 7.7 Lung organ donation and retrieval rates in the UK, 1 April 2017 - 31 March 2018, by lung allocation zone and donor type

	DBD				DCD			
Lung Allocation Zone	**Number of donors**	**Number of lung donors (utilised)**		**Number donated heart and lungs**	**Number of donors**	**Number of lung donors (utilised)**		**Number donated heart and lungs**
Birmingham	128	25	(23)	11	88	5	(4)	0
Harefield	290	60	(55)	24	149	9	(9)	1
Manchester	200	34	(34)	14	140	6	(5)	1
Newcastle	166	47	(35)	17	105	9	(7)	1
Papworth	171	30	(30)	17	137	13	(13)	2
TOTAL	**955**	**196**	**(177)**	**83**	**619**	**42**	**(38)**	**5**

The rates per million population for cardiothoracic organ donors are shown in **Table 7.8** by country/Strategic Health Authority of residence. No adjustments have been made for potential demographic differences in populations. The overall cardiothoracic organ donor rate was 5.6 pmp in 2017-2018 and varied across the Strategic Health Authorities from 4.4 pmp to 7.8 pmp. Of the four nations the highest cardiothoracic organ donor rate was in Northern Ireland at 5.9 pmp.

Table 7.8 Cardiothoracic donation and retrieval rates for deceased donors in the UK, 1 April 2017 - 31 March 2018, by country/ Strategic Health Authority

Country/	Heart (pmp)				Lungs (pmp)				Total (pmp)	
Strategic Health Authority	DBD		DCD[1]		DBD		DCD			
North East	6	(2.3)	0	(0.0)	11	(4.2)	4	(1.5)	15	(5.7)
North West	19	(2.6)	4	(0.6)	22	(3.0)	4	(0.6)	42	(5.8)
Yorkshire and The Humber	14	(2.6)	8	(1.5)	17	(3.1)	5	(0.9)	34	(6.3)
North of England	**39**	**(2.6)**	**12**	**(0.8)**	**50**	**(3.3)**	**13**	**(0.9)**	**91**	**(6.0)**
East Midlands	11	(2.3)	0	(0.0)	9	(1.9)	6	(1.3)	22	(4.7)
West Midlands	13	(2.2)	1	(0.2)	11	(1.9)	5	(0.9)	27	(4.7)
East of England	27	(4.4)	7	(1.1)	22	(3.6)	6	(1.0)	48	(7.8)
Midlands and East	**51**	**(3.1)**	**8**	**(0.5)**	**42**	**(2.5)**	**17**	**(1.0)**	**97**	**(5.8)**
London	**31**	**(3.5)**	**5**	**(0.6)**	**26**	**(3.0)**	**4**	**(0.5)**	**54**	**(6.1)**
South East Coast	15	(3.2)	2	(0.4)	19	(4.1)	0	(0.0)	28	(6.0)
South Central	8	(1.8)	1	(0.2)	11	(2.5)	3	(0.7)	19	(4.4)
South West	21	(3.8)	1	(0.2)	15	(2.7)	2	(0.4)	32	(5.8)
South of England	**44**	**(3.0)**	**4**	**(0.3)**	**45**	**(3.1)**	**5**	**(0.3)**	**79**	**(5.4)**
England	**165**	**(3.0)**	**29**	**(0.5)**	**163**	**(2.9)**	**39**	**(0.7)**	**321**	**(5.8)**
Isle of Man	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**
Channel Islands	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**
Wales	**11**	**(3.5)**	**0**	**(0.0)**	**7**	**(2.3)**	**1**	**(0.3)**	**14**	**(4.5)**
Scotland	**9**	**(1.7)**	**0**	**(0.0)**	**21**	**(3.9)**	**1**	**(0.2)**	**24**	**(4.4)**
Northern Ireland	**6**	**(3.2)**	**0**	**(0.0)**	**5**	**(2.7)**	**1**	**(0.5)**	**11**	**(5.9)**
TOTAL[2]	**191**	**(2.9)**	**29**	**(0.4)**	**196**	**(3.0)**	**42**	**(0.6)**	**370**	**(5.6)**

[1] DCD heart donation is not operational in all areas
[2] Includes 7 donors where the hospital postcode was used in place of an unknown donor postcode

7.4 Transplants

The number of cardiothoracic organ 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 cardiothoracic organ transplant rate ranged from 4.1 to 8.0 pmp across Strategic Health Authorities and overall was 6.1 pmp. Lung transplant rates include a small number of heart-lung transplants.

Table 7.9 Cardiothoracic transplant rates per million population (pmp) in the UK, 1 April 2017 - 31 March 2018, by country/ Strategic Health Authority

Country/ Strategic Health Authority	Heart (pmp)				Lungs (pmp)				Total (pmp)	
	DBD		DCD[1]		DBD		DCD			
North East	9	(3.4)	0	(0.0)	8	(3.0)	2	(0.8)	19	(7.2)
North West	21	(2.9)	3	(0.4)	26	(3.6)	4	(0.6)	54	(7.5)
Yorkshire and The Humber	5	(0.9)	1	(0.2)	14	(2.6)	2	(0.4)	22	(4.1)
North of England	**35**	**(2.3)**	**4**	**(0.3)**	**48**	**(3.1)**	**8**	**(0.5)**	**95**	**(6.2)**
East Midlands	12	(2.5)	4	(0.8)	10	(2.1)	3	(0.6)	29	(6.1)
West Midlands	13	(2.2)	1	(0.2)	17	(2.9)	3	(0.5)	34	(5.9)
East of England	15	(2.4)	6	(1.0)	18	(2.9)	3	(0.5)	42	(6.9)
Midlands and East	**40**	**(2.4)**	**11**	**(0.7)**	**45**	**(2.7)**	**9**	**(0.5)**	**105**	**(6.3)**
London	**32**	**(3.6)**	**3**	**(0.3)**	**8**	**(0.9)**	**1**	**(0.1)**	**44**	**(5.0)**
South East Coast	12	(2.6)	1	(0.2)	13	(2.8)	5	(1.1)	31	(6.7)
South Central	10	(2.3)	2	(0.5)	19	(4.4)	4	(0.9)	35	(8.0)
South West	12	(2.2)	2	(0.4)	12	(2.2)	4	(0.7)	30	(5.4)
South of England	**34**	**(2.3)**	**5**	**(0.3)**	**44**	**(3.0)**	**13**	**(0.9)**	**96**	**(6.6)**
England	**141**	**(2.6)**	**23**	**(0.4)**	**145**	**(2.6)**	**31**	**(0.6)**	**340**	**(6.2)**
Isle of Man	**1**	**(12.5)**	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**	**1**	**(12.5)**
Channel Islands	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**
Wales	**3**	**(1.0)**	**0**	**(0.0)**	**12**	**(3.9)**	**1**	**(0.3)**	**16**	**(5.1)**
Scotland	**15**	**(2.8)**	**1**	**(0.2)**	**12**	**(2.2)**	**4**	**(0.7)**	**32**	**(5.9)**
Northern Ireland	**7**	**(3.8)**	**1**	**(0.5)**	**5**	**(2.7)**	**2**	**(1.1)**	**15**	**(8.1)**
TOTAL[2,3]	**168**	**(2.6)**	**25**	**(0.4)**	**174**	**(2.6)**	**38**	**(0.6)**	**405**	**(6.1)**

[1] DCD heart transplantation is not operational in all areas
[2] Excludes 5 recipients who reside in the Republic of Ireland and 2 recipients who reside overseas
[3] Includes 1 recipient whose postcode was unknown

Table 7.10 and **Table 7.11** show cardiothoracic organ transplant activity for each centre by urgency status and donor type, respectively. In 2017-2018, a total of 412 transplants were carried out; an increase of 10% on 2016-2017. Of these, 198 were heart transplants, of which 154 (78%) were in urgent or super-urgent patients and additionally, 25 (13%) were achieved from donors after circulatory death. There were a total of 202 lung transplants, of which 48 (24%) were in urgent patients and 6 (3%) in super-urgent patients. Of the 12 heart-lung transplants carried out, 7 were in urgent or super-urgent patients.

Table 7.10 Cardiothoracic transplants from deceased donors, 1 April 2017 - 31 March 2018 (2016-2017), by age group and centre

Transplant centre	Transplant type														TOTAL	
	Heart						Heart/ lung		Lung(s)							
	Non-urgent		Urgent		Super-urgent				Non-urgent		Urgent		Super-urgent			
Adult																
Birmingham	1	(1)	17	(20)	2	(5)	2	(0)	13	(15)	5	(0)	2	(0)	42	(41)
Glasgow	1	(2)	4	(9)	6	(4)	0	(0)	0	(0)	0	(0)	0	(0)	11	(15)
Great Ormond Street	0	(0)	0	(0)	0	(0)	0	(0)	0	(1)	0	(0)	0	(0)	0	(1)
Harefield	2	(3)	22	(18)	8	(0)	5	(0)	51	(41)	5	(0)	3	(0)	96	(62)
Manchester	7	(5)	8	(20)	6	(3)	1	(1)	23	(33)	6	(0)	0	(0)	51	(62)
Newcastle	1	(5)	17	(23)	4	(0)	3	(0)	25	(33)	18	(0)	0	(0)	68	(61)
Papworth	21	(19)	27	(25)	8	(3)	1	(1)	32	(43)	12	(0)	1	(0)	102	(91)
TOTAL	**33**	**(35)**	**95**	**(115)**	**34**	**(15)**	**12**	**(2)**	**144**	**(166)**	**46**	**(0)**	**6**	**(0)**	**370**	**(333)**
Paediatric[1]																
Great Ormond Street	6	(3)	10	(11)	0	(0)	0	(0)	2	(8)	1	(0)	0	(0)	19	(22)
Harefield	0	(0)	0	(1)	1	(0)	0	(0)	0	(0)	0	(0)	0	(0)	1	(1)
Newcastle	5	(2)	14	(16)	0	(0)	0	(0)	2	(2)	1	(0)	0	(0)	22	(20)
TOTAL	**11**	**(5)**	**24**	**(28)**	**1**	**(0)**	**0**	**(0)**	**4**	**(10)**	**2**	**(0)**	**0**	**(0)**	**42**	**(43)**

[1] Paediatric recipients are aged under 16 years at time of transplant

Table 7.11 Cardiothoracic transplants from deceased donors, 1 April 2017 - 31 March 2018 (2016-2017), by age group and centre

Transplant centre	Transplant type												TOTAL	
	Heart				Heart/ lung				Lung(s)					
	DBD		DCD		DBD		DCD		DBD		DCD			
Adult														
Birmingham	20	(26)	0	(0)	2	(0)	0	(0)	17	(11)	3	(4)	42	(41)
Glasgow	11	(15)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	11	(15)
Great Ormond Street	0	(0)	0	(0)	0	(0)	0	(0)	0	(1)	0	(0)	0	(1)
Harefield	30	(19)	2	(2)	5	(0)	0	(0)	45	(36)	14	(5)	96	(62)
Manchester	15	(28)	6	(0)	1	(1)	0	(0)	25	(27)	4	(6)	51	(62)
Newcastle	22	(28)	0	(0)	3	(0)	0	(0)	35	(26)	8	(7)	68	(61)
Papworth	40	(35)	16	(12)	1	(1)	0	(0)	37	(37)	8	(6)	102	(91)
TOTAL	**138**	**(151)**	**24**	**(14)**	**12**	**(2)**	**0**	**(0)**	**159**	**(138)**	**37**	**(28)**	**370**	**(333)**
Paediatric[1]														
Great Ormond Street	16	(14)	0	(0)	0	(0)	0	(0)	3	(7)	0	(1)	19	(22)
Harefield	1	(1)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	1	(1)
Newcastle	18	(18)	1	(0)	0	(0)	0	(0)	2	(2)	1	(0)	22	(20)
TOTAL	**35**	**(33)**	**1**	**(0)**	**0**	**(0)**	**0**	**(0)**	**5**	**(9)**	**1**	**(1)**	**42**	**(43)**

[1] Paediatric recipients are aged under 16 years at time of transplant

At 31 March 2018 there were approximately 4,000 recipients with a functioning cardiothoracic organ transplant being followed-up as reported to the UK Transplant Registry.

The length of time that elapses between cardiothoracic organs being removed from the donor and their transplantation into the recipient is called the total ischaemia time (IT). Generally, the shorter this time, the more likely the organ is to work immediately and the better the long-term outcome. In 2017-2018 the median IT for a DBD heart transplant was 3.4 hours (Inter-Quartile (IQ) range 2.8 – 4.3) and for a DCD heart transplant was 5.0 hours (IQ range 4.4 – 5.6) and overall was 3.6 hours (IQ range 2.9 – 4.7).

The median IT for DBD donor lung transplant was 5.0 hours (IQ range 4.2 – 5.9) and for a DCD donor lung transplant was 6.0 hours (IQ range 5.3 – 7.0) and overall was 5.3 hours (IQ range 4 .3-6.0). Please note some of these data include the use of donor organ maintenance systems, in which cases the IT reported will be an overestimate of the true ischaemia time.

7.5 Demographic characteristics

The age group, sex, ethnicity and blood group of deceased donors, transplant recipients and patients on the transplant list are shown in **Table 7.12**.

Table 7.12 Demographic characteristics of deceased cardiothoracic donors and transplant recipients 1 April 2017 - 31 March 2018, and transplant list patients at 31 March in the UK

Age group (years)	Donors		Transplant recipients		Active transplant list patients	
	N	(%)	N	(%)	N	(%)
0 - 17	24	(6)	46	(11)	35	(5)
18 - 34	116	(31)	76	(18)	100	(16)
35 - 49	107	(29)	80	(19)	142	(22)
50 - 59	83	(22)	117	(28)	210	(33)
60 - 69	37	(10)	90	(22)	150	(23)
70+	3	(1)	3	(1)	4	(1)
mean (SD)	40	(16)	44	(18)	47	(16)
Male	187	(51)	260	(63)	376	(59)
Female	183	(49)	152	(37)	265	(41)
White	335	(92)	364	(89)	577	(90)
Asian	6	(2)	24	(6)	39	(6)
Black	4	(1)	18	(4)	17	(3)
Chinese	3	(1)	1	(0)	1	(0)
Other	17	(5)	4	(1)	5	(1)
Not reported	5	-	1	-	2	-
O	197	(53)	171	(42)	333	(52)
A	134	(36)	183	(44)	222	(35)
B	32	(9)	45	(11)	71	(11)
AB	7	(2)	13	(3)	15	(2)
First graft			404	(98)	625	(98)
Re-graft			8	(2)	16	(2)
TOTAL	**370**	**(100)**	**412**	**(100)**	**641**	**(100)**

Liver Activity

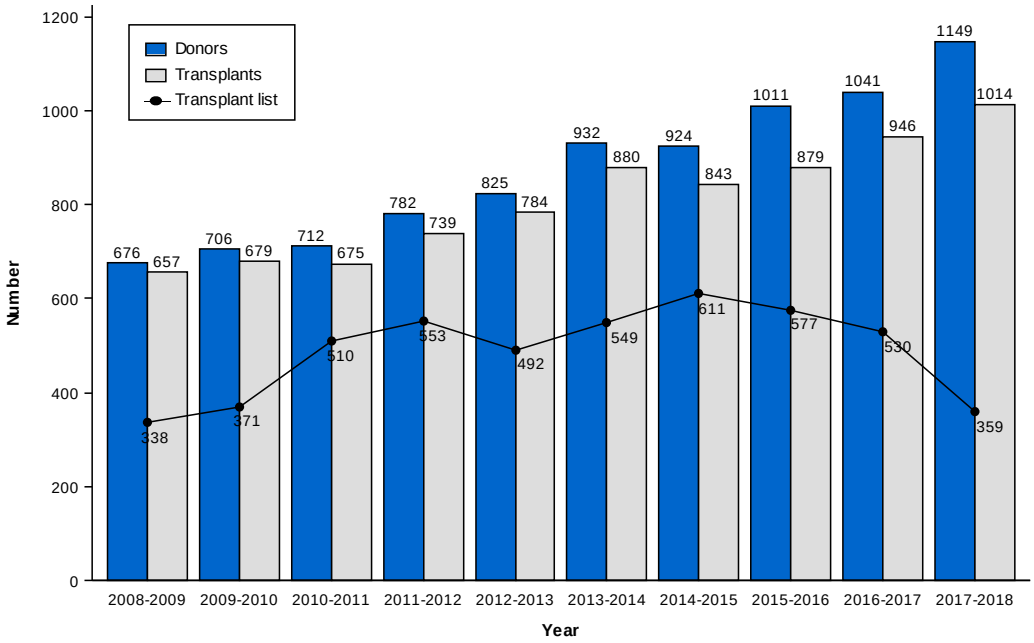
Key messages

- **On 20 March 2018, the new National Liver Offering Scheme (NLOS) was introduced for offering livers from donors after brain death**
- **The number of patients on the active liver transplant list at 31 March 2018 was 359, a fall of 32% from 2017**
- **The number of liver donors after brain death increased by 14% to 850, while transplants from donors after brain death increased by 10% to 814**
- **The number of liver donors after circulatory death increased by 1% to 299, while transplants from donors after circulatory death fell by 4% to 200**

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 an increase in the number of patients registered on the active transplant list at 31 March, although this number has fallen in the last two years. The numbers of donors and transplants has steadily increased over the last decade.

Figure 8.1 **Deceased donor liver programme in the UK, 1 April 2008 - 31 March 2018, 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 centre's allocation zone (by any retrieval team) rather than the number of retrievals made by that centre. In 2017-2018, 1,149 organ donors donated their liver for transplant: 850 donors after brain death and 299 donors after circulatory death. There were 359 patients on the active transplant list at 31 March 2018, a fall of 32% from 2017.

Overall, the number of liver transplants (either whole liver or liver lobe transplants) from donors after brain death increased by 10% to 814, and donors after circulatory death fell by 4% to 200, compared with the previous financial year. Additionally, there were 29 living liver lobe donor transplants in NHS Group 1 (20) and Group 2 (9) paediatric and adult recipients, and 1 domino donor transplants in NHS Group 1 adult recipients.

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 100 deceased donor adult super-urgent transplants in 2017-2018, representing 11% of all adult transplants. There were 13 deceased donor paediatric super-urgent transplants in 2017-2018, representing 16% of all paediatric transplants. There was one living donor paediatric super-urgent transplant.

Table 8.1 **Deceased and living liver donors and transplants, 1 April 2017 - 31 March 2018 (2016-2017) and transplant list patients at 31 March 2018 (2017) in the UK, by age group and centre**

Allocation zone/ transplant centre	Deceased donors[1]						Deceased transplants						Living donor transplants		Active transplant list	
	DBD		DCD		**TOTAL**		DBD		DCD		**TOTAL**					
Adult																
Birmingham	158	(151)	55	(48)	213	(199)	155	(142)	52	(54)	207	(196)	0	(5)	86	(86)
Cambridge	86	(62)	49	(44)	135	(106)	84	(68)	33	(34)	117	(102)	0	(0)	26	(37)
Edinburgh	87	(96)	19	(21)	106	(117)	90	(85)	13	(18)	103	(103)	0	(0)	33	(35)
King's College	205	(171)	64	(74)	269	(245)	151	(127)	51	(59)	202	(186)	5	(6)	91	(131)
Leeds	161	(127)	70	(58)	231	(185)	126	(104)	25	(20)	151	(124)	3	(2)	40	(104)
Newcastle	29	(42)	11	(10)	40	(52)	32	(36)	5	(6)	37	(42)	0	(0)	8	(15)
Royal Free	106	(76)	18	(28)	124	(104)	102	(90)	14	(13)	116	(103)	2	(1)	41	(76)
TOTAL	**832**	**(725)**	**286**	**(283)**	**1118**	**1008)**	**740**	**(652)**	**193**	**(204)**	**933**	**(856)**	**10[2]**	**(14)[3]**	**325**	**(484)**
Paediatric																
Birmingham	2	(6)	3	(4)	5	(10)	21	(26)	1	(3)	22	(29)	3	(7)	6	(15)
Cambridge	2	(1)	3	(0)	5	(1)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
Edinburgh	1	(1)	0	(1)	1	(2)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
King's College	5	(4)	6	(5)	11	(9)	34	(42)	6	(2)	40	(44)	12	(11)	21	(25)
Leeds	6	(5)	1	(1)	7	(6)	18	(17)	0	(0)	18	(17)	5	(2)	7	(6)
Newcastle	1	(3)	0	(0)	1	(3)	1	(0)	0	(0)	1	(0)	0	(0)	0	(0)
Royal Free	1	(1)	0	(1)	1	(2)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
TOTAL	**18**	**(21)**	**13**	**(12)**	**31**	**(33)**	**74**	**(85)**	**7**	**(5)**	**81**	**(90)**	**20[4]**	**(20)[5]**	**34**	**(46)**

[1] Includes donors whose livers were retrieved by other teams
[2] Includes 4 and 5 living liver lobe transplants, and 1 and 0 domino transplants in NHS Group 1 and Group 2 recipients, respectively
[3] Includes 7 and 4 living liver lobe transplants, and 3 and 0 domino transplants in NHS Group 1 and Group 2 recipients, respectively
[4] Includes 16 and 4 living liver lobe transplants in NHS Group 1 and Group 2 recipients, respectively
[5] Includes 16 and 4 living liver lobe transplants in NHS Group 1 and Group 2 recipients, respectively

8.2 Transplant list

During 2017-2018, 1,169 patients joined the liver transplant list. Outcomes for patients on the list at 1 April 2017 and those joining the list during the year are shown in **Table 8.2**. There have been 136 (12%) new registrations that were super-urgent.

