NHS
Blood and Transplant

Organ Donation and Transplantation

Activity Report 2019/20

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 12 May 2020 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.

NHS regions 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 **Appendix I**. Donation and transplant rates in this report are presented per million population (pmp): population figures used throughout this report are mid-2018 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.

The COVID-19 pandemic has led to unprecedented challenges for UK transplantation. Concerns about the ability to care for transplant recipients, lack of access to resource because it is being used for patients in the pandemic, and the risk versus benefit for immunosuppressed transplant recipients, have resulted in a major reduction in the number of organ transplants undertaken.

Waiting list figures at the 31 March 2020 do not accurately reflect the need for an organ transplant due to the COVID-19 pandemic. Different practices have been established across the UK and across organ groups with regards to waiting list management. Due to this, a snapshot of the waiting list at 29 February 2020 has been used to better reflect activity near the end of the 2019-2020 financial year.

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

The last decade has seen a huge increase in the number of deceased donors and lifesaving or life transforming transplants. Until February 2020, we were confident that we would once again see a UK record number of organ donors and transplants. Then the global COVID-19 pandemic hit in March and the impact was felt across the whole of the NHS and in every aspect of UK society.

In March 2020 we witnessed a sharp reduction in activity with a decline in deceased donors as well as the number of transplants. This was due to concerns for patient safety and the fact NHS resources were required to deal with the COVID-19 crisis.

Through dedication, effort and with the support of the wider NHS, we were able to keep aspects of organ donation and transplantation available for highly urgent patients even during the peak of the surge of COVID-19. Yet there was still a fall in the overall number of deceased organ donors - 1,580 compared to 1,600 last year. Subsequently, the number of patients who received a deceased organ donor transplant fell from 3,952 to 3,760.

Unfortunately COVID-19 also had a big impact on living donation kidney transplant numbers just as it did in most other countries. Living donor transplants fell by 4% to 1,001.

We fully realise that this has been a very worrying time for patients who are awaiting a transplant and for the families of those patients. We would like to take this opportunity to reassure them that the recovery of donation and transplantation is well underway and the majority of transplant units have reopened, with all heart, lungs and liver transplant units functioning at the time of writing.

Despite these challenges, it is testament to the strong foundations laid in the UK that we have seen incredible family support for organ donation. Even during the worst days of the pandemic there were 91 deceased organ donors (March 2020) from UK intensive care units. Impressively the overall consent/authorisation rate for organ donation has continued to rise over the last year to 68%. During the pandemic crisis this consent rate was even higher at 74.5% (March 2020).

Looking forward we are committed to do all that we can to increase the number of organ donors and transplants even as we continue to fight COVID-19. We hope that, with England's move to an opt out system as a result of Max and Keira's law, we will continue to see improved public support for organ donation as Wales has seen since the legislative change in December 2015. Scotland is intending to commence its own deemed authorisation legislation in the Spring of 2021.

With the new law in effect in England since 20 May 2020, it is important that people know that they still have a choice whether or not to donate. Families will still be consulted, and people's faith culture and beliefs will continue to be respected. We are grateful to all those in the faith and belief community across the UK who advised us during the preparation for the legislative change.

As the current pandemic situation improves, we believe that the new law and growing public support will lead to even more lives saved.

Anthony Clarkson
Director - Organ and Tissue Donation and Transplantation

Prof John Forsythe
Medical Director - Organ and Tissue Donation and Transplantation

Dr Dale Gardiner
National Clinical Lead For Organ Donation

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Summary of Donor and Transplant Activity

In the financial year to 31 March 2020, compared with the previous year

- there was a 1% fall in the number of deceased donors to 1,580
- the number of donors after brain death fell by 2% to 946, while the number of donors after circulatory death fell by 1% to 634
- the number of living donors fell by 4% to 1,001, accounting for 39% of the total number of organ donors
- the total number of patients whose lives were potentially saved or improved by an organ transplant fell by 5% to 4,761

The total number of patients registered for a transplant has increased slightly (by 1%), so that:

- there were 6,138 patients waiting for a transplant at the end of February 2020, with a further 3,484 temporarily suspended from transplant lists
- 372 patients died while on the active list waiting for their transplant and a further 746 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:

- a fall of 4% in the total number of kidney transplants
- an increase of 1% in the total number of pancreas containing transplants
- a fall of 6% in the total number of liver transplants
- a fall of 5% in the total number of heart transplants
- a fall of 4% in the total number of lung or heart-lung transplants
- the total number of intestinal transplants has remained approximately stable
- a fall of 6% in the total number of corneas retrieved to NHSBT Eye Banks and a fall of 2% in the total number of corneal transplants
- No change in the overall referral rate of potential donors at 94% but an increase in the proportion of approaches where a Specialist Nurse - Organ Donation was present, from 91% to 92%
- an increase in the overall consent/authorisation rate for organ donation from 67% to 68%
- an increase in the number of opt-in registrations on the ODR, from 25.3 to 26.0 million at the end of March 2020. There were 1.5 million opt-out registrants
- an increase in capacity of the National Organ Retrieval Service to now provide 8 abdominal surgical teams on-call at any given time; previously this was 7

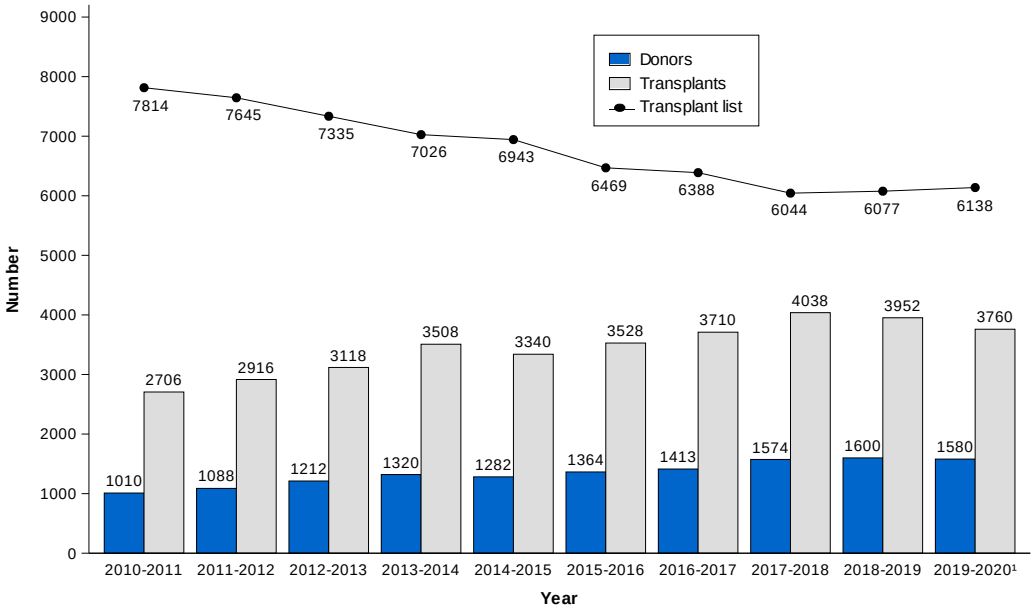
Overview of Organ Donation and Transplantation

A summary of organ donation and transplantation activity in the UK during the financial year from 1 April 2019 to 31 March 2020

2.1 Summary of activity

Many patients became suspended from the active transplant list as transplant centres reacted to the COVID-19 pandemic in March 2020. Using 29 February 2020 as a more representative date for the number of patients on the active transplant list at year end this year, there were 61 more active patients than at the end of March last year. This small increase 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 2010 to 31 March 2020) and the number of patients registered on the transplant lists at 31 March each year are shown in **Figure 2.1**. There were 192 fewer deceased donor transplants in 2019-2020 than in the previous year, representing a 5% fall. There was a 1% fall in the number of deceased donors.

Figure 2.1 **Number of deceased donors and transplants in the UK, 1 April 2010 - 31 March 2020, and patients on the active transplant list at 31 March**



¹ Waiting list as at 29 February 2020

Figure 2.2 shows the number of deceased and living donors for 2010-2020. The numbers of deceased donors after brain death (DBD) and deceased donors after circulatory death (DCD) have both increased over the decade. In 2019-2020 the numbers of DBD and DCD donors fell slightly compared to the previous year, to 946 and 634 respectively. The number of living donors has fallen over the last 7 years, from a peak of 1,148 donors in 2013-2014 to 1,001 in 2019-2020, which represents a 4% fall compared with 2018-2019.

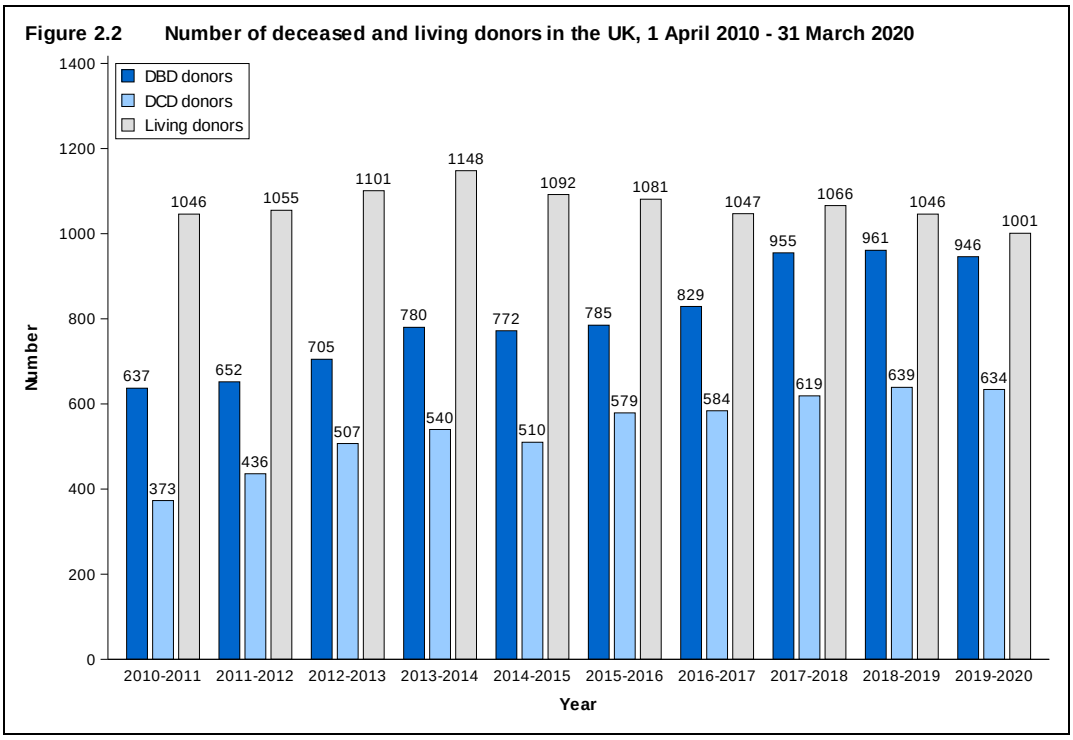
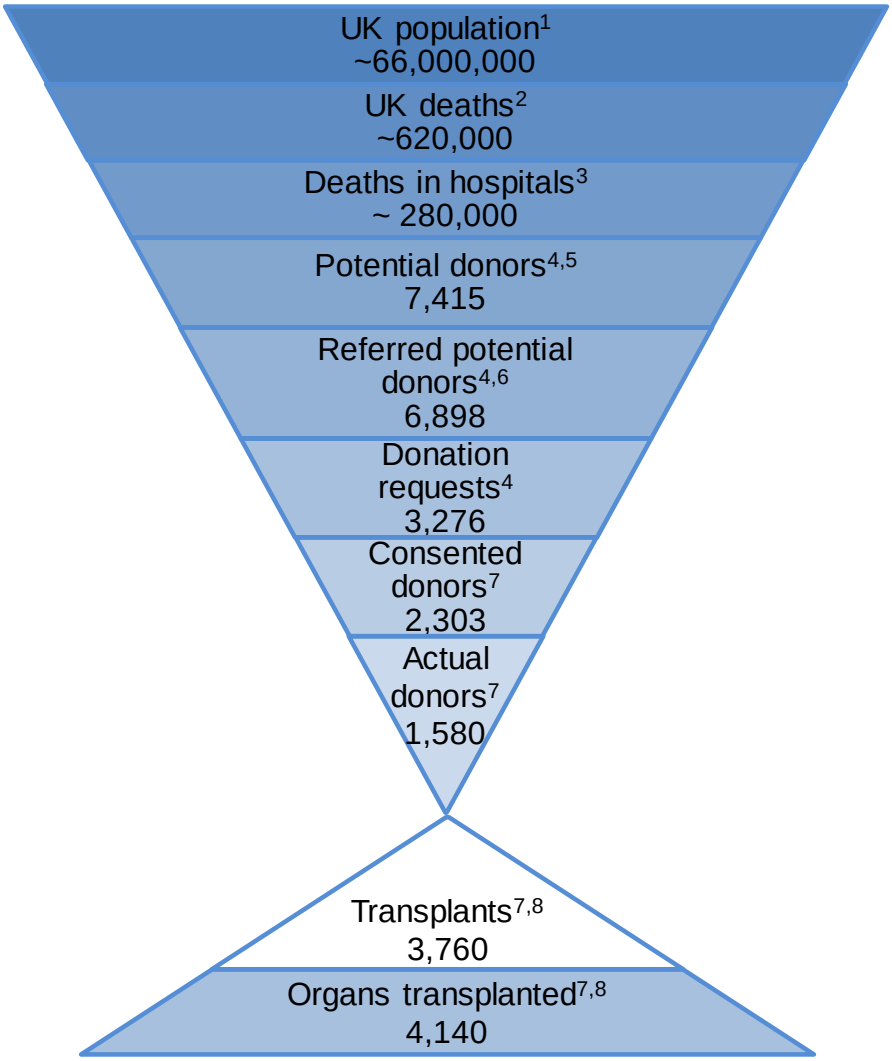


Figure 2.3 shows the potential deceased organ donor population in the UK. Not everyone can be a deceased organ donor and this figure highlights the small proportion of deaths in the UK that represent potential donors. *Please note that the information presented comes from several different sources. The 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 2019 – 31 March 2020



[1] Mid 2018 estimates: www.ons.gov.uk
[2] 2018 data: England & Wales www.ons.gov.uk; Scotland www.gro-scotland.gov.uk; Northern Ireland www.nisra.gov.uk
[3] 2018 data: England & Wales www.ons.gov.uk; Scotland www.isdscotland.org; Northern Ireland www.nisra.gov.uk
[4] 2019/2020 data, NHSBT, Potential Donor Audit as at 8 June 2020
[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] Referred potential donor – Potential donor who was discussed with a Specialist Nurse – Organ Donation
[7] 2019/2020 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 2019-2020 and patients on the transplant list at 29 February 2020 for each country in the UK and overall.

Table 2.1 Deceased donors and transplants 1 April 2019 - 31 March 2020, and transplant lists as at 29 February 2020, by country of residence

	Country of residence[1]									
	England		Wales		Scotland		Northern Ireland		TOTAL[2]	
Organ	N	(pmp)	N	(pmp)	N	(pmp)	N	(pmp)	N	(pmp)
Kidney										
Deceased donors	1235	(22.1)	82	(26.1)	90	(16.5)	44	(23.4)	1474	(22.2)
Transplants[3]	1957	(35.0)	90	(28.7)	180	(33.1)	43	(22.9)	2280	(34.3)
Transplant list	4215	(75.3)	200	(63.7)	444	(81.6)	79	(42.0)	4960	(74.7)
Pancreas										
Deceased donors	371	(6.6)	31	(9.9)	30	(5.5)	8	(4.3)	449	(6.8)
Transplants	155	(2.8)	10	(3.2)	34	(6.3)	3	(1.6)	203	(3.1)
Transplant list	185	(3.3)	16	(5.1)	33	(6.1)	1	(0.5)	237	(3.6)
Heart										
Deceased donors	163	(2.9)	16	(5.1)	11	(2.0)	6	(3.2)	199	(3.0)
Transplants[4]	148	(2.6)	4	(1.3)	13	(2.4)	3	(1.6)	173	(2.6)
Transplant list	281	(5.0)	12	(3.8)	28	(5.1)	14	(7.4)	343	(5.2)
Lung										
Deceased donors	158	(2.8)	12	(3.8)	14	(2.6)	3	(1.6)	192	(2.9)
Transplants	131	(2.3)	11	(3.5)	9	(1.7)	6	(3.2)	159	(2.4)
Transplant list	282	(5.0)	14	(4.5)	32	(5.9)	21	(11.2)	352	(5.3)
Liver										
Deceased donors	927	(16.6)	71	(22.6)	71	(13.1)	30	(16.0)	1119	(16.8)
Transplants	766	(13.7)	41	(13.1)	65	(11.9)	31	(16.5)	915	(13.8)
Transplant list	355	(6.3)	27	(8.6)	54	(9.9)	19	(10.1)	466	(7.0)
Intestinal										
Deceased donors	17	(0.3)	0	(0.0)	4	(0.7)	0	(0.0)	21	(0.3)
Transplants	16	(0.3)	0	(0.0)	0	(0.0)	1	(0.5)	17	(0.3)
Transplant list	17	(0.3)	0	(0.0)	0	(0.0)	0	(0.0)	19	(0.3)
Total[5]										
Deceased donors	**1314**	**(23.5)**	**85**	**(27.1)**	**100**	**(18.4)**	**49**	**(26.1)**	**1580**	**(23.8)**
Transplants	**3172**	**(56.7)**	**155**	**(49.4)**	**301**	**(55.3)**	**87**	**(46.3)**	**3760**	**(56.6)**
Transplant list	**5145**	**(91.9)**	**253**	**(80.6)**	**561**	**(103.1)**	**133**	**(70.7)**	**6138**	**(92.4)**

[1] Country of residence of donor given for deceased donor numbers, and residence of recipient given for transplant and waiting list numbers
[2] Includes patients resident in Channel Islands, Isle of Man and UK unknown; excludes patients resident 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 29 February 2020, 6,138 patients were registered for an organ transplant in the UK on the active transplant list. A further 3,484 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 2019 and 29 February 2020. Between these dates the total number increased by 61 (1%), mostly due to increases in the heart, intestinal, and liver transplant lists which have seen the largest increases in numbers.

Table 2.2 Active transplant lists in the UK at 31 March 2019 and 29 February 2020

	2019	2020	% Change
Kidney & pancreas patients	**4989**	**4963**	**-1**
Kidney	4739	4726	0
Kidney & pancreas	196	198	+1
Kidney & pancreas islets	16	12	-25
Pancreas	12	11	-8
Pancreas islets	26	16	-38
Cardiothoracic patients	**643**	**690**	**+7**
Heart	292	340	+16
Heart-lung	12	5	-
Lung(s)	339	345	+2
Liver patients	**407**	**437**	**+7**
Intestinal patients	**11**	**19**	**+73**
Other multi-organ patients[1]	**27**	**29**	**+7**
ALL PATIENTS	**6077**	**6138**	**+1**

Percentages not reported when fewer than 10 in either year

[1] Includes patients waiting for kidney and liver transplants (24 in 2019, 24 in 2020), kidney and heart transplants (2 in 2019), liver and heart transplants (1 in 2019, 3 in 2020), liver and lung transplants (2 in 2020)

During 2019-2020, 377 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 2019 and 31 March 2020		
	Total	Adult	Paediatric
Kidney & pancreas patients	**247**	**247**	**0**
Kidney	233	233	0
Kidney & pancreas	13	13	0
Pancreas	1	1	0
Cardiothoracic patients	**79**	**70**	**9**
Heart	27	20	7
Heart-lung	2	1	1
Lung(s)	50	49	1
Liver patients	**49**	**42**	**7**
Intestinal patients	**1**	**0**	**1**
Other multi-organ patients[1]	**1**	**0**	**1**
ALL PATIENTS	**377**	**359**	**18**

[1] Includes 1 patient waiting for liver and lung transplants (1 paediatric)

2.3 Transplants

There was a 5% fall in the total number of organ transplants (from deceased and living donors) last year: 4,761 transplants were performed in 2019-2020 compared with 4,998 in 2018-2019 (**Table 2.4**). All multi-organ transplants are identified separately as are transplants from living donors.

The total number of kidney transplants fell in 2019-2020; kidney transplants from donors after circulatory death fell by 5%, while the number of living donor kidney transplants fell by 4%. The total number of cardiothoracic organ transplants fell by 4%, the number of liver transplants fell by 6%, however the number of pancreas transplants (including pancreas only, intestinal, kidney/pancreas and pancreas islets) increased by 1%.

Note that the COVID-19 pandemic affected the number of transplants in 2019-2020, and that, based on comparing the first 11 months of this year with the same period last year, total deceased donor transplants fell by 2% and living donor transplants actually increased by 2%, resulting in a 1% decrease overall (compared with a 5% decrease at year end).

Table 2.4 Transplants performed in the UK, 1 April 2018 - 31 March 2020

Transplant	2018-2019	2019-2020	% Change
DBD kidney	1425	1362	-4
DCD kidney	974	921	-5
Living donor kidney	1024	982	-4
DBD kidney & pancreas	112	118	+5
DCD kidney & pancreas	46	44	-4
Kidney & pancreas islets	8	5	-
DBD pancreas	12	11	-8
DCD pancreas	6	2	-
Pancreas islets	20	23	+15
DBD heart	152	149	-2
DCD heart	31	23	-26
Heart-lung	4	5	-
DBD single lung	11	13	+18
DCD single lung	5	1	-
DBD bilateral lung	112	109	-3
DCD bilateral lung	34	31	-9
DBD liver	674	644	-4
DCD liver	187	169	-10
Domino liver	1	1	-
DBD liver lobe	107	92	-14
DCD liver lobe	1	0	-
Living donor liver lobe	21	18	-14
Bowel only[1]	8	6	-
Liver, bowel & pancreas	1	0	-
Multivisceral[2]	6	8	-
Modified multivisceral[3]	4	6	-
Kidney & heart	0	1	-
Kidney & liver	12	15	+25
Heart & liver	0	1	-
Lung & liver	0	1	-
TOTAL ORGAN TRANSPLANTS	**4998**	**4761**	**-5**
Total kidney transplants[4]	**3601**	**3452**	**-4**
Total pancreas transplants[4]	**215**	**217**	**+1**
Total cardiothoracic transplants	**349**	**334**	**-4**
Total liver transplants[4]	**1010**	**949**	**-6**
Total intestinal transplants	**19**	**20**	**+5**

Percentage not reported when fewer than 10 in either year
[1] Including a kidney (1 in 2019-2020)
[2] Including a kidney (1 in 2019-2020)
[3] Including a kidney (2 in 2019-2020)
[4] Includes intestinal transplants

The total approximate number of patients with a functioning transplant on 31 March 2020 is 56,300 (**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 2020

	Functioning transplants[1]
Kidney	41000
Pancreas	2100
Cardiothoracic	4100
Liver	11000
Intestinal	150
ALL PATIENTS	**56300**

[1] Approximate number of patients with a functioning transplant being followed up
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 1% fall in deceased donors (to 1,580) and a 4% fall in living organ donors (to 1,001) compared with last year**
- **There has been a decrease in donors after brain death of 2% to 946 and a decrease of 1% in donors after circulatory death to 634, 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 over the decade: donors are older, more obese, and less likely to have suffered a trauma-related death, all of which have adverse effects on transplant outcomes**

3.1 Summary of activity

There was a 1% fall in the number of deceased organ donors in 2019-2020 (1,580). There was a fall in donors after brain death (DBD) of 2% and a fall of 1% in donors after circulatory death (DCD).

The 1,580 deceased organ donors gave 5,086 organs compared with 1,600 donors and 5,145 organs in 2018-2019. This represents a 1% decrease in organs donated. **Table 3.1** shows deceased organ donors according to the organs they donated.

Note that the COVID-19 pandemic affected the number of organ donors in 2019-2020, and that based on the first 11 months of this year and last year, deceased donor numbers overall had in fact increased by 2%.

Nearly all deceased donors (94%) gave a kidney and of these, the majority (74%) also donated at least one other organ. Only 15% of donors after brain death were single organ donors, with similar proportions being liver only and kidney only donors. By contrast, 51% of donors after circulatory death were single organ donors, the majority (96%) of these donating just their kidneys.

Although the vast majority of living organ donors donated a kidney, 19 donated part of their liver. All living donations are approved by the Human Tissue Authority.

Table 3.1 Solid organ donors in the UK, 1 April 2019 - 31 March 2020, by organ types donated

	DBD	DCD	Living donor	**TOTAL**
Kidney only	72	313	982	**1367**
Kidney & thoracic	8	22	-	**30**
Kidney & liver	373	152	-	**525**
Kidney & pancreas	9	18	-	**27**
Kidney, thoracic & liver	79	16	-	**95**
Kidney, thoracic & pancreas	3	2	-	**5**
Kidney, liver & pancreas	157	66	-	**223**
Kidney, liver & bowel	1	-	-	**1**
Kidney, liver, pancreas & bowel	7	-	-	**7**
Kidney, thoracic, liver & pancreas	141	29	-	**170**
Kidney, thoracic, liver & bowel	1	-	-	**1**
Kidney, thoracic, liver, pancreas & bowel	12	-	-	**12**
Thoracic only	6	1	-	**7**
Thoracic & liver	5	2	-	**7**
Thoracic, liver & pancreas	2	-	-	**2**
Liver only	68	12	19	**99**
Liver & pancreas	2	1	-	**3**
TOTAL	**946**	**634**	**1001**	**2581**

Bowel may include abdominal wall/colon/stomach/spleen

3.2 Organ donors

Organ donor rates per million population (pmp) for 2019-2020 are given by country and NHS region according to where the donor lived in **Table 3.2**, while the numbers 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 2019 - 31 March 2020, by country/NHS region of donor residence

Country/NHS region of residence	DBD		DCD		**TOTAL**		Living	
	N	(pmp)	N	(pmp)	N	(pmp)	N	(pmp)
North East and Yorkshire	135	(15.8)	79	(9.2)	214	(25.0)	114	(13.3)
North West	92	(13.1)	68	(9.7)	160	(22.8)	95	(13.6)
Midlands	130	(12.3)	87	(8.3)	217	(20.6)	114	(10.8)
East of England	82	(12.6)	102	(15.7)	184	(28.4)	76	(11.7)
London	120	(13.5)	64	(7.2)	184	(20.7)	116	(13.0)
South East	133	(15.0)	94	(10.6)	227	(25.6)	138	(15.6)
South West	76	(13.5)	52	(9.3)	128	(22.8)	63	(11.2)
England	**768**	**(13.7)**	**546**	**(9.8)**	**1314**	**(23.5)**	**716**	**(12.8)**
Isle of Man	**2**	**(25.0)**	**1**	**(12.5)**	**3**	**(37.5)**	**1**	**(12.5)**
Channel Islands	**3**	**(18.8)**	**0**	**(0.0)**	**3**	**(18.8)**	**2**	**(12.5)**
Wales	**57**	**(18.2)**	**28**	**(8.9)**	**85**	**(27.1)**	**35**	**(11.1)**
Scotland	**65**	**(11.9)**	**35**	**(6.4)**	**100**	**(18.4)**	**97**	**(17.8)**
Northern Ireland	**30**	**(16.0)**	**19**	**(10.1)**	**49**	**(26.1)**	**67**	**(35.6)**
TOTAL[1]	**939**	**(14.1)**	**633**	**(9.5)**	**1572**	**(23.7)**	**980**	**(14.8)**

[1] Includes 80 donors with an unknown UK postcode and excludes 29 donors resident outside the UK

Table 3.2 shows variation in the number of DBD and DCD donors pmp across the UK. There were 14.1 DBD donors pmp for the UK as a whole, but across NHS regions this ranged between 12.3 and 15.8 pmp. Across the four countries of the UK, Wales had the highest rate of 18.2 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 9.5 pmp, and Northern Ireland had the highest rate of 10.1 pmp across countries of the UK, across NHS regions it ranged from 7.2 to 15.7 pmp. No adjustment has been made for any differences in demographics of the populations across countries or NHS regions.

Table 3.3 Deceased organ donors in the UK, 1 April 2019 - 31 March 2020, by country/NHS region of hospital of donor death

Country of donation/ NHS region	DBD N	DCD N	**TOTAL** N
North East and Yorkshire	137	79	216
North West	96	64	160
Midlands	126	94	220
East of England	64	87	151
London	182	95	277
South East	108	89	197
South West	72	47	119
England	**785**	**555**	**1340**
Isle of Man	**2**	**1**	**3**
Channel Islands	**2**	**0**	**2**
Wales	**51**	**24**	**75**
Scotland	**74**	**35**	**109**
Northern Ireland	**32**	**19**	**51**
TOTAL	**946**	**634**	**1580**

Table 3.4	Deceased organ donors in the UK, 1 April 2019 - 31 March 2020 by Organ Donation Services Team		
Team	DBD N	DCD N	**TOTAL** N
Eastern	78	95	173
London	122	70	192
Midlands	102	90	192
North West	106	70	176
Northern	66	30	96
Northern Ireland	32	19	51
Scotland	74	35	109
South Central	73	53	126
South East	105	60	165
South Wales	46	19	65
South West	59	40	99
Yorkshire	83	53	136
TOTAL	**946**	**634**	**1580**

The mean number of organs retrieved per donor in 2019-2020 is given by country in **Table 3.5**. Overall, an average of 3.6 organs were donated per DBD donor and 2.7 per DCD donor. These rates ranged from 3.1 (DBD) and 2.3 (DCD) organs per donor in Northern Ireland to 3.8 (DBD) and 3.0 (DCD) in Wales.

Table 3.5	Organs retrieved per donor, in the UK, 1 April 2019 - 31 March 2020, by country of donor residence								
Country	Adult			Paediatric			All		
	DBD	DCD	TOTAL	DBD	DCD	TOTAL	DBD	DCD	TOTAL
England	3.5	2.8	**3.2**	4.6	3.0	**4.0**	3.6	2.8	**3.2**
Wales	3.7	3.0	**3.5**	6.0	3.0	**5.3**	3.8	3.0	**3.6**
Scotland	3.5	2.6	**3.2**	3.0	-	**3.0**	3.5	2.6	**3.2**
Northern Ireland	2.9	2.3	**2.7**	6.0	-	**6.0**	3.1	2.3	**2.8**
TOTAL	**3.5**	**2.7**	**3.2**	**4.7**	**2.9**	**4.0**	**3.6**	**2.7**	**3.2**

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 2019-2020, 36% of deceased donors were aged 60 years or more compared with 30% in 2010-2011 (**Figure 3.1**). In particular, the proportion of donors aged at least 70 years has increased from 10% to 15% over the same time period. The proportion of clinically obese donors (Body Mass Index (BMI) of 30 or higher) has increased from 20% to 27% 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 7% 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 8% of donors are from the Black, Asian and minority ethic (BAME) community. By contrast, the BAME community represent 11% of the UK population.

Table 3.6 Demographic characteristics of organ donors in the UK 1 April 2019 - 31 March 2020

		DBD		DCD		TOTAL	
		N	%	N	%	N	%
Age	0-17	32	3	18	3	50	3
	18-49	368	39	202	32	570	36
	50-59	228	24	155	24	383	24
	60-69	164	17	172	27	336	21
	70+	154	16	87	14	241	15
	Mean (SD)	51	17	53	16	52	17
BMI	0-19	53	6	35	6	88	6
	20-29	662	70	407	64	1069	68
	30+	231	24	191	30	422	27
	Unknown	0		1		1	
	Mean (SD)	27	6	28	7	27	6
Cause of death	Intracranial	858	91	524	83	1382	87
	Trauma	22	2	23	4	45	3
	Other	66	7	87	14	153	10
Ethnicity	White	865	92	589	94	1454	93
	Asian	24	3	16	3	40	3
	Black	24	3	6	1	30	2
	Other	28	3	14	2	42	3
	Unknown	5		9		14	
Blood group	O	439	46	277	44	716	45
	A	382	40	279	44	661	42
	B	98	10	56	9	154	10
	AB	27	3	22	3	49	3
Donor sex	Male	503	53	412	65	915	58
	Female	443	47	222	35	665	42
TOTAL		**946**	**100**	**634**	**100**	**1580**	**100**

Figure 3.1 Age of deceased donors in the UK, 1 April 2010 - 31 March 2020

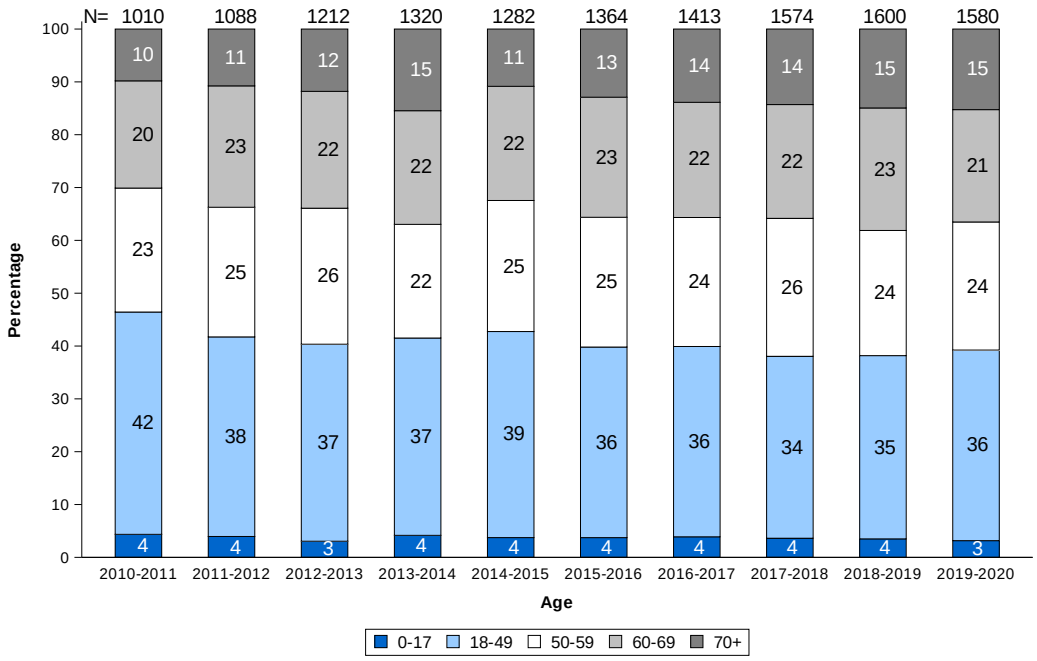
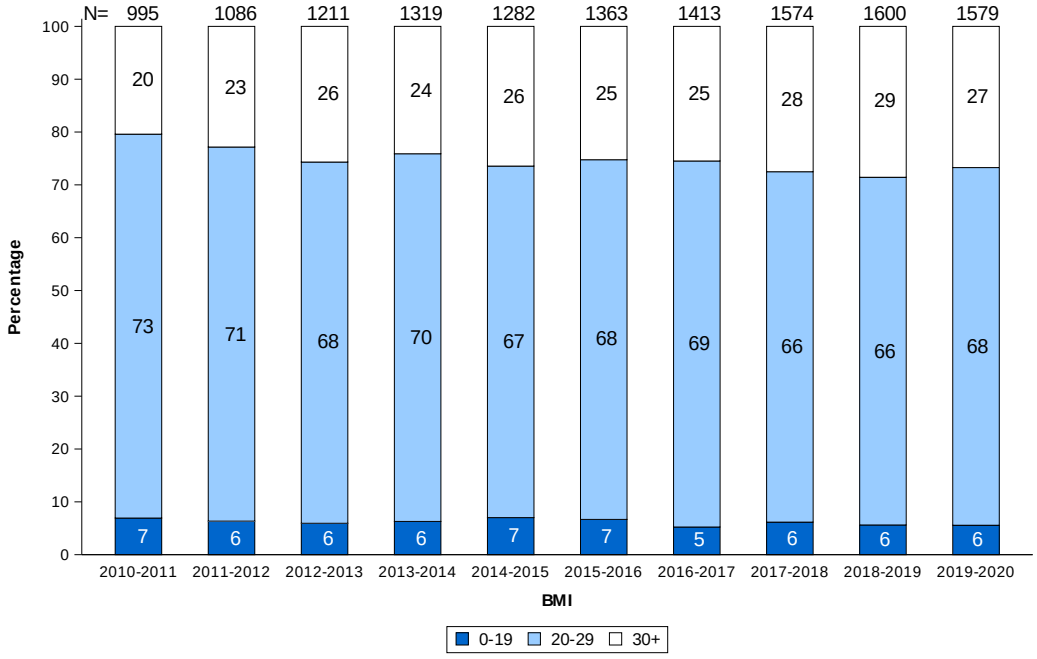


Figure 3.2 BMI of deceased donors in the UK, 1 April 2010 - 31 March 2020



*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 969 possible DBD donors and 971 possible DCD donors; 98% of these DBD donors and 65% of these DCD donors attended proceeded to donation**
- **Overall, 52% of organs offered from those donors that did proceed were transplanted, but individually, these rates were 82% for kidneys, 59% for livers, 25% for pancreases, 29% for hearts, 19% for lungs and 12% for bowels**
- **The number of deceased donors per million of population was 23.8, however 8% of actual donors resulted in no organ transplants, slightly more than the previous year**
- **On 6 January 2020 the National Organ Retrieval Service increased capacity to provide 8 abdominal surgical teams on-call at any given time. The cardiothoracic service provides 3 surgical teams at any given time**

4.1 The National Organ Retrieval Service (NORS)

There are 16 NORS teams in total, ten abdominal and six cardiothoracic. On 6 January 2020, the abdominal aspect of the service increased capacity to eight abdominal NORS teams available to retrieve organs from deceased donors in the UK for transplantation, at any given time. Prior to this change there were seven abdominal teams available. Three cardiothoracic NORS teams are available at any given time, this has been in place since April 2016.

NORS teams are mobilised using a sequence. The first and second teams in the sequence are defined for each UK hospital (largely based on travel times but adjusted to give a more even workload across NORS teams), while subsequent teams in the sequence are ordered based on travel time and availability, known as 'closest available', which applied for April 2018 – January 2019 for the current report. The new system was introduced in February 2019 following a Demand and Capacity review.

If a team is first in sequence 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.

The number of possible DBD and DCD donors that were attended by each of the teams in 2019-2020 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 (proceeding 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 may be 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 proceeding and non-proceeding donors attended by each NORS team

NORS team	DBD				DCD			
	Proceeding[2]	Non-proceeding	% non-proc	**No. attended**	Proceeding[2]	Non-proceeding	% non-proc	**No. attended**
Abdominal								
Birmingham[1]	120	3	2	123	74	36	33	110
Cambridge	114	3	3	117	116	48	29	164
Cardiff[1]	46	0	-	46	18	9	33	27
Edinburgh	95	2	2	97	47	13	22	60
King's	185	2	1	187	107	55	34	162
Leeds[1]	72	2	3	74	55	37	40	92
Manchester[1]	75	1	1	76	50	40	44	90
Newcastle	100	4	4	104	61	39	39	100
Oxford[1]	66	2	3	68	60	30	33	90
Royal Free[1]	67	5	7	72	45	29	39	74
Abdominal total	**940**	**24**	**2**	**964**	**633**	**336**	**35**	**969**
Cardiothoracic[1]								
Birmingham	42	30	42	72	4	8	67	12
Glasgow	19	30	61	49	4	3	43	7
Harefield	49	28	36	77	16	26	62	42
Manchester	45	41	48	86	9	16	64	25
Newcastle	33	22	40	55	4	10	71	14
Papworth	61	25	29	86	33	24	42	57
Cardiothoracic total	**249**	**176**	**41**	**425**	**70**	**87**	**55**	**157**
Total donors attended	**946**	**23**	**2**	**969**	**634**	**337**	**35**	**971**

[1] Part-time teams
[2] For abdominal, at least one abdominal organ retrieved. For cardiothoracic, at least one cardiothoracic organ retrieved

For more detailed information regarding the National Organ Retrieval Service and individual team activity, an annual NORS report is available here: https://www.odt.nhs.uk/statistics-and-reports/annual-national-organ-retrieval-service-report/

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**. Note that organs are not always offered from 'consented' donors, e.g. because the donor's condition deteriorates, or it is discovered the donor is unsuitable for organ donation. The number of organs offered from '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 2019-2020, 8% of actual donors resulted in no organ transplants, slightly more than the previous year (5%). Note that the COVID-19 pandemic affected the number of offered, retrieved and transplanted organs in 2019-2020.

Table 4.2 Consented, offered, actual, and utilised deceased donors in the UK, 1 April 2019 - 31 March 2020

	DBD	(pmp)	DCD	(pmp)	Total	(pmp)
Consented donors[1]	1053	(15.8)	1250	(18.8)	2303	(34.7)
Offered donors[2]	1015	(15.3)	1101	(16.6)	2116	(31.8)
Kidneys offered	*1953*		*2148*		*4101*	
Livers offered	*985*		*1019*		*2004*	
Pancreases offered	*673*		*382*		*1055*	
Bowels offered	*175*		*0*		*175*	
Hearts offered	*565*		*201*		*766*	
Lungs offered	*1296*		*888*		*2184*	
Actual donors[3]	946	(14.2)	634	(9.5)	1580	(23.8)
Utilised donors[4]	898	(13.5)	557	(8.4)	1455	(21.9)

[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 1,580 actual deceased organ donors in 2019-2020, 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 946 DBD and 634 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.

