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Blood and Transplant

ANNUAL REPORT ON KIDNEY TRANSPLANTATION

REPORT FOR 2025/2026
(1 APRIL 2016– 31 MARCH 2026)

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Executive Summary

This report presents key figures about kidney transplantation in the UK. The period reported covers 10 years of transplant data, from 1 April 2016. The report presents information on the number of transplants and survival analysis after first kidney only transplantation on a national and centre-specific basis.

Key findings

- On 31 March 2026, there were 6,678 adults on the UK active kidney transplant list which represents a 4% increase in the number of patients a year earlier. The equivalent number of paediatric patients was 136, representing a decrease by 9 from the previous year.

- There were 3,011 adult kidney only transplants performed in the UK in 2025/26; a 1% decrease compared to the previous year. Of these, 920 were from DBD donors, 1,191 were from DCD donors and 900 were from living donors. The equivalent number of paediatric transplants was 137 representing a 19% increase from the previous year.

Use of the contents of this report should be acknowledged as follows:
Annual Report on Kidney Transplantation 2025/26, NHS Blood and Transplant

Introduction

This report presents information on transplant activity between 1 April 2016 and 31 March 2026, for all 24 centres performing kidney transplantation in the UK. Data were obtained from the UK Transplant Registry, at NHS Blood & Transplant, that holds information relating to donors, recipients and outcomes for all kidney transplants performed in the UK.

Graft and patient survival estimates are reported at one-year post-transplant for the period 1 April 2021 to 31 March 2025 and five-year post-transplant for the period 1 April 2017 to 31 March 2021. Results are described separately according to the type of donor (deceased and living).

Patient survival from listing is reported at one-, five- and ten-year post registration for a deceased donor adult kidney only transplant between 1 January 2014 and 31 December 2025.

The centre specific results for survival estimates are adjusted for differences in risk factors between the centres. The risk models used are described in the Appendix.

Patients requiring multi-organ transplants are excluded from all analyses and all results are described separately for adults (aged≥18years) and paediatric patients (aged<18 years) other than those presented in this Introduction section.

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.

NHSBT Statistics Team are registered with the Office for Statistics Regulation TQV Voluntary Application scheme which demonstrates our commitment to applying the principles of Trustworthiness, Quality and Value from the Code of Practice for Statistics in all our analyses and reports.

Throughout this report Imperial College Healthcare NHS Trust is labeled as ICHNT.

Transplants performed at private hospitals are excluded from this report.

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.

Figure 2.1 shows the number of patients on the kidney transplant list on 31 March each year between 2017 and 2026.

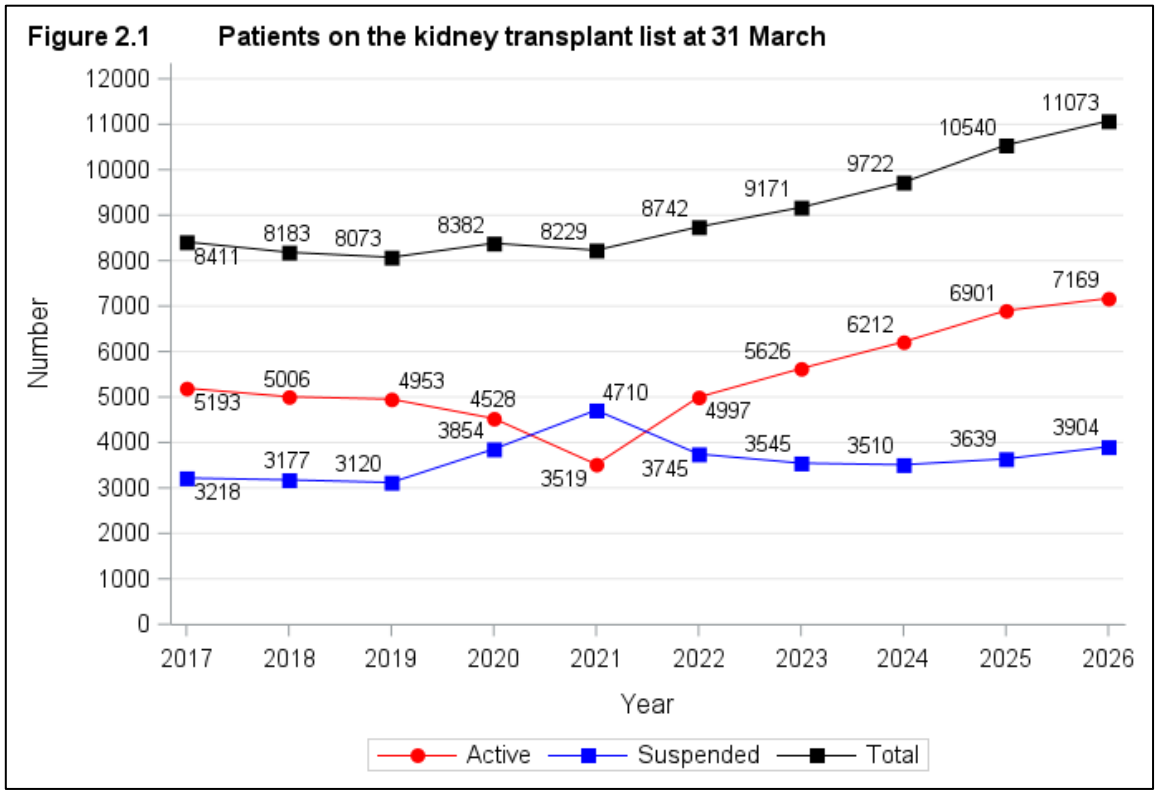


Figure 2.2 shows the number of patients on the kidney transplant list at 31 March 2026 for each transplant centre.

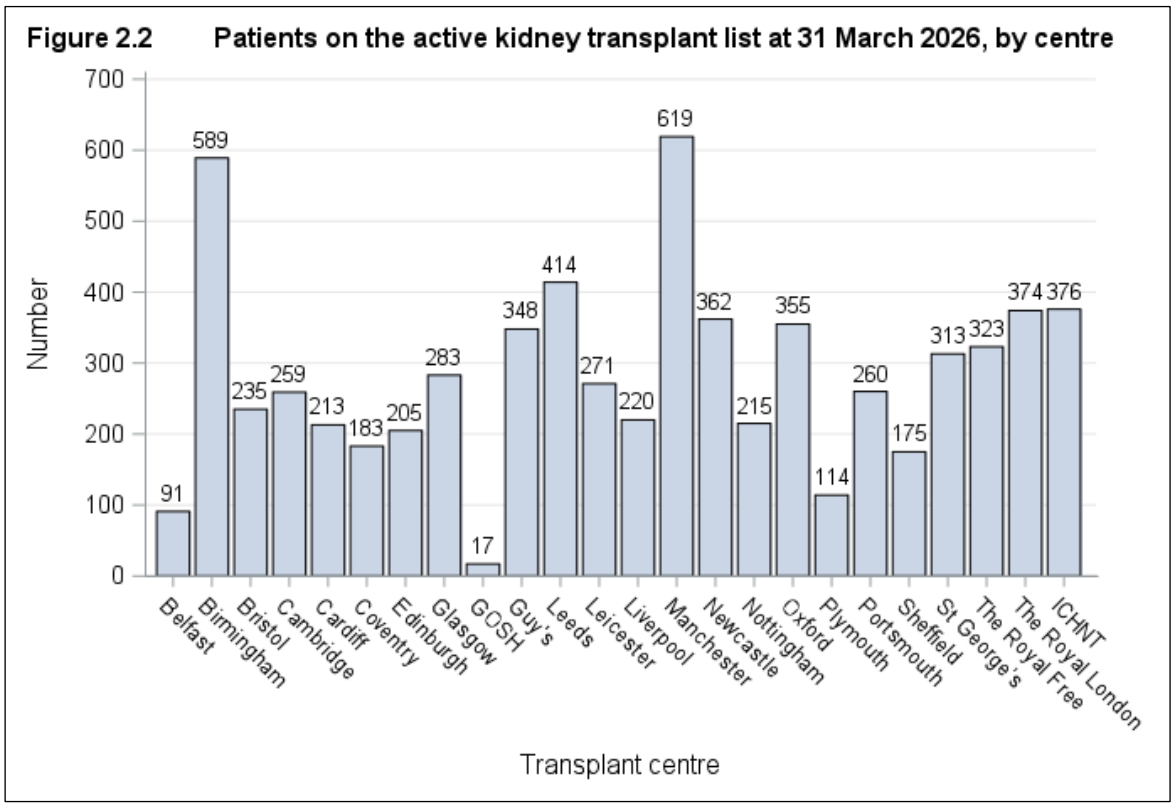


Figure 2.3 shows the total number of kidney transplants performed in the last ten years.

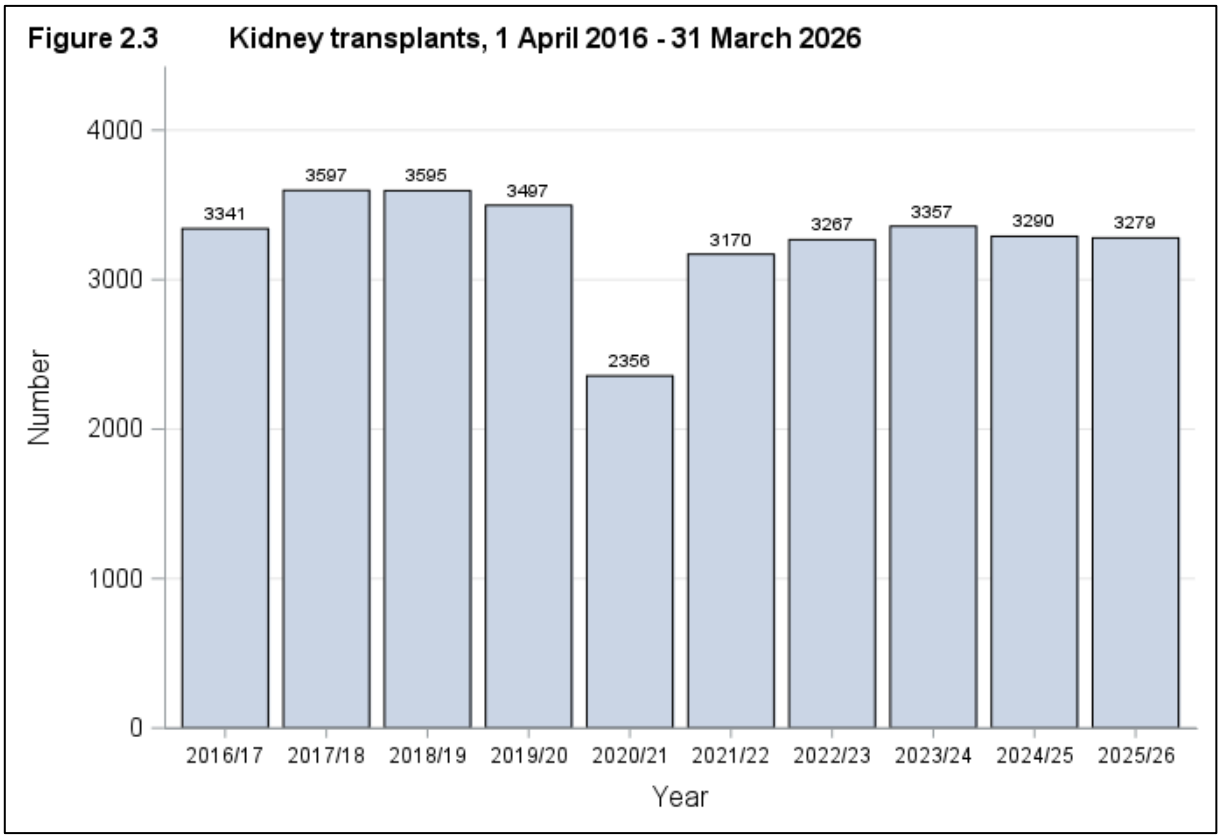


Figure 2.4 shows the total number of kidney transplants performed in 2025/26 at each transplant centre.

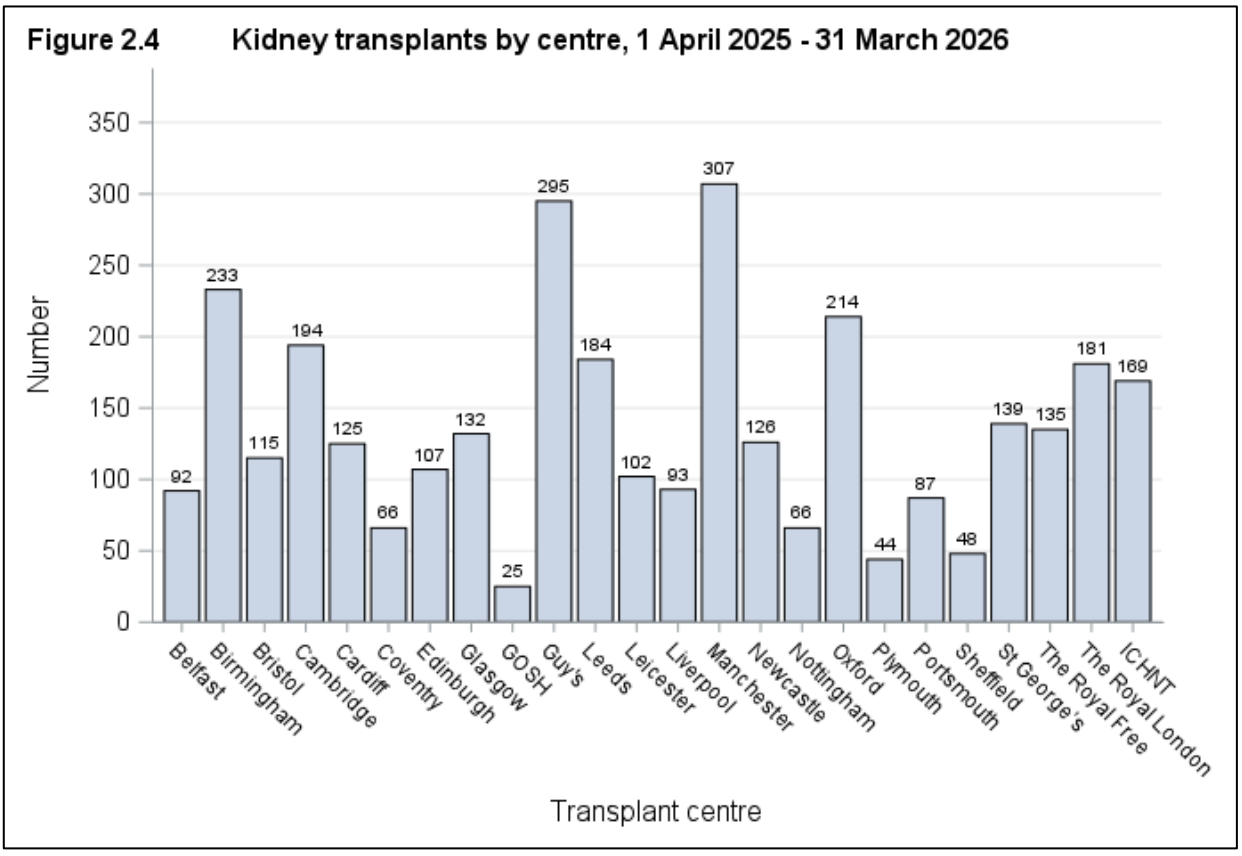


Figure 2.5 shows the total number of kidney transplants performed per million population in 2025/26 at each transplant centre.

Figure 2.5 Adult Deceased donor kidney transplants (pmp) in the UK, 1 April 2025 - 31 March 2026

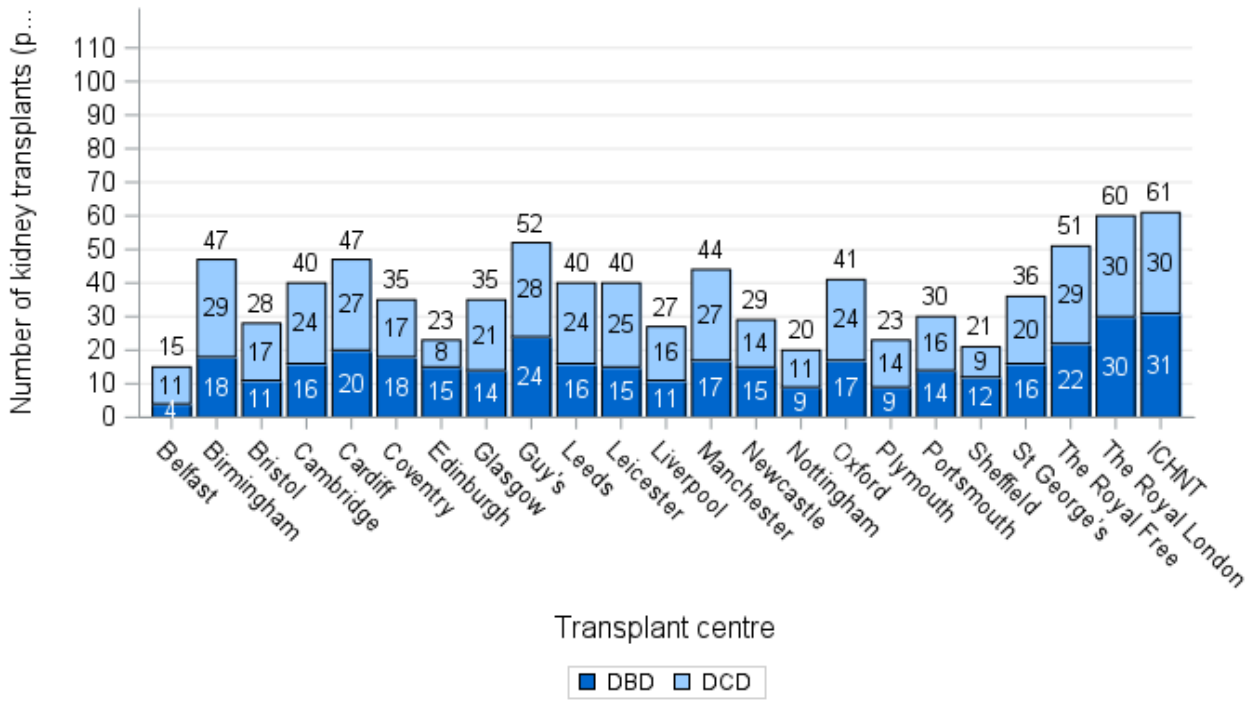
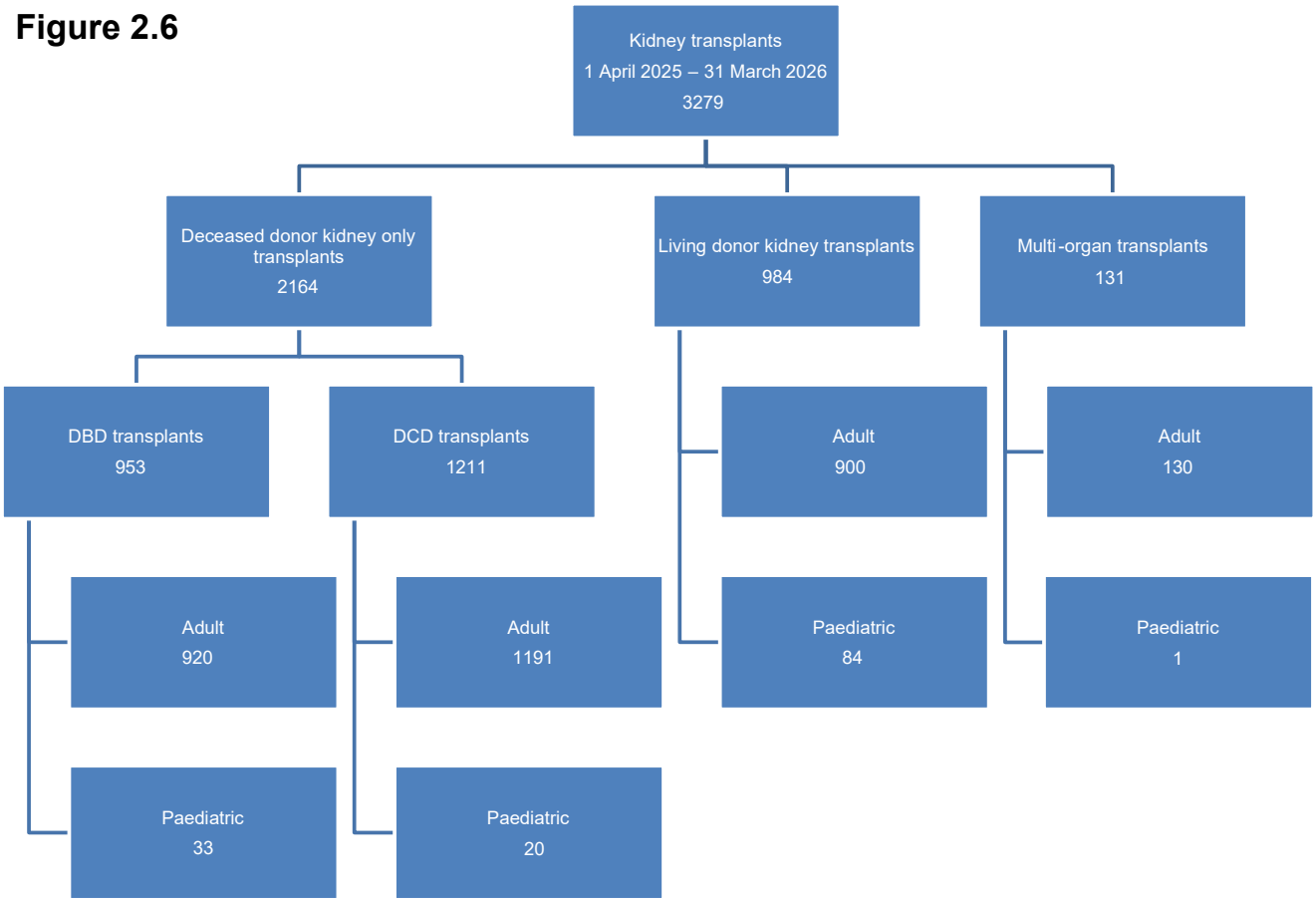


Figure 2.6 details the 3,279 kidney transplants performed in the UK between 1 April 2025 and 31 March 2026. Of the 131 multi-organ transplants, 115 were simultaneous kidney and pancreas transplants, 8 were kidney and liver transplants and 8 were simultaneous kidney and islet transplants.

Figure 2.6



Geographical variation in registration and transplant rates

Figure 2.7 shows rates of registration to the kidney only transplant list per million population (pmp) between 1 April 2025 and 31 March 2026 compared with deceased donor kidney only transplant rates pmp for the same time period, by recipient country/NHS region of residence. **Figure 2.8** shows the transplant rates pmp for living donor kidney only transplants in the same period. **Table 2.2** shows the breakdown of these numbers by recipient country/NHS region of residence. No adjustments have been made for potential demographic differences in populations. If a patient has had more than one registration/transplant in the period, each registration/transplant is considered. Note that this analysis only considered NHS Group 1 patients.