Table 8.2 Liver transplant list and new registrations in the UK, 1 April 2017 – 31 March 2018

Outcome of patient at 31 March 2018	Active and suspended patients at 1 April 2017		New registrations in 2017-2018[1]		**TOTAL**	
	N	%	N	%	**N**	**%**
Remained active/suspended	130	24	314	27	**444**	**26**
Transplanted	301	55	736	63	**1037**	**60**
Removed	100	18	76	7	**176**	**10**
Died	15	3	43	4	**58**	**3**
TOTAL	**546**		**1169**		**1715**	

[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 2018, the overall rate was 5.4 pmp and ranged from 2.3 to 7.1 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) 2018		2017	
North East	6	(2.3)	14	(5.3)
North West	29	(4.0)	68	(9.4)
Yorkshire and The Humber	29	(5.3)	55	(10.1)
North of England	**64**	**(4.2)**	**137**	**(9.0)**
East Midlands	21	(4.4)	25	(5.3)
West Midlands	41	(7.1)	32	(5.5)
East of England	31	(5.1)	44	(7.2)
Midlands and East	**93**	**(5.6)**	**101**	**(6.1)**
London	**44**	**(5.0)**	**69**	**(7.8)**
South East Coast	26	(5.6)	48	(10.3)
South Central	23	(5.3)	29	(6.7)
South West	29	(5.3)	40	(7.2)
South of England	**78**	**(5.4)**	**117**	**(8.1)**
England	**279**	**(5.0)**	**424**	**(7.7)**
Isle of Man	**0**	**(0.0)**	**0**	**(0.0)**
Channel Islands	**1**	**(6.3)**	**0**	**(0.0)**
Wales	**14**	**(4.5)**	**25**	**(8.0)**
Scotland	**36**	**(6.7)**	**37**	**(6.9)**
Northern Ireland	**23**	**(12.4)**	**30**	**(16.1)**
TOTAL[1]	**359**	**(5.4)**	**530**	**(8.0)**

[1] Includes patients in 2018 (2017) resident in: UK unknown 0 (3) Republic of Ireland - 1 (3); Overseas - 5 (8)

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, 70% of patients had received a liver transplant while 10% of patients had died whilst waiting or had been removed due to their condition deteriorating. 4% 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 994 new elective liver only registrations made in the UK, 1 April 2015 - 31 March 2016**

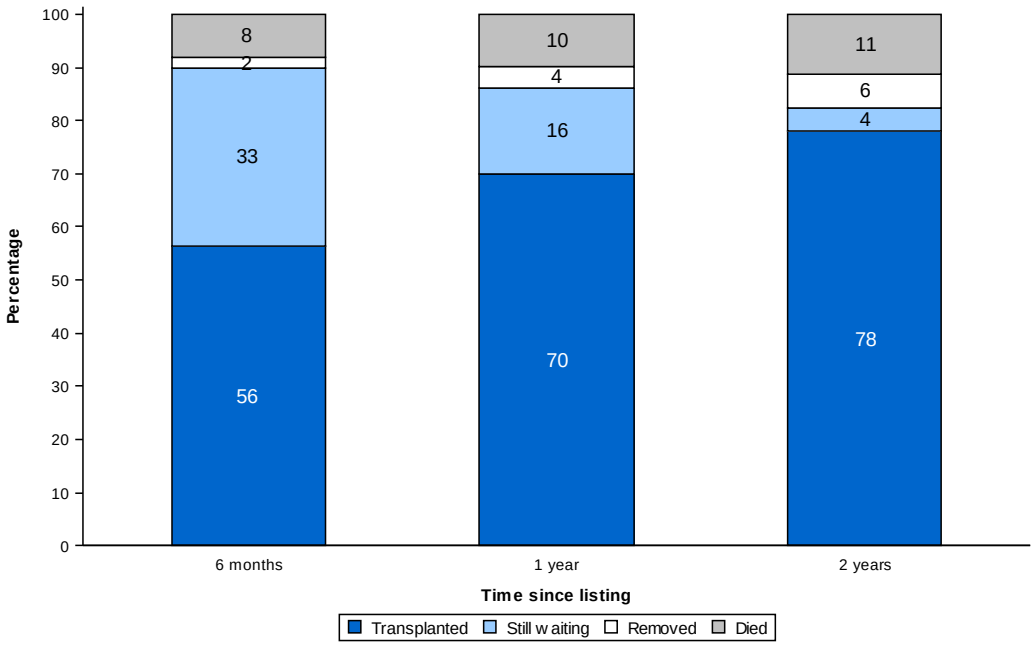


Table 8.4 and **Table 8.5** show the median waiting time to liver transplant for adult and paediatric elective registrations, separately, including a breakdown by blood group and ethnicity for adult elective registrations only. On average, adult patients wait 130 days for a transplant while paediatric patients wait an average of 107 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 2013 - 31 March 2016, by blood group**

Blood group	Number of patients registered	Waiting time (days)	
		Median	95% Confidence interval
Adult			
O	1274	208	186 - 230
A	1032	78	70 - 86
B	310	173	130 - 216
AB	90	56	29 - 83
TOTAL	**2706**	**130**	**120 - 140**
Paediatric	**214**	**107**	**79 - 135**

Table 8.5 Median waiting time to liver transplant in the UK, for patients registered 1 April 2013 - 31 March 2016, by ethnicity

Ethnicity	Number of patients registered	Waiting time (days)	
		Median	95% Confidence interval
Adult			
White	2376	132	121 - 143
Asian	199	118	93 - 143
Black	78	150	51 - 249
Other	51	75	34 - 116
TOTAL[1]	**2706**	**130**	**120 - 140**
Paediatric	**214**	**107**	**79 - 135**

[1] Includes 2 patients whose ethnicity was not reported

8.3 Donor and organ supply

On 20 March 2018, the new National Liver Offering Scheme was introduced to offer livers from donors after brain death. This change introduced a national waiting list for all adult liver patients and liver offering for these donors are now made on a patient basis. For donors after circulatory death, the allocation scheme has not changed from centre based offering.

Of the 1,574 organ donors, 1,149 (73%) donated their liver and 975 (85%) of these donated livers were used; see **Table 8.6**. Of livers retrieved from donors after brain death and donors after circulatory death, 91% and 67% were transplanted, 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 2017 - 31 March 2018, 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	176	120	**296**	160	58	**218**	160	(149)	58	(42)	**218**	**(191)**
Cambridge	97	90	**187**	88	52	**140**	88	(81)	52	(35)	**140**	**(116)**
Edinburgh	96	60	**156**	88	19	**107**	88	(85)	19	(14)	**107**	**(99)**
King's College	240	134	**374**	210	70	**280**	210	(183)	70	(44)	**280**	**(227)**
Leeds	189	153	**342**	167	71	**238**	167	(156)	71	(50)	**238**	**(206)**
Newcastle	39	28	**67**	30	11	**41**	30	(22)	11	(6)	**41**	**(28)**
Royal Free	118	34	**152**	107	18	**125**	107	(98)	18	(10)	**125**	**(108)**
TOTAL	**955**	**619**	**1574**	**850**	**299**	**1149**	**850**	**(774)**	**299**	**(201)**	**1149**	**(975)**

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 17.4 pmp in 2017-2018 and varied across the Strategic Health Authorities from 13.6 pmp to 24.6 pmp.

Table 8.7 Liver donor rates in the UK, 1 April 2017 - 31 March 2018, by Country/ Strategic Health Authority

Country/ Strategic Health Authority	Deceased donors (pmp)					
	DBD		DCD		**Total**	
North East	28	(10.6)	9	(3.4)	**37**	**(14.0)**
North West	122	(16.9)	38	(5.3)	**160**	**(22.2)**
Yorkshire and The Humber	61	(11.2)	35	(6.4)	**96**	**(17.7)**
North of England	**211**	**(13.8)**	**82**	**(5.4)**	**293**	**(19.2)**
East Midlands	46	(9.7)	18	(3.8)	**64**	**(13.6)**
West Midlands	57	(9.8)	26	(4.5)	**83**	**(14.3)**
East of England	99	(16.2)	52	(8.5)	**151**	**(24.6)**
Midlands and East	**202**	**(12.1)**	**96**	**(5.8)**	**298**	**(17.9)**
London	**127**	**(14.4)**	**19**	**(2.2)**	**146**	**(16.6)**
South East Coast	70	(15.0)	21	(4.5)	**91**	**(19.5)**
South Central	51	(11.7)	19	(4.4)	**70**	**(16.1)**
South West	64	(11.6)	27	(4.9)	**91**	**(16.5)**
South of England	**185**	**(12.7)**	**67**	**(4.6)**	**252**	**(17.3)**
England	**725**	**(13.1)**	**264**	**(4.8)**	**989**	**(17.9)**
Isle of Man	**0**	**(0.0)**	**1**	**(12.5)**	**1**	**(12.5)**
Channel Islands	**1**	**(6.3)**	**0**	**(0.0)**	**1**	**(6.3)**
Wales	**44**	**(14.1)**	**15**	**(4.8)**	**59**	**(19.0)**
Scotland	**59**	**(10.9)**	**14**	**(2.6)**	**73**	**(13.5)**
Northern Ireland	**21**	**(11.3)**	**5**	**(2.7)**	**26**	**(14.0)**
TOTAL[1]	**850**	**(12.9)**	**299**	**(4.5)**	**1149**	**(17.4)**

[1] Includes 14 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 10.3 to 17.8 pmp across the Strategic Health Authorities and overall was 15.1 pmp.

Table 8.8 Liver transplant rates per million population (pmp) in the UK, 1 April 2017 - 31 March 2018, by Country/ Strategic Health Authority

Country/ Strategic Health Authority	Deceased transplants (pmp)						Living transplants (pmp)	
	DBD		DCD		Total			
North East	27	(10.2)	3	(1.1)	**30**	**(11.4)**	2	(0.8)
North West	93	(12.9)	23	(3.2)	**116**	**(16.1)**	3	(0.4)
Yorkshire and The Humber	77	(14.2)	9	(1.7)	**86**	**(15.8)**	2	(0.4)
North of England	**197**	**(12.9)**	**35**	**(2.3)**	**232**	**(15.2)**	**7**	**(0.5)**
East Midlands	40	(8.5)	17	(3.6)	**57**	**(12.1)**	2	(0.4)
West Midlands	78	(13.4)	25	(4.3)	**103**	**(17.8)**	0	(0.0)
East of England	77	(12.6)	27	(4.4)	**104**	**(17.0)**	0	(0.0)
Midlands and East	**195**	**(11.7)**	**69**	**(4.1)**	**264**	**(15.9)**	**2**	**(0.1)**
London	**103**	**(11.7)**	**18**	**(2.0)**	**121**	**(13.8)**	**5**	**(0.6)**
South East Coast	58	(12.4)	18	(3.9)	**76**	**(16.3)**	1	(0.2)
South Central	38	(8.7)	7	(1.6)	**45**	**(10.3)**	2	(0.5)
South West	52	(9.4)	17	(3.1)	**69**	**(12.5)**	1	(0.2)
South of England	**148**	**(10.2)**	**42**	**(2.9)**	**190**	**(13.1)**	**4**	**(0.3)**
England	**643**	**(11.6)**	**164**	**(3.0)**	**807**	**(14.6)**	**18**	**(0.3)**
Isle of Man	**2**	**(25.0)**	0	(0.0)	**2**	**(25.0)**	0	(0.0)
Channel Islands	**1**	**(6.3)**	0	(0.0)	**1**	**(6.3)**	**1**	**(6.3)**
Wales	**34**	**(10.9)**	**11**	**(3.5)**	**45**	**(14.5)**	**1**	**(0.3)**
Scotland	**93**	**(17.2)**	**14**	**(2.6)**	**107**	**(19.8)**	0	(0.0)
Northern Ireland	**24**	**(12.9)**	**5**	**(2.7)**	**29**	**(15.6)**	0	(0.0)
TOTAL[1,2]	**801**	**(12.2)**	**194**	**(2.9)**	**995**	**(15.1)**	**21[3]**	**(0.3)**

[1] Excludes 28 recipients who reside outside the UK (13 DBD, 6 DCD, 9 Living).
[2] Includes 4 recipients in the UK with an unknown postcode.
[3] Includes 1 domino donor transplants.

The number of whole, reduced and split liver transplants by urgency status of the transplant (elective, super-urgent) in 2017-2018 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 7% in 2017-2018. There were 1,014 deceased donor liver transplants performed in 2017-2018: 912 whole liver, including 18 liver and kidney, 1 liver and heart, 1 liver and lung; 91 split liver, including 3 liver and kidney; and 11 deceased liver lobe, including 1 liver and kidney. Split liver transplants accounted for 89% of liver lobe transplant activity.

Table 8.9 Deceased liver transplants performed in the UK, 1 April 2016 - 31 March 2018

Transplant centre	2016 - 2017								2017 - 2018							
	Whole liver		Reduced liver		Split liver		TOTAL		Whole liver		Reduced liver		Split liver		TOTAL	
	E	SU	E	SU	E	SU	E	SU	E	SU	E	SU	E	SU	E	SU
Birmingham	174	15	6	1	27	2	**207**	**18**	180	22	3	2	21	1	**204**	**25**
Cambridge	85	7	0	0	10	0	**95**	**7**	102	13	0	0	2	0	**104[1]**	**13**
Edinburgh	92	6	0	0	5	0	**97**	**6**	90	9	0	0	4	0	**94**	**9**
King's College	167	14	1	3	41	4	**209**	**21**	184	17	1	3	34	3	**219**	**23**
Leeds	110	14	1	0	14	2	**125**	**16**	131	17	2	0	15	4	**148**	**21**
Newcastle	38	3	0	0	1	0	**39**	**3**	34	4	0	0	0	0	**34**	**4**
Royal Free	72	17	0	0	14	0	**86**	**17**	92	17	0	0	6	1	**98**	**18**
TOTAL	**738**	**76**	**8**	**4**	**112**	**8**	**858**	**88**	**813**	**99**	**6**	**5**	**82**	**9**	**901**	**113**

E=Elective, SU=Super-urgent
Birmingham, King's College and Leeds transplant paediatric patients
Super-urgent registration categories were changed on 17 June 2015 to account for development in treatment of patients with acute liver failure
[1] Includes 1 urgent heart/liver transplant and 1 super-urgent lung/liver transplant

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 2017-2018, the median CIT for a DBD donor whole liver only transplant was 8.3 hours (Inter-Quartile (IQ) range 6.7 – 10.2) and for a DCD donor whole liver only transplant was 7.5 hours (IQ range 6.3 - 8.7) and overall is 8.1 hours (IQ range 6.5 – 9.9).

At 31 March 2018 there were approximately 10,100 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 are shown in **Table 8.10**.

Table 8.10 Demographic characteristics of deceased liver donors and transplant recipients 1 April 2017 - 31 March 2018, and transplant list patients at 31 March in the UK

Age group (years)	Donors		Transplant recipients		Active transplant list patients	
	N	(%)	N	(%)	N	(%)
0 - 17	45	(4)	86	(8)	37	(10)
18 - 34	175	(15)	132	(13)	57	(16)
35 - 49	254	(22)	173	(17)	81	(23)
50 - 59	292	(25)	312	(31)	103	(29)
60 - 69	228	(20)	286	(28)	78	(22)
70+	155	(13)	25	(2)	3	(1)
mean (SD)	51	(17)	48	(18)	45	(18)
Male	626	(54)	603	(59)	222	(62)
Female	523	(46)	411	(41)	137	(38)
White	1048	(92)	873	(86)	309	(87)
Asian	25	(2)	69	(7)	27	(8)
Black	22	(2)	28	(3)	12	(3)
Chinese	6	(1)	9	(1)	0	(0)
Other	34	(3)	31	(3)	6	(2)
Not reported	14	-	4	-	5	-
O	589	(51)	475	(47)	210	(58)
A	429	(37)	389	(38)	87	(24)
B	103	(9)	117	(12)	49	(14)
AB	28	(2)	33	(3)	13	(4)
First graft			922	(91)	309	(86)
Re-graft			92	(9)	50	(14)
TOTAL	**1149**	**(100)**	**1014**	**(100)**	**359**	**(100)**

Intestinal Activity

Key messages

- **There were 6 patients on the active intestinal transplant list at 31 March 2018 in total**
- **There were 28 registrations for an intestinal transplant in 2017-2018, corresponding to 27 patients (20 adult and 7 paediatric patients)**
- **26 intestinal transplants were carried out in 2017-2018 (15 in the previous year)**
- **On average, patients wait around 3 months for a transplant**

9.1 Overview

During 2017-2018, there were 28 registrations for an intestinal transplant, corresponding to 27 patients. As at 31 March 2018, 6 (21%) registrations remained active/suspended, 20 (71%) resulted in a transplant, 1 (4%) resulted in a death on the transplant list, and 1 (4%) was removed.

Last year the number of deceased donor intestinal transplants rose by 67% from 15 to 25. There was also one living donor intestinal transplant performed in 2017-2018.

A national Intestinal Allocation Scheme has been in place since 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.

9.2 Transplant list

In 2017-2018, there were 28 registrations for an intestinal transplant. The outcome of these registrations for paediatric (aged <18 years) and adult patients, as at 31 March 2018, broken down by transplant centre can be found in **Table 9.1**.

Table 9.1 Outcome of intestinal registrations in the UK, 1 April 2017 – 31 March 2018

Transplant centre	Outcome of registrations as at 31 March 2018								TOTAL
	Transplanted		Died		Removed		Active/Susp		
	N	%	N	%	N	%	N	%	
Adult									
Cambridge	11	85	1	8	1	8	0	0	13
Oxford	4	57	0	0	0	0	3	43	7
TOTAL	**15**	**75**	**1**	**5**	**1**	**5**	**3**	**15**	**20**
Paediatric									
Birmingham	1	100	0	0	0	0	0	0	1
Cambridge[1]	1	100	0	0	0	0	0	0	1
King's College	3	50	0	0	0	0	3	50	6
TOTAL	**5**	**63**	**0**	**0**	**0**	**0**	**3**	**38**	**8**

[1] 1 patient at Cambridge was 16 at time of registration

Table 9.2 shows the intestinal transplant list rate in the UK by country/Strategic Health Authority of patient's residence. At 31 March 2018, the overall transplant list rate was 0.1 pmp and ranged from 0.0 to 0.2 pmp across the Strategic Health Authorities, although these 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) 2018		2017	
North East	0	(0.0)	0	(0.0)
North West	0	(0.0)	0	(0.0)
Yorkshire and The Humber	1	(0.2)	0	(0.0)
North of England	**1**	**(0.1)**	**0**	**(0.0)**
East Midlands	1	(0.2)	2	(0.4)
West Midlands	0	(0.0)	0	(0.0)
East of England	1	(0.2)	0	(0.0)
Midlands and East	**2**	**(0.1)**	**2**	**(0.1)**
London	**0**	**(0.0)**	**2**	**(0.2)**
South East Coast	1	(0.2)	1	(0.2)
South Central	0	(0.0)	0	(0.0)
South West	1	(0.2)	1	(0.2)
South of England	**2**	**(0.1)**	**2**	**(0.1)**
England	**5**	**(0.1)**	**6**	**(0.1)**
Isle of Man	**0**	**(0.0)**	**0**	**(0.0)**
Channel Islands	**0**	**(0.0)**	**0**	**(0.0)**
Wales	**0**	**(0.0)**	**1**	**(0.3)**
Scotland	**0**	**(0.0)**	**2**	**(0.4)**
Northern Ireland	**0**	**(0.0)**	**0**	**(0.0)**
TOTAL[1]	**6**	**(0.1)**	**12**	**(0.2)**

[1] Includes 1 patient in 2018 resident in the UK with an unknown postcode

Table 9.3 shows median waiting time to elective intestinal transplant by registration type. On average, patients wait 97 days for a transplant.

Table 9.3 Median waiting time to intestinal transplant in the UK, for patients registered 1 April 2014 - 31 March 2017, by registration type

Registration type	Number of patients registered	Waiting time (days) Median	95% Confidence interval
Bowel only[1]	8	58	39 – 77
Liver, bowel and pancreas[1]	36	161	0 – 163
Bowel and pancreas[1]	20	65	119 – 203
TOTAL	**64**	**97**	**8 – 146**

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

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 0.0 to 1.0 pmp across the Strategic Health Authorities. Of the 955 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 2017 - 31 March 2018, by Country/Strategic Health Authority

Country/ Strategic Health Authority of residence	Solid organ donors (pmp)		Intestinal donors (pmp)		% of solid organ donors	Organs used
North East	38	(14.4)	1	(0.4)	2.6	1
North West	143	(19.8)	1	(0.1)	0.7	1
Yorkshire and The Humber	67	(12.3)	0	(0.0)	-	-
North of England	**248**	**(16.2)**	**2**	**(0.1)**	**0.8**	**2**
East Midlands	48	(10.2)	2	(0.4)	4.2	2
West Midlands	64	(11.0)	4	(0.7)	6.3	4
East of England	106	(17.3)	6	(1.0)	5.7	6
Midlands and East	**218**	**(13.1)**	**12**	**(0.7)**	**5.5**	**12**
London	**147**	**(16.7)**	**7**	**(0.8)**	**4.8**	**7**
South East Coast	77	(16.5)	0	(0.0)	-	-
South Central	58	(13.3)	1	(0.2)	1.7	-
South West	71	(12.9)	0	(0.0)	-	-
South of England	**206**	**(14.2)**	**1**	**(0.1)**	**0.5**	**-**
England	**819**	**(14.8)**	**22**	**(0.4)**	**2.7**	**21**
Isle of Man	**0**	**(0.0)**	**0**	**(0.0)**	**-**	**-**
Channel Islands	**2**	**(12.5)**	**0**	**(0.0)**	**-**	**-**
Wales	**49**	**(15.8)**	**1**	**(0.3)**	**2.0**	**1**
Scotland	**61**	**(11.3)**	**2**	**(0.4)**	**3.3**	**2**
Northern Ireland	**24**	**(12.9)**	**0**	**(0.0)**	**-**	**-**
TOTAL[1]	**955**	**(14.5)**	**25**	**(0.4)**	**2.6**	**24**

[1] Includes 10 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 2016-2017 and 2017-2018. In 2017-2018, there were a total of 26 transplants, 17 adult and 9 paediatric transplants. This includes 1 transplant from a living donor.

At 31 March 2018 there were approximately 100 recipients with a functioning intestinal transplant (or multi-organ including 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 2017 - 31 March 2018 (2016-2017)

Transplant centre	Transplant type											
	BO		LBP		MV		MMV		LB		**TOTAL**	
Adult												
Cambridge	1	(0)	0	(0)	7	(2)	5	(4)	0	(0)	13	(6)
Oxford	4	(3)	0	(0)	0	(0)	0	(2)	0	(0)	4	(5)
TOTAL	**5**	**(3)**	**0**	**(0)**	**7**	**(2)**	**5**	**(6)**	**0**	**(0)**	**17**	**(11)**
Paediatric												
Birmingham	0	(0)	2	(1)	2	(0)	0	(0)	0	(0)	4	(1)
Cambridge	0	(0)	0	(0)	1	(0)	0	(0)	0	(0)	1	(0)
King's College	1	(1)	0	(0)	2	(2)	0	(0)	1	(0)	4	(3)
TOTAL	**1**	**(1)**	**2**	**(1)**	**5**	**(2)**	**0**	**(0)**	**1**	**(0)**	**9**	**(4)**

BO = Bowel only (may also include stomach/spleen/abdominal wall/kidney/colon)
BP = Bowel and pancreas
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
LB = Liver and bowel

9.5 Demographic Characteristics

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

Table 9.6 Demographic characteristics of deceased intestinal donors and transplant recipients 1 April 2017 - 31 March 2018, and transplant list patients at 31 March in the UK

Age group (years)	Donors		Transplant recipients		Active transplant list patients	
	N	(%)	N	(%)	N	(%)
0 - 17	7	(28)	9	(35)	4	(67)
18 - 34	10	(40)	6	(23)	2	(33)
35 - 49	7	(28)	5	(19)	0	(0)
50 - 59	1	(4)	5	(19)	0	(0)
60 - 69	0	(0)	1	(4)	0	(0)
70+	0	(0)	0	(0)	0	(0)
mean (SD)	25	(16)	30	(20)	12	(13)
Male	9	(36)	13	(50)	3	(50)
Female	16	(64)	13	(50)	3	(50)
White	23	(96)	25	(96)	6	(100)
Asian	0	(0)	1	(4)	0	(0)
Black	1	(4)	0	(0)	0	(0)
Not reported	1	-	0	-	0	-
O	17	(68)	13	(50)	1	(17)
A	8	(32)	11	(42)	5	(83)
B	0	(0)	1	(4)	0	(0)
AB	0	(0)	1	(4)	0	(0)
First graft			23	(88)	4	(67)
Re-graft			3	(12)	2	(33)
TOTAL	**25[1]**	**(100)**	**26[2]**	**(100)**	**6**	**(100)**

[1] Includes 1 donor whose bowel was retrieved but not transplanted
[2] Includes 1 living donor recipient and 1 overseas donor

Survival Rates Following Transplantation

This chapter shows graft survival rates over time for kidney and pancreas 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 year survival over the time periods shown, p=0.01. **Table 11.2** 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>0.3).