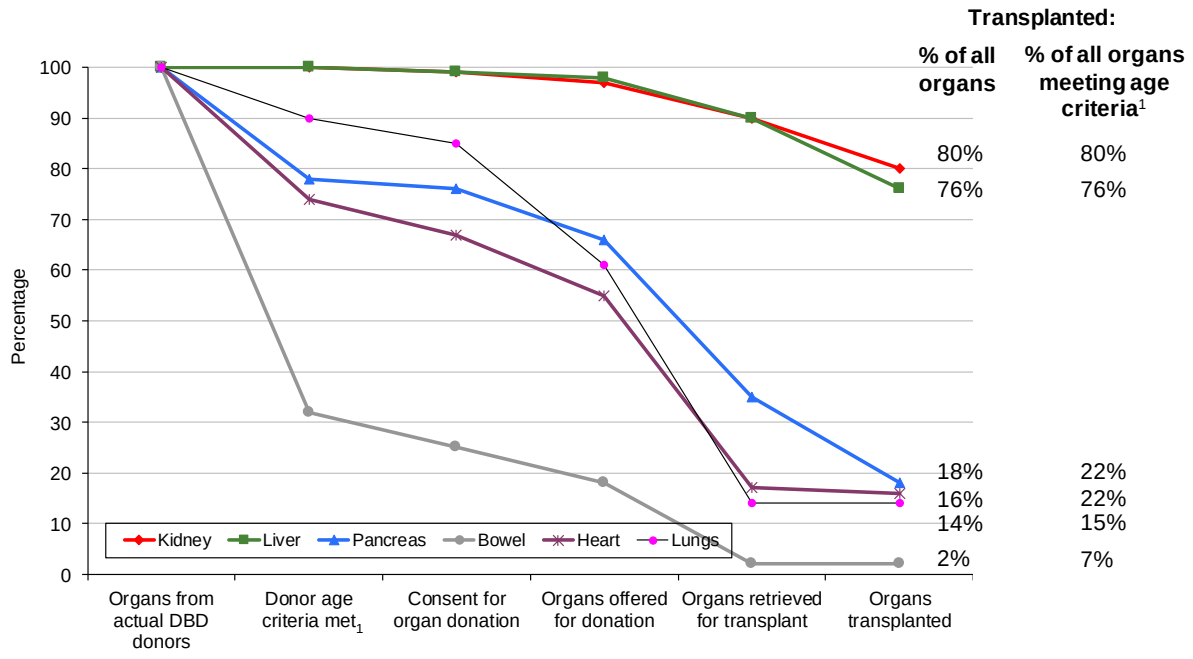
Table 4.3 Donation and transplantation of organs from 1580 deceased donors in the UK, 1 April 2019 – 31 March 2020

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	1829	1705	93	1522	89	83	86
Liver	923	848	92	721	85	78	69
Pancreas[1]	629	333	53	166	50	26	75
Bowel[2]	166	21	13	20	95	12	0
Heart[3]	523	161	31	153	95	29	3
Lung[4]	1161	274	24	256	93	22	9
Total	**5231**	**3342**	**64**	**2838**	**85**	**54**	**242**
DCD donor organs[5]							
Kidney	1252	1225	98	991	81	79	98
Liver	595	278	47	170	61	29	61
Pancreas[1]	256	116	45	51	44	20	24
Lung[4]	508	89	18	63	71	12	18
Total	**2611**	**1708**	**65**	**1275**	**75**	**49**	**201**
Deceased donor organs							
Kidney	3081	2930	95	2513	86	82	184
Liver	1518	1126	74	891	79	59	130
Pancreas[1]	885	449	51	217	48	25	99
Bowel[2]	166	21	13	20	95	12	0
Heart[3]	523	161	31	153	95	29	3
Lung[4]	1669	363	22	319	88	19	27
Total	**7842**	**5050**	**64**	**4113**	**81**	**52**	**443**

[1] Excludes donors with a BMI > 40 or aged > 65 years (DBD) or aged > 55 years (DCD)
[2] Excludes donors aged >= 56 years or weighing >= 80kg
[3] Excludes donors aged >= 65 years or died due to myocardial infarction
[4] Excludes donors aged > 70 years
[5] Excludes DCD hearts because this is not part of the national service, see cardiothoracic section for DCD heart detail

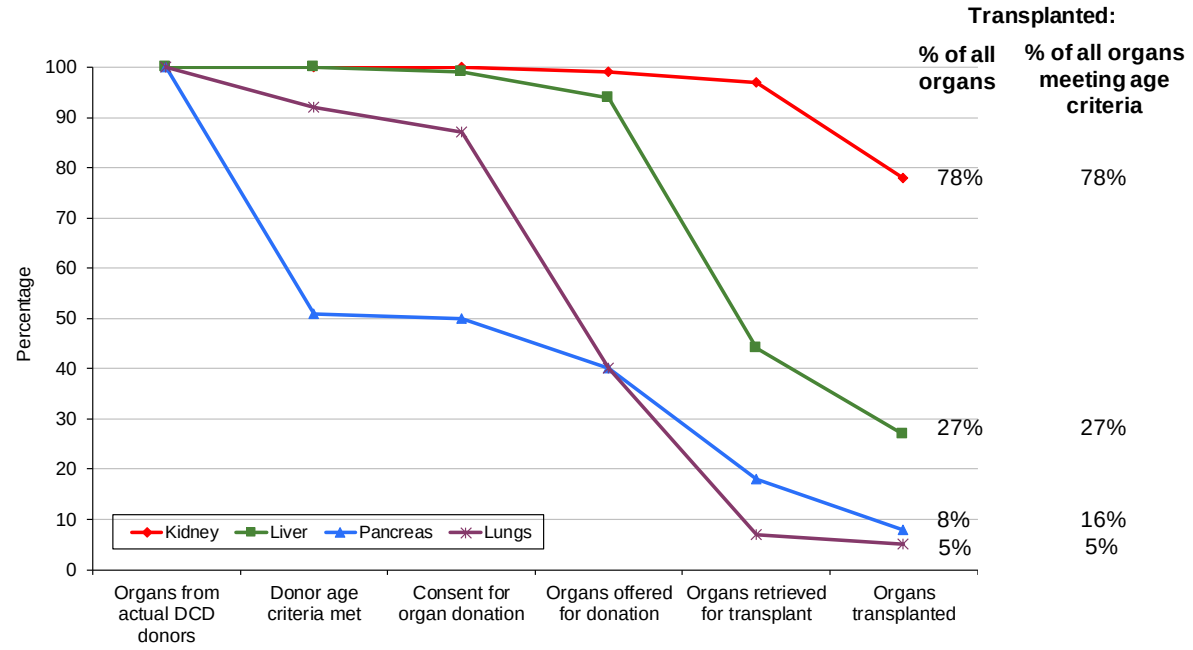
Figures 4.1 and 4.2 show line graphs of the pathway for all donor organs through to transplantation. The charts start at 100% for each organ, representing all organs from the 946 DBD and 634 DCD donors. The proportion of these organs where any national donor age criteria are met is then shown, followed by the proportion with consent, the proportion offered, the proportion retrieved and finally the proportion transplanted. For example, **Figure 4.2** shows that 78% of the kidneys from the 634 DCD donors were transplanted, a slight fall from 82% 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 2019 – 31 March 2020



[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 2019 – 31 March 2020



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' primarily include recipient related issues (such as no suitable recipients), but may also include logistical reasons and un-coded reasons reported of a miscellaneous nature. Note that reasons associated with the COVID-19 pandemic may also be included under either medical unsuitability or 'other'.

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 2019-2020 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. Note that the COVID-19 pandemic will have affected the 2019-2020 non-utilisation rate. 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 2019 - 31 March 2020

	Kidney		Liver		Pancreas		Bowel	
All actual DBD organ donors	**946**		**946**		**946**		**946**	
Donors from whom organs were not offered for donation	28		23		317		780	
Reasons for organs not being offered[1]								
Family permission refused	4		5		14		54	
Permission refused by coroner	1		0		2		2	
Permission refused other	0		0		4		7	
Donor unsuitable - medical	0		0		0		1	
Donor unsuitable - non-medical	0		0		1		3	
Donor unsuitable - age	0		0		208		2	
Organ unsuitable - clinical	14		16		41		15	
Poor function	6		2		4		1	
Donor age>=56 or donor weight >=80kg	0		0		0		642	
Other	3		0		43		53	
TOTAL DONORS WITH ORGANS NOT OFFERED	**28**		**23**		**317**		**780**	
Organs offered for donation	**1829**		**923**		**629**		**166**	
Organs not retrieved (% of organs offered for donation)	**124**	**(7)**	**75**	**(8)**	**296**	**(47)**	**145**	**(87)**
Reasons for non-retrieval								
Donor unsuitable - medical	10		4		7		16	
Donor unsuitable - non-medical	0		3		17		6	
Donor unsuitable - age	12		2		83		4	
Organ unsuitable - clinical	54		41		122		46	
Poor function	30		9		23		17	
Other	18		16		44		56	
TOTAL ORGANS OFFERED, NOT RETRIEVED	**124**		**75**		**296**		**145**	
Organs retrieved (% of organs offered for donation)	**1705**	**(93)**	**848**	**(92)**	**333**	**(53)**	**21**	**(13)**
Organs transplanted in the UK	1522		718		166		20	
Organs transplanted overseas	0		3		0		0	
Organs not transplanted	183		127		167		1	
Reasons for organ not being transplanted								
Donor unsuitable - medical	29		10		15		0	
Donor unsuitable - non-medical	0		2		3		0	
Donor unsuitable - age	6		0		2		0	
Organ unsuitable - clinical	40		61		82		0	
Poor function	7		2		1		0	
Other	101		52		64		1	
TOTAL ORGANS RETRIEVED, NOT TRANSPLANTED (Number used for research)	**183**	**(86)**	**127**	**(69)**	**167**	**(75)**	**1**	**(0)**

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

Table 4.5 Reasons for non-retrieval and non-use of abdominal organs from DCD donors in the UK, 1 April 2019 - 31 March 2020

	Kidney		Liver		Pancreas	
All actual DCD organ donors	**634**		**634**		**634**	
Donors from whom organs were not offered for donation	6		39		378	
Reasons for organs not being offered[1]						
Family permission refused	0		1		3	
Permission refused by coroner	1		3		1	
Permission refused other	0		1		1	
Donor unsuitable - medical	0		0		1	
Donor unsuitable - non-medical	0		1		0	
Donor unsuitable - age	2		4		311	
Organ unsuitable - clinical	3		19		24	
Poor function	0		6		0	
Other	0		4		37	
TOTAL DONORS WITH ORGANS NOT OFFERED	**6**		**39**		**378**	
Organs offered for donation	**1252**		**595**		**256**	
Organs not retrieved (% of organs offered for donation)	**27**	**(2)**	**317**	**(53)**	**140**	**(55)**
Reasons for non-retrieval						
Donor unsuitable - medical	1		4		4	
Donor unsuitable - non-medical	0		16		11	
Donor unsuitable - age	0		81		27	
Organ unsuitable - clinical	15		95		55	
Poor function	5		27		6	
Other	6		94		37	
TOTAL ORGANS OFFERED, NOT RETRIEVED	**27**		**317**		**140**	
Organs retrieved (% of organs offered for donation)	**1225**	**(98)**	**278**	**(47)**	**116**	**(45)**
Organs transplanted in the UK	991		170		51	
Organs transplanted overseas	0		0		0	
Organs not transplanted	234		108		65	
Reasons for organ not being transplanted						
Donor unsuitable - medical	46		9		8	
Donor unsuitable - non-medical	1		1		5	
Donor unsuitable - age	3		4		2	
Organ unsuitable - clinical	65		37		21	
Poor function	6		9		0	
Other	113		48		29	
TOTAL ORGANS RETRIEVED, NOT TRANSPLANTED (Number used for research)	**234**	**(98)**	**108**	**(61)**	**65**	**(24)**

[1] Includes donors whose organ 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 2019 - 31 March 2020

	Heart (DBD)		Lung (DBD)		Lung (DCD)	
All actual organ donors	**946**		**946**		**634**	
Donors from whom organs were not offered for donation	423		365		380	
Reasons for organs not being offered[1]						
Family permission refused	32		24		17	
Permission refused by coroner	36		21		13	
Permission refused other	2		1		1	
Donor unsuitable - medical	1		0		4	
Donor unsuitable - non-medical	6		1		1	
Donor unsuitable - age	242		98		52	
Organ unsuitable - clinical	59		97		153	
Poor function	39		103		129	
Other	6		20		10	
TOTAL DONORS WITH ORGANS NOT OFFERED	**423**		**365**		**380**	
Organs offered for donation	**523**		**1161**		**508**	
Organs not retrieved (% of organs offered for donation)	**362**	**(69)**	**887**	**(76)**	**419**	**(82)**
Reasons for non-retrieval						
Donor unsuitable – medical	16		14		12	
Donor unsuitable - non-medical	15		40		16	
Donor unsuitable – age	30		14		10	
Organ unsuitable - clinical	96		274		132	
Poor function	154		345		132	
Other	51		200		117	
TOTAL ORGANS OFFERED, NOT RETRIEVED	**362**		**887**		**419**	
Organs retrieved (% of organs offered for donation)	**161**	**(31)**	**274**	**(24)**	**89**	**(18)**
Organs transplanted in the UK	152		238		63	
Organs transplanted overseas	1		18		0	
Organs not transplanted	8		18		26	
Reasons for organ not being transplanted						
Organ unsuitable - clinical	1		0		2	
Poor function	4		0		0	
Other	3		18		24	
TOTAL ORGANS RETRIEVED, NOT TRANSPLANTED (Number used for research)	**8**	**(3)**	**18**	**(9)**	**26**	**(18)**

[1] Includes donors whose organ 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 2010 - 31 March 2020**

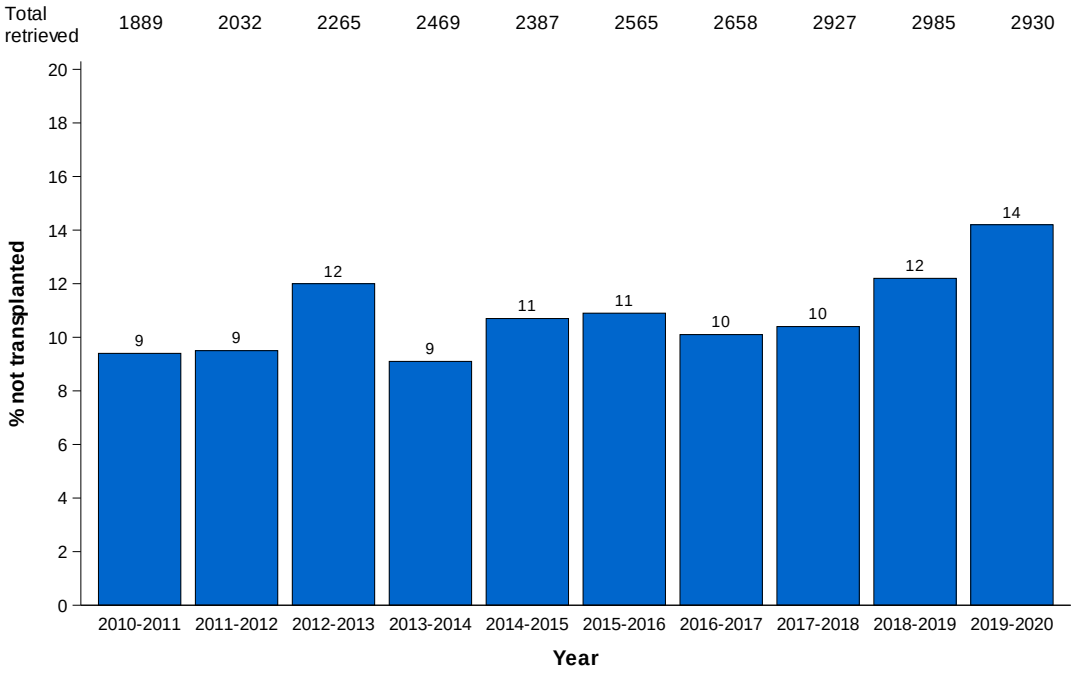


Figure 4.4 **Percentage of livers retrieved that were not transplanted from deceased organ donors in the UK, 1 April 2010 - 31 March 2020**

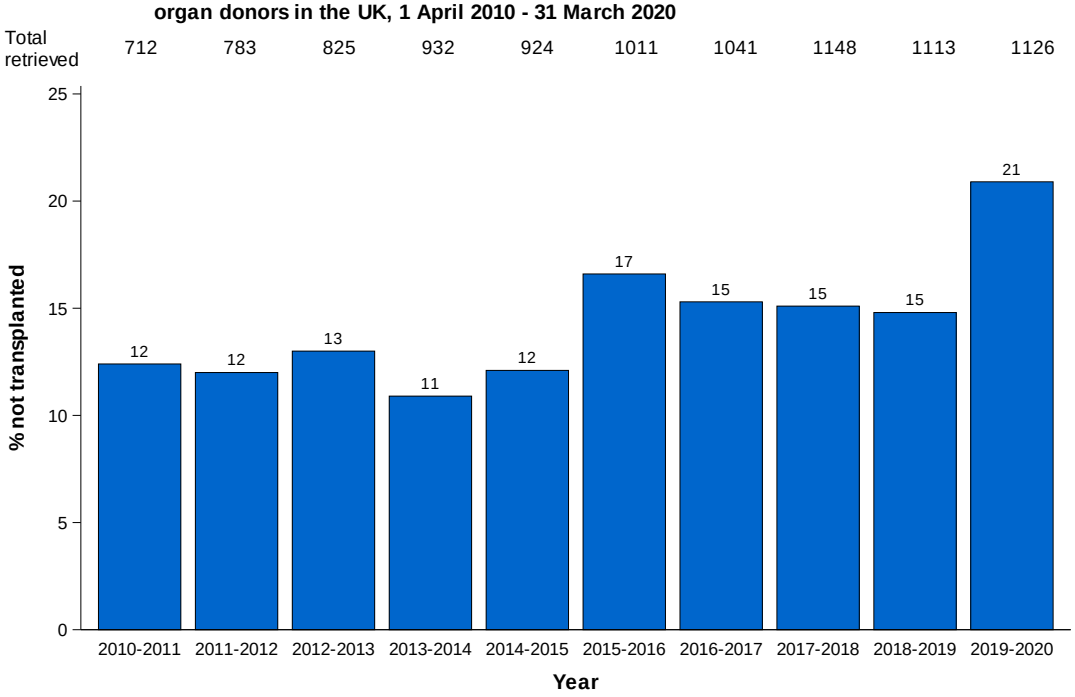
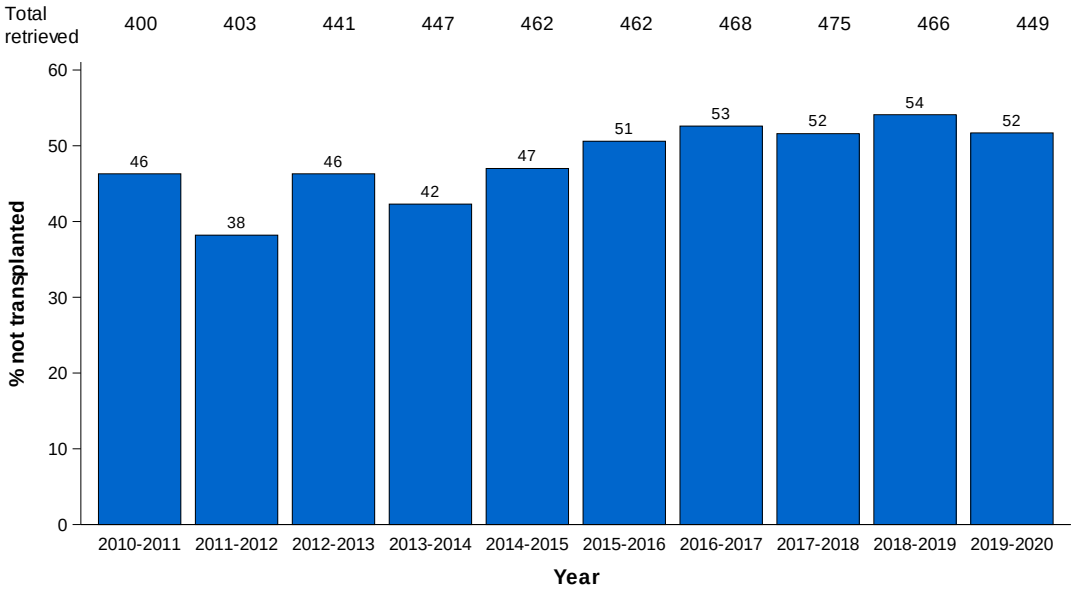
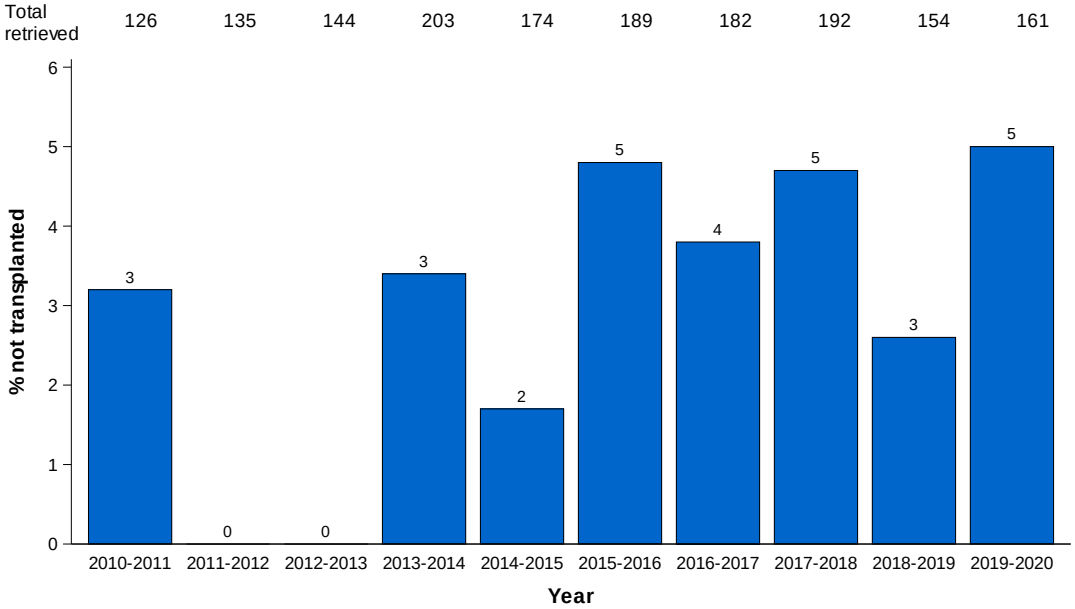


Figure 4.5 **Percentage of pancreases[1] [2] retrieved that were not transplanted from deceased organ donors in the UK, 1 April 2010 - 31 March 2020**



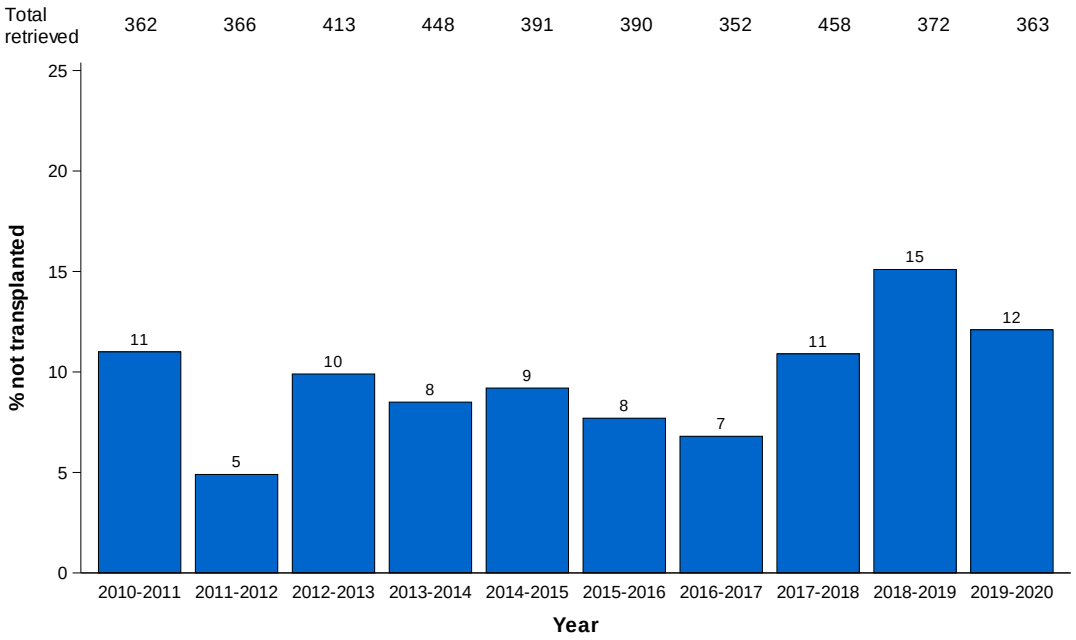
[1] Excludes donors with a BMI > 40 or aged > 65 years (DBD) or aged > 55 years (DCD)
[2] Includes pancreases retrieved for islet transplantation and not transplanted due to the outcome of the islet isolation process

Figure 4.6 **Percentage of hearts[1] retrieved that were not transplanted from deceased organ donors[2] in the UK, 1 April 2010 - 31 March 2020**



[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 2010 - 31 March 2020



[1]Excludes donors aged > 70 years

Kidney Activity

Key messages

- **On 11 September 2019, a new National Kidney Offering Scheme was introduced**
- **The number of patients registered on the kidney transplant list this year remained similar at 4,960**
- **The number of deceased kidney donors fell by 2% to 1,481**
- **Kidney transplants from living donors fell by 4% to 982, while transplants from deceased donors fell by 4% to 2,466**
- **96 kidney transplants were made possible by the paired living kidney donation programme**
- **There were 95 non-directed altruistic living kidney donors, leading to 146 patients benefitting from a living donor transplant**

5.1 Overview

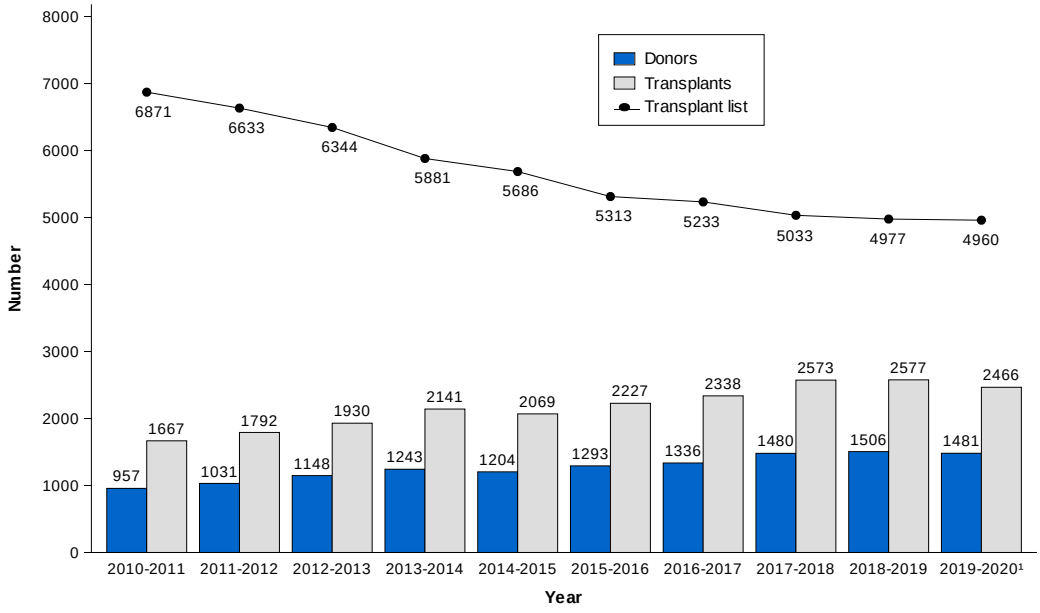
Note that the COVID-19 pandemic has affected the number of offered, retrieved and transplanted organs in 2019-2020. To better reflect the number of patients waiting for a transplant at the end of this year, data as at 29 February 2020 have been used.

The number of deceased kidney donors fell by 2% in 2019-2020 compared to 2018-2019 and the number of deceased donor kidney transplants fell by 4%. There were 4,960 patients waiting for a kidney transplant at 29 February 2020, with the number of patients on the national list consistently declining year on year.

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 29 February 2020 for a kidney only or multi-organ kidney transplant has fallen by 28% since 31 March 2011. These registrations include patients suspended on the kidney waiting list but active on the liver waiting list for a combined liver and kidney transplant.

On 11 September 2019, a new National Kidney Offering Scheme was introduced to offer kidneys from both donors after brain death and donors after circulatory death. This is a change from the previous system where kidneys from donors after circulatory death were offered under a different scheme than kidneys from donors after brain death. The scheme has two tiers with priority going to patients who are the most difficult to match or who have waited over 7 years for a transplant.

Figure 5.1 **Deceased donor kidney programme in the UK, 1 April 2010 - 31 March 2020, Number of donors, transplants and patients on the active transplant list at 31 March**



¹ Waiting list as at 29 February 2020

Table 5.1 shows the number of deceased and living donor kidney transplants carried out in 2019-2020 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 London 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 fell to 1,481 in 2019-2020 from 1,506 in 2018-2019 and the number of transplants fell from 2,577 to 2,466. The number of kidney donors after circulatory death fell to 618 from 625 in 2018-2019 and the number of transplants from such donors fell by 5% to 966.

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 reported in the kidney donor activity. Intestinal transplant activity is reported in Chapter 9.

Table 5.1 **Kidney donors and transplants, 1 April 2019 - 31 March 2020 (2018-2019) and transplant list at 29 February 2020 (2019)* in the UK, by centre**

Centre	Deceased kidney donors				Deceased donor transplants				Living donor transplants		Active transplant list*	
	DBD		DCD		DBD		DCD					
Belfast	27	(23)	19	(17)	26	(20)	18	(28)	66	(62)	79	(91)
Birmingham	46	(50)	45	(49)	91	(89)	55	(45)	42	(45)	363	(335)
Bristol	28	(45)	21	(28)	53	(69)	27	(42)	28	(36)	153	(165)
Cambridge	35	(46)	58	(51)	76	(79)	96	(98)	40	(27)	168	(190)
Cardiff	40	(33)	19	(29)	41	(42)	33	(42)	30	(35)	159	(139)
Coventry[1]	11	(18)	17	(15)	32	(30)	21	(26)	20	(27)	101	(85)
Edinburgh	24	(30)	15	(17)	72	(70)	30	(22)	48	(60)	194	(231)
Glasgow	46	(35)	19	(13)	63	(63)	42	(34)	47	(47)	251	(251)
Leeds	49	(45)	31	(33)	76	(95)	52	(57)	53	(67)	287	(255)
Leicester	25	(16)	13	(14)	48	(57)	46	(44)	45	(28)	175	(172)
Liverpool	34	(61)	23	(35)	48	(54)	24	(36)	26	(41)	141	(134)
London[2]	238	(218)	162	(141)	-	-	-	-	-	-	-	-
Great Ormond Street	-	-	-	-	8	(11)	0	(0)	12	(13)	17	(17)
Guy's	-	-	-	-	122	(128)	89	(73)	85	(77)	275	(285)
Royal Free	-	-	-	-	56	(56)	31	(21)	34	(42)	238	(251)
Royal London	-	-	-	-	101	(100)	51	(46)	37	(48)	327	(304)
St George's	-	-	-	-	89	(72)	24	(45)	46	(41)	229	(251)
WLRTC	-	-	-	-	114	(89)	71	(52)	55	(44)	402	(450)
Manchester	65	(57)	49	(32)	111	(119)	71	(97)	84	(74)	463	(377)
Newcastle	54	(62)	28	(33)	62	(59)	25	(23)	54	(58)	211	(257)
Nottingham	28	(26)	17	(30)	30	(32)	20	(42)	23	(8)	130	(126)
Oxford[1]	34	(34)	28	(21)	82	(113)	78	(83)	52	(65)	245	(240)
Plymouth	21	(23)	14	(15)	27	(30)	17	(19)	14	(26)	96	(89)
Portsmouth	33	(32)	25	(33)	37	(43)	22	(31)	24	(28)	144	(165)
Sheffield	25	(27)	15	(19)	35	(35)	23	(16)	15	(19)	112	(117)
TOTAL	**863**	**(881)**	**618**	**(625)**	**1500**	**(1555)**	**966**	**(1022)**	**982[3,5]**	**(1024[4,6])**	**4960**	**(4977)**

* Waiting list figures are as at 29 February 2020 and 31 March 2019
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 1 transplant performed at London, Cromwell Hospital and 1 transplant performed at London, London Bridge Hospital
[4] Includes an additional 3 transplants performed at London, Cromwell Hospital and 3 transplants performed at London, London Bridge Hospital
[5] Includes 2 domino donors
[6] Includes 3 domino donors

5.2 Transplant list

The number of patients registered on the kidney or kidney and pancreas transplant list remained stable in the year: on 29 February 2020, 4,960 patients were registered as active, compared with 4,977 at the end of March 2019. The number of patients waiting for a kidney transplant represents 74.7 patients per million population (pmp).

Of the 4,960 patients on the active transplant list at 29 February 2020, 210 required a kidney and pancreas/islet transplant (212 at 31 March 2019).

The outcome of patients registered on the UK kidney and kidney/pancreas transplant list at 1 April 2019, or subsequently registered during the financial year, is shown in **Table 5.2**. A total of 4,208 patients joined the kidney transplant list last year, while a further 238 joined the kidney/pancreas transplant list.

Table 5.2 Kidney transplant list and new registrations in the UK, 1 April 2019 - 31 March 2020

Outcome of patient at 31 March 2020	Active and suspended patients at 1 April 2019		New registrations in 2019-2020[1]		**TOTAL**	
	N	%	N	%	**N**	**%**
Kidney transplant list						
Remained active/suspended	4841	63	3227	77	8068	68
Transplanted	2240	29	934	22	3174	27
Removed[2]	423	5	24	1	447	4
Died	208	3	23	1	231	2
TOTAL	**7712**		**4208**		**11920**	
Kidney/pancreas transplant list						
Remained active/suspended	173	53	199	84	372	66
Transplanted	133	41	32	13	165	29
Removed[3]	12	4	3	1	15	3
Died	8	2	4	2	12	2
TOTAL	**326**		**238**		**564**	

[1] Includes re-registrations for second or subsequent patients
[2] Includes 5 patients removed from kidney list and made active on kidney/pancreas list
[3] Includes 1 patient removed from kidney/pancreas list and made active on kidney/islet list

Table 5.3 shows the active transplant list in the UK at 29 February 2020 and 31 March 2019 by country/NHS region of patient's residence. In 2020, the overall kidney transplant list rate was 74.7 pmp with rates across NHS regions ranging from 51.6 pmp to 125.1 pmp.

Table 5.3 Active kidney transplant list at 31 March, by Country/ NHS region of patient residence

Country/ NHS region of residence	Kidney transplant list (pmp) 2020[1]		2019	
North East and Yorkshire	615	(71.8)	628	(73.3)
North West	535	(76.3)	461	(65.8)
Midlands	808	(76.7)	766	(72.7)
East of England	352	(54.2)	383	(59.0)
London	1115	(125.1)	1164	(130.6)
South East	457	(51.6)	483	(54.6)
South West	333	(59.4)	329	(58.6)
England	**4215**	**(75.3)**	**4214**	**(75.3)**
Isle of Man	**5**	**(62.5)**	**2**	**(25.0)**
Channel Islands	**9**	**(56.3)**	**7**	**(43.8)**
Wales	**200**	**(63.7)**	**171**	**(54.5)**
Scotland	**444**	**(81.6)**	**482**	**(88.6)**
Northern Ireland	**79**	**(42.0)**	**92**	**(48.9)**
TOTAL[2]	**4960**	**(74.7)**	**4977**	**(74.9)**

[1]As at 29 February 2020
[2]Includes patients in 2020 (2019) residing in: Unspecified UK 7 (6); Overseas 1 (3)

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 27% of patients are transplanted within one year, while five years after listing 74% of patients have received a transplant.

The median (average) waiting time for a kidney only transplant has fallen from 706 days reported last year to 633 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 3140 new adult kidney only registrations made in the UK, 1 April 2014 - 31 March 2015**

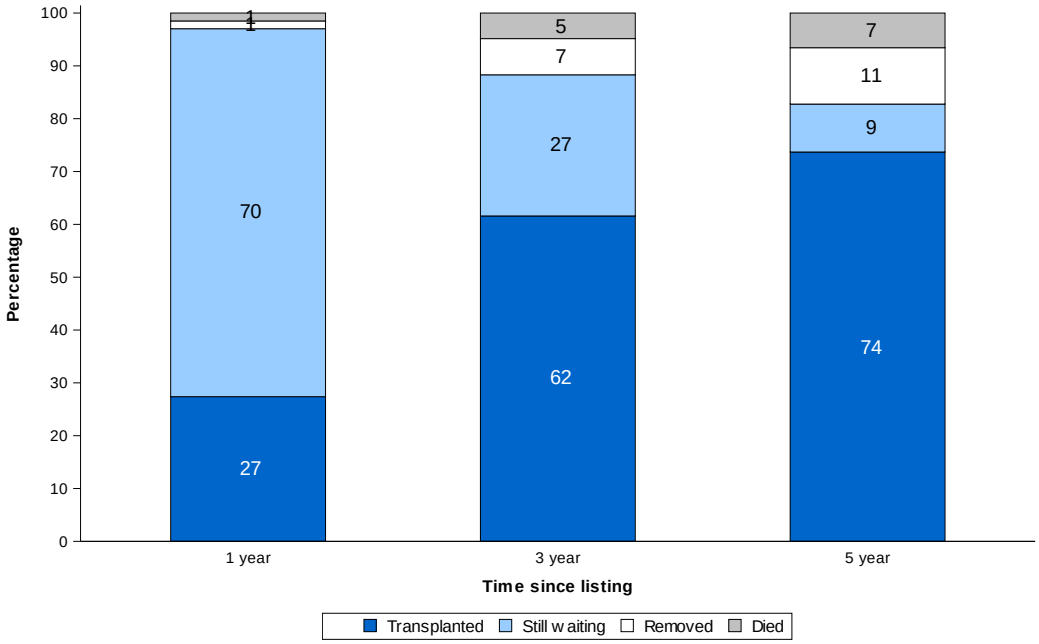


Table 5.4 **Median waiting time to kidney only transplant in the UK, for patients registered 1 April 2013 - 31 March 2017, by blood group**

Blood group	Number of patients registered	Waiting time (days) Median	95% Confidence interval
Adult			
O	4596	807	784 - 830
A	3627	438	422 - 454
B	1407	898	854 - 942
AB	452	188	167 - 209
TOTAL	**10082**	**633**	**619 - 647**
Paediatric			
O	112	367	205 - 529
A	101	251	198 - 304
B	38	353	244 - 462
AB	14	351	0 - 718
TOTAL	**265**	**291**	**206 - 376**

Table 5.5 Median waiting time to kidney only transplant in the UK, for patients registered 1 April 2013 - 31 March 2017, by ethnicity

Ethnicity	Number of patients registered	Waiting time (days)	
		Median	95% Confidence interval
Adult			
White	6957	573	557 - 589
Asian	1688	736	695 - 777
Black	982	900	845 - 955
Other	334	743	676 - 810
TOTAL[1]	**10082**	**633**	**619 - 647**
Paediatric			
White	151	222	170 - 274
Asian	78	384	260 - 508
Black	15	540	233 - 847
Other	18	560	448 - 672
TOTAL[2]	**265**	**291**	**206 - 376**

[1] Includes 121 patients whose ethnicity was not reported
[2] Includes 3 patients whose ethnicity was not reported

5.3 Donor and organ supply

Of the 946 organ donors after brain death in the UK in 2019-2020, 863 (91%) were kidney donors. From these donors, 1,693 kidneys were retrieved. There were 618 kidney donors after circulatory death in 2019-2020. From these donors, 1,223 kidneys were retrieved. **Table 5.6** shows this activity by donor country/NHS region 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 12.9 pmp, with rates across NHS regions ranging from 11.4 to 15.1 pmp. The number of kidneys retrieved from donors after brain death in the UK is 25.5 pmp and varies from 22.6 to 29.6 pmp.

The overall rate for kidney donors after circulatory death is 9.3 pmp, with rates across NHS regions ranging from 7.0 to 15.3 pmp. The number of kidneys retrieved from donors after circulatory death is 18.4 pmp and varies from 13.8 to 30.2 pmp.

Table 5.6 Kidney donation and retrieval rates for deceased donors in the UK, 1 April 2019 - 31 March 2020, by Country/NHS region

Country/NHS region of residence	Kidney donors (pmp)				Kidneys retrieved (pmp)			
	DBD		DCD		DBD		DCD	
North East and Yorkshire	129	(15.1)	78	(9.1)	254	(29.6)	155	(18.1)
North West	84	(12.0)	66	(9.4)	166	(23.7)	132	(18.8)
Midlands	122	(11.6)	85	(8.1)	240	(22.8)	168	(15.9)
East of England	76	(11.7)	99	(15.3)	152	(23.4)	196	(30.2)
London	107	(12.0)	62	(7.0)	211	(23.7)	123	(13.8)
South East	120	(13.6)	92	(10.4)	238	(26.9)	182	(20.6)
South West	64	(11.4)	51	(9.1)	127	(22.6)	100	(17.8)
England	**702**	**(12.5)**	**533**	**(9.5)**	**1388**	**(24.8)**	**1056**	**(18.9)**
Isle of Man	**2**	**(25.0)**	**1**	**(12.5)**	**4**	**(50.0)**	**2**	**(25.0)**
Channel Islands	**3**	**(18.8)**	**0**	**(0.0)**	**6**	**(37.5)**	**0**	**(0.0)**
Wales	**54**	**(17.2)**	**28**	**(8.9)**	**106**	**(33.8)**	**56**	**(17.8)**
Scotland	**57**	**(10.5)**	**33**	**(6.1)**	**112**	**(20.6)**	**65**	**(11.9)**
Northern Ireland	**25**	**(13.3)**	**19**	**(10.1)**	**50**	**(26.6)**	**38**	**(20.2)**
TOTAL[1]	**857**	**(12.9)**	**617**	**(9.3)**	**1693**	**(25.5)**	**1223**	**(18.4)**

[1] Includes 17 donors with unknown UK postcode and excludes 7 donors with overseas postcode

5.4 Transplants

The number of kidney transplants by recipient country/NHS region 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 27.7 to 56.2 pmp across NHS regions and overall was 34.3 pmp. The living donor transplant rate ranged from 10.3 to 15.2 pmp across NHS regions and overall was 14.6 pmp.

