

# Kidney Activity

## Key messages

- The number of patients registered on the kidney transplant list this year increased to 5,023
- The number of deceased kidney donors increased by 20% to 1,331
- Kidney transplants from living donors increased by 106% to 884, while transplants from deceased donors increased by 17% to 2,263
- 100 kidney transplants were made possible by the paired living kidney donation programme (17 2-way and 22 3-way exchanges)
- There were 68 non-directed altruistic living kidney donors, leading to 94 patients benefitting from a living donor transplant

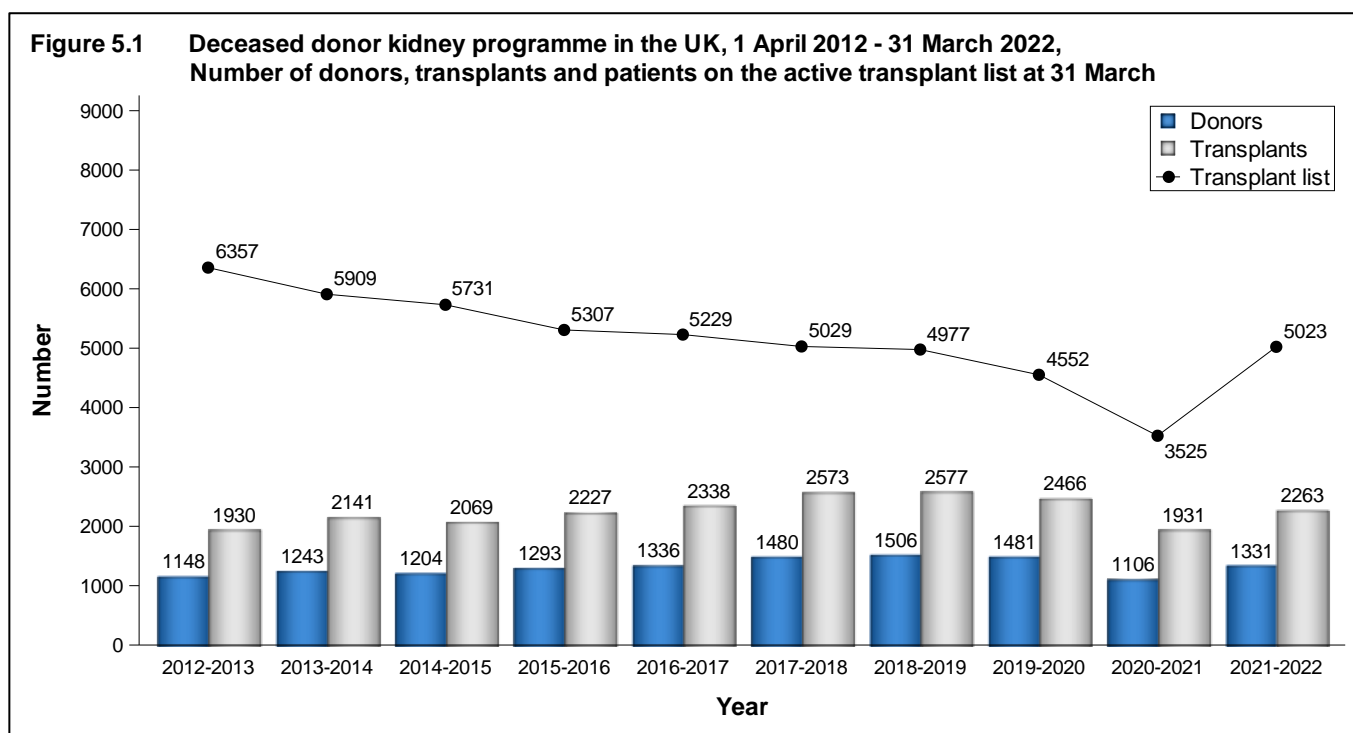
## 5.1 Overview

Note that the COVID-19 pandemic has affected the number of offered, retrieved and transplanted organs in 2021-2022.

The number of deceased kidney donors increased by 20% in 2021-2022 compared to 2020-2021 and the number of deceased donor kidney transplants increased by 17%. There were 5,023 patients waiting for a kidney transplant at 31 March 2022, 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 2022 for a kidney only or multi-organ kidney transplant has fallen by 21% since 31 March 2013. 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.



**Table 5.1** shows the number of deceased and living donor kidney transplants carried out in 2021-2022 at each centre. As yet, very few kidneys from donors after circulatory death are transplanted in paediatric patients (<18 years). Donation figures for centres in London are not reported individually as they have shared designated areas and donor populations. Multi-organ transplants including a kidney are included in the table.

The total number of deceased kidney donors increased to 1,331 in 2021-2022 from 1,106 in 2020-2021 and the number of transplants increased from 1,931 to 2,263. The number of kidney donors after circulatory death increased to 598 from 405 in 2020-2021 and the number of transplants from such donors increased by 41% to 972.