Figure 11.1 Long-term graft survival after first adult kidney only transplant from donors after brain death, 1 January 2004 – 31 December 2016

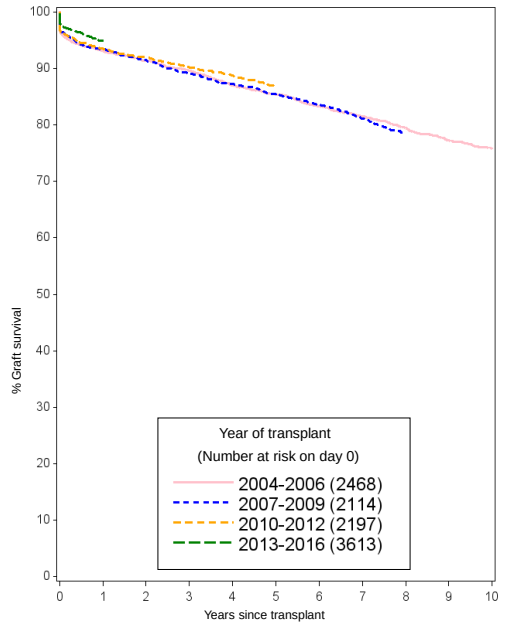


Table 11.1 Graft survival after first adult kidney only transplant from a DBD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2004-2006	2468	93	(92-94)	91	(90-92)	85	(84-87)	76	(74-78)
2007-2009	2114	93	(92-94)	91	(90-93)	85	(84-87)		
2010-2012	2197	93	(92-94)	92	(91-93)	87	(85-88)		
2013-2016	3613	95	(94-96)						

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	
2004-2006	2471	97	(96-97)	95	(94-96)	90	(88-91)	76	(75-78)
2007-2009	2114	96	(95-97)	95	(93-95)	89	(88-91)		
2010-2012	2198	96	(96-97)	94	(93-95)	88	(87-90)		
2013-2016	3614	97	(96-97)						

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 significant variation in one year survival over the time periods shown, p=0.007. 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 borderline statistically significant decline in patient survival over time at one years post-transplant (p=0.07).

Figure 11.2 Long-term graft survival after first adult kidney only transplant from donors after circulatory death, 1 January 2004 – 31 December 2016

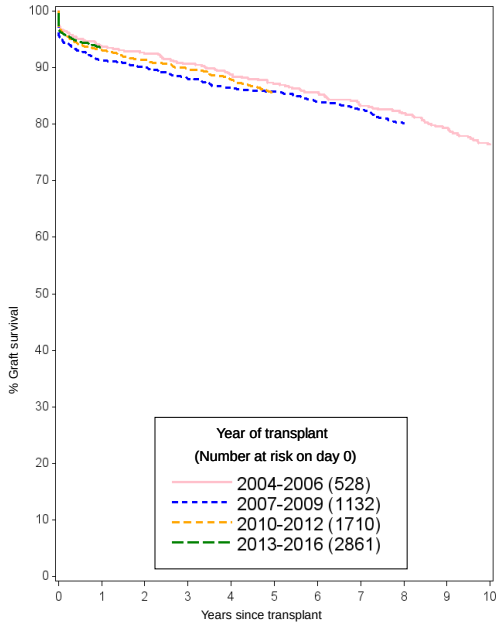


Table 11.3 Graft survival after first adult kidney only transplant from a DCD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2004-2006	528	94	(91-96)	92	(90-94)	87	(84-90)	76	(72-80)
2007-2009	1132	91	(89-93)	90	(88-92)	86	(83-88)		
2010-2012	1710	93	(92-94)	91	(90-93)	86	(84-87)		
2013-2016	2861	94	(93-94)						

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	
2004-2006	529	95	(93-96)	93	(91-95)	86	(83-89)	72	(68-76)
2007-2009	1132	96	(94-97)	94	(93-95)	88	(86-90)		
2010-2012	1710	95	(94-96)	93	(92-94)	85	(83-87)		
2013-2016	2862	97	(96-97)						

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 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 changes in patient survival over time (p>0.1).

Figure 11.3 Long-term graft survival after first adult living donor kidney only transplant in the UK, 1 January 2004 – 31 December 2016

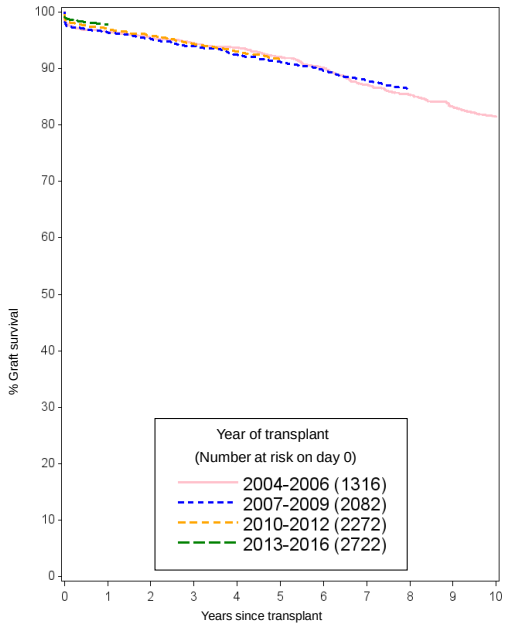


Table 11.5 Graft survival after first adult living donor kidney transplant

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2004-2006	1316	96	(95-97)	95	(94-96)	92	(90-93)	82	(79-84)
2007-2009	2082	96	(95-97)	95	(94-96)	91	(90-92)		
2010-2012	2272	97	(96-98)	96	(95-97)	92	(90-93)		
2013-2016	2722	98	(97-98)						

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	
2004-2006	1316	99	(98-99)	98	(97-99)	96	(95-97)	91	(89-93)
2007-2009	2082	99	(98-99)	98	(97-99)	95	(94-96)		
2010-2012	2271	99	(98-99)	98	(97-98)	94	(93-95)		
2013-2016	2722	99	(99-99)						

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 has been a significant improvement in one year survival over the time periods shown, p=0.01. **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>0.1). There were insufficient paediatric recipients of first kidney only transplants from donors after circulatory death to permit reliable analysis.

Figure 11.4 Long-term graft survival after first paediatric kidney only transplant from donors after brain death, 1 January 2004 – 31 December 2016

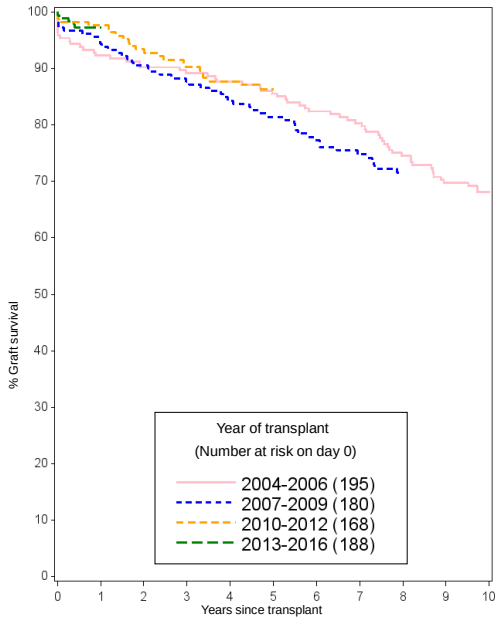


Table 11.7 Graft survival after first paediatric kidney only transplant from a DBD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2004-2006	195	92	(88-95)	90	(85-94)	86	(80-90)	68	(61-74)
2007-2009	180	94	(90-97)	91	(85-94)	81	(75-86)		
2010-2012	168	98	(94-99)	93	(88-96)	86	(80-91)		
2013-2016	188	97	(93-99)						

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	
2004-2006	196	99	(96-100)	99	(96-100)	99	(96-100)	98	(94-99)
2007-2009	180	99	(96-100)	99	(96-100)	98	(95-99)		
2010-2012	168	99	(96-100)	99	(95-100)	95	(91-98)		
2013-2016	188	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 change in five year survival over the time periods shown, p=0.02. **Table 11.10** shows the patient survival estimates and confidence intervals for one, two, five and ten years post-transplant. There has been a significant change in five year survival over the time periods shown, p=0.05.

Figure 11.5 Long-term graft survival after first paediatric living donor kidney only transplant in the UK, 1 January 2004 – 31 December 2016

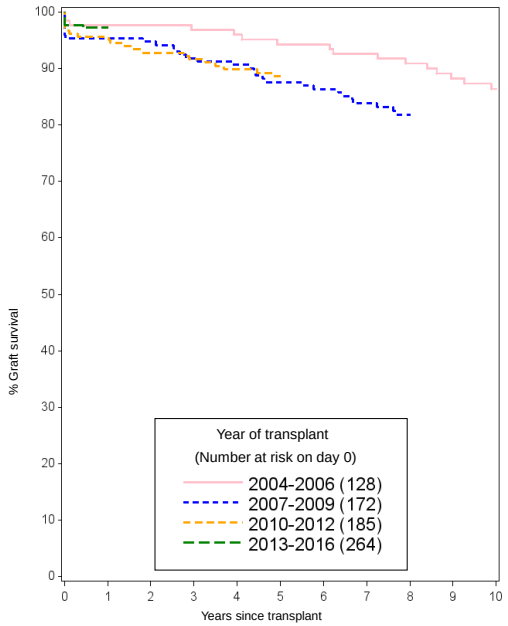


Table 11.9 Graft survival after first paediatric living donor kidney transplant

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2004-2006	128	98	(93-99)	98	(93-99)	94	(88-97)	86	(79-91)
2007-2009	172	95	(91-98)	95	(90-97)	88	(82-92)		
2010-2012	185	96	(92-98)	93	(88-96)	89	(83-92)		
2013-2016	264	97	(94-99)						

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	
2004-2006	128	100	(-)	100	(-)	100	(-)	98	(93-100)
2007-2009	172	99	(95-100)	99	(95-100)	97	(93-99)		
2010-2012	185	99	(96-100)	99	(96-100)	99	(96-100)		
2013-2016	264	99	(96-100)						

11.2 Pancreas graft and patient survival

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

Figure 11.6 shows long-term graft survival in recipients receiving their first simultaneous kidney/pancreas (SPK) transplant performed from donors after brain death. Graft and patient survival estimates and confidence intervals are shown at one, two, five and ten years post-transplant in **Table 11.11** and **Table 11.12** respectively. Results relate to adults only as there are no paediatric pancreas transplant recipients. There has been no significant variation in graft survival over time (p>0.2). Differences in patient survival are also not significant over time (p>0.3).

Figure 11.6 Long-term graft survival after first SPK transplant from donors after brain death, 1 January 2004 – 31 December 2016

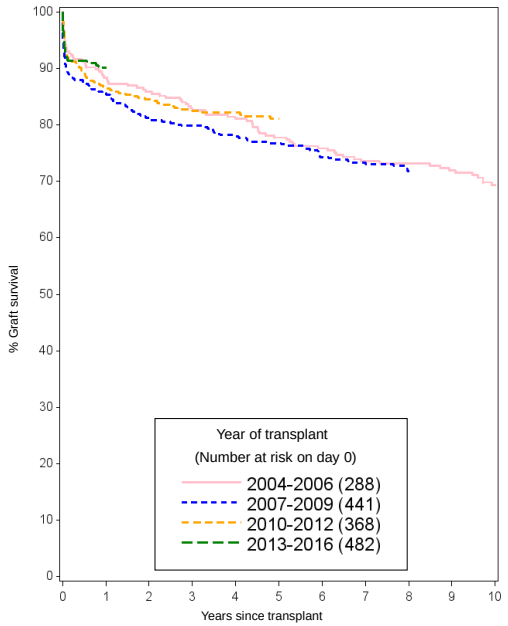


Table 11.11 Graft survival after first SPK transplant from a DBD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2004-2006	288	88	(84-92)	86	(81-89)	78	(72-82)	69	(63-75)
2007-2009	441	86	(82-89)	81	(77-84)	77	(73-80)		
2010-2012	368	86	(83-90)	85	(80-88)	81	(77-85)		
2013-2016	482	90	(87-92)						

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		Ten year	
2004-2006	290	94	(91-96)	92	(89-95)	88	(83-91)	74	(68-79)
2007-2009	442	96	(94-98)	94	(92-96)	89	(86-92)		
2010-2012	368	96	(94-98)	94	(90-96)	87	(83-90)		
2013-2016	484	97	(95-98)						

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, 2009-2011 and 2012-2015. Graft and patient survival estimates and confidence intervals are shown at one, two and three years 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 2010 – 31 December 2016

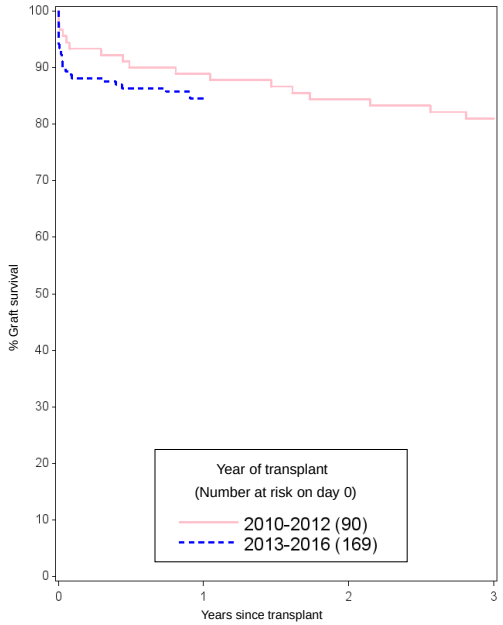


Table 11.13 Graft survival after first SPK transplant from a DCD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Three year	
2010-2012	90	89	(80-94)	84	(75-90)	81	(71-88)
2013-2016	169	85	(78-89)				

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		Two year		Three year	
2010-2012	90	98	(91-99)	95	(88-98)	94	(87-98)
2013-2016	169	99	(95-100)				

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

Figure 11.8 shows long-term graft survival in recipients receiving their first pancreas only transplant performed from donors after brain death. Graft and patient survival estimates and confidence intervals are shown at one, two, five and ten years in **Table 11.15** and **Table 11.16** respectively. Results are for adult patients only. There were no statistically significant differences in graft or patient survival over time (p>0.6 and p>0.1).

Figure 11.8 Long-term graft survival after pancreas only transplant from donors after brain death, 1 January 2004 – 31 December 2016

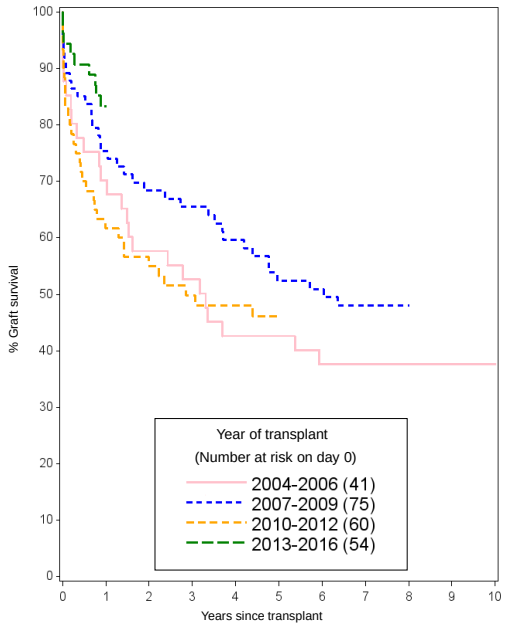


Table 11.15 Graft survival after first pancreas only transplant from a DBD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2004-2006	41	70	(53-82)	58	(41-71)	43	(27-57)	38	(23-52)
2007-2009	75	75	(64-84)	68	(56-78)	52	(40-63)		
2010-2012	60	62	(48-73)	55	(42-66)	46	(33-58)		
2013-2016	54	83	(70-91)						

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		Ten year	
2004-2006	42	98	(84-100)	95	(81-99)	95	(81-99)	57	(38-73)
2007-2009	76	95	(86-98)	93	(84-97)	87	(76-93)		
2010-2012	60	98	(86-100)	96	(84-99)	74	(56-85)		
2013-2016	55	96	(86-99)						

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 circulatory death, 2009-2011 and 2012-2015. Graft and patient survival estimates and confidence intervals are shown at one, two and three years 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 2010 – 31 December 2016

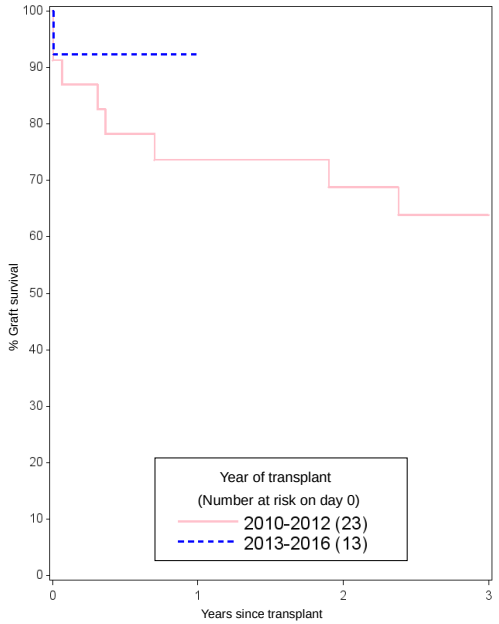


Table 11.17 Graft survival after first pancreas only transplant from a DCD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Three year	
2010-2012	23	74	(50-87)	69	(45-84)	64	(40-80)
2013-2016	13	92	(57-99)				

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		Two year		Three year	
2010-2012	23	95	(72-99)	95	(72-99)	90	(66-97)
2013-2016	13	100	(-)				

11.3 Cardiothoracic patient survival

11.3.1 Adult heart recipients – donors after brain death (DBD)

Long-term patient survival for adult (≥16 years) recipients after first heart only transplant performed from donors after brain death is shown in **Figure 11.10**. Both urgent and non-urgent patients are included. **Table 11.19** shows the patient survival estimates and confidence intervals for one, two, five and ten years post-transplant for each transplant era. There were no statistically significant differences in patient survival over time (p>0.3).

Figure 11.10 Long-term patient survival after first adult heart only transplant from donors after brain death, 1 January 2004 – 31 December 2016

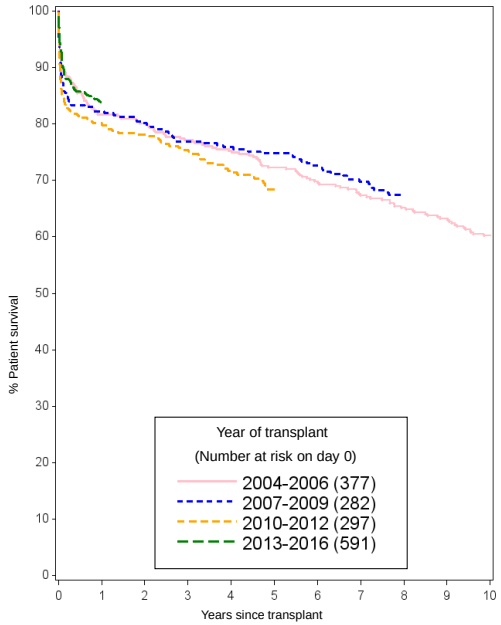


Table 11.19 Patient survival after first adult heart only transplant from a DBD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year		Ten year	
2004-2006	377	82	(77-85)	80	(76-84)	72	(67-77)	60	(55-65)
2007-2009	282	82	(77-86)	80	(75-84)	75	(69-79)		
2010-2012	297	80	(75-84)	78	(73-82)	68	(63-73)		
2013-2016	591	84	(81-87)						

11.3.2 Adult heart-lung block recipients – donors after brain death (DBD)

Patient survival for adult recipients after first heart-lung block transplant from donors after brain death is shown in **Figure 11.11**. Patient survival estimates and confidence intervals for each time period analysed are shown in **Table 11.20**. There is some variation between survival rates across transplant eras, with shorter term outcomes generally seeing an improvement, however these statistics are based on small numbers and are not statistically significantly different (p>0.1).

Figure 11.11 Long-term patient survival after first adult heart/lung block transplant from donors after brain death, 1 January 2004 – 31 December 2016

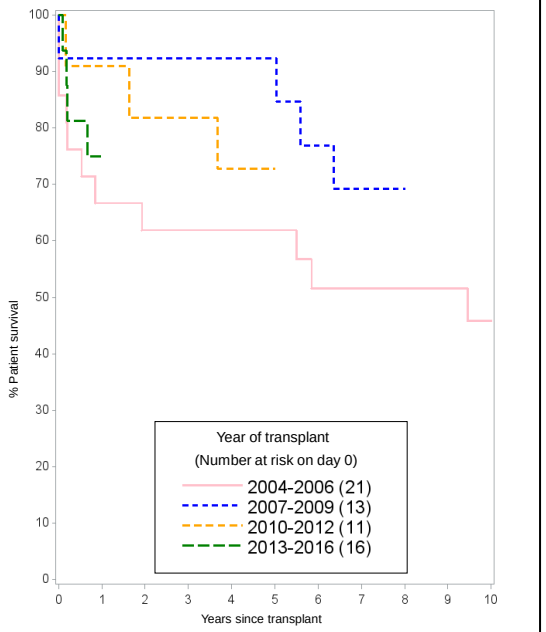


Table 11.20 Patient survival after first adult heart-lung block transplant from a DBD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval)							
		One year		Two year		Five year		Ten year	
2004-2006	21	67	(43-83)	62	(38-79)	62	(38-79)	46	(24-66)
2007-2009	13	92	(57-99)	92	(57-99)	92	(57-99)		
2010-2012	11	91	(51-99)	82	(45-95)	73	(37-90)		
2013-2016	16	75	(46-90)						

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 were no statistically significant differences in 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 2004 – 31 December 2016

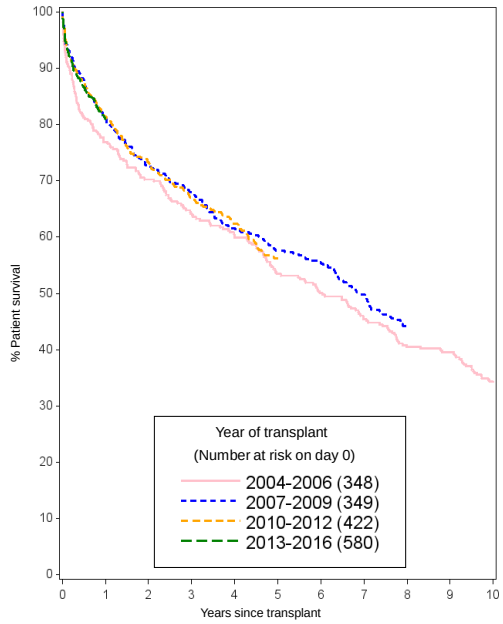


Table 11.21 Patient survival after first adult lung only transplant from a DBD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year		Ten year	
2004-2006	348	77	(72-81)	70	(65-75)	53	(48-59)	34	(29-39)
2007-2009	349	81	(77-85)	73	(67-77)	58	(52-63)		
2010-2012	422	81	(77-85)	73	(69-77)	56	(51-61)		
2013-2016	580	81	(77-84)						

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 are 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 2010 – 31 December 2016

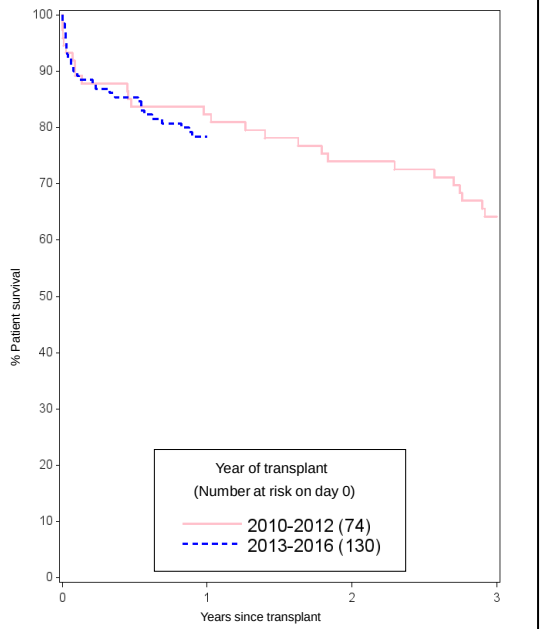


Table 11.22 Patient survival after first adult lung only transplant from a DCD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Three year	
2010-2012	74	82	(72-89)	74	(62-83)	64	(52-74)
2013-2016	130	78	(70-85)				

11.3.5 Paediatric heart recipients – donors after brain death (DBD)

Long-term patient survival for paediatric recipients after first heart only transplant from donors after brain death is shown in **Figure 11.14**. Both urgent and non-urgent patients are included. **Table 11.23** shows the patient survival estimates and confidence intervals for one, two, five and ten years post-transplant. There was no statistically significant variation in survival over the time period analysed, p>0.4. The number of heart-lung transplant recipients was too small for analysis.

