NHS
Blood and Transplant

Organ and Tissue Donation and Transplantation

Activity Report 2020/21

Preface

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

All figures quoted in this report are as reported to NHS Blood and Transplant by 10 May 2021 for the UK Transplant Registry, maintained on behalf of the transplant community and National Health Service (NHS), or for the NHS Organ Donor Register, maintained on behalf of the UK Health Departments.

The information provided in the tables and figures given in Chapters 2-10 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-2019 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, Mixed Race and Minority Ethnic (BAME) groups is published alongside this Activity Report – *Organ Donation and Transplantation data for Black, Asian, Mixed Race 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 and 2021 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.

A supplementary report on COVID-19 in organ donation and transplantation is published alongside this Activity Report.

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 12 months have been the most challenging in our history due to the Covid-19 pandemic. The whole NHS was put under intense pressure and the effects were also seen in Organ Donation and Transplantation. In April 2020, during the peak of the first wave of the pandemic, we saw a sharp reduction in the number of deceased donors and transplants – the lowest number ever recorded on a monthly basis with just 100 transplants taking place.

However, with a great team effort across clinical teams, deceased organ donation and transplant activity continued for the most urgent patients during the first wave of Covid-19 and returned to pre-Covid levels quite rapidly. Indeed, July and August were record summer months.

Despite further waves of the pandemic, numbers of transplants never fell so dramatically again and we were able to conclude the year with 75% of proceeding deceased donor activity (1,180) and 78% of deceased donor transplants (2,947) compared to the previous year. These numbers compared favourably to many of our international peers.

Even during the pandemic's worst weeks, we saw incredible family support for organ donation with record numbers of families agreeing to donation, providing those patients on the waiting list with life-saving organ transplants. This is testament to the strong foundation of altruism and support for donation, across the UK. The consent/authorisation rate for organ donation was at its highest ever last year, reaching 69% - a 1% rise on the previous year's figure and representing the sixth consecutive year of continuous improvement.

There was also a significant change to the organ donation and transplantation system in 2020/21, with England switching to an opt-out legislation in May 2020 and Scotland in March 2021. This change has seen an increase in the number of opt-in registrations on the NHS Organ Donor Register from 26.0 to 26.7 million at the end of March 2021. There were also 2 million people who chose to opt-out of donating their organs after death. However, this is much lower than the initial estimates for opt out registrations when the law changed – the forecast was 8% of people opting out, when in fact it's just over 3%.

Unfortunately, Covid-19 also had an impact on living donation just as it did in most other countries. Living donor transplants fell by 58% to 444, this was due to the fact that we had to pause the UK Living Kidney Sharing Scheme for the safety of both the patient and the donor during the peak of the pandemic. This has now resumed, and every effort is being made to ensure that it continues to run smoothly.

We realise this has been a very worrying time for those patients who are waiting for a transplant and the families supporting those patients. We would like to reassure them that the recovery of organ donation and transplantation, both living and deceased, is well underway and deceased donation rates are back to pre-COVID levels thanks to the huge support of all those families who agree to donation and the clinical teams who work tirelessly to get the best outcome for patients.

There is a long way to go before the NHS fully recovers from the effects of COVID-19. The number of patients registered on the active waiting list for a transplant in the UK fell to 4,256 at the end of March 2021, however this does not fully reflect the need for an organ transplant. Many transplant centres are still getting through the backlog of patient referrals and re-activations on to the transplant waiting list and it is currently forecast that the number of those likely waiting for a transplant is around 7000.

Although this report is focused around figures, each one represents a real person. Those who made the decision to save someone's life through organ donation, someone waiting eagerly for that call for a lifesaving transplant, those who receive the gift of life and those who sadly died waiting. We thank everyone who has played a part in keeping organ donation and transplantation going throughout the global pandemic and our promise is to work towards closing the gap between those waiting and those who receive a lifesaving transplant.

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National Clinical Lead For Organ Donation

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Summary of Donor and Transplant Activity

In the financial year to 31 March 2021, compared with the previous year

- there was a 25% fall in the number of deceased donors to 1,180
- the number of donors after brain death fell by 19% to 766, while the number of donors after circulatory death fell by 35% to 414
- the number of living donors fell by 58% to 444, accounting for 27% 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 30% to 3,391

The total number of patients registered for a transplant has decreased slightly (by 2%), so that:

- there were 4,256 patients waiting for a transplant at the end of March 2021, with a further 5,307 temporarily suspended from transplant lists
- 474 patients died while on the active list waiting for their transplant compared with 377 in the previous year, an increase of 26%. A further 693 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 33% in the total number of kidney transplants
- a fall of 49% in the total number of transplants involving a pancreas
- a fall of 19% in the total number of liver transplants
- a fall of 7% in the total number of heart transplants
- a fall of 44% in the total number of lung or heart-lung transplants
- a fall of 40% in the total number of intestinal transplants
- A fall of 35% in the total number of corneas retrieved to NHSBT Eye Banks and a fall of 47% in the total number of corneal transplants
- The overall referral rate of potential donors has dropped from 93% to 83%, but there has been an increase in the proportion of approaches where a Specialist Nurse - Organ Donation was present, from 92% to 93%
- an increase in the overall consent/authorisation rate for organ donation from 68% to 69%
- an increase in the number of opt-in registrations on the ODR, from 26.0 to 26.7 million at the end of March 2021. There were 2.0 million opt-out registrants

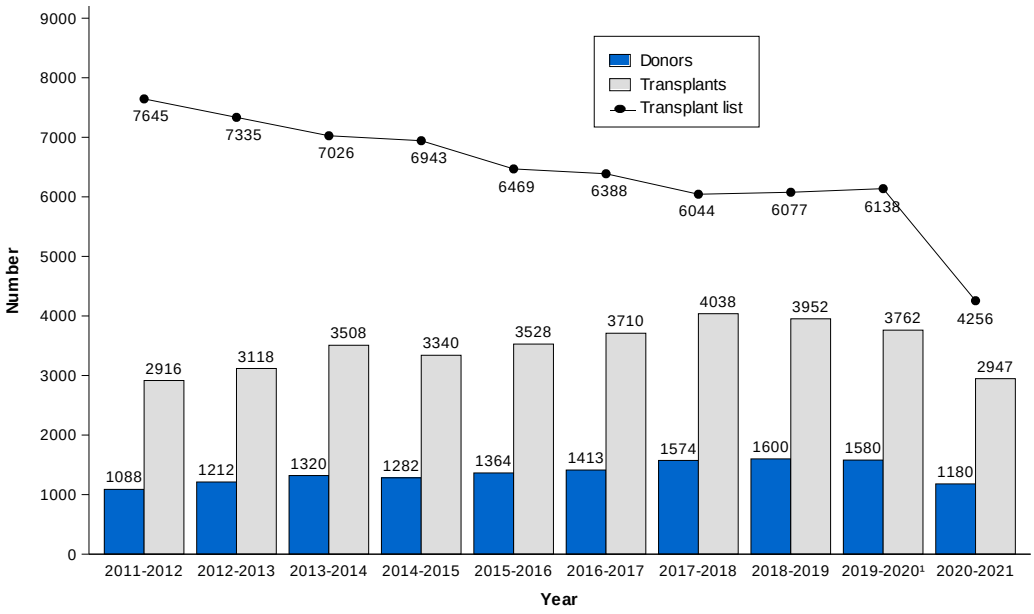
Overview of Organ Donation and Transplantation

A summary of organ donation and transplantation activity in the UK during the financial year from 1 April 2020 to 31 March 2021

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 the end of the 2019/20 financial year, there were 1,882 less active patients at 31 March 2021. The change in donor and transplant numbers (1 April 2011 to 31 March 2021) and the number of patients registered on the transplant lists at 31 March each year are shown in **Figure 2.1**. There were 815 fewer deceased donor transplants in 2020-2021 than in the previous year, representing a 22% fall. There was a 25% fall in the number of deceased donors.

Figure 2.1 **Number of deceased donors and transplants in the UK, 1 April 2011 - 31 March 2021, and patients on the active transplant list at 31 March**



¹ Transplant list as at 29 February 2020

Figure 2.2 shows the number of deceased and living donors for 2011-2021. The numbers of deceased donors after brain death (DBD) and deceased donors after circulatory death (DCD) have both increased over the decade. In 2020-2021, as a result of the pandemic, the numbers of DBD and DCD donors fell greatly compared to the previous year, to 766 and 414 respectively. The number of living donors has also fallen, from a peak of 1,148 donors in 2013-2014 to 444 in 2020-2021, which represents a 58% fall compared with 2019-2020.

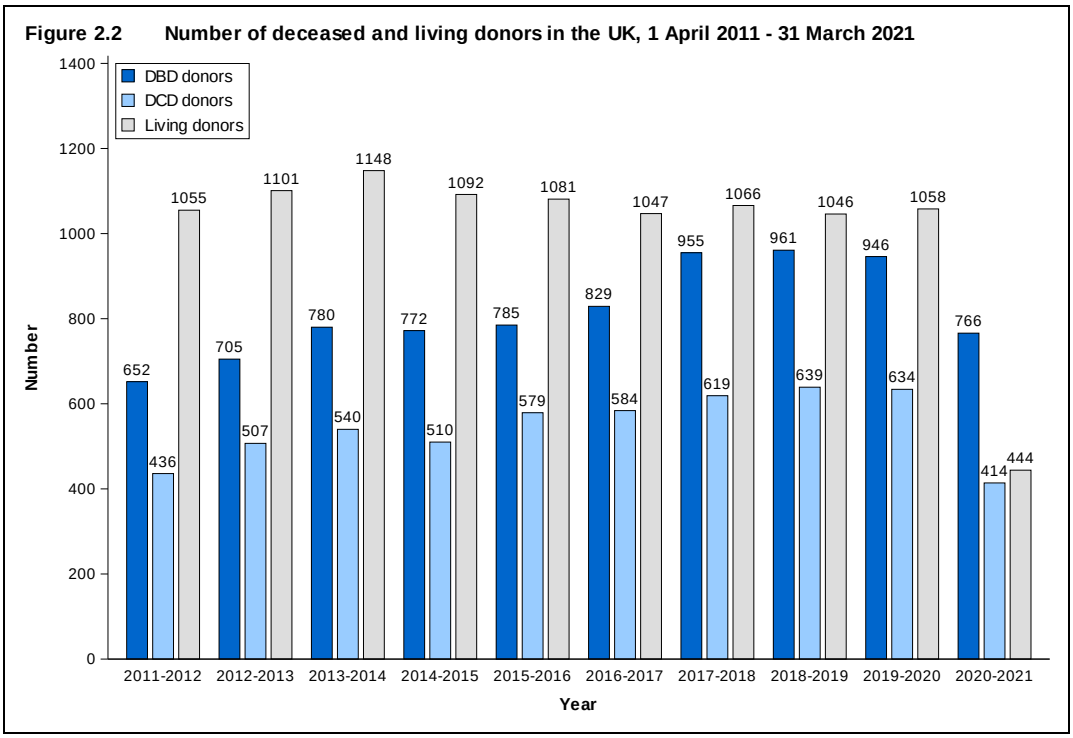
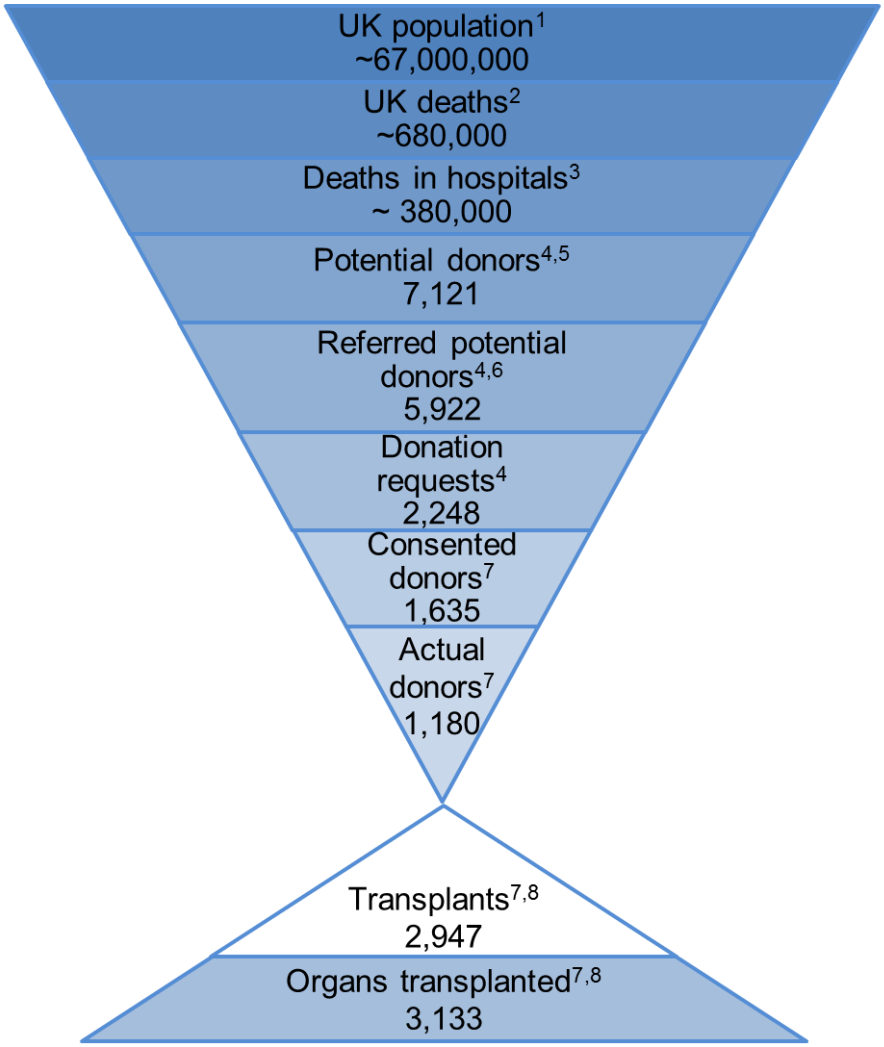


Figure 2.3 shows the potential deceased organ donor population in the UK. Not everyone can be a deceased organ donor and this figure highlights the small proportion of deaths in the UK that represent potential donors. *Please note that the information presented comes from several different sources. The 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 2020 – 31 March 2021



[1] Mid 2019 estimates: www.ons.gov.uk
[2] 2020 data: England & Wales www.ons.gov.uk; Scotland www.gro-scotland.gov.uk; Northern Ireland www.nisra.gov.uk
[3] 2020 data: England & Wales www.ons.gov.uk; Scotland www.isdscotland.org; Northern Ireland www.nisra.gov.uk
[4] 2020/2021 data, NHSBT, Potential Donor Audit as at 10 May 2021
[5] Potential donor - patients for whom death was confirmed following neurological tests or patients who had treatment withdrawn and death was anticipated within a time frame to allow donation to occur
[6] Referred potential donor – Potential donor who was discussed with a Specialist Nurse – Organ Donation
[7] 2020/2021 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 2020-2021 and patients on the transplant list at 31 March 2021 for each country in the UK and overall.

Table 2.1 Deceased donors and transplants 1 April 2020 - 31 March 2021, and transplant lists as at 31 March 2021, 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	902	(16.0)	49	(15.6)	90	(16.5)	48	(25.4)	1106	(16.5)
Transplants[3]	1457	(25.9)	52	(16.5)	174	(31.9)	133	(70.4)	1836	(27.4)
Transplant list	2959	(52.6)	126	(40.0)	345	(63.2)	86	(45.5)	3525	(52.6)
Pancreas										
Deceased donors	168	(3.0)	13	(4.1)	18	(3.3)	8	(4.2)	211	(3.1)
Transplants	75	(1.3)	9	(2.9)	15	(2.7)	1	(0.5)	101	(1.5)
Transplant list	142	(2.5)	5	(1.6)	23	(4.2)	2	(1.1)	172	(2.6)
Heart										
Deceased donors	134	(2.4)	10	(3.2)	14	(2.6)	10	(5.3)	171	(2.6)
Transplants[4]	127	(2.3)	6	(1.9)	21	(3.8)	3	(1.6)	161	(2.4)
Transplant list	262	(4.7)	12	(3.8)	19	(3.5)	16	(8.5)	313	(4.7)
Lung										
Deceased donors	88	(1.6)	5	(1.6)	9	(1.6)	5	(2.6)	108	(1.6)
Transplants	76	(1.4)	4	(1.3)	7	(1.3)	3	(1.6)	91	(1.3)
Transplant list	217	(3.9)	17	(5.4)	22	(4.0)	10	(5.3)	271	(4.0)
Liver										
Deceased donors	704	(12.5)	44	(14.0)	71	(13.0)	34	(18.0)	870	(13.0)
Transplants	606	(10.8)	29	(9.2)	71	(13.0)	29	(15.3)	749	(11.1)
Transplant list	94	(1.7)	5	(1.6)	13	(2.4)	3	(1.6)	123	(1.8)
Intestinal										
Deceased donors	13	(0.2)	1	(0.3)	0	(0.0)	0	(0.0)	14	(0.2)
Transplants	10	(0.2)	0	(0.0)	1	(0.2)	0	(0.0)	12	(0.2)
Transplant list	13	(0.2)	0	(0.0)	1	(0.2)	0	(0.0)	14	(0.2)
Total[5]										
Deceased donors	**967**	**(17.2)**	**52**	**(16.5)**	**92**	**(16.8)**	**48**	**(25.4)**	**1180**	**(17.6)**
Transplants	**2349**	**(41.7)**	**100**	**(31.7)**	**289**	**(52.9)**	**169**	**(89.4)**	**2947**	**(44.0)**
Transplant list	**3555**	**(63.2)**	**159**	**(50.5)**	**401**	**(73.4)**	**115**	**(60.8)**	**4256**	**(63.5)**

[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, overseas and in the Republic of Ireland
[3] Kidney only transplants
[4] Excludes heart-lung transplants
[5] Organ numbers do not add up to total due to multi-organ donors and patients waiting for a multi-organ transplant

2.2 Transplant list

At 31 March 2021, 4,256 patients were registered for an organ transplant in the UK on the active transplant list. A further 5,307 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 29 February 2020 and 31 March 2021. Between these dates the total number decreased by 1882 (31%). This is mostly due to decreases in the kidney and liver transplant lists, where non-urgent patients have been suspended. There have also been fewer patients added to the transplant lists throughout the pandemic.

Table 2.2 Active transplant lists in the UK at 29 February 2020 and 31 March 2021

	2020	2021	% Change
Kidney & pancreas patients	**4963**	**3537**	**-29**
Kidney	4726	3365	-29
Kidney & pancreas	198	143	-28
Kidney & pancreas islets	12	11	-8
Pancreas	11	10	-9
Pancreas islets	16	8	-
Cardiothoracic patients	**690**	**582**	**-16**
Heart	340	312	-8
Heart-lung	5	10	-
Lung(s)	345	260	-25
Liver patients	**437**	**115**	**-74**
Intestinal patients	**19**	**14**	**-26**
Other multi-organ patients[1]	**29**	**8**	**-**
ALL PATIENTS	**6138**	**4256**	**-31**

Percentages not reported when fewer than 10 in either year

[1] Includes patients waiting for kidney and liver transplants (24 in 2020, 6 in 2021), liver and heart transplants (3 in 2020, 1 in 2021), liver and lung transplants (2 in 2020, 1 in 2021)

During 2020-2021, 487 patients died whilst active/suspended on the transplant list or within one year of removal from the list. For comparison, in 2019-2020, 377 patients died. This information for 2020-2021 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 2021

	2019-2020	2020-2021		
	Total	Total	Adult	Paediatric
Kidney & pancreas patients	**247**	**337**	**336**	**1**
Kidney	233	313	312	1
Kidney & pancreas	13	23	23	0
Pancreas	1	1	1	0
Cardiothoracic patients	**79**	**77**	**71**	**6**
Heart	27	27	21	6
Heart-lung	2	2	2	0
Lung(s)	50	48	48	0
Liver patients	**49**	**65**	**60**	**5**
Intestinal patients	**1**	**4**	**3**	**1**
Other multi-organ patients[1]	**1**	**4**	**3**	**1**
ALL PATIENTS	**377**	**487**	**473**	**14**

[1] Includes patients waiting for kidney and heart transplants (1 adult), kidney and liver transplants (1 adult, 1 paediatric), liver and heart transplants (1 adult) in 2020-2021 and 1 patient waiting for liver and lung transplant (1 paediatric) in 2019-2020

2.3 Transplants

There was a 30% fall in the total number of organ transplants (from deceased and living donors) last year: 3,391 transplants were performed in 2020-2021 compared with 4,820 in 2019-2020 (**Table 2.4**). All multi-organ transplants are identified separately as are transplants from living donors.

The total number of kidney transplants fell in 2020-2021; kidney transplants from donors after circulatory death fell by 28%, while the number of living donor kidney transplants fell by 59%. The number of heart transplants fell by 7%, the number of lung transplants fell by 44%, the number of liver transplants fell by 19%, and the number of pancreas transplants (including pancreas only, intestinal, kidney/pancreas and pancreas islets) fell by 49%.

Table 2.4 Transplants performed in the UK, 1 April 2019 - 31 March 2021

Transplant	2019-2020	2020-2021	% Change
DBD kidney	1362	1171	-14
DCD kidney	921	665	-28
Living donor kidney	1039	422	-59
DBD kidney & pancreas	118	62	-47
DCD kidney & pancreas	44	21	-52
Kidney & pancreas islets	5	5	-
DBD pancreas	11	3	-
DCD pancreas	2	0	-
Pancreas islets	23	10	-57
DBD heart	149	137	-8
DCD heart	23	22	-4
Heart-lung	5	2	-
DBD single lung	13	4	-
DCD single lung	1	3	-
DBD bilateral lung	110	65	-41
DCD bilateral lung	31	16	-48
DBD liver	645	518	-20
DCD liver	169	120	-29
Domino liver	1	0	-
DBD liver lobe	92	100	+9
DCD liver lobe	0	1	-
Living donor liver lobe	18	22	+22
Bowel only[1]	6	2	-
Multivisceral[2]	8	5	-
Modified multivisceral[3]	6	5	-
Kidney & heart	1	0	-
Kidney & liver	15	7	-
Heart & liver	1	2	-
Liver & lung	1	1	-
TOTAL ORGAN TRANSPLANTS	**4820**	**3391**	**-30**
Total kidney transplants[4]	**3509**	**2353**	**-33**
Total pancreas transplants[4]	**217**	**111**	**-49**
Total cardiothoracic transplants	**335**	**252**	**-25**
Total liver transplants[4]	**950**	**776**	**-18**
Total intestinal transplants	**20**	**12**	**-40**

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 2021 is 57,400 (**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 2021

	Functioning transplants[1]
Kidney	42000
Pancreas	2500
Cardiothoracic	4000
Liver	11000
Intestinal	150
ALL PATIENTS	**57400**

[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 25% fall in deceased donors (to 1,180) and a 56% fall in living organ donors (to 444) compared with last year**
- **There has been a decrease in donors after brain death of 19% to 766 and a decrease of 35% in donors after circulatory death to 414, compared with last year**
- **Donors after brain death provide, on average, one more organ for transplantation than donors after circulatory death**
- **As a result of the COVID-19 pandemic, donor characteristics changed over the last year following a decade long trend towards older and more obese donors**

3.1 Summary of activity

There was a 25% fall in the number of deceased organ donors in 2020-2021 (1,180). There was a fall in donors after brain death (DBD) of 19% and a fall of 35% in donors after circulatory death (DCD).

The 1,180 deceased organ donors gave 3,654 organs compared with 1,580 donors and 5,088 organs in 2019-2020. This represents a 28% decrease in organs donated. **Table 3.1** shows deceased organ donors according to the organs they donated.

Nearly all deceased donors (94%) gave a kidney and of these, the majority (76%) also donated at least one other organ. Only 16% of donors after brain death were single organ donors, with similar proportions being liver only and kidney only donors. By contrast, 52% 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, 22 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 2020 - 31 March 2021, by organ types donated

	DBD	DCD	Living donor	**TOTAL**
Kidney only	62	206	422	**690**
Kidney & thoracic	10	12	-	**22**
Kidney & liver	366	119	-	**485**
Kidney & pancreas	1	7	-	**8**
Kidney, thoracic & liver	104	16	-	**120**
Kidney, thoracic & pancreas	3	7	-	**10**
Kidney, liver & pancreas	85	25	-	**110**
Kidney, liver, pancreas & bowel	2	-	-	**2**
Kidney, thoracic, liver & pancreas	57	13	-	**70**
Kidney, thoracic, liver & bowel	2	-	-	**2**
Kidney, thoracic, liver, pancreas & bowel	9	-	-	**9**
Thoracic only	2	-	-	**2**
Thoracic & liver	4	1	-	**5**
Thoracic, liver, pancreas & bowel	1	-	-	**1**
Liver only	57	8	22	**87**
Liver & pancreas	1	-	-	**1**
TOTAL	**766**	**414**	**444**	**1624**

Bowel may include abdominal wall/colon/stomach/spleen

3.2 Organ donors

Organ donor rates per million population (pmp) for 2020-2021 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 2020 - 31 March 2021, 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	101	(11.7)	57	(6.6)	158	(18.4)	35	(4.1)
North West	77	(10.9)	45	(6.4)	122	(17.3)	37	(5.2)
Midlands	91	(8.6)	68	(6.4)	159	(15.0)	50	(4.7)
East of England	70	(10.7)	53	(8.1)	123	(18.8)	20	(3.1)
London	80	(8.9)	37	(4.1)	117	(13.1)	41	(4.6)
South East	120	(13.5)	51	(5.7)	171	(19.2)	38	(4.3)
South West	80	(14.2)	37	(6.6)	117	(20.8)	37	(6.6)
England	**619**	**(11.0)**	**348**	**(6.2)**	**967**	**(17.2)**	**258**	**(4.6)**
Isle of Man	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**
Channel Islands	**1**	**(5.9)**	**0**	**(0.0)**	**1**	**(5.9)**	**0**	**(0.0)**
Wales	**38**	**(12.1)**	**14**	**(4.4)**	**52**	**(16.5)**	**13**	**(4.1)**
Scotland	**62**	**(11.4)**	**30**	**(5.5)**	**92**	**(16.8)**	**46**	**(8.5)**
Northern Ireland	**33**	**(17.5)**	**15**	**(7.9)**	**48**	**(25.4)**	**10**	**(5.3)**
TOTAL[1]	**766**	**(11.4)**	**414**	**(6.2)**	**1180**	**(17.6)**	**440**	**(6.5)**

[1] Includes 133 donors with an unknown UK postcode and excludes 4 living donors resident outside the UK

Table 3.2 shows variation in the number of DBD and DCD donors pmp across the UK. There were 11.4 DBD donors pmp for the UK as a whole, but across NHS regions this ranged between 8.6 and 14.2 pmp. Across the four countries of the UK, Northern Ireland had the highest rate of 17.5 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 6.2 pmp, and Northern Ireland had the highest rate of 7.9 pmp across countries of the UK, and across NHS regions it ranged from 4.1 to 8.1 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 2020 - 31 March 2021, by country/ NHS region of hospital of donor death

Country of donation/ NHS region	DBD N	DCD N	**TOTAL** N
North East and Yorkshire	103	64	167
North West	82	44	126
Midlands	85	65	150
East of England	61	49	110
London	115	45	160
South East	102	54	156
South West	81	34	115
England	**629**	**355**	**984**
Isle of Man	**0**	**0**	**0**
Channel Islands	**1**	**0**	**1**
Wales	**36**	**13**	**49**
Scotland	**64**	**31**	**95**
Northern Ireland	**36**	**15**	**51**
TOTAL	**766**	**414**	**1180**

Table 3.4	Deceased organ donors in the UK, 1 April 2020 - 31 March 2021 by Organ Donation Services Team		
Team	DBD N	DCD N	**TOTAL** N
Eastern	67	53	120
London	76	35	111
Midlands	79	58	137
North West	97	48	145
Northern	51	23	74
Northern Ireland	36	15	51
Scotland	64	31	95
South Central	65	29	94
South East	84	37	121
South Wales	23	10	33
South West	70	31	101
Yorkshire	54	44	98
TOTAL	**766**	**414**	**1180**

The mean number of organs retrieved per donor in 2020-2021 is given by country in **Table 3.5**. Overall, an average of 3.3 organs were donated per DBD donor and 2.7 per DCD donor. These rates ranged from 3.3 (DBD) and 2.6 (DCD) organs per donor in England and Scotland, respectively, to 3.6 (DBD) and 3.1 (DCD) in Scotland and Wales, respectively.

Table 3.5	Organs retrieved per donor, in the UK, 1 April 2020 - 31 March 2021, by country of donor residence								
Country	Adult			Paediatric			All		
	DBD	DCD	TOTAL	DBD	DCD	TOTAL	DBD	DCD	TOTAL
England	3.2	2.6	**3.0**	4.5	3.2	**3.9**	3.3	2.7	**3.1**
Wales	3.3	2.8	**3.2**	6.0	7.0	**6.5**	3.4	3.1	**3.3**
Scotland	3.5	2.6	**3.2**	5.0	4.0	**4.5**	3.6	2.6	**3.3**
Northern Ireland	3.4	2.8	**3.2**	4.0	-	**4.0**	3.5	2.8	**3.3**
TOTAL[1]	3.3	2.6	**3.1**	4.6	3.3	**3.9**	3.3	2.7	**3.1**

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 2020-2021, the decade long trend towards older donors has reversed, as a result of the pandemic: 26% of deceased donors were aged 60 years or more compared with 34% in 2011-2012 (**Figure 3.1**). Emergency donor age restrictions implemented at the start of the COVID-19 pandemic will have contributed to the smaller proportion of older donors in 2020-2021. The proportion of clinically obese donors (Body Mass Index (BMI) of 30 or higher) has increased from 23% to 28% in deceased donors in the last 10 years (**Figure 3.2**). In addition, the proportion of all deceased donors after a trauma death has decreased from 6% to 3% over the same time period. Trends towards older and more obese deceased donors and those with non-trauma related deaths may all have an adverse impact on the quality and utilisation of the organs, and the subsequent transplant outcome for the recipient.

Table 3.6 also indicates the ethnicity of deceased organ donors, highlighting that 7% of donors are from the Black, Asian, Mixed and minority ethic (BAME) community. By contrast, the BAME community are estimated to represent 14% of the UK population.

Table 3.6 Demographic characteristics of organ donors in the UK 1 April 2020 - 31 March 2021

		DBD		DCD		TOTAL	
		N	%	N	%	N	%
Age	0-17	23	3	24	6	47	4
	18-49	325	42	156	38	481	41
	50-59	217	28	123	30	340	29
	60-69	125	16	88	21	213	18
	70+	76	10	23	6	99	8
	Mean (SD)	49	16	49	16	49	16
BMI	0-19	47	6	32	8	79	7
	20-29	511	67	264	64	775	66
	30+	208	27	118	29	326	28
	Mean (SD)	27	6	27	6	27	6
Cause of death	Intracranial	679	89	347	84	1026	87
	Trauma	15	2	17	4	32	3
	Other	72	9	50	12	122	10
Ethnicity	White	680	92	380	94	1060	93
	Asian	23	3	9	2	32	3
	Black	16	2	2	0	18	2
	Other	22	3	12	3	34	3
	Unknown	25	-	11	-	36	-
Blood group	O	343	45	199	48	542	46
	A	316	41	168	41	484	41
	B	89	12	38	9	127	11
	AB	17	2	9	2	26	2
	Unknown	1	-	0	-	0	-
Donor gender	Male	384	50	275	66	659	56
	Female	382	50	139	34	521	44
TOTAL		**766**	**100**	**414**	**100**	**1180**	**100**

Figure 3.1 Age of deceased donors in the UK, 1 April 2011 - 31 March 2021

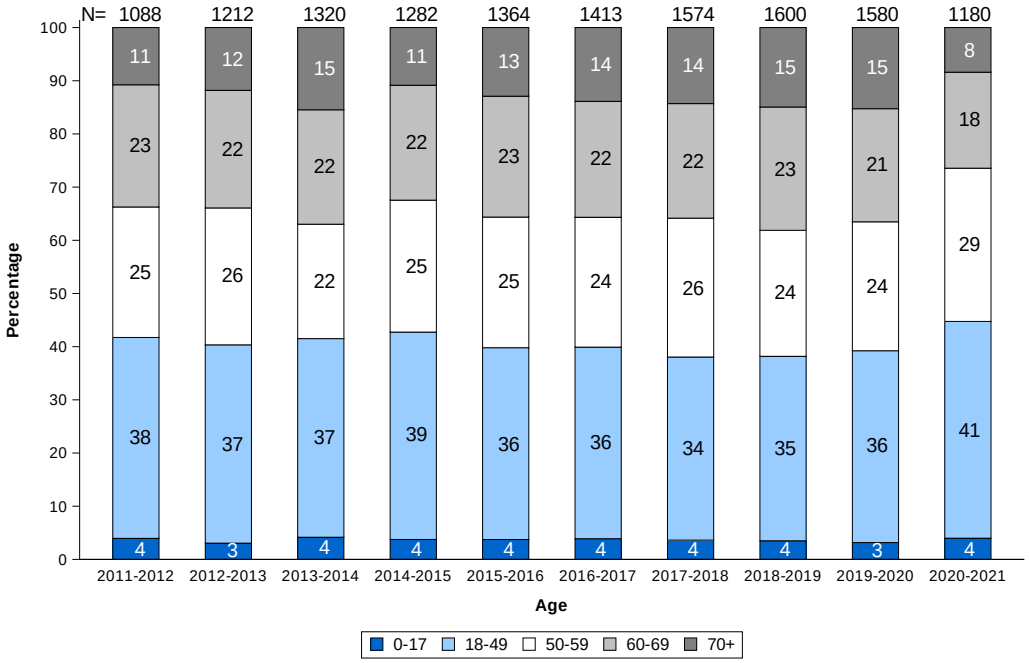
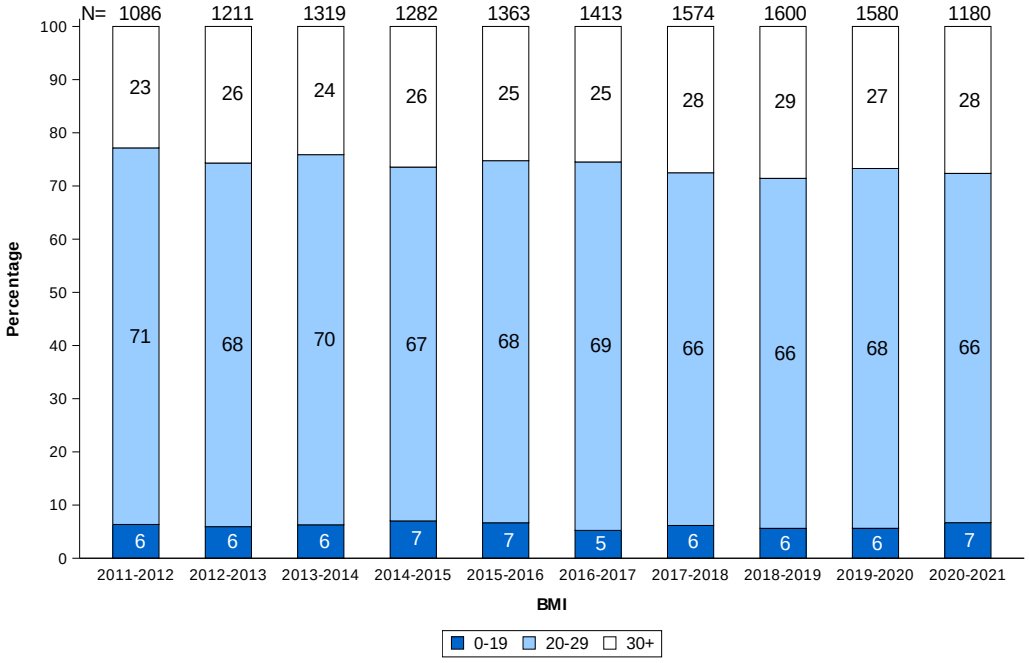


Figure 3.2 BMI of deceased donors in the UK, 1 April 2011 - 31 March 2021



*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 793 possible DBD donors and 587 possible DCD donors; 97% of these DBD donors and 71% 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 85% for kidneys, 63% for livers, 17% for pancreases, 29% for hearts, 13% for lungs and 9% for bowels**
- **The number of deceased donors per million of population was 17.6, however 4% of actual donors resulted in no organ transplants, compared with 8% 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'.

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 2020-2021 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 in the UK, 1 April 2020 – 31 March 2021**

NORS team	DBD				DCD			
	Proceeding[2]	Non-proceeding	% non-proc	**No. attended**	Proceeding[2]	Non-proceeding	% non-proc	**No. attended**
Abdominal								
Birmingham[1]	94	1	1	95	43	25	37	68
Cambridge	76	2	3	78	65	19	23	84
Cardiff[1]	24	4	14	28	10	4	29	14
Edinburgh	82	2	2	84	39	18	32	57
King's	138	2	1	140	56	20	26	76
Leeds[1]	79	2	2	81	48	15	24	63
Manchester[1]	61	3	5	64	53	28	35	81
Newcastle	74	3	4	77	31	13	30	44
Oxford[1]	75	5	6	80	39	15	28	54
Royal Free[1]	61	3	5	64	30	16	35	46
Abdominal total	**764**	**27**	**3**	**791**	**414**	**173**	**29**	**587**
Cardiothoracic[1]								
Birmingham	31	24	44	55	0	5	100	5
Glasgow	21	14	40	35	0	2	100	2
Harefield	43	42	49	85	14	21	60	35
Manchester	39	22	36	61	8	7	47	15
Newcastle	26	14	35	40	4	9	69	13
Papworth	32	17	35	49	23	8	26	31
Cardiothoracic total	**192**	**133**	**41**	**325**	**49**	**52**	**51**	**101**
Total donors attended	**766**	**27**	**3**	**793**	**414**	**173**	**29**	**587**

[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 2020-2021, 4% of actual donors resulted in no organ transplants, less than the previous year (8%). Note that the COVID-19 pandemic affected the number of offered, retrieved and transplanted organs in 2020-2021.

Table 4.2 Consented, offered, actual and utilised deceased donors in the UK, 1 April 2020 - 31 March 2021

	DBD	(pmp)	DCD	(pmp)	Total	(pmp)
Consented donors[1]	888	(13.2)	747	(11.1)	1635	(24.4)
Offered donors[2]	834	(12.4)	677	(10.1)	1511	(22.5)
Kidneys offered	*1613*		*1316*		*2929*	
Livers offered	*803*		*611*		*1414*	
Pancreases offered	*492*		*259*		*751*	
Bowels offered	*132*		*0*		*132*	
Hearts offered	*508*		*135*		*643*	
Lungs offered	*1028*		*596*		*1624*	
Actual donors[3]	766	(11.4)	414	(6.2)	1180	(17.6)
Utilised donors[4]	742	(11.1)	388	(5.8)	1130	(16.9)

[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 1,180 actual deceased organ donors in 2020-2021, 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 766 DBD and 414 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.