Since there will inevitably be some random variation in rates between areas, the systematic component of variation (SCV) was used to identify if the variation is more (or less) than a random effect for the different NHS regions in England only. Only first registrations and transplants in this period were considered. The larger the SCV the greater the evidence of a high level of systematic variation between areas. Registration, deceased donor transplant, and living donor transplant rates yielded an SCV of 0.0441 (p-value <0.001), 0.0762 (p-value <0.001), and 0 (p-value >0.999) respectively. The p-value shows the probability that an SCV of this size (or higher) would be observed by chance if only random variation existed and therefore, strong evidence for registration and deceased donor transplants, and no evidence for living donor transplants of geographical variation beyond what would be expected at random. No adjustment has been made for area-specific demographic characteristics that may impact the rates of registration to the transplant list and transplantation such as age and sex. Therefore, these results should be interpreted with caution.

Figure 2.7 Comparison of kidney registration rates (pmp) with deceased donor transplant rates (pmp) by recipient country/NHS region of residence, 1 April 2025 – 31 March 2026

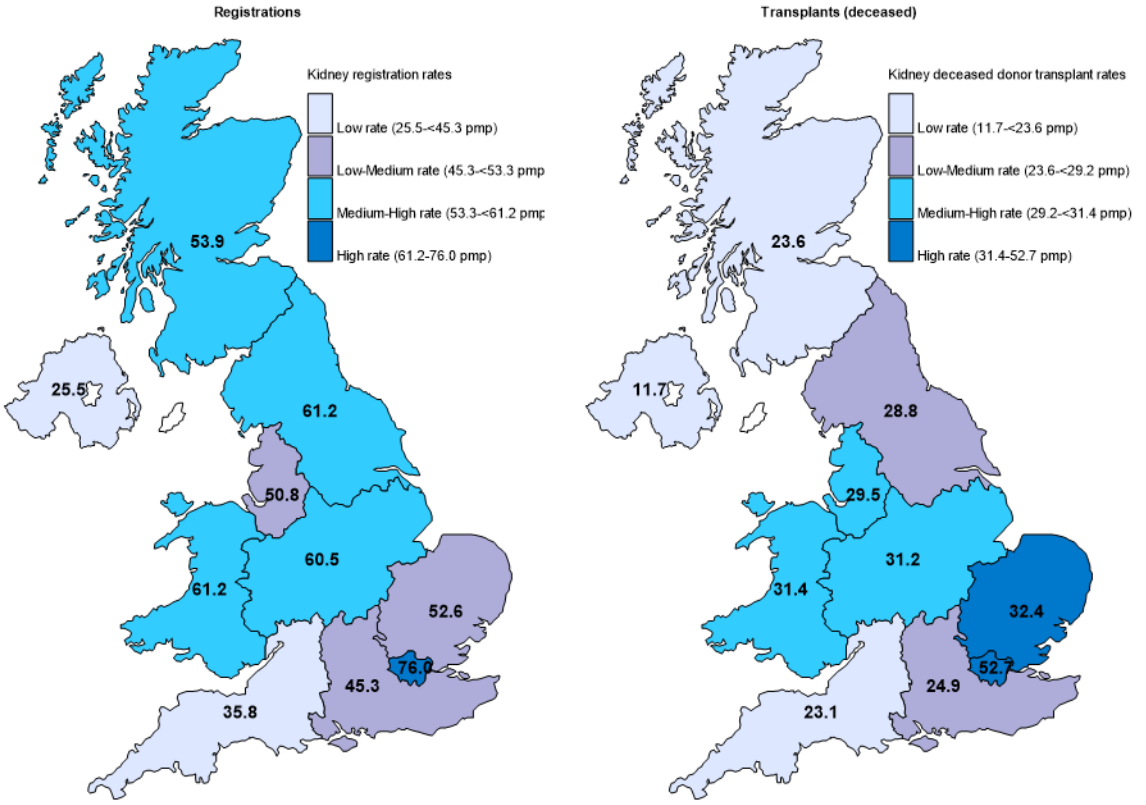


Figure 2.8 Living donor kidney transplant rates (pmp) by recipient country/NHS region of residence, 1 April 2025 – 31 March 2026

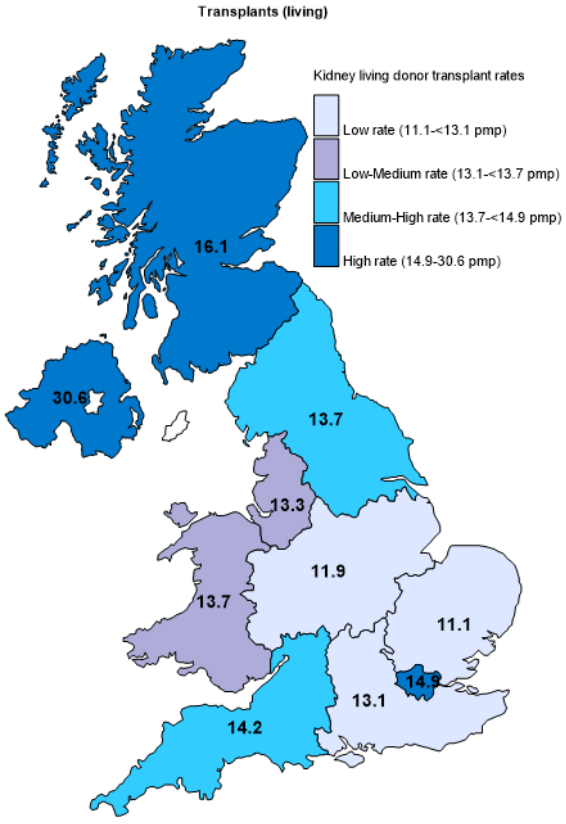


Table 2.2 Kidney registration and transplant rates per million population (pmp) in the UK, 1 April 2025 - 31 March 2026, by Country/NHS region

Country/ NHS region	Registrations (pmp)		Deceased Donor Transplants (pmp)		Living Donor Transplants (pmp)	
North East and Yorkshire	517	(61.2)	243	(28.8)	116	(13.7)
North West	393	(50.8)	228	(29.5)	103	(13.3)
Midlands	682	(60.5)	352	(31.2)	134	(11.9)
East of England	346	(52.6)	213	(32.4)	73	(11.1)
London	693	(76.0)	481	(52.7)	136	(14.9)
South East	437	(45.3)	240	(24.9)	126	(13.1)
South West	212	(35.8)	137	(23.1)	84	(14.2)
England	**3280**	**(55.9)**	**1894**	**(32.3)**	**772**	**(13.1)**
Isle of Man	**10**	**(125.0)**	**3**	**(37.5)**	**0**	**(0.0)**
Channel Islands	**5**	**(29.4)**	**6**	**(35.3)**	**2**	**(11.8)**
Wales	**197**	**(61.2)**	**101**	**(31.4)**	**44**	**(13.7)**
Scotland	**302**	**(53.9)**	**132**	**(23.6)**	**90**	**(16.1)**
Northern Ireland	**50**	**(25.5)**	**23**	**(11.7)**	**60**	**(30.6)**
TOTAL	**3847[1]**	**(55.4)**	**2164[2]**	**(31.1)**	**970[3]**	**(14.0)**

[1] Registrations include 3 recipients whose postcode was unknown.
[2] Deceased donor transplants include 5 recipients whose postcode was unknown.
[3] Living donor transplants include 2 recipients whose postcode was unknown and excludes 8 recipients who reside in the Republic of Ireland and 2 recipients who reside overseas

Adult kidney transplant list

3.1 Adults on the kidney transplant list as at 31 March, 2017 – 2026

Figure 3.1 shows the number of adults on the kidney only transplant list at 31 March each year between 2017 and 2026.

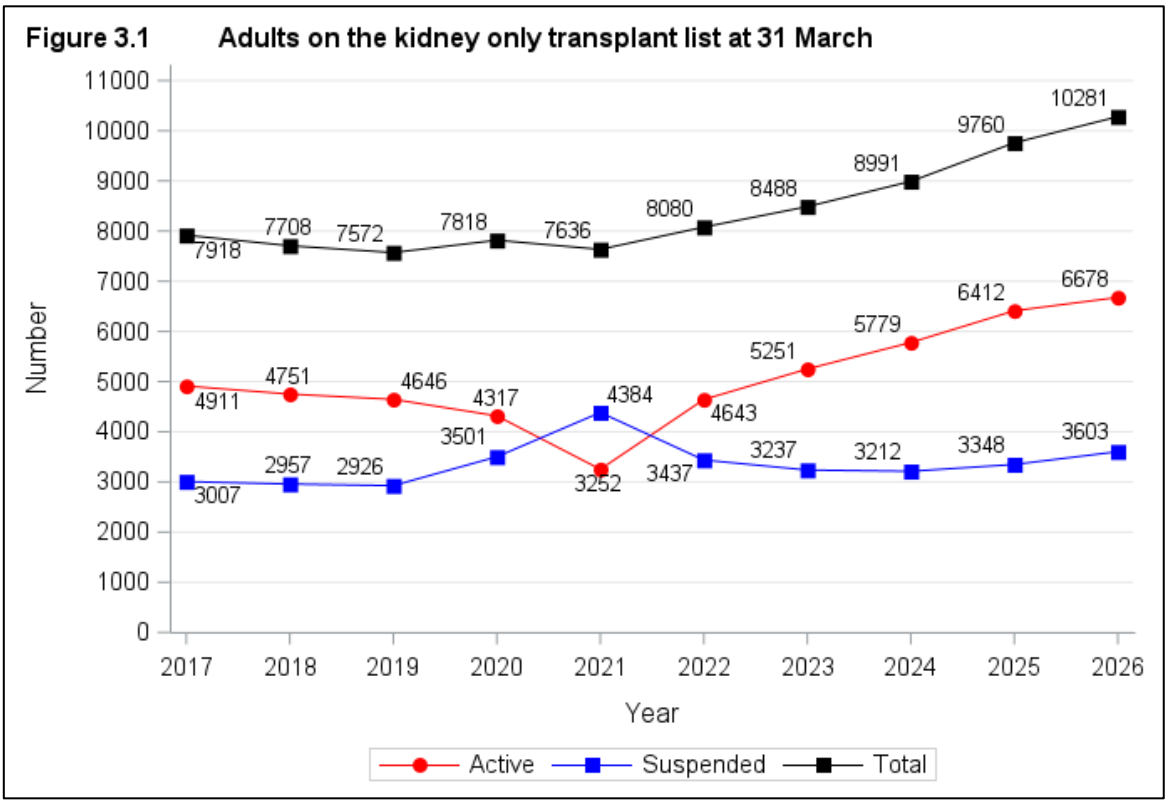


Figure 3.2 shows the number of adults on the active kidney only transplant list at 31 March 2026 by centre.

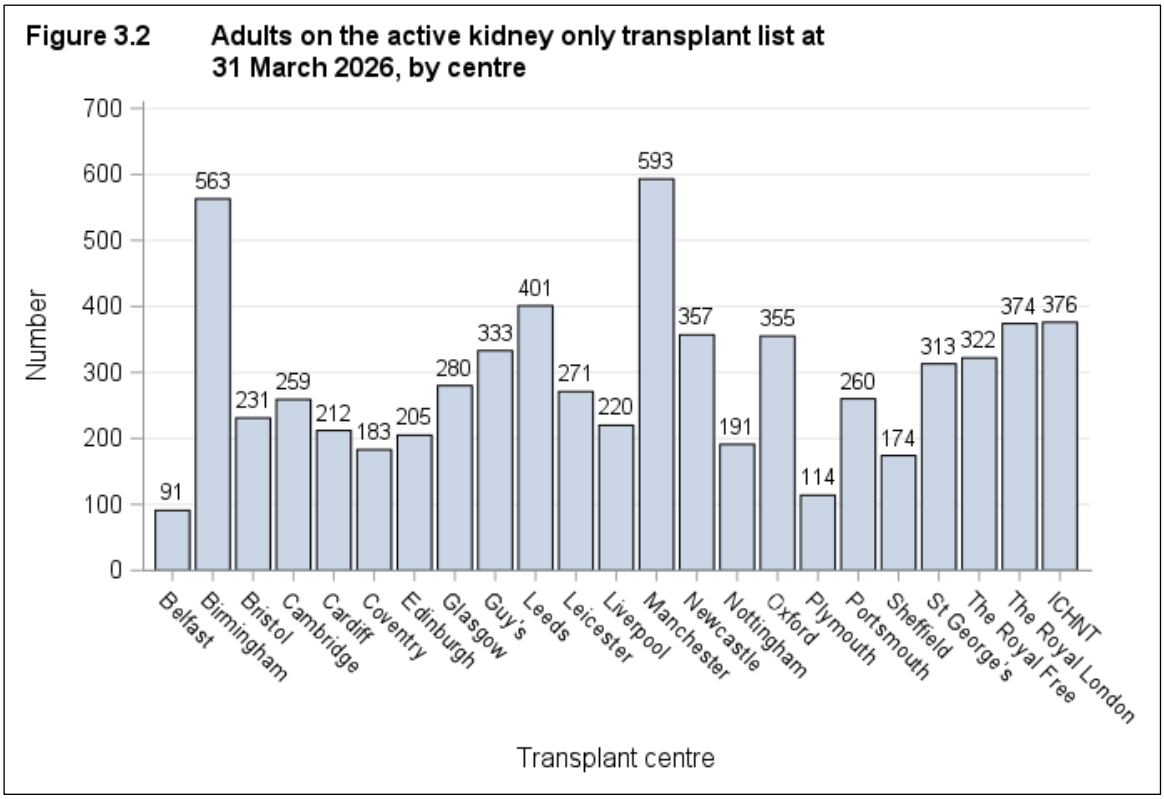


Figure 3.3 shows the number of adults on the suspended kidney only transplant list at 31 March 2026 by centre.

Figure 3.3 Adults on the suspended kidney only transplant list at 31 March 2026, by centre

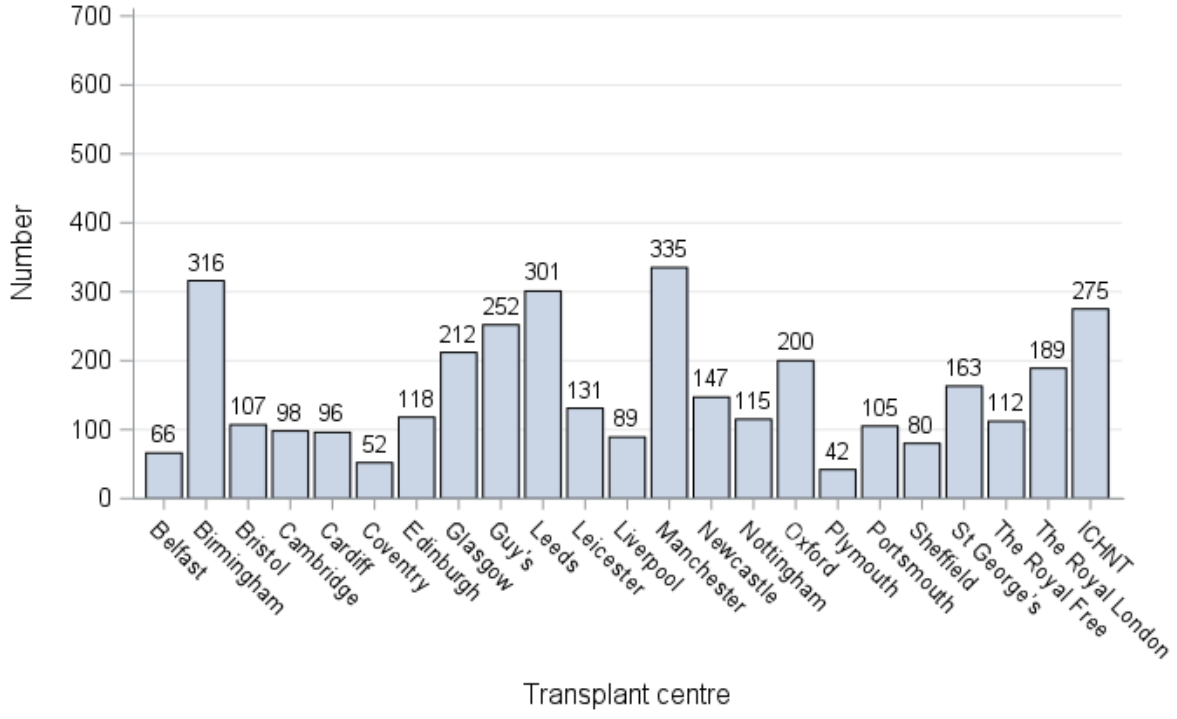
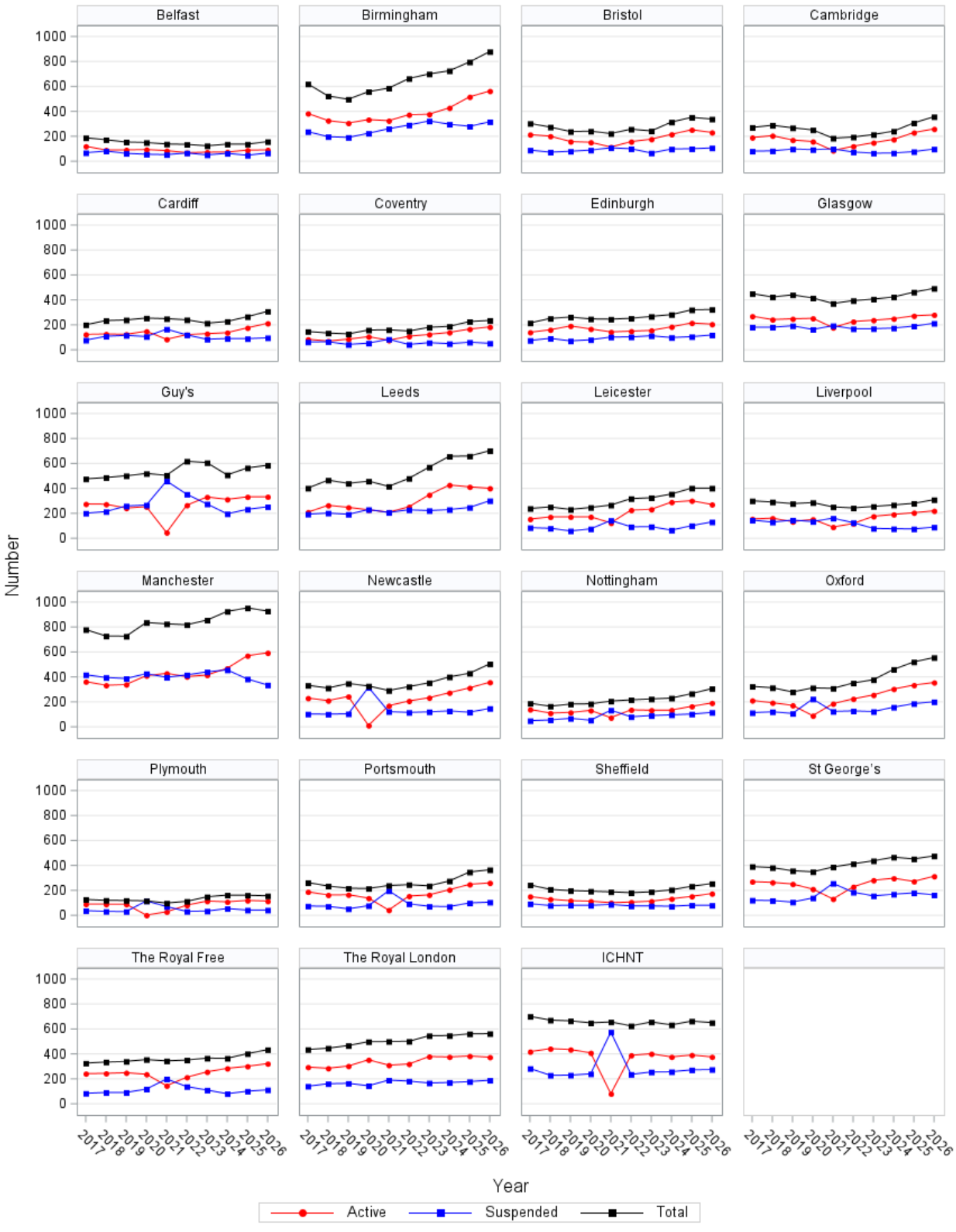


Figure 3.4 shows the number of adults on the transplant list at 31 March each year between 2017 and 2026 for each transplant centre.

Figure 3.4 Adults on the kidney only transplant list at 31 March, by centre



3.2 Post-registration outcomes, 1 April 2022 – 31 March 2023

An indication of outcomes for patients listed for a kidney transplant is summarised in **Figure 3.5**. This shows the proportion of patients transplanted or still waiting one 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.

Figure 3.5 **Post-registration outcome for 3916 new adult kidney only registrations made in the UK, 1 April 2022 - 31 March 2023**

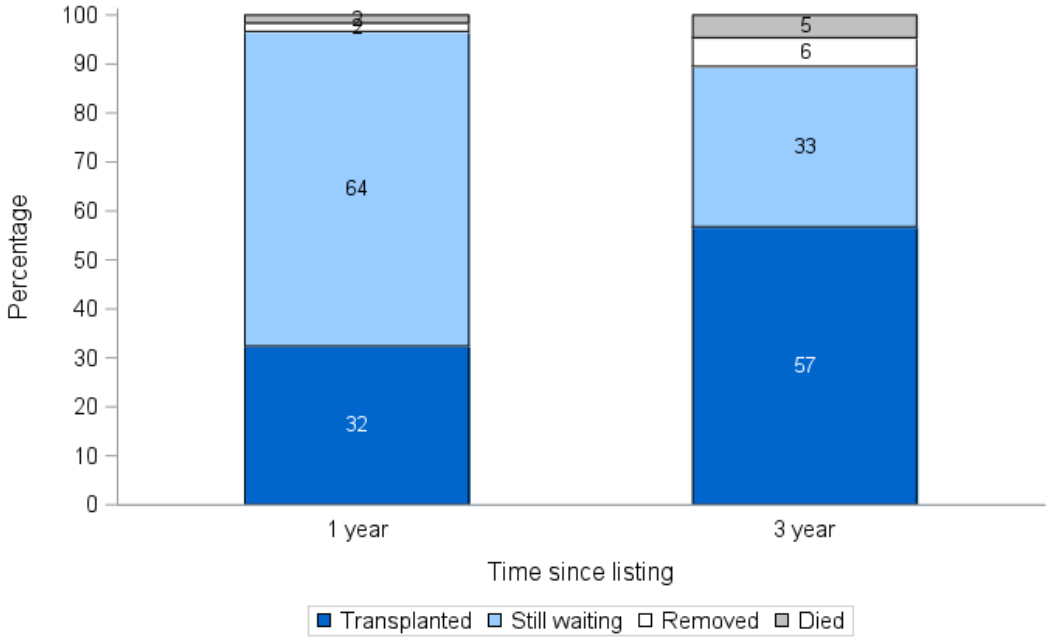
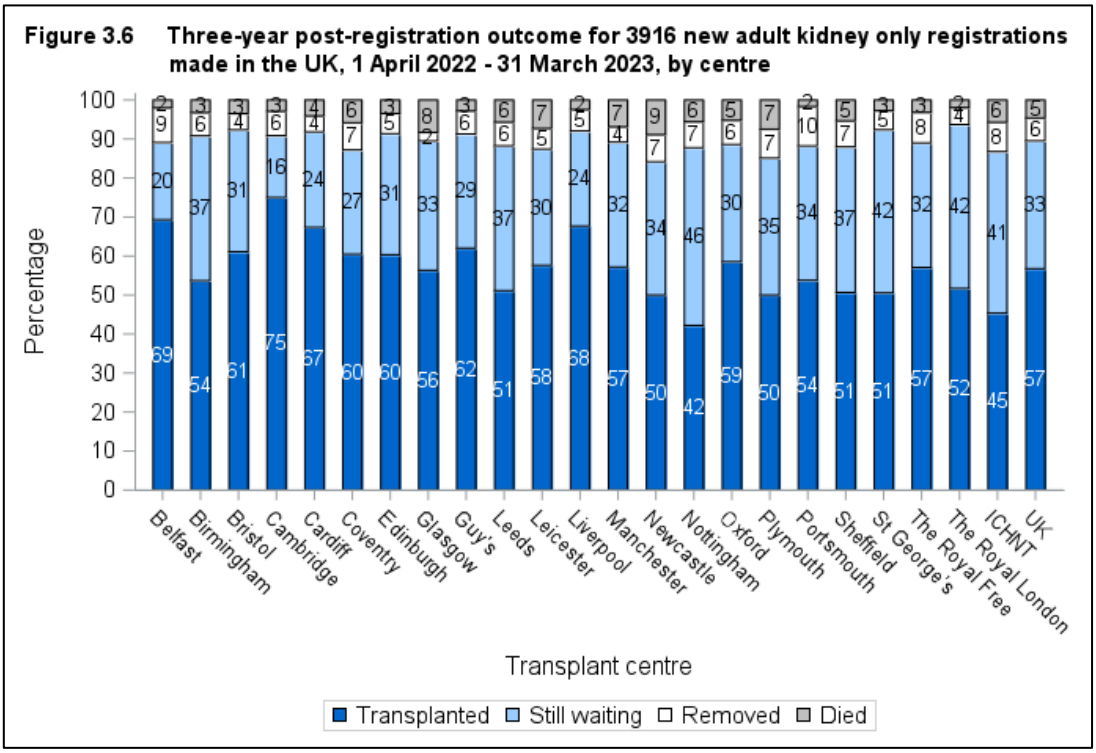


Figure 3.6 shows the proportion of patients transplanted or still waiting three years after joining the list by centre.