Figure 11.14 Long-term patient survival after first paediatric heart only transplant from donors after brain death, 1 January 2004 – 31 December 2016

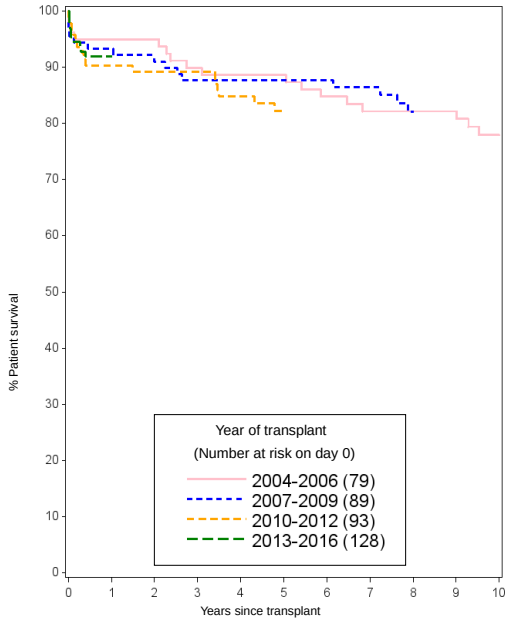


Table 11.23 Patient survival after first paediatric heart only transplant

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year		Ten year	
2004-2006	79	95	(87-98)	95	(87-98)	89	(79-94)	78	(67-86)
2007-2009	89	93	(86-97)	91	(83-95)	88	(79-93)		
2010-2012	93	90	(82-95)	89	(81-94)	82	(73-89)		
2013-2016	128	92	(86-96)						

11.3.6 Paediatric lung recipients - donors after brain death (DBD)

Long-term patient survival for paediatric recipients after first lung only transplant from donors after brain death is shown in **Figure 11.15**. **Table 11.24** 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).

Figure 11.15 Long-term patient survival after first paediatric lung only transplant from donors after brain death, 1 January 2004 – 31 December 2016

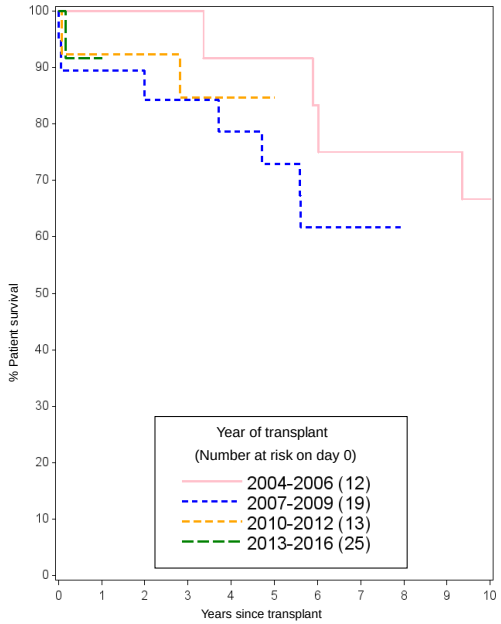


Table 11.24 Patient survival after first paediatric lung only transplant from a DBD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval)							
		One year		Two year		Five year		Ten year	
2004-2006	12	100	(-)	100	(-)	92	(54-99)	67	(34-86)
2007-2009	19	89	(64-97)	84	(59-95)	73	(47-88)		
2010-2012	13	92	(57-99)	92	(57-99)	85	(51-96)		
2013-2016	25	92	(71-98)						

11.4 Liver patient survival

11.4.1 Adult liver 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 11.16**. **Table 11.25** shows patient survival estimates at one, two, five and ten years post-transplant. There have been significant improvements in one, two and five year patient survival, p<0.001 in each case, over the time periods analysed from 2004-2006 to 2013-2016.

Figure 11.16 Long-term patient survival after first elective adult liver only transplant from donors after brain death, 1 January 2004 – 31 December 2016

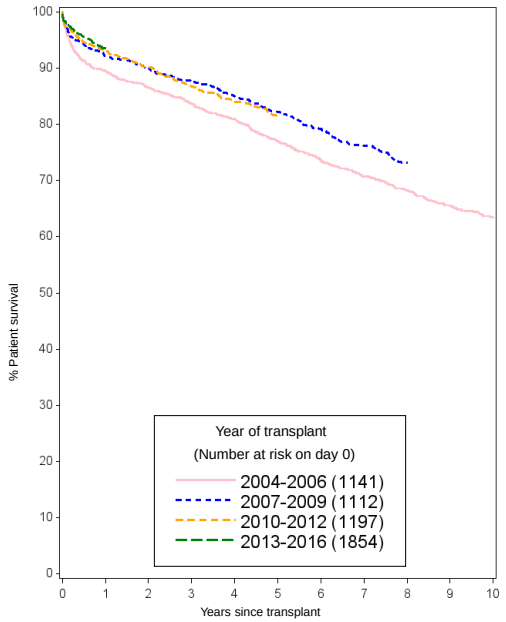


Table 11.25 Patient survival after first elective adult liver only transplant from a DBD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year		Ten year	
2004-2006	1141	90	(88-91)	87	(84-88)	77	(74-79)	63	(60-66)
2007-2009	1112	92	(90-94)	90	(88-92)	82	(80-84)		
2010-2012	1197	93	(91-94)	90	(88-92)	81	(79-83)		
2013-2016	1854	94	(92-95)						

11.4.2 Adult liver 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 11.17**. Due to small numbers prior to 2006 it is not possible to estimate long term patient survival. **Table 11.26** shows patient survival estimates at one, two and five years post-transplant.

Figure 11.17 Liver patient survival after first elective adult liver only transplant from donors after circulatory death, 1 January 2007 – 31 December 2016

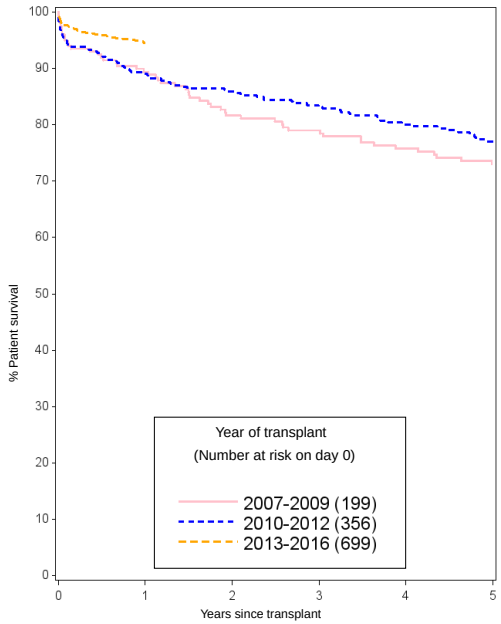


Table 11.26 Patient survival after first elective adult liver only transplant from a DCD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year	
2007-2009	199	89	(84-93)	82	(75-86)	73	(66-79)
2010-2012	356	89	(85-92)	86	(82-89)	77	(72-81)
2013-2016	699	95	(93-96)				

11.4.3 Paediatric liver recipients - donor after brain death (DBD)

Figure 11.18 and **Table 11.27** 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 11.18 **Long-term patient survival after first elective paediatric liver only transplant from donors after brain death, 1 January 2004 – 31 December 2016**

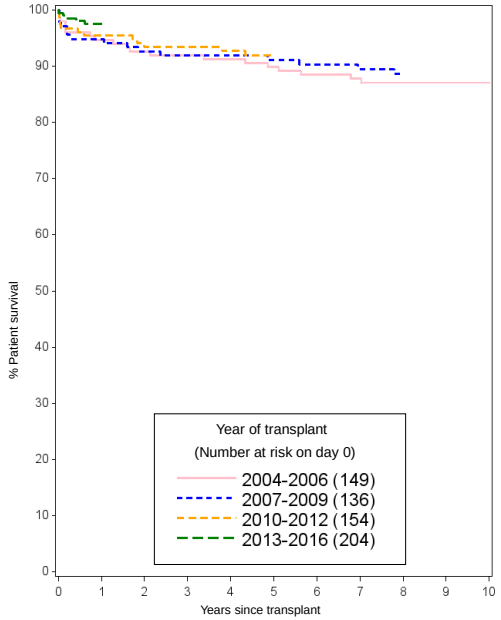


Table 11.27 **Patient survival after first elective paediatric liver only transplant from a DBD**

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year		Ten year	
2004-2006	149	95	(90-97)	93	(87-96)	90	(84-94)	87	(80-92)
2007-2009	136	95	(90-98)	93	(87-96)	91	(85-95)		
2010-2012	154	95	(91-98)	93	(88-96)	92	(86-95)		
2013-2016	204	98	(94-99)						

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 11.19** and **Table 11.28** show one-year patient survival estimates for recipients receiving their first intestinal transplant, 2008-2011 and 2012-2015, by recipient age group (adults aged ≥ 18 years).

Figure 11.19 Patient survival after first intestinal graft in the UK, 1 January 2009 – 31 December 2016

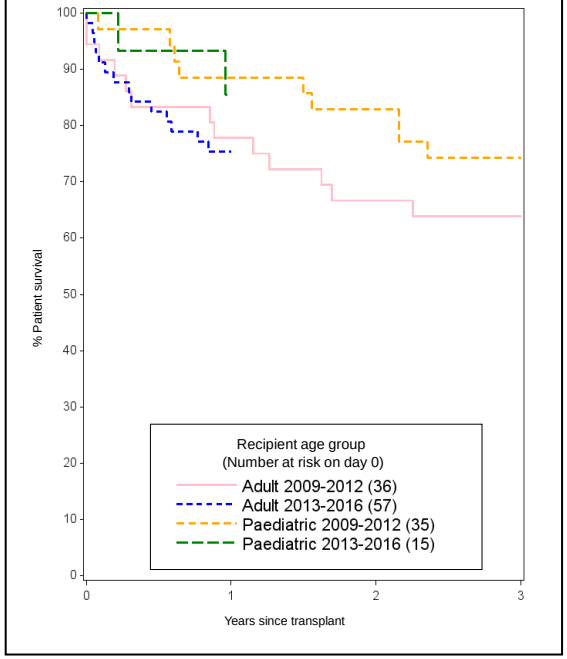


Table 11.28 Patient survival after first intestinal transplant in the UK, 1 January 2009 - 31 December 2016

Recipient age group	No. at risk on day 0	% Patient survival (95% confidence interval) One year	
Adult			
2009-2012	36	78	(60-88)
2013-2016	57	75	(62-85)
Paediatric			
2009-2012	35	89	(72-96)
2013-2016	15	86	(53-96)

NHS Organ Donor Register

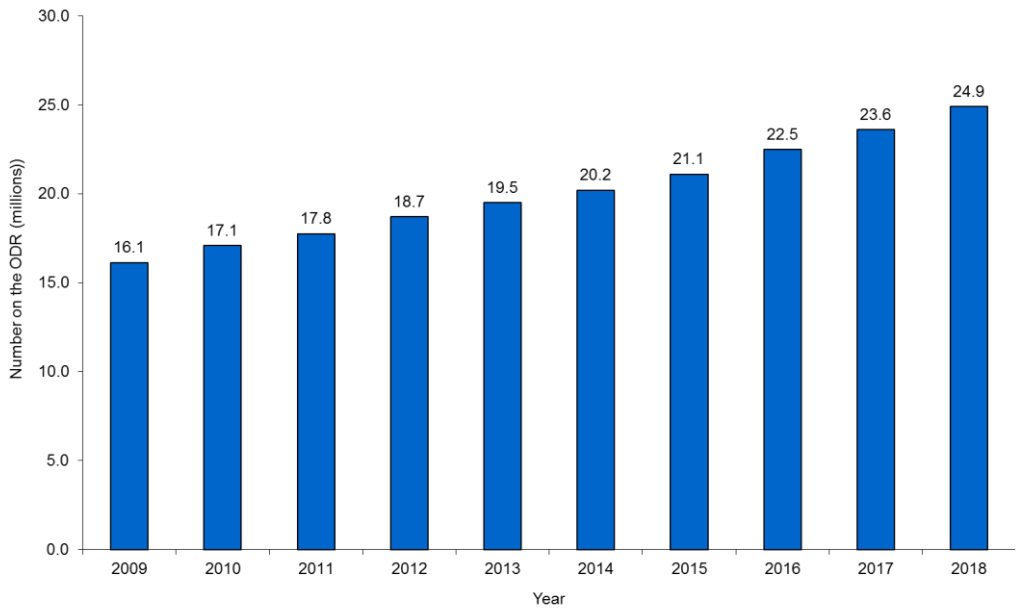
Key messages

- **24.9 million people on the opt-in ODR at March 2018 (38% of the population)**
- **517,124 people on the opt-out ODR at March 2018, with a further 86 appointed representative registrations**
- **48% of the 1,574 deceased organ donors last year were on the opt-in ODR**
- **50% of 1,253,448 registrations last year were through the Driver and Vehicle Licensing Agency (DVLA).**

By the end of March 2018 the NHS Organ Donor Register (ODR) held just over 24.9 million opt-in registrations. A summary of the number of registrations at the end of each financial year from 31 March 2009 to 31 March 2018 is shown **Figure 12.1**. Opt-in registrations have seen a 5.5% increase this year, compared to a 4.9% increase in the previous year.

Of the 1,574 deceased organ donors in 2017-2018, 48% were registered on the ODR compared with 44% of organ donors in 2016-2017.

Figure 12.1 Number opted-in 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 (opt-in) in each country/Strategic Health Authority at 31 March 2018, and the number of opt-in registrants. This information is also illustrated in **Figure 12.2**. No adjustment has been made for any differences in demographics of the populations.

Table 12.2 shows the number of opt-out registrants in each country/Strategic Health Authority at 31 March 2018. The proportion of the population registered opt-out was 6% in Wales, and less than 1% for other countries and Strategic Health Authorities. While only Wales has opt-out legislation, it is possible for people elsewhere in the UK to opt-out. In addition there have been 86 appointed representative registrations.

Please note that a back-log of registration activity made via the UK GP Services is not accounted for in these figures. These registrations will be uploaded in due course and reflected in future reports.

Table 12.1 Opt-in registrations[1] on the NHS Organ Donor Register by 31 March 2018, by country/ Strategic Health Authority

Country/ Strategic Health Authority	Opt-in registrants		
	N	pmp	Proportion registered
North East	975,195	369,392	37%
North West	2,560,499	354,640	35%
Yorkshire and The Humber	1,919,528	353,504	35%
North of England	**5,455,222**	**356,784**	**36%**
East Midlands	1,714,403	363,221	36%
West Midlands	1,806,917	311,537	31%
East of England	2,399,769	391,479	39%
Midlands and East	**5,921,089**	**355,621**	**36%**
London	**2,605,505**	**296,417**	**30%**
South East Coast	1,993,146	427,714	43%
South Central	1,804,845	414,907	41%
South West	2,543,398	460,761	46%
South of England	**6,341,389**	**436,434**	**44%**
England	**20,323,205**	**367,708**	**37%**
Isle of Man	**13,098**	**163,725**	**16%**
Channel Islands	**18,965**	**118,531**	**12%**
Wales	**1,234,025**	**396,793**	**40%**
Scotland	**2,485,864**	**460,345**	**46%**
Northern Ireland	**804,367**	**432,455**	**43%**
TOTAL[2]	**24,942,992**	**378,613**	**38%**

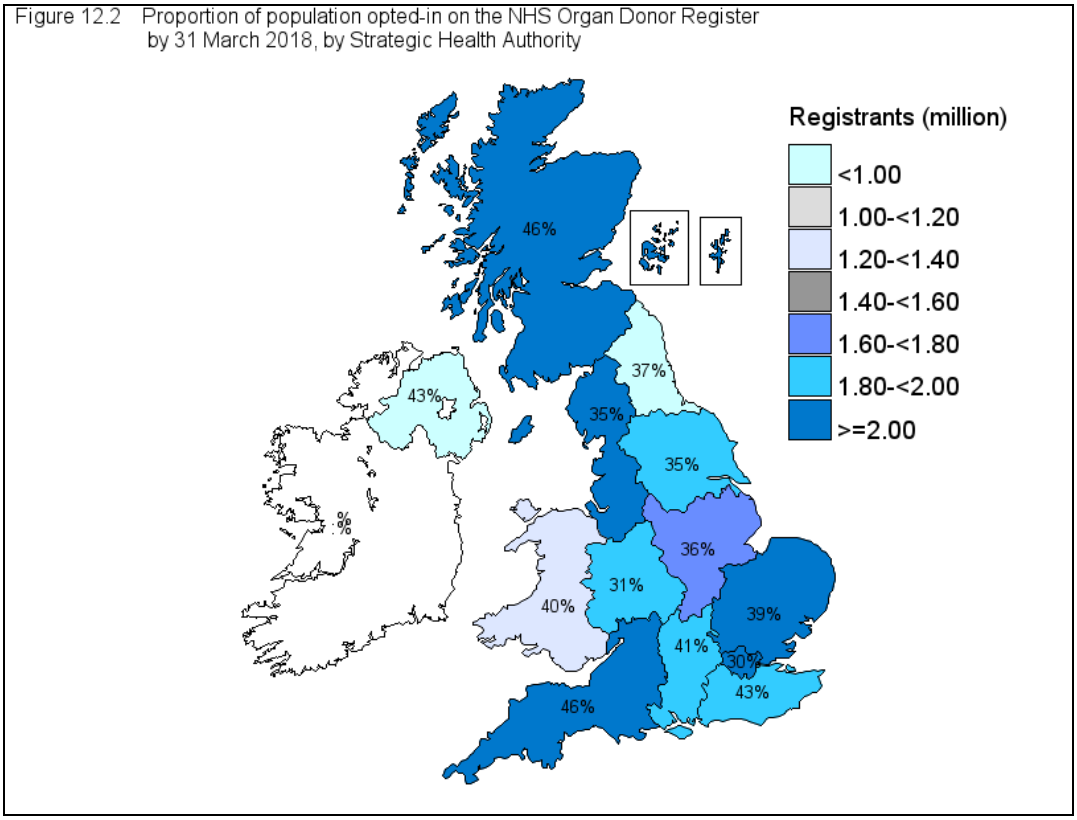
[1] Please note that a back-log of registration activity made via the UK GP Services is not accounted for in these figures. These registrations will be uploaded in due course and reflected in future reports
[2] Includes 63,468 registrants where the postcode was unknown

Table 12.2 Opt-out registrations on the NHS Organ Donor Register by 31 March 2018, by country/ Strategic Health Authority

Country/ Strategic Health Authority	Opt-out registrants	
	N	pmp
North East	4,601	1,743
North West	54,414	7,537
Yorkshire and The Humber	47,431	8,735
North of England	**106,446**	**6,962**
East Midlands	17,633	3,736
West Midlands	55,194	9,516
East of England	20,038	3,269
Midlands and East	**92,865**	**5,578**
London	**104,134**	**11,847**
South East Coast	7,717	1,656
South Central	12,684	2,916
South West	6,951	1,259
South of England	**27,352**	**1,883**
England	**330,797**	**5,985**
Isle of Man	**6**	**75**
Channel Islands	**20**	**125**
Wales	**180,924**	**58,175**
Scotland	**4,774**	**884**
Northern Ireland	**460**	**247**
TOTAL[1]	**517,124**	**7,850**

[1] Includes 143 registrants where the postcode was unknown

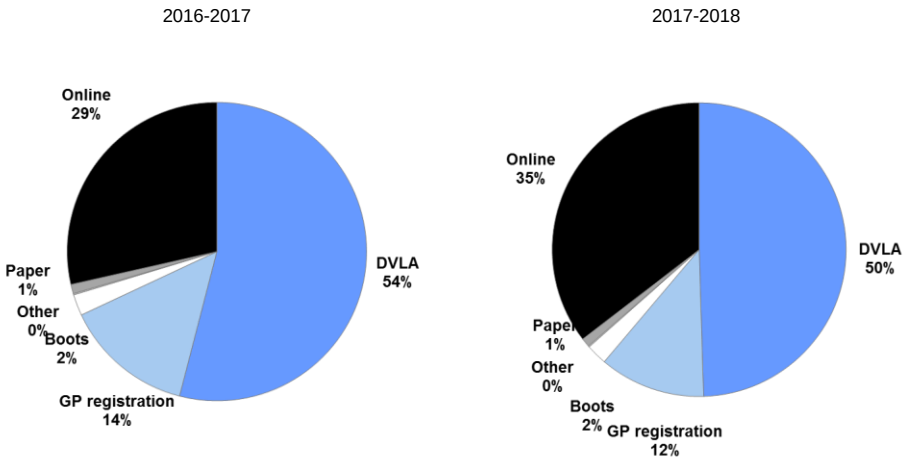
Figure 12.2 Proportion of population opted-in on the NHS Organ Donor Register by 31 March 2018, by Strategic Health Authority



There are a number of registration routes to opt-in on the ODR: 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.odt.nhs.uk) and by telephone.