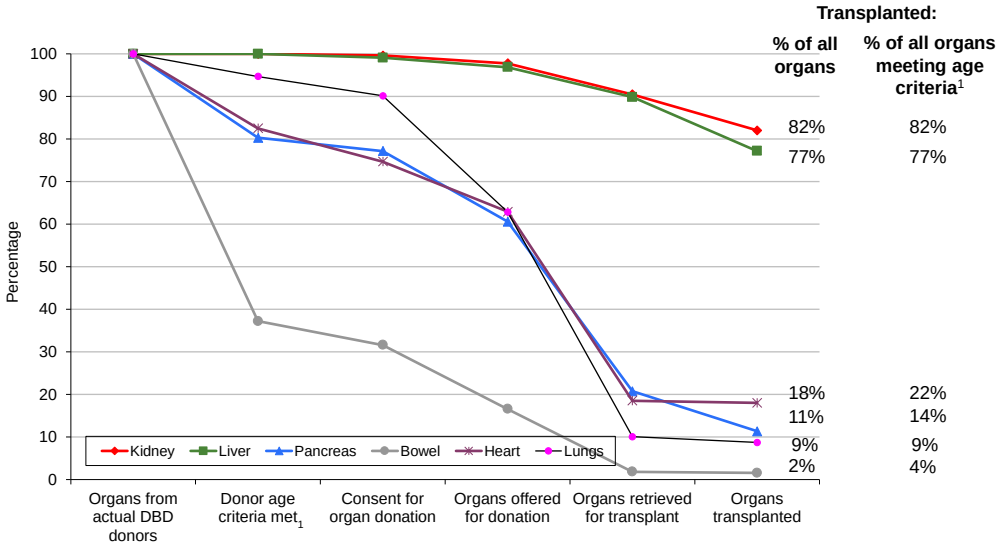
Table 4.3 Donation and transplantation of organs from 1180 deceased donors in the UK, 1 April 2020 – 31 March 2021

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	1491	1380	93	1251	91	84	87
Liver	742	688	93	593	86	80	23
Pancreas[1]	464	159	34	87	55	19	33
Bowel[2]	127	14	11	12	86	9	0
Heart[3]	482	142	29	139	98	29	1
Lung[4]	944	159	17	140	88	15	8
Total	**4250**	**2542**	**60**	**2222**	**87**	**52**	**152**
DCD donor organs[5]							
Kidney	815	799	98	699	87	86	71
Liver	383	182	48	119	65	31	25
Pancreas[1]	181	52	29	24	46	13	12
Lung[4]	386	52	13	35	67	9	8
Total	**1765**	**1085**	**61**	**877**	**81**	**50**	**116**
Deceased donor organs							
Kidney	2306	2179	94	1950	89	85	158
Liver	1125	870	77	712	82	63	48
Pancreas[1]	645	211	33	111	53	17	45
Bowel[2]	127	14	11	12	86	9	0
Heart[3]	482	142	29	139	98	29	1
Lung[4]	1330	211	16	175	83	13	16
Total	**6015**	**3627**	**60**	**3099**	**85**	**52**	**268**

[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

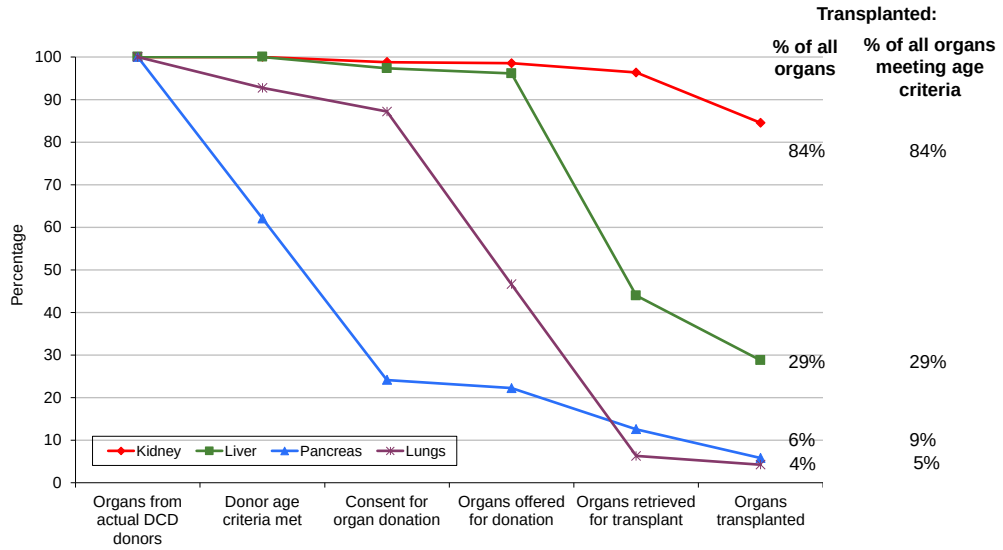
Figures 4.1 and 4.2 show line graphs of the pathway for all donor organs through to transplantation. The charts start at 100% for each organ, representing all organs from the 766 DBD and 414 DCD donors. The proportion of these organs where any national donor age criteria are met is then shown, followed by the proportion with consent, the proportion offered, the proportion retrieved and finally the proportion transplanted. For example, **Figure 4.2** shows that 84% of the kidneys from the 414 DCD donors were transplanted, a slight rise from 78% 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 2020 – 31 March 2021



[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 2020 – 31 March 2021



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 2020-2021 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 2020-2021 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 2020 - 31 March 2021

	Kidney		Liver		Pancreas		Bowel	
All actual DBD organ donors	**766**		**766**		**766**		**766**	
Donors from whom organs not offered for donation	17		24		302		639	
Reasons for organs not being offered[1]								
Family permission refused	1		3		15		32	
Permission refused by coroner	1		3		5		5	
Permission refused other	1		1		4		6	
Donor unsuitable - medical	1		0		1		3	
Donor unsuitable - non-medical	0		0		12		6	
Donor unsuitable - age	1		0		151		0	
Organ unsuitable - clinical	8		13		42		22	
Poor function	4		2		0		1	
Donor age>=56 or donor weight >=80kg	0		0		0		481	
Other	0		2		72		83	
TOTAL DONORS WITH ORGANS NOT OFFERED	**17**		**24**		**302**		**639**	
Organs offered for donation	**1491**		**742**		**464**		**127**	
Organs not retrieved (% of organs offered for donation)	**111**	**(7)**	**54**	**(7)**	**305**	**(66)**	**113**	**(89)**
Reasons for non-retrieval								
Donor unsuitable - medical	6		2		9		20	
Donor unsuitable - non-medical	0		0		32		8	
Donor unsuitable - age	18		0		86		4	
Organ unsuitable - clinical	47		39		111		29	
Poor function	19		8		21		2	
Other	21		5		46		50	
TOTAL ORGANS OFFERED, NOT RETRIEVED	**111**		**54**		**305**		**113**	
Organs retrieved (% of organs offered for donation)	**1380**	**(93)**	**688**	**(93)**	**159**	**(34)**	**14**	**(11)**
Organs transplanted in the UK	1251		591		87		12	
Organs transplanted overseas	0		2		0		0	
Organs not transplanted	129		95		72		2	
Reasons for organ not being transplanted								
Donor unsuitable - medical	37		10		5		0	
Donor unsuitable - non-medical	1		1		1		0	
Donor unsuitable - age	3		0		2		0	
Organ unsuitable - clinical	41		54		38		0	
Poor function	10		6		2		0	
Other	37		24		24		2	
TOTAL ORGANS RETRIEVED, NOT TRANSPLANTED (Number used for research)	**129**	**(87)**	**95**	**(23)**	**72**	**(33)**	**2**	

[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 2020 - 31 March 2021

	Kidney		Liver		Pancreas	
All actual DCD organ donors	**414**		**414**		**414**	
Donors from whom organs not offered for donation	6		31		233	
Reasons for organs not being offered[1]						
Family permission refused	0		2		4	
Permission refused by coroner	0		3		4	
Donor unsuitable - non-medical	0		0		18	
Donor unsuitable - age	1		11		157	
Organ unsuitable - clinical	3		13		23	
Poor function	1		1		0	
Other	1		1		27	
TOTAL DONORS WITH ORGANS NOT OFFERED	**6**		**31**		**233**	
Organs offered for donation	**817**		**383**		**181**	
Organs not retrieved (% of organs offered for donation)	**18**	**(2)**	**201**	**(52)**	**129**	**(71)**
Reasons for non-retrieval						
Donor unsuitable - medical	2		1		2	
Donor unsuitable - non-medical	0		8		12	
Donor unsuitable - age	1		30		37	
Organ unsuitable - clinical	10		90		48	
Poor function	3		21		3	
Other	2		51		27	
TOTAL ORGANS OFFERED, NOT RETRIEVED	**18**		**201**		**129**	
Organs retrieved (% of organs offered for donation)	**799**	**(98)**	**182**	**(48)**	**52**	**(29)**
Organs transplanted in the UK	699		119		24	
Organs transplanted overseas	0		0		0	
Organs not transplanted	100		63		28	
Reasons for organ not being transplanted						
Donor unsuitable - medical	21		9		5	
Donor unsuitable - non-medical	3		3		0	
Donor unsuitable - age	1		1		3	
Organ unsuitable - clinical	43		18		15	
Poor function	4		10		0	
Other	26		22		5	
TOTAL ORGANS RETRIEVED, NOT TRANSPLANTED (Number used for research)	**100**	**(71)**	**63**	**(25)**	**28**	**(12)**

[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 2020 - 31 March 2021

	Heart (DBD)		Lung (DBD)		Lung (DCD)	
All actual organ donors	**766**		**766**		**414**	
Donors from whom organs not offered for donation	284		294		221	
Reasons for organs not being offered[1]						
Family permission refused	28		9		10	
Permission refused by coroner	29		23		12	
Permission refused other	3		4		1	
Donor unsuitable - medical	0		1		5	
Donor unsuitable - non-medical	5		4		2	
Donor unsuitable - age	134		42		30	
Donor unsuitable - cause of death	1		0		0	
Organ unsuitable - clinical	46		89		83	
Poor function	35		110		74	
Other	3		12		4	
TOTAL DONORS WITH ORGANS NOT OFFERED	**284**		**294**		**221**	
Organs offered for donation	**482**		**944**		**386**	
Organs not retrieved (% of organs offered for donation)	**340**	**(71)**	**785**	**(83)**	**334**	**(87)**
Reasons for non-retrieval						
Donor unsuitable - medical	11		20		8	
Donor unsuitable - non-medical	29		54		28	
Donor unsuitable - age	44		19		4	
Organ unsuitable - clinical	71		186		116	
Poor function	117		254		96	
Other	68		252		82	
TOTAL ORGANS OFFERED, NOT RETRIEVED	**340**		**785**		**334**	
Organs retrieved (% of organs offered for donation)	**142**	**(29)**	**159**	**(17)**	**52**	**(13)**
Organs transplanted in the UK	138		138		35	
Organs transplanted overseas	1		2		0	
Organs not transplanted	3		19		17	
Reasons for organ not being transplanted						
Donor unsuitable - medical	0		0		1	
Donor unsuitable - non-medical	0		1		0	
Organ unsuitable - clinical	0		2		4	
Poor function	2		8		5	
Other	1		8		7	
TOTAL ORGANS RETRIEVED, NOT TRANSPLANTED (Number used for research)	**3**	**(1)**	**19**	**(8)**	**17**	**(8)**

[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 2011 - 31 March 2021

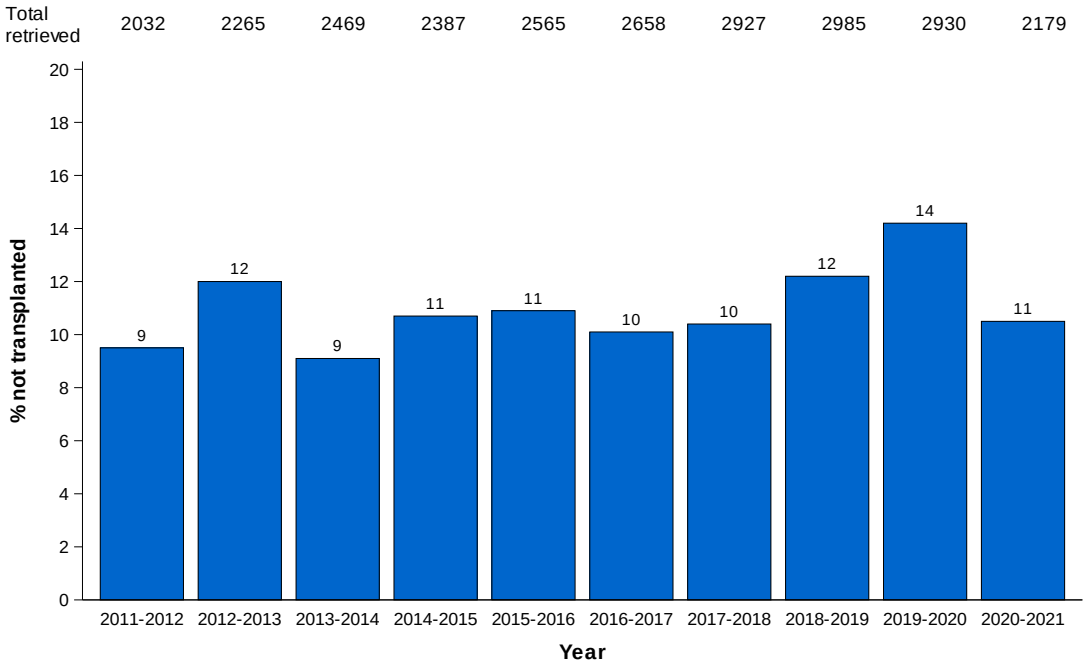


Figure 4.4 Percentage of livers retrieved that were not transplanted from deceased organ donors in the UK, 1 April 2011 - 31 March 2021

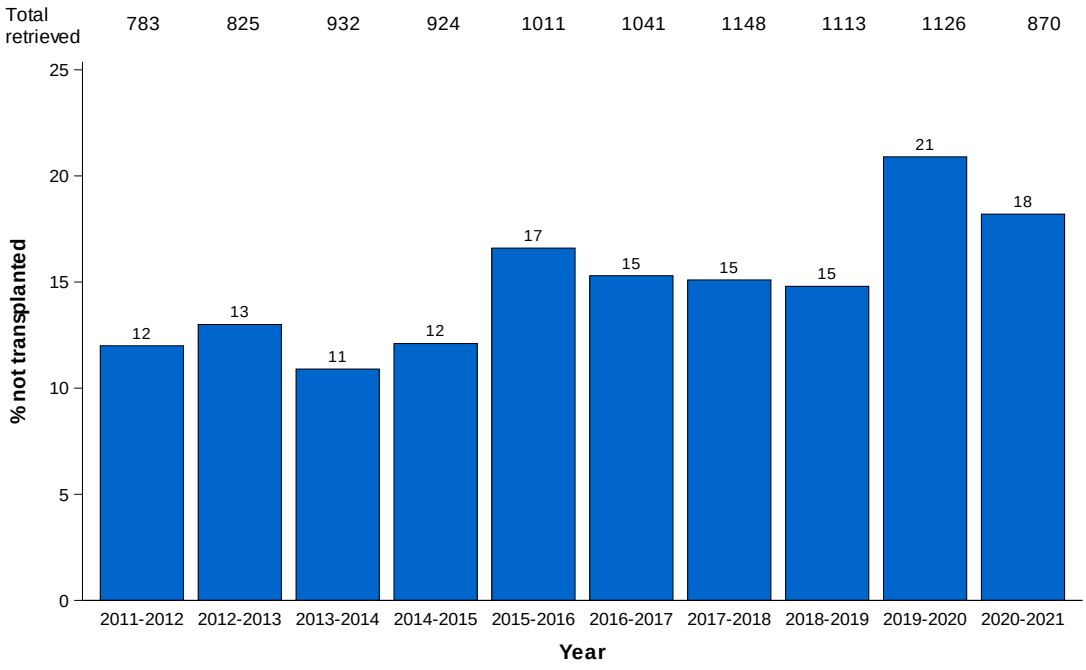
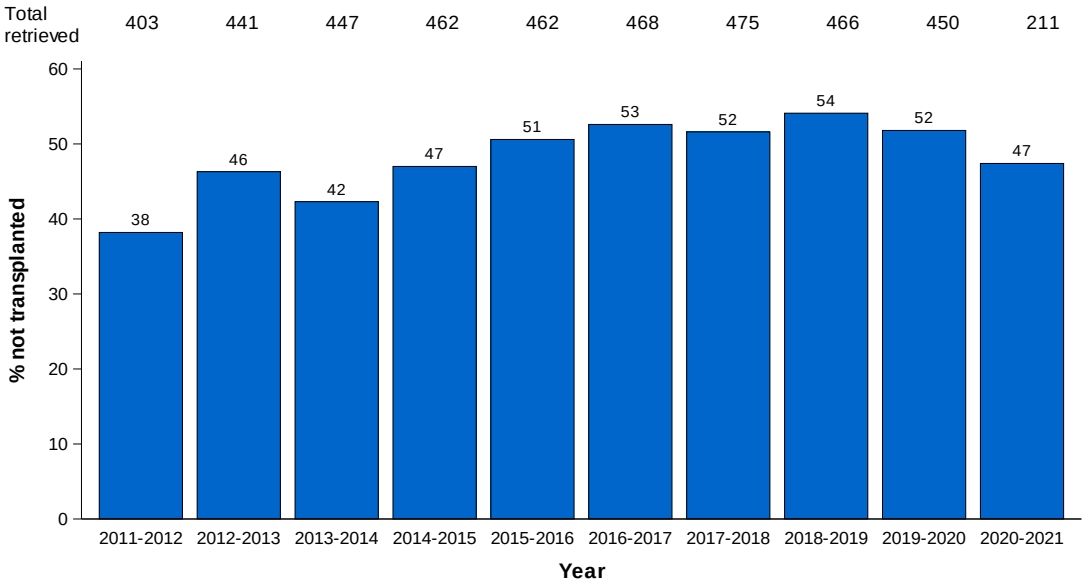


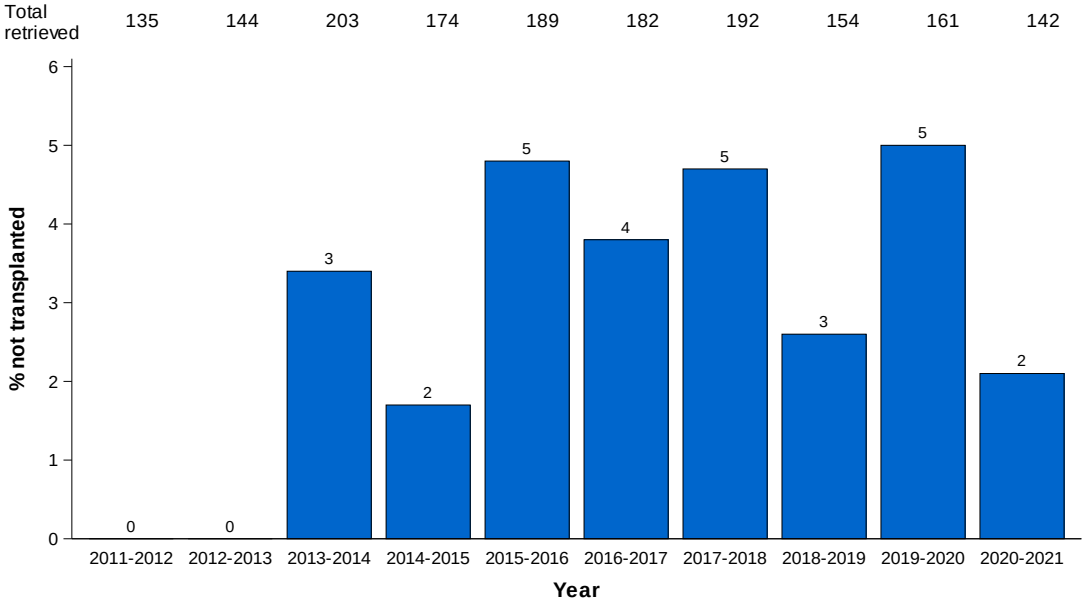
Figure 4.5 Percentage of pancreases[1] [2] retrieved that were not transplanted from deceased organ donors in the UK, 1 April 2011 - 31 March 2021



[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

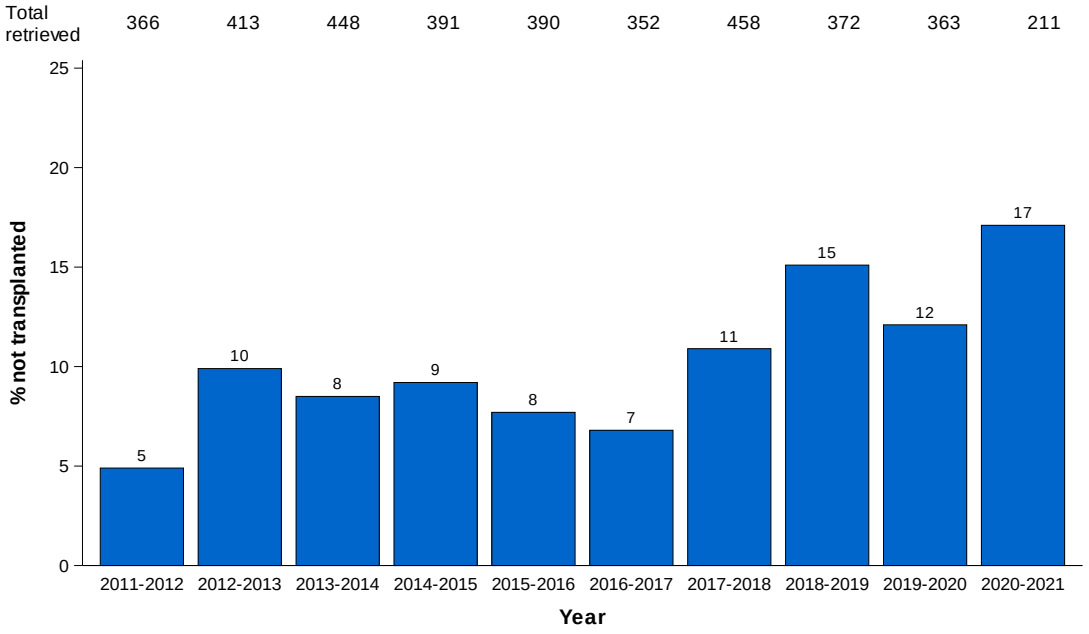
Figure 4.6 Percentage of hearts[1] retrieved that were not transplanted from deceased organ donors[2] in the UK, 1 April 2011 - 31 March 2021



[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 2011 - 31 March 2021



[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 3,525**
- **The number of deceased kidney donors fell by 25% to 1,106**
- **Kidney transplants from living donors fell by 60% to 422, while transplants from deceased donors fell by 22% to 1,931**
- **10 kidney transplants were made possible by the paired living kidney donation programme**
- **There were 30 non-directed altruistic living kidney donors, leading to 60 patients benefitting from a living donor transplant**

5.1 Overview

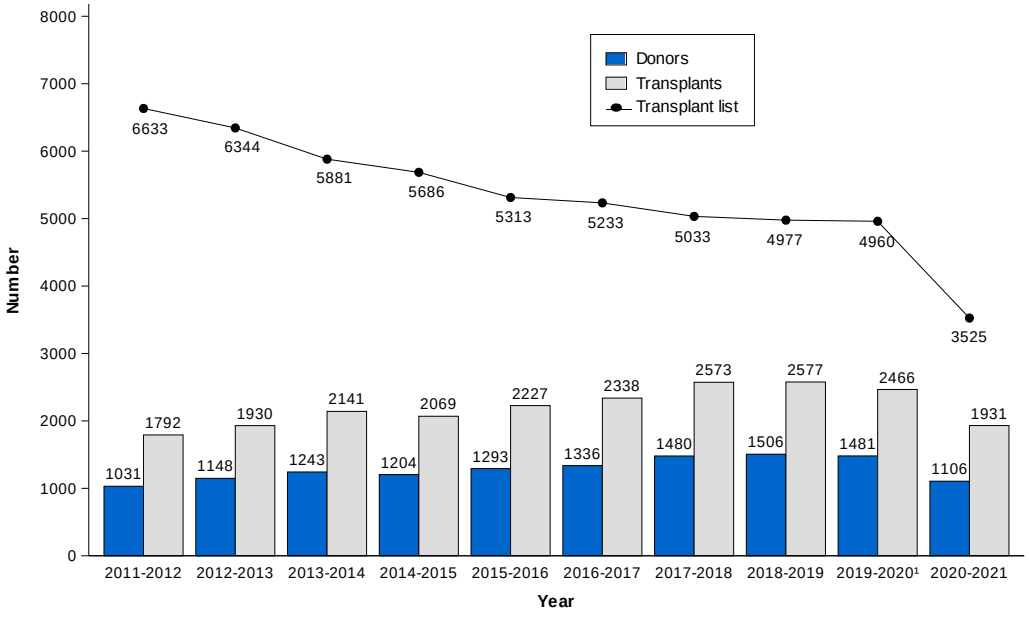
Note that the COVID-19 pandemic has affected the number of offered, retrieved and transplanted organs in 2020-2021.

The number of deceased kidney donors fell by 25% in 2020-2021 compared to 2019-2020 and the number of deceased donor kidney transplants fell by 22%. There were 3,525 patients waiting for a kidney transplant at 31 March 2021, 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 31 March 2021 for a kidney only or multi-organ kidney transplant has fallen by 47% since 31 March 2012. 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 2011 - 31 March 2021, Number of donors, transplants and patients on the active transplant list at 31 March**



¹ Transplant list as at 29 February 2020

Table 5.1 shows the number of deceased and living donor kidney transplants carried out in 2020-2021 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 1,106 in 2020-2021 from 1,481 in 2019-2020 and the number of transplants fell from 2,466 to 1,931. The number of kidney donors after circulatory death fell to 405 from 618 in 2019-2020 and the number of transplants from such donors fell by 29% to 689.

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 2020 - 31 March 2021 (2019-2020) and transplant list at 31 March 2021 (2020)* in the UK, by centre**

Centre	Deceased kidney donors				Deceased donor transplants				Living donor transplants		Active transplant list*	
	DBD		DCD		DBD		DCD					
Belfast	34	(27)	15	(19)	87	(26)	48	(18)	14	(67)	85	(79)
Birmingham	34	(46)	25	(45)	61	(91)	19	(55)	20	(45)	349	(363)
Bristol	39	(28)	18	(21)	52	(53)	28	(27)	17	(31)	129	(153)
Cambridge	24	(35)	31	(58)	104	(76)	112	(96)	10	(41)	93	(168)
Cardiff	19	(40)	10	(19)	34	(41)	16	(33)	12	(32)	87	(159)
Coventry[1]	11	(11)	4	(17)	38	(32)	20	(21)	9	(22)	76	(101)
Edinburgh	18	(24)	17	(15)	58	(72)	18	(30)	27	(48)	167	(194)
Glasgow	45	(46)	16	(19)	68	(63)	46	(42)	34	(52)	180	(251)
Leeds	40	(49)	32	(31)	70	(76)	56	(52)	27	(53)	213	(287)
Leicester	9	(25)	11	(13)	36	(48)	36	(46)	19	(49)	124	(175)
Liverpool	30	(34)	17	(23)	33	(48)	23	(24)	12	(29)	90	(141)
London[2]	182	(238)	88	(162)	-	-	-	-	-	-	-	-
Great Ormond Street	-	-	-	-	6	(8)	1	(0)	8	(13)	20	(17)
Guy's	-	-	-	-	33	(122)	18	(89)	15	(92)	61	(275)
Royal Free	-	-	-	-	61	(56)	19	(31)	23	(40)	145	(238)
Royal London	-	-	-	-	35	(101)	4	(51)	16	(40)	310	(327)
St George's	-	-	-	-	43	(89)	8	(24)	14	(46)	131	(229)
WLRTC	-	-	-	-	57	(114)	27	(71)	10	(55)	82	(402)
Manchester	65	(65)	36	(49)	86	(111)	62	(71)	37	(84)	492	(463)
Newcastle	25	(54)	16	(28)	90	(62)	33	(25)	25	(56)	185	(211)
Nottingham	26	(28)	21	(17)	21	(30)	14	(20)	5	(24)	88	(130)
Oxford[1]	31	(34)	15	(28)	115	(82)	55	(78)	32	(55)	247	(245)
Plymouth	13	(21)	7	(14)	26	(27)	11	(17)	13	(15)	28	(96)
Portsmouth	35	(33)	18	(25)	11	(37)	2	(22)	7	(24)	42	(144)
Sheffield	21	(25)	8	(15)	17	(35)	13	(23)	7	(17)	101	(112)
TOTAL	**701**	**(863)**	**405**	**(618)**	**1242**	**(1500)**	**689**	**(966)**	**422[3,5]**	**(1039[4,6])**	**3525**	**(4960)**

* Waiting list figures are as at 31 March 2021 and 29 February 2020
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 3 transplant performed at London, Cromwell Hospital and 6 transplant performed at London, London Bridge Hospital (4 on behalf of NHS Hospitals)
[4] Includes an additional 8 transplants performed at London, Cromwell Hospital and 1 transplants performed at London, London Bridge Hospital
[5] Includes 2 domino donors
[6] Includes 2 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 31 March 2021, 3,525 patients were registered as active, compared with 4,960 at the end of February 2020. The number of patients waiting for a kidney transplant represents 52.6 patients per million population (pmp).

Of the 3,525 patients on the active transplant list at 31 March 2021, 154 required a kidney and pancreas/islet transplant (210 at 29 February 2020).

The outcome of patients registered on the UK kidney and kidney/pancreas transplant list at 1 April 2020, or subsequently registered during the financial year, is shown in **Table 5.2**. A total of 2,693 patients joined the kidney transplant list last year, while a further 144 joined the kidney/pancreas transplant list.

Table 5.2 Kidney transplant list and new registrations in the UK, 1 April 2020 - 31 March 2021

Outcome of patient at 31 March 2021	Active and suspended patients at 1 April 2020		New registrations in 2020-2021[1]		**TOTAL**	
	N	%	N	%	**N**	**%**
Kidney transplant list						
Remained active/suspended	5724	72	2122	79	7846	73
Transplanted	1662	21	540	20	2202	21
Removed[2]	325	4	8	0	333	3
Died	285	4	23	1	308	3
TOTAL	**7996**		**2693**		**10689**	
Kidney/pancreas transplant list						
Remained active/suspended	242	67	124	86	366	73
Transplanted	67	19	19	13	86	17
Removed[3]	28	8	1	1	29	6
Died	22	6	0	0	22	4
TOTAL	**359**		**144**		**503**	

[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 5 patients removed from kidney/pancreas list and made active on kidney/islet list

Table 5.3 shows the active transplant list in the UK at 31 March 2021 and 29 February 2020 by country/NHS region of patient's residence. In 2021, the overall kidney transplant list rate was 52.6 pmp with rates across NHS regions ranging from 28.9 pmp to 72.2 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) 2021		2020[1]	
North East and Yorkshire	514	(59.8)	615	(71.5)
North West	510	(72.2)	535	(75.8)
Midlands	674	(63.6)	808	(76.2)
East of England	212	(32.5)	352	(53.9)
London	583	(65.1)	1115	(124.4)
South East	257	(28.9)	457	(51.3)
South West	209	(37.1)	333	(59.1)
England	**2959**	**(52.6)**	**4215**	**(74.9)**
Isle of Man	**4**	**(50.0)**	**5**	**(62.5)**
Channel Islands	**4**	**(23.5)**	**9**	**(52.9)**
Wales	**126**	**(40.0)**	**200**	**(63.5)**
Scotland	**345**	**(63.2)**	**444**	**(81.3)**
Northern Ireland	**86**	**(45.5)**	**79**	**(41.8)**
TOTAL[2]	**3525**	**(52.6)**	**4960**	**(74.0)**

[1]As at 29 February 2020
[2]Includes patients in 2020 (2019) residing in: Unspecified UK 0 (7); Overseas 1 (1)

An indication of outcomes for adult patients listed for a kidney only transplant is summarised in **Figure 5.2**. This shows the proportion of patients transplanted or still waiting one, three and five years after joining the list. It also shows the proportion removed from the transplant list (typically because they become too unwell for transplant) and those dying while on the transplant list. Only 31% of patients are transplanted within one year, while five years after listing 78% of patients have received a transplant.

The median (average) waiting time for a kidney only transplant has fallen from 633 days reported last year to 589 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 3035 new adult kidney only registrations made in the UK, 1 April 2015 - 31 March 2016**

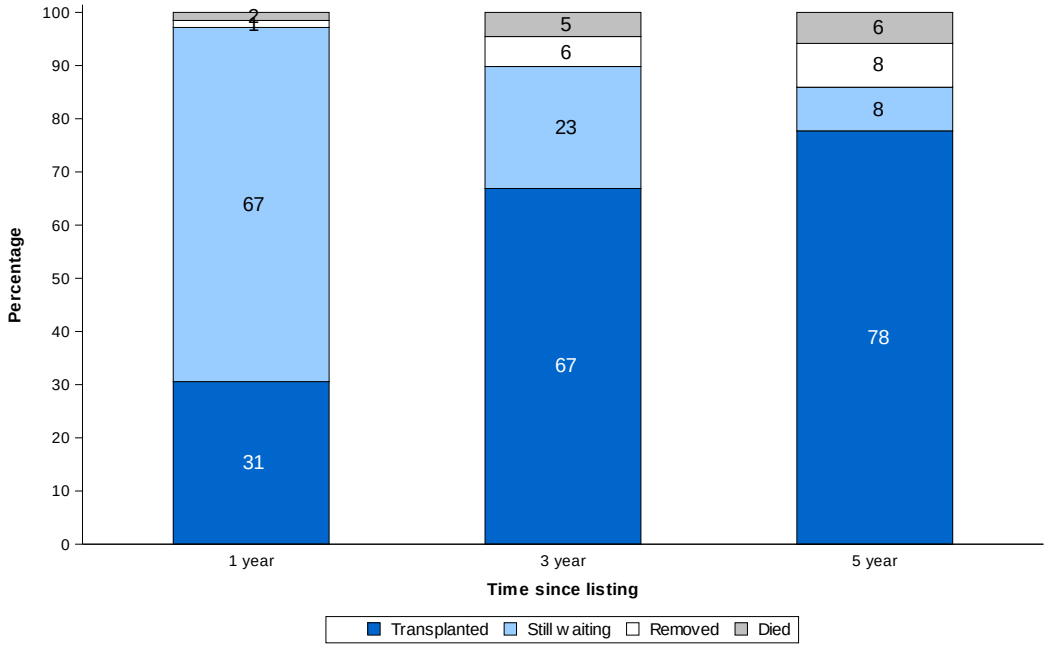


Table 5.4 **Median waiting time to kidney only transplant in the UK, for patients registered 1 April 2014 - 31 March 2018, by blood group**

Blood group	Number of patients registered	Waiting time (days) Median	95% Confidence interval
Adult			
O	4782	762	742 - 782
A	3719	399	383 - 415
B	1494	853	804 - 902
AB	477	182	163 - 201
TOTAL	**10472**	**589**	**575 - 603**
Paediatric			
O	112	275	126 - 424
A	94	251	199 - 303
B	35	352	206 - 498
AB	19	174	62 - 286
TOTAL	**260**	**258**	**188 - 328**

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	7200	527	511 - 543
Asian	1749	682	643 - 721
Black	1009	824	770 - 878
Other	399	678	596 - 760
TOTAL[1]	**10472**	**589**	**575 - 603**
Paediatric			
White	147	202	141 - 263
Asian	78	399	322 - 476
Black	18	628	161 - 1095
Other	16	501	305 - 697
TOTAL[2]	**260**	**258**	**188 - 328**

[1] Includes 115 patients whose ethnicity was not reported
[2] Includes 1 patients whose ethnicity was not reported

5.3 Donor and organ supply

Of the 766 organ donors after brain death in the UK in 2020-2021, 701 (92%) were kidney donors. From these donors, 1,380 kidneys were retrieved. There were 405 kidney donors after circulatory death in 2020-2021. From these donors, 799 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 10.5 pmp, with rates across NHS regions ranging from 7.5 to 13.0 pmp. The number of kidneys retrieved from donors after brain death in the UK is 20.6 pmp and varies from 14.7 to 25.9 pmp.

The overall rate for kidney donors after circulatory death is 6.0 pmp, with rates across NHS regions ranging from 3.9 to 7.8 pmp. The number of kidneys retrieved from donors after circulatory death is 11.9 pmp and varies from 7.7 to 15.6 pmp.

Table 5.6 Kidney donation and retrieval rates for deceased donors in the UK, 1 April 2020 - 31 March 2021, by Country/ NHS region

Country/ NHS region of residence	Kidney donors (pmp)				Kidneys retrieved (pmp)			
	DBD		DCD		DBD		DCD	
North East and Yorkshire	91	(10.6)	57	(6.6)	181	(21.0)	113	(13.1)
North West	73	(10.3)	45	(6.4)	140	(19.8)	89	(12.6)
Midlands	88	(8.3)	66	(6.2)	171	(16.1)	129	(12.2)
East of England	63	(9.6)	51	(7.8)	125	(19.1)	102	(15.6)
London	67	(7.5)	35	(3.9)	132	(14.7)	69	(7.7)
South East	107	(12.0)	49	(5.5)	210	(23.6)	93	(10.4)
South West	73	(13.0)	37	(6.6)	146	(25.9)	74	(13.1)
England	**562**	**(10.0)**	**340**	**(6.0)**	**1105**	**(19.6)**	**669**	**(11.9)**
Isle of Man	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**
Channel Islands	**1**	**(5.9)**	**0**	**(0.0)**	**2**	**(11.8)**	**0**	**(0.0)**
Wales	**35**	**(11.1)**	**14**	**(4.4)**	**69**	**(21.9)**	**28**	**(8.9)**
Scotland	**60**	**(11.0)**	**30**	**(5.5)**	**119**	**(21.8)**	**60**	**(11.0)**
Northern Ireland	**33**	**(17.5)**	**15**	**(7.9)**	**65**	**(34.4)**	**30**	**(15.9)**
TOTAL[1]	**701**	**(10.5)**	**405**	**(6.0)**	**1380**	**(20.6)**	**799**	**(11.9)**

[1] Includes 16 donors with unknown UK 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 16.7 to 36.0 pmp across NHS regions and overall was 27.4 pmp. The living donor transplant rate ranged from 4.4 to 7.6 pmp across NHS regions and overall was 6.2 pmp.

Table 5.7 Kidney only transplant rates per million population (pmp), in the UK, 1 April 2020 - 31 March 2021, 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	175	(20.3)	98	(11.4)	273	(31.7)	60	(7.0)
North West	100	(14.2)	78	(11.0)	178	(25.2)	42	(5.9)
Midlands	156	(14.7)	98	(9.2)	254	(24.0)	58	(5.5)
East of England	126	(19.3)	109	(16.7)	235	(36.0)	30	(4.6)
London	167	(18.6)	55	(6.1)	222	(24.8)	52	(5.8)
South East	105	(11.8)	44	(4.9)	149	(16.7)	39	(4.4)
South West	94	(16.7)	52	(9.2)	146	(25.9)	43	(7.6)
England	**923**	**(16.4)**	**534**	**(9.5)**	**1457**	**(25.9)**	**324**	**(5.8)**
Isle of Man	**2**	**(25.0)**	**0**	**(0.0)**	**2**	**(25.0)**	**0**	**(0.0)**
Channel Islands	**1**	**(5.9)**	**3**	**(17.6)**	**4**	**(23.5)**	**1**	**(5.9)**
Wales	**36**	**(11.4)**	**16**	**(5.1)**	**52**	**(16.5)**	**17**	**(5.4)**
Scotland	**116**	**(21.2)**	**58**	**(10.6)**	**174**	**(31.9)**	**61**	**(11.2)**
Northern Ireland	**86**	**(45.5)**	**47**	**(24.9)**	**133**	**(70.4)**	**13**	**(6.9)**
TOTAL[1,2]	**1171**	**(17.5)**	**664**	**(9.9)**	**1835**	**(27.4)**	**416**	**(6.2)**

[1] Excludes 1 recipient of a deceased donor kidney and 6 recipients of a living donor kidney who reside outside of the UK
[2] Includes 16 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 no en bloc kidneys and 6 double kidney transplants in 2020-2021 (5 and 17 in 2019-2020). Kidney transplants from donors after circulatory death include 4 en bloc and 5 double kidney transplants in 2020-2021 (3 and 21 in 2019-2020). This table excludes multi-organ transplants: 7 kidney and liver, 83 kidney and pancreas, and 5 kidney and islets in 2020-2021.

