NHS
Blood and Transplant

Organ and Tissue Donation and Transplantation

Activity Report 2022/23

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 22 May 2023 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-2021 estimates based on ONS 2021 Census figures and are given in **Appendix III**.

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

A supplementary report on organ donation and transplantation activity for Black, Asian and ethnic minority groups is published alongside this Activity Report – *Annual report on ethnicity differences in Organ Donation and Transplantation*. It provides additional information on trends in organ donation and transplantation by ethnicity.

The COVID-19 pandemic 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, resulted in a major reduction in the number of organ transplants undertaken and the impact of the pandemic is still evident.

Waiting list figures at 31 March 2020, 2021 and 2022 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.

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.

Photographer credit: Stephen Hamilton from Press Eye

Foreword

Organ Donation and Transplantation remains a vital part of the NHS' work in saving lives. Thanks to the 1,429 people who donated their organs after death and the 958 living donors last year (2022/23), 4,533 people with organ failure, who desperately needed a transplant, were given a gift of life.

While the global pandemic reduced the opportunity for lifesaving and life-transforming organ [and tissue] transplantation, we are achieving a steady return to pre-pandemic donation and transplantation activity levels. This Activity Report highlights a 4% increase of patients receiving a transplant last year than the previous year, which is 5% off pre-pandemic levels.

However, this increase is not enough to meet the need of those needing an organ transplant. The sad fact is transplant waiting lists have returned to levels last seen in 2014. There were 6,959 patients waiting for a transplant with a further 3,822 temporarily suspended from transplant lists as of the end of March 2023. Last year (2022/23), 439 patients died while on the active list waiting for their transplant compared with 429 in the previous year. A further 732 were removed from the transplant list, mostly as a result of deteriorating health and ineligibility for transplant.

There are several ongoing challenges. Organ donation is a very precise science. Only one per cent of people who die in the UK every year die in the right circumstances and in the right location to be eligible for their organs to be used to save someone's life. That is why we need as large a pool of people as possible who have agreed to donate their organs by signing the NHS Organ Donor Register and telling their families what they want to happen when they die; and also why we need to embrace technology and innovation to utilise as many of those donated organs as we can.

The consent/authorisation rates for organ donation fell again last year from 66% to 62%. The main reason given as to why families did not support organ donation is because their loved one had previously expressed a wish not to donate. Overall last year, 1130 families declined support for organ donation, meaning hundreds of opportunities for transplant were missed. Ultimately the more people who sign the NHS Organ Donor Register and tell their families of their decision to be a donor, the more families will support that decision and the more lives will be saved.

The number of patients donating after brain stem death (DBD) is decreasing, but patients donating after circulatory death (DCD) is increasing. This shift poses challenges for the type and quality of organs that can be donated. This is where we need to use resources that enable the utilisation of more organs from DCD patients.

Existing initiatives such as abdominal normothermic regional perfusion (ANRP) of donors after circulatory death to improve liver outcomes and facilitating the transplantation of hearts from donors after circulatory death (DCD), are working well. Last year there was a 20% increase in the number of people receiving a heart transplant – 55 of those patients receiving a heart through DCD donation. The DCD hearts programme now accounts for around a third of all heart transplants in the UK. These are highly successful programmes that have saved hundreds of lives since their creation.

There is growing evidence that new perfusion technology gives clinicians more confidence to transplant more organs successfully by reducing damage during organ transport and providing a mechanism to repair and recover donated organs. Renewed partnerships with our stakeholders and initiatives like the Organ Utilisation Group are focused on developing these and other initiatives.

Compared to last year (2021/22), the number of cornea-only donors increased by 7%, while the number of cornea and solid organ donors fell by 8%. In 2022/23, corneas were retrieved from 246 organ donors after brain death (DBD) and 201 organ donors after circulatory death (DCD). Despite the number of donors increasing last year, the number of actual transplants fell by 4%.

Through the dedication of the donation and transplantation community and the generosity of our donors and their families we will return to baseline pre-pandemic levels of donation and transplantation activity. More is needed if we are to implement our vision for honouring the gift of donation and meeting the need of all who require transplantation.

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Medical Director - Organ and Tissue Donation and Transplantation

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Summary of Donor and Transplant Activity

In the financial year to 31 March 2023, compared with the previous year

- there was a 2% increase in the number of deceased donors to 1,429
- the number of donors after brain death decreased by 2% to 772, while the number of donors after circulatory death increased by 7% to 657.
- the number of living donors increased by 2% to 958, accounting for 40% of the total number of organ donors
- the total number of patients whose lives were potentially saved or improved by an organ transplant increased by 4% to 4,533

The total number of patients registered for a transplant has increased (by 47%), so that:

- there were 6,959 patients waiting for a transplant at the end of March 2023, with a further 3,822 temporarily suspended from transplant lists
- 439 patients died while on the active list waiting for their transplant compared with 429 in the previous year, an increase of 2%. A further 732 were removed from the transplant list. The removals were mostly as a result of deteriorating health and ineligibility for transplant and many of these patients would have died shortly afterwards.

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

- an increase of 3% in the total number of kidney transplants
- a decrease of 2% in the total number of transplants involving a pancreas
- an increase of 8% in the total number of liver transplants
- an increase of 20% in the total number of heart transplants
- a decrease of 7% in the total number of lung or heart-lung transplants
- a decrease of 7% in the total number of intestinal transplants
- an increase of 7% in the total number of corneas retrieved to NHSBT Eye Banks and a decrease of 4% in the total number of corneal transplants
- an increase in the overall referral rate of potential donors from 93% to 94%
- no change in the proportion of approaches where a Specialist Nurse - Organ Donation was present - 93%
- a decrease in the overall consent/authorisation rate for organ donation from 66% to 62%
- an increase in the number of opt-in registrations on the ODR, from 27.7 to 28.6 million at the end of March 2023. There were just under 2.5 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 2022 to 31 March 2023

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 and 2021. There were 690 more active patients at 31 March 2023 than at the end of the previous financial year. The change in donor and transplant numbers (1 April 2013 to 31 March 2023) and the number of patients registered on the transplant lists at 31 March each year are shown in **Figure 2.1**. There were 161 more deceased donor transplants in 2022-2023 than in the previous year, representing a 5% increase. There was a 2% increase in the number of deceased donors. Despite these increases, neither donor nor transplant numbers have recovered to pre-pandemic levels.

Figure 2.1 **Number of deceased donors and transplants in the UK, 1 April 2013 - 31 March 2023, and patients on the active transplant list at 31 March**

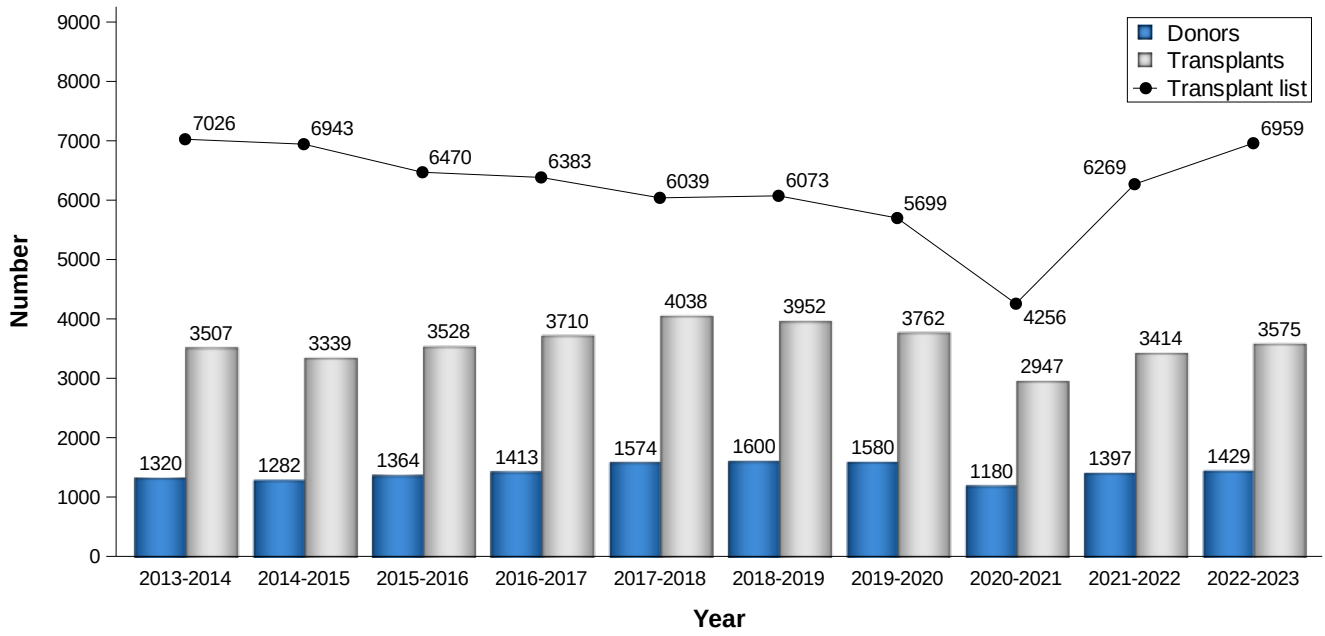


Figure 2.2 shows the number of deceased and living donors for 2013-2023. The number of deceased donors after circulatory death (DCD) have increased over the decade, with the proportion of donors which are DCD donors compared to deceased donors after brain death (DBD) the highest it has ever been. In 2022-2023, the numbers of DBD donors fell and DCD donors increased compared to the previous year, to 772 and 657 respectively. The number of living donors has fallen, from a peak of 1,150 donors in 2013-2014 to 958 in 2022-2023, which nevertheless represents a 2% increase compared with 2021-2022.

Figure 2.2 Number of deceased and living donors in the UK, 1 April 2013 - 31 March 2023

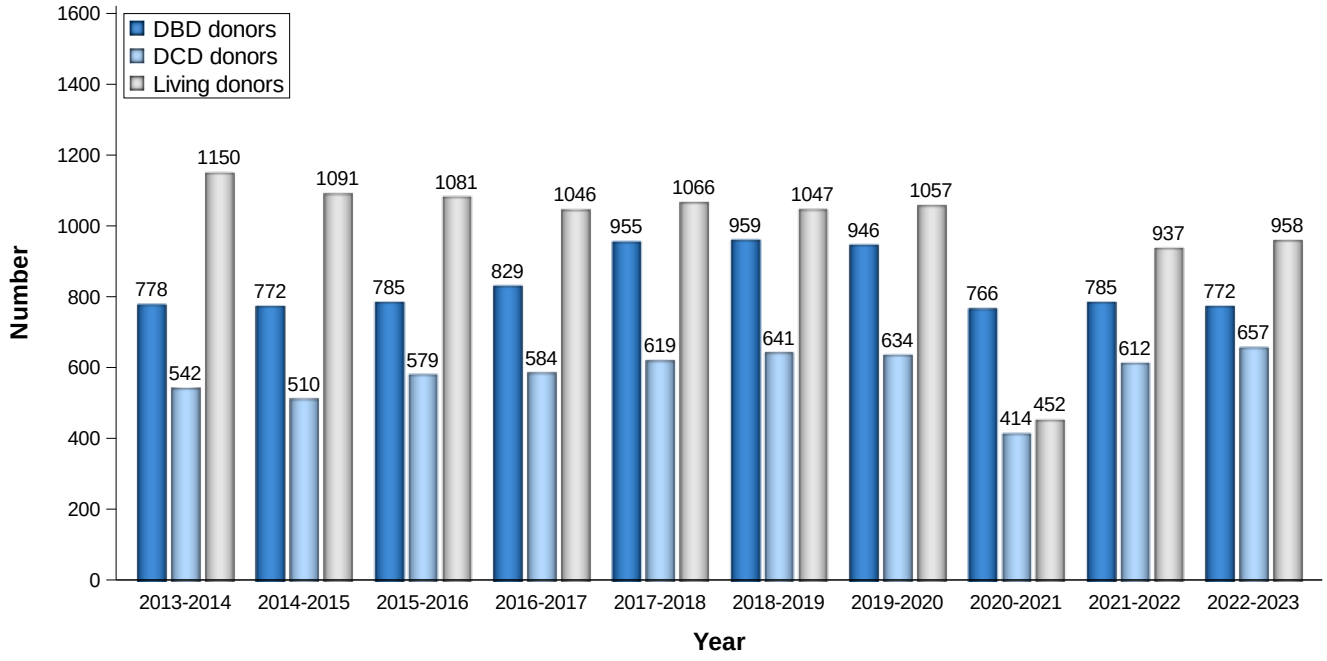
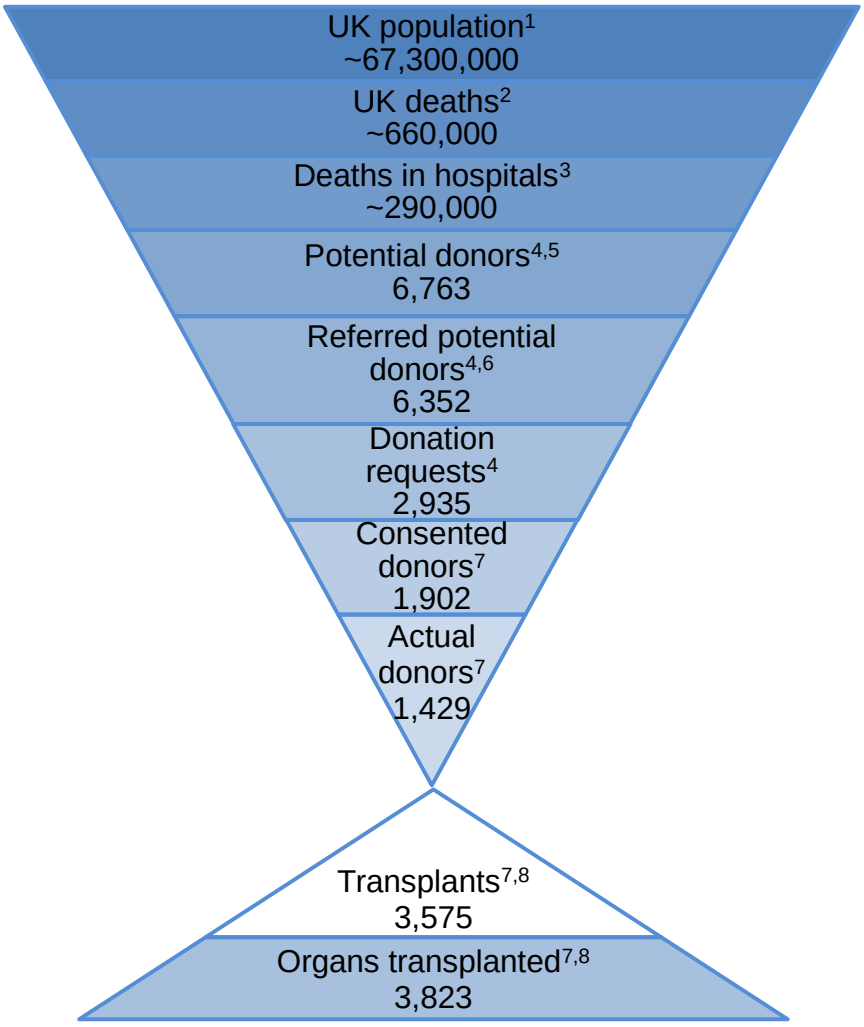


Figure 2.3 shows the potential deceased organ donor population in the UK. Not everyone can be a deceased organ donor and this figure highlights the small proportion of deaths in the UK that represent potential donors. *Please note that the information presented comes from several different sources. The 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 2022 – 31 March 2023



[1] Mid 2021 estimates: www.ons.gov.uk
[2] 2022 data: England & Wales www.ons.gov.uk; Scotland www.gro-scotland.gov.uk; Northern Ireland www.nisra.gov.uk
[3] 2022 data: England & Wales www.ons.gov.uk; Scotland www.isdscotland.org; Northern Ireland www.nisra.gov.uk
[4] 2022/2023 data, NHSBT, Potential Donor Audit as at 9 May 2023
[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] 2022/2023 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 2022-2023 and patients on the transplant list at 31 March 2023 for each country in the UK and overall.

Table 2.1 Deceased donors and transplants 1 April 2022 - 31 March 2023, and transplant lists as at 31 March 2023, 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	1071	(18.9)	72	(23.2)	97	(17.7)	53	(27.9)	1360	(20.3)
Transplants	2018	(35.7)	99	(31.8)	159	(29.0)	63	(33.2)	2349	(35.0)
Transplant list	4945	(87.5)	185	(59.5)	422	(77.0)	76	(40.0)	5655	(84.4)
Pancreas										
Deceased donors	276	(4.9)	18	(5.8)	28	(5.1)	14	(7.4)	357	(5.3)
Transplants	110	(1.9)	12	(3.9)	25	(4.6)	0	(0.0)	147	(2.2)
Transplant list	239	(4.2)	14	(4.5)	32	(5.8)	3	(1.6)	290	(4.3)
Heart										
Deceased donors	159	(2.8)	12	(3.9)	19	(3.5)	7	(3.7)	211	(3.1)
Transplants[3]	155	(2.7)	5	(1.6)	44	(8.0)	8	(4.2)	214	(3.2)
Transplant list[3]	250	(4.4)	14	(4.5)	29	(5.3)	17	(8.9)	312	(4.7)
Lung										
Deceased donors	96	(1.7)	3	(1.0)	3	(0.5)	4	(2.1)	112	(1.7)
Transplants	85	(1.5)	6	(1.9)	7	(1.3)	2	(1.1)	101	(1.5)
Transplant list	248	(4.4)	12	(3.9)	29	(5.3)	12	(6.3)	302	(4.5)
Liver										
Deceased donors	834	(14.8)	60	(19.3)	85	(15.5)	35	(18.4)	1074	(16.0)
Transplants	726	(12.8)	42	(13.5)	75	(13.7)	21	(11.1)	876	(13.1)
Transplant list	563	(10.0)	32	(10.3)	55	(10.0)	38	(20.0)	697	(10.4)
Intestinal										
Deceased donors	20	(0.4)	1	(0.3)	3	(0.5)	1	(0.5)	25	(0.4)
Transplants	19	(0.3)	0	(0.0)	3	(0.5)	2	(1.1)	25	(0.4)
Transplant list	8	(0.1)	0	(0.0)	2	(0.4)	0	(0.0)	10	(0.1)
Total[4]										
Deceased donors	1121	(19.8)	78	(25.1)	100	(18.2)	57	(30.0)	1429	(21.3)
Transplants	3003	(53.1)	155	(49.8)	295	(53.8)	96	(50.5)	3575	(53.3)
Transplant list	5995	(106.0)	243	(78.1)	539	(98.4)	143	(75.3)	6959	(103.8)

[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] Excludes heart-lung recipients
[4] 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 2023, 6,959 patients were registered for an organ transplant in the UK on the active transplant list. A further 3,822 patients were temporarily suspended from the active national transplant list because they were unfit or otherwise unavailable for transplant. Details of numbers of patients on each of the organ transplant lists are given in **Table 2.2** for 31 March 2022 and 2023. Between these dates the total number increased by 690 (11%). This is mostly due to increases in the kidney, liver and lung transplant lists, where patients have built up due to a reduction in transplant numbers due to the COVID-19 pandemic.

Table 2.2 Active transplant lists in the UK at 31 March 2022 and 2023

	2022	2023	% Change
Kidney & pancreas patients	**5022**	**5643**	**+12**
Kidney	4744	5353	+13
Kidney & pancreas	243	258	+6
Kidney & pancreas islets	8	13	-
Pancreas	9	7	-
Pancreas islets	18	12	-33
Cardiothoracic patients	**587**	**607**	**+3**
Heart	320	305	-5
Heart-lung	9	12	-
Lung(s)	258	290	+12
Liver patients	**612**	**663**	**+8**
Intestinal patients	**14**	**10**	**-29**
Other multi-organ patients[1]	**34**	**36**	**+6**
ALL PATIENTS	**6269**	**6959**	**+11**

Percentages not reported when fewer than 10 in either year

[1] Includes patients waiting for kidney and liver transplants (26 in 2022, 29 in 2023), kidney and heart transplants (2 in 2022, 2 in 2023), liver and heart transplants (6 in 2022, 5 in 2023)

During 2022-2023, 439 patients died whilst active/suspended on the transplant list or within one year of removal from the list. For comparison, in 2021-2022, 429 patients died. This information for 2022-2023 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 2021 and 31 March 2023

	2021-2022	2022-2023		
	Total	Total	Adult	Paediatric
Kidney & pancreas patients	**287**	**313**	**310**	**3**
Kidney	268	281	278	3
Kidney & pancreas	16	26	26	0
Kidney & pancreas islets	0	0	0	0
Pancreas	1	1	1	0
Pancreas islets	2	5	5	0
Cardiothoracic patients	**67**	**57**	**51**	**6**
Heart	22	21	15	6
Heart-lung	1	0	0	0
Lung(s)	44	36	36	0
Liver patients	**67**	**67**	**63**	**4**
Intestinal patients	**2**	**0**	**0**	**0**
Other multi-organ patients[1]	**6**	**2**	**2**	**0**
ALL PATIENTS	**429**	**439**	**426**	**13**

[1] Includes patients waiting for kidney and liver transplants (2 in 2021/22, 1 adult in 2022/23), liver and heart transplants (1 in 2021/22) and liver and lung transplant (3 in 2021/22, 1 adult in 2022/23)

2.3 Transplants

As services started to return to more normal levels there was a 4% increase in the total number of organ transplants (from deceased and living donors) last year: 4,533 transplants were performed in 2022-2023 compared with 4,351 in 2021-2022 (**Table 2.4**). All multi-organ transplants are identified separately as are transplants from living donors.

The total number of kidney transplants increased in 2022-2023; kidney only transplants from donors after circulatory death increased by 8%, while the number of DBD and living donor kidney transplants increased by 1%. The number of heart transplants increased by 20%, the number of lung and heart-lung transplants decreased by 7%, the number of liver transplants increased by 8%, and the number of pancreas transplants (including pancreas only, intestinal, kidney/pancreas and pancreas islets) decreased by 2%.

Table 2.4 Transplants performed in the UK, 1 April 2022 - 31 March 2023

Transplant	2021-2022	2022-2023	% Change
DBD kidney	1190	1203	+1
DCD kidney	936	1011	+8
Living donor kidney	912	923	+1
DBD kidney and pancreas	85	81	-5
DCD kidney and pancreas	35	40	+14
Kidney and pancreas islets	7	5	-
DBD pancreas	9	5	-
DCD pancreas	2	3	-
Pancreas Islets	15	13	-13
DBD heart	131	158	+21
DCD heart	44	54	+23
Heart-lung	3	1	-
DBD single lung	12	7	-
DCD single lung	2	1	-
DBD bilateral lung	69	55	-20
DCD bilateral lung	22	37	+68
DBD liver	529	523	-1
DCD liver	194	249	+28
DBD liver lobe	90	93	+3
Living donor liver lobe	25	35	+40
Bowel only[1]	9	5	-
Liver, bowel & pancreas	1	1	-
Multivisceral	10	12	+20
Modified multivisceral	7	7	-
Kidney & liver	7	9	-
Heart & kidney	2	0	-
Heart & liver	2	2	-
Lung & liver	1	0	-
TOTAL ORGAN TRANSPLANTS	**4351**	**4533**	**+4**
Total kidney transplants[2]	**3176**	**3272**	**+3**
Total pancreas transplants[2]	**171**	**167**	**-2**
Total cardiothoracic transplants	**288**	**315**	**+9**
Total liver transplants[2]	**859**	**924**	**+8**
Total intestinal transplants	**27**	**25**	**-7**

Percentage not reported when fewer than 10 in either year
[1] Including a kidney (2 in 2021-22)
[2] Includes intestinal transplants

The total approximate number of patients with a functioning transplant on 31 March 2023 is 60,400 (**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 2023

	Functioning transplants[1]
Kidney	44200
Pancreas	2200
Cardiothoracic	4100
Liver	11700
Intestinal	170
ALL PATIENTS	60400

[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 2% increase in deceased donors (to 1,429) and a 2% increase in living organ donors (to 958) compared with last year**
- **There has been a decrease in donors after brain death of 2% to 772 and an increase of 7% in donors after circulatory death to 657, compared with last year**
- **Donors after brain death provide, on average, one more organ for transplantation for every two donors after circulatory death**
- **Following the changes observed in 2020-2021, donor characteristics have returned to those similar to pre-pandemic and the long term trend towards more donors affected by obesity has continued**

3.1 Summary of activity

There was a 2% increase in the number of deceased organ donors in 2022-2023 (1,429). There was a decrease in donors after brain death (DBD) of 2% and an increase of 7% in donors after circulatory death (DCD).

The 1,429 deceased organ donors gave 4,580 organs compared with 1,397 donors and 4,433 organs in 2021-2022. This represents a 3% increase in organs donated. **Table 3.1** shows deceased organ donors according to the organs they donated.

Nearly all deceased donors (95%) gave a kidney and of these, the majority (77%) also donated at least one other organ. Only 13% of donors after brain death were single organ donors, with similar proportions being liver only or kidney only donors. By contrast, 41% of donors after circulatory death were single organ donors, the majority (94%) of these donating just their kidneys.

Although the vast majority of living organ donors donated a kidney, 35 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 2022 - 31 March 2023, by organ types donated

	DBD	DCD	Living donor	**TOTAL**
Kidney only	58	252	923	**1233**
Kidney & thoracic	7	19	-	**26**
Kidney & liver	352	227	-	**579**
Kidney & pancreas	2	10	-	**12**
Kidney, thoracic & liver	60	30	-	**90**
Kidney, thoracic & pancreas	2	1	-	**3**
Kidney, liver & pancreas	117	64	-	**181**
Kidney, liver, pancreas & bowel	7	-	-	**7**
Kidney, thoracic, liver & pancreas	100	35	-	**135**
Kidney, thoracic, liver & bowel	1	-	-	**1**
Kidney, thoracic, liver, pancreas & bowel	16	-	-	**16**
Thoracic only	3	1	-	**4**
Thoracic & liver	-	1	-	**1**
Thoracic, liver & pancreas	2	-	-	**2**
Liver only	44	17	35	**96**
Liver, pancreas & bowel	1	-	-	**1**
TOTAL	**772**	**657**	**958**	**2387**

Bowel may include abdominal wall/colon/stomach/spleen

3.2 Organ donors

Organ donor rates per million population (pmp) for 2022-2023 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 2022 - 31 March 2023, 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	105	(12.9)	82	(10.1)	187	(23.0)	54	(6.6)
North West	78	(10.5)	55	(7.4)	133	(17.9)	35	(4.7)
Midlands	92	(8.5)	109	(10.1)	201	(18.5)	45	(4.2)
East of England	67	(10.6)	74	(11.7)	141	(22.2)	20	(3.1)
London	85	(9.7)	49	(5.6)	134	(15.2)	38	(4.3)
South East	105	(11.3)	99	(10.7)	204	(22.0)	54	(5.8)
South West	70	(12.3)	51	(8.9)	121	(21.2)	37	(6.5)
England	**602**	**(10.6)**	**519**	**(9.2)**	**1121**	**(19.8)**	**283**	**(5.0)**
Isle of Man	**0**	**(0.0)**	**1**	**(12.5)**	**1**	**(12.5)**	**2**	**(25.0)**
Channel Islands	**1**	**(5.9)**	**1**	**(5.9)**	**2**	**(11.8)**	**1**	**(5.9)**
Wales	**44**	**(14.1)**	**34**	**(10.9)**	**78**	**(25.1)**	**22**	**(7.1)**
Scotland	**49**	**(8.9)**	**51**	**(9.3)**	**100**	**(18.2)**	**45**	**(8.2)**
Northern Ireland	**35**	**(18.4)**	**22**	**(11.6)**	**57**	**(30.0)**	**16**	**(8.4)**
TOTAL[1]	**772**	**(11.5)**	**657**	**(9.8)**	**1429**	**(21.3)**	**944**	**(14.1)**

[1] Includes 645 donors (41 DBD, 29 DCD and 575 living) with an unknown UK postcode and excludes 14 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 11.5 DBD donors pmp for the UK as a whole, but across NHS regions this ranged between 8.5 and 12.9 pmp. Across the four countries of the UK, Northern Ireland had the highest rate of 18.4 pmp. However, the number of eligible donors pmp also varies and further information can be seen in Chapter 13. It should be noted that these figures are not directly comparable, since not all donors are reported in the Potential Donor Audit. For DCD donors the UK rate is 9.8 pmp, and Northern Ireland had the highest rate of 11.6 pmp across countries of the UK, and across NHS regions it ranged from 5.6 to 11.7 pmp. No adjustment has been made for any differences in demographics of the populations across countries or NHS regions.

Table 3.3 Deceased organ donors in the UK, 1 April 2022 - 31 March 2023, by country/ NHS region of hospital of donor death

Country of donation/ NHS region	DBD N	DCD N	**TOTAL** N
North East and Yorkshire	109	82	191
North West	88	59	147
Midlands	89	114	203
East of England	67	76	143
London	123	67	190
South East	104	106	210
South West	66	51	117
England	**646**	**555**	**1201**
Isle of Man	**0**	**1**	**1**
Channel Islands	**1**	**1**	**2**
Wales	**37**	**27**	**64**
Scotland	**51**	**51**	**102**
Northern Ireland	**37**	**22**	**59**
TOTAL	**772**	**657**	**1429**

Table 3.4	Deceased organ donors in the UK, 1 April 2022 - 31 March 2023 by Organ Donation Services Team		
Team	DBD N	DCD N	**TOTAL** N
Eastern	69	85	154
London	92	44	136
Midlands	77	101	178
North West	94	61	155
Northern	48	34	82
Northern Ireland	37	22	59
Scotland	51	51	102
South Central	64	71	135
South East	81	64	145
South Wales	34	28	62
South West	59	44	103
Yorkshire	66	52	118
TOTAL	**772**	**657**	**1429**

The mean number of organs retrieved per donor in 2022-2023 is given by country in **Table 3.5**. Overall, an average of 3.5 organs were donated per DBD donor and 2.9 per DCD donor. These rates ranged from 3.2 (DBD) and 2.7 (DCD) organs per donor in Northern Ireland, to 3.8 (DBD) in Wales and 2.9 (DCD) in England, Wales and Scotland.

Table 3.5	Organs retrieved per donor, in the UK, 1 April 2022 - 31 March 2023, by country of donor residence								
Country	Adult			Paediatric			All		
	DBD	DCD	TOTAL	DBD	DCD	TOTAL	DBD	DCD	TOTAL
England	3.4	2.9	**3.2**	4.3	3.9	**4.2**	3.5	2.9	**3.2**
Wales	3.2	2.9	**3.1**	-	-	**-**	3.2	2.9	**3.1**
Scotland	3.7	2.8	**3.3**	4.7	4.0	**4.5**	3.8	2.9	**3.3**
Northern Ireland	3.1	2.7	**3.0**	4.0	-	**4.0**	3.2	2.7	**3.0**
TOTAL	**3.4**	**2.9**	**3.2**	**4.3**	**3.9**	**4.2**	**3.5**	**2.9**	**3.2**

3.3 Demographic characteristics

While the number of donors overall has increased over the last 10 years, it is important to be aware that there have been changes over time with regard to donor characteristics (**Table 3.6**). In 2022-2023, 37% of deceased donors were aged 60 years or more (**Figure 3.1**). The proportion of clinically obese donors (Body Mass Index (BMI) of 30 or higher) has increased from 22% 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 2% over the same time period. Trends towards 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 8% of donors are from the Black, Asian and minority ethnic community. By contrast, these communities are estimated to represent 18% of the UK population.

Table 3.6 Demographic characteristics of organ donors in the UK 1 April 2022 - 31 March 2023

		DBD		DCD		TOTAL	
		N	%	N	%	N	%
Age (Years)	0-17	28	4	13	2	41	3
	18-49	317	41	200	30	517	36
	50-59	190	25	161	25	351	25
	60-69	142	18	181	28	323	23
	70+	95	12	102	16	197	14
	Mean (SD)	50	(17)	54	(15)	52	(16)
BMI	0-19	75	10	42	6	117	8
	20-29	514	67	401	61	915	64
	30+	183	24	214	33	397	28
	Mean (SD)	27	(6)	28	(6)	27	(6)
Cause of death	Intracranial	694	90	573	87	1267	89
	Trauma	12	2	17	3	29	2
	Other	66	9	67	10	133	9
Ethnicity	White	678	90	611	95	1289	92
	Asian	40	5	14	2	54	4
	Black	22	3	6	1	28	2
	Other	15	2	11	2	26	2
	Unknown	17	-	15	-	32	-
Blood group	O	350	45	317	48	667	47
	A	324	42	263	40	587	41
	B	72	9	63	10	135	9
	AB	24	3	14	2	38	3
	Unknown	2	-	0	-	2	-
Donor gender	Male	395	51	418	64	813	57
	Female	377	49	239	36	616	43
TOTAL		**772**	**100**	**657**	**100**	**1429**	**100**

Figure 3.1 Age of deceased donors in the UK, 1 April 2013 - 31 March 2023

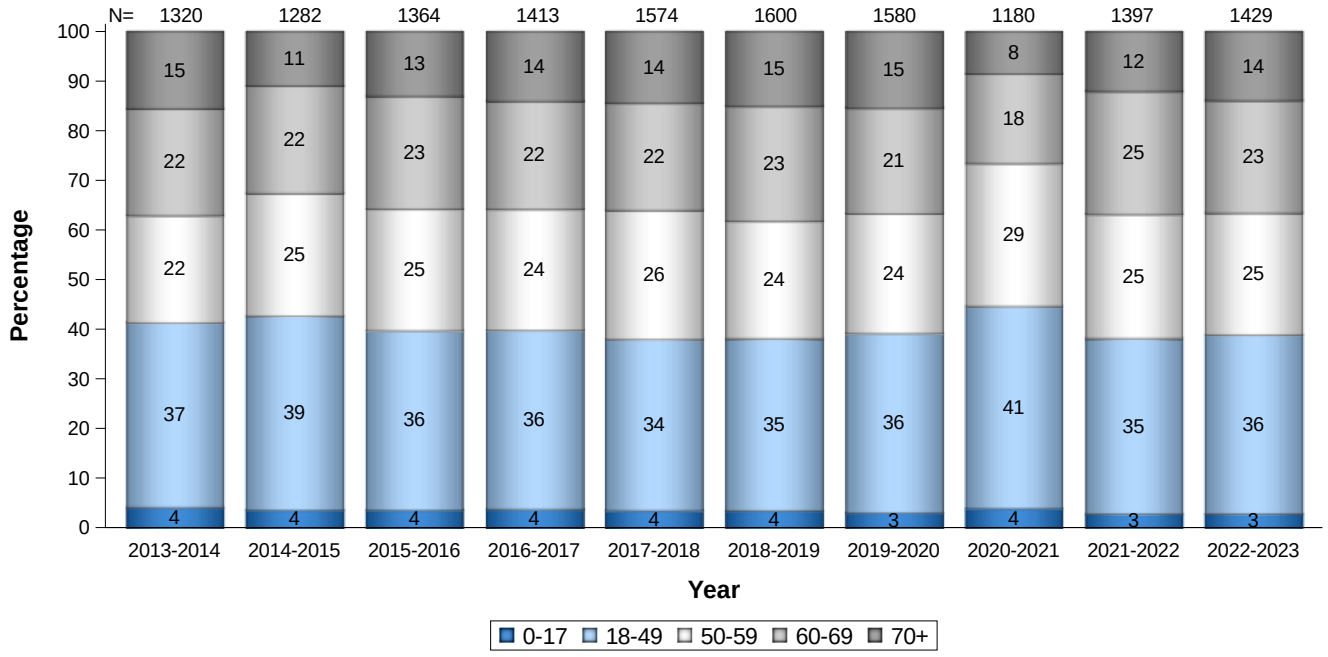
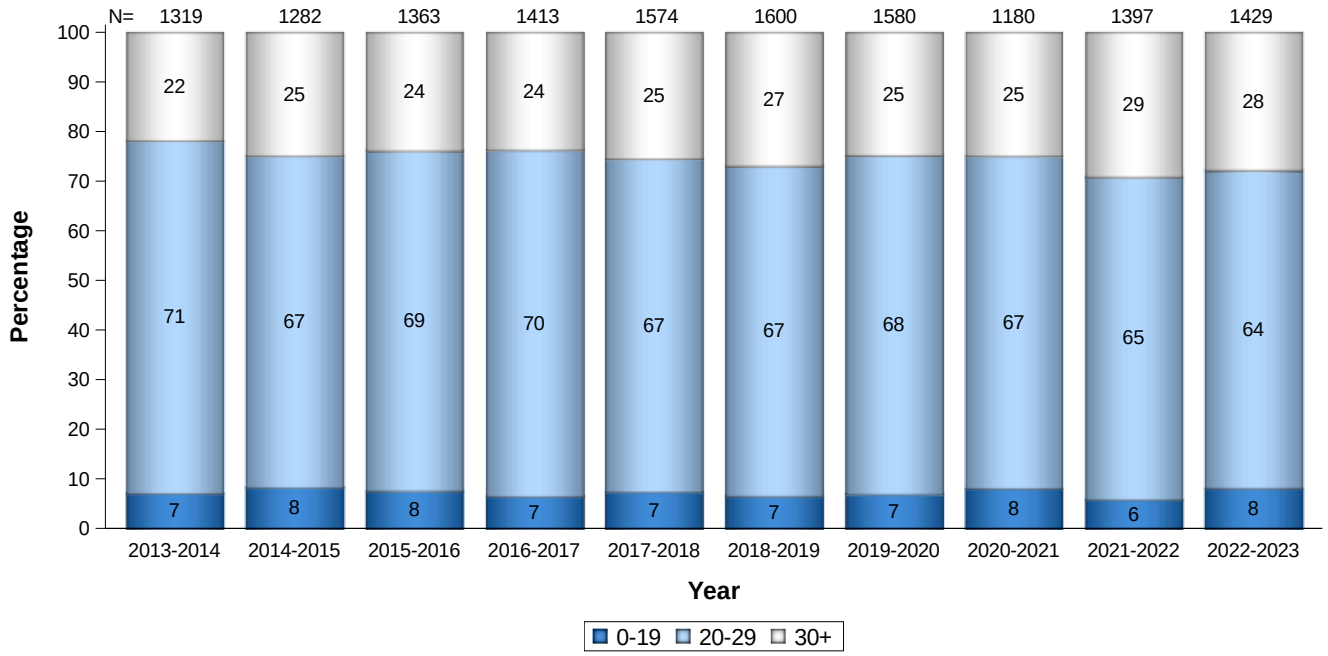


Figure 3.2 BMI of deceased donors in the UK, 1 April 2013 - 31 March 2023



*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 789 possible DBD donors and 898 possible DCD donors; 98% of these DBD donors and 73% of these DCD donors attended, proceeded to donation**
- **Overall, 54% of organs offered from those donors that did proceed were transplanted, but individually, these rates were 85% for kidneys, 62% for livers, 24% for pancreases, 35% for hearts, 15% for lungs and 10% for bowels**
- **Overall, 83% of organs retrieved were transplanted, but individually, these rates were 88% for kidneys, 79% for livers, 47% for pancreases, 98% for hearts, 91% for lungs and 96% for bowels**
- **The number of deceased donors per million of population was 21.3, however 5% of actual donors resulted in no organ transplants, the same as the previous year**

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, an arrangement that 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 2022-2023 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 2022 – 31 March 2023**

NORS team	DBD				DCD			
	Proceeding[2]	Non-proceeding	% non-proc	**No. attended**	Proceeding[2]	Non-proceeding	% non-proc	**No. attended**
Abdominal								
Birmingham[1]	92	3	3	95	79	22	22	101
Cambridge	78	4	5	82	107	45	30	152
Cardiff[1]	22	-	-	22	32	6	16	38
Edinburgh	60	2	3	62	70	21	23	91
King's	136	3	2	139	82	25	23	107
Leeds[1]	68	-	-	68	64	29	31	93
Manchester[1]	79	1	1	80	58	27	32	85
Newcastle	73	1	1	74	48	24	33	72
Oxford[1]	80	3	4	83	56	24	30	80
Royal Free[1]	80	1	1	81	60	17	22	77
Abdominal total	**768**	**18**	**2**	**786**	**656**	**240**	**27**	**896**
Cardiothoracic[1]								
Birmingham	42	34	45	76	7	10	59	17
Glasgow	20	10	33	30	11	8	42	19
Harefield	43	28	39	71	26	24	48	50
Manchester	30	26	46	56	5	6	55	11
Newcastle	27	20	43	47	2	9	82	11
Papworth	29	26	47	55	36	32	47	68
Cardiothoracic total	**191**	**144**	**43**	**335**	**87**	**89**	**51**	**176**
Total donors attended	**771**	**18**	**2**	**789**	**657**	**241**	**27**	**898**

[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 2022-2023, 6% of actual donors resulted in no organ transplants, the same as the previous year.

Table 4.2 Consented, offered, actual and utilised deceased donors in the UK, 1 April 2022 - 31 March 2023

	DBD	(pmp)	DCD	(pmp)	Total	(pmp)
Consented donors[1]	834	(12.4)	1068	(15.9)	1902	(28.4)
Offered donors[2]	803	(12.0)	978	(14.6)	1781	(26.6)
Kidneys offered	*1556*		*1912*		*3468*	
Livers offered	*778*		*912*		*1690*	
Pancreases offered	*491*		*323*		*814*	
Bowels offered	*243*		*1*		*244*	
Hearts offered	*458*		*184*		*642*	
Lungs offered	*880*		*742*		*1622*	
Actual donors[3]	772	(11.5)	657	(9.8)	1429	(21.3)
Utilised donors[4]	753	(11.2)	600	(9.0)	1353	(20.2)

[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 1,429 actual deceased organ donors in 2022-2023, 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 772 DBD and 657 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.