The source of applications for opt-in registration on the ODR is illustrated in **Figure 12.3**. This figure shows that 12% of registrations in 2017-2018 arrived by means of registering through a GP, 50% from driving licence applications and reminders through the DVLA and 35% online through the ODT website.

Figure 12.3 Source of applications for opt-in registration[1] on the NHS Organ Donor Register, 1 April 2016 - 31 March 2018



[1] Please note that a back-log of registration activity made via the UK GP Services is not accounted for in these figures. These registrations will be uploaded in due course and reflected in future reports

At the end of March 2018, 79% 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 (75%) did not wish to donate their corneas. Of the restricted registrations, only 6% (less than 1% of the total register) did not wish to donate their kidneys. Willingness to donate, by organ type, is shown in **Table 12.3**.

Table 12.3 Preparedness of those opted-in on the NHS Organ Donor Register at 31 March 2018 to donate different organs[1]

Registrants prepared to donate all organs 85%

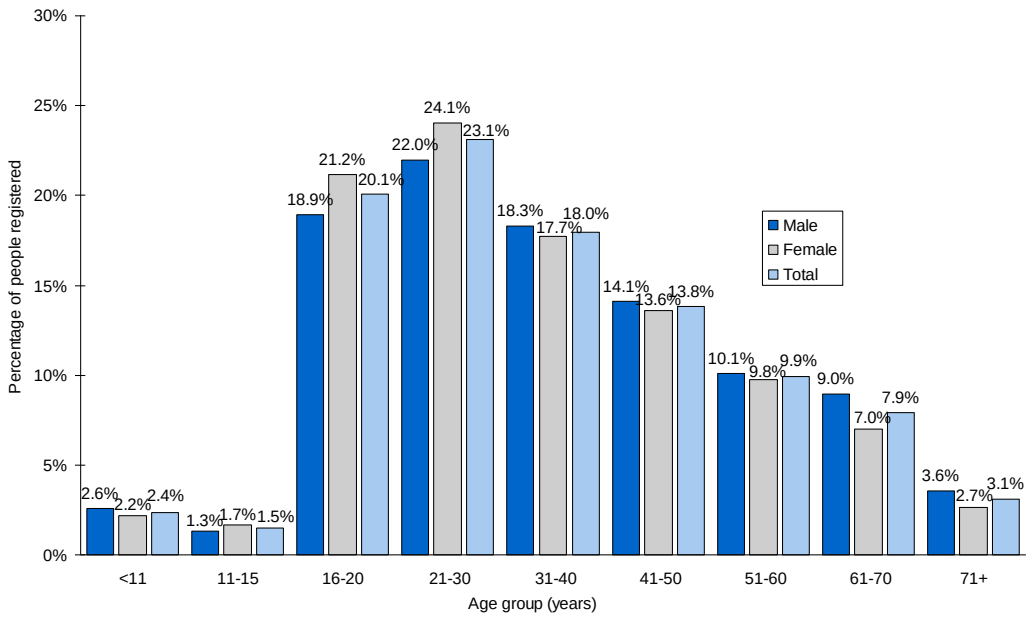
Of those not prepared to donate all organs ('restricted donors'):

Not prepared to donate:	% of 'Restricted donors'	% of all registrants
Kidney	6	0.8
Pancreas	18	2.6
Heart	19	2.6
Lungs	18	2.4
Liver	11	1.5
Corneas	75	10.6

[1] Complete information was not available for approximately 12% of the total register

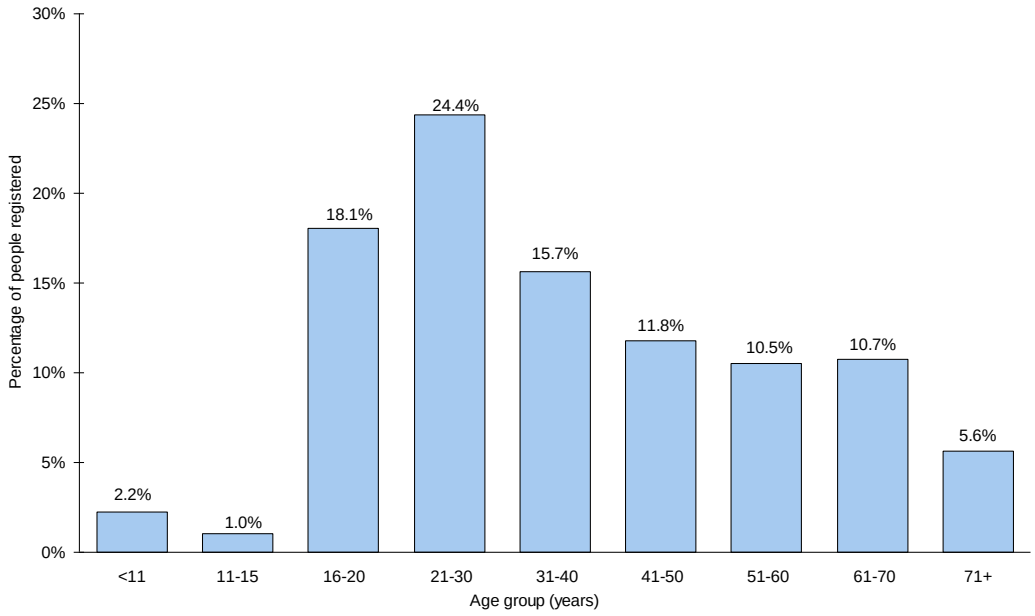
People of all ages are eligible for organ donor registration: the distribution of age by sex at time of opt-in registration is shown in **Figure 12.4**. The highest proportion of registrations (22.0% of males and 24.1% of females) are in the 21-30 years age group. The lowest proportions are in the under 11 and 11-15 age groups. Of all people registered on the NHS Organ Donor Register, 46% are male and 53% are female (<1% unknown).

Figure 12.4 Age and gender at registration of total people registered as opt-in on the NHS Organ Donor Register by 31 March 2018



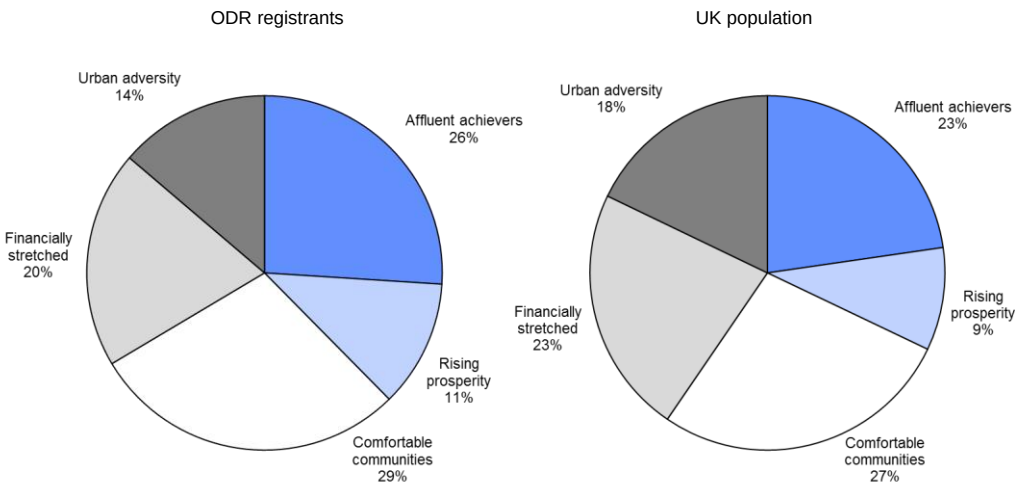
Additionally, the distribution of age of people registering on the opt-in ODR during the latest financial year, 2017-2018, is shown in **Figure 12.5**. The highest proportion of registrations in this year were in the 21-30 years age group. Of the registrants in 2017-2018, 46% were male and 54% were female.

Figure 12.5 Age of people registering as opt-in on the NHS Organ Donor Register between 1 April 2017 and 31 March 2018



The breakdown of opt-in registrants on the ODR during 2017-2018 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' or 'financially stretched' on the ODR than in the general population.

Figure 12.6 Opt-in registrants on the NHS Organ Donor Register, 1 April 2017 - 31 March 2018, and the general population, by socio-economic group



[1] ACORN data supplied by CACI Ltd.

National Potential Donor Audit

Key messages

- **There were 35,568 audited deaths reported through the Potential Donor Audit in the financial year to 31 March 2018, including 1,568 (99%) of the 1,574 deceased organ donors**
- **Compared with the previous financial year, improvements have been observed in the overall referral rate of potential donors (from 88% to 92%), in the proportion of approaches where a Specialist Nurse – Organ Donation was present (from 86% to 90%), and in the overall consent/authorisation rate (from 63% to 66%)**
- **The consent/authorisation rate was 92% when a patient's decision was known at the time of potential donation, but 101 families overruled their loved one's known decision to be an organ donor.**
- **A significant difference is still apparent in the consent/authorisation rates for white patients and patients from minority ethnic groups (69% and 42% respectively).**

13.1 Introduction

In this chapter, summary data from the National Potential Donor Audit (PDA) are shown for 1 April 2017 to 31 March 2018 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. Paediatric ICU data are included however neonatal ICU data have been excluded. The data are based on information received by 9 May 2018.**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: https://nhsbtdbe.blob.core.windows.net/umbraco-assets-corp/6455/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.

Neurological death suspected patients who meet all of the following criteria: apnoea, coma from known aetiology and unresponsive, ventilated, fixed pupils. Excluding those not tested as cardiac arrest occurred despite resuscitation, brain stem reflexes returned, or neonates less than 2 months post term.

The neurological death testing rate is the percentage of patients for whom neurological death was suspected who were tested.

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

The proportion of approaches where a SN-OD was present is the percentage of eligible donor families or appointed/nominated representatives approached where a SN-OD was present.

Deemed consent applies, in Wales, if a person has not registered an organ donation decision either to opt-in or opt-out or appoint a representative, is aged 18 or over, has lived for longer than 12 months and is ordinarily resident and also died in Wales, and had the capacity to understand the notion of deemed consent for a significant period before their death.

The consent/authorisation rate is the percentage of eligible donor families or appointed/nominated representatives approached for formal organ donation discussion where consent/authorisation was ascertained. Note that consent/authorisation rates have not been provided where the number of families approached is less than ten.

13.3 Breakdown of audited deaths in ICUs and emergency departments

In the 12-month period there were a total of 35,568 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 there were 1,568 solid organ donors reported through the PDA, 99% of the total 1,574 deceased solid organ donors.

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 present for the approach to the family and/or whether the patient's decision to be a donor was known at the time of potential donation. Details of ODR, known decision and deemed consent overrides are included in the footnote of the table.

An ODR override is a case where the family overruled their loved one's known decision to be an organ donor where the decision was recorded on the ODR. This decision was known at the time that the family were approached. Similarly, a known decision override is a case where the family overruled their loved one's known decision to donate and includes decisions registered on the ODR, those expressed via carrying a donor card, verbally, in a will, or via an appointed/nominated representative. Again, the decision was known at the time that the family were approached. A deemed consent override is a case where the family did not support deemed consent.

Figure 13.3 uses the flow chart information to illustrate the stages where opportunities are lost pre-donation. Current practice within DCD donation has led to a significant proportion of DCD patients dropping out of the donation process at the approach stage; this is because eligible donors are screened out due to medical unsuitability and therefore families or nominated/appointed representatives are not approached for a formal organ donation discussion.

Figure 13.1 Donation after brain death

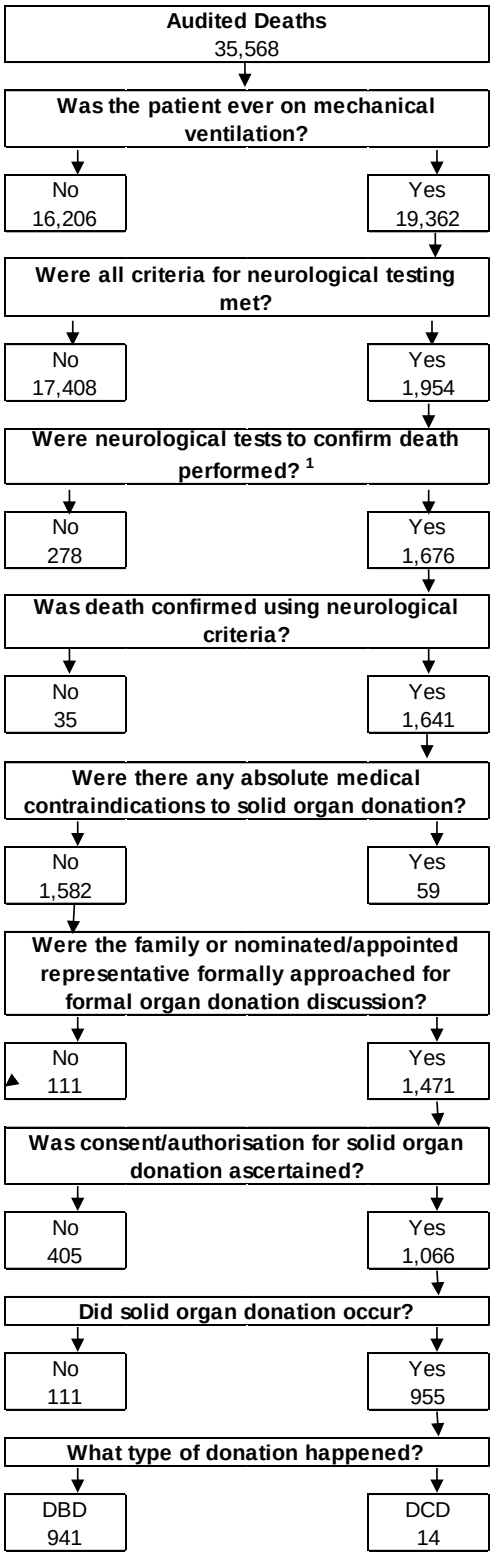
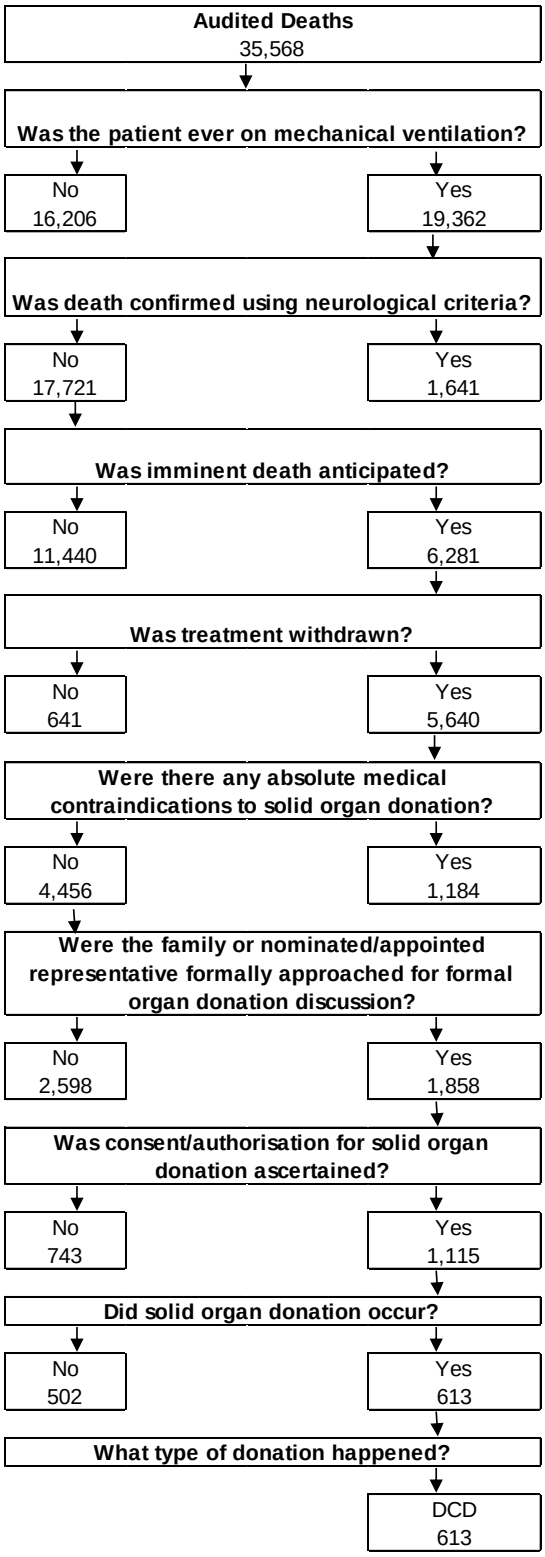


Figure 13.2 Donation after circulatory death



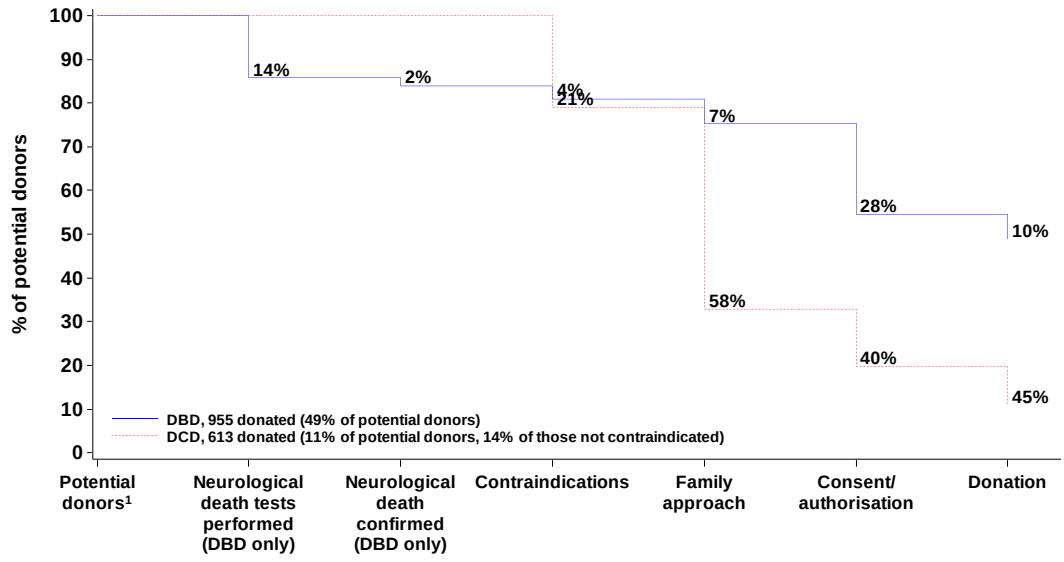
[1] Patients for whom tests were not performed due to; cardiac arrest despite resuscitation occurred, brainstem reflexes returned, or neonates - less than 2 months post term are excluded from the calculation of the neurological death testing rate

Table 13.1 Summary of key percentages, 1 April 2017 to 31 March 2018

	DBD	DCD	ALL
Neurological death testing rate	85.8%		
Referral rate	98.7%	89.4%	91.6%
Proportion of approaches where a SN-OD was present	94.8%	85.6%	89.7%
Consent/authorisation rate	72.5%	60.0%	65.5%
- when SN-OD not present for approach	36.4%	18.0%	22.1%
- when SN-OD present for approach	74.5%	67.1%	70.5%
- when patient had not expressed a wish to donate or the patient's ODR status was not known at the time of potential donation	55.8%	43.1%	48.5%
- when patient's decision on ODR and known at time of potential donation*	95.3%	88.8%	91.9%
- when patient's decision (by any method) is known at time of potential donation**	95.9%	88.9%	92.2%
- when SN-OD present for approach and patient known to be on ODR at time of potential donation	95.8%	91.3%	93.5%
- when deemed consent applied***	85.7%	53.6%	67.3%

* 90 families overruled their loved one's known ODR wish to be an organ donor
** 101 families overruled their loved one's known wish (by any method) to be an organ donor
*** There were 49 cases where deemed consent applied and in 16 cases the family did not support deemed consent

Figure 13.3 Stages at which potential organ donors lose the opportunity to become actual donors, 1 April 2017 to 31 March 2018



[1] Potential DBD donor - A patient who meets all four criteria for neurological death testing excluding those for which cardiac arrest occurred despite resuscitation, brain stem reflexes returned, and neonates less than 2 months post term
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/Strategic Health Authority (SHA). The number of actual donors pmp can be found in Table 3.2 of Chapter 3. Eligible DBD ranged from 11.9 pmp in East Midlands SHA to 44.4 pmp in London SHA. Eligible DCD ranged from 44.0 pmp in South East Coast SHA to 115.2 pmp in North East SHA.

Across the countries, there was a range of 74.3 eligible donors pmp in Scotland to 101.6 eligible donors pmp in Wales. Overall, there were 1,582 eligible DBD (24.0 pmp) and 4,456 eligible DCD (67.6 pmp) in the UK, resulting in a total of 91.7 eligible donors per million population. **Tables 13.3** and **13.4** show more detailed information by country/SHA for DBD and DCD data, respectively.