Table 5.8 Adult kidney only transplants in the UK, 1 April 2019 - 31 March 2021, by transplant centre

Transplant centre	2019-2020 DBD	DCD	Living donor	TOTAL	2020-2021 DBD	DCD	Living donor	TOTAL
Belfast	25	18	63	106	87	47	8	142
Birmingham	83	53	40	176	52	17	15	84
Bristol	49	27	27	103	49	26	14	89
Cambridge	64	84	41	189	82	105	10	197
Cardiff	34	30	31	95	29	14	12	55
Coventry[1]	32	21	22	75	38	20	9	67
Edinburgh	50	27	48	125	51	13	27	91
Glasgow	63	42	50	155	63	44	30	137
Guy's	88	82	78	248	29	13	4	46
Leeds	74	52	46	172	66	56	22	144
Leicester	48	46	49	143	36	36	19	91
Liverpool	48	24	29	101	33	23	12	68
Manchester	89	64	70	223	75	57	34	166
Newcastle	54	24	54	132	88	32	22	142
Nottingham	28	20	18	66	16	14	4	34
Oxford[1]	48	65	55	168	95	53	32	180
Plymouth	27	17	14	58	26	11	13	50
Portsmouth	37	22	24	83	11	2	7	20
Sheffield	35	23	17	75	17	13	7	37
St George's	89	24	46	159	43	8	14	65
The Royal Free	54	31	40	125	59	19	23	101
The Royal London	101	50	40	191	35	4	16	55
WLRTC	106	69	55	230	56	27	10	93
TOTAL	**1326**	**915**	**966[2]**	**3207**	**1136**	**654**	**372[3]**	**2163**

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 8 transplants performed at London Cromwell Hospital and 1 transplants performed at London Bridge Hospital
[3] Includes 3 transplants performed at London Cromwell Hospital and 5 transplants performed at London Bridge Hospital (4 on behalf of NHS Hospitals)

Living donor kidney transplants fell by 59% to 422 in 2020-2021, representing 19% 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 53% 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 30 such donors donated a kidney to a recipient, all 30 were transplanted into an adult recipient. Of the 30 non-directed altruistic donors, 24 went into an altruistic donor chain (18 short (2 transplants each) and 6 long chains (3 transplants each)) benefiting 30 adult patients in the paired/pooled scheme. The kidneys from the paired donors of these recipients led to 24 adult patients on the deceased donor transplant list. Thus 24 non-directed altruistic donors creating chains benefited 54 adult 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 2020-2021, there were 22 paired living kidney donor transplants (21 adult and 1 paediatric recipients). Due to the pandemic, of the 4 scheduled matching runs in 2020-2021, only 1 took place.

As a percentage of the number of patients on the active transplant list at 31 March 2021, the number of living donor adult transplants in the year was 11% and ranged from 5% to 46% at individual transplant centres.

Table 5.9 Adult living donor kidney transplants in the UK, 1 April 2020 - 31 March 2021, and percentage of active transplant list at 31 March 2021, by transplant centre

	2020-2021					
					TOTAL	
Transplant centre	Directed	Non-directed (altruistic) to waiting list	Paired/ pooled exchanges	Altruistic donor chain	**N**	**% list**
Belfast	5	0	0	3	**8**	**9**
Birmingham	8	1	3	3	**15**	**5**
Bristol	13	0	0	1	**14**	**12**
Cambridge	9	1	0	0	**10**	**11**
Cardiff	8	0	2	2	**12**	**14**
Coventry[1]	8	0	1	0	**9**	**12**
Edinburgh	18	1	3	5	**27**	**16**
Glasgow	19	2	2	7	**30**	**17**
Guy's	3	0	0	1	**4**	**9**
Leeds	19	0	1	2	**22**	**11**
Leicester	19	0	0	0	**19**	**15**
Liverpool	8	1	0	3	**12**	**13**
Manchester	28	1	2	3	**34**	**7**
Newcastle	15	1	2	4	**22**	**12**
Nottingham	2	0	0	2	**4**	**5**
Oxford[1]	26	0	2	4	**32**	**13**
Plymouth	10	0	0	3	**13**	**46**
Portsmouth	6	0	0	1	**7**	**17**
Sheffield	7	0	0	0	**7**	**7**
St George's	12	0	1	1	**14**	**11**
The Royal Free	18	0	2	3	**23**	**16**
The Royal London	12	0	0	4	**16**	**5**
WLRTC	8	0	0	2	**10**	**12**
TOTAL[2]	**289**	**8[3]**	**21**	**54**	**372**	**11**

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 transplant performed at London Cromwell Hospital and 5 transplant performed at London Bridge (4 on behalf of NHS Hospitals)
[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 2019 - 31 March 2021, by donor centre**

	2019-2020				2020-2021			
	Donation to				Donation to			
Donor centre	Transplant list	Chain	**Total**	**%**	Transplant list	Chain	**Total**	**%**
Belfast	6	7	13	14	0	2	2	7
Birmingham	1	0	1	1	1	3	4	13
Bristol	1	2	3	3	0	1	1	3
Cambridge	1	2	3	3	0	0	0	0
Cardiff	1	1	2	2	0	2	2	7
Coventry[1]	0	2	2	2	0	0	0	0
Edinburgh	4	5	9	9	1	1	2	7
Glasgow	2	2	4	4	1	0	1	3
Guy's	3	7	10	10	0	3	3	10
Leeds	3	2	5	5	0	1	1	3
Leicester	1	0	1	1	0	0	0	0
Liverpool	2	0	2	2	0	0	0	0
Manchester	4	2	6	6	2	4	6	20
Newcastle	1	1	2	2	0	2	2	7
Nottingham	2	1	3	3	0	0	0	0
Oxford[1]	4	2	6	6	0	1	1	3
Plymouth	3	0	3	3	0	1	1	3
Portsmouth	4	6	10	10	1	2	3	10
Sheffield	0	0	0	0	0	0	0	0
St George's	0	0	0	0	0	1	1	3
The Royal Free	2	1	3	3	0	0	0	0
The Royal London	2	2	4	4	0	0	0	0
WLRTC	2	2	4	4	0	0	0	0
Total donors	**49**	**47**	**96**	**100**	**6**	**24**	**30**	**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 50 living donor transplants and 46 deceased donor transplants in paediatric patients in 2020-2021. The paediatric transplant list has increased by 19% from 111 patients at 29 February 2020 to 112 at the end of March 2021.

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

	2019-2020				2020-2021			
Paediatric transplant centre	DBD	DCD	Living donor	**TOTAL**	DBD	DCD	Living donor	**TOTAL**
Belfast	1	0	4	**5**	0	1	6	**7**
Birmingham	7	2	5	**14**	7	2	5	**14**
Bristol	4	0	4	**8**	3	2	3	**8**
Glasgow	0	0	2	**2**	5	2	4	**11**
Great Ormond Street	8	0	13	**21**	6	1	8	**15**
Guy's	6	0	14	**20**	1	2	11	**14**
Leeds	2	0	7	**9**	4	0	5	**9**
Manchester	2	1	14	**17**	3	1	3	**7**
Newcastle	3	1	2	**6**	1	0	3	**4**
Nottingham	2	0	6	**8**	5	0	1	**6**
Adult centres	1	2	2	**5**	0	0	1	**1**
TOTAL	**36**	**6**	**73[1]**	**115**	**35**	**11**	**50[2]**	**96**

[1] Includes 1 paired living donor transplant
[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 2021, there were approximately 42,000 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 2,258 kidney only transplant recipients in 2020-2021, dialysis status at time of transplant was reported for 2,143 (95%). Of these 2,143 transplants, 442 (21%) were carried out in pre-dialysis patients.

Pre-emptive transplants accounted for 26% of all paediatric kidney only transplants with reported dialysis status, compared with 20% of those in adults. Living donor transplants are more likely to be carried out before the need for dialysis than deceased donor transplants: 34% and 16% respectively. This is because a living donor transplant can often be carried out more quickly than a deceased donor kidney transplant as the latter often necessitates a long waiting time.

Table 5.12 Pre-emptive kidney only transplants in the UK, 1 April 2020 - 31 March 2021				
	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	1790	1715	(95.8)	17.0
Living donor transplant	372	337	(90.6)	36.8
Paediatric				
Deceased donor transplant	46	43	(93.5)	16.3
Living donor transplant	50	48	(96.0)	35.4

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 2020 - 31 March 2021				
	Number of kidney only transplants[1]	Median (hours)	Inter-quartile range[2] Q1	Q3
Adult				
DBD donor transplant	1136	13.0	10.2	17.3
DCD donor transplant	654	13.3	10.3	17.0
Total	**1790**	**13.1**	**10.2**	**17.1**
Paediatric				
DBD donor transplant	35	12.9	10.6	14.2
DCD donor transplant	11	9.7	9.2	11.0
Total	**46**	**12.4**	**9.6**	**14.1**
TOTAL	**1836**	**13.1**	**10.2**	**17.0**

[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

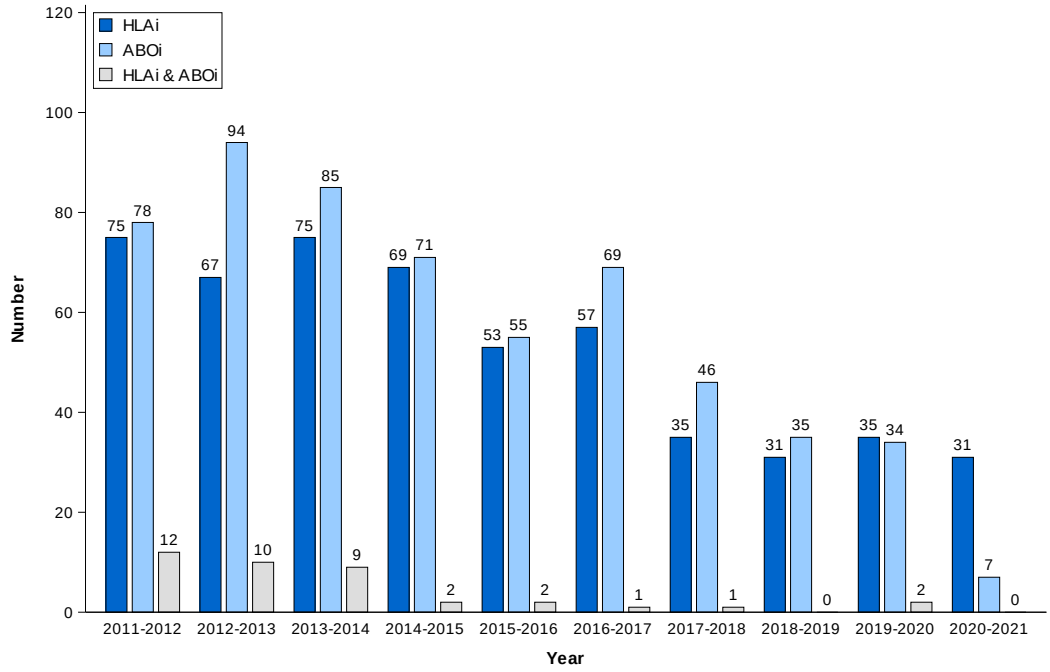
Level	HLA mismatch summary	HLA mismatch combinations included
1	000	000
2	[0 DR and 0/1 B]	100, 010, 110, 200, 210, 001, 101, 201
3	[0 DR and 2 B] or [1 DR and 0/1 B]	020, 120, 220, 011, 111, 211
4	[1 DR and 2 B] or [2 DR]	021, 121, 221, 002, 102, 202, 012, 112, 212, 022, 122, 222

Table 5.15 HLA matching for kidney only transplants in the UK, 1 April 2020 - 31 March 2021

	DBD		DCD		Living	
	N	(%)	N	(%)	N	(%)
Adult patients						
Level 1 (Best match)	23	(2)	13	(2)	25	(8)
Level 2	361	(32)	197	(30)	56	(18)
Level 3	473	(42)	290	(44)	138	(45)
Level 4	279	(25)	154	(24)	88	(29)
Not reported	0		0		65	
Paediatric patients						
Level 1 (Best match)	3	(9)	3	(27)	5	(12)
Level 2	26	(74)	6	(55)	20	(47)
Level 3	6	(17)	1	(9)	18	(42)
Level 4	0	(0)	1	(9)	0	(0)
Not reported	0		0		7	

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 528 HLA incompatible (HLAi) transplants performed; 212 were deceased donor transplants and 316 were living donor transplants, whilst the vast majority of ABO incompatible (ABOi) transplants were living donor transplants (570 of 574). 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 2011 - 31 March 2021



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 2020 - 31 March 2021, and transplant list patients at 31 March

Age group (years)	Donors		Transplant recipients		Active transplant list patients	
	N	(%)	N	(%)	N	(%)
0 - 17	41	(4)	46	(2)	115	(3)
18 - 34	183	(17)	280	(15)	449	(13)
35 - 49	279	(25)	460	(24)	1002	(28)
50 - 59	324	(29)	565	(29)	1002	(28)
60 - 69	195	(18)	423	(22)	746	(21)
70+	84	(8)	157	(8)	211	(6)
Mean (SD)	49	(16)	50	(15)	50	(15)
Male	612	(55)	1191	(62)	2150	(61)
Female	494	(45)	740	(38)	1369	(39)
Not reported	0	-	0	-	6	-
White	996	(93)	1366	(72)	2327	(67)
Asian	28	(3)	297	(16)	662	(19)
Black	15	(1)	170	(9)	351	(10)
Chinese	4	(0)	23	(1)	32	(1)
Other	30	(3)	49	(3)	92	(3)
Not reported	33	-	26	-	61	-
O	516	(47)	837	(43)	1929	(55)
A	445	(40)	756	(39)	831	(24)
B	121	(11)	266	(14)	679	(19)
AB	23	(2)	72	(4)	86	(2)
Not reported	1	-	0	-	0	-
First graft			1617	(84)	2759	(78)
Re-graft			314	(16)	766	(22)
TOTAL	**1106**	**(100)**	**1931**	**(100)**	**3525**	**(100)**

Table 5.17 Demographic characteristics of living kidney donors and transplant recipients, 1 April 2020 - 31 March 2021

Age group (years)	Donors		Transplant recipients	
	N	(%)	N	(%)
0 - 17	0	(0)	50	(12)
18 - 34	76	(18)	101	(24)
35 - 49	141	(33)	95	(23)
50 - 59	124	(29)	84	(20)
60 - 69	71	(17)	71	(17)
70+	10	(2)	21	(5)
Mean (SD)	48	(12)	42	(19)
Male	210	(50)	260	(62)
Female	212	(50)	162	(38)
White	369	(87)	340	(82)
Asian	33	(8)	40	(10)
Black	8	(2)	16	(4)
Chinese	2	(0)	4	(1)
Other	10	(2)	15	(4)
Not reported	0	-	7	-
O	252	(60)	183	(43)
A	129	(31)	169	(40)
B	35	(8)	54	(13)
AB	6	(1)	16	(4)
First graft			372	(88)
Re-graft			50	(12)
TOTAL	**422**	**(100)**	**422**	**(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 27% during the year, to 172 at 31 March 2021 due to the COVID pandemic**
- **The number of pancreas donors after brain death fell by 52% to 159, while transplants from donors after brain death fell by 49% to 77**
- **The number of pancreas donors after circulatory death fell by 56% to 52, while transplants from donors after circulatory death fell by 53% to 24**
- **8 islet transplants were made possible by the pancreas islet transplant programme**

6.1 Overview

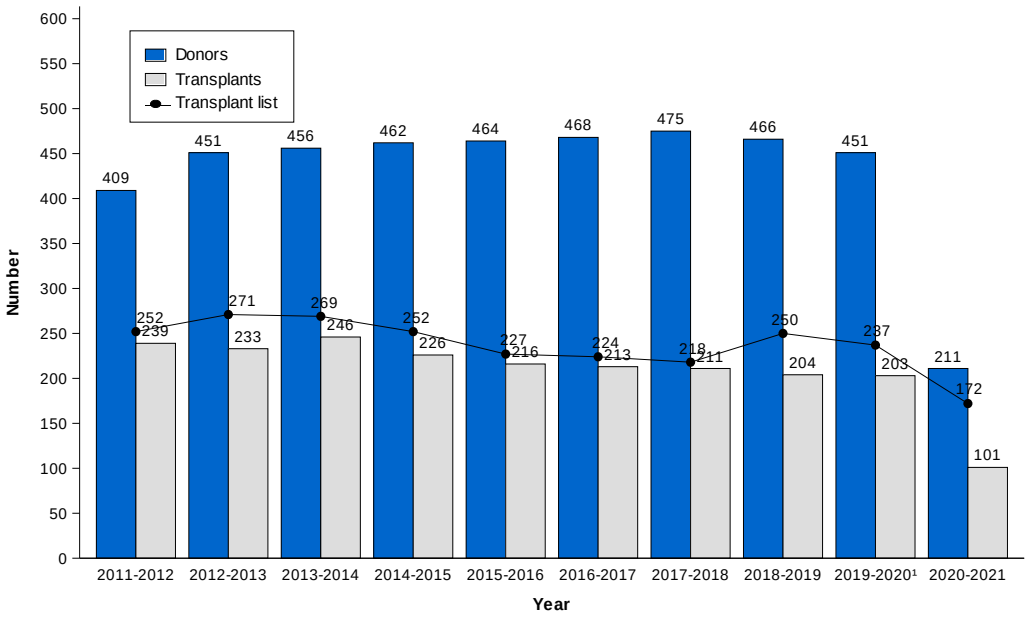
Note that the COVID-19 pandemic will have affected the number of offered, retrieved and transplanted organs in 2020-2021.

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 252 patients at 31 March 2012 to 172 patients at 31 March 2021. The number of pancreas donors fell from 409 to 211. The number of transplants has decreased in the last 6 years to 101 transplants in 2020-2021. A summary of activity for deceased donor pancreas transplants and the transplant list for 1 April 2011 - 31 March 2021 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 2020-2021 there were 10 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 2011 - 31 March 2021, Number of donors, transplants and patients on the active transplant list at 31 March**



¹ Transplant list as at 29 February 2020

6.2 Transplant list

Table 6.1 shows the number of patients on the active transplant lists at 31 March 2021 by centre. The number of patients registered on the pancreas transplant list fell by 5% in the year: on 31 March 2021, 172 patients were registered active, compared with 237 at the end of February 2020.

Of the 172 patients on the active transplant list at 31 March 2021, 143 (83%) required a SPK transplant (198 at 29 February 2020), 10 (6%) patients required a pancreas only transplant (11 at 29 February 2020) and 19 (11%) were registered for a pancreas islet transplant (including 11 for a SIK transplant).

The outcome of patients registered on the UK pancreas transplant list at 1 April 2020, or subsequently registered during the financial year, is shown in **Table 6.2**. Six patients joined the pancreas transplant list while 144 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 31 March 2021 (2020)[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	5	(9)	-	-	0	(1)	-	-	-	-	**5**	**(10)**
Cardiff	1	(13)	-	-	0	(0)	-	-	-	-	**1**	**(13)**
Edinburgh	22	(29)	2	(1)	0	(0)	1	(2)	0	(2)	**25**	**(34)**
Guys	0	(27)	-	-	0	(0)	-	-	-	-	**0**	**(27)**
King's College	-	-	0	(0)	-	-	0	(0)	0	(1)	**0**	**(1)**
Manchester	43	(40)	8	(10)	2	(2)	0	(1)	1	(0)	**54**	**(53)**
Newcastle	10	(6)	1	(0)	3	(2)	3	(6)	1	(1)	**18**	**(15)**
Oxford	62	(62)	0	(1)	5	(6)	1	(2)	1	(0)	**69**	**(71)**
Royal Free	-	-	0	(0)	-	-	0	(1)	0	(0)	**0**	**(1)**
WLRTC	0	(12)	-	-	0	(0)	-	-	-	-	**0**	**(12)**
TOTAL	**143**	**(198)**	**11**	**(12)**	**10**	**(11)**	**5**	**(12)**	**3**	**(4)**	**172**	**(237)**

WLRTC - West London Renal and Transplant Centre
[1] Waiting list figures are as at 31 March 2021 and 29 February 2020

Table 6.2 Whole pancreas transplant list and new registrations in the UK, 1 April 2020 - 31 March 2021

Outcome of patient at 31 March 2021	Active and suspended patients at 1 April 2020 N	%	New registrations in 2020-2021[1] N	%	TOTAL N	%
Pancreas transplant list						
Remained active/suspended	61	88	4	67	65	87
Transplanted	2	3	1	17	3	4
Removed	5	7	1	17	6	8
Died	1	1	0	0	1	1
TOTAL	**69**		**6**		**75**	
Kidney/pancreas transplant list						
Remained active/suspended	242	67	124	86	366	73
Transplanted	67	19	19	13	86	17
Removed[2]	28	8	1	1	29	6
Died	22	6	0	0	22	4
TOTAL	**359**		**144**		**503**	

[1] Includes re-registrations for second or subsequent patients
[2] Includes 5 patients 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 31 March 2021, the overall transplant list rate was 2.6 pmp and across NHS regions ranged from 0.6 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)			
	2021		2020[1]	
North East and Yorkshire	37	(4.3)	32	(3.7)
North West	26	(3.7)	30	(4.2)
Midlands	31	(2.9)	35	(3.3)
East of England	6	(0.9)	14	(2.1)
London	5	(0.6)	27	(3.0)
South East	19	(2.1)	32	(3.6)
South West	18	(3.2)	15	(2.7)
England	**142**	**(2.5)**	**185**	**(3.3)**
Isle of Man	**0**	**(0.0)**	**0**	**(0.0)**
Channel Islands	**0**	**(0.0)**	**0**	**(0.0)**
Wales	**5**	**(1.6)**	**16**	**(5.1)**
Scotland	**23**	**(4.2)**	**33**	**(6.0)**
Northern Ireland	**2**	**(1.1)**	**1**	**(0.5)**
TOTAL[2]	**172**	**(2.6)**	**237**	**(3.5)**

[1]As at 29 February 2020
[2] Includes patients in 2021 (2020) resident in: UK unknown 0 (2)

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. 35% of patients are transplanted within one year, while three years after listing 72% of patients have received a transplant. The median (average) waiting time for a pancreas transplant is 364 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 226 new pancreas only and kidney/pancreas registrations made in the UK, 1 April 2017 - 31 March 2018**

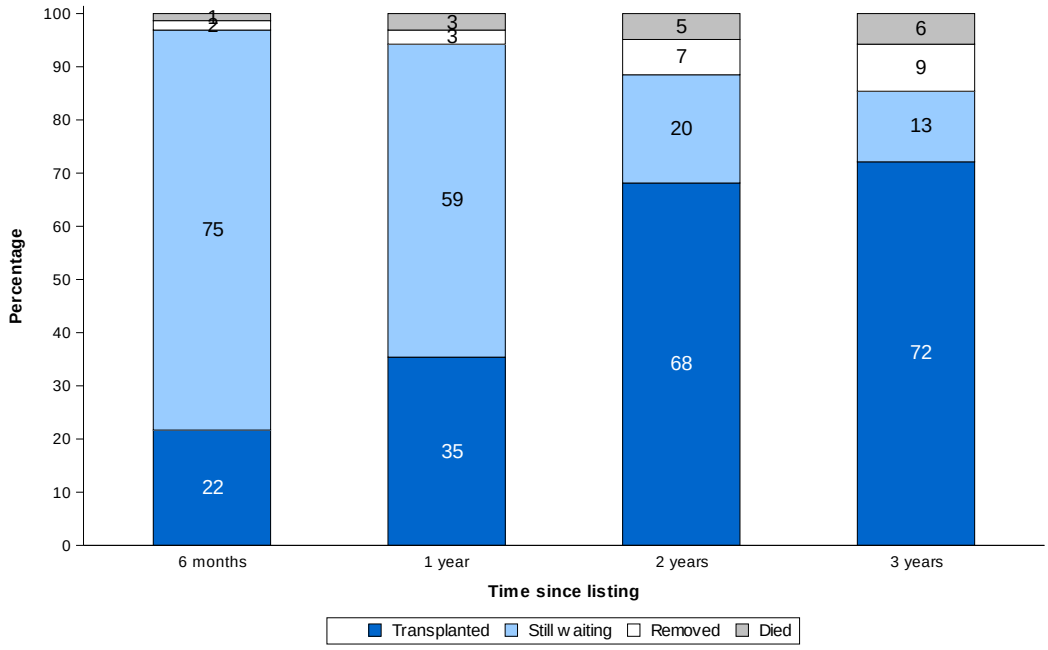


Table 6.4 **Median waiting time to pancreas only and kidney/pancreas transplant in the UK, for patients registered 1 April 2015 - 31 March 2019, by blood group**

Blood group	Number of patients registered	Waiting time (days) Median	95% Confidence interval
Adult			
O	409	450	423 - 477
A	350	245	211 - 279
B	120	437	364 - 510
AB	32	137	77 - 197
TOTAL	**911**	**364**	**341 - 387**

Table 6.5 **Median waiting time to pancreas only and kidney/pancreas transplant in the UK, for patients registered 1 April 2015 - 31 March 2019, by ethnicity**

Ethnicity	Number of patients registered	Waiting time (days) Median	95% Confidence interval
Adult			
White	769	360	332 - 388
Asian	61	372	285 - 459
Black	56	414	374 - 454
Other	18	178	116 - 240
TOTAL[1]	**911**	**364**	**341 - 387**

[1] Includes 7 patients whose ethnicity was not reported

6.3 Donor and organ supply

Of the 766 organ donors after brain death in the UK in 2020-2021, 159 (21%) donated a pancreas. There were 52 pancreas donors after circulatory death in 2020-2021. **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 2.4 pmp, with rates ranging from 1.6 to 3.2 pmp across NHS regions and for donors after circulatory death is 0.8 pmp, with rates ranging from 0.3 to 1.4 pmp across NHS regions.

Table 6.6 Pancreas donation rates for deceased donors in the UK, 1 April 2020 - 31 March 2021, by country/ NHS region

Country/ NHS region of residence	Pancreas donors (pmp)					
	DBD		DCD		**TOTAL**	
North East and Yorkshire	19	(2.2)	6	(0.7)	**25**	**(2.9)**
North West	16	(2.3)	5	(0.7)	**21**	**(3.0)**
Midlands	17	(1.6)	9	(0.8)	**26**	**(2.5)**
East of England	12	(1.8)	9	(1.4)	**21**	**(3.2)**
London	20	(2.2)	3	(0.3)	**23**	**(2.6)**
South East	24	(2.7)	6	(0.7)	**30**	**(3.4)**
South West	18	(3.2)	4	(0.7)	**22**	**(3.9)**
England	**126**	**(2.2)**	**42**	**(0.7)**	**168**	**(3.0)**
Isle of Man	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**
Channel Islands	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**
Wales	**11**	**(3.5)**	**2**	**(0.6)**	**13**	**(4.1)**
Scotland	**14**	**(2.6)**	**4**	**(0.7)**	**18**	**(3.3)**
Northern Ireland	**6**	**(3.2)**	**2**	**(1.1)**	**8**	**(4.2)**
TOTAL[1]	**159**	**(2.4)**	**52**	**(0.8)**	**211**	**(3.1)**

[1] Includes 4 donors with unknown UK postcode

6.4 Transplants

The number of pancreas and islet 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 0.4 to 2.0 pmp across NHS regions and overall was 1.1 pmp. For donors after circulatory death, the overall rate was 0.4 pmp and ranged from 0.0 to 0.6 pmp across NHS regions.

Table 6.7 Pancreas and islet transplant rates per million population (pmp), in the UK, 1 April 2020-31 March 2021, by country and NHS region

Country/NHS region of residence	DBD		DCD		TOTAL	
	N	(pmp)	N	(pmp)	N	(pmp)
North East and Yorkshire	8	(0.9)	2	(0.2)	**10**	**(1.2)**
North West	4	(0.6)	1	(0.1)	**5**	**(0.7)**
Midlands	19	(1.8)	5	(0.5)	**24**	**(2.3)**
East of England	13	(2.0)	4	(0.6)	**17**	**(2.6)**
London	4	(0.4)	1	(0.1)	**5**	**(0.6)**
South East	8	(0.9)	2	(0.2)	**10**	**(1.1)**
South West	4	(0.7)	0	(0.0)	**4**	**(0.7)**
England	**60**	**(1.1)**	**15**	**(0.3)**	**75**	**(1.3)**
Isle of Man	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**
Channel Islands	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**
Wales	**6**	**(1.9)**	**3**	**(1.0)**	**9**	**(2.9)**
Scotland	**11**	**(2.0)**	**4**	**(0.7)**	**15**	**(2.7)**
Northern Ireland	**0**	**(0.0)**	**1**	**(0.5)**	**1**	**(0.5)**
TOTAL[1]	**77**	**(1.1)**	**24**	**(0.4)**	**101**	**(1.5)**

[1] Includes 1 recipient with an unknown UK postcode

There were 101 deceased donor pancreas and islet transplants in 2020-2021, fewer than the 203 transplants performed in 2019-2020. Of these 101, 83 (82%) were SPK transplants, 3 (3%) were pancreas only transplants (pancreas alone (PTA) or pancreas after kidney (PAK)) and 15 (15%) 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 2020-2021, the median CIT for a DBD donor whole pancreas transplant is 10.4 hours (Inter-Quartile (IQ) range 9.6 – 12.0) and for a DCD donor transplant is 10.9 hours (IQ range 9.6 – 11.7) and overall is 10.4 hours (IQ range 9.6 – 12.0).

At 31 March 2021, there were approximately 2,500 recipients with a functioning pancreas transplant (including multi-organ transplants) being followed-up, as reported to the UK Transplant Registry.

Table 6.8 Pancreas and islet transplants, 1 April 2020 - 31 March 2021 (2019-2020) by centre

Centre	Transplant type											
	SPK		SIK		PTA		PAK		Islet			
									Routine		Priority	
Bristol	-	-	0	(0)	-	-	-	-	0	(0)	0	(0)
Cambridge	27	(19)	-	-	0	(0)	1	(0)	-	-	-	-
Cardiff	7	(9)	-	-	0	(0)	0	(0)	-	-	-	-
Edinburgh	11	(24)	1	(1)	0	(0)	0	(0)	2	(6)	2	(6)
Guys	5	(27)	-	-	0	(0)	0	(0)	-	-	-	-
King's College	-	-	0	(0)	-	-	-	-	0	(2)	1	(0)
Manchester	9	(22)	3	(4)	0	(2)	0	(3)	0	(0)	0	(1)
Newcastle	2	(5)	0	(0)	0	(0)	0	(1)	3	(3)	1	(1)
Oxford	21	(46)	1	(0)	2	(2)	0	(5)	1	(2)	0	(2)
Royal Free	-	-	0	(0)	-	-	-	-	0	(0)	0	(0)
WLRTC	1	(10)	-	-	0	(0)	0	(0)	-	-	-	-
TOTAL	**83**	**(162)**	**5**	**(5)**	**2**	**(4)**	**1**	**(9)**	**6**	**(13)**	**4**	**(10)**

WLRTC - West London Renal and Transplant Centre

Table 6.9 Pancreas and islet transplants, 1 April 2020 - 31 March 2021 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	20	7	-	-	1	0	-	-	**21**	**7**
Cardiff	5	2	-	-	0	0	-	-	**5**	**2**
Edinburgh	7	4	0	1	0	0	4	0	**11**	**5**
Guys	2	3	-	-	0	0	-	-	**2**	**3**
King's College	-	-	0	0	-	-	1	0	**1**	**0**
Manchester	7	2	1	2	0	0	0	0	**8**	**4**
Newcastle	1	1	0	0	0	0	4	0	**5**	**1**
Oxford	19	2	1	0	2	0	1	0	**23**	**2**
Royal Free	-	-	0	0	-	-	0	0	**0**	**0**
WLRTC	1	0	-	-	0	0	-	-	**1**	**0**
TOTAL	**62**	**21**	**2**	**3**	**3**	**0**	**10**	**0**	**77**	**24**

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 2020 - 31 March 2021, and transplant list patients at 31 March

Age group (years)	Donors		Transplant recipients		Active transplant list patients	
	N	(%)	N	(%)	N	(%)
0 - 17	23	(11)	0	(0)	0	(0)
18 - 34	73	(35)	22	(22)	43	(25)
35 - 49	72	(34)	51	(50)	80	(47)
50 - 59	43	(20)	23	(23)	45	(26)
60 - 69	0	(0)	4	(4)	3	(2)
70+	0	(0)	1	(1)	1	(1)
Mean (SD)	36	(14)	44	(10)	43	(10)
Male	119	(56)	51	(50)	78	(45)
Female	92	(44)	50	(50)	94	(55)
White	188	(92)	92	(91)	158	(92)
Asian	4	(2)	3	(3)	10	(6)
Black	5	(2)	5	(5)	3	(2)
Other	8	(4)	1	(1)	1	(1)
Not reported	6		0		0	
O	107	(51)	47	(47)	82	(48)
A	75	(36)	41	(41)	68	(40)
B	26	(12)	9	(9)	19	(11)
AB	2	(1)	4	(4)	3	(2)
Not reported	1		0		0	
First graft			93	(92)	152	(88)
Re-graft			8	(8)	20	(12)
TOTAL	**211**	**(100)**	**101**	**(100)**	**172**	**(100)**

Cardiothoracic Activity

Key messages

- **At 31 March 2021, there were 313 patients on the active heart transplant list, 261 on the lung list and 10 on the heart-lung list**
- **Of the 766 organ donors after brain death during 2020-2021, 142 (19%) donated their heart and 81 (11%) donated at least one lung**
- **The number of heart transplants fell by 7% to 161; 60% of these were urgent heart transplants, 18% were super-urgent, and 22% were non-urgent**
- **The number of lung and heart-lung transplants fell by 44% this year to 90; 22% of these were urgent lung transplants, 1% were super-urgent, and 77% were non-urgent.**
- **There were 22 DCD heart transplants in 2020-2021, 1 fewer than the previous year**

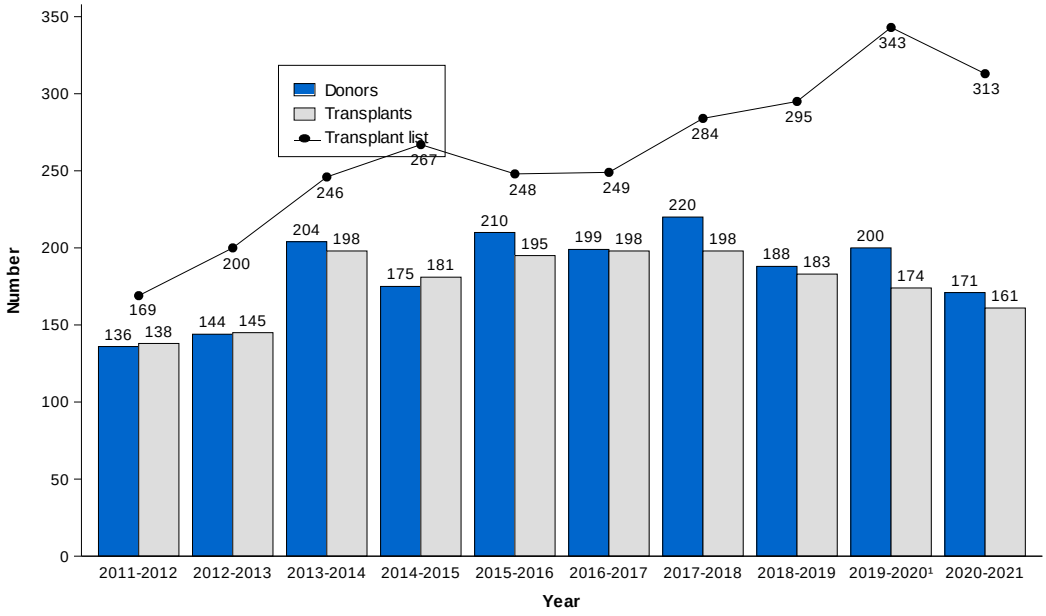
7.1 Overview

Note that the COVID-19 pandemic will have affected the number of offered, retrieved and transplanted organs in 2020-2021. This is particularly true for lung transplant activity which was severely impacted by the pandemic.

Last year the number of heart transplants fell by 7% to 161 compared with 2019-2020, and the number of lung or heart-lung transplants fell by 43% to 91 There were decreases in both the heart and the lung transplant lists since 29 February 2020; this is because fewer patients joined the list during 2020-2021 due to the pandemic than in an average year, rather than more patients dying on the list or being removed. The number of patients active on the heart transplant list at year end has increased by 85% since 2012, while the number of patients active on the lung or heart-lung transplant list has increased by 17% since 2012.

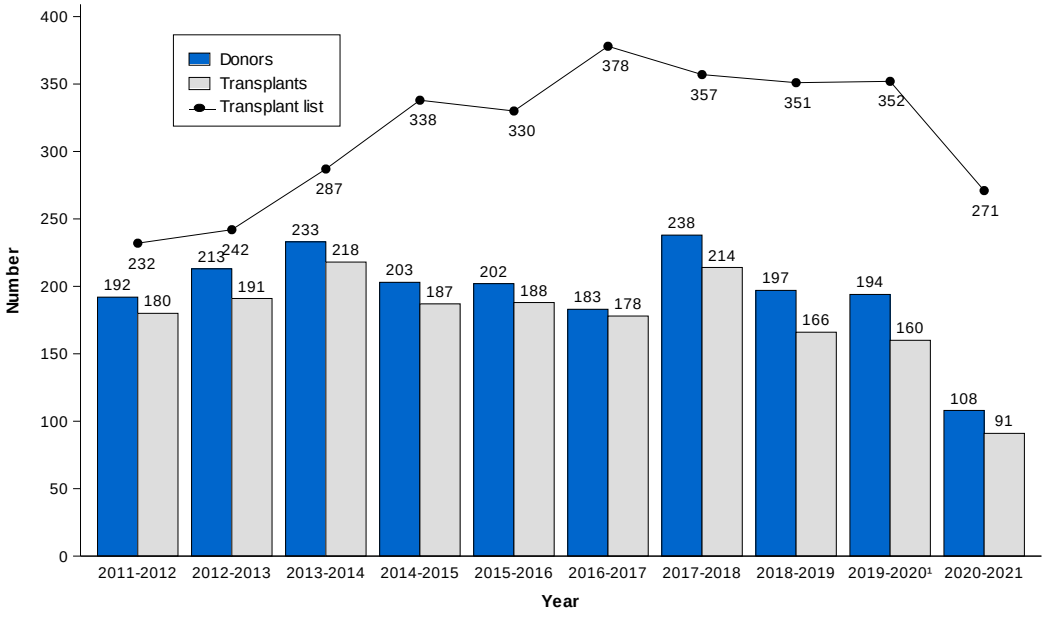
A summary of the deceased donor cardiothoracic activity from 1 April 2011 to 31 March 2021 is shown in **Figure 7.1** for heart activity and **Figure 7.2** for lung activity. Donors who donate both heart and lung(s) are included in both figures, but heart-lung block transplants and patients active on 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 2011 - 31 March 2021, Number of donors, transplants and patients on the active transplant list at 31 March



¹ Transplant list as at 29 February 2020

Figure 7.2 Deceased donor lung and heart-lung programme in the UK, 1 April 2011 - 31 March 2021, Number of donors, transplants and patients on the active transplant list at 31 March



¹ Transplant list as at 29 February 2020

7.2 Transplant list

Table 7.1 shows the number of patients on the active transplant lists at 31 March 2021 by centre. There were four patients waiting on the super-urgent heart transplant list. There were no patients waiting on the super-urgent lung transplant list, and eight patients waiting on the urgent lung transplant list. The lung transplant list accounts for 45% of the patients waiting for a cardiothoracic organ transplant. Overall, Newcastle and Harefield had the largest cardiothoracic transplant waiting lists on 31 March 2021.