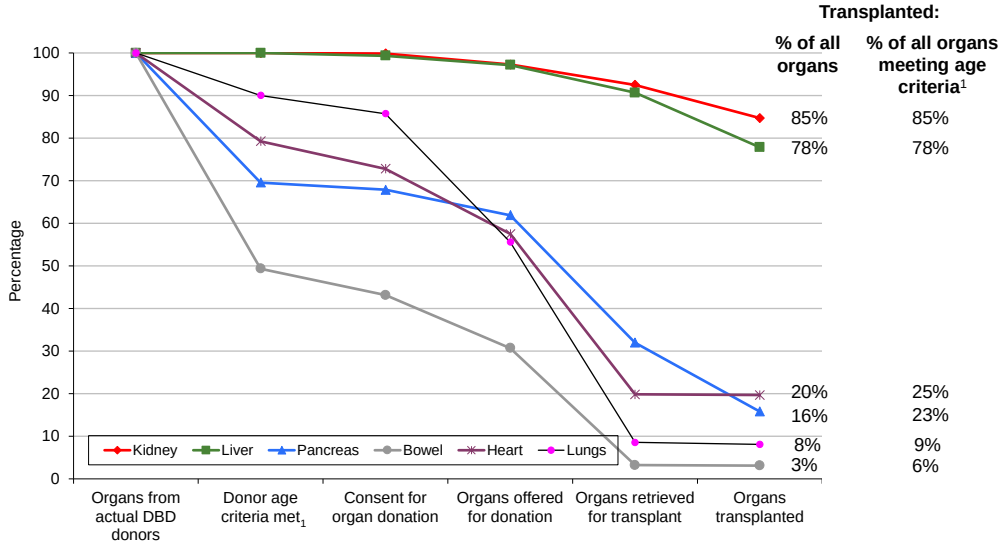
Table 4.3 Donation and transplantation of organs from 1,429 deceased donors in the UK, 1 April 2022 - 31 March 2023

Organ	Organs meeting initial suitability criteria and offered for transplantation	Organs retrieved for transplantation		Organs transplanted			Organs used for research (from actual organ donors)
		N	% of offered	N	% of retrieved	% of offered	
DBD donor organs							
Kidney	1502	1428	95	1308	92	87	74
Liver	750	700	93	601	86	80	53
Pancreas	478	247	52	122	49	26	62
Bowel	237	25	11	24	96	10	0
Heart	444	153	34	152	99	34	0
Lung	858	132	15	125	95	15	6
Total	**4269**	**2685**	**63**	**2332**	**87**	**55**	**195**
DCD donor organs							
Kidney	1295	1267	98	1067	84	82	112
Liver	617	374	61	249	67	40	59
Pancreas	239	110	46	47	43	20	27
Heart	140	58	41	55	95	39	2
Lung	506	86	17	73	85	14	10
Total	**2798**	**1895**	**68**	**1491**	**79**	**53**	**210**
Deceased donor organs							
Kidney	2797	2695	96	2375	88	85	186
Liver	1367	1074	79	850	79	62	112
Pancreas	717	357	50	169	47	24	89
Bowel	238	25	11	24	96	10	0
Heart	584	211	36	207	98	35	2
Lung	1364	218	16	198	91	15	16
Total	**7067**	**4580**	**65**	**3823**	**83**	**54**	**405**

Suitability Criteria:
Pancreas: donors with a BMI ≤40 or aged ≤ 60 years (DBD) or aged ≤ 55 years (DCD)
Bowel: donors aged < 60 years or weighting < 90kg
Heart: donors aged < 65 years (DBD) or aged < 55 years (DCD) or died due to myocardial infarction (DBD)
Lung: donors aged < 70 years

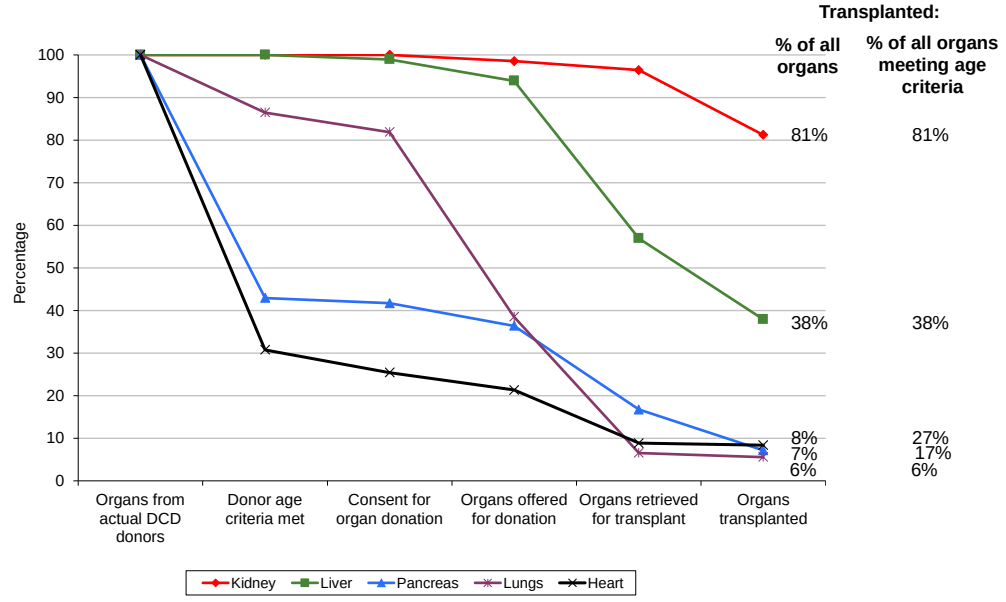
Figures 4.1 and 4.2 show line graphs of the pathway for all donor organs through to transplantation. The charts start at 100% for each organ, representing all organs from the 772 DBD and 657 DCD donors. The proportion of these organs where any national donor age criteria are met is then shown, followed by the proportion with consent, the proportion offered, the proportion retrieved and finally the proportion transplanted. For example, **Figure 4.2** shows that 81% of the kidneys from the 657 DCD donors were transplanted. 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 2022 – 31 March 2023



[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 >=90kg are excluded

Figure 4.2 Donation and transplantation rates of organs from DCD organ donors in the UK, 1 April 2022 – 31 March 2023



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 2022-2023 only a small number of livers, hearts and lungs were exported for transplantation outside the UK. Organs from outside the UK are occasionally imported for transplant. Further information on the import and export of organs can be found in **Appendix IV.**

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

Table 4.4 Reasons for non-retrieval and non-use of abdominal organs from DBD donors in the UK, 1 April 2022 - 31 March 2023

	Kidney		Liver		Pancreas		Bowel	
All actual DBD organ donors	**772**		**772**		**772**		**772**	
Donors from whom organs not offered for donation	20		22		294		533	
Reasons for organs not being offered[1]								
Family permission refused	0		1		7		38	
Permission refused by coroner	0		4		4		4	
Permission refused other	1		0		2		6	
Donor unsuitable - medical	0		0		0		2	
Donor unsuitable - non-medical	2		0		20		10	
Donor unsuitable - age	0		0		204		4	
Organ unsuitable - clinical	10		13		46		29	
Poor function	6		1		1		6	
Donor age>=60 or donor weight >=90kg	-		-		-		388	
Other	1		3		10		46	
Organs offered for donation	**1502**		**750**		**478**		**237**	
Organs not retrieved (% of organs offered for donation)	**74**	**(5)**	**50**	**(7)**	**231**	**(48)**	**212**	**(89)**
Donor unsuitable - medical	7		5		14		16	
Donor unsuitable - non-medical	0		1		28		24	
Donor unsuitable - age	16		0		25		24	
Organ unsuitable - clinical	36		27		113		67	
Poor function	10		4		17		11	
Other	5		13		34		70	
Organs retrieved (% of organs offered for donation)	**1428**	**(95)**	**700**	**(93)**	**247**	**(52)**	**25**	**(11)**
Organs transplanted in the UK	1308		601		122		24	
Organs transplanted overseas	0		2		0		0	
Organs not transplanted	120		99		125		1	
Reasons for organ not being transplanted								
Donor unsuitable - medical	39		11		19		0	
Donor unsuitable - non-medical	0		3		0		0	
Donor unsuitable - age	1		0		1		0	
Organ unsuitable - clinical	34		43		64		0	
Poor function	2		10		2		0	
Other	44		32		39		1	
TOTAL ORGANS RETRIEVED, NOT TRANSPLANTED (Number used for research)	**120**	**(71)**	**99**	**(53)**	**125**	**(62)**	**1**	**(0)**

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

Table 4.5 Reasons for non-retrieval and non-use of abdominal organs from DCD donors in the UK, 1 April 2022 - 31 March 2023

	Kidney		Liver		Pancreas	
All actual DCD organ donors	**657**		**657**		**657**	
Donors from whom organs not offered for donation	9		40		418	
Reasons for organs not being offered[1]						
Family permission refused	0		3		4	
Permission refused by coroner	0		3		2	
Permission refused other	0		1		2	
Donor unsuitable - medical	0		0		1	
Donor unsuitable - non-medical	0		3		20	
Donor unsuitable - age	0		4		329	
Organ unsuitable - clinical	6		22		46	
Poor function	3		4		2	
Other	0		0		12	
Organs offered for donation	**1295**		**617**		**239**	
Organs not retrieved (% of organs offered for donation)	**28**	**(2)**	**243**	**(39)**	**129**	**(54)**
Donor unsuitable - medical	4		2		3	
Donor unsuitable - non-medical	0		13		16	
Donor unsuitable - age	1		64		24	
Organ unsuitable - clinical	15		111		57	
Poor function	7		16		7	
Other	1		37		22	
Organs retrieved (% of organs offered for donation)	**1267**	**(98)**	**374**	**(61)**	**110**	**(46)**
Organs transplanted in the UK	1067		249		47	
Organs transplanted overseas	0		0		0	
Organs not transplanted	200		125		63	
Reasons for organ not being transplanted						
Donor unsuitable - medical	64		12		8	
Donor unsuitable - non-medical	0		5		0	
Donor unsuitable - age	4		6		1	
Organ unsuitable - clinical	65		50		35	
Poor function	4		18		0	
Other	63		34		19	
TOTAL ORGANS RETRIEVED, NOT TRANSPLANTED (Number used for research)	**200**	**(112)**	**125**	**(59)**	**63**	**(27)**

[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 deceased donors in the UK, 1 April 2022 - 31 March 2023

	Heart (DBD)		Lung (DBD)		Heart (DCD)		Lung (DCD)	
All actual organ donors	**772**		**772**		**657**		**657**	
Donors from whom organs not offered for donation	328		343		517		404	
Reasons for organs not being offered[1]								
Family permission refused	17		13		18		16	
Permission refused by coroner	29		18		16		12	
Permission refused other	4		2		1		2	
Donor unsuitable - medical	0		6		1		15	
Donor unsuitable - non-medical	0		0		27		0	
Donor unsuitable - age	156		48		360		80	
Organ unsuitable - clinical	71		79		61		107	
Poor function	42		156		31		157	
Other	9		21		2		15	
Organs offered for donation	**444**		**858**		**140**		**506**	
Organs not retrieved (% of organs offered for donation)	**291**	**(66)**	**726**	**(85)**	**82**	**(59)**	**420**	**(83)**
Reasons for non-retrieval								
Donor unsuitable - medical	13		20		4		10	
Donor unsuitable - non-medical	29		32		9		12	
Donor unsuitable - age	21		46		4		38	
Organ unsuitable - clinical	72		128		22		136	
Poor function	94		337		23		166	
Other	62		163		20		58	
Organs retrieved (% of organs offered for donation)	**153**	**(34)**	**132**	**(15)**	**58**	**(41)**	**86**	**(17)**
Organs transplanted in the UK	151		115		55		73	
Organs transplanted overseas	1		10		0		0	
Organs not transplanted	1		7		3		13	
Reasons for organ not being transplanted								
Donor unsuitable - medical	0		0		0		0	
Donor unsuitable - non-medical	0		2		0		1	
Donor unsuitable - age	0		0		0		0	
Organ unsuitable - clinical	0		0		0		4	
Poor function	0		2		1		6	
Other	1		3		2		2	
TOTAL ORGANS RETRIEVED, NOT TRANSPLANTED (Number used for research)	**1**	**(0)**	**7**	**(6)**	**3**	**(2)**	**13**	**(10)**

[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 2013 - 31 March 2023

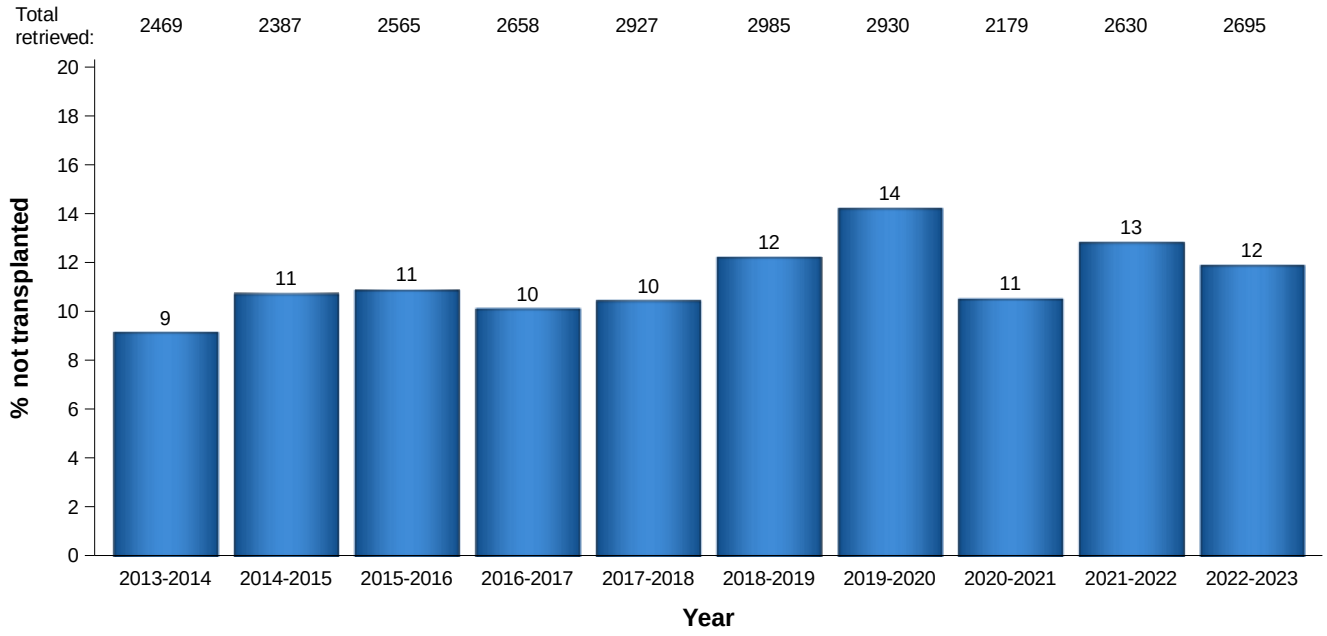


Figure 4.4 Percentage of livers retrieved that were not transplanted from deceased organ donors in the UK, 1 April 2013 - 31 March 2023

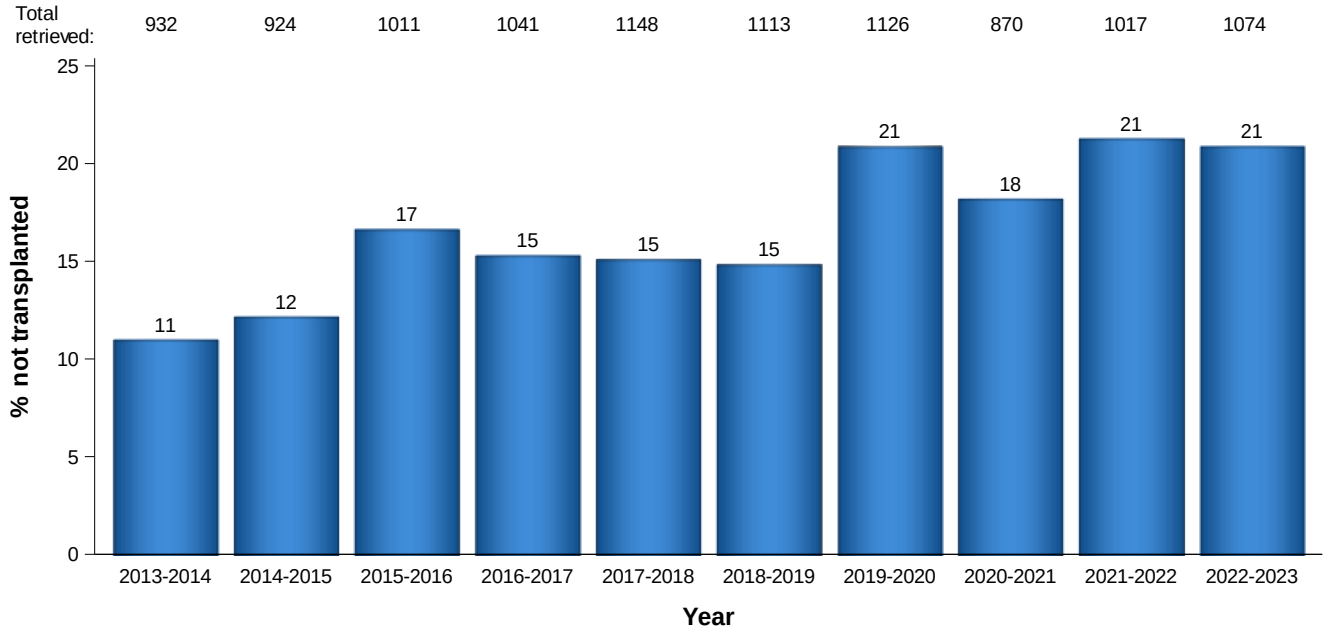
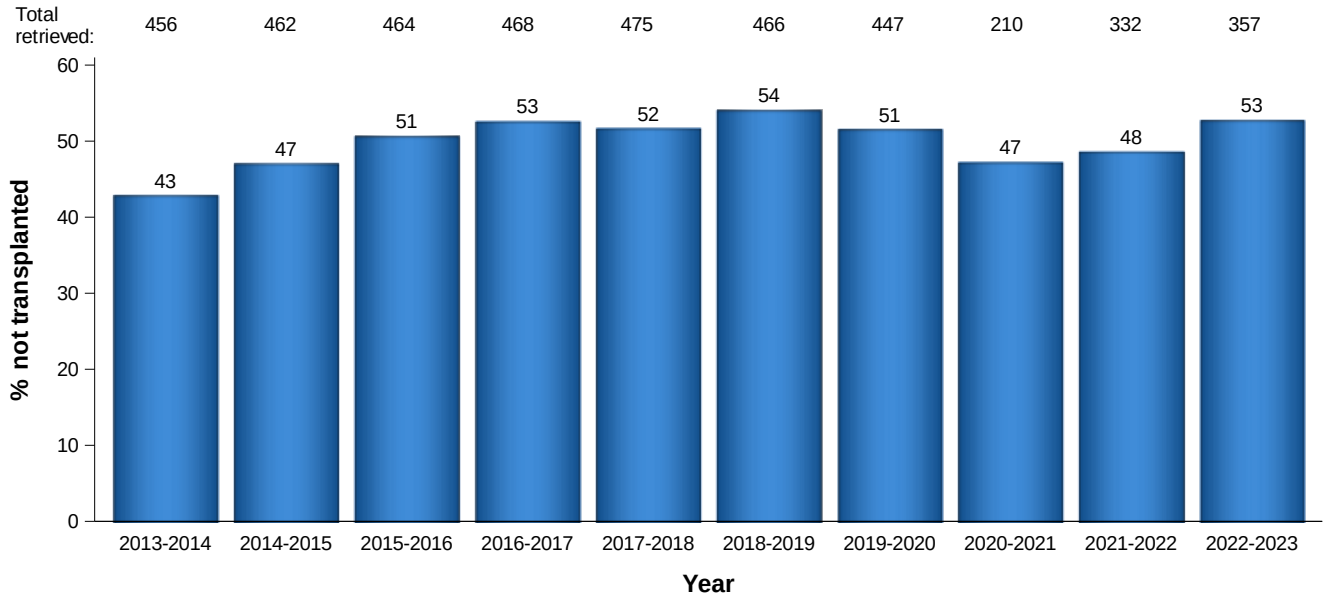


Figure 4.5 Percentage of pancreases[1] retrieved that were not transplanted from deceased organ donors in the UK, 1 April 2013 - 31 March 2023



[1]Includes pancreases retrieved for islet transplantation and not transplanted due to the outcome of the islet isolation

Figure 4.6 Percentage of hearts retrieved that were not transplanted from deceased organ donors in the UK, 1 April 2013 - 31 March 2023

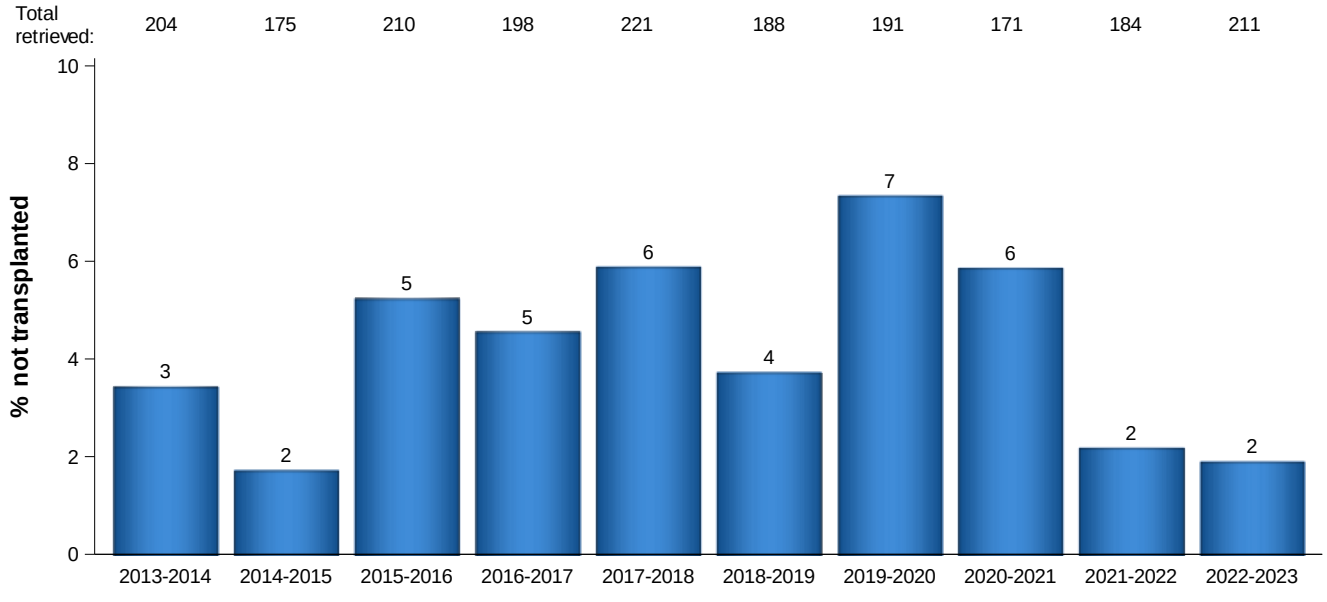
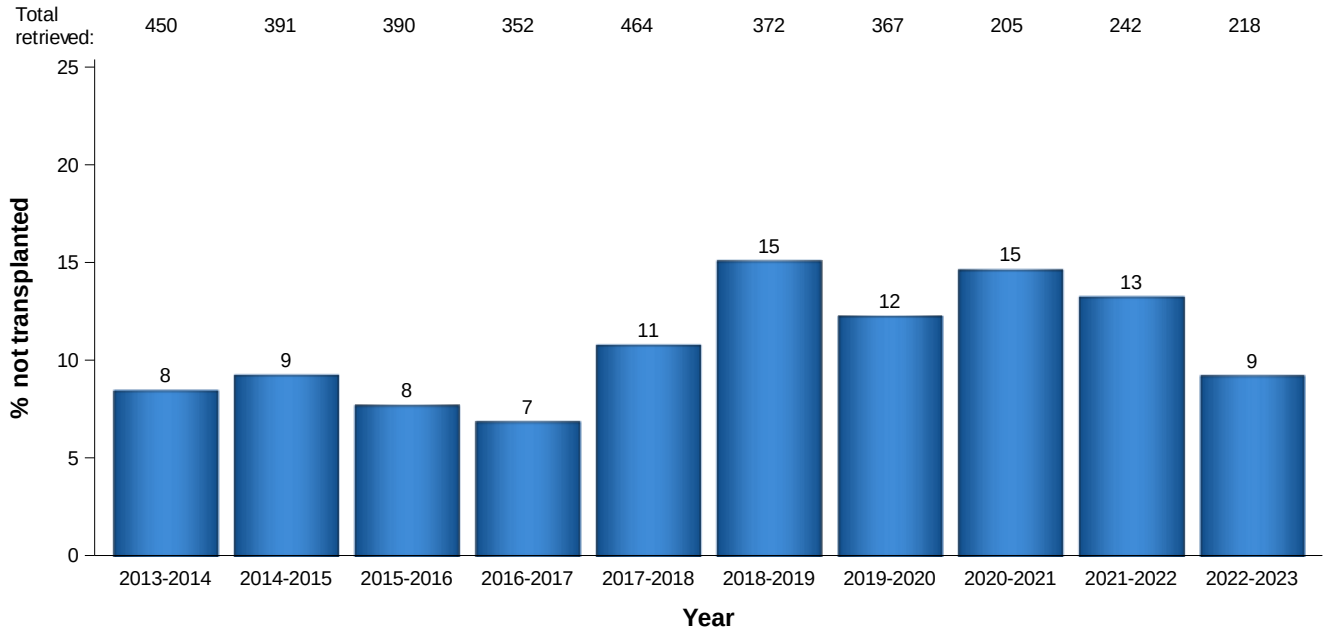


Figure 4.7 Percentage of lungs retrieved that were not transplanted from deceased organ donors in the UK, 1 April 2013 - 31 March 2023



Kidney Activity

Key messages

- **The number of patients registered on the kidney transplant list this year increased to 5,655**
- **The number of deceased kidney donors increased by 2% to 1,360**
- **Kidney transplants from living donors increased by 1% to 923, while transplants from deceased donors increased by 4% to 2,349**
- **112 kidney transplants were made possible by the paired living kidney donation programme (28 2-way and 42 3-way exchanges)**
- **There were 83 non-directed altruistic living kidney donors, leading to 119 patients benefitting from a living donor transplant**

5.1 Overview

The number of deceased kidney donors increased by 2% in 2022-2023 compared to 2021-2022 and the number of deceased donor kidney transplants increased by 4%. There were 5,655 patients waiting for a kidney transplant at 31 March 2023, with the number of patients on the national list increasing as more patients are reactivated on the list following the height of the COVID-19 pandemic.

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 2023 for a kidney only or multi-organ kidney transplant has fallen by 4% since 31 March 2014. 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 2013 - 31 March 2023, Number of donors, transplants and patients on the active transplant list at 31 March

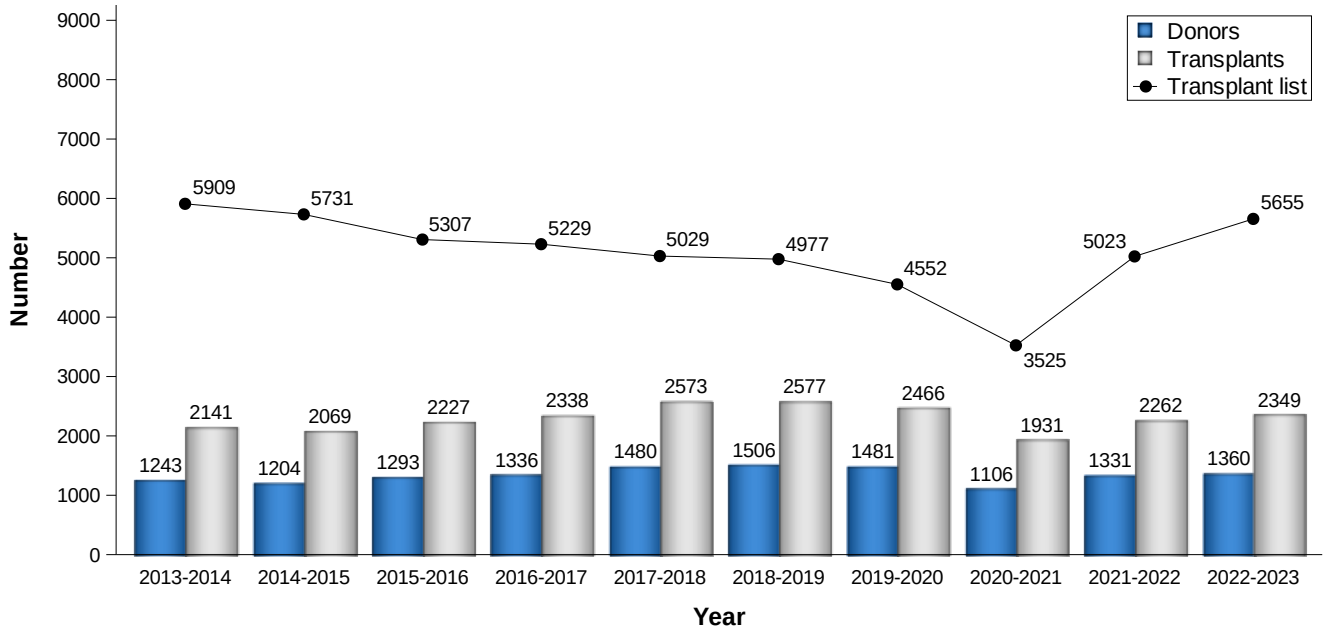


Table 5.1 shows the number of deceased and living donor kidney transplants carried out in 2022-2023 at each centre. Donation figures for centres in London are not reported individually as they have shared designated areas and donor populations. Multi-organ transplants including a kidney are included in the table.

The total number of deceased kidney donors increased to 1,360 in 2022-2023 from 1,331 in 2021-2022 and the number of transplants increased from 2,262 to 2,349. The number of kidney donors after circulatory death increased to 638 from 597 in 2021-2022 and the number of transplants from such donors increased by 8% to 1054.

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 2022 - 31 March 2023 (2021-2022) and transplant list at 31 March 2023 (29 February 2022) in the UK, by centre**

Centre	Deceased kidney donors				Deceased donor transplants				Living donor transplants		Active transplant list	
	DBD		DCD		DBD		DCD					
Belfast	33	(35)	21	(17)	28	(29)	35	(28)	63	(61)	73	(69)
Birmingham	33	(36)	57	(38)	94	(86)	63	(41)	41	(51)	392	(400)
Bristol	31	(28)	28	(28)	45	(44)	46	(37)	38	(31)	183	(164)
Cambridge	33	(25)	37	(43)	68	(57)	94	(97)	17	(26)	175	(136)
Cardiff	29	(26)	26	(14)	37	(33)	39	(30)	41	(33)	139	(127)
Coventry[1]	13	(17)	7	(16)	23	(26)	22	(27)	18	(15)	123	(108)
Edinburgh	11	(12)	25	(13)	43	(40)	23	(18)	38	(42)	185	(185)
Glasgow	42	(34)	26	(19)	50	(45)	43	(44)	58	(42)	239	(230)
Leeds	50	(49)	45	(34)	66	(52)	56	(48)	56	(52)	356	(264)
Leicester	17	(24)	22	(23)	41	(25)	43	(21)	28	(24)	233	(227)
Liverpool	25	(24)	19	(20)	50	(45)	23	(24)	25	(20)	177	(118)
London[2]	193	(215)	156	(156)	-	-	-	-	-	-	-	-
Great Ormond Street	-	-	-	-	7	(7)	1	(4)	17	(29)	15	(15)
Guy's	-	-	-	-	112	(102)	80	(59)	86	(93)	394	(329)
Royal Free	-	-	-	-	70	(45)	34	(58)	33	(28)	260	(214)
Royal London	-	-	-	-	58	(96)	46	(50)	41	(38)	379	(319)
St George's	-	-	-	-	54	(62)	49	(45)	22	(33)	281	(228)
WLRTC	-	-	-	-	100	(120)	68	(63)	41	(34)	409	(400)
Manchester	74	(55)	41	(46)	105	(129)	86	(93)	76	(82)	531	(490)
Newcastle	28	(30)	19	(20)	44	(40)	41	(21)	50	(47)	247	(223)
Nottingham	19	(18)	22	(21)	26	(30)	18	(28)	19	(21)	151	(147)
Oxford[1]	38	(26)	32	(27)	75	(89)	73	(67)	58	(54)	322	(289)
Plymouth	12	(16)	8	(14)	28	(16)	15	(9)	18	(16)	114	(81)
Portsmouth	25	(37)	35	(30)	43	(43)	36	(42)	21	(24)	164	(154)
Sheffield	16	(27)	12	(18)	28	(29)	20	(18)	9	(12)	113	(106)
TOTAL	**722**	**(734)**	**638**	**(597)**	**1295**	**(1290)**	**1054**	**(972)**	**923[3,5]**	**(912[4])**	**5655**	**(5023)**

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 transplants performed at London, Cromwell Hospital and 6 transplants performed at London, London Bridge Hospital
[4] Includes an additional 4 transplants performed at London, London Bridge Hospital
[5] Includes 5 domino donors

5.2 Transplant list

The number of patients registered on the kidney or kidney and pancreas transplant list increased in the year: on 31 March 2023, 5,655 patients were registered as active, compared with 5,023 at the end of March 2022. The number of patients waiting for a kidney transplant represents 84.4 patients per million population (pmp).

Of the 5,655 patients on the active transplant list at 31 March 2023, 271 required a kidney and pancreas/islet transplant (251 at 31 March 2022).

The outcome of patients registered on the UK kidney and kidney/pancreas transplant list at 1 April 2022, or subsequently registered during the financial year, is shown in **Table 5.2**. A total of 4,370 patients joined the kidney transplant list last year, while a further 205 joined the kidney/pancreas transplant list.

Table 5.2 Kidney transplant list and new registrations in the UK, 1 April 2022 - 31 March 2023

Outcome of patient at 31 March 2023	Active and suspended patients at 1 April 2022		New registrations in 2022-2023[1]		**TOTAL**	
	N	%	N	%	**N**	**%**
Kidney transplant list						
Remained active/suspended	5287	64	3428	78	8715	69
Transplanted	2169	26	869	20	3038	24
Removed[2]	547	7	42	1	589	5
Died	247	3	31	1	278	2
TOTAL	**8250**		**4370**		**12620**	
Kidney/pancreas transplant list						
Remained active/suspended	293	64	178	87	471	71
Transplanted	110	24	17	8	127	19
Removed[3]	31	7	5	2	36	5
Died	21	5	5	2	26	4
TOTAL	**455**		**205**		**660**	

[1] Includes re-registrations for second or subsequent patients
[2] Includes 10 patients removed from kidney list and made active on kidney/pancreas list
[3] Includes 2 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 2023 and 2022 by country/NHS region of patient's residence. In 2023, the overall kidney transplant list rate was 84.4 pmp with rates across NHS regions ranging from 58.4 pmp to 144.8 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) 2023		2022	
North East and Yorkshire	732	(90.0)	595	(73.2)
North West	604	(81.4)	525	(70.8)
Midlands	957	(88.3)	946	(87.3)
East of England	371	(58.4)	309	(48.7)
London	1274	(144.8)	1108	(125.9)
South East	621	(66.8)	532	(57.3)
South West	386	(67.6)	345	(60.4)
England	**4945**	**(87.5)**	**4360**	**(77.1)**
Isle of Man	**8**	**(100.0)**	**3**	**(37.5)**
Channel Islands	**9**	**(52.9)**	**4**	**(23.5)**
Wales	**185**	**(59.5)**	**163**	**(52.4)**
Scotland	**422**	**(77.0)**	**413**	**(75.4)**
Northern Ireland	**76**	**(40.0)**	**70**	**(36.8)**
TOTAL[1]	**5655**	**(84.4)**	**5023**	**(74.9)**

[1]Includes patients in 2023 (2022) residing in: Unspecified UK 7 (8); Overseas 3 (2)

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 36% of patients are transplanted within one year, while five years after listing 77% of patients have received a transplant.

The median (average) waiting time for a kidney only transplant has fallen from 550 days reported last year to 509 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 3435 new adult kidney only registrations made in the UK, 1 April 2017 - 31 March 2018**

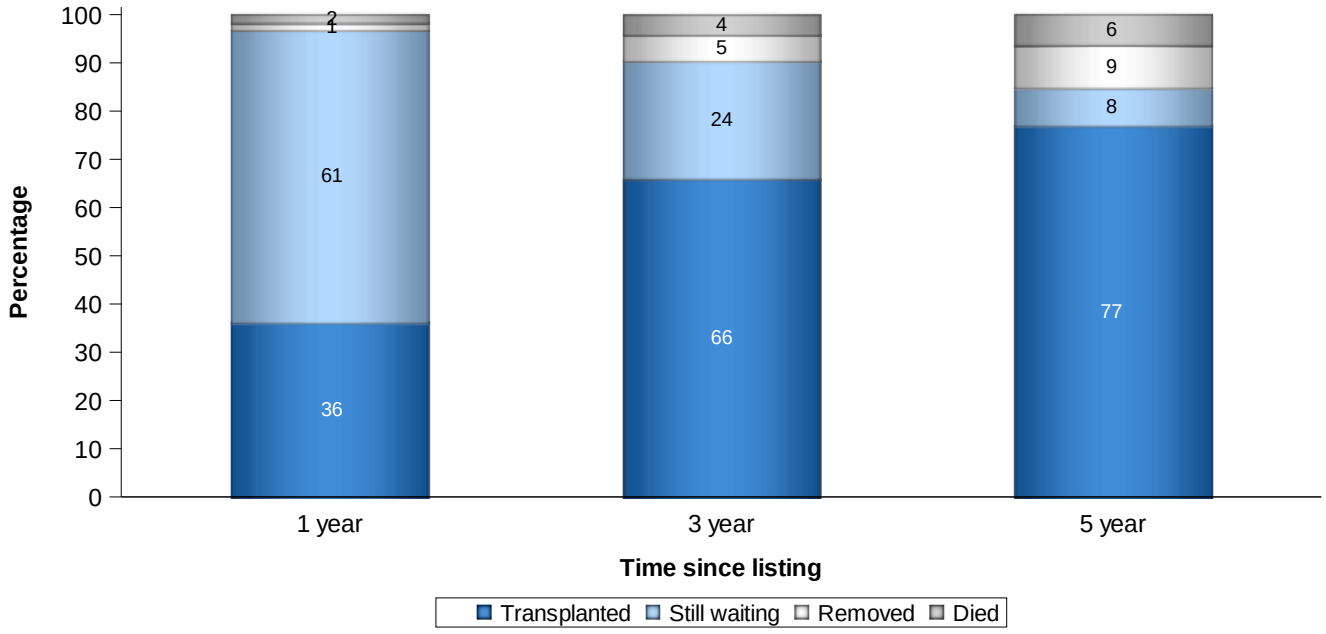


Table 5.4 **Median waiting time to kidney only transplant in the UK, for patients registered 1 April 2016 - 31 March 2020**

Blood group	Number of patients registered	Waiting time (days) Median	95% Confidence interval
Adult			
O	5322	701	680 - 722
A	4045	308	294 - 322
B	1729	780	733 - 827
AB	536	158	139 - 177
TOTAL	**11632**	**509**	**496 - 522**
Paediatric			
O	137	347	245 - 449
A	95	212	116 - 308
B	52	459	223 - 695
AB	19	309	70 - 548
TOTAL	**303**	**312**	**253 - 371**

Table 5.5 Median waiting time to kidney only transplant in the UK, for patients registered 1 April 2016 - 31 March 2020

Ethnicity	Number of patients registered	Waiting time (days)	
		Median	95% Confidence interval
Adult			
White	7799	463	448 - 478
Asian	1979	599	564 - 634
Black	1179	649	605 - 693
Other	532	584	519 - 649
TOTAL[1]	**11632**	**509**	**496 - 522**
Paediatric			
White	157	206	147 - 265
Asian	88	449	333 - 565
Black	36	360	246 - 474
Other	17	560	397 - 723
TOTAL[2]	**303**	**312**	**253 - 371**

[1] Includes 143 patients whose ethnicity was not reported
[2] Includes 5 patients whose ethnicity was not reported

5.3 Donor and organ supply

Of the 772 organ donors after brain death in the UK in 2022-2023, 722 (94%) were kidney donors. From these donors, 1,428 kidneys were retrieved. There were 638 kidney donors after circulatory death in 2022-2023. From these donors, 1267 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 10.8 pmp, with rates across NHS regions ranging from 8.4 to 11.9 pmp. The number of kidneys retrieved from donors after brain death in the UK is 21.3 pmp and varies from 16.3 to 23.6 pmp.

The overall rate for kidney donors after circulatory death is 9.5 pmp, with rates across NHS regions ranging from 5.6 to 11.2 pmp. The number of kidneys retrieved from donors after circulatory death is 18.9 pmp and varies from 11.1 to 22.4 pmp.

Table 5.6 Kidney donation and retrieval rates for deceased donors in the UK, 1 April 2022 - 31 March 2023, by Country/ NHS region

Country/ NHS region of residence	Kidney donors (pmp)				Kidneys retrieved (pmp)			
	DBD		DCD		DBD		DCD	
North East and Yorkshire	97	(11.9)	79	(9.7)	192	(23.6)	157	(19.3)
North West	78	(10.5)	55	(7.4)	156	(21.0)	108	(14.6)
Midlands	91	(8.4)	104	(9.6)	177	(16.3)	208	(19.2)
East of England	60	(9.4)	71	(11.2)	120	(18.9)	142	(22.4)
London	77	(8.8)	49	(5.6)	152	(17.3)	98	(11.1)
South East	97	(10.4)	98	(10.5)	192	(20.7)	195	(21.0)
South West	65	(11.4)	50	(8.8)	129	(22.6)	96	(16.8)
England	**565**	**(10.0)**	**506**	**(8.9)**	**1118**	**(19.8)**	**1004**	**(17.8)**
Isle of Man	**0**	**(0.0)**	**1**	**(12.5)**	**0**	**(0.0)**	**2**	**(25.0)**
Channel Islands	**1**	**(5.9)**	**1**	**(5.9)**	**2**	**(11.8)**	**2**	**(11.8)**
Wales	**40**	**(12.9)**	**32**	**(10.3)**	**80**	**(25.7)**	**64**	**(20.6)**
Scotland	**47**	**(8.6)**	**50**	**(9.1)**	**91**	**(16.6)**	**99**	**(18.1)**
Northern Ireland	**32**	**(16.8)**	**21**	**(11.1)**	**63**	**(33.2)**	**42**	**(22.1)**
TOTAL[1]	**722**	**(10.8)**	**638**	**(9.5)**	**1428**	**(21.3)**	**1267**	**(18.9)**

[1] Includes 64 donors with unknown UK postcode (37 DBD and 27 DCD)

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 24.9 to 54.5 pmp across NHS regions and overall was 33.0 pmp. The living donor transplant rate ranged from 9.5 to 14.7 pmp across NHS regions and overall was 13.5 pmp.

Table 5.7 Kidney only transplant rates per million population (pmp), in the UK, 1 April 2022 - 31 March 2023, 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	132	(16.2)	106	(13.0)	238	(29.3)	118	(14.5)
North West	122	(16.4)	93	(12.5)	215	(29.0)	83	(11.2)
Midlands	187	(17.3)	157	(14.5)	344	(31.7)	103	(9.5)
East of England	98	(15.4)	117	(18.4)	215	(33.9)	69	(10.9)
London	291	(33.1)	189	(21.5)	480	(54.5)	129	(14.7)
South East	113	(12.2)	118	(12.7)	231	(24.9)	118	(12.7)
South West	100	(17.5)	87	(15.2)	187	(32.7)	75	(13.1)
England	**1043**	**(18.4)**	**867**	**(15.3)**	**1910**	**(33.8)**	**695**	**(12.3)**
Isle of Man	**1**	**(12.5)**	**2**	**(25.0)**	**3**	**(37.5)**	**4**	**(50.0)**
Channel Islands	**5**	**(29.4)**	**2**	**(11.8)**	**7**	**(41.2)**	**0**	**(0.0)**
Wales	**45**	**(14.5)**	**45**	**(14.5)**	**90**	**(28.9)**	**50**	**(16.1)**
Scotland	**81**	**(14.8)**	**60**	**(10.9)**	**141**	**(25.7)**	**95**	**(17.3)**
Northern Ireland	**28**	**(14.7)**	**35**	**(18.4)**	**63**	**(33.2)**	**57**	**(30.0)**
TOTAL[1,2]	**1203**	**(17.9)**	**1011**	**(15.1)**	**2214**	**(33.0)**	**902**	**(13.5)**

[1] Excludes 21 recipients of a living donor kidney who reside outside of the UK
[2] Includes 1 recipient with an unknown UK postcode (1 living)

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 2 en bloc kidneys and 12 double kidney transplants in 2022-2023 (1 and 12 in 2021-2022). Kidney transplants from donors after circulatory death include 3 en bloc and 11 double kidney transplants in 2022-2023 (3 and 18 in 2021-2022). This table excludes multi-organ transplants: 8 (6) kidney and liver, 121 (120) kidney and pancreas, 5 (7) kidney and islets, and 0 (1) kidney and heart in 2022-2023 (2020-2021).

Table 5.8 Adult kidney only transplants in the UK, 1 April 2021 - 31 March 2023, by transplant centre

	2021-2022				2022-2023			
Transplant centre	DBD	DCD	Living donor	TOTAL	DBD	DCD	Living donor	TOTAL
Belfast	29	28	60	117	28	35	60	123
Birmingham	80	41	42	163	84	58	34	176
Bristol	39	35	22	96	41	45	34	120
Cambridge	49	91	26	166	56	87	17	160
Cardiff	29	29	31	89	33	36	41	110
Coventry[1]	26	27	15	68	23	22	18	63
Edinburgh	32	15	42	89	31	17	37	85
Glasgow	44	44	38	126	47	41	52	140
Guy's	79	50	73	202	89	71	75	235
Leeds	50	47	48	145	63	56	49	168
Leicester	25	21	24	70	41	43	28	112
Liverpool	45	24	20	89	50	23	25	98
Manchester	105	83	68	256	84	81	66	231
Newcastle	35	21	44	100	39	38	48	125
Nottingham	26	25	17	68	25	18	13	56
Oxford[1]	54	56	53	163	52	64	58	174
Plymouth	16	9	16	41	28	15	18	61
Portsmouth	43	42	24	109	43	36	21	100
Sheffield	29	18	12	59	28	20	9	57
St George's	62	45	33	140	54	49	22	125
The Royal Free	45	58	28	131	70	34	33	137
The Royal London	96	50	38	184	58	46	40	144
WLRTC	115	62	32	209	96	66	41	203
TOTAL	**1153**	**921**	**810[2]**	**2884[2]**	**1163**	**1001**	**848[3]**	**3012[3]**

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 4 transplants performed at London Bridge Hospital
[3] Includes 3 transplants performed at London Cromwell Hospital and 6 transplants performed at London Bridge Hospital

Living donor kidney only transplants increased by 1% to 923 in 2022-2023, representing 28% of the total kidney transplant programme. The total number of living donor adult transplants performed by each transplant centre is shown in **Table 5.9**. Also shown is the number as a percentage of patients listed at the end of the year, to indicate the size of the living donor programme relative to the centre's transplant list.

Most living donor transplants are 'directed'. This means that a kidney is donated to a specific recipient known to the donor - a close family member or friend. There has been a 4% increase in these transplants. In addition, there are a number of 'non-directed' living donor transplants (also known as altruistic donor transplants). Last year 83 such donors donated a kidney to a recipient, 81 of which were transplanted into an adult recipient. Of the 83 non-directed altruistic donors, 49 went into an altruistic donor chain (28 short (2 transplants each) and 21 long chains (3 transplants each)), benefiting 69 adult patients in the paired/pooled scheme. The kidneys from the paired donors of these recipients led to 45 adult patients on the deceased donor transplant list. Thus 83 non-directed altruistic donors created chains benefiting 119 patients in total (114 adult and 5 paediatric patients).