Table 13.2 Eligible donor rates per million population (pmp), in the UK, 1 April 2017 to 31 March 2018, by country and Strategic Health Authority

	Eligible DBD		Eligible DCD		**TOTAL**	
Country/ Strategic Health Authority of donation	N	(pmp)	N	(pmp)	**N**	**(pmp)**
North East	71	(26.9)	304	(115.2)	**375**	**(142.0)**
North West	210	(29.1)	643	(89.1)	**853**	**(118.1)**
Yorkshire and the Humber	118	(21.7)	385	(70.9)	**503**	**(92.6)**
North of England	**399**	**(26.1)**	**1332**	**(87.1)**	**1731**	**(113.2)**
East Midlands	56	(11.9)	295	(62.5)	**351**	**(74.4)**
West Midlands	121	(20.9)	415	(71.6)	**536**	**(92.4)**
East of England	118	(19.2)	533	(86.9)	**651**	**(106.2)**
Midlands and East	**295**	**(17.7)**	**1243**	**(74.7)**	**1538**	**(92.4)**
London	**390**	**(44.4)**	**441**	**(50.2)**	**831**	**(94.5)**
South East Coast	90	(19.3)	205	(44.0)	**295**	**(63.3)**
South Central	78	(17.9)	300	(69.0)	**378**	**(86.9)**
South West	111	(20.1)	280	(50.7)	**391**	**(70.8)**
South of England	**279**	**(19.2)**	**785**	**(54.0)**	**1064**	**(73.2)**
England	**1363**	**(24.7)**	**3801**	**(68.8)**	**5164**	**(93.4)**
Isle of Man	**2**	**(25.0)**	**2**	**(25.0)**	**4**	**(50.0)**
Channel Islands	**4**	**(25.0)**	**4**	**(25.0)**	**8**	**(50.0)**
Wales	**73**	**(23.5)**	**243**	**(78.1)**	**316**	**(101.6)**
Scotland	**98**	**(18.1)**	**303**	**(56.1)**	**401**	**(74.3)**
Northern Ireland	**42**	**(22.6)**	**103**	**(55.4)**	**145**	**(78.0)**
TOTAL	**1582**	**(24.0)**	**4456**	**(67.6)**	**6038**	**(91.7)**

Table 13.3 DBD key metrics from the Potential Donor Audit, 1 April 2017 to 31 March 2018, 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	Percentage of DBD approaches where a SN-OD was present (%)	DBD consent/ authorisation rate (%)
North East	97	81.4	99.0	71	69	100.0	72.5
North West	268	82.1	97.8	210	198	97.0	80.8
Yorkshire and the Humber	148	83.8	100.0	118	104	96.2	67.3
North of England	**513**	**82.5**	**98.6**	**399**	**371**	**97.3**	**75.5**
East Midlands	71	87.3	98.6	56	51	98.0	70.6
West Midlands	172	76.2	96.5	121	109	89.9	70.6
East of England	144	84.0	99.3	118	118	90.7	81.4
Midlands and East	**387**	**81.1**	**97.9**	**295**	**278**	**91.7**	**75.2**
London	**453**	**92.5**	**99.3**	**390**	**362**	**95.3**	**60.8**
South East Coast	118	79.7	99.2	90	80	95.0	76.3
South Central	89	91.0	98.9	78	74	93.2	82.4
South West	128	89.8	100.0	111	105	92.4	78.1
South of England	**335**	**86.6**	**99.4**	**279**	**259**	**93.4**	**78.8**
England	**1688**	**85.7**	**98.8**	**1363**	**1270**	**94.7**	**71.9**
Isle of Man	**2**	**100.0**	**50.0**	**2**	**1**	**0.0**	**-**
Channel Islands	**4**	**100.0**	**100.0**	**4**	**4**	**0.0**	**-**
Wales	**85**	**95.3**	**98.8**	**73**	**66**	**95.5**	**80.3**
Scotland	**117**	**85.5**	**99.1**	**98**	**90**	**94.4**	**75.6**
Northern Ireland	**58**	**74.1**	**96.6**	**42**	**40**	**95.0**	**70.0**
TOTAL	**1954**	**85.8**	**98.7**	**1582**	**1471**	**94.8**	**72.5**

Table 13.4 DCD key metrics from the Potential Donor Audit, 1 April 2017 to 31 March 2018, 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	Percentage of DCD approaches where a SN-OD was present (%)	DCD consent/ authorisation rate (%)
North East	405	95.8	304	108	87.0	57.4
North West	933	88.1	643	220	90.5	61.4
Yorkshire and the Humber	643	94.6	385	162	93.2	71.6
North of England	**1981**	**91.8**	**1332**	**490**	**90.6**	**63.9**
East Midlands	385	79.0	295	114	86.8	57.0
West Midlands	569	82.1	415	166	80.1	60.2
East of England	714	89.8	533	214	83.2	66.4
Midlands and East	**1668**	**84.7**	**1243**	**494**	**83.0**	**62.1**
London	**683**	**90.8**	**441**	**227**	**85.0**	**55.9**
South East Coast	327	88.7	205	92	91.3	65.2
South Central	410	88.3	300	127	78.7	59.1
South West	352	94.0	280	138	84.1	57.2
South of England	**1089**	**90.3**	**785**	**357**	**84.0**	**59.9**
England	**5421**	**89.2**	**3801**	**1568**	**85.9**	**61.3**
Isle of Man	**4**	**25.0**	**2**	**0**		**-**
Channel Islands	**6**	**33.3**	**4**	**1**	**0.0**	**-**
Wales	**325**	**91.4**	**243**	**91**	**90.1**	**62.6**
Scotland	**357**	**93.0**	**303**	**161**	**79.5**	**46.0**
Northern Ireland	**168**	**89.3**	**103**	**37**	**91.9**	**62.2**
TOTAL	**6281**	**89.4**	**4456**	**1858**	**85.6**	**60.0**

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 South Wales team, the DBD referral rate was 100% in both the South West and Yorkshire teams. The proportion of DBD approaches where a SN-OD was present was highest for the Northern team.

Table 13.5 DBD key metrics from the Potential Donor Audit, 1 April 2017 to 31 March 2018, 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	Percentage of DBD approaches where a SN-OD was present (%)	DBD consent/ authorisation rate (%)
Eastern	182	86.8	99.5	152	148	91.2	76.4
London	338	92.6	99.1	289	273	94.1	59.3
Midlands	213	77.5	96.7	154	139	92.1	70.5
North West	285	83.5	97.5	224	212	97.6	80.2
Northern	106	80.2	99.1	77	74	98.6	71.6
Northern Ireland	58	74.1	96.6	42	40	95.0	70.0
Scotland	117	85.5	99.1	98	90	94.4	75.6
South Central	110	90.9	99.1	94	90	94.4	80.0
South East	205	84.4	99.5	167	149	97.3	74.5
South Wales	65	96.9	98.5	57	50	94.0	82.0
South West	113	90.3	100.0	100	94	91.5	78.7
Yorkshire	162	84.0	100.0	128	112	96.4	67.9
TOTAL	**1954**	**85.8**	**98.7**	**1582**	**1471**	**94.8**	**72.5**

Table 13.6 indicates that for DCD patients, the highest referral rate was for the Northern team. The proportion of DCD approaches for which a SN-OD was present was highest for the Yorkshire team. No account has been taken of the demographics of the populations within the teams which may impact on the rates presented.

Table 13.6	DCD key metrics from the Potential Donor Audit, 1 April 2017 to 31 March 2018, 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	Percentage of DCD approaches where a SN-OD was present (%)	DCD consent/ authorisation rate (%)
Eastern	814	90.5	594	237	84.4	65.0
London	474	88.8	339	172	83.1	54.7
Midlands	806	79.5	616	247	82.6	59.1
North West	960	88.3	656	222	91.0	61.3
Northern	459	95.2	338	120	86.7	57.5
Northern Ireland	168	89.3	103	37	91.9	62.2
Scotland	357	93.0	303	161	79.5	46.0
South Central	525	89.1	380	152	80.3	59.2
South East	475	89.9	274	131	89.3	63.4
South Wales	258	89.9	203	79	88.6	63.3
South West	286	93.0	233	122	82.8	57.4
Yorkshire	699	93.8	417	178	93.3	70.8
TOTAL	**6281**	**89.4**	**4456**	**1858**	**85.6**	**60.0**

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 110 paediatric patients for whom neurological death was suspected, tests were not performed on 31 patients.

Table 13.7 DBD and DCD key metrics from the Potential Donor Audit, 1 April 2017 to 31 March 2018, 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	Percentage of approaches where a SN-OD was present (%)	Consent/ authorisation rate (%)	Number of actual donors[2]
DBD	Critical care	1756	87.0	1440	1332	95.0	71.2	848
	Emergency dept.	173	82.1	138	137	94.2	85.4	107
	TOTAL	**1929**	**86.6**	**1578**	**1469**	**94.9**	**72.6**	**955**
DCD	Critical care	5345		3814	1707	87.3	61.3	584
	Emergency dept.	270		210	125	80.8	55.2	29
	TOTAL	**5615**		**4024**	**1832**	**86.8**	**60.9**	**613**

[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 13 DCD donors referred from critical care and 1 DCD donors referred from emergency departments

Table 13.8 DBD and DCD key metrics from the Potential Donor Audit, 1 April 2017 to 31 March 2018, 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	Percentage of approaches where a SN-OD was present (%)	Consent/ authorisation rate (%)	Number of actual donors[2]
DBD	Adult (>=18)	1844	86.5	99.0	1506	1410	95.2	72.9	919
	Paediatric (<18)	110	73.6	94.5	76	61	83.6	62.3	36
	TOTAL	**1954**	**85.8**	**98.7**	**1582**	**1471**	**94.8**	**72.5**	**955**
DCD	Adult (>=18)	6057		89.6	4277	1776	86.2	61.0	593
	Paediatric (<18)	224		83.5	179	82	73.2	37.8	20
	TOTAL	**6281**		**89.4**	**4456**	**1858**	**85.6**	**60.0**	**613**

[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 donors under 18 and 13 DCD donors aged 18 and over

13.5 Consent/ authorisation rates

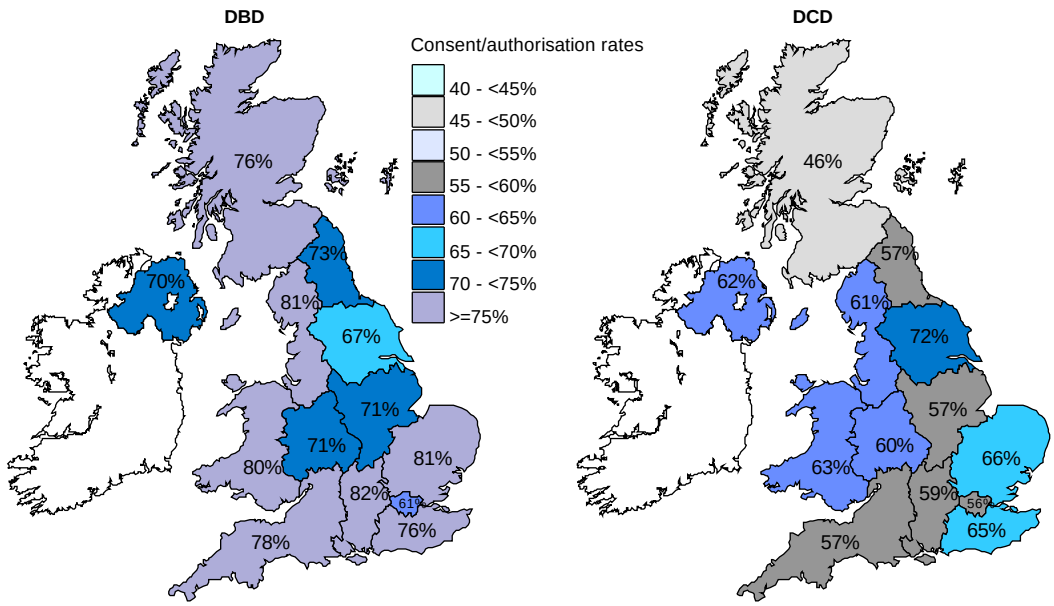
The overall DBD consent/authorisation rate was 73% and the 95% confidence limits for this percentage are 70% - 75%. For DCD, the overall rate was 60% and the 95% confidence limits are 58% - 62%.

Consent/authorisation rates by country/Strategic Health Authority 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, ODR status or ethnicity.

Across the countries and SHAs, the DBD consent/authorisation rates range from 61% in London to 82% in South Central. DCD consent/authorisation rates range from 46% in Scotland to 72% in Yorkshire and the Humber.

The overall consent/authorisation rates (combining DBD and DCD) for England, Wales, Scotland and Northern Ireland were 66%, 70%, 57% and 66%, respectively.

Figure 13.4 Consent/authorisation rates by English SHA/country



Across the Organ Donation Services Teams, the DBD consent/authorisation rates range from 59% in the London team to 82% in the South Wales team. DCD consent/authorisation rates range from 46% in the Scotland team to 71% in the Yorkshire team.

Figure 13.5 Consent/authorisation rates by Organ Donation Services Team

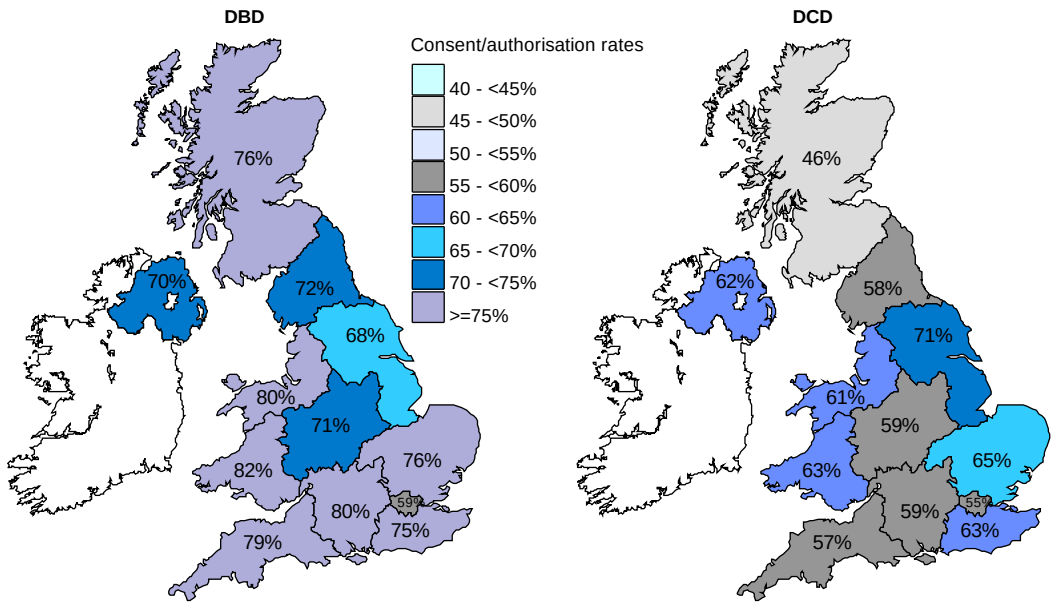


Table 13.9 shows the consent/authorisation rate separately for white patients and patients from ethnic minority groups. The national DBD consent/authorisation rates for white patients and patients from ethnic minority groups were 78% and 44%, respectively. A smaller, but still significant, difference was observed for national DCD consent/authorisation rates: 62% and 38%, respectively. Note that there were an additional 32 DBD and 76 DCD families approached where the ethnicity was not known or not reported.

The Northern, Scotland, South Central and South West teams each accounted for only 1-2% of families from ethnic minority groups approached for a decision about organ donation, with Northern Ireland and South Wales at less than 1%, whereas London accounted for 52%. Most teams had a very small proportion, therefore accounting for some of the variation observed in overall consent/authorisation rates between teams.

Table 13.9 DBD and DCD consent/authorisation rates from the Potential Donor Audit, 1 April 2017 to 31 March 2018, 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	127	81.1	218	66.1	**71.6**	19	52.6	17	47.1	**50.0**	**69.4**
London	140	70.0	130	61.5	**65.9**	123	48.0	36	33.3	**44.7**	**57.5**
Midlands	119	78.2	220	61.4	**67.3**	19	21.1	19	36.8	**28.9**	**63.2**
North West	198	82.8	204	63.7	**73.1**	14	42.9	5	-	**31.6**	**70.5**
Northern	70	72.9	116	57.8	**63.4**	3	-	3	-	**-**	**62.9**
Northern Ireland	38	68.4	35	60.0	**64.4**	1	-	1	-	**-**	**66.2**
Scotland	83	78.3	148	48.0	**58.9**	6	-	3	-	**-**	**56.6**
South Central	83	80.7	135	62.2	**69.3**	6	-	8	-	**50.0**	**66.9**
South East	120	80.8	116	65.5	**73.3**	27	44.4	8	-	**42.9**	**69.3**
South Wales	48	83.3	68	72.1	**76.7**	0		1	-	**-**	**70.5**
South West	81	81.5	113	58.4	**68.0**	3	-	3	-	**-**	**66.7**
Yorkshire	97	74.2	167	70.7	**72.0**	14	21.4	8	-	**40.9**	**69.7**
TOTAL	**1204**	**78.2**	**1670**	**62.3**	**69.0**	**235**	**43.8**	**112**	**37.5**	**41.8**	**65.5**

[1] Includes 108 families approached where the ethnicity was not known or not reported

Table 13.10 shows the reasons why the family did not give consent/authorisation, by donor type. The most common reason reported for why the families of both eligible DBD and DCD families did not give consent/authorisation was that the patient had previously expressed a wish not to donate. Overall, this reason was reported in 22% of cases.

Table 13.10 Reasons why the family did not support organ donation, 1 April 2017 to 31 March 2018, by donor type

Primary reason why family did not support organ donation	Donor type				Total	
	DBD		DCD			
	N	%	N	%	N	%
Patient previously expressed a wish not to donate	91	22.5	162	21.8	252	22.0
Family were not sure whether the patient would have agreed to donation	65	16.1	103	13.9	168	14.6
Family did not believe in donation	13	3.2	29	3.9	42	3.7
Family felt it was against their religious/cultural beliefs	44	10.9	25	3.4	69	6.1
Family were divided over the decision	21	5.2	26	3.5	47	4.1
Family felt the patient had suffered enough	15	3.7	57	7.7	72	6.3
Family did not want surgery to the body	52	12.8	72	9.7	124	10.8
Family wanted to stay with the patient after death	0	0.0	9	1.2	9	0.8
Family had difficulty understanding/accepting neurological testing	3	0.7	0	0.0	3	0.3
Family felt the length of time for donation process was too long	23	5.7	128	17.2	151	13.2
Family felt the body needs to be buried whole (unrelated to religious or cultural reasons)	39	9.6	24	3.2	63	5.5
Family concerned that organs may not be transplanted	2	0.5	11	1.5	13	1.1
Families concerned about organ allocation	0	0.0	1	0.1	1	0.1
Family concerned donation may delay the funeral	2	0.5	1	0.1	3	0.3
Strong refusal - probing not appropriate	11	2.7	16	2.2	27	2.4
Other	24	5.9	79	10.6	103	9.0
Total	**405**	**100**	**743**	**100**	**1148**	**100**

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

Table 13.11 shows the proportion of family approaches where a SN-OD was present, for DBD and DCD separately, and overall. Nationally, 95% of DBD and 86% of DCD family approaches had a SN-OD present. There is some variation between teams in the percentage of DCD approaches where a SN-OD was present, however SN-OD presence rates are good across all teams for DBD approaches.

Table 13.11 Percentage of family approaches for which a Specialist Nurse - Organ Donation (SN-OD) was present from the Potential Donor Audit, 1 April 2017 to 31 March 2018, by Organ Donation Services Team (ODST)

ODST	Number of eligible DBD donors whose family were approached	Number of eligible DBD donors where SN-OD present for approach	Percentage of DBD approaches where a SN-OD was present (%)	Number of eligible DCD donors whose family were approached	Number of eligible DCD donors where SN-OD present for approach	Percentage of DCD approaches where a SN-OD was present (%)	Overall percentage of DBD/DCD approaches where a SN-OD was present (%)
Eastern	148	135	91.2	237	200	84.4	**87.0**
London	273	257	94.1	172	143	83.1	**89.9**
Midlands	139	128	92.1	247	204	82.6	**86.0**
North West	212	207	97.6	222	202	91.0	**94.2**
Northern	74	73	98.6	120	104	86.7	**91.2**
Northern Ireland	40	38	95.0	37	34	91.9	**93.5**
Scotland	90	85	94.4	161	128	79.5	**84.9**
South Central	90	85	94.4	152	122	80.3	**85.5**
South East	149	145	97.3	131	117	89.3	**93.6**
South Wales	50	47	94.0	79	70	88.6	**90.7**
South West	94	86	91.5	122	101	82.8	**86.6**
Yorkshire	112	108	96.4	178	166	93.3	**94.5**
TOTAL	**1471**	**1394**	**94.8**	**1858**	**1591**	**85.6**	**89.7**

Table 13.12 shows the effect on the consent/authorisation rate when a SN-OD is present or not present for the approach to a family for a formal organ donation discussion. Evidence shows that the family is more likely to support organ donation when a trained SN-OD is present for the approach and this is particularly apparent for eligible DCD donors. There is wide variation between teams, particularly when a SN-OD is not present for the approach.

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 13.12 DBD and DCD consent/authorisation rates with/without a SN-OD present from the Potential Donor Audit, 1 April 2017 to 31 March 2018, by Organ Donation Services Team (ODST)

	SN-OD present for approach					SN-OD not present for 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	135	77.0	200	70.0	**72.8**	13	69.2	37	37.8	**46.0**	**69.4**
London	257	61.5	143	62.9	**62.0**	16	25.0	29	13.8	**17.8**	**57.5**
Midlands	128	71.9	204	66.2	**68.4**	11	54.5	43	25.6	**31.5**	**63.2**
North West	207	80.7	202	66.3	**73.6**	5	-	20	10.0	**20.0**	**70.5**
Northern	73	72.6	104	62.5	**66.7**	1	-	16	25.0	**23.5**	**62.9**
Northern Ireland	38	73.7	34	67.6	**70.8**	2	-	3	-	**-**	**66.2**
Scotland	85	80.0	128	57.8	**66.7**	5	-	33	0.0	**0.0**	**56.6**
South Central	85	84.7	122	73.0	**77.8**	5	-	30	3.3	**2.9**	**66.9**
South East	145	75.9	117	68.4	**72.5**	4	-	14	21.4	**22.2**	**69.3**
South Wales	47	85.1	70	67.1	**74.4**	3	-	9	-	**33.3**	**70.5**
South West	86	82.6	101	64.4	**72.7**	8	-	21	23.8	**27.6**	**66.7**
Yorkshire	108	69.4	166	75.3	**73.0**	4	-	12	8.3	**12.5**	**69.7**
TOTAL	**1394**	**74.5**	**1591**	**67.1**	**70.5**	**77**	**36.4**	**267**	**18.0**	**22.1**	**65.5**

13.7 Comparison with previous years

Table 13.13 and **Figure 13.6** show the key metrics from the PDA for the last four financial years.

Table 13.13 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	Proportion of family approaches where a SN-OD was present (%)	Number of families who consented to/ authorised donation	Consent/ authorisation rate (%)	Number of actual donors [2]
DBD	**2014-2015**	1734	83.3	96.4	1373	1284	86.7	859	66.9	780
	2015-2016	1747	84.5	96.4	1404	1296	91.0	891	68.8	786
	2016-2017	1787	85.7	97.4	1454	1339	93.1	926	69.2	827
	2017-2018	1954	85.8	98.7	1582	1471	94.8	1066	72.5	955
DCD	**2014-2015**	6761		76.3	4290	2019	72.3	1046	51.8	492
	2015-2016	6501		83.1	4206	1942	77.8	1113	57.3	564
	2016-2017	6233		85.6	4262	1834	80.6	1069	58.3	574
	2017-2018	6281		89.4	4456	1858	85.6	1115	60.0	613
TOTAL	**2014-2015**	8495		80.4	5663	3303	77.9	1905	57.7	1272
	2015-2016	8248		85.9	5610	3238	83.1	2004	61.9	1350
	2016-2017	8020		88.2	5716	3173	85.8	1995	62.9	1401
	2017-2018	8235		91.6	6038	3329	89.7	2181	65.5	1568

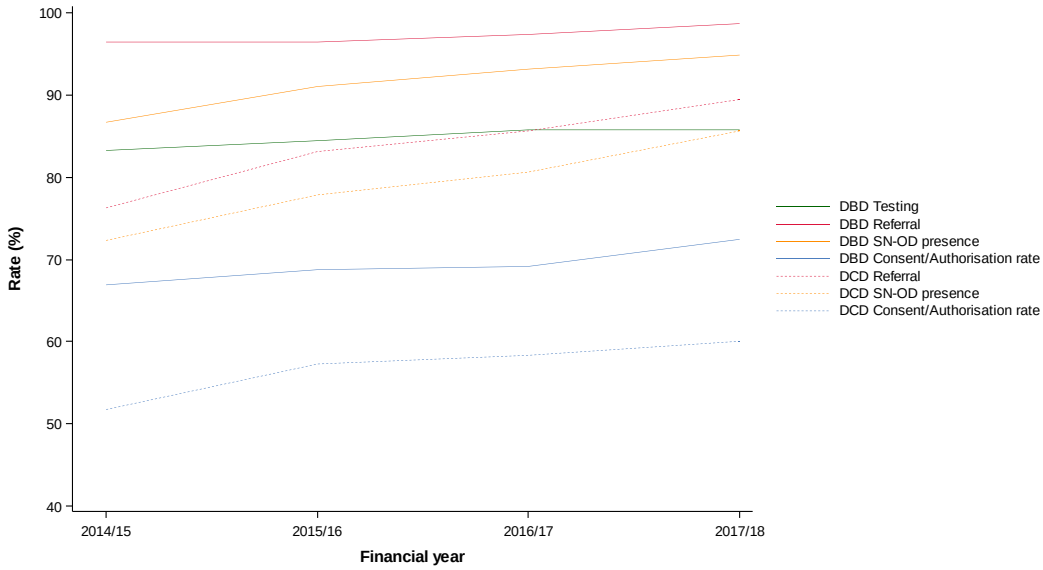
[1] DBD referral criteria: patients where neurological death was suspected (excluding those for which cardiac arrest occurred despite resuscitation, brain stem reflexes returned, and neonates less than 2 months post term; DCD referral criteria: patients for whom imminent death was anticipated

[2] Actual donors resulting from eligible DBD donors includes 13 DCD donors in 2014-2015, 7 DCD donors in 2015-2016, 10 DCD donors in 2016-2017 and 14 DCD donors in 2017-2018

An increase has been observed in the neurological death testing rate, but 14% of patients who met the criteria were not tested in 2017-2018. Details, such as the reasons for not testing, can be found in the accompanying PDA Annual Report available at https://www.odt.nhs.uk/statistics-and-reports/potential-donor-audit/

Increases have been observed in the rates of referral to the SN-ODS as well as the proportion of approaches where a SN-OD was present, especially for DCD. An increase has also been observed in consent/authorisation rates for both DBD and DCD.