Table 5.7 Kidney only transplant rates per million population (pmp), in the UK, 1 April 2019 - 31 March 2020, by country and English NHS region

Country/ NHS region of residence	DBD		DCD		**TOTAL**		Living	
	N	(pmp)	N	(pmp)	N	(pmp)	N	(pmp)
North East and Yorkshire	167	(19.5)	96	(11.2)	263	(30.7)	124	(14.5)
North West	114	(16.3)	83	(11.8)	197	(28.1)	99	(14.1)
Midlands	209	(19.8)	143	(13.6)	352	(33.4)	122	(11.6)
East of England	119	(18.3)	120	(18.5)	239	(36.8)	94	(14.5)
London	314	(35.2)	187	(21.0)	501	(56.2)	135	(15.2)
South East	145	(16.4)	100	(11.3)	245	(27.7)	132	(14.9)
South West	98	(17.5)	62	(11.1)	160	(28.5)	58	(10.3)
England	**1166**	**(20.8)**	**791**	**(14.1)**	**1957**	**(35.0)**	**764**	**(13.6)**
Isle of Man	**1**	**(12.5)**	**0**	**(0.0)**	**1**	**(12.5)**	**2**	**(25.0)**
Channel Islands	**1**	**(6.3)**	**4**	**(25.0)**	**5**	**(31.3)**	**1**	**(6.3)**
Wales	**52**	**(16.6)**	**38**	**(12.1)**	**90**	**(28.7)**	**39**	**(12.4)**
Scotland	**112**	**(20.6)**	**68**	**(12.5)**	**180**	**(33.1)**	**94**	**(17.3)**
Northern Ireland	**25**	**(13.3)**	**18**	**(9.6)**	**43**	**(22.9)**	**64**	**(34.0)**
TOTAL[1,2]	**1360**	**(20.5)**	**920**	**(13.8)**	**2280**	**(34.3)**	**970**	**(14.6)**

[1] Excludes 12 recipients of a living donor kidney who reside outside of the UK
[2] Includes 10 recipients with an unknown UK postcode

The number of kidney only transplants at each transplant centre is shown in **Table 5.8** for adult patients only. Kidney transplants from donors after brain death include 5 en bloc kidneys and 16 double kidney transplants in 2019-2020 (7 and 17 in 2018-2019). Kidney transplants from donors after circulatory death include 3 en bloc and 21 double kidney transplants in 2019-2020 (6 and 19 in 2018-2019). This table excludes multi-organ transplants: 15 kidney and liver, 1 kidney and heart, 162 kidney and pancreas, 5 kidney and islets, and 4 kidney and bowel in 2019-2020.

Table 5.8 Adult kidney only transplants in the UK, 1 April 2018 - 31 March 2020, by transplant centre

Transplant centre	2018-2019 DBD	DCD	Living donor	TOTAL	2019-2020 DBD	DCD	Living donor	TOTAL
Belfast	20	28	58	106	25	18	62	105
Birmingham	79	45	37	161	83	53	37	173
Bristol	62	42	31	135	49	27	25	101
Cambridge	66	89	27	182	64	84	40	188
Cardiff	37	40	35	112	34	30	30	94
Coventry[1]	30	26	27	83	32	21	20	73
Edinburgh	53	22	60	135	50	27	48	125
Glasgow	60	32	37	129	63	42	45	150
Guy's	93	64	68	225	88	82	71	241
Leeds	88	57	61	206	74	52	46	172
Leicester	57	44	28	129	48	46	45	139
Liverpool	54	36	41	131	48	24	26	98
Manchester	103	78	55	236	89	64	70	223
Newcastle	51	23	55	129	54	24	52	130
Nottingham	25	41	7	73	28	20	17	65
Oxford[1]	71	73	64	208	48	65	52	165
Plymouth	30	19	26	75	27	17	13	57
Portsmouth	43	31	28	102	37	22	24	83
Sheffield	35	16	19	70	35	23	15	73
St George's	72	45	41	158	89	24	46	159
The Royal Free	56	21	42	119	54	31	34	119
The Royal London	100	46	48	194	101	50	37	188
WLRTC	84	52	44	180	106	69	55	230
TOTAL	**1369**	**970**	**945**[2]	**3284**	**1326**	**915**	**912**[3]	**3153**

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 3 transplants performed at London Cromwell Hospital and 3 transplants performed at London Bridge Hospital
[3] Includes 1 transplant performed at London Cromwell Hospital and 1 transplant performed at London Bridge Hospital

Living donor kidney transplants fell by 4% to 982 in 2019-2020, 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 12% decrease in these transplants. In addition there are now a number of 'non-directed' living donor transplants (also known as altruistic donor transplants). Last year 95 such donors donated a kidney to a recipient, 94 transplanted into an adult recipient and 1 transplanted into a paediatric recipient. Of the 95 non-directed altruistic donors, 47 went into an altruistic donor chain (19 short (2 transplants each) and 28 long chains (3 transplants each)) benefiting 73 adult and 2 paediatric patients in the paired/pooled scheme. The kidneys from the paired donors of these recipients led to 45 adult and 2 paediatric transplants for patients on the deceased donor transplant list. Thus 47 non-directed altruistic donors creating chains benefited 118 adult and 4 paediatric patients in total.

When a potential living 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 2019-2020, there were 96 paired living kidney donor transplants (93 adult and 3 paediatric recipients).

As a percentage of the number of patients on the active transplant list at 29 February 2020, the number of living donor adult transplants in the year was 19% and ranged from 11% to 78% at individual transplant centres.

Table 5.9 Adult living donor kidney transplants in the UK, 1 April 2019 - 31 March 2020, and percentage of active transplant list at 29 February, by transplant centre

	2019-2020				TOTAL	
Transplant centre	Directed	Non-directed (altruistic) to waiting list	Paired/ pooled exchanges	Altruistic donor chain	**N**	**% list**
Belfast	40	2	12	8	**62**	**78**
Birmingham	29	3	1	4	**37**	**11**
Bristol	19	0	3	3	**25**	**17**
Cambridge	33	1	3	3	**40**	**24**
Cardiff	22	2	3	3	**30**	**19**
Coventry[1]	11	2	3	4	**20**	**20**
Edinburgh	39	3	2	4	**48**	**25**
Glasgow	27	2	9	7	**45**	**18**
Guy's	46	6	7	12	**71**	**28**
Leeds	33	4	4	5	**46**	**17**
Leicester	35	1	4	5	**45**	**26**
Liverpool	24	2	0	0	**26**	**18**
Manchester	57	5	2	6	**70**	**16**
Newcastle	39	0	6	7	**52**	**25**
Nottingham	10	2	3	2	**17**	**14**
Oxford[1]	30	3	8	11	**52**	**21**
Plymouth	9	1	2	1	**13**	**14**
Portsmouth	21	0	2	1	**24**	**17**
Sheffield	9	1	1	4	**15**	**13**
St George's	28	3	6	9	**46**	**20**
The Royal Free	26	1	3	4	**34**	**14**
The Royal London	26	5	3	3	**37**	**11**
WLRTC	37	0	6	12	**55**	**14**
TOTAL[2]	**652**	**49[3]**	**93**	**118**	**912**	**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 1 transplant performed at London Cromwell Hospital and 1 transplant performed at London Bridge
[3] Includes 2 domino donor transplants

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 **Non-directed altruistic kidney donors in the UK, 1 April 2018 - 31 March 2020, by donor centre**

	2018-2019				2019-2020			
Donor centre	Transplant list	Chain	**Total**	**%**	Transplant list	Chain	**Total**	**%**
Belfast	2	3	5	8	6	7	13	14
Birmingham	0	0	0	0	1	0	1	1
Bristol	3	1	4	6	1	2	3	3
Cambridge	0	2	2	3	1	2	3	3
Cardiff	0	0	0	0	1	1	2	2
Coventry[1]	0	0	0	0	0	2	2	2
Edinburgh	1	5	6	9	4	5	9	9
Glasgow	2	0	2	3	2	2	4	4
Guy's	4	3	7	11	3	7	10	11
Leeds	5	2	7	11	3	2	5	5
Leicester	0	0	0	0	1	0	1	1
Liverpool	1	0	1	2	1	0	1	1
Manchester	2	2	4	6	4	2	6	6
Newcastle	1	2	3	5	1	1	2	2
Nottingham	1	1	2	3	2	1	3	3
Oxford[1]	3	1	4	6	4	2	6	6
Plymouth	0	5	5	8	3	0	3	3
Portsmouth	2	4	6	9	4	6	10	11
Sheffield	0	1	1	2	0	0	0	0
St George's	0	1	1	2	0	0	0	0
The Royal Free	2	0	2	3	2	1	3	3
The Royal London	1	0	1	2	2	2	4	4
WLRTC	1	0	1	2	2	2	4	4
Total donors	**31**	**33**	**64**	**100**	**48**	**47**	**95**	**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 42 deceased donor transplants in paediatric patients in 2019-2020. The paediatric transplant list has increased by 19% from 93 patients at 31 March 2019 to 111 at the end of February 2020.

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 2018 - 31 March 2020, by transplant centre

	2018-2019				2019-2020			
Paediatric transplant centre	DBD	DCD	Living donor	**TOTAL**	DBD	DCD	Living donor	**TOTAL**
Belfast	0	0	4	**4**	1	0	4	**5**
Birmingham	7	0	8	**15**	7	2	5	**14**
Bristol	7	0	5	**12**	4	0	3	**7**
Glasgow	3	2	10	**15**	0	0	2	**2**
Great Ormond Street	11	0	13	**24**	8	0	12	**20**
Guy's	9	0	9	**18**	6	0	14	**20**
Leeds	7	0	6	**13**	2	0	7	**9**
Manchester	5	1	19	**25**	2	1	14	**17**
Newcastle	0	0	3	**3**	3	1	2	**6**
Nottingham	7	1	1	**9**	2	0	6	**8**
Adult centres	0	0	1	**1**	1	2	1	**4**
TOTAL	**56**	**4**	**79[1]**	**139**	**36**	**6**	**70[2]**	**112**

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

At 31 March 2020, there were approximately 41,000 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 3,265 kidney only transplant recipients in 2019-2020, dialysis status at time of transplant was reported for 3,184 (98%). Of these 3,184 transplants, 667 (21%) were carried out in pre-dialysis patients.

Pre-emptive transplants accounted for 21% of all paediatric kidney only transplants with reported dialysis status, compared with 21% of those in adults. Living donor transplants are more likely to be carried out before the need for dialysis than deceased donor transplants: 37% and 14% 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 2019 - 31 March 2020				
	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	2241	2215	(98.8)	14.0
Living donor transplant	912	901	(98.8)	38.0
Paediatric				
Deceased donor transplant	42	42	(100.0)	11.9
Living donor transplant	70	68	(97.1)	26.5

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 2019 - 31 March 2020				
	Number of kidney only transplants[1]	Median (hours)	Inter-quartile range[2] Q1	Q3
Adult				
DBD donor transplant	1326	12.7	10.1	16.3
DCD donor transplant	915	12.6	9.6	16.0
Total	**2241**	**12.7**	**10.0**	**16.2**
Paediatric				
DBD donor transplant	36	11.0	9.1	14.4
DCD donor transplant	6	13.6	10.9	15.8
Total	**42**	**11.2**	**9.5**	**15.0**
TOTAL	**2283**	**12.6**	**10.0**	**16.2**

[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 circulatory death are allocated on the basis of a national Kidney Offering Scheme which incorporates HLA matching between donor and recipient. These HLA matches are based on four levels which are described in **Table 5.14**. Prior to 11 September 2020, patients with 000 HLA-A, B, DR mismatch (Level 1) were prioritised in the scheme, whereas kidneys were rarely transplanted as a Level 4 match. Under the new scheme, Level 4 matches are only permitted for difficult to match patients. 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 poorer HLA match between donor and recipient than deceased donor transplantation. Very often there is no genetic relationship between donor and recipient.

Table 5.14 HLA mismatch groups

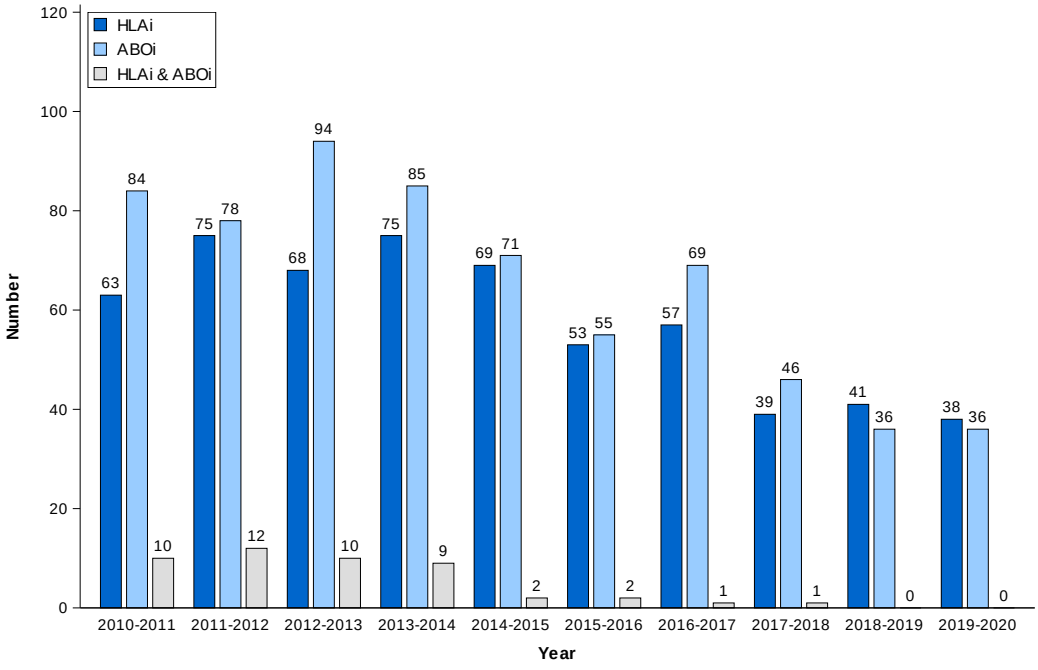
Level	HLA mismatch summary	HLA mismatch combinations included
1	000	000
2	[0 DR and 0/1 B]	100, 010, 110, 200, 210, 001, 101, 201
3	[0 DR and 2 B] or [1 DR and 0/1 B]	020, 120, 220, 011, 111, 211
4	[1 DR and 2 B] or [2 DR]	021, 121, 221, 002, 102, 202, 012, 112, 212, 022, 122, 222

Table 5.15 HLA matching for kidney only transplants in the UK, 1 April 2019 - 31 March 2020

	DBD		DCD		Living	
	N	(%)	N	(%)	N	(%)
Adult patients						
Level 1 (Best match)	87	(7)	29	(3)	75	(9)
Level 2	455	(34)	277	(30)	179	(22)
Level 3	497	(38)	400	(44)	333	(41)
Level 4	286	(22)	209	(23)	229	(28)
Not reported	1		0		96	
Paediatric patients						
Level 1 (Best match)	3	(8)	0	(0)	4	(6)
Level 2	24	(67)	5	(83)	24	(38)
Level 3	9	(25)	1	(17)	33	(52)
Level 4	0	(0)	0	(0)	3	(5)
Not reported	0		0		6	

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 578 HLA incompatible (HLAi) transplants performed; 216 were deceased donor transplants and 362 were living donor transplants, whilst the vast majority of ABO incompatible (ABOi) transplants were living donor transplants (650 of 654). 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 2010 - 31 March 2020



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.

Table 5.16 Demographic characteristics of deceased kidney donors and transplant recipients, 1 April 2019 - 31 March 2020, and transplant list patients at 29 February

Age group (years)	Donors		Transplant recipients		Active transplant list patients	
	N	(%)	N	(%)	N	(%)
0 - 17	44	(3)	42	(2)	111	(2)
18 - 34	208	(14)	307	(12)	550	(11)
35 - 49	334	(23)	605	(25)	1302	(26)
50 - 59	360	(24)	707	(29)	1429	(29)
60 - 69	320	(22)	537	(22)	1161	(23)
70+	215	(15)	268	(11)	407	(8)
Mean (SD)	52	(17)	52	(15)	51	(14)
Male	854	(58)	1492	(61)	2985	(60)
Female	627	(42)	974	(39)	1969	(40)
Not reported	0		0		6	
White	1367	(93)	1594	(65)	3139	(64)
Asian	39	(3)	419	(17)	955	(20)
Black	27	(2)	312	(13)	569	(12)
Chinese	10	(1)	26	(1)	45	(1)
Other	25	(2)	87	(4)	178	(4)
Not reported	13		28		74	
O	665	(45)	973	(39)	2744	(55)
A	627	(42)	1034	(42)	1161	(23)
B	143	(10)	339	(14)	946	(19)
AB	46	(3)	120	(5)	109	(2)
First graft			2031	(82)	3889	(78)
Re-graft			435	(18)	1071	(22)
TOTAL	**1481**	**(100)**	**2466**	**(100)**	**4960**	**(100)**

Table 5.17 Demographic characteristics of living kidney donors and transplant recipients, 1 April 2019 - 31 March 2020

Age group (years)	Donors		Transplant recipients	
	N	(%)	N	(%)
0 - 17	0	(0)	70	(7)
18 - 34	166	(17)	204	(21)
35 - 49	338	(34)	280	(29)
50 - 59	271	(28)	217	(22)
60 - 69	162	(16)	158	(16)
70+	45	(5)	53	(5)
Mean (SD)	48	(13)	45	(17)
Male	470	(48)	568	(58)
Female	512	(52)	414	(42)
White	846	(86)	796	(83)
Asian	81	(8)	92	(10)
Black	26	(3)	40	(4)
Chinese	7	(1)	7	(1)
Other	21	(2)	29	(3)
Not reported	1		18	
O	567	(58)	447	(46)
A	296	(30)	351	(36)
B	107	(11)	143	(15)
AB	12	(1)	41	(4)
First graft			814	(83)
Re-graft			168	(17)
TOTAL	**982**	**(100)**	**982**	**(100)**

Pancreas Activity

Key messages

- **On 11 September 2019, a revised National Pancreas Offering Scheme was introduced**
- **The number of patients waiting on the pancreas transplant list fell by 5% during the year, to 237 at 29 February 2020**
- **The number of pancreas donors after brain death fell by 8% to 333, while transplants from donors after brain death increased by 3% to 152**
- **The number of pancreas donors after circulatory death increased by 12% to 116, while transplants from donors after circulatory death fell by 9% to 51**
- **28 islet transplants were made possible by the pancreas islet transplant programme, the same as last year**

6.1 Overview

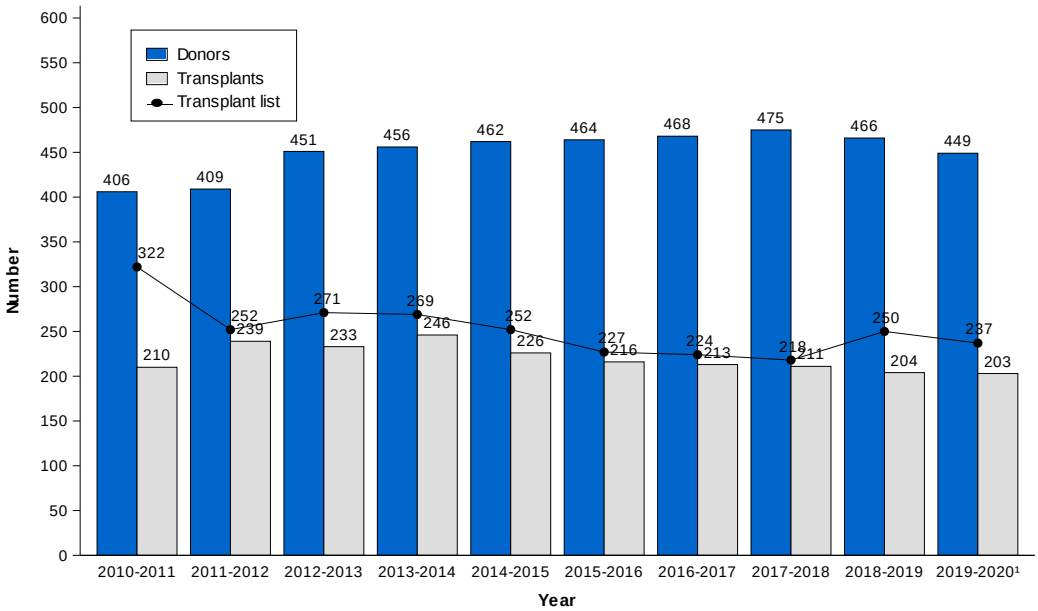
Note that the COVID-19 pandemic will have affected the number of offered, retrieved and transplanted organs in 2019-2020. To better reflect the number of patients waiting for a transplant at the end of this year, data as at 29 February 2020 have been used.

The number of patients registered on the active transplant list for a pancreas, simultaneous pancreas/kidney (SPK), simultaneous islet/kidney (SIK), or islet transplant has decreased over the last ten years from 322 patients at 31 March 2011 to 237 patients at 29 February 2020. The number of pancreas donors has increased from 406 to 449 and peaked at 475 in 2017-2018. However, the number of transplants has decreased in the last 6 years to 203 transplants in 2019-2020. A summary of activity for deceased donor pancreas transplants and the transplant list for 1 April 2010 - 31 March 2020 is shown in **Figure 6.1**.

On 11 September 2019, an additional top tier of patients was introduced to the National Pancreas Offering Scheme. Patients in this top tier are either categorised as very difficult to HLA match to a donor or have been waiting for more than 3 years for a pancreas or islet transplant. All other patients appear in subsequent tiers and are prioritised according to a point system based on a range of clinical factors. A score is calculated for every potentially suitable patient and the pancreas is allocated preferentially to the patient with the most points after those in the new top tier. 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.

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 2019-2020 there were 14 intestinal transplants including a pancreas. Intestinal transplant activity is reported in Chapter 9.

Figure 6.1 **Deceased pancreas and islet programme in the UK, 1 April 2010 - 31 March 2020, Number of donors, transplants and patients on the active transplant list at 31 March**



¹ Waiting list as at 29 February 2020

6.2 Transplant list

Table 6.1 shows the number of patients on the active transplant lists at 29 February 2020 by centre. The number of patients registered on the pancreas transplant list fell by 5% in the year: on 29 February 2020, 237 patients were registered active, compared with 250 at the end of March 2019.

Of the 237 patients on the active transplant list at 29 February 2020, 198 (83%) required a SPK transplant (196 at 31 March 2019), 11 (5%) patients required a pancreas only transplant (12 at 31 March 2019) and 28 (12%) were registered for a pancreas islet transplant (including 12 for a SIK transplant).

The outcome of patients registered on the UK pancreas transplant list at 1 April 2019, or subsequently registered during the financial year, is shown in **Table 6.2**. Twenty patients joined the pancreas transplant list while 238 joined the list for a 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 29 February 2020 (2019)[1] in the UK, by centre

Centre	Active transplant lists											
	Kidney/ pancreas		Kidney/islet		Pancreas alone		Islet				**TOTAL**	
							Routine		Priority			
Bristol	-	-	0	(0)	-	-	0	(0)	0	(0)	**0**	**(0)**
Cambridge	9	(13)	-	-	1	(0)	-	-	-	-	**10**	**(13)**
Cardiff	13	(15)	-	-	0	(0)	-	-	-	-	**13**	**(15)**
Edinburgh	29	(39)	1	(0)	0	(0)	2	(6)	2	(2)	**34**	**(47)**
Guys	27	(23)	-	-	0	(0)	-	-	-	-	**27**	**(23)**
King's College	-	-	0	(0)	-	-	0	(2)	1	(0)	**1**	**(2)**
Manchester	40	(20)	10	(15)	2	(2)	1	(3)	0	(1)	**53**	**(41)**
Newcastle	6	(6)	0	(1)	2	(3)	6	(4)	1	(0)	**15**	**(14)**
Oxford	62	(68)	1	(0)	6	(6)	2	(2)	0	(3)	**71**	**(79)**
Royal Free	-	-	0	(0)	-	-	1	(3)	0	(0)	**1**	**(3)**
WLRTC	12	(12)	-	-	0	(1)	-	-	-	-	**12**	**(13)**
TOTAL	**198**	**(196)**	**12**	**(16)**	**11**	**(12)**	**12**	**(20)**	**4**	**(6)**	**237**	**(250)**

WLRTC - West London Renal and Transplant Centre
[1] Waiting list figures are as at 29 February 2020 and 31 March 2019

Table 6.2 Whole pancreas transplant list and new registrations in the UK, 1 April 2019 - 31 March 2020

Outcome of patient at 31 March 2020	Active and suspended patients at 1 April 2019 N	%	New registrations in 2019-2020[1] N	%	TOTAL N	%
Pancreas transplant list						
Remained active/suspended	56	80	11	55	67	74
Transplanted	4	6	9	45	13	14
Removed	9	13	0	0	9	10
Died	1	1	0	0	1	1
TOTAL	**70**		**20**		**90**	
Kidney/pancreas transplant list						
Remained active/suspended	173	53	199	84	372	66
Transplanted	133	41	32	13	165	29
Removed[2]	12	4	3	1	15	3
Died	8	2	4	2	12	2
TOTAL	**326**		**238**		**564**	

[1] Includes re-registrations for second or subsequent patients
[2] Includes 1 patient removed from kidney/pancreas list and made active on kidney/islet list

The active pancreas transplant list rates by country/NHS region of patient's residence are shown in **Table 6.3**. At 29 February 2020, the overall transplant list rate was 3.6 pmp and across NHS regions ranged from 2.2 to 4.3 pmp.

Table 6.3 Active pancreas, kidney/pancreas, and islet transplant list at 31 March, by country/ NHS region of patient residence

Country/NHS region of residence	Pancreas/Islet transplant list (pmp)			
	2020[1]		2019	
North East and Yorkshire	32	(3.7)	25	(2.9)
North West	30	(4.3)	22	(3.1)
Midlands	35	(3.3)	49	(4.6)
East of England	14	(2.2)	12	(1.8)
London	27	(3.0)	28	(3.1)
South East	32	(3.6)	36	(4.1)
South West	15	(2.7)	11	(2.0)
England	**185**	**(3.3)**	**183**	**(3.3)**
Isle of Man	**0**	**(0.0)**	**0**	**(0.0)**
Channel Islands	**0**	**(0.0)**	**1**	**(6.3)**
Wales	**16**	**(5.1)**	**18**	**(5.7)**
Scotland	**33**	**(6.1)**	**44**	**(8.1)**
Northern Ireland	**1**	**(0.5)**	**3**	**(1.6)**
TOTAL[2]	**237**	**(3.6)**	**250**	**(3.8)**

[1]As at 29 February 2020
[2] Includes patients in 2020 (2019) resident in: UK unknown 2 (1)

An indication of longer term outcomes for patients listed for a pancreas or kidney/pancreas transplant are summarised in **Figure 6.2**. This shows the proportion of patients transplanted or still waiting six months, one year, two years, and three years after joining the list. It also shows the proportion removed from the transplant list (typically because they become too unwell for transplant) and those dying while on the transplant list. 34% of patients are transplanted within one year, while three years after listing 74% of patients have received a transplant. The median (average) waiting time for a pancreas transplant is 352 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 240 new pancreas only and kidney/pancreas registrations made in the UK, 1 April 2016 - 31 March 2017**

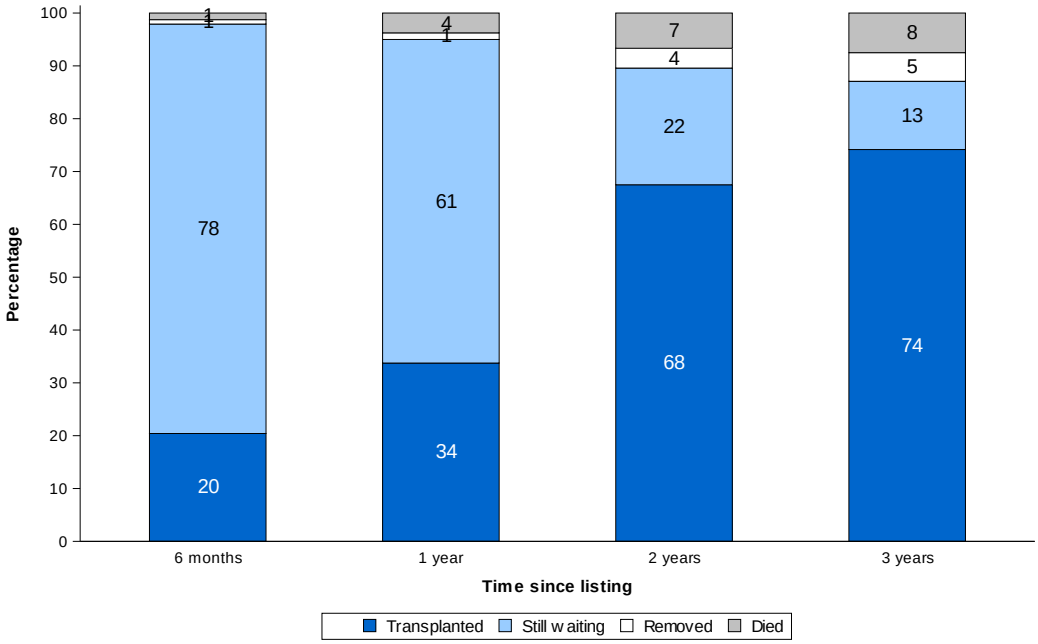


Table 6.4 **Median waiting time to pancreas only and kidney/pancreas transplant in the UK, for patients registered 1 April 2014 - 31 March 2018, by blood group**

Blood group	Number of patients registered	Waiting time (days) Median	95% Confidence interval
Adult			
O	425	450	424 - 476
A	359	252	225 - 279
B	121	389	314 - 464
AB	34	125	37 - 213
TOTAL	**939**	**352**	**329 - 375**

Table 6.5 **Median waiting time to pancreas only and kidney/pancreas transplant in the UK, for patients registered 1 April 2014 - 31 March 2018, by ethnicity**

Ethnicity	Number of patients registered	Waiting time (days) Median	95% Confidence interval
Adult			
White	812	348	322 - 374
Asian	54	347	261 - 433
Black	49	414	326 - 502
Other	15	186	168 - 204
TOTAL[1]	**939**	**352**	**329 - 375**

[1] Includes 9 patients whose ethnicity was not reported

6.3 Donor and organ supply

Of the 946 organ donors after brain death in the UK in 2019-2020, 333 (35%) donated a pancreas. There were 116 pancreas donors after circulatory death in 2019-2020. **Table 6.6** shows this activity by country/NHS region 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 5.0 pmp, with rates ranging from 3.7 to 6.2 pmp across NHS regions and for donors after circulatory death is 1.7 pmp, with rates ranging from 1.1 to 2.9 pmp across NHS regions.

Table 6.6 Pancreas donation rates for deceased donors in the UK, 1 April 2019 - 31 March 2020, by country/ NHS region

Country/ NHS region of residence	Pancreas donors (pmp)					
	DBD		DCD		**TOTAL**	
North East and Yorkshire	53	(6.2)	18	(2.1)	**71**	**(8.3)**
North West	31	(4.4)	8	(1.1)	**39**	**(5.6)**
Midlands	47	(4.5)	21	(2.0)	**68**	**(6.5)**
East of England	24	(3.7)	19	(2.9)	**43**	**(6.6)**
London	41	(4.6)	10	(1.1)	**51**	**(5.7)**
South East	38	(4.3)	19	(2.1)	**57**	**(6.4)**
South West	34	(6.1)	8	(1.4)	**42**	**(7.5)**
England	**268**	**(4.8)**	**103**	**(1.8)**	371	**(6.6)**
Isle of Man	**2**	**(25.0)**	**0**	**(0.0)**	**2**	**(25.0)**
Channel Islands	**1**	**(6.3)**	**0**	**(0.0)**	**1**	**(6.3)**
Wales	**23**	**(7.3)**	**8**	**(2.5)**	**31**	**(9.9)**
Scotland	**25**	**(4.6)**	**5**	**(0.9)**	**30**	**(5.5)**
Northern Ireland	**8**	**(4.3)**	**0**	**(0.0)**	**8**	**(4.3)**
TOTAL[1]	**333**	**(5.0)**	**116**	**(1.7)**	**449**	**(6.8)**

[1] Includes 6 donors with unknown UK postcode

6.4 Transplants

The number of pancreas transplants by recipient country/NHS region 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 1.4 to 2.6 pmp across NHS regions and overall was 2.3 pmp. For donors after circulatory death, the overall rate was 0.8 pmp and ranged from 0.2 to 1.4 pmp across NHS regions.

Table 6.7 Pancreas transplant rates per million population (pmp), in the UK, 1 April 2019 - 31 March 2020, by country and NHS region

Country/NHS region of residence	DBD		DCD		TOTAL	
	N	(pmp)	N	(pmp)	N	(pmp)
North East and Yorkshire	15	(1.8)	3	(0.4)	**18**	**(2.1)**
North West	12	(1.7)	3	(0.4)	**15**	**(2.1)**
Midlands	27	(2.6)	13	(1.2)	**40**	**(3.8)**
East of England	10	(1.5)	9	(1.4)	**19**	**(2.9)**
London	19	(2.1)	7	(0.8)	**26**	**(2.9)**
South East	23	(2.6)	5	(0.6)	**28**	**(3.2)**
South West	8	(1.4)	1	(0.2)	**9**	**(1.6)**
England	**114**	**(2.0)**	**41**	**(0.7)**	**155**	**(2.8)**
Isle of Man	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**
Channel Islands	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**
Wales	**7**	**(2.2)**	**3**	**(1.0)**	**10**	**(3.2)**
Scotland	**27**	**(5.0)**	**7**	**(1.3)**	**34**	**(6.3)**
Northern Ireland	**3**	**(1.6)**	**0**	**(0.0)**	**3**	**(1.6)**
TOTAL[1]	**152**	**(2.3)**	**51**	**(0.8)**	**203**	**(3.1)**

[1] Includes 1 recipient with an unknown UK postcode

There were 203 deceased donor pancreas transplants in 2019-2020, similar to the 204 transplants performed in 2018-2019. Of these 203, 162 (80%) were SPK transplants, 13 (6%) were pancreas only transplants (pancreas alone (PTA) or pancreas after kidney (PAK)) and 28 (14%) were islet transplants (including 5 SIK). The number of transplants performed at each centre is shown in **Table 6.8** by transplant type and **Table 6.9** by transplant and 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. In 2019-2020, the median CIT for a DBD donor whole pancreas transplant is 11.0 hours (Inter-Quartile (IQ) range 9.0 – 12.3) and for a DCD donor transplant is 10.2 hours (IQ range 9.0 – 11.5) and overall is 10.6 hours (IQ range 9.0 – 12.0).

At 31 March 2020, there were approximately 2,100 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 2019 - 31 March 2020 (2018-2019) by centre

Centre	Transplant type											
	SPK		SIK		PTA		PAK		Islet			
									Routine		Priority	
Bristol	-	-	0	(0)	-	-	-	-	0	(0)	0	(0)
Cambridge	19	(19)	-	-	0	(0)	0	(0)	-	-	-	-
Cardiff	9	(7)	-	-	0	(1)	0	(1)	-	-	-	-
Edinburgh	24	(14)	1	(3)	0	(0)	0	(0)	6	(3)	6	(4)
Guys	27	(29)	-	-	0	(0)	0	(0)	-	-	-	-
King's College	-	-	0	(0)	-	-	-	-	2	(1)	0	(1)
Manchester	22	(25)	4	(4)	2	(0)	3	(7)	0	(1)	1	(3)
Newcastle	5	(7)	0	(1)	0	(0)	1	(1)	3	(3)	1	(1)
Oxford	46	(52)	0	(0)	2	(3)	5	(2)	2	(3)	2	(0)
Royal Free	-	-	0	(0)	-	-	-	-	0	(0)	0	(0)
WLRTC	10	(5)	-	-	0	(2)	0	(1)	-	-	-	-
TOTAL	**162**	**(158)**	**5**	**(8)**	**4**	**(6)**	**9**	**(12)**	**13**	**(11)**	**10**	**(9)**

WLRTC - West London Renal and Transplant Centre

Table 6.9 Pancreas transplants, 1 April 2019 - 31 March 2020 by centre and donor type

Centre	Transplant and donor type									
	SPK		SIK		PTA/PAK		Islet		**TOTAL**	
	DBD	DCD	DBD	DCD	DBD	DCD	DBD	DCD	**DBD**	**DCD**
Bristol	-	-	0	0	-	-	0	0	**0**	**0**
Cambridge	8	11	-	-	0	0	-	-	**8**	**11**
Cardiff	6	3	-	-	0	0	-	-	**6**	**3**
Edinburgh	21	3	1	0	0	0	8	4	**30**	**7**
Guys	20	7	-	-	0	0	-	-	**20**	**7**
King's College	-	-	0	0	-	-	1	1	**1**	**1**
Manchester	16	6	4	0	4	1	1	0	**25**	**7**
Newcastle	5	0	0	0	1	0	4	0	**10**	**0**
Oxford	34	12	0	0	6	1	4	0	**44**	**13**
Royal Free	-	-	0	0	-	-	0	0	**0**	**0**
WLRTC	8	2	-	-	0	0	-	-	**8**	**2**
TOTAL	**118**	**44**	**5**	**0**	**11**	**2**	**18**	**5**	**152**	**51**

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 2019 - 31 March 2020, and transplant list patients at 29 February

Age group (years)	Donors		Transplant recipients		Active transplant list patients	
	N	(%)	N	(%)	N	(%)
0 - 17	28	(6)	0	(0)	1	(0)
18 - 34	140	(31)	47	(23)	58	(24)
35 - 49	176	(39)	97	(48)	110	(46)
50 - 59	97	(22)	51	(25)	60	(25)
60 - 69	8	(2)	7	(3)	7	(3)
70+	0	(0)	1	(0)	1	(0)
Mean (SD)	38	(13)	43	(10)	43	(10)
Male	259	(58)	107	(53)	123	(52)
Female	190	(42)	96	(47)	114	(48)
White	408	(92)	171	(85)	202	(86)
Asian	13	(3)	10	(5)	21	(9)
Black	9	(2)	17	(8)	7	(3)
Chinese	5	(1)	0	(0)	2	(1)
Other	8	(2)	4	(2)	4	(2)
Not reported	6		1		1	
O	205	(46)	86	(42)	123	(52)
A	183	(41)	84	(41)	69	(29)
B	50	(11)	24	(12)	41	(17)
AB	11	(2)	9	(4)	4	(2)
First graft			183	(90)	213	(90)
Re-graft			20	(10)	24	(10)
TOTAL	**449**	**(100)**	**203**	**(100)**	**237**	**(100)**

Cardiothoracic Activity

Key messages

- **At 29 February 2020, there were 343 patients on the active heart transplant list, 347 on the lung list and 5 on the heart-lung list**
- **Of the 946 organ donors after brain death during 2019-2020, 165 (17%) donated their heart and 146 (15%) donated at least one lung**
- **The number of heart transplants fell by 5% to 174; 69% of these were urgent heart transplants, 17% were super-urgent, and 14% were non-urgent**
- **The number of lung and heart-lung transplants fell by 4% this year to 160**
- **There were 23 DCD heart transplants and the first DCD heart-lung transplant in 2019-2020**

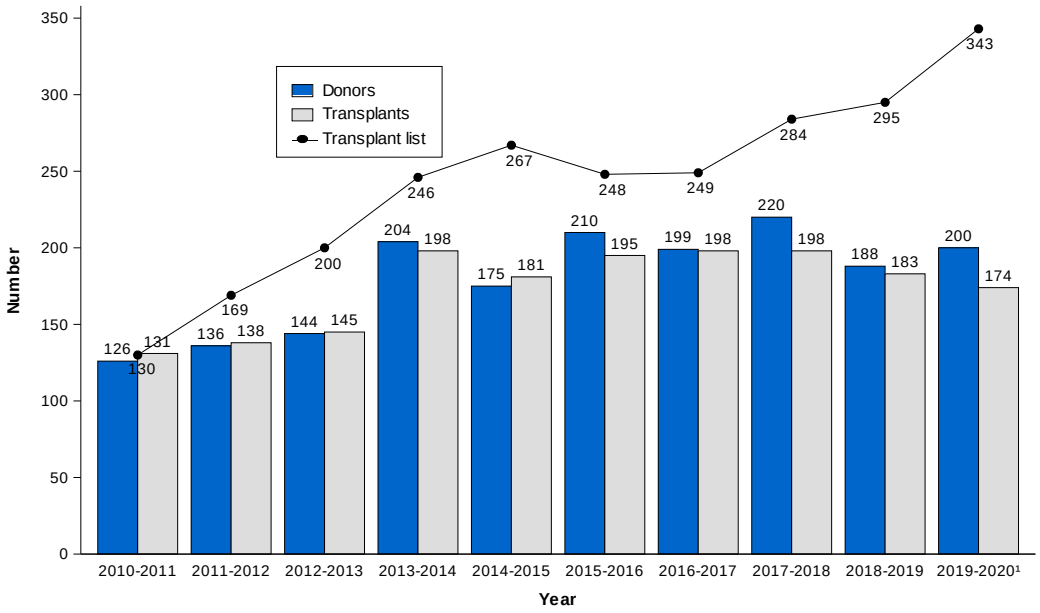
7.1 Overview

Note that the COVID-19 pandemic will have affected the number of offered, retrieved and transplanted organs in 2019-2020. To better reflect the number of patients waiting for a transplant at the end of this year, data as at 29 February 2020 have been used.

Last year the number of heart transplants fell by 5% to 174 compared with 2018-2019, and the number of lung or heart-lung transplants fell by 4% to 160. There were increases in both the heart and the lung transplant lists since March 2019. The number of patients active on the heart transplant list at year end has increased by 164% since 2011, while the number of patients active on the lung or heart-lung transplant list has increased by 56% since 2011.