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 2022-2023, there were 103 paired living kidney donor transplants (102 adult and 1 paediatric recipients).

As a percentage of the number of patients on the active transplant list at 31 March 2023, the number of living donor adult transplants in the year was 15% and ranged from 8% to 82% at individual transplant centres.

Table 5.9 Adult living donor kidney transplants in the UK, 1 April 2022 - 31 March 2023, and percentage of active transplant list at 31 March, by transplant centre/region

Transplant centre	Directed	Non-directed (altruistic) to waiting list	Paired/ pooled exchanges	Altruistic donor chain	TOTAL N	TOTAL % list
Belfast	40	1	13	6	**60**	**82**
Birmingham	22	5	2	5	**34**	**9**
Bristol	24	0	5	5	**34**	**19**
Cambridge	12	0	4	1	**17**	**10**
Cardiff	30	2	4	5	**41**	**29**
Coventry[1]	9	0	2	7	**18**	**15**
Edinburgh	31	0	1	5	**37**	**20**
Glasgow	35	1	8	8	**52**	**22**
Guy's	51	2	13	9	**75**	**20**
Leeds	34	3	5	7	**49**	**14**
Leicester	22	1	2	3	**28**	**12**
Liverpool	17	2	2	4	**25**	**14**
Manchester	47	3	7	9	**66**	**13**
Newcastle	37	5	5	1	**48**	**20**
Nottingham	8	2	2	1	**13**	**10**
Oxford[1]	41	2	10	5	**58**	**18**
Plymouth	10	1	3	4	**18**	**16**
Portsmouth	12	3	2	4	**21**	**13**
Sheffield	6	0	2	1	**9**	**8**
St George's	17	0	1	4	**22**	**8**
The Royal Free	32	0	0	1	**33**	**13**
The Royal London	23	2	6	9	**40**	**11**
WLRTC	27	2	3	9	**41**	**10**
TOTAL[2]	**595**	**37[3]**	**102**	**114**	**848**	**15**

[1] As of 1 June 2016 Coventry and Oxford began working in partnership as a transplant network.
[2] Includes 3 directed transplants performed at London Cromwell and 5 at London Bridge and 1 altruistic donor chain at London Bridge
[3] Includes 5 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 2021 - 31 March 2023, by donor centre

	2021-2022				2022-2023			
Donor centre	Transplant list	Donation to Chain	**Total**	**%**	Transplant list	Donation to Chain	**Total**	**%**
Belfast	8	5	13	18	7	4	11	13
Birmingham	0	2	2	3	1	2	3	4
Bristol	1	0	1	1	1	2	3	4
Cambridge	0	0	0	0	0	0	0	0
Cardiff	3	0	3	4	1	3	4	5
Coventry[1]	0	1	1	1	0	1	1	1
Edinburgh	3	2	5	7	1	1	2	2
Glasgow	1	2	3	4	2	3	5	6
Guy's	4	9	13	18	4	6	10	12
Leeds	2	3	5	7	4	4	8	10
Leicester	1	0	1	1	1	0	1	1
Liverpool	0	0	0	0	0	0	0	0
Manchester	2	0	2	3	1	1	2	2
Newcastle	1	0	1	1	0	4	4	5
Nottingham	0	1	1	1	1	3	4	5
Oxford[1]	0	3	3	4	2	2	4	5
Plymouth	1	3	4	6	4	1	5	6
Portsmouth	1	4	5	7	2	8	10	12
Sheffield	1	0	1	1	1	2	3	4
St George's	2	0	2	3	1	0	1	1
The Royal Free	0	1	1	1	0	0	0	0
The Royal London	0	4	4	6	0	2	2	2
WLRTC	0	0	0	0	0	0	0	0
Total donors	**31**	**40**	**71**	**100**	**34**	**49**	**83**	**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 75 living donor transplants and 50 deceased donor transplants in paediatric patients in 2022-2023. The paediatric transplant list has fallen by 1% from 105 patients at 31 March 2022 to 104 at the end of March 2023.

Table 5.11 Paediatric kidney only transplants in the UK, 1 April 2021 - 31 March 2023, by transplant centre

Transplant centre	2021-2022				2022-2023			
	DBD	DCD	Living donor	TOTAL	DBD	DCD	Living donor	TOTAL
Belfast	0	0	1	1	0	0	3	3
Birmingham	5	0	9	14	10	5	7	22
Bristol	5	2	9	16	4	1	4	9
Glasgow	1	0	4	5	3	2	6	11
Great Ormond Street	7	4	29	40	7	1	17	25
Guy's	5	2	20	27	6	0	11	17
Leeds	1	1	4	6	3	0	7	10
Manchester	8	3	14	25	5	1	10	16
Newcastle	1	0	3	4	0	0	2	2
Nottingham	4	3	4	11	1	0	6	7
Adult centres	0	0	5	5	1	0	2	3
TOTAL	**37**	**15**	**102[1]**	**154**	**40**	**10**	**75[2]**	**125**

[1] Includes 4 non-directed donor transplants, 3 paired living donor transplants and 3 altruistic donor chain (3 as a patient on transplant list at end of chain)
[2] Includes 2 non-directed donor transplants, 5 paired living donor transplants and 5 altruistic donor chain (4 as a patient on transplant list at end of chain)

At 31 March 2023, there were approximately 44,200 recipients with a functioning kidney transplant (including multi-organ transplants) being followed-up as reported to the UK Transplant Registry.

Rates of pre-emptive kidney only transplantation are shown in **Table 5.12**. Of the 3,137 kidney only transplant recipients in 2022-2023, dialysis status at time of transplant was reported for 2,520 (80%). Of these 2,520 transplants, 496 (20%) were carried out in pre-dialysis patients.

Pre-emptive transplants accounted for 22% 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: 39% and 13% 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 2022 - 31 March 2023				
	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	2164	1810	(83.6)	12.7
Living donor transplant	848	628	(74.1)	39.6
Paediatric				
Deceased donor transplant	50	32	(64.0)	9.4
Living donor transplant	75	50	(66.7)	30.0

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 2022 - 31 March 2023				
	Number of kidney only transplants[1]	Median (hours)	Inter-quartile range[2] Q1	Q3
Adult				
DBD donor transplant	1163	12.9	10.0	17.8
DCD donor transplant	1001	13.0	10.2	17.5
Total	**2164**	**13.0**	**10.1**	**17.7**
Paediatric				
DBD donor transplant	40	11.3	9.7	13.4
DCD donor transplant	10	11.2	10.6	11.7
Total	**50**	**11.2**	**10.2**	**12.4**
TOTAL	**2214**	**12.9**	**10.1**	**17.5**

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

Kidneys from donors after brain death and some kidneys from donors after 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 2019 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

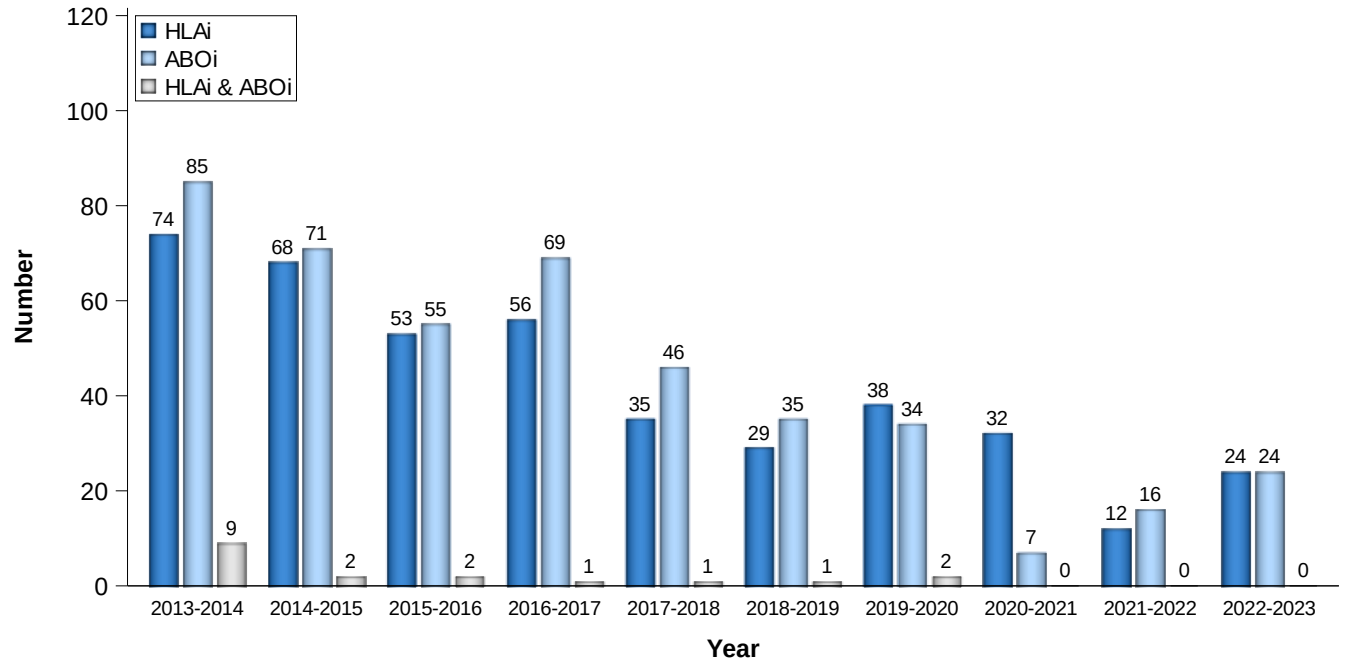
Level	HLA mismatch summary	HLA mismatch combinations included
1	000	000
2	[0 DR and 0/1 B]	100, 010, 110, 200, 210, 001, 101, 201
3	[0 DR and 2 B] or [1 DR and 0/1 B]	020, 120, 220, 011, 111, 211
4	[1 DR and 2 B] or [2 DR]	021, 121, 221, 002, 102, 202, 012, 112, 212, 022, 122, 222

Table 5.15 HLA matching for kidney only transplants in the UK, 1 April 2022 - 31 March 2023

	DBD		DCD		Living	
	N	%	N	%	N	%
Adult						
Level 1 (Best match)	37	(3)	20	(2)	61	(9)
Level 2	297	(26)	216	(22)	102	(16)
Level 3	560	(48)	551	(55)	313	(48)
Level 4	267	(23)	210	(21)	180	(27)
Not reported	2	-	4	-	192	-
Paediatric						
Level 1 (Best match)	4	(10)	0	(0)	9	(17)
Level 2	25	(63)	5	(50)	16	(30)
Level 3	9	(23)	4	(40)	29	(54)
Level 4	2	(5)	1	(10)	0	(0)
Not reported	0	-	0	-	21	-

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 421 HLA incompatible (HLAi) transplants performed; 200 were deceased donor transplants and 221 were living donor transplants, whilst the vast majority of ABO incompatible (ABOi) transplants were living donor transplants (440 of 442). 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 2013 - 31 March 2023



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 2022 - 31 March 2023, and transplant list patients at 31 March

		Donors		Transplant recipients		Active transplant list patients	
		N	(%)	N	(%)	N	(%)
Age (years)	0-17	39	(3)	51	(2)	104	(2)
	18-34	172	(13)	312	(13)	624	(11)
	35-49	322	(24)	572	(24)	1600	(28)
	50-59	342	(25)	619	(26)	1630	(29)
	60-69	310	(23)	544	(23)	1302	(23)
	70+	175	(13)	251	(11)	395	(7)
	mean (SD)	52	(16)	52	(15)	51	(14)
Sex	Male	775	(57)	1449	(62)	3393	(60)
	Female	585	(43)	900	(38)	2241	(40)
	Unknown	0	-	0	-	21	-
Ethnicity	White	1233	(93)	1552	(67)	3458	(63)
	Asian	50	(4)	402	(17)	1125	(21)
	Black	24	(2)	271	(12)	711	(13)
	Other	23	(2)	83	(4)	187	(3)
	Unknown	30	-	41	-	174	-
Blood group	O	636	(47)	997	(42)	2996	(53)
	A	560	(41)	940	(40)	1429	(25)
	B	126	(9)	290	(12)	1105	(20)
	AB	36	(3)	122	(5)	125	(2)
	Unknown[1]	2	-	0	-	0	-
Graft number	First graft	-	-	1962	(84)	4535	(80)
	Re-graft	-	-	387	(16)	1120	(20)
TOTAL		**1360**	**(100)**	**2349**	**(100)**	**5655**	**(100)**

[1] 2 donors had an indeterminate blood group

Table 5.17 Demographic characteristics of living kidney donors and transplant recipients, 1 April 2022 - 31 March 2023

		Donors		Transplant recipients	
		N	(%)	N	(%)
Age (years)	0-17	0	(0)	75	(8)
	18-34	155	(17)	197	(21)
	35-49	347	(38)	271	(29)
	50-59	233	(25)	211	(23)
	60-69	158	(17)	131	(14)
	70+	30	(3)	38	(4)
	Mean (SD)	48	(12)	43	(17)
Sex	Male	435	(47)	545	(59)
	Female	488	(53)	374	(41)
	Unknown	0	-	4	-
Ethnicity	White	798	(87)	730	(82)
	Asian	74	(8)	90	(10)
	Black	19	(2)	32	(4)
	Other	30	(3)	41	(5)
	Unknown	2	-	30	-
Blood group	O	543	(59)	419	(45)
	A	279	(30)	350	(38)
	B	76	(8)	120	(13)
	AB	24	(3)	34	(4)
	Unknown	1	-	0	-
Graft number	First graft	-	-	801	(87)
	Re-graft	-	-	122	(13)
TOTAL		**923**	**(100)**	**923**	**(100)**

Pancreas Activity

Key messages

- **The number of patients waiting on the pancreas transplant list increased by 4% during the year, to 290 at 31 March 2023**
- **The number of pancreas donors after brain death increased by 2% to 247, while transplants from donors after brain death decreased by 10% to 101**
- **The number of pancreas donors after circulatory death increased by 18% to 110, while transplants from donors after circulatory death increased by 12% to 46**
- **18 islet transplants were made possible by the pancreas islet transplant programme**

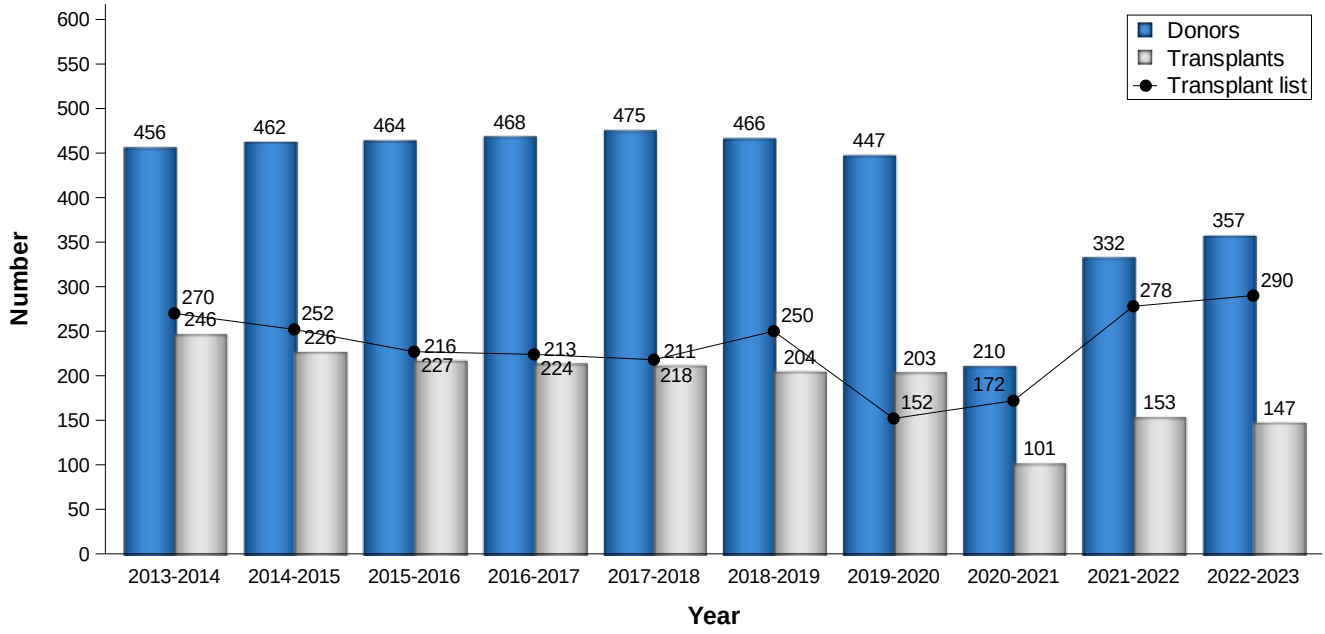
6.1 Overview

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 remained similar over the last ten years from 270 patients at 31 March 2014 to 290 patients at 31 March 2023. The number of pancreas donors fell from 456 to 357. The number of transplants has decreased in the last 10 years to 147 transplants in 2022-2023. A summary of activity for deceased donor pancreas transplants and the transplant list for 1 April 2013 - 31 March 2023 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 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 2022-2023 there were 20 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 2013 - 31 March 2023, Number of donors, transplants and patients on the active transplant list at 31 March



6.2 Transplant list

Table 6.1 shows the number of patients on the active transplant lists at 31 March 2023 by centre. The number of patients registered on the pancreas transplant list increased by 4% in the year: on 31 March 2023, 290 patients were registered active, compared with 278 at the end of March 2022.

Of the 290 patients on the active transplant list at 31 March 2023, 258 (89%) required a SPK transplant (243 at 31 March 2022), 7 (2%) patients required a pancreas only transplant (9 at 31 March 2022) and 25 (9%) were registered for a pancreas islet transplant (including 13 for a SIK transplant).

The outcome of patients registered on the UK pancreas transplant list at 1 April 2022, or subsequently registered during the financial year, is shown in **Table 6.2**. Four patients joined the pancreas transplant list while 205 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 2023 (2022) in the UK, by centre

Centre	Active transplant lists											
	Kidney/ pancreas		Kidney/islet		Pancreas alone		Islet				**TOTAL**	
							Routine		Priority			
Cambridge	19	(13)	0	(0)	0	(0)	-	-	-	-	**19**	**(13)**
Cardiff	10	(6)	-	-	0	(1)	-	-	-	-	**10**	**(7)**
Edinburgh	28	(35)	2	(1)	0	(0)	4	(4)	0	(0)	**34**	**(40)**
Guy's	32	(31)	-	-	0	(0)	-	-	-	-	**32**	**(31)**
King's College	-	-	0	(0)	-	-	0	(0)	0	(0)	**0**	**(0)**
Manchester	88	(70)	8	(6)	3	(3)	0	(3)	1	(1)	**100**	**(83)**
Newcastle	9	(13)	0	(0)	1	(2)	4	(5)	1	(3)	**15**	**(23)**
Oxford	64	(64)	3	(1)	3	(3)	2	(2)	0	(0)	**72**	**(70)**
Royal Free	-	-	0	(0)	-	-	0	(0)	0	(0)	**0**	**(0)**
WLRTC	8	(11)	-	-	0	(0)	-	-	-	-	**8**	**(11)**
TOTAL	**258**	**(243)**	**13**	**(8)**	**7**	**(9)**	**10**	**(14)**	**2**	**(4)**	**290**	**(278)**

WLRTC - West London Renal and Transplant Centre

Table 6.2 Whole pancreas transplant list and new registrations in the UK, 1 April 2022 - 31 March 2023

Outcome of patient at 31 March 2023	Active and suspended patients at 1 April 2022		New registrations in 2022-2023[1]		TOTAL	
	N	%	N	%	**N**	**%**
Pancreas transplant list						
Remained active/suspended	55	82	4	100	59	83
Transplanted	8	12	0	0	8	11
Removed	3	4	0	0	3	4
Died	1	1	0	0	1	1
TOTAL	**67**		**4**		**71**	
Kidney/pancreas transplant list						
Remained active/suspended	293	64	178	87	471	71
Transplanted[2]	110	24	17	8	127	19
Removed[3]	31	7	5	2	36	5
Died	21	5	5	2	26	4
TOTAL	**455**		**205**		**660**	

[1] Includes re-registrations for second or subsequent patients
[2] Includes 6 patients that received a kidney only transplant
[3] Includes 2 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 2023, the overall transplant list rate was 4.3 pmp and across NHS regions ranged from 1.7 to 6.7 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) 2023		2022	
North East and Yorkshire	42	(5.2)	42	(5.2)
North West	50	(6.7)	44	(5.9)
Midlands	59	(5.4)	48	(4.4)
East of England	11	(1.7)	18	(2.8)
London	30	(3.4)	28	(3.2)
South East	31	(3.3)	24	(2.6)
South West	16	(2.8)	20	(3.5)
England	**239**	**(4.2)**	**224**	**(4.0)**
Isle of Man	**0**	**(0.0)**	**0**	**(0.0)**
Channel Islands	**0**	**(0.0)**	**0**	**(0.0)**
Wales	**14**	**(4.5)**	**11**	**(3.5)**
Scotland	**32**	**(5.8)**	**38**	**(6.9)**
Northern Ireland	**3**	**(1.6)**	**2**	**(1.1)**
TOTAL[1]	**290**	**(4.3)**	**278**	**(4.1)**

[1]Includes patients in 2023 (2022) residing in: Unspecified UK 2 (3)

An indication of longer-term outcomes for patients listed for a pancreas or kidney/pancreas transplant is shown 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. 24% of patients are transplanted within one year, while three years after listing 62% of patients have received a transplant. The median (average) waiting time for a pancreas transplant is 375 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 245 new pancreas only and kidney/pancreas registrations made in the UK, 1 April 2019 - 31 March 2020**

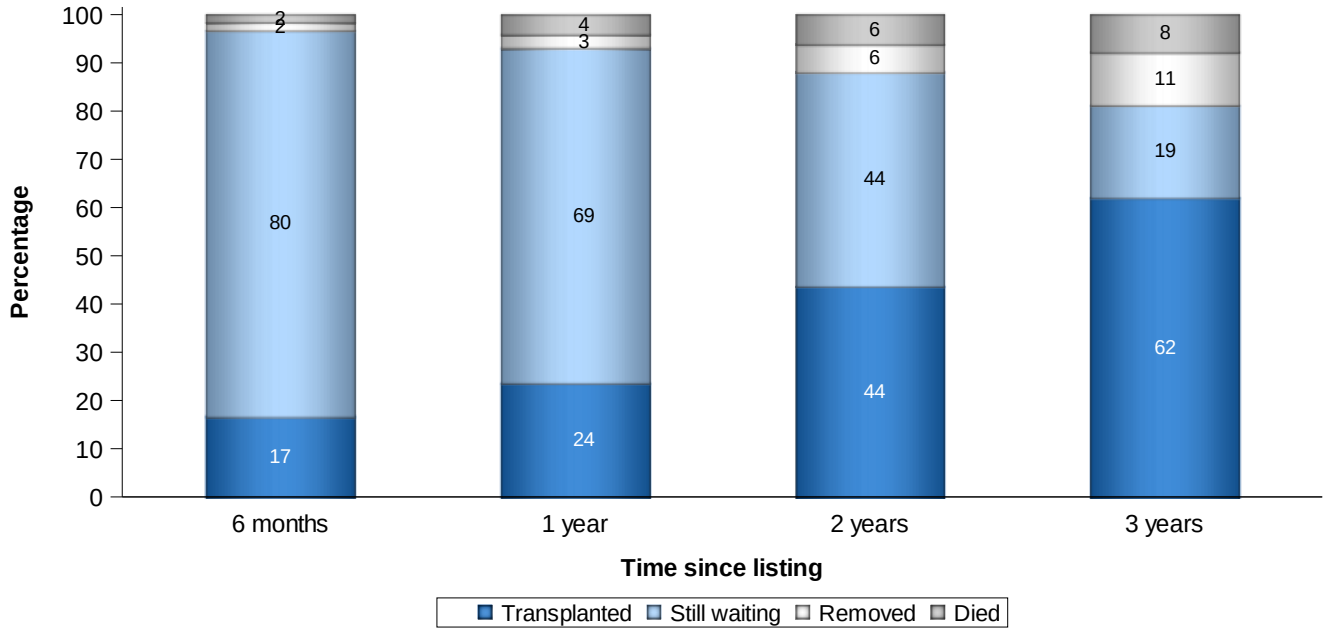


Table 6.4 **Median waiting time to pancreas only and kidney/pancreas transplant in the UK, for patients registered 1 April 2017 - 31 March 2021**

Blood group	Number of patients registered	Waiting time (days) Median	95% Confidence interval
Adult			
O	379	468	439 - 497
A	331	245	209 - 281
B	97	437	363 - 511
AB	32	130	100 - 160
TOTAL	**839**	**375**	**343 - 407**

Table 6.5 **Median waiting time to pancreas only and kidney/pancreas transplant in the UK, for patients registered 1 April 2017 - 31 March 2021**

Ethnicity	Number of patients registered	Waiting time (days) Median	95% Confidence interval
Adult			
White	713	378	343 - 413
Asian	62	437	268 - 606
Black	43	372	239 - 505
Other	18	209	148 - 270
TOTAL[1]	**839**	**375**	**343 – 407**

[1] Includes 3 recipients with unknown ethnicity

6.3 Donor and organ supply

Of the 772 organ donors after brain death in the UK in 2022-2023, 247 (32%) donated a pancreas. There were 110 pancreas donors after circulatory death in 2022-2023. **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 3.7 pmp, with rates ranging from 1.8 to 4.9 pmp across NHS regions and for donors after circulatory death is 1.6 pmp, with rates ranging from 0.9 to 2.4 pmp across NHS regions.

Table 6.6 Pancreas donation rates for deceased donors in the UK, 1 April 2022 - 31 March 2023, by Country/ NHS region

Country/ NHS region of residence	Pancreas donors (pmp)					
	DBD		DCD		**TOTAL**	
North East and Yorkshire	40	(4.9)	15	(1.8)	55	(6.8)
North West	32	(4.3)	10	(1.3)	42	(5.7)
Midlands	31	(2.9)	21	(1.9)	52	(4.8)
East of England	16	(2.5)	9	(1.4)	25	(3.9)
London	16	(1.8)	8	(0.9)	24	(2.7)
South East	32	(3.4)	22	(2.4)	54	(5.8)
South West	18	(3.2)	6	(1.1)	24	(4.2)
England	**185**	**(3.3)**	**91**	**(1.6)**	**276**	**(4.9)**
Isle of Man	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**
Channel Islands	**1**	**(5.9)**	**0**	**(0.0)**	**1**	**(5.9)**
Wales	**12**	**(3.9)**	**6**	**(1.9)**	**18**	**(5.8)**
Scotland	**22**	**(4.0)**	**6**	**(1.1)**	**28**	**(5.1)**
Northern Ireland	**11**	**(5.8)**	**3**	**(1.6)**	**14**	**(7.4)**
TOTAL[1]	**247**	**(3.7)**	**110**	**(1.6)**	**357**	**(5.3)**

[1] Includes 20 donors with unknown UK postcode (16 DBD and 4 DCD)

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 0.8 to 1.8 pmp across NHS regions and overall was 1.5 pmp. For donors after circulatory death, the overall rate was 0.7 pmp and ranged from 0.4 to 0.9 pmp across NHS regions.

Table 6.7 Pancreas and islet transplant rates per million population (pmp), in the UK, 1 April 2022 - 31 March 2023, by country and English NHS region

Country/ NHS region of residence	DBD		DCD		TOTAL	
	N	(pmp)	N	(pmp)	N	(pmp)
North East and Yorkshire	12	(1.5)	4	(0.5)	16	(2.0)
North West	10	(1.3)	3	(0.4)	13	(1.8)
Midlands	19	(1.8)	7	(0.6)	26	(2.4)
East of England	10	(1.6)	4	(0.6)	14	(2.2)
London	11	(1.3)	8	(0.9)	19	(2.2)
South East	7	(0.8)	4	(0.4)	11	(1.2)
South West	8	(1.4)	3	(0.5)	11	(1.9)
England	**77**	**(1.4)**	**33**	**(0.6)**	**110**	**(1.9)**
Isle of Man	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**
Channel Islands	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**
Wales	**7**	**(2.3)**	**5**	**(1.6)**	**12**	**(3.9)**
Scotland	**17**	**(3.1)**	**8**	**(1.5)**	**25**	**(4.6)**
Northern Ireland	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**
TOTAL	**101**	**(1.5)**	**46**	**(0.7)**	**147**	**(2.2)**

There were 147 deceased donor pancreas and islet transplants in 2022-2023, less than the 153 transplants performed in 2021-2022. Of these 147, 121 (82%) were SPK transplants, 8 (5%) were pancreas only transplants (pancreas alone (PTA) or pancreas after kidney (PAK)) and 18 (12%) 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 2022-2023, the median CIT for a DBD donor whole pancreas transplant is 10.1 hours (Inter-Quartile (IQ) range 8.6 – 10.7) and for a DCD donor transplant is 11.3 hours (IQ range 10.0 – 12.5) and overall is 10.1 hours (IQ range 10.0 – 10.7).

At 31 March 2023, there were approximately 2,200 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 2022 - 31 March 2023 (2021-2022) by centre

Centre	Transplant type											
	SPK		SIK		PTA		PAK		Islet			
									Routine		Priority	
Cambridge	15	(11)	-	-	0	(0)	0	(0)	-	-	-	-
Cardiff	7	(5)	-	-	0	(0)	2	(1)	-	-	-	-
Edinburgh	16	(8)	2	(3)	0	(0)	0	(0)	3	(5)	4	(5)
Guy's	21	(21)	-	-	0	(0)	0	(0)	-	-	-	-
King's College	-	-	0	(0)	-	-	-	-	0	(0)	0	(0)
Manchester	17	(20)	3	(3)	3	(1)	0	(3)	0	(0)	2	(1)
Newcastle	8	(4)	0	(0)	0	(1)	0	(1)	2	(2)	1	(1)
Oxford	32	(45)	0	(1)	2	(3)	1	(1)	1	(1)	0	(0)
Royal Free	-	-	0	(0)	-	-	-	-	0	(0)	0	(0)
WLRTC	5	(6)	-	-	0	(0)	0	(0)	-	-	-	-
TOTAL	**121**	**(120)**	**5**	**(7)**	**5**	**(5)**	**3**	**(6)**	**6**	**(8)**	**7**	**(7)**

WLRTC - West London Renal and Transplant Centre

Table 6.9 Pancreas and islet transplants, 1 April 2022 - 31 March 2023 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
Cambridge	10	5	-	-	0	0	-	-	**10**	**5**
Cardiff	4	3	-	-	0	2	-	-	**4**	**5**
Edinburgh	11	5	1	1	0	0	5	2	**17**	**8**
Guy's	12	9	-	-	0	0	-	-	**12**	**9**
King's College	-	-	0	0	-	-	0	0	**0**	**0**
Manchester	13	4	3	0	2	1	2	0	**20**	**5**
Newcastle	5	3	0	0	0	0	3	0	**8**	**3**
Oxford	23	9	0	0	3	0	1	0	**27**	**9**
Royal Free	-	-	0	0	-	-	0	0	**0**	**0**
WLRTC	3	2	-	-	0	0	-	-	**3**	**2**
TOTAL	**81**	**40**	**4**	**1**	**5**	**3**	**11**	**2**	**101**	**46**

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 2022 - 31 March 2023, and transplant list patients at 31 March

		Donors		Transplant recipients		Active transplant list patients	
		N	(%)	N	(%)	N	(%)
Age (years)	0-17	26	(7)		-		-
	18-34	114	(32)	42	(29)	65	(22)
	35-49	147	(41)	71	(48)	150	(52)
	50-59	68	(19)	31	(21)	67	(23)
	60-69	1	(0)	3	(2)	8	(3)
	70+	1	(0)	0	(0)	0	(0)
	Mean (SD)	37	(13)	42	(9)	43	(9)
Sex	Male	212	(59)	79	(54)	144	(50)
	Female	145	(41)	68	(46)	145	(50)
	Unknown	0	-	0	-	1	-
Ethnicity	White	322	(93)	132	(90)	250	(88)
	Asian	12	(3)	7	(5)	16	(6)
	Black	6	(2)	6	(4)	14	(5)
	Other	8	(2)	2	(1)	5	(2)
	Unknown	9	-	0	-	5	-
Blood group	O	168	(47)	54	(37)	155	(53)
	A	145	(41)	65	(44)	94	(32)
	B	35	(10)	21	(14)	35	(12)
	AB	9	(3)	7	(5)	6	(2)
Graft number	First graft	-	-	129	(88)	260	(90)
	Re-graft	-	-	18	(12)	30	(10)
TOTAL		**357**	**(100)**	**147**	**(100)**	**290**	**(100)**

Cardiothoracic Activity

Key messages

- **At 31 March 2023, there were 312 patients on the active heart transplant list, 290 on the lung list and 12 on the heart-lung list**
- **Of the 772 organ donors after brain death during 2022-2023, 153 (20%) donated their heart and 69 (9%) donated at least one lung**
- **The number of heart transplants increased by 20% to 214; 56% of these were urgent heart transplants, 25% were super-urgent, and 19% were non-urgent**
- **The number of lung and heart-lung transplants fell by 7% this year to 101; 22% of these were urgent lung transplants, 3% were super-urgent, and 75% were non-urgent.**
- **There were 55 DCD heart transplants in 2022-2023 (including one heart/liver), 11 more than the previous year.**

7.1 Overview

Last year the number of heart transplants increased by 20% to 214 compared with 2021-2022, and the number of lung or heart-lung transplants fell by 7% to 101. There were increases in the lung transplant list since 31 March 2022, but the heart transplant list fell by 5% to 312. The number of patients active on the heart transplant list at year end has increased by 27% since 2014, while the number of patients active on the lung or heart-lung transplant list has increased by 5% since 2014.

A summary of the deceased donor cardiothoracic activity from 1 April 2013 to 31 March 2023 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 2013 - 31 March 2023, Number of donors, transplants and patients on the active transplant list at 31 March

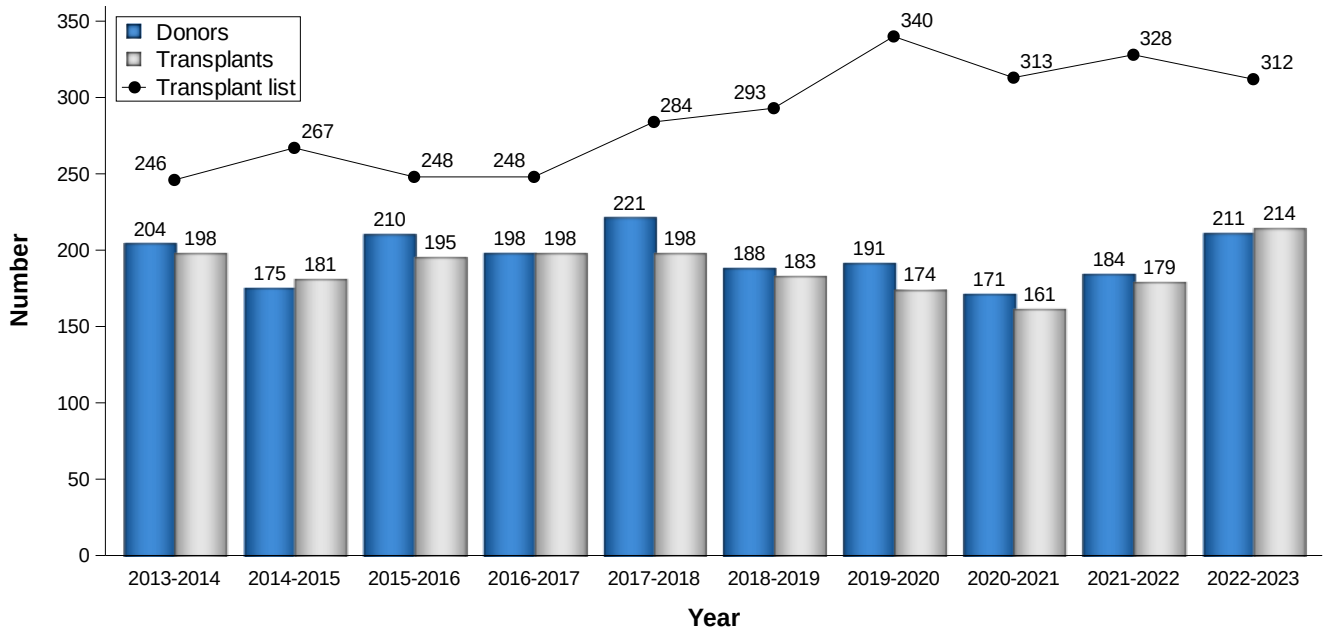
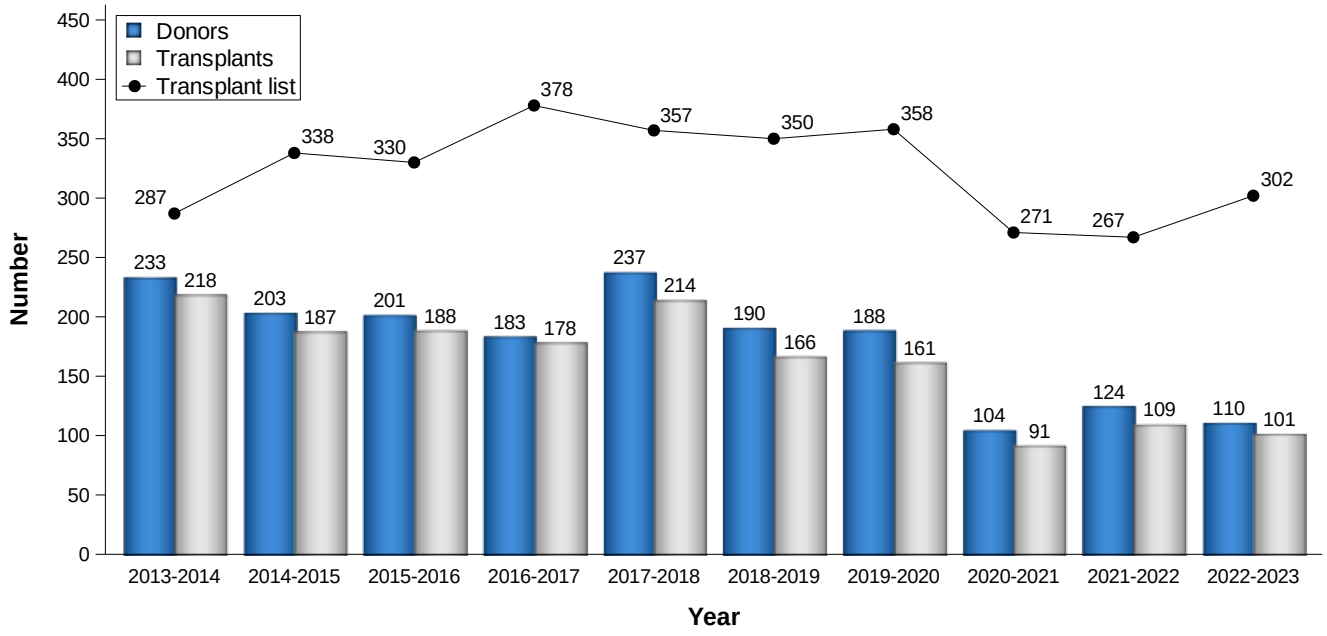


Figure 7.2 Deceased donor lung and heart-lung programme in the UK, 1 April 2013 - 31 March 2023, Number of donors, transplants and patients on the active transplant list at 31 March



7.2 Transplant list

Table 7.1 shows the number of patients on the active transplant lists at 31 March 2023 by centre. There was one patient waiting on the super-urgent heart transplant list. There were no patients waiting on the super-urgent lung transplant list, and seven patients waiting on the urgent lung transplant list. The lung transplant list accounts for 47% of the patients waiting for a cardiothoracic organ transplant. Overall, Newcastle and Harefield had the largest cardiothoracic transplant waiting lists on 31 March 2023.

Table 7.1 Patients on the cardiothoracic transplant lists at 31 March 2023 (2022) in the UK, by centre

Centre	Active transplant lists														TOTAL	
	Heart						Heart-lung		Lung							
	Non-urgent		Urgent		Super-urgent				Non-urgent		Urgent		Super-urgent			
Adult																
Birmingham	38	(43)	3	(4)	0	(0)	3	(2)	37	(42)	0	(0)	0	(0)	**81**	**(91)**
Glasgow	15	(14)	4	(2)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	**19**	**(16)**
Great Ormond Street	1	(1)	1	(0)	0	(0)	0	(0)	0	(1)	0	(0)	0	(0)	**2**	**(2)**
Harefield	49	(62)	9	(4)	1	(2)	1	(0)	79	(55)	1	(0)	0	(0)	**140**	**(123)**
Manchester	29	(30)	2	(2)	0	(1)	0	(1)	34	(39)	1	(0)	0	(0)	**66**	**(73)**
Newcastle	62	(72)	12	(10)	0	(0)	2	(3)	80	(60)	2	(6)	0	(0)	**158**	**(151)**
Papworth	34	(32)	4	(3)	0	(1)	3	(2)	42	(43)	1	(3)	0	(0)	**84**	**(84)**
TOTAL	**228**	**(254)**	**35**	**(25)**	**1**	**(4)**	**9**	**(8)**	**272**	**(240)**	**5**	**(9)**	**0**	**(0)**	**550**	**(540)**
Paediatric																
Great Ormond Street	19	(14)	8	(4)	0	(1)	2	(1)	9	(7)	2	(1)	0	(0)	**40**	**(28)**
Newcastle	15	(17)	6	(9)	0	(0)	1	(0)	2	(1)	0	(0)	0	(0)	**24**	**(27)**
TOTAL	**34**	**(31)**	**14**	**(13)**	**0**	**(1)**	**3**	**(1)**	**11**	**(8)**	**2**	**(1)**	**0**	**(0)**	**64**	**(55)**

During 2022-2023, there were 325 registrations onto the heart transplant list, 7 registrations onto the heart-lung transplant list and 203 onto the lung transplant list. Registration outcomes as at 31 March 2023 for patients on the list at 1 April 2022 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 2022 - 31 March 2023

	Active and suspended patients at 1 April 2022		New registrations in 2022-2023[1]		**TOTAL**	
Outcome of patient at 31 March 2023	N	%	N	%	**N**	**%**
Heart transplant list						
Remained active/suspended	243	66	141	43	384	55
Transplanted	70	19	142	44	212	31
Removed	47	13	34	10	81	12
Died	10	3	8	2	18	3
TOTAL	**370**		**325**		**695**	
Heart-lung transplant list						
Remained active/suspended	9	90	5	63	14	78
Transplanted[2]	1	10	0	0	1	6
Removed	1	10	2	25	3	17
TOTAL	**11**		**7**		**18**	
Lung transplant list						
Remained active/suspended	182	67	125	62	307	65
Transplanted	47	17	51	25	98	21
Removed	29	11	5	2	34	7
Died	12	4	22	11	34	7
TOTAL	**270**		**203**		**473**	

[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 2023 was 4.7 pmp and ranged from 3.1 to 6.0 across NHS regions. The overall UK lung transplant list rate was 4.5 pmp and ranged from 3.1 to 5.8 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) 2023		2022		Lung transplant list (pmp) 2023		2022	
North East and Yorkshire	49	(6.0)	60	(7.4)	47	(5.8)	39	(4.8)
North West	32	(4.3)	35	(4.7)	30	(4.0)	34	(4.6)
Midlands	46	(4.2)	50	(4.6)	54	(5.0)	53	(4.9)
East of England	20	(3.1)	19	(3.0)	25	(3.9)	20	(3.1)
London	37	(4.2)	45	(5.1)	40	(4.5)	24	(2.7)
South East	43	(4.6)	43	(4.6)	29	(3.1)	28	(3.0)
South West	23	(4.0)	23	(4.0)	23	(4.0)	20	(3.5)
England	**250**	**(4.4)**	**275**	**(4.9)**	**248**	**(4.4)**	**218**	**(3.9)**
Isle of Man	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**
Channel Islands	**1**	**(5.9)**	**1**	**(5.9)**	**0**	**(0.0)**	**0**	**(0.0)**
Wales	**14**	**(4.5)**	**11**	**(3.5)**	**12**	**(3.9)**	**14**	**(4.5)**
Scotland	**29**	**(5.3)**	**24**	**(4.4)**	**29**	**(5.3)**	**26**	**(4.7)**
Northern Ireland	**17**	**(8.9)**	**16**	**(8.4)**	**12**	**(6.3)**	**8**	**(4.2)**
TOTAL[1,2]	**312**	**(4.7)**	**328**	**(4.9)**	**302**	**(4.5)**	**267**	**(4.0)**

[1]Includes heart patients in 2023 (2022) residing in: Republic of Ireland 1 (1)
[2]Includes lung patients in 2023 (2022) residing in: Unspecified UK 1 (1)

The transplant list outcomes for adult patients listed for a cardiothoracic organ transplant between 1 April 2019 and 31 March 2020 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, 8% of non-urgent heart patients were transplanted while 2% had died, compared with 54% transplanted and 5% died for urgent heart patients. Of those listed for a non-urgent lung transplant, 16% were transplanted within six months, rising to 34% after three years, however at three years, 22% 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 post-registration outcomes of super-urgent heart, super-urgent lung and urgent lung registrations are not presented due to the small number of patients who start off on these lists.