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 2021 - 31 March 2022 (2020-2021) and transplant list at 31 March 2022 (2021) in the UK, by centre**

Centre	Deceased kidney donors				Deceased donor transplants				Living donor transplants	Active transplant list		
	DBD		DCD		DBD		DCD					
Belfast	35	(34)	17	(15)	29	(87)	28	(48)	60	(14)	69	(85)
Birmingham	36	(34)	38	(25)	86	(61)	41	(19)	49	(21)	400	(349)
Bristol	28	(39)	28	(18)	44	(52)	37	(28)	29	(17)	164	(129)
Cambridge	25	(24)	43	(31)	57	(104)	97	(112)	26	(11)	136	(93)
Cardiff	26	(19)	14	(10)	33	(34)	30	(16)	31	(12)	127	(87)
Coventry <sup>1</sup>	17	(11)	16	(4)	26	(39)	27	(21)	14	(9)	108	(76)
Edinburgh	12	(18)	13	(17)	41	(58)	18	(18)	41	(27)	185	(167)
Glasgow	34	(45)	19	(16)	45	(68)	44	(46)	42	(35)	230	(180)
Leeds	49	(40)	34	(32)	52	(70)	48	(56)	51	(27)	264	(213)
Leicester	24	(9)	23	(11)	25	(36)	21	(36)	24	(19)	227	(124)
Liverpool	24	(30)	20	(17)	45	(33)	24	(23)	20	(12)	118	(90)
London <sup>2</sup>	215	(182)	156	(88)	-	-	-	-	-	-	-	-
Great Ormond Street	-	-	-	-	7	(6)	4	(1)	27	(8)	15	(20)
Guy's	-	-	-	-	102	(33)	59	(18)	90	(15)	329	(61)
Royal Free	-	-	-	-	45	(61)	58	(19)	25	(23)	214	(145)
Royal London	-	-	-	-	96	(35)	50	(4)	36	(16)	319	(310)
St George's	-	-	-	-	62	(43)	45	(8)	32	(14)	108	(62)
WLRTC	-	-	-	-	120	(57)	63	(27)	33	(11)	520	(151)
Manchester	55	(65)	46	(36)	129	(86)	93	(62)	81	(37)	490	(492)
Newcastle	30	(25)	20	(16)	40	(90)	21	(33)	47	(28)	223	(185)
Nottingham	17	(26)	22	(21)	30	(21)	28	(14)	19	(5)	147	(88)
Oxford <sup>1</sup>	26	(31)	27	(15)	89	(114)	67	(54)	51	(32)	289	(247)
Plymouth	16	(13)	14	(7)	16	(26)	9	(11)	16	(13)	81	(28)
Portsmouth	37	(35)	30	(18)	43	(11)	42	(2)	24	(7)	154	(42)
Sheffield	27	(21)	18	(8)	29	(17)	18	(13)	12	(7)	106	(101)
<b>TOTAL</b>	<b>733</b>	<b>(701)</b>	<b>598</b>	<b>(405)</b>	<b>1291</b>	<b>(1242)</b>	<b>972</b>	<b>(689)</b>	<b>884<sup>3</sup></b>	<b>(429<sup>4,5</sup>)</b>	<b>5023</b>	<b>(3525)</b>

WLRTC - West London Renal and Transplant Centre

<sup>1</sup> As of 1 June 2016 Coventry and Oxford began working in partnership as a transplant network.

<sup>2</sup> Donor figures in this area cannot be linked to individual transplant centres due to shared retrieval areas.

<sup>3</sup> Includes an additional 4 transplant performed at London, London Bridge Hospital

<sup>4</sup> Includes an additional 3 transplants performed at London, Cromwell Hospital and 6 transplants performed at London, London Bridge Hospital

<sup>5</sup> Includes 2 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 2022, 5,023 patients were registered as active, compared with 3,525 at the end of March 2021. The number of patients waiting for a kidney transplant represents 74.9 patients per million population (pmp).

Of the 5,023 patients on the active transplant list at 31 March 2022, 251 required a kidney and pancreas/islet transplant (154 at 31 March 2021).

The outcome of patients registered on the UK kidney and kidney/pancreas transplant list at 1 April 2021, or subsequently registered during the financial year, is shown in **Table 5.2**. A total of 4,124 patients joined the kidney transplant list last year, while a further 256 joined the kidney/pancreas transplant list.

<b>Table 5.2 Kidney transplant list and new registrations in the UK, 1 April 2021 - 31 March 2022</b>						
<b>Outcome of patient at 31 March 2022</b>	<b>Active and suspended patients at 1 April 2021</b>		<b>New registrations in 2021-2022<sup>1</sup></b>		<b>TOTAL</b>	
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>
<b>Kidney transplant list</b>						
Remained active/suspended	5135	66	3202	78	8337	70
Transplanted	2049	26	866	21	2915	24
Removed <sup>2</sup>	407	5	23	1	430	4
Died	227	3	33	1	260	2
<b>TOTAL</b>	<b>7818</b>		<b>4124</b>		<b>11942</b>	
<b>Kidney/pancreas transplant list</b>						
Remained active/suspended	226	62	227	89	453	73
Transplanted	100	27	23	9	123	20
Removed <sup>3</sup>	28	8	2	1	30	5
Died	11	3	4	2	15	2
<b>TOTAL</b>	<b>365</b>		<b>256</b>		<b>621</b>	

<sup>1</sup> Includes re-registrations for second or subsequent patients  
<sup>2</sup> Includes 6 patients removed from kidney list and made active on kidney/pancreas list  
<sup>3</sup> Includes 3 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 2022 and 2021 by country/NHS region of patient's residence. In 2022, the overall kidney transplant list rate was 74.9 pmp with rates across NHS regions ranging from 47.1 pmp to 123.1 pmp.