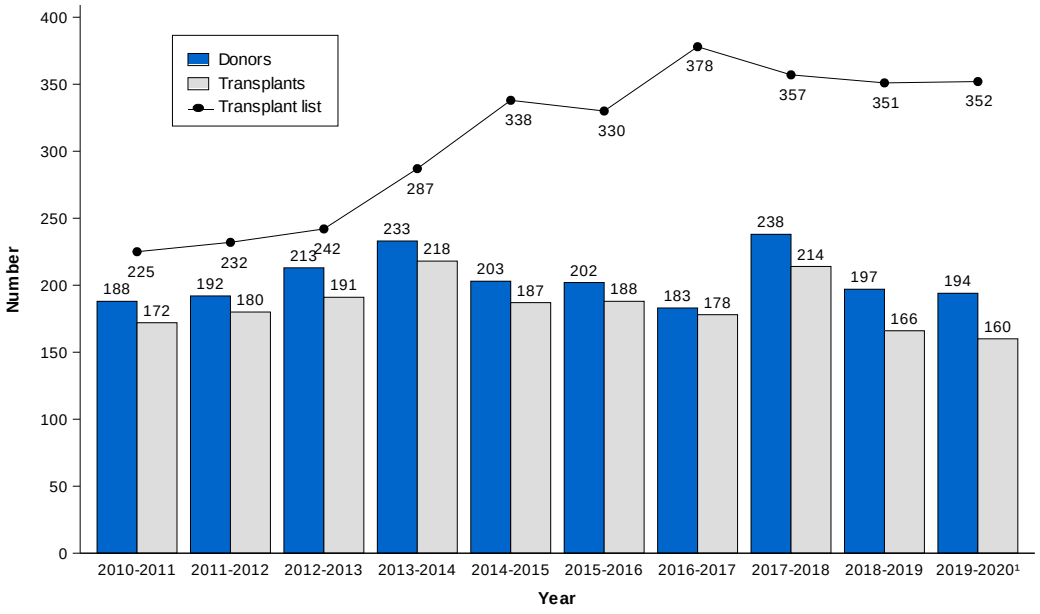
A summary of the deceased donor cardiothoracic activity from 1 April 2010 to 31 March 2020 is shown in **Figure 7.1** for heart activity and **Figure 7.2** for lung activity. Donors who donate both heart and lung(s) are included in both figures, but heart-lung block transplants and patients active on 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 2010 - 31 March 2020, Number of donors, transplants and patients on the active transplant list at 31 March**



¹ Waiting list as at 29 February 2020

Figure 7.2 **Deceased donor lung and heart-lung programme in the UK, 1 April 2010 - 31 March 2020, Number of donors, transplants and patients on the active transplant list at 31 March**



¹ Waiting list as at 29 February 2020

7.2 Transplant list

Table 7.1 shows the number of patients on the active transplant lists at 29 February 2020 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 six patients waiting on the urgent lung transplant list. The lung transplant list accounts for 50% of the patients waiting for a cardiothoracic organ transplant. Overall, Newcastle and Harefield had the largest cardiothoracic lists on 29 February 2020.

Table 7.1 Patients on the cardiothoracic transplant lists at 29 February 2020 (2019)[1] 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	39	(30)	9	(4)	0	(1)	1	(2)	48	(44)	1	(0)	0	(0)	**98**	**(81)**
Glasgow	18	(17)	3	(3)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	**21**	**(20)**
Great Ormond Street	1	(0)	0	(0)	0	(0)	0	(0)	1	(0)	0	(0)	0	(0)	**2**	**(0)**
Harefield	56	(59)	7	(4)	0	(0)	0	(2)	96	(110)	1	(0)	0	(0)	**160**	**(175)**
Manchester	33	(28)	1	(5)	0	(0)	1	(3)	53	(55)	0	(0)	0	(0)	**88**	**(91)**
Newcastle	82	(70)	11	(10)	0	(0)	1	(1)	101	(91)	1	(0)	0	(0)	**196**	**(172)**
Papworth	43	(27)	2	(1)	2	(1)	2	(4)	41	(31)	2	(0)	0	(0)	**92**	**(64)**
TOTAL	**272**	**(231)**	**33**	**(27)**	**2**	**(2)**	**5**	**(12)**	**340**	**(331)**	**5**	**(0)**	**0**	**(0)**	**657**	**(603)**
Paediatric																
Great Ormond Street	11	(18)	14	(6)	0	(0)	0	(0)	0	(3)	1	(3)	0	(0)	**26**	**(30)**
Harefield	0	(1)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	**0**	**(1)**
Newcastle	8	(5)	3	(5)	0	(0)	0	(0)	1	(2)	0	(0)	0	(0)	**12**	**(12)**
TOTAL	**19**	**(24)**	**17**	**(11)**	**0**	**(0)**	**0**	**(0)**	**1**	**(5)**	**1**	**(3)**	**0**	**(0)**	**38**	**(43)**

[1] Waiting list figures are as at 29 February 2020 and 31 March 2019

During 2019-2020, there were 322 registrations onto the heart transplant list, 5 registrations onto the heart-lung transplant list and 272 onto the lung transplant list. Registration outcomes as at 31 March 2020 for patients on the list at 1 April 2019 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 2019 - 31 March 2020

	Active and suspended patients at 1 April 2019		New registrations in 2019-2020[1]		**TOTAL**	
Outcome of patient at 31 March 2020	N	%	N	%	**N**	**%**
Heart transplant list						
Remained active/suspended	227	69	148	46	375	58
Transplanted	53	16	120	37	173	27
Removed	31	9	44	14	75	12
Died	16	5	10	3	26	4
TOTAL	**327**		**322**		**649**	
Heart-lung transplant list						
Remained active/suspended	4	24	2	40	6	27
Transplanted[2]	6	35	1	20	7	32
Removed	5	29	2	40	7	32
Died	2	12	0	0	2	9
TOTAL	**17**		**5**		**22**	
Lung transplant list						
Remained active/suspended	179	52	185	68	364	59
Transplanted	99	29	54	20	153	25
Removed	36	11	11	4	47	8
Died	28	8	22	8	50	8
TOTAL	**342**		**272**		**614**	

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

Table 7.3 shows the transplant list rates per million population by country/NHS region of patient's residence. The overall UK heart transplant list rate at 29 February 2020 was 5.2 pmp and ranged from 3.7 to 8.1 across NHS regions. The overall UK lung transplant list rate was 5.3 pmp and ranged from 2.9 to 6.2 across NHS regions.

Table 7.3 Active cardiothoracic transplant list at 31 March, by country/NHS region of patient residence

Country/ NHS region of residence	Heart transplant list (pmp) 2020[1]		2019		Lung transplant list (pmp) 2020[1]		2019	
North East and Yorkshire	69	(8.1)	62	(7.2)	53	(6.2)	59	(6.9)
North West	31	(4.4)	22	(3.1)	43	(6.1)	39	(5.6)
Midlands	51	(4.8)	39	(3.7)	61	(5.8)	53	(5.0)
East of England	24	(3.7)	21	(3.2)	19	(2.9)	22	(3.4)
London	43	(4.8)	31	(3.5)	45	(5.1)	34	(3.8)
South East	40	(4.5)	38	(4.3)	36	(4.1)	47	(5.3)
South West	23	(4.1)	21	(3.7)	25	(4.5)	29	(5.2)
England	**281**	**(5.0)**	**234**	**(4.2)**	**282**	**(5.0)**	**283**	**(5.1)**
Isle of Man	**1**	**(12.5)**	**1**	**(12.5)**	**0**	**(0.0)**	**1**	**(12.5)**
Channel Islands	**0**	**(0.0)**	**0**	**(0.0)**	**2**	**(12.5)**	**1**	**(6.3)**
Wales	**12**	**(3.8)**	**10**	**(3.2)**	**14**	**(4.5)**	**22**	**(7.0)**
Scotland	**28**	**(5.1)**	**27**	**(5.0)**	**32**	**(5.9)**	**28**	**(5.1)**
Northern Ireland	**14**	**(7.4)**	**15**	**(8.0)**	**21**	**(11.2)**	**14**	**(7.4)**
TOTAL[2,3]	**343**	**(5.2)**	**295**	**(4.4)**	**352**	**(5.3)**	**351**	**(5.3)**

[1] As at 29 February 2020
[2] Includes heart patients in 2020 (2019) resident in: UK unknown 3 (3); Republic of Ireland 2 (2); Overseas 2 (3)
[3] Includes lung patients in 2020 (2019) resident in: UK unknown 1 (1); Republic of Ireland 0 (1)

The transplant list outcomes for adult patients listed for a cardiothoracic organ transplant between 1 April 2016 and 31 March 2017 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, 10% of non-urgent heart patients were transplanted while 3% had died, compared with 67% transplanted and 7% died for urgent heart patients. Of those listed for a non-urgent lung transplant, 26% were transplanted within six months, rising to 47% after three years, however at three years, 20% had died. The patients removed from these lists may have subsequently died.

Figure 7.3 **Post-registration outcome for 172 first non-urgent heart only registrations made in the UK, 1 April 2016 - 31 March 2017**

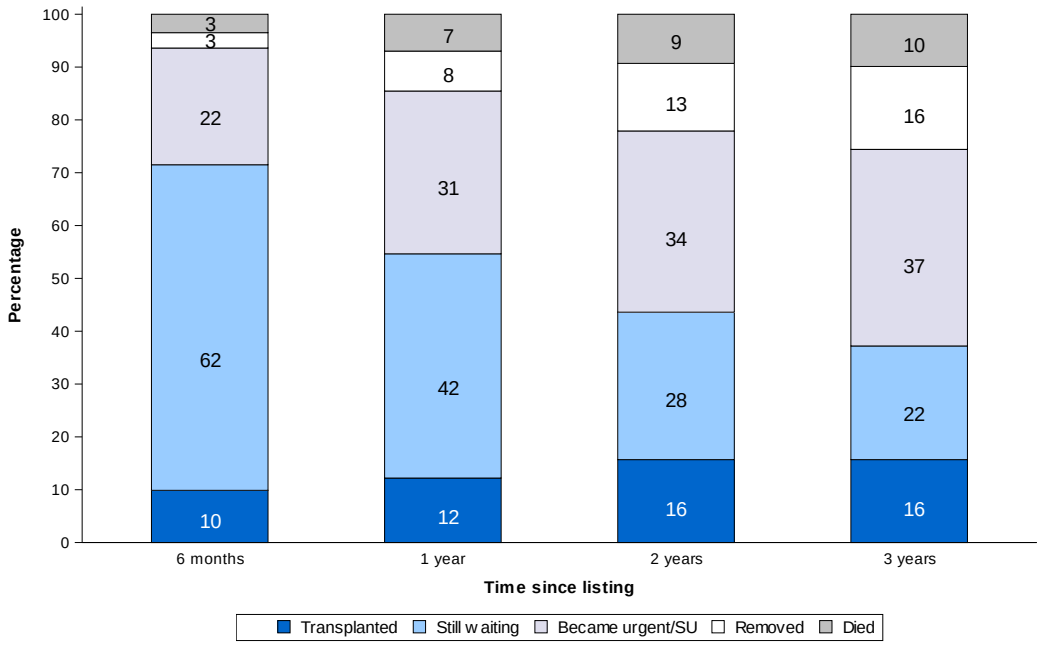


Figure 7.4 **Post-registration outcome for 199 first urgent heart only registrations made in the UK, 1 April 2016 - 31 March 2017**

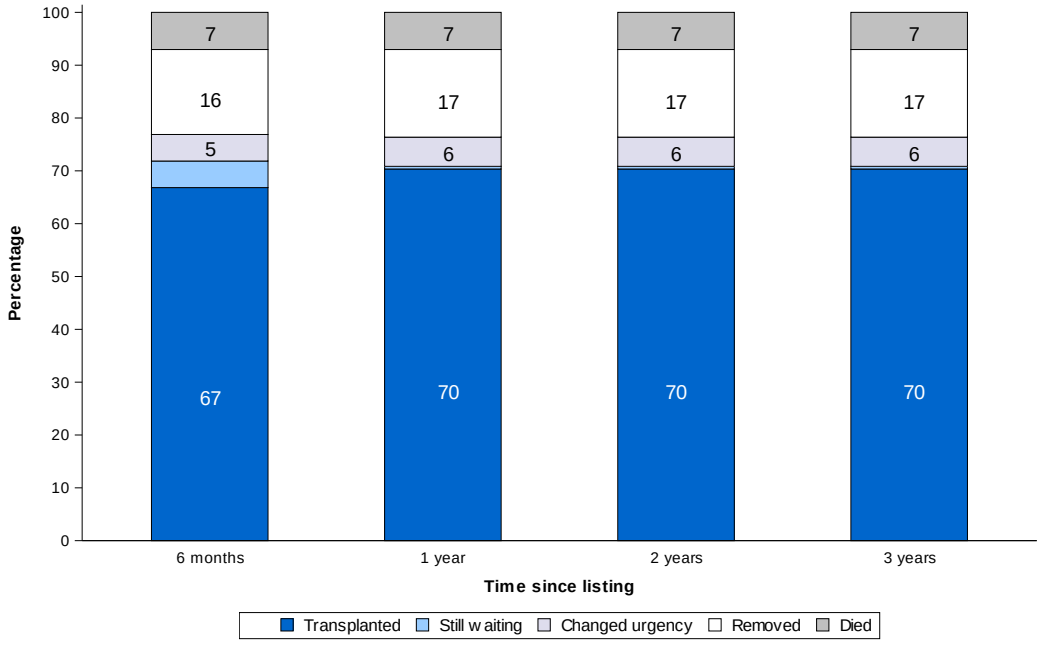


Figure 7.5 **Post-registration outcome for 340 first lung only registrations made in the UK, 1 April 2016 - 31 March 2017**

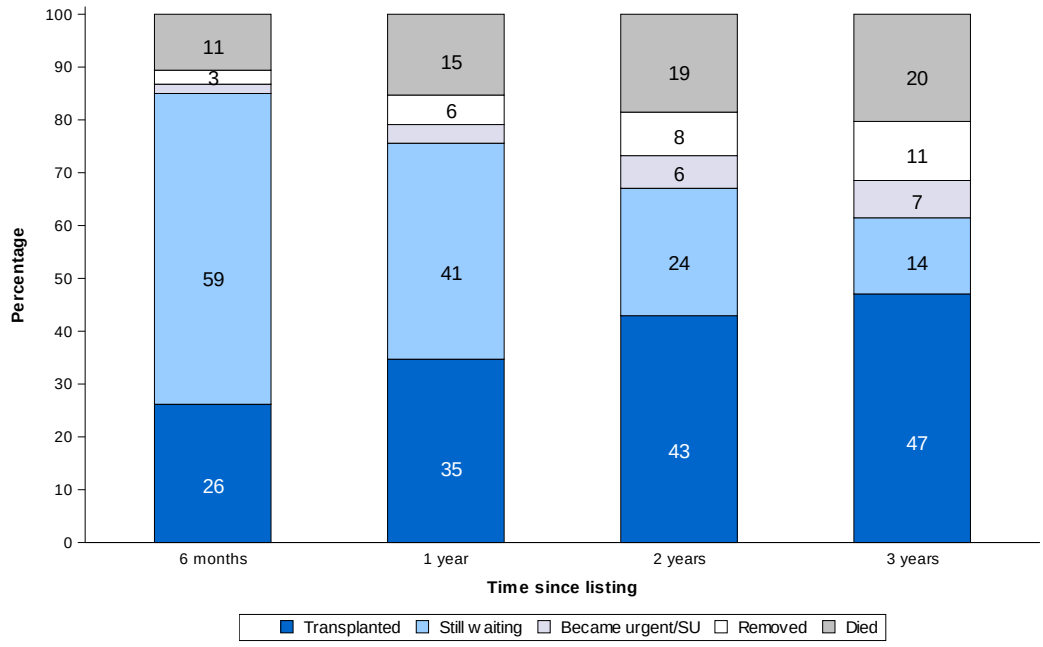


Table 7.4 and **Table 7.5** show the median waiting time to cardiothoracic organ transplant by blood group and ethnicity of patient, respectively, for patients registered between 1 April 2012 and 31 March 2017. The overall median waiting time to heart transplantation, for adults, was just over 4 years 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 32 days. The overall median waiting time to lung transplantation, for adults, was 336 days, but for blood group O patients alone was 528 days. For paediatric heart patients, the median waiting time was 463 days for 'never urgent' registrations and 77 days for 'ever 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 2012 - 31 March 2017, by blood group

Blood group	Number of patients registered	Waiting time (days) Median	95% Confidence interval
Adult never urgent heart			
O[1]	186	-	-
A	197	756	216 - 1296
B	45	497	186 - 808
AB	15	92	0 - 195
TOTAL	**443**	**1487**	**909 - 2065**
Adult ever urgent heart[2] (urgent waiting time only)			
O	311	52	45 - 59
A	316	17	14 - 20
B	97	39	29 - 49
AB	34	27	20 - 34
TOTAL	**758**	**32**	**28 - 36**
Paediatric never urgent heart	**32**	**463**	**0 - 951**
Paediatric ever urgent heart (urgent waiting time only)	**214**	**77**	**54 - 100**
Adult lung			
O	653	528	448 - 608
A	597	200	159 - 241
B	140	269	128 - 410
AB	44	171	125 - 217
TOTAL	**1434**	**336**	**299 - 373**

[1] Median and/or 95% confidence interval cannot be estimated
[2] Includes registrations and waiting time on super-urgent list where applicable

Table 7.5 Median waiting time to cardiothoracic transplant in the UK, for patients registered 1 April 2012 - 31 March 2017, by ethnicity

Ethnicity	Number of patients registered	Waiting time (days) Median	95% Confidence interval
Adult never urgent heart			
White	396	1798	1080 - 2516
Asian	24	506	0 - 1222
Black	17	742	86 - 1398
Other[1]	5	-	-
TOTAL[2]	**443**	**1487**	**909 - 2065**
Adult ever urgent heart[3] (urgent waiting time only)			
White	636	31	27 - 35
Asian	74	33	22 - 44
Black	27	68	1 - 135
Other	15	34	24 - 44
TOTAL[2]	**758**	**32**	**28 - 36**
Paediatric never urgent heart	**32**	**463**	**0 - 951**
Paediatric ever urgent heart (urgent waiting time only)	**214**	**77**	**54 - 100**
Adult lung			
White	1354	322	285 - 359
Asian	55	592	289 - 895
Black	16	735	526 - 944
Other[1]	3	-	-
TOTAL[2]	**1434**	**336**	**299 - 373**

[1] Median waiting time not calculated for fewer than 10 patients
[2] Totals do not add up where we do not have ethnicity reported for all patients
[3] Includes registrations and waiting time on super-urgent list where applicable

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 946 DBD donors, 166 (18%) donated their heart, resulting in 153 transplants. Of the 634 DCD donors, 34 (5%) donated their heart, resulting in 24 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 946 DBD donors, 148 (16%) donated at least one lung, with 135 proceeding to transplantation. Of the 634 DCD donors, 46 (7%) donated at least one lung, with 33 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 2019 - 31 March 2020, 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	150	36	(34)	11	94	1	(1)	0
Glasgow	83	13	(13)	7	37	1	(0)	0
Harefield	209	34	(32)	14	143	8	(4)	3
Manchester	120	23	(23)	10	88	2	(2)	0
Newcastle	210	33	(28)	8	131	11	(9)	3
Papworth	174	27	(23)	7	141	11	(8)	2
TOTAL	**946**	**166**	**(153)**	**57**	**634**	**34**	**(24)**	**8**

Table 7.7 Lung organ donation and retrieval rates in the UK, 1 April 2019 - 31 March 2020, 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	149	25	(25)	11	80	8	(6)	0
Harefield	287	48	(48)	17	186	19	(13)	4
Manchester	118	17	(17)	8	100	4	(3)	0
Newcastle	220	33	(21)	12	114	9	(6)	2
Papworth	172	25	(24)	9	154	6	(5)	2
TOTAL	**946**	**148**	**(135)**	**57**	**634**	**46**	**(33)**	**8**

The rates per million population for cardiothoracic organ donors are shown in **Table 7.8** by country/NHS region of residence. No adjustments have been made for potential demographic differences in populations. The overall heart donor rate was 3.0 pmp in 2019-2020 and varied across NHS regions from 2.2 pmp to 3.5 pmp. For lungs, the overall donor rate was 2.9 pmp in 2019-2020 and varied across NHS regions from 1.9 pmp to 3.6 pmp.

Table 7.8 Cardiothoracic donation and retrieval rates for deceased donors in the UK, 1 April 2019 - 31 March 2020, by country/NHS region

Country/ NHS region	Heart (pmp)						Lungs (pmp)					
	DBD		DCD		Total		DBD		DCD		Total	
North East and Yorkshire	21	(2.5)	7	(0.8)	28	(3.3)	19	(2.2)	7	(0.8)	26	(3.0)
North West	15	(2.1)	3	(0.4)	18	(2.6)	11	(1.6)	2	(0.3)	13	(1.9)
Midlands	28	(2.7)	4	(0.4)	32	(3.0)	23	(2.2)	6	(0.6)	29	(2.8)
East of England	14	(2.2)	9	(1.4)	23	(3.5)	11	(1.7)	3	(0.5)	14	(2.2)
London	14	(1.6)	6	(0.7)	20	(2.2)	20	(2.2)	6	(0.7)	26	(2.9)
South East	24	(2.7)	3	(0.3)	27	(3.1)	22	(2.5)	10	(1.1)	32	(3.6)
South West	14	(2.5)	1	(0.2)	15	(2.7)	12	(2.1)	6	(1.1)	18	(3.2)
England	**130**	**(2.3)**	**33**	**(0.6)**	**163**	**(2.9)**	**118**	**(2.1)**	**40**	**(0.7)**	**158**	**(2.8)**
Isle of Man	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**	**1**	**(12.5)**	**1**	**(12.5)**
Channel Islands	**1**	**(6.3)**	**0**	**(0.0)**	**1**	**(6.3)**	**1**	**(6.3)**	**0**	**(0.0)**	**1**	**(6.3)**
Wales	**16**	**(5.1)**	**0**	**(0.0)**	**16**	**(5.1)**	**10**	**(3.2)**	**2**	**(0.6)**	**12**	**(3.8)**
Scotland	**10**	**(1.8)**	**1**	**(0.2)**	**11**	**(2.0)**	**12**	**(2.2)**	**2**	**(0.4)**	**14**	**(2.6)**
Northern Ireland	**6**	**(3.2)**	**0**	**(0.0)**	**6**	**(3.2)**	**2**	**(1.1)**	**1**	**(0.5)**	**3**	**(1.6)**
TOTAL[1,2]	**165**	**(2.5)**	**34**	**(0.5)**	**199**	**(3.0)**	**146**	**(2.2)**	**46**	**(0.7)**	**192**	**(2.9)**

DCD heart donation is not operational in all areas
[1] Heart numbers include 2 donors with unknown UK postcode and excludes 1 donor with overseas postcode
[2] Lung numbers include 3 donors with unknown UK postcode and excludes 2 donors with overseas postcode

7.4 Transplants

The number of cardiothoracic organ transplants by recipient country/NHS region of residence is shown in **Table 7.9**. No adjustments have been made for potential demographic differences in populations. The heart transplant rate ranged from 1.6 to 3.7 pmp across NHS regions and overall was 2.6 pmp. The lung transplant rate ranged from 1.6 to 2.9 pmp across NHS regions and overall was 2.4 pmp. Lung transplant rates include the small number of heart-lung transplants.

Table 7.9 Cardiothoracic transplant rates per million population (pmp) in the UK, 1 April 2019 - 31 March 2020, by country/NHS region

Country/ NHS region	Heart (pmp)						Lungs (pmp)					
	DBD		DCD		Total		DBD		DCD		Total	
North East and Yorkshire	28	(3.3)	1	(0.1)	29	(3.4)	14	(1.6)	5	(0.6)	19	(2.2)
North West	13	(1.9)	1	(0.1)	14	(2.0)	18	(2.6)	2	(0.3)	20	(2.9)
Midlands	31	(2.9)	3	(0.3)	34	(3.2)	21	(2.0)	4	(0.4)	25	(2.4)
East of England	16	(2.5)	8	(1.2)	24	(3.7)	15	(2.3)	4	(0.6)	19	(2.9)
London	10	(1.1)	4	(0.4)	14	(1.6)	12	(1.3)	2	(0.2)	14	(1.6)
South East	18	(2.0)	3	(0.3)	21	(2.4)	15	(1.7)	4	(0.5)	19	(2.1)
South West	10	(1.8)	2	(0.4)	12	(2.1)	12	(2.1)	3	(0.5)	15	(2.7)
England	**126**	**(2.3)**	**22**	**(0.4)**	**148**	**(2.6)**	**107**	**(1.9)**	**24**	**(0.4)**	**131**	**(2.3)**
Isle of Man	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**	**1**	**(12.5)**	**0**	**(0.0)**	**1**	**(12.5)**
Channel Islands	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**	**1**	**(6.3)**	**1**	**(6.3)**
Wales	**4**	**(1.3)**	**0**	**(0.0)**	**4**	**(1.3)**	**9**	**(2.9)**	**2**	**(0.6)**	**11**	**(3.5)**
Scotland	**12**	**(2.2)**	**1**	**(0.2)**	**13**	**(2.4)**	**6**	**(1.1)**	**3**	**(0.6)**	**9**	**(1.7)**
Northern Ireland	**3**	**(1.6)**	**0**	**(0.0)**	**3**	**(1.6)**	**3**	**(1.6)**	**3**	**(1.6)**	**6**	**(3.2)**
TOTAL[1]	**150**	**(2.3)**	**23**	**(0.3)**	**173**	**(2.6)**	**126**	**(1.9)**	**33**	**(0.5)**	**159**	**(2.4)**

DCD heart transplantation is not operational in all areas
[1]Excludes 2 recipients who reside in the Republic of Ireland and includes 5 recipients 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 2019-2020, a total of 334 transplants were carried out; a fall of 4% on 2018-2019. Of these, 174 were heart transplants, of which 149 (86%) were in urgent or super-urgent patients and additionally, 23 (13%) were achieved from donors after circulatory death. There were a total of 155 lung transplants, of which 24 (15%) were in urgent patients and 6 (4%) in super-urgent patients. There was an increase in the number of heart-lung transplants compared with 2018-2019, including the first DCD heart-lung transplant.

Table 7.10 Cardiothoracic transplants from deceased donors, 1 April 2019 – 31 March 2020 (2018-2019), 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	2	(0)	20	(22)	8	(4)	2	(0)	13	(13)	2	(3)	0	(0)	47	(42)
Glasgow	2	(0)	8	(7)	1	(2)	0	(0)	0	(0)	0	(0)	0	(0)	11	(9)
Harefield	1	(6)	17	(24)	5	(6)	0	(0)	32	(38)	3	(6)	5	(6)	63	(86)
Manchester	0	(3)	18	(11)	4	(6)	1	(1)	24	(19)	4	(2)	0	(0)	51	(42)
Newcastle	3	(7)	19	(12)	4	(2)	0	(1)	19	(21)	10	(5)	1	(0)	56	(48)
Papworth	16	(21)	16	(20)	7	(4)	2	(0)	34	(34)	5	(8)	0	(1)	80	(88)
TOTAL	**24**	**(37)**	**98**	**(96)**	**29**	**(24)**	**5**	**(2)**	**122**	**(125)**	**24**	**(24)**	**6**	**(7)**	**308**	**(315)**
Paediatric[1]																
Great Ormond Street	1	(5)	9	(10)	0	(0)	0	(2)	2	(4)	0	(0)	0	(0)	12	(21)
Manchester	0	(0)	0	(0)	0	(1)	0	(0)	0	(0)	0	(0)	0	(0)	0	(1)
Newcastle	0	(2)	13	(8)	0	(0)	0	(0)	1	(0)	0	(2)	0	(0)	14	(12)
TOTAL	**1**	**(7)**	**22**	**(18)**	**0**	**(1)**	**0**	**(2)**	**3**	**(4)**	**0**	**(2)**	**0**	**(0)**	**26**	**(34)**

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

Table 7.11 Cardiothoracic transplants from deceased donors, 1 April 2019 - 31 March 2020 (2018-2019), by age group and centre

Transplant centre	Transplant type												TOTAL	
	Heart				Heart-lung				Lung(s)					
	DBD		DCD		DBD		DCD		DBD		DCD			
Adult														
Birmingham	30	(26)	0	(0)	2	(0)	0	(0)	15	(13)	0	(3)	47	(42)
Glasgow	10	(9)	1	(0)	0	(0)	0	(0)	0	(0)	0	(0)	11	(9)
Harefield	20	(27)	3	(9)	0	(0)	0	(0)	33	(38)	7	(12)	63	(86)
Manchester	20	(19)	2	(1)	1	(1)	0	(0)	23	(18)	5	(3)	51	(42)
Newcastle	26	(20)	0	(1)	0	(1)	0	(0)	21	(17)	9	(9)	56	(48)
Papworth	24	(25)	15	(20)	1	(0)	1	(0)	28	(32)	11	(11)	80	(88)
TOTAL	**130**	**(126)**	**21**	**(31)**	**4**	**(2)**	**1**	**(0)**	**120**	**(118)**	**32**	**(38)**	**308**	**(315)**
Paediatric[1]														
Great Ormond Street	8	(15)	2	(0)	0	(2)	0	(0)	2	(3)	0	(1)	12	(21)
Manchester	0	(1)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(1)
Newcastle	13	(10)	0	(0)	0	(0)	0	(0)	1	(2)	0	(0)	14	(12)
TOTAL	**21**	**(26)**	**2**	**(0)**	**0**	**(2)**	**0**	**(0)**	**3**	**(5)**	**0**	**(1)**	**26**	**(34)**

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

At 31 March 2020 there were approximately 4,100 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. 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.

In 2019-2020, the median IT for a DBD heart transplant was 3.2 hours (Inter-Quartile (IQ) range 2.8 – 4.1) and for a DCD heart transplant was 5.1 hours (IQ range 4.3 – 6.0) and overall was 3.4 hours (IQ range 2.9 – 4.5).

The median IT for a DBD donor lung transplant was 6.2 hours (IQ range 5.5 – 8.3) and for a DCD donor lung transplant was 7.6 hours (IQ range 6.6 – 10.3) and overall was 6.6 hours (IQ range 5.7 – 8.4).

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 2019 - 31 March 2020, and transplant list patients at 29 February in the UK

Age group (years)	Donors		Transplant recipients		Active transplant list patients	
	N	(%)	N	(%)	N	(%)
0 - 17	25	(8)	30	(9)	45	(6)
18 - 34	106	(32)	51	(15)	97	(14)
35 - 49	101	(31)	78	(23)	148	(21)
50 - 59	58	(18)	110	(33)	230	(33)
60 - 69	33	(10)	65	(19)	168	(24)
70+	6	(2)	0	(0)	7	(1)
Mean (SD)	40	(16)	45	(17)	48	(16)
Male	180	(55)	204	(61)	430	(62)
Female	149	(45)	129	(39)	265	(38)
Not reported	0		1		0	
White	296	(91)	295	(89)	595	(86)
Asian	12	(4)	30	(9)	55	(8)
Black	8	(2)	4	(1)	33	(5)
Chinese	1	(0)	0	(0)	0	(0)
Other	9	(3)	4	(1)	6	(1)
Not reported	3		1		6	
O	163	(50)	126	(38)	362	(52)
A	138	(42)	160	(48)	251	(36)
B	23	(7)	35	(10)	73	(11)
AB	5	(2)	13	(4)	9	(1)
First graft			331	(99)	684	(98)
Re-graft			3	(1)	11	(2)
TOTAL	**329**	**(100)**	**334**	**(100)**	**695**	**(100)**

Liver Activity

Key messages

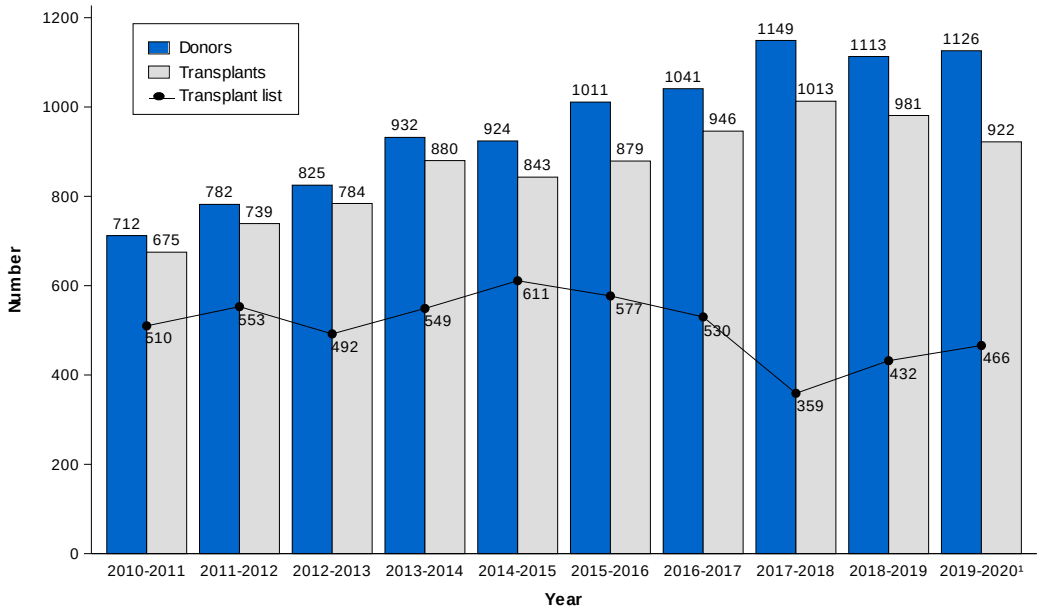
- **The number of patients on the active liver transplant list at 29 February 2020 was 466, an increase of 8% from 2019**
- **The number of liver donors after brain death fell by 1% to 848, while transplants from donors after brain death fell by 5% to 752**
- **The number of liver donors after circulatory death increased by 8% to 278, while transplants from donors after circulatory death fell by 10% to 170**

8.1 Overview

Note that the COVID-19 pandemic will have affected the number of offered, retrieved and transplanted organs in 2019-2020. To better reflect the number of patients waiting for a transplant at the end of this year, data as at 29 February 2020 have been used.

The number of deceased liver donors and transplants in the UK in the last ten years is shown in **Figure 8.1**. Over this period, there has been a decrease in the number of patients registered on the active liver transplant list, although this number has increased in recent years. The numbers of donors and transplants has steadily increased over the last decade although both have slightly decreased over the last two years.

Figure 8.1 Deceased donor liver programme in the UK, 1 April 2010 - 31 March 2020, Number of donors, transplants and patients on the active transplant list at 31 March



¹ Waiting list as at 29 February 2020

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 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 2019-2020, 1,126 organ donors donated their liver for transplant: 848 donors after brain death and 278 donors after circulatory death. There were 466 patients on the active transplant list at 29 February 2020, an increase of 8% from 31 March 2019.

Overall, the number of liver transplants (either whole liver or liver lobe transplants) from donors after brain death fell by 5% to 752, and donors after circulatory death fell by 10% to 170, compared with the previous financial year. Additionally, there were 18 living liver lobe donor transplants in NHS Group 1 (14) and Group 2 (4) paediatric and adult recipients, and 1 domino donor transplant 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. In 2019-2020, there were 85 deceased donor adult super-urgent transplants, representing 10% of all adult deceased transplants and 14 deceased donor paediatric super-urgent transplants, representing 18% of all paediatric deceased transplants. Additionally, there was 1 living donor paediatric super-urgent transplant.

Table 8.1 Deceased and living liver donors and transplants, 1 April 2019 - 31 March 2020 (2018-2019) and transplant list patients at 29 February 2020 (2019)* 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	170	(164)	63	(66)	233	(230)	166	(181)	31	(38)	197	(219)	1	(0)	128	(117)
Cambridge	66	(86)	37	(36)	103	(122)	66	(79)	33	(39)	99	(118)	0	(0)	39	(39)
Edinburgh	102	(92)	20	(14)	122	(106)	59	(95)	6	(13)	65	(108)	0	(0)	49	(37)
King's College	208	(197)	66	(57)	274	(254)	160	(161)	37	(43)	197	(204)	3	(5)	104	(102)
Leeds	155	(152)	49	(41)	204	(193)	90	(81)	20	(21)	110	(102)	3	(1)	57	(43)
Newcastle	50	(58)	8	(7)	58	(65)	32	(25)	4	(3)	36	(28)	0	(0)	22	(18)
Royal Free	82	(85)	29	(28)	111	(113)	103	(97)	38	(27)	141	(124)	0	(0)	30	(40)
TOTAL	**833**	**(834)**	**272**	**(249)**	**1105**	**(1083)**	**676**	**(719)**	**169**	**(184)**	**845**	**(903)**	**7[2]**	**(6)[3]**	**429**	**(396)**
Paediatric																
Birmingham	3	(6)	2	(2)	5	(8)	33	(20)	0	(1)	33	(21)	2	(3)	9	(14)
Cambridge	2	(0)	0	(2)	2	(2)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
Edinburgh	2	(1)	0	(0)	2	(1)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
King's College	1	(5)	3	(2)	4	(7)	29	(37)	1	(3)	30	(40)	6	(8)	21	(16)
Leeds	3	(7)	1	(2)	4	(9)	14	(17)	0	(0)	14	(17)	4	(5)	7	(6)
Newcastle	1	(0)	0	(1)	1	(1)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
Royal Free	3	(2)	0	(0)	3	(2)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
TOTAL	**15**	**(21)**	**6**	**(9)**	**21**	**(30)**	**76**	**(74)**	**1**	**(4)**	**77**	**(78)**	**12[4]**	**(16)[5]**	**37**	**(36)**

* Waiting list figures are as at 29 February 2020 and 31 March 2019
[1] Includes donors whose livers were retrieved by other teams
[2] Includes 3 and 3 living liver lobe transplants, and 1 and 0 domino transplants in NHS Group 1 and Group 2 recipients, respectively
[3] Includes 1 and 5 living liver lobe transplants in NHS Group 1 and Group 2 recipients, respectively
[4] Includes 11 and 1 living liver lobe transplants in NHS Group 1 and Group 2 recipients, respectively
[5] Includes 11 and 3 living liver lobe transplants, 1 and 0 altruistic donor transplants, and 1 and 0 domino transplants in NHS Group 1 and Group 2 recipients, respectively

8.2 Transplant list

During 2019-2020, 1,201 patients joined the liver transplant list. Outcomes for patients on the list at 1 April 2019 and those joining the list during the year are shown in **Table 8.2**. There have been 131 (11%) new registrations that were super-urgent.

Table 8.2 Liver transplant list and new registrations in the UK, 1 April 2019 - 31 March 2020

Outcome of patient at 31 March 2020	Active and suspended patients at 1 April 2019		New registrations in 2019-2020[1]		**TOTAL**	
	N	%	N	%	**N**	**%**
Remained active/suspended	160	33	394	33	554	33
Transplanted	239	49	701	58	940	56
Removed[2]	75	15	71	6	146	9
Died[3]	15	3	35	3	50	3
TOTAL	**489**		**1201**		**1690**	

[1] Includes re-registrations for second or subsequent patients
[2] Includes 14 patients removed and re-registered at a different centre or on different pathway
[3] Includes patients removed due to deteriorating condition

Table 8.3 shows the active transplant list in the UK at 29 February 2020 and 31 March 2019 by country/NHS region of patient's residence. At 29 February 2020, the overall rate was 7.0 pmp and ranged from 4.7 to 8.6 pmp across English NHS regions.

Table 8.3 Active liver transplant list at 31 March, by country/NHS region of patient residence

Country/ NHS region of residence	Liver transplant list (pmp) 2020[1]		2019	
North East and Yorkshire	51	(6.0)	44	(5.1)
North West	49	(7.0)	34	(4.9)
Midlands	78	(7.4)	95	(9.0)
East of England	43	(6.6)	39	(6.0)
London	44	(4.9)	59	(6.6)
South East	42	(4.7)	33	(3.7)
South West	48	(8.6)	42	(7.5)
England	**355**	**(6.3)**	**346**	**(6.2)**
Isle of Man	**1**	**(12.5)**	**0**	**(0.0)**
Channel Islands	**0**	**(0.0)**	**1**	**(6.3)**
Wales	**27**	**(8.6)**	**19**	**(6.1)**
Scotland	**54**	**(9.9)**	**37**	**(6.8)**
Northern Ireland	**19**	**(10.1)**	**20**	**(10.6)**
TOTAL[2]	**466**	**(7.0)**	**432**	**(6.5)**

[1]As at 29 February 2020
[2] Includes patients in 2020 (2019) resident in: UK unknown 1 (1) Republic of Ireland - 3 (4); Overseas - 6 (4)

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, 76% of patients had received a liver transplant while 8% 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 1010 new elective liver only registrations made in the UK, 1 April 2017 - 31 March 2018**

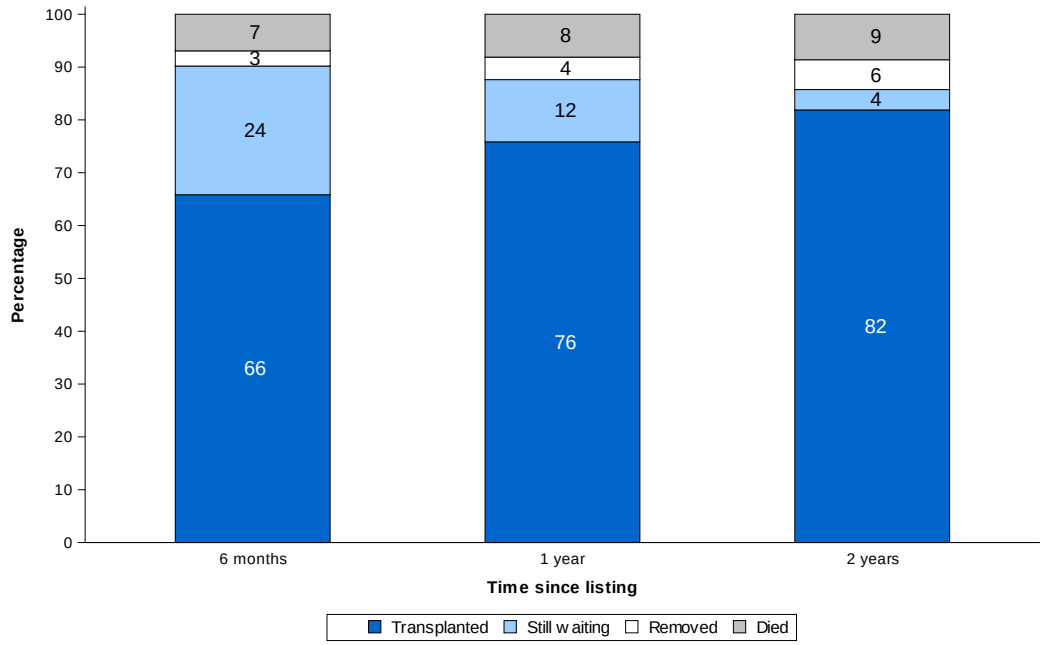


Table 8.4 and **Table 8.5** show the median waiting time to liver transplant for adult and paediatric elective registrations, separately, including a breakdown by blood group and ethnicity for adult elective registrations only. On average, adult patients wait 65 days for a transplant while paediatric patients wait an average of 77 days. Note that these waiting times are not adjusted for other relevant factors which may be influential and differ across blood or ethnic groups.