Table 7.1 Patients on the cardiothoracic transplant lists at 31 March 2021 (2020)[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	35	(39)	7	(9)	1	(0)	2	(1)	41	(48)	0	(1)	0	(0)	**86**	**(98)**
Glasgow	13	(18)	0	(3)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	**13**	**(21)**
Great Ormond Street	3	(1)	0	(0)	0	(0)	1	(0)	1	(1)	0	(0)	0	(0)	**5**	**(2)**
Harefield	54	(56)	3	(7)	1	(0)	0	(0)	66	(96)	0	(1)	0	(0)	**124**	**(160)**
Manchester	33	(33)	1	(1)	1	(0)	1	(1)	48	(53)	0	(0)	0	(0)	**84**	**(88)**
Newcastle	77	(82)	5	(11)	0	(0)	1	(1)	60	(101)	4	(1)	0	(0)	**147**	**(196)**
Papworth	33	(43)	1	(2)	1	(2)	2	(2)	32	(41)	1	(2)	0	(0)	**70**	**(92)**
TOTAL	**248**	**(272)**	**17**	**(33)**	**4**	**(2)**	**7**	**(5)**	**248**	**(340)**	**5**	**(5)**	**0**	**(0)**	**529**	**(657)**
Paediatric																
Great Ormond Street	14	(11)	8	(14)	0	(0)	2	(0)	4	(0)	2	(1)	0	(0)	**30**	**(26)**
Newcastle	17	(8)	5	(3)	0	(0)	1	(0)	1	(1)	1	(0)	0	(0)	**25**	**(12)**
TOTAL	**31**	**(19)**	**13**	**(17)**	**0**	**(0)**	**3**	**(0)**	**5**	**(1)**	**3**	**(1)**	**0**	**(0)**	**55**	**(38)**

[1] Waiting list figures are as at 31 March 2021 and 29 February 2020

During 2020-2021, there were 273 registrations onto the heart transplant list, 10 registrations onto the heart-lung transplant list and 133 onto the lung transplant list. This is fewer than the number of registrations in a normal year, leading to the fall in the transplant lists observed in **Figures 7.1** and **7.2**. Registration outcomes as at 31 March 2021 for patients on the list at 1 April 2020 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 2020 - 31 March 2021

Outcome of patient at 31 March 2021	Active and suspended patients at 1 April 2020		New registrations in 2020-2021[1]		**TOTAL**	
	N	%	N	%	**N**	**%**
Heart transplant list						
Remained active/suspended	243	67	126	46	369	58
Transplanted	66	18	92	34	158	25
Removed	41	11	40	15	81	13
Died	11	3	15	5	26	4
TOTAL	**361**		**273**		**634**	
Heart-lung transplant list						
Remained active/suspended	2	33	8	80	10	63
Transplanted[2]	1	17	0	0	1	6
Removed	2	33	2	20	4	25
Died	1	17	0	0	1	6
TOTAL	**6**		**10**		**16**	
Lung transplant list						
Remained active/suspended	198	58	86	65	284	60
Transplanted	56	16	30	23	86	18
Removed	51	15	6	5	57	12
Died	37	11	11	8	48	10
TOTAL	**342**		**133**		**475**	

[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 31 March 2021 was 4.7 pmp and ranged from 3.2 to 8.0 across NHS regions. The overall UK lung transplant list rate was 4.0 pmp and ranged from 2.7 to 5.1 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) 2021		2020[1]		Lung transplant list (pmp) 2021		2020[1]	
North East and Yorkshire	69	(8.0)	69	(8.0)	44	(5.1)	53	(6.2)
North West	31	(4.4)	31	(4.4)	36	(5.1)	43	(6.1)
Midlands	44	(4.2)	51	(4.8)	49	(4.6)	61	(5.8)
East of England	21	(3.2)	24	(3.7)	19	(2.9)	19	(2.9)
London	42	(4.7)	43	(4.8)	24	(2.7)	45	(5.0)
South East	34	(3.8)	40	(4.5)	26	(2.9)	36	(4.0)
South West	21	(3.7)	23	(4.1)	19	(3.4)	25	(4.4)
England	**262**	**(4.7)**	**281**	**(5.0)**	**217**	**(3.9)**	**282**	**(5.0)**
Isle of Man	**1**	**(12.5)**	**1**	**(12.5)**	**1**	**(12.5)**	**0**	**(0.0)**
Channel Islands	**0**	**(0.0)**	**0**	**(0.0)**	**3**	**(17.6)**	**2**	**(11.8)**
Wales	**12**	**(3.8)**	**12**	**(3.8)**	**17**	**(5.4)**	**14**	**(4.4)**
Scotland	**19**	**(3.5)**	**28**	**(5.1)**	**22**	**(4.0)**	**32**	**(5.9)**
Northern Ireland	**16**	**(8.5)**	**14**	**(7.4)**	**10**	**(5.3)**	**21**	**(11.1)**
TOTAL[2,3]	**313**	**(4.7)**	**343**	**(5.1)**	**271**	**(4.0)**	**352**	**(5.3)**

[1] As at 29 February 2020
[2] Includes heart patients in 2021 (2020) resident in: UK unknown 1 (3); Republic of Ireland 1 (2); Overseas 1 (2)
[3] Includes lung patients in 2021 (2020) resident in: UK unknown 1 (1)

The transplant list outcomes for adult patients listed for a cardiothoracic organ transplant between 1 April 2017 and 31 March 2018 are summarised in **Figure 7.3**, **Figure 7.4** and **Figure 7.5**, for non-urgent heart, urgent heart and non-urgent lung registrations, respectively. 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, 12% of non-urgent heart patients were transplanted while 4% had died, compared with 59% transplanted and 4% died for urgent heart patients. Of those listed for a non-urgent lung transplant, 26% were transplanted within six months, rising to 45% after three years, however at three years, 16% had died. The patients removed from these lists may have subsequently died.

In October 2016 and May 2017, respectively, the super-urgent heart offering scheme and urgent and super-urgent lung offering schemes were introduced, with corresponding new registration types. The outcomes and median waiting times of such registrations are not represented in **Figures 7.3 – 7.5** and in **Tables 7.4** and **7.5**.

Figure 7.3 **Post-registration outcome for 178 first non-urgent heart only registrations made in the UK, 1 April 2017 - 31 March 2018**

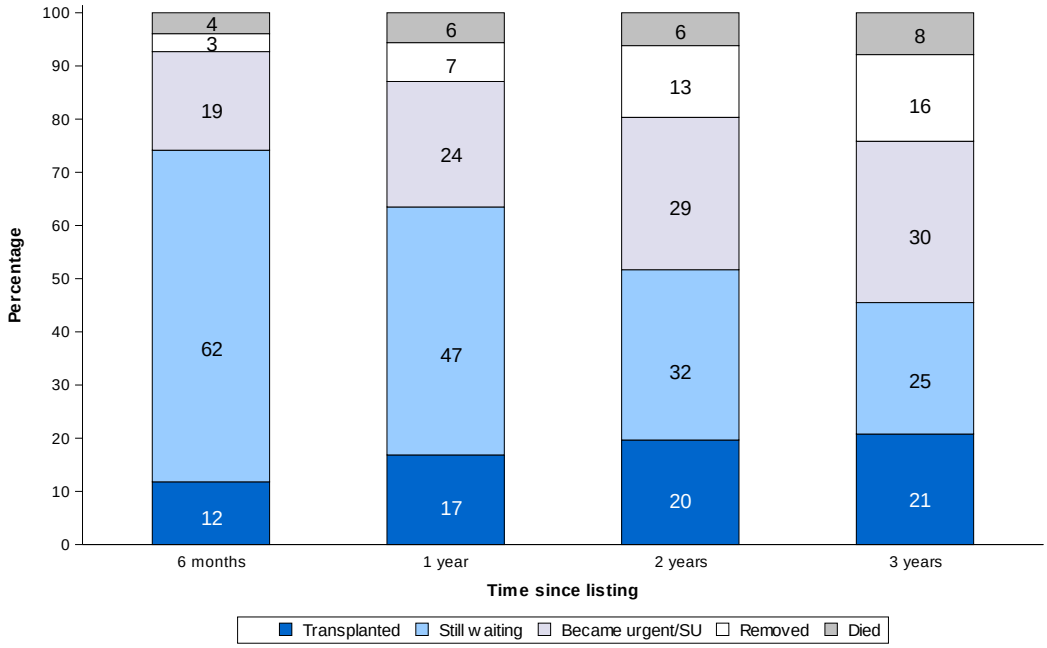


Figure 7.4 **Post-registration outcome for 190 first urgent heart only registrations made in the UK, 1 April 2017 - 31 March 2018**

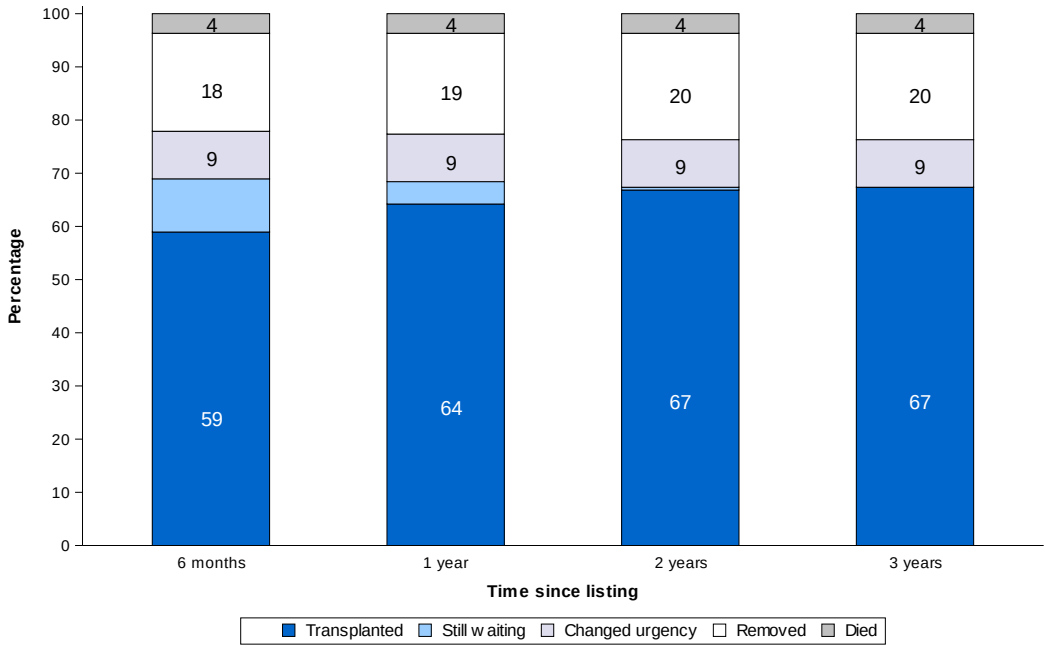


Figure 7.5 **Post-registration outcome for 273 first lung only registrations made in the UK, 1 April 2017 - 31 March 2018**

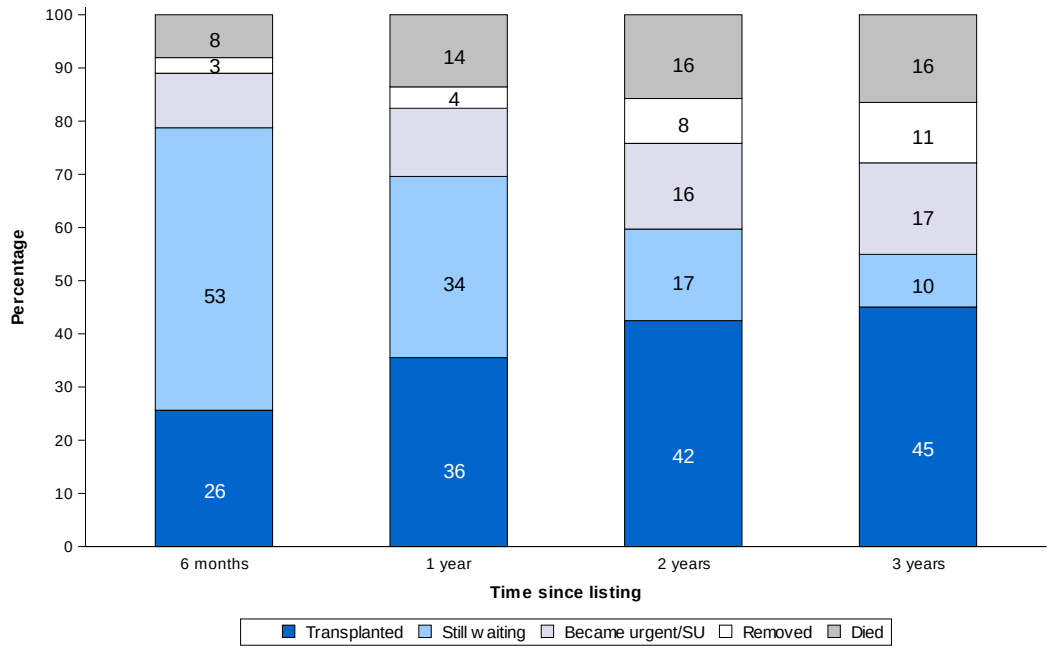


Table 7.4 and **Table 7.5** show the median waiting time to cardiothoracic organ transplant by blood group and ethnicity of patient, respectively, for patients registered between 1 April 2013 and 31 March 2018. The overall median waiting time to non-urgent heart transplantation for adult patients who were never on the urgent or super-urgent list was over 6 years. For patients who had been on the urgent list ('ever urgent'), the overall median time on the urgent list before transplant was 35 days.

The overall median waiting time to non-urgent lung transplantation for adult patients who were never on the urgent or super-urgent list, was 365 days, but for blood group O patients alone was longer, at 530 days.

For paediatric heart patients, the median waiting time was 414 days for non-urgent registrations and 88 days for urgent registrations (this is not broken down by blood group or ethnicity due to low numbers). Median waiting time is not calculated for paediatric lung patients due to the small number of registrations. Note that these waiting times are not adjusted for other relevant factors which may be influential and which may differ across blood or ethnic groups.

Table 7.4 Median waiting time to cardiothoracic transplant in the UK, for patients registered 1 April 2013 - 31 March 2018, by blood group

Blood group	Number of patients registered	Waiting time (days) Median	95% Confidence interval
Adult non-urgent heart[1]			
O	190	-	-
A	206	1305	561 - 2049
B	49	612	0 - 1328
AB	13	693	0 - 1512
TOTAL	**458**	**2279**	**-**
Adult urgent heart[2] (urgent waiting time only)			
O	320	52	45 - 59
A	346	21	18 - 24
B	109	41	28 - 54
AB	33	25	17 - 33
TOTAL	**808**	**35**	**31 - 39**
Paediatric non-urgent heart[1]	**40**	**414**	**196 - 632**
Paediatric urgent heart[2] (urgent waiting time only)	**217**	**88**	**72 - 104**
Adult non-urgent lung[1]			
O	668	530	452 - 608
A	605	240	191 - 289
B	146	404	147 - 661
AB	46	171	125 - 217
TOTAL	**1465**	**365**	**319 - 411**

- Median and/or 95% confidence interval cannot be estimated due to insufficient numbers of patients transplanted
[1] Excludes patients that were moved to the urgent/super-urgent lists
[2] Excludes patients that were moved to the super-urgent list

Table 7.5 Median waiting time to cardiothoracic transplant in the UK, for patients registered 1 April 2013 - 31 March 2018, by ethnicity

Ethnicity	Number of patients registered	Waiting time (days) Median	95% Confidence interval
Adult never urgent heart			
White	406	2279	-
Asian	31	1473	-
Black	16	742	177 - 1307
Other[1]	4	479	0 - 1171
TOTAL[2]	**458**	**2279**	**-**
Adult ever urgent heart[3] (urgent waiting time only)			
White	676	35	30 - 40
Asian	73	37	14 - 60
Black	39	40	0 - 92
Other	13	34	21 - 47
TOTAL[2]	**808**	**35**	**31 - 39**
Paediatric never urgent heart	**40**	**414**	**196 - 632**
Paediatric ever urgent heart (urgent waiting time only)	**217**	**88**	**72 - 104**
Adult lung			
White	1378	351	308 - 394
Asian	58	1191	355 - 2027
Black	18	735	-
Other[1]	5	-	-
TOTAL[2]	**1465**	**365**	**319 - 411**

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

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 where the heart was 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 766 DBD donors, 142 (19%) donated their heart, resulting in 139 transplants. Of the 414 DCD donors, 29 (7%) donated their heart, resulting in 22 transplants.

Table 7.7 shows the number of deceased organ donors identified in each lung allocation zone, and the number of donors where at least one lung was 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 766 DBD donors, 81 (11%) donated at least one lung, with 72 proceeding to transplantation. Of the 414 DCD donors, 27 (7%) donated at least one lung, with 19 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 2020 - 31 March 2021, 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	122	24	(24)	5	55	3	(2)	2
Glasgow	75	15	(15)	3	32	2	(1)	0
Harefield	179	27	(25)	8	82	5	(4)	1
Manchester	99	15	(15)	2	54	2	(2)	0
Newcastle	167	36	(36)	7	113	9	(6)	4
Papworth	124	25	(24)	6	78	8	(7)	0
TOTAL	**766**	**142**	**(139)**	**31**	**414**	**29**	**(22)**	**7**

Table 7.7 Lung organ donation and retrieval rates in the UK, 1 April 2020 - 31 March 2021, 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	122	6	(5)	2	53	5	(4)	2
Harefield	229	23	(19)	10	104	8	(7)	0
Manchester	109	9	(9)	3	59	0	(0)	0
Newcastle	179	22	(21)	7	102	5	(4)	2
Papworth	127	19	(18)	7	96	7	(4)	1
TOTAL	**766**	**79**	**(72)**	**29**	**414**	**25**	**(19)**	**5**

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 2.6 pmp in 2020-2021 and varied across NHS regions from 1.4 pmp to 3.4 pmp. For lungs, the overall donor rate was 1.6 pmp in 2020-2021 and varied across NHS regions from 0.9 pmp to 2.4 pmp.

Table 7.8 Cardiothoracic donation and retrieval rates for deceased donors in the UK, 1 April 2020 - 31 March 2021, by country/NHS region

Country/ NHS region	Heart (pmp)						Lungs (pmp)					
	DBD		DCD		Total		DBD		DCD		Total	
North East and Yorkshire	24	(2.8)	3	(0.3)	27	(3.1)	11	(1.3)	4	(0.5)	15	(1.7)
North West	8	(1.1)	2	(0.3)	10	(1.4)	8	(1.1)	0	(0.0)	8	(1.1)
Midlands	18	(1.7)	4	(0.4)	22	(2.1)	10	(0.9)	4	(0.4)	14	(1.3)
East of England	9	(1.4)	4	(0.6)	13	(2.0)	11	(1.7)	4	(0.6)	15	(2.3)
London	15	(1.7)	4	(0.4)	19	(2.1)	5	(0.6)	3	(0.3)	8	(0.9)
South East	19	(2.1)	5	(0.6)	24	(2.7)	16	(1.8)	5	(0.6)	21	(2.4)
South West	18	(3.2)	1	(0.2)	19	(3.4)	5	(0.9)	2	(0.4)	7	(1.2)
England	**111**	**(2.0)**	**23**	**(0.4)**	**134**	**(2.4)**	**66**	**(1.2)**	**22**	**(0.4)**	**88**	**(1.6)**
Isle of Man	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**
Channel Islands	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**
Wales	**8**	**(2.5)**	**2**	**(0.6)**	**10**	**(3.2)**	**3**	**(1.0)**	**2**	**(0.6)**	**5**	**(1.6)**
Scotland	**12**	**(2.2)**	**2**	**(0.4)**	**14**	**(2.6)**	**8**	**(1.5)**	**1**	**(0.2)**	**9**	**(1.6)**
Northern Ireland	**8**	**(4.2)**	**2**	**(1.1)**	**10**	**(5.3)**	**3**	**(1.6)**	**2**	**(1.1)**	**5**	**(2.6)**
TOTAL[1,2]	**142**	**(2.1)**	**29**	**(0.4)**	**171**	**(2.6)**	**81**	**(1.2)**	**27**	**(0.4)**	**108**	**(1.6)**

[1] Heart numbers include 3 donors with unknown UK postcode
[2] Lung numbers include 1 donors with unknown UK 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 0.9 to 3.2 pmp across NHS regions and overall was 2.4 pmp. The lung transplant rate ranged from 0.9 to 1.9 pmp across NHS regions and overall was 1.3 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 2020 – 31 March 2021, by country/NHS region

Country/ NHS region	Heart (pmp)						Lungs (pmp)					
	DBD		DCD		Total		DBD		DCD		Total	
North East and Yorkshire	19	(2.2)	2	(0.2)	21	(2.4)	10	(1.2)	2	(0.2)	12	(1.4)
North West	13	(1.8)	2	(0.3)	15	(2.1)	7	(1.0)	1	(0.1)	8	(1.1)
Midlands	32	(3.0)	2	(0.2)	34	(3.2)	8	(0.8)	2	(0.2)	10	(0.9)
East of England	14	(2.1)	4	(0.6)	18	(2.8)	6	(0.9)	3	(0.5)	9	(1.4)
London	12	(1.3)	1	(0.1)	13	(1.5)	11	(1.2)	6	(0.7)	17	(1.9)
South East	12	(1.3)	9	(1.0)	21	(2.4)	9	(1.0)	2	(0.2)	11	(1.2)
South West	4	(0.7)	1	(0.2)	5	(0.9)	8	(1.4)	1	(0.2)	9	(1.6)
England	**106**	**(1.9)**	**21**	**(0.4)**	**127**	**(2.3)**	**59**	**(1.0)**	**17**	**(0.3)**	**76**	**(1.4)**
Isle of Man	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**
Channel Islands	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**
Wales	**6**	**(1.9)**	**0**	**(0.0)**	**6**	**(1.9)**	**4**	**(1.3)**	**0**	**(0.0)**	**4**	**(1.3)**
Scotland	**20**	**(3.7)**	**1**	**(0.2)**	**21**	**(3.8)**	**6**	**(1.1)**	**1**	**(0.2)**	**7**	**(1.3)**
Northern Ireland	**3**	**(1.6)**	**0**	**(0.0)**	**3**	**(1.6)**	**2**	**(1.1)**	**1**	**(0.5)**	**3**	**(1.6)**
TOTAL[1]	**136**	**(2.0)**	**22**	**(0.3)**	**158**	**(2.4)**	**71**	**(1.1)**	**19**	**(0.3)**	**91**	**(1.3)**

[1]Excludes 2 recipients who reside in the Republic of Ireland, 1 recipient who resides overseas, and includes 2 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 2020-2021, a total of 252 transplants were carried out; a fall of 25% on 2019-2020. Of these, 161 were heart transplants, of which 126 (78%) were urgent or super-urgent and additionally, 22 (14%) were achieved from donors after circulatory death. There was a total of 91 lung transplants, of which 20 (22%) were urgent or super-urgent. There were fewer heart-lung transplants compared with 2019-2020.

Table 7.10 Cardiothoracic transplants from deceased donors, 1 April 2020 – 31 March 2021 (2019-2020), by age group, centre, transplant type and urgency

Transplant centre	Transplant type														TOTAL	
	Heart						Heart- lung		Lung(s)							
	Non-urgent		Urgent		Super-urgent				Non-urgent		Urgent		Super-urgent			
Adult																
Birmingham	4	(2)	12	(20)	10	(8)	1	(2)	4	(13)	2	(2)	0	(0)	33	(47)
Glasgow	6	(2)	12	(8)	2	(1)	0	(0)	0	(0)	0	(0)	0	(0)	20	(11)
Great Ormond Street	1	(0)	0	(0)	0	(0)	0	(0)	1	(0)	0	(0)	0	(0)	2	(0)
Harefield	0	(1)	12	(17)	1	(5)	0	(0)	23	(32)	4	(3)	1	(5)	41	(63)
Manchester	2	(0)	11	(18)	2	(4)	1	(1)	11	(24)	1	(4)	0	(0)	28	(51)
Newcastle	4	(3)	16	(19)	3	(4)	0	(0)	16	(19)	5	(10)	0	(1)	44	(56)
Papworth	14	(16)	15	(16)	8	(7)	0	(2)	13	(34)	6	(5)	0	(0)	56	(80)
TOTAL	**31**	**(24)**	**78**	**(98)**	**26**	**(29)**	**2**	**(5)**	**68**	**(122)**	**18**	**(24)**	**1**	**(6)**	**224**	**(308)**
Paediatric[1]																
Great Ormond Street	2	(1)	14	(9)	3	(0)	0	(0)	1	(2)	1	(0)	0	(0)	21	(12)
Newcastle	2	(0)	5	(13)	0	(0)	0	(0)	0	(1)	0	(0)	0	(0)	7	(14)
TOTAL	**4**	**(1)**	**19**	**(22)**	**3**	**(0)**	**0**	**(0)**	**1**	**(3)**	**1**	**(0)**	**0**	**(0)**	**28**	**(26)**

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

Table 7.11 Cardiothoracic transplants from deceased donors,1 April 2020 – 31 March 2021 (2019-2020), by age group, centre, transplant type and donor type

Transplant centre	Transplant type												TOTAL	
	Heart				Heart-lung				Lung(s)					
	DBD		DCD		DBD		DCD		DBD		DCD			
Adult														
Birmingham	26	(30)	0	(0)	1	(2)	0	(0)	6	(15)	0	(0)	33	(47)
Glasgow	20	(10)	0	(1)	0	(0)	0	(0)	0	(0)	0	(0)	20	(11)
Great Ormond Street	0	(0)	1	(0)	0	(0)	0	(0)	1	(0)	0	(0)	2	(0)
Harefield	11	(20)	2	(3)	0	(0)	0	(0)	21	(33)	7	(7)	41	(63)
Manchester	15	(20)	0	(2)	1	(1)	0	(0)	11	(23)	1	(5)	28	(51)
Newcastle	20	(26)	3	(0)	0	(0)	0	(0)	16	(21)	5	(9)	44	(56)
Papworth	26	(24)	11	(15)	0	(1)	0	(1)	13	(28)	6	(11)	56	(80)
TOTAL	**118**	**(130)**	**17**	**(21)**	**2**	**(4)**	**0**	**(1)**	**68**	**(120)**	**19**	**(32)**	**224**	**(308)**
Paediatric[1]														
Great Ormond Street	15	(8)	4	(2)	0	(0)	0	(0)	2	(2)	0	(0)	20	(12)
Newcastle	6	(13)	1	(0)	0	(0)	0	(0)	0	(1)	0	(0)	7	(14)
TOTAL	**21**	**(21)**	**5**	**(2)**	**0**	**(0)**	**0**	**(0)**	**2**	**(3)**	**0**	**(0)**	**28**	**(26)**

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

At 31 March 2021 there were approximately 4,000 recipients with a functioning cardiothoracic organ transplant being followed-up as reported to the UK Transplant Registry.

The length of time that elapses between cardiothoracic organs being removed from the donor and their transplantation into the recipient is called the total ischaemia time (IT). Generally, the shorter this time, the more likely the organ is to work immediately and the better the long-term outcome. 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 2020-2021, the median IT for a DBD heart transplant was 3.4 hours (Inter-Quartile (IQ) range 2.6 – 3.8) and for a DCD heart transplant was 5.8 hours (IQ range 4.7 – 6.5) and overall was 3.5 hours (IQ range 2.9 – 4.2).

The median IT for a DBD donor lung transplant was 6.5 hours (IQ range 5.7 – 8.0) and for a DCD donor lung transplant was 8.5 hours (IQ range 6.9 – 10.5) and overall was 7.0 hours (IQ range 5.7 – 8.3).

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 2020 - 31 March 2021, and transplant list patients at 31 March in the UK

Age group (years)	Donors		Transplant recipients		Active transplant list patients	
	N	(%)	N	(%)	N	(%)
0 - 17	22	(9)	33	(13)	62	(11)
18 - 34	84	(35)	39	(16)	64	(11)
35 - 49	78	(32)	59	(24)	133	(23)
50 - 59	45	(19)	71	(28)	172	(29)
60 - 69	12	(5)	50	(20)	148	(25)
70+	0	(0)	0	(0)	5	(1)
mean (SD)	37	(15)	43	(18)	46	(18)
Male	134	(56)	158	(63)	365	(63)
Female	107	(44)	94	(37)	219	(38)
White	205	(87)	212	(84)	504	(87)
Asian	7	(3)	20	(8)	48	(8)
Black	8	(3)	15	(6)	22	(4)
Chinese	1	(0)	0	(0)	1	(0)
Other	14	(6)	4	(2)	6	(1)
Not reported	6	-	1	-	3	-
O	133	(55)	101	(40)	323	(55)
A	84	(35)	108	(43)	196	(34)
B	23	(10)	26	(10)	58	(10)
AB	1	(0)	17	(7)	7	(1)
First graft			245	(97)	569	(97)
Re-graft			7	(3)	15	(3)
TOTAL	**241**	**(100)**	**252**	**(100)**	**584**	**(100)**

Liver Activity

Key messages

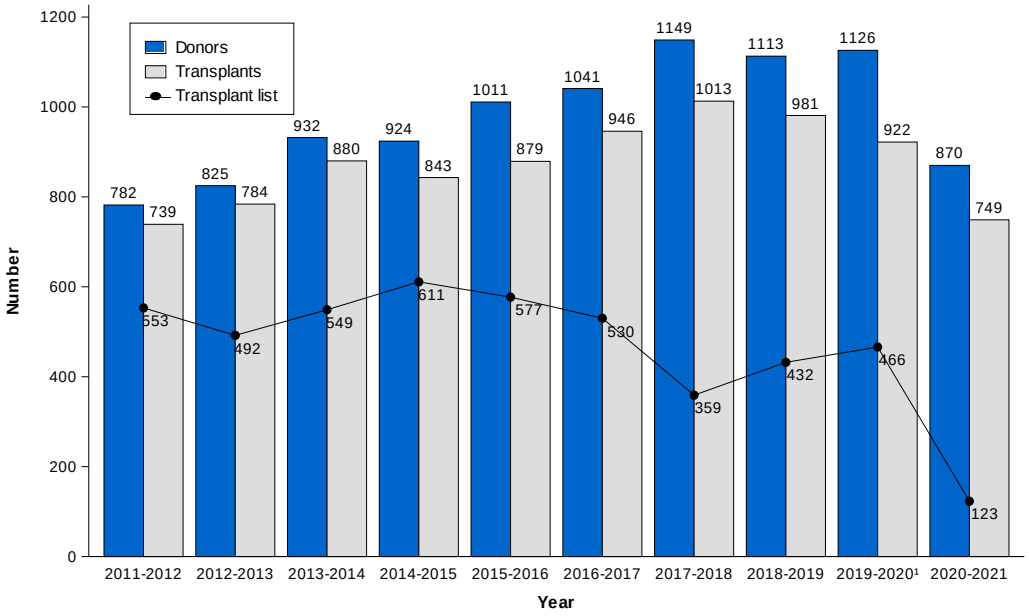
- **The number of patients on the active liver transplant list at 31 March 2021 was 123, a decrease of 74% from 2020. This was due to the suspension of non clinically urgent patients**
- **The number of liver donors after brain death fell by 19% to 688, while transplants from donors after brain death fell by 17% to 628**
- **The number of liver donors after circulatory death fell by 35% to 182, while transplants from donors after circulatory death fell by 29% to 121**

8.1 Overview

Note that the COVID-19 pandemic will have affected the number of offered, retrieved and transplanted organs in 2020-2021. There were periods during 2020/2021 where only paediatric and adult elective patients deemed clinically urgent by transplant centres were active on the transplant list, with the majority of patients reactivated on 6 April 2021.

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 2011 - 31 March 2021, Number of donors, transplants and patients on the active transplant list at 31 March



¹ Transplant 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 2020-2021, 870 organ donors donated their liver for transplant: 688 donors after brain death and 182 donors after circulatory death. There were 123 patients on the active transplant list at 31 March 2021, a fall of 74% from 29 February 2020.

Overall, the number of liver transplants (either whole liver or liver lobe transplants) from donors after brain death fell by 16% to 628, and donors after circulatory death fell by 29% to 121, compared with the previous financial year. Additionally, there were 22 living liver lobe donor transplants in NHS Group 1 (14) and Group 2 (8) paediatric and 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 2020-2021, there were 66 deceased donor adult super-urgent transplants, representing 10% of all adult deceased transplants and 13 deceased donor paediatric super-urgent transplants, representing 17% of all paediatric deceased transplants.

Table 8.1 Deceased and living liver donors and transplants, 1 April 2020 - 31 March 2021 (2019-2020) and transplant list patients at 31 March 2021 (2020)* 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	129	(170)	38	(63)	167	(233)	132	(166)	11	(31)	143	(197)	0	(1)	23	(128)
Cambridge	51	(66)	25	(37)	76	(103)	50	(66)	37	(33)	87	(99)	0	(0)	10	(39)
Edinburgh	101	(102)	19	(20)	120	(122)	61	(59)	6	(6)	67	(65)	0	(0)	11	(49)
King's College	179	(208)	40	(66)	219	(274)	130	(160)	34	(37)	164	(197)	3	(3)	24	(104)
Leeds	121	(155)	28	(49)	149	(204)	81	(90)	16	(20)	97	(110)	1	(3)	7	(57)
Newcastle	34	(50)	5	(8)	39	(58)	32	(32)	2	(4)	34	(36)	0	(0)	6	(22)
Royal Free	64	(81)	14	(29)	78	(110)	67	(103)	12	(38)	79	(141)	0	(0)	9	(30)
TOTAL	**679**	**(833)**	**169**	**(272)**	**848**	**(1105)**	**554[6]**	**(676)**	**118**	**(169)**	**672**	**(845)**	**4[2]**	**(7)[3]**	**90**	**(429)**
Paediatric																
Birmingham	5	(3)	3	(2)	8	(5)	26	(33)	0	(0)	26	(33)	0	(2)	7	(9)
Cambridge	0	(2)	3	(0)	3	(2)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
Edinburgh	1	(2)	0	(0)	1	(2)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
King's College	2	(1)	4	(3)	6	(4)	36	(29)	3	(1)	39	(30)	10	(6)	16	(21)
Leeds	1	(3)	2	(1)	3	(4)	12	(14)	0	(0)	12	(14)	8	(4)	10	(7)
Newcastle	0	(1)	0	(0)	0	(1)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
Royal Free	0	(3)	1	(0)	1	(3)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
TOTAL	**9**	**(15)**	**13**	**(6)**	**22**	**(21)**	**74**	**(76)**	**3**	**(1)**	**77**	**(77)**	**18[4]**	**(12)[5]**	**33**	**(37)**

* Waiting list figures are as at 31 March 2021 and 29 February 2020
[1] Includes donors whose livers were retrieved by other teams
[2] Includes 1 and 3 living liver lobe transplants in NHS Group 1 and Group 2 recipients, respectively
[3] Includes 3 and 3 living liver lobe transplants, and 1 and 0 domino transplants in NHS Group 1 and Group 2 recipients, respectively
[4] Includes 13 and 5 living liver lobe transplants in NHS Group 1 and Group 2 recipients, respectively
[5] Includes 11 and 1 living liver lobe transplants in NHS Group 1 and Group 2 recipients, respectively
[6] Includes 1 transplant at London Bridge involving a private patient

8.2 Transplant list

During 2020-2021, 1,064 patients joined the liver transplant list. Outcomes for patients on the list at 1 April 2020 and those joining the list during the year are shown in **Table 8.2**. There have been 103 (10%) new registrations that were super-urgent.

Table 8.2 Liver transplant list and new registrations in the UK, 1 April 2020 - 31 March 2021

Outcome of patient at 31 March 2021	Active and suspended patients at 1 April 2020		New registrations in 2020-2021[1]		TOTAL	
	N	%	N	%	**N**	**%**
Remained active/suspended	208	38	391	37	599	37
Transplanted	243	44	524	49	767	47
Removed[2]	75	14	108	10	183	11
Died[3]	27	5	41	4	68	4
TOTAL	**553**		**1064**		**1617**	

[1] Includes re-registrations for second or subsequent patients
[2] Includes 52 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 31 March 2021 and 29 February 2020 by country/NHS region of patient's residence. At 31 March 2021, the overall rate was 1.8 pmp and ranged from 0.9 to 2.6 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) 2021		2020[1]	
North East and Yorkshire	11	(1.3)	51	(5.9)
North West	14	(2.0)	49	(6.9)
Midlands	28	(2.6)	78	(7.4)
East of England	6	(0.9)	43	(6.6)
London	14	(1.6)	44	(4.9)
South East	12	(1.3)	42	(4.7)
South West	9	(1.6)	48	(8.5)
England	**94**	**(1.7)**	**355**	**(6.3)**
Isle of Man	**0**	**(0.0)**	**1**	**(12.5)**
Channel Islands	**1**	**(5.9)**	**0**	**(0.0)**
Wales	**5**	**(1.6)**	**27**	**(8.6)**
Scotland	**13**	**(2.4)**	**54**	**(9.9)**
Northern Ireland	**3**	**(1.6)**	**19**	**(10.1)**
TOTAL[2]	**123**	**(1.8)**	**466**	**(7.0)**

[1]As at 29 February 2020
[2] Includes patients in 2021 (2020) resident in: UK unknown 0 (1) Republic of Ireland - 5 (3); Overseas - 2 (6)

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, 74% of patients had received a liver transplant while 7% 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 1066 new elective liver only registrations made in the UK, 1 April 2018 - 31 March 2019**

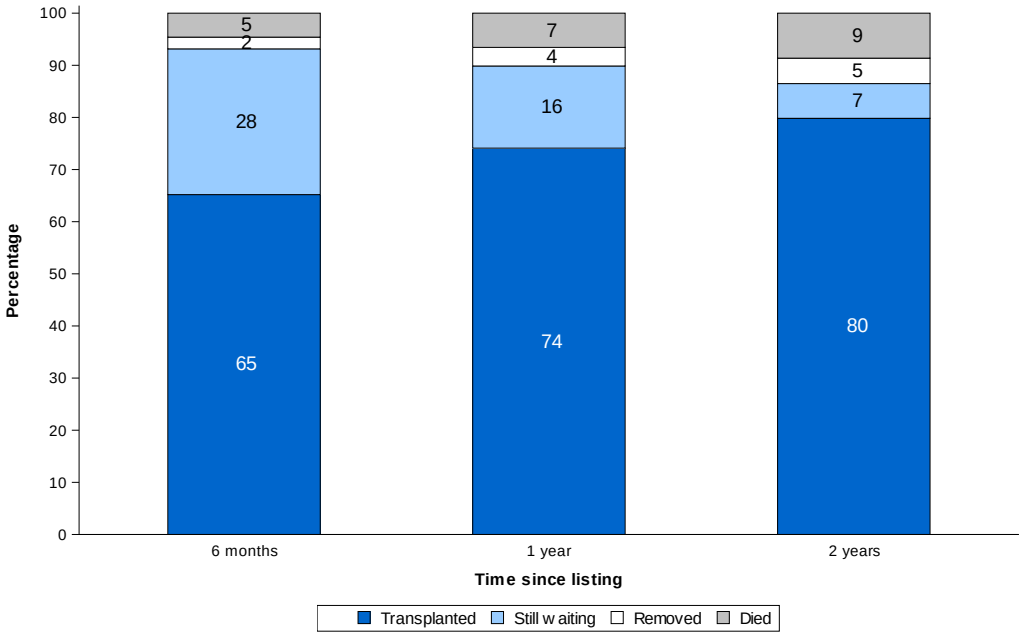


Table 8.4 and **Table 8.5** show the median waiting time to liver transplant for adult and paediatric elective registrations, separately, including a breakdown by blood group and ethnicity for adult elective registrations only. On average, adult patients wait 72 days for a transplant while paediatric patients wait an average of 74 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 patients registered 1 April 2018 - 31 March 2020**

Blood group	Number of patients registered	Waiting time (days) Median	95% Confidence interval
Adult			
O	862	100	82 - 118
A	762	52	42 - 62
B	211	119	90 - 148
AB	92	23	14 - 32
TOTAL	**1927**	**72**	**64 - 80**
Paediatric	**142**	**74**	**54 - 94**

Table 8.5 Median waiting time to liver transplant in the UK, for patients registered 1 April 2018 - 31 March 2020

Ethnicity	Number of patients registered	Waiting time (days)	
		Median	95% Confidence interval
Adult			
White	1652	70	62 - 78
Asian	124	87	57 - 117
Black	43	81	21 - 141
Other	61	36	21 - 51
TOTAL	**1927**	**72**	**64 - 80**
Paediatric	**142**	**74**	**54 - 94**

8.3 Donor and organ supply

Of the 1,180 organ donors, 870 (74%) donated their liver and 712 (82%) of these donated livers were used; see **Table 8.6**. Of livers retrieved from donors after brain death and donors after circulatory death, 86% and 65% were transplanted, respectively. Segments from 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 2020 - 31 March 2021, 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	148	82	**230**	134	41	**175**	134	(115)	41	(30)	**175**	**(145)**
Cambridge	55	52	**107**	51	28	**79**	51	(46)	28	(21)	**79**	**(67)**
Edinburgh	110	51	**161**	102	19	**121**	102	(86)	19	(11)	**121**	**(97)**
King's College	203	86	**289**	181	44	**225**	181	(158)	44	(28)	**225**	**(186)**
Leeds	135	94	**229**	122	30	**152**	122	(104)	30	(18)	**152**	**(122)**
Newcastle	44	20	**64**	34	5	**39**	34	(30)	5	(2)	**39**	**(32)**
Royal Free	71	29	**100**	64	15	**79**	64	(54)	15	(9)	**79**	**(63)**
TOTAL	**766**	**414**	**1180**	**688**	**182**	**870**	**688**	**(593)**	**182**	**(119)**	**870**	**(712)**

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 13.0 pmp in 2020-2021 and ranged from 10.3 pmp to 15.5 pmp across English NHS regions.