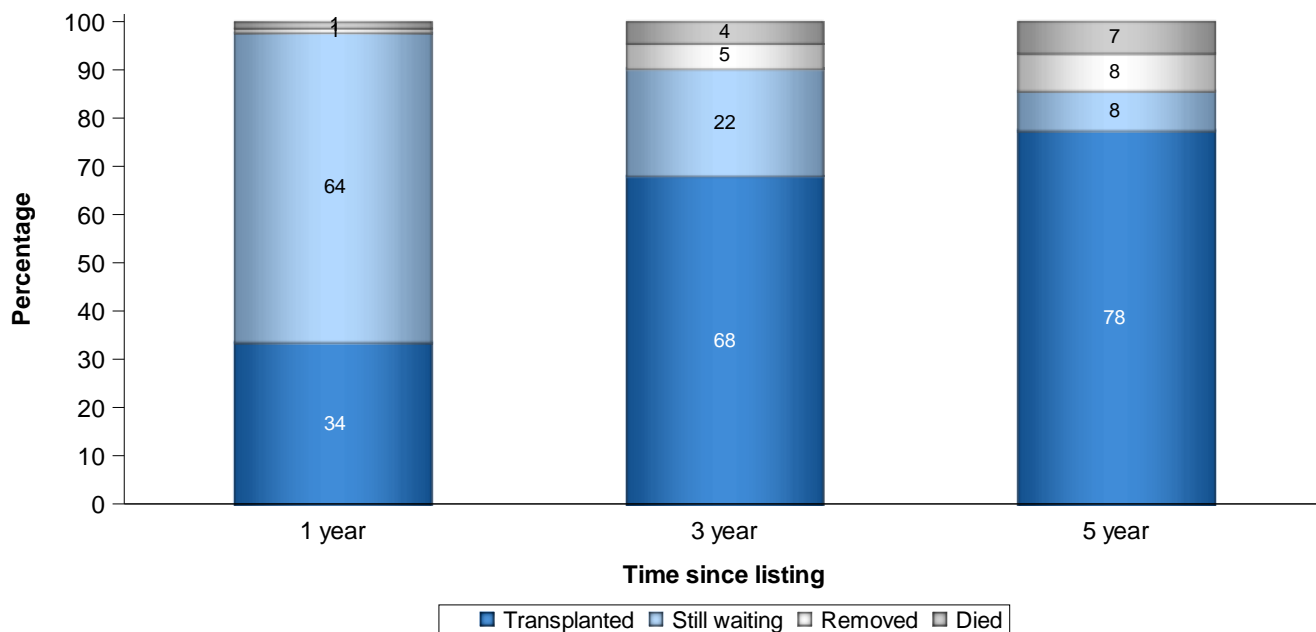
<b>Table 5.3 Active kidney transplant list at 31 March, by Country/ NHS region of patient residence</b>				
<b>Country/ NHS region of residence</b>	<b>Kidney transplant list (pmp)</b>			
	<b>2022</b>		<b>2021</b>	
North East and Yorkshire	595	(68.9)	514	(59.5)
North West	525	(74.0)	510	(71.9)
Midlands	946	(88.7)	674	(63.2)
East of England	309	(47.1)	212	(32.3)
London	1108	(123.1)	583	(64.8)
South East	532	(59.6)	257	(28.8)
South West	345	(60.8)	209	(36.9)
<b>England</b>	<b>4360</b>	<b>(77.1)</b>	<b>2959</b>	<b>(52.3)</b>
<b>Isle of Man</b>	<b>3</b>	<b>(37.5)</b>	<b>4</b>	<b>(50.0)</b>
<b>Channel Islands</b>	<b>4</b>	<b>(23.5)</b>	<b>4</b>	<b>(23.5)</b>
<b>Wales</b>	<b>163</b>	<b>(51.4)</b>	<b>126</b>	<b>(39.7)</b>
<b>Scotland</b>	<b>413</b>	<b>(75.5)</b>	<b>345</b>	<b>(63.1)</b>
<b>Northern Ireland</b>	<b>70</b>	<b>(36.8)</b>	<b>86</b>	<b>(45.3)</b>
<b>TOTAL<sup>1</sup></b>	<b>5023</b>	<b>(74.9)</b>	<b>3525</b>	<b>(52.5)</b>

<sup>1</sup>Includes patients in 2022 (2021) residing in: Unspecified UK 8 (0); Overseas 2 (1)

An indication of outcomes for adult patients listed for a kidney only transplant is summarised in **Figure 5.2**. This shows the proportion of patients transplanted or still waiting one, three and five years after joining the list. It also shows the proportion removed from the transplant list (typically because they become too unwell for transplant) and those dying while on the transplant list. Only 34% of patients are transplanted within one year, while five years after listing 78% of patients have received a transplant.