Table 8.4 **Median waiting time to liver transplant in the UK, for elective patients registered 1 April 2018 - 31 March 2019, by blood group**

Blood group	Number of patients registered	Waiting time (days)	
		Median	95% Confidence interval
Adult			
O	438	95	68 - 122
A	401	47	37 - 57
B	101	125	89 - 161
AB	36	21	16 - 26
TOTAL	**976**	**65**	**54 - 76**
Paediatric	**69**	**77**	**48 - 106**

Table 8.5 Median waiting time to liver transplant in the UK, for elective patients registered 1 April 2018 - 31 March 2019, by ethnicity

Ethnicity	Number of patients registered	Waiting time (days) Median	95% Confidence interval
Adult			
White	849	65	54 - 76
Asian	52	89	56 - 122
Black	19	59	25 - 93
Other	41	37	22 - 52
TOTAL[1]	**976**	**65**	**54 - 76**
Paediatric	**69**	**77**	**48 - 106**

[1] Includes 15 recipients 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 elective liver patients and liver offering for these donors is now made on a patient basis. For donors after circulatory death, the allocation scheme has not changed from centre based offering.

Of the 1,580 organ donors, 1,126 (71%) donated their liver and 891 (79%) of these donated livers were used; see **Table 8.6**. Of livers retrieved from donors after brain death and donors after circulatory death, 85% and 61% 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 2019 - 31 March 2020, 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	186	130	**316**	173	65	**238**	173	(144)	65	(44)	**238**	**(188)**
Cambridge	77	89	**166**	68	37	**105**	68	(54)	37	(26)	**105**	**(80)**
Edinburgh	117	63	**180**	104	20	**124**	104	(89)	20	(10)	**124**	**(99)**
King's College	229	141	**370**	209	69	**278**	209	(185)	69	(37)	**278**	**(222)**
Leeds	179	113	**292**	158	50	**208**	158	(140)	50	(29)	**208**	**(169)**
Newcastle	59	27	**86**	51	8	**59**	51	(39)	8	(5)	**59**	**(44)**
Royal Free	99	71	**170**	85	29	**114**	85	(70)	29	(19)	**114**	**(89)**
TOTAL	**946**	**634**	**1580**	**848**	**278**	**1126**	**848**	**(721)**	**278**	**(170)**	**1126**	**(891)**

The rates per million population (pmp) for liver donors are shown in **Table 8.7** by donor country/NHS region of residence. No adjustments have been made for potential demographic differences in populations. The overall deceased liver donor rate was 16.8 pmp in 2019-2020 and ranged from 15.2 pmp to 18.4 pmp across English NHS regions.

Table 8.7 Liver donor rates in the UK, 1 April 2019 - 31 March 2020, by Country/NHS region

Country/ NHS region	Deceased donors (pmp)					
	DBD		DCD		**Total**	
North East and Yorkshire	116	(13.5)	31	(3.6)	**147**	**(17.2)**
North West	84	(12.0)	25	(3.6)	**109**	**(15.5)**
Midlands	116	(11.0)	44	(4.2)	**160**	**(15.2)**
East of England	73	(11.2)	41	(6.3)	**114**	**(17.6)**
London	107	(12.0)	29	(3.3)	**136**	**(15.3)**
South East	119	(13.4)	44	(5.0)	**163**	**(18.4)**
South West	71	(12.7)	27	(4.8)	**98**	**(17.5)**
England	**686**	**(12.3)**	**241**	**(4.3)**	927	**(16.6)**
Isle of Man	**2**	**(25.0)**	**0**	**(0.0)**	**2**	**(25.0)**
Channel Islands	**3**	**(18.8)**	**0**	**(0.0)**	**3**	**(18.8)**
Wales	**54**	**(17.2)**	**17**	**(5.4)**	**71**	**(22.6)**
Scotland	**56**	**(10.3)**	**15**	**(2.8)**	**71**	**(13.1)**
Northern Ireland	**27**	**(14.4)**	**3**	**(1.6)**	**30**	**(16.0)**
TOTAL[1,2]	**841**	**(12.7)**	**278**	**(4.2)**	**1119**	**(16.8)**

[1] Includes 15 donors with unknown UK postcode
[2] Excludes 7 donors with overseas postcode

8.4 Transplants

The number of liver transplants by recipient country/NHS region 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 10.7 to 15.9 pmp across English NHS regions and overall was 13.8 pmp.

Table 8.8 Liver transplant rates per million population (pmp) in the UK, 1 April 2019 - 31 March 2020, by Country/NHS region

Country/ NHS region	Deceased transplants (pmp)						Living transplants (pmp)	
	DBD		DCD		Total			
North East and Yorkshire	90	(10.5)	13	(1.5)	**103**	**(12.0)**	3	(0.4)
North West	65	(9.3)	11	(1.6)	**76**	**(10.8)**	5	(0.7)
Midlands	137	(13.0)	31	(2.9)	**168**	**(15.9)**	2	(0.2)
East of England	69	(10.6)	27	(4.2)	**96**	**(14.8)**	1	(0.2)
London	101	(11.3)	38	(4.3)	**139**	**(15.6)**	2	(0.2)
South East	80	(9.0)	15	(1.7)	**95**	**(10.7)**	0	(0.0)
South West	72	(12.8)	17	(3.0)	**89**	**(15.9)**	0	(0.0)
England	**614**	**(11.0)**	**152**	**(2.7)**	766	**(13.7)**	**13**	**(0.2)**
Isle of Man	**1**	**(12.5)**	**2**	**(25.0)**	**3**	**(37.5)**	**0**	**(0.0)**
Channel Islands	**2**	**(12.5)**	**0**	**(0.0)**	**2**	**(12.5)**	**0**	**(0.0)**
Wales	**37**	**(11.8)**	**4**	**(1.3)**	**41**	**(13.1)**	**1**	**(0.3)**
Scotland	**59**	**(10.8)**	**6**	**(1.1)**	**65**	**(11.9)**	**0**	**(0.0)**
Northern Ireland	**27**	**(14.4)**	**4**	**(2.1)**	**31**	**(16.5)**	**0**	**(0.0)**
TOTAL[1,2]	**747**	**(11.2)**	**168**	**(2.5)**	**915**	**(13.8)**	**14[3]**	**(0.2)**

[1] Excludes 12 recipients who reside outside the UK (5 DBD, 2 DCD, 5 Living)
[2] Includes 7 recipients in the UK with an unknown postcode
[3] Includes 1 domino donor transplant

The number of whole, reduced and split liver transplants by urgency status of the transplant (elective, super-urgent) in 2019-2020 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 fell by 6% in 2019-2020. There were 922 deceased donor liver transplants performed in 2019-2020: 830 whole liver, including 15 liver and kidney; 70 split liver, and 22 deceased liver lobe. Split liver transplants accounted for 76% of liver lobe transplant activity.

Table 8.9 Deceased liver transplants performed in the UK, 1 April 2018 - 31 March 2020

Transplant centre	2018 - 2019								2019 - 2020							
	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	191	25	4	2	16	2	**211**	**29**	183	17	7	2	19	2	**209**	**21**
Cambridge	104	10	0	0	4	0	**108**	**10**	84	10	0	0	5	0	**89**	**10**
Edinburgh	94	11	0	0	3	0	**97**	**11**	55	8	0	0	2	0	**57**	**8**
King's College	176	13	4	10	35	6	**215**	**29**	172	21	3	6	24	1	**199**	**28**
Leeds	82	18	3	1	14	1	**99**	**20**	100	11	3	1	9	0	**112**	**12**
Newcastle	24	4	0	0	0	0	**24**	**4**	31	5	0	0	0	0	**31**	**5**
Royal Free	107	14	0	0	3	0	**110**	**14**	118	15	0	0	8	0	**126**	**15**
TOTAL	**778**	**95**	**11**	**13**	**75**	**9**	864	117	**743**	**87**	**13**	**9**	**67**	**3**	**823**[1]	**99**

E=Elective, SU=Super-urgent
Birmingham, King's College and Leeds transplant paediatric patients
[1] Includes 1 urgent heart/liver transplant at Newcastle and 1 urgent lung/liver transplant at Birmingham

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 2019-2020, the median CIT for a DBD donor whole liver only transplant was 8.7 hours (Inter-Quartile (IQ) range 7.3 – 10.3) and for a DCD donor whole liver only transplant was 7.1 hours (IQ range 6.0 – 9.1) and overall was 8.4 hours (IQ range 6.9 – 10.2). Please note some of these data include the use of donor organ maintenance systems, in which cases the CIT reported will be an overestimate of the true cold ischaemia time.

At 31 March 2020 there were approximately 11,000 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 2019 - 31 March 2020, and transplant list patients at 29 February in the UK

Age group (years)	Donors		Transplant recipients		Active transplant list patients	
	N	(%)	N	(%)	N	(%)
0 - 17	38	(3)	80	(9)	37	(8)
18 - 34	187	(17)	105	(11)	71	(15)
35 - 49	263	(23)	151	(16)	134	(29)
50 - 59	270	(24)	282	(31)	128	(27)
60 - 69	214	(19)	287	(31)	87	(19)
70+	154	(14)	17	(2)	9	(2)
Mean (SD)	50	(17)	49	(18)	45	(17)
Male	626	(56)	536	(58)	254	(55)
Female	500	(44)	386	(42)	212	(45)
White	1030	(92)	772	(86)	379	(85)
Asian	29	(3)	68	(8)	48	(11)
Black	26	(2)	31	(3)	14	(3)
Chinese	8	(1)	3	(0)	2	(0)
Other	23	(2)	24	(3)	5	(1)
Not reported	10		24		18	
O	542	(48)	395	(43)	252	(54)
A	452	(40)	375	(41)	142	(30)
B	107	(10)	101	(11)	62	(13)
AB	25	(2)	51	(6)	10	(2)
First graft			830	(90)	406	(87)
Re-graft			92	(10)	60	(13)
TOTAL	**1126**	**(100)**	**922**	**(100)**	**466**	**(100)**

Intestinal Activity

Key messages

- **There were 19 patients on the active intestinal transplant list at 29 February 2020 in total**
- **There were 32 registrations for an intestinal transplant in 2019-2020, corresponding to 32 patients (26 adult and 6 paediatric patients)**
- **20 intestinal transplants were carried out in 2019-2020 (19 in the previous year)**
- **On average, patients wait around 3 months for a transplant**

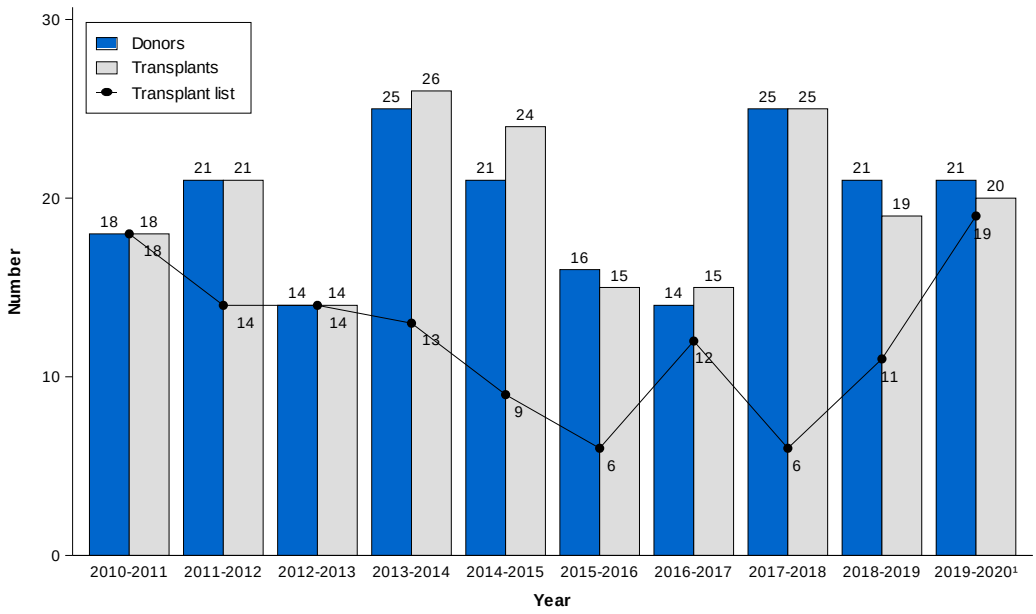
9.1 Overview

Note that the COVID-19 pandemic will have affected the number of offered, retrieved and transplanted organs in 2019-2020. To better reflect the number of patients waiting for a transplant at the end of this year, data as at 29 February 2020 have been used.

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 donor organs are allocated preferentially to the patient with the most points.

A summary of activity for deceased donor intestinal transplants and the transplant list at year end for the last ten years is shown in **Figure 9.1**. The number of patients registered on the active transplant list for an intestinal transplant has increased since 2019 by 73% to 19. In the last financial year, the number of intestinal transplants increased slightly from the previous year.

Figure 9.1 Deceased donor intestinal programme in the UK, 1 April 2010 - 31 March 2020, Number of donors, transplants and patients on the active transplant list at 31 March



¹ Waiting list as at 29 February 2020

9.2 Transplant list

In 2019-2020, there were 32 registrations for an intestinal transplant corresponding to 32 patients. The outcome of these registrations for paediatric (aged <18 years) and adult patients, as at 31 March 2020, broken down by transplant centre, can be found in **Table 9.1**. Overall, 15 (47%) remained active/suspended, 13 (41%) resulted in a transplant, 1 (3%) died on the transplant list, and 3 (9%) were removed.

Table 9.1 Outcome of intestinal registrations in the UK, 1 April 2019 and 31 March 2020

Transplant centre	Outcome of registrations as at 31 March 2020								TOTAL
	Transplanted		Died		Removed		Active/Susp		
	N	%	N	%	N	%	N	%	
Adult									
Cambridge	9	53	0	0	0	0	8	47	17
Oxford	4	44	0	0	2	22	3	33	9
TOTAL	**13**	**50**	**0**	**0**	**2**	**8**	**11**	**42**	**26**
Paediatric									
Birmingham	0	0	1	33	0	0	2	67	3
King's College	0	0	0	0	1	33	2	67	3
TOTAL	**0**	**0**	**1**	**17**	**1**	**17**	**4**	**67**	**6**

Table 9.2 shows the active intestinal transplant list in the UK at 29 February 2020 and 31 March 2019 by country/NHS region of patient's residence. At 29 February 2020, the overall transplant list rate was 0.3 pmp and ranged from 0.2 to 0.6 pmp across NHS regions, although these numbers are very small, so these are not meaningful differences.

Table 9.2 Active intestinal transplant list at 31 March, by country/NHS region of patient residence

Country/ NHS region of residence	Intestinal transplant list (pmp) 2020[1]		2019	
North East and Yorkshire	2	(0.2)	0	(0.0)
North West	2	(0.3)	0	(0.0)
Midlands	3	(0.3)	1	(0.1)
East of England	4	(0.6)	4	(0.6)
London	3	(0.3)	2	(0.2)
South East	2	(0.2)	2	(0.2)
South West	1	(0.2)	1	(0.2)
England	**17**	**(0.3)**	**10**	**(0.2)**
Isle of Man	**0**	**(0.0)**	**0**	**(0.0)**
Channel Islands	**0**	**(0.0)**	**0**	**(0.0)**
Wales	**0**	**(0.0)**	**0**	**(0.0)**
Scotland	**0**	**(0.0)**	**0**	**(0.0)**
Northern Ireland	**0**	**(0.0)**	**0**	**(0.0)**
TOTAL[2]	**19**	**(0.3)**	**11**	**(0.2)**

[1]As at 29 February 2020
[2] Includes patients in 2020 (2019) resident Overseas 2 (1)

Table 9.3 shows median waiting time to elective intestinal transplant by registration type. On average, patients wait 100 days for a transplant, but those requiring a liver wait significantly longer.

Table 9.3 Median waiting time to intestinal transplant in the UK, for patients registered 1 April 2015 - 31 March 2019, by registration type

Registration type	Number of patients registered	Waiting time (days) Median	95% Confidence interval
Bowel only[1]	14	59	25 – 93
Liver, bowel and pancreas[1]	51	178	131 – 225
Bowel and pancreas[1]	30	46	31 – 61
TOTAL	**95**	**100**	**59 – 141**

[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/NHS region of residence. The overall DBD intestinal donor rate was 0.3 pmp and ranged from 0.2 to 0.4 pmp across NHS regions. Of the 946 DBD solid organ donors, 21 (2%) donated their small bowel. A large majority of DBD solid organ donors are lost because they are outside of the age and weight criteria for bowel donation. The next most common reason for losing donors is lack of consent for bowel donation. Of those donors with consent for bowel donation, the most common reason for not offering them is no suitable recipient on the transplant list followed by donor history. Of those donors that are offered, a large number are not accepted, most commonly, due to donor virology, donor history and unsuitable size.

Table 9.4 Intestinal donation rates for deceased donors after brain death in the UK, 1 April 2019 - 31 March 2020, by country/NHS region

Country/NHS region of residence	Solid organ donors (pmp)		Intestinal donors (pmp)		% of solid organ donors	Organs used
North East and Yorkshire	135	(15.8)	3	(0.4)	2.2	3
North West	92	(13.1)	2	(0.3)	2.2	2
Midlands	130	(12.3)	2	(0.2)	1.5	2
East of England	82	(12.6)	2	(0.3)	2.4	2
London	120	(13.5)	3	(0.3)	2.5	3
South East	133	(15.0)	3	(0.3)	2.3	3
South West	76	(13.5)	2	(0.4)	2.6	2
England	**768**	**(13.7)**	**17**	**(0.3)**	**2.2**	**17**
Isle of Man	**2**	**(25.0)**	**0**	**(0.0)**	**-**	**-**
Channel Islands	**3**	**(18.8)**	**0**	**(0.0)**	**-**	**-**
Wales	**57**	**(18.2)**	**0**	**(0.0)**	**-**	**-**
Scotland	**65**	**(11.9)**	**4**	**(0.7)**	**6.2**	**3**
Northern Ireland	**30**	**(16.0)**	**0**	**(0.0)**	**-**	**-**
TOTAL[1]	**939**	**(14.1)**	**21**	**(0.3)**	**2.2**	**20**

[1] UK includes 14 donors with unknown UK postcode and excludes 7 donors with overseas postcode

9.4 Transplants

Table 9.5 shows intestinal transplant activity by transplant centre and transplant type for financial years 2018-2019 and 2019-2020. In 2019-2020, there were a total of 20 transplants, 17 adult and 3 paediatric transplants.

At 31 March 2020 there were approximately 150 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 2019 - 31 March 2020 (2018-2019)

Transplant centre	Transplant type											
	BO		LBP		MV		MMV		LB		**TOTAL**	
Adult												
Cambridge	0	(0)	0	(0)	6	(5)	6	(3)	0	(0)	12	(8)
Oxford	5	(7)	0	(0)	0	(0)	0	(1)	0	(0)	5	(8)
TOTAL	**5**	**(7)**	**0**	**(0)**	**6**	**(5)**	**6**	**(4)**	**0**	**(0)**	**17**	**(16)**
Paediatric												
Birmingham	0	(1)	0	(0)	0	(0)	0	(0)	0	(0)	0	(1)
King's College	1	(0)	0	(1)	2	(1)	0	(0)	0	(0)	3	(2)
TOTAL	**1**	**(1)**	**0**	**(1)**	**2**	**(1)**	**0**	**(0)**	**0**	**(0)**	**3**	**(3)**

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 2019 - 31 March 2020, and transplant list patients at 29 February in the UK

Age group (years)	Donors		Transplant recipients		Active transplant list patients	
	N	(%)	N	(%)	N	(%)
0 - 17	6	(29)	3	(15)	10	(53)
18 - 34	5	(24)	6	(30)	2	(11)
35 - 49	8	(38)	4	(20)	5	(26)
50 - 59	2	(10)	3	(15)	2	(11)
60 - 69	0	(0)	4	(20)	0	(0)
70+	0	(0)	0	(0)	0	(0)
Mean (SD)	30	(17)	38	(19)	22	(20)
Male	11	(52)	7	(35)	10	(53)
Female	10	(48)	13	(65)	9	(47)
White	18	(90)	16	(80)	14	(74)
Asian	0	(0)	3	(15)	2	(11)
Black	1	(5)	0	(0)	0	(0)
Chinese	0	(0)	0	(0)	1	(5)
Other	1	(5)	1	(5)	2	(11)
Not reported	1		0		0	
O	11	(52)	8	(40)	11	(58)
A	9	(43)	8	(40)	6	(32)
B	1	(5)	3	(15)	2	(11)
AB	0	(0)	1	(5)	0	(0)
First graft			17	(85)	17	(89)
Re-graft			3	(15)	2	(11)
TOTAL	**21**	**(100)**	**20**	**(100)**	**19**	**(100)**

Cornea Activity

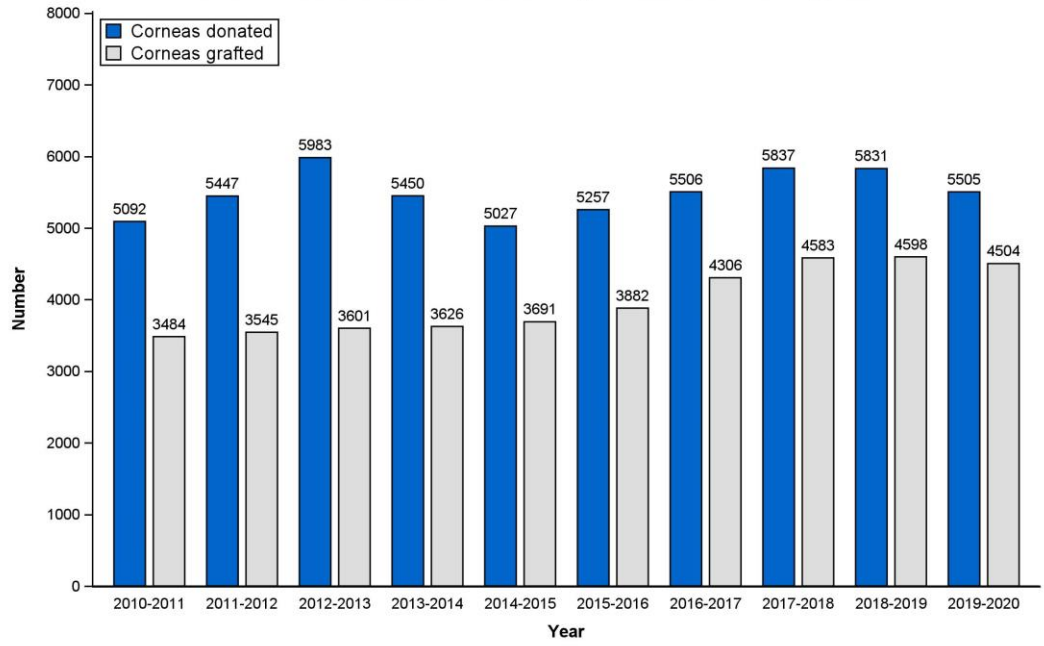
Key messages

- **5,505 corneas were supplied to NHSBT Eye Banks**
- **Corneas were retrieved from 2,329 cornea-only donors and from 446 solid organ donors**
- **The number of transplants remained stable at 4,504**
- **13%, 35% and 13% of corneal transplants were for keratoconus, Fuchs endothelial dystrophy and pseudophakic bullous keratopathy patients, respectively**
- **Descemet membrane endothelial keratoplasty transplants have increased to 23% of all corneal transplants performed**
- **566 eyes (corneas or globes) were supplied to support research or training**

10.1 Overview

The number of corneas donated in 2019-2020 was 5,505, representing a decrease of 5.6% from last year, as shown in **Figure 10.1**. In the last financial year, the number of corneal transplants has decreased slightly to 4,504. The declines will be in part due to the impact of COVID-19 on donation and transplantation in March 2020. It should be noted that not all corneal donations in the UK are reported to NHSBT and thus the donation data reported are not the full national data.

Figure 10.1 Cornea programme in the UK, 1 April 2010 - 31 March 2020, Number of corneas retrieved to NHSBT Eye Banks and corneas grafted



In 2019-2020, of 2,775 donors whose corneas were retrieved to NHSBT Eye Banks, 2,329 were cornea-only donors and 446 were cornea and solid organ donors. Compared to 2018-2019, the number of cornea-only donors decreased by 5.9%, and the number of cornea and solid organ donors decreased by 4.5% (this does not account for the impact of COVID-19 in 2019-2020). In 2019-2020, corneas were retrieved from 271 organ donors after brainstem death and 175 organ donors after circulatory death.

10.2 NHSBT Eye Bank activity

NHSBT Eye Bank activity levels for Filton, David Lucas (in Liverpool) and Manchester Eye Banks are shown in **Table 10.1**. Manchester Eye Bank closed in July 2019 and David Lucas Eye Bank started to regularly process corneas in the northern regions in September 2019. The number of corneas retrieved by NHSBT Eye Banks decreased in 2019-2020 by 5.6% and the number of corneas issued decreased by 6.2% (partly due to the impact of COVID-19 in 2019-2020). In 2019-2020, 5,505 corneas were retrieved to NHSBT Eye Banks, of which 4,252 (77%) were subsequently issued for transplantation. A further 566 eyes (corneas or globes) were supplied to support research or training.

Table 10.1 Corneas retrieved into NHSBT Eye Banks, by year 1 April 2019 - 31 March 2020 (2018-2019)

Eye bank	Total retrieved		Number issued[1]		% issued		Difference between number retrieved and issued	
Filton	4115	(3168)	3308	(2567)	80	(81)	807	(601)
David Lucas	939	(4)	610	(0)	65	(0)	329	(4)
Manchester	451	(2659)	334	(1966)	74	(74)	117	(693)
Total	**5505**	**(5831)**	**4252**	**(4533)**	**77**	**(78)**	**1253**	**(1298)**

[1] Number issued of those retrieved in each year
Please note that Manchester Eye Bank closed in July 2019 and David Lucas Eye Bank started to regularly process corneas in September 2019

10.3 Transplants

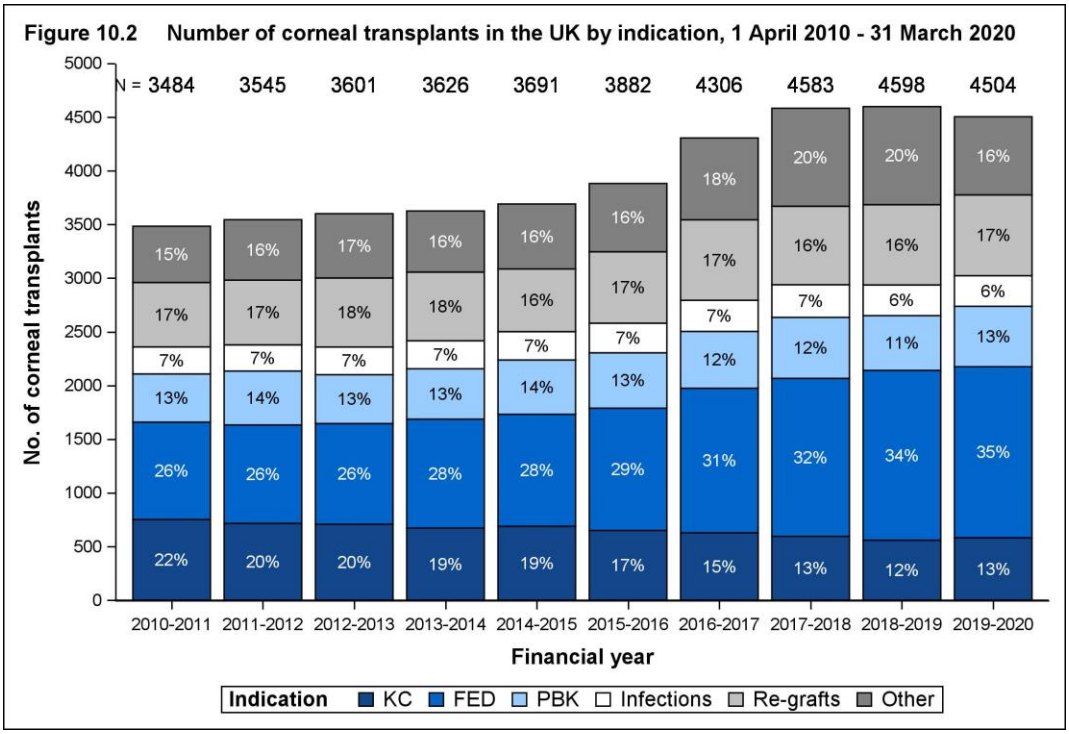
Corneal transplant activity in the UK by country of residence and NHS regions for the years 2018-2019 and 2019-2020 is detailed in **Table 10.2**. Corneas were supplied by NHSBT and non-NHSBT Eye Banks for corneal transplants in the UK. No adjustments have been made for potential demographic differences in populations. The overall transplant rate was 69.2 pmp in 2018-2019. This decreased slightly to 67.8 pmp in 2019-2020. Transplant rates decreased in Scotland and Wales but have increased slightly in England and Northern Ireland. England had the highest transplant rate in the UK: 67.6 pmp, this ranged from 58.7 pmp to 83.2 pmp across NHS regions.

Table 10.2 Cornea transplants performed per million population (pmp) in the UK, 1 April 2018 - 31 March 2020, by country/NHS region

Country of residence/ NHS region	Number of transplants (pmp) 2018-2019		2019-2020	
North East and Yorkshire	551	(64.3)	503	(58.7)
North West	505	(72.0)	583	(83.2)
Midlands	670	(63.6)	692	(65.7)
East of England	434	(66.9)	439	(67.6)
London	471	(52.9)	561	(63.0)
South East	666	(75.3)	651	(73.6)
South West	339	(60.4)	353	(62.9)
England	**3636**	**(65.0)**	**3782**	**(67.6)**
Isle of Man	**3**	**(37.5)**	**4**	**(50.0)**
Channel Islands	**8**	**(50.0)**	**7**	**(43.8)**
Wales	**182**	**(58.0)**	**165**	**(52.5)**
Scotland	**303**	**(55.7)**	**280**	**(51.5)**
Northern Ireland	**58**	**(30.9)**	**63**	**(33.5)**
TOTAL[1]	**4598**	**(69.2)**	**4504**	**(67.8)**

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

Fi**gure 10.2** shows the number of corneal transplants in the UK by indication for transplant from 1 April 2010 to 31 March 2020. For corneas transplanted in 2018-2019 and 2019-2020, a further breakdown by indication is shown in **Table 10.3**.



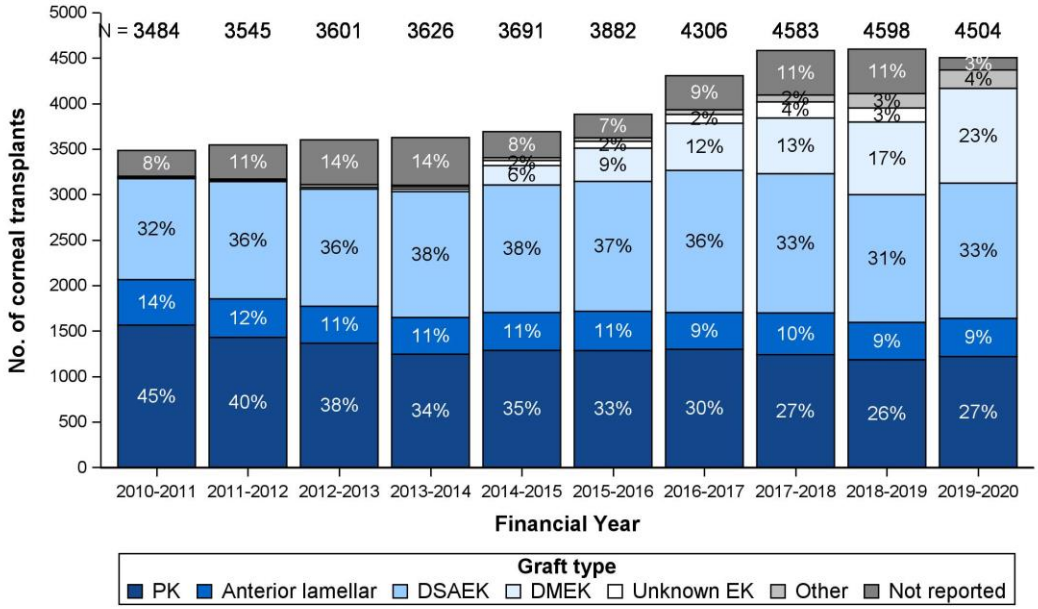
There has been an improvement in the reporting of indication in the latest financial year and as a result there has been a drop in other indications. There has been a slight increase in the number of corneal transplants for keratoconus (KC), Fuchs endothelial dystrophy (FED) and pseudophakic bullous keratopathy (PBK) patients as well as for re-grafts in 2019-2020. The number of patients with an infection has remained stable. The most common indication for transplantation is FED representing 35% of corneal transplants in 2019-2020.

Table 10.3 Corneal transplants in the UK by indication and financial year, 1 April 2018 - 31 March 2020				
Indication for transplant	**2018 - 2019**		**2019 - 2020**	
	N	**%**	**N**	**%**
Keratoconus (KC)	**559**	**12.2**	**582**	**12.9**
Fuchs endothelial dystrophy (FED)	**1582**	**34.4**	**1593**	**35.4**
Pseudophakic bullous keratopathy (PBK)	**510**	**11.1**	**563**	**12.5**
Infections	**286**	**6.2**	**285**	**6.3**
Re-grafts	**748**	**16.3**	**753**	**16.7**
Other (listed below)	**913**	**19.9**	**728**	**16.2**
Ectasias	23	0.5	15	0.3
Dystrophies	86	1.9	62	1.4
Previous ocular surgery	120	2.6	121	2.7
Injury	64	1.4	55	1.2
Ulcerative keratitis	46	1.0	44	1.0
Opacification	94	2.0	94	2.1
Miscellaneous	38	0.8	113	2.5
Not reported	442	9.6	224	5.0
Total	**4598**	**100.0**	**4504**	**100.0**

Figure 10.3 shows the number of corneal transplants in the UK by graft type from 1 April 2010 to 31 March 2020. Over the last 10 years, the proportion of penetrating keratoplasty (PK) grafts has reduced from 45% to 27%, whilst the proportion of endothelial keratoplasty (EK) grafts has almost doubled.

Since March 2014, the type of EK graft has been collected on the Ocular Tissue Outcome and Transplant Record form reported to the UK Transplant Registry. Unknown EK graft types have been imputed such that historic grafts and grafts by surgeons that have never reported a Descemet Membrane EK (DMEK) transplant are assumed to be Descemet Stripping Automated EK (DSAEK) transplants. A further breakdown by graft type for corneas transplanted in 2018-2019 and 2019-2020 is shown in **Table 10.4**.

Figure 10.3 Number of corneal transplants in the UK by graft type, 1 April 2010 - 31 March 2020



Unknown EK grafts have been imputed such that historic grafts and grafts by surgeons that have never reported a DMEK transplant are assumed to be DSAEK transplants

There has been an improvement in the reporting of graft types in the last financial year. In 2019-2020, a third of grafts were DSAEK and 23% were DMEK grafts, representing a 30% increase for DMEK transplants compared to 2018-2019. PK grafts are still a popular choice for corneal transplantation accounting for 27% of transplants in 2019-2020.

Table 10.4 Corneal transplants in the UK by graft type and financial year, 1 April 2018 - 31 March 2020

Graft type	2018 - 2019		2019 - 2020	
	N	%	N	%
PK	1183	25.7	1218	27.0
Anterior lamellar	411	8.9	420	9.3
DSAEK	1404	30.5	1487	33.0
DMEK	799	17.4	1042	23.1
Unknown EK	154	3.3	0	0.0
Other	158	3.4	202	4.5
Not reported	489	10.6	135	3.0
All grafts	**4598**	**100.0**	**4504**	**100.0**

Unknown EK grafts have been imputed such that historic grafts and grafts by surgeons that have never reported a DMEK transplant are assumed to be DSAEK transplants

10.4 Demographic characteristics

The age, sex and ethnicity of cornea donors and transplant recipients are shown in **Table 10.5**.

Table 10.5 Demographic characteristics of donors whose corneas were retrieved to NHSBT Eye Banks and transplant recipients in the UK, 1 April 2019 - 31 March 2020

	Cornea-only donors		Solid organ and cornea donors		Transplant recipients	
	N	%	N	%	N	%
Age group (years)						
0 - 17	4	0.2	4	0.9	43	1.0
18 - 34	29	1.2	30	6.7	433	9.9
35 - 49	128	5.5	85	19.1	426	9.7
50 - 59	272	11.7	110	24.7	468	10.7
60 - 69	509	21.9	121	27.1	798	18.2
70-79	893	38.3	88	19.7	1294	29.5
80+	494	21.2	8	1.8	918	21.0
Not reported	0		0		124	
Mean (SD)	69	(12)	57	(14)	64	(18)
Sex						
Male	1404	60.3	241	54.0	2287	52.2
Female	925	39.7	205	46.0	2093	47.8
Not reported	0		0		124	
Ethnicity						
White	831	99.0	421	95.0	3467	86.8
Asian	4	0.5	5	1.1	328	8.2
Black	2	0.2	5	1.1	145	3.6
Chinese	2	0.2	4	0.9	6	0.2
Other	0	0.0	8	1.8	49	1.2
Not reported	1490		3		509	
TOTAL	**2329**	**100.0**	**446**	**100.0**	**4504**	**100.0**

Survival Rates Following Transplantation

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

In all cases, the Kaplan-Meier estimate of the survivor function was used to provide the survival rate and groups (years) were compared using the log-rank test. The analyses do not take account of risk factors which may change over time. Graft survival is defined as time from transplant to graft failure, censoring for death with a functioning graft and grafts still functioning at time of analysis. Patient survival is defined as time from transplant to patient death, censoring for patients still alive at time of analysis. Both analyses consider only first transplants.

11.1 Kidney graft and patient survival

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

Figure 11.1 shows long-term graft survival in adult (≥18 years) recipients for first kidney only transplant from donors after brain death. **Table 11.1** shows the graft survival estimates and confidence intervals for one, two, five and ten years post-transplant. There have been significant improvements in one and two years survival over the time periods shown, (p=0.01 and p=0.03, respectively). **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>0.2).

Figure 11.1 Long-term graft survival after first adult kidney only transplant from donors after brain death, 1 January 2006 – 31 December 2018

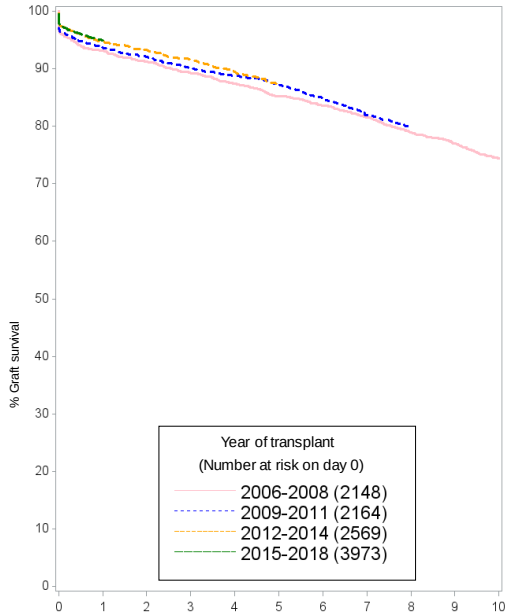


Table 11.1 Graft survival after first adult kidney only transplant from a DBD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2006-2008	2148	93	(92-94)	91	(90-92)	85	(84-87)	74	(72-76)
2009-2011	2164	94	(93-95)	92	(91-93)	87	(86-89)		
2012-2014	2569	95	(94-96)	93	(92-94)	87	(86-89)		
2015-2018	3973	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	
2006-2008	2149	97	(96-97)	95	(94-96)	89	(88-91)	78	(76-80)
2009-2011	2165	96	(95-97)	95	(94-95)	90	(88-91)		
2012-2014	2571	96	(95-97)	94	(93-95)	88	(87-90)		
2015-2018	3974	97	(96-98)						

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=0.005. **Table 11.4** shows the patient survival estimates and confidence intervals for each time period analysed. There was a statistically significant increase in patient survival over time at one year post-transplant (p=0.005).