Table 8.7 Liver donor rates in the UK, 1 April 2020 - 31 March 2021, by Country/NHS region

Country/ NHS region	Deceased donors (pmp)					
	DBD		DCD		**Total**	
North East and Yorkshire	84	(9.8)	14	(1.6)	**98**	**(11.4)**
North West	65	(9.2)	14	(2.0)	**79**	**(11.2)**
Midlands	86	(8.1)	36	(3.4)	**122**	**(11.5)**
East of England	59	(9.0)	33	(5.1)	**92**	**(14.1)**
London	75	(8.4)	17	(1.9)	**92**	**(10.3)**
South East	109	(12.2)	25	(2.8)	**134**	**(15.1)**
South West	73	(13.0)	14	(2.5)	**87**	**(15.5)**
England	**551**	**(9.8)**	**153**	**(2.7)**	704	(12.5)
Isle of Man	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**
Channel Islands	**1**	**(5.9)**	**0**	**(0.0)**	**1**	**(5.9)**
Wales	**36**	**(11.4)**	**8**	**(2.5)**	**44**	**(14.0)**
Scotland	**60**	**(11.0)**	**11**	**(2.0)**	**71**	**(13.0)**
Northern Ireland	**29**	**(15.3)**	**5**	**(2.6)**	**34**	**(18.0)**
TOTAL[1]	**688**	**(10.3)**	**182**	**(2.7)**	**870**	**(13.0)**

[1] Includes 16 donors with unknown UK 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 10.0 to 11.4 pmp across English NHS regions and overall was 11.0 pmp.

Table 8.8 Liver transplant rates per million population (pmp) in the UK, 1 April 2020 - 31 March 2021, by Country/NHS region

Country/ NHS region	Deceased transplants (pmp)						Living transplants (pmp)	
	DBD		DCD		Total			
North East and Yorkshire	76	(8.8)	10	(1.2)	**86**	**(10.0)**	3	(0.3)
North West	60	(8.5)	13	(1.8)	**73**	**(10.3)**	1	(0.1)
Midlands	113	(10.7)	8	(0.8)	**121**	**(11.4)**	0	(0.0)
East of England	44	(6.7)	30	(4.6)	**74**	**(11.3)**	2	(0.3)
London	83	(9.3)	16	(1.8)	**99**	**(11.0)**	3	(0.3)
South East	74	(8.3)	18	(2.0)	**92**	**(10.3)**	0	(0.0)
South West	50	(8.9)	11	(2.0)	**61**	**(10.8)**	0	(0.0)
England	**500**	**(8.9)**	**106**	**(1.9)**	**606**	**(10.8)**	**9**	**(0.2)**
Isle of Man	**2**	**(25.0)**	**0**	**(0.0)**	**2**	**(25.0)**	**0**	**(0.0)**
Channel Islands	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**
Wales	**27**	**(8.6)**	**2**	**(0.6)**	**29**	**(9.2)**	**1**	**(0.3)**
Scotland	**65**	**(11.9)**	**6**	**(1.1)**	**71**	**(13.0)**	**3**	**(0.5)**
Northern Ireland	**22**	**(11.6)**	**7**	**(3.7)**	**29**	**(15.3)**	**0**	**(0.0)**
TOTAL[1,2]	**622**	**(9.2)**	**121**	**(1.8)**	**743**	**(11.0)**	**14**	**(0.2)**

[1] Excludes 14 recipients who reside outside the UK (6 DBD, 0 DCD, 8 Living)
[2] Includes 7 recipients in the UK with an unknown postcode

The number of whole, reduced and split liver transplants by urgency status of the transplant (elective, super-urgent) in 2020-2021 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 19% in 2020-2021. There were 749 deceased donor liver transplants performed in 2020-2021: 648 whole liver, including 7 liver and kidney, 2 liver and heart and 1 liver and lung; 74 split liver, and 27 deceased liver lobe. Split liver transplants accounted for 73% of liver lobe transplant activity.

Table 8.9 Deceased liver transplants performed in the UK, 1 April 2019 - 31 March 2021

Transplant centre	2019 - 2020								2020 - 2021							
	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	183	17	7	2	19	2	**209**	**21**	123	12	3	1	26	3	**152**	**17**
Cambridge	84	10	0	0	5	0	**89**	**10**	72	12	0	0	3	0	**75**	**12**
Edinburgh	55	8	0	0	2	0	**57**	**8**	63	4	0	0	0	0	**63**	**4**
King's College	172	21	3	6	24	1	**199**	**28**	144	12	12	7	26	2	**182**	**21**
Leeds	100	11	3	1	9	0	**112**	**12**	85	10	4	0	9	1	**98**	**11**
Newcastle	31	5	0	0	0	0	**31**	**5**	30	4	0	0	0	0	**30**	**4**
Royal Free	118	15	0	0	8	0	**126**	**15**	68	7	0	0	4	0	**72**	**7**
TOTAL	**743**	**87**	**13**	**9**	**67**	**3**	**823**	**99**	**586**[1]	**62**	**19**	**8**	**68**	**6**	**673**	**76**

E=Elective, SU=Super-urgent
Birmingham, King's College and Leeds transplant paediatric patients
[1] Includes 1 transplant at London Bridge involving a private patient

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 2020-2021, the median CIT for a DBD donor whole liver only transplant was 8.8 hours (Inter-Quartile (IQ) range 7.3 – 10.4) and for a DCD donor whole liver only transplant was 7.3 hours (IQ range 5.9 – 9.8) and overall was 8.6 hours (IQ range 7.0 – 10.4). Please note some of the reported CITs may 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 2021 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 2020 - 31 March 2021, and active transplant list patients as at 31 March in the UK

Age group (years)	Donors		Transplant recipients		Active transplant list patients	
	N	(%)	N	(%)	N	(%)
0 - 17	39	(4)	81	(11)	34	(28)
18 - 34	158	(18)	93	(12)	18	(15)
35 - 49	211	(24)	144	(19)	28	(23)
50 - 59	248	(29)	218	(29)	20	(16)
60 - 69	143	(16)	201	(27)	20	(16)
70+	71	(8)	12	(2)	3	(2)
Mean (SD)	48	(16)	47	(19)	36	(22)
Male	460	(53)	451	(60)	69	(56)
Female	410	(47)	298	(40)	54	(44)
White	779	(92)	628	(86)	99	(83)
Asian	22	(3)	63	(9)	15	(13)
Black	17	(2)	24	(3)	3	(3)
Chinese	4	(0)	5	(1)	0	(0)
Other	23	(3)	12	(2)	3	(3)
Not reported	25	-	17	-	3	-
O	397	(46)	303	(40)	65	(53)
A	357	(41)	317	(42)	33	(27)
B	97	(11)	88	(12)	25	(20)
AB	18	(2)	41	(5)	0	(0)
Not reported	1	-	0	-	0	-
First graft			667	(89)	102	(83)
Re-graft			82	(11)	21	(17)
TOTAL	**870[1]**	**(100)**	**749**	**(100)**	**123**	**(100)**

Intestinal Activity

Key messages

- **There were 14 patients on the active intestinal transplant list at 31 March 2021 in total**
- **There were 20 registrations for an intestinal transplant in 2020-2021, corresponding to 20 patients (13 adult and 7 paediatric patients)**
- **12 intestinal transplants were carried out in 2020-2021 (20 in the previous year)**
- **On average, patients wait 4 months for a transplant**

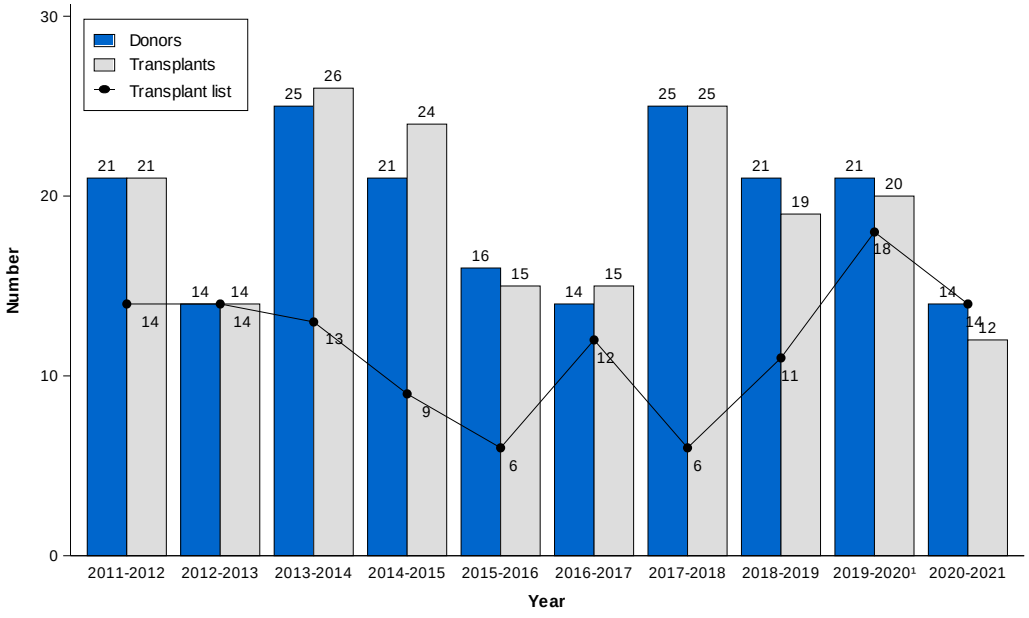
9.1 Overview

Note that the COVID-19 pandemic will have affected the number of offered, retrieved and transplanted organs in 2020-2021.

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 decreased since 2020 by 22% to 14. In the last financial year, the number of intestinal transplants decreased to the lowest number seen in the period analysed.

Figure 9.1 Deceased donor intestinal programme in the UK, 1 April 2011 - 31 March 2021, Number of donors, transplants and patients on the active transplant list at 31 March



¹ Transplant list as at 29 February 2020

9.2 Transplant list

In 2020-2021, there were 20 registrations for an intestinal transplant corresponding to 20 patients. The outcome of these registrations for paediatric (aged <18 years) and adult patients, as at 31 March 2021, broken down by transplant centre, can be found in **Table 9.1**. Overall, 10 (50%) remained active/suspended, 8 (40%) resulted in a transplant, 1 (5%) died on the transplant list, and 1 (5%) were removed.

Table 9.1 Outcome of intestinal registrations in the UK, 1 April 2020 and 31 March 2021

Transplant centre	Outcome of registrations as at 31 March 2021								TOTAL
	Transplanted		Died		Removed		Active/Susp		
	N	%	N	%	N	%	N	%	
Adult									
Cambridge	4	33	1	8	0	0	7	58	12
Oxford	0	0	0	0	0	0	1	100	1
TOTAL	**4**	**31**	**1**	**8**	**0**	**0**	**8**	**62**	**13**
Paediatric									
Birmingham	4	67	0	0	0	0	2	33	6
King's College	0	0	0	0	1	100	0	0	1
TOTAL	**4**	**57**	**0**	**0**	**1**	**14**	**2**	**29**	**7**

Table 9.2 shows the active intestinal transplant list in the UK at 31 March 2021 and 29 February 2020 by country/NHS region of patient's residence. At 31 March 2021, the overall transplant list rate was 0.2 pmp and ranged from 0.1 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[1], by country/NHS region of patient residence			
Country/ NHS region of residence	**Intestinal transplant list (pmp)**			
	2021		2020[1]	
North East and Yorkshire	2	(0.2)	2	(0.2)
North West	1	(0.1)	2	(0.3)
Midlands	2	(0.2)	3	(0.3)
East of England	4	(0.6)	4	(0.6)
London	1	(0.1)	3	(0.3)
South East	2	(0.2)	2	(0.2)
South West	1	(0.2)	1	(0.2)
England	**13**	**(0.2)**	**17**	**(0.3)**
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	**1**	**(0.2)**	**0**	**(0.0)**
Northern Ireland	**0**	**(0.0)**	**0**	**(0.0)**
TOTAL[2]	**14**	**(0.2)**	**19**	**(0.3)**

[1] As at 29 February 2020
[2] Includes patients in 2021 (2020) resident Overseas 0 (2)

Table 9.3 shows median waiting time to elective intestinal transplant by registration type. On average, patients wait 116 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 2016 - 31 March 2020, by registration type		
Registration type	Number of patients registered	Waiting time (days)	
		Median	95% Confidence interval
Bowel only[1]	18	59	0 – 151
Liver, bowel and pancreas[1]	55	197	126 – 248
Bowel and pancreas[1]	39	71	18 – 124
TOTAL	**112**	**116**	**81 – 151**

[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 0.2 pmp and ranged from 0.0 to 0.6 pmp across NHS regions. Of the 766 DBD solid organ donors, 14 (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 2020 - 31 March 2021, 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	101	(11.7)	0	(0.0)	-	-
North West	77	(10.9)	2	(0.3)	2.6	2
Midlands	91	(8.6)	1	(0.1)	1.1	1
East of England	70	(10.7)	1	(0.2)	1.4	1
London	80	(8.9)	2	(0.2)	2.5	1
South East	120	(13.5)	5	(0.6)	4.2	4
South West	80	(14.2)	2	(0.4)	2.5	2
England	**619**	**(11.0)**	**13**	**(0.2)**	**2.1**	**11**
Isle of Man	**0**	**(0.0)**	**0**	**(0.0)**	**-**	**-**
Channel Islands	**1**	**(5.9)**	**0**	**(0.0)**	**-**	**-**
Wales	**38**	**(12.1)**	**1**	**(0.3)**	**2.6**	**1**
Scotland	**62**	**(11.4)**	**0**	**(0.0)**	**-**	**-**
Northern Ireland	**33**	**(17.5)**	**0**	**(0.0)**	**-**	**-**
TOTAL[1]	**766**	**(11.4)**	**14**	**(0.2)**	**1.8**	**12**

[1] UK includes 13 donors with unknown UK postcode

9.4 Transplants

Table 9.5 shows intestinal transplant activity by transplant centre and transplant type for financial years 2019-2020 and 2020-2021. In 2020-2021, there were a total of 12 transplants, 6 adult and 6 paediatric transplants.

At 31 March 2021 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 2020 - 31 March 2021 (2019-2020)

Transplant centre	Transplant type										**TOTAL**	
	BO		LBP		MV		MMV		LB			
Adult												
Cambridge	0	(0)	0	(0)	1	(6)	5	(6)	0	(0)	6	(12)
Oxford	0	(5)	0	(0)	0	(0)	0	(0)	0	(0)	0	(5)
TOTAL	**0**	**(5)**	**0**	**(0)**	**1**	**(6)**	**5**	**(6)**	**0**	**(0)**	**6**	**(17)**
Paediatric												
Birmingham	1	(0)	0	(0)	4	(0)	0	(0)	0	(0)	5	(0)
King's College	1	(1)	0	(0)	0	(2)	0	(0)	0	(0)	1	(3)
TOTAL	**2**	**(1)**	**0**	**(0)**	**4**	**(2)**	**0**	**(0)**	**0**	**(0)**	**6**	**(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 2020 - 31 March 2021, and transplant list patients at 31 March in the UK

Age group (years)	Donors		Transplant recipients		Active transplant list patients	
	N	(%)	N	(%)	N	(%)
0 - 17	8	(57)	6	(50)	6	(43)
18 - 34	3	(21)	3	(25)	1	(7)
35 - 49	3	(21)	2	(17)	6	(43)
50 - 59	0	(0)	1	(8)	0	(0)
60 - 69	0	(0)	0	(0)	1	(7)
mean (SD)	21	(16)	21	(16)	28	(21)
Male	12	(86)	7	(58)	8	(57)
Female	2	(14)	5	(42)	6	(43)
White	14	(100)	10	(83)	10	(71)
Asian	0	(0)	1	(8)	2	(14)
Chinese	0	(0)	0	(0)	1	(7)
Other	0	(0)	1	(8)	1	(7)
O	10	(71)	7	(58)	7	(50)
A	4	(29)	5	(42)	5	(36)
B	0	(0)	0	(0)	2	(14)
First graft			12	(100)	13	(93)
Re-graft			0	(0)	1	(7)
TOTAL	**14**	**(100)**	**12**	**(100)**	**14**	**(100)**

Cornea Activity

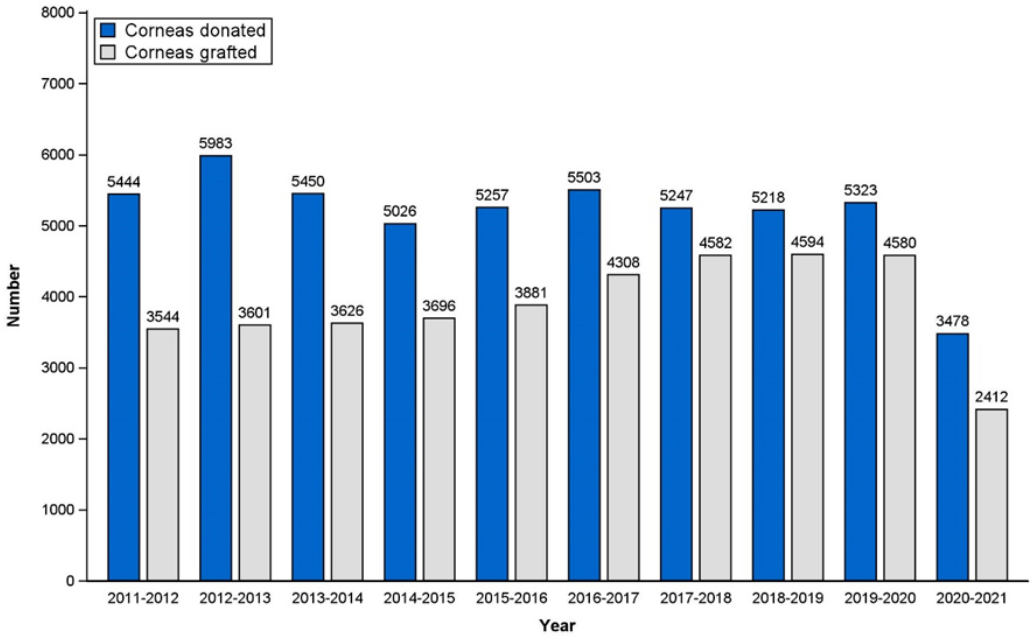
Key messages

- **3,478 corneas were supplied to NHSBT Eye Banks**
- **Corneas were retrieved from 1,467 cornea-only donors and from 332 solid organ donors after brainstem death (64%) or after circulatory death (36%)**
- **The number of transplants decreased to 2,412 due to COVID-19**
- **9%, 32% and 16% of corneal transplants were for keratoconus, Fuchs endothelial dystrophy and pseudophakic bullous keratopathy patients, respectively**
- **The proportion of descemet membrane endothelial keratoplasty transplants have increased to 29%**
- **833 eyes (corneas or globes) were supplied to support research or training**

10.1 Overview

The number of corneas donated in 2020-2021 was 3478, representing a decrease of 35% from last year, as shown in **Figure 10.1**. In the last financial year, the number of corneal transplants has fallen to 2412, representing a decrease of 47% from last year, as a result of the impact of COVID-19 on donation and transplantation from 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 2011 - 31 March 2021, Number of corneas retrieved to NHSBT Eye Banks and corneas grafted



In 2020-2021, of 1799 donors whose corneas were received by NHSBT Eye Banks, 1467 were cornea-only donors and 332 were cornea and solid organ donors: see **Table 10.1**. Compared to 2019-2020, the number of cornea-only donors decreased by 37%, and the number of cornea and solid organ donors decreased by 16%. In 2020-2021, corneas were retrieved from 213 organ donors after brainstem death and 119 organ donors after cardiac death.

Table 10.1 also shows the number and rate per million population (pmp) of donors whose corneas were retrieved to NHSBT Eye Banks in 2020-2021, by country and NHS region. Information for 2019-2020 is shown for comparison. No adjustments have been made for potential demographic differences in populations. In 2020-2021, the corneal donor rate fell across England, Scotland, Wales, and Northern Ireland. England had the highest corneal donor rate of countries in the UK (28.0 pmp). Across the NHS regions in England, the corneal donor rate ranged from 13.4 pmp to 54.9 pmp.

Table 10.1 Corneal donor rates per million population (pmp) in the UK, 1 April 2020 - 31 March 2021 (2019 - 2020), by country/ NHS region for donors whose corneas were retrieved to NHSBT Eye Banks

Country of residence/ NHS region	Cornea-only		Solid organ and cornea		TOTAL		TOTAL pmp	
North East and Yorkshire	185	(235)	47	(52)	232	(287)	27.0	(33.4)
North West	300	(522)	39	(38)	339	(560)	48.0	(79.3)
Midlands	191	(310)	23	(58)	214	(368)	20.2	(34.7)
East of England	176	(237)	40	(41)	216	(278)	33.1	(42.6)
London	72	(158)	48	(64)	120	(222)	13.4	(24.8)
South East	84	(195)	60	(63)	144	(258)	16.2	(29.0)
South West	268	(284)	41	(31)	309	(315)	54.9	(56.0)
England	**1276**	**(1941)**	**298**	**(347)**	**1574**	**(2288)**	**28.0**	**(40.6)**
Isle of Man	**0**	**(0)**	**0**	**(0)**	**0**	**(0)**	**0.0**	**(0.0)**
Channel Islands	**0**	**(0)**	**0**	**(0)**	**0**	**(0)**	**0.0**	**(0.0)**
Wales	**42**	**(85)**	**16**	**(17)**	**58**	**(102)**	**18.4**	**(32.4)**
Scotland	**25**	**(43)**	**12**	**(12)**	**37**	**(55)**	**6.8**	**(10.1)**
Northern Ireland	**7**	**(13)**	**5**	**(13)**	**12**	**(26)**	**6.3**	**(13.8)**
TOTAL[1]	**1467**	**(2332)**	**332**	**(394)**	**1799**	**(2726)**	**26.8**	**(40.7)**

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

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 10.2**. 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 fell by 35% in 2020-2021 and the number of corneas issued fell by 38%. In 2020-2021, 3478 corneas were retrieved to NHSBT Eye Banks, of which 2548 (73%) were subsequently issued for transplantation. A further 833 eyes (corneas or globes) were supplied to support research or training.

Table 10.2 Corneas retrieved into NHSBT Eye Banks, by year 1 April 2020 - 31 March 2021 (2019-2020)

Eye bank	Total retrieved		Number issued[1]		% issued		Difference between number retrieved and issued	
Filton	2253	(4027)	1716	(3266)	76	(81)	537	(761)
David Lucas	1225	(938)	832	(614)	68	(65)	393	(324)
Manchester	0	(358)	0	(251)	0	(70)	0	(107)
Total	**3478**	**(5323)**	**2548**	**(4131)**	**73**	**(78)**	**930**	**(1192)**

[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

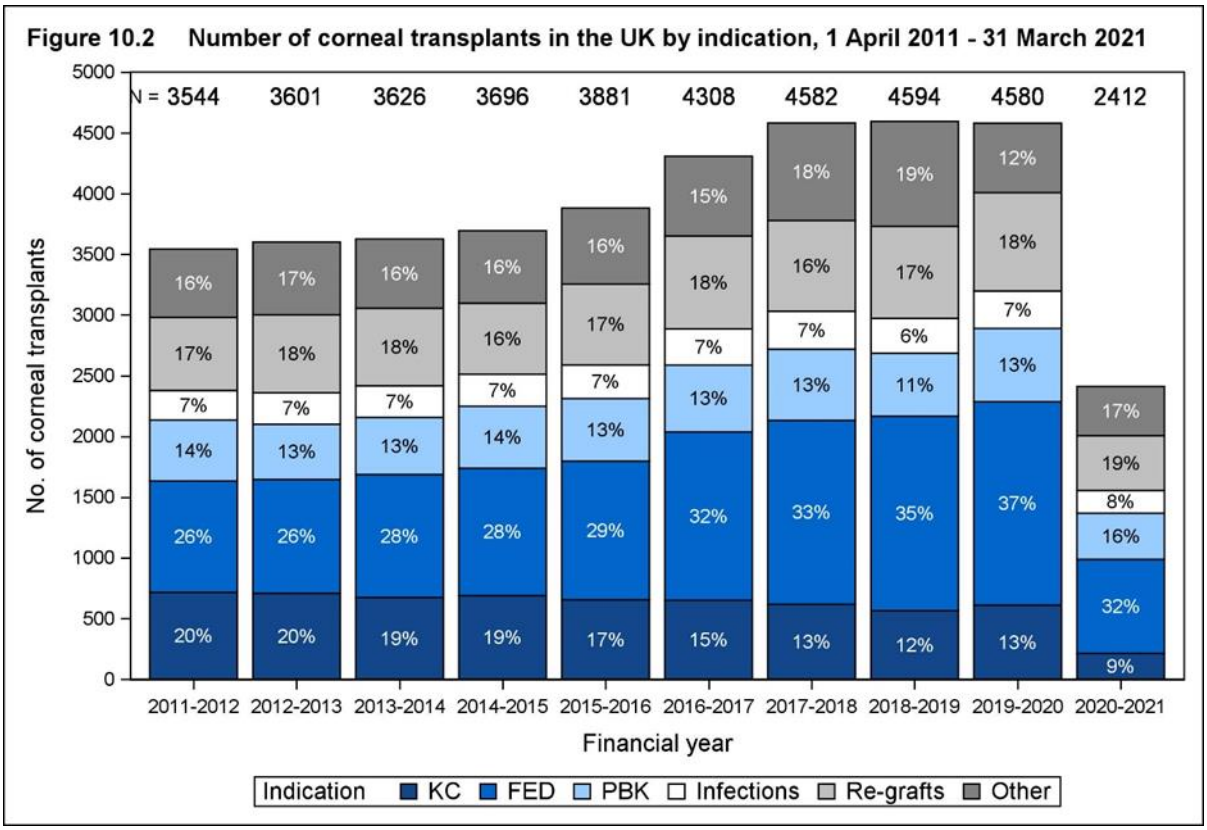
Corneal transplant activity in the UK by country of residence and NHS regions for the years 2019-2020 and 2020-2021 is detailed in **Table 10.3**. Corneas were supplied by NHSBT and non-NHSBT Eye Banks for corneal transplants in the UK. No adjustments have been made for potential demographic differences in populations. The overall transplant rate was 68.3 pmp in 2019-2020. This fell to 36.0 pmp in 2020-2021. Transplant rates decreased in all countries and NHS regions. England had the highest transplant rate in the UK: 38.5 pmp, and this ranged from 24.8 pmp to 50.3 pmp across the NHS regions.

Table 10.3 Cornea transplants performed per million population (pmp) in the UK, 1 April 2019 - 31 March 2021, by country/NHS region

Country of residence/ NHS region	Number of transplants (pmp) 2019-2020		2020-2021	
North East and Yorkshire	511	(59.4)	250	(29.1)
North West	611	(86.5)	355	(50.3)
Midlands	712	(67.2)	263	(24.8)
East of England	467	(71.5)	276	(42.3)
London	646	(72.1)	392	(43.8)
South East	673	(75.6)	386	(43.4)
South West	359	(63.8)	244	(43.3)
England	**3979**	**(70.7)**	**2166**	**(38.5)**
Isle of Man	**5**	**(62.5)**	**0**	**(0)**
Channel Islands	**8**	**(47.1)**	**2**	**(11.8)**
Wales	**169**	**(53.7)**	**67**	**(21.3)**
Scotland	**282**	**(51.6)**	**127**	**(23.3)**
Northern Ireland	**64**	**(33.9)**	**17**	**(9.0)**
TOTAL[1]	**4580**	**(68.3)**	**2412**	**(36.0)**

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

Figure 10.2 shows the number of corneal transplants in the UK by indication for transplant from 1 April 2011 to 31 March 2021. For corneas transplanted in 2019-2020 and 2020-2021, a further breakdown by indication is shown in **Table 10.4.**



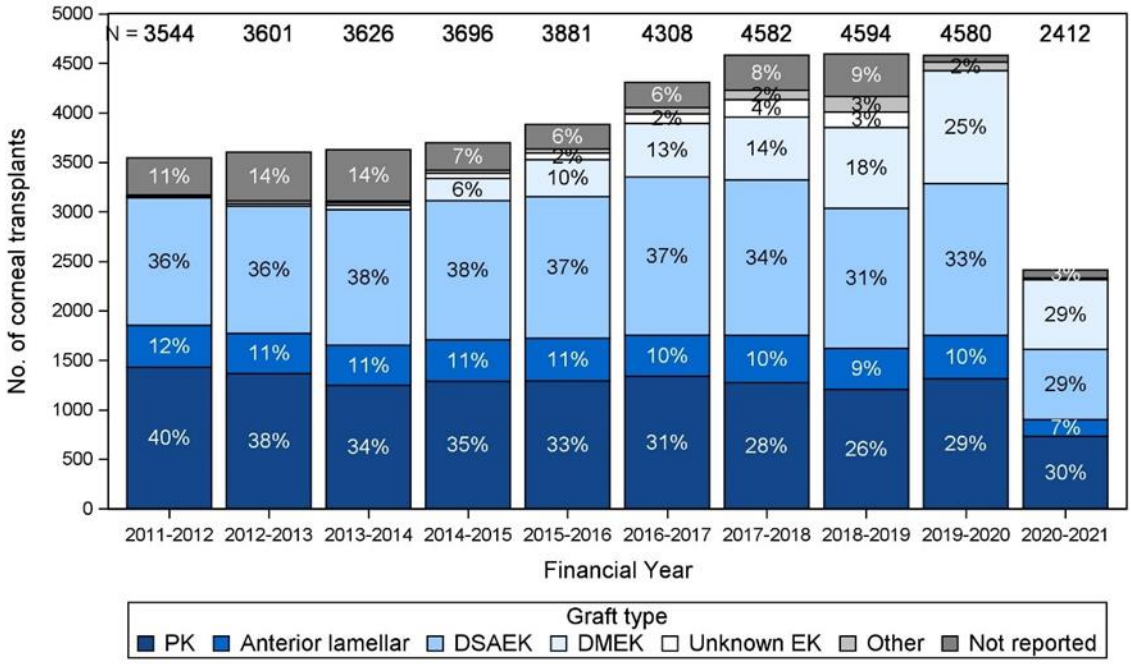
Higher risk indications were prioritised in 2020-2021 due to COVID-19, therefore the proportion of transplants performed for keratoconus (KC) patients reduced from 13% to 9%. There was also a decrease in the proportion of corneal transplants for Fuchs endothelial dystrophy (FED) patients and a slight increase in the proportion of pseudophakic bullous keratopathy (PBK) patients. The proportion of patients with an infection or re-graft has remained stable. The most common indication for transplantation is FED representing 32% of corneal transplants in 2020-2021.

Table 10.4 Corneal transplants in the UK by indication and financial year, 1 April 2019 - 31 March 2021				
Indication for transplant	**2019 - 2020**		**2020 - 2021**	
	N	**%**	**N**	**%**
Keratoconus (KC)	**610**	**13.3**	**214**	**8.9**
Fuchs endothelial dystrophy (FED)	**1676**	**36.6**	**773**	**32.0**
Pseudophakic bullous keratopathy (PBK)	**604**	**13.2**	**381**	**15.8**
Infections	**308**	**6.7**	**187**	**7.8**
Re-grafts	**810**	**17.7**	**450**	**18.7**
Other (listed below)	**572**	**12.5**	**407**	**16.9**
Ectasias	16	0.3	15	0.6
Dystrophies	67	1.5	34	1.4
Previous ocular surgery	125	2.7	65	2.7
Injury	61	1.3	35	1.5
Ulcerative keratitis	46	1.0	28	1.2
Opacification	99	2.2	52	2.2
Miscellaneous	130	2.8	106	4.4
Not reported	28	0.6	72	3.0
Total	**4580**	**100.0**	**2412**	**100.0**

Figure 10.3 shows the number of corneal transplants in the UK by graft type from 1 April 2011 to 31 March 2021. Over the last 10 years, the proportion of penetrating keratoplasty (PK) grafts has reduced by a quarter, 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. Prior to 2019-2020, 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 2019-2020 and 2020-2021 is shown in **Table 10.5.**

Figure 10.3 Number of corneal transplants in the UK by graft type, 1 April 2011 - 31 March 2021



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

In 2020-2021, 29.4% of grafts were DSAEK and 29.1% were DMEK grafts. Anterior lamellar transplants dropped to 7.0% of all grafts, likely due to the reduction in corneal transplants for KC patients. PK grafts account for 30.3% of transplants in 2020-2021.

Table 10.5 Corneal transplants in the UK by graft type and financial year, 1 April 2019 - 31 March 2021

Graft type	2019 - 2020		2020 - 2021	
	N	%	N	%
PK	1313	28.7	731	30.3
Anterior lamellar	439	9.6	169	7.0
DSAEK	1533	33.5	710	29.4
DMEK	1141	24.9	702	29.1
Other	87	1.9	18	0.7
Not reported	67	1.5	82	3.4
All grafts	**4580**	**100.0**	**2412**	**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 10.6**.

Table 10.6 Demographic characteristics of donors whose corneas were retrieved to NHSBT Eye Banks and transplant recipients in the UK, 1 April 2020 - 31 March 2021

	Cornea-only donors		Solid organ and cornea donors		Transplant recipients	
	N	%	N	%	N	%
Age group (years)						
0 - 17	11	0.7	2	0.6	30	1.2
18 - 34	32	2.2	28	8.4	184	7.6
35 - 49	101	6.9	67	20.2	247	10.2
50 - 59	174	11.9	109	32.8	262	10.9
60 - 69	302	20.6	80	24.1	450	18.7
70-79	550	37.5	43	13.0	705	29.2
80+	297	20.2	3	0.9	534	22.1
Mean (SD)	68	(13)	54	(13)	65	(18)
Sex						
Male	886	60.4	199	59.9	1241	51.5
Female	581	39.6	133	40.1	1171	48.5
Ethnicity						
White	71	4.8	298	89.8	1955	81.1
Asian	3	0.2	10	3.0	185	7.7
Black	1	0.1	3	0.9	101	4.2
Chinese	0	0.0	0	0.0	11	0.5
Other	3	0.2	1	0.3	21	0.9
Not reported	1389	94.7	20	6.0	139	5.8
TOTAL	**1467**	**100.0**	**332**	**100.0**	**2412**	**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-year survival over the time periods shown, ($p<0.01$ and $p=0.01$, 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 ($p>0.6$).

Figure 11.1 Long-term graft survival after first adult kidney only transplant from donors after brain death, 1 January 2007 – 31 December 2019

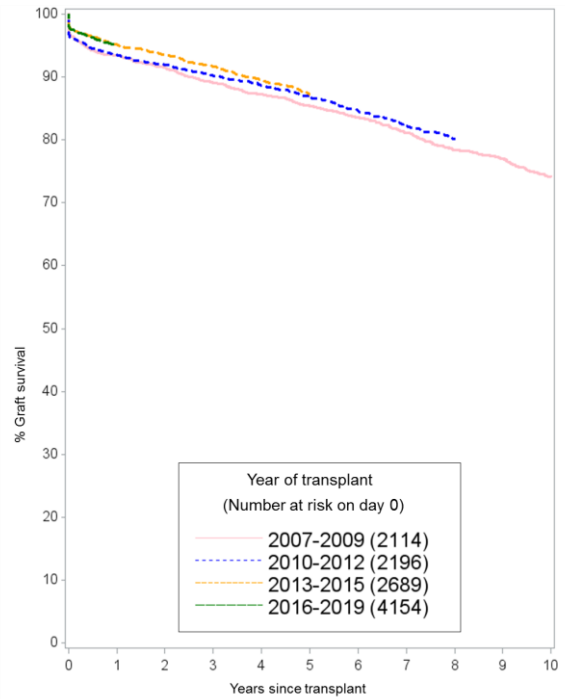


Table 11.1 Graft survival after first adult kidney only transplant from a DBD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2007-2009	2114	93	(92-94)	91	(90-93)	85	(84-87)	74	(72-76)
2010-2012	2196	93	(92-94)	92	(91-93)	87	(85-88)		
2013-2015	2689	95	(94-96)	94	(93-94)	87	(86-89)		
2016-2019	4154	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	
2007-2009	2114	96	(95-97)	95	(93-95)	89	(88-91)	77	(75-79)
2010-2012	2198	96	(96-97)	94	(93-95)	89	(87-90)		
2013-2015	2690	97	(96-97)	95	(94-96)	89	(87-90)		
2016-2019	4156	97	(96-97)						

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

Long-term graft survival in adult recipients for kidney transplants from donors after circulatory death is shown in **Figure 11.2**. **Table 11.3** shows the graft survival estimates and confidence intervals for one, two, five and ten years post-transplant. There has been significant variation in one year survival over the time periods shown, p=0.02. **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=0.008).

Figure 11.2 Long-term graft survival after first adult kidney only transplant from donors after circulatory death, 1 January 2007 – 31 December 2019

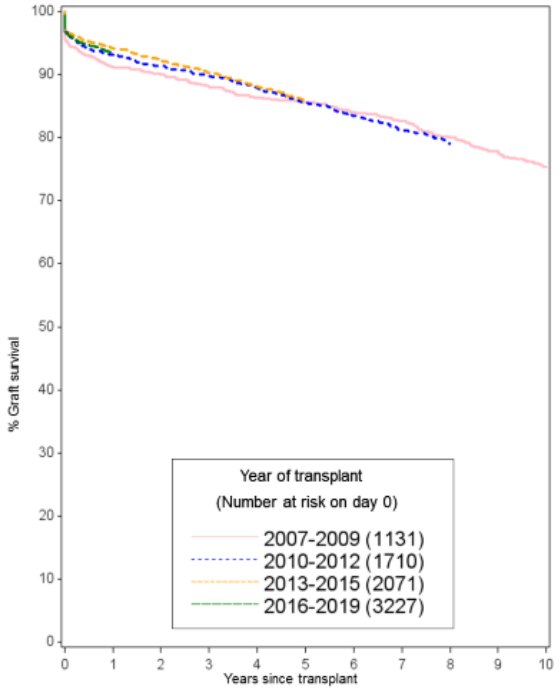


Table 11.3 Graft survival after first adult kidney only transplant from a DCD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2007-2009	1131	91	(89-93)	90	(88-92)	86	(83-88)	75	(73-78)
2010-2012	1710	93	(92-94)	91	(90-93)	86	(84-87)		
2013-2015	2071	94	(93-95)	92	(91-93)	86	(84-87)		
2016-2019	3227	93	(93-94)						

Table 11.4 Patient survival after first adult kidney only transplant from a DCD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year		Ten year	
2007-2009	1132	96	(94-97)	94	(93-95)	88	(86-90)	76	(73-79)
2010-2012	1710	95	(94-96)	93	(92-94)	85	(84-87)		
2013-2015	2072	96	(96-97)	95	(93-95)	86	(85-88)		
2016-2019	3231	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>0.2).

Figure 11.3 Long-term graft survival after first adult living donor kidney only transplant in the UK, 1 January 2007 – 31 December 2019

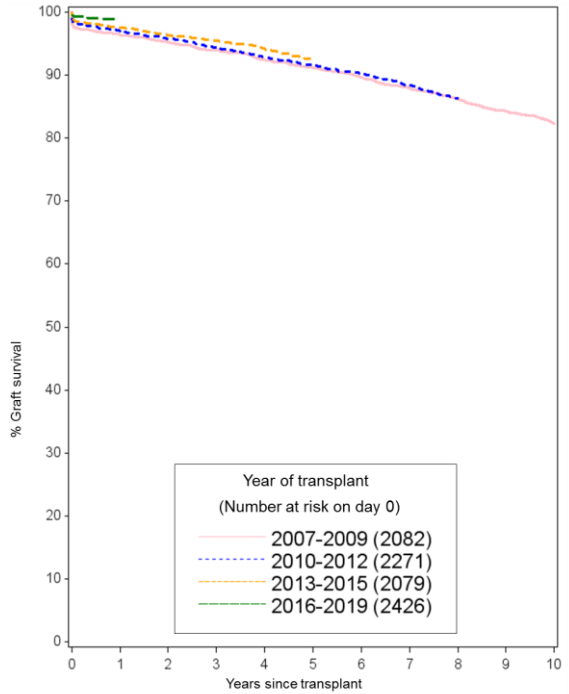


Table 11.5 Graft survival after first adult living donor kidney transplant

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2007-2009	2082	96	(95-97)	95	(94-96)	91	(90-92)	82	(81-84)
2010-2012	2271	97	(96-98)	96	(95-97)	92	(90-93)		
2013-2015	2079	98	(97-98)	96	(95-97)	93	(91-94)		
2016-2019	2426	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	
2007-2009	2082	99	(98-99)	98	(97-99)	95	(94-96)	87	(86-89)
2010-2012	2271	99	(98-99)	98	(97-98)	94	(93-95)		
2013-2015	2079	99	(98-99)	98	(97-99)	95	(94-96)		
2016-2019	2428	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>0.3). **Table 11.8** shows the patient survival estimates and confidence intervals for one, two, five and ten years post-transplant. There were no statistically significant changes in patient survival over time (p>0.1). There were insufficient paediatric recipients of first kidney only transplants from donors after circulatory death to permit reliable analysis.