Figure 3.6 **Three-year post-registration outcome for 3916 new adult kidney only registrations made in the UK, 1 April 2022 - 31 March 2023, by centre**



3.3 Demographic characteristics, 1 April 2025 – 31 March 2026

The sex, ethnicity, age group, calculated reaction frequency and primary renal disease of patients on the transplant list are shown by centre in **Figure 3.7, 3.8, 3.9, 3.10 and 3.11**, respectively. Note that all percentages quoted are based only on data where relevant information was available. Data are not presented where the proportion of missing data was over 50%.

Figure 3.7 Sex of adult registrations on the active kidney only transplant list, 1 April 2025 and 31 March 2026, by centre

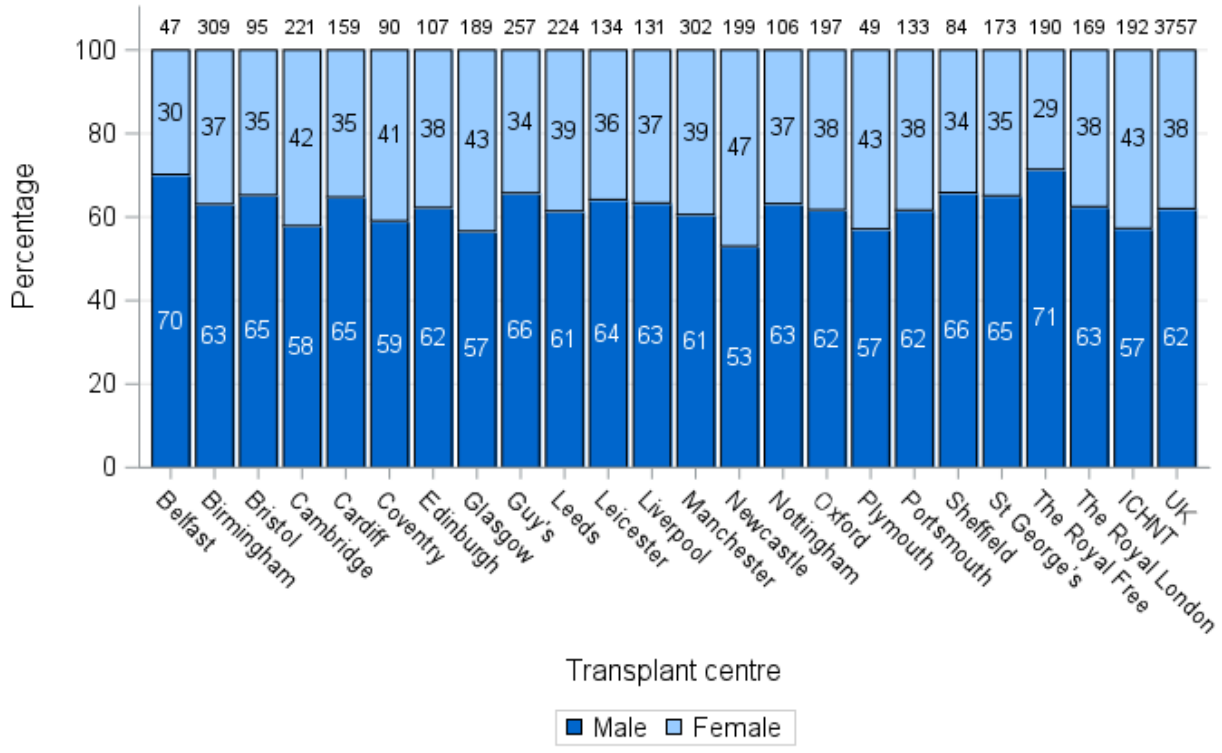


Figure 3.8 Ethnicity of adult registrations on the active kidney only transplant list, 1 April 2025 and 31 March 2026, by centre

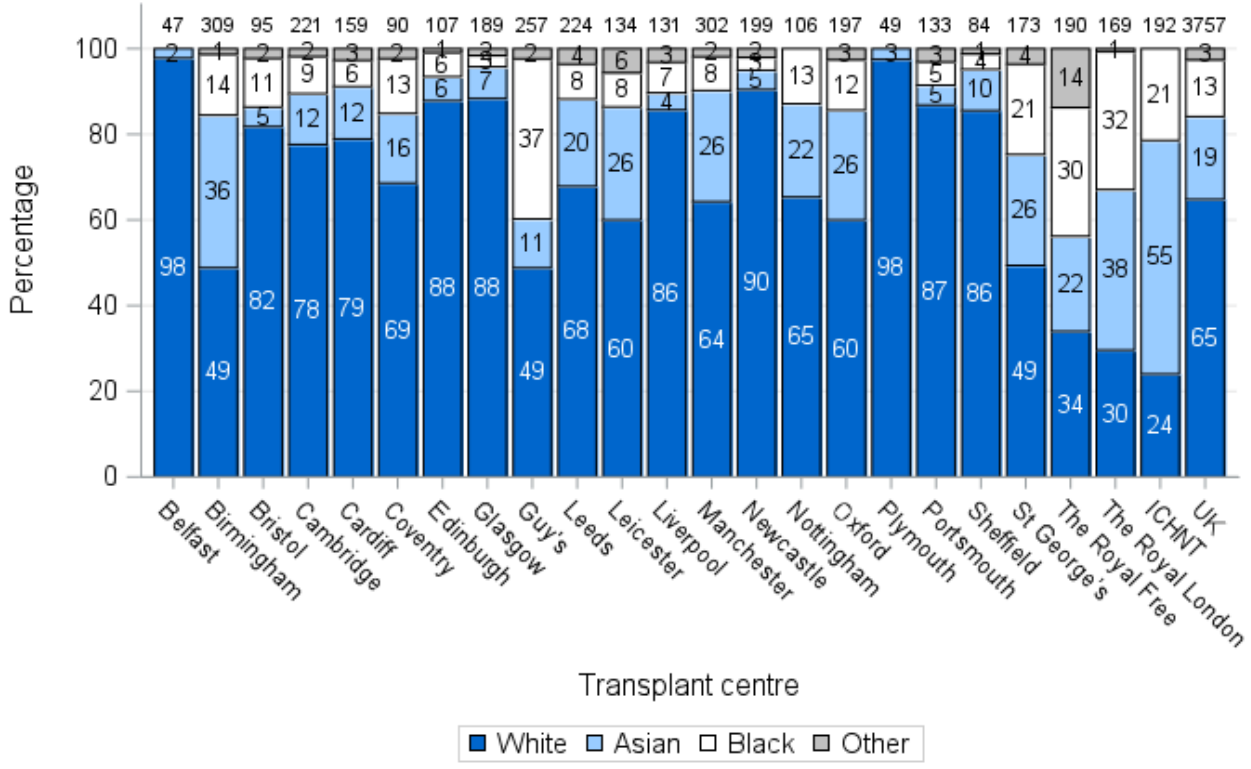


Figure 3.9 Age of adult registrations on the active kidney only transplant list, 1 April 2025 and 31 March 2026, by centre

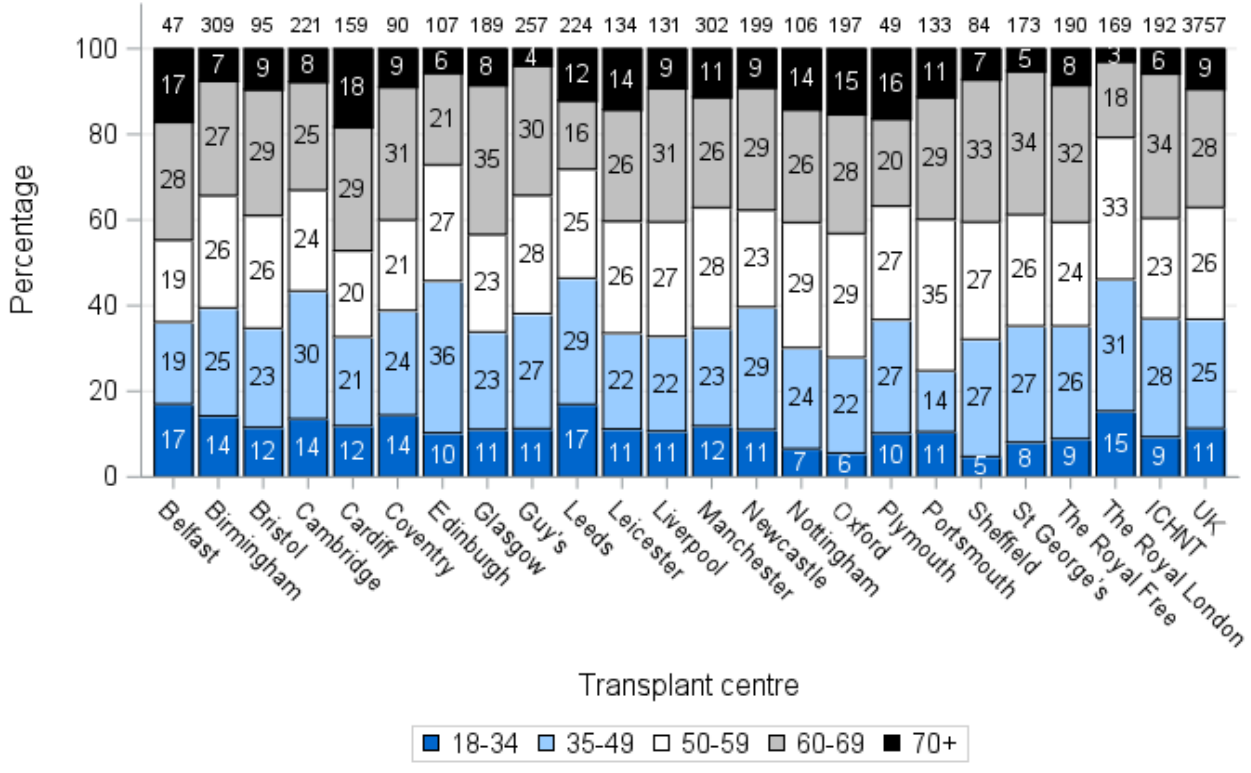


Figure 3.10 cRF of adult registrations on the active kidney only transplant list, 1 April 2025 and 31 March 2026, by centre

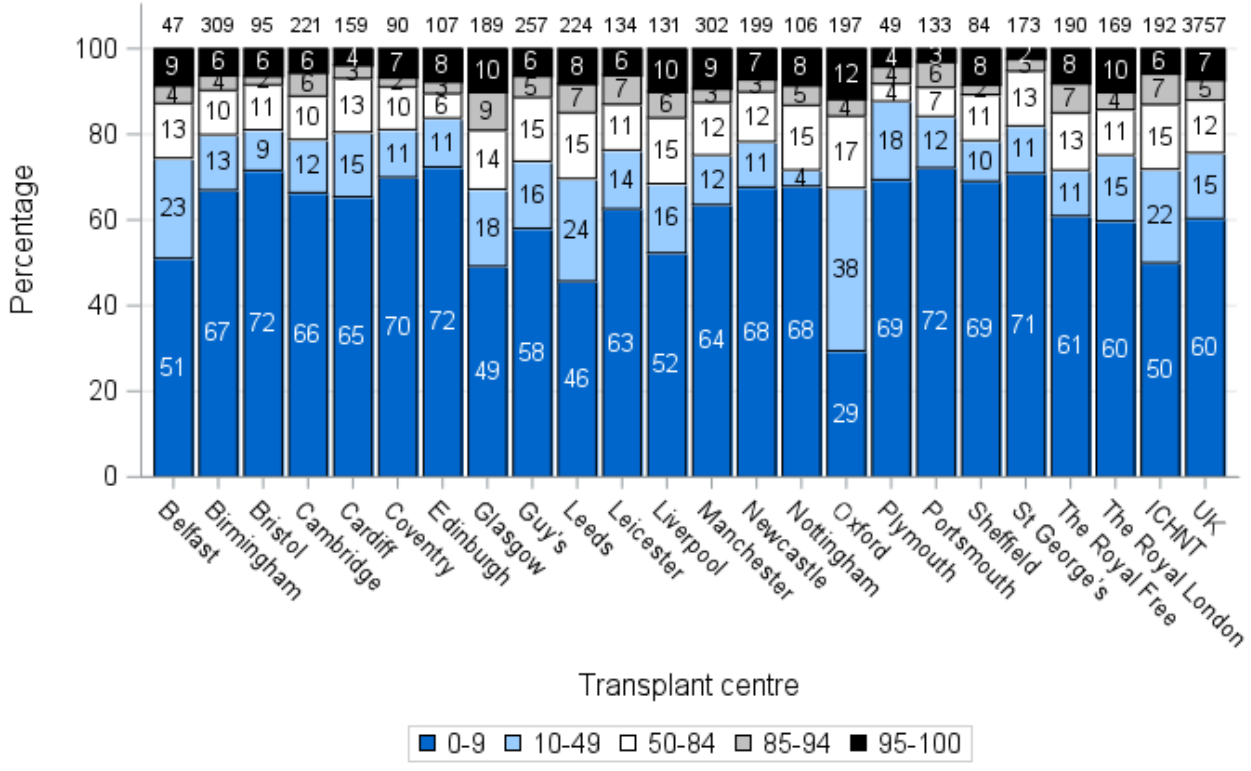
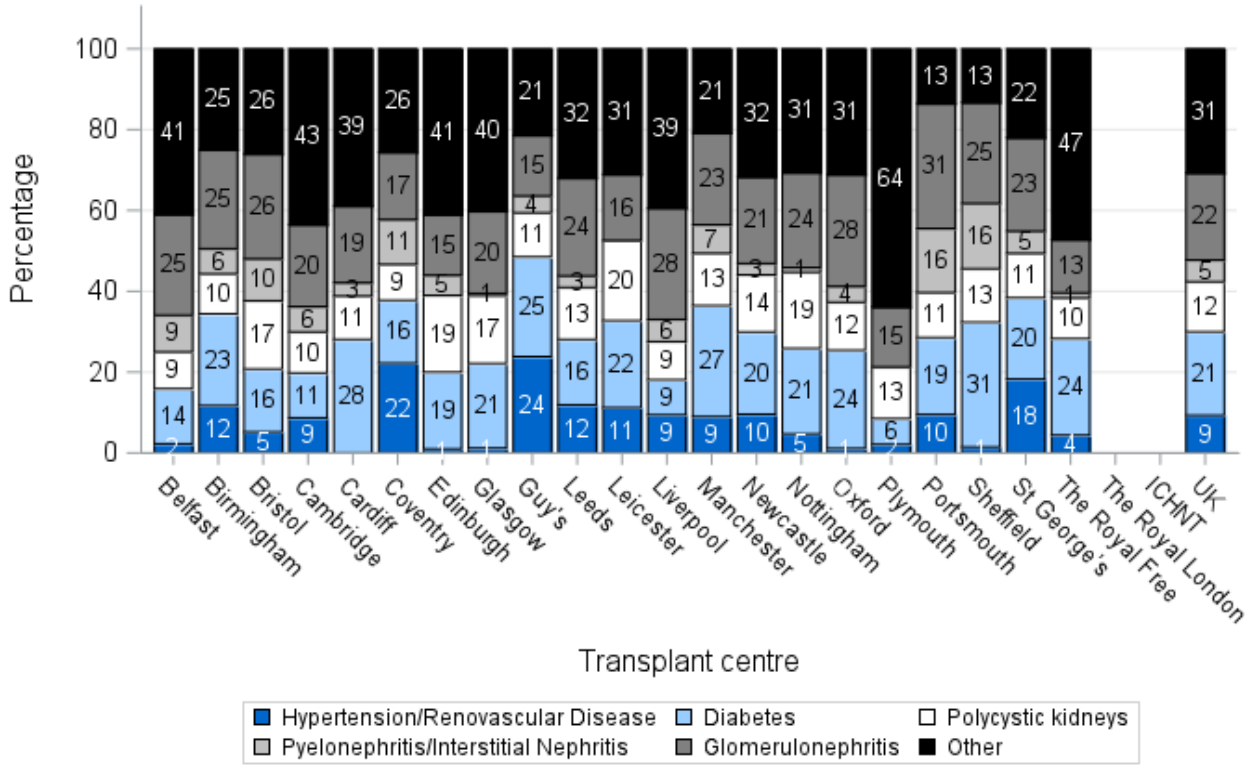


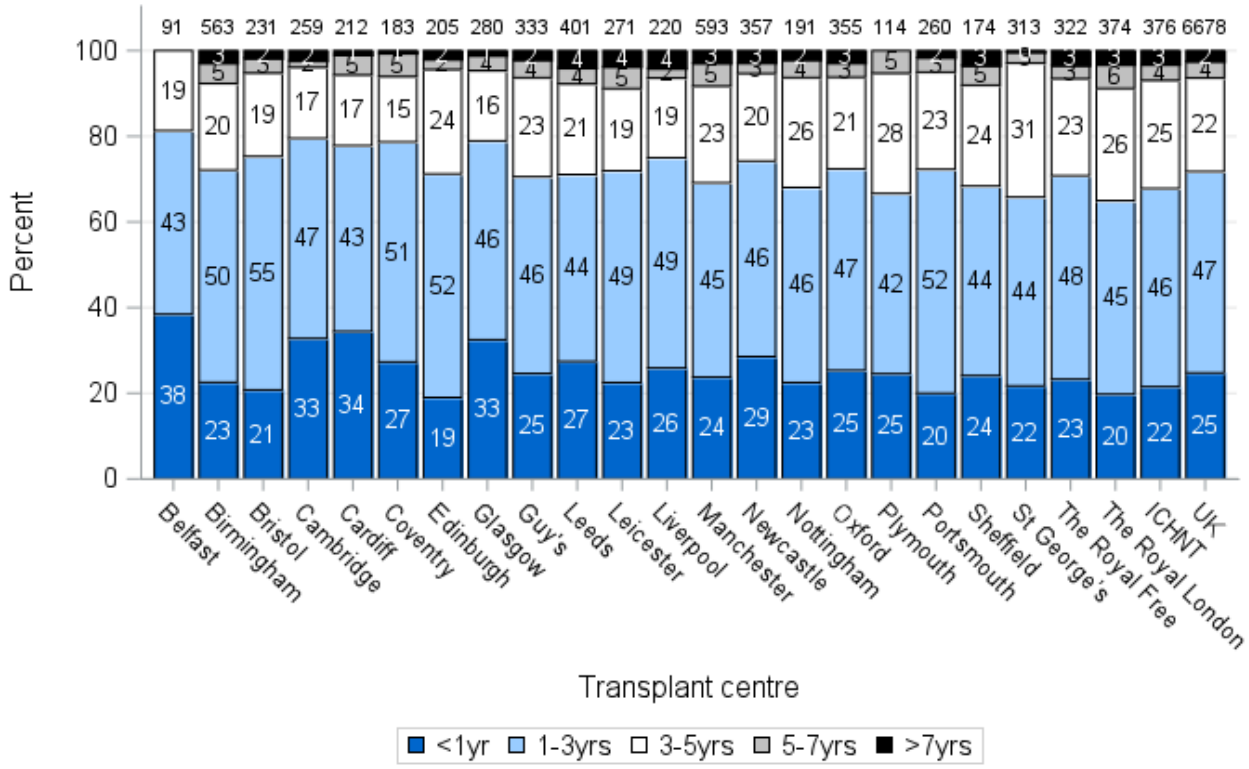
Figure 3.11 Primary renal disease of adult registrations on the active kidney only transplant list, 1 April 2025 and 31 March 2026, by centre



3.4 Adult waiting times for those currently on the list, 31 March 2026

Figure 3.12 shows the length of time adults have been waiting on the kidney only transplant list at 31 March 2026 by centre. A small proportion of adults have been waiting for a transplant for more than seven years, 98% of these adults are highly sensitised with a calculated reaction frequency (cRF) of 85% or higher. Of those waiting for more than seven years, 82% have a cRF of 100% which makes these adults very difficult to match.

Figure 3.12 Adults on the active kidney only transplant list as at 31 March 2026, by centre and waiting time



3.5 Median waiting time to transplant, 1 April 2020 – 31 March 2023

The length of time a patient waits for a kidney transplant varies across the UK. The median active waiting time for adult deceased donor kidney only transplantation is shown in **Figure 3.13a** and **Table 3.1a** for patients registered at each individual unit. Risk-adjusted median active waiting time to adult deceased donor kidney only transplantation is shown in **Figure 3.14a** and **Table 3.1a**. The median total waiting time (including dialysis and periods of suspension) for adult deceased donor kidney only transplantation is shown in **Figure 3.13b** and **Table 3.1b** for patients registered at each individual unit. Risk-adjusted median total waiting time to adult deceased donor kidney only transplantation is shown in **Figure 3.14b** and **Table 3.1b**. The data shown are for all adults, joining the list within the time period shown, including those still awaiting a transplant on the day of analysis. Patients who received a live donor or multi-organ transplant are not included. The national allocation scheme introduced in April 2006 helped to reduce the variability in deceased donor kidney waiting times across the country but currently some variability remains. Waiting times across centres continue to differ in a way that it is difficult for centres to control, given that the 2006 National Kidney Allocation Scheme determined allocation of all kidneys available for transplant from donors after brain death (DBD). This has continued following the introduction of the 2019 National Kidney Offering Scheme which determines allocation of all DBD kidneys and kidneys from donations after circulatory death (DCD).