Figure 7.3 **Post-registration outcome for 165 first non-urgent heart only registrations made in the UK, 1 April 2019 - 31 March 2020**

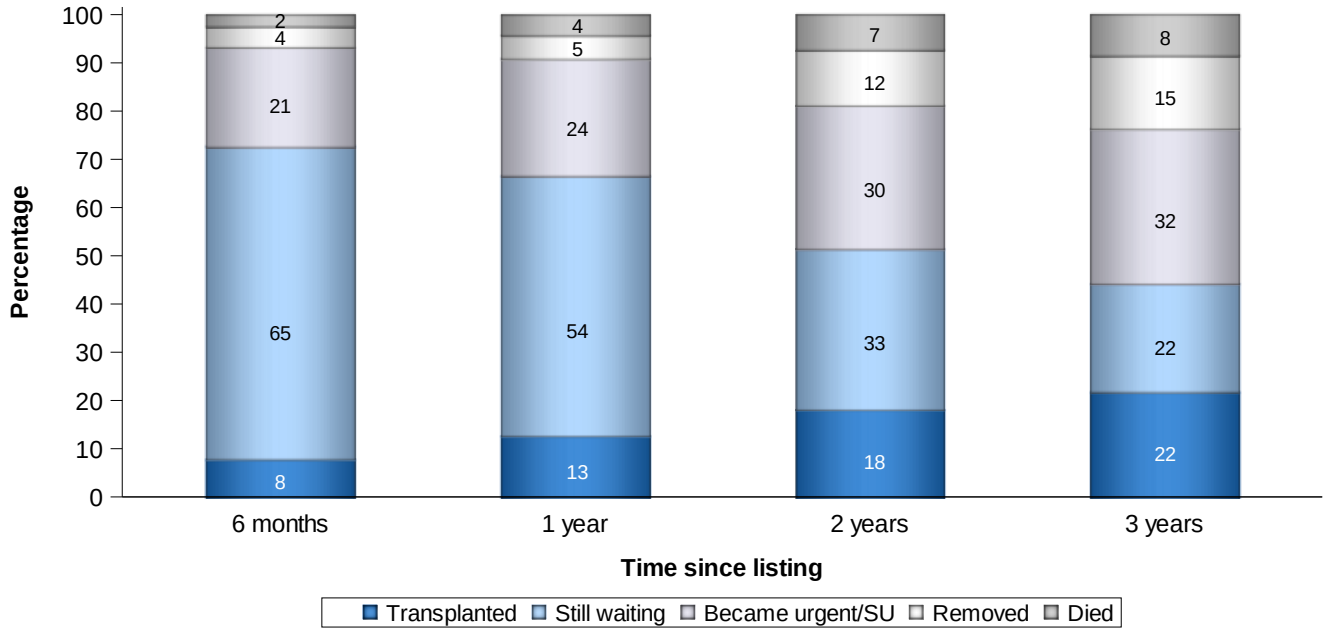


Figure 7.4 **Post-registration outcome for 197 first urgent heart only registrations made in the UK, 1 April 2019 - 31 March 2020**

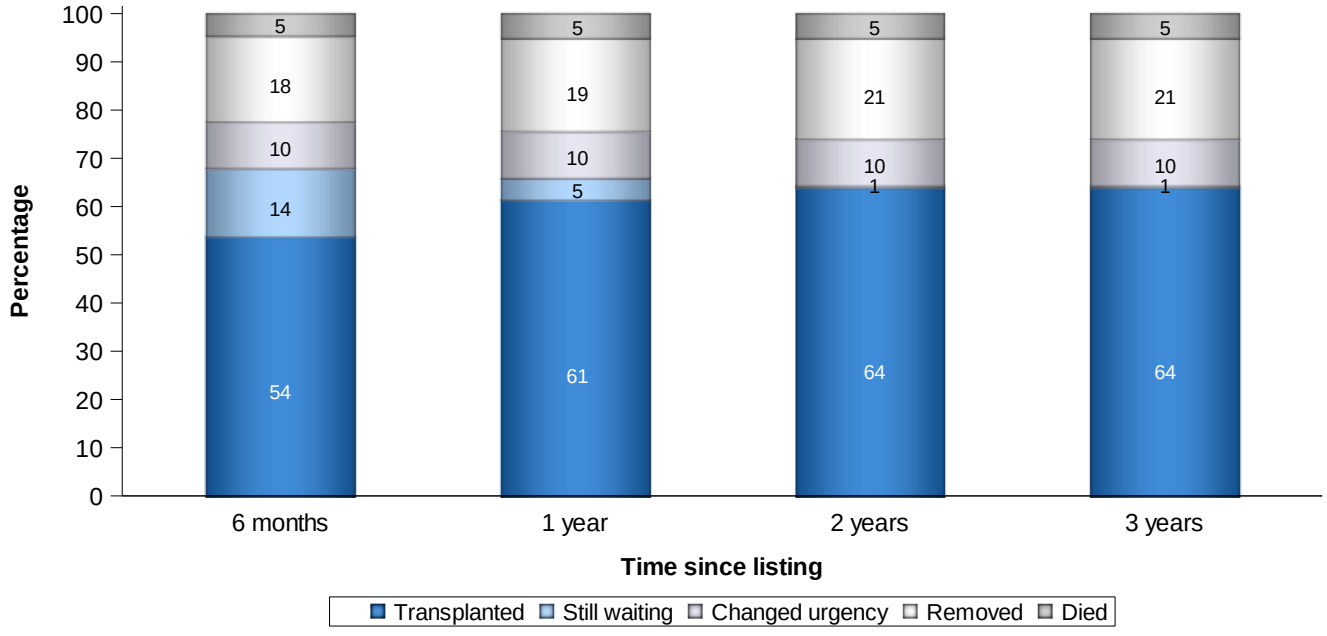


Figure 7.5 **Post-registration outcome for 260 first non-urgent lung only registrations made in the UK, 1 April 2019 - 31 March 2020**

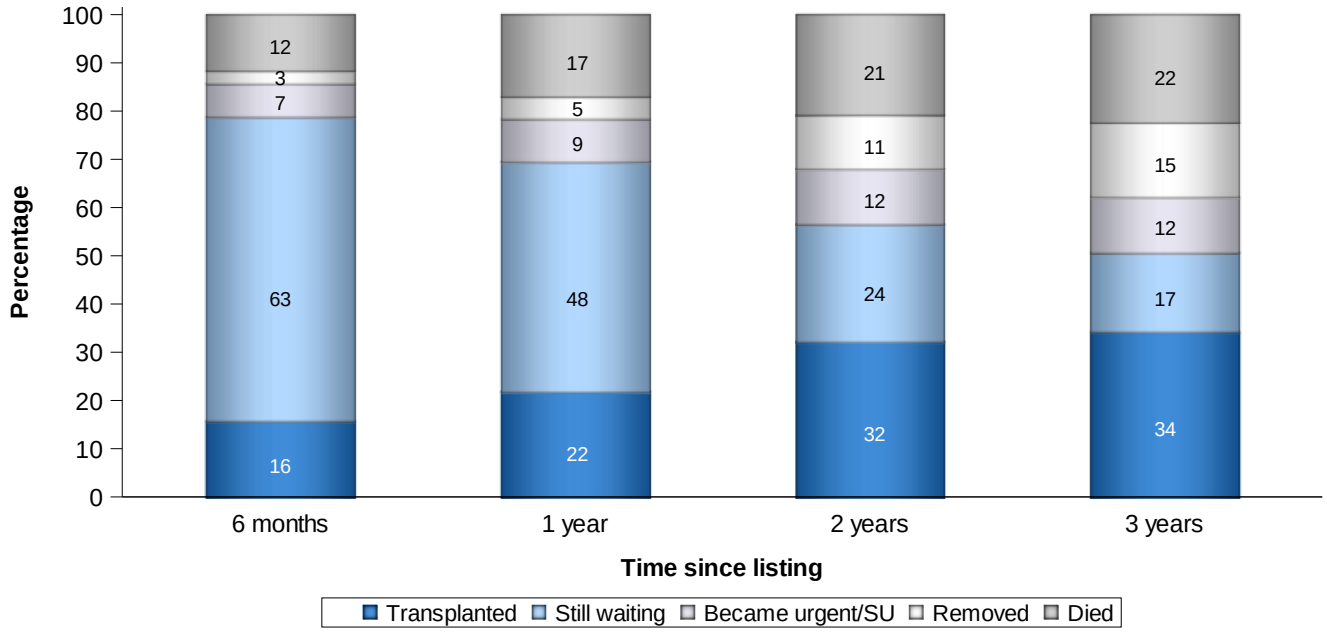


Table 7.4 and **Table 7.5** show the median waiting time to cardiothoracic organ transplant by blood group and ethnicity of patient, respectively, for patients registered between 1 April 2014 and 31 March 2020. The overall median waiting time to non-urgent heart transplantation for adult patients who were never on the urgent or super-urgent list was 6 years. For adult patients who had been on the urgent list, the overall median time on the urgent list before transplant was 43 days. For patients who had been on the super-urgent list ('ever super-urgent'), the overall median time on the super-urgent list before transplant was 13 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 471 days, but for blood group O patients alone was longer, at 712 days. The overall median time on the urgent list before transplant was 17 days. Median waiting time is not calculated for adult super-urgent lung patients due to the small number of registrations.

For paediatric heart patients, the median waiting time was 754 days for non-urgent registrations and 97 days for urgent registrations (this is not broken down by blood group or ethnicity and is not presented for super-urgent patients due to low numbers). The overall median waiting time to non-urgent lung transplantation for paediatric patients who were never on the urgent or super-urgent list, was 162 days. Median waiting time is not calculated for paediatric urgent or super-urgent lung patients due to the small number of registrations. Note that these waiting time estimates 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 2014 - 31 March 2020

Blood group	Number of patients registered	Waiting time (days) Median	95% Confidence interval
Adult non-urgent heart[1]			
O	224	-	-
A	251	1434	769 - 2099
B	60	1473	847 - 2099
AB	16	693	287 - 1099
TOTAL	**551**	**2082**	**-**
Adult urgent heart[2]			
O	333	55	45 - 65
A	347	30	24 - 36
B	96	50	31 - 69
AB	39	27	18 - 36
TOTAL	**815**	**43**	**39 - 47**
Adult super-urgent heart	**153**	**13**	**8 - 18**
Paediatric non-urgent heart[1]	**51**	**754**	**424 - 1084**
Paediatric urgent heart[2]	**244**	**97**	**77 - 117**
Adult non-urgent lung[1]			
O	672	712	584 - 840
A	650	298	235 - 361
B	136	454	205 - 703
AB	53	191	79 - 303
TOTAL	**1511**	**471**	**409 - 533**
Adult urgent lung[2]	**135**	**17**	**10 - 24**
Paediatric non-urgent lung[1]	**33**	**162**	**42 - 282**

- 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 2014 - 31 March 2020

Ethnicity	Number of patients registered	Waiting time (days) Median	95% Confidence interval
Adult non-urgent heart[1]			
White	479	2082	-
Asian	45	-	-
Black	19	-	-
Other	0	-	-
TOTAL[3]	**551**	**2082**	**-**
Adult urgent heart[2]			
White	681	43	39 - 47
Asian	80	37	17 - 57
Black	39	45	3 - 87
Other	12	78	10 - 146
TOTAL[4]	**815**	**43**	**39 - 47**
Adult super-urgent heart	**153**	**13**	**8 - 18**
Paediatric non-urgent heart[1]	**51**	**754**	**424 - 1084**
Paediatric urgent heart	**244**	**97**	**77 - 117**
Adult non-urgent lung[1]			
White	1410	449	383 - 515
Asian	64	-	-
Black	26	1227	344 - 2110
Other	0	-	
TOTAL[5]	**1511**	**471**	**409 - 533**
Adult urgent lung[2]	**135**	**17**	**10 - 24**
Paediatric non-urgent lung[1]	**33**	**162**	**42 - 282**

- 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

[3] Includes 8 patients whose ethnicity was not reported

[4] Includes 3 patients whose ethnicity was not reported

[5] Includes 11 patients whose ethnicity was not reported

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 772 DBD donors, 153 (20%) donated their heart, resulting in 152 transplants. Of the 657 DCD donors, 58 (9%) donated their heart, resulting in 55 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 772 DBD donors, 69 (9%) donated at least one lung, with 66 proceeding to transplantation. Of the 657 DCD donors, 43 (7%) donated at least one lung, with 37 proceeding to transplantation.

Table 7.6 Heart organ donation and retrieval rates in the UK, 1 April 2022 - 31 March 2023, by heart allocation zone and donor type

Heart Allocation Zone	DBD Number of donors	DBD Number of heart donors (utilised)		DBD Number donated heart and lungs	DCD Number of donors	DCD Number of heart donors (utilised)		DCD Number donated heart and lungs
Birmingham	109	15	(15)	3	101	9	(9)	1
Glasgow	58	17	(17)	2	58	4	(3)	0
Harefield	181	25	(24)	6	155	17	(17)	5
Manchester	107	18	(18)	2	94	9	(8)	2
Newcastle	173	40	(40)	13	135	9	(8)	2
Papworth	144	38	(38)	5	114	10	(10)	4
TOTAL	**772**	**153**	**(152)**	**31**	**657**	**58**	**(55)**	**14**

Table 7.7 Lung organ donation and retrieval rates in the UK, 1 April 2022 - 31 March 2023, by lung allocation zone and donor type

Lung Allocation Zone	DBD Number of donors	DBD Number of lung donors (utilised)		DBD Number donated heart and lungs	DCD Number of donors	DCD Number of lung donors (utilised)		DCD Number donated heart and lungs
Birmingham	109	7	(7)	3	98	3	(3)	1
Harefield	190	22	(20)	7	162	14	(11)	6
Manchester	117	10	(10)	3	106	9	(9)	3
Newcastle	203	20	(19)	14	164	8	(7)	1
Papworth	153	10	(10)	4	127	9	(7)	3
TOTAL	**772**	**69**	**(66)**	**31**	**657**	**43**	**(37)**	**14**

The rates per million population for cardiothoracic organ donors are shown in **Table 7.8** by country/NHS region of residence. No adjustments have been made for potential demographic differences in populations. The overall heart donor rate was 3.1 pmp in 2022-2023 and varied across NHS regions from 1.8 pmp to 3.7 pmp. For lungs, the overall donor rate was 1.7 pmp in 2022-2023 and varied across NHS regions from 0.9 pmp to 2.6 pmp.

Table 7.8 Cardiothoracic donation rates for deceased donors in the UK, 1 April 2022 - 31 March 2023, by country/ NHS region

Country/ NHS region of residence	Heart (pmp)						Lung(s) (pmp)					
	DBD		DCD		**TOTAL**		DBD		DCD		**TOTAL**	
North East and Yorkshire	24	(3.0)	5	(0.6)	29	(3.6)	16	(2.0)	5	(0.6)	21	(2.6)
North West	15	(2.0)	4	(0.5)	19	(2.6)	6	(0.8)	2	(0.3)	8	(1.1)
Midlands	18	(1.7)	10	(0.9)	28	(2.6)	10	(0.9)	7	(0.6)	17	(1.6)
East of England	15	(2.4)	3	(0.5)	18	(2.8)	1	(0.2)	5	(0.8)	6	(0.9)
London	15	(1.7)	6	(0.7)	21	(2.4)	9	(1.0)	5	(0.6)	14	(1.6)
South East	20	(2.2)	14	(1.5)	34	(3.7)	12	(1.3)	10	(1.1)	22	(2.4)
South West	9	(1.6)	1	(0.2)	10	(1.8)	5	(0.9)	3	(0.5)	8	(1.4)
England	**116**	**(2.1)**	**43**	**(0.8)**	**159**	**(2.8)**	**59**	**(1.0)**	**37**	**(0.7)**	**96**	**(1.7)**
Isle of Man	**0**	**(0.0)**	**0**	**(0.0)**	**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)**	**0**	**(0.0)**	**0**	**(0.0)**
Wales	**6**	**(1.9)**	**6**	**(1.9)**	**12**	**(3.9)**	**2**	**(0.6)**	**1**	**(0.3)**	**3**	**(1.0)**
Scotland	**16**	**(2.9)**	**3**	**(0.5)**	**19**	**(3.5)**	**2**	**(0.4)**	**1**	**(0.2)**	**3**	**(0.5)**
Northern Ireland	**5**	**(2.6)**	**2**	**(1.1)**	**7**	**(3.7)**	**2**	**(1.1)**	**2**	**(1.1)**	**4**	**(2.1)**
TOTAL[1]	**153**	**(2.3)**	**58**	**(0.9)**	**211**	**(3.1)**	**69**	**(1.0)**	**43**	**(0.6)**	**112**	**(1.7)**

[1] Includes 13 heart (9 DBD and 4 DCD) and 6 lung (4 DBD and 2 DCD) with an 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 2.1 to 3.6 pmp across NHS regions and overall was 3.2 pmp. The lung transplant rate ranged from 1.1 to 2.2 pmp across NHS regions and overall was 1.5 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 2022 - 31 March 2023, by country/ NHS region

Country/ NHS region of residence	Heart (pmp)						Lung(s) (pmp)					
	DBD		DCD		**TOTAL**		DBD		DCD		**TOTAL**	
North East and Yorkshire	18	(2.2)	3	(0.4)	21	(2.6)	9	(1.1)	7	(0.9)	16	(2.0)
North West	13	(1.8)	5	(0.7)	18	(2.4)	6	(0.8)	3	(0.4)	9	(1.2)
Midlands	26	(2.4)	8	(0.7)	34	(3.1)	11	(1.0)	2	(0.2)	13	(1.2)
East of England	10	(1.6)	5	(0.8)	15	(2.4)	7	(1.1)	7	(1.1)	14	(2.2)
London	18	(2.0)	14	(1.6)	32	(3.6)	6	(0.7)	4	(0.5)	10	(1.1)
South East	17	(1.8)	6	(0.6)	23	(2.5)	9	(1.0)	3	(0.3)	12	(1.3)
South West	9	(1.6)	3	(0.5)	12	(2.1)	7	(1.2)	4	(0.7)	11	(1.9)
England	**111**	**(2.0)**	**44**	**(0.8)**	**155**	**(2.7)**	**55**	**(1.0)**	**30**	**(0.5)**	**85**	**(1.5)**
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	**4**	**(1.3)**	**1**	**(0.3)**	**5**	**(1.6)**	**4**	**(1.3)**	**2**	**(0.6)**	**6**	**(1.9)**
Scotland	**36**	**(6.6)**	**8**	**(1.5)**	**44**	**(8.0)**	**3**	**(0.5)**	**4**	**(0.7)**	**7**	**(1.3)**
Northern Ireland	**6**	**(3.2)**	**2**	**(1.1)**	**8**	**(4.2)**	**1**	**(0.5)**	**1**	**(0.5)**	**2**	**(1.1)**
TOTAL[1,2]	**159**	**(2.4)**	**55**	**(0.8)**	**214**	**(3.2)**	**63**	**(0.9)**	**38**	**(0.6)**	**101**	**(1.5)**

[1] Excludes 1 heart and 1 lung recipient who resides in the Republic of Ireland
[2] Includes 1 heart recipient with an unknown UK postcode

Table 7.10 and **Table 7.11** show cardiothoracic organ transplant activity for each centre by urgency status and donor type, respectively. In 2022-2023, a total of 315 transplants were carried out; an increase of 9% on 2021-2022. Of these, 214 were heart transplants, of which 174 (81%) were urgent or super-urgent and additionally, 55 (26%) were achieved from donors after circulatory death. There was a total of 101 lung or heart-lung transplants, of which 25 (25%) were urgent or super-urgent.

Table 7.10 Cardiothoracic transplants from deceased donors, 1 April 2022 - 31 March 2023 (2021 - 2022) by age group, centre, transplant type and urgency

Transplant centre	Transplant type: Heart						Heart-lung		Lung						TOTAL	
	Non-urgent		Urgent		Super-urgent				Non-urgent		Urgent		Super-urgent			
Adult																
Birmingham	7	(1)	14	(11)	8	(4)	0	(1)	8	(5)	1	(3)	1	(0)	**39**	**(25)**
Glasgow	10	(10)	19	(11)	11	(3)	0	(0)	0	(0)	0	(0)	0	(0)	**40**	**(24)**
Great Ormond Street	0	(3)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	**0**	**(3)**
Harefield	5	(8)	23	(11)	10	(5)	0	(0)	13	(23)	2	(1)	1	(1)	**54**	**(49)**
Manchester	3	(2)	10	(11)	3	(3)	0	(0)	9	(12)	4	(4)	0	(0)	**29**	**(32)**
Newcastle	2	(6)	21	(25)	5	(2)	0	(0)	17	(5)	8	(15)	0	(1)	**53**	**(54)**
Papworth	11	(13)	12	(11)	12	(12)	1	(2)	28	(28)	6	(6)	1	(0)	**71**	**(72)**
TOTAL	**38**	**(43)**	**99**	**(80)**	**49**	**(29)**	**1**	**(3)**	**75**	**(73)**	**21**	**(29)**	**3**	**(2)**	**286**	**(259)**
Paediatric[1]																
Great Ormond Street	1	(3)	11	(11)	3	(2)	0	(0)	0	(0)	1	(2)	0	(0)	**16**	**(18)**
Newcastle	1	(4)	10	(6)	2	(1)	0	(0)	0	(0)	0	(0)	0	(0)	**13**	**(11)**
TOTAL	**2**	**(7)**	**21**	**(17)**	**5**	**(3)**	**0**	**(0)**	**0**	**(0)**	**1**	**(2)**	**0**	**(0)**	**29**	**(29)**

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

Table 7.11 Cardiothoracic transplants from deceased donors, 1 April 2022 - 31 March 2023 (2021 - 2022) by age group, centre, transplant type and donor type

Transplant centre	Transplant type: Heart DBD		Heart DCD		Heart-lung DBD		Heart-lung DCD		Lung DBD		Lung DCD		TOTAL	
Adult														
Birmingham	23	(13)	6	(3)	0	(1)	0	(0)	9	(6)	1	(2)	**39**	**(25)**
Glasgow	32	(21)	8	(3)	0	(0)	0	(0)	0	(0)	0	(0)	**40**	**(24)**
Great Ormond Street	0	(2)	0	(1)	0	(0)	0	(0)	0	(0)	0	(0)	**0**	**(3)**
Harefield	22	(13)	16	(11)	0	(0)	0	(0)	10	(21)	6	(4)	**54**	**(49)**
Manchester	10	(15)	6	(1)	0	(0)	0	(0)	8	(11)	5	(5)	**29**	**(32)**
Newcastle	24	(23)	4	(10)	0	(0)	0	(0)	13	(15)	12	(6)	**53**	**(54)**
Papworth	22	(26)	13	(10)	1	(2)	0	(0)	22	(27)	13	(7)	**71**	**(72)**
TOTAL	**133**	**(113)**	**53**	**(39)**	**1**	**(3)**	**0**	**(0)**	**62**	**(80)**	**37**	**(24)**	**286**	**(259)**
Paediatric[1]														
Great Ormond Street	14	(15)	1	(1)	0	(0)	0	(0)	0	(2)	1	(0)	**16**	**(18)**
Newcastle	12	(7)	1	(4)	0	(0)	0	(0)	0	(0)	0	(0)	**13**	**(11)**
TOTAL	**26**	**(22)**	**2**	**(5)**	**0**	**(0)**	**0**	**(0)**	**0**	**(2)**	**1**	**(0)**	**29**	**(29)**

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

At 31 March 2023 there were approximately 4,100 recipients with a functioning cardiothoracic organ transplant being followed-up as reported to the UK Transplant Registry.

The length of time that elapses between cardiothoracic organs being removed from the donor and their transplantation into the recipient is called the total ischaemia time (IT). Generally, the shorter this time, the more likely the organ is to work immediately and the better the long-term outcome. Please note some of these data include the use of donor organ maintenance systems, in which cases the IT reported will be an overestimate of the true ischaemia time.

In 2022-2023, the median IT for a DBD heart transplant was 3.7 hours (Inter-Quartile (IQ) range 3.1 – 4.2) and for a DCD heart transplant was 5.4 hours (IQ range 4.8 – 6.4) and overall was 3.8 hours (IQ range 3.3 – 4.7).

The median IT for a DBD donor lung transplant was 6.6 hours (IQ range 5.5 – 8.8) and for a DCD donor lung transplant was 8.3 hours (IQ range 7.2 – 10.1) and overall was 7.2 hours (IQ range 6.2 – 9.2).

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 2022 - 31 March 2023, and transplant list patients at 31 March

		Donors		Transplant recipients		Active transplant list patients	
		N	(%)	N	(%)	N	(%)
Age (years)	0-17	21	(8)	35	(11)	70	(11)
	18-34	99	(36)	40	(13)	54	(9)
	35-49	99	(36)	72	(23)	148	(24)
	50-59	47	(17)	91	(29)	165	(27)
	60-69	11	(4)	76	(24)	170	(28)
	70+	1	(0)	1	(0)	7	(1)
	Mean (SD)	37	(14)	46	(17)	47	(18)
Sex	Male	156	(56)	216	(69)	379	(62)
	Female	122	(44)	99	(31)	233	(38)
	Unknown	0	-	0	-	2	-
Ethnicity	White	252	(92)	252	(82)	493	(81)
	Asian	14	(5)	38	(12)	75	(12)
	Black	2	(1)	9	(3)	32	(5)
	Other	5	(2)	9	(3)	5	(1)
	Unknown	5	-	7	-	9	-
Blood group	O	140	(51)	118	(37)	350	(57)
	A	109	(39)	142	(45)	186	(30)
	B	26	(9)	45	(14)	69	(11)
	AB	2	(1)	10	(3)	9	(1)
	Unknown[1]	1	-	0	-	0	-
Graft number	First graft	-	-	312	(99)	602	(98)
	Re-graft	-	-	3	(1)	12	(2)
TOTAL		**278**	**(100)**	**315**	**(100)**	**614**	**(100)**

[1] One donor had an indeterminate blood group

Liver Activity

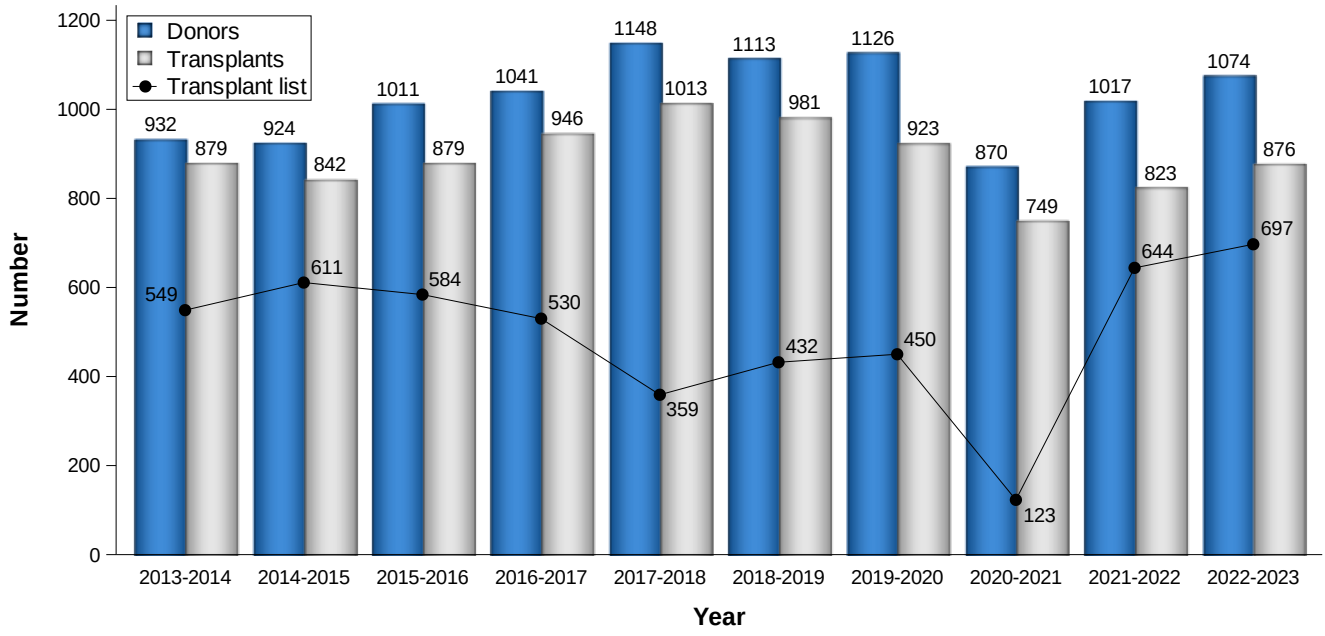
Key messages

- **The number of patients on the active liver transplant list at 31 March 2023 was 697, an increase of 8% from 2022.**
- **The number of liver donors after brain death fell by 1% to 700, while transplants from donors after brain death fell by 5 (0.8%) to 624**
- **The number of liver donors after circulatory death increased by 21% to 374, while transplants from donors after circulatory death increased by 30% to 252 which was the highest ever number of DCD liver transplants performed in a financial year**

8.1 Overview

The number of deceased liver donors and transplants in the UK in the last ten years is shown in **Figure 8.1**. There has been a decrease in the number of patients registered on the active liver transplant list between 2013-2014 and 2019-2020. However, this number has increased to 697 patients active in March 2023, higher than pre-pandemic levels. The numbers of donors and transplants has steadily increased over the last decade although both have slightly decreased over the last three years.

Figure 8.1 Deceased donor liver programme in the UK, 1 April 2013 - 31 March 2023, Number of donors, transplants and patients on the active transplant list at 31 March



Intestinal transplants that used a liver are not included in the liver transplant 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 2022-2023, 1074 organ donors donated their liver for transplant: 700 donors after brain death and 374 donors after circulatory death. There were 697 patients on the active transplant list at 31 March 2023, an increase of 8% from 31 March 2022.

Overall, the number of liver transplants (either whole liver or liver lobe transplants) from donors after brain death fell by 5 to 624, and donors after circulatory death increased by 30% to 252, compared with the previous financial year. Additionally, there were 35 living liver lobe donor transplants (NHS Group 1: 21 and Group 2: 14).

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 2022-2023, there were 97 deceased donor adult super-urgent transplants, representing 12% of all adult deceased donor transplants and 24 deceased donor paediatric super-urgent transplants, representing 28% of all paediatric deceased donor transplants.

Table 8.1 Deceased and living liver donors and transplants, 1 April 2022 - 31 March 2023 (2021-2022) and transplant list patients at 31 March 2023 (2022) in the UK, by age group and centre

Allocation zone/ transplant centre	Deceased donors[1]						Deceased donor transplants						Living donor transplants		Active transplant list	
	DBD		DCD		**TOTAL**		DBD		DCD		**TOTAL**					
Adult																
Birmingham	134	(140)	79	(64)	213	(204)	136	(140)	57	(26)	193	(166)	0	(0)	189	(186)
Cambridge	64	(65)	55	(53)	119	(118)	55	(53)	55	(49)	110	(102)	0	(0)	57	(52)
Edinburgh	85	(84)	46	(32)	131	(116)	45	(42)	26	(18)	71	(60)	0	(0)	51	(38)
King's College	162	(176)	86	(75)	248	(251)	115	(142)	51	(46)	166	(188)	1	(0)	195	(166)
Leeds	141	(127)	59	(44)	200	(171)	86	(73)	26	(15)	112	(88)	6	(4)	91	(80)
Newcastle	35	(36)	14	(12)	49	(48)	22	(28)	14	(13)	36	(41)	0	(0)	24	(28)
Royal Free	63	(67)	25	(19)	88	(86)	86	(76)	17	(25)	103	(101)	1	(0)	50	(59)
TOTAL	**684**	**(695)**	**364**	**(299)**	**1048**	**(994)**	**545**	**(554)**	**246**	**(192)**	**791**	**(746)**	**15[2,6]**	**(11)[3,7]**	**657**	**(609)**
Paediatric																
Birmingham	5	(9)	4	(0)	9	(9)	27	(28)	1	(1)	28	(29)	0	(0)	10	(3)
Cambridge	4	(1)	0	(0)	4	(1)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
Edinburgh	2	(0)	1	(1)	3	(1)	1	(0)	0	(0)	1	(0)	0	(0)	0	(0)
King's College	4	(3)	5	(6)	9	(9)	33	(28)	5	(1)	38	(29)	13	(8)	23	(19)
Leeds	1	(0)	0	(2)	1	(2)	18	(19)	0	(0)	18	(19)	7	(5)	6	(12)
Newcastle	0	(0)	0	(1)	0	(1)	0	(0)	0	(0)	0	(0)	0	(0)	1	(1)
Royal Free	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
TOTAL	**16**	**(13)**	**10**	**(10)**	**26**	**(23)**	**79**	**(75)**	**6**	**(2)**	**85**	**(77)**	**20[4]**	**(14)[5,8]**	**40**	**(35)**

[1] Includes donors whose livers were retrieved by other teams
[2] Includes 8 and 7 living liver lobe transplants in NHS Group 1 and Group 2 recipients, respectively
[3] Includes 4 and 7 living liver lobe transplants in NHS Group 1 and Group 2 recipients, respectively
[4] Includes 13 and 7 living liver lobe transplants in NHS Group 1 and Group 2 recipients, respectively
[5] Includes 12 and 2 living liver lobe transplants in NHS Group 1 and Group 2 recipients, respectively
[6] Includes 4 transplants at London Cromwell and 3 transplants at London Bridge involving private patients
[7] Includes 3 transplants at London Cromwell and 4 transplants at London Bridge involving private patients
[8] Includes 1 transplant at London Cromwell involving a private patient

8.2 Transplant list

During 2022-2023, 1,269 patients joined the liver transplant list. Outcomes for patients on the list at 1 April 2022 and those joining the list during the year are shown in **Table 8.2**. There have been 147 (12%) new registrations that were super-urgent.

Table 8.2 Liver transplant list and new registrations in the UK, 1 April 2022 - 31 March 2023

Outcome of patient at 31 March 2023	Active and suspended patients at 1 April 2022		New registrations in 2022-2023[1]		TOTAL	
	N	%	N	%	**N**	**%**
Remained active/suspended	288	38	527	42	815	40
Transplanted	293	39	615	48	908	45
Removed[2]	140	19	91	7	231	11
Died[3]	33	4	36	3	69	3
TOTAL	**754**		**1269**		**2023**	

[1] Includes re-registrations for second or subsequent patients
[2] Includes 29 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 2023 and 2022 by country/NHS region of patient's residence. At 31 March 2023, the overall rate was 10.4 pmp and ranged from 7.9 to 12.3 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) 2023		2022	
North East and Yorkshire	73	(9.0)	71	(8.7)
North West	78	(10.5)	74	(10.0)
Midlands	121	(11.2)	114	(10.5)
East of England	64	(10.1)	52	(8.2)
London	84	(9.5)	79	(9.0)
South East	73	(7.9)	81	(8.7)
South West	70	(12.3)	60	(10.5)
England	**563**	**(10.0)**	**531**	**(9.4)**
Isle of Man	**1**	**(12.5)**	**0**	**(0.0)**
Channel Islands	**0**	**(0.0)**	**0**	**(0.0)**
Wales	**32**	**(10.3)**	**37**	**(11.9)**
Scotland	**55**	**(10.0)**	**39**	**(7.1)**
Northern Ireland	**38**	**(20.0)**	**28**	**(14.7)**
TOTAL[1]	**697**	**(10.4)**	**644**	**(9.6)**

[1]Includes patients in 2023 (2022) residing in: Unspecified UK 1 (2); Republic of Ireland 5 (2); Overseas 2 (5)

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, 61% of patients had received a liver transplant while 10% of patients had died whilst waiting or had been removed due to their condition deteriorating. 5% had been removed for other reasons such as the patient's condition improving, or as a result of non-compliance or at the request of the patient or family.

Figure 8.2 **Post-registration outcome for 946 new elective liver only registrations made in the UK, 1 April 2020 - 31 March 2021**

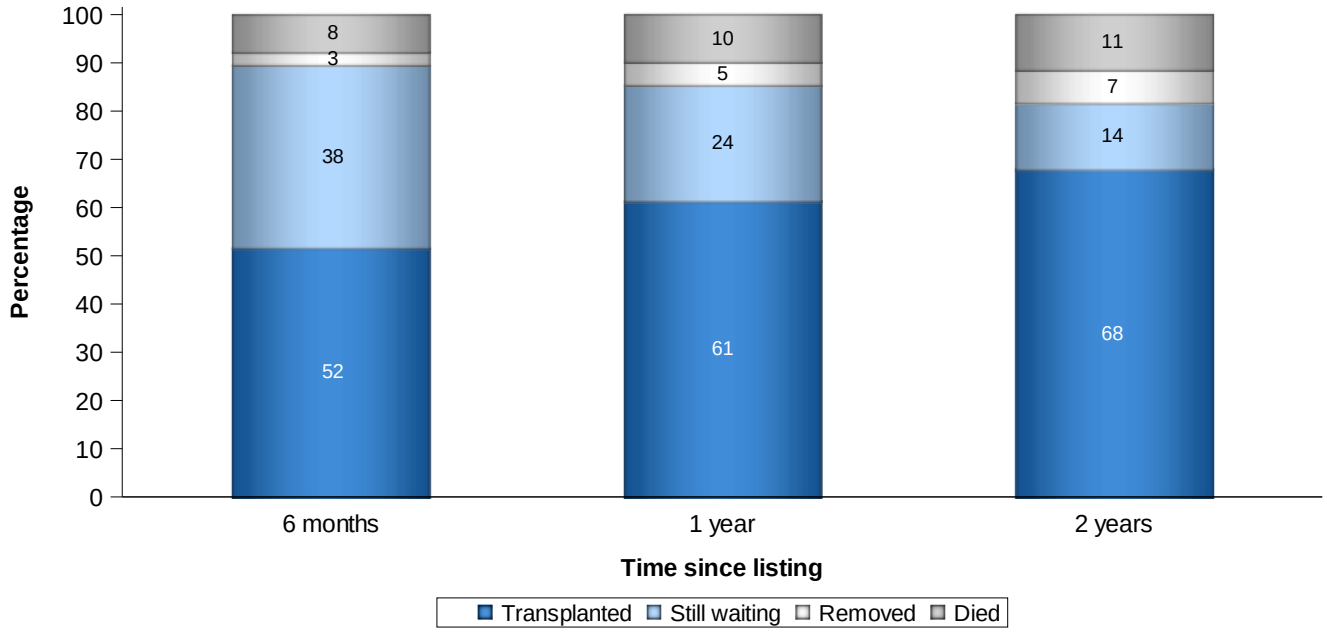


Table 8.4 and **Table 8.5** show the median waiting time to liver transplant for adult and paediatric elective registrations, separately, including a breakdown by blood group and ethnicity for adult elective registrations only. On average, adult patients wait 119 days for a transplant while paediatric patients wait an average of 64 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 2020 - 31 March 2022**

Blood group	Number of patients registered	Waiting time (days)	
		Median	95% Confidence interval
Adult			
O	844	182	145 - 219
A	750	80	63 - 97
B	222	137	67 - 207
AB	57	23	9 - 37
TOTAL	**1873**	**119**	**106 - 132**
Paediatric	**131**	**64**	**32 - 96**

Table 8.5 Median waiting time to liver transplant in the UK, for patients registered 1 April 2020 - 31 March 2022

Ethnicity	Number of patients registered	Waiting time (days) Median	95% Confidence interval
Adult			
White	1585	111	96 - 126
Asian	164	118	92 - 144
Black	52	243	93 - 393
Other	40	235	0 - 718
TOTAL[1]	**1873**	**119**	**106 - 132**
Paediatric	**131**	**64**	**32 - 96**

[1] Includes 32 patients whose ethnicity was not reported

8.3 Donor and organ supply

Of the 1,429 actual organ donors, 1074 (75%) donated their liver and 850 (79%) 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 67% 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 2022 - 31 March 2023, 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	156	147	**303**	139	83	**222**	139	(122)	83	(63)	**222**	**(185)**
Cambridge	76	89	**165**	68	55	**123**	68	(56)	55	(42)	**123**	**(98)**
Edinburgh	94	81	**175**	87	47	**134**	87	(74)	47	(29)	**134**	**(103)**
King's College	185	155	**340**	166	91	**257**	166	(146)	91	(55)	**257**	**(201)**
Leeds	152	111	**263**	142	59	**201**	142	(123)	59	(38)	**201**	**(161)**
Newcastle	37	30	**67**	35	14	**49**	35	(25)	14	(9)	**49**	**(34)**
Royal Free	72	44	**116**	63	25	**88**	63	(55)	25	(13)	**88**	**(68)**
TOTAL	**772**	**657**	**1429**	**700**	**374**	**1074**	**700**	**(601)**	**374**	**(249)**	**1074**	**(850)**

The rates per million population (pmp) for liver donors are shown in **Table 8.7** by donor country/NHS region of residence. No adjustments have been made for potential demographic differences in populations. The overall deceased liver donor rate was 16.0 pmp in 2022-2023 and ranged from 11.3 pmp to 17.2 pmp across English NHS regions.

Table 8.7 Liver donation rates for deceased donors in the UK, 1 April 2022 - 31 March 2023, by Country/ NHS region

Country/ NHS region of residence	Liver donors (pmp)					
	DBD		DCD		**TOTAL**	
North East and Yorkshire	97	(11.9)	43	(5.3)	140	(17.2)
North West	72	(9.7)	30	(4.0)	102	(13.7)
Midlands	84	(7.7)	60	(5.5)	144	(13.3)
East of England	59	(9.3)	39	(6.1)	98	(15.4)
London	71	(8.1)	28	(3.2)	99	(11.3)
South East	94	(10.1)	62	(6.7)	156	(16.8)
South West	66	(11.6)	29	(5.1)	95	(16.6)
England	**543**	**(9.6)**	**291**	**(5.1)**	**834**	**(14.8)**
Isle of Man	**-**		**-**		**-**	
Channel Islands	**1**	**(5.9)**	**1**	**(5.9)**	**2**	**(11.8)**
Wales	**39**	**(12.5)**	**21**	**(6.8)**	**60**	**(19.3)**
Scotland	**49**	**(8.9)**	**36**	**(6.6)**	**85**	**(15.5)**
Northern Ireland	**27**	**(14.2)**	**8**	**(4.2)**	**35**	**(18.4)**
TOTAL[1]	**700**	**(10.4)**	**374**	**(5.6)**	**1074**	**(16.0)**

[1] Includes 58 donors (41 DBD and 17 DCD) 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 10.1 to 15.4 pmp across English NHS regions and overall was 13.0 pmp.

Table 8.8 Liver transplant rates per million population (pmp), in the UK, 1 April 2022 - 31 March 2023, 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	72	(8.9)	30	(3.7)	102	(12.5)	4	(0.5)
North West	60	(8.1)	15	(2.0)	75	(10.1)	7	(0.9)
Midlands	105	(9.7)	52	(4.8)	157	(14.5)	1	(0.1)
East of England	58	(9.1)	40	(6.3)	98	(15.4)	3	(0.5)
London	76	(8.6)	33	(3.8)	109	(12.4)	0	(0.0)
South East	77	(8.3)	34	(3.7)	111	(11.9)	3	(0.3)
South West	59	(10.3)	15	(2.6)	74	(13.0)	1	(0.2)
England	**507**	**(9.0)**	**219**	**(3.9)**	**726**	**(12.8)**	**19**	**(0.3)**
Isle of Man	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**
Channel Islands	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**	**0**	**(0.0)**
Wales	**36**	**(11.6)**	**6**	**(1.9)**	**42**	**(13.5)**	**0**	**(0.0)**
Scotland	**49**	**(8.9)**	**26**	**(4.7)**	**75**	**(13.7)**	**1**	**(0.2)**
Northern Ireland	**20**	**(10.5)**	**1**	**(0.5)**	**21**	**(11.1)**	**0**	**(0.0)**
TOTAL[1,2]	**617**	**(9.2)**	**252**	**(3.8)**	**869**	**(13.0)**	**23**	**(0.3)**

[1] Excludes 19 recipients who reside outside the UK (7 DBD, 12 Living)
[2] Includes 8 (5 DBD and 3 living) recipients with an unknown UK postcode

The number of whole, reduced and split liver transplants by urgency status of the transplant (elective, super-urgent) in 2022-2023 is shown in **Table 8.9**. The term 'reduced' is used when only one lobe of the liver is transplanted and the term 'split' applies when both lobes of the liver are transplanted into two different recipients.