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



13.8 Consented/authorised cases not proceeding to solid organ donation

Consent/authorisation for donation was ascertained for 1,066 eligible DBD donors and 1,115 eligible DCD donors; 955 (90%) and 613 (55%) of these cases proceeded to donate at least one solid organ, respectively. **Table 13.14** shows the reasons why donation did not proceed for the 111 eligible DBD and 502 eligible DCD cases where consent/authorisation was ascertained. The main reason reported for consented/authorised eligible DBD donors not proceeding to donate was that the organs were deemed to be medically unsuitable by transplant centres. The main reason for consented/authorised DCD donors was prolonged time to asystole, meaning that the donor did not die in a timeframe suitable for organ donation.

Table 13.14 Reasons why consented/authorised eligible donors did not proceed to donate, 1 April 2017 to 31 March 2018, by donor type

	Donor type				TOTAL	
	DBD		DCD			
Primary reason why donation did not proceed	**N**	**%**	**N**	**%**	**N**	**%**
Family changed mind	4	3.6	25	5.0	29	4.7
Coroner/Procurator Fiscal refusal	19	17.1	15	3.0	34	5.6
Organs deemed medically unsuitable by recipient centres	40	36.0	146	29.1	186	30.3
Organs deemed medically unsuitable on surgical inspection	17	15.3	8	1.6	25	4.1
Prolonged time to asystole	0	0.0	221	44.0	221	36.1
Cardiac Arrest	0	0.0	6	1.2	6	1.0
General instability	17	15.3	36	7.2	53	8.7
Logistic reasons	1	0.9	1	0.2	2	0.3
Positive virology	9	8.1	9	1.8	18	2.9
Family placed conditions on donation	1	0.9	0	0.0	1	0.2
Other	3	2.7	35	7.0	38	6.2
TOTAL	**111**	**100**	**502**	**100**	**613**	**100**

Appendices

Appendix I provides details of the 1,574 deceased solid organ donors reported in 2017-2018. Details are given for each donating hospital and the hospitals have been grouped by former English Strategic Health Authority and country.

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-2016 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** shows the number and type of transplants in the UK into non-UK residents. **Appendix IVB** and **Appendix IVC** show the number and type of transplants resulting from the import to and export from the UK, respectively. 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 I Deceased solid organ donors and donated organs in the UK, 1 April 2017 – 31 March 2018 (2016-2017), by donating hospital

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas	Bowel
East Midlands														
Boston, Pilgrim Hospital	1	(2)	1	(0)	2	(2)	1	(1)	3	0	0	1	0	0
Chesterfield, Chesterfield Royal Hospital	4	(1)	0	(2)	4	(3)	3	(1)	6	0	2	4	1	0
Derby, Royal Derby Hospital	2	(2)	2	(1)	4	(3)	3	(1)	8	0	2	3	3	0
Kettering, Kettering General Hospital	3	(1)	3	(0)	6	(1)	3	(1)	10	0	2	4	1	0
Leicester, Glenfield General Hospital	0	(1)	3	(1)	3	(2)	0	(1)	6	0	0	0	0	0
Leicester, Leicester Royal Infirmary	4	(5)	2	(3)	6	(8)	4	(5)	10	1	2	5	2	0
Lincoln, Lincoln County Hospital	1	(2)	3	(3)	4	(5)	2	(4)	8	0	4	2	2	0
Northampton, Northampton General Hospital	2	(3)	3	(4)	5	(7)	3	(2)	10	0	3	3	2	0
Nottingham, Nottingham City Hospital	1	(1)	3	(5)	4	(6)	3	(3)	8	1	0	3	1	0
Nottingham, Nottingham University Hospital	15	(11)	15	(9)	30	(20)	22	(18)	58	3	12	21	9	2
Sutton-In-Ashfield, King's Mill Hospital	0	(2)	3	(3)	3	(5)	1	(3)	6	0	0	1	1	0
Total	**33**	**(31)**	**38**	**(31)**	**71**	**(62)**	**45**	**(40)**	**133**	**5**	**27**	**47**	**22**	**2**
East of England														
Basildon, Basildon Hospital	1	(2)	2	(4)	3	(6)	2	(3)	4	0	0	3	1	0
Bedford, Bedford Hospital	1	(1)	2	(4)	3	(5)	1	(5)	5	0	0	1	1	0
Bury St Edmunds, West Suffolk Hospital	3	(2)	3	(0)	6	(2)	4	(2)	12	1	2	4	2	0
Cambridge, Addenbrooke's Hospital	23	(17)	28	(21)	51	(38)	40	(31)	99	12	12	38	16	2
Chelmsford, Broomfield Hospital	5	(2)	2	(0)	7	(2)	7	(2)	13	3	4	6	4	0
Colchester, Colchester General Hospital	5	(3)	1	(4)	6	(7)	3	(7)	12	0	0	3	0	0
Great Yarmouth, James Paget Hospital	1	(1)	3	(6)	4	(7)	3	(2)	8	1	2	3	1	0
Huntingdon, Hinchingbrooke Hospital	1	(1)	4	(2)	5	(3)	3	(3)	10	1	2	2	2	1
Ipswich, Ipswich Hospital	5	(4)	4	(3)	9	(7)	7	(6)	18	1	2	7	3	0
Kings Lynn, The Queen Elizabeth Hospital	2	(1)	2	(1)	4	(2)	3	(2)	8	0	0	3	0	0
Luton, Luton And Dunstable Hospital	4	(4)	4	(5)	8	(9)	4	(7)	14	0	0	5	2	0
Norwich, Norfolk And Norwich University Hospital	11	(6)	11	(9)	22	(15)	15	(9)	42	1	2	16	4	0
Papworth, Royal Papworth Hospital	4	(0)	4	(0)	8	(0)	6	(0)	14	0	4	7	3	0
Peterborough, Peterborough City Hospital	3	(2)	4	(3)	7	(5)	5	(4)	12	0	0	6	1	0
Stevenage, Lister Hospital	8	(4)	1	(9)	9	(13)	9	(6)	17	3	0	8	2	0
Watford, Watford General Hospital	6	(2)	3	(3)	9	(5)	7	(5)	17	0	6	7	4	0
Westcliff On Sea, Southend Hospital	1	(4)	0	(0)	1	(4)	1	(4)	2	1	0	1	1	0
Total	**84**	**(56)**	**78**	**(74)**	**162**	**(130)**	**120**	**(98)**	**307**	**24**	**36**	**120**	**47**	**3**
London														
Barnet, Barnet General Hospital	3	(1)	1	(0)	4	(1)	4	(1)	7	3	2	3	1	1

Appendix I Deceased solid organ donors and donated organs in the UK, 1 April 2017 – 31 March 2018 (2016-2017), by donating hospital

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas	Bowel
Carshalton, St Helier Hospital	2	(4)	0	(1)	2	(5)	1	(3)	4	0	0	1	0	0
Chelsea, Chelsea And Westminster Hospital	1	(1)	0	(0)	1	(1)	0	(0)	2	0	0	0	0	0
Croydon, Mayday University Hospital	2	(4)	0	(0)	2	(4)	1	(3)	2	1	0	1	0	0
Evelina Childrens Hospital	1	(1)	0	(0)	1	(1)	1	(1)	2	1	2	1	1	0
Harefield, Harefield Hospital	4	(4)	2	(4)	6	(8)	4	(4)	10	0	2	5	2	0
Harrow, Northwick Park Hospital	2	(2)	2	(2)	4	(4)	3	(3)	5	1	0	4	1	0
Ilford, King George Hospital	1	(2)	0	(0)	1	(2)	1	(0)	2	0	0	1	1	0
Isleworth, West Middlesex University Hospital	3	(5)	0	(0)	3	(5)	2	(4)	6	1	0	2	1	0
Kingston, Kingston Hospital	2	(1)	1	(4)	3	(5)	1	(4)	3	0	0	2	0	0
London, Charing Cross Hospital	12	(10)	3	(3)	15	(13)	10	(10)	24	1	4	11	3	0
London, Great Ormond Street Hospital For Children	5	(1)	1	(0)	6	(1)	6	(0)	12	3	4	5	3	2
London, Hammersmith Hospital	2	(1)	0	(1)	2	(2)	2	(2)	4	0	0	2	0	0
London, Homerton Hospital	4	(0)	0	(0)	4	(0)	3	(0)	6	0	0	4	2	1
London, King's College Hospital	32	(21)	12	(11)	44	(32)	29	(27)	70	9	10	35	19	1
London, National Hospital For Neurology And Neurosurgery	9	(6)	0	(2)	9	(8)	8	(6)	16	2	8	9	4	1
London, Newham General Hospital	2	(1)	0	(0)	2	(1)	1	(1)	4	0	0	1	1	0
London, North Middlesex Hospital	4	(1)	2	(0)	6	(1)	4	(1)	11	0	0	4	2	0
London, Queen Elizabeth Hospital	4	(2)	1	(1)	5	(3)	4	(3)	8	2	0	4	1	0
London, Royal Brompton Hospital	0	(0)	1	(1)	1	(1)	1	(1)	2	0	0	1	1	0
London, Royal Free Hospital	1	(5)	0	(1)	1	(6)	1	(6)	2	0	0	1	0	0
London, St Bartholomew's Hospital	4	(0)	3	(3)	7	(3)	5	(2)	10	1	4	6	3	0
London, St George's Hospital	28	(17)	13	(12)	41	(29)	32	(23)	76	8	15	33	15	1
London, St Mary's Hospital	14	(7)	4	(6)	18	(13)	13	(10)	30	4	2	14	4	0
London, St Thomas' Hospital	6	(1)	7	(2)	13	(3)	10	(2)	26	1	4	10	3	0
London, The Harley Street Clinic	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0	0
London, The Royal London Hospital (Whitechapel)	20	(17)	6	(4)	26	(21)	22	(17)	50	11	9	22	12	1
London, The Whittington Hospital	3	(2)	0	(0)	3	(2)	2	(0)	4	0	0	3	0	0
London, University College Hospital	3	(3)	1	(0)	4	(3)	2	(2)	6	0	0	3	1	0
London, University Hospital Lewisham	3	(1)	0	(1)	3	(2)	3	(2)	6	0	4	3	0	0
London, Whipps Cross Hospital	0	(1)	0	(1)	0	(2)	0	(1)	0	0	0	0	0	0
Orpington, Princess Royal University Hospital	7	(2)	1	(2)	8	(4)	4	(3)	14	1	2	5	1	0
Romford, Queens Hospital	11	(14)	6	(5)	17	(19)	14	(16)	34	4	4	13	6	2
Southall, Ealing Hospital	2	(1)	0	(1)	2	(2)	2	(1)	4	0	2	2	0	0
Uxbridge, Hillingdon Hospital	4	(0)	0	(1)	4	(1)	2	(0)	6	0	2	3	0	0
Total	**201**	**(140)**	**67**	**(69)**	**268**	**(209)**	**198**	**(160)**	**468**	**54**	**80**	**214**	**88**	**10**
North East														

Appendix I Deceased solid organ donors and donated organs in the UK, 1 April 2017 – 31 March 2018 (2016-2017), by donating hospital

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas	Bowel
Darlington, Darlington Memorial Hospital	3	(3)	0	(1)	3	(4)	2	(3)	6	0	0	2	0	0
Durham, University Hospital Of North Durham	2	(4)	3	(2)	5	(6)	4	(5)	10	0	0	4	2	0
Gateshead, Queen Elizabeth Hospital	2	(0)	0	(0)	2	(0)	1	(0)	3	0	0	1	1	0
Middlesbrough, The James Cook University Hospital	8	(11)	12	(3)	20	(14)	15	(12)	40	3	14	11	8	1
Newcastle, Freeman Hospital	2	(3)	2	(1)	4	(4)	3	(3)	8	0	0	3	1	0
Newcastle, Royal Victoria Infirmary	15	(16)	5	(13)	20	(29)	13	(19)	38	2	16	13	4	0
Northumbria, Nsech	4	(7)	3	(5)	7	(12)	3	(9)	12	0	1	3	1	0
South Shields, South Tyneside District General Hospital	1	(0)	0	(1)	1	(1)	0	(1)	0	0	0	1	0	0
Stockton-On-Tees, University Hospital Of North Tees	5	(4)	1	(0)	6	(4)	5	(3)	12	1	2	4	2	0
Sunderland, Sunderland Royal Hospital	2	(4)	3	(1)	5	(5)	3	(4)	10	1	2	3	1	0
Total	**44**	**(52)**	**29**	**(27)**	**73**	**(79)**	**49**	**(59)**	**139**	**7**	**35**	**45**	**20**	**1**
North West														
Ashton-Under-Lyne, Tameside General Hospital	4	(0)	1	(2)	5	(2)	5	(1)	10	2	2	5	1	0
Barrow-In-Furness, Furness General Hospital	3	(0)	0	(1)	3	(1)	2	(1)	4	1	2	3	0	0
Blackburn, Royal Blackburn Hospital	9	(7)	5	(1)	14	(8)	9	(6)	24	2	4	11	6	0
Blackpool, Blackpool Victoria Hospital	4	(3)	3	(2)	7	(5)	3	(3)	14	0	4	3	0	0
Bolton, Royal Bolton Hospital	7	(4)	4	(1)	11	(5)	8	(4)	21	2	2	8	1	0
Bury, Fairfield General Hospital	8	(1)	0	(1)	8	(2)	7	(1)	15	1	0	6	0	0
Carlisle, Cumberland Infirmary	1	(2)	1	(2)	2	(4)	2	(2)	4	0	0	2	1	0
Chester, Countess Of Chester Hospital	5	(5)	1	(2)	6	(7)	4	(6)	12	1	2	4	3	0
Chorley And South Ribble Hospital	1	(0)	0	(0)	1	(0)	1	(0)	2	0	0	1	1	0
Crewe, Leighton Hospital	3	(1)	0	(2)	3	(3)	2	(3)	6	0	0	2	0	0
Lancaster, Royal Lancaster Infirmary	0	(1)	1	(2)	1	(3)	1	(2)	2	0	0	0	1	0
Liverpool, Alder Hey Children's Hospital	1	(2)	2	(1)	3	(3)	1	(3)	4	1	0	1	1	0
Liverpool, Liverpool Heart And Chest Hospital	1	(0)	1	(1)	2	(1)	2	(0)	4	0	0	2	1	0
Liverpool, Royal Liverpool University Hospital	3	(2)	1	(1)	4	(3)	4	(2)	8	1	2	2	1	0
Liverpool, University Hospital Aintree	6	(3)	2	(3)	8	(6)	6	(3)	15	1	4	6	4	0
Liverpool, Walton Centre For Neurology And Neurosurgery	16	(14)	6	(6)	22	(20)	19	(16)	44	0	2	19	10	0
Macclesfield, Macclesfield District General Hospital	0	(0)	1	(0)	1	(0)	0	(0)	0	0	0	1	0	0
Manchester, Manchester Royal Infirmary	6	(0)	4	(1)	10	(1)	6	(1)	18	0	2	5	2	0
Manchester, North Manchester General Hospital	1	(0)	0	(3)	1	(3)	0	(1)	2	0	0	0	0	0
Manchester, Royal Manchester Children's Hospital	1	(1)	1	(1)	2	(2)	1	(1)	4	0	2	1	1	0
Manchester, Wythenshawe Hospital	3	(2)	2	(8)	5	(10)	3	(7)	8	2	2	4	1	0
Oldham, Royal Oldham Hospital (Rochdale Road)	1	(2)	3	(0)	4	(2)	2	(2)	8	0	0	2	0	0
Prescot, Whiston Hospital	8	(5)	6	(3)	14	(8)	9	(6)	26	0	2	9	1	0
Preston, Royal Preston Hospital	13	(11)	10	(9)	23	(20)	14	(15)	40	2	4	15	8	0

Appendix I Deceased solid organ donors and donated organs in the UK, 1 April 2017 – 31 March 2018 (2016-2017), by donating hospital

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas	Bowel
Salford, Salford Royal	24	(20)	14	(11)	38	(31)	28	(24)	75	5	16	27	9	0
Southport, Southport District General Hospital	1	(0)	0	(1)	1	(1)	1	(1)	2	0	0	1	1	0
Stockport, Stepping Hill Hospital	1	(3)	4	(0)	5	(3)	1	(3)	10	0	0	1	0	0
Warrington, Warrington Hospital	3	(1)	0	(3)	3	(4)	2	(2)	5	1	0	2	1	0
Whitehaven, West Cumberland Hospital	2	(1)	0	(2)	2	(3)	2	(0)	4	0	0	2	1	0
Wigan, Royal Albert Edward Infirmary	0	(2)	3	(1)	3	(3)	2	(3)	6	0	0	2	1	0
Wirral, Arrowe Park Hospital	6	(2)	0	(3)	6	(5)	6	(1)	11	1	0	6	2	0
Total	**142**	**(95)**	**76**	**(74)**	**218**	**(169)**	**153**	**(120)**	**408**	**23**	**52**	**153**	**59**	**0**
South Central														
Aylesbury, Stoke Mandeville Hospital	4	(2)	0	(2)	4	(4)	3	(2)	6	0	2	4	1	0
Banbury, Horton General Hospital	1	(0)	0	(0)	1	(0)	1	(0)	2	0	0	1	1	0
Basingstoke, North Hampshire Hospital	1	(2)	2	(0)	3	(2)	2	(1)	6	0	0	2	0	0
Milton Keynes, Milton Keynes General Hospital	2	(1)	1	(0)	3	(1)	2	(0)	6	0	0	2	1	0
Newport, St Mary's Hospital	2	(1)	1	(3)	3	(4)	3	(4)	6	1	4	3	2	0
Oxford, John Radcliffe Hospital	19	(19)	11	(12)	30	(31)	28	(25)	60	5	12	27	12	0
Portsmouth, Queen Alexandra Hospital	7	(8)	6	(4)	13	(12)	8	(10)	26	2	0	8	4	1
Reading, Royal Berkshire Hospital	1	(0)	3	(2)	4	(2)	2	(2)	8	0	2	2	0	0
Southampton, Southampton University Hospitals	17	(18)	19	(9)	36	(27)	25	(20)	68	5	8	23	8	0
Winchester, Royal Hampshire County Hospital	2	(1)	0	(1)	2	(2)	2	(2)	4	0	4	2	0	0
Wycombe, Wycombe General Hospital	0	(0)	1	(0)	1	(0)	1	(0)	2	0	0	1	0	0
Total	**56**	**(52)**	**44**	**(33)**	**100**	**(85)**	**77**	**(66)**	**194**	**13**	**32**	**75**	**29**	**1**
South East Coast														
Ashford, William Harvey Hospital	7	(8)	4	(5)	11	(13)	9	(9)	19	5	2	9	3	0
Brighton, Royal Sussex County Hospital	10	(11)	4	(13)	14	(24)	9	(19)	28	1	8	8	3	0
Camberley, Frimley Park Hospital	3	(4)	2	(1)	5	(5)	3	(3)	10	0	0	3	1	0
Canterbury, Kent And Canterbury Hospital	0	(0)	2	(0)	2	(0)	2	(0)	4	0	0	2	1	0
Chertsey, St Peter's Hospital	5	(1)	3	(7)	8	(8)	6	(5)	13	1	3	7	4	0
Chichester, St Richard's Hospital	2	(6)	1	(1)	3	(7)	2	(7)	6	0	2	2	1	0
Dartford, Darent Valley Hospital	0	(4)	2	(1)	2	(5)	0	(3)	2	0	0	1	0	0
Eastbourne, Eastbourne District General Hospital	2	(2)	2	(1)	4	(3)	1	(2)	6	0	0	2	0	0
Gillingham, Medway Hospital	5	(4)	3	(5)	8	(9)	3	(5)	14	0	0	4	2	0
Guildford, Royal Surrey County Hospital	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0	0
Hastings, Conquest Hospital	1	(3)	3	(3)	4	(6)	2	(4)	8	0	0	2	1	0
Haywards Heath, Princess Royal Hospital	1	(0)	0	(1)	1	(1)	1	(1)	2	0	0	1	1	0
Maidstone, Maidstone District General Hospital	2	(0)	0	(1)	2	(1)	2	(1)	4	1	2	2	1	0

Appendix I Deceased solid organ donors and donated organs in the UK, 1 April 2017 – 31 March 2018 (2016-2017), by donating hospital