2019 National Kidney Offering Scheme
The 2019 Kidney Offering Scheme was introduced on 11 September 2019 and this is a single scheme for offering all kidneys from deceased donors in the UK. This scheme prioritises patients who are difficult to match or have waited a long time for a transplant. Waiting time was updated from time from first active listing under the 2006 scheme to time from the earliest of starting permanent dialysis (HD or PD) in the UK or first active listing. On 25 February 2025, a cap on suspension time points for pre-dialysis patients on the transplant list. The number of points accrued for days of suspension before a patient has started permanent dialysis was capped at 180 days. This cap is only applicable to a patient's first registration.

We present a visual comparison of median waiting time to transplant among centres that is based on a graphical display known as a funnel plot (1, 2). This display is used to show how consistent the waiting times of the different transplant units are with the national rate accounting for different patient mix within centres. Funnel plots show the risk-adjusted median waiting time to transplant plotted against the number of patients registered at each centre, with the overall national unadjusted waiting time to transplant (solid line), and its 95% (thin dotted lines) and 99.8% (thick dotted lines) confidence limits superimposed. Each dot in the plot represents one of the centres.

Interpreting the funnel plots
If a centre lies within all the limits, then that centre has a median waiting time to transplant that is statistically consistent with the national rate. If a centre lies outside the 95% confidence limits, this serves as an alert that the centre may have a median waiting time to transplant that is significantly different from the national rate. If a centre lies outside the 99.8% limits, then further investigations may be carried out to determine the reasons for the possible difference. When a centre lies above the upper limits, this indicates a median waiting time to transplant that is higher than the national rate, while a centre that lies below the lower limits has a median waiting time to transplant that is lower than the national rate. It is important to note that adjusting for patient mix through the use of risk-adjustment

models may not account for all possible causes of centre differences. There may be other factors that are not taken into account in the risk-adjustment process that may affect the median waiting time to transplant of a particular centre.

References

1. Tekkis PP, McCulloch P, Steger AC, Benjamin IS, Poloniecki JD. Mortality control charts for comparing performance of surgical units: validation study using hospital mortality data. British Medical Journal 2003; 326: 786 – 788.

2. Stark J, Gallivan S, Lovegrove J, Hamilton JRL, Monro JL, Pollock JCS, Watterson KG. Mortality rates after surgery for congenital heart defects in children and surgeons' performance. Lancet 2000; 355: 1004 – 1007.

The median active waiting time to transplant for adults registered on the kidney only transplant list between 1 April 2020 and 31 March 2023 was 604 days, an increase from 502 days for those registered between 1 April 2019 and 31 March 2022. The median total waiting time to transplant (including dialysis and periods of suspension) for adults registered on the kidney only transplant list between 1 April 2020 and 31 March 2023 was 1239 days. This is an increase from 1169 days for those registered between 1 April 2019 and 31 March 2022.

Figure 3.13a Median active waiting time to deceased donor transplant for adults patients registered on the kidney transplant list, 1 April 2020 - 31 March 2023

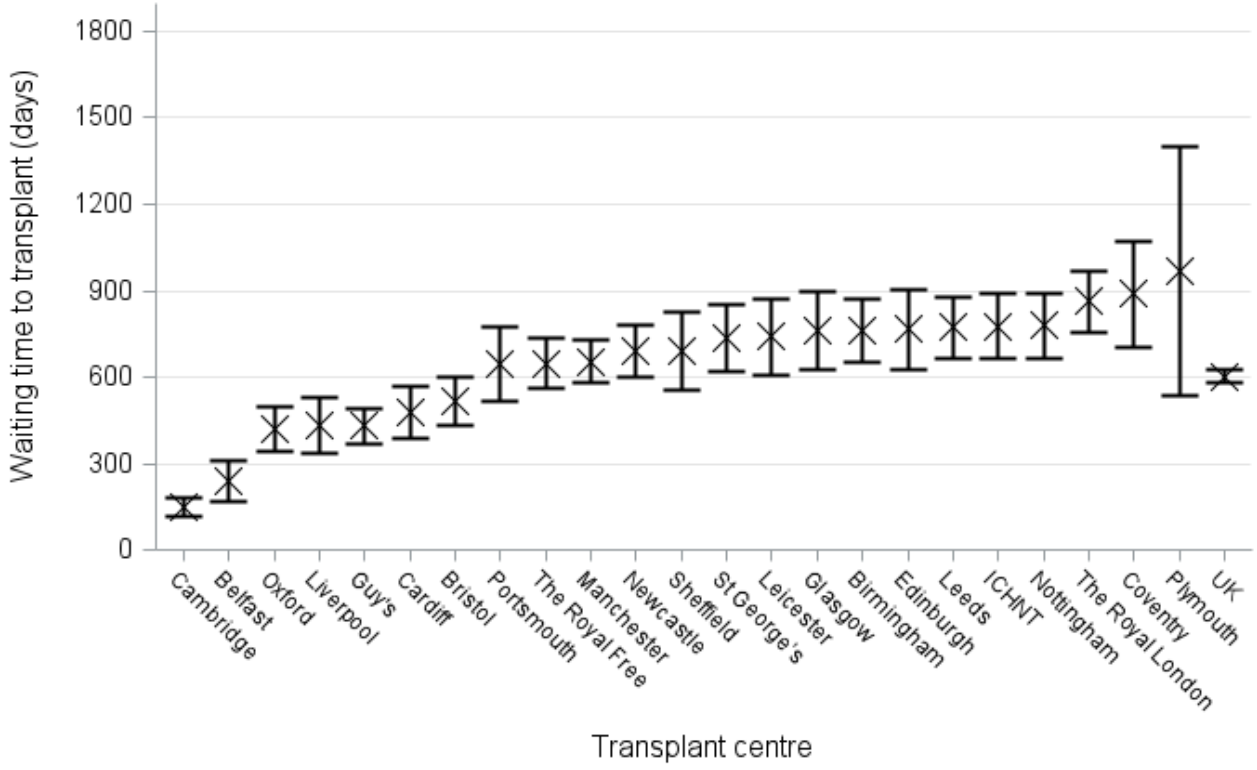


Figure 3.13b Median total waiting time to deceased donor transplant for adult patients registered on the kidney transplant list, 1 April 2020 - 31 March 2023

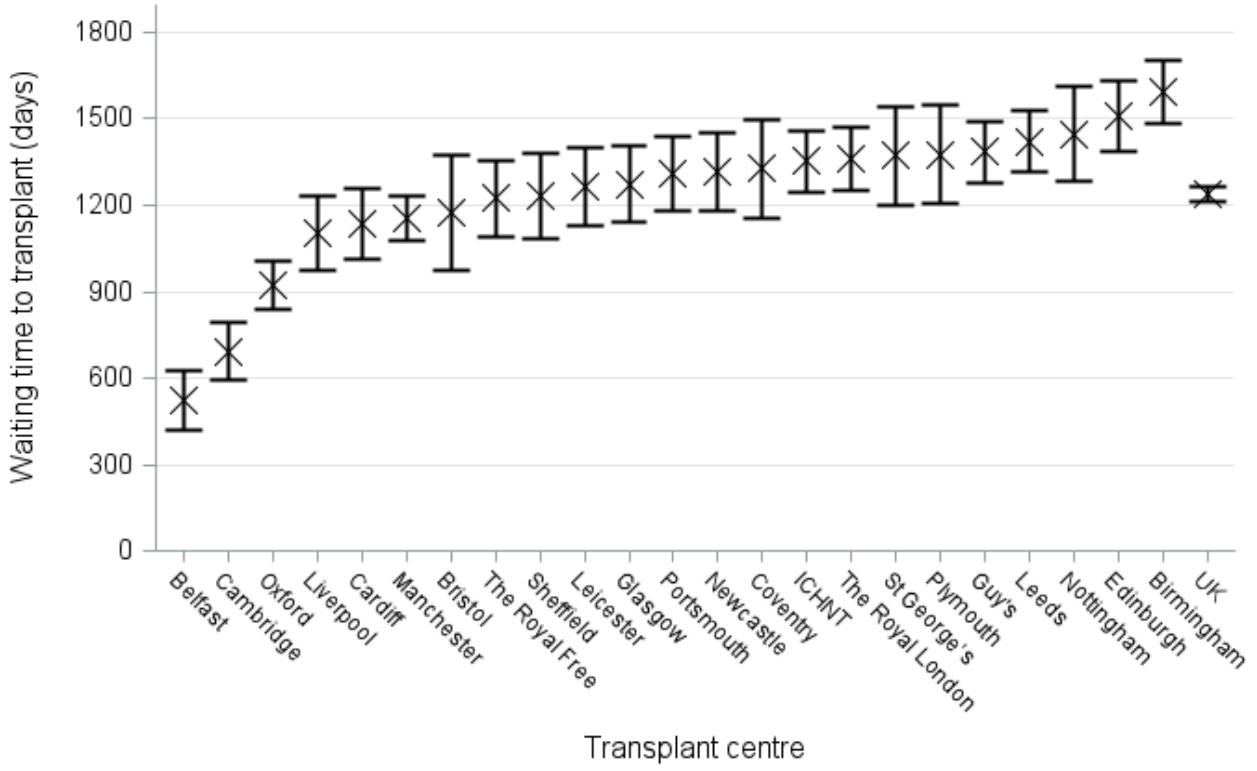


Figure 3.14a Adult risk-adjusted median active waiting times for patients listed between 1 April 2020 - 31 March 2023

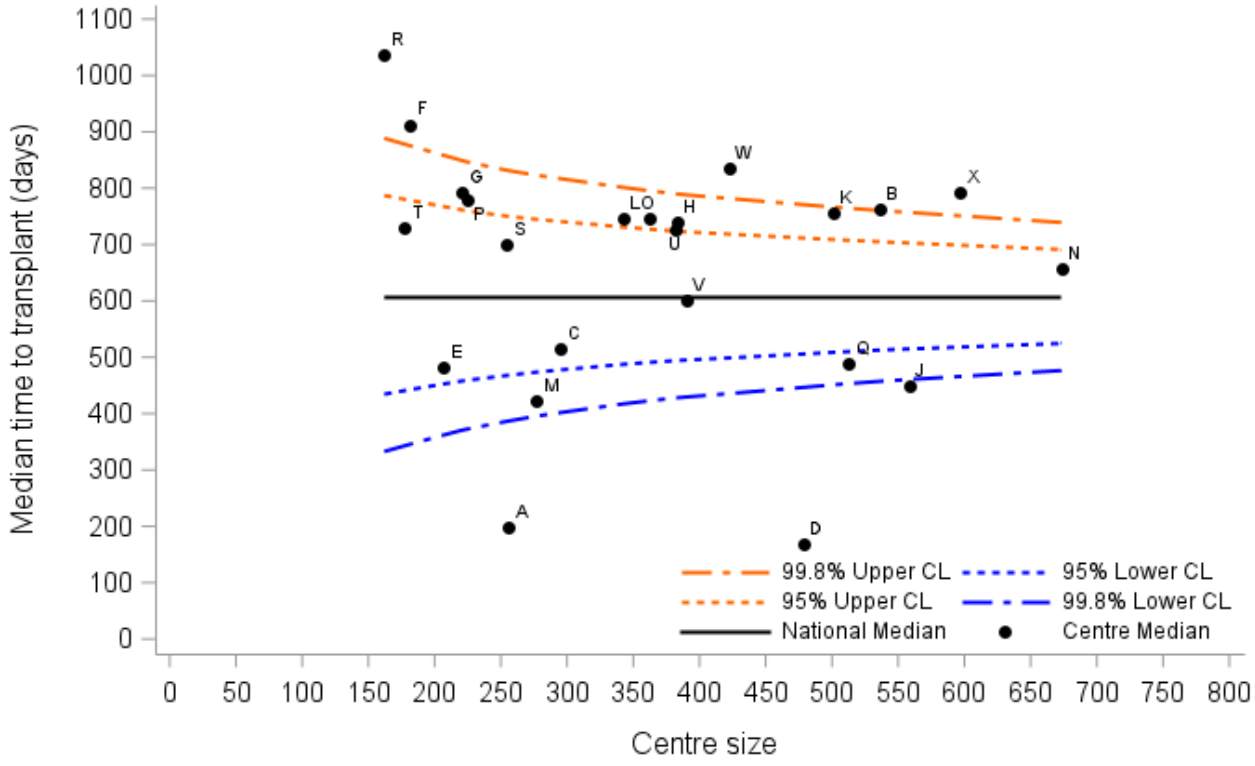


Figure 3.14b Adult risk-adjusted median total waiting times for patients listed between 1 April 2020 - 31 March 2023

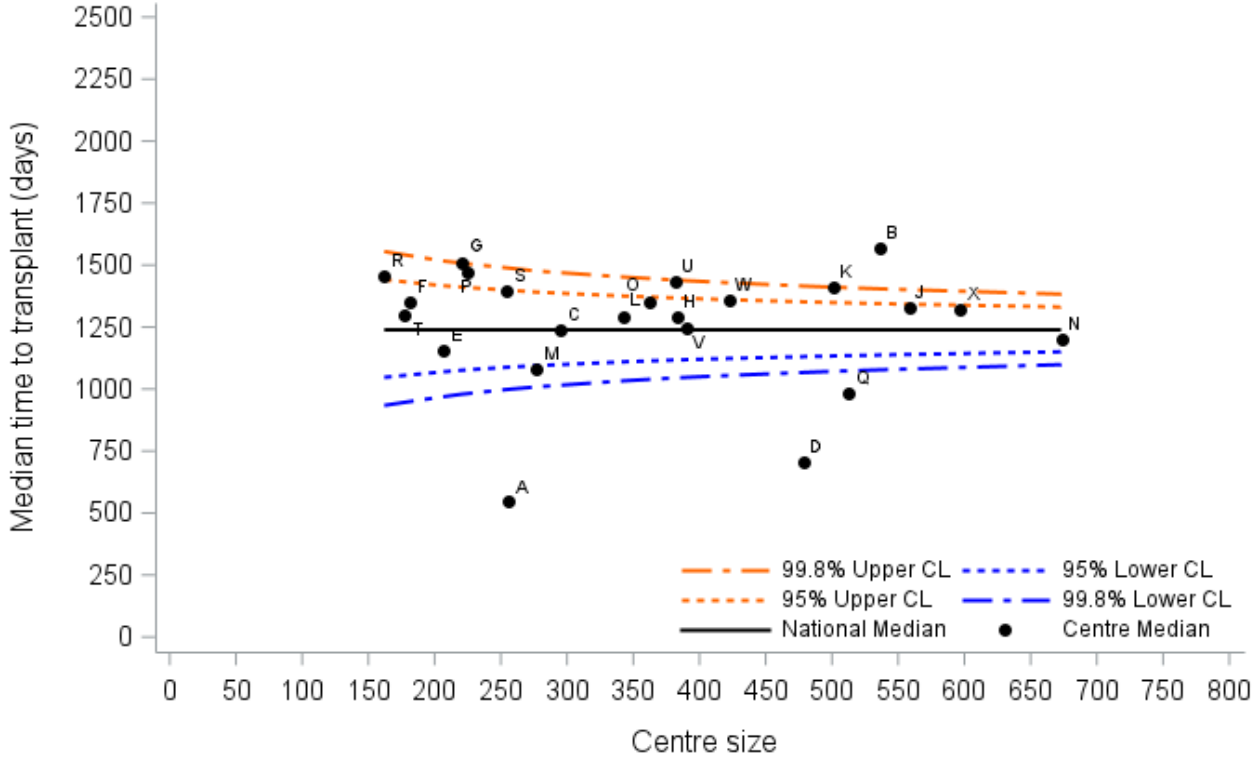


Table 3.1a Median active waiting time to kidney only transplant in the UK, for adults registered 1 April 2020 – 31 March 2023

Transplant centre	Code	Number of adults registered	Waiting time (days)		
			Unadjusted Median	95% Confidence interval	Risk-adjusted median
Cambridge	D	486	149	115 - 183	168
Belfast	A	261	243	172 - 314	200
Liverpool	M	278	431	335 - 527	423
Guy's	J	561	432	372 - 492	451
Cardiff	E	207	477	387 - 567	482
Oxford	Q	515	421	346 - 496	489
Bristol	C	297	515	431 - 599	517
The Royal Free	V	395	646	559 - 733	602
Manchester	N	677	655	582 - 728	658
Portsmouth	S	255	645	518 - 772	699
St George's	U	386	735	618 - 852	727
Sheffield	T	178	691	555 - 827	731
Glasgow	H	383	761	628 - 894	739
Newcastle	O	362	691	598 - 784	747
Leicester	L	353	740	607 - 873	747
Leeds	K	505	772	663 - 881	756
Birmingham	B	540	764	655 - 873	762
Nottingham	P	226	780	667 - 893	779
ICHNT	X	601	776	663 - 889	792
Edinburgh	G	224	767	629 - 905	793
The Royal London	W	424	862	756 - 968	835
Coventry	F	185	888	705 - 1071	913
Plymouth	R	163	967	534 - 1400	1036
UK		**8462**	**604**	**579 - 629**	

Table 3.1b Median total waiting time[1] to kidney only transplant in the UK, for adults registered 1 April 2020 – 31 March 2023

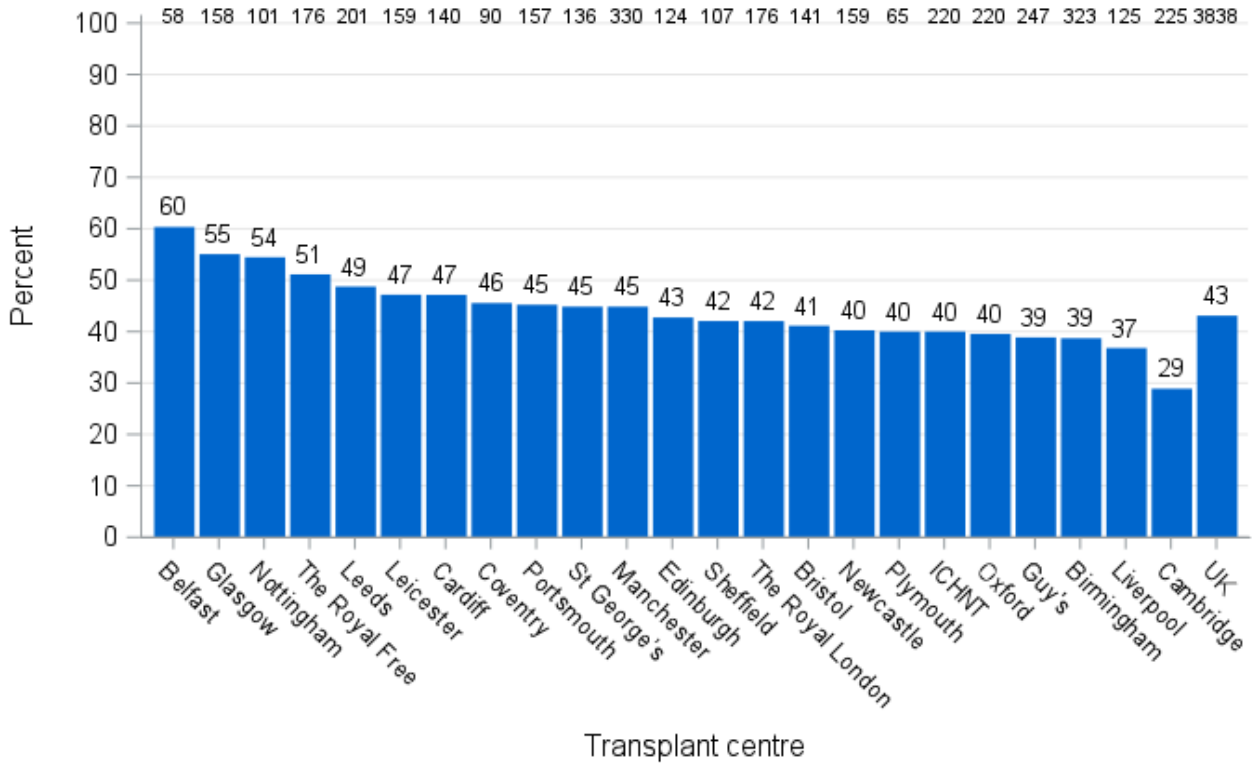
Transplant centre	Code	Number of adults registered	Waiting time (days)		
			Unadjusted Median	95% Confidence interval	Risk-adjusted median
Belfast	A	258	523	422 - 624	545
Cambridge	D	484	693	595 - 791	707
Oxford	Q	514	923	841 - 1005	985
Liverpool	M	278	1103	974 - 1232	1078
Cardiff	E	207	1134	1010 - 1258	1156
Manchester	N	677	1155	1076 - 1234	1203
Bristol	C	297	1174	974 - 1374	1239
The Royal Free	V	395	1224	1092 - 1356	1248
Glasgow	H	383	1274	1145 - 1403	1293
Leicester	L	347	1266	1130 - 1402	1295
Sheffield	T	178	1234	1086 - 1382	1296
ICHNT	X	601	1354	1248 - 1460	1319
Guy's	J	560	1385	1277 - 1493	1327
Coventry	F	184	1327	1157 - 1497	1351
Newcastle	O	362	1316	1180 - 1452	1355
The Royal London	W	424	1361	1251 - 1471	1357
Portsmouth	S	255	1311	1182 - 1440	1399
Leeds	K	505	1421	1314 - 1528	1408
St George's	U	385	1372	1202 - 1542	1432
Plymouth	R	163	1376	1205 - 1547	1455
Nottingham	P	226	1448	1281 - 1615	1468
Edinburgh	G	223	1509	1389 - 1629	1512
Birmingham	B	540	1592	1484 - 1700	1568
UK		**8446**	**1239**	**1212 - 1266**	

[1] Total waiting time includes dialysis and periods of suspension
Recipients who were not active for more than 1 day are excluded from this analysis.

3.6 Pre-emptive listing rates, 1 April 2024 – 31 March 2025

Rates of pre-emptive kidney only listings are shown in **Figure 3.15** for adults joining the list between 1 April 2024 and 31 March 2025. Patients listed on the deceased donor transplant list prior to receiving a living donor transplant are excluded and in order to remove the effect of these patients an earlier cohort was selected.

Figure 3.15 Adult pre-emptive listing rates by centre, registrations between 1 April 2024 and 31 March 2025



3.7 2019 Kidney Offering Scheme Recipient Risk Index, 1 April 2025 – 31 March 2026

A Recipient Risk Score (RRI) was developed alongside the change in kidney offering scheme in 2019. The RRI is now calculated for each eligible patient using four risk factors. A recipient is then categorised into one of four groups (R1-R4) based on the risk score and by pre-determined cut-off values.

RRI = exp { 0 x (recipient age≤25)-75) +
0.016 x ((recipient age>25)-75) +
0.361 x (recipient on dialysis at registration) +
0.033 x ([waiting time from dialysis-950]/365.25) +
0.252 x (Diabetic recipient) }

R1 → RRI ≤ 0.74 (lowest risk)
R2 → RRI 0.74 – 0.94
R3 → RRI 0.94 – 1.20
R4 → RRI ≥1.20 (highest risk)

Table 3.2 presents the RRI groups and average scores for adults on the kidney only transplant list at 31 March 2026.