Figure 11.2 Long-term graft survival after first adult kidney only transplant from donors after circulatory death, 1 January 2006 – 31 December 2018

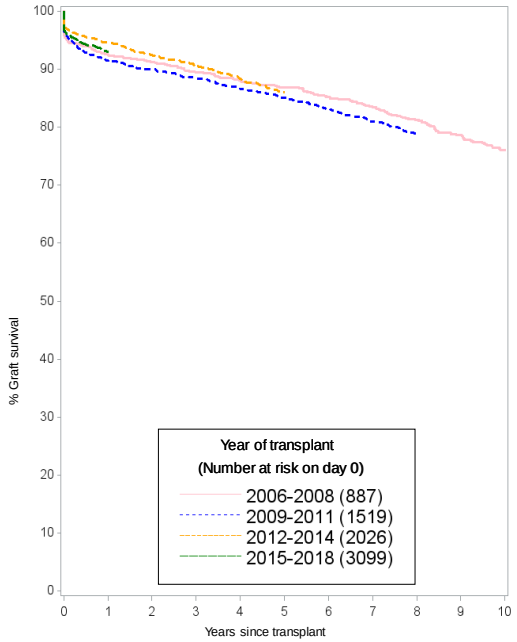


Table 11.3 Graft survival after first adult kidney only transplant from a DCD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2006-2008	887	93	(91-94)	91	(89-93)	87	(84-89)	76	(73-79)
2009-2011	1519	91	(90-93)	90	(88-91)	85	(83-87)		
2012-2014	2026	95	(93-95)	92	(91-94)	86	(84-88)		
2015-2018	3099	93	(92-94)						

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	
2006-2008	888	96	(95-97)	95	(93-96)	88	(86-90)	76	(73-79)
2009-2011	1519	95	(94-96)	93	(92-94)	86	(84-87)		
2012-2014	2027	96	(95-97)	94	(93-95)	86	(84-88)		
2015-2018	3101	97	(96-98)						

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<0.0001. **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>0.3).

Figure 11.3 Long-term graft survival after first adult living donor kidney only transplant in the UK, 1 January 2006 – 31 December 2018

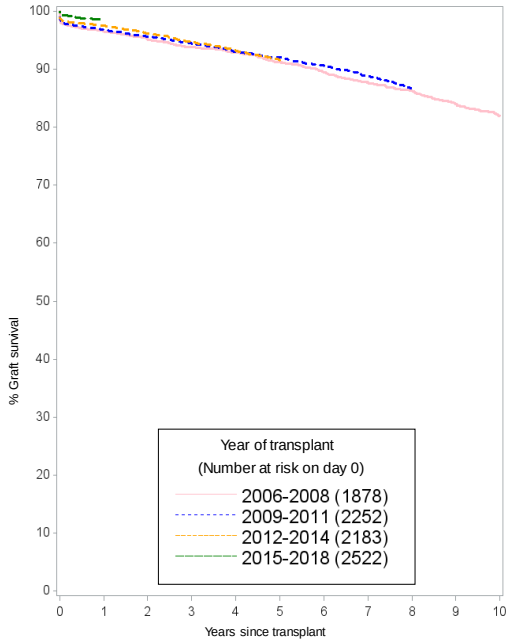


Table 11.5 Graft survival after first adult living donor kidney transplant

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2006-2008	1878	96	(96-97)	95	(94-96)	91	(90-92)	82	(80-84)
2009-2011	2252	97	(96-97)	96	(95-96)	92	(91-93)		
2012-2014	2183	98	(97-98)	96	(95-97)	92	(90-93)		
2015-2018	2522	99	(98-99)						

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	
2006-2008	1878	99	(98-99)	98	(97-99)	95	(94-96)	89	(87-90)
2009-2011	2253	99	(98-99)	98	(97-99)	94	(93-95)		
2012-2014	2182	99	(98-99)	98	(97-99)	95	(94-96)		
2015-2018	2524	99	(99-100)						

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 were no statistically significant changes in graft survival over time (p>0.4). **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>0.4). 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 2006 – 31 December 2018

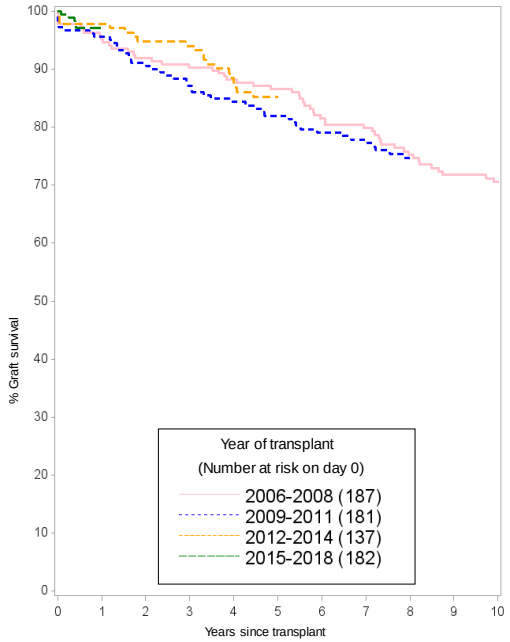


Table 11.7 Graft survival after first paediatric kidney only transplant from a DBD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2006-2008	187	95	(91-97)	92	(87-95)	87	(81-91)	71	(63-77)
2009-2011	181	96	(91-98)	91	(86-94)	82	(76-87)		
2012-2014	137	98	(93-99)	95	(89-97)	85	(78-90)		
2015-2018	182	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	
2006-2008	188	100	(-)	99	(96-100)	99	(96-100)	98	(94-99)
2009-2011	181	99	(96-100)	99	(96-100)	97	(93-99)		
2012-2014	137	99	(95-100)	99	(95-100)	98	(92-99)		
2015-2018	182	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=0.004. **Table 11.10** shows the patient survival estimates and confidence intervals for one, two, five and ten years post-transplant. There were no statistically significant changes in patient survival over time (p>0.6).

Figure 11.5 Long-term graft survival after first paediatric living donor kidney only transplant in the UK, 1 January 2006 – 31 December 2018

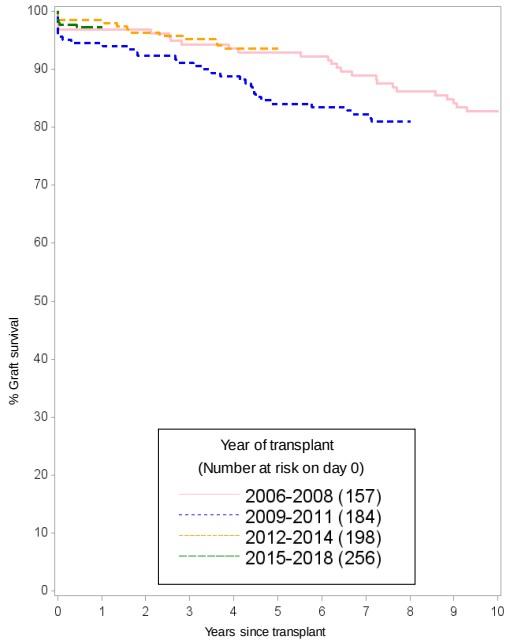


Table 11.9 Graft survival after first paediatric living donor kidney transplant

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2006-2008	157	97	(93-99)	97	(93-99)	93	(88-96)	83	(76-88)
2009-2011	184	95	(90-97)	92	(87-95)	84	(78-89)		
2012-2014	198	98	(95-100)	96	(92-98)	94	(89-96)		
2015-2018	256	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	
2006-2008	157	99	(96-100)	99	(96-100)	99	(95-100)	97	(93-99)
2009-2011	185	99	(96-100)	99	(96-100)	98	(94-99)		
2012-2014	198	99	(96-100)	99	(96-100)	99	(96-100)		
2015-2018	256	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 a borderline significant change in two year survival over the time periods shown, p=0.09. Differences in patient survival are not significant over time (p>0.2).

Figure 11.6 Long-term graft survival after first SPK transplant from donors after brain death, 1 January 2006 – 31 December 2018

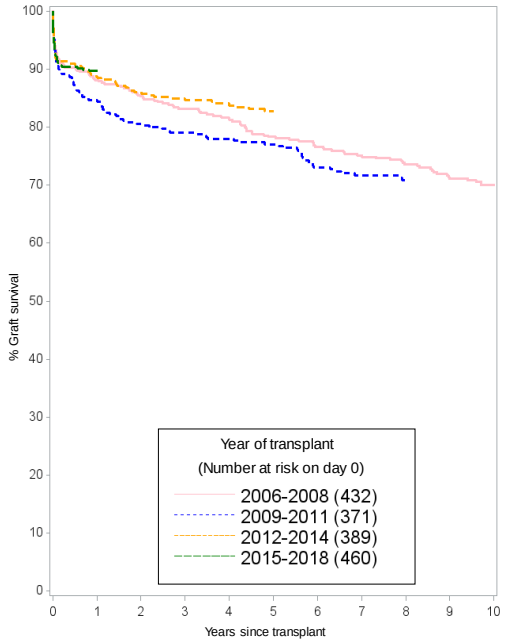


Table 11.11 Graft survival after first SPK transplant from a DBD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2006-2008	432	88	(85-91)	85	(82-88)	78	(74-82)	70	(65-74)
2009-2011	371	85	(81-88)	81	(76-84)	77	(72-81)		
2012-2014	389	89	(85-91)	86	(82-89)	83	(79-86)		
2015-2018	460	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	
2006-2008	433	96	(93-97)	94	(92-96)	90	(87-93)	75	(70-79)
2009-2011	371	96	(94-98)	93	(90-95)	87	(83-90)		
2012-2014	390	97	(94-98)	96	(93-97)	88	(84-91)		
2015-2018	460	98	(96-99)						

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. 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 2012 – 31 December 2018

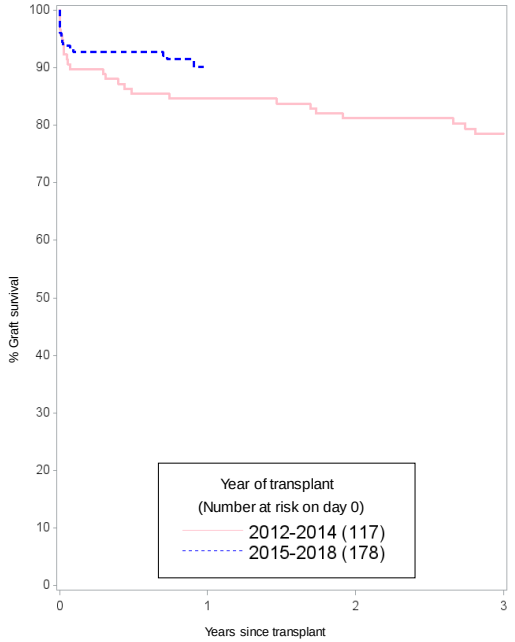


Table 11.13 Graft survival after first SPK transplant from a DCD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Three year	
2012-2014	117	85	(77-90)	81	(73-87)	79	(70-85)
2015-2018	178	90	(85-94)				

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	
2012-2014	117	99	(94-100)	98	(93-100)	96	(90-99)
2015-2018	178	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 have been no significant changes in graft survival over time (p>0.6). There were no statistically significant changes in patient survival over time (p>0.3).

Figure 11.8 Long-term graft survival after pancreas only transplant from donors after brain death, 1 January 2006 – 31 December 2018

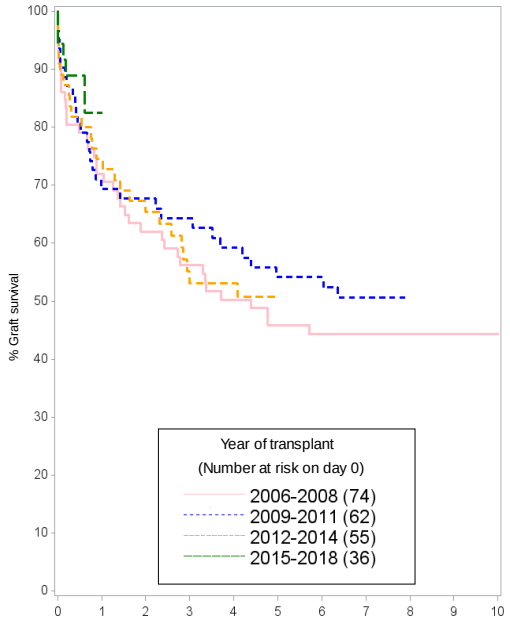


Table 11.15 Graft survival after first pancreas only transplant from a DBD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2006-2008	74	72	(60-81)	62	(50-72)	46	(34-57)	44	(32-56)
2009-2011	62	69	(56-79)	68	(54-78)	54	(41-66)		
2012-2014	55	75	(61-84)	65	(51-76)	51	(36-63)		
2015-2018	36	83	(65-92)						

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	
2006-2008	74	95	(86-98)	92	(82-96)	87	(76-93)	70	(56-80)
2009-2011	63	96	(86-99)	94	(84-98)	82	(68-90)		
2012-2014	55	98	(86-100)	98	(86-100)	79	(61-90)		
2015-2018	36	97	(79-100)						

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. 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 2012 – 31 December 2018

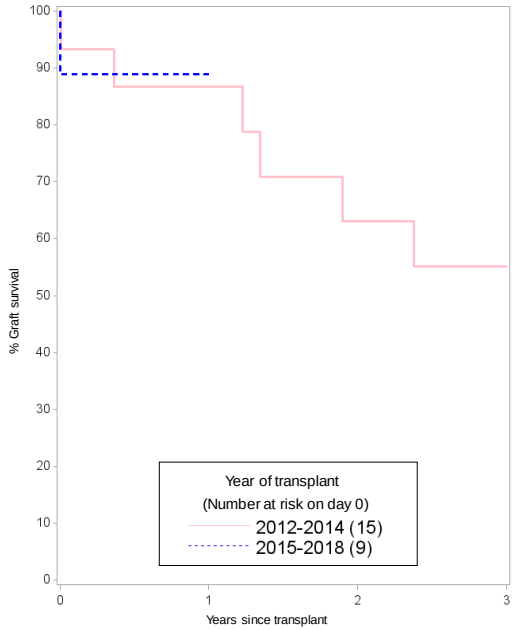


Table 11.17 Graft survival after first pancreas only transplant from a DCD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Three year	
2012-2014	15	87	(56-96)	63	(32-83)	55	(26-77)
2015-2018	9	89	(43-98)				

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	
2012-2014	15	93	(61-99)	93	(61-99)	78	(46-92)
2015-2018	9	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**. Super-urgent, 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>0.1).

Figure 11.10 Long-term patient survival after first adult heart only transplant from donors after brain death, 1 January 2006 – 31 December 2018

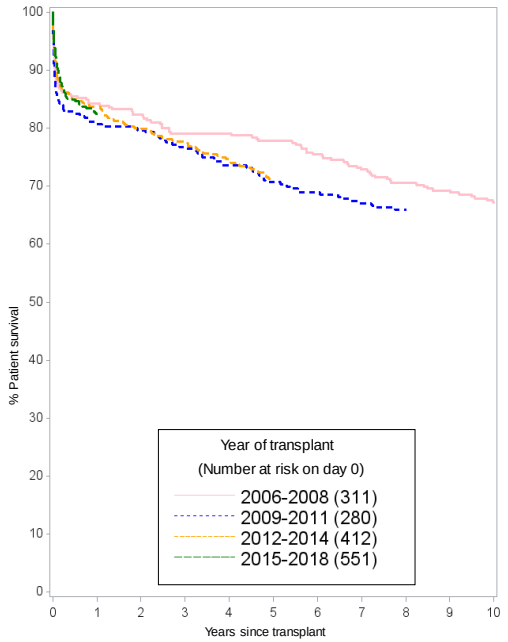


Table 11.19 Patient survival after first adult heart only transplant from a DBD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year		Ten year	
2006-2008	311	84	(80-88)	82	(78-86)	78	(73-82)	67	(62-72)
2009-2011	280	81	(76-85)	80	(74-84)	71	(65-76)		
2012-2014	412	84	(80-87)	80	(76-84)	71	(66-75)		
2015-2018	551	83	(79-85)						

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, however these statistics are based on small numbers and are not statistically significantly different (p>0.2).

Figure 11.11 Long-term patient survival after first adult heart-lung block transplant from donors after brain death, 1 January 2006 – 31 December 2018

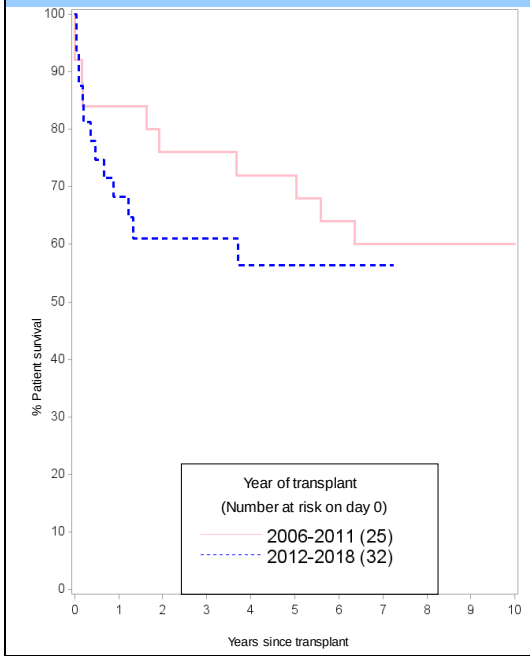


Table 11.20 Patient survival after first adult heart-lung block transplant from a DBD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year		Ten year	
2006-2011	25	84	(63-94)	76	(54-88)	72	(50-86)	60	(38-76)
2012-2018	32	68	(49-82)	61	(42-76)	56	(36-72)		

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**. Super-urgent, urgent, and non-urgent patients are included. There were no statistically significant differences in patient survival over time (p>0.5).

Figure 11.12 Long-term patient survival after first adult lung only transplant from donors after brain death, 1 January 2006 – 31 December 2018

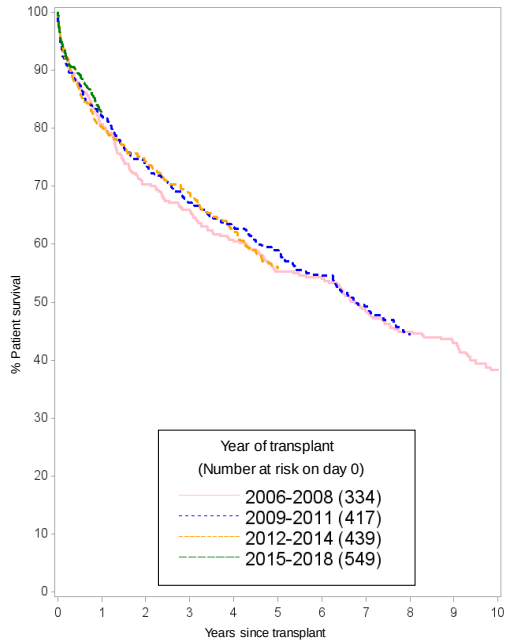


Table 11.21 Patient survival after first adult lung only transplant from a DBD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year		Ten year	
2006-2008	334	81	(76-85)	70	(65-75)	55	(50-61)	38	(33-44)
2009-2011	417	82	(78-85)	74	(69-78)	59	(54-64)		
2012-2014	439	80	(76-84)	74	(70-78)	56	(51-60)		
2015-2018	549	83	(79-86)						

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**. Super-urgent, urgent, and non-urgent patients are included.

Figure 11.13 Patient survival after first adult lung only transplant from donors after circulatory death, 1 January 2012 – 31 December 2018

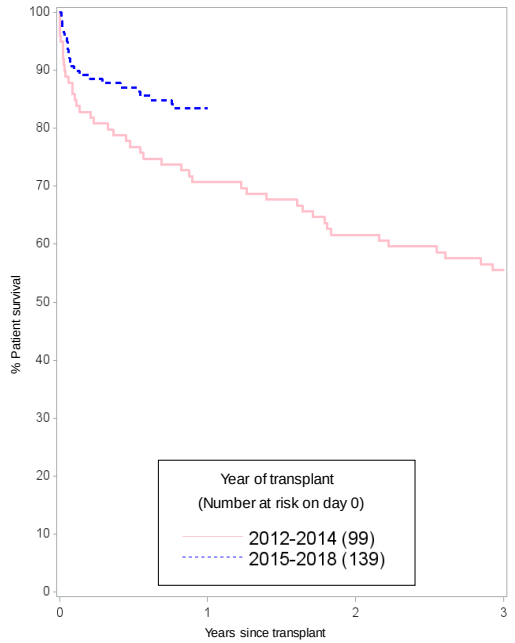


Table 11.22 Patient survival after first adult lung only transplant from a DCD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Three year	
2012-2014	99	71	(61-79)	62	(51-70)	56	(45-65)
2015-2018	139	83	(76-89)				

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 have been statistically significant variations in one, two, and five year survival over the time period (p=0.03, p=0.02, and p=0.05 respectively). 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 2006 – 31 December 2018

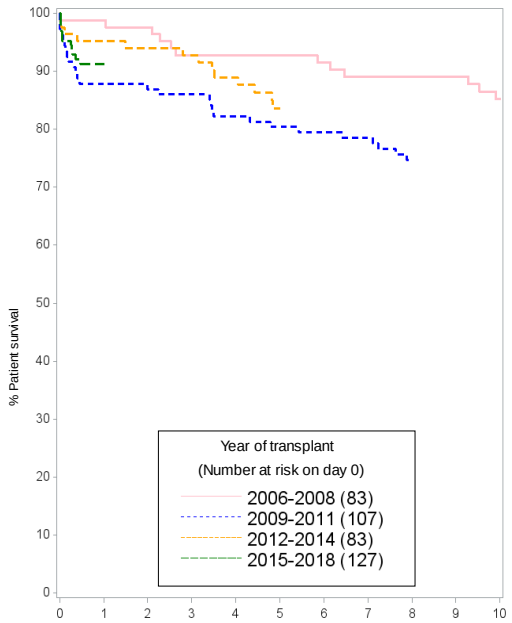


Table 11.23 Patient survival after first paediatric heart only transplant from a DBD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year		Ten year	
2006-2008	83	99	(92-100)	98	(91-99)	93	(85-97)	85	(75-91)
2009-2011	107	88	(80-93)	87	(79-92)	80	(72-87)		
2012-2014	83	95	(88-98)	94	(86-97)	84	(73-90)		
2015-2018	127	91	(85-95)						

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**. Urgent and non-urgent patients are included. **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>0.2).

Figure 11.15 Long-term patient survival after first paediatric lung only transplant from donors after brain death, 1 January 2006 – 31 December 2018

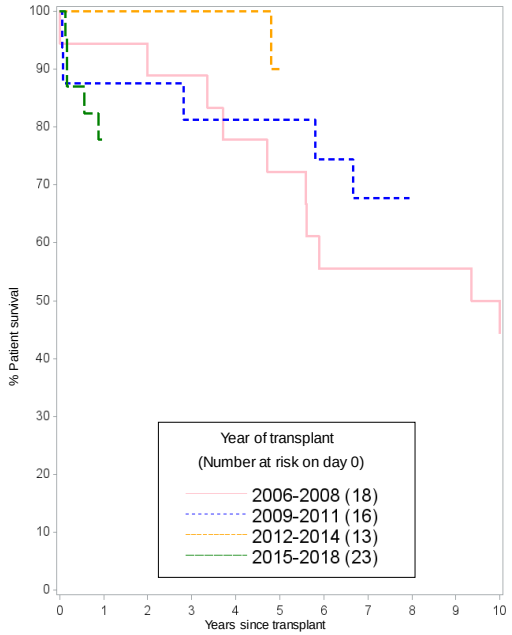


Table 11.24 Patient survival after first paediatric lung only transplant from a DBD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year		Ten year	
2006-2008	18	94	(67-99)	89	(62-97)	72	(46-87)	44	(22-65)
2009-2011	16	88	(59-97)	88	(59-97)	81	(52-94)		
2012-2014	13	100	(-)	100	(-)	90	(47-99)		
2015-2018	23	78	(55-90)						

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 NHS Group 1 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, $p<0.05$ in each case, over the time periods analysed. Whole liver transplants are included as well as reduced and split liver transplants.

Figure 11.16 Long-term patient survival after first elective adult liver only transplant from donors after brain death, 1 January 2006 – 31 December 2018

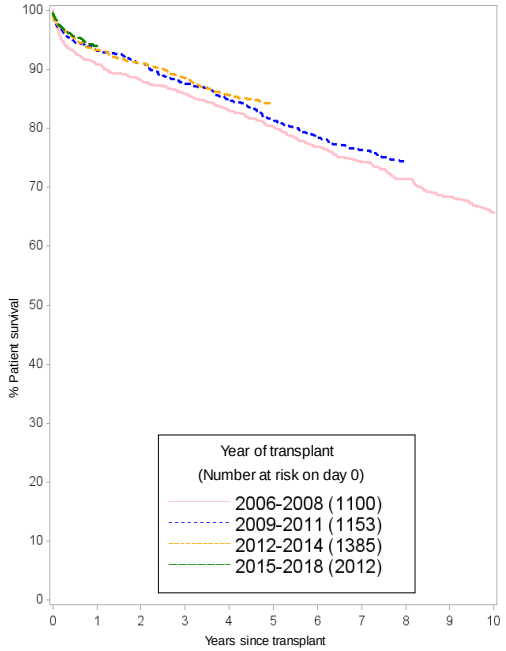


Table 11.25 Patient survival after first elective adult NHS Group 1 liver only transplant from donors after brain death, 1 January 2006 to 31 December 2018

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year		Ten year	
2006-2008	1100	91	(89-92)	88	(86-90)	80	(78-83)	66	(63-69)
2009-2011	1153	93	(92-95)	91	(89-93)	81	(79-84)		
2012-2014	1385	93	(92-95)	91	(89-92)	84	(82-86)		
2015-2018	2012	94	(93-95)						

11.4.2 Adult liver recipients - donor after circulatory death (DCD)

Patient survival for adult (≥17 years) recipients after first elective NHS Group 1 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 Long-term patient survival after first elective adult liver only transplant from donors after circulatory death, 1 January 2009 – 31 December 2018

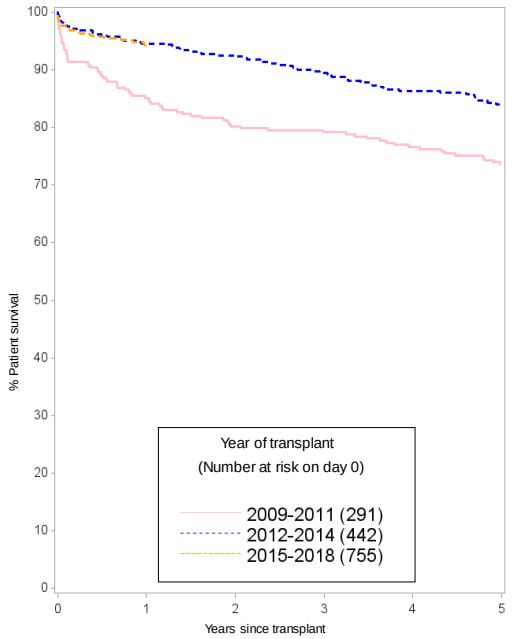


Table 11.26 Patient survival after first elective adult NHS Group 1 liver only transplant from donors after circulatory death, 1 January 2006 to 31 December 2018

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year	
2009-2011	291	85	(81-89)	80	(75-84)	74	(68-78)
2012-2014	442	95	(92-96)	93	(90-95)	84	(80-87)
2015-2018	755	94	(92-96)				

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 changes in one, two or five year patient survival over the time period analysed (p>0.2). 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 2006 – 31 December 2018

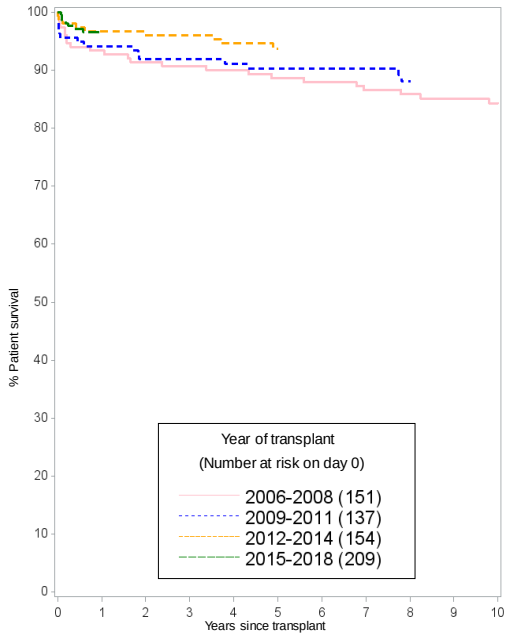


Table 11.27 Patient survival after first elective paediatric liver only transplant from donors after brain death, 1 January 2006 to 31 December 2018

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year		Ten year	
2006-2008	151	93	(88-96)	91	(86-95)	89	(82-93)	84	(77-89)
2009-2011	137	94	(89-97)	92	(86-95)	90	(84-94)		
2012-2014	154	97	(92-99)	96	(91-98)	94	(88-97)		
2015-2018	209	97	(93-98)						

11.5 Intestinal patient survival

Figure 11.19 and **Table 11.28** show patient survival estimates for recipients receiving their first intestinal transplant, by recipient age group (adults aged ≥ 18 years) and transplant era.

Figure 11.19 Patient survival after first intestinal graft in the UK, 1 January 2011 – 31 December 2018

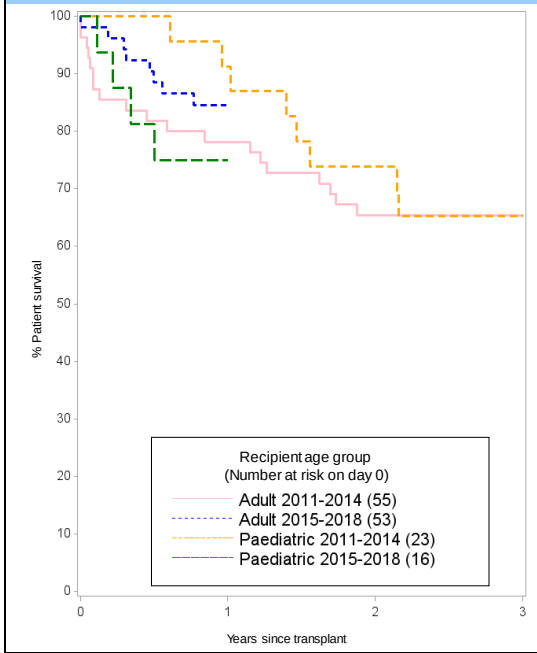


Table 11.28 Patient survival after first intestinal transplant in the UK, 1 January 2011 - 31 December 2018

Recipient age group	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Three year	
Adult							
2011-2014	55	78	(65-87)	65	(51-76)	65	(51-76)
2015-2018	53	85	(72-92)				
Paediatric							
2011-2014	23	91	(69-98)	74	(51-87)	65	(42-81)
2015-2018	16	75	(46-90)				

11.6 Corneal graft survival

11.6.1 Cornea grafts for keratoconus

Figure 11.20 shows graft survival estimates for first corneal transplant for keratoconus (KC) for grafts in 2006-2008, 2009-2011, 2012-2014 and 2015-2018. Graft survival estimates and confidence intervals are shown by transplant year at one, two and five years in **Table 11.29**.

Figure 11.20 Graft survival after first corneal graft for KC in the UK, 1 January 2006 – 31 December 2018

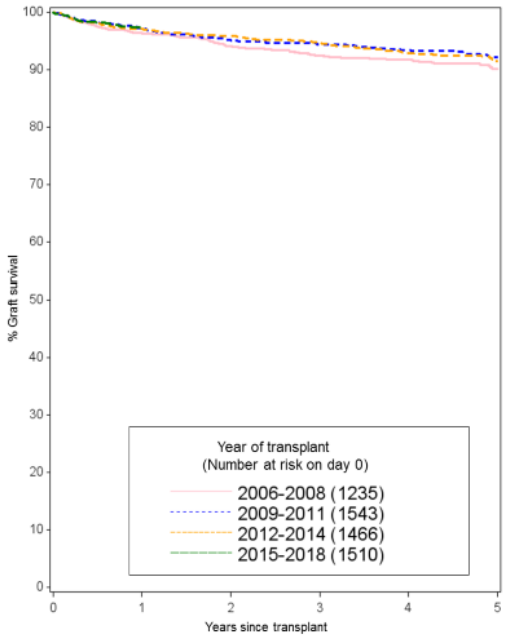


Table 11.29 Graft survival after first corneal graft for KC in the UK

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year	
2006-2008	1235	96	(95-97)	94	(93-95)	90	(88-92)
2009-2011	1543	97	(96-98)	95	(94-96)	92	(90-94)
2012-2014	1466	97	(96-98)	96	(95-97)	91	(89-93)
2015-2018	1510	97	(96-98)				

11.6.2 Cornea grafts for Fuchs endothelial dystrophy

Figure 11.21 shows graft survival estimates for first corneal transplant for Fuchs endothelial dystrophy (FED) for grafts in 2006-2008, 2009-2011, 2012-2014 and 2015-2018. Graft survival estimates and confidence intervals are shown by transplant year at one, two and five years in **Table 11.30**.

Figure 11.21 Graft survival after first corneal graft for FED in the UK, 1 January 2006 – 31 December 2018

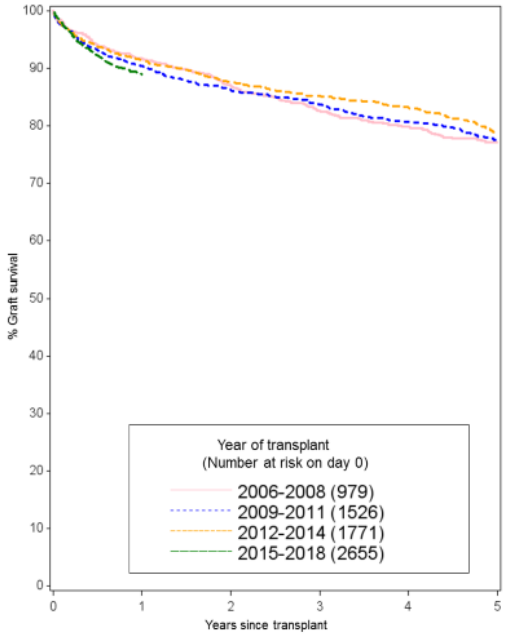


Table 11.30 Graft survival after first corneal graft for FED in the UK

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year	
2006-2008	979	92	(90-93)	87	(85-89)	77	(74-80)
2009-2011	1526	90	(89-92)	86	(84-88)	78	(75-80)
2012-2014	1771	91	(90-93)	88	(86-89)	79	(76-81)
2015-2018	2655	89	(88-90)				

11.6.3 Cornea grafts for pseudophakic bullous keratopathy

Figure 11.22 shows graft survival estimates for first corneal transplant for pseudophakic bullous keratopathy (PBK) for grafts in 2006-2008, 2009-2011, 2012-2014 and 2015-2018. Graft survival estimates and confidence intervals are shown by transplant year at one, two and five years in **Table 11.31**.

Figure 11.22 Graft survival after first corneal graft for PBK in the UK, 1 January 2006 – 31 December 2018

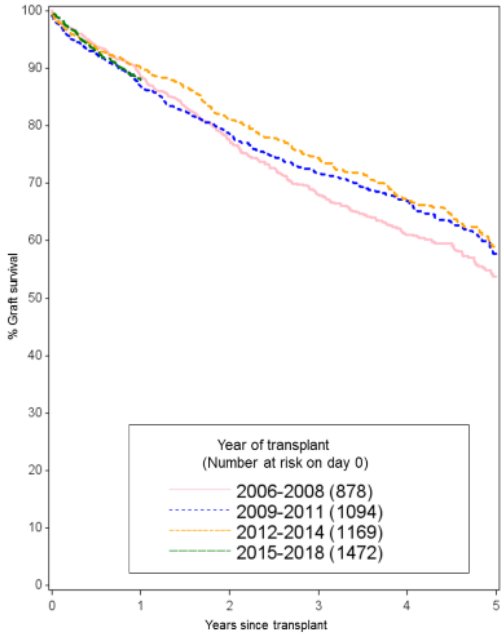


Table 11.31 Graft survival after first corneal graft for PBK in the UK

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year	
2006-2008	878	88	(86-90)	78	(75-80)	54	(49-58)
2009-2011	1094	87	(85-89)	79	(76-81)	57	(53-61)
2012-2014	1169	90	(88-92)	81	(79-83)	59	(55-63)
2015-2018	1472	88	(86-90)				

NHS Organ Donor Register

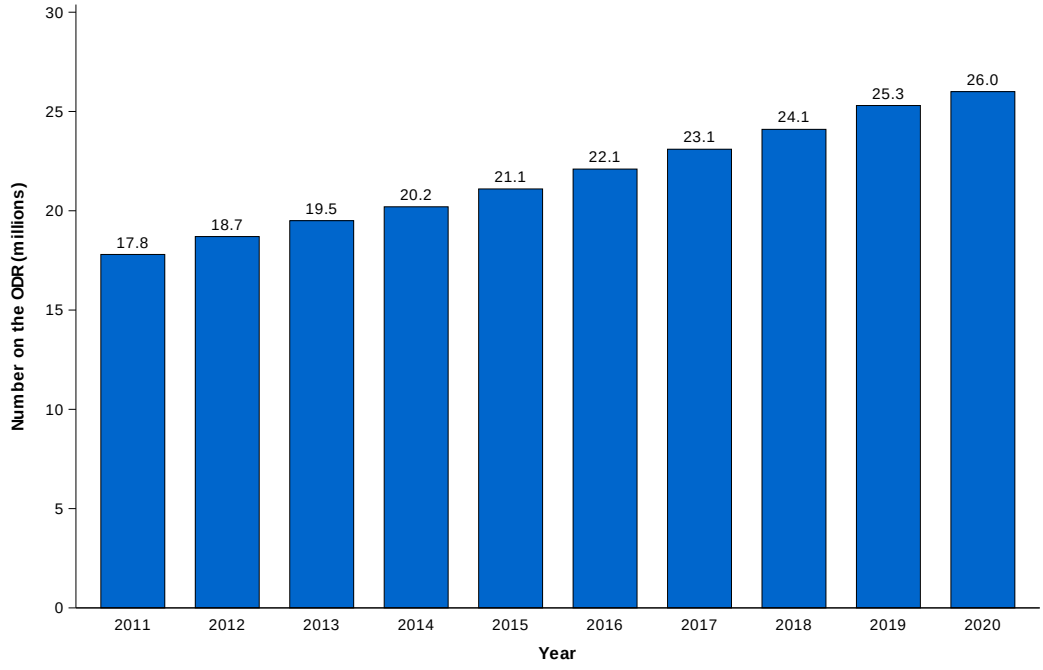
Key messages

- **26.0 million people were on the opt-in ODR at March 2020 (39% of the population)**
- **1.5 million people were on the opt-out ODR at March 2020, with a further 109 appointed representative registrations**
- **50% of the 1,580 deceased organ donors last year were on the opt-in ODR**
- **57% of registrations last year were through the Driver and Vehicle Licensing Agency (DVLA)**

By the end of March 2020, the NHS Organ Donor Register (ODR) held just over 26.0 million opt-in registrations. A summary of the number of registrations at the end of each financial year from 31 March 2011 to 31 March 2020 is shown in **Figure 12.1**. Opt-in registrations have seen a 2.8% increase this year, compared to a 5.0% increase in the previous year.

Of the 1,580 deceased organ donors in 2019-2020, 50% were registered on the ODR compared with 46% of organ donors in 2018-2019.

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/NHS region at 31 March 2020, and the number of opt-in registrants. 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/NHS region at 31 March 2020. The proportion of the population that registered opt-out was 6% in Wales, and less for other countries and NHS regions. In the time period, only Wales has opt-out legislation, but it is possible for people elsewhere in the UK to opt-out. There has been an increase in opt-out registrations from across the UK ahead of the implementation of opt-out legislation in England and Scotland. In addition, there have been 109 appointed representative registrations.

Table 12.1 Opt-in registrations on the NHS Organ Donor Register by 31 March 2020, by country/NHS region

Country/NHS region of residence	Registrants N	Registrants pmp	Proportion registered
North East and Yorkshire	3,257,933	380,156	38%
North West	2,469,842	352,331	35%
Midlands	3,603,772	341,914	34%
East of England	2,598,447	400,377	40%
London	2,669,170	299,570	30%
South East	3,821,772	431,839	43%
South West	2,646,602	471,765	47%
England	**21,067,538**	**376,340**	**38%**
Isle of Man	**13,494**	**168,675**	**17%**
Channel Islands	**28,641**	**179,006**	**18%**
Wales	**1,285,286**	**409,327**	**41%**
Scotland	**2,696,636**	**495,705**	**50%**
Northern Ireland	**885,677**	**471,105**	**47%**
TOTAL[1]	**26,037,200**	**391,890**	**39%**

[1] Includes 59,928 registrants where the postcode was unknown

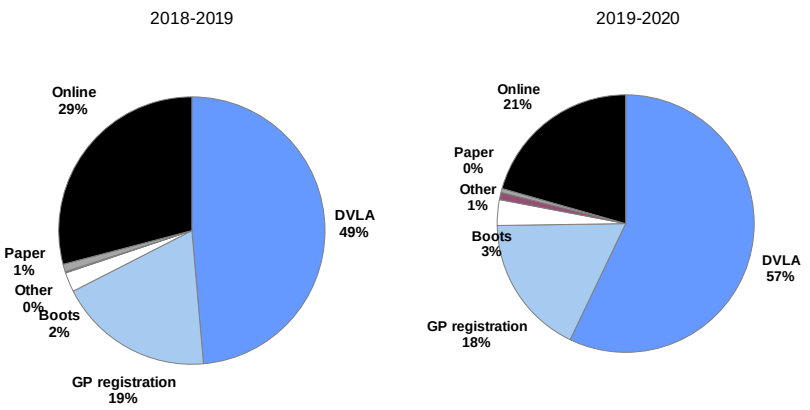
Table 12.2 Opt-out registrations on the NHS Organ Donor Register by 31 March 2020, by country/NHS region			
Country/NHS region of residence	N	**Registrants** pmp	Proportion registered
North East and Yorkshire	176,325	20,575	2.1%
North West	177,593	25,334	2.5%
Midlands	274,095	26,005	2.6%
East of England	96,838	14,921	1.5%
London	423,228	47,500	4.8%
South East	96,445	10,898	1.1%
South West	39,618	7,062	0.7%
England	**1,284,142**	**22,939**	**2.3%**
Isle of Man	**84**	**1,050**	**0.1%**
Channel Islands	**1,637**	**10,231**	**1.0%**
Wales	**189,030**	**60,201**	**6.0%**
Scotland	**20,182**	**3,710**	**0.4%**
Northern Ireland	**1,461**	**777**	**0.1%**
TOTAL[1]	**1,496,725**	**22,528**	**2.3%**

[1] Includes 189 registrants where the postcode was unknown

There are a number of registration routes to opt-in on the ODR: when registering as a patient with a General Practitioner (via the GMS1 paper form); with driving licence applications and other driving services (via the Driver and Vehicle Licensing Agency (DVLA)); the NHS App, when applying for a Boots Advantage Card; online registrations via the NHSBT Organ Donation website (www.organdonation.nhs.uk); Wales and Scotland organ donation websites, NHSBT paper forms and by telephone. There are also various external links delivering traffic to the NHSBT Organ Donation website (such as in newspapers and radio).