Overall, the number of deceased donor liver transplants increased by 6% in 2022-2023. There were 876 deceased donor liver transplants performed in 2022-2023: 782 whole liver, including 8 liver and kidney and 2 liver and heart; 62 split liver, and 32 deceased liver lobe. Split liver transplants accounted for 67% of liver only lobe transplant activity.

Table 8.9 Deceased donor liver transplants performed in the UK, 1 April 2021 - 31 March 2023

Transplant centre	2021-2022								2022-2023							
	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	155	15	3	2	17	3	**175**	**20**	174	25	5	4	11	2	**190**	**31**
Cambridge	91	7	0	0	4	0	**95**	**7**	91	16	0	0	3	0	**94**	**16**
Edinburgh	58	2	0	0	0	0	**58**	**2**	66	6	0	0	0	0	**66**	**6**
King's College	153	29	6	6	19	4	**178**	**39**	149	14	6	11	21	3	**176**	**28**
Leeds	70	15	6	2	13	1	**89**	**18**	101	11	4	2	10	2	**115**	**15**
Newcastle	38	3	0	0	0	0	**38**	**3**	29	7	0	0	0	0	**29**	**7**
Royal Free	85	11	0	0	5	0	**90**	**11**	75	18	0	0	10	0	**85**	**18**
TOTAL	**650**	**82**	**15**	**10**	**58**	**8**	**723**	**100**	**685**	**97**	**15**	**17**	**55**	**7**	**755**	**121**

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

The length of time that elapses between a liver being removed from the donor to its transplantation into the recipient is called the cold ischaemia time (CIT). Generally, the shorter this time, the more likely the liver is to work immediately and the better the long-term outcome. In 2022-2023, the median CIT for a DBD donor whole liver only transplant was 8.5 hours (Inter-Quartile (IQ) range 7.0 – 10.3) and for a DCD donor whole liver only transplant was 7.1 hours (IQ range 5.8 – 9.0) and overall was 8.1 hours (IQ range 6.5 – 10.0). 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 2023 there were approximately 11,700 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** along with the liver graft number for transplant recipients and patients active on the transplant list.

Table 8.10 Demographic characteristics of deceased liver donors and transplant recipients, 1 April 2022 - 31 March 2023, and transplant list patients at 31 March

		Donors		Transplant recipients		Active transplant list patients	
		N	(%)	N	(%)	N	(%)
Age (years)	0-17	34	(3)	88	(10)	44	(6)
	18-34	159	(15)	93	(11)	92	(13)
	35-49	267	(25)	165	(19)	177	(25)
	50-59	266	(25)	235	(27)	189	(27)
	60-69	222	(21)	281	(32)	187	(27)
	70+	126	(12)	14	(2)	8	(1)
	Mean (SD)	50	(16)	48	(19)	48	(16)
Sex	Male	592	(55)	554	(63)	406	(58)
	Female	482	(45)	322	(37)	291	(42)
Ethnicity	White	966	(92)	695	(84)	542	(83)
	Asian	46	(4)	92	(11)	67	(10)
	Black	21	(2)	23	(3)	26	(4)
	Other	18	(2)	17	(2)	16	(2)
	Unknown	23	-	49	-	46	-
Blood group	O	509	(47)	363	(41)	385	(55)
	A	447	(42)	370	(42)	219	(31)
	B	95	(9)	113	(13)	86	(12)
	AB	23	(2)	30	(3)	7	(1)
Graft number	First graft	-	-	812	(93)	626	(90)
	Re-graft	-	-	64	(7)	71	(10)
TOTAL		**1074**	**(100)**	**876**	**(100)**	**697**	**(100)**

Intestinal Activity

Key messages

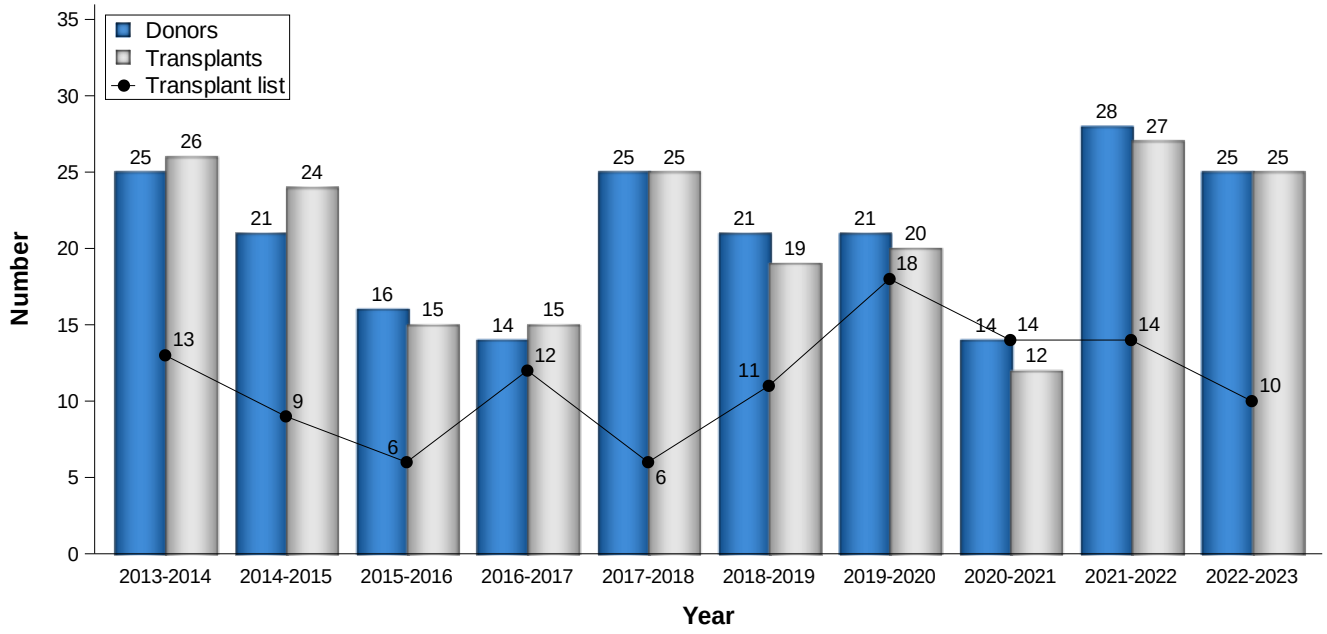
- **There were 10 patients on the active intestinal transplant list at 31 March 2023 in total**
- **There were 29 registrations for an intestinal transplant during 2022-2023**
- **25 intestinal transplants were carried out in 2022-2023 (27 in the previous year)**
- **On average, patients wait 5 months for a transplant**

9.1 Overview

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 fallen to 10. In the last financial year, the number of intestinal transplants fell to 25.

Figure 9.1 Deceased donor intestinal programme in the UK, 1 April 2013 - 31 March 2023, Number of donors, transplants and patients on the active transplant list at 31 March



9.2 Transplant list

In 2022-2023, there were 29 registrations for an intestinal transplant corresponding to 29 patients. The outcome of these registrations for paediatric (aged <18 years) and adult patients, as at 31 March 2023, broken down by transplant centre, can be found in **Table 9.1**. Overall, 13 (45%) remained active/suspended, 12 (41%) resulted in a transplant, and 4 (14%) were removed.

Table 9.1 Outcome of intestinal registrations in the UK, 1 April 2022 and 31 March 2023

Transplant centre	Outcome of registrations as at 31 March 2023								
	Transplanted		Died		Removed		Active/Susp		TOTAL
	N	%	N	%	N	%	N	%	
Adult									
Cambridge	7	44	0	0	1	6	8	50	16
Oxford	3	50	0	0	2	33	1	17	6
TOTAL	**10**	**45**	**0**	**0**	**3**	**14**	**9**	**41**	**22**
Paediatric									
Birmingham	1	50	0	0	0	0	1	50	2
King's College	1	20	0	0	1	20	3	60	5
TOTAL	**2**	**29**	**0**	**0**	**1**	**14**	**4**	**57**	**7**

Table 9.2 shows the active intestinal transplant list in the UK at 31 March 2023 and 2022 by country/NHS region of patient's residence. At 31 March 2023, the overall transplant list rate was 0.1 pmp and ranged from 0.0 to 0.4 pmp across NHS regions, although these numbers are very small, so these are not meaningful differences.

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

Country/ NHS region of residence	Intestinal transplant list (pmp) 2023		2022	
North East and Yorkshire	3	(0.4)	4	(0.5)
North West	0	(0.0)	0	(0.0)
Midlands	1	(0.1)	0	(0.0)
East of England	1	(0.2)	1	(0.2)
London	1	(0.1)	2	(0.2)
South East	2	(0.2)	2	(0.2)
South West	0	(0.0)	2	(0.4)
England	**8**	**(0.1)**	**11**	**(0.2)**
Isle of Man	**0**	**(0.0)**	**0**	**(0.0)**
Channel Islands	**0**	**(0.0)**	**0**	**(0.0)**
Wales	**0**	**(0.0)**	**0**	**(0.0)**
Scotland	**2**	**(0.4)**	**3**	**(0.5)**
Northern Ireland	**0**	**(0.0)**	**0**	**(0.0)**
TOTAL	**10**	**(0.1)**	**14**	**(0.2)**

Table 9.3 shows median waiting time to elective intestinal transplant by registration type. On average, patients wait 158 days for a transplant, but those requiring a liver wait longer.

Table 9.3 Median waiting time to intestinal transplant in the UK, for patients registered 1 April 2018 - 31 March 2022, by registration type

Registration type	Number of patients registered	Waiting time (days) Median	95% Confidence interval
Bowel only[1]	20	176	85 - 267
Liver, bowel and pancreas[1]	54	179	123 - 235
Bowel and pancreas[1]	39	116	79 - 153
TOTAL	**113**	**158**	**104 - 212**

[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 0.4 pmp and ranged from 0.0 to 0.8 pmp across NHS regions. Of the 772 DBD solid organ donors, 25 (3%) 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 2022 - 31 March 2023, 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	105	(12.9)	6	(0.7)	5.7	5
North West	78	(10.5)	1	(0.1)	1.3	1
Midlands	92	(8.5)	4	(0.4)	4.3	4
East of England	67	(10.6)	5	(0.8)	7.5	5
London	85	(9.7)	2	(0.2)	2.4	2
South East	105	(11.3)	0	(0.0)	0.0	0
South West	70	(12.3)	2	(0.4)	2.9	2
England	**602**	**(10.6)**	**20**	**(0.4)**	**3.3**	**19**
Isle of Man	**0**	**(0.0)**	**0**	**(0.0)**	**0.0**	**0**
Channel Islands	**1**	**(5.9)**	**0**	**(0.0)**	**0.0**	**0**
Wales	**44**	**(14.1)**	**1**	**(0.3)**	**2.3**	**1**
Scotland	**49**	**(8.9)**	**3**	**(0.5)**	**6.1**	**3**
Northern Ireland	**35**	**(18.4)**	**1**	**(0.5)**	**2.9**	**1**
TOTAL[1]	**772**	**(11.5)**	**25**	**(0.4)**	**3.2**	**24**

[1] Includes 41 donors with unknown UK postcode

9.4 Transplants

Table 9.5 shows intestinal transplant activity by transplant centre and transplant type for financial years 2021-2022 and 2022-2023. In 2022-2023, there were a total of 25 transplants, 21 adult and 4 paediatric transplants.

At 31 March 2023 there were approximately 170 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 2022 - 31 March 2023 (2021 - 2022)

Transplant centre	Transplant type											
	BO		LBP		MV		MMV		LB		**TOTAL**	
Adult												
Cambridge	1	(1)	1	(0)	9	(9)	7	(4)	0	(0)	**18**	**(14)**
Oxford	3	(5)	0	(0)	0	(0)	0	(1)	0	(0)	**3**	**(6)**
TOTAL	**4**	**(6)**	**1**	**(0)**	**9**	**(9)**	**7**	**(5)**	**0**	**(0)**	21	(20)
Paediatric												
Birmingham	0	(1)	0	(1)	2	(0)	0	(2)	0	(0)	**2**	**(4)**
King's College	1	(2)	0	(0)	1	(1)	0	(0)	0	(0)	**2**	**(3)**
TOTAL	**1**	**(3)**	**0**	**(1)**	**3**	**(1)**	**0**	**(2)**	**0**	**(0)**	4	(7)

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 2022 - 31 March 2023, and transplant list patients at 31 March

		Donors		Transplant recipients		Active transplant list patients	
		N	(%)	N	(%)	N	(%)
Age (years)	0-17	7	(28)	4	(16)	4	(40)
	18-34	9	(36)	3	(12)	0	(0)
	35-49	9	(36)	6	(24)	2	(20)
	50-59	0	(0)	10	(40)	3	(30)
	60-69	0	(0)	2	(8)	1	(10)
	mean (SD)	29	(13)	41	(19)	33	(25)
Sex	Male	11	(44)	16	(64)	2	(20)
	Female	14	(56)	9	(36)	8	(80)
Ethnicity	White	21	(91)	20	(80)	9	(90)
	Asian	1	(4)	2	(8)	1	(10)
	Black	0	(0)	1	(4)	0	(0)
	Other	1	(4)	2	(8)	0	(0)
	Unknown	2	-	0	-	0	-
Blood group	O	15	(60)	9	(36)	4	(40)
	A	8	(32)	10	(40)	4	(40)
	B	2	(8)	3	(12)	1	(10)
	AB	0	(0)	3	(12)	1	(10)
Graft number	First graft	-	-	22	(88)	8	(80)
	Re-graft	-	-	3	(12)	2	(20)
TOTAL		**25**	**(100)**	**25**	**(100)**	**10**	**(100)**

Cornea Activity

Key messages

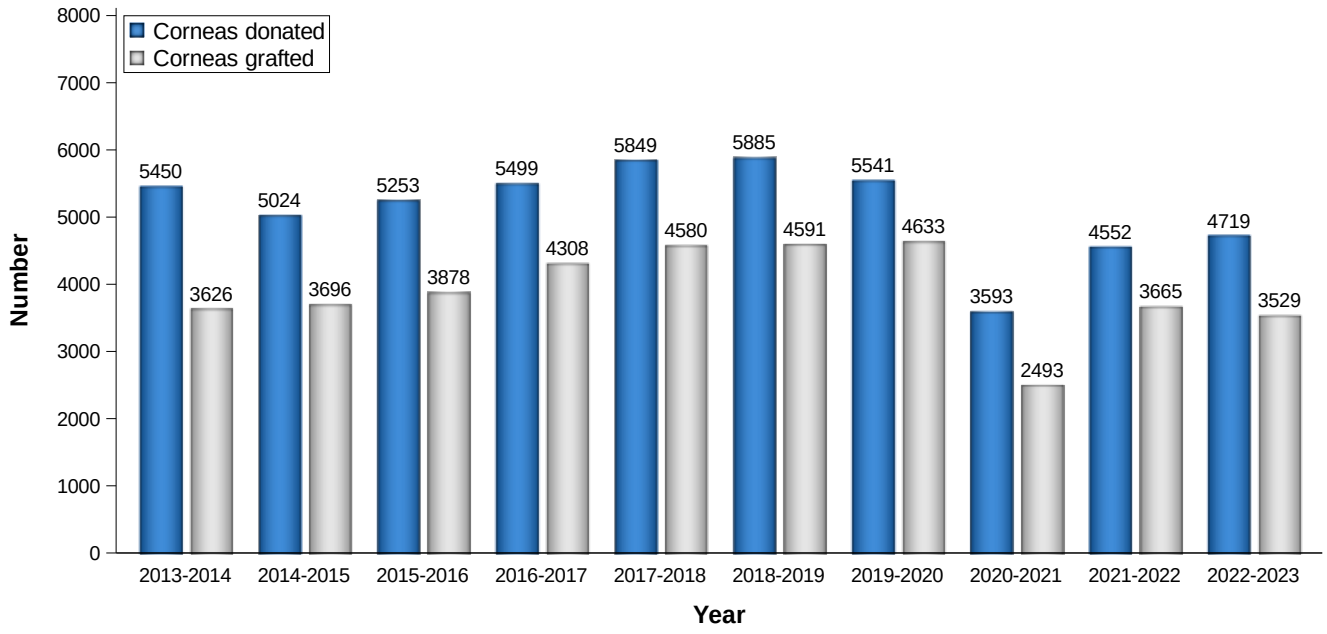
- **4,719 corneas were supplied to NHSBT Eye Banks**
- **Corneas were retrieved from 1,922 cornea-only donors and from 447 solid organ donors after brain death (55%) or after circulatory death (45%)**
- **The number of transplants declined by 4% to 3,529, although figures are an underestimate due to delays in reporting**
- **9%, 36% and 16% of corneal transplants were for keratoconus, Fuchs endothelial dystrophy and pseudophakic bullous keratopathy patients, respectively**
- **Descemet membrane endothelial keratoplasty transplants are the most popular technique for corneal transplantation (35% of all transplants)**
- **265 (5%) corneas were issued for non-clinical use to support research or training from corneas that were considered unsuitable for transplantation**

10.1 Overview

As a result of the COVID-19 pandemic, the number of corneas transplanted (N=2,493) decreased by 46% in 2020-2021 compared with the previous year. In 2021-2022, corneal transplants rose to 3665, although in the last year, the number of transplants has declined by 4% to 3529. These figures are an underestimate due to delays in reporting the transplant outcome to NHSBT. The number of corneas donated in 2022-2023 was 4,719, representing an increase of 4% compared with the previous year as shown in **Figure 10.1**. Overall, corneal donation and transplantation figures have not fully recovered to pre-pandemic levels.

It should be noted that not all corneas donated or transplanted 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 2013 - 31 March 2023, Number of corneas retrieved to NHSBT Eye Banks and corneas grafted



In 2022-2023, of 2,369 donors whose corneas were retrieved to NHSBT Eye Banks, 1,922 were cornea-only donors and 447 were cornea and solid organ donors: see **Table 10.1**. Compared to 2021-2022, the number of cornea-only donors increased by 7%, and the number of cornea and solid organ donors fell by 8%. In 2022-2023, corneas were retrieved from 246 organ donors after brain death and 201 organ donors after circulatory 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 2022-2023, by country and NHS region. Information for 2021-2022 is shown for comparison. No adjustments have been made for potential demographic differences in populations.

In 2022-2023, the corneal donor rate increased across England, Scotland, Wales and Northern Ireland. England (34.3 pmp) had the highest corneal donor rate of countries in the UK (34.1 pmp). Across the NHS regions, the corneal donor rate ranged from 16.7 pmp to 69.9 pmp. This variation is largely attributed to the location of NHSBT Eye Retrieval Schemes, NHSBT Eye Banks and non-NHSBT Eye Banks (East Grinstead).

Table 10.1 Corneal donation rates per million population (pmp) in the UK, 1 April 2022 - 31 March 2023 (2021 - 2022), 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	265	(232)	56	(62)	321	(294)	39.5	(36.2)
North West	295	(249)	53	(50)	348	(299)	46.9	(40.3)
Midlands	270	(256)	61	(78)	331	(334)	30.5	(30.8)
East of England	199	(213)	39	(48)	238	(261)	37.5	(41.1)
London	99	(97)	58	(85)	157	(182)	17.8	(20.7)
South East	78	(82)	77	(75)	155	(157)	16.7	(16.9)
South West	347	(368)	52	(47)	399	(415)	69.9	(72.7)
England	**1553**	**(1497)**	**396**	**(445)**	**1949**	**(1942)**	**34.5**	**(34.3)**
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	**66**	**(57)**	**18**	**(12)**	**84**	**(69)**	**27.0**	**(22.2)**
Scotland	**23**	**(38)**	**18**	**(20)**	**41**	**(58)**	**7.5**	**(10.6)**
Northern Ireland	**16**	**(16)**	**7**	**(10)**	**23**	**(26)**	**12.1**	**(13.7)**
TOTAL[1]	**1922**	**(1796)**	**447**	**(488)**	**2369**	**(2284)**	**35.3**	**(34.1)**

[1] Includes UK donors where the hospital/hospice postcode was unspecified

10.2 NHSBT Eye Bank activity

NHSBT Eye Bank activity levels for Filton (Bristol) and David Lucas (in Liverpool) Eye Banks are shown in **Table 10.2**. In 2022-2023, a total of 4,719 corneas were retrieved to NHSBT, of which 3,649 (77%) were subsequently issued for transplantation. Filton Eye Bank (in Bristol) processed 57% of corneas retrieved in the last financial year.

Of 1070 corneas not issued for transplantation, 265 (25%) were issued for non-clinical use to support research or training. These corneas were primarily unsuitable for transplantation due to a low endothelial cell density or dead cells.

Table 10.2 Corneas retrieved into NHSBT Eye Banks, by year 1 April 2022 - 31 March 2023 (2021-2022)

Eye bank	Total retrieved		Number issued[1]		% issued		Difference between number retrieved and issued	
Filton	2656	(2680)	2063	(2115)	78	(79)	593	(565)
David Lucas	2063	(1872)	1586	(1468)	77	(78)	477	(404)
Total	**4719**	**(4552)**	**3649**	**(3583)**	**77**	**(79)**	**1070**	**(969)**

[1] Number issued of those retrieved in each year

10.3 Transplants

Corneal transplant activity in the UK by country of residence and NHS regions for the years 2021-2022 and 2022-2023 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 54.7 pmp in 2021-2022 which fell to 52.6 pmp in 2022-2023. Transplant rates increased in Scotland and Northern Ireland and fell in England and Wales. England had the highest transplant rate in the UK: 52.9 pmp, and this ranged from 43.5 pmp to 71.1 pmp across the NHS regions. In the last financial year, transplant rates for regions in England that increased were the South-West and North-East and Yorkshire.

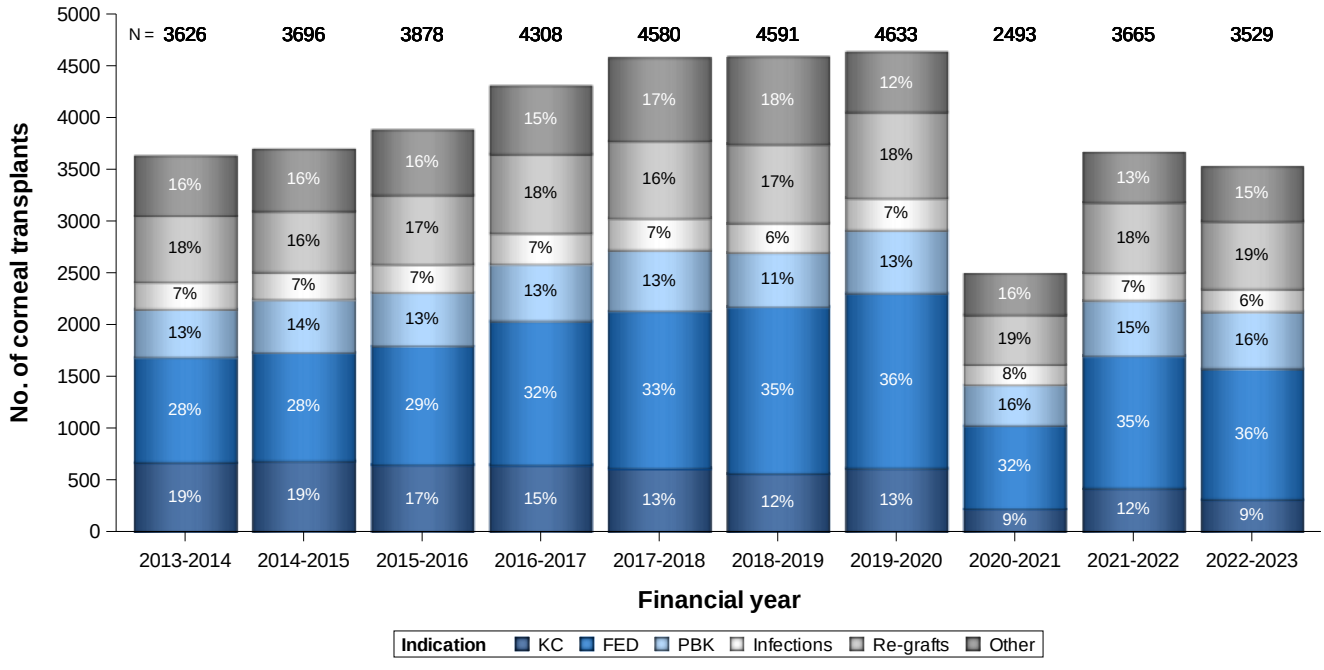
Table 10.3 Cornea transplants performed per million population (pmp) in the UK, 1 April 2021 - 31 March 2023, by country/NHS region

Country of residence/ NHS region	Number of transplants (pmp) 2021-2022		2022-2023	
North East and Yorkshire	404	(49.7)	416	(51.2)
North West	412	(55.5)	347	(46.8)
Midlands	536	(49.4)	471	(43.5)
East of England	423	(66.6)	370	(58.3)
London	562	(63.9)	521	(59.2)
South East	555	(59.7)	462	(49.7)
South West	291	(51.0)	406	(71.1)
England	**3183**	**(56.3)**	**2993**	**(52.9)**
Isle of Man	**4**	**(50.0)**	**1**	**(12.5)**
Channel Islands	**6**	**(35.3)**	**7**	**(41.2)**
Wales	**138**	**(44.4)**	**133**	**(42.8)**
Scotland	**206**	**(37.6)**	**218**	**(39.8)**
Northern Ireland	**25**	**(13.2)**	**65**	**(34.2)**
TOTAL[1]	**3665**	**(54.7)**	**3529**	**(52.6)**

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

Figure 10.2 shows the number of corneal transplants in the UK by indication for transplant from 1 April 2013 to 31 March 2023. For corneas transplanted in 2021-2022 and 2022-2023, a further breakdown by indication is shown in **Table 10.4**.

Figure 10.2 Number of corneal transplants in the UK by indication, 1 April 2013 - 31 March 2023



Generally, there's been a slight decline in transplantation activity across indications except for pseudophakic bullous keratopathy (PBK) and 'other' indications in 2022-2023. Keratoconus (KC) has seen the largest proportional fall in activity. The most common indication for transplantation is FED, representing 36% of corneal transplants in 2022-2023.

Table 10.4 Corneal transplants in the UK by indication and financial year, 1 April 2021 - 31 March 2023

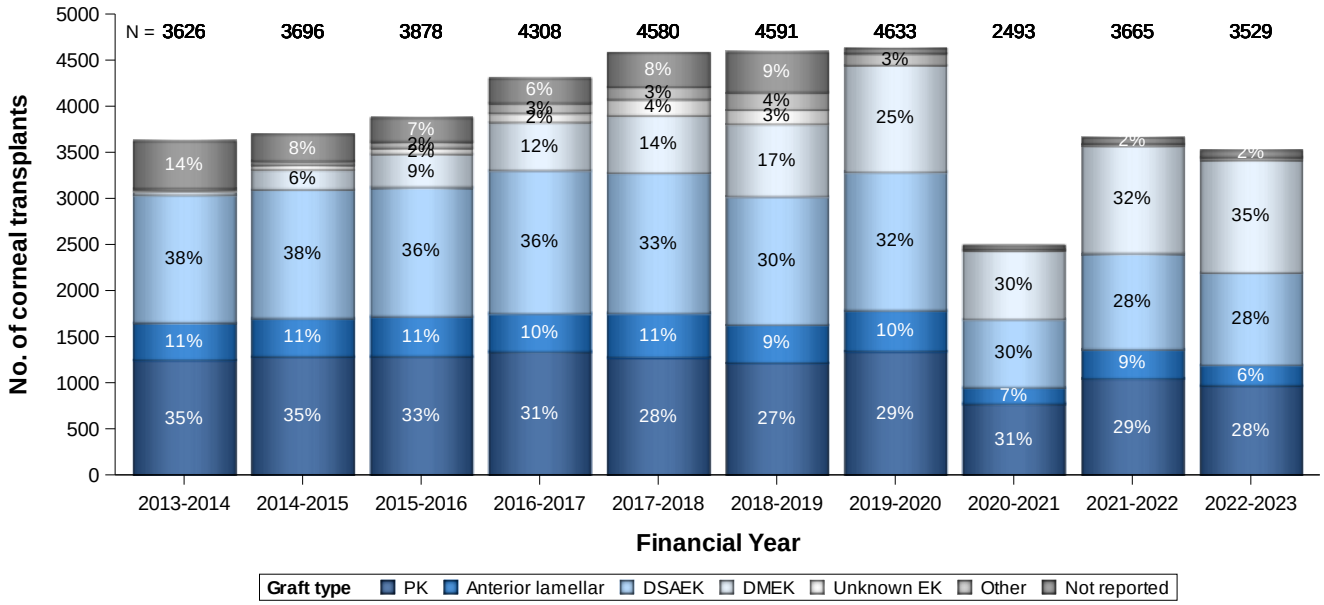
Indication for transplant	2021 - 2022		2022 - 2023	
	N	%	N	%
Keratoconus (KC)	**423**	**11.5**	**317**	**9.0**
Fuchs endothelial dystrophy (FED)	**1281**	**35.0**	**1261**	**35.7**
Pseudophakic bullous keratopathy (PBK)	**533**	**14.5**	**552**	**15.6**
Infections	**269**	**7.3**	**220**	**6.2**
Re-grafts	**678**	**18.5**	**655**	**18.6**
Other (listed below)	**481**	**13.1**	**524**	**14.8**
Ectasias	19	0.5	22	0.6
Dystrophies	63	1.7	61	1.7
Previous ocular surgery	100	2.7	107	3.0
Injury	43	1.2	53	1.5
Ulcerative keratitis	40	1.1	42	1.2
Opacification	62	1.7	81	2.3
Miscellaneous	130	3.5	113	3.2
Not reported	24	0.7	45	1.3
Total	**3665**	**100.0**	**3529**	**100.0**

Figure 10.3 shows the number of corneal transplants in the UK by graft type from 1 April 2013 to 31 March 2023. Over the last 10 years, the proportion of penetrating keratoplasty (PK) grafts has reduced by nearly a third. Descemet Membrane Endothelial Keratoplasty (DMEK) transplants are now the most popular technique for corneal transplantation.

Note that Endothelial Keratoplasty (EK) procedures were first specified on the Ocular Tissue Outcome and Transplant Record form reported to the UK Transplant Registry on 5 May 2010. The type of EK graft, Descemet Stripping Automated EK (DSAEK) and DMEK transplants, were first collected as free text on the form. This meant that all EK transplants were often reported as EK unknown. In April 2019, the form changed so that 'EK unknown' was no longer specified.

All unknown EK grafts prior to 2014 are assumed to be DSEK transplants as DMEK transplantation was not a routine form of transplantation at this time. Between January 2014 and April 2019, unknown EK graft types have been imputed such that grafts by surgeons that have never reported a DMEK transplant are assumed to be Descemet Stripping Automated EK (DSAEK) transplants and all transplants prior to the first reported DMEK are considered DSAEK transplants. A further breakdown by graft type for corneas transplanted in 2021-2022 and 2022-2023 is shown in **Table 10.5**.

Figure 10.3 Number of corneal transplants in the UK by graft type, 1 April 2013 - 31 March 2023



Between April 2013 to March 2019, 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 2022-2023, 28% of grafts were DSAEK and 35% were DMEK grafts. PK grafts are still a popular choice for corneal transplantation accounting for 28% of all transplants in 2022-2023. The proportion of anterior lamellar transplants has declined from 9% in 2021-2022 to 6% in 2022-2023.

Table 10.5 Corneal transplants in the UK by graft type and financial year, 1 April 2021 - 31 March 2023

Graft type	2021 - 2022		2022 - 2023	
	N	%	N	%
PK	1052	28.7	974	27.6
Anterior lamellar	321	8.8	227	6.4
DSAEK	1036	28.3	1003	28.4
DMEK	1167	31.8	1220	34.6
Other	28	0.8	32	0.9
Not reported	61	1.7	73	2.1
All grafts	**3665**	**100.0**	**3529**	**100.0**

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 2022 - 31 March 2023

	Cornea-only donors		Solid organ and cornea donors		Transplant recipients	
	N	%	N	%	N	%
Age group (years)						
0 - 17	10	1	7	2	37	1
18 - 34	25	1	33	7	243	7
35 - 49	116	6	87	20	303	9
50 - 59	216	11	114	26	437	12
60 - 69	416	22	118	26	645	18
70-79	717	37	84	19	1050	30
80+	422	22	4	1	814	23
Mean (SD)	69	(13)	56	(14)	65	(17)
Sex						
Male	1122	58	253	57	1842	52
Female	800	42	194	43	1687	48
Ethnicity						
White	86	5	415	93	2662	75
Asian	5	0	14	3	267	8
Black	0	0	2	0	140	4
Other	1	0	4	1	22	1
Not reported	1830	95	11	3	431	12
TOTAL	**1922**	**100**	**447**	**100**	**3529**	**100**

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-year survival over the time periods shown, ($p<0.01$). **Table 11.2** shows the patient survival estimates and confidence intervals for one, two, five and ten years post-transplant. There were no statistically significant changes in patient survival over time ($p>0.07$).

Figure 11.1 Long-term graft survival after first adult kidney only transplant from donors after brain death, 1 January 2009 – 31 December 2021

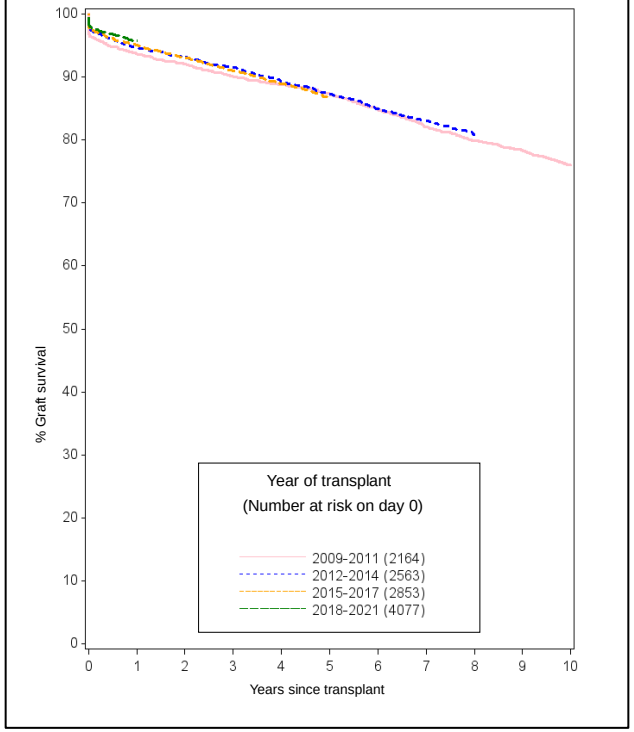


Table 11.1 Graft survival after first adult kidney only transplant from a DBD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2009-2011	2164	94	(93-95)	92	(91-93)	87	(86-89)	76	(74-78)
2012-2014	2563	95	(94-96)	93	(92-94)	87	(86-89)		
2015-2017	2853	95	(94-96)	93	(92-94)	87	(85-88)		
2018-2021	4077	96	(95-96)						

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	
2009-2011	2165	96	(95-97)	95	(94-96)	90	(88-91)	75	(73-77)
2012-2014	2565	96	(95-97)	94	(93-95)	89	(87-90)		
2015-2017	2853	97	(97-98)	95	(95-96)	88	(86-89)		
2018-2021	4078	96	(95-97)						

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

Long-term graft survival in adult recipients for kidney transplants from donors after circulatory death is shown in **Figure 11.2**. **Table 11.3** shows the graft survival estimates and confidence intervals for one, two, five and ten years post-transplant. There has been significant variation in one- and two-year survival over the time periods shown, p=0.0001 and p=0.02, respectively. **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- and two-year post-transplant (p=0.003 and p=0.02, respectively).

Figure 11.2 Long-term graft survival after first adult kidney only transplant from donors after circulatory death, 1 January 2009 – 31 December 2021

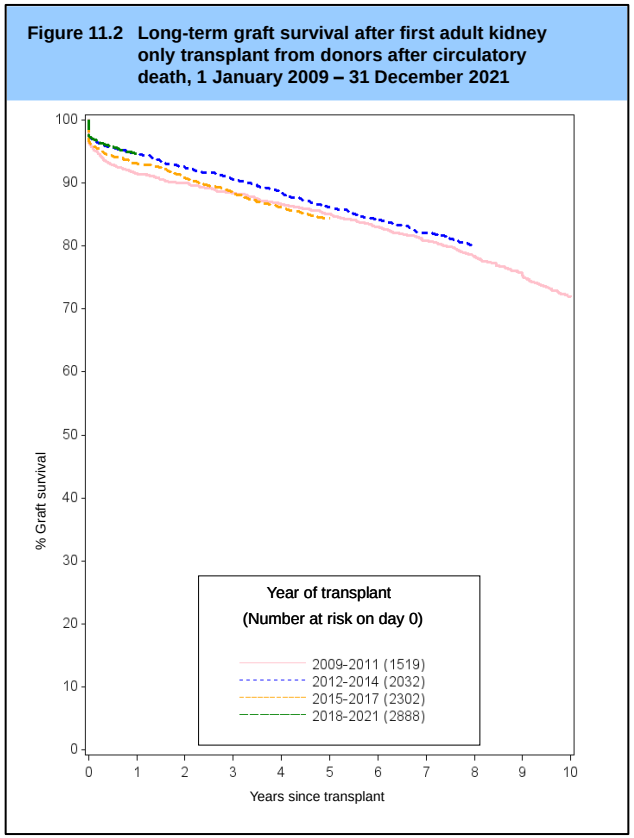


Table 11.3 Graft survival after first adult kidney only transplant from a DCD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2009-2011	1519	91	(90-93)	90	(88-91)	85	(83-87)	72	(69-74)
2012-2014	2032	95	(94-95)	93	(91-94)	86	(84-88)		
2015-2017	2302	93	(92-94)	91	(90-92)	84	(83-86)		
2018-2021	2888	95	(94-95)						

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	
2009-2011	1519	95	(94-96)	93	(92-94)	86	(84-87)	69	(66-71)
2012-2014	2033	96	(95-97)	94	(93-95)	86	(85-88)		
2015-2017	2303	97	(96-98)	95	(94-96)	85	(83-86)		
2018-2021	2892	97	(96-97)						

11.1.3 Adult kidney recipients – living donor

Long-term graft survival in adult recipients for living donor kidney transplants in the UK is shown in **Figure 11.3**. **Table 11.5** shows graft survival estimates and confidence intervals for each time period analysed. There has been a significant improvement in one-, two-, and five-year survival over the time periods shown (p<0.0001, p=0.003 and p=0.005, respectively). **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>0.4).

Figure 11.3 Long-term graft survival after first adult living donor kidney only transplant in the UK, 1 January 2009 – 31 December 2021

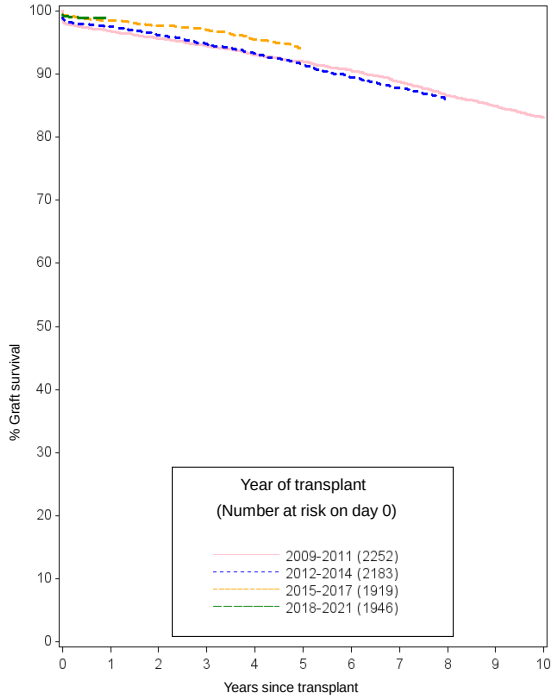


Table 11.5 Graft survival after first adult living donor kidney transplant

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2009-2011	2252	97	(96-97)	96	(95-96)	92	(91-93)	83	(81-85)
2012-2014	2183	98	(97-98)	96	(95-97)	92	(90-93)		
2015-2017	1919	98	(98-99)	98	(97-98)	94	(93-95)		
2018-2021	1946	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	
2009-2011	2253	99	(98-99)	98	(97-99)	94	(93-95)	86	(84-87)
2012-2014	2182	99	(98-99)	98	(97-99)	95	(94-96)		
2015-2017	1919	99	(98-99)	98	(98-99)	94	(93-95)		
2018-2021	1949	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>0.4). There were insufficient paediatric recipients of first kidney only transplants from donors after circulatory death to permit reliable analysis.

Figure 11.4 Long-term graft survival after first paediatric kidney only transplant from donors after brain death, 1 January 2009 – 31 December 2021

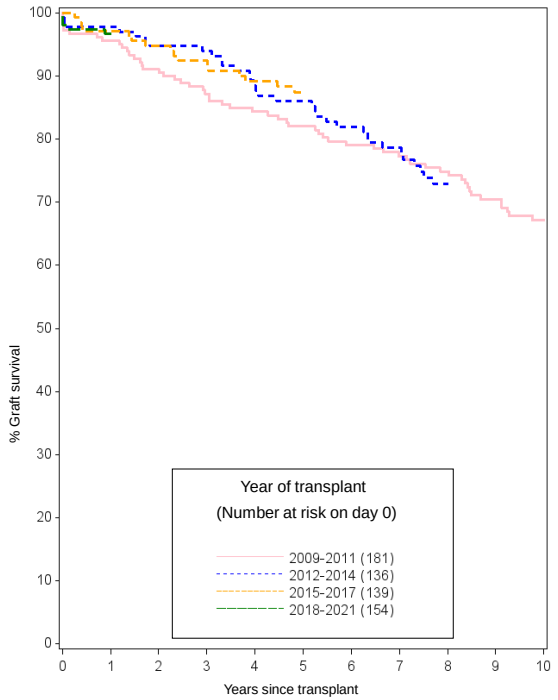


Table 11.7 Graft survival after first paediatric kidney only transplant from a DBD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2009-2011	181	96	(91-98)	91	(86-94)	82	(76-87)	67	(60-74)
2012-2014	136	98	(93-99)	95	(89-97)	86	(79-91)		
2015-2017	139	97	(92-99)	95	(89-97)	87	(80-92)		
2018-2021	154	97	(92-99)						

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	
2009-2011	181	99	(96-100)	99	(96-100)	97	(93-99)	95	(90-97)
2012-2014	136	99	(95-100)	99	(95-100)	98	(93-99)		
2015-2017	139	99	(95-100)	99	(95-100)	99	(95-100)		
2018-2021	154	99	(95-100)						

11.1.5 Paediatric kidney recipients - living donor

Long-term graft survival in paediatric recipients for living donor kidney transplants in the UK is shown in **Figure 11.5**. **Table 11.9** shows graft survival estimates and confidence intervals for each time period analysed. There has been a significant improvement in one- and five-year survival over the time periods shown (p=0.04 and p=0.001, respectively). **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>0.5).

Figure 11.5 Long-term graft survival after first paediatric living donor kidney only transplant in the UK, 1 January 2009 – 31 December 2021

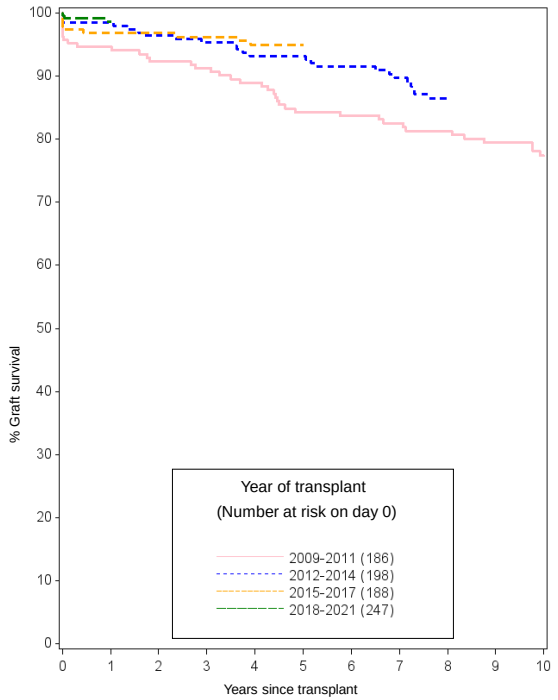


Table 11.9 Graft survival after first paediatric living donor kidney transplant

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2009-2011	186	95	(90-97)	92	(87-95)	84	(78-89)	77	(70-83)
2012-2014	198	98	(95-100)	96	(93-98)	93	(89-96)		
2015-2017	188	97	(93-99)	97	(93-99)	95	(90-97)		
2018-2021	247	99	(96-100)						

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	
2009-2011	187	99	(96-100)	99	(96-100)	98	(94-99)	96	(92-98)
2012-2014	198	99	(96-100)	99	(96-100)	99	(96-100)		
2015-2017	188	99	(96-100)	98	(95-99)	98	(94-99)		
2018-2021	247	98	(95-100)						

11.2 Pancreas graft and patient survival

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

Figure 11.6 shows long-term graft survival in recipients receiving their first simultaneous pancreas/kidney (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-, two- and five-year graft survival over the time periods shown, (p=0.008, p=0.05, p=0.04, respectively). Differences in patient survival are not significant over time (p>0.06).