Table 3.2 Recipient Risk Index of adult patients active on the kidney only transplant list at 31 March 2026

Transplant centre	Recipient Risk Group				
	R1	R2	R3	R4	Avg. RRI
Belfast	43	29	14	5	0.79
Birmingham	188	168	125	82	0.9
Bristol	79	73	46	33	0.88
Cambridge	86	77	65	31	0.89
Cardiff	67	69	47	29	0.9
Coventry	62	49	40	32	0.92
Edinburgh	59	64	48	34	0.9
Glasgow	84	100	64	32	0.88
Guy's	99	115	77	42	0.89
Leeds	138	128	77	58	0.88
Leicester	91	82	54	44	0.9
Liverpool	57	82	50	31	0.9
Manchester	197	184	117	95	0.91
Newcastle	118	115	75	49	0.89
Nottingham	60	63	45	23	0.89
Oxford	106	105	84	60	0.93
Plymouth	30	38	34	12	0.9
Portsmouth	74	73	63	50	0.94
Sheffield	46	57	42	29	0.95
St George’s	101	98	64	50	0.9
The Royal Free	92	106	82	42	0.9
The Royal London	148	105	82	39	0.85
ICHNT	137	101	86	52	0.89
UK	**2162**	**2081**	**1481**	**954**	**0.9**

Response to adult kidney offers

Offer decline rates

Kidney-only offers from DBD and DCD donors who had at least one kidney retrieved, offered directly and on behalf of a named individual patient and resulted in transplantation are included in the analysis. Any offers made through the reallocation of kidneys, declined kidney or fast track schemes were excluded. Offers where a donor was already accepted for the recipient are also excluded.

Funnel plots were used to compare centre specific offer decline rates and indicate how consistent the rates of the individual transplant centres are with the national rate. The overall national unadjusted offer decline rate is shown by the solid line while the 95% and 99.8% confidence lines are indicated via a thin and thick dotted line, respectively. Each dot in the plot represents an individual transplant centre. Centres that are positioned above the upper limits indicate on offer decline rate that is higher than the national rate, while centres positioned below the lower limits indicates on offer decline rate that is lower than the national rate. Patient case mix is known to influence the number of offers a centre may receive. In this analysis however only individual offers for named patients were considered which excluded any ABO- and HLA-incompatible patients. For this reason it was decided not to risk adjust for known centre differences in patient case mix.

4.1 DBD offer decline rates, 1 April 2023 – 31 March 2026

Figure 4.1 compares individual centre offer decline rates with the national rate for DBD donors over the time period, 1 April 2023 and 31 March 2026. Centres can be identified by the information shown in **Table 4.1**.

Figure 4.1 **Adult DBD donor kidney offer decline rates for kidneys that resulted in a transplant, 1 April 2023 and 31 March 2026**

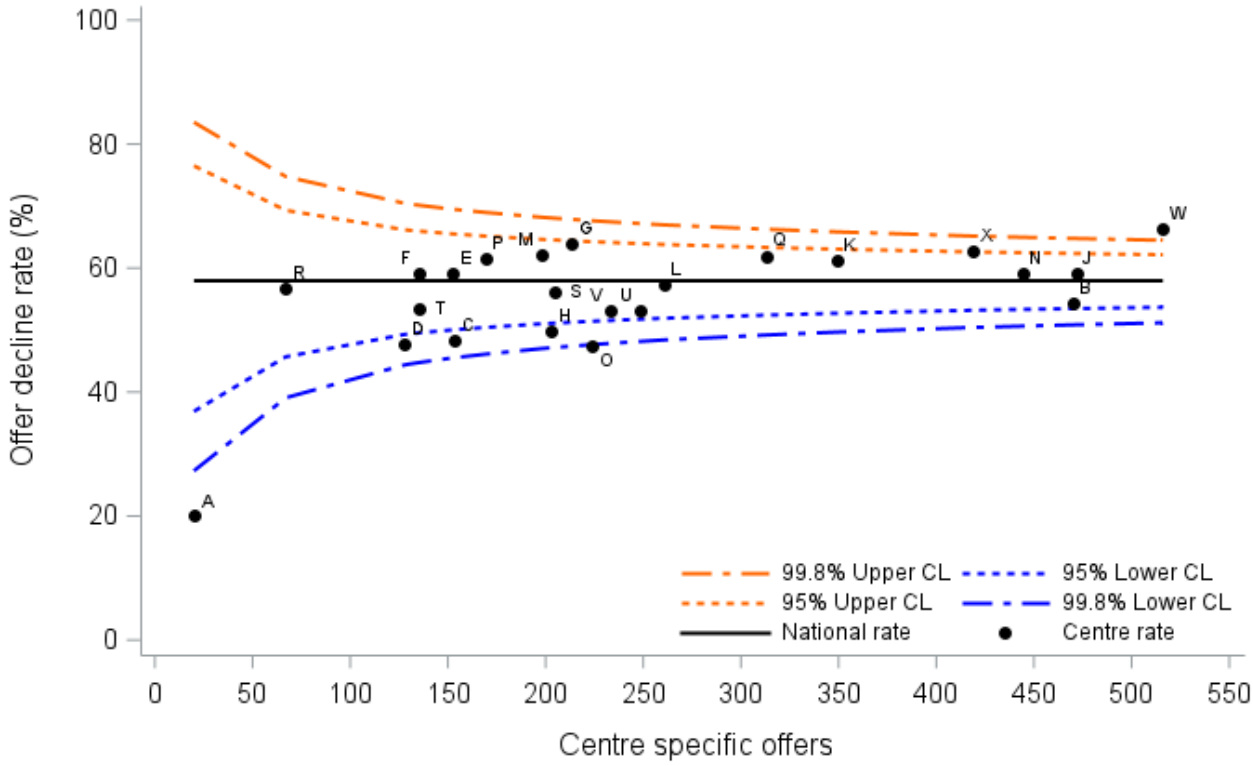


Table 4.1 compares individual centre offer decline rates for DBD donors over time by financial year.

Table 4.1 Adult DBD donor kidney offer decline rates by transplant centre, 1 April 2023 and 31 March 2026

Centre	Code	2023/24		2024/25		2025/26		Overall	
		N	(%)	N	(%)	N	(%)	N	(%)
Belfast	A	4	(25)	11	(18)	5	(20)	20	(20)
Birmingham	B	195	(52)	145	(58)	130	(54)	470	(54)
Bristol	C	59	(51)	56	(48)	38	(45)	153	(48)
Cambridge	D	37	(41)	33	(39)	58	(57)	128	(48)
Cardiff	E	56	(64)	48	(54)	48	(58)	152	(59)
Coventry	F	48	(54)	43	(65)	44	(59)	135	(59)
Edinburgh	G	64	(59)	87	(72)	62	(56)	213	(64)
Glasgow	H	74	(46)	70	(49)	59	(56)	203	(50)
Guy's	J	176	(60)	144	(58)	152	(59)	472	(59)
Leeds	K	124	(65)	134	(60)	91	(58)	349	(61)
Leicester	L	106	(54)	90	(60)	65	(60)	261	(57)
Liverpool	M	87	(63)	55	(47)	56	(75)	198	(62)
Manchester	N	161	(56)	157	(66)	126	(54)	444	(59)
Newcastle	O	82	(48)	78	(51)	64	(42)	224	(47)
Nottingham	P	65	(57)	65	(62)	39	(69)	169	(62)
Oxford	Q	112	(65)	112	(59)	89	(62)	313	(62)
Plymouth	R	36	(67)	19	(58)	12	(25)	67	(57)
Portsmouth	S	75	(59)	74	(54)	56	(55)	205	(56)
Sheffield	T	45	(58)	52	(50)	38	(53)	135	(53)
St George's	U	99	(54)	69	(51)	80	(55)	248	(53)
The Royal Free	V	74	(62)	95	(48)	64	(50)	233	(53)
The Royal London	W	168	(59)	187	(73)	161	(66)	516	(66)
ICHNT	X	150	(65)	148	(63)	121	(60)	419	(63)
UK		**2097**	**(58)**	**1972**	**(59)**	**1658**	**(57)**	**5727**	**(58)**

Centre has reached the lower 99.8% confidence limit
Centre has reached the lower 95% confidence limit
Centre has reached the upper 95% confidence limit
Centre has reached the upper 99.8% confidence limit

4.2 DCD offer decline rates, 1 April 2023 – 31 March 2026

Figure 4.2 compares individual centre offer decline rates with the national rate for DCD donors over the time period, 1 April 2023 and 31 March 2026. Centres can be identified by the information shown in **Table 4.2**.

Figure 4.2 **Adult DCD donor kidney offer decline rates for kidneys that resulted in a transplant, 1 April 2023 and 31 March 2026**

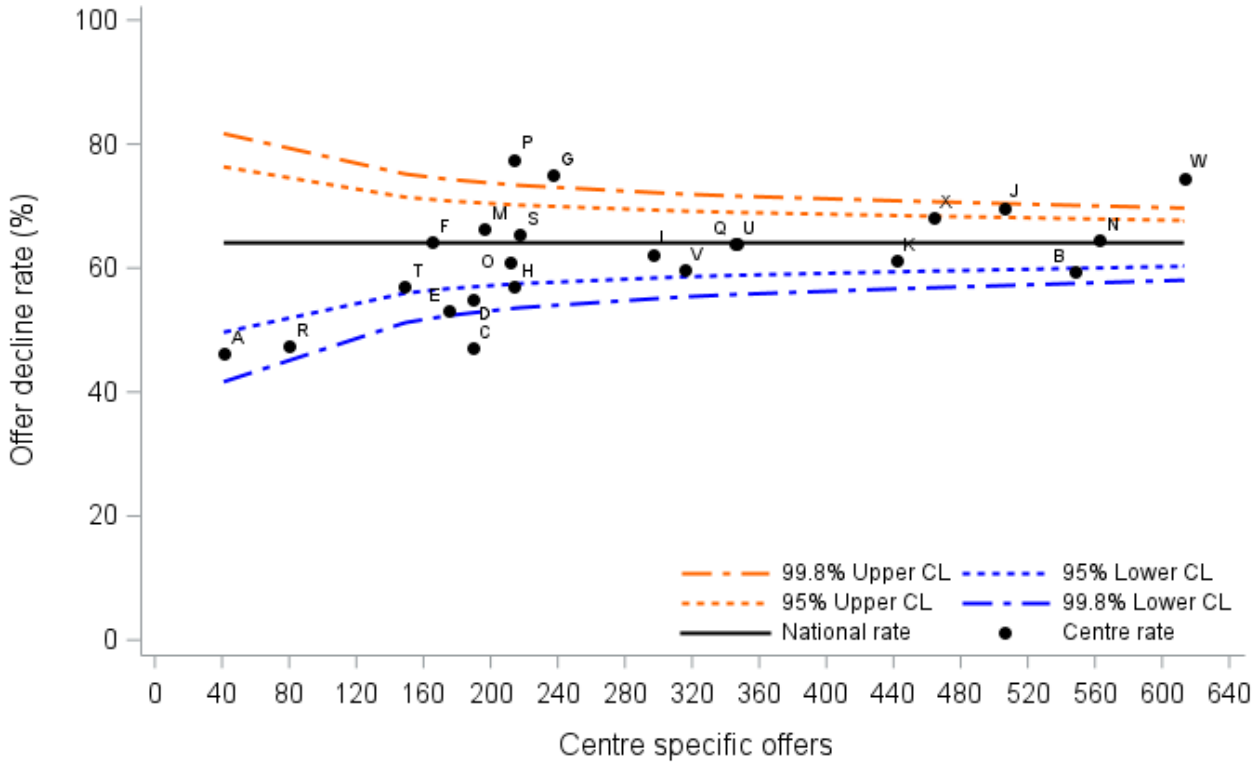


Table 4.2 compares individual centre offer decline rates for DCD donors over time by financial year.

Table 4.2 Adult DCD donor kidney offer decline rates by transplant centre, 1 April 2023 and 31 March 2026

Centre	Code	2023/24		2024/25		2025/26		Overall	
		N	(%)	N	(%)	N	(%)	N	(%)
Belfast	A	20	(55)	10	(30)	11	(45)	41	(46)
Birmingham	B	205	(69)	182	(62)	161	(45)	548	(59)
Bristol	C	68	(47)	60	(48)	61	(46)	189	(47)
Cambridge	D	59	(64)	58	(38)	72	(61)	189	(55)
Cardiff	E	61	(61)	51	(43)	63	(54)	175	(53)
Coventry	F	58	(62)	59	(68)	48	(63)	165	(64)
Edinburgh	G	79	(67)	85	(74)	73	(85)	237	(75)
Glasgow	H	65	(46)	61	(66)	88	(59)	214	(57)
Guy's	J	185	(75)	151	(67)	170	(67)	506	(70)
Leeds	K	163	(67)	136	(58)	143	(57)	442	(61)
Leicester	L	99	(69)	107	(58)	91	(60)	297	(62)
Liverpool	M	77	(73)	61	(56)	58	(69)	196	(66)
Manchester	N	180	(65)	194	(64)	189	(65)	563	(65)
Newcastle	O	72	(74)	67	(48)	73	(60)	212	(61)
Nottingham	P	74	(76)	68	(79)	72	(78)	214	(78)
Oxford	Q	95	(65)	127	(61)	125	(66)	347	(64)
Plymouth	R	30	(53)	29	(48)	21	(38)	80	(48)
Portsmouth	S	88	(68)	56	(66)	73	(62)	217	(65)
Sheffield	T	64	(55)	51	(57)	34	(62)	149	(57)
St George's	U	135	(68)	106	(58)	105	(64)	346	(64)
The Royal Free	V	103	(56)	107	(65)	106	(58)	316	(60)
The Royal London	W	181	(72)	217	(74)	215	(77)	613	(75)
ICHNT	X	168	(66)	142	(68)	154	(70)	464	(68)
UK		**2329**	**(66)**	**2185**	**(62)**	**2206**	**(64)**	**6720**	**(64)**

Centre has reached the lower 99.8% confidence limit
Centre has reached the lower 95% confidence limit
Centre has reached the upper 95% confidence limit
Centre has reached the upper 99.8% confidence limit

4.3 Reallocation of kidneys, 1 April 2023 – 31 March 2026

Between 3 April 2006 and 11 September 2019 all kidneys from donation after brain death (DBD) donors have been allocated through the 2006 National Kidney Allocation Scheme. There are however certain situations when a kidney can be reallocated to an alternative patient of the centre's choice. This occurs when the kidney is accepted and dispatched to a named patient but is subsequently declined and there are no other patients listed nationally who fall within Tiers A to D of the kidney allocation scheme (000 mismatched adults and paediatric patients or favourably matched paediatric patients).

In this situation the centre in receipt of the kidney can reallocate the organ to a locally listed patient of their choice based on an individual centre matching run.

Since 11 September 2019 all kidneys from deceased donors have been allocated through the 2019 National Kidney Offering Scheme. In a similar fashion to the 2006 scheme, if a kidney needs to be reallocated because the patient for whom the kidney has been accepted cannot subsequently receive the transplant then the kidney can be reallocated to an alternative patient of the centre's choice if the kidney has been dispatched to the transplant centre and there are no suitable patients in Tier A.

Funnel plots were used to compare centre specific reallocation rates and indicate how consistent the rates of the individual transplant centres are with the national rate. The overall national reallocation rate is shown by the solid line while the 95% and 99.8% confidence lines are indicated via a thin and thick dotted line, respectively. Each dot in the plot represents an individual transplant centre. Centres that are positioned above the upper limits indicate a reallocation rate that is higher than the national rate, while centres positioned below the lower limits indicates a reallocation rate that is lower than the national rate.

Figure 4.3 compares individual centre reallocation rates with the national rate over the time period, 1 April 2023 and 31 March 2026. Centres can be identified by the information shown in **Table 4.3**.

Figure 4.3 **Local reallocation of DBD donor kidneys following an acceptance of an adult offer through the national allocation scheme**

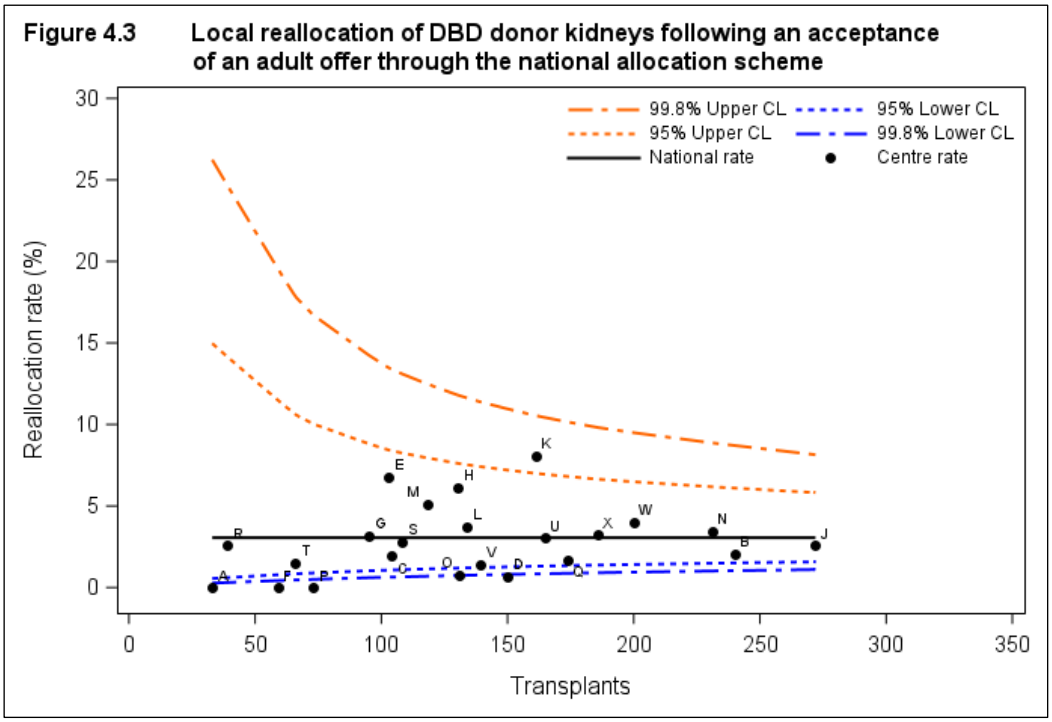


Table 4.3 compares individual reallocation rates over time by financial year.

Table 4.3 Local reallocation of DBD donor kidneys following an acceptance of an adult offer through the national allocation scheme

Centre	Code	2023/24		2024/25		2025/26		Overall	
		N	(%)	N	(%)	N	(%)	N	(%)
Belfast	A	14	(0)	13	(0)	6	(0)	33	(0)
Birmingham	B	101	(1)	75	(3)	64	(3)	240	(2)
Bristol	C	40	(0)	37	(0)	27	(7)	104	(2)
Cambridge	D	51	(0)	41	(2)	58	(0)	150	(1)
Cardiff	E	35	(6)	33	(3)	35	(11)	103	(7)
Coventry	F	20	(0)	16	(0)	23	(0)	59	(0)
Edinburgh	G	32	(3)	30	(3)	33	(3)	95	(3)
Glasgow	H	53	(9)	45	(4)	32	(3)	130	(6)
Guy's	J	106	(2)	83	(0)	83	(6)	272	(3)
Leeds	K	49	(4)	62	(13)	50	(6)	161	(8)
Leicester	L	59	(3)	44	(2)	31	(6)	134	(4)
Liverpool	M	47	(4)	45	(4)	26	(8)	118	(5)
Manchester	N	85	(4)	74	(3)	72	(4)	231	(3)
Newcastle	O	49	(0)	43	(2)	39	(0)	131	(1)
Nottingham	P	33	(0)	27	(0)	13	(0)	73	(0)
Oxford	Q	63	(2)	64	(3)	47	(0)	174	(2)
Plymouth	R	16	(6)	12	(0)	11	(0)	39	(3)
Portsmouth	S	39	(5)	42	(0)	27	(4)	108	(3)
Sheffield	T	20	(0)	27	(4)	19	(0)	66	(2)
St George's	U	62	(6)	52	(0)	51	(2)	165	(3)
The Royal Free	V	34	(3)	63	(0)	42	(2)	139	(1)
The Royal London	W	76	(3)	58	(3)	66	(6)	200	(4)
ICHNT	X	57	(2)	64	(5)	65	(3)	186	(3)
UK		**1141**	**(3)**	**1050**	**(3)**	**920**	**(4)**	**3111**	**(3)**

Centre has reached the lower 99.8% confidence limit
Centre has reached the lower 95% confidence limit
Centre has reached the upper 95% confidence limit
Centre has reached the upper 99.8% confidence limit

Adult kidney transplants

5.1 Kidney only transplants, 1 April 2016 – 31 March 2026

Figure 5.1 shows the total number of adult kidney only transplants performed in the last ten years, by type of donor.