The median (average) waiting time for a kidney only transplant has fallen from 589 days reported last year to 550 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 3346 new adult kidney only registrations made in the UK, 1 April 2016 - 31 March 2017**



**Table 5.4 Median waiting time to kidney only transplant in the UK, for patients registered 1 April 2015 - 31 March 2019**

Blood group	Number of patients registered	Waiting time (days)	
		Median	95% Confidence interval
<b>Adult</b>			
O	4987	729	709 - 749
A	3843	351	337 - 365
B	1562	790	745 - 835
AB	498	161	139 - 183
<b>TOTAL</b>	<b>10890</b>	<b>550</b>	<b>536 - 564</b>
<b>Paediatric</b>			
O	126	311	192 - 430
A	99	197	108 - 286
B	48	430	345 - 515
AB	15	351	58 - 644
<b>TOTAL</b>	<b>288</b>	<b>282</b>	<b>220 - 344</b>

**Table 5.5 Median waiting time to kidney only transplant in the UK, for patients registered 1 April 2015 - 31 March 2019**

Ethnicity	Number of patients registered	Waiting time (days)	
		Median	95% Confidence interval
<b>Adult</b>			
White	7433	488	473 - 503
Asian	1817	650	618 - 682
Black	1067	735	687 - 783
Other	445	629	572 - 686
<b>TOTAL<sup>1</sup></b>	<b>10890</b>	<b>550</b>	<b>536 - 564</b>
<b>Paediatric</b>			
White	152	191	137 - 245
Asian	89	432	355 - 509
Black	29	415	94 - 736
Other	16	548	452 - 644
<b>TOTAL<sup>2</sup></b>	<b>288</b>	<b>282</b>	<b>220 - 344</b>

<sup>1</sup> Includes 128 patients whose ethnicity was not reported

<sup>2</sup> Includes 2 patients whose ethnicity was not reported



### 5.3 Donor and organ supply

Of the 785 organ donors after brain death in the UK in 2021-2022, 733 (93%) were kidney donors. From these donors, 1,448 kidneys were retrieved. There were 598 kidney donors after circulatory death in 2021-2022. From these donors, 1182 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 10.9 pmp, with rates across NHS regions ranging from 8.6 to 12.5 pmp. The number of kidneys retrieved from donors after brain death in the UK is 21.6 pmp and varies from 17.1 to 24.7 pmp.

The overall rate for kidney donors after circulatory death is 8.9 pmp, with rates across NHS regions ranging from 4.7 to 11.1 pmp. The number of kidneys retrieved from donors after circulatory death is 17.6 pmp and varies from 9.1 to 22.0 pmp.

<b>Table 5.6 Kidney donation and retrieval rates for deceased donors in the UK, 1 April 2021 - 31 March 2022, by Country/ NHS region</b>								
<b>Country/ NHS region of residence</b>	<b>Kidney donors (pmp)</b>				<b>Kidneys retrieved (pmp)</b>			
	DBD		DCD		DBD		DCD	
North East and Yorkshire	102	(11.8)	70	(8.1)	203	(23.5)	139	(16.1)
North West	61	(8.6)	65	(9.2)	121	(17.1)	130	(18.3)
Midlands	99	(9.3)	100	(9.4)	197	(18.5)	198	(18.6)
East of England	64	(9.8)	73	(11.1)	126	(19.2)	144	(22.0)
London	81	(9.0)	42	(4.7)	160	(17.8)	82	(9.1)
South East	112	(12.5)	93	(10.4)	221	(24.7)	183	(20.5)
South West	69	(12.2)	58	(10.2)	136	(24.0)	114	(20.1)
<b>England</b>	<b>588</b>	<b>(10.4)</b>	<b>501</b>	<b>(8.9)</b>	<b>1164</b>	<b>(20.6)</b>	<b>990</b>	<b>(17.5)</b>
<b>Isle of Man</b>	<b>1</b>	<b>(12.5)</b>	<b>0</b>	<b>(0.0)</b>	<b>2</b>	<b>(25.0)</b>	<b>0</b>	<b>(0.0)</b>
<b>Channel Islands</b>	<b>3</b>	<b>(17.6)</b>	<b>2</b>	<b>(11.8)</b>	<b>6</b>	<b>(35.3)</b>	<b>4</b>	<b>(23.5)</b>
<b>Wales</b>	<b>37</b>	<b>(11.7)</b>	<b>16</b>	<b>(5.0)</b>	<b>72</b>	<b>(22.7)</b>	<b>31</b>	<b>(9.8)</b>
<b>Scotland</b>	<b>44</b>	<b>(8.0)</b>	<b>32</b>	<b>(5.9)</b>	<b>87</b>	<b>(15.9)</b>	<b>64</b>	<b>(11.7)</b>
<b>Northern Ireland</b>	<b>34</b>	<b>(17.9)</b>	<b>17</b>	<b>(8.9)</b>	<b>67</b>	<b>(35.3)</b>	<b>34</b>	<b>(17.9)</b>
<b>TOTAL<sup>1</sup></b>	<b>733</b>	<b>(10.9)</b>	<b>598</b>	<b>(8.9)</b>	<b>1448</b>	<b>(21.6)</b>	<b>1182</b>	<b>(17.6)</b>

<sup>1</sup> Includes 56 donors with unknown UK postcode (26 DBD and 30 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 24.1 to 57.9 pmp across NHS regions and overall was 31.7 pmp. The living donor transplant rate ranged from 10.7 to 13.7 pmp across NHS regions and overall was 12.9 pmp.