Figure 11.4 Long-term graft survival after first paediatric kidney only transplant from donors after brain death, 1 January 2007 – 31 December 2019

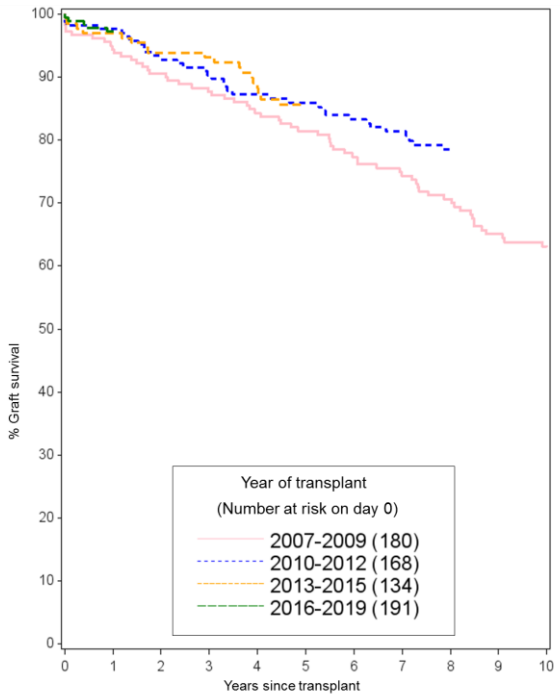


Table 11.7 Graft survival after first paediatric kidney only transplant from a DBD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2007-2009	180	94	(90-97)	91	(85-94)	81	(75-86)	63	(55-70)
2010-2012	168	98	(94-99)	93	(88-96)	86	(80-90)		
2013-2015	134	97	(92-99)	94	(88-97)	86	(78-91)		
2016-2019	191	97	(94-99)						

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	
2007-2009	180	99	(96-100)	99	(96-100)	98	(95-99)	96	(92-98)
2010-2012	168	99	(96-100)	99	(95-100)	96	(91-98)		
2013-2015	134	99	(95-100)	99	(95-100)	99	(95-100)		
2016-2019	191	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 were no statistically significant changes in graft survival over time (p>0.1). **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>0.2).

Figure 11.5 Long-term graft survival after first paediatric living donor kidney only transplant in the UK, 1 January 2007 – 31 December 2019

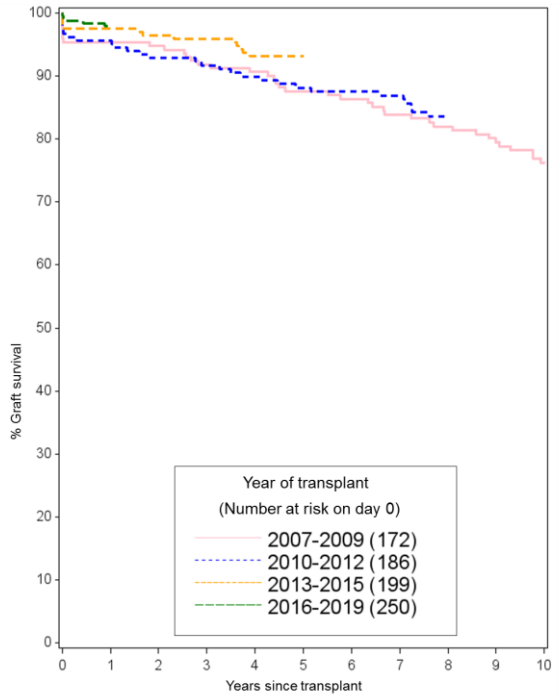


Table 11.9 Graft survival after first paediatric living donor kidney transplant

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2007-2009	172	95	(91-98)	95	(90-97)	88	(82-92)	76	(69-82)
2010-2012	186	96	(92-98)	93	(88-96)	88	(82-92)		
2013-2015	199	97	(94-99)	96	(93-98)	93	(88-96)		
2016-2019	250	98	(95-99)						

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	
2007-2009	172	99	(95-100)	99	(95-100)	97	(93-99)	96	(91-98)
2010-2012	187	99	(96-100)	99	(96-100)	99	(96-100)		
2013-2015	199	99	(96-100)	99	(96-100)	98	(95-99)		
2016-2019	250	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 significant improvement in one year graft survival over the time periods shown, p=0.01. Differences in patient survival are not significant over time (p>0.1).

Figure 11.6 Long-term graft survival after first SPK transplant from donors after brain death, 1 January 2007 – 31 December 2019

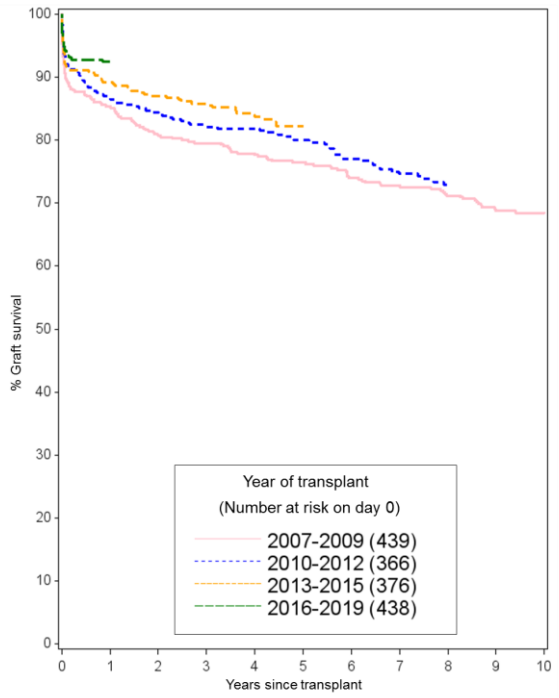


Table 11.11 Graft survival after first SPK transplant from a DBD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2007-2009	439	85	(82-88)	81	(77-84)	76	(72-80)	68	(64-73)
2010-2012	366	86	(82-90)	84	(80-88)	80	(75-84)		
2013-2015	376	89	(86-92)	87	(83-90)	82	(78-86)		
2016-2019	438	92	(89-95)						

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	
2007-2009	440	96	(94-98)	94	(92-96)	89	(86-92)	76	(71-80)
2010-2012	366	96	(94-98)	94	(90-96)	88	(84-91)		
2013-2015	377	97	(95-98)	97	(95-98)	89	(85-92)		
2016-2019	438	99	(97-99)						

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

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, five and ten 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 2007 – 31 December 2019

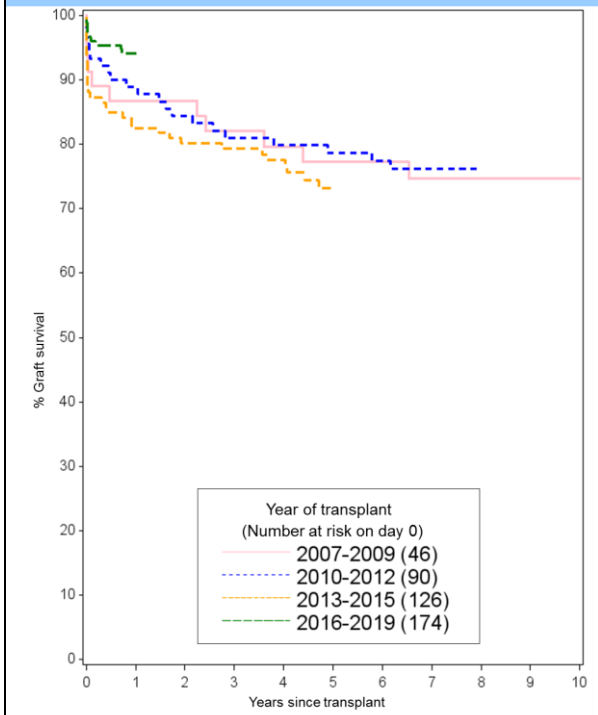


Table 11.13 Graft survival after first SPK transplant from a DCD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2007-2009	46	87	(73-94)	87	(73-94)	77	(62-87)	75	(59-85)
2010-2012	90	89	(80-94)	84	(75-90)	79	(69-86)		
2013-2015	126	83	(75-88)	80	(72-86)	73	(64-80)		
2016-2019	174	94	(89-97)						

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		Five year		Ten year	
2007-2009	47	96	(84-99)	93	(81-98)	89	(75-95)	80	(64-90)
2010-2012	90	98	(91-99)	95	(88-98)	92	(83-96)		
2013-2015	126	100	-	98	(93-100)	93	(86-97)		
2016-2019	175	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 is evidence of a change in one and two year graft survival over time (p=0.03 and p=0.05 respectively). 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 2007 – 31 December 2019

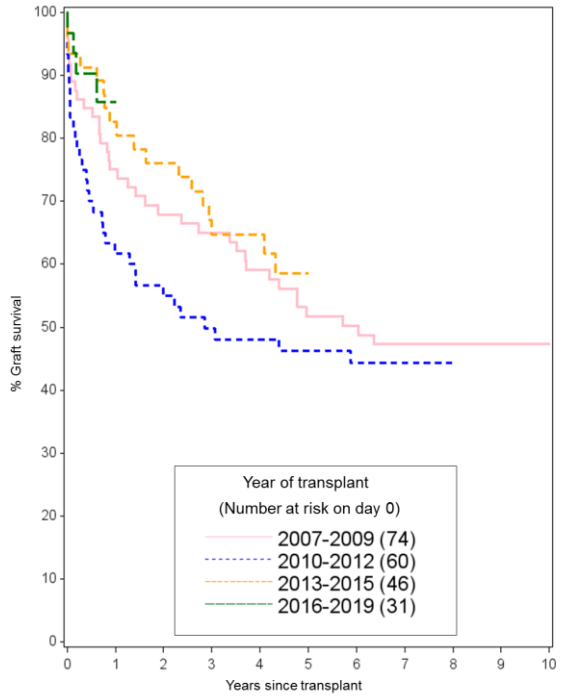


Table 11.15 Graft survival after first pancreas only transplant from a DBD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2007-2009	74	75	(63-83)	68	(56-77)	52	(39-63)	47	(35-58)
2010-2012	60	62	(48-73)	55	(42-66)	46	(33-58)		
2013-2015	46	83	(68-91)	76	(61-86)	59	(42-72)		
2016-2019	31	86	(66-95)						

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	
2007-2009	75	95	(86-98)	93	(84-97)	87	(76-93)	76	(62-85)
2010-2012	60	98	(86-100)	96	(84-99)	76	(60-86)		
2013-2015	46	98	(85-100)	98	(85-100)	89	(72-96)		
2016-2019	31	92	(70-98)						

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, five and ten years in **Table 11.17** and **Table 11.18** respectively. Results are for adult patients only and are based on small numbers so should be interpreted with caution.

Figure 11.9 Pancreas graft survival after pancreas only transplant from donors after circulatory death, 1 January 2007 – 31 December 2019

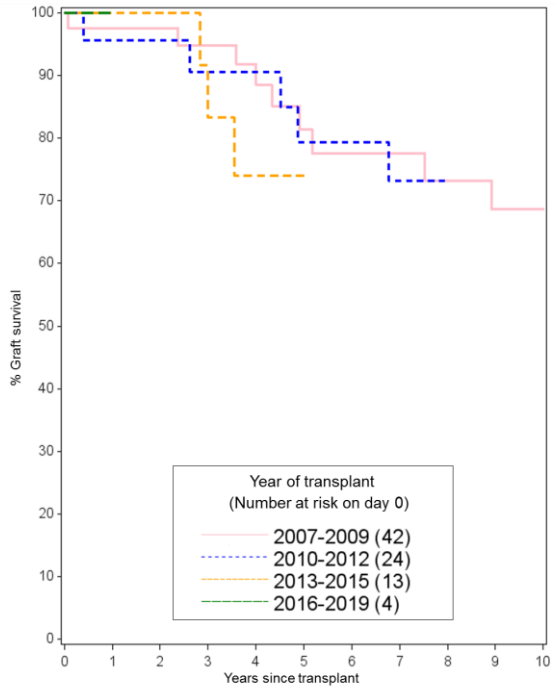


Table 11.17 Graft survival after first pancreas only transplant from a DCD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2007-2009	42	73	(57-84)	61	(45-74)	43	(27-58)	30	(16-45)
2010-2012	24	75	(52-88)	70	(47-85)	60	(37-77)		
2013-2015	13	92	(57-99)	69	(37-87)	43	(13-71)		
2016-2019	4	75	(13-96)						

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		Five year		Ten year	
2007-2009	42	98	(84-100)	98	(84-100)	81	(63-91)	69	(48-83)
2010-2012	24	96	(73-99)	96	(73-99)	79	(53-92)		
2013-2015	13					74	(39-91)		

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 across eras (p>0.2).

Figure 11.10 Long-term patient survival after first adult heart only transplant from donors after brain death, 1 January 2007 – 31 December 2019

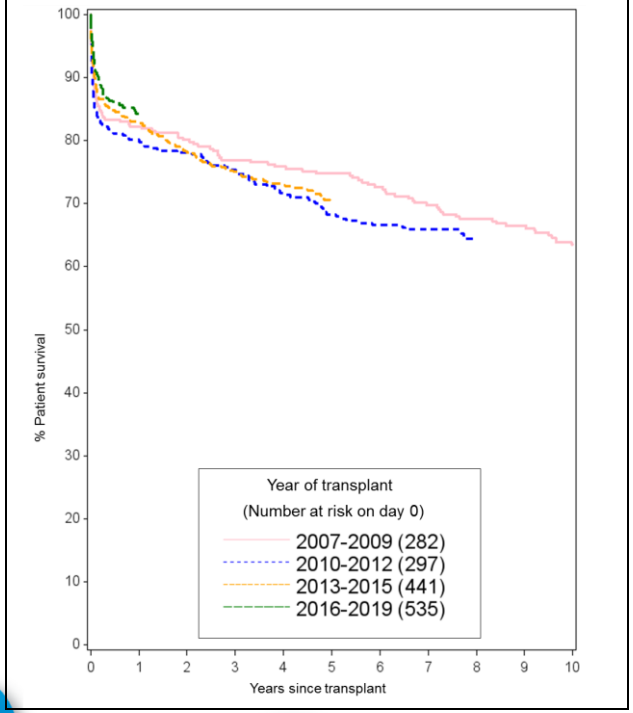


Table 11.19 Patient survival after first adult heart only transplant from a DBD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year		Ten year	
2007-2009	282	82	(77-86)	80	(75-84)	75	(69-79)	64	(58-69)
2010-2012	297	80	(75-84)	78	(73-82)	68	(63-73)		
2013-2015	441	83	(79-86)	78	(74-82)	70	(66-74)		
2016-2019	535	84	(81-87)						

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

Patient survival for adult recipients after first heart-lung block transplant from donors after brain death is shown in **Figure 11.11**. Patient survival estimates and confidence intervals for each time period analysed are shown in **Table 11.20**. There is evidence to suggest poorer survival rates in the more recent time period, at one, two and five years (p=0.04, p=0.03 and p=0.03 respectively), however there is no adjustment for risk factors and the cohorts are small.

Figure 11.11 Long-term patient survival after first adult heart-lung block transplant from donors after brain death, 1 January 2007 – 31 December 2019

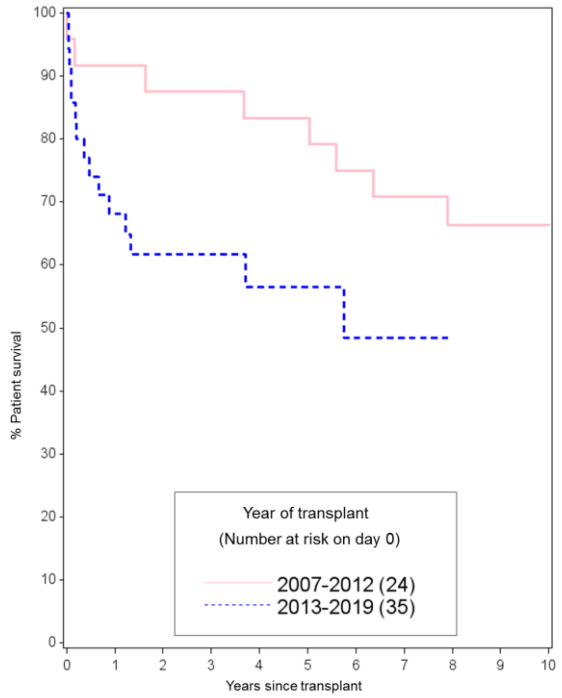


Table 11.20 Patient survival after first adult heart-lung block transplant from a DBD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year		Ten year	
2007-2012	24	92	(71-98)	88	(66-96)	83	(61-93)	66	(44-82)
2013-2019	35	68	(50-81)	62	(43-76)	57	(37-72)		

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 across eras (p>0.7).

Figure 11.12 Long-term patient survival after first adult lung only transplant from donors after brain death, 1 January 2007 – 31 December 2019

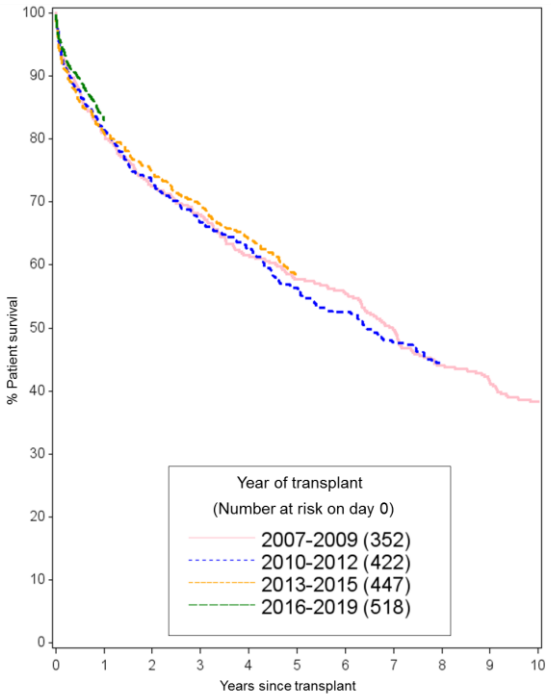


Table 11.21 Patient survival after first adult lung only transplant from a DBD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year		Ten year	
2007-2009	352	81	(76-85)	72	(67-77)	58	(52-63)	38	(33-43)
2010-2012	422	81	(77-85)	73	(69-77)	56	(51-61)		
2013-2015	447	81	(77-84)	75	(70-78)	58	(53-62)		
2016-2019	518	83	(80-86)						

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

Patient survival for adult recipients after first lung only transplant from donors after circulatory death is shown in **Figure 11.13**, by era, 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 2013 – 31 December 2019

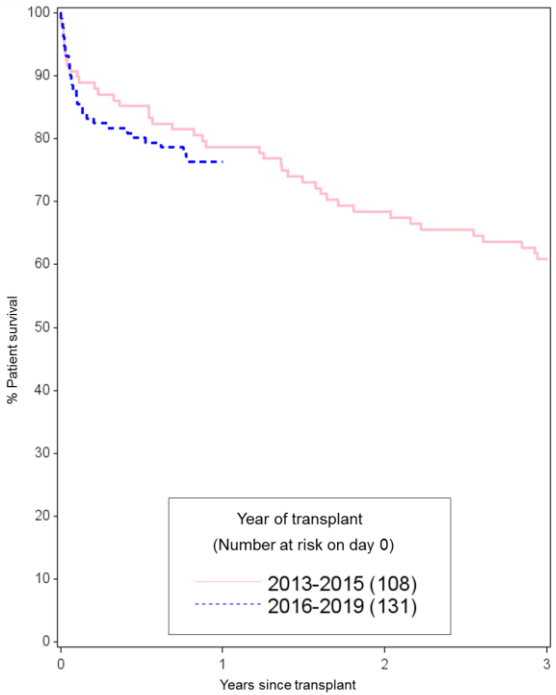


Table 11.22 Patient survival after first adult lung only transplant from a DCD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Three year	
2013-2015	108	79	(70-85)	68	(59-76)	61	(51-69)
2016-2019	131	76	(68-83)				

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 were no statistically significant differences in patient survival across eras (p>0.5). The number of heart-lung transplant recipients was too small to analyse.

Figure 11.14 Long-term patient survival after first paediatric heart only transplant from donors after brain death, 1 January 2007 – 31 December 2019

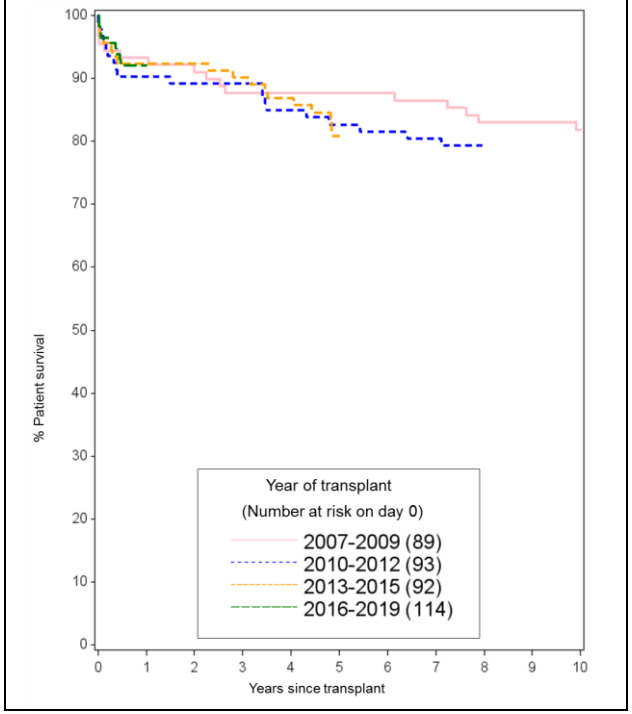


Table 11.23 Patient survival after first paediatric heart only transplant from a DBD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year		Ten year	
2007-2009	89	93	(86-97)	91	(83-95)	88	(79-93)	82	(72-88)
2010-2012	93	90	(82-95)	89	(81-94)	83	(73-89)		
2013-2015	92	92	(85-96)	92	(85-96)	81	(71-88)		
2016-2019	114	92	(85-96)						

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

Long-term patient survival for paediatric recipients after first lung only transplant from donors after brain death is shown in **Figure 11.15**. 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 across eras (p>0.7).

Figure 11.15 Long-term patient survival after first paediatric lung only transplant from donors after brain death, 1 January 2007 – 31 December 2019

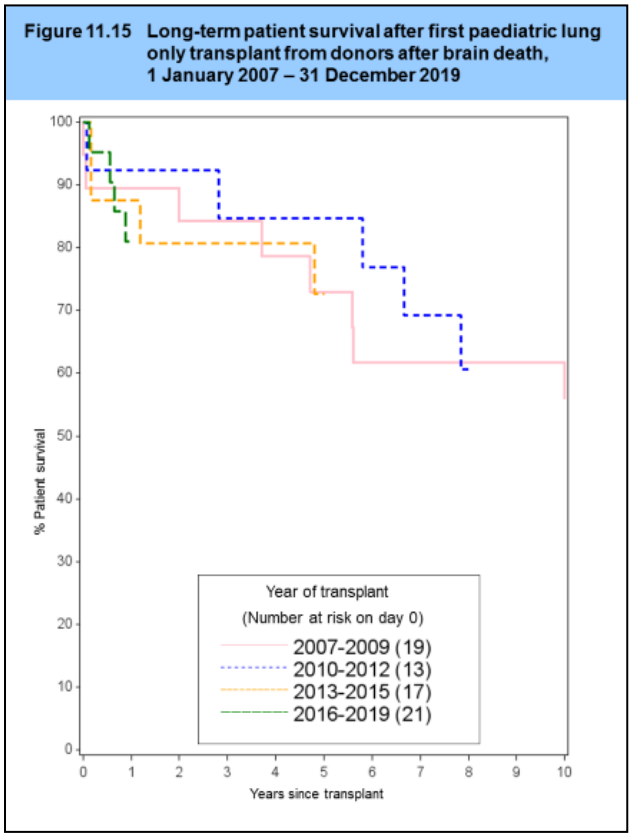


Table 11.24 Patient survival after first paediatric lung only transplant from a DBD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year		Ten year	
2007-2009	19	89	(64-97)	84	(59-95)	73	(47-88)	56	(31-75)
2010-2012	13	92	(57-99)	92	(57-99)	85	(51-96)		
2013-2015	17	88	(59-97)	81	(51-93)	73	(42-89)		
2016-2019	21	81	(57-92)						

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 were no statistically significant differences in patient survival over time (p>0.1). 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 2007 – 31 December 2019

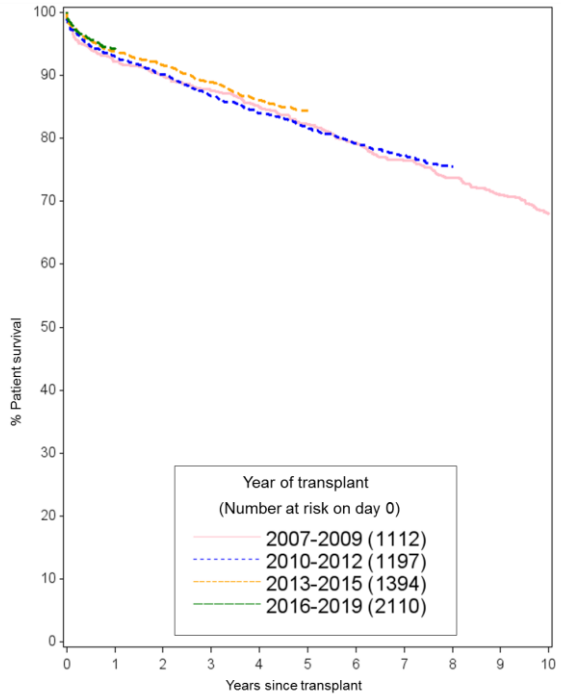


Table 11.25 Patient survival after first elective adult NHS Group 1 liver only transplant from donors after brain death, 1 January 2007 to 31 December 2019

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year		Ten year	
2007-2009	1112	92	(90-94)	90	(88-92)	82	(80-84)	68	(65-71)
2010-2012	1197	93	(91-94)	90	(88-92)	82	(79-84)		
2013-2015	1394	94	(92-95)	92	(90-93)	84	(82-86)		
2016-2019	2110	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 2010 – 31 December 2019

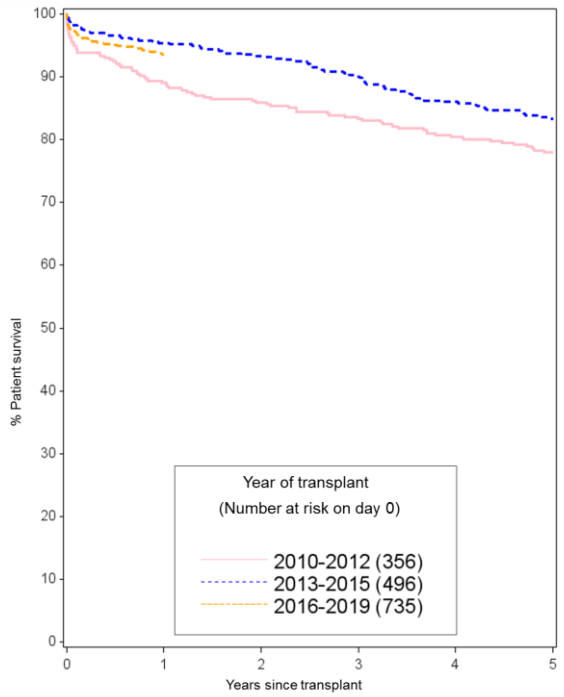


Table 11.26 Patient survival after first elective adult NHS Group 1 liver only transplant from donors after circulatory death, 1 January 2007 to 31 December 2019

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year	
2010-2012	356	89	(85-92)	86	(82-89)	78	(73-82)
2013-2015	496	95	(93-97)	93	(91-95)	83	(80-86)
2016-2019	735	94	(91-95)				

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>0.3). 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 2007 – 31 December 2019

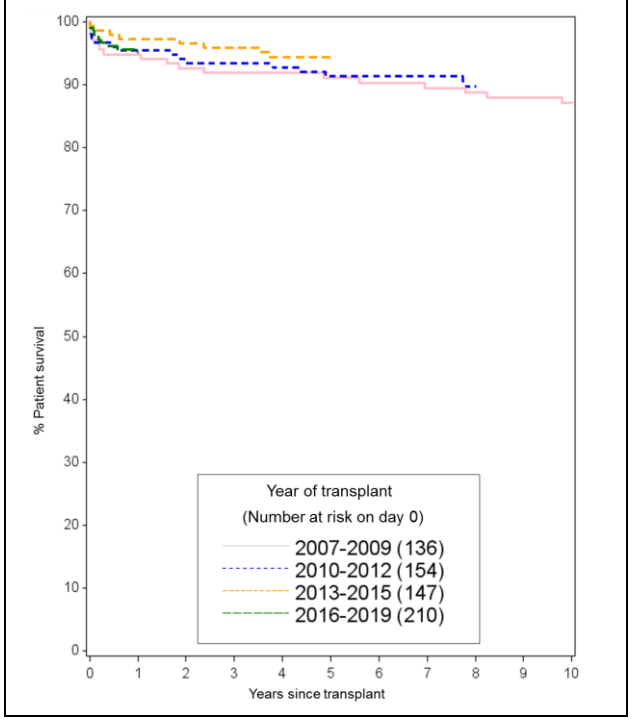


Table 11.27 Patient survival after first elective paediatric liver only transplant from donors after brain death, 1 January 2007 to 31 December 2019

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year		Ten year	
2007-2009	136	95	(90-98)	93	(87-96)	91	(85-95)	87	(80-92)
2010-2012	154	95	(91-98)	93	(88-96)	91	(86-95)		
2013-2015	147	97	(93-99)	97	(92-99)	94	(89-97)		
2016-2019	210	95	(91-97)						

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. Results should be interpreted cautiously due to the small cohort and the heterogeneity of transplant types (both transplants that involve and do not involve the liver are being included).

Figure 11.19 Patient survival after first intestinal graft in the UK, 1 January 2012 – 31 December 2019

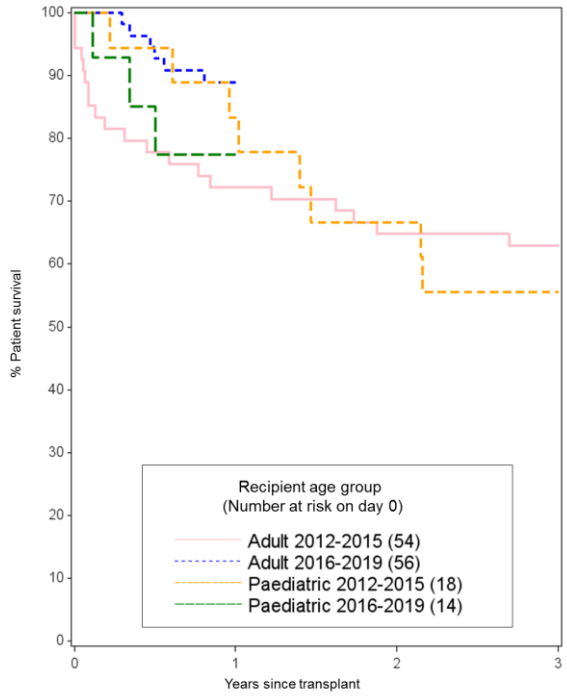


Table 11.28 Patient survival after first intestinal transplant in the UK, 1 January 2012 - 31 December 2019

Recipient age group	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Three year	
Adult							
2012-2015	54	72	(58-82)	65	(51-76)	63	(49-74)
2016-2019	56	89	(77-95)				
Paediatric							
2012-2015	18	83	(57-94)	67	(40-83)	56	(31-75)
2016-2019	14	77	(45-92)				

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 2007-2009, 2010-2012, 2013-2015 and 2016-2019. 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 2007 – 31 December 2019

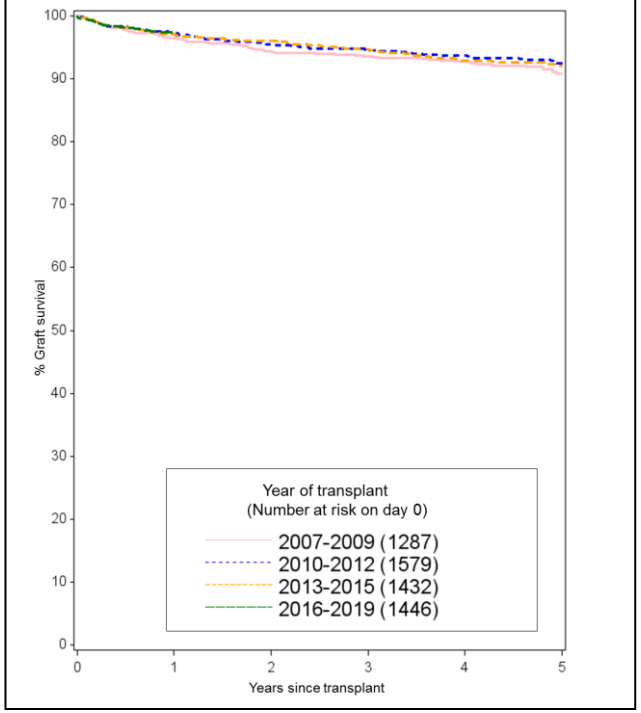


Table 11.29 Graft survival after first corneal graft for KC in the UK

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year	
2007-2009	1287	96	(95-97)	94	(93-95)	91	(89-93)
2010-2012	1579	97	(96-98)	95	(94-96)	92	(91-94)
2013-2015	1432	97	(96-98)	96	(95-97)	92	(90-94)
2016-2019	1446	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 2007-2009, 2010-2012, 2013-2015 and 2016-2019. 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 2007 – 31 December 2019

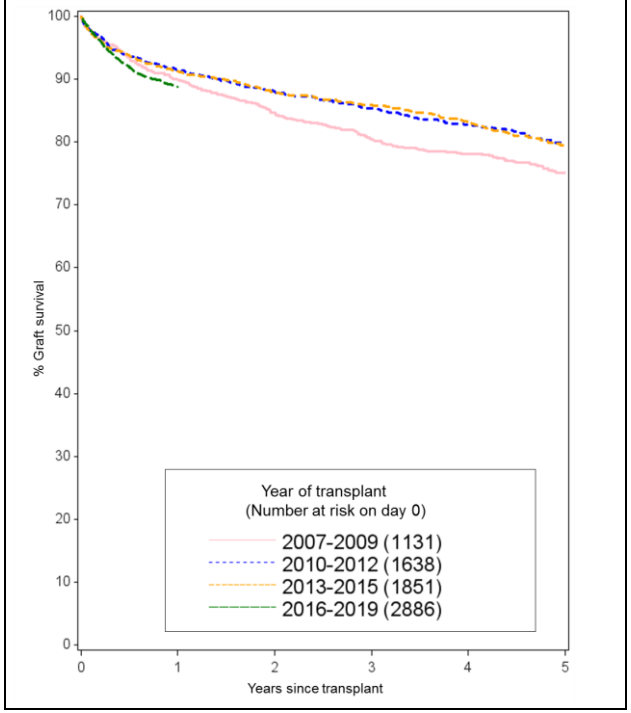


Table 11.30 Graft survival after first corneal graft for FED in the UK

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year	
2007-2009	1131	90	(88-92)	85	(82-87)	75	(72-78)
2010-2012	1638	92	(90-93)	88	(86-90)	80	(77-82)
2013-2015	1851	91	(90-92)	88	(86-89)	79	(77-82)
2016-2019	2886	89	(87-90)				

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 in 2007-2009, 2010-2012, 2013-2015 and 2016-2019. 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 2007 – 31 December 2019

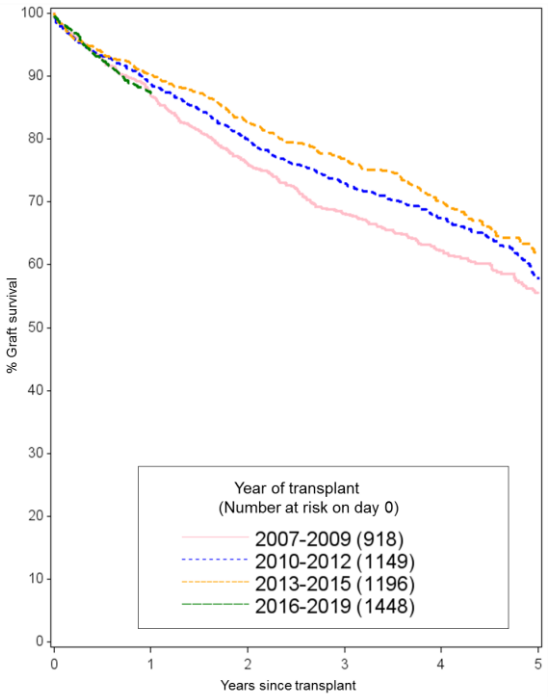


Table 11.31 Graft survival after first corneal graft for PBK in the UK

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year	
2007-2009	918	87	(85-89)	76	(73-79)	56	(51-59)
2010-2012	1149	89	(87-90)	80	(77-82)	58	(54-62)
2013-2015	1196	90	(88-92)	83	(80-85)	62	(58-66)
2016-2019	1448	87	(85-89)				

NHS Organ Donor Register

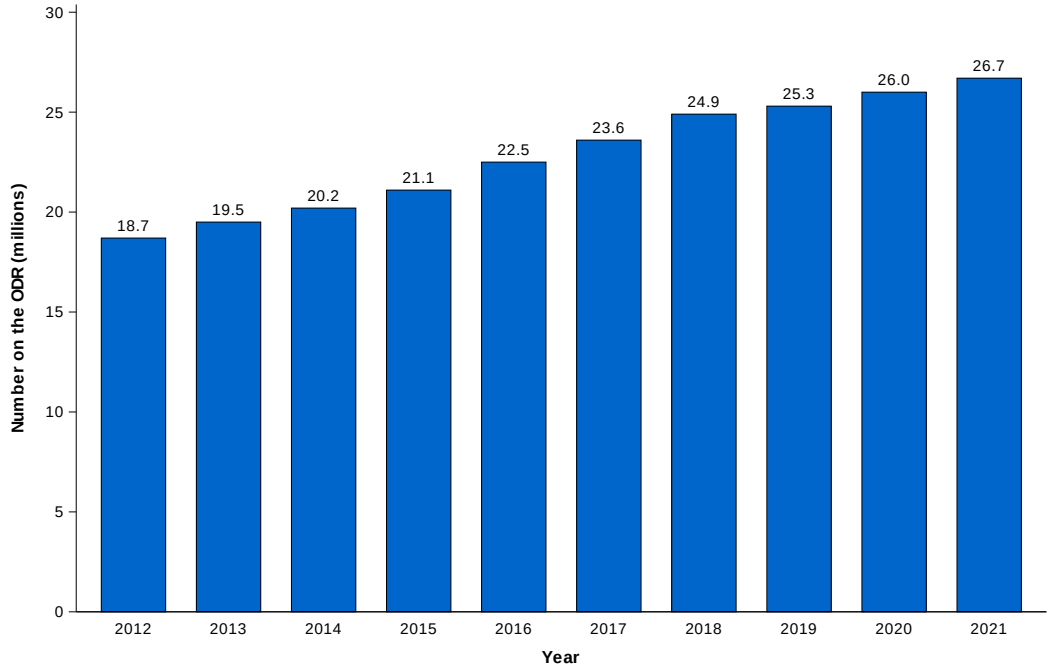
Key messages

- **Opt-Out legislation introduced in England in May 2020 and in Scotland in March 2021**
- **26.7 million people were on the opt-in ODR at March 2021 (39% of the population)**
- **2.0 million people were on the opt-out ODR at March 2021, with a further 171 appointed representative registrations**
- **51% of the 1,180 deceased organ donors last year were on the opt-in ODR**
- **64% of registrations last year were through the Driver and Vehicle Licensing Agency (DVLA)**

By the end of March 2021, the NHS Organ Donor Register (ODR) held just under 26.7 million opt-in registrations. A summary of the number of registrations at the end of each financial year from 31 March 2012 to 31 March 2021 is shown in **Figure 12.1**. Opt-in registrations have seen a 2.7% increase this year, compared to a 2.8% increase in the previous year.

Of the 1,180 deceased organ donors in 2020-2021, 51% were registered on the ODR compared with 20% of organ donors in 2019-2020. This increase in the proportion of organ donors registered on the ODR could be due to the COVID-19 pandemic or the introduction of opt-out legislation in England in May 2020 and Scotland in March 2021.

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 2021, 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 2021. 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, Wales, England and Scotland have 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. In addition, there have been 171 appointed representative registrations.