Figure 5.1 Adult kidney only transplants, 1 April 2016 - 31 March 2026

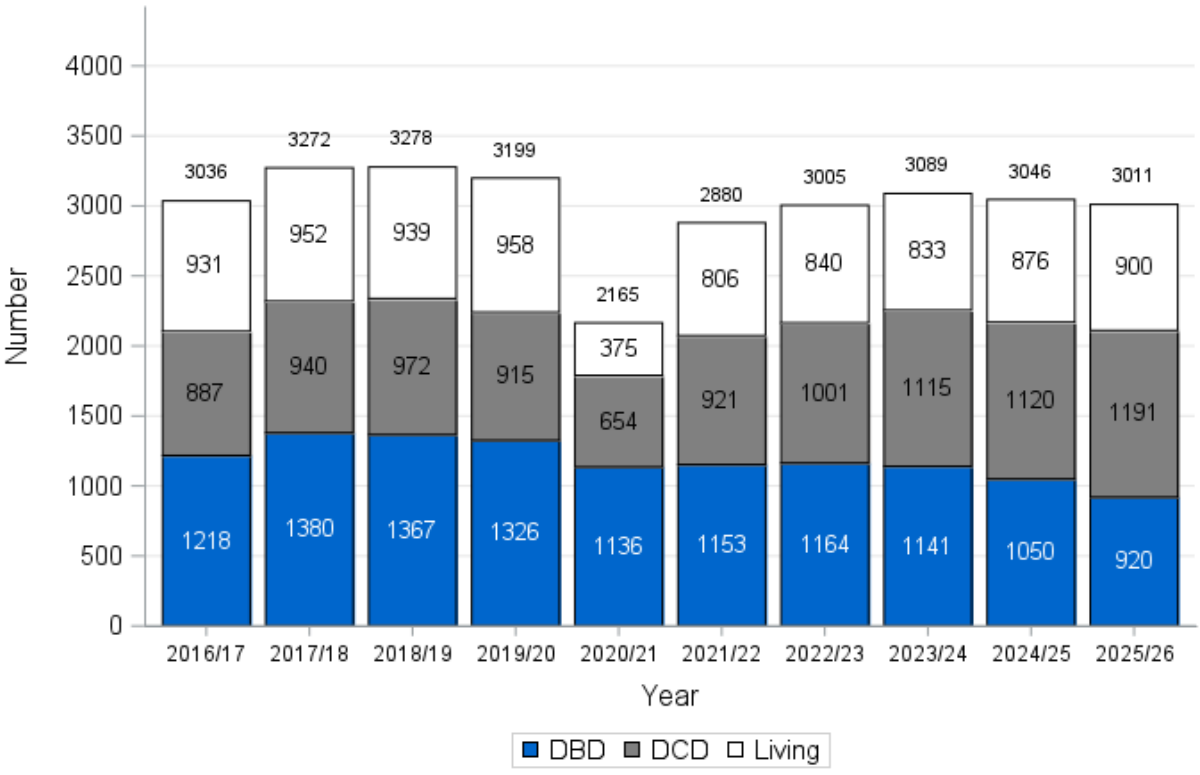
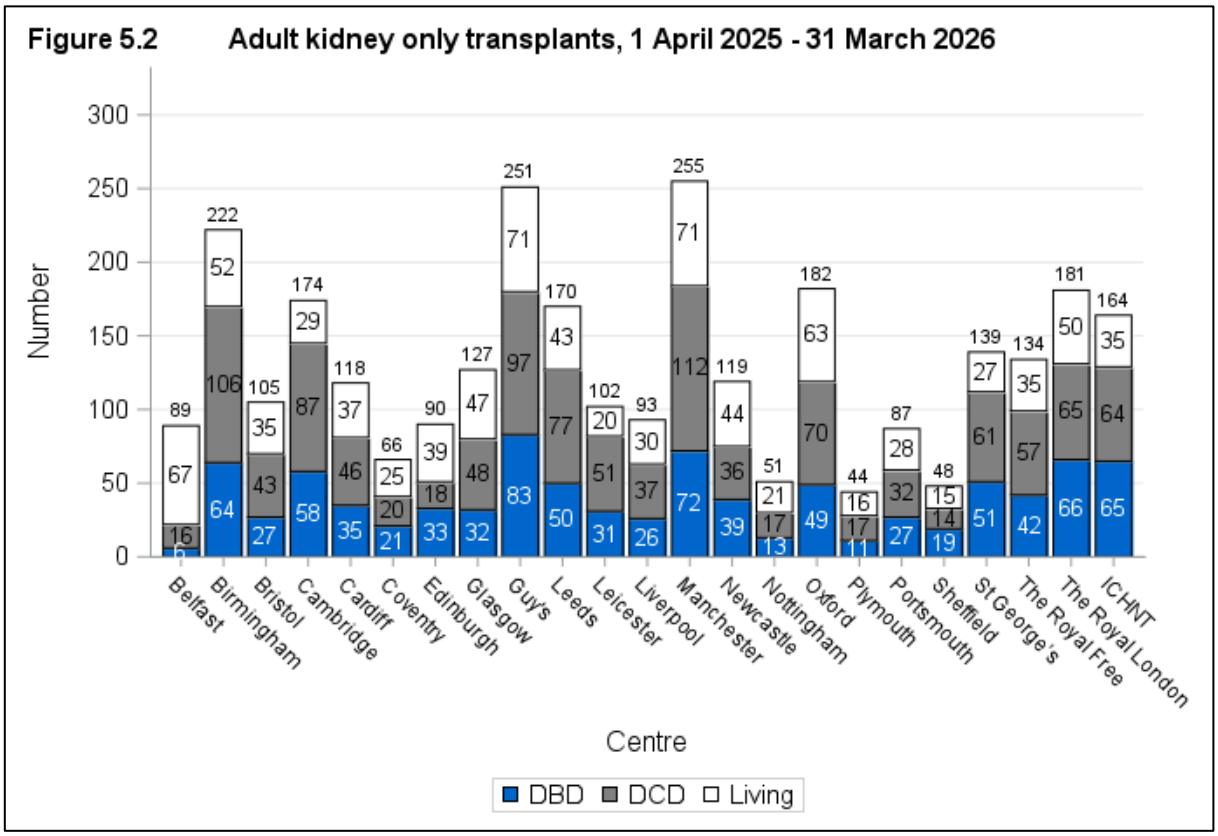


Figure 5.2 shows the total number of adult kidney only transplants performed in 2025/26, by centre and type of donor. The same information is presented in **Figure 5.3,** but this shows the proportion of DBD, DCD and living donor transplants performed at each centre.



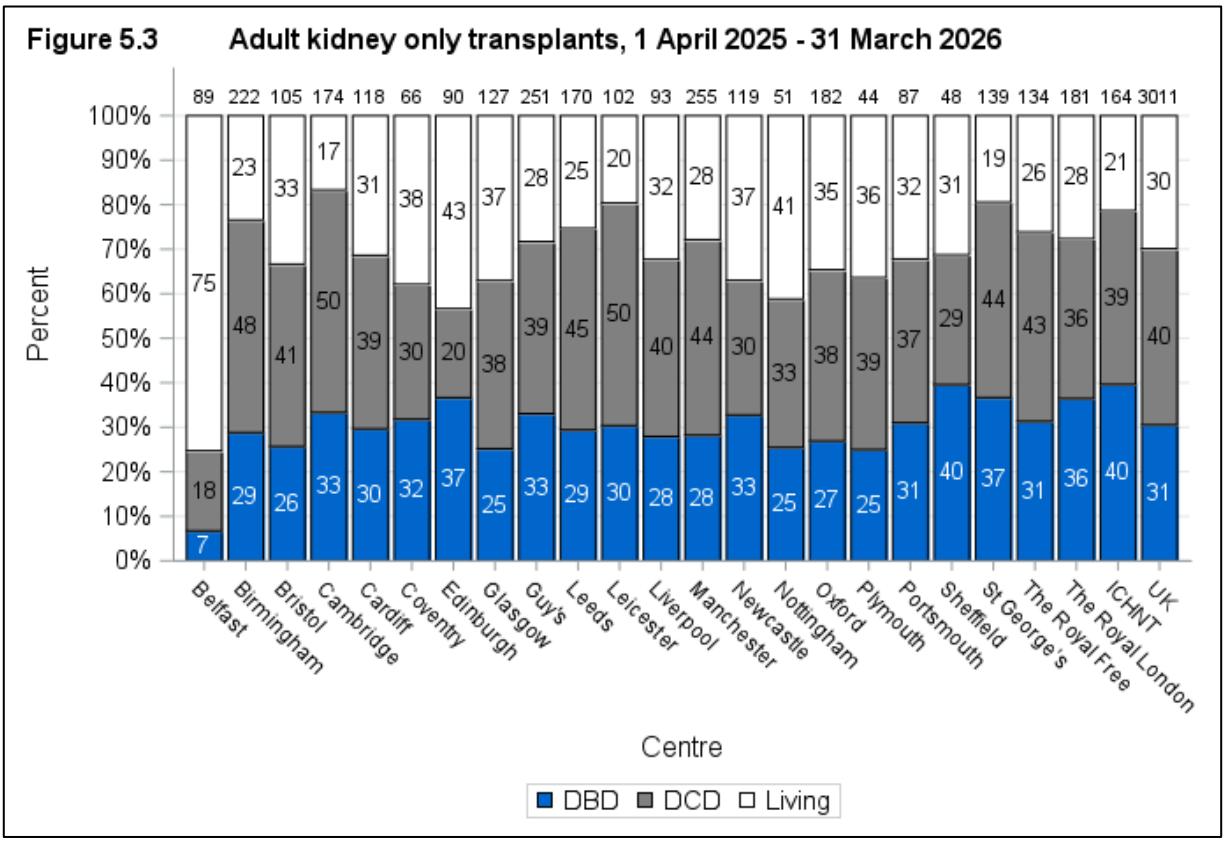
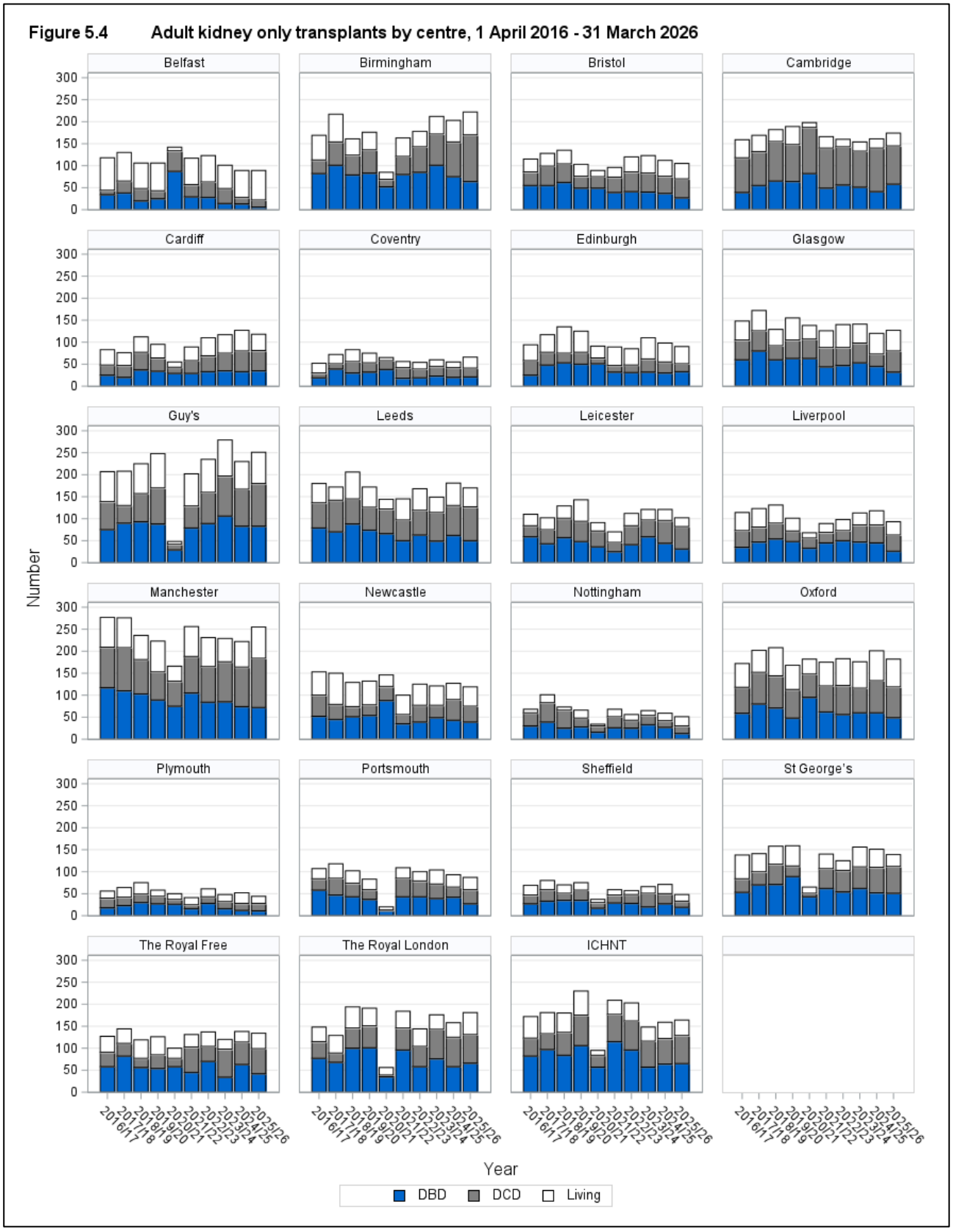


Figure 5.4 shows the total number of adult kidney only transplants performed in last ten years, by centre and type of donor.



5.2 Demographic characteristics of recipients, 1 April 2025 – 31 March 2026

The sex, ethnicity and age group of recipients who received a kidney only transplant are shown by centre in **Figure 5.5, 5.6 and 5.7**, respectively. Note that all percentages quoted are based only on data where relevant information was available.

Figure 5.5 Sex of adult kidney only transplant recipients, 1 April 2025 and 31 March 2026, by centre

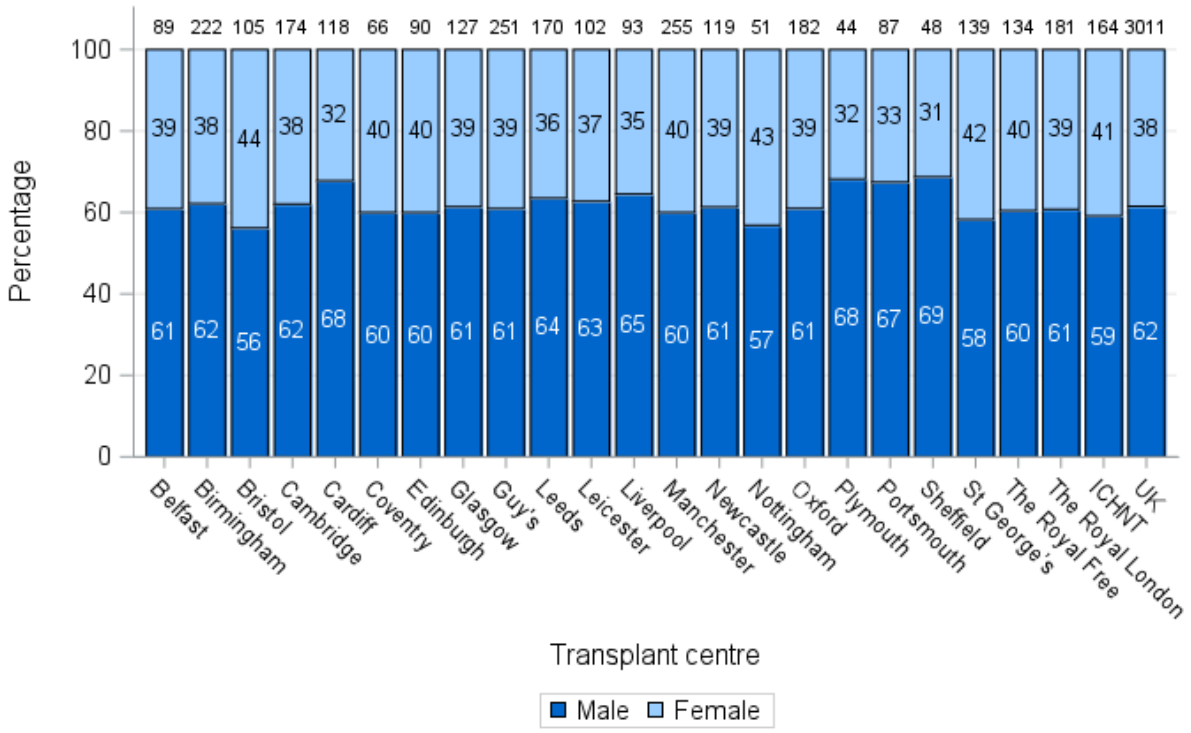


Figure 5.6 Ethnicity of adult kidney only transplant recipients, 1 April 2025 and 31 March 2026, by centre

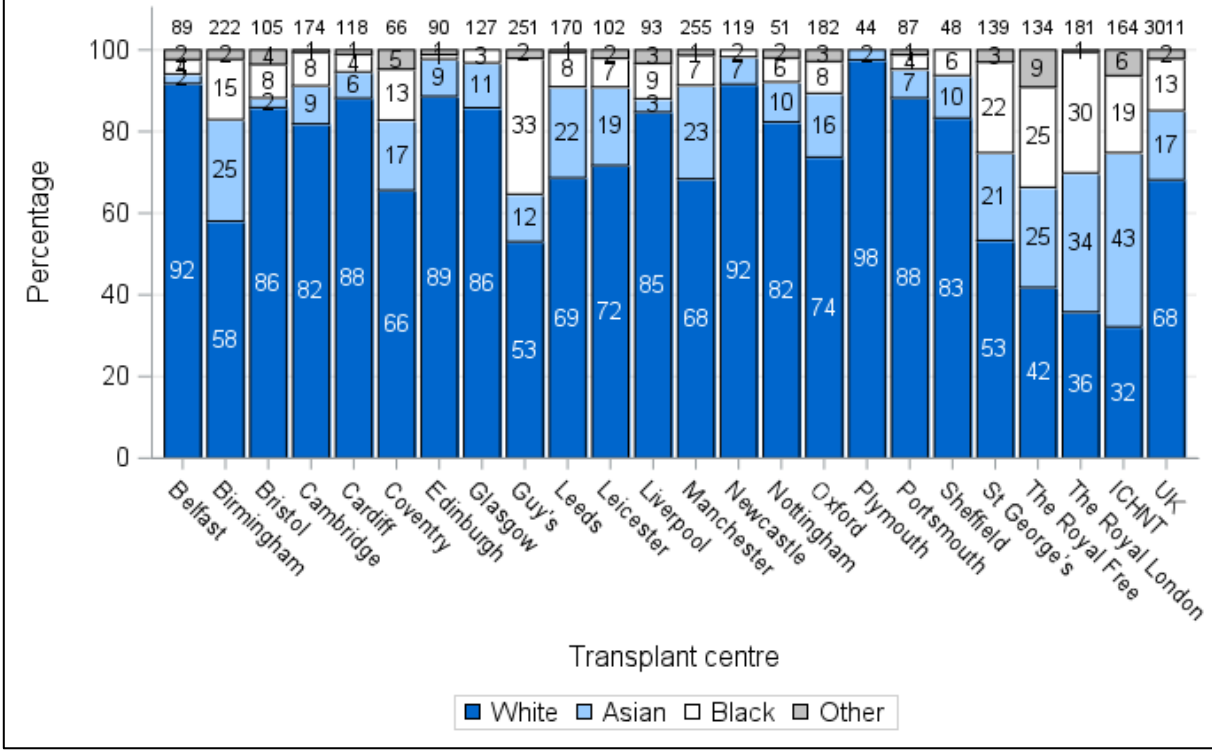
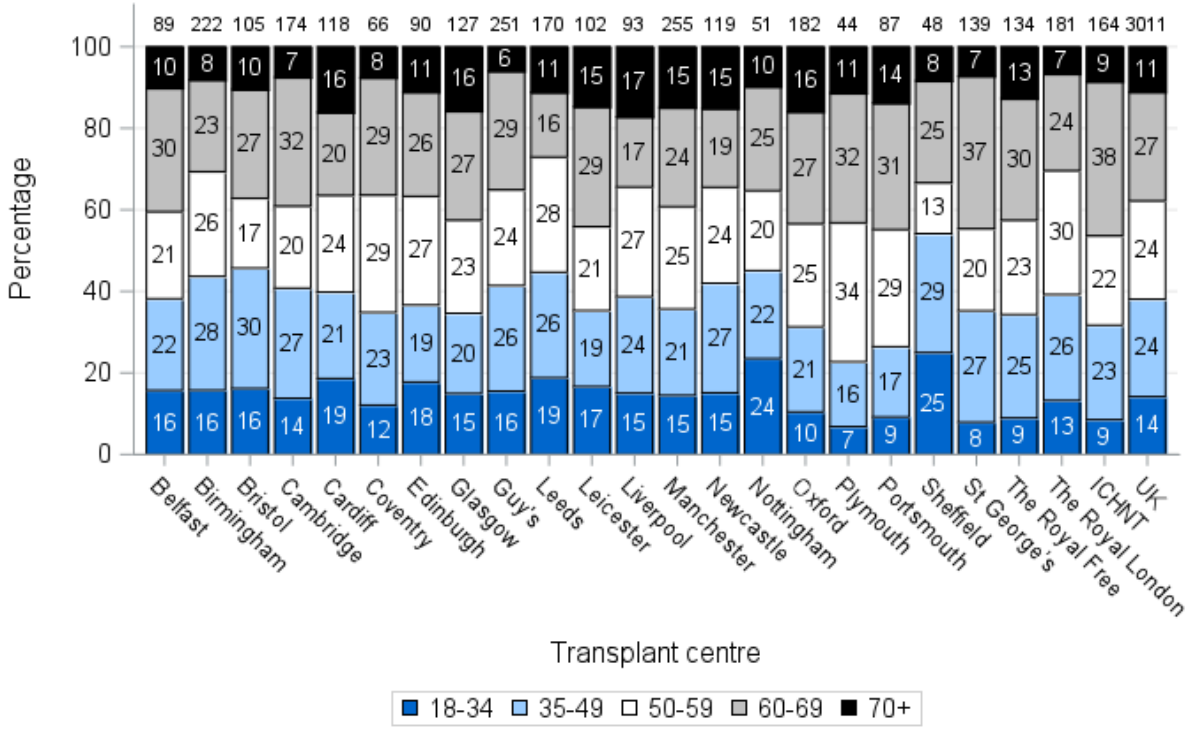


Figure 5.7 Age of adult kidney only transplant recipients, 1 April 2025 and 31 March 2026, by centre



5.3 Pre-emptive transplant rates, 1 April 2025 – 31 March 2026

Rates of pre-emptive kidney only transplantation are shown in **Figure 5.8** for adult deceased donor transplants and **Figure 5.9** for adult living donor transplants. Living donor transplants are more likely to be carried out before the need for dialysis than deceased donor transplants: 38% 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.