<b>Table 5.7 Kidney only transplant rates per million population (pmp), in the UK, 1 April 2021 - 31 March 2022, by country and English NHS region</b>								
<b>Country/ NHS region of residence</b>	<b>DBD</b>		<b>DCD</b>		<b>TOTAL</b>		<b>Living</b>	
	<b>N</b>	<b>(pmp)</b>	<b>N</b>	<b>(pmp)</b>	<b>N</b>	<b>(pmp)</b>	<b>N</b>	<b>(pmp)</b>
North East and Yorkshire	118	(13.7)	90	(10.4)	208	(24.1)	107	(12.4)
North West	141	(19.9)	101	(14.2)	242	(34.1)	86	(12.1)
Midlands	157	(14.7)	110	(10.3)	267	(25.0)	114	(10.7)
East of England	95	(14.5)	123	(18.8)	218	(33.2)	70	(10.7)
London	314	(34.9)	207	(23.0)	521	(57.9)	117	(13.0)
South East	131	(14.7)	114	(12.8)	245	(27.4)	122	(13.7)
South West	75	(13.2)	65	(11.5)	140	(24.7)	61	(10.8)
<b>England</b>	<b>1031</b>	<b>(18.2)</b>	<b>810</b>	<b>(14.3)</b>	<b>1841</b>	<b>(32.6)</b>	<b>677</b>	<b>(12.0)</b>
<b>Isle of Man</b>	<b>1</b>	<b>(12.5)</b>	<b>1</b>	<b>(12.5)</b>	<b>2</b>	<b>(25.0)</b>	<b>1</b>	<b>(12.5)</b>
<b>Channel Islands</b>	<b>4</b>	<b>(23.5)</b>	<b>1</b>	<b>(5.9)</b>	<b>5</b>	<b>(29.4)</b>	<b>1</b>	<b>(5.9)</b>
<b>Wales</b>	<b>46</b>	<b>(14.5)</b>	<b>37</b>	<b>(11.7)</b>	<b>83</b>	<b>(26.2)</b>	<b>47</b>	<b>(14.8)</b>
<b>Scotland</b>	<b>78</b>	<b>(14.3)</b>	<b>59</b>	<b>(10.8)</b>	<b>137</b>	<b>(25.0)</b>	<b>83</b>	<b>(15.2)</b>
<b>Northern Ireland</b>	<b>29</b>	<b>(15.3)</b>	<b>28</b>	<b>(14.7)</b>	<b>57</b>	<b>(30.0)</b>	<b>58</b>	<b>(30.5)</b>
<b>TOTAL<sup>1,2</sup></b>	<b>1190</b>	<b>(17.7)</b>	<b>936</b>	<b>(14.0)</b>	<b>2126</b>	<b>(31.7)</b>	<b>868</b>	<b>(12.9)</b>

<sup>1</sup> Excludes 1 recipient of a DBD donor kidney and 16 recipients of a living donor kidney who reside outside of the UK  
<sup>2</sup> Includes 2 recipients with an unknown UK postcode (1 DBD and 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 1 en bloc kidneys and 12 double kidney transplants in 2021-2022 (0 and 6 in 2020-2021). Kidney transplants from donors after circulatory death include 3 en bloc and 18 double kidney transplants in 2021-2022 (4 and 5 in 2020-2021). This table excludes multi-organ transplants: 6 (7) kidney and liver, 120 (83) kidney and pancreas, 7 (5) kidney and islets, and 1 (0) kidney and heart in 2021-2022 (2020-2021).

**Table 5.8 Adult kidney only transplants in the UK,  
1 April 2020 - 31 March 2022, by transplant centre**

Transplant centre	2020-2021				2021-2022			
	DBD	DCD	Living donor	TOTAL	DBD	DCD	Living donor	TOTAL
Belfast	87	47	8	142	29	28	59	116
Birmingham	52	17	16	85	80	41	41	162
Bristol	49	26	14	89	39	35	21	95
Cambridge	82	105	11	198	49	91	26	166
Cardiff	29	14	12	55	29	29	29	87
Coventry <sup>1</sup>	39	21	9	69	26	27	14	67
Edinburgh	51	13	27	91	33	15	41	89
Glasgow	63	44	31	138	44	44	38	126
Guy's	29	13	4	46	79	50	71	200
Leeds	66	56	22	144	50	47	48	145
Leicester	36	36	19	91	25	21	24	70
Liverpool	33	23	12	68	45	24	20	89
Manchester	75	57	34	166	105	83	67	255
Newcastle	88	32	25	145	35	21	44	100
Nottingham	16	14	4	34	26	25	15	66
Oxford <sup>1</sup>	94	52	32	178	54	56	50	160
Plymouth	26	11	13	50	16	9	16	41
Portsmouth	11	2	7	20	43	42	24	109
Sheffield	17	13	7	37	29	18	12	59
St George's	43	8	14	65	62	45	32	139
The Royal Free	59	19	23	101	45	58	25	128
The Royal London	35	4	16	55	96	50	36	182
WLRTC	56	27	11	94	115	62	31	208
<b>TOTAL</b>	<b>1136</b>	<b>654</b>	<b>379<sup>2</sup></b>	<b>2169<sup>2</sup></b>	<b>1154</b>	<b>921</b>	<b>788<sup>3</sup></b>	<b>2863<sup>3</sup></b>

WLRTC - West London Renal and Transplant Centre

<sup>1</sup> As of 1 June 2016 Coventry and Oxford began working in partnership as a transplant network.