The source of applications for opt-in registration on the ODR is illustrated in **Figure 12.2**. This figure shows that 18% of registrations in 2019-2020 arrived by means of registering through a GP, 57% from driving licence applications and reminders through the DVLA and 21% online through the Organ Donation website.

Figure 12.2 Source of applications for opt-in registration on the NHS Organ Donor Register, 1 April 2018 - 31 March 2020



At the end of March 2020, 85% 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 (68%) 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 2020 to donate different organs[1]

Registrants prepared to donate all organs 85%

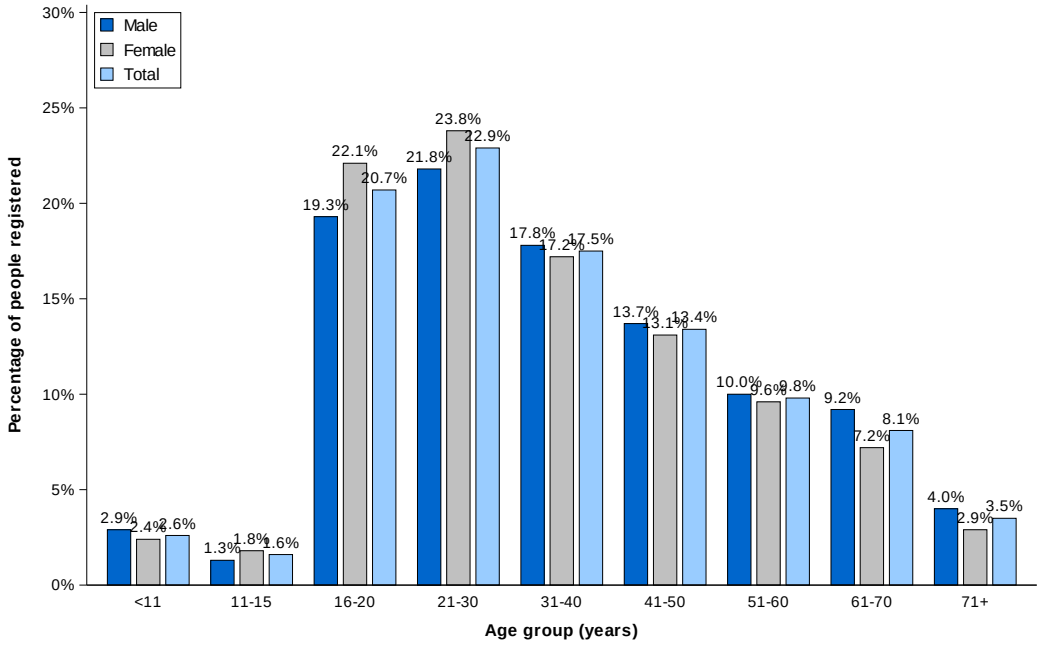
Of those not prepared to donate all organs ('restricted donors'):

Not prepared to donate:	% of 'Restricted donors'	% of all registrants
Kidney	6	0.9
Pancreas	17	2.5
Heart	17	2.5
Lungs	16	2.4
Liver	10	1.5
Corneas	68	10.1

[1] Complete information was not available for approximately 7% of the total register

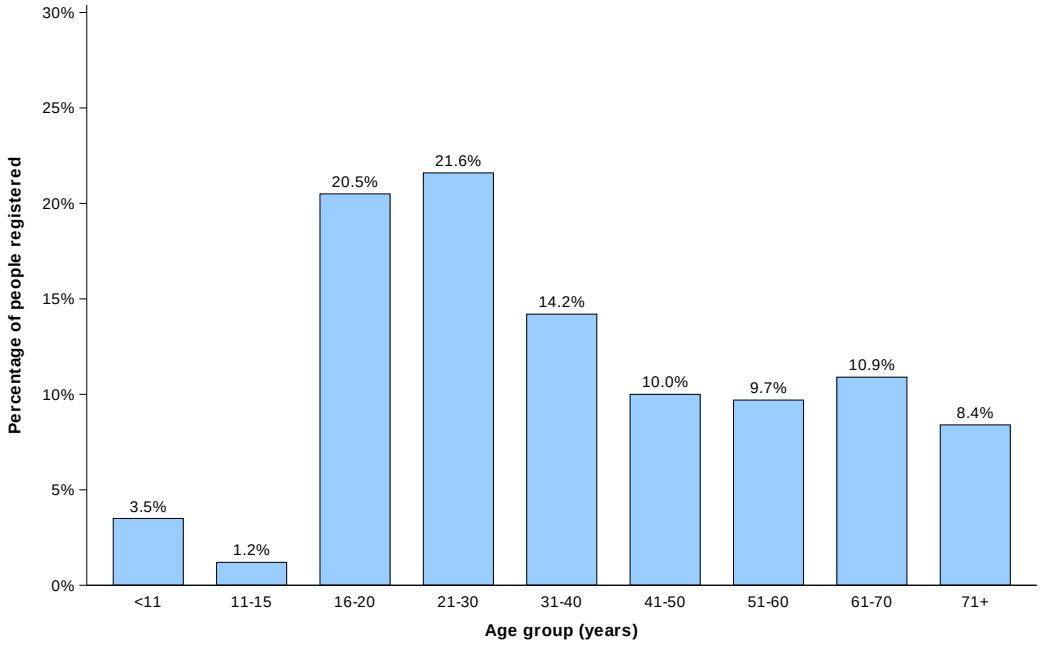
People of all ages are eligible for organ donor registration: the distribution of age by sex at time of opt-in registration is shown in **Figure 12.3**. The highest proportion of registrations (21.8% of males and 23.8% of females) are in the 21-30 years age group. The lowest proportions are in the under 11 and 11-15 age groups. Of all people registered on the NHS Organ Donor Register, 47% are male and 53% are female (<1% unknown).

Figure 12.3 **Age and gender at registration of total people registered as opt-in on the NHS Organ Donor Register by 31 March 2020**



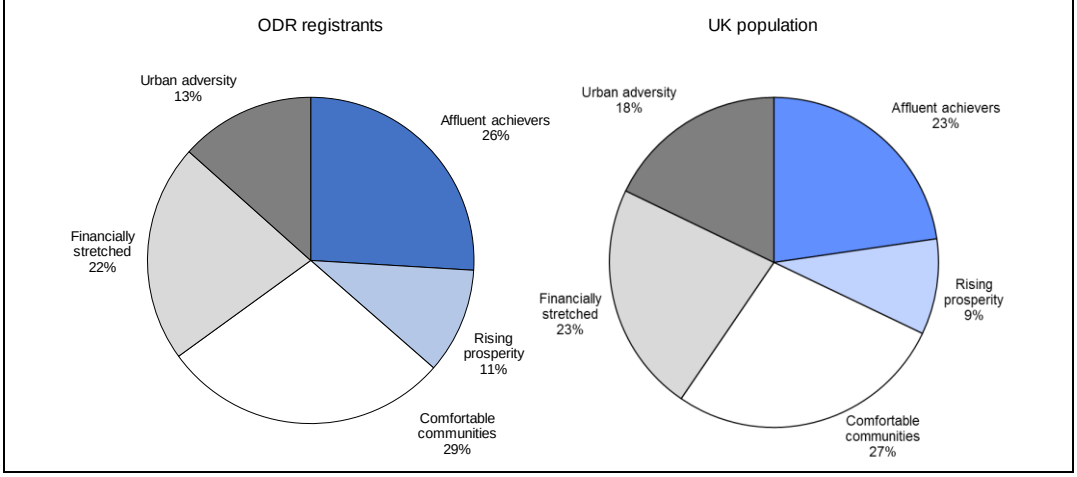
Additionally, the distribution of age of people registering opt-in on the ODR during the latest financial year, 2019-2020, is shown in **Figure 12.4**. The highest proportion of registrations in this year were in the 21-30 years age group. Of the registrants in 2019-2020, 49% were male and 51% were female.

Figure 12.4 **Age of people registering as opt-in on the NHS Organ Donor Register between 1 April 2019 and 31 March 2020**



The breakdown of opt-in registrants on the ODR during 2019-2020 by socio-economic group (using the ACORN[1] classification, based on postcode) is shown in **Figure 12.5**, where it is compared with the general UK population. Though having similar distributions, there were proportionately more 'affluent achievers' and less 'urban adversity' or 'financially stretched' on the ODR than in the general population.

Figure 12.5 Opt-in registrants on the NHS Organ Donor Register, 1 April 2019 - 31 March 2020, and the general population, by socio-economic group



[1] ACORN data supplied by CACI Ltd.

National Potential Donor Audit

Key messages

- **Due to the impact of the COVID-19 pandemic the Potential Donor Audit is currently incomplete for March 2020, therefore 2019-2020 activity presented in this section, includes 11 months of data from 1 April 2019 – 29 February 2020. Data presented on previous financial years include 12 months of data**
- **There were 31,042 audited deaths reported through the Potential Donor Audit in the financial year to 29 February 2020, including 1,473 (99%) of the 1,485 deceased organ donors**
- **Compared with the previous financial year, small improvements have been observed in the proportion of approaches where a Specialist Nurse – Organ Donation was present (from 91% to 92%), and in the overall consent/ authorisation rate (from 67% to 68%). The overall referral rate of potential donors has remained constant at 94%**
- **The consent/authorisation rate was 91% when a patient's opt-in decision was known at the time of potential donation, but 109 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 Black, Asian, and Minority Ethnic (BAME) communities (71% and 42%, respectively)**

13.1 Introduction

In this chapter, summary data from the National Potential Donor Audit (PDA) are shown for 1 April 2019 to 29 February 2020 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 11 May 2020. **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 and this section only including 11 months of 2019-2020 activity**.

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 if a person who died in Wales or Jersey 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 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

Due to the impact of the COVID-19 pandemic, only the first 11 months of 2019-2020 activity are included. In the 11-month period there were a total of 31,042 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 1,473 solid organ donors reported through the PDA, 99% of the total 1,485 deceased solid organ donors.

Table 13.1 shows the key percentages calculated from the flow chart information and **Table 13.2** provides a breakdown by Organ Donation Services Team (ODST). Consent/authorisation rates have also been provided, in **Table 13.1**, 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 opt-in, expressed opt-in decision and deemed consent overrides are included in the footnote of the table.

An ODR opt-in override is a case where the family overruled their loved one's 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, an opt-in 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 verbally, 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 in Wales or Jersey.

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 [3]

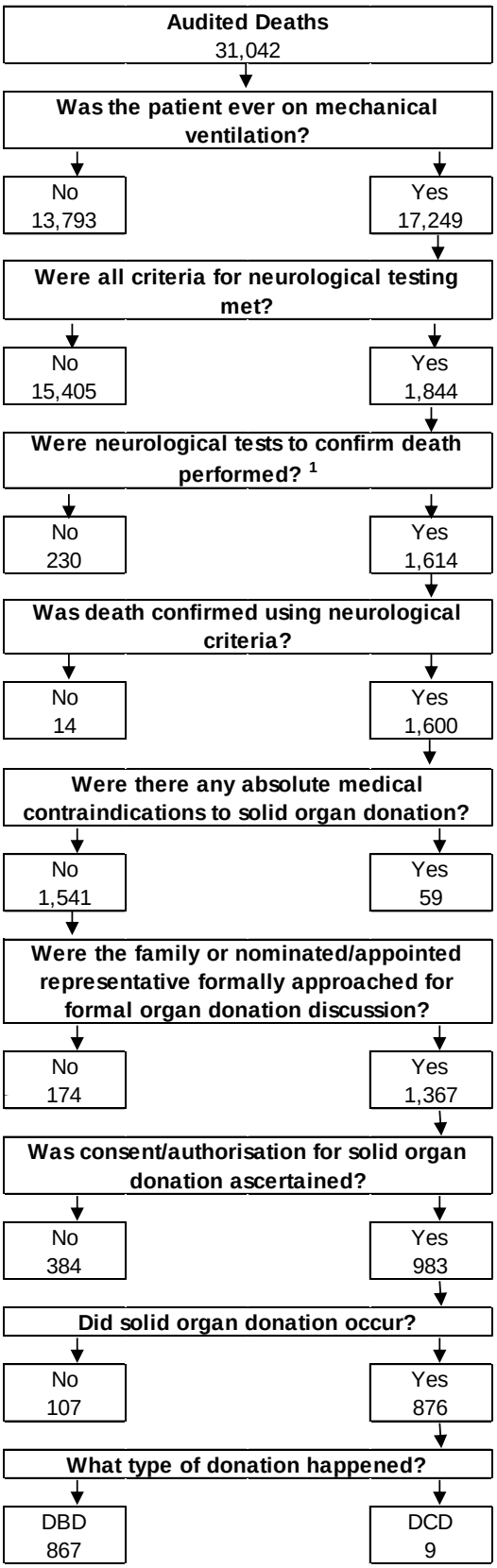
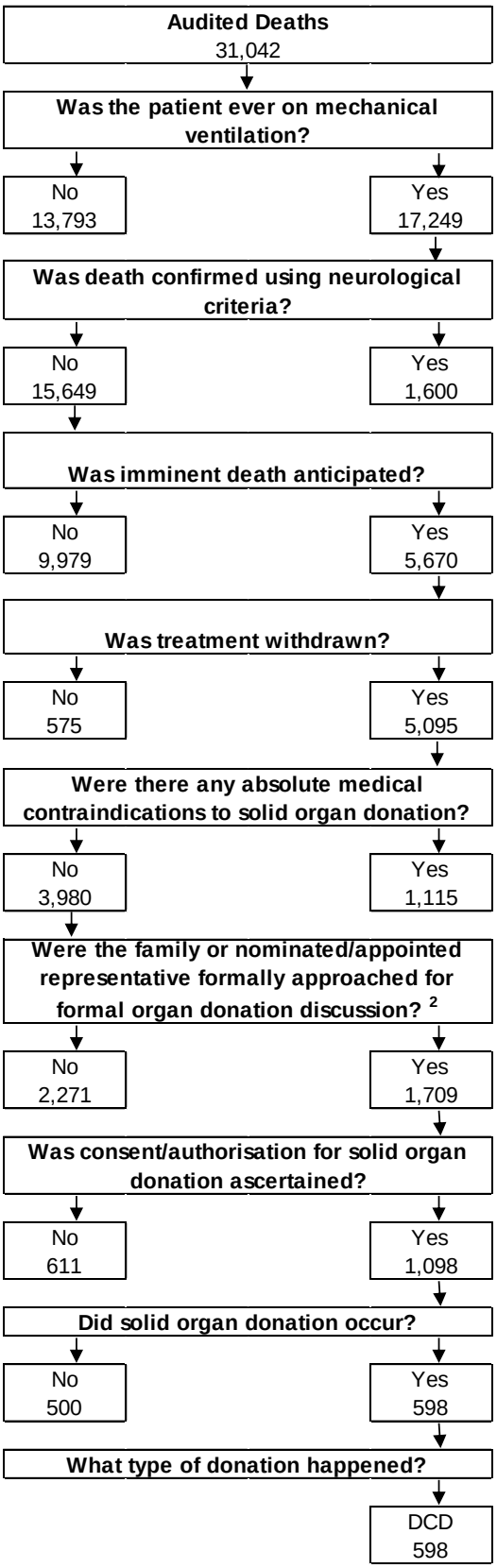


Figure 13.2 Donation after circulatory death [3]



[1] Patients for whom tests were not performed due to; cardiac arrest despite resuscitation occurred or brainstem reflexes returned are excluded from the calculation of the neurological death testing rate

[2] A large number of DCD donors are not approached due to the DCD screening process which precludes them from solid organ donation

[3] Due to the impact of the COVID-19 pandemic, 2019-2020 includes 11 months of data, from 1 April 2019 - 29 February 2020

Table 13.1 Summary of key percentages, 1 April 2019 to 29 February 2020

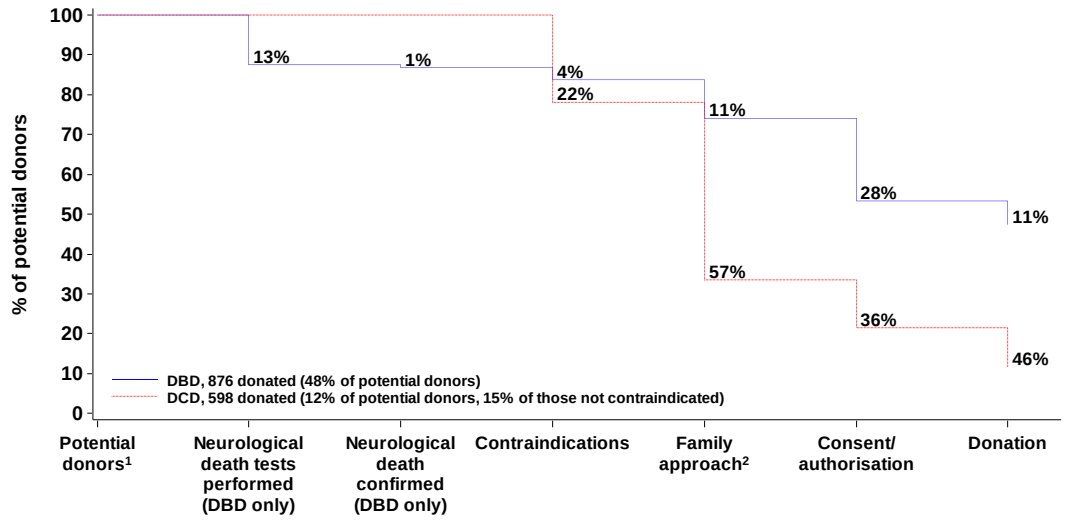
	DBD	DCD	ALL
Neurological death testing rate	87.5		
Referral rate	99.1	92.3	93.9
Proportion of approaches where a SN-OD was present	96.1	89.3	92.3
Consent/authorisation rate	71.9	64.2	67.7
- SN-OD not present for approach	43.4	24.0	28.4
- SN-OD present for approach	73.1	69.1	70.9
- Opt-in decision registered on the ODR*	92.4	89.4	90.8
- Opt-in decision expressed by any method**	93.5	89.6	91.4
- Deemed consent applied***	73.9	44.0	58.3
- No known decision to donate	55.9	47.5	51.2

* 103 families overruled their loved one's opt-in ODR decision to be an organ donor
** 109 families overruled their loved one's opt-in decision (expressed by any method) to be an organ donor
*** There were 48 cases where deemed consent applied and in 20 cases the family did not support deemed consent

Table 13.2 Summary of all deceased donor key percentages by Organ Donation Services Team (ODST), 1 April 2019 to 29 February 2020

ODST	Testing rate	Referral rate	SN-OD presence rate	Consent/authorisation rate
Eastern	90.6	92.9	93.8	67.2
London	86.2	93.4	91.5	62.0
Midlands	81.4	91.9	91.5	67.2
North West	83.8	94.2	96.0	68.0
Northern	86.7	98.2	93.7	72.6
Northern Ireland	90.3	96.1	94.6	62.4
Scotland	92.3	94.8	90.4	64.6
South Central	97.2	94.0	88.2	72.0
South East	87.0	90.7	93.2	70.0
South Wales	91.9	87.5	78.8	72.7
South West	92.0	97.9	89.8	72.2
Yorkshire	87.5	97.0	96.4	67.3
TOTAL	**87.5**	**93.9**	**92.3**	**67.7**

Figure 13.3 Stages at which potential organ donors lose the opportunity to become actual donors, 1 April 2019 to 29 February 2020



[1] Potential DBD donor - A patient who meets all four criteria for neurological death testing excluding those for which cardiac arrest occurred despite resuscitation or brain stem reflexes returned
Potential DCD donor - A patient who had treatment withdrawn and death was anticipated within four hours

[2] A large number of DCD donors are not approached due to the DCD screening process which precludes them from solid organ donation

13.4 Eligible donors

The number of eligible donors (as defined earlier) and rates per million population (pmp) are shown in **Table 13.3**, by NHS region. The number of actual donors pmp can be found in Table 3.2 of Chapter 3. Eligible DBD ranged from 15.9 pmp in the South West to 37.9 pmp in London. Eligible DCD ranged from 44 pmp in the South West to 79.6 pmp in the North West.

Across the countries, there was a range of 62.3 eligible donors pmp in Scotland to 85.3 eligible donors pmp in England. Overall, there were 1,541 eligible DBD (23.2 pmp) and 3,980 eligible DCD (59.9 pmp) in the UK, resulting in a total of 83.1 eligible donors per million population. **Tables 13.4** and **13.5** show more detailed information by country/NHS region for DBD and DCD data, respectively.

Table 13.3 Eligible donor rates per million population (pmp), in the UK, 1 April 2019 to 29 February 2020, by country and NHS region

	Eligible DBD		Eligible DCD		**TOTAL**	
Country/ NHS region of donation	N	(pmp)	N	(pmp)	**N**	**(pmp)**
North East and Yorkshire	213	(24.9)	584	(68.1)	**797**	**(93.0)**
North West	164	(23.4)	558	(79.6)	**722**	**(103.0)**
Midlands	217	(20.6)	596	(56.5)	**813**	**(77.1)**
East of England	106	(16.3)	502	(77.3)	**608**	**(93.7)**
London	338	(37.9)	522	(58.6)	**860**	**(96.5)**
South East	167	(18.9)	473	(53.4)	**640**	**(72.3)**
South West	89	(15.9)	247	(44.0)	**336**	**(59.9)**
England	**1294**	**(23.1)**	**3482**	**(62.2)**	**4776**	**(85.3)**
Isle of Man	**4**	**(50.0)**	**2**	**(25.0)**	**6**	**(75.0)**
Channel Islands	**4**	**(25.0)**	**2**	**(12.5)**	**6**	**(37.5)**
Wales	**68**	**(21.7)**	**185**	**(58.9)**	**253**	**(80.6)**
Scotland	**116**	**(21.3)**	**223**	**(41.0)**	**339**	**(62.3)**
Northern Ireland	**55**	**(29.3)**	**86**	**(45.7)**	**141**	**(75.0)**
TOTAL	**1541**	**(23.2)**	**3980**	**(59.9)**	**5521**	**(83.1)**

Table 13.4 DBD key metrics from the Potential Donor Audit, 1 April 2019 to 29 February 2020, by country and NHS region

Country/ NHS region 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 and Yorkshire	253	87.4	99.2	213	197	97.5	76.6
North West	219	82.2	99.5	164	141	97.9	70.2
Midlands	274	82.8	98.5	217	184	95.1	73.4
East of England	122	88.5	98.4	106	96	96.9	67.7
London	407	87.2	98.5	338	299	95.7	63.5
South East	192	90.6	100.0	167	150	98.0	77.3
South West	101	93.1	99.0	89	83	94.0	84.3
England	**1568**	**86.7**	**99.0**	**1294**	**1150**	**96.4**	**71.8**
Isle of Man	**4**	**100.0**	**100.0**	**4**	**4**	**0.0**	**75.0**
Channel Islands	**4**	**100.0**	**100.0**	**4**	**3**	**0.0**	**66.7**
Wales	**76**	**93.4**	**100.0**	**68**	**62**	**90.3**	**74.2**
Scotland	**130**	**92.3**	**99.2**	**116**	**99**	**94.9**	**75.8**
Northern Ireland	**62**	**90.3**	**100.0**	**55**	**49**	**98.0**	**63.3**
TOTAL	**1844**	**87.5**	**99.1**	**1541**	**1367**	**96.1**	**71.9**

Table 13.5 DCD key metrics from the Potential Donor Audit, 1 April 2019 to 29 February 2020, by country and NHS region

Country/ NHS region 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 and Yorkshire	921	96.7	584	227	93.0	63.4
North West	861	92.7	558	197	94.4	67.5
Midlands	821	90.4	596	270	89.6	64.1
East of England	690	91.2	502	208	91.8	68.3
London	765	89.9	522	276	89.1	60.9
South East	628	91.2	473	195	85.6	69.2
South West	315	96.5	247	118	84.7	63.6
England	**5001**	**92.5**	**3482**	**1491**	**90.1**	**65.1**
Isle of Man	**3**	**66.7**	**2**	**0**		
Channel Islands	**2**	**100.0**	**2**	**0**		
Wales	**276**	**87.3**	**185**	**64**	**75.0**	**64.1**
Scotland	**263**	**92.8**	**223**	**110**	**86.4**	**54.5**
Northern Ireland	**125**	**94.4**	**86**	**44**	**90.9**	**61.4**
TOTAL	**5670**	**92.3**	**3980**	**1709**	**89.3**	**64.2**

Tables 13.6 and **13.7** 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 13.6**, the neurological death testing rate was highest for the South Central team and the DBD referral rate was 100% for 3 teams. The proportion of DBD approaches where a SN-OD was present was highest for the Northern team, where a SNOD was present for 99% of DBD approaches.

Table 13.6 DBD key metrics from the Potential Donor Audit, 1 April 2019 to 29 February 2020, 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	149	90.6	98.7	133	123	96.7	65.9
London	290	86.2	99.0	239	210	95.2	61.4
Midlands	237	81.4	98.3	184	154	94.8	71.4
North West	240	83.8	99.6	184	159	98.1	68.6
Northern	113	86.7	99.1	95	91	98.9	79.1
Northern Ireland	62	90.3	100.0	55	49	98.0	63.3
Scotland	130	92.3	99.2	116	99	94.9	75.8
South Central	106	97.2	100.0	99	90	95.6	81.1
South East	207	87.0	98.6	169	148	97.3	75.0
South Wales	62	91.9	100.0	55	51	88.2	82.4
South West	88	92.0	98.9	78	73	95.9	82.2
Yorkshire	160	87.5	99.4	134	120	96.7	75.0
TOTAL	**1844**	**87.5**	**99.1**	**1541**	**1367**	**96.1**	**71.9**

Table 13.7 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 13.7	DCD key metrics from the Potential Donor Audit, 1 April 2019 to 29 February 2020, 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	743	91.8	540	234	92.3	67.9
London	550	90.5	405	201	87.6	62.7
Midlands	694	89.8	517	245	89.4	64.5
North West	964	92.9	601	213	94.4	67.6
Northern	355	98.0	245	84	88.1	65.5
Northern Ireland	125	94.4	86	44	90.9	61.4
Scotland	263	92.8	223	110	86.4	54.5
South Central	434	92.6	325	121	82.6	65.3
South East	478	87.4	312	145	89.0	64.8
South Wales	190	83.7	150	48	68.8	62.5
South West	248	97.2	200	103	85.4	65.0
Yorkshire	626	96.3	376	161	96.3	61.5
TOTAL	**5670**	**92.3**	**3980**	**1709**	**89.3**	**64.2**

Table 13.8 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 13.9 shows key metrics separately for adult and paediatric patients, for DBD and DCD, respectively. Note that of the 86 paediatric patients for whom neurological death was suspected, tests were not performed on 24 patients.

Table 13.8 DBD and DCD key metrics from the Potential Donor Audit, 1 April 2019 to 29 February 2020, 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	1762	88.3	1483	1313	96.3	72.1	845
	Emergency dept.	65	86.2	55	51	96.1	70.6	31
	TOTAL	**1827**	**88.2**	**1538**	**1364**	**96.3**	**72.1**	**876**
DCD	Critical care	5115		3602	1645	90.4	64.9	582
	Emergency dept.	117		87	51	76.5	58.8	16
	TOTAL	**5232**		**3689**	**1696**	**90.0**	**64.7**	**598**

[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 9 DCD donors referred from critical care

Table 13.9 DBD and DCD key metrics from the Potential Donor Audit, 1 April 2019 to 29 February 2020, 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)	1758	88.3	99.1	1483	1321	96.2	72.0	847
	Paediatric (<18)	86	72.1	97.7	58	46	93.5	69.6	29
	TOTAL	**1844**	**87.5**	**99.1**	**1541**	**1367**	**96.1**	**71.9**	**876**
DCD	Adult (>=18)	5467		92.6	3815	1647	89.9	65.0	582
	Paediatric (<18)	203		82.3	165	62	72.6	45.2	16
	TOTAL	**5670**		**92.3**	**3980**	**1709**	**89.3**	**64.2**	**598**

[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 9 DCD donors aged 18 and over

13.5 Consent/ authorisation rates

The overall DBD consent/authorisation rate was 72% and the 95% confidence limits for this percentage are 70% - 74%. For DCD, the overall rate was 64% and the 95% confidence limits are 62% - 67%.

Consent/authorisation rates by Organ Donation Services Team are shown in **Figure 13.4** 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, prior opt-in decision and ethnicity.

Across the country/NHS region, the DBD consent/authorisation rates range from 62% in London to 89% in South West. DCD consent/authorisation rates range from 55% in Scotland and the East Midlands to 73% in Wales and the East of England.

The overall consent/authorisation rates (combining DBD and DCD) for England, Wales, Scotland and Northern Ireland were 68%, 69%, 65% and 62%, respectively.

Across the Organ Donation Services Teams, the DBD consent/authorisation rates range from 61% in the London team to 82% in the South West and South Wales teams. DCD consent/authorisation rates range from 55% in the Scotland team to 68% in the Eastern and North West teams.

Figure 13.4 Consent/authorisation rates by Organ Donation Services Team

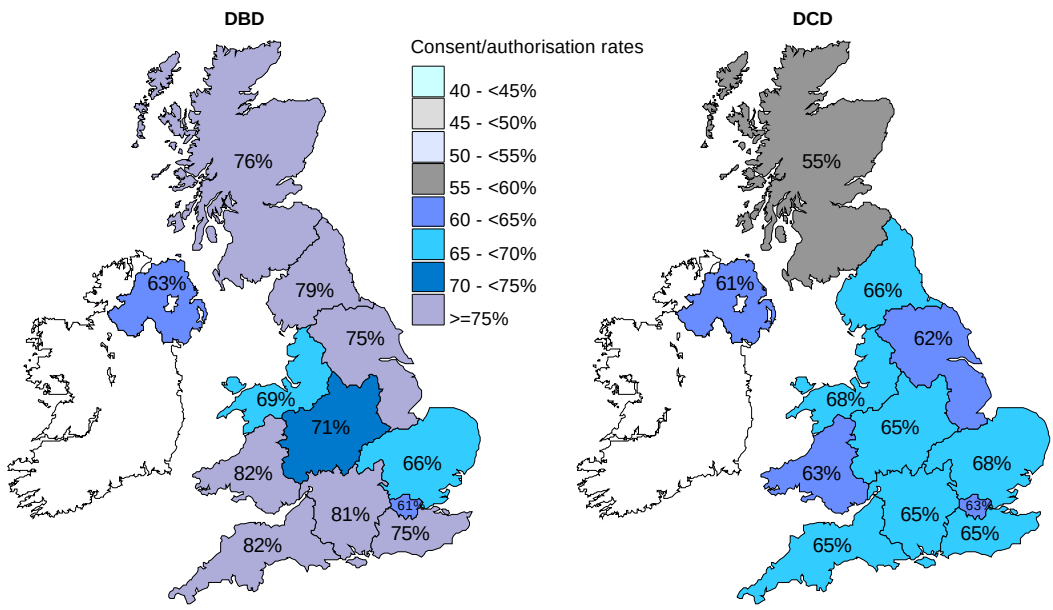


Table 13.10 shows the consent/authorisation rate separately for white patients and patients from BAME communities. The national DBD consent/authorisation rates for white patients and patients from BAME communities were 77% and 42%, respectively. A smaller, but still significant, difference was observed for DCD consent/authorisation rates: 66% and 43%, respectively. Note that there were an additional 17 DBD and 47 DCD families approached where the ethnicity was not known or not reported.

The Northern, Northern Ireland, Scotland, South Wales and South West teams each accounted for only 2% or less where patients from BAME communities' families were approached for a decision about organ donation, whereas London accounted for 42%. Most teams had a very small proportion, therefore accounting for some of the variation observed in overall consent/authorisation rates between teams. Note that consent/authorisation rates have not been provided where the number of families approached is less than ten.

Table 13.10 DBD and DCD consent/authorisation rates from the Potential Donor Audit, 1 April 2019 to 29 February 2020, by Organ Donation Services Team (ODST) and ethnicity

	White eligible donors					Eligible donors from BAME communities					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	106	70.8	218	70.2	**70.4**	17	35.3	12	33.3	**34.5**	**67.2**
London	122	75.4	148	68.9	**71.9**	86	43.0	47	44.7	**43.6**	**62.0**
Midlands	129	76.7	222	67.1	**70.7**	25	44.0	19	42.1	**43.2**	**67.2**
North West	139	74.1	202	68.3	**70.7**	17	23.5	6	-	**30.4**	**68.0**
Northern	87	80.5	82	64.6	**72.8**	4	-	2	-	**-**	**72.6**
Northern Ireland	46	65.2	41	61.0	**63.2**	2	-	0	-	**-**	**62.4**
Scotland	92	79.3	106	54.7	**66.2**	5	-	2	-	**-**	**64.6**
South Central	86	83.7	111	64.0	**72.6**	4	-	6	-	**50.0**	**72.0**
South East	119	79.8	126	69.0	**74.3**	27	51.9	16	43.8	**48.8**	**70.0**
South Wales	46	82.6	40	65.0	**74.4**	4	-	2	-	**-**	**72.7**
South West	68	83.8	93	68.8	**75.2**	1	-	3	-	**-**	**72.2**
Yorkshire	115	76.5	151	63.6	**69.2**	3	-	7	-	**10.0**	**67.3**
TOTAL	**1155**	**77.2**	**1540**	**66.4**	**71.0**	**195**	**41.5**	**122**	**43.4**	**42.3**	**67.7**

[1] Includes 64 families approached where the ethnicity was not known or not reported

Table 13.11 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 decision not to donate. Overall, this reason was reported in 25% of cases.

Table 13.11 Reasons why the family did not support organ donation, 1 April 2019 to 29 February 2020, by donor type

Primary reason why family did not support organ donation	Donor type				Total	
	DBD		DCD			
	N	%	N	%	N	%
Patient previously expressed a decision not to donate	110	28.7	143	23.4	253	25.4
Family were not sure whether the patient would have agreed to donation	55	14.3	85	13.9	140	14.1
Family did not believe in donation	15	3.9	12	2.0	27	2.7
Family felt it was against their religious/cultural beliefs	36	9.4	16	2.6	52	5.2
Family were divided over the decision	17	4.4	22	3.6	39	3.9
Family felt the patient had suffered enough	24	6.3	66	10.8	90	9.1
Family did not want surgery to the body	40	10.4	58	9.5	98	9.9
Family wanted to stay with the patient after death	3	0.8	7	1.2	10	1.0
Family had difficulty understanding/accepting neurological testing	3	0.8	0	-	3	0.3
Family felt the length of time for donation process was too long	20	5.2	109	17.8	129	13.0
Family concerned that other people may disapprove/be offended	0	-	1	0.2	1	0.1
Family felt the body needs to be buried whole (unrelated to religious or cultural reasons)	22	5.7	13	2.1	35	3.5
Family concerned that organs may not be transplanted	0	-	7	1.2	7	0.7
Families concerned about organ allocation	0	-	1	0.2	1	0.1
Family concerned donation may delay the funeral	0	-	2	0.3	2	0.2
Strong refusal - probing not appropriate	11	2.9	16	2.6	27	2.7
Other	28	7.3	53	8.7	81	8.1
Total	**384**	**100**	**611**	**100**	**995**	**100**

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

Table 13.12 shows the proportion of family approaches where a SN-OD was present, for DBD and DCD separately, and overall. Nationally, 96% of DBD and 89% 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 high across all teams for DBD approaches.

Table 13.12 Percentage of family approaches for which a Specialist Nurse - Organ Donation (SN-OD) was present from the Potential Donor Audit, 1 April 2019 to 29 February 2020, 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	123	119	96.7	234	216	92.3	**93.8**
London	210	200	95.2	201	176	87.6	**91.5**
Midlands	154	146	94.8	245	219	89.4	**91.5**
North West	159	156	98.1	213	201	94.4	**96.0**
Northern	91	90	98.9	84	74	88.1	**93.7**
Northern Ireland	49	48	98.0	44	40	90.9	**94.6**
Scotland	99	94	94.9	110	95	86.4	**90.4**
South Central	90	86	95.6	121	100	82.6	**88.2**
South East	148	144	97.3	145	129	89.0	**93.2**
South Wales	51	45	88.2	48	33	68.8	**78.8**
South West	73	70	95.9	103	88	85.4	**89.8**
Yorkshire	120	116	96.7	161	155	96.3	**96.4**
TOTAL	**1367**	**1314**	**96.1**	**1709**	**1526**	**89.3**	**92.3**

Table 13.13 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. Again, there is wide variation between teams.

Caution should be applied when interpreting these rates as no account has been taken of approaches initiated by the family, patient's prior opt-in decision or ethnicity.

Table 13.13 DBD and DCD consent/authorisation rates with/without a SN-OD present from the Potential Donor Audit, 1 April 2019 to 29 February 2020, 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	119	65.5	216	70.4	**68.7**	4	75.0	18	38.9	**45.5**	**67.2**
London	200	61.5	176	67.0	**64.1**	10	60.0	25	32.0	**40.0**	**62.0**
Midlands	146	73.3	219	69.4	**71.0**	8	37.5	26	23.1	**26.5**	**67.2**
North West	156	69.9	201	70.6	**70.3**	3	0.0	12	16.7	**13.3**	**68.0**
Northern	90	78.9	74	68.9	**74.4**	1	100.0	10	40.0	**45.5**	**72.6**
Northern Ireland	48	64.6	40	62.5	**63.6**	1	0.0	4	50.0	**40.0**	**62.4**
Scotland	94	79.8	95	63.2	**71.4**	5	0.0	15	0.0	**0.0**	**64.6**
South Central	86	81.4	100	78.0	**79.6**	4	75.0	21	4.8	**16.0**	**72.0**
South East	144	75.0	129	67.4	**71.4**	4	75.0	16	43.8	**50.0**	**70.0**
South Wales	45	88.9	33	81.8	**85.9**	6	33.3	15	20.0	**23.8**	**72.7**
South West	70	82.9	88	71.6	**76.6**	3	66.7	15	26.7	**33.3**	**72.2**
Yorkshire	116	77.6	155	63.9	**69.7**	4	0.0	6	0.0	**0.0**	**67.3**
TOTAL	**1314**	**73.1**	**1526**	**69.1**	**70.9**	**53**	**43.4**	**183**	**24.0**	**28.4**	**67.7**

13.7 Comparison with previous years

Table 13.14 and **Figure 13.5** show the key metrics from the Potential Donor Audit (PDA) for the last four financial years.

Table 13.14 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	**2016-2017**	1787	85.7	97.4	1454	1339	93.1	926	69.2	827
	2017-2018	1956	85.8	98.7	1584	1474	94.8	1067	72.4	953
	2018-2019	2008	85.6	98.9	1639	1497	95.3	1087	72.6	976
	2019-2020[3]	1844	87.5	99.1	1541	1367	96.1	983	71.9	876
DCD	**2016-2017**	6233		85.6	4262	1837	80.5	1069	58.2	574
	2017-2018	6283		89.4	4457	1859	85.5	1115	60.0	612
	2018-2019	5982		92.7	4186	1756	87.3	1099	62.6	612
	2019-2020[3]	5670		92.3	3980	1709	89.3	1098	64.2	598
TOTAL	**2016-2017**	8020		88.2	5716	3176	85.8	1995	62.8	1401
	2017-2018	8239		91.6	6041	3333	89.6	2182	65.5	1565
	2018-2019	7990		94.3	5825	3253	91.0	2186	67.2	1588
	2019-2020[3]	7514		93.9	5521	3076	92.3	2081	67.7	1474

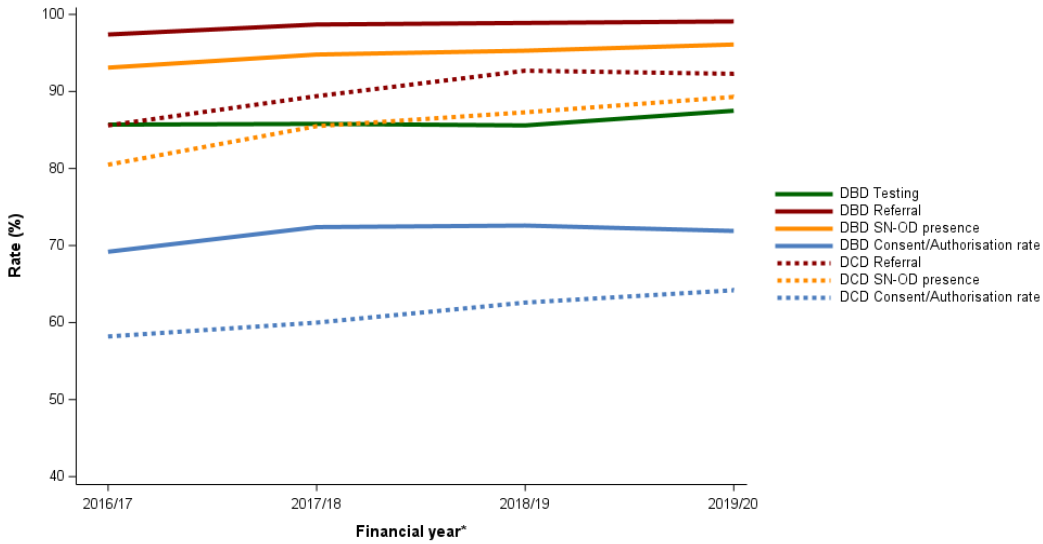
[1] DBD referral criteria: patients where neurological death was suspected (excluding those for which cardiac arrest occurred despite resuscitation, and brain stem reflexes returned; DCD referral criteria: patients for whom imminent death was anticipated

[2] Actual donors resulting from eligible DBD donors includes 10 DCD donors in 2016-2017, 14 DCD donors in 2017-2018, 24 DCD donors in 2018-2019 and 9 DCD donors in 2019-2020

[3] Due to the impact of the COVID-19 pandemic, 2019-2020 includes 11 months of data, from 1 April 2019 – 29 February 2020

DBD referral rates have remained unchanged, with DCD referral rates increasing in 2018-2019 before falling slightly in 2019-2020. Increases have been observed in the proportion of approaches where a SN-OD was present, especially for DCD. An increase has also been observed in consent/ authorisation rate for DCD whereas the DBD rate remains unchanged.