Figure 11.6 Long-term graft survival after first SPK transplant from donors after brain death, 1 January 2009 – 31 December 2021

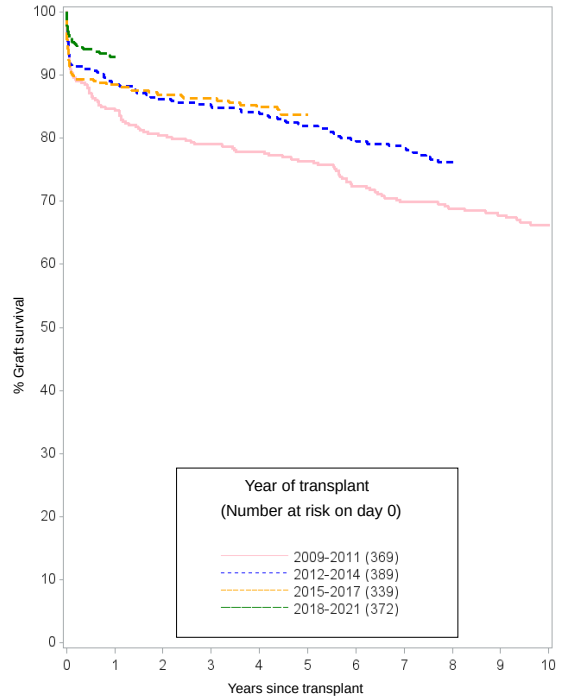


Table 11.11 Graft survival after first SPK transplant from a DBD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2009-2011	369	85	(81-88)	80	(76-84)	76	(72-80)	66	(61-71)
2012-2014	389	89	(85-91)	86	(82-89)	82	(78-85)		
2015-2017	339	88	(85-91)	87	(83-90)	84	(79-87)		
2018-2021	372	93	(90-95)						

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	
2009-2011	371	96	(94-98)	93	(90-96)	87	(83-90)	73	(68-78)
2012-2014	389	97	(94-98)	96	(94-98)	89	(85-92)		
2015-2017	340	97	(95-99)	97	(94-98)	93	(89-95)		
2018-2021	375	98	(96-99)						

11.2.2 Simultaneous pancreas/kidney 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. There has been a significant improvement in one-year graft survival over the time periods shown, p=0.03. Differences in patient survival are not significant over time (p>0.5).

Figure 11.7 Pancreas graft survival after first SPK transplant from donors after circulatory death, 1 January 2009 – 31 December 2021

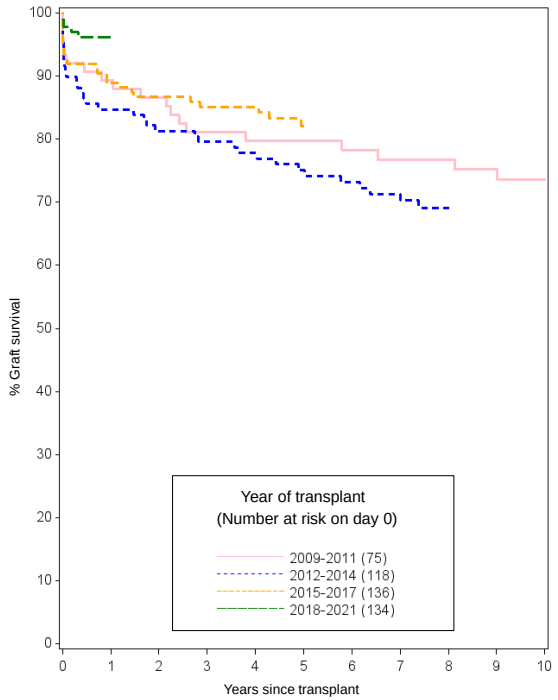


Table 11.13 Graft survival after first SPK transplant from a DCD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2009-2011	75	89	(80-95)	87	(77-93)	80	(69-87)	74	(62-82)
2012-2014	118	85	(77-90)	81	(73-87)	75	(66-82)		
2015-2017	136	89	(82-93)	87	(80-91)	82	(74-88)		
2018-2021	134	96	(91-98)						

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	
2009-2011	75	99	(91-100)	94	(86-98)	92	(82-96)	82	(71-90)
2012-2014	119	99	(94-100)	97	(92-99)	91	(84-95)		
2015-2017	136	98	(94-100)	97	(92-99)	92	(86-96)		
2018-2021	136	98	(93-99)						

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

Figure 11.8 shows long-term graft survival in recipients receiving their first pancreas only transplant performed from donors after brain death. Graft and patient survival estimates and confidence intervals are shown at one, two, five and ten years in **Table 11.15** and **Table 11.16** respectively. Results are for adult patients only. There were no statistically significant changes in graft or patient survival over time (p>0.2).

Figure 11.8 Long-term graft survival after pancreas only transplant from donors after brain death, 1 January 2009 – 31 December 2021

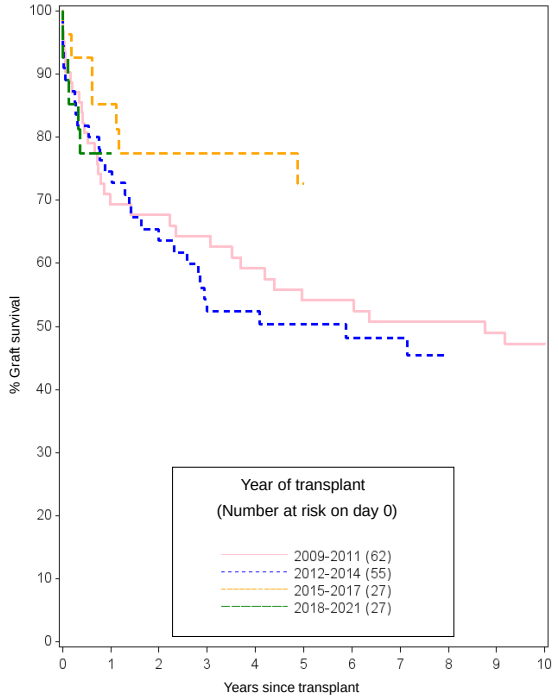


Table 11.15 Graft survival after first pancreas only transplant from a DBD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2009-2011	62	69	(56-79)	68	(54-78)	54	(41-66)	47	(34-59)
2012-2014	55	75	(61-84)	64	(49-75)	50	(36-63)		
2015-2017	27	85	(65-94)	77	(56-89)	73	(51-86)		
2018-2021	27	77	(56-89)						

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	
2009-2011	63	96	(86-99)	95	(84-98)	83	(69-91)	75	(60-85)
2012-2014	55	98	(87-100)	98	(87-100)	83	(67-91)		
2015-2017	27	96	(76-99)	92	(72-98)	88	(66-96)		
2018-2021	27	95	(71-99)						

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

Figure 11.9 shows pancreas graft survival in recipients receiving their first pancreas only transplant performed from donors after circulatory death. 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 2009 – 31 December 2021

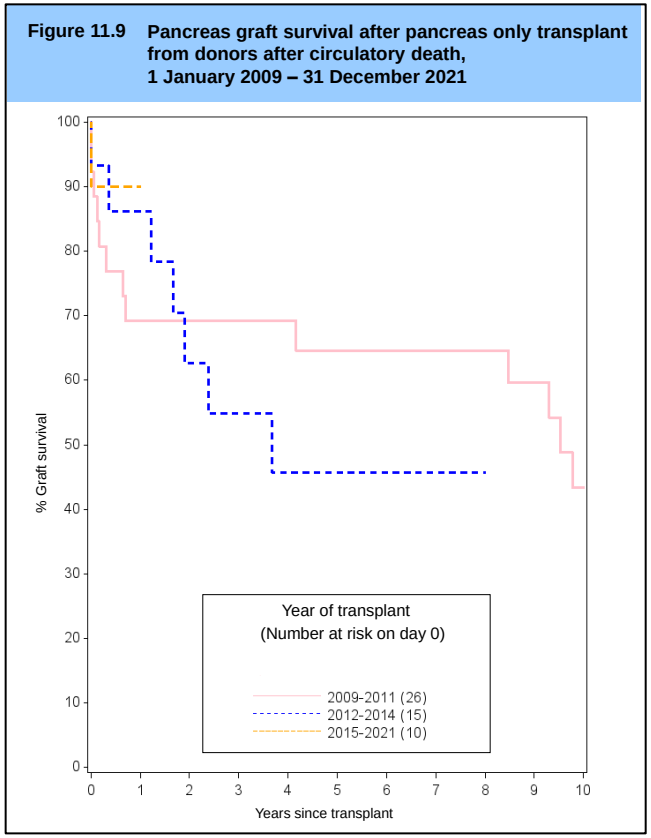


Table 11.17 Graft survival after first pancreas only transplant from a DCD

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year		Ten year	
2009-2011	26	69	(48-83)	69	(48-83)	65	(43-80)	43	(22-63)
2012-2014	15	86	(55-96)	63	(32-83)	46	(18-70)		
2015-2021	10	90	(47-99)						

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

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year		Ten year	
2009-2011	26	100	-	100	-	86	(62-95)	75	(50-89)
2012-2014	15	93	(61-99)	93	(61-99)	78	(46-92)		
2015-2021	10	100	-						

11.3 Cardiothoracic patient survival

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

Long-term patient survival for adult (≥16 years) recipients after first heart only transplant performed from donors after brain death is shown in **Figure 11.10**. Super-urgent, urgent, and non-urgent patients are included. **Table 11.19** shows the patient survival estimates and confidence intervals for one, two, five and ten years post-transplant for each transplant era. There were no statistically significant differences in patient survival across eras (p>0.4).

Figure 11.10 Long-term patient survival after first adult heart only transplant from donors after brain death, 1 January 2009 – 31 December 2021

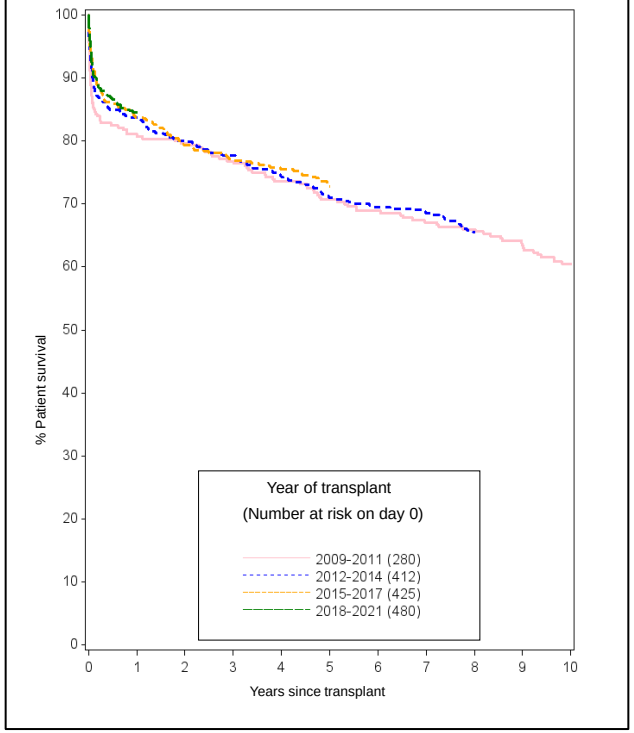


Table 11.19 Patient survival after first adult heart only transplant from a DBD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year		Ten year	
2009-2011	280	81	(76-85)	80	(74-84)	71	(65-76)	60	(54-66)
2012-2014	412	84	(80-87)	80	(76-84)	71	(66-75)		
2015-2017	425	84	(80-87)	79	(75-83)	73	(68-77)		
2018-2021	480	85	(81-87)						

11.3.2 Adult heart recipients – donors after circulatory death (DCD)

Long-term patient survival for adult (≥16 years) recipients after first heart only transplant performed from donors after circulatory death is shown in **Figure 11.11**. Super-urgent, urgent, and non-urgent patients are included. **Table 11.20** shows the patient survival estimates and confidence intervals for one, two, and three years post-transplant for each transplant era.

Figure 11.11 Long-term patient survival after first adult heart only transplant from donors after circulatory death, 1 January 2015 – 31 December 2021

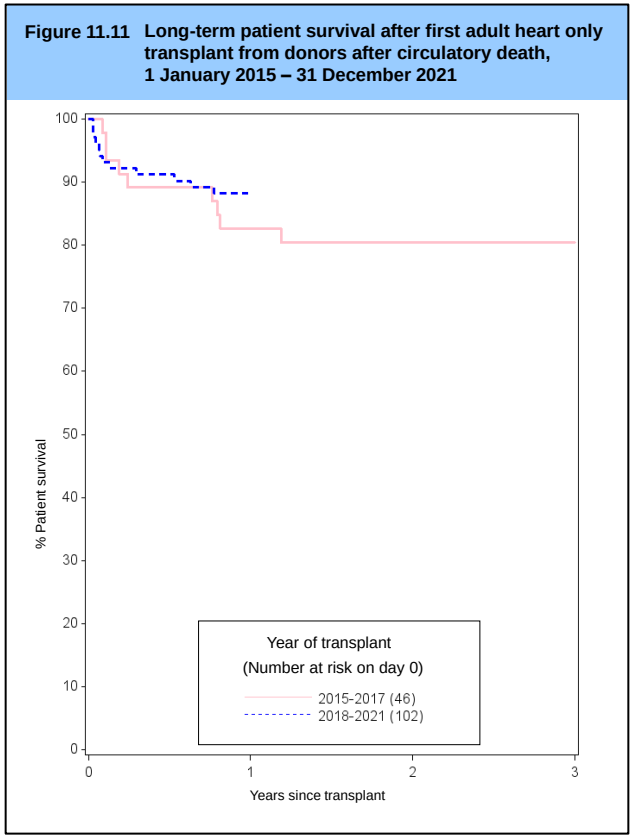


Table 11.20 Patient survival after first adult heart only transplant from a DCD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Three year	
2015-2017	46	83	(68-91)	80	(66-89)	80	(66-89)
2018-2021	102	88	(80-93)				

11.3.3 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 11.12**. Patient survival estimates and confidence intervals for each time period analysed are shown in **Table 11.21**. Numbers of transplants is small and thus confidence intervals for survival estimates are wide and the differences in patient survival rates across eras were not statistically significant (p>0.1).

Figure 11.12 Long-term patient survival after first adult heart-lung block transplant from donors after brain death, 1 January 2009 – 31 December 2021

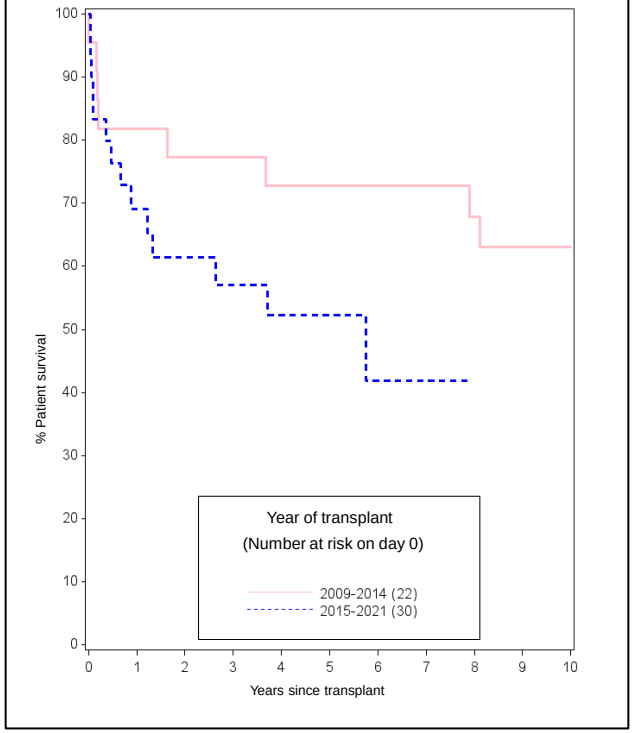


Table 11.21 Patient survival after first adult heart-lung block transplant from a DBD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year		Ten year	
2009-2014	22	82	(59-93)	77	(54-90)	73	(49-87)	63	(39-80)
2015-2021	30	69	(49-83)	61	(41-77)	52	(32-69)		

11.3.4 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 11.13**, with survival estimates and confidence intervals shown in **Table 11.22**. Super-urgent, urgent, and non-urgent patients are included. There were no statistically significant differences in patient survival across eras (p>0.7).

Figure 11.13 Long-term patient survival after first adult lung only transplant from donors after brain death, 1 January 2009 – 31 December 2021

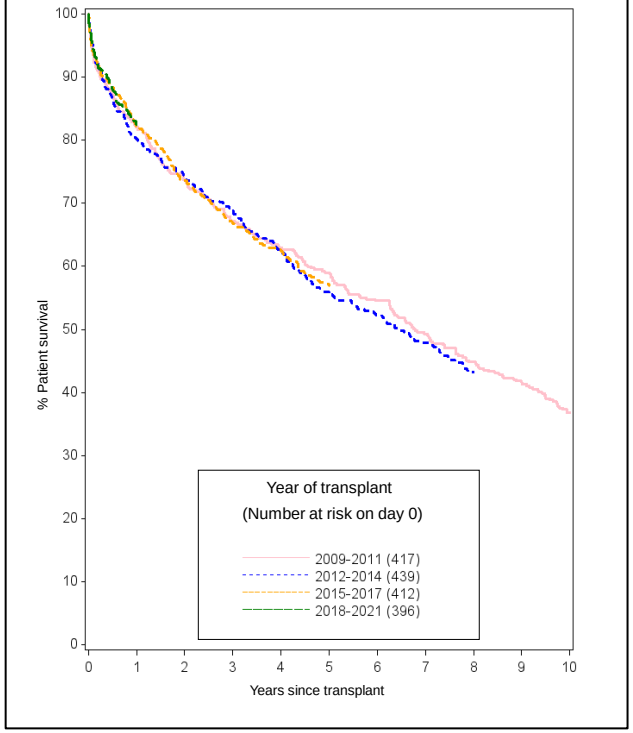


Table 11.22 Patient survival after first adult lung only transplant from a DBD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year		Ten year	
2009-2011	417	82	(78-85)	74	(69-78)	59	(54-64)	37	(32-41)
2012-2014	439	80	(76-84)	74	(70-78)	56	(51-60)		
2015-2017	412	82	(78-86)	74	(69-78)	57	(52-62)		
2018-2021	396	82	(78-86)						

11.3.5 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 11.14**, by era, with survival estimates and confidence intervals shown in **Table 11.23**. Super-urgent, urgent, and non-urgent patients are included.

Figure 11.14 Patient survival after first adult lung only transplant from donors after circulatory death, 1 January 2009 – 31 December 2021

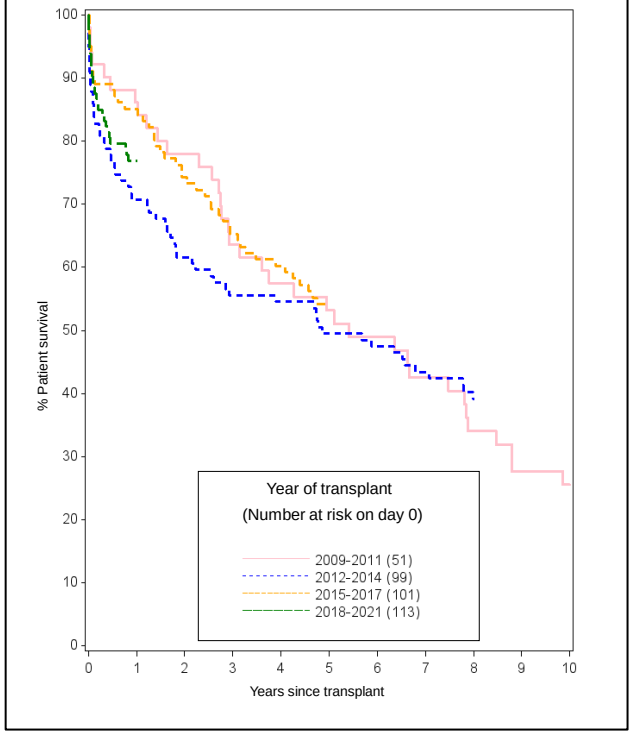


Table 11.23 Patient survival after first adult lung only transplant from a DCD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Three year	
2009-2011	51	86	(73-93)	78	(64-87)	53	(38-66)
2012-2014	99	71	(61-79)	62	(51-70)	49	(39-59)
2015-2017	101	85	(77-91)	74	(65-82)	54	(44-63)
2018-2021	113	77	(68-84)				

11.3.6 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 11.15**. Super-urgent, 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>0.2). The number of heart-lung transplant recipients was too small to analyse.

Figure 11.15 Long-term patient survival after first paediatric heart only transplant from donors after brain death, 1 January 2009 – 31 December 2021

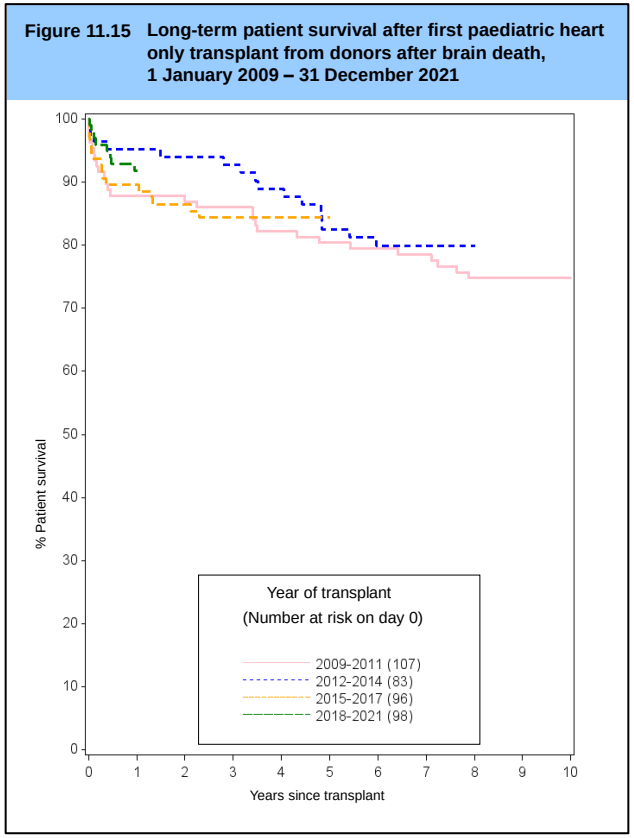


Table 11.24 Patient survival after first paediatric heart only transplant from a DBD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year		Ten year	
2009-2011	107	88	(80-93)	87	(79-92)	80	(72-87)	75	(65-82)
2012-2014	83	95	(88-98)	94	(86-97)	83	(72-89)		
2015-2017	96	90	(82-94)	86	(78-92)	84	(75-90)		
2018-2021	98	92	(84-96)						

11.3.7 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 11.16**. Super-urgent, urgent and non-urgent patients are included. **Table 11.25** shows the patient survival estimates and confidence intervals for one, two, five, and ten years post-transplant. There has been a significant reduction in two and five-year patient survival over the time periods shown, p=0.05 and p=0.03, respectively.

Figure 11.16 Long-term patient survival after first paediatric lung only transplant from donors after brain death, 1 January 2009 – 31 December 2021

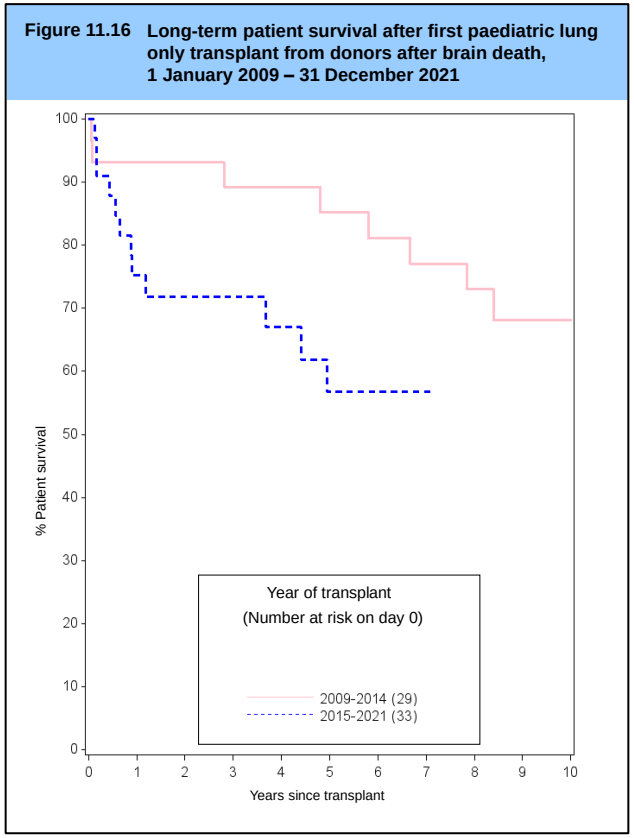


Table 11.25 Patient survival after first paediatric lung only transplant from a DBD

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year		Ten year	
2009-2014	29	93	(75-98)	93	(75-98)	85	(65-94)	68	(46-83)
2015-2021	33	75	(57-87)	72	(53-84)	57	(35-73)		

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 11.17**. **Table 11.26** shows patient survival estimates at one, two, five, and ten years post-transplant. There is evidence of a change in one-year patient survival over time (p=0.02) but no evidence of a change in two- and five-year patient survival (p≥0.2). Whole liver transplants are included as well as reduced and split liver transplants.

Figure 11.17 **Long-term patient survival after first elective adult liver only transplant from donors after brain death, 1 January 2009 – 31 December 2021**

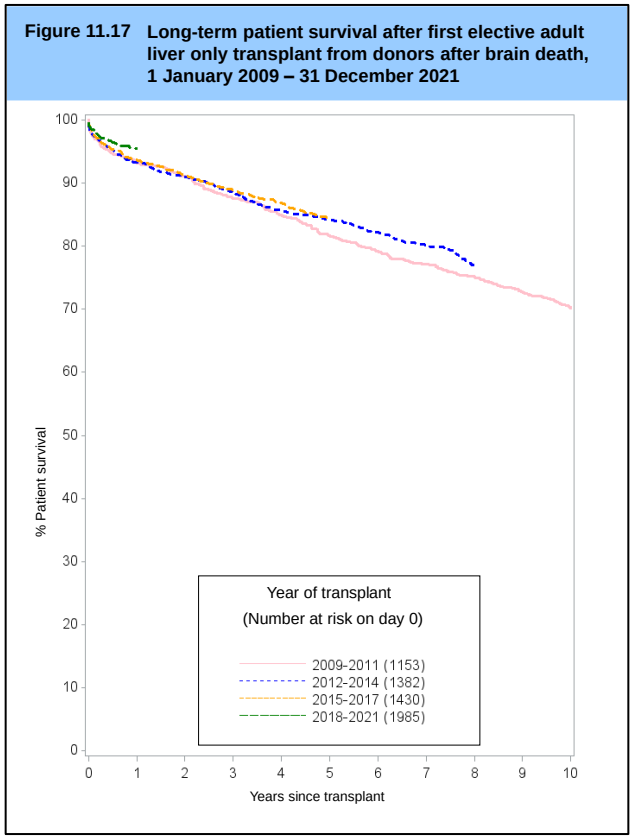


Table 11.26 **Patient survival after first elective adult NHS Group 1 liver only transplant from donors after brain death**

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year		Ten year	
2009-2011	1153	93	(92-95)	91	(89-93)	82	(79-84)	70	(67-73)
2012-2014	1382	93	(92-95)	91	(89-92)	84	(82-86)		
2015-2017	1430	94	(92-95)	91	(90-93)	84	(82-86)		
2018-2021	1985	95	(94-96)						

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 11.18**. **Table 11.27** shows patient survival estimates at one, two and five years post-transplant. There is evidence of a change in one-, two- and five-year patient survival over time (p<0.001, p<0.001, and p=0.0001, respectively).

Figure 11.18 Long-term patient survival after first elective adult liver only transplant from donors after circulatory death, 1 January 2009 – 31 December 2021

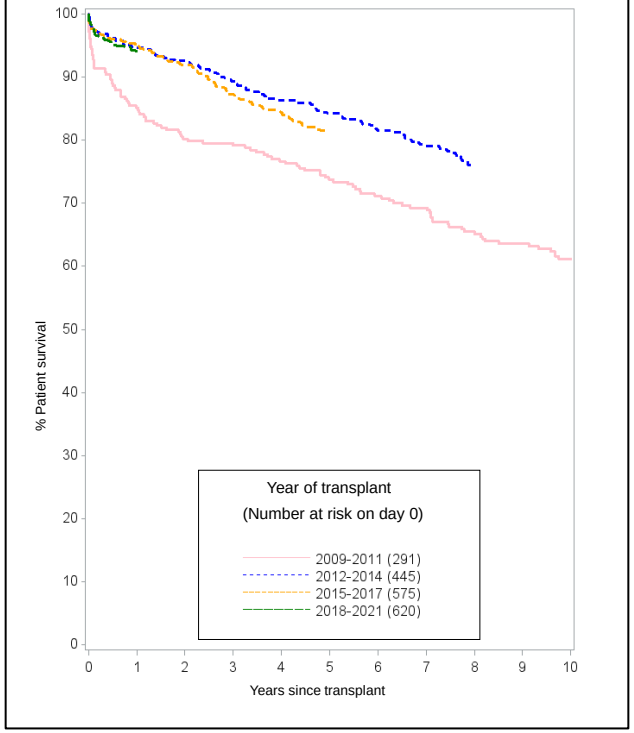


Table 11.27 Patient survival after first elective adult NHS Group 1 liver only transplant from donors after circulatory death

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year		Ten year	
2009-2011	291	85	(81-89)	80	(75-84)	74	(68-78)	61	(55-67)
2012-2014	445	95	(92-96)	93	(90-95)	84	(80-87)		
2015-2017	575	95	(93-96)	92	(89-94)	81	(78-84)		
2018-2021	620	94	(92-96)						

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

Figure 11.19 and **Table 11.28** 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>0.1). The number of paediatric transplants from donors after circulatory death was too small to estimate meaningful patient survival.

Figure 11.19 Long-term patient survival after first elective paediatric liver only transplant from donors after brain death, 1 January 2009 – 31 December 2021

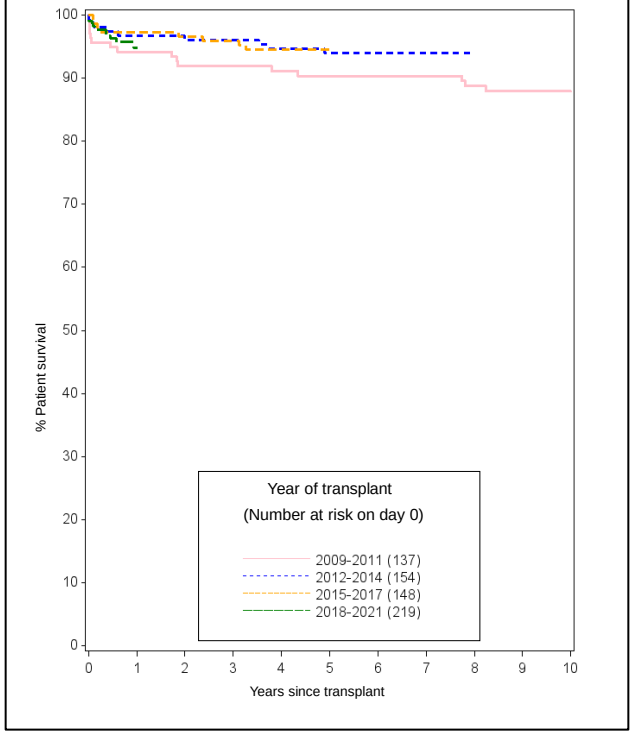


Table 11.28 Patient survival after first elective paediatric liver only transplant from donors after brain death

Year of transplant	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Five year		Ten year	
2009-2011	137	94	(89-97)	92	(86-95)	90	(84-94)	88	(81-92)
2012-2014	154	97	(92-99)	96	(91-98)	94	(89-97)		
2015-2017	148	97	(93-99)	97	(92-99)	95	(89-97)		
2018-2021	219	95	(91-97)						

11.5 Intestinal patient survival

Figure 11.20 and **Table 11.29** 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 included).

Figure 11.20 Patient survival after first intestinal graft in the UK, 1 January 2014 – 31 December 2021

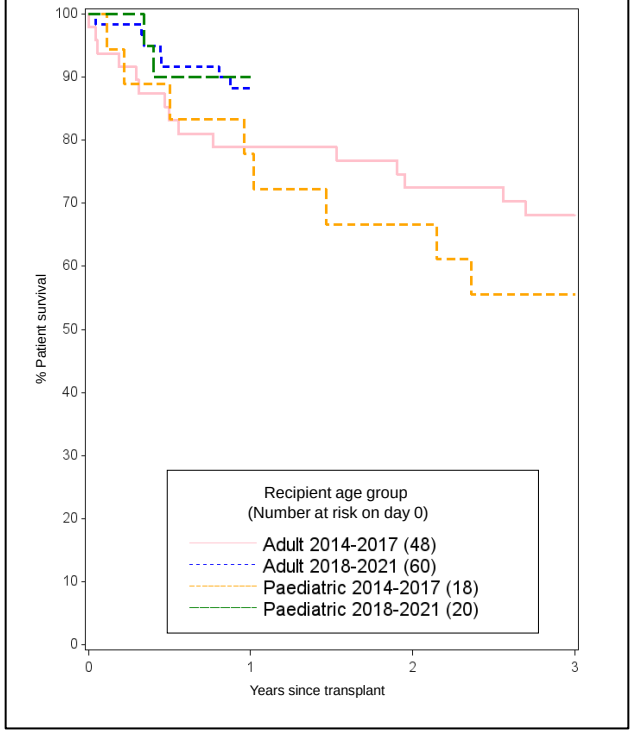


Table 11.29 Patient survival after first intestinal transplant in the UK

Recipient age group	No. at risk on day 0	% Patient survival (95% confidence interval) One year		Two year		Three year	
Adult							
2013-2016	48	79	(64-88)	72	(57-83)	68	(53-79)
2017-2020	60	88	(77-94)				
Paediatric							
2013-2016	18	78	(51-91)	67	(40-83)	56	(31-75)
2017-2020	20	90	(66-97)				

11.6 Corneal graft survival

11.6.1 Cornea grafts for keratoconus

Figure 11.21 shows graft survival estimates for first corneal transplant for keratoconus (KC) for grafts in 2009-2011, 2012-2014, 2015-2017 and 2018-2021. 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 KC in the UK, 1 January 2009 – 31 December 2021

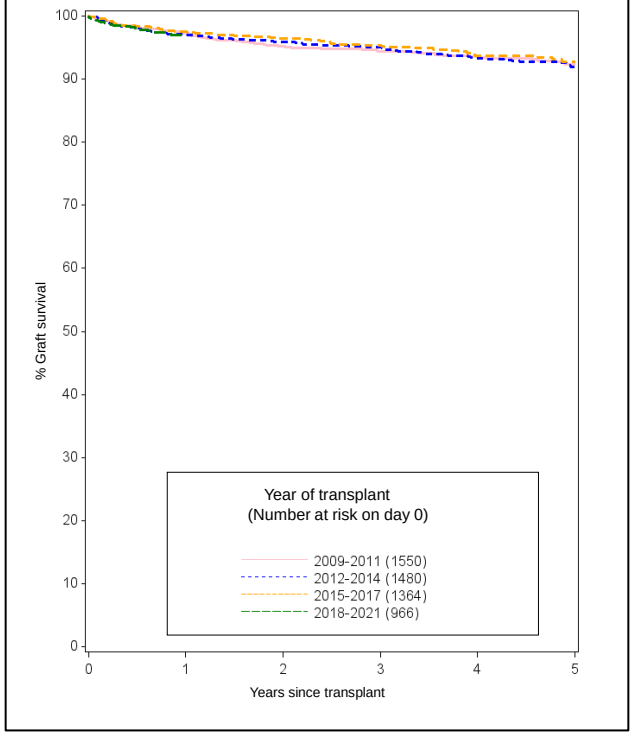


Table 11.30 Graft survival after first corneal graft for KC in the UK

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year	
2009-2011	1550	97	(96-98)	95	(94-96)	92	(91-94)
2012-2014	1480	97	(96-98)	96	(95-97)	92	(90-93)
2015-2017	1364	98	(97-98)	96	(95-97)	93	(90-94)
2018-2021	966	97	(96-98)				

11.6.2 Cornea grafts for Fuchs endothelial dystrophy

Figure 11.22 shows graft survival estimates for first corneal transplant for Fuchs endothelial dystrophy (FED) for grafts in 2009-2011, 2012-2014, 2015-2017 and 2018-2021. 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 FED in the UK, 1 January 2009 – 31 December 2021

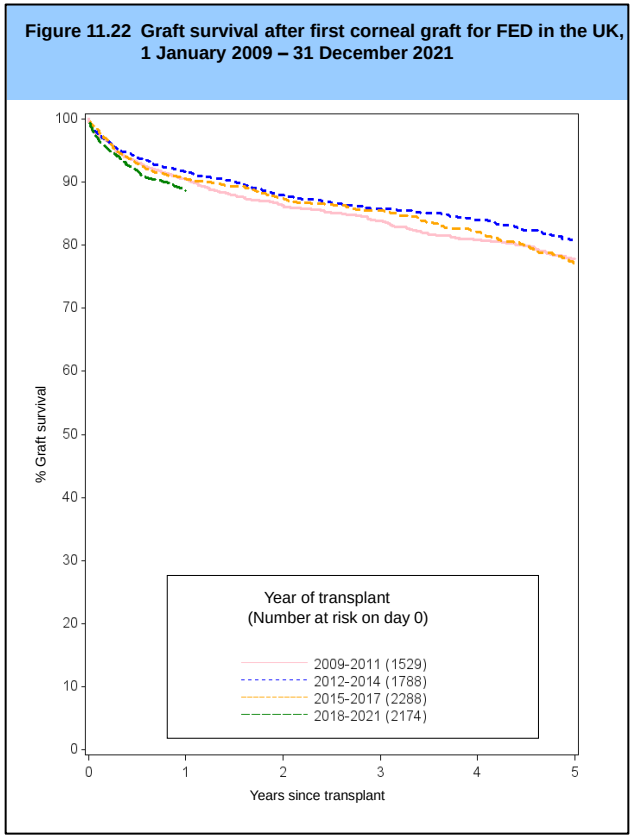


Table 11.31 Graft survival after first corneal graft for FED in the UK

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year	
2009-2011	1529	90	(89-92)	86	(84-88)	78	(75-80)
2012-2014	1788	92	(90-93)	88	(86-89)	81	(78-83)
2015-2017	2288	91	(89-92)	87	(86-89)	77	(74-80)
2018-2021	2174	89	(87-90)				

11.6.3 Cornea grafts for pseudophakic bullous keratopathy

Figure 11.23 shows graft survival estimates for first corneal transplant for pseudophakic bullous keratopathy (PBK) for in 2009-2011, 2012-2014, 2015-2017 and 2018-2021. Graft survival estimates and confidence intervals are shown by transplant year at one, two and five years in **Table 11.32**.

Figure 11.23 Graft survival after first corneal graft for PBK in the UK, 1 January 2009 – 31 December 2021

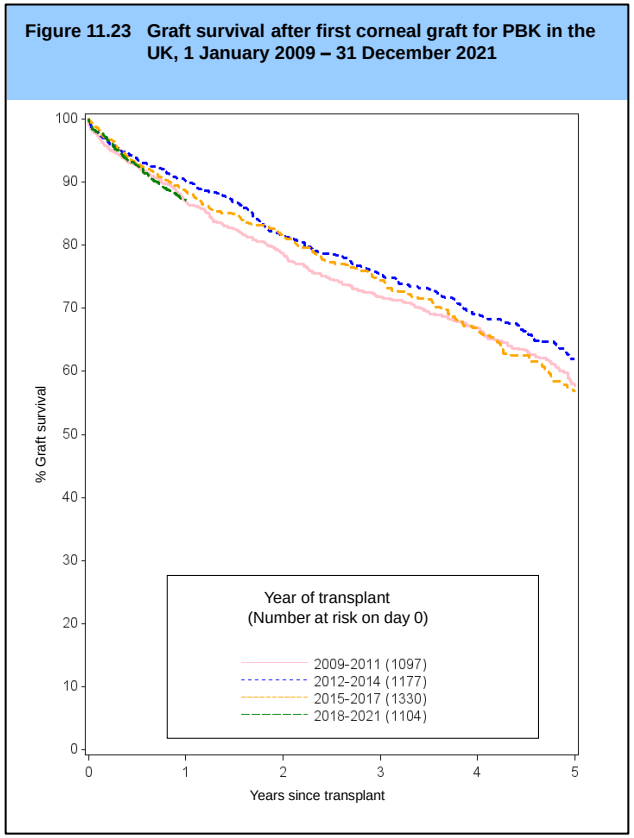


Table 11.32 Graft survival after first corneal graft for PBK in the UK

Year of transplant	No. at risk on day 0	% Graft survival (95% confidence interval) One year		Two year		Five year	
2009-2011	1097	87	(85-89)	79	(76-81)	58	(54-61)
2012-2014	1177	90	(88-92)	81	(79-84)	62	(58-66)
2015-2017	1330	89	(87-90)	81	(79-83)	57	(52-61)
2018-2021	1104	87	(85-89)				

NHS Organ Donor Register (ODR)

Key messages

- **Opt out legislation has been implemented in Wales (2015), Jersey (2019), England (2020), Scotland (2021) and most recently, Guernsey on 1 January 2023**
- **28.6 million people were on the opt-in ODR at March 2023 (43% of the population)**
- **2.5 million people were on the opt-out ODR at March 2023**
- **188 people were appointed representative registrations on the ODR at March 2023**
- **53% of the 1,429 deceased organ donors last year were on the opt-in ODR**
- **5% of ODR registrations last year were through the NHS App**

By the end of March 2023, the NHS Organ Donor Register (ODR) held just over 28.6 million opt-in registrations. A summary of the number of registrations at the end of each financial year from 31 March 2014 to 31 March 2023 is shown in **Figure 12.1**. Opt-in registrations have seen a 3.2% increase this year, compared to a 3.7% increase in the previous year.

By the end of March 2023, the NHS Organ Donor Register (ODR) held just under 2.5 million opt-out registrations. A summary of the number of opt-out registrations at the end of each financial year from 31 March 2016 to 31 March 2023 is shown in **Figure 12.2**.

Of the 1,429 deceased organ donors in 2022-2023, 53% were registered on the ODR, representing an increase of 1% from 2021-2022.