<sup>2</sup> Includes 3 transplants performed at London Cromwell Hospital and 5 transplants performed at London Bridge Hospital

<sup>3</sup> Includes 4 transplants performed at London Bridge Hospital

Living donor kidney transplants increased by 106% to 884 in 2021-2022, 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 97% increase in these transplants. In addition, there are now a number of 'non-directed' living donor transplants (also known as altruistic donor transplants). Last year 68 such donors donated a kidney to a recipient, 64 were transplanted into an adult recipient. Of the 68 non-directed altruistic donors, 36 went into an altruistic donor chain (14 short (2 transplants each) and 22 long chains (3 transplants each)) benefiting 58 adult patients in the paired/pooled scheme. The kidneys from the paired donors of these recipients led to 33 adult patients on the deceased donor transplant list. Thus 68 non-directed altruistic donors created chains benefiting 94 patients in total (91 adult and 3 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 2021-2022, there were 97 paired living kidney donor transplants (94 adult and 3 paediatric recipients).

As a percentage of the number of patients on the active transplant list at 31 March 2022, the number of living donor adult transplants in the year was 16% and ranged from 6% to 86% at individual transplant centres.

**Table 5.9 Adult living donor kidney transplants in the UK, 1 April 2021 - 31 March 2022, 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	% list
Belfast	38	4	13	4	59	86
Birmingham	25	4	4	8	41	11
Bristol	13	0	5	3	21	13
Cambridge	21	1	2	2	26	19
Cardiff	24	1	0	3	29	23
Coventry <sup>1</sup>	12	0	1	1	14	13
Edinburgh	24	2	8	7	41	22
Glasgow	27	0	4	7	38	17
Guy's	52	3	7	9	71	23
Leeds	31	1	11	5	48	19
Leicester	19	1	2	2	24	11
Liverpool	19	0	0	1	20	17
Manchester	52	4	6	5	67	14
Newcastle	33	0	4	7	44	20
Nottingham	10	2	3	0	15	11
Oxford <sup>1</sup>	36	3	5	6	50	17
Plymouth	16	0	0	0	16	20
Portsmouth	19	0	3	2	24	16
Sheffield	9	0	1	2	12	11
St George's	21	1	5	5	32	30
The Royal Free	19	1	3	2	25	12
The Royal London	27	0	4	5	36	11
WLRTC	23	0	3	5	31	6
<b>TOTAL<sup>2</sup></b>	<b>574</b>	<b>28</b>	<b>94</b>	<b>91</b>	<b>788</b>	<b>16</b>

<sup>1</sup> As of 1 June 2016 Coventry and Oxford began working in partnership as a transplant network.

<sup>2</sup> Includes 4 directed transplants performed at London Bridge

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**.

<b>Table 5.10 Non-directed altruistic kidney donors in the UK, 1 April 2020 - 31 March 2022, by donor centre</b>									
Donor centre	Transplant list	2020-2021 Donation to			2021-2022 Donation to			Total	%
		Chain	Total	%	Transplant list	Chain	Total		
Belfast	1	1	2	6	8	5	13	19	
Birmingham	1	3	4	12	0	2	2	3	
Bristol	0	1	1	3	2	0	2	3	
Cambridge	0	0	0	0	0	0	0	0	
Cardiff	0	2	2	6	3	0	3	4	
Coventry <sup>1</sup>	0	0	0	0	0	0	0	0	
Edinburgh	1	1	2	6	3	2	5	7	
Glasgow	2	0	2	6	1	2	3	4	
Guy's	0	3	3	9	4	8	12	18	
Leeds	1	1	2	6	2	2	4	6	
Leicester	0	0	0	0	1	0	1	1	
Liverpool	0	1	1	3	0	0	0	0	
Manchester	2	4	6	18	2	0	2	3	
Newcastle	0	2	2	6	1	0	1	1	
Nottingham	0	0	0	0	0	1	1	1	
Oxford <sup>1</sup>	1	1	2	6	0	3	3	4	
Plymouth	0	1	1	3	1	3	4	6	
Portsmouth	1	2	3	9	1	3	4	6	
Sheffield	0	0	0	0	1	0	1	1	
St George's	0	1	1	3	2	0	2	3	
The Royal Free	0	0	0	0	0	1	1	1	
The Royal London	0	0	0	0	0	4	4	6	
WLRTC	0	0	0	0	0	0	0	0	
<b>Total donors</b>	<b>10</b>	<b>24</b>	<b>34</b>	<b>100</b>	<b>32</b>	<b>36</b>	<b>68</b>	<b>100</b>	

WLRTC - West London Renal and Transplant Centre  
<sup>1</sup> 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 96 living donor transplants and 52 deceased donor transplants in paediatric patients in 2021-2022. The paediatric transplant list has fallen by 9% from 115 patients at 31 March 2021 to 105 at the end of March 2022.

<b>Table 5.11 Paediatric kidney only transplants in the UK, 1 April 2020 - 31 March 2022, by transplant centre</b>								
<b>Transplant centre</b>	<b>2020-2021</b>				<b>2021-2022</b>			
	DBD	DCD	Living donor	TOTAL	DBD	DCD	Living donor	TOTAL
Belfast	0	1	6	7	0	0	1	1
Birmingham	7	2	5	14	5	0	8	13
Bristol	3	2	3	8	5	2	8	15
Glasgow	5	2	4	11	1	0	4	5
Great Ormond Street	6	1	8	15	7	4	27	38
Guy's	1	2	11	14	5	2	19	26
Leeds	4	0	5	9	1	1	3	5
Manchester	3	1	3	7	8	3	14	25
Newcastle	1	0	3	4	1	0	3	4
Nottingham	5	0	1	6	4	3	4	11
Adult centres	0	0	0	0	0	0	5	5
<b>TOTAL</b>	<b>35</b>	<b>11</b>	<b>50<sup>1,3</sup></b>	<b>96<sup>3</sup></b>	<b>37</b>	<b>15</b>	<b>96<sup>2</sup></b>	<b>148</b>