Figure 13.5 **DBD and DCD key metrics from the Potential Donor Audit**



*Due to the impact of the Covid-19 pandemic, 2019/20 includes 11 months of data, from 1 April 2019 - 29 February 2020.

13.8 Consented/authorised cases not proceeding to solid organ donation

Consent/authorisation for donation was ascertained for 983 eligible DBD donors and 1,098 eligible DCD donors; 876 (89%) and 598 (54%) of these cases proceeded to donate at least one solid organ, respectively. **Table 13.15** shows the reasons why donation did not proceed for the 107 eligible DBD and 500 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 eligible DCD donors not proceeding was prolonged time to asystole, meaning that the donor did not die in a timeframe suitable for organ donation.

Table 13.15 Reasons why consented/authorised eligible donors did not proceed to donate, 1 April 2019 to 29 February 2020, by donor type

Primary reason why donation did not proceed	Donor type				Total	
	DBD		DCD			
	N	%	N	%	N	%
Family changed mind	9	8.4	15	3.0	24	4.0
Coroner/Procurator Fiscal refusal	10	9.4	16	3.2	26	4.3
Organs deemed medically unsuitable by recipient centres	38	35.5	141	28.2	179	29.5
Organs deemed medically unsuitable on surgical inspection	11	10.3	7	1.4	18	3.0
Prolonged time to asystole	0	-	226	45.2	226	37.2
Cardiac Arrest	8	7.5	11	2.2	19	3.1
General instability	8	7.5	29	5.8	37	6.1
Logistic reasons	0	-	4	0.8	4	0.7
Positive virology	10	9.4	10	2.0	20	3.3
Family placed conditions on donation	0	-	2	0.4	2	0.3
Other	13	12.2	39	7.8	52	8.6
Total	**107**	**100**	**500**	**100**	**607**	**100**

Appendices

Appendix I provides details of the 1,580 deceased solid organ donors reported in 2019-2020. Details are given for each donating hospital and the hospitals have been grouped by NHS region and country.

The number of donors by donor country/NHS region 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/NHS region per million population are given in **Appendix III**; these populations are mid-2018 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 due to 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 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 2019 - 31 March 2020 (2018-2019), by donating hospital

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas	Bowel
North East and Yorkshire														
Barnsley, Barnsley District General Hospital	2	(3)	1	(4)	3	(7)	3	(4)	6	0	0	3	1	0
Barrow-In-Furness, Furness General Hospital	1	(0)	0	(0)	1	(0)	1	(0)	2	0	0	1	1	0
Bradford, Bradford Royal Infirmary	7	(7)	2	(2)	9	(9)	8	(6)	18	0	2	7	1	0
Carlisle, Cumberland Infirmary	3	(1)	3	(3)	6	(4)	4	(3)	12	0	2	4	0	0
Cottingham, Castle Hill Hospital	1	(0)	1	(1)	2	(1)	2	(0)	4	0	0	2	1	0
Darlington, Darlington Memorial Hospital	4	(2)	1	(1)	5	(3)	5	(2)	10	1	2	5	2	0
Doncaster, Doncaster Royal Infirmary	5	(1)	1	(4)	6	(5)	5	(2)	12	0	0	5	2	0
Durham, University Hospital Of North Durham	4	(8)	0	(1)	4	(9)	4	(8)	8	1	2	4	1	0
Gateshead, Queen Elizabeth Hospital	4	(1)	4	(4)	8	(5)	7	(1)	14	1	4	5	3	0
Grimsby, Diana Princess Of Wales Hospital	0	(2)	0	(4)	0	(6)	0	(2)	0	0	0	0	0	0
Halifax, Calderdale Royal Hospital	0	(1)	4	(1)	4	(2)	3	(0)	8	1	0	3	3	0
Harrogate, Harrogate District Hospital	4	(2)	0	(4)	4	(6)	3	(2)	8	0	0	3	1	0
Huddersfield, Huddersfield Royal Infirmary	6	(2)	1	(0)	7	(2)	6	(2)	14	1	2	6	2	0
Hull, Hull Royal Infirmary	6	(5)	11	(3)	17	(8)	9	(4)	34	2	4	9	7	1
Keighley, Airedale General Hospital	1	(4)	0	(1)	1	(5)	1	(2)	2	0	0	1	1	0
Leeds, Leeds General Infirmary	10	(16)	13	(11)	23	(27)	14	(17)	46	3	4	14	5	1
Leeds, St James's University Hospital	1	(3)	0	(1)	1	(4)	1	(3)	2	0	0	1	0	0
Middlesbrough, The James Cook University Hospital	6	(16)	4	(7)	10	(23)	6	(18)	19	3	6	6	4	0
Newcastle, Freeman Hospital	1	(1)	4	(1)	5	(2)	3	(0)	9	0	0	3	2	0
Newcastle, Royal Victoria Infirmary	26	(22)	11	(9)	37	(31)	28	(23)	69	7	12	23	13	1
Northumbria, Nsech	7	(8)	1	(4)	8	(12)	7	(7)	16	1	2	7	3	0
Rotherham, Rotherham District General Hospital	2	(3)	2	(2)	4	(5)	3	(4)	8	0	0	3	1	0
Scarborough, Scarborough General Hospital	4	(0)	0	(0)	4	(0)	2	(0)	5	0	4	2	1	0
Scunthorpe, Scunthorpe General Hospital	0	(0)	2	(0)	2	(0)	2	(0)	4	0	0	2	1	0
Sheffield, Northern General Hospital	8	(10)	5	(7)	13	(17)	7	(13)	24	3	2	8	4	0
Sheffield, Royal Hallamshire Hospital	6	(7)	3	(1)	9	(8)	9	(6)	17	1	5	8	3	0
Sheffield, Sheffield Children's Hospital	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0	0
South Shields, South Tyneside District General Hospital	1	(0)	0	(0)	1	(0)	1	(0)	2	0	0	1	0	0
Stockton-On-Tees, University Hospital Of North Tees	4	(3)	0	(1)	4	(4)	3	(3)	8	0	0	3	1	0
Sunderland, Sunderland Royal Hospital	4	(6)	1	(1)	5	(7)	2	(5)	8	0	0	3	1	0
Wakefield, Pinderfields General Hospital	5	(4)	1	(2)	6	(6)	5	(4)	12	1	2	4	2	0
Whitehaven, West Cumberland Hospital	2	(1)	1	(1)	3	(2)	2	(1)	6	0	0	2	0	0
Worksop, Bassetlaw District General Hospital	0	(2)	0	(0)	0	(2)	0	(2)	0	0	0	0	0	0
York, York District Hospital	2	(7)	2	(4)	4	(11)	1	(9)	6	0	0	2	0	0
Total	**137**	**(149)**	**79**	**(85)**	**216**	**(234)**	**157**	**(154)**	**413**	**26**	**55**	**150**	**67**	**3**

Appendix I Deceased solid organ donors and donated organs in the UK, 1 April 2019 - 31 March 2020 (2018-2019), by donating hospital

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas	Bowel
North West														
Ashton-Under-Lyne, Tameside General Hospital	1	(3)	2	(2)	3	(5)	2	(3)	6	1	0	2	2	0
Blackburn, Royal Blackburn Hospital	7	(4)	4	(4)	11	(8)	6	(5)	18	0	1	7	3	0
Blackpool, Blackpool Victoria Hospital	2	(5)	4	(1)	6	(6)	3	(3)	12	0	0	3	0	0
Bolton, Royal Bolton Hospital	0	(0)	3	(2)	3	(2)	2	(1)	6	0	0	2	0	0
Bury, Fairfield General Hospital	0	(1)	2	(1)	2	(2)	1	(1)	2	0	0	2	0	0
Chester, Countess Of Chester Hospital	4	(3)	1	(5)	5	(8)	4	(4)	8	1	2	4	1	0
Crewe, Leighton Hospital	3	(0)	3	(1)	6	(1)	4	(0)	12	1	0	4	1	0
Lancaster, Royal Lancaster Infirmary	1	(1)	1	(0)	2	(1)	1	(1)	2	1	0	1	0	0
Liverpool, Alder Hey Children's Hospital	1	(0)	0	(2)	1	(2)	1	(2)	2	1	2	1	1	0
Liverpool, Liverpool Heart And Chest Hospital	2	(3)	2	(0)	4	(3)	3	(3)	8	0	2	2	1	0
Liverpool, Royal Liverpool University Hospital	4	(2)	0	(4)	4	(6)	4	(3)	7	1	0	4	1	0
Liverpool, University Hospital Aintree	0	(6)	4	(5)	4	(11)	4	(5)	8	1	0	3	1	0
Liverpool, Walton Centre For Neurology And Neurosurgery	10	(10)	7	(8)	17	(18)	9	(12)	31	2	0	10	7	0
Macclesfield, Macclesfield District General Hospital	1	(2)	1	(1)	2	(3)	2	(0)	4	0	0	2	1	0
Manchester, Manchester Royal Infirmary	9	(6)	3	(1)	12	(7)	9	(7)	24	2	5	9	5	0
Manchester, North Manchester General Hospital	0	(0)	1	(1)	1	(1)	0	(0)	2	0	0	0	0	0
Manchester, Royal Manchester Children's Hospital	1	(3)	1	(2)	2	(5)	2	(3)	4	1	2	1	2	1
Manchester, Wythenshawe Hospital	1	(3)	6	(3)	7	(6)	2	(4)	10	0	2	3	0	0
Oldham, Royal Oldham Hospital (Rochdale Road)	1	(0)	1	(4)	2	(4)	2	(1)	4	1	2	2	1	0
Prescot, Whiston Hospital	4	(9)	1	(1)	5	(10)	4	(9)	10	1	0	4	0	0
Preston, Royal Preston Hospital	13	(9)	7	(4)	20	(13)	13	(9)	40	1	2	13	8	0
Salford, Salford Royal	20	(19)	4	(4)	24	(23)	19	(17)	48	4	4	18	8	1
Southport, Southport District General Hospital	3	(1)	1	(0)	4	(1)	2	(0)	6	1	3	2	0	0
Stockport, Stepping Hill Hospital	1	(3)	2	(1)	3	(4)	2	(3)	6	0	0	2	0	0
Warrington, Warrington Hospital	3	(5)	0	(2)	3	(7)	2	(5)	4	0	0	3	1	0
Wigan, Royal Albert Edward Infirmary	0	(3)	1	(3)	1	(6)	1	(5)	2	0	0	1	0	0
Wirral, Arrowe Park Hospital	4	(7)	2	(0)	6	(7)	4	(4)	12	0	0	4	1	0
Total	**96**	**(108)**	**64**	**(62)**	**160**	**(170)**	**108**	**(110)**	**298**	**20**	**27**	**109**	**45**	**2**
Midlands														
Birmingham, Birmingham Children's Hospital	1	(0)	0	(0)	1	(0)	0	(0)	2	0	0	0	0	0
Birmingham, Birmingham Heartlands Hospital	6	(2)	2	(1)	8	(3)	5	(3)	14	1	2	6	3	0
Birmingham, City Hospital	2	(1)	1	(3)	3	(4)	2	(3)	6	0	0	2	0	0
Birmingham, Queen Elizabeth Hospital Birmingham	16	(11)	10	(11)	26	(22)	20	(16)	50	7	14	19	10	0

Appendix I Deceased solid organ donors and donated organs in the UK, 1 April 2019 - 31 March 2020 (2018-2019), by donating hospital

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas	Bowel
Boston, Pilgrim Hospital	6	(0)	1	(0)	7	(0)	3	(0)	12	0	0	4	0	0
Burton-On-Trent, Queen's Hospital	1	(2)	1	(1)	2	(3)	2	(3)	4	0	0	2	0	0
Chesterfield, Chesterfield Royal Hospital	4	(0)	1	(1)	5	(1)	5	(0)	10	2	4	5	4	0
Coventry, University Hospital	10	(19)	16	(15)	26	(34)	16	(26)	47	4	8	18	8	0
Derby, Royal Derby Hospital	5	(4)	2	(6)	7	(10)	6	(5)	14	1	2	6	2	0
Dudley, Russells Hall Hospital	0	(5)	0	(1)	0	(6)	0	(5)	0	0	0	0	0	0
Hereford, The County Hospital	2	(3)	0	(1)	2	(4)	1	(1)	4	0	2	1	1	0
Kettering, Kettering General Hospital	4	(6)	0	(1)	4	(7)	4	(6)	7	1	6	4	2	0
Leicester, Glenfield General Hospital	1	(0)	3	(7)	4	(7)	2	(3)	8	0	0	2	1	0
Leicester, Leicester Royal Infirmary	7	(6)	2	(1)	9	(7)	7	(7)	16	2	2	8	3	0
Lincoln, Lincoln County Hospital	3	(2)	2	(1)	5	(3)	2	(3)	8	0	0	3	0	0
Northampton, Northampton General Hospital	5	(5)	0	(4)	5	(9)	4	(6)	10	0	0	4	2	0
Nottingham, Nottingham City Hospital	0	(0)	1	(3)	1	(3)	0	(0)	2	0	0	0	0	0
Nottingham, Nottingham University Hospital	23	(27)	15	(21)	38	(48)	31	(32)	73	10	7	30	14	1
Nuneaton, George Eliot Hospital	2	(0)	1	(0)	3	(0)	3	(0)	5	0	0	3	0	0
Redditch, The Alexandra Hospital	0	(4)	2	(0)	2	(4)	0	(4)	4	0	0	0	0	0
Shrewsbury, Royal Shrewsbury Hospital	5	(3)	1	(1)	6	(4)	5	(4)	10	0	2	6	0	0
Stoke-On-Trent, Royal Stoke University Hospital	5	(11)	20	(19)	25	(30)	20	(21)	48	1	2	20	10	0
Sutton Coldfield, Good Hope District General Hosp.	2	(3)	1	(1)	3	(4)	1	(2)	5	0	0	1	0	0
Sutton-In-Ashfield, King's Mill Hospital	2	(1)	3	(0)	5	(1)	4	(0)	9	0	0	4	0	0
Telford, The Princess Royal Hospital	3	(1)	0	(0)	3	(1)	3	(1)	6	1	0	3	2	0
Walsall, Manor Hospital	0	(1)	0	(3)	0	(4)	0	(1)	0	0	0	0	0	0
Warwick, Warwick Hospital	2	(3)	0	(0)	2	(3)	2	(1)	2	1	0	2	0	1
West Bromwich, Sandwell General Hospital	3	(2)	0	(2)	3	(4)	3	(3)	6	0	0	3	1	0
Wolverhampton, New Cross Hospital	2	(3)	6	(5)	8	(8)	2	(3)	16	0	0	2	1	0
Worcester, Worcestershire Royal Hospital	4	(3)	3	(3)	7	(6)	5	(5)	14	0	2	5	1	0
Total	**126**	**(128)**	**94**	**(112)**	**220**	**(240)**	**158**	**(164)**	**412**	**31**	**53**	**163**	**65**	**2**
East of England														
Basildon, Basildon Hospital	3	(1)	3	(4)	6	(5)	4	(3)	12	0	0	3	1	0
Bedford, Bedford Hospital	2	(3)	2	(2)	4	(5)	2	(4)	8	1	0	2	0	0
Bury St Edmunds, West Suffolk Hospital	1	(4)	0	(2)	1	(6)	1	(3)	2	0	0	1	0	0
Cambridge, Addenbrooke's Hospital	12	(17)	32	(29)	44	(46)	30	(31)	88	8	6	27	15	2
Chelmsford, Broomfield Hospital	2	(1)	1	(1)	3	(2)	2	(2)	6	0	0	2	0	0
Colchester, Colchester General Hospital	3	(3)	1	(2)	4	(5)	2	(4)	8	0	0	2	1	0
Great Yarmouth, James Paget Hospital	1	(3)	3	(4)	4	(7)	1	(5)	8	0	0	1	0	0
Harlow, Princess Alexandra Hospital	0	(2)	7	(0)	7	(2)	2	(1)	14	0	2	1	0	0
Huntingdon, Hinchingbrooke Hospital	0	(3)	0	(0)	0	(3)	0	(3)	0	0	0	0	0	0

Appendix I Deceased solid organ donors and donated organs in the UK, 1 April 2019 - 31 March 2020 (2018-2019), by donating hospital

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas	Bowel
Ipswich, Ipswich Hospital	3	(4)	5	(1)	8	(5)	5	(4)	13	2	2	5	1	0
Kings Lynn, The Queen Elizabeth Hospital	1	(2)	4	(4)	5	(6)	3	(5)	10	1	0	3	2	0
Luton, Luton And Dunstable Hospital	4	(4)	4	(4)	8	(8)	7	(3)	16	1	2	7	2	0
Milton Keynes, Milton Keynes General Hospital	2	(2)	1	(1)	3	(3)	3	(2)	6	2	0	3	2	0
Norwich, Norfolk And Norwich University Hospital	12	(9)	11	(3)	23	(12)	14	(10)	42	3	4	14	3	0
Papworth, Papworth Hospital	1	(2)	2	(4)	3	(6)	0	(3)	4	0	0	1	0	0
Peterborough, Peterborough City Hospital	5	(2)	2	(4)	7	(6)	3	(3)	10	0	0	5	0	0
Stevenage, Lister Hospital	7	(5)	8	(4)	15	(9)	10	(7)	28	1	4	11	3	0
Watford, Watford General Hospital	3	(3)	1	(5)	4	(8)	1	(5)	8	0	0	1	1	0
Westcliff On Sea, Southend Hospital	2	(1)	0	(0)	2	(1)	2	(1)	4	0	0	2	0	0
Total	**64**	**(71)**	**87**	**(74)**	**151**	**(145)**	**92**	**(99)**	**287**	**19**	**20**	**91**	**31**	**2**
London														
Barnet, Barnet General Hospital	1	(3)	1	(2)	2	(5)	1	(3)	2	0	0	2	0	0
Carshalton, St Helier Hospital	1	(0)	1	(2)	2	(2)	2	(1)	4	0	0	2	0	0
Croydon, Mayday University Hospital	3	(1)	1	(1)	4	(2)	4	(2)	8	0	4	2	1	0
Evelina Childrens Hospital	0	(1)	0	(1)	0	(2)	0	(0)	0	0	0	0	0	0
Harefield, Harefield Hospital	3	(4)	6	(7)	9	(11)	5	(7)	18	0	2	5	0	0
Harrow, Northwick Park Hospital	3	(3)	5	(3)	8	(6)	4	(4)	16	2	0	4	1	1
Ilford, King George Hospital	1	(2)	0	(1)	1	(3)	1	(3)	2	0	0	1	0	0
Isleworth, West Middlesex University Hospital	0	(3)	1	(1)	1	(4)	0	(4)	2	0	0	0	0	0
Kingston, Kingston Hospital	1	(0)	0	(1)	1	(1)	1	(0)	2	0	0	1	0	0
London, Charing Cross Hospital	10	(7)	3	(3)	13	(10)	11	(9)	22	3	8	12	4	0
London, Great Ormond Street Hospital For Children	0	(1)	3	(1)	3	(2)	0	(1)	4	0	0	1	0	0
London, Hammersmith Hospital	0	(3)	3	(0)	3	(3)	2	(3)	6	0	2	1	1	0
London, Homerton Hospital	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0	0
London, King's College Hospital	31	(33)	11	(16)	42	(49)	35	(34)	79	6	14	34	17	1
London, London Bridge Hospital	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0	0
London, National Hospital For Neurology And Neurosurgery	9	(12)	0	(0)	9	(12)	8	(10)	17	2	6	8	4	0
London, Newham General Hospital	1	(1)	0	(1)	1	(2)	1	(2)	2	0	0	1	1	0
London, North Middlesex Hospital	3	(2)	0	(0)	3	(2)	3	(2)	6	0	2	3	1	0
London, Queen Elizabeth Hospital	1	(4)	0	(1)	1	(5)	1	(2)	2	0	0	1	1	0
London, Royal Brompton Hospital	2	(1)	1	(2)	3	(3)	3	(1)	6	1	0	2	2	0
London, Royal Free Hospital	5	(6)	8	(4)	13	(10)	8	(7)	25	1	2	7	1	0
London, St Bartholomew's Hospital	3	(4)	3	(4)	6	(8)	4	(4)	12	0	0	4	2	0
London, St George's Hospital	41	(25)	14	(15)	55	(40)	46	(29)	105	10	17	41	22	1
London, St Mary's Hospital	11	(8)	2	(3)	13	(11)	10	(6)	26	4	8	9	3	0

Appendix I Deceased solid organ donors and donated organs in the UK, 1 April 2019 - 31 March 2020 (2018-2019), by donating hospital

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas	Bowel
London, St Thomas' Hospital	8	(5)	5	(3)	13	(8)	6	(3)	15	0	0	11	2	0
London, The Royal London Hospital (Whitechapel)	13	(17)	10	(9)	23	(26)	18	(21)	40	6	4	16	10	0
London, The Royal Marsden Hospital Fulham Road	1	(0)	0	(0)	1	(0)	1	(0)	2	1	2	1	0	0
London, The Whittington Hospital	2	(1)	1	(1)	3	(2)	2	(1)	4	0	0	3	1	0
London, University College Hospital	6	(2)	1	(1)	7	(3)	5	(2)	12	1	6	5	2	0
London, University Hospital Lewisham	1	(0)	0	(0)	1	(0)	1	(0)	2	0	0	1	0	0
London, Whipps Cross Hospital	6	(4)	1	(1)	7	(5)	6	(3)	12	0	2	7	3	0
Orpington, Princess Royal University Hospital	1	(5)	2	(1)	3	(6)	1	(4)	6	0	0	1	0	0
Romford, Queens Hospital	11	(11)	9	(4)	20	(15)	12	(11)	35	1	0	13	3	0
Southall, Ealing Hospital	2	(3)	1	(0)	3	(3)	1	(3)	4	0	0	2	0	0
Uxbridge, Hillingdon Hospital	1	(1)	2	(2)	3	(3)	0	(2)	6	0	0	0	0	0
Total	**182**	**(175)**	**95**	**(91)**	**277**	**(266)**	**203**	**(186)**	**504**	**38**	**79**	**201**	**82**	**3**
South East														
Ashford, William Harvey Hospital	8	(5)	1	(3)	9	(8)	7	(5)	18	1	4	7	2	0
Aylesbury, Stoke Mandeville Hospital	2	(1)	1	(0)	3	(1)	1	(1)	6	0	0	1	0	0
Basingstoke, North Hampshire Hospital	3	(1)	4	(4)	7	(5)	4	(3)	13	2	4	4	2	0
Brighton, Royal Sussex County Hospital	9	(9)	7	(6)	16	(15)	11	(6)	25	0	4	13	3	0
Camberley, Frimley Park Hospital	2	(6)	4	(3)	6	(9)	5	(7)	12	1	3	4	1	0
Canterbury, Kent And Canterbury Hospital	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0	0
Chertsey, St Peter's Hospital	6	(0)	9	(5)	15	(5)	8	(2)	30	0	2	8	2	0
Chichester, St Richard's Hospital	5	(0)	1	(3)	6	(3)	5	(2)	12	1	2	5	2	0
Dartford, Darent Valley Hospital	2	(0)	1	(2)	3	(2)	1	(1)	4	0	1	2	0	0
Eastbourne, Eastbourne District General Hospital	2	(1)	4	(4)	6	(5)	4	(2)	12	0	0	4	0	0
Gillingham, Medway Hospital	5	(3)	3	(5)	8	(8)	3	(4)	12	1	0	5	1	0
Guildford, Royal Surrey County Hospital	0	(3)	0	(0)	0	(3)	0	(2)	0	0	0	0	0	0
Hastings, Conquest Hospital	2	(0)	0	(1)	2	(1)	2	(1)	4	0	0	2	0	0
Haywards Heath, Princess Royal Hospital	0	(1)	0	(0)	0	(1)	0	(0)	0	0	0	0	0	0
Maidstone, Maidstone District General Hospital	3	(3)	3	(1)	6	(4)	5	(3)	12	1	0	5	1	0
Margate, Queen Elizabeth The Queen Mother Hospital	6	(7)	3	(4)	9	(11)	8	(8)	18	1	4	6	4	0
Newport, St Mary's Hospital	2	(5)	2	(3)	4	(8)	2	(5)	8	0	0	2	0	0
Oxford, Churchill Hospital	0	(0)	0	(1)	0	(1)	0	(0)	0	0	0	0	0	0
Oxford, John Radcliffe Hospital	14	(17)	17	(8)	31	(25)	20	(24)	56	5	4	20	11	1
Portsmouth, Queen Alexandra Hospital	3	(4)	3	(2)	6	(6)	5	(6)	10	0	4	6	2	0
Reading, Royal Berkshire Hospital	4	(6)	2	(3)	6	(9)	5	(6)	10	1	2	6	1	0
Redhill, East Surrey Hospital	1	(1)	2	(0)	3	(1)	2	(1)	6	0	2	2	1	0
Slough, Wexham Park Hospital	2	(2)	4	(0)	6	(2)	5	(1)	12	0	2	5	0	0
Southampton, Southampton University Hospitals	24	(19)	14	(19)	38	(38)	29	(30)	72	5	8	28	13	1

Appendix I Deceased solid organ donors and donated organs in the UK, 1 April 2019 - 31 March 2020 (2018-2019), by donating hospital

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas	Bowel
Tunbridge Wells, Tunbridge Wells Hospital	1	(2)	1	(1)	2	(3)	2	(2)	2	0	2	2	0	0
Winchester, Royal Hampshire County Hospital	0	(1)	2	(0)	2	(1)	0	(1)	4	0	0	0	0	0
Worthing, Worthing Hospital	1	(6)	1	(3)	2	(9)	1	(7)	4	0	0	1	0	0
Wycombe, Wycombe General Hospital	1	(2)	0	(2)	1	(4)	0	(3)	2	0	0	0	0	0
Total	**108**	**(106)**	**89**	**(83)**	**197**	**(189)**	**135**	**(134)**	**364**	**19**	**48**	**138**	**46**	**2**
South West														
Barnstaple, North Devon District Hospital	3	(1)	0	(0)	3	(1)	3	(1)	6	1	0	3	1	0
Bath, Royal United Hospital	6	(2)	0	(3)	6	(5)	3	(3)	8	1	2	5	1	0
Bournemouth, Royal Bournemouth General Hospital	3	(2)	3	(1)	6	(3)	4	(3)	11	0	0	4	0	0
Bristol, Bristol Royal Hospital For Children	1	(3)	0	(0)	1	(3)	1	(3)	2	1	0	1	1	1
Bristol, Bristol Royal Infirmary	5	(7)	6	(5)	11	(12)	8	(9)	19	0	0	8	5	0
Bristol, Southmead Hospital	13	(22)	13	(11)	26	(33)	19	(26)	48	5	4	21	10	0
Cheltenham, Cheltenham General Hospital	2	(0)	1	(2)	3	(2)	2	(1)	4	0	0	3	0	0
Dorchester, Dorset County Hospital	1	(0)	0	(1)	1	(1)	1	(0)	2	0	0	1	1	0
Exeter, Royal Devon And Exeter Hospital (Wonford)	2	(2)	3	(2)	5	(4)	2	(3)	6	0	1	2	1	0
Gloucester, Gloucestershire Royal Hospital	5	(5)	1	(4)	6	(9)	5	(4)	12	1	4	5	3	1
Plymouth, Derriford Hospital	14	(12)	10	(10)	24	(22)	22	(16)	48	3	14	21	10	1
Poole, Poole General Hospital	1	(1)	1	(0)	2	(1)	0	(1)	2	0	0	1	0	0
Salisbury, Salisbury District Hospital	2	(2)	2	(2)	4	(4)	2	(2)	8	0	0	2	1	0
Swindon, Great Western Hospital	4	(3)	3	(1)	7	(4)	4	(3)	12	0	2	5	0	0
Taunton, Taunton And Somerset Hospital (Musgrove Park)	4	(6)	0	(5)	4	(11)	4	(8)	8	0	0	4	1	0
Torquay, Torbay Hospital	2	(4)	1	(0)	3	(4)	3	(4)	6	1	2	3	1	0
Truro, Royal Cornwall Hospital (Treliske)	2	(3)	3	(1)	5	(4)	2	(4)	6	0	2	4	0	0
Yeovil, Yeovil District Hospital	2	(1)	0	(0)	2	(1)	2	(1)	4	1	0	1	2	0
Total	**72**	**(76)**	**47**	**(48)**	**119**	**(124)**	**87**	**(92)**	**212**	**14**	**31**	**94**	**38**	**3**
Isle of Man														
Douglas, Nobles I-O-M Hospital	2	(2)	1	(0)	3	(2)	3	(2)	6	0	2	2	2	0
Total	**2**	**(2)**	**1**	**(0)**	**3**	**(2)**	**3**	**(2)**	**6**	**0**	**2**	**2**	**2**	**0**
Channel Islands														
Guernsey, Princess Elizabeth Hospital	1	(0)	0	(0)	1	(0)	1	(0)	2	0	0	1	0	0
St Helier, Jersey General Hospital	1	(1)	0	(0)	1	(1)	1	(1)	2	1	2	1	1	0
Total	**2**	**(1)**	**0**	**(0)**	**2**	**(1)**	**2**	**(1)**	**4**	**1**	**2**	**2**	**1**	**0**

Appendix I Deceased solid organ donors and donated organs in the UK, 1 April 2019 - 31 March 2020 (2018-2019), by donating hospital

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas	Bowel
England	**789**	**(816)**	**556**	**(555)**	**1345**	**1371)**	**945**	**(942)**	**2500**	**168**	**317**	**950**	**377**	**17**
Wales														
Abergavenny, Nevill Hall Hospital	2	(4)	0	(0)	2	(4)	2	(4)	4	1	2	2	0	0
Bangor, Ysbyty Gwynedd District General Hospital	4	(5)	0	(2)	4	(7)	3	(5)	6	1	2	4	1	0
Bodelwyddan, Glan Clwyd District General Hospital	2	(4)	1	(5)	3	(9)	3	(4)	6	0	2	3	1	0
Bridgend, Princess Of Wales Hospital	1	(2)	0	(4)	1	(6)	1	(6)	1	1	0	1	1	0
Cardiff, University Of Wales Hospital	23	(18)	11	(14)	34	(32)	28	(22)	66	7	10	29	17	0
Carmarthen, Glangwili General Hospital	0	(3)	1	(2)	1	(5)	1	(3)	2	0	0	1	1	0
Haverford West, Withybush General Hospital	1	(0)	0	(1)	1	(1)	1	(0)	2	1	2	1	1	0
Llanelli, Prince Philips Hospital	3	(1)	0	(0)	3	(1)	1	(1)	4	0	0	2	0	0
Merthyr Tydfil, Prince Charles Hospital	5	(0)	2	(1)	7	(1)	6	(1)	14	1	0	6	2	0
Newport, Royal Gwent Hospital	2	(2)	2	(3)	4	(5)	4	(2)	8	0	0	4	2	0
Pontypridd, Royal Glamorgan Hospital	2	(2)	1	(2)	3	(4)	2	(2)	6	1	0	2	0	0
Swansea, Morriston Hospital	5	(5)	2	(3)	7	(8)	7	(6)	14	0	4	7	2	0
Wrexham, Maelor General Hospital	1	(4)	4	(0)	5	(4)	2	(3)	10	0	0	2	0	0
Total	**51**	**(50)**	**24**	**(37)**	**75**	**(87)**	**61**	**(59)**	**143**	**13**	**22**	**64**	**28**	**0**
Scotland														
Aberdeen, Aberdeen Royal Infirmary	12	(7)	4	(5)	16	(12)	13	(7)	29	4	8	14	8	1
Airdrie, Monklands District General Hospital	2	(2)	1	(1)	3	(3)	3	(3)	6	0	0	3	1	0
Ayr, The Ayr Hospital	1	(1)	1	(0)	2	(1)	0	(1)	2	0	0	1	0	0
Dundee, Ninewells Hospital	3	(2)	2	(5)	5	(7)	4	(4)	10	2	2	3	2	1
East Kilbride, Hairmyres Hospital	1	(1)	1	(0)	2	(1)	1	(1)	2	0	2	2	1	0
Edinburgh, Royal Infirmary Of Edinburgh	3	(6)	6	(1)	9	(7)	5	(6)	16	0	0	6	2	0
Edinburgh, Western General Hospital	9	(11)	2	(2)	11	(13)	8	(11)	20	3	6	9	4	1
Glasgow, Glasgow Royal Infirmary	2	(5)	1	(1)	3	(6)	3	(5)	6	0	2	3	3	0
Glasgow, Golden Jubilee National Hospital	1	(1)	1	(2)	2	(3)	1	(1)	3	0	0	1	0	0
Glasgow, Queen Elizabeth University Hospital	8	(14)	6	(5)	14	(19)	8	(17)	25	1	2	9	4	0
Glasgow, The Royal Hospital For Children	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0	0
Greenock, Inverclyde Royal Hospital	1	(0)	1	(0)	2	(0)	0	(0)	4	0	0	0	0	0
Inverness, Raigmore Hospital	3	(3)	1	(1)	4	(4)	3	(4)	8	0	2	3	1	0
Kilmarnock, Crosshouse Hospital	4	(2)	1	(1)	5	(3)	5	(3)	10	0	2	5	2	1
Kirkcaldy, Victoria Hospital	4	(1)	5	(3)	9	(4)	4	(3)	14	1	4	5	1	0
Larbert, Forth Valley Royal Hospital	8	(6)	0	(2)	8	(8)	5	(5)	14	0	4	6	3	0
Livingston, St John's Hospital	3	(0)	0	(0)	3	(0)	3	(0)	6	1	0	3	1	0

Appendix I Deceased solid organ donors and donated organs in the UK, 1 April 2019 - 31 March 2020 (2018-2019), by donating hospital

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas	Bowel
Melrose, Borders General Hospital	1	(0)	1	(0)	2	(0)	1	(0)	3	0	0	1	0	0
Paisley, Royal Alexandra Hospital	5	(1)	0	(1)	5	(2)	4	(1)	10	0	0	4	2	0
Perth, Perth Royal Infirmary	0	(2)	0	(0)	0	(2)	0	(2)	0	0	0	0	0	0
Wishaw, Wishaw General Hospital	3	(2)	1	(0)	4	(2)	2	(2)	8	1	0	2	0	0
Total	**74**	**(68)**	**35**	**(30)**	**109**	**(98)**	**73**	**(77)**	**196**	**13**	**34**	**80**	**35**	**4**
Northern Ireland														
Belfast, Antrim Hospital	4	(4)	0	(0)	4	(4)	3	(4)	8	0	0	2	1	0
Belfast, Belfast City Hospital	2	(0)	2	(0)	4	(0)	1	(0)	6	1	0	2	1	0
Belfast, Mater Infirmorum Hospital	1	(0)	1	(1)	2	(1)	1	(0)	4	1	0	1	0	0
Belfast, Royal Belfast Hospital For Sick Children	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0	0
Belfast, Royal Victoria Hospital	17	(11)	12	(10)	29	(21)	18	(15)	51	3	4	19	5	0
Belfast, The Ulster Hospital	1	(2)	2	(4)	3	(6)	1	(3)	6	0	0	1	0	0
Coleraine, Causeway Hospital	3	(2)	0	(0)	3	(2)	3	(0)	6	1	2	3	1	0
Enniskillen, South West Acute Hospital	2	(2)	0	(1)	2	(3)	2	(2)	4	0	0	2	1	0
Londonderry, Altnagelvin Area Hospital	0	(4)	2	(1)	2	(5)	0	(3)	4	0	0	0	0	0
Portadown, Craigavon Area Hospital	2	(1)	0	(0)	2	(1)	1	(1)	2	0	0	2	0	0
Total	**32**	**(27)**	**19**	**(17)**	**51**	**(44)**	**30**	**(29)**	**91**	**6**	**6**	**32**	**9**	**0**

Appendix IIA Numbers of donors after brain death and organs retrieved in the UK, 1 April 2019 - 31 March 2020, by country/ NHS region

Country/ NHS region	Donors				Organs					
	All donors	pmp	Multi-organ donors	pmp	Kidney	Heart	Lung	Liver	Pancreas	Bowel
North East and Yorkshire	135	15.8	117	13.7	254	21	38	116	53	3
North West	92	13.1	79	11.3	166	15	19	84	31	2
Midlands	130	12.3	109	10.3	240	28	44	116	47	2
East of England	82	12.6	69	10.6	152	14	22	73	24	2
London	120	13.5	101	11.3	211	14	39	107	41	3
South East	133	15.0	113	12.8	238	24	42	119	38	3
South West	76	13.5	62	11.1	127	14	24	71	34	2
England	**768**	**13.7**	**650**	**11.6**	**1388**	**130**	**228**	**686**	**268**	**17**
Isle of Man	**2**	**25.0**	**2**	**25.0**	**4**	**0**	**0**	**2**	**2**	**0**
Channel Islands	**3**	**18.8**	**3**	**18.8**	**6**	**1**	**2**	**3**	**1**	**0**
Wales	**57**	**18.2**	**52**	**16.6**	**106**	**16**	**20**	**54**	**23**	**0**
Scotland	**65**	**11.9**	**50**	**9.2**	**112**	**10**	**24**	**56**	**25**	**4**
Northern Ireland	**30**	**16.0**	**24**	**12.8**	**50**	**6**	**4**	**27**	**8**	**0**
TOTAL	**946**	**14.2**	**800**	**12.0**	**1705**	**166**	**288**	**848**	**333**	**21**

Appendix IIB Numbers of donors after circulatory death and organs retrieved in the UK, 1 April 2019 - 31 March 2020, by country/ NHS region

	Donors				Organs					
Country/ NHS region	**All donors**	**pmp**	**Multi-organ donors**	**pmp**	**Kidney**	**Heart**	**Lung**	**Liver**	**Pancreas**	**Bowel**
North East and Yorkshire	79	0	39	0	155	7	14	31	18	0
North West	68	0	27	0	132	3	4	25	8	0
Midlands	87	0	46	0	168	4	12	44	21	0
East of England	102	0	47	0	196	9	6	41	19	0
London	64	0	34	0	123	6	12	29	10	0
South East	94	0	50	0	182	3	20	44	19	0
South West	52	0	29	0	100	1	11	27	8	0
England	**546**	**9.8**	**272**	**4.9**	**1056**	**33**	**79**	**241**	**103**	**0**
Isle of Man	**1**	**12.5**	**1**	**12.5**	**2**	**0**	**2**	**0**	**0**	**0**
Channel Islands	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Wales	**28**	**8.9**	**17**	**5.4**	**56**	**0**	**4**	**17**	**8**	**0**
Scotland	**35**	**6.4**	**14**	**2.6**	**65**	**1**	**4**	**15**	**5**	**0**
Northern Ireland	**19**	**10.1**	**4**	**2.1**	**38**	**0**	**2**	**3**	**0**	**0**
TOTAL	**634**	**9.5**	**309**	**4.7**	**1225**	**34**	**91**	**278**	**116**	**0**

Appendix III	Populations for NHS regions, 2019-2020 Mid-2018 estimates based on ONS 2011 Census figures
NHS region	**Population (millions)**
North East and Yorkshire	8.57
North West	7.01
Midlands	10.54
East of England	6.49
London	8.91
South East	8.85
South West	5.61
England	**55.98**
Isle of Man	**0.08**
Channel Islands	**0.16**
Wales	**3.14**
Scotland	**5.44**
Northern Ireland	**1.88**
TOTAL	**66.44**

Appendix IVA **UK solid organ transplants from deceased UK donors[1] to non-UK residents, 1 April 2017 to 31 March 2020**

Transplant type by year

Year	Transplant type	Residency of recipient ROI	Other EU	Non-EU	Total
2017/18	Heart	3	0	0	3
	Liver	5	8	6	19
	Bilateral lung	1	0	0	1
	Heart-lung	1	0	0	1
	Bowel only	0	1	0	1
	Total	**10**	**9**	**6**	**25**
2018/19	Liver	0	1	6	7
	Bilateral lung	1	0	0	1
	Multivisceral	0	1	0	1
	Total	**1**	**2**	**6**	**9**
2019/20	Kidney	0	3	0	3
	Heart	1	0	0	1
	Liver	4	0	1	5
	Bilateral lung	1	0	0	1
	Bowel only	0	0	1	1
	Multivisceral	1	0	0	1
	Modified multivisceral	1	0	0	1
	Total	**8**	**3**	**2**	**13**

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 2017 to 31 March 2020**

Transplant type by year

Year	Transplant type	Country of donation ROI	Other EU	Non-EU	Total
2017/18	Kidney	4	0	0	4
	Heart	3	3	0	6
	Liver	7	4	0	11
	Multivisceral	0	1	0	1
	Total	**14**	**8**	**0**	**22**
2018/19	Kidney	0	1	0	1
	Heart	1	7	0	8
	Liver	3	1	0	4
	Bilateral lung	0	1	0	1
	Total	**4**	**10**	**0**	**14**
2019/20	Kidney	0	2	0	2
	Heart	2	0	0	2
	Liver	2	6	0	8
	Bilateral lung	0	1	0	1
	Total	**4**	**9**	**0**	**13**

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 2017 to 31 March 2020**

Transplant type by year

Year	Transplant type	Residency of recipient ROI	Other EU	Non-EU	Total
2017/18	Heart	0	4	0	4
	Liver	3	1	0	4
	Single Lung	0	1	0	1
	Bilateral lung	0	4	0	4
	Total	**3**	**10**	**0**	**13**
2018/19	Heart	0	2	0	2
	Liver	9	0	0	9
	Bilateral lung	0	2	0	2
	Total	**9**	**4**	**0**	**13**
2019/20	Heart	0	1	0	1
	Liver	3	0	0	3
	Bilateral lung	0	9	0	9
	Total	**3**	**10**	**0**	**13**

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

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