Figure 5.8 Adult deceased donor pre-emptive transplant rates by centre, 1 April 2025 - 31 March 2026

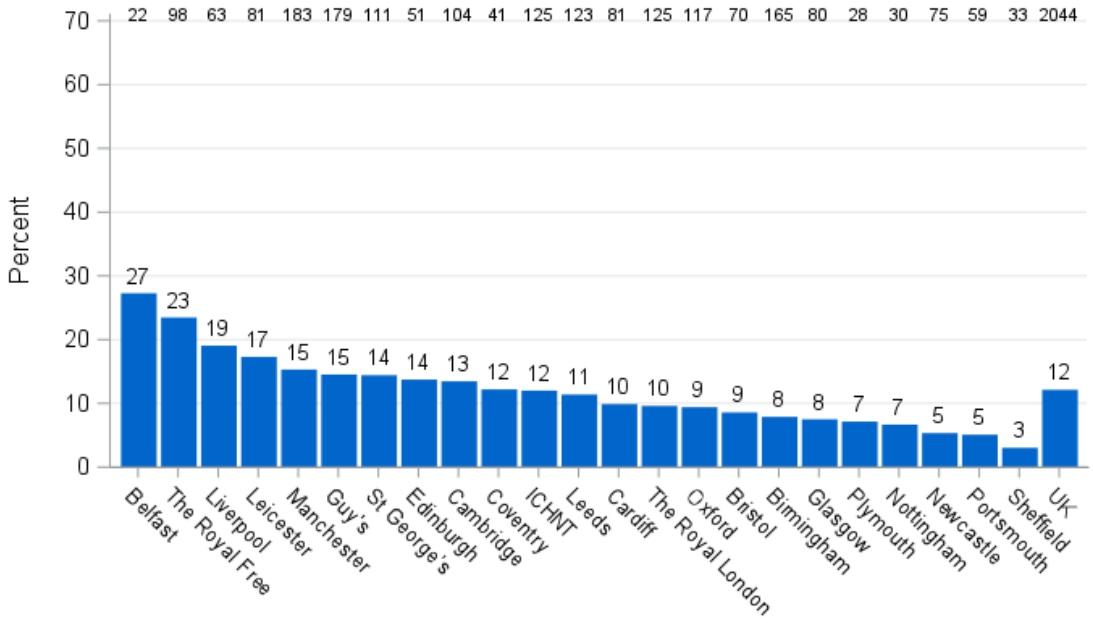
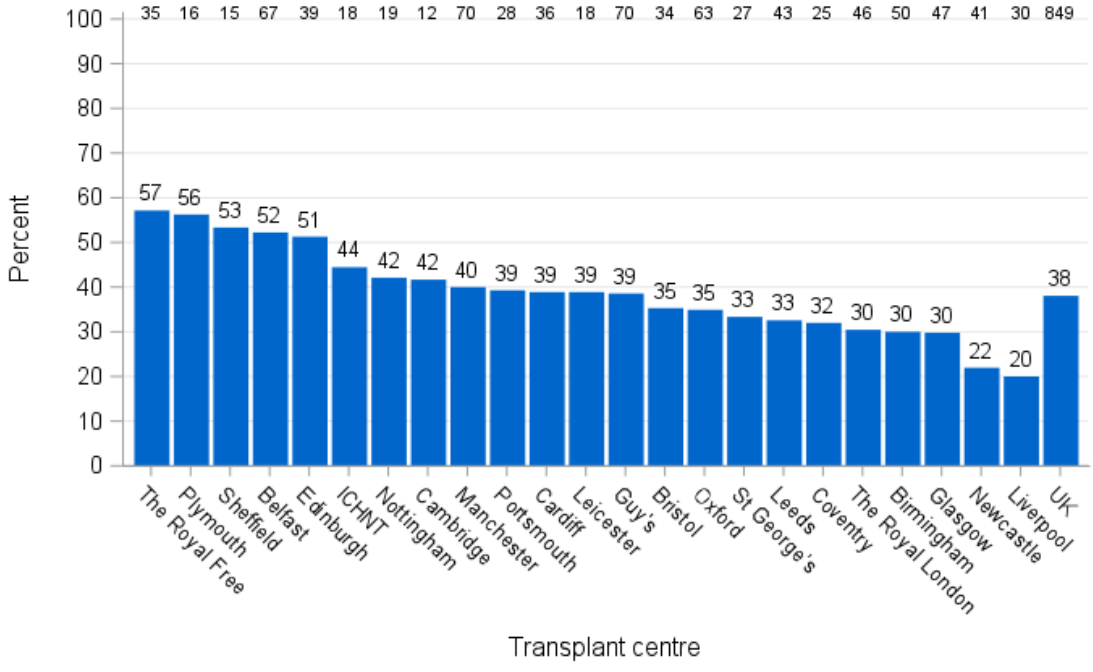


Figure 5.9 Adult living donor pre-emptive transplant rates by centre, 1 April 2025 - 31 March 2026



5.4 Kidney donor risk-index[1]

The severe shortage of deceased donor (DD) organs available for transplantation has led to increased use of kidneys from suboptimal donors with potentially less good transplant outcome. Categorising such kidneys according to anticipated outcome is important because it enables clinicians to be better informed when making decisions about organ allocation and allows appropriate counselling of potential recipients. Kidneys from suboptimal donors are variously referred to as marginal, extended criteria, or expanded criteria organs. Although categorising DD kidneys as either standard or expanded criteria has the advantage of simplicity, it does not adequately reflect the wide spectrum of donor kidney quality, and this has led to the development of more refined approaches to assessing the quality of DD kidneys. A donor risk index was developed by determining the factors that influence transplant survival, the time from transplant to the earlier of graft failure or patient death. A UK donor risk index was derived from the parameter estimates of the donor factors in the Cox model developed for overall transplant survival. This gives the following index:

UKKDRI = exp{-0.245 x (donor age <40) +
0.396 x (donor age ≥60) +
0.265 x (history of hypertension) +
0.0253 x [donor weight(kg)-75]/10) +
0.00461 x (days in hospital) +
0.0465 x (adrenaline)}

Reference

1 Watson CJE, Johnson RJ, Birch R, Collett D, Bradley JA. A simplified donor risk index for predicting outcome after deceased donor kidney transplantation. *Transplantation*, 2012; 93: 314-318

Figure 5.10 shows the number of transplanted DBD donor kidneys over the last ten financial years by kidney donor risk index group. In 2025/26, 39% of all transplants were performed using kidneys from donors categorised as high risk (UK Donor risk index ≥1.35).

Figure 5.10 UK Kidney Donor Risk Index of transplanted DBD donor kidneys 1 April 2016 - 31 March 2026

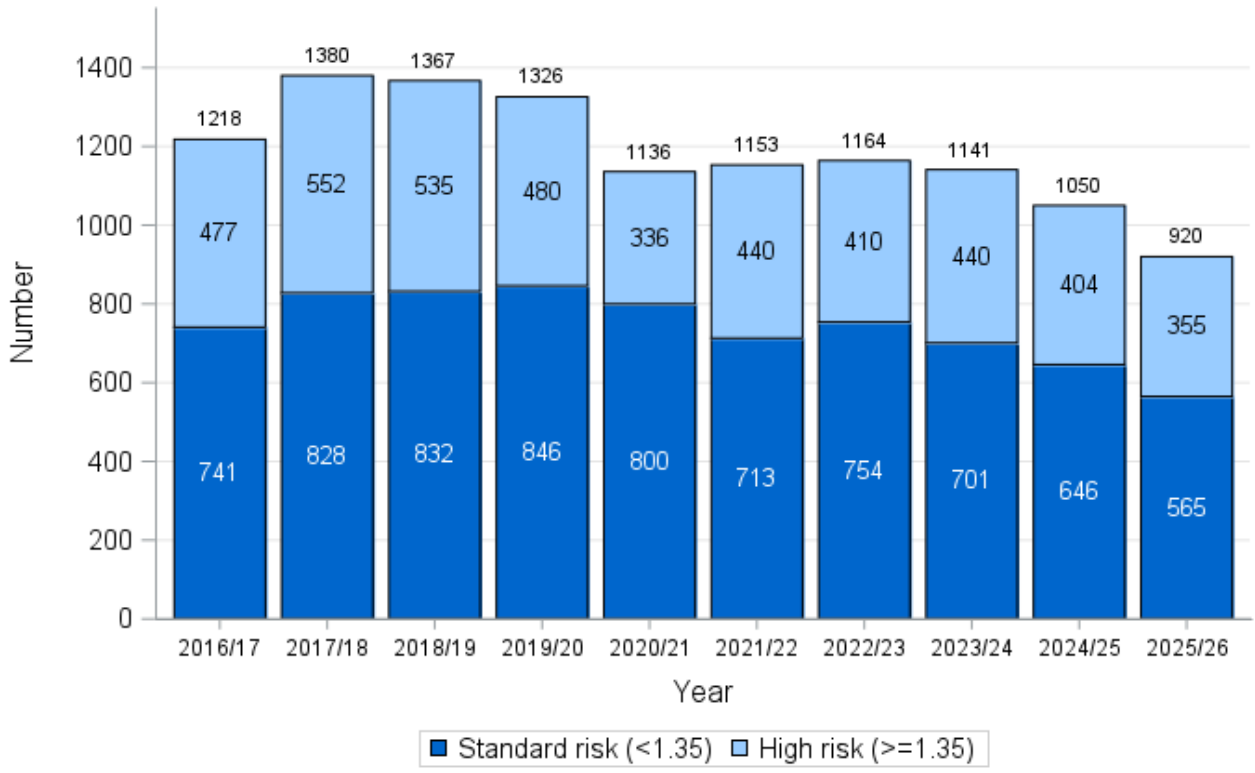


Figure 5.11 shows the number of transplanted DBD donor kidneys in 2025/26 by kidney donor risk index group for each transplant centre. The same information is presented in **Figure 5.12** but this shows the proportion of standard risk and high risk donor transplants performed at each centre.

Figure 5.11 UK Kidney Donor Risk Index of transplanted DBD donor kidneys 1 April 2025 - 31 March 2026

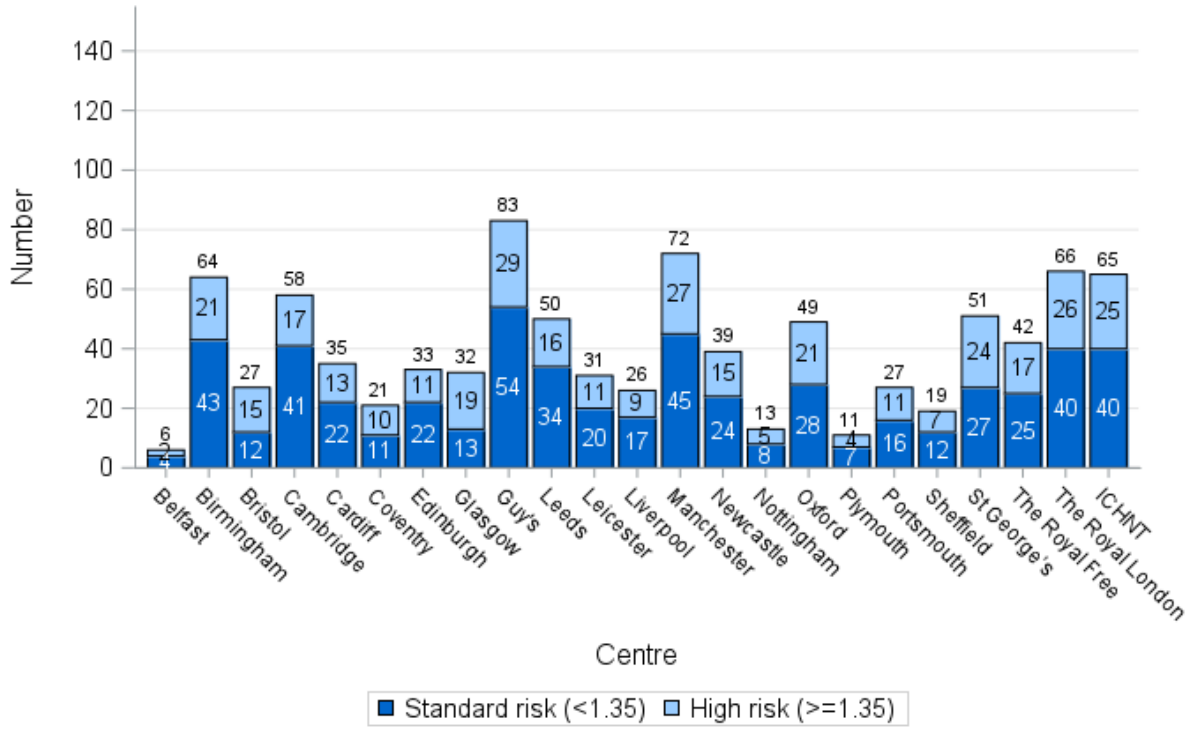


Figure 5.12 UK Kidney Donor Risk Index of transplanted DBD donor kidneys 1 April 2025 - 31 March 2026

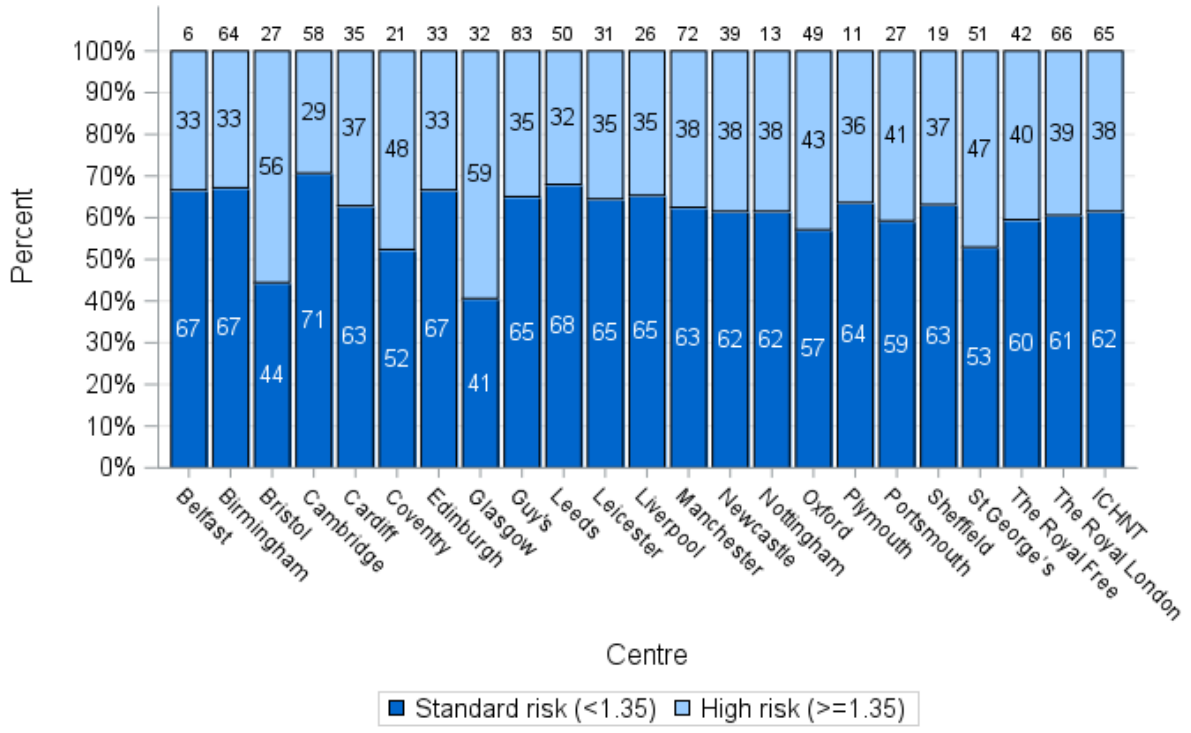


Figure 5.13 shows the number of transplanted DBD donor kidneys in the last ten years by kidney donor risk index group for each transplant centre.

Figure 5.13 **UK Kidney Donor Risk Index of transplanted DBD donor kidneys by centre, 1 April 2016 - 31 March 2026**



5.5 2019 Kidney Offering Scheme Donor Risk Index and Recipient Risk Index, 1 April 2025 – 31 March 2026

A new Kidney Donor Risk Index (DRI) was developed for deceased donors alongside the change in kidney offering scheme in 2019. This DRI is calculated using seven risk factors. A donor is then categorised into one of four groups (D1-D4) based on the risk score and by pre-determined cut-off values.

$$
\begin{aligned}
DRI = \exp\{\ & 0.023 \times (\text{donor age}-50) \\
& -0.152 \times ([\text{donor height}-170]/10) \\
& +0.149 \times (\text{history of hypertension}) \\
& -0.184 \times (\text{female donor}) \\
& +0.190 \times (\text{CMV +ve donor}) \\
& -0.023 \times ([\text{offer eGFR}-90]/10) \\
& +0.015 \times (\text{days in hospital})\ \}
\end{aligned}
$$

D1 → DRI ≤ 0.79 (lowest risk)
D2 → DRI 0.79 – 1.12
D3 → DRI 1.12 – 1.50
D4 → DRI ≥1.50 (highest risk)

As discussed in Section 3.8 a Recipient Risk Score (RRI) was also developed alongside the 2019 offering scheme using four risk factors.

$$
\begin{aligned}
RRI = \exp\{\ & 0 \times (\text{recipient age} \leq 25)-75) \\
& +0.016 \times ((\text{recipient age} > 25)-75) \\
& +0.361 \times (\text{recipient on dialysis at registration}) \\
& +0.033 \times ([\text{waiting time from dialysis}-950]/365.25) \\
& +0.252 \times (\text{Diabetic recipient})\ \}
\end{aligned}
$$

A recipient is then categorised into one of four groups based on the risk score and pre-determined cut-off values.

R1 → RRI ≤ 0.74 (lowest risk)
R2 → RRI 0.74 - 0.94
R3 → RRI 0.94 – 1.20
R4 → RRI ≥1.20 (highest risk)

Table 5.1 presents the DRI and RRI groups and average scores for kidneys transplanted between 1 April 2025 and 31 March 2026.

Table 5.1 UK Kidney Donor Risk Index of transplanted deceased donor kidneys and Recipient Risk Index of those receiving them, 1 April 2025 - 31 March 2026

Transplant centre	Donor Risk Group					Recipient Risk Group				
	D1	D2	D3	D4	Avg. DRI	R1	R2	R3	R4	Avg. RRI
Belfast	4	11	5	3	1.09	8	6	8	1	0.85
Birmingham	40	54	37	45	1.17	39	35	44	57	1.05
Bristol	12	17	16	27	1.35	15	23	19	15	0.97
Cambridge	46	36	40	43	1.16	31	52	44	36	0.98
Cardiff	23	16	23	26	1.25	21	21	18	28	1
Coventry	9	11	14	11	1.22	8	7	17	13	1.06
Edinburgh	26	12	15	15	1.06	18	8	26	16	1
Glasgow	16	16	20	29	1.29	14	31	15	21	1
GOSH	7	1	2	0	0.71	10	0	0	0	0.61
Guy's	50	49	50	54	1.2	48	45	53	55	1
Leeds	42	25	33	33	1.14	46	23	34	30	0.93
Leicester	22	18	22	20	1.14	18	19	23	22	1
Liverpool	24	15	6	18	1.09	19	13	13	18	0.97
Manchester	82	47	38	60	1.12	57	59	61	50	0.98
Newcastle	18	15	20	25	1.25	15	18	29	16	1.02
Nottingham	11	13	6	6	1.03	12	10	8	6	0.91
Oxford	49	30	38	30	1.11	26	29	53	39	1.04
Plymouth	5	9	8	6	1.19	4	11	6	7	0.99
Portsmouth	10	14	19	16	1.28	11	14	17	17	1.02
Sheffield	6	12	7	8	1.18	8	12	6	7	0.92
St George's	21	23	31	37	1.35	21	22	33	36	1.04
The Royal Free	25	26	27	22	1.15	27	25	22	25	0.97
The Royal London	27	38	35	31	1.21	36	34	38	23	0.94
ICHNT	26	33	34	41	1.27	19	40	33	42	1.04
UK	**601**	**541**	**546**	**606**	**1.19**	**531**	**557**	**620**	**580**	**0.99**

5.6 Total preservation time, 1 April 2023 – 31 March 2026

The length of time that elapses between the initial perfusion of the kidney with preservation fluid to its transplantation into the recipient is called the total preservation time (preservation time). Generally, the shorter this time, the more likely the kidney is to work immediately and the better the long-term outcome. One of the reasons why live donor kidney transplantation is so successful is because the preservation time is generally three to six hours long. For deceased donor renal transplants, preservation time is unlikely to be as short as this, but efforts are made to keep the time to a minimum. Evidence indicates that the outcome is only adversely affected when preservation time is longer than 20 hours, although many deceased donor kidney transplants with a preservation time of more than 20 hours have been very successful.

The factors which determine preservation time 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 preservation times are shown in addition to inter-quartile ranges. Fifty percent of the transplants have a preservation time within the inter-quartile range. There is some variation in average (median) preservation time between different transplant centres although all centres continually try to reduce this time.

Figure 5.14 shows the median total preservation time in adult DBD donor kidney only transplants over the last 10 years.

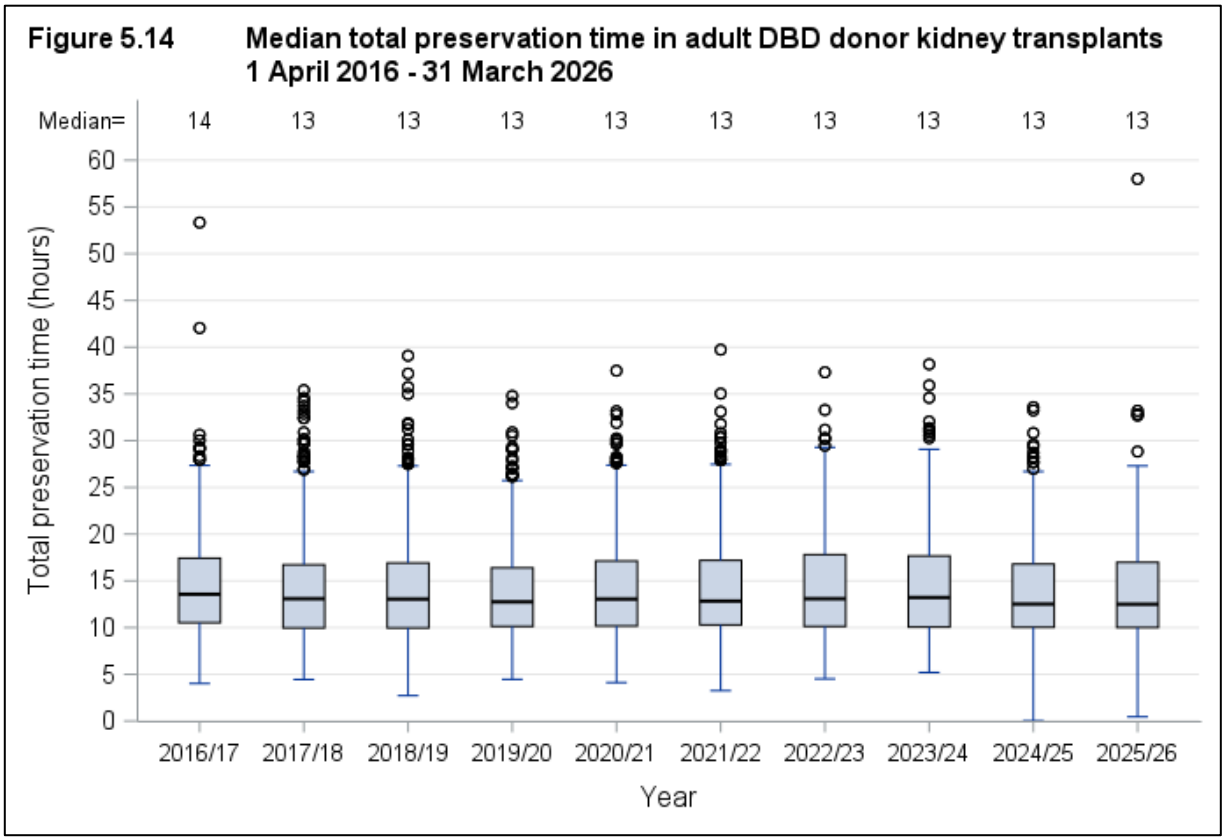


Figure 5.15 shows the median total preservation time in adult DBD donor kidney only transplants in 2025/26 for each transplant centre.