<sup>1</sup> Includes 1 paired living donor transplants  
<sup>2</sup> Includes 4 non-directed donor transplants, 3 paired living donor transplants and 3 altruistic donor chains (3 as a patient on transplant list at end of chain)  
<sup>3</sup> Includes 1 transplants performed at London Bridge Hospital

At 31 March 2022, there were approximately 43,100 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 3,011 kidney only transplant recipients in 2021-2022, dialysis status at time of transplant was reported for 2,778 (92%). Of these 2,778 transplants, 512 (18%) were carried out in pre-dialysis patients.

Pre-emptive transplants accounted for 20% of all paediatric kidney only transplants with reported dialysis status, compared with 18% of those in adults. Living donor transplants are more likely to be carried out before the need for dialysis than deceased donor transplants: 34% and 12% respectively. This is because a living donor transplant can often be carried out more quickly than a deceased donor kidney transplant as the latter often necessitates a long waiting time.

**Table 5.12 Pre-emptive kidney only transplants in the UK, 1 April 2021 - 31 March 2022**

	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)
<b>Adult</b>			
Deceased donor transplant	2075	1950 (94.0)	(12.3)
Living donor transplant	788	695 (88.2)	(35.5)
<b>Paediatric</b>			
Deceased donor transplant	52	49 (94.2)	(10.2)
Living donor transplant	96	84 (87.5)	(25.0)

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 2021 - 31 March 2022**

	Number of kidney only transplants <sup>1</sup>	Median (hours)	Inter-quartile range <sup>2</sup>	
			Q1	Q3
<b>Adult</b>				
DBD donor transplant	1154	12.8	10.3	17.2
DCD donor transplant	921	13.0	10.4	17.1
<b>Total</b>	<b>2075</b>	<b>12.9</b>	<b>10.3</b>	<b>17.2</b>
<b>Paediatric</b>				
DBD donor transplant	37	12.1	9.8	15.6
DCD donor transplant	15	9.2	8.4	11.2
<b>Total</b>	<b>52</b>	<b>11.2</b>	<b>9.1</b>	<b>14.8</b>
<b>TOTAL</b>	<b>2127</b>	<b>12.8</b>	<b>10.3</b>	<b>17.2</b>

<sup>1</sup> Not all cold ischaemia times are reported

<sup>2</sup> 25% of times are shorter than Q1, 25% are longer than Q3

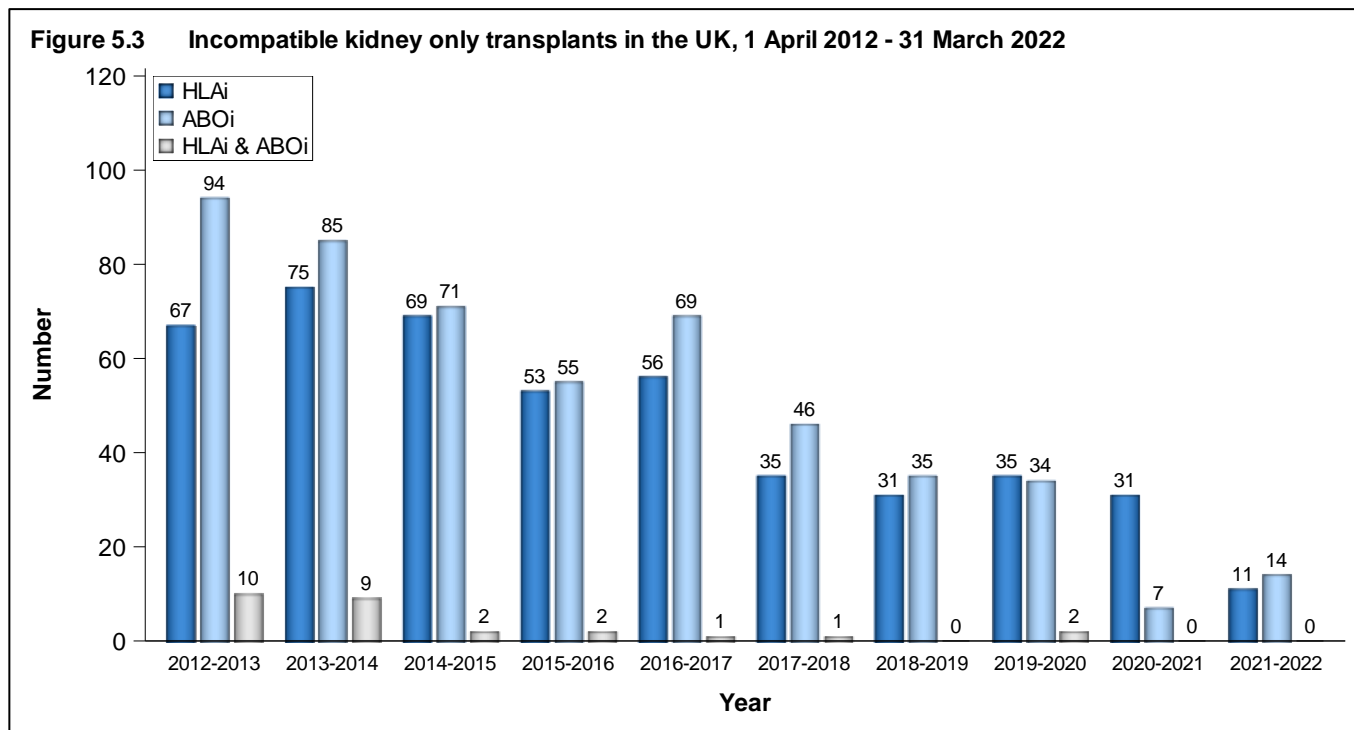
Kidneys from donors after brain death and some kidneys from donors after circulatory death are allocated on the basis of a national Kidney Offering Scheme which incorporates HLA matching between donor and recipient. These HLA matches are based on four levels which are described in **Table 5.14**. Prior 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](http://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.