Table 12.1 Opt-in registrations on the NHS Organ Donor Register by 31 March 2021, by country/ NHS region

Country/ NHS region of residence	Registrants N	Registrants pmp	Proportion registered
North East and Yorkshire	3,347,364	389,228	39%
North West	2,536,629	359,296	36%
Midlands	3,707,591	349,773	35%
East of England	2,667,930	408,565	41%
London	2,713,587	302,856	30%
South East	3,927,980	441,346	44%
South West	2,725,831	484,162	48%
England	**21,626,912**	**384,205**	**38%**
Isle of Man	**13,752**	**171,900**	**17%**
Channel Islands	**29,065**	**170,971**	**17%**
Wales	**1,323,716**	**420,227**	**42%**
Scotland	**2,770,976**	**507,505**	**51%**
Northern Ireland	**924,298**	**489,047**	**49%**
TOTAL[1]	**26,746,406**	**398,962**	**40%**

[1] Includes 57,687 registrants where the postcode was unknown

Table 12.2 Opt-out registrations on the NHS Organ Donor Register by 31 March 2021, by country/ NHS region

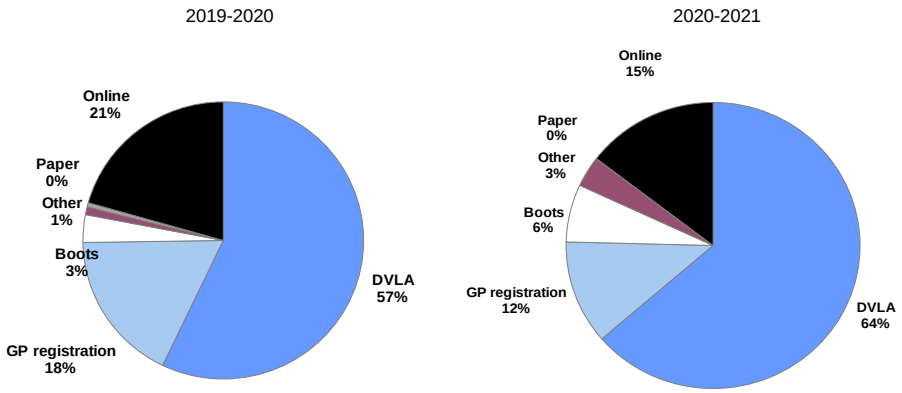
Country/ NHS region of residence	Registrants N	Registrants pmp	Proportion registered
North East and Yorkshire	231,114	26,874	2.7%
North West	225,603	31,955	3.2%
Midlands	354,738	33,466	3.3%
East of England	143,913	22,039	2.2%
London	508,461	56,748	5.7%
South East	153,445	17,241	1.7%
South West	73,140	12,991	1.3%
England	**1,690,414**	**30,030**	**3.0%**
Isle of Man	**180**	**2,250**	**0.2%**
Channel Islands	**1,735**	**10,206**	**1.0%**
Wales	**194,957**	**61,891**	**6.2%**
Scotland	**139,178**	**25,491**	**2.5%**
Northern Ireland	**2,867**	**1,517**	**0.2%**
TOTAL[1]	**2,029,561**	**30,274**	**3.0%**

[1] Includes 230 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 12% of registrations in 2020-2021 arrived by means of registering through a GP, 64% from driving licence applications and reminders through the DVLA and 15% online through the Organ Donation website.

Figure 12.2 Source of applications for opt-in registration on the NHS Organ Donor Register, 1 April 2019 - 31 March 2021



At the end of March 2021, 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 2021 to donate different organs[1]

Registrants prepared to donate all organs 85%

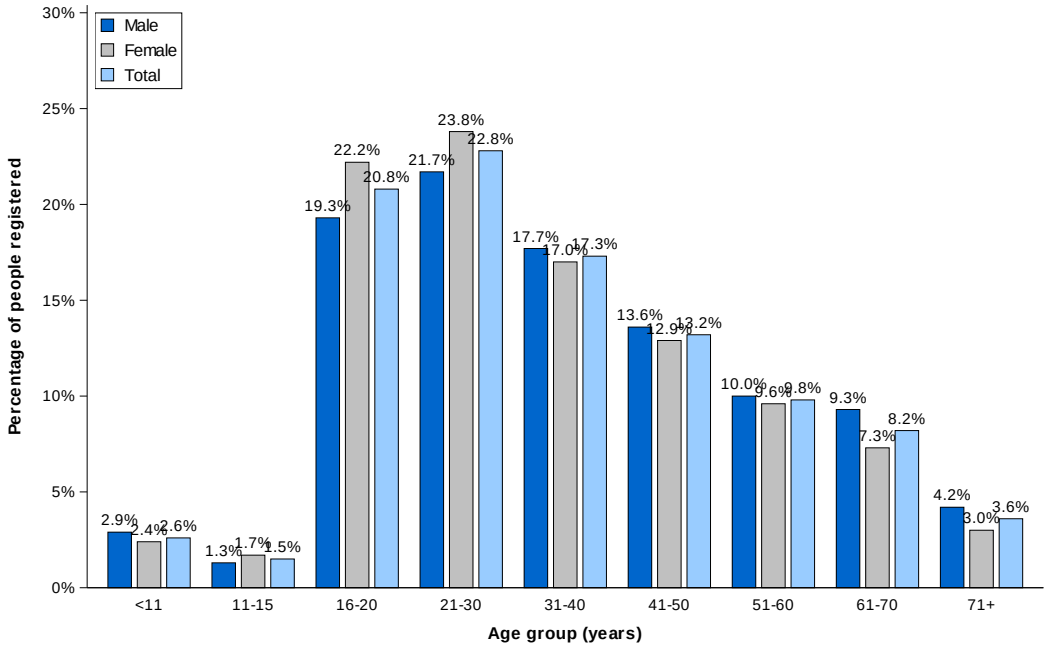
Of those not prepared to donate all organs ('restricted donors'):

Not prepared to donate:	% of 'Restricted donors'	% of all registrants
Kidney	6	0.9
Pancreas	17	2.5
Heart	17	2.4
Lungs	16	2.3
Liver	10	1.5
Corneas	68	10.0

[1] Complete information was not available for approximately 6% of the total register

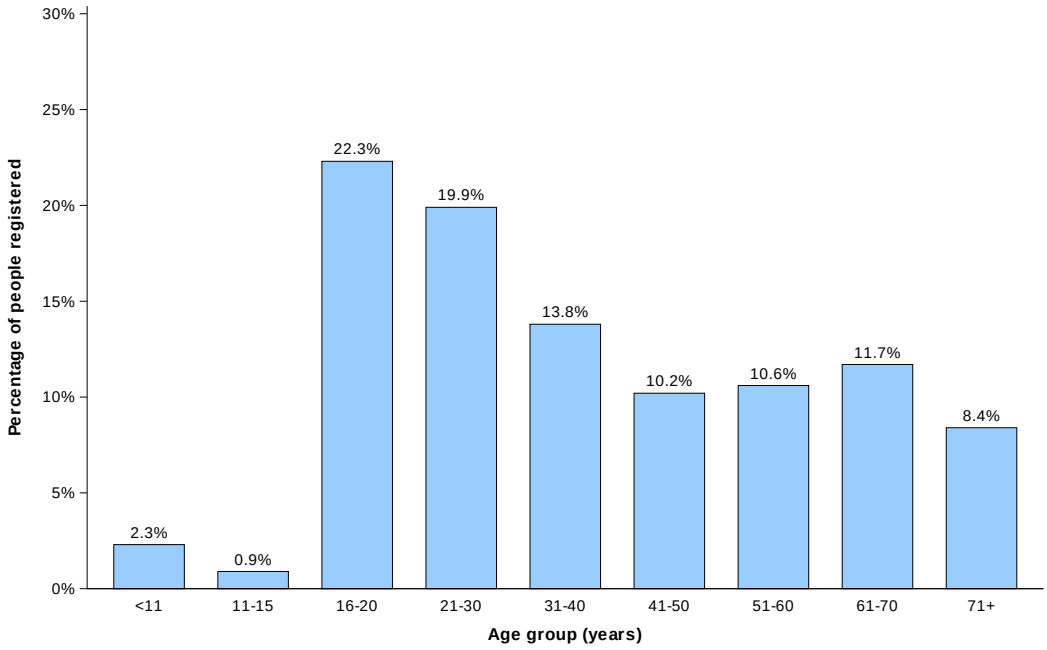
People of all ages are eligible for organ donor registration: the distribution of age by sex at time of opt-in registration is shown in **Figure 12.3**. The highest proportion of registrations (21.7% of males and 23.8% of females) are in the 21-30 years age group. The lowest proportions are in the under 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 2021**



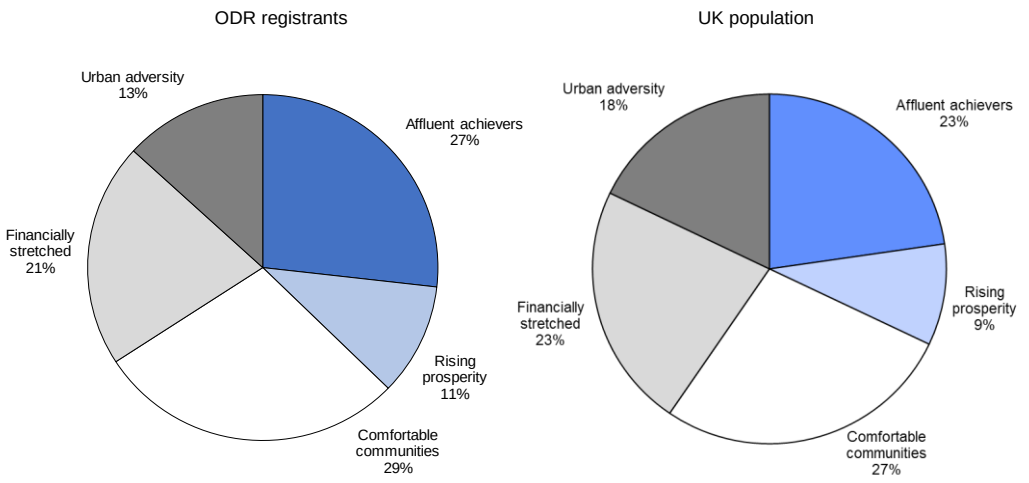
Additionally, the distribution of age of people registering opt-in on the ODR during the latest financial year, 2020-2021, is shown in **Figure 12.4**. The highest proportion of registrations in this year were in the 16-20 years age group. Of the registrants in 2020-2021, 50% were male and 50% were female.

Figure 12.4 **Age of people registering as opt-in on the NHS Organ Donor Register between 1 April 2020 and 31 March 2021**



The breakdown of opt-in registrants on the ODR during 2020-2021 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 2020 - 31 March 2021, and the general population, by socio-economic group



[1] ACORN data supplied by CACI Ltd.

National Potential Donor Audit

Key messages

- **There were 40,334 audited deaths reported through the Potential Donor Audit in the financial year to 31 March 2021, including 1,177 (99.8%) of the 1,180 deceased organ donors.**
- **Compared to the previous financial year, small improvements have been observed in the proportion of approaches where a Specialist Nurse – Organ Donation was present (from 92% to 93%), and in the overall consent/authorisation rate (from 68% to 69%). The overall referral rate of potential donors has dropped in 2020/21, from 93% to 83%.**
- **The consent/authorisation rate was 93% when a patient had expressed an opt in decision, but 71 families overruled their loved one's 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, Mixed Race and Minority Ethnic (BAME) communities (75% and 36% respectively).**

13.1 Introduction

In this chapter, summary data from the National Potential Donor Audit (PDA) are shown for 1 April 2020 to 31 March 2021 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 10 May 2021. **The number of solid organ donors reported in this chapter will differ from that shown in the rest of the report, due to the national PDA excluding specific patients**.

13.2 Definitions

All data shown in this chapter use the following definitions.

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

Eligible donors after circulatory death (DCD) are defined as patients who had treatment withdrawn and death was anticipated, 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 invasive ventilation, a clinical decision to withdraw treatment has been made and a controlled death is anticipated within a time frame to allow donation to occur.

Neurological death suspected patients who meet all of the following criteria: invasive ventilation, Glasgow Coma Scale 3 not explained by sedation, no respiratory effort, fixed pupils, no cough or gag reflex. 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 referred to the Specialist Nurse - Organ Donation (SN-OD).

The proportion of approaches where a SN-OD was present is the percentage of eligible donor donation decision conversations where a SN-OD was present (includes telephone and video call conversations).

Deemed consent applies if a person who died in Wales, England or Jersey meets deemed consent criteria: aged 18 or over, has not expressed an organ donation decision either to opt in, opt out or appoint a representative, has lived for longer than 12 months and is ordinarily resident in the country in which they died, and had the capacity to understand the notion of deemed consent for a significant period before their death. Note that where a patient has verbally expressed an opt out or opt in decision deemed consent does not apply.

Deemed authorisation applies if a person, who died in Scotland, meets deemed authorisation criteria: aged 16 or over, has not registered or expressed, in writing, an organ donation decision either to opt in or opt out, has lived for longer than 12 months and is ordinarily resident in Scotland, and had the capacity to understand the notion of deemed authorisation for a significant period before their death. Note that, in Scotland, a patient who has verbally expressed an opt in decision is included as a deemed authorisation, whereas a patient who has verbally expressed an opt out decision is not included.

The consent/authorisation rate is the percentage of eligible donor donation decision conversations 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, 1 April 2020 – 31 March 2021

In the 12-month period there were a total of 40,334 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 1,177 solid organ donors reported through the PDA, 99.8% of the total 1,180 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 by whether there was an expressed opt in decision or consent/authorisation was deemed. Details of expressed opt in decision and deemed consent/authorisation overrides are included in the footnote of the table.

An expressed 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. A deemed consent/authorisation override is a case where the family did not support deemed consent/authorisation.

Figure 13.1 Donation after brain death

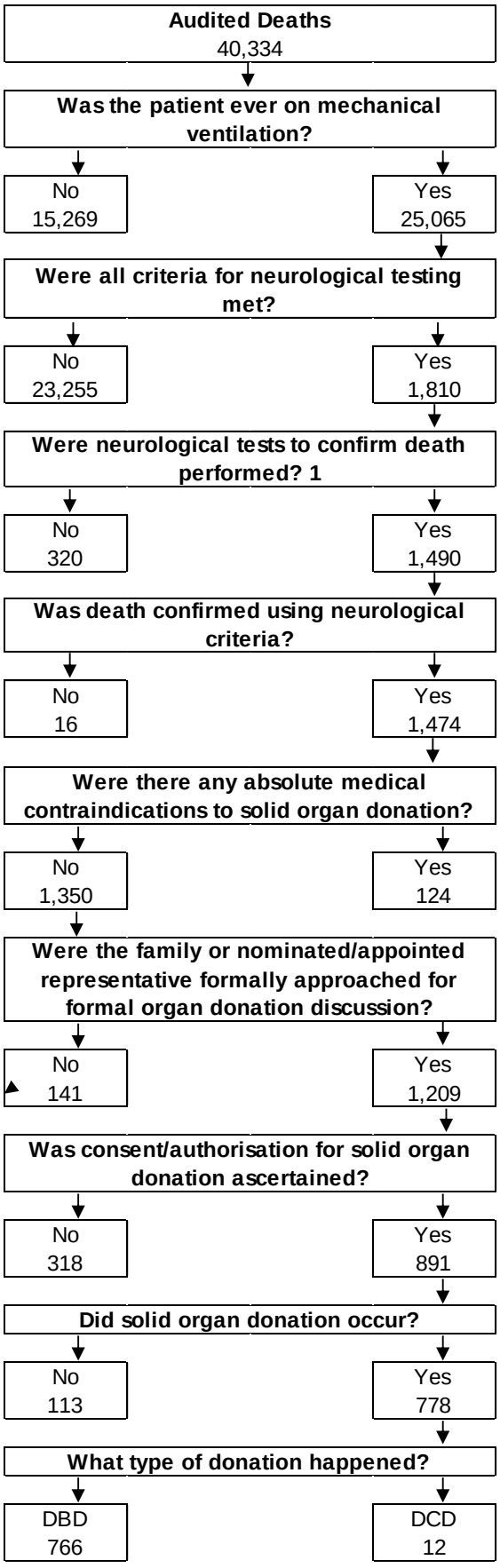
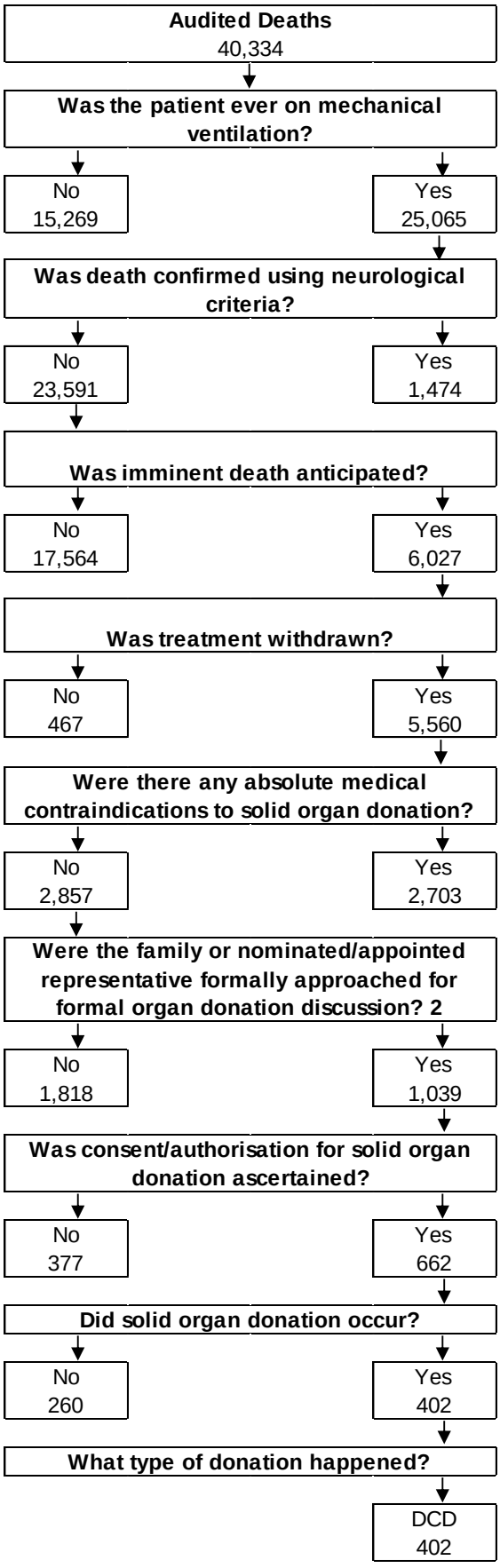


Figure 13.2 Donation after circulatory death



1 Patients for whom tests were not performed due to; cardiac arrest despite resuscitation occurred 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

Table 13.1 Summary of key percentages, 1 April 2020 to 31 March 2021

	DBD	DCD	ALL
Neurological death testing rate	82.3		
Referral rate	98.2	79.1	83.2
Proportion of approaches where a SN-OD was present	96.5	88.7	92.9
Consent/authorisation rate	73.7	63.7	69.1
- SN-OD present for approach	74.8	68.9	72.2
- SN-OD not present for approach	42.9	23.1	28.3
- Expressed opt in*	96.9	87.9	92.8
- Deemed consent/authorisation**	70.5	62.4	66.7
- Other***	59.1	49.6	54.6

* 71 families overruled their loved one's expressed opt in decision to be an organ donor
** There were 553 cases where deemed consent/authorisation applied and in 184 cases the family did not support deemed consent/authorisation
*** Includes patients where nation specific deemed criteria are not met and the patient has not expressed a donation decision in accordance with relevant legislation

Table 13.2 Summary of all deceased donor key percentages by Organ Donation Services Team (ODST), 1 April 2020 to 31 March 2021

ODST	Testing rate	Referral rate	SN-OD presence rate	Consent/authorisation rate
Eastern	78.1	77.4	94.7	71.7
London	81.6	80.7	93.5	53.6
Midlands	84.5	83.3	91.2	62.3
North West	77.5	79.0	94.9	73.9
Northern	88.1	92.3	94.9	69.9
Northern Ireland	74.7	97.0	96.0	78.7
Scotland	85.8	94.1	85.4	73.2
South Central	91.5	90.7	92.9	72.2
South East	84.1	69.9	93.2	73.9
South Wales	84.5	91.6	87.8	63.5
South West	87.4	95.9	91.4	78.8
Yorkshire	74.8	86.3	96.7	70.7
TOTAL	**82.3**	**83.2**	**92.9**	**69.1**

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 13.9 pmp in the East of England to 31.7 pmp in London. Eligible DCD ranged from 30.4 pmp in the South West to 61.2 pmp in the North West.

Across the countries, there was a range of 50.5 eligible donors pmp in Scotland to 64.7 eligible donors pmp in England. Overall, there were 1,350 eligible DBD (20.1 pmp) and 2,857 eligible DCD (42.6 pmp) in the UK, resulting in a total of 62.8 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 2020 to 31 March 2021, 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	171	(19.9)	461	(53.6)	**632**	**(73.5)**
North West	146	(20.7)	432	(61.2)	**578**	**(81.9)**
Midlands	172	(16.2)	431	(40.7)	**603**	**(56.9)**
East of England	91	(13.9)	387	(59.3)	**478**	**(73.2)**
London	284	(31.7)	321	(35.8)	**605**	**(67.5)**
South East	154	(17.3)	307	(34.5)	**461**	**(51.8)**
South West	116	(20.6)	171	(30.4)	**287**	**(51.0)**
England	**1134**	**(20.1)**	**2510**	**(44.6)**	**3644**	**(64.7)**
Isle of Man	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**
Channel Islands	**1**	**(5.9)**	**3**	**(17.6)**	**4**	**(23.5)**
Wales	**67**	**(21.3)**	**102**	**(32.4)**	**169**	**(53.7)**
Scotland	**95**	**(17.4)**	**181**	**(33.2)**	**276**	**(50.5)**
Northern Ireland	**53**	**(28.0)**	**61**	**(32.3)**	**114**	**(60.3)**
TOTAL	**1350**	**(20.1)**	**2857**	**(42.6)**	**4207**	**(62.8)**

Table 13.4 DBD key metrics from the Potential Donor Audit, 1 April 2020 to 31 March 2021, 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	235	82.6	98.7	171	154	98.1	75.3
North West	212	76.9	98.1	146	126	98.4	77.8
Midlands	233	81.5	97.4	172	153	93.5	65.4
East of England	130	78.5	94.6	91	86	98.8	86.0
London	385	83.1	97.4	284	242	97.9	55.4
South East	191	85.3	99.5	154	145	96.6	83.4
South West	135	89.6	100.0	116	106	95.3	84.9
England	**1521**	**82.4**	**98.0**	**1134**	**1012**	**96.9**	**72.4**
Isle of Man	**0**			**0**	**0**		
Channel Islands	**1**	**100.0**	**100.0**	**1**	**1**	**100.0**	**100.0**
Wales	**89**	**83.1**	**100.0**	**67**	**61**	**96.7**	**73.8**
Scotland	**120**	**85.8**	**98.3**	**95**	**86**	**91.9**	**83.7**
Northern Ireland	**79**	**74.7**	**100.0**	**53**	**49**	**95.9**	**81.6**
TOTAL	**1810**	**82.3**	**98.2**	**1350**	**1209**	**96.5**	**73.7**

Table 13.5 DCD key metrics from the Potential Donor Audit, 1 April 2020 to 31 March 2021, 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	1058	86.6	461	153	93.5	65.4
North West	1022	75.2	432	122	91.8	67.2
Midlands	758	79.9	431	171	88.9	59.6
East of England	892	73.5	387	130	91.5	65.4
London	764	70.9	321	135	88.1	57.0
South East	713	75.7	307	122	86.9	67.2
South West	281	92.9	171	69	87.0	68.1
England	**5488**	**78.2**	**2510**	**902**	**89.9**	**63.7**
Isle of Man	**0**		**0**	**0**		
Channel Islands	**5**	**20.0**	**3**	**0**		
Wales	**185**	**83.8**	**102**	**33**	**75.8**	**60.6**
Scotland	**251**	**92.0**	**181**	**78**	**78.2**	**61.5**
Northern Ireland	**98**	**94.9**	**61**	**26**	**96.2**	**73.1**
TOTAL	**6027**	**79.1**	**2857**	**1039**	**88.7**	**63.7**

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 4 teams. The proportion of DBD approaches where a SN-OD was present was highest for the Yorkshire team, where a SNOD was present for 100% of DBD approaches.

Table 13.6 DBD key metrics from the Potential Donor Audit, 1 April 2020 to 31 March 2021, 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	160	78.1	95.0	110	100	99.0	81.0
London	283	81.6	97.9	208	178	97.2	52.8
Midlands	206	84.5	97.6	159	144	93.8	64.6
North West	236	77.5	98.3	163	142	98.6	80.3
Northern	109	88.1	99.1	83	77	96.1	70.1
Northern Ireland	79	74.7	100.0	53	49	95.9	81.6
Scotland	120	85.8	98.3	95	86	91.9	83.7
South Central	118	91.5	100.0	102	95	96.8	81.1
South East	182	84.1	97.3	137	124	98.4	77.4
South Wales	71	84.5	100.0	55	48	93.8	64.6
South West	111	87.4	100.0	95	87	94.3	86.2
Yorkshire	135	74.8	98.5	90	79	100.0	81.0
TOTAL	**1810**	**82.3**	**98.2**	**1350**	**1209**	**96.5**	**73.7**

Table 13.7 indicates that for DCD patients, the highest referral rate and the highest proportion of DCD approaches for which a SN-OD was present was for the Northern Ireland 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 2020 to 31 March 2021, 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	960	74.6	420	144	91.7	65.3
London	545	73.0	247	100	87.0	55.0
Midlands	653	79.2	383	153	88.9	60.1
North West	1104	75.6	471	130	90.8	66.9
Northern	453	90.7	198	59	93.2	69.5
Northern Ireland	98	94.9	61	26	96.2	73.1
Scotland	251	92.0	181	78	78.2	61.5
South Central	426	88.3	195	74	87.8	60.8
South East	574	62.5	199	83	85.5	68.7
South Wales	115	87.0	67	26	76.9	61.5
South West	215	94.0	147	64	87.5	68.8
Yorkshire	633	84.0	288	102	94.1	62.7
TOTAL	**6027**	**79.1**	**2857**	**1039**	**88.7**	**63.7**

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 13.8 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 92 paediatric patients for whom neurological death was suspected, tests were not performed on 30 patients.

Table 13.8 DBD and DCD key metrics from the Potential Donor Audit, 1 April 2020 to 31 March 2021, 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	1696	84.1	1294	1159	96.6	74.3	751
	Emergency dept.	48	66.7	31	29	100.0	72.4	18
	Other	32	75.0	22	20	90.0	45.0	9
	TOTAL	**1776**	**83.4**	**1347**	**1208**	**96.6**	**73.8**	**778**
DCD	Critical care	4596		2421	982	90.2	65.4	388
	Emergency dept.	100		60	20	80.0	40.0	7
	Other	72		49	23	87.0	52.2	7
	TOTAL	**4768**		**2530**	**1025**	**90.0**	**64.6**	**402**

[1] DBD referral criteria: patients where neurological death was suspected; DCD referral criteria: patients for whom imminent death was anticipated

[2] Actual donors resulting from eligible DBD donors includes 12 DCD donors referred from critical care

Table 13.9 DBD and DCD key metrics from the Potential Donor Audit, 1 April 2020 to 31 March 2021, 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)	1718	83.1	98.2	1291	1163	96.9	74.4	754
	Paediatric (<18)	92	67.4	97.8	59	46	87.0	56.5	24
	TOTAL	**1810**	**82.3**	**98.2**	**1350**	**1209**	**96.5**	**73.7**	**778**
DCD	Adult (>=18)	5821		78.9	2692	987	89.4	64.3	380
	Paediatric (<18)	206		85.9	165	52	76.9	51.9	22
	TOTAL	**6027**		**79.1**	**2857**	**1039**	**88.7**	**63.7**	**402**

[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 11 DCD donors aged 18 and over and 1 donor aged under 18

13.5 Consent/ authorisation rates

The overall DBD consent/authorisation rate was 74% and the 95% confidence limits for this percentage are 71% - 76%. For DCD, the overall rate was 64% and the 95% confidence limits are 61% - 67%.

Consent/authorisation rates by Organ Donation Services Team are illustrated in Figure 13.3 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 55% in London to 86% in the East of England. DCD consent/authorisation rates range from 57% in London to 68% in the South West.

The overall consent/authorisation rates (combining DBD and DCD) for England, Wales, Scotland and Northern Ireland were 68%, 69%, 73% and 79%, respectively.

Across the Organ Donation Services Teams, the DBD consent/authorisation rates range from 53% in the London team to 86% in the South West team. DCD consent/authorisation rates range from 55% in the London team to 73% in the Northern Ireland team.

Figure 13.3 Consent/authorisation rates by Organ Donation Services Team

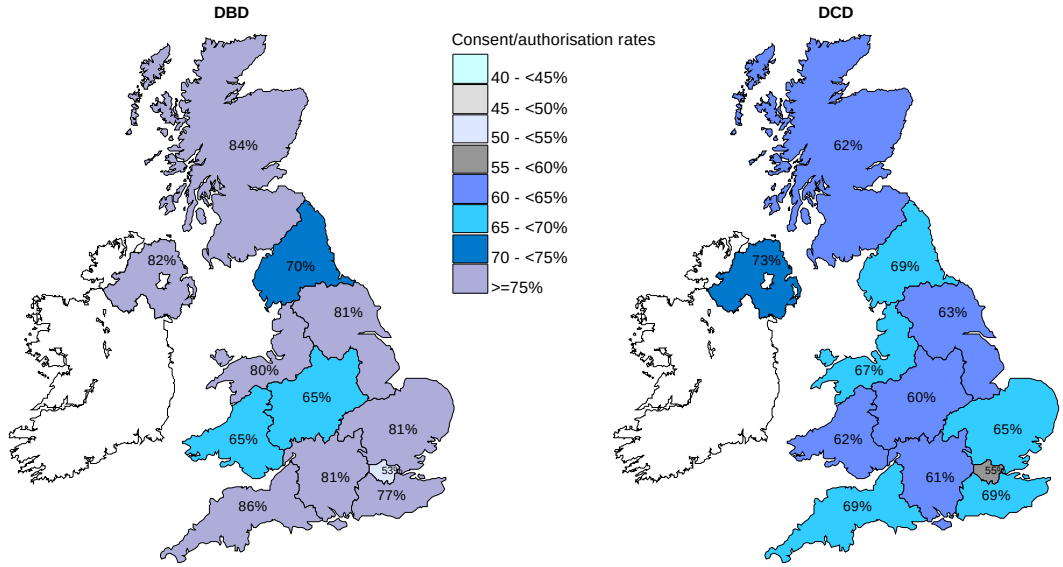


Table 13.10 shows the consent/authorisation rate separately for white patients and patients from BAME communities. The national DBD consent/authorisation rates for white patients and patients from BAME communities were 81% and 35%, respectively. A smaller, but still significant, difference was observed for DCD consent/authorisation rates: 67% and 38%, respectively. Note that there were an additional 20 DBD and 20 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 36%. 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 2020 to 31 March 2021, 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	87	85.1	131	67.2	**74.3**	12	50.0	12	50.0	**50.0**	**71.7**
London	95	73.7	78	62.8	**68.8**	81	29.6	18	27.8	**29.3**	**53.6**
Midlands	110	77.3	135	62.2	**69.0**	32	25.0	18	44.4	**32.0**	**62.3**
North West	132	83.3	115	73.0	**78.5**	10	40.0	12	25.0	**31.8**	**73.9**
Northern	73	69.9	58	70.7	**70.2**	3	-	0	-	**-**	**69.9**
Northern Ireland	45	84.4	24	75.0	**81.2**	4	-	2	-	**-**	**78.7**
Scotland	80	83.8	73	65.8	**75.2**	3	-	1	-	**-**	**73.2**
South Central	85	85.9	67	62.7	**75.7**	9	-	4	-	**38.5**	**72.2**
South East	100	84.0	71	73.2	**79.5**	22	50.0	12	41.7	**47.1**	**73.9**
South Wales	40	70.0	22	68.2	**69.4**	2	-	4	-	**-**	**63.5**
South West	82	89.0	60	70.0	**81.0**	3	-	1	-	**-**	**78.8**
Yorkshire	73	84.9	98	63.3	**72.5**	6	-	3	-	**-**	**70.7**
TOTAL	**1002**	**81.3**	**932**	**67.1**	**74.5**	**187**	**35.3**	**87**	**37.9**	**36.1**	**69.1**

[1] Includes 40 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 32% of cases.

Table 13.11 Reasons why the family did not support organ donation, 1 April 2020 to 31 March 2021, by donor type

	Donor type					
	DBD		DCD		Total	
Primary reason why family did not support organ donation	**N**	**%**	**N**	**%**	**N**	**%**
Patient had registered a decision to Opt Out	6	1.9	13	3.4	19	2.7
Patient had previously expressed a wish not to donate	111	34.9	108	28.6	219	31.5
Family were not sure whether the patient would have agreed to donation	35	11.0	36	9.5	71	10.2
Family did not believe in donation	10	3.1	13	3.4	23	3.3
Family felt it was against their religious/cultural beliefs	38	11.9	13	3.4	51	7.3
Family divided over the decision	13	4.1	16	4.2	29	4.2
Family felt patient had suffered enough	16	5.0	34	9.0	50	7.2
Family did not want surgery to the body	29	9.1	35	9.3	64	9.2
Family wanted to stay with the patient after death	1	0.3	2	0.5	3	0.4
Family had difficulty understanding/accepting neurological testing	2	0.6	0	-	2	0.3
Family felt the length of time for the donation process was too long	9	2.8	48	12.7	57	8.2
Family concerned other people may disapprove/be offended	3	0.9	2	0.5	5	0.7
Family felt that the body should be buried whole (unrelated to religious/cultural reasons)	12	3.8	9	2.4	21	3.0
Family believe patient's treatment may have been limited to facilitate organ donation	1	0.3	0	-	1	0.1
Family concerned that organs may not be transplantable	1	0.3	1	0.3	2	0.3
Family concerned donation may delay the funeral	1	0.3	0	-	1	0.1
Strong refusal - probing not appropriate	8	2.5	11	2.9	19	2.7
Other	22	6.9	36	9.5	58	8.3
TOTAL	**318**	**100**	**377**	**100**	**695**	**100**

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

Table 13.12 shows the proportion of family approaches where a SN-OD was present, for DBD and DCD separately, and overall. Nationally, 97% 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 good 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 2020 to 31 March 2021, 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	100	99	99.0	144	132	91.7	**94.7**
London	178	173	97.2	100	87	87.0	**93.5**
Midlands	144	135	93.8	153	136	88.9	**91.2**
North West	142	140	98.6	130	118	90.8	**94.9**
Northern	77	74	96.1	59	55	93.2	**94.9**
Northern Ireland	49	47	95.9	26	25	96.2	**96.0**
Scotland	86	79	91.9	78	61	78.2	**85.4**
South Central	95	92	96.8	74	65	87.8	**92.9**
South East	124	122	98.4	83	71	85.5	**93.2**
South Wales	48	45	93.8	26	20	76.9	**87.8**
South West	87	82	94.3	64	56	87.5	**91.4**
Yorkshire	79	79	100.0	102	96	94.1	**96.7**
TOTAL	**1209**	**1167**	**96.5**	**1039**	**922**	**88.7**	**92.9**

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 numbers of approaches are very small where SN-OD not present and 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 2020 to 31 March 2021, 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	99	80.8	132	68.9	**74.0**	1	100.0	12	25.0	**30.8**	**71.7**
London	173	53.8	87	63.2	**56.9**	5	20.0	13	0.0	**5.6**	**53.6**
Midlands	135	65.9	136	61.0	**63.5**	9	44.4	17	52.9	**50.0**	**62.3**
North West	140	80.7	118	72.9	**77.1**	2	50.0	12	8.3	**14.3**	**73.9**
Northern	74	73.0	55	74.5	**73.6**	3	0.0	4	0.0	**0.0**	**69.9**
Northern Ireland	47	85.1	25	76.0	**81.9**	2	0.0	1	0.0	**0.0**	**78.7**
Scotland	79	88.6	61	75.4	**82.9**	7	28.6	17	11.8	**16.7**	**73.2**
South Central	92	80.4	65	67.7	**75.2**	3	100.0	9	11.1	**33.3**	**72.2**
South East	122	77.0	71	74.6	**76.2**	2	100.0	12	33.3	**42.9**	**73.9**
South Wales	45	68.9	20	70.0	**69.2**	3	0.0	6	33.3	**22.2**	**63.5**
South West	82	86.6	56	71.4	**80.4**	5	80.0	8	50.0	**61.5**	**78.8**
Yorkshire	79	81.0	96	65.6	**72.6**	0	-	6	16.7	**16.7**	**70.7**
TOTAL	**1167**	**74.8**	**922**	**68.9**	**72.2**	**42**	**42.9**	**117**	**23.1**	**28.3**	**69.1**

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

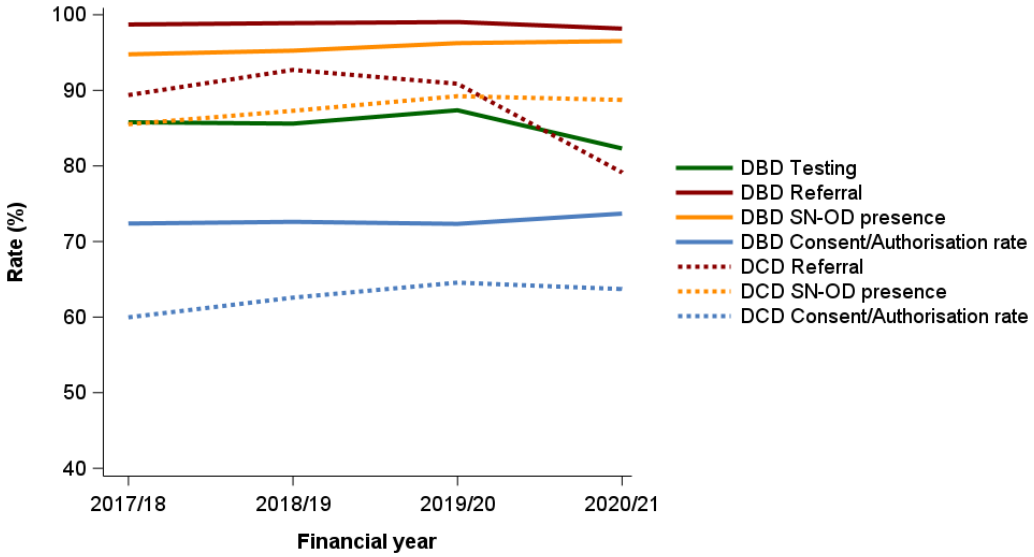
Eligible donor type	Financial year	Number of patients who met referral criteria [1]	Neurological death testing rate (%)	Referral rate (%)	Number of eligible donors	Number of eligible donors whose family were approached	Proportion of family approaches where a SN-OD was present (%)	Number of families who consented to/ authorised donation	Consent/ authorisation rate (%)	Number of actual donors [2]
DBD	**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	1996	87.4	99.0	1658	1468	96.3	1062	72.3	946
	2020-2021	1810	82.3	98.2	1350	1209	96.5	891	73.7	778
DCD	**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	6297		90.9	4349	1812	89.2	1170	64.6	621
	2020-2021	6027		79.1	2857	1039	88.7	662	63.7	402
TOTAL	**2017-2018**	7982		91.5	6041	3333	89.6	2182	65.5	1565
	2018-2019	7739		94.3	5825	3253	91.0	2186	67.2	1588
	2019-2020	8080		92.8	6007	3280	92.4	2232	68.0	1568
	2020-2021	7551		83.2	4207	2248	92.9	1553	69.1	1180

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

[2] Actual donors resulting from eligible DBD donors includes 14 DCD donors in 2017-2018, 24 DCD donors in 2018-2019, 10 DCD donors in 2019-2020 and 12 DCD donors in 2020-2021

DBD referral rates have remained unchanged, with DCD referral rates increasing in 2018/19 before falling slightly in 2019/20 and 2020/21. Increases have been observed in the proportion of approaches where a SN-OD was present. An increase has also been observed in consent/authorisation rate for DCD whereas the DBD rate remains unchanged.