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

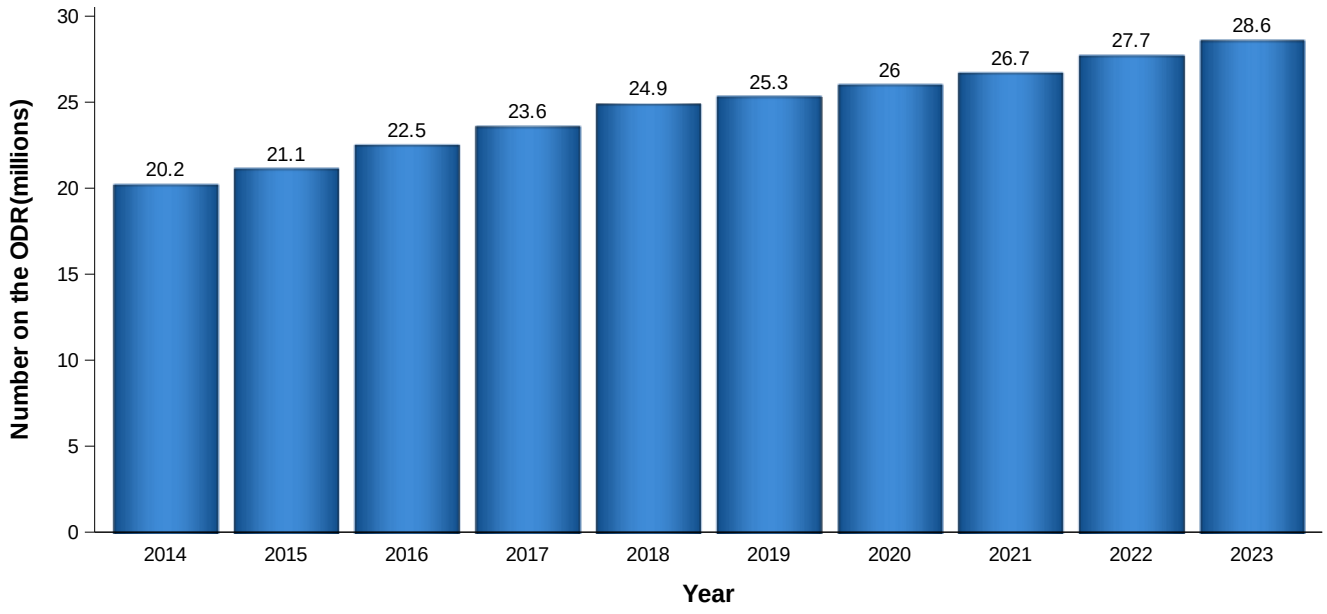
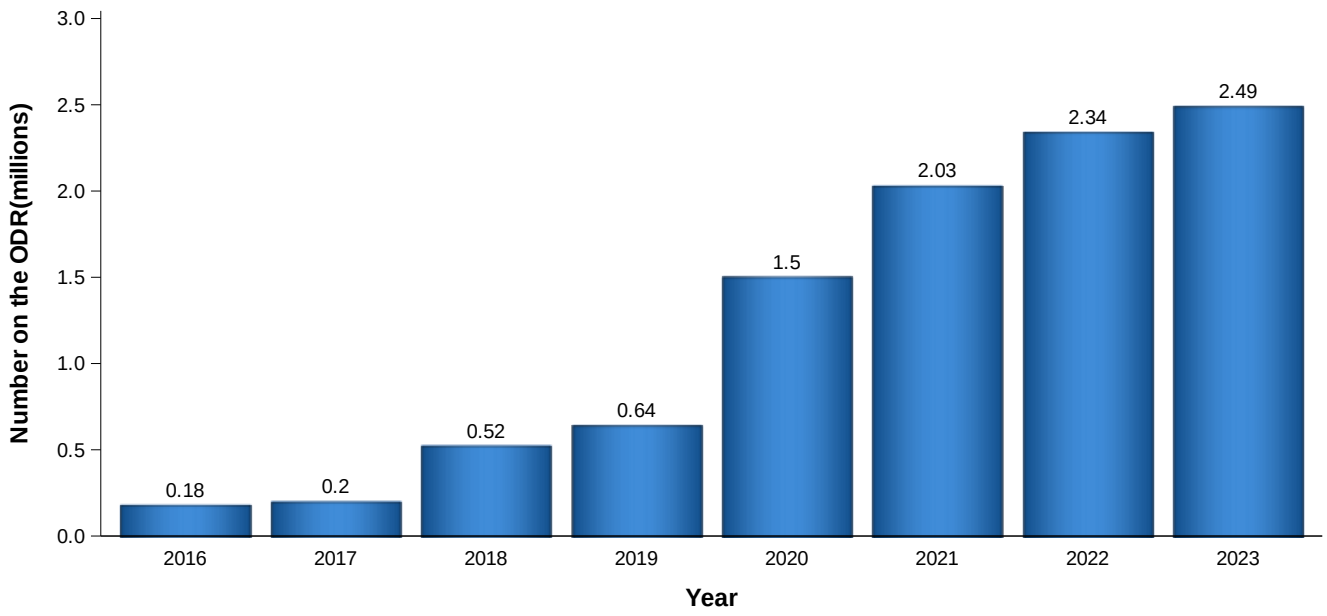


Figure 12.2 Number opted-out on the NHS Organ Donor Register at 31 March



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 2023, 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 2023. The proportion of the population that registered an opt-out was 6.2% in Wales, and less for other countries and NHS regions. In the time period, Wales, England and Scotland have opt-out legislation in place, but it is possible for people anywhere 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 187 appointed representative registrations. An appointed representative(s), in circumstances where donation is possible, will be asked if organs should be donated.

Table 12.1. Opt-in registrations on the NHS Organ Donor Register by 31 March 2023, by country/ NHS region

Country/ NHS region of residence	Registrants N	Registrants pmp	Proportion registered
North East and Yorkshire	3,581,623	440,544	44%
North West	2,708,655	365,048	37%
Midlands	3,976,279	366,815	37%
East of England	2,845,878	448,170	45%
London	2,859,956	324,995	32%
South East	4,190,784	451,107	45%
South West	2,924,038	512,091	51%
England	**23,087,213**	**408,334**	**41%**
Isle of Man	**56,532**	**706,650**	**71%**
Channel Islands	**29,954**	**176,200**	**18%**
Wales	**1,402,291**	**450,897**	**45%**
Scotland	**2,924,908**	**533,742**	**53%**
Northern Ireland	**1,010,296**	**531,735**	**53%**
TOTAL[1]	**28,567,574**	**426,191**	**43%**

[1] Includes 56,380 registrants where the postcode was unknown

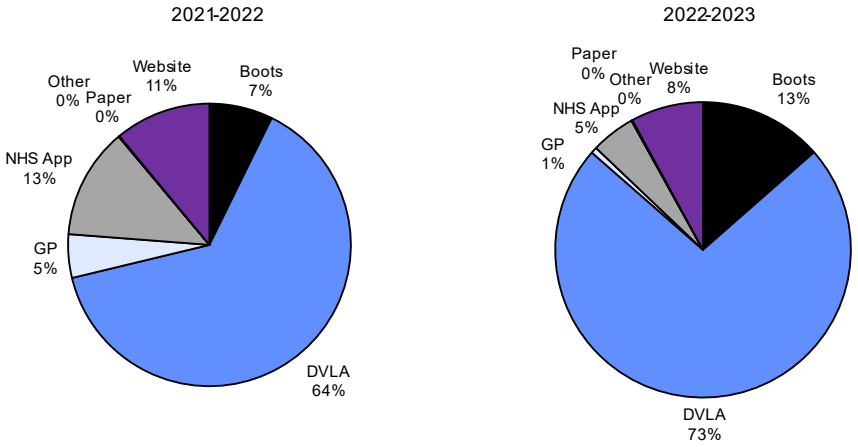
Table 12.2. Opt-out registrations on the NHS Organ Donor Register by 31 March 2023, by country/ NHS region			
Country/ NHS region of residence	**Registrants** N	pmp	Proportion registered
North East and Yorkshire	292,352	35,960	3.6%
North West	272,320	36,701	3.7%
Midlands	435,224	40,150	4.0%
East of England	194,239	30,589	3.1%
London	582,326	66,173	6.6%
South East	213,387	22,970	2.3%
South West	109,764	19,223	1.9%
England	**2,099,612**	**37,135**	**3.7%**
Isle of Man	**623**	**7,788**	**0.8%**
Channel Islands	**2,267**	**13,335**	**1.3%**
Wales	**200,579**	**64,495**	**6.4%**
Scotland	**177,431**	**32,378**	**3.2%**
Northern Ireland	**7,181**	**3,779**	**0.4%**
TOTAL[1]	**2,487,936**	**37,117**	**3.7%**

[1] Includes 243 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 12.3**. This figure shows that 1% of registrations in 2022-2023 arrived by means of registering through a GP, 73% from driving licence applications and reminders through the DVLA and 8% online through the Organ Donation website. There has been a decrease in applications for opt-in registrations through the NHS App, 5% in 2022-2023 compared with 13% in 2021-2022.

Figure 12.3 Source of applications for opt-in registration on the NHS Organ Donor Register, 1 April 2021 - 31 March 2023



At the end of March 2023, 81% 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 (63%) did not wish to donate their corneas. Of the restricted registrations, only 6% (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 2023 to donate different organs[1]

Registrants prepared to donate all organs 81%

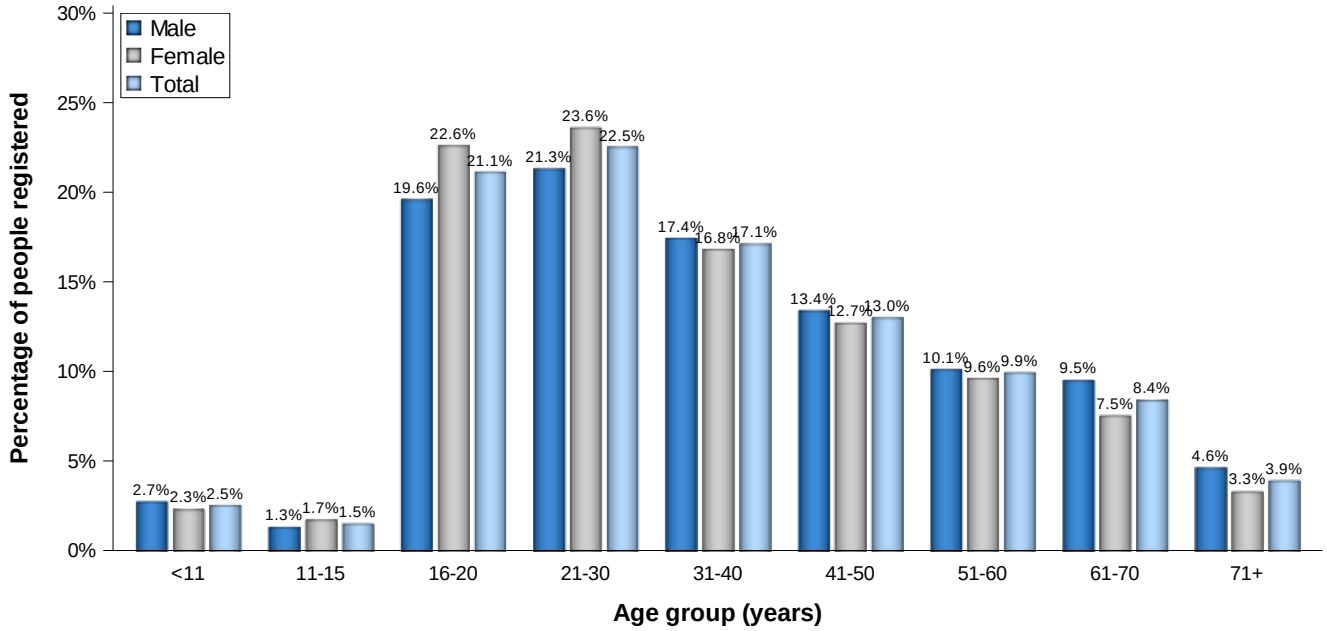
Of those not prepared to donate all organs ('restricted donors'):

Not prepared to donate:	% of 'Restricted donors'	% of all registrants
Kidney	6	1.0
Pancreas	15	2.8
Heart	15	2.8
Lungs	15	2.7
Liver	9	1.7
Corneas	63	11.5

[1] Complete information was not available for approximately 4% of the total register

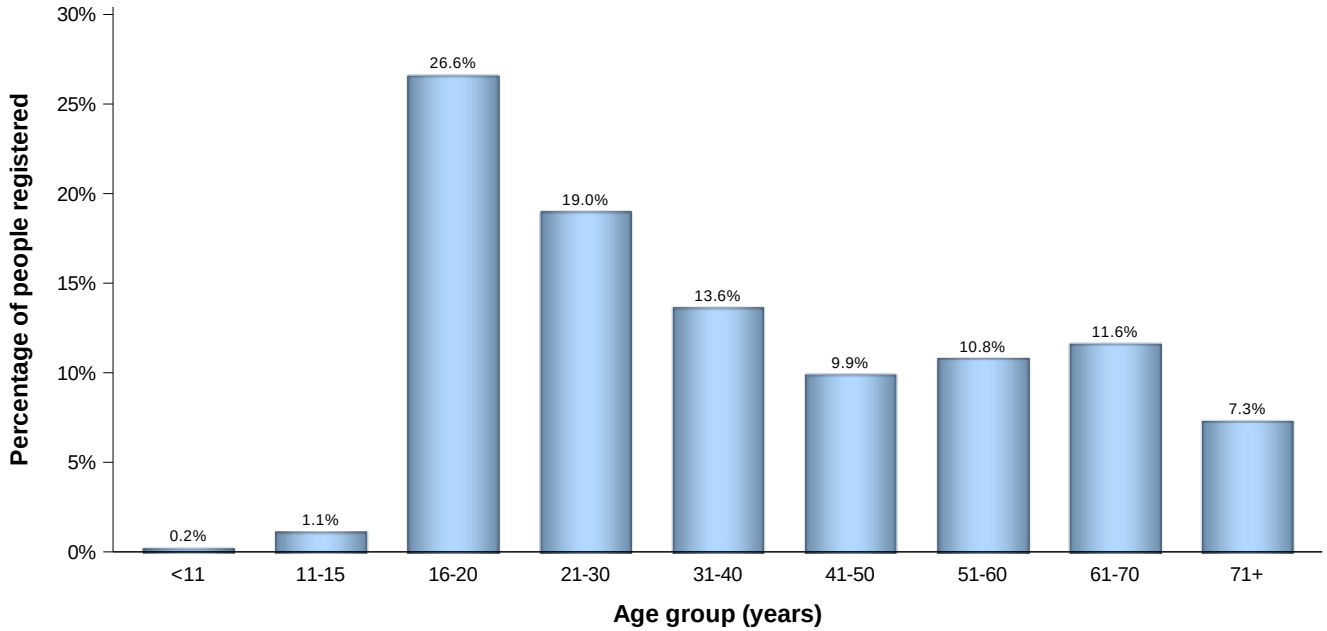
People of all ages are eligible for organ donor registration: the distribution of age by sex at time of opt-in registration is shown in **Figure 12.4**. The highest proportion of registrations (21.3% of males and 23.6% of females) are in the 21-30 years age group. The lowest proportions are in the under 16 age groups. Of all people registered on the NHS Organ Donor Register, 47% are male and 52% are female (1% unknown).

Figure 12.4 Age and gender at registration of total people registered as opt-in on the NHS Organ Donor Register by 31 March 2023



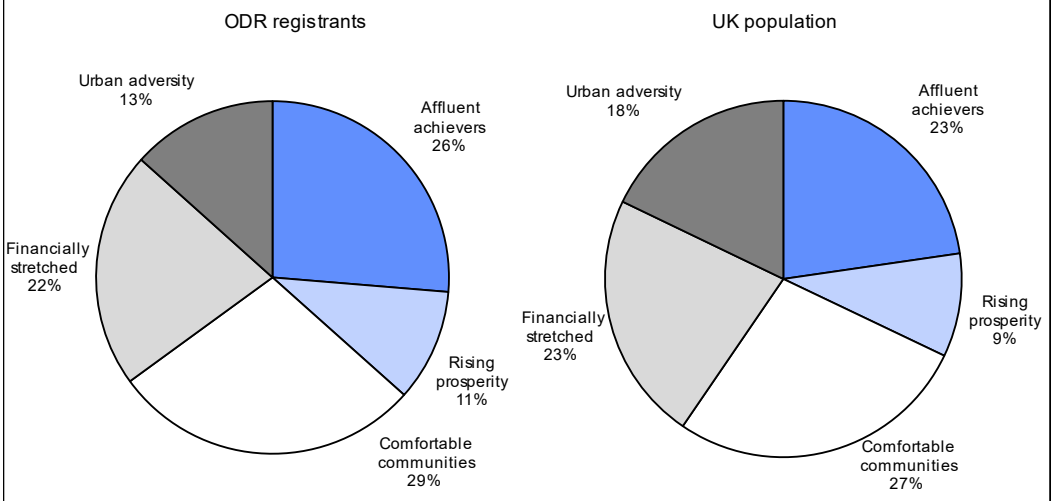
The distribution of age of people registering an opt-in on the ODR during the latest financial year, 2022-2023, is shown in **Figure 12.5**. The highest proportion of registrations in this year were in the 16-20 years age group. Of the registrants in 2022-2023, 46% were male and 52% were female (1% unknown).

Figure 12.5 Age of people registering as opt-in on the NHS Organ Donor Register between 1 April 2022 and 31 March 2023



The breakdown of opt-in registrants on the ODR during 2022-2023 by socio-economic group (using the ACORN[1] classification, based on postcode) is shown in **Figure 12.6**, where it is compared with the general UK population. Though having similar distributions, there were proportionately more 'affluent achievers' and less 'urban adversity' or 'financially stretched' on the ODR than in the general population.

Figure 12.6 Opt-in registrants on the NHS Organ Donor Register, 1 April 2022 - 31 March 2023, and the general population, by socio-economic group



[1] ACORN data supplied by CACI Ltd.

National Potential Donor Audit

Key messages

- **There were 37,917 audited deaths reported through the Potential Donor Audit in the financial year to 31 March 2023, including 1,419 (99%) of the 1,429 deceased organ donors.**
- **Compared to the previous financial year, the overall referral rate of potential donors has remained high, 93% in 2021/22 and 94% in 2022/23. The proportion of donation decision conversations where a Specialist Nurse – Organ Donation was present has remained at 93%, however the overall consent/authorisation rate has decreased in 2022/23, from 66% to 62%.**
- **The consent/authorisation rate was 89% when a patient had expressed an opt in decision, but 137 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 ethnic minority groups (65% and 35% respectively).**

13.1 Introduction

In this chapter, summary data from the National Potential Donor Audit (PDA) are shown for 1 April 2022 to 31 March 2023 and data from the previous three financial years are also provided for comparison purposes. The data comprise all audited patient deaths in UK Intensive Care Units (ICUs) and emergency departments, excluding wards and patients over 80 years of age, in the time period. Paediatric ICU data are included however neonatal ICU data have been excluded. The data are based on information received by 9 May 2023. **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.

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

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).

Donation decision conversation is where the family of eligible donors are asked to make or support patient's organ donation decision, this includes clarifying an opt out decision.

SN-OD presence rate 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, Jersey or Guernsey 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.

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 donation decision conversations is less than ten.

13.3 Breakdown of audited deaths in ICUs and emergency departments, 1 April 2022 – 31 March 2023

In the 12-month period there were a total of 37,917 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 1,419 solid organ donors reported through the PDA, 99.3% of the total 1,429 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 donation decision conversation 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

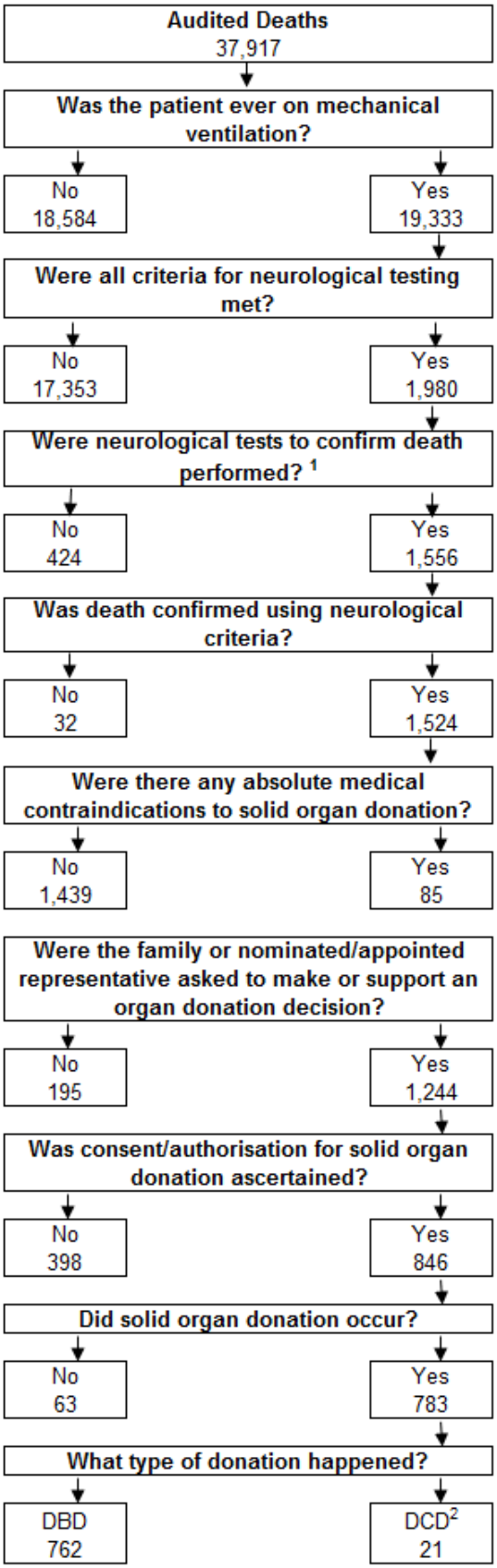
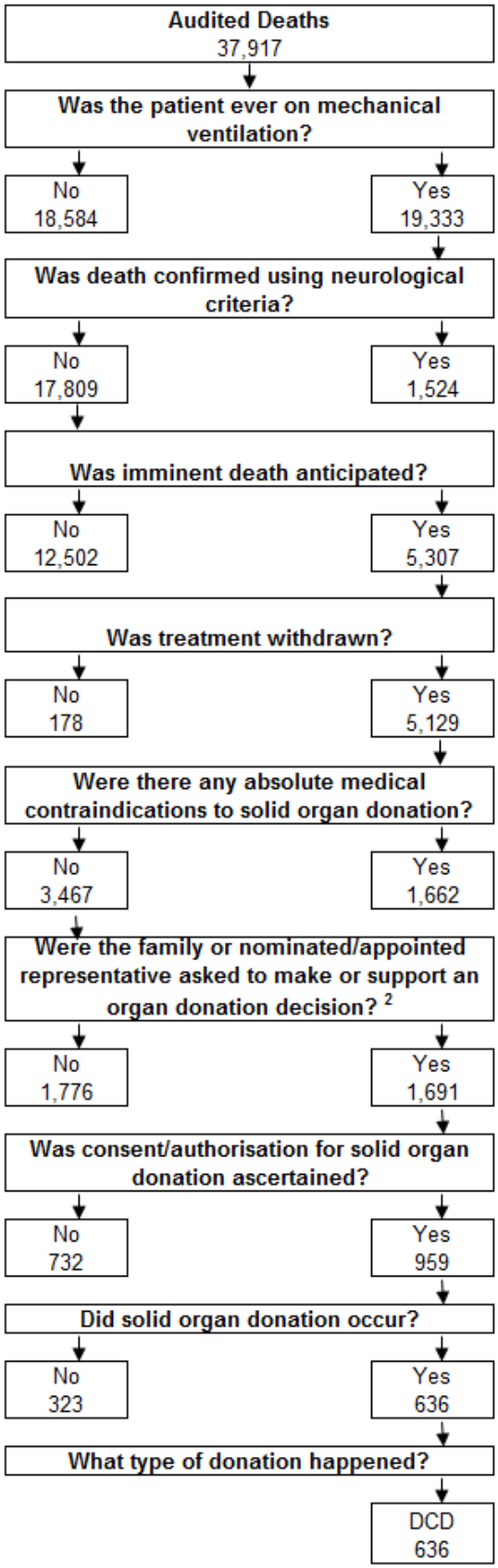


Figure 13.2 Donation after circulatory death



[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 2022 to 31 March 2023

	DBD	DCD	ALL
Neurological death testing rate	78.6		
Referral rate	99.2	92.1	93.8
SN-OD presence rate	95.7	90.2	92.5
Consent/authorisation rate	68	56.7	61.5
- SN-OD present for donation decision conversation	69.7	60.8	64.7
- SN-OD not present for donation decision conversation	31.5	18.8	21.9
- Expressed opt in*	95.4	83.5	88.5
- Deemed consent/authorisation**	63.3	52.1	56.9
- Other***	60.1	37.8	47.2

* 137 families overruled their loved one's expressed opt in decision to be an organ donor
** There were 1036 cases where deemed consent/authorisation applied and in 446 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 2022 to 31 March 2023

ODST	Testing rate	Referral rate	SN-OD presence rate	Consent/ authorisation rate
Eastern	70.1	89.5	89.8	62.3
London	77.9	90.6	95.0	51.4
Midlands	69.9	93.8	91.2	54.9
North West	77.9	92.2	95.8	63.8
Northern	87.6	98.2	95.9	68.8
Northern Ireland	81.6	100.0	93.9	64.9
Scotland	85.9	97.0	88.8	68.0
South Central	83.7	95.0	89.3	64.6
South East	79.6	93.5	91.4	60.5
South Wales	84.8	95.3	87.0	66.7
South West	88.8	95.4	93.6	71.7
Yorkshire	78.9	97.8	97.3	59.1
TOTAL	**78.6**	**93.8**	**92.5**	**61.5**

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 16.1 pmp in the South West to 34.1 pmp in London. Eligible DCD ranged from 35.2 pmp in the South West to 71.0 pmp in the East of England.

Across the countries, there was a range of 53.6 eligible donors pmp in Scotland to 80.7 eligible donors pmp in Wales. Overall, there were 1,439 eligible DBD (21.5 pmp) and 3,467 eligible DCD (51.7 pmp) in the UK, resulting in a total of 73.2 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 2022 to 31 March 2023, 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	212	(26.1)	528	(64.9)	**740**	**(91.0)**
North West	154	(20.8)	421	(56.7)	**575**	**(77.5)**
Midlands	189	(17.4)	494	(45.6)	**683**	**(63.0)**
East of England	108	(17.0)	451	(71.0)	**559**	**(88.0)**
London	300	(34.1)	455	(51.7)	**755**	**(85.8)**
South East	169	(18.2)	449	(48.3)	**618**	**(66.5)**
South West	92	(16.1)	201	(35.2)	**293**	**(51.3)**
England	**1224**	**(21.6)**	**2999**	**(53.0)**	**4223**	**(74.7)**
Isle of Man	**0**	**(0.0)**	**5**	**(62.5)**	**5**	**(62.5)**
Channel Islands	**1**	**(5.9)**	**1**	**(5.9)**	**2**	**(11.8)**
Wales	**65**	**(20.9)**	**186**	**(59.8)**	**251**	**(80.7)**
Scotland	**80**	**(14.6)**	**214**	**(39.1)**	**294**	**(53.6)**
Northern Ireland	**69**	**(36.3)**	**62**	**(32.6)**	**131**	**(68.9)**
TOTAL	**1439**	**(21.5)**	**3467**	**(51.7)**	**4906**	**(73.2)**

Table 13.4 DBD key metrics from the Potential Donor Audit, 1 April 2022 to 31 March 2023, 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 donation decision conversations	DBD SN-OD presence rate (%)	DBD consent/ authorisation rate (%)
North East and Yorkshire	277	82.7	99.6	212	182	98.9	64.8
North West	223	77.1	99.6	154	129	98.4	73.6
Midlands	298	70.1	99.0	189	167	94.0	63.5
East of England	161	72.0	97.5	108	95	96.8	77.9
London	428	76.4	99.5	300	243	95.1	54.3
South East	215	83.3	99.5	169	155	94.2	71.6
South West	107	89.7	100.0	92	85	96.5	83.5
England	**1709**	**77.7**	**99.3**	**1224**	**1056**	**96.1**	**67.0**
Isle of Man	**0**			**0**	**0**		
Channel Islands	**1**	**100.0**	**100.0**	**1**	**1**	**0.0**	**100.0**
Wales	**84**	**84.5**	**98.8**	**65**	**60**	**88.3**	**70.0**
Scotland	**99**	**85.9**	**98.0**	**80**	**66**	**93.9**	**84.8**
Northern Ireland	**87**	**81.6**	**100.0**	**69**	**61**	**98.4**	**65.6**
TOTAL	**1980**	**78.6**	**99.2**	**1439**	**1244**	**95.7**	**68.0**

Table 13.5 DCD key metrics from the Potential Donor Audit, 1 April 2022 to 31 March 2023, 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 donation decision conversations	DCD SN-OD presence rate (%)	DCD consent/ authorisation rate (%)
North East and Yorkshire	859	97.1	528	229	94.8	60.7
North West	695	89.9	421	154	93.5	59.1
Midlands	774	92.0	494	292	90.1	52.1
East of England	755	88.7	451	221	86.0	61.1
London	668	87.6	455	212	94.8	47.6
South East	680	91.8	449	244	86.1	57.8
South West	260	94.6	201	107	91.6	60.7
England	**4691**	**91.6**	**2999**	**1459**	**90.7**	**56.5**
Isle of Man	**7**	**85.7**	**5**	**2**	**100.0**	**50.0**
Channel Islands	**6**	**50.0**	**1**	**1**	**100.0**	**100.0**
Wales	**242**	**95.5**	**186**	**64**	**89.1**	**53.1**
Scotland	**282**	**96.1**	**214**	**112**	**85.7**	**58.0**
Northern Ireland	**79**	**100.0**	**62**	**53**	**88.7**	**64.2**
TOTAL	**5307**	**92.1**	**3467**	**1691**	**90.2**	**56.7**

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 West team and the DBD referral rate was 100% for 4 teams. The SN-OD presence rate was highest for the Yorkshire team, where a SNOD was present for 100% of DBD donation decision conversations.

Table 13.6 DBD key metrics from the Potential Donor Audit, 1 April 2022 to 31 March 2023, 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 donation decision conversations	DBD SN-OD presence rate (%)	DBD consent/ authorisation rate (%)
Eastern	194	70.1	97.9	126	109	97.2	70.6
London	308	77.9	99.4	222	182	95.1	54.9
Midlands	259	69.9	99.2	164	144	93.8	63.2
North West	244	77.9	99.6	169	141	98.6	72.3
Northern	105	87.6	100.0	85	72	97.2	70.8
Northern Ireland	87	81.6	100.0	69	61	98.4	65.6
Scotland	99	85.9	98.0	80	66	93.9	84.8
South Central	129	83.7	100.0	102	93	92.5	72.0
South East	206	79.6	99.5	150	131	93.9	64.9
South Wales	66	84.8	98.5	53	51	86.3	74.5
South West	98	88.8	100.0	84	77	97.4	85.7
Yorkshire	185	78.9	98.9	135	117	100.0	62.4
TOTAL	**1980**	**78.6**	**99.2**	**1439**	**1244**	**95.7**	**68.0**

Table 13.7 indicates that for DCD patients, the highest referral rate was 100% for the Northern Ireland team and the highest proportion of DCD donation decision conversations for which a SN-OD was present was 95.1% for the Yorkshire team. No account has been taken of the demographics of the populations within the teams which may impact on the rates presented.

Table 13.7 DCD key metrics from the Potential Donor Audit, 1 April 2022 to 31 March 2023, 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 donation decision conversations	DCD SN-OD presence rate (%)	DCD consent/ authorisation rate (%)
Eastern	858	88.0	514	252	86.5	58.7
London	451	85.8	309	139	95.0	46.8
Midlands	675	92.1	432	266	89.8	50.4
North West	801	90.3	505	166	93.4	56.6
Northern	354	97.7	255	98	94.9	67.3
Northern Ireland	79	100.0	62	53	88.7	64.2
Scotland	282	96.1	214	112	85.7	58.0
South Central	452	93.8	321	150	87.3	60.0
South East	462	91.1	285	160	89.4	56.9
South Wales	156	94.2	115	57	87.7	59.6
South West	198	93.4	161	96	90.6	60.4
Yorkshire	539	97.6	294	142	95.1	56.3
TOTAL	**5307**	**92.1**	**3467**	**1691**	**90.2**	**56.7**

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 144 paediatric patients for whom neurological death was suspected, tests were not performed on 42 patients.

Table 13.8 DBD and DCD key metrics from the Potential Donor Audit, 1 April 2022 to 31 March 2023, 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 donor donation decision conversations	SN-OD presence rate (%)	Consent/ authorisation rate (%)	Number of actual donors[2]
DBD	Critical care	1924	79.6	1418	1227	95.7	67.7	769
	Emergency dept.	35	51.4	15	14	100.0	92.9	12
	Other	6	66.7	4	2	100.0	100.0	2
	TOTAL	**1965**	**79.1**	**1437**	**1243**	**95.7**	**68.1**	**783**
DCD	Critical care	4779		3150	1635	91.6	57.7	626
	Emergency dept.	80		57	26	69.2	38.5	7
	Other	27		15	12	83.3	41.7	3
	TOTAL	**4886**		**3222**	**1673**	**91.2**	**57.3**	**636**

[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 21 DCD donors referred from critical care and 0 DCD donors referred from emergency departments

Table 13.9 DBD and DCD key metrics from the Potential Donor Audit, 1 April 2022 to 31 March 2023, 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 donor donation decision conversations	SN-OD presence rate (%)	Consent/ authorisation rate (%)	Number of actual donors[2]
DBD	Adult (>=18)	1866	79.5	99.3	1372	1191	96.2	68.6	755
	Paediatric (<18)	114	63.2	98.2	67	53	83.0	54.7	28
	TOTAL	**1980**	**78.6**	**99.2**	**1439**	**1244**	**95.7**	**68.0**	**783**
DCD	Adult (>=18)	5071		92.3	3281	1631	90.6	57.7	623
	Paediatric (<18)	236		88.1	186	60	80.0	30.0	13
	TOTAL	**5307**		**92.1**	**3467**	**1691**	**90.2**	**56.7**	**636**

[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 0 DCD donors under 18 and 21 DCD donors aged 18 years and over

13.5 Consent/ authorisation rates

The overall DBD consent/authorisation rate was 68% and the 95% confidence limits for this percentage are 65% - 71%. For DCD, the overall rate was 57% and the 95% confidence limits are 54% - 59%.

Across the country/NHS region, the DBD consent/authorisation rates range from 54% in London to 84% in the South West. DCD consent/authorisation rates range from 48% in London to 64% in Northern Ireland (**Tables 13.4** and **13.5**).

The overall consent/authorisation rates (combining DBD and DCD) for England, Wales, Scotland and Northern Ireland were 61%, 61%, 68% and 65%, respectively.

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 Organ Donation Services Teams, the DBD consent/authorisation rates range from 55% in the London team to 86% in the South West team. DCD consent/authorisation rates range from 47% in the London team to 67% in the Northern Ireland team.

Figure 13.3 Consent/authorisation rates by Organ Donation Services Team

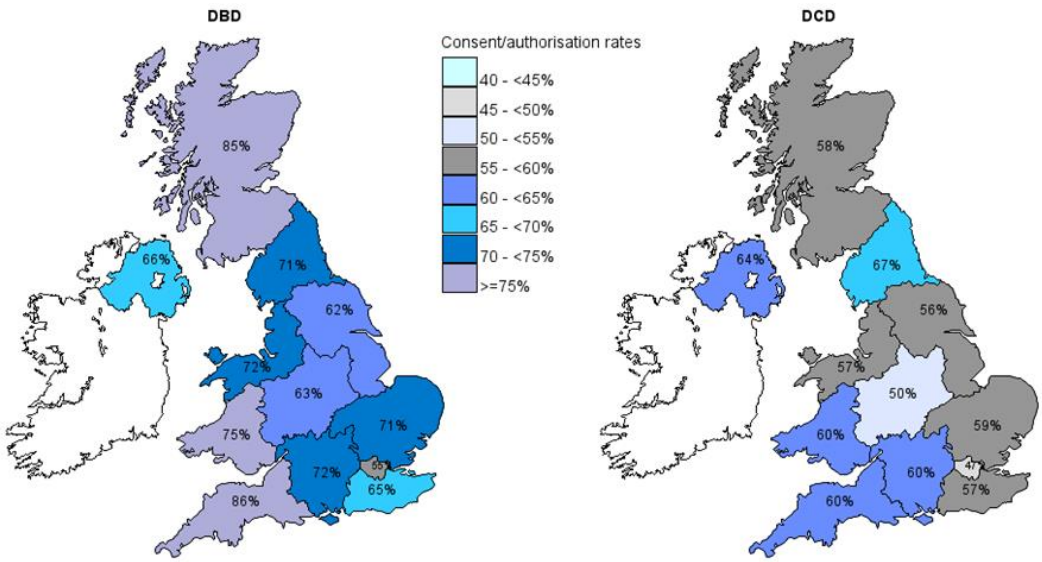


Table 13.10 shows the consent/authorisation rate separately for white patients and patients from ethnic minority groups. The national DBD consent/authorisation rates for white patients and patients from ethnic minority groups were 74% and 40%, respectively. A similar difference was observed for DCD consent/authorisation rates: 60% and 28%, respectively. Note that there were an additional 7 DCD donation decision conversations where the ethnicity was not known or not reported.

The Northern, Northern Ireland, Scotland, South Wales and South West teams each accounted for only 1% or less donation decision conversations where patients are from ethnic minority groups, whereas London accounted for 37%. 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 donation decision conversations is less than ten.

Table 13.10 DBD and DCD consent/authorisation rates from the Potential Donor Audit, 1 April 2022 to 31 March 2023, by Organ Donation Services Team (ODST) and ethnicity

	White eligible donors					Eligible donors from ethnic minority groups					All
ODST	Number of eligible DBD donation decision conversations	DBD consent/ authorisation rate (%)	Number of eligible DCD donation decision conversations	DCD consent/ authorisation rate (%)	Overall consent/ authorisation rate (%)	Number of eligible DBD donation decision conversations	DBD consent/ authorisation rate (%)	Number of eligible DCD donation decision conversations	DCD consent/ authorisation rate (%)	Overall consent/ authorisation rate (%)	Overall consent/ authorisation rate (%) [1]
Eastern	92	73.9	230	61.7	**65.2**	17	52.9	22	27.3	**38.5**	**62.3**
London	99	67.7	92	54.3	**61.3**	83	39.8	47	31.9	**36.9**	**51.4**
Midlands	110	71.8	238	53.4	**59.2**	34	35.3	26	26.9	**31.7**	**54.9**
North West	131	75.6	161	58.4	**66.1**	10	30.0	5	0.0	**20.0**	**63.8**
Northern	70	71.4	96	68.8	**69.9**	2	50.0	2	0.0	**25.0**	**68.8**
Northern Ireland	61	65.6	53	64.2	**64.9**	0		0			**64.9**
Scotland	65	84.6	108	57.4	**67.6**	1	100.0	2	100.0	**100.0**	**68.0**
South Central	85	76.5	129	65.1	**69.6**	8	25.0	19	31.6	**29.6**	**64.6**
South East	96	71.9	144	61.1	**65.4**	35	45.7	16	18.8	**37.3**	**60.5**
South Wales	51	74.5	55	60.0	**67.0**	0		2	50.0	**50.0**	**66.7**
South West	75	86.7	95	61.1	**72.4**	2	50.0	0		**50.0**	**71.7**
Yorkshire	99	68.7	137	57.7	**62.3**	18	27.8	5	20.0	**26.1**	**59.1**
TOTAL	**1034**	**73.8**	**1538**	**59.6**	**65.3**	**210**	**39.5**	**146**	**28.1**	**34.8**	**61.5**

[1] Includes 7 donation decision conversations 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 26% of cases.

Table 13.11 Reasons why the family did not support organ donation, 1 April 2022 to 31 March 2023, 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	22	5.5	31	4.2	53	4.7
Patient had previously expressed a wish not to donate	121	30.4	175	23.9	296	26.2
Family were not sure whether the patient would have agreed to donation	44	11.1	90	12.3	134	11.9
Family did not believe in donation	4	1.0	12	1.6	16	1.4
Family felt it was against their religious/cultural beliefs	40	10.1	24	3.3	64	5.7
Family divided over the decision	21	5.3	18	2.5	39	3.5
Family felt patient had suffered enough	22	5.5	62	8.5	84	7.4
Family did not want surgery to the body	38	9.5	51	7.0	89	7.9
Family wanted to stay with the patient after death	2	0.5	16	2.2	18	1.6
Family had difficulty understanding/accepting neurological testing	3	0.8	0	-	3	0.3
Family felt the length of time for the donation process was too long	17	4.3	126	17.2	143	12.7
Family concerned other people may disapprove/be offended	1	0.3	2	0.3	3	0.3
Family felt that the body should be buried whole (unrelated to religious/cultural reasons)	20	5.0	13	1.8	33	2.9
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	7	1.0	8	0.7
Family concerned donation may delay the funeral	2	0.5	1	0.1	3	0.3
Strong refusal - probing not appropriate	17	4.3	31	4.2	48	4.2
Other	22	5.5	73	10.0	95	8.4
TOTAL	**398**	**100.0**	**732**	**100.0**	**1130**	**100.0**

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

Table 13.12 shows the proportion of donation decision conversations where a SN-OD was present, for DBD and DCD separately, and overall. Nationally, 96% of DBD and 90% of DCD donation decision conversation had a SN-OD present. There is some variation between teams in the percentage of DCD donation decision conversations where a SN-OD was present, however SN-OD presence rates are good across all teams for DBD donation decision conversations.

Table 13.12 Donation decision conversations where a Specialist Nurse - Organ Donation (SN-OD) was present from the Potential Donor Audit, 1 April 2022 to 31 March 2023, by Organ Donation Services Team (ODST)

ODST	Number of eligible DBD donation decision conversations	Number of eligible DBD donation decision conversations where SN-OD present	DBD SN-OD presence rate (%)	Number of eligible DCD donation decision conversations	Number of eligible DCD donation decision conversations where SN-OD present	DCD SN-OD presence rate (%)	Overall SN-OD presence rate (%)
Eastern	109	106	97.2	252	218	86.5	**89.8**
London	182	173	95.1	139	132	95.0	**95.0**
Midlands	144	135	93.8	266	239	89.8	**91.2**
North West	141	139	98.6	166	155	93.4	**95.8**
Northern	72	70	97.2	98	93	94.9	**95.9**
Northern Ireland	61	60	98.4	53	47	88.7	**93.9**
Scotland	66	62	93.9	112	96	85.7	**88.8**
South Central	93	86	92.5	150	131	87.3	**89.3**
South East	131	123	93.9	160	143	89.4	**91.4**
South Wales	51	44	86.3	57	50	87.7	**87.0**
South West	77	75	97.4	96	87	90.6	**93.6**
Yorkshire	117	117	100.0	142	135	95.1	**97.3**
TOTAL	**1244**	**1190**	**95.7**	**1691**	**1526**	**90.2**	**92.5**

Table 13.13 shows the effect on the consent/authorisation rate when a SN-OD is present or not present for the donation decision conversation. Evidence shows that the family is more likely to support organ donation when a trained SN-OD is present for the donation decision conversation, 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 donation decision conversations are very small where a SN-OD is not present and no account has been taken of donation decisions which were initiated by the family, a 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 2022 to 31 March 2023, by Organ Donation Services Team (ODST)

	SN-OD present for donation decision conversation					SN-OD not present for donation decision conversation					All
ODST	Number of eligible DBD donation decision conversations	DBD consent/ authorisation rate (%)	Number of eligible DCD donation decision conversations	DCD consent/ authorisation rate (%)	Overall consent/ authorisation rate (%)	Number of eligible DBD donation decision conversations	DBD consent/ authorisation rate (%)	Number of eligible DCD donation decision conversations	DCD consent/ authorisation rate (%)	Overall consent/ authorisation rate (%)	Overall consent/ authorisation rate (%)
Eastern	106	72.6	218	62.8	**66.0**	3	0.0	34	32.4	**29.7**	**62.3**
London	173	56.1	132	49.2	**53.1**	9	33.3	7	0.0	**18.8**	**51.4**
Midlands	135	65.9	239	54.0	**58.3**	9	22.2	27	18.5	**19.4**	**54.9**
North West	139	71.9	155	60.6	**66.0**	2	100.0	11	0.0	**15.4**	**63.8**
Northern	70	72.9	93	71.0	**71.8**	2	0.0	5	0.0	**0.0**	**68.8**
Northern Ireland	60	66.7	47	70.2	**68.2**	1	0.0	6	16.7	**14.3**	**64.9**
Scotland	62	88.7	96	66.7	**75.3**	4	25.0	16	6.3	**10.0**	**68.0**
South Central	86	75.6	131	65.6	**69.6**	7	28.6	19	21.1	**23.1**	**64.6**
South East	123	65.9	143	59.4	**62.4**	8	50.0	17	35.3	**40.0**	**60.5**
South Wales	44	84.1	50	66.0	**74.5**	7	14.3	7	14.3	**14.3**	**66.7**
South West	75	85.3	87	64.4	**74.1**	2	100.0	9	22.2	**36.4**	**71.7**
Yorkshire	117	62.4	135	59.3	**60.7**	0		7	0.0	**0.0**	**59.1**
TOTAL	**1190**	**69.7**	**1526**	**60.8**	**64.7**	**54**	**31.5**	**165**	**18.8**	**21.9**	**61.5**

13.7 Comparison with previous years

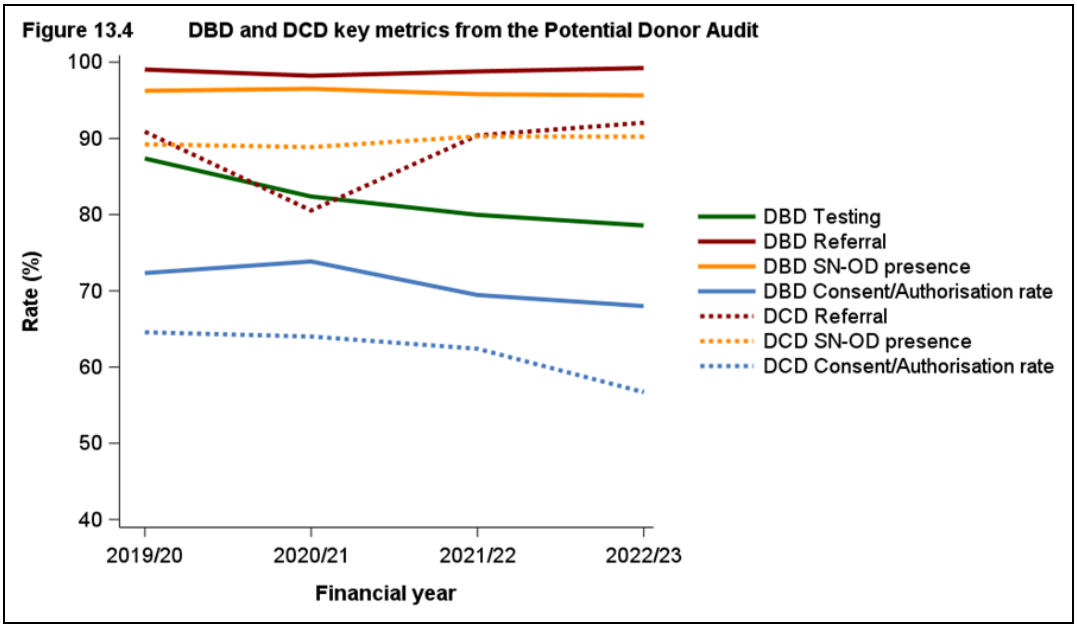
Table 13.14 and **Figure 13.4** show the key metrics from the PDA for the last four financial years.