<b>Table 5.14 HLA mismatch groups</b>		
<b>Level</b>	<b>HLA mismatch summary</b>	<b>HLA mismatch combinations included</b>
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

<b>Table 5.15 HLA matching for kidney only transplants in the UK, 1 April 2021 - 31 March 2022</b>						
	DBD		DCD		Living	
	N	%	N	%	N	%
<b>Adult</b>						
Level 1 (Best match)	37	(3)	14	(2)	54	(9)
Level 2	273	(24)	216	(24)	82	(14)
Level 3	597	(52)	506	(55)	287	(49)
Level 4	247	(21)	183	(20)	160	(27)
Not reported	0	-	2	-	205	-
<b>Paediatric</b>						
Level 1 (Best match)	2	(5)	0	(0)	12	(17)
Level 2	26	(70)	10	(67)	18	(25)
Level 3	6	(16)	3	(20)	40	(56)
Level 4	3	(8)	2	(13)	2	(3)
Not reported	0	-	0	-	24	-



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 463 HLA incompatible (HLAi) transplants performed; 197 were deceased donor transplants and 266 were living donor transplants, whilst the vast majority of ABO incompatible (ABOi) transplants were living donor transplants (506 of 510). Due to the nature of reporting HLA incompatible transplants, the numbers presented may be subject to change over time.



## 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.

<b>Table 5.16 Demographic characteristics of deceased kidney donors and transplant recipients, 1 April 2021 - 31 March 2022, and transplant list patients at 31 March</b>							
		<b>Donors</b>		<b>Transplant recipients</b>		<b>Active transplant list patients</b>	
		<b>N</b>	<b>(%)</b>	<b>N</b>	<b>(%)</b>	<b>N</b>	<b>(%)</b>
Age	0-17	38	(3)	54	(2)	105	(2)
	18-34	175	(13)	290	(13)	542	(11)
	35-49	302	(23)	514	(23)	1428	(28)
	50-59	344	(26)	569	(25)	1475	(29)
	60-69	321	(24)	603	(27)	1089	(22)
	70+	151	(11)	233	(10)	384	(8)
	mean (SD)	51	(16)	52	(15)	51	(14)
Sex	Male	764	(57)	1408	(62)	2992	(60)
	Female	567	(43)	855	(38)	2016	(40)
	Unknown	0	-	0	-	15	-
Ethnicity	White	1200	(92)	1463	(66)	3146	(64)
	Asian	36	(3)	393	(18)	950	(19)
	Black	23	(2)	255	(11)	582	(12)
	Other	40	(3)	112	(5)	232	(5)
	Unknown	32	-	40	-	113	-
Blood group	O	627	(47)	948	(42)	2690	(54)
	A	537	(40)	899	(40)	1260	(25)
	B	122	(9)	287	(13)	956	(19)
	AB	44	(3)	129	(6)	117	(2)
	Unknown <sup>1</sup>	1	-	0	-	0	-
Graft number	First graft	-	-	1901	(84)	4015	(80)
	Re-graft	-	-	362	(16)	1008	(20)
<b>TOTAL</b>		<b>1331</b>	<b>(100)</b>	<b>2263</b>	<b>(100)</b>	<b>5023</b>	<b>(100)</b>

<sup>1</sup> 1 donor had an indeterminate blood group

**Table 5.17 Demographic characteristics of living kidney donors and transplant recipients, 1 April 2021 - 31 March 2022**

		Donors		Transplant recipients	
		N	(%)	N	(%)
Age	0-17	0	(0)	96	(11)
	18-34	175	(20)	199	(23)
	35-49	320	(36)	224	(25)
	50-59	230	(26)	190	(21)
	60-69	127	(14)	124	(14)
	70+	32	(4)	51	(6)
	mean (SD)	47	(13)	43	(18)
Sex	Male	397	(45)	533	(60)
	Female	487	(55)	348	(39)
	Unknown	-	-	3	-
Ethnicity	White	769	(87)	718	(83)
	Asian	68	(8)	82	(10)
	Black	25	(3)	32	(4)
	Other	22	(2)	31	(4)
	Unknown	0	-	21	-
Blood group	O	522	(59)	379	(43)
	A	245	(28)	333	(38)
	B	104	(12)	130	(15)
	AB	13	(1)	42	(5)
Graft number	First graft	-	-	762	(86)
	Re-graft	-	-	122	(14)
<b>TOTAL</b>		<b>884</b>	<b>(100)</b>	<b>884</b>	<b>(100)</b>