Figure 13.4 DBD and DCD key metrics from the Potential Donor Audit



13.8 Consented/authorised cases not proceeding to solid organ donation

Consent/authorisation for donation was ascertained for 891 eligible DBD donors and 662 eligible DCD donors; 778 (87%) and 402 (61%) 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 113 eligible DBD and 260 eligible DCD cases where consent/authorisation was ascertained. The main reason reported for consented/authorised eligible DBD donors not proceeding to donate was that the organs were deemed to be medically unsuitable by transplant centres. The main reason for consented/authorised DCD donors was prolonged time to asystole, meaning that the donor did not die in a timeframe suitable for organ donation.

Table 13.15 Reasons why consented/authorised eligible donors did not proceed to donate, 1 April 2020 to 31 March 2021, by donor type

	Donor type					
	DBD		DCD		Total	
Primary reason why donation did not proceed	**N**	**%**	**N**	**%**	**N**	**%**
Clinical - Outside of donation criteria at referral	0	-	3	1.2	3	0.8
Clinical - Absolute contraindication to organ donation	8	7.1	3	1.2	11	2.9
Clinical - No transplantable organ	8	7.1	13	5.0	21	5.6
Clinical - Patient's general medical condition	2	1.8	4	1.5	6	1.6
Clinical - Patient actively dying	4	3.5	5	1.9	9	2.4
Clinical - Considered high risk donor	5	4.4	2	0.8	7	1.9
Clinical - DCD clinical exclusion	0	-	1	0.4	1	0.3
Clinical - Patient asystolic	2	1.8	1	0.4	3	0.8
Clinical - Patient expected to die before donation could take place attendance not required	6	5.3	7	2.7	13	3.5
Clinical - PTA post WLST	0	-	109	41.9	109	29.2
Clinical - Organs deemed medically unsuitable by recipient centres	34	30.1	73	28.1	107	28.7
Clinical - Organs deemed medically unsuitable on surgical inspection	15	13.3	1	0.4	16	4.3
Clinical - Positive virology	4	3.5	1	0.4	5	1.3
Clinical - Other	8	7.1	3	1.2	11	2.9
Consent / Auth - Coroner/Procurator fiscal refusal	10	8.8	12	4.6	22	5.9
Consent / Auth - NOK withdraw consent / authorisation	1	0.9	11	4.2	12	3.2
Consent / Auth - Family placed conditions on donation	1	0.9	0	-	1	0.3
Logistical - No critical care bed available	0	-	1	0.4	1	0.3
Logistical - Other	5	4.4	10	3.8	15	4.0
TOTAL	**113**	**100**	**260**	**100**	**373**	**100**

Appendices

Appendix I provides details of the 1180 deceased solid organ donors reported in 2020-2021. Details are given for each donating hospital and the hospitals have been grouped by former English Strategic Health Authority and country.

The number of donors by donor country/ former Strategic Health Authority of residence is given for donors after brain death in **Appendix IIA** and donors after circulatory death in **Appendix IIB**.

The populations used for country/ former Strategic Health Authority per million population are given in **Appendix III** these populations are mid-2019 estimates based on ONS 2011 Census figures.

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

Appendix 1 Deceased solid organ donors and donated organs in the UK, 1 April 2020 - 31 March 2021 (2019-2020), 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	1	(2)	0	(1)	1	(3)	1	(3)	2	1	2	1	1	0
Barrow-In-Furness, Furness General Hospital	2	(1)	1	(0)	3	(1)	2	(1)	6	1	0	2	0	0
Bradford, Bradford Royal Infirmary	2	(7)	1	(2)	3	(9)	2	(8)	6	1	0	2	1	0
Carlisle, Cumberland Infirmary	3	(3)	2	(3)	5	(6)	1	(4)	6	0	0	3	0	0
Cottingham, Castle Hill Hospital	0	(1)	0	(1)	0	(2)	0	(2)	0	0	0	0	0	0
Darlington, Darlington Memorial Hospital	4	(4)	0	(1)	4	(5)	3	(5)	6	1	0	4	2	0
Doncaster, Doncaster Royal Infirmary	3	(5)	1	(1)	4	(6)	1	(5)	6	0	0	2	0	0
Durham, University Hospital Of North Durham	3	(4)	0	(0)	3	(4)	3	(4)	6	0	0	3	1	0
Gateshead, Queen Elizabeth Hospital	1	(4)	1	(4)	2	(8)	1	(7)	4	0	0	1	1	0
Grimsby, Diana Princess Of Wales Hospital	1	(0)	3	(0)	4	(0)	1	(0)	8	0	0	1	0	0
Halifax, Calderdale Royal Hospital	4	(0)	4	(4)	8	(4)	4	(3)	14	1	0	4	0	0
Harrogate, Harrogate District Hospital	4	(4)	1	(0)	5	(4)	3	(3)	10	0	0	3	1	0
Huddersfield, Huddersfield Royal Infirmary	2	(6)	1	(1)	3	(7)	2	(6)	6	0	0	2	0	0
Hull, Hull Royal Infirmary	6	(6)	5	(11)	11	(17)	7	(9)	21	1	2	7	1	0
Keighley, Airedale General Hospital	0	(1)	2	(0)	2	(1)	0	(1)	4	0	0	0	0	0
Leeds, Leeds General Infirmary	5	(10)	13	(13)	18	(23)	12	(14)	34	3	8	8	3	0
Leeds, St James's University Hospital	0	(1)	3	(0)	3	(1)	0	(1)	6	0	0	0	0	0
Middlesbrough, The James Cook University Hospital	14	(6)	5	(4)	19	(10)	14	(6)	38	2	4	14	3	0
Newcastle, Freeman Hospital	1	(1)	4	(4)	5	(5)	1	(3)	10	0	0	1	0	0
Newcastle, Royal Victoria Infirmary	15	(26)	6	(11)	21	(37)	12	(28)	37	7	6	12	6	0
Northumbria, NSECH	3	(7)	1	(1)	4	(8)	2	(7)	8	0	0	2	0	0
Rotherham, Rotherham District General Hospital	2	(2)	1	(2)	3	(4)	1	(3)	6	0	0	1	1	0
Scarborough, Scarborough General Hospital	1	(4)	0	(0)	1	(4)	0	(2)	2	0	0	0	0	0
Scunthorpe, Scunthorpe General Hospital	1	(0)	1	(2)	2	(2)	2	(2)	4	0	0	2	1	0
Sheffield, Northern General Hospital	3	(8)	1	(5)	4	(13)	2	(7)	6	1	0	3	1	0
Sheffield, Royal Hallamshire Hospital	9	(6)	1	(3)	10	(9)	10	(9)	20	1	2	9	0	0
Sheffield, Sheffield Children's Hospital	1	(0)	0	(0)	1	(0)	1	(0)	2	1	2	1	1	0
South Shields, South Tyneside District General Hospital	1	(1)	1	(0)	2	(1)	1	(1)	4	0	0	1	1	0
Stockton-On-Tees, University Hospital Of North Tees	3	(4)	0	(0)	3	(4)	2	(3)	6	1	3	2	0	0
Sunderland, Sunderland Royal Hospital	2	(4)	2	(1)	4	(5)	1	(2)	8	1	0	1	0	0
Wakefield, Pinderfields General Hospital	2	(5)	1	(1)	3	(6)	3	(5)	6	1	0	3	0	0
Whitehaven, West Cumberland Hospital	1	(2)	1	(1)	2	(3)	2	(2)	4	0	0	2	1	0
Worksop, Bassetlaw District General Hospital	1	(0)	0	(0)	1	(0)	0	(0)	0	0	0	1	0	0
York, York District Hospital	2	(2)	1	(2)	3	(4)	3	(1)	4	2	0	3	0	0
Total	**103**	**(137)**	**64**	**(79)**	**167**	**(216)**	**100**	**(157)**	**310**	**26**	**29**	**101**	**26**	**0**

Appendix 1 Deceased solid organ donors and donated organs in the UK, 1 April 2020 - 31 March 2021 (2019-2020), 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	0	(1)	0	(2)	0	(3)	0	(2)	0	0	0	0	0	0
Blackburn, Royal Blackburn Hospital	2	(7)	1	(4)	3	(11)	0	(6)	6	0	0	0	0	0
Blackpool, Blackpool Victoria Hospital	1	(2)	1	(4)	2	(6)	2	(3)	4	0	0	2	0	0
Bolton, Royal Bolton Hospital	1	(0)	1	(3)	2	(3)	2	(2)	4	1	0	2	0	0
Bury, Fairfield General Hospital	5	(0)	0	(2)	5	(2)	3	(1)	8	0	0	4	0	0
Chester, Countess Of Chester Hospital	1	(4)	2	(1)	3	(5)	1	(4)	6	0	0	1	0	0
Crewe, Leighton Hospital	2	(3)	0	(3)	2	(6)	2	(4)	4	0	0	2	1	0
Lancaster, Royal Lancaster Infirmary	3	(1)	1	(1)	4	(2)	3	(1)	8	1	2	3	0	0
Liverpool, Alder Hey Children's Hospital	2	(1)	1	(0)	3	(1)	3	(1)	6	2	0	3	1	2
Liverpool, Liverpool Heart And Chest Hospital	0	(2)	1	(2)	1	(4)	0	(3)	2	0	0	0	0	0
Liverpool, Royal Liverpool University Hospital	1	(4)	0	(0)	1	(4)	0	(4)	2	0	0	0	0	0
Liverpool, University Hospital Aintree	5	(0)	5	(4)	10	(4)	5	(4)	20	2	0	5	1	0
Liverpool, Walton Centre For Neurology And Neurosurgery	10	(10)	7	(7)	17	(17)	13	(9)	31	3	2	9	4	0
Macclesfield, Macclesfield District General Hospital	1	(1)	1	(1)	2	(2)	1	(2)	4	0	0	1	0	0
Manchester, Manchester Royal Infirmary	4	(9)	0	(3)	4	(12)	2	(9)	5	0	0	3	0	0
Manchester, North Manchester General Hospital	2	(0)	0	(1)	2	(1)	2	(0)	4	1	0	2	0	0
Manchester, Royal Manchester Children's Hospital	0	(1)	1	(1)	1	(2)	1	(2)	2	0	0	1	0	0
Manchester, Wythenshawe Hospital	1	(1)	2	(6)	3	(7)	2	(2)	6	0	0	2	0	0
Oldham, Royal Oldham Hospital (Rochdale Road)	0	(1)	1	(1)	1	(2)	0	(2)	2	0	0	0	0	0
Prescot, Whiston Hospital	7	(4)	0	(1)	7	(5)	6	(4)	11	0	0	7	1	0
Preston, Royal Preston Hospital	8	(13)	9	(7)	17	(20)	13	(13)	34	1	4	11	4	0
Salford, Salford Royal	13	(20)	7	(4)	20	(24)	13	(19)	37	0	4	14	8	0
Southport, Southport District General Hospital	4	(3)	0	(1)	4	(4)	3	(2)	8	0	0	3	0	0
Stockport, Stepping Hill Hospital	3	(1)	1	(2)	4	(3)	2	(2)	6	0	1	3	1	0
Warrington, Warrington Hospital	0	(3)	2	(0)	2	(3)	0	(2)	4	0	0	0	0	0
Wigan, Royal Albert Edward Infirmary	2	(0)	0	(1)	2	(1)	2	(1)	4	0	0	2	1	0
Wirral, Arrowe Park Hospital	4	(4)	0	(2)	4	(6)	3	(4)	8	0	0	3	2	0
Total	**82**	**(96)**	**44**	**(64)**	**126**	**(160)**	**84**	**(108)**	**236**	**11**	**13**	**83**	**24**	**2**
Midlands														
Birmingham, Birmingham Children's Hospital	1	(1)	0	(0)	1	(1)	1	(0)	0	1	0	1	0	0
Birmingham, Birmingham Heartlands Hospital	3	(6)	3	(2)	6	(8)	5	(5)	12	1	0	5	1	0
Birmingham, City Hospital	2	(2)	2	(1)	4	(3)	3	(2)	7	1	0	3	1	0
Birmingham, Queen Elizabeth Hospital Birmingham	12	(16)	3	(10)	15	(26)	13	(20)	27	3	2	14	3	0

Appendix 1 Deceased solid organ donors and donated organs in the UK, 1 April 2020 - 31 March 2021 (2019-2020), by donating hospital

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas	Bowel
Boston, Pilgrim Hospital	0	(6)	1	(1)	1	(7)	0	(3)	2	0	0	0	0	0
Burton-On-Trent, Queen's Hospital	0	(1)	2	(1)	2	(2)	0	(2)	3	0	0	0	0	0
Chesterfield, Chesterfield Royal Hospital	3	(4)	0	(1)	3	(5)	3	(5)	5	1	0	3	0	0
Coventry, University Hospital	8	(10)	4	(16)	12	(26)	10	(16)	24	2	8	10	1	0
Derby, Royal Derby Hospital	2	(5)	3	(2)	5	(7)	2	(6)	8	0	0	3	0	0
Dudley, Russells Hall Hospital	3	(0)	0	(0)	3	(0)	3	(0)	6	0	0	3	0	0
Hereford, The County Hospital	0	(2)	0	(0)	0	(2)	0	(1)	0	0	0	0	0	0
Kettering, Kettering General Hospital	0	(4)	1	(0)	1	(4)	1	(4)	2	0	0	1	0	0
Leicester, Glenfield General Hospital	0	(1)	0	(3)	0	(4)	0	(2)	0	0	0	0	0	0
Leicester, Leicester Royal Infirmary	2	(7)	1	(2)	3	(9)	2	(7)	5	1	0	2	1	0
Lincoln, Lincoln County Hospital	1	(3)	3	(2)	4	(5)	2	(2)	6	0	0	3	0	0
Northampton, Northampton General Hospital	2	(5)	2	(0)	4	(5)	4	(4)	8	0	0	4	0	0
Nottingham, Nottingham City Hospital	0	(0)	2	(1)	2	(1)	1	(0)	4	0	0	1	0	0
Nottingham, Nottingham University Hospital	25	(23)	19	(15)	44	(38)	36	(31)	86	8	13	34	11	0
Nuneaton, George Eliot Hospital	1	(2)	0	(1)	1	(3)	1	(3)	2	0	0	1	0	0
Redditch, The Alexandra Hospital	1	(0)	0	(2)	1	(2)	1	(0)	2	0	0	1	0	0
Shrewsbury, Royal Shrewsbury Hospital	1	(5)	0	(1)	1	(6)	1	(5)	2	0	0	1	0	0
Stoke-On-Trent, Royal Stoke University Hospital	7	(5)	8	(20)	15	(25)	14	(20)	29	3	4	13	5	1
Sutton Coldfield, Good Hope District General Hosp.	2	(2)	2	(1)	4	(3)	4	(1)	8	1	0	4	1	0
Sutton-In-Ashfield, King's Mill Hospital	0	(2)	0	(3)	0	(5)	0	(4)	0	0	0	0	0	0
Telford, The Princess Royal Hospital	1	(3)	1	(0)	2	(3)	2	(3)	4	0	0	2	0	0
Walsall, Manor Hospital	3	(0)	0	(0)	3	(0)	2	(0)	6	0	0	2	0	0
Warwick, Warwick Hospital	2	(2)	0	(0)	2	(2)	2	(2)	4	1	0	2	0	0
West Bromwich, Sandwell General Hospital	1	(3)	0	(0)	1	(3)	1	(3)	2	0	0	1	0	0
Wolverhampton, New Cross Hospital	1	(2)	5	(6)	6	(8)	3	(2)	12	0	0	3	1	0
Worcester, Worcestershire Royal Hospital	1	(4)	3	(3)	4	(7)	2	(5)	8	0	0	2	0	0
Total	**85**	**(126)**	**65**	**(94)**	**150**	**(220)**	**119**	**(158)**	**284**	**23**	**27**	**119**	**25**	**1**
East of England														
Basildon, Basildon Hospital	5	(3)	6	(3)	11	(6)	7	(4)	18	1	2	9	4	0
Bedford, Bedford Hospital	1	(2)	1	(2)	2	(4)	2	(2)	4	0	4	2	1	0
Bury St Edmunds, West Suffolk Hospital	1	(1)	2	(0)	3	(1)	2	(1)	6	1	2	2	1	0
Cambridge, Addenbrooke's Hospital	11	(12)	21	(32)	32	(44)	20	(30)	55	4	2	23	6	2
Chelmsford, Broomfield Hospital	3	(2)	0	(1)	3	(3)	1	(2)	6	0	0	1	0	0
Colchester, Colchester General Hospital	1	(3)	1	(1)	2	(4)	1	(2)	4	0	0	1	0	0
Great Yarmouth, James Paget Hospital	2	(1)	0	(3)	2	(4)	2	(1)	4	0	0	2	1	0
Harlow, Princess Alexandra Hospital	2	(0)	0	(7)	2	(7)	1	(2)	4	0	0	1	0	0
Huntingdon, Hinchingbrooke Hospital	1	(0)	0	(0)	1	(0)	1	(0)	2	0	0	1	0	0

Appendix 1 Deceased solid organ donors and donated organs in the UK, 1 April 2020 - 31 March 2021 (2019-2020), by donating hospital

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas	Bowel
Ipswich, Ipswich Hospital	1	(3)	0	(5)	1	(8)	1	(5)	2	0	0	1	0	0
Kings Lynn, The Queen Elizabeth Hospital	2	(1)	1	(4)	3	(5)	1	(3)	6	0	0	1	1	0
Luton, Luton And Dunstable Hospital	2	(4)	2	(4)	4	(8)	3	(7)	8	0	4	2	1	0
Milton Keynes, Milton Keynes General Hospital	0	(2)	0	(1)	0	(3)	0	(3)	0	0	0	0	0	0
Norwich, Norfolk And Norwich University Hospital	8	(12)	11	(11)	19	(23)	15	(14)	36	2	4	15	2	0
Papworth, Papworth Hospital	1	(1)	2	(2)	3	(3)	2	(1)	6	0	0	2	0	0
Peterborough, Peterborough City Hospital	7	(5)	0	(2)	7	(7)	5	(3)	12	2	2	5	1	0
Stevenage, Lister Hospital	7	(7)	0	(8)	7	(15)	5	(10)	10	0	4	7	1	0
Watford, Watford General Hospital	5	(3)	0	(1)	5	(4)	2	(1)	6	0	0	4	0	0
Westcliff On Sea, Southend Hospital	1	(2)	2	(0)	3	(2)	2	(2)	6	0	0	2	1	0
Total	**61**	**(64)**	**49**	**(87)**	**110**	**(151)**	**73**	**(93)**	**195**	**10**	**24**	**81**	**20**	**2**
London														
Barnet, Barnet General Hospital	1	(1)	1	(1)	2	(2)	1	(1)	4	1	0	0	1	0
Carshalton, St Helier Hospital	3	(1)	0	(1)	3	(2)	2	(2)	6	0	0	2	0	0
Croydon, Mayday University Hospital	2	(3)	0	(1)	2	(4)	2	(4)	4	1	0	2	0	0
Harefield, Harefield Hospital	0	(3)	0	(6)	0	(9)	0	(5)	0	0	0	0	0	0
Harrow, Northwick Park Hospital	2	(3)	2	(5)	4	(8)	3	(4)	4	0	2	4	0	0
Ilford, King George Hospital	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0	0
Isleworth, West Middlesex University Hospital	4	(0)	0	(1)	4	(1)	3	(0)	6	1	0	4	2	0
Kingston, Kingston Hospital	1	(1)	0	(0)	1	(1)	1	(1)	2	0	0	1	1	0
London, Charing Cross Hospital	13	(10)	2	(3)	15	(13)	15	(11)	30	1	4	14	2	0
London, Great Ormond Street Hospital For Children	0	(0)	1	(3)	1	(3)	1	(0)	2	1	0	1	0	0
London, Hammersmith Hospital	0	(0)	2	(3)	2	(3)	1	(2)	4	0	2	1	0	0
London, King's College Hospital	28	(31)	11	(11)	39	(42)	30	(35)	69	10	10	32	7	1
London, National Hospital For Neurology And Neurosurgery	3	(9)	2	(0)	5	(9)	3	(8)	8	0	0	4	0	0
London, Newham General Hospital	0	(1)	1	(0)	1	(1)	0	(1)	2	0	0	0	0	0
London, North Middlesex Hospital	2	(3)	0	(0)	2	(3)	1	(3)	4	1	0	1	1	0
London, Queen Elizabeth Hospital	3	(1)	0	(0)	3	(1)	2	(1)	3	0	0	3	0	0
London, Royal Brompton Hospital	0	(2)	1	(1)	1	(3)	0	(3)	0	0	0	1	0	0
London, Royal Free Hospital	1	(5)	0	(7)	1	(12)	0	(7)	0	0	0	1	0	0
London, St Bartholomew's Hospital	1	(3)	2	(3)	3	(6)	3	(4)	6	0	0	3	0	0
London, St George's Hospital	22	(41)	7	(14)	29	(55)	23	(46)	56	5	8	23	8	0
London, St Mary's Hospital	5	(11)	3	(2)	8	(13)	5	(10)	14	0	0	6	1	0
London, St Thomas' Hospital	2	(8)	3	(5)	5	(13)	3	(6)	10	2	0	3	1	0
London, The Royal London Hospital (Whitechapel)	9	(13)	3	(11)	12	(24)	8	(19)	24	5	2	8	2	0
London, The Whittington Hospital	2	(2)	0	(1)	2	(3)	2	(2)	4	2	0	2	2	2

Appendix 1 Deceased solid organ donors and donated organs in the UK, 1 April 2020 - 31 March 2021 (2019-2020), by donating hospital

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas	Bowel
London, University College Hospital	1	(6)	1	(1)	2	(7)	1	(5)	4	0	0	1	0	0
London, University Hospital Lewisham	2	(1)	0	(0)	2	(1)	2	(1)	4	0	0	2	2	0
London, Whipps Cross Hospital	0	(6)	0	(1)	0	(7)	0	(6)	0	0	0	0	0	0
Orpington, Princess Royal University Hospital	2	(1)	0	(2)	2	(3)	2	(1)	3	0	0	2	1	0
Romford, Queens Hospital	6	(11)	3	(9)	9	(20)	6	(12)	15	1	2	7	3	0
Southall, Ealing Hospital	0	(2)	0	(1)	0	(3)	0	(1)	0	0	0	0	0	0
Sutton, The Royal Marsden Hospital	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0	0
Uxbridge, Hillingdon Hospital	0	(1)	0	(2)	0	(3)	0	(0)	0	0	0	0	0	0
Total	**115**	**(182)**	**45**	**(95)**	**160**	**(277)**	**120**	**(203)**	**288**	**31**	**30**	**128**	**34**	**3**
South East														
Ashford, William Harvey Hospital	3	(8)	4	(1)	7	(9)	3	(7)	14	0	2	3	1	0
Aylesbury, Stoke Mandeville Hospital	5	(2)	0	(1)	5	(3)	3	(1)	6	0	2	5	1	1
Basingstoke, North Hampshire Hospital	2	(3)	0	(4)	2	(7)	2	(4)	4	0	0	2	0	0
Brighton, Royal Sussex County Hospital	7	(9)	8	(7)	15	(16)	11	(11)	27	3	2	12	5	0
Camberley, Frimley Park Hospital	6	(2)	1	(4)	7	(6)	6	(5)	12	2	2	6	1	0
Chertsey, St Peter's Hospital	4	(6)	3	(9)	7	(15)	5	(8)	14	1	4	3	1	0
Chichester, St Richard's Hospital	1	(5)	3	(1)	4	(6)	2	(5)	8	0	0	2	0	0
Dartford, Darent Valley Hospital	2	(2)	0	(1)	2	(3)	2	(1)	4	0	0	2	1	0
Eastbourne, Eastbourne District General Hospital	1	(2)	2	(4)	3	(6)	1	(4)	6	0	0	1	0	0
Epsom General Hospital	0	(0)	1	(0)	1	(0)	1	(0)	2	0	0	1	0	0
Gillingham, Medway Hospital	3	(5)	1	(3)	4	(8)	3	(3)	6	0	2	4	1	0
Guildford, Royal Surrey County Hospital	3	(0)	0	(0)	3	(0)	3	(0)	6	0	2	3	1	0
Hastings, Conquest Hospital	1	(2)	0	(0)	1	(2)	1	(2)	2	0	0	1	0	0
Haywards Heath, Princess Royal Hospital	1	(0)	1	(0)	2	(0)	2	(0)	4	0	2	1	1	0
Maidstone, Maidstone District General Hospital	1	(3)	0	(3)	1	(6)	1	(5)	2	0	0	1	0	0
Margate, Queen Elizabeth The Queen Mother Hospital	2	(6)	0	(3)	2	(9)	2	(8)	4	0	0	2	0	0
Newport, St Mary's Hospital	1	(2)	0	(2)	1	(4)	1	(2)	2	0	0	1	0	0
Oxford, John Radcliffe Hospital	11	(14)	7	(17)	18	(31)	14	(20)	33	4	6	12	2	1
Portsmouth, Queen Alexandra Hospital	5	(3)	2	(3)	7	(6)	4	(5)	14	0	0	4	0	0
Reading, Royal Berkshire Hospital	4	(4)	3	(2)	7	(6)	4	(5)	8	0	0	7	1	1
Redhill, East Surrey Hospital	5	(1)	0	(2)	5	(3)	5	(2)	8	3	2	5	2	0
Slough, Wexham Park Hospital	3	(2)	2	(4)	5	(6)	3	(5)	7	0	0	4	1	0
Southampton, Southampton University Hospitals	22	(24)	11	(14)	33	(38)	24	(29)	62	6	10	22	5	2
Tunbridge Wells, Tunbridge Wells Hospital	3	(1)	0	(1)	3	(2)	1	(2)	4	1	0	2	0	0
Winchester, Royal Hampshire County Hospital	0	(0)	1	(2)	1	(2)	0	(0)	0	0	0	1	0	0
Worthing, Worthing Hospital	4	(1)	4	(1)	8	(2)	7	(1)	16	0	0	7	1	0
Wycombe, Wycombe General Hospital	2	(1)	0	(0)	2	(1)	1	(0)	2	0	0	2	0	0

Appendix 1 Deceased solid organ donors and donated organs in the UK, 1 April 2020 - 31 March 2021 (2019-2020), by donating hospital

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas	Bowel
Total	**102**	**(108)**	**54**	**(89)**	**156**	**(197)**	**112**	**(135)**	**277**	**20**	**36**	**116**	**25**	**5**
South West														
Barnstaple, North Devon District Hospital	4	(3)	1	(0)	5	(3)	4	(3)	10	1	0	4	2	0
Bath, Royal United Hospital	5	(6)	1	(0)	6	(6)	5	(3)	12	2	0	5	1	0
Bournemouth, Royal Bournemouth General Hospital	6	(3)	3	(3)	9	(6)	6	(4)	18	0	0	6	0	0
Bristol, Bristol Royal Hospital For Children	1	(1)	2	(0)	3	(1)	2	(1)	4	1	0	2	2	1
Bristol, Bristol Royal Infirmary	5	(5)	4	(6)	9	(11)	4	(8)	14	0	0	6	0	0
Bristol, Southmead Hospital	25	(13)	5	(13)	30	(26)	26	(19)	58	5	8	26	7	0
Cheltenham, Cheltenham General Hospital	1	(2)	2	(1)	3	(3)	2	(2)	6	0	0	2	1	0
Dorchester, Dorset County Hospital	2	(1)	1	(0)	3	(1)	1	(1)	6	0	0	1	0	0
Exeter, Royal Devon And Exeter Hospital (Wonford)	1	(2)	3	(3)	4	(5)	2	(2)	8	1	0	2	0	0
Gloucester, Gloucestershire Royal Hospital	6	(5)	0	(1)	6	(6)	5	(5)	12	2	2	5	2	0
Plymouth, Derriford Hospital	9	(14)	5	(10)	14	(24)	12	(22)	28	3	2	12	3	0
Poole, Poole General Hospital	1	(1)	1	(1)	2	(2)	1	(0)	4	0	0	1	0	0
Salisbury, Salisbury District Hospital	2	(2)	0	(2)	2	(4)	1	(2)	2	0	0	2	1	0
Swindon, Great Western Hospital	2	(4)	1	(3)	3	(7)	3	(4)	6	0	2	2	0	0
Taunton, Taunton And Somerset Hospital (Musgrove Park)	2	(4)	1	(0)	3	(4)	3	(4)	6	1	0	3	1	0
Torquay, Torbay Hospital	1	(2)	0	(1)	1	(3)	0	(3)	0	0	0	1	0	0
Truro, Royal Cornwall Hospital (Treliske)	6	(2)	2	(3)	8	(5)	5	(2)	12	0	0	7	2	0
Weston-Super-Mare, Weston General Hospital	0	(0)	1	(0)	1	(0)	1	(0)	2	0	2	1	0	0
Yeovil, Yeovil District Hospital	2	(2)	1	(0)	3	(2)	2	(2)	6	0	0	2	1	0
Total	**81**	**(72)**	**34**	**(47)**	**115**	**(119)**	**85**	**(87)**	**214**	**16**	**16**	**90**	**23**	**1**
Isle of Man														
Douglas, Nobles I-O-M Hospital	0	(2)	0	(1)	0	(3)	0	(3)	0	0	0	0	0	0
Total	**0**	**(2)**	**0**	**(1)**	**0**	**(3)**	**0**	**(3)**	**0**	**0**	**0**	**0**	**0**	**0**
Channel Islands														
Guernsey, Princess Elizabeth Hospital	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0	0
St Helier, Jersey General Hospital	1	(1)	0	(0)	1	(1)	1	(1)	2	0	0	1	0	0
Total	**1**	**(2)**	**0**	**(0)**	**1**	**(2)**	**1**	**(2)**	**2**	**0**	**0**	**1**	**0**	**0**
England	**630**	**(789)**	**355**	**(556)**	**985**	**1345)**	**694**	**(946)**	**1806**	**137**	**175**	**719**	**177**	**14**

Appendix 1 Deceased solid organ donors and donated organs in the UK, 1 April 2020 - 31 March 2021 (2019-2020), by donating hospital

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas	Bowel
Wales														
Abergavenny, Nevill Hall Hospital	0	(2)	0	(0)	0	(2)	0	(2)	0	0	0	0	0	0
Bangor, Ysbyty Gwynedd District General Hospital	3	(4)	1	(0)	4	(4)	2	(3)	6	1	0	3	1	0
Bodelwyddan, Glan Clwyd District General Hospital	2	(2)	2	(1)	4	(3)	3	(3)	8	1	0	3	1	0
Bridgend, Princess Of Wales Hospital	0	(1)	2	(0)	2	(1)	1	(1)	4	0	0	1	0	0
Cardiff, University Of Wales Hospital	12	(23)	3	(11)	15	(34)	13	(28)	29	6	6	13	4	0
Carmarthen, Glangwili General Hospital	2	(0)	0	(1)	2	(1)	2	(1)	4	0	2	2	0	0
Haverford West, Withybush General Hospital	0	(1)	0	(0)	0	(1)	0	(1)	0	0	0	0	0	0
Llanelli, Prince Philips Hospital	0	(3)	0	(0)	0	(3)	0	(1)	0	0	0	0	0	0
Merthyr Tydfil, Prince Charles Hospital	1	(5)	1	(2)	2	(7)	2	(6)	4	0	0	2	0	0
Newport, Royal Gwent Hospital	3	(2)	0	(2)	3	(4)	3	(4)	6	0	0	3	1	0
Pontypridd, Royal Glamorgan Hospital	1	(2)	1	(1)	2	(3)	1	(2)	4	0	0	1	0	0
Swansea, Morriston Hospital	4	(5)	3	(2)	7	(7)	6	(7)	12	0	0	6	1	0
Wrexham, Maelor General Hospital	8	(1)	0	(4)	8	(5)	6	(2)	14	1	2	7	0	0
Total	**36**	**(51)**	**13**	**(24)**	**49**	**(75)**	**39**	**(61)**	**91**	**9**	**10**	**41**	**8**	**0**
Scotland														
Aberdeen, Aberdeen Royal Infirmary	6	(12)	3	(4)	9	(16)	6	(13)	18	1	0	5	2	0
Airdrie, Monklands District General Hospital	1	(2)	0	(1)	1	(3)	1	(3)	2	0	0	1	0	0
Ayr, The Ayr Hospital	1	(1)	0	(1)	1	(2)	1	(0)	2	1	0	1	0	0
Dumfries, Dumfries And Galloway Royal Infirmary	2	(0)	0	(0)	2	(0)	2	(0)	4	1	0	2	1	0
Dundee, Ninewells Hospital	3	(3)	3	(2)	6	(5)	4	(4)	12	2	0	3	1	0
East Kilbride, Hairmyres Hospital	3	(1)	0	(1)	3	(2)	3	(1)	6	0	4	3	2	0
Edinburgh, Royal Hospital For Sick Children	1	(0)	0	(0)	1	(0)	1	(0)	2	1	0	1	1	0
Edinburgh, Royal Infirmary Of Edinburgh	11	(3)	13	(6)	24	(9)	19	(5)	48	2	4	18	4	0
Edinburgh, Western General Hospital	0	(9)	0	(2)	0	(11)	0	(8)	0	0	0	0	0	0
Glasgow, Glasgow Royal Infirmary	3	(2)	2	(1)	5	(3)	3	(3)	9	1	2	3	0	0
Glasgow, Golden Jubilee National Hospital	0	(1)	3	(1)	3	(2)	1	(1)	6	0	0	1	1	0
Glasgow, Queen Elizabeth University Hospital	8	(8)	1	(6)	9	(14)	8	(8)	18	0	0	8	1	0
Greenock, Inverclyde Royal Hospital	0	(1)	0	(1)	0	(2)	0	(0)	0	0	0	0	0	0
Inverness, Raigmore Hospital	6	(3)	1	(1)	7	(4)	6	(3)	12	2	2	7	1	0
Kilmarnock, Crosshouse Hospital	9	(4)	0	(1)	9	(5)	9	(5)	18	2	2	9	2	0
Kirkcaldy, Victoria Hospital	3	(4)	1	(5)	4	(9)	3	(4)	8	0	0	3	0	0
Larbert, Forth Valley Royal Hospital	1	(8)	1	(0)	2	(8)	2	(5)	4	1	2	1	0	0
Livingston, St John's Hospital	2	(3)	0	(0)	2	(3)	2	(3)	4	0	0	2	0	0
Melrose, Borders General Hospital	0	(1)	1	(1)	1	(2)	0	(1)	2	0	0	0	0	0
Paisley, Royal Alexandra Hospital	2	(5)	1	(0)	3	(5)	1	(4)	4	0	0	2	1	0
Wishaw, Wishaw General Hospital	2	(3)	1	(1)	3	(4)	3	(2)	6	1	2	3	1	0

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Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Heart	Lung	Liver	Pancreas	Bowel
Total	**64**	**(74)**	**31**	**(35)**	**95**	**(109)**	**75**	**(73)**	**185**	**15**	**18**	**73**	**18**	**0**
Northern Ireland														
Belfast, Antrim Hospital	3	(4)	0	(0)	3	(4)	3	(3)	6	0	0	3	0	0
Belfast, Belfast City Hospital	0	(2)	1	(2)	1	(4)	1	(1)	2	1	2	1	1	0
Belfast, Mater Infirmorum Hospital	0	(1)	0	(1)	0	(2)	0	(1)	0	0	0	0	0	0
Belfast, Royal Belfast Hospital For Sick Children	1	(0)	0	(0)	1	(0)	1	(0)	2	1	0	1	0	0
Belfast, Royal Victoria Hospital	18	(17)	7	(12)	25	(29)	19	(18)	47	5	6	20	6	0
Belfast, The Ulster Hospital	1	(1)	2	(2)	3	(3)	0	(1)	4	0	0	1	0	0
Coleraine, Causeway Hospital	1	(3)	0	(0)	1	(3)	1	(3)	2	0	0	1	0	0
Enniskillen, South West Acute Hospital	5	(2)	0	(0)	5	(2)	5	(2)	10	2	2	4	1	0
Londonderry, Altnagelvin Area Hospital	2	(0)	1	(2)	3	(2)	3	(0)	6	0	0	3	0	0
Portadown, Craigavon Area Hospital	5	(2)	4	(0)	9	(2)	4	(1)	18	1	0	3	0	0
Total	**36**	**(32)**	**15**	**(19)**	**51**	**(51)**	**37**	**(30)**	**97**	**10**	**10**	**37**	**8**	**0**

Appendix IIA Numbers of donors after brain death and organs retrieved in the UK, 1 April 2020 - 31 March 2021, 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	101	11.7	80	9.3	181	24	21	84	19	0
North West	77	10.9	64	9.1	140	8	15	65	16	2
Midlands	91	8.6	84	7.9	171	18	19	86	17	1
East of England	70	10.7	53	8.1	125	9	22	59	12	1
London	80	8.9	62	6.9	132	15	10	75	20	2
South East	120	13.5	100	11.2	210	19	32	109	24	5
South West	80	14.2	69	12.3	146	18	10	73	18	2
England	**619**	**11.0**	**512**	**9.1**	**1105**	**111**	**129**	**551**	**126**	**13**
Isle of Man	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Channel Islands	**1**	**5.9**	**1**	**5.9**	**2**	**0**	**0**	**1**	**0**	**0**
Wales	**38**	**12.1**	**34**	**10.8**	**69**	**8**	**6**	**36**	**11**	**1**
Scotland	**62**	**11.4**	**58**	**10.6**	**119**	**12**	**16**	**60**	**14**	**0**
Northern Ireland	**33**	**17.5**	**31**	**16.4**	**65**	**8**	**6**	**29**	**6**	**0**
TOTAL	**766**	**11.4**	**645**	**9.6**	**1380**	**142**	**159**	**688**	**159**	**14**

Appendix IIB Numbers of donors after circulatory death and organs retrieved in the UK, 1 April 2020 - 31 March 2021, 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	57	0	18	0	113	3	8	14	6	0
North West	45	0	17	0	89	2	0	14	5	0
Midlands	68	0	37	0	129	4	8	36	9	0
East of England	53	0	33	0	102	4	8	33	9	0
London	37	0	20	0	69	4	6	17	3	0
South East	51	0	30	0	93	5	10	25	6	0
South West	37	0	14	0	74	1	4	14	4	0
England	**348**	**6.2**	**169**	**3.0**	**669**	**23**	**44**	**153**	**42**	**0**
Isle of Man	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Channel Islands	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Wales	**14**	**4.4**	**8**	**2.5**	**28**	**2**	**4**	**8**	**2**	**0**
Scotland	**30**	**5.5**	**14**	**2.6**	**60**	**2**	**2**	**11**	**4**	**0**
Northern Ireland	**15**	**7.9**	**5**	**2.6**	**30**	**2**	**4**	**5**	**2**	**0**
TOTAL	**414**	**6.2**	**200**	**3.0**	**799**	**29**	**54**	**182**	**52**	**0**

Appendix III	Populations for NHS regions, 2020-2021 Mid-2019 estimates based on ONS 2011 Census figures
NHS region	**Population (millions)**
North East and Yorkshire	8.6
North West	7.06
Midlands	10.6
East of England	6.53
London	8.96
South East	8.9
South West	5.63
England	**56.29**
Isle of Man	**0.08**
Channel Islands	**0.17**
Wales	**3.15**
Scotland	**5.46**
Northern Ireland	**1.89**
TOTAL	**67.04**

Appendix IVA **UK solid organ transplants from deceased UK donors[1] to non-UK residents, 1 April 2018 to 31 March 2021**

Transplant type by year

Year	Transplant type	Residency of recipient ROI	Other EU	Non-EU	Total
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	1	1	6
	Bilateral lung	1	0	0	1
	Bowel only	0	0	1	1
	Multivisceral	1	0	0	1
	Modified multivisceral	1	0	0	1
	Other tissue	1	0	0	1
	Total	**9**	**4**	**2**	**15**
2020/21	Heart	1	0	0	1
	Liver	2	2	1	5
	Bowel only	0	0	1	1
	Total	**3**	**2**	**2**	**7**

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 2018 to 31 March 2021**

Transplant type by year

Year	Transplant type	Country of donation ROI	Other EU	Non-EU	Total
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**
2020/21	Heart	2	0	0	2
	Liver	3	0	0	3
	Total	**5**	**0**	**0**	**5**

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 2018 to 31 March 2021**

Transplant type by year

Year	Transplant type	Residency of recipient ROI	Other EU	Non-EU	Total
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**
2020/21	Heart	0	1	0	1
	Liver	2	0	0	2
	Bilateral lung	0	1	0	1
	Total	**2**	**2**	**0**	**4**

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

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