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 donor donation decision conversations	SN-OD presence rate (%)	Number of families who consented to/ authorised donation	Consent/ authorisation rate (%)	Number of actual donors [2]
DBD	**2019-2020**	1996	87.4	99.0	1658	1468	96.3	1062	72.3	946
	2020-2021	1811	82.4	98.2	1353	1209	96.5	893	73.9	779
	2021-2022	1918	80.0	98.8	1375	1241	95.8	862	69.5	787
	2022-2023	1980	78.6	99.2	1439	1244	95.7	846	68.0	783
DCD	**2019-2020**	6296		90.9	4349	1812	89.2	1170	64.6	621
	2020-2021	5938		80.5	2851	1042	88.9	667	64.0	402
	2021-2022	5229		90.4	2988	1450	90.3	905	62.4	604
	2022-2023	5307		92.1	3467	1691	90.2	959	56.7	636
TOTAL	**2019-2020**	**8079**		**92.8**	**6007**	**3280**	**92.4**	**2232**	**68.0**	**1568**
	2020-2021	**7466**		**84.4**	**4204**	**2251**	**93.0**	**1560**	**69.3**	**1182**
	2021-2022	**6797**		**92.5**	**4363**	**2691**	**92.8**	**1767**	**65.7**	**1391**
	2022-2023	**6910**		**93.8**	**4906**	**2935**	**92.5**	**1805**	**61.5**	**1419**

[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 10 DCD donors in 2019-2020, 12 DCD donors in 2020-2021, 6 DCD donors in 2021-2022 and 21 DCD donors in 2022-2023

DBD referral rates have remained unchanged, with DCD referral rates having risen since 2020/21. The DBD testing rate has been slowly decreasing whilst the SN-OD presence rate has remained unchanged in both DBD and DCD. The consent/authorisation rate for both DBD and DCD has fallen slightly.



13.8 Consented/authorised cases not proceeding to solid organ donation

Consent/authorisation for donation was ascertained for 846 eligible DBD donors and 959 eligible DCD donors; 783 (92%) and 636 (66%) 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 63 eligible DBD and 323 eligible DCD cases where consent/authorisation was ascertained. The main reasons reported for consented/authorised eligible DBD donors not proceeding to donate was that the organs were deemed to be medically unsuitable by transplant centres or there was an absolute contraindication to organ donation. 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 2022 to 31 March 2023, by donor type

	Donor type					
	DBD		DCD		Total	
Primary reason why donation did not proceed	**N**	**%**	**N**	**%**	**N**	**%**
Clinical - Absolute contraindication to organ donation	10	15.9	8	2.5	18	4.7
Clinical - No transplantable organ	6	9.5	12	3.7	18	4.7
Clinical - Patient's general medical condition	2	3.2	3	0.9	5	1.3
Clinical - Patient actively dying	4	6.3	19	5.9	23	6.0
Clinical - Cardiac arrest during referral	2	3.2	0	-	2	0.5
Clinical - Considered high risk donor	7	11.1	8	2.5	15	3.9
Clinical - DCD clinical exclusion	0	-	1	0.3	1	0.3
Clinical - Patient asystolic	1	1.6	0	-	1	0.3
Clinical - Predicted PTA therefore not attended	0	-	3	0.9	3	0.8
Clinical - PTA post WLST	0	-	165	51.1	165	42.7
Clinical - Organs deemed medically unsuitable by recipient centres	10	15.9	51	15.8	61	15.8
Clinical - Organs deemed medically unsuitable on surgical inspection	7	11.1	3	0.9	10	2.6
Clinical - Positive virology	1	1.6	3	0.9	4	1.0
Clinical - Other	3	4.8	10	3.1	13	3.4
Consent / Auth - Coroner/Procurator fiscal refusal	5	7.9	10	3.1	15	3.9
Consent / Auth - NOK withdraw consent / authorisation	5	7.9	24	7.4	29	7.5
Logistical - Other	0	-	3	0.9	3	0.8
TOTAL	**63**	**100.0**	**323**	**100.0**	**386**	**100.0**

PTA = Prolonged time to asystole, WLST = Withdrawal of life sustaining treatment, NOK = Next of kin

Appendices

Appendix I provides details of the 1,429 deceased solid organ donors reported in 2022-2023. Details are given for each donating hospital and the hospitals have been grouped by NHS Region and country.

The number of donors by donor country/ NHS Region of residence is given for donors after brain death in **Appendix IIA** and donors after circulatory death in **Appendix IIB**.

The populations used for country / NHS Region per million population are given in **Appendix III** these populations are mid-2021 estimates based on ONS 2021 Census figures.

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

Appendix I Deceased solid organ donors and donated organs in the UK, 1 April 2022 - 31 March 2023 (2021-2022), by donating hospital

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Pancreas	Liver	Bowel	Heart	Lung
South West														
Barnstaple, North Devon District Hospital	2	(2)	0	(0)	2	(2)	2	(3)	2	0	2	0	0	0
Bath, Royal United Hospital	7	(5)	1	(2)	8	(7)	6	(11)	8	1	6	0	0	1
Bournemouth, Royal Bournemouth General Hospital	4	(5)	5	(4)	9	(9)	7	(13)	9	1	7	0	0	0
Bristol, Bristol Royal Hospital For Children	0	(3)	2	(1)	2	(4)	1	(5)	2	1	1	0	0	0
Bristol, Bristol Royal Infirmary	5	(8)	6	(8)	11	(16)	7	(17)	11	1	6	0	2	1
Bristol, Southmead Hospital	14	(10)	13	(12)	27	(22)	18	(35)	26	6	19	0	1	0
Cheltenham, Cheltenham General Hospital	1	(1)	2	(1)	3	(2)	3	(4)	3	0	3	0	0	1
Dorchester, Dorset County Hospital	2	(2)	0	(1)	2	(3)	1	(3)	1	0	2	0	0	0
Exeter, Royal Devon And Exeter Hospital (Wonford)	6	(4)	1	(3)	7	(7)	7	(11)	7	4	7	0	0	1
Gloucester, Gloucestershire Royal Hospital	2	(4)	1	(3)	3	(7)	2	(6)	3	0	2	0	0	0
Plymouth, Derriford Hospital	8	(11)	6	(8)	14	(19)	11	(27)	12	2	13	0	1	1
Poole, Poole General Hospital	0	(3)	1	(1)	1	(4)	1	(5)	1	0	1	0	0	0
Salisbury, Salisbury District Hospital	0	(2)	1	(0)	1	(2)	1	(1)	1	0	1	0	0	0
Swindon, Great Western Hospital	4	(2)	3	(3)	7	(5)	4	(9)	6	0	5	0	2	2
Taunton, Taunton And Somerset Hospital (Musgrove Park)	4	(1)	4	(4)	8	(5)	6	(9)	7	1	7	0	1	0
Torquay, Torbay Hospital	2	(2)	1	(2)	3	(4)	2	(6)	3	0	2	0	0	0
Truro, Royal Cornwall Hospital (Treliske)	3	(3)	2	(4)	5	(7)	4	(8)	5	1	4	0	0	0
Weston-Super-Mare, Weston General Hospital	1	(0)	0	(0)	1	(0)	1	(1)	1	1	1	0	0	0
Yeovil, Yeovil District Hospital	1	(1)	2	(0)	3	(1)	2	(3)	3	0	2	0	0	0
TOTAL	**66**	**(69)**	**51**	**(57)**	**117**	**(126)**	**86**	**(177)**	**111**	**19**	**91**	**0**	**7**	**7**
South East														
Ashford, William Harvey Hospital	5	(7)	3	(2)	8	(9)	7	(15)	8	4	7	0	2	0
Aylesbury, Stoke Mandeville Hospital	2	(0)	1	(1)	3	(1)	1	(2)	2	1	2	0	0	0
Basingstoke, North Hampshire Hospital	2	(2)	2	(4)	4	(6)	4	(7)	4	2	4	0	1	0
Brighton, Royal Sussex County Hospital	10	(10)	12	(11)	22	(21)	15	(29)	20	2	15	0	5	3
Camberley, Frimley Park Hospital	5	(6)	2	(2)	7	(8)	6	(13)	7	3	6	0	1	1
Canterbury, Kent And Canterbury Hospital	1	(0)	0	(0)	1	(0)	1	(1)	1	0	1	0	0	0
Chertsey, St Peter's Hospital	5	(1)	4	(3)	9	(4)	6	(9)	8	2	6	0	1	1
Chichester, St Richard's Hospital	2	(4)	2	(3)	4	(7)	3	(8)	4	0	3	0	0	1
Dartford, Darent Valley Hospital	6	(3)	4	(0)	10	(3)	6	(8)	9	0	7	0	0	0
Eastbourne, Eastbourne District General Hospital	0	(1)	2	(4)	2	(5)	1	(5)	2	0	0	0	0	1
Gillingham, Medway Hospital	4	(7)	4	(4)	8	(11)	5	(13)	8	1	4	0	2	0
Guildford, Royal Surrey County Hospital	1	(1)	1	(1)	2	(2)	1	(3)	2	0	1	0	0	1
Hastings, Conquest Hospital	3	(0)	1	(1)	4	(1)	3	(4)	3	2	4	0	1	1
Haywards Heath, Princess Royal Hospital	1	(1)	0	(1)	1	(2)	1	(2)	1	1	1	0	0	0

Appendix I Deceased solid organ donors and donated organs in the UK, 1 April 2022 - 31 March 2023 (2021-2022), by donating hospital

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Pancreas	Liver	Bowel	Heart	Lung
Maidstone, Maidstone Hospital	0	(1)	3	(0)	3	(1)	3	(4)	3	1	3	0	1	0
Margate, The Queen Elizabeth The Queen Mother Hospital	1	(1)	0	(1)	1	(2)	0	(1)	0	0	1	0	0	0
Newport, St Mary's Hospital	4	(1)	0	(0)	4	(1)	3	(3)	3	0	4	0	1	0
Oxford, John Radcliffe Hospital	16	(11)	20	(15)	36	(26)	29	(51)	35	11	29	1	7	4
Portsmouth, Queen Alexandra Hospital	4	(5)	7	(4)	11	(9)	5	(10)	11	2	5	0	0	0
Reading, Royal Berkshire Hospital	1	(4)	7	(7)	8	(11)	5	(12)	8	2	5	0	1	0
Redhill, East Surrey Hospital	3	(1)	2	(2)	5	(3)	3	(6)	5	1	3	0	0	0
Slough, Wexham Park Hospital	5	(1)	2	(2)	7	(3)	6	(8)	7	1	6	0	1	0
Southampton, Southampton University Hospitals	19	(23)	22	(23)	41	(46)	34	(72)	38	13	33	1	7	6
Tunbridge Wells, Tunbridge Wells Hospital	1	(3)	1	(1)	2	(4)	2	(5)	2	0	2	0	0	0
Winchester, Royal Hampshire County Hospital	1	(2)	1	(1)	2	(3)	2	(5)	2	0	2	0	0	0
Worthing, Worthing Hospital	2	(0)	2	(4)	4	(4)	3	(4)	3	1	4	0	0	1
Wycombe, Wycombe General Hospital	0	(3)	1	(1)	1	(4)	0	(4)	1	0	0	0	0	0
TOTAL	**104**	**(99)**	**106**	**(98)**	**210**	**(197)**	**155**	**(304)**	**197**	**50**	**158**	**2**	**31**	**20**
London														
Barnet, Barnet General Hospital	1	(2)	0	(0)	1	(2)	1	(3)	1	0	1	0	0	0
Carshalton, St Helier Hospital	2	(0)	0	(0)	2	(0)	2	(2)	2	0	2	0	2	0
Chelsea, Chelsea And Westminster Hospital	2	(0)	0	(0)	2	(0)	1	(1)	2	0	1	0	0	0
Croydon, Croydon University Hospital	2	(1)	0	(1)	2	(2)	2	(2)	2	1	2	0	0	1
Evelina Childrens Hospital	1	(0)	0	(1)	1	(1)	1	(2)	1	0	1	0	1	0
Harefield, Harefield Hospital	0	(0)	1	(3)	1	(3)	0	(1)	1	0	0	0	0	0
Harrow, Northwick Park Hospital	6	(7)	3	(2)	9	(9)	7	(14)	9	2	6	0	1	1
Ilford, King George Hospital	0	(1)	0	(0)	0	(1)	0	(0)	0	0	0	0	0	0
Isleworth, West Middlesex University Hospital	0	(2)	1	(2)	1	(4)	0	(1)	1	0	0	0	0	0
Kingston, Kingston Hospital	0	(1)	0	(2)	0	(3)	0	(3)	0	0	0	0	0	0
London, Charing Cross Hospital	10	(10)	4	(6)	14	(16)	11	(21)	13	3	10	1	3	3
London, Great Ormond Street Hospital For Children	3	(2)	0	(1)	3	(3)	2	(5)	2	1	2	0	3	0
London, Hammersmith Hospital	3	(1)	1	(2)	4	(3)	4	(6)	4	0	4	0	0	0
London, Homerton Hospital	1	(2)	0	(0)	1	(2)	1	(2)	1	0	1	0	1	0
London, King's College Hospital	30	(32)	14	(16)	44	(48)	37	(76)	44	14	34	1	7	6
London, National Hospital For Neurology And Neurosurgery	5	(8)	3	(1)	8	(9)	6	(13)	7	2	7	0	2	1
London, Newham General Hospital	2	(0)	1	(0)	3	(0)	2	(2)	3	1	2	0	0	0
London, North Middlesex Hospital	1	(2)	0	(0)	1	(2)	0	(2)	1	0	0	0	0	0
London, Royal Brompton Hospital	0	(0)	1	(0)	1	(0)	0	(0)	1	0	0	0	0	0
London, St Bartholomew's Hospital	2	(0)	1	(1)	3	(1)	3	(3)	3	0	3	0	0	1

Appendix I Deceased solid organ donors and donated organs in the UK, 1 April 2022 - 31 March 2023 (2021-2022), by donating hospital

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Pancreas	Liver	Bowel	Heart	Lung
London, St George's Hospital	17	(20)	17	(13)	34	(33)	26	(46)	32	7	25	0	1	4
London, St Mary's Hospital	3	(3)	4	(5)	7	(8)	4	(10)	6	2	4	0	0	0
London, St Thomas' Hospital	2	(3)	1	(2)	3	(5)	1	(4)	2	0	2	0	0	0
London, The Queen Elizabeth Hospital	2	(1)	1	(0)	3	(1)	2	(3)	3	2	2	1	2	0
London, The Royal Free Hospital	2	(4)	2	(0)	4	(4)	3	(7)	3	1	4	0	1	0
London, The Royal London Hospital (Whitechapel)	12	(15)	5	(5)	17	(20)	13	(30)	15	3	15	0	3	1
London, University College Hospital	1	(1)	0	(1)	1	(2)	1	(2)	1	1	1	0	1	0
London, University Hospital Lewisham	2	(1)	0	(0)	2	(1)	1	(2)	1	0	2	0	0	0
London, Whipps Cross Hospital	2	(1)	0	(0)	2	(1)	1	(2)	2	0	1	0	0	0
London, Whittington Hospital	0	(2)	0	(1)	0	(3)	0	(2)	0	0	0	0	0	0
Orpington, Princess Royal University Hospital	1	(5)	1	(0)	2	(5)	2	(7)	2	1	1	0	0	0
Romford, Queens Hospital	6	(11)	5	(8)	11	(19)	6	(23)	9	1	8	0	1	0
Southall, Ealing Hospital	0	(2)	0	(1)	0	(3)	0	(2)	0	0	0	0	0	0
Uxbridge, Hillingdon Hospital	2	(1)	1	(2)	3	(3)	3	(4)	3	1	3	0	2	1
TOTAL	**123**	**(141)**	**67**	**(76)**	**190**	**(217)**	**143**	**(303)**	**177**	**43**	**144**	**3**	**31**	**19**
East of England														
Basildon, Basildon Hospital	1	(7)	4	(4)	5	(11)	2	(10)	5	1	2	0	0	0
Bedford, Bedford Hospital	1	(3)	3	(0)	4	(3)	2	(5)	4	0	2	0	0	0
Bury St Edmunds, West Suffolk Hospital	2	(1)	3	(4)	5	(5)	3	(7)	5	0	2	0	2	0
Cambridge, Addenbrooke's Hospital	16	(18)	24	(23)	40	(41)	30	(59)	39	10	31	1	10	3
Chelmsford, Broomfield Hospital	0	(1)	3	(0)	3	(1)	3	(4)	3	0	2	0	1	1
Colchester, Colchester General Hospital	2	(2)	2	(0)	4	(2)	3	(5)	4	0	2	0	0	1
Great Yarmouth, The James Paget Hospital	6	(3)	4	(2)	10	(5)	7	(10)	9	2	8	1	3	1
Harlow, Princess Alexandra Hospital	2	(1)	0	(0)	2	(1)	2	(2)	2	2	2	1	1	0
Huntingdon, Hinchingbrooke Hospital	0	(1)	1	(0)	1	(1)	0	(1)	1	0	0	0	0	0
Ipswich, Ipswich Hospital	2	(2)	2	(7)	4	(9)	4	(9)	4	1	4	0	0	1
Kings Lynn, Queen Elizabeth Hospital	2	(3)	3	(2)	5	(5)	3	(8)	3	1	4	0	0	1
Luton, Luton And Dunstable Hospital	2	(3)	0	(1)	2	(4)	2	(6)	2	0	2	0	0	0
Milton Keynes, Milton Keynes General Hospital	5	(1)	0	(1)	5	(2)	3	(4)	5	0	3	0	0	0
Norwich, Norfolk And Norwich University Hospital	11	(4)	9	(13)	20	(17)	13	(22)	18	4	15	1	4	0
Papworth, Papworth Hospital	0	(5)	4	(3)	4	(8)	3	(10)	4	2	3	0	0	0
Peterborough, Peterborough City Hospital	3	(2)	2	(5)	5	(7)	5	(10)	5	3	5	0	2	0
Stevenage, Lister Hospital	4	(2)	7	(4)	11	(6)	7	(10)	10	1	8	0	1	1
Watford, Watford General Hospital	8	(3)	4	(1)	12	(4)	10	(11)	12	3	10	0	1	0
Westcliff On Sea, Southend Hospital	0	(0)	1	(2)	1	(2)	0	(2)	1	0	0	0	0	0
TOTAL	**67**	**(62)**	**76**	**(72)**	**143**	**(134)**	**102**	**(195)**	**136**	**30**	**105**	**4**	**25**	**9**

Appendix I Deceased solid organ donors and donated organs in the UK, 1 April 2022 - 31 March 2023 (2021-2022), by donating hospital

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Pancreas	Liver	Bowel	Heart	Lung
Midlands														
Birmingham, Birmingham Children's Hospital	2	(2)	2	(0)	4	(2)	4	(6)	4	2	4	1	1	1
Birmingham, Birmingham Heartlands Hospital	2	(2)	3	(0)	5	(2)	3	(4)	4	1	4	0	0	0
Birmingham, City Hospital	0	(1)	0	(4)	0	(5)	0	(3)	0	0	0	0	0	0
Birmingham, Queen Elizabeth Hospital Birmingham	7	(8)	11	(5)	18	(13)	16	(27)	17	7	16	0	4	2
Boston, Pilgrim Hospital	2	(1)	0	(1)	2	(2)	2	(4)	2	1	2	1	0	0
Burton-On-Trent, Queen's Hospital	1	(0)	4	(0)	5	(0)	3	(3)	5	1	3	0	0	0
Chesterfield, Chesterfield And N Derbyshire Royal Hospital	3	(5)	1	(1)	4	(6)	4	(10)	4	0	3	0	0	1
Coventry, University Hospital (Walsgrave)	9	(15)	6	(14)	15	(29)	11	(32)	15	5	10	0	3	1
Derby, Royal Derby Hospital	5	(6)	5	(6)	10	(12)	8	(17)	10	1	8	0	0	0
Dudley, Russells Hall Hospital	2	(1)	1	(1)	3	(2)	3	(5)	3	2	3	0	0	0
Hereford, The County Hospital	2	(1)	2	(0)	4	(1)	2	(3)	3	2	3	0	0	0
Kettering, Kettering General Hospital	1	(1)	4	(4)	5	(5)	3	(6)	5	0	3	0	0	0
Leicester, Glenfield General Hospital	1	(1)	2	(3)	3	(4)	1	(2)	3	0	1	0	0	0
Leicester, Leicester Royal Infirmary	5	(10)	2	(3)	7	(13)	5	(15)	7	1	5	0	0	0
Lincoln, Lincoln County Hospital	1	(1)	3	(5)	4	(6)	3	(4)	4	1	2	0	0	0
Northampton, Northampton General Hospital	3	(4)	3	(2)	6	(6)	4	(8)	6	2	4	0	1	2
Nottingham, Nottingham University Hospitals City Campus	0	(1)	2	(3)	2	(4)	0	(3)	2	0	0	0	0	0
Nottingham, Nottingham University Hospitals Qmc Campus	19	(18)	17	(16)	36	(34)	27	(53)	35	10	25	2	8	4
Nuneaton, George Eliot Hospital	0	(0)	0	(1)	0	(1)	0	(1)	0	0	0	0	0	0
Redditch, Alexandra Hospital	3	(1)	0	(0)	3	(1)	3	(4)	3	0	3	0	1	0
Shrewsbury, Royal Shrewsbury Hospital	1	(0)	3	(1)	4	(1)	2	(2)	3	0	3	0	1	0
Stoke-On-Trent, Royal Stoke University Hospital	9	(11)	29	(19)	38	(30)	26	(48)	37	11	26	0	4	5
Sutton Coldfield, Good Hope District General Hosp.	1	(1)	1	(2)	2	(3)	1	(2)	2	0	1	0	1	0
Sutton-In-Ashfield, King's Mill Hospital	0	(2)	1	(1)	1	(3)	0	(3)	0	0	1	0	0	0
Telford, Princess Royal Hospital	1	(2)	2	(0)	3	(2)	3	(5)	3	1	2	0	0	0
Walsall, Walsall Manor Hospital	2	(1)	2	(0)	4	(1)	3	(4)	4	0	3	0	0	0
Warwick, Warwick Hospital	1	(1)	1	(2)	2	(3)	1	(4)	2	0	1	0	0	0
West Bromwich, Sandwell District General Hospital	2	(4)	1	(1)	3	(5)	1	(5)	2	0	2	0	0	0
Wolverhampton, New Cross Hospital	2	(2)	4	(4)	6	(6)	2	(7)	6	1	2	0	0	1
Worcester, Worcestershire Royal Hospital	2	(4)	2	(4)	4	(8)	2	(8)	4	1	2	0	1	1
TOTAL	**89**	**(107)**	**114**	**(103)**	**203**	**(210)**	**143**	**(298)**	**195**	**50**	**142**	**4**	**25**	**18**
North West														
Ashton-Under-Lyne, Tameside General Hospital	4	(1)	2	(0)	6	(1)	6	(7)	6	5	6	0	1	0

Appendix I Deceased solid organ donors and donated organs in the UK, 1 April 2022 - 31 March 2023 (2021-2022), by donating hospital

Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Pancreas	Liver	Bowel	Heart	Lung
Blackburn, Royal Blackburn Hospital	3	(2)	2	(4)	5	(6)	4	(6)	5	0	4	0	0	1
Blackpool, Blackpool Victoria Hospital	2	(5)	6	(3)	8	(8)	6	(12)	7	2	6	0	0	1
Bolton, Royal Bolton Hospital	1	(2)	1	(1)	2	(3)	2	(5)	2	1	1	0	1	0
Bury, Fairfield General Hospital	3	(1)	3	(1)	6	(2)	3	(4)	6	0	3	0	0	0
Chester, Countess Of Chester Hospital	5	(4)	3	(4)	8	(8)	7	(10)	8	0	7	0	0	1
Crewe, Leighton Hospital	3	(1)	0	(0)	3	(1)	3	(4)	3	0	3	0	0	0
Lancaster, Royal Lancaster Infirmary	2	(2)	2	(0)	4	(2)	3	(4)	4	1	3	0	1	0
Liverpool, Alder Hey Children's Hospital	1	(1)	0	(0)	1	(1)	1	(2)	1	1	1	0	1	0
Liverpool, Liverpool Heart And Chest Hospital	1	(3)	2	(4)	3	(7)	2	(6)	3	0	2	0	1	0
Liverpool, Royal Liverpool University Hospital	2	(2)	0	(2)	2	(4)	2	(6)	2	0	2	0	0	0
Liverpool, University Hospital Aintree	3	(3)	8	(3)	11	(6)	7	(12)	11	3	7	0	0	1
Liverpool, Walton Centre For Neurology And Neurosurgery	13	(4)	6	(3)	19	(7)	16	(18)	19	8	14	1	4	1
Macclesfield, Macclesfield District General Hospital	1	(0)	0	(0)	1	(0)	1	(1)	1	0	1	0	0	0
Manchester, Manchester Royal Infirmary	2	(6)	1	(3)	3	(9)	3	(11)	3	1	3	0	1	0
Manchester, North Manchester General Hospital	2	(0)	2	(0)	4	(0)	4	(4)	4	2	4	0	2	0
Manchester, Wythenshawe Hospital	5	(3)	0	(3)	5	(6)	5	(10)	5	2	5	0	1	1
Oldham, Royal Oldham Hospital(Rochdale Road)	0	(0)	1	(2)	1	(2)	0	(1)	1	0	0	0	0	0
Prescot, Whiston Hospital	2	(3)	0	(2)	2	(5)	2	(6)	2	1	2	0	1	0
Preston, Royal Preston Hospital	7	(6)	5	(10)	12	(16)	12	(22)	12	6	12	0	3	1
Salford, Salford Royal	14	(11)	9	(5)	23	(16)	17	(28)	23	9	17	0	4	2
Southport, Southport District General Hospital	0	(1)	1	(4)	1	(5)	1	(4)	1	1	1	0	0	0
Stockport, Stepping Hill Hospital	1	(1)	1	(0)	2	(1)	2	(3)	2	1	2	0	0	0
Warrington, Warrington Hospital	8	(3)	3	(3)	11	(6)	8	(13)	11	4	8	1	1	1
Wigan, Royal Albert Edward Infirmary	1	(1)	1	(2)	2	(3)	1	(2)	2	0	1	0	0	0
Wirral, Arrowe Park Hospital	2	(2)	0	(2)	2	(4)	2	(6)	2	2	2	0	1	0
TOTAL	**88**	**(68)**	**59**	**(61)**	**147**	**(129)**	**120**	**(207)**	**146**	**50**	**117**	**2**	**23**	**10**
North East and Yorkshire														
Barnsley, Barnsley District General Hospital	0	(0)	4	(2)	4	(2)	3	(4)	4	0	3	0	0	1
Barrow-In-Furness, Furness General Hospital	1	(0)	0	(1)	1	(1)	1	(2)	1	1	1	0	0	0
Bradford, Bradford Royal Infirmary	2	(3)	2	(0)	4	(3)	4	(7)	4	2	3	0	0	0
Carlisle, Cumberland Infirmary	4	(2)	1	(1)	5	(3)	5	(8)	5	1	5	0	0	1
Cottingham, Castle Hill Hospital	0	(0)	1	(0)	1	(0)	1	(1)	1	0	1	0	0	0
Darlington, Darlington Memorial Hospital	2	(0)	3	(3)	5	(3)	4	(6)	4	2	5	0	0	0
Doncaster, Doncaster Royal Infirmary	3	(2)	0	(0)	3	(2)	2	(3)	2	0	3	0	0	0
Durham, University Hospital Of North Durham	3	(2)	0	(1)	3	(3)	3	(5)	3	1	3	0	0	1
Gateshead, Queen Elizabeth Hospital	1	(3)	2	(2)	3	(5)	2	(5)	3	2	1	1	0	0

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Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Pancreas	Liver	Bowel	Heart	Lung
Grimsby, Diana Princess Of Wales Hospital	1	(2)	1	(1)	2	(3)	1	(4)	2	0	1	0	0	0
Halifax, Calderdale Royal Hospital	3	(2)	0	(1)	3	(3)	3	(5)	3	0	3	0	0	0
Harrogate, Harrogate District Hospital	1	(1)	0	(5)	1	(6)	1	(5)	1	0	1	0	0	0
Huddersfield, Huddersfield Royal Infirmary	2	(1)	0	(1)	2	(2)	2	(4)	2	1	2	1	1	1
Hull, The Hull Royal Infirmary	3	(6)	7	(4)	10	(10)	7	(14)	10	3	5	0	3	0
Keighley, Airedale General Hospital	2	(1)	2	(0)	4	(1)	3	(4)	4	1	3	0	1	0
Leeds, Leeds General Infirmary	17	(16)	11	(8)	28	(24)	23	(42)	27	14	22	1	9	6
Leeds, St James's University Hospital	4	(1)	1	(0)	5	(1)	4	(5)	5	1	4	1	1	0
Middlesbrough, The James Cook University Hospital	5	(8)	8	(7)	13	(15)	8	(19)	13	3	7	0	2	2
Newcastle, Freeman Hospital	1	(0)	3	(2)	4	(2)	2	(2)	4	1	2	0	0	0
Newcastle, Royal Victoria Infirmary	20	(14)	7	(12)	27	(26)	24	(43)	26	6	22	0	5	6
Northumbria, Nsech	1	(6)	1	(1)	2	(7)	1	(7)	2	1	1	0	1	0
Rotherham, Rotherham District General Hospital	0	(5)	0	(1)	0	(6)	0	(4)	0	0	0	0	0	0
Scarborough, Scarborough Hospital	2	(4)	1	(1)	3	(5)	3	(7)	3	2	3	0	1	1
Scunthorpe, Scunthorpe General Hospital	0	(2)	1	(0)	1	(2)	0	(2)	0	0	1	0	0	0
Sheffield, Northern General Hospital	9	(4)	6	(9)	15	(13)	12	(20)	13	4	12	1	4	1
Sheffield, Royal Hallamshire Hospital	3	(8)	4	(6)	7	(14)	4	(15)	7	2	4	0	0	0
South Shields, South Tyneside Dist. Gen. Hospital	1	(1)	1	(0)	2	(1)	2	(3)	2	1	2	0	0	0
Stockton-On-Tees, University Hospital Of North Tees	6	(4)	3	(0)	9	(4)	5	(6)	8	2	6	1	2	0
Sunderland, Sunderland Royal Hospital	3	(5)	4	(2)	7	(7)	4	(10)	5	1	6	0	0	0
Wakefield, Pinderfields General Hospital	5	(6)	3	(4)	8	(10)	7	(12)	8	5	6	0	2	1
Whitehaven, West Cumberland Hospital	1	(1)	1	(0)	2	(1)	2	(3)	2	1	2	0	0	0
York, York District Hospital	3	(4)	4	(2)	7	(6)	6	(8)	7	2	6	0	0	0
TOTAL	**109**	**(114)**	**82**	**(77)**	**191**	**(191)**	**149**	**(285)**	**181**	**60**	**146**	**6**	**32**	**21**
Isle of Man														
Douglas, Nobles I-O-M Hospital	0	(1)	1	(0)	1	(1)	0	(1)	1	0	0	0	0	0
TOTAL	0	(1)	1	(0)	1	(1)	0	(1)	1	0	0	0	0	0
Channel Islands														
Guernsey, Princess Elizabeth Hospital	0	(1)	0	(0)	0	(1)	0	(0)	0	0	0	0	0	0
St Helier, Jersey General Hospital	1	(1)	1	(0)	2	(1)	2	(3)	2	1	2	0	0	0
TOTAL	**1**	**(2)**	**1**	**(0)**	**2**	**(2)**	**2**	**(3)**	**2**	**1**	**2**	**0**	**0**	**0**
England	**646**	**(660)**	**555**	**(544)**	**1201**	**(1204)**	**898**	**(1769)**	**1143**	**302**	**903**	**21**	**174**	**104**

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Donating hospital	DBD		DCD		All donors		Multi-organ donor		Kidney	Pancreas	Liver	Bowel	Heart	Lung
Wales														
Aberystwyth, Bronglais Hospital	1	(0)	0	(0)	1	(0)	1	(1)	1	1	1	0	0	0
Bangor, Ysbyty Gwynedd District General Hospital	0	(6)	0	(0)	0	(6)	0	(6)	0	0	0	0	0	0
Bodelwyddan, Glan Clwyd District General Hospital	3	(4)	1	(2)	4	(6)	2	(8)	4	1	2	0	1	0
Bridgend, Princess Of Wales Hospital	3	(0)	1	(1)	4	(1)	4	(5)	4	2	4	0	1	0
Cardiff, University Of Wales Hospital	14	(12)	11	(7)	25	(19)	16	(33)	23	2	16	0	2	0
Carmarthen, Glangwili General Hospital	2	(2)	2	(0)	4	(2)	3	(5)	4	1	3	0	0	0
Haverford West, Withybush General Hospital	0	(4)	1	(0)	1	(4)	1	(4)	1	1	1	0	0	0
Llanelli, Prince Philips Hospital	1	(0)	0	(0)	1	(0)	1	(1)	1	0	1	0	0	0
Llanfrechfa, The Grange University Hospital	4	(1)	0	(3)	4	(4)	4	(5)	4	1	3	0	1	0
Merthyr Tydfil, Prince Charles Hospital	1	(2)	3	(0)	4	(2)	2	(4)	4	1	2	0	0	0
Pontypridd, Royal Glamorgan Hospital	1	(0)	3	(1)	4	(1)	3	(4)	4	0	3	0	0	0
Swansea, Morriston Hospital	5	(6)	5	(2)	10	(8)	9	(15)	9	2	9	0	4	1
Wrexham, Maelor General Hospital	2	(1)	0	(0)	2	(1)	2	(2)	2	0	2	0	1	0
TOTAL	**37**	**(38)**	**27**	**(16)**	**64**	**(54)**	**48**	**(93)**	**61**	**12**	**47**	**0**	**10**	**1**
Scotland														
Aberdeen, Aberdeen Royal Infirmary	5	(8)	3	(4)	8	(12)	7	(16)	8	1	7	0	2	1
Airdrie, Monklands District General Hospital	1	(3)	0	(0)	1	(3)	1	(2)	1	1	1	0	1	0
Ayr, The Ayr Hospital	0	(1)	1	(1)	1	(2)	0	(1)	1	0	0	0	0	0
Dumfries, Dumfries And Galloway Royal Infirmary	1	(2)	2	(2)	3	(4)	2	(5)	3	0	1	0	0	0
Dundee, Ninewells Hospital	4	(1)	2	(6)	6	(7)	5	(9)	6	3	5	0	2	1
East Kilbride, Hairmyres Hospital	0	(0)	1	(1)	1	(1)	1	(2)	1	1	1	0	1	0
Edinburgh, Royal Hospital For Sick Children	0	(0)	1	(0)	1	(0)	1	(1)	1	1	1	0	0	0
Edinburgh, Royal Infirmary Of Edinburgh	4	(6)	15	(6)	19	(12)	16	(28)	19	3	15	0	4	0
Glasgow, Glasgow Royal Infirmary	6	(2)	2	(2)	8	(4)	7	(10)	8	3	7	0	4	0
Glasgow, Golden Jubilee National Hospital	0	(0)	1	(1)	1	(1)	1	(2)	1	0	1	0	0	0
Glasgow, Queen Elizabeth University Hospital	9	(8)	5	(1)	14	(9)	12	(21)	13	3	13	0	2	0
Glasgow, The Royal Hospital For Children	2	(0)	0	(1)	2	(1)	2	(3)	1	2	2	2	0	0
Inverness, Raigmore Hospital	3	(1)	2	(1)	5	(2)	5	(7)	5	1	5	0	1	0
Kilmarnock, Crosshouse Hospital	2	(2)	0	(1)	2	(3)	2	(5)	2	0	2	0	1	0
Kirkcaldy, Victoria Hospital	3	(5)	7	(4)	10	(9)	8	(14)	10	1	7	0	0	0
Larbert, Forth Valley Royal Hospital	3	(2)	2	(0)	5	(2)	5	(7)	5	1	5	0	0	1
Livingston, St John's Hospital	1	(0)	0	(2)	1	(2)	1	(3)	1	0	1	0	0	0
Melrose, Borders General Hospital	1	(1)	1	(0)	2	(1)	2	(3)	2	0	2	0	0	0
Paisley, Royal Alexandra Hospital	2	(1)	4	(1)	6	(2)	3	(4)	5	2	4	0	1	0
Wishaw, Wishaw General Hospital	4	(4)	2	(0)	6	(4)	4	(6)	6	4	4	1	2	0
TOTAL	**51**	**(47)**	**51**	**(34)**	**102**	**(81)**	**85**	**(149)**	**99**	**27**	**84**	**3**	**21**	**3**

Appendix I Deceased solid organ donors and donated organs in the UK, 1 April 2022 - 31 March 2023 (2021-2022), by donating hospital														
Donating hospital	**DBD**		**DCD**		**All donors**		**Multi-organ donor**		**Kidney**	**Pancreas**	**Liver**	**Bowel**	**Heart**	**Lung**
Northern Ireland														
Belfast, Antrim Hospital	2	(3)	2	(1)	4	(4)	3	(7)	4	1	3	0	0	0
Belfast, Belfast City Hospital	3	(0)	0	(1)	3	(1)	3	(4)	3	1	3	1	2	1
Belfast, Royal Belfast Hospital For Sick Children	2	(0)	1	(0)	3	(0)	3	(3)	3	2	3	0	0	0
Belfast, Royal Victoria Hospital	21	(17)	12	(8)	33	(25)	21	(38)	30	9	21	0	3	1
Belfast, The Ulster Hospital	3	(2)	0	(3)	3	(5)	2	(5)	3	2	2	0	1	1
Coleraine, Causeway Hospital	0	(3)	0	(0)	0	(3)	0	(2)	0	0	0	0	0	0
Enniskillen, South West Acute Hospital	0	(3)	1	(1)	1	(4)	0	(2)	0	0	1	0	0	0
Londonderry, Altnagelvin Area Hospital	5	(4)	4	(1)	9	(5)	4	(9)	8	0	4	0	0	1
Portadown, Craigavon Area Hospital	1	(6)	2	(2)	3	(8)	1	(5)	3	0	1	0	0	0
TOTAL	**37**	**(38)**	**22**	**(17)**	**59**	**(55)**	**37**	**(75)**	**54**	**15**	**38**	**1**	**6**	**4**
TOTAL	**772**	**(786)**	**657**	**(611)**	**1429**	**(1397)**	**1070**	**(2090)**	**1360**	**357**	**1074**	**25**	**211**	**112**

Appendix IIA Numbers of donors after brain death and organs retrieved in the UK, 1 April 2022 - 31 March 2023, by country/ NHS region

	Donors				Organs					
Country/ NHS region	**All donors**	**pmp**	**Multi-organ donors**	**pmp**	**Kidney**	**Pancreas**	**Liver**	**Bowel**	**Heart**	**Lung**
North East and Yorkshire	109	13.4	99	12.2	101	43	101	6	26	16
North West	88	11.9	83	11.2	88	37	81	2	17	7
Midlands	89	8.2	82	7.6	88	28	81	4	16	11
East of England	67	10.6	58	9.1	63	20	61	4	19	3
London	123	14	99	11.3	110	29	107	3	23	12
South East	104	11.2	85	9.1	94	30	92	2	19	11
South West	66	11.6	57	10	61	15	62	0	6	4
England	**602**	**10.6**	**525**	**9.3**	**565**	**185**	**543**	**20**	**116**	**59**
Isle of Man	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Channel Islands	**1**	**5.9**	**1**	**5.9**	**1**	**1**	**1**	**0**	**0**	**0**
Wales	**37**	**11.9**	**32**	**10.3**	**34**	**10**	**33**	**0**	**5**	**1**
Scotland	**51**	**9.3**	**50**	**9.1**	**49**	**22**	**51**	**3**	**17**	**2**
Northern Ireland	**37**	**19.5**	**28**	**14.7**	**33**	**12**	**30**	**1**	**5**	**2**
TOTAL	**772**	**11.5**	**674**	**10.1**	**722**	**247**	**700**	**25**	**153**	**69**

Appendix IIB Numbers of donors after circulatory death and organs retrieved in the UK, 1 April 2022 - 31 March 2023, by country/ NHS region

Country/ NHS region	Donors				Organs					
	All donors	pmp	Multi-organ donors	pmp	Kidney	Pancreas	Liver	Bowel	Heart	Lung
North East and Yorkshire	82	10.1	50	6.2	80	17	45	0	6	5
North West	59	8	37	5	58	13	36	0	6	3
Midlands	114	10.5	61	5.6	107	22	61	0	9	7
East of England	76	12	44	6.9	73	10	44	0	6	6
London	67	7.6	44	5	67	14	37	0	8	7
South East	106	11.4	70	7.5	103	20	66	0	12	9
South West	51	8.9	29	5.1	50	4	29	0	1	3
England	**519**	**9.2**	**309**	**5.5**	**506**	**91**	**291**	**0**	**43**	**37**
Isle of Man	**1**	**12.5**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**
Channel Islands	**1**	**5.9**	**1**	**5.9**	**1**	**0**	**1**	**0**	**0**	**0**
Wales	**27**	**8.7**	**16**	**5.1**	**27**	**2**	**14**	**0**	**5**	**0**
Scotland	**51**	**9.3**	**35**	**6.4**	**50**	**5**	**33**	**0**	**4**	**1**
Northern Ireland	**22**	**11.6**	**9**	**4.7**	**21**	**3**	**8**	**0**	**1**	**2**
TOTAL	**657**	**9.8**	**396**	**5.9**	**638**	**110**	**374**	**0**	**58**	**43**

Appendix III Populations for NHS regions, 2022-2023
Mid-2021 estimates based on ONS 2021 Census figures

Country/ NHS region	Population (millions)
North East and Yorkshire	8.13
North West	7.42
Midlands	10.84
East of England	6.35
London	8.8
South East	9.29
South West	5.71
England	**56.54**
Isle of Man	**0.08**
Channel Islands	**0.17**
Wales	**3.11**
Scotland	**5.48**
Northern Ireland	**1.9**
TOTAL	**67.03**

Appendix IVA **UK solid organ transplants from deceased UK donors[1] to non-UK residents, 1 April 2020 to 31 March 2023**

Transplant type by year

Year	Transplant type	Residency of recipient ROI	Other EU	Non-EU	Total
2020/21	Heart	1	0	0	1
	Liver	2	2	1	5
	Bowel only	0	0	1	1
	Total	**3**	**2**	**2**	**7**
2021/22	Kidney	0	0	1	1
	Heart	1	0	0	1
	Liver	6	3	1	10
	Total	**7**	**3**	**2**	**12**
2022/23	Liver	6	0	0	6
	Bilateral lung	1	0	0	1
	Total	**7**	**0**	**0**	**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 2020 to 31 March 2023**

Transplant type by year

Year	Transplant type	Country of donation ROI	Other EU	Non-EU	Total
2020/21	Heart	2	0	0	2
	Liver	6	0	0	6
	Bilateral lung	0	1	0	1
	Total	**8**	**1**	**0**	**9**
2021/22	Kidney	4	0	0	4
	Heart	0	3	0	3
	Liver	7	0	0	7
	Total	**11**	**3**	**0**	**14**
2022/23	Kidney	4	2	0	6
	Heart	5	3	0	8
	Liver	9	0	0	9
	Bilateral lung	3	0	0	3
	Bowel	1	0	0	1
	Total	**22**	**5**	**0**	**27**

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 2020 to 31 March 2023**

Transplant type by year

Year	Transplant type	Residency of recipient ROI	Other EU	Non-EU	Total
2020/21	Heart	0	0	1	1
	Liver	2	0	0	2
	Total	**2**	**0**	**1**	**3**
2021/22	Liver	4	0	0	4
	Bilateral lung	0	2	1	3
	Total	**4**	**2**	**1**	**7**
2022/23	Heart	0	1	0	1
	Liver	1	1	0	1
	Bilateral lung	0	3	2	5
	Total	**1**	**5**	**2**	**8**

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

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