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas	Bowel
Margate, Queen Elizabeth The Queen Mother Hospital	2	(2)	1	(3)	3	(5)	2	(4)	6	0	0	2	0	0
Redhill, East Surrey Hospital	4	(3)	3	(0)	7	(3)	6	(3)	14	1	4	6	1	0
Slough, Wexham Park Hospital	5	(4)	0	(3)	5	(7)	5	(7)	10	0	2	5	2	0
Tunbridge Wells, Tunbridge Wells Hospital	5	(2)	0	(0)	5	(2)	3	(2)	8	0	4	4	2	0
Worthing, Worthing Hospital	1	(2)	1	(3)	2	(5)	1	(3)	4	0	0	1	1	0
Total	**55**	**(57)**	**31**	**(48)**	**86**	**(105)**	**57**	**(79)**	**158**	**9**	**27**	**61**	**24**	**0**
South West														
Barnstaple, North Devon District Hospital	3	(0)	0	(2)	3	(2)	2	(1)	6	1	2	1	0	0
Bath, Royal United Hospital	3	(6)	2	(2)	5	(8)	4	(8)	10	0	2	4	1	0
Bournemouth, Royal Bournemouth General Hospital	4	(0)	4	(4)	8	(4)	5	(1)	14	1	0	6	1	0
Bristol, Bristol Royal Hospital For Children	1	(1)	0	(2)	1	(3)	1	(3)	2	1	0	1	1	0
Bristol, Bristol Royal Infirmary	4	(6)	4	(6)	8	(12)	6	(10)	14	1	0	7	0	0
Bristol, Southmead Hospital	22	(15)	10	(7)	32	(22)	26	(17)	61	8	10	25	15	0
Cheltenham, Cheltenham General Hospital	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0	0
Dorchester, Dorset County Hospital	3	(0)	3	(1)	6	(1)	4	(1)	12	1	2	4	3	0
Exeter, Royal Devon And Exeter Hospital (Wonford)	2	(1)	0	(2)	2	(3)	2	(3)	4	0	0	2	1	0
Gloucester, Gloucestershire Royal Hospital	3	(4)	1	(1)	4	(5)	2	(4)	6	1	4	3	1	0
Plymouth, Derriford Hospital	13	(15)	7	(8)	20	(23)	18	(20)	39	4	4	18	6	0
Poole, Poole General Hospital	2	(2)	1	(1)	3	(3)	3	(1)	6	1	2	2	3	0
Salisbury, Salisbury District Hospital	3	(1)	1	(1)	4	(2)	4	(2)	8	1	2	3	0	0
Swindon, Great Western Hospital	1	(6)	2	(3)	3	(9)	1	(8)	4	0	0	2	0	0
Taunton, Taunton And Somerset Hospital (Musgrove Park)	2	(2)	4	(1)	6	(3)	5	(2)	12	0	4	5	1	0
Torquay, Torbay Hospital	2	(3)	2	(0)	4	(3)	2	(1)	6	0	0	3	1	0
Truro, Royal Cornwall Hospital (Treliske)	2	(1)	4	(3)	6	(4)	3	(1)	12	1	2	3	1	0
Weston-Super-Mare, Weston General Hospital	2	(0)	0	(0)	2	(0)	2	(0)	4	0	2	2	1	0
Yeovil, Yeovil District Hospital	0	(0)	1	(0)	1	(0)	0	(0)	2	0	0	0	0	0
Total	**72**	**(64)**	**46**	**(44)**	**118**	**(108)**	**90**	**(84)**	**222**	**21**	**36**	**91**	**36**	**0**
West Midlands														
Birmingham, Birmingham Children's Hospital	0	(2)	1	(3)	1	(5)	1	(3)	2	0	0	1	1	0
Birmingham, Birmingham Heartlands Hospital	3	(11)	1	(1)	4	(12)	3	(10)	6	0	2	4	2	0
Birmingham, City Hospital	2	(2)	5	(0)	7	(2)	5	(2)	14	0	2	5	1	0
Birmingham, Queen Elizabeth Hospital Birmingham	17	(17)	11	(6)	28	(23)	23	(17)	54	6	8	21	12	0
Burton-On-Trent, Queen's Hospital	4	(5)	1	(3)	5	(8)	5	(6)	10	1	3	4	2	0
Coventry, University Hospital	9	(9)	8	(5)	17	(14)	10	(12)	30	0	4	11	5	0
Dudley, Russells Hall Hospital	1	(0)	0	(2)	1	(2)	1	(1)	2	0	0	1	0	0

Appendix I Deceased solid organ donors and donated organs in the UK, 1 April 2017 – 31 March 2018 (2016-2017), by donating hospital

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas	Bowel
Hereford, The County Hospital	1	(3)	0	(1)	1	(4)	1	(4)	2	0	0	1	1	1
Redditch, The Alexandra Hospital	1	(1)	2	(0)	3	(1)	1	(1)	6	0	0	1	1	1
Shrewsbury, Royal Shrewsbury Hospital	3	(0)	2	(2)	5	(2)	2	(1)	8	1	2	3	1	0
Stoke-On-Trent, Royal Stoke University Hospital	13	(7)	15	(18)	28	(25)	21	(14)	54	4	3	22	12	3
Sutton Coldfield, Good Hope District General Hosp.	4	(3)	1	(3)	5	(6)	3	(3)	10	0	0	3	0	0
Telford, The Princess Royal Hospital	1	(0)	0	(0)	1	(0)	1	(0)	2	1	0	1	1	0
Walsall, Manor Hospital	0	(1)	0	(1)	0	(2)	0	(2)	0	0	0	0	0	0
Warwick, Warwick Hospital	1	(1)	0	(0)	1	(1)	1	(1)	2	1	0	1	0	0
West Bromwich, Sandwell General Hospital	2	(2)	1	(0)	3	(2)	1	(2)	5	0	0	1	1	0
Wolverhampton, New Cross Hospital	2	(2)	5	(5)	7	(7)	4	(4)	12	0	0	5	1	0
Worcester, Worcestershire Royal Hospital	3	(0)	5	(1)	8	(1)	6	(0)	16	0	4	6	3	0
Total	**67**	**(66)**	**58**	**(51)**	**125**	**(117)**	**89**	**(83)**	**235**	**14**	**28**	**91**	**44**	**5**
Yorkshire and the Humber														
Barnsley, Barnsley District General Hospital	1	(0)	2	(2)	3	(2)	2	(1)	6	1	2	2	1	0
Bradford, Bradford Royal Infirmary	4	(2)	4	(0)	8	(2)	4	(1)	14	0	0	5	0	0
Cottingham, Castle Hill Hospital	1	(0)	5	(0)	6	(0)	5	(0)	12	0	0	5	2	0
Dewsbury, Dewsbury And District Hospital	0	(1)	0	(2)	0	(3)	0	(2)	0	0	0	0	0	0
Doncaster, Doncaster Royal Infirmary	4	(3)	0	(1)	4	(4)	4	(4)	8	0	2	4	1	0
Grimsby, Diana Princess Of Wales Hospital	3	(0)	1	(0)	4	(0)	4	(0)	8	1	0	4	1	0
Halifax, Calderdale Royal Hospital	2	(4)	1	(0)	3	(4)	3	(3)	6	0	0	3	1	0
Harrogate, Harrogate District Hospital	0	(1)	2	(1)	2	(2)	2	(1)	4	1	0	2	1	0
Huddersfield, Huddersfield Royal Infirmary	3	(4)	0	(3)	3	(7)	3	(6)	6	2	4	3	2	0
Hull, Hull Royal Infirmary	6	(5)	11	(9)	17	(14)	10	(10)	32	1	2	11	2	0
Keighley, Airedale General Hospital	0	(2)	1	(0)	1	(2)	0	(1)	2	0	0	0	0	0
Leeds, Leeds General Infirmary	15	(16)	21	(11)	36	(27)	25	(21)	70	5	10	24	11	0
Leeds, St James's University Hospital	0	(0)	3	(1)	3	(1)	0	(1)	6	0	0	0	0	0
Rotherham, Rotherham District General Hospital	0	(2)	0	(0)	0	(2)	0	(2)	0	0	0	0	0	0
Scarborough, Scarborough General Hospital	4	(2)	2	(1)	6	(3)	4	(2)	12	1	0	4	1	0
Scunthorpe, Scunthorpe General Hospital	1	(0)	2	(0)	3	(0)	3	(0)	6	2	0	3	2	0
Sheffield, Northern General Hospital	7	(7)	5	(1)	12	(8)	10	(6)	24	3	2	9	6	0
Sheffield, Royal Hallamshire Hospital	8	(7)	6	(3)	14	(10)	10	(7)	28	4	10	10	5	0
Sheffield, Sheffield Children's Hospital	1	(0)	0	(1)	1	(1)	1	(1)	2	1	2	1	0	0
Wakefield, Pinderfields General Hospital	2	(3)	1	(2)	3	(5)	3	(3)	6	1	6	3	3	0
Worksop, Bassetlaw District General Hospital	0	(1)	0	(1)	0	(2)	0	(2)	0	0	0	0	0	0
York, York District Hospital	5	(2)	0	(4)	5	(6)	5	(3)	9	0	0	5	1	0
Total	**67**	**(62)**	**67**	**(43)**	**134**	**(105)**	**98**	**(77)**	**261**	**23**	**40**	**98**	**40**	**0**

Appendix I Deceased solid organ donors and donated organs in the UK, 1 April 2017 – 31 March 2018 (2016-2017), by donating hospital

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas	Bowel
Channel Islands														
Guernsey, Princess Elizabeth Hospital	1	(2)	0	(0)	1	(2)	1	(2)	2	0	0	1	0	0
St Helier, Jersey General Hospital	2	(1)	0	(2)	2	(3)	1	(3)	4	0	0	1	0	0
Total	**3**	**(3)**	**0**	**(2)**	**3**	**(5)**	**2**	**(5)**	**6**	**0**	**0**	**2**	**0**	**0**
Isle of Man														
Douglas, Nobles I-O-M Hospital	0	(2)	0	(1)	0	(3)	0	(2)	0	0	0	0	0	0
Total	**0**	**(2)**	**0**	**(1)**	**0**	**(3)**	**0**	**(2)**	**0**	**0**	**0**	**0**	**0**	**0**
England	**824**	**(680)**	**534**	**(497)**	**1358**	**1177)**	**978**	**(873)**	**2531**	**193**	**393**	**997**	**409**	**22**
Northern Ireland														
Belfast, Antrim Hospital	1	(3)	0	(1)	1	(4)	1	(3)	2	0	0	1	0	0
Belfast, Belfast City Hospital	0	(1)	2	(0)	2	(1)	1	(1)	4	0	0	1	1	0
Belfast, Mater Infirmorum Hospital	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0	0
Belfast, Royal Belfast Hospital For Sick Children	1	(0)	0	(0)	1	(0)	1	(0)	2	1	0	1	1	0
Belfast, Royal Victoria Hospital	9	(16)	5	(3)	14	(19)	11	(15)	26	2	9	11	8	0
Belfast, The Ulster Hospital	3	(3)	4	(0)	7	(3)	3	(3)	14	0	2	3	1	0
Coleraine, Causeway Hospital	2	(2)	1	(1)	3	(3)	1	(3)	4	0	0	2	0	0
Enniskillen, South West Acute Hospital	3	(3)	1	(1)	4	(4)	3	(2)	8	2	0	3	3	0
Londonderry, Altnagelvin Area Hospital	3	(2)	0	(1)	3	(3)	2	(2)	5	0	0	2	0	0
Portadown, Craigavon Area Hospital	3	(1)	2	(3)	5	(4)	4	(2)	10	2	2	3	3	0
Total	**25**	**(32)**	**15**	**(10)**	**40**	**(42)**	**27**	**(32)**	**75**	**7**	**13**	**27**	**17**	**0**
Scotland														
Aberdeen, Aberdeen Royal Infirmary	6	(4)	6	(13)	12	(17)	6	(6)	18	1	4	5	3	0
Airdrie, Monklands District General Hospital	2	(0)	0	(0)	2	(0)	2	(0)	4	0	0	2	1	0
Ayr, The Ayr Hospital	0	(1)	0	(1)	0	(2)	0	(1)	0	0	0	0	0	0
Dumfries, Dumfries And Galloway Royal Infirmary	4	(2)	1	(0)	5	(2)	3	(0)	10	0	2	3	1	0
Dundee, Ninewells Hospital	2	(5)	4	(3)	6	(8)	3	(6)	12	0	2	2	2	0
East Kilbride, Hairmyres Hospital	1	(5)	0	(2)	1	(7)	1	(6)	2	0	0	1	1	0
Edinburgh, Royal Hospital For Sick Children	0	(0)	1	(0)	1	(0)	0	(0)	2	0	0	0	0	0
Edinburgh, Royal Infirmary Of Edinburgh	4	(7)	6	(10)	10	(17)	5	(13)	14	1	0	7	3	1
Edinburgh, Western General Hospital	6	(5)	10	(8)	16	(13)	10	(5)	31	2	6	10	3	0

Appendix I Deceased solid organ donors and donated organs in the UK, 1 April 2017 – 31 March 2018 (2016-2017), by donating hospital

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas	Bowel
Glasgow, Glasgow Royal Infirmary	4	(4)	0	(2)	4	(6)	3	(5)	6	0	0	4	0	0
Glasgow, Golden Jubilee National Hospital	1	(0)	1	(3)	2	(3)	2	(2)	4	0	0	1	1	0
Glasgow, Queen Elizabeth University Hospital	11	(20)	6	(4)	17	(24)	14	(17)	34	2	10	13	10	0
Glasgow, The Royal Hospital For Children	1	(0)	0	(2)	1	(2)	1	(1)	0	1	0	1	0	0
Inverness, Raigmore Hospital	5	(1)	1	(1)	6	(2)	5	(1)	12	1	4	5	4	0
Kilmarnock, Crosshouse Hospital	4	(5)	1	(1)	5	(6)	5	(5)	10	0	4	5	1	0
Kirkcaldy, Victoria Hospital	1	(4)	1	(1)	2	(5)	2	(5)	4	0	2	2	1	0
Larbert, Forth Valley Royal Hospital	1	(4)	1	(0)	2	(4)	1	(4)	4	0	2	1	1	1
Livingston, St John's Hospital	0	(1)	1	(0)	1	(1)	0	(1)	2	0	0	0	0	0
Melrose, Borders General Hospital	1	(0)	0	(0)	1	(0)	1	(0)	2	0	2	1	1	0
Paisley, Royal Alexandra Hospital	3	(1)	1	(2)	4	(3)	3	(1)	8	1	2	3	2	0
Perth, Perth Royal Infirmary	0	(2)	0	(0)	0	(2)	0	(2)	0	0	0	0	0	0
Wishaw, Wishaw General Hospital	4	(6)	0	(3)	4	(9)	3	(5)	6	0	4	4	2	0
Total	**61**	**(77)**	**41**	**(56)**	**102**	**(133)**	**70**	**(86)**	**185**	**9**	**44**	**70**	**37**	**2**
Wales														
Abergavenny, Nevill Hall Hospital	1	(3)	1	(1)	2	(4)	1	(2)	4	0	2	1	0	0
Aberystwyth, Bronglais Hospital	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0	0
Bangor, Ysbyty Gwynedd District General Hospital	6	(4)	0	(0)	6	(4)	5	(4)	10	0	0	6	3	0
Bodelwyddan, Glan Clwyd District General Hospital	1	(2)	2	(2)	3	(4)	3	(2)	6	0	0	3	0	0
Bridgend, Princess Of Wales Hospital	2	(0)	0	(1)	2	(1)	1	(0)	2	0	0	2	0	0
Cardiff, University Of Wales Hospital	14	(14)	13	(8)	27	(22)	20	(17)	54	4	8	19	12	1
Carmarthen, Glangwili General Hospital	3	(0)	3	(1)	6	(1)	5	(1)	12	2	4	5	2	0
Llanelli, Prince Philips Hospital	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0	0
Merthyr Tydfil, Prince Charles Hospital	1	(4)	4	(0)	5	(4)	2	(4)	10	0	2	2	1	0
Newport, Royal Gwent Hospital	5	(4)	3	(4)	8	(8)	5	(5)	14	0	0	6	2	0
Penarth, Llandough Hospital	0	(0)	1	(0)	1	(0)	1	(0)	2	0	0	1	0	0
Pontypridd, Royal Glamorgan Hospital	5	(0)	1	(0)	6	(0)	5	(0)	10	3	0	5	1	0
Swansea, Morriston Hospital	4	(2)	0	(1)	4	(3)	3	(3)	5	2	0	2	0	0
Wrexham, Maelor General Hospital	3	(5)	1	(3)	4	(8)	3	(5)	7	0	0	3	0	0
Total	**45**	**(40)**	**29**	**(21)**	**74**	**(61)**	**54**	**(45)**	**136**	**11**	**16**	**55**	**21**	**1**

Appendix IIA Numbers of donors after brain death and organs retrieved in the UK, 1 April 2017 - 31 March 2018, by country/ Strategic Health Authority

	Donors				Organs					
Country/ Strategic Health Authority	**All donors**	**pmp**	**Multi-organ donors**	**pmp**	**Kidney**	**Heart**	**Lung**	**Liver**	**Pancreas**	**Bowel**
North East	38	14.4	29	11.0	69	6	21	28	12	1
North West	143	19.8	121	16.8	269	19	44	122	51	1
Yorkshire and The Humber	67	12.3	60	11.0	129	14	32	61	27	0
East Midlands	48	10.2	43	9.1	89	11	18	46	18	2
West Midlands	64	11.0	56	9.7	117	13	20	57	31	4
East of England	106	17.3	95	15.5	197	27	44	99	40	6
London	147	16.7	113	12.9	249	31	50	127	50	7
South East Coast	77	16.5	65	13.9	138	15	37	70	32	0
South Central	58	13.3	51	11.7	112	8	22	51	20	1
South West	71	12.9	62	11.2	132	21	30	64	25	0
England	**819**	**14.8**	**695**	**12.6**	**1501**	**165**	**318**	**725**	**306**	**22**
Isle of Man	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Channel Islands	**2**	**12.5**	**1**	**6.3**	**4**	**0**	**0**	**1**	**0**	**0**
Wales	**49**	**15.8**	**43**	**13.8**	**88**	**11**	**14**	**44**	**17**	**1**
Scotland	**61**	**11.3**	**57**	**10.6**	**110**	**9**	**42**	**59**	**30**	**2**
Northern Ireland	**24**	**12.9**	**20**	**10.8**	**45**	**6**	**10**	**21**	**11**	**0**
TOTAL	**955**	**14.5**	**816**	**12.4**	**1748**	**191**	**384**	**850**	**364**	**25**

Appendix IIB Numbers of donors after circulatory death and organs retrieved in the UK, 1 April 2017 - 31 March 2018, by country/ Strategic Health Authority

	Donors				Organs					
Country/ Strategic Health Authority	**All donors**	**pmp**	**Multi-organ donors**	**pmp**	**Kidney**	**Heart**	**Lung**	**Liver**	**Pancreas**	**Bowel**
North East	25	9.5	12	4.5	50	0	8	9	6	0
North West	82	11.4	38	5.3	153	4	8	38	13	0
Yorkshire and The Humber	64	11.8	35	6.4	124	8	10	35	13	0
East Midlands	44	9.3	20	4.2	86	0	11	18	11	0
West Midlands	53	9.1	27	4.7	103	1	10	26	8	0
East of England	91	14.8	56	9.1	174	7	12	52	18	0
London	40	4.6	21	2.4	73	5	8	19	8	0
South East Coast	46	9.9	16	3.4	82	2	0	21	4	0
South Central	38	8.7	20	4.6	76	1	6	19	8	0
South West	47	8.5	30	5.4	91	1	4	27	11	0
England	**530**	**9.6**	**275**	**5.0**	**1012**	**29**	**77**	**264**	**100**	**0**
Isle of Man	**1**	**12.5**	**1**	**12.5**	**2**	**0**	**0**	**1**	**1**	**0**
Channel Islands	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Wales	**30**	**9.6**	**15**	**4.8**	**58**	**0**	**2**	**15**	**8**	**0**
Scotland	**43**	**8.0**	**16**	**3.0**	**79**	**0**	**2**	**14**	**6**	**0**
Northern Ireland	**15**	**8.1**	**6**	**3.2**	**28**	**0**	**1**	**5**	**5**	**0**
TOTAL	**619**	**9.4**	**313**	**4.8**	**1179**	**29**	**82**	**299**	**120**	**0**

Appendix III	Populations for SHA's, 2017-2018 Mid-2016 estimates based on ONS 2011 Census figures
SHA	**Population (millions)**
North East	2.64
North West	7.22
Yorkshire and The Humber	5.43
East Midlands	4.72
West Midlands	5.8
East of England	6.13
London	8.79
South East Coast[1]	4.66
South Central[1]	4.35
South West	5.52
England	**55.27**
Isle of Man	**0.08**
Channel Islands	**0.16**
Wales	**3.11**
Scotland	**5.4**
Northern Ireland	**1.86**
TOTAL	**65.88**

[1] Population obtained by proportionally dividing population of South East (9.01 million) based on previous data.

Appendix IVA **UK solid organ transplants from deceased UK donors[1] to non-UK residents, 1 April 2015 to 31 March 2018**

Transplant type by year

Year	Transplant type	Residency of recipient ROI	Other EU	Non-EU	Total
2015/16	Heart	1	0	0	1
	Liver	1	10	1	12
	Double lung	2	0	0	2
	Bowel only	0	0	1	1
	Modified Mulitvisceral	1	0	0	1
	Total	**5**	**10**	**2**	**17**
2016/17	Kidney	0	0	1	1
	Heart	1	0	0	1
	Liver	4	4	1	9
	Double lung	1	0	0	1
	Liver and kidney	2	0	0	2
	Total	**8**	**4**	**2**	**14**
2017/2018	Heart	3	0	1	4
	Liver	5	8	6	19
	Double lung	1	0	0	1
	Heart and lung	1	0	0	1
	Bowel only	0	1	0	1
	Total	**10**	**9**	**7**	**26**

ROI = Republic of Ireland
[1] based on country of donor hospital

Appendix IVB **UK solid organ transplants from deceased non-UK donors[1] to UK residents, 1 April 2015 to 31 March 2018**

Transplant type by year

Year	Transplant type	Country of donation			
		ROI	Other EU	Non-EU	Total
2015/16	Kidney	1	0	0	1
	En-bloc kidney	2	0	0	2
	Heart	2	3	0	5
	Liver	1	1	0	2
	Lung	2	0	0	2
	Double lung	1	0	0	1
	Total	**9**	**4**	**0**	**13**
2016/17	Kidney	3	0	0	3
	En-bloc kidney	1	3	0	4
	Heart	4	9	0	13
	Liver	10	3	0	13
	Double lung	2	3	0	5
	Multivisceral	0	1	0	1
	Total	**20**	**19**	**0**	**39**
2017/18	Kidney	4	0	0	4
	En-bloc kidney	0	0	0	0
	Heart	3	3	0	6
	Liver	7	4	0	11
	Double lung	0	0	0	0
	Multivisceral	0	1	0	0
	Total	**14**	**8**	**0**	**22**

ROI = Republic of Ireland
[1] based on country of donor hospital

Appendix IVC **Non-UK solid organ transplants from deceased UK donors[1] to non-UK hospitals, 1 April 2015 to 31 March 2018**

Transplant type by year

Year	Transplant type	Residency of recipient ROI	Other EU	Non-EU	Total
2015/16	Heart	0	3	0	3
	Liver	3	0	0	3
	Double lung	0	2	0	2
	Total	**3**	**5**	**0**	**8**
2016/17	Heart	0	2	0	2
	Liver	6	0	0	6
	Double lung	0	2	0	2
	Total	**6**	**4**	**0**	**10**
2017/18	Heart	0	4	0	4
	Liver	3	1	0	4
	Double lung	0	5	0	5
	Total	**3**	**10**	**0**	**13**

ROI = Republic of Ireland
[1] based on country of donor hospital

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