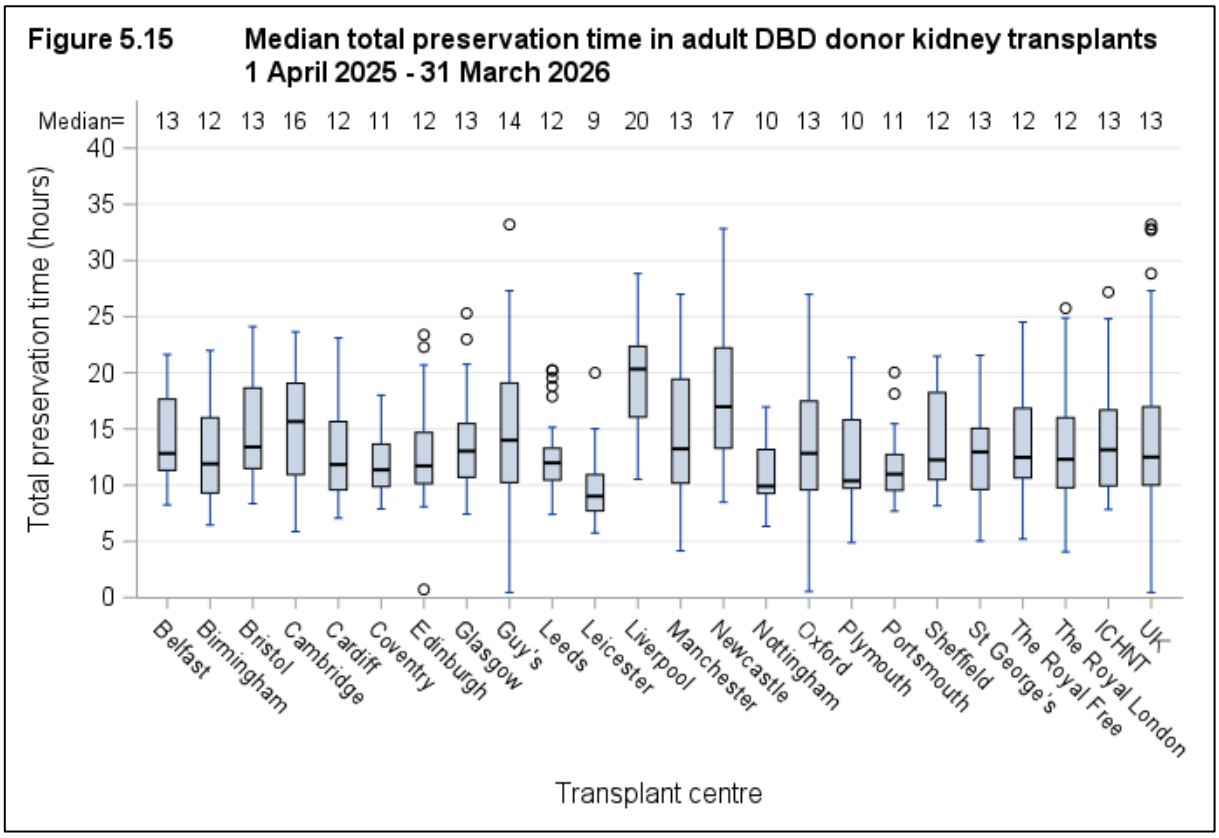


Figure 5.16 shows the median total preservation in adult DBD donor kidney only transplants over the last ten years for each transplant centre.

Figure 5.16 Median total preservation time in adult DBD donor kidney transplants, 1 April 2016 - 31 March 2026



Figure 5.17 shows the proportion of adult DBD donor kidney only transplants in 2025/26 that have been performed within 18 hours of preservation time for each transplant centre.

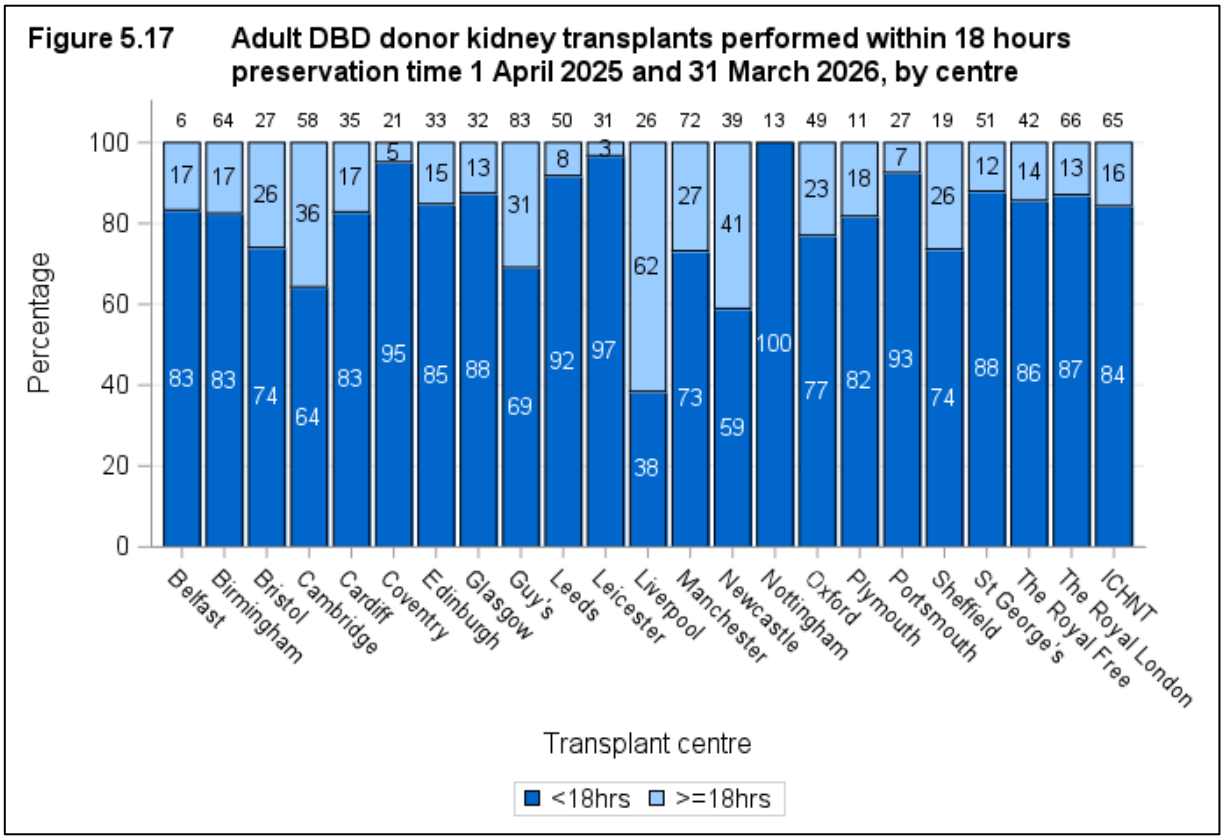


Figure 5.18 shows the median total preservation time in adult DCD donor kidney only transplants over the last 10 years.

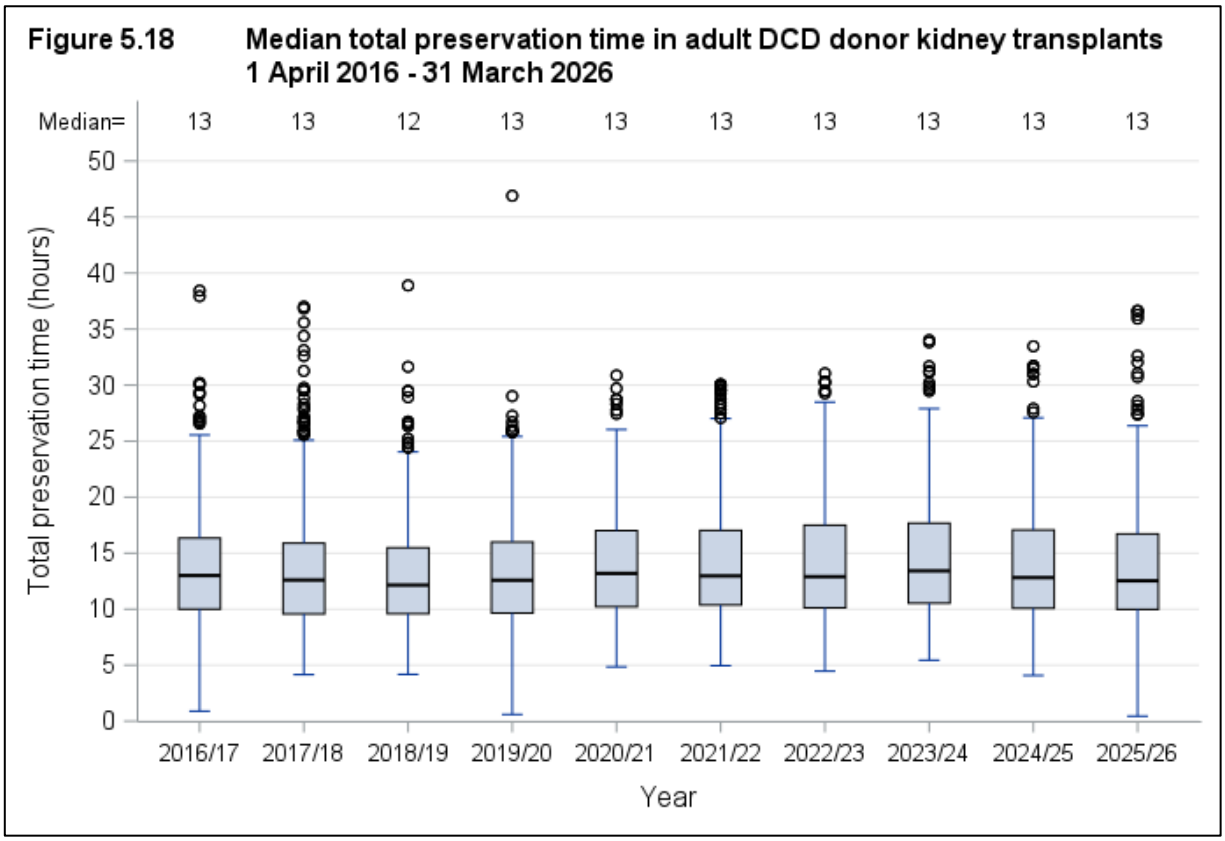


Figure 5.19 shows the median total preservation time in adult DCD donor kidney only transplants in 2025/26 for each transplant centre.

Figure 5.19 Median total preservation time in adult DCD donor kidney transplants 1 April 2025 - 31 March 2026

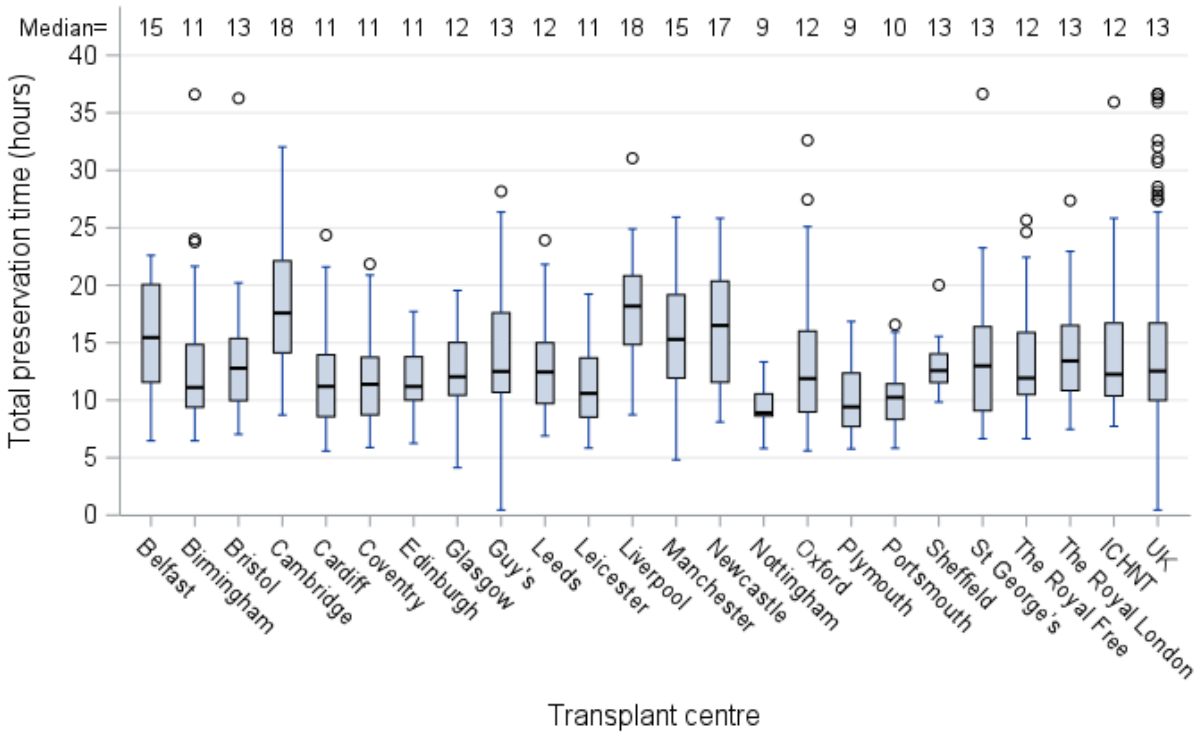


Figure 5.20 shows the median total preservation time in adult DCD donor kidney only transplants over the last ten years for each transplant centre.

Figure 5.20 **Median total preservation time in adult DCD donor kidney transplants, 1 April 2016 - 31 March 2026**



Figure 5.21 shows the proportion of adult DCD donor kidney only transplants in 2025/26 that have been performed within 12 hours of preservation time for each transplant centre.

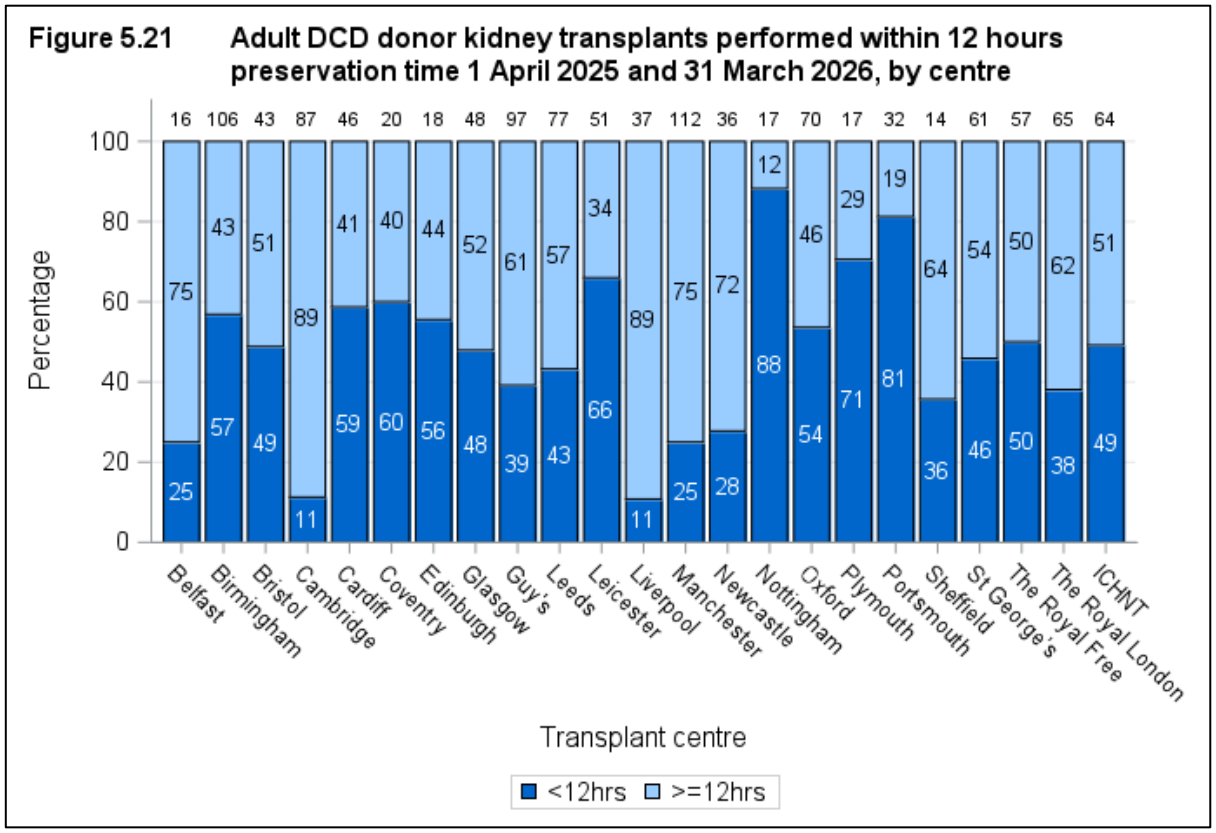


Figure 5.22 shows the median total preservation time in adult living donor kidney transplants over the last 10 years.

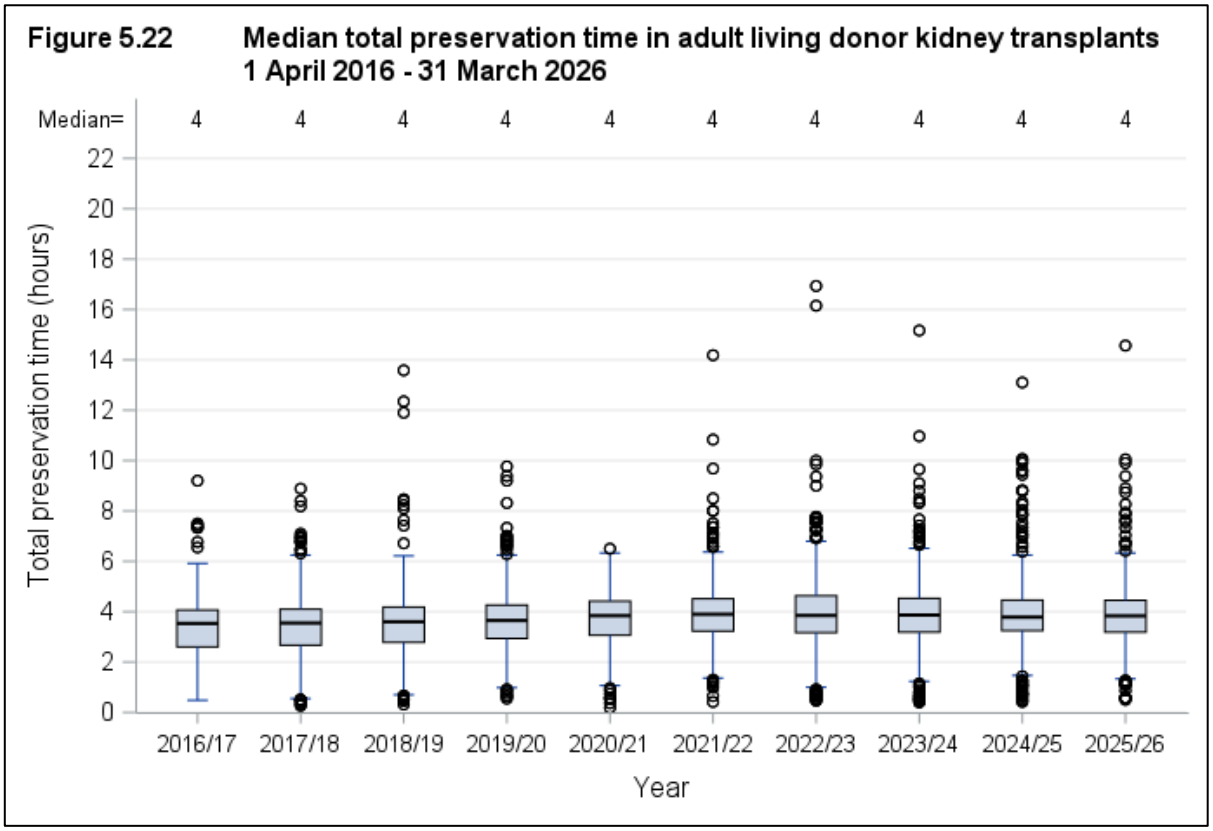


Figure 5.23 shows the median total preservation time in adult living donor kidney transplants in 2025/26 for each transplant centre.

Figure 5.23 Median total preservation time in adult living donor kidney transplants 1 April 2025 - 31 March 2026

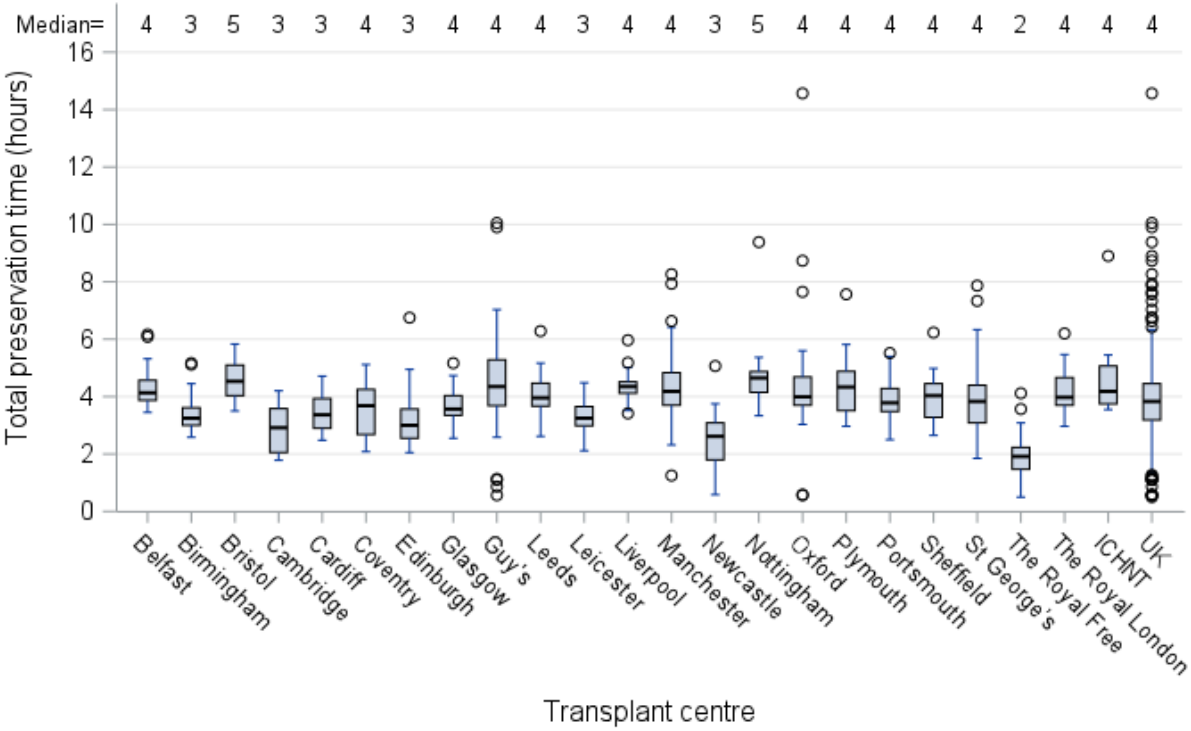


Figure 5.24 shows the median total preservation time in adult living donor kidney transplants over the last ten years for each transplant centre.

Figure 5.24 **Median total preservation time in adult living donor kidney transplants, 1 April 2016 - 31 March 2026**



Adult kidney outcomes

6.1 Deceased donor graft and patient survival

The funnel plots show that, for the most part, the centres lie within the confidence limits. Some of the funnel plots show some centres lie outside the lower 95% confidence limits, indicating that these centres have survival rates that are significantly lower than the national rate. Some of the funnel plots show some centres to be above the upper 99.8% confidence limit. This suggests that these centres may have survival rates that are considerably higher than the national rate. Centres can be identified by the information shown in **Table 6.1**. Transplants where cold ischaemia time (CIT) is unknown are excluded from the one year risk-adjusted analysis. Centres have been omitted where less than 75% of data reported. Work is currently in progress with centres to address follow up return issues and help improve follow up return rates.

Figure 6.1 **Risk-adjusted one year graft (death censored) survival rates for first deceased donor kidney transplants in adult patients, between 1 April 2021 and 31 March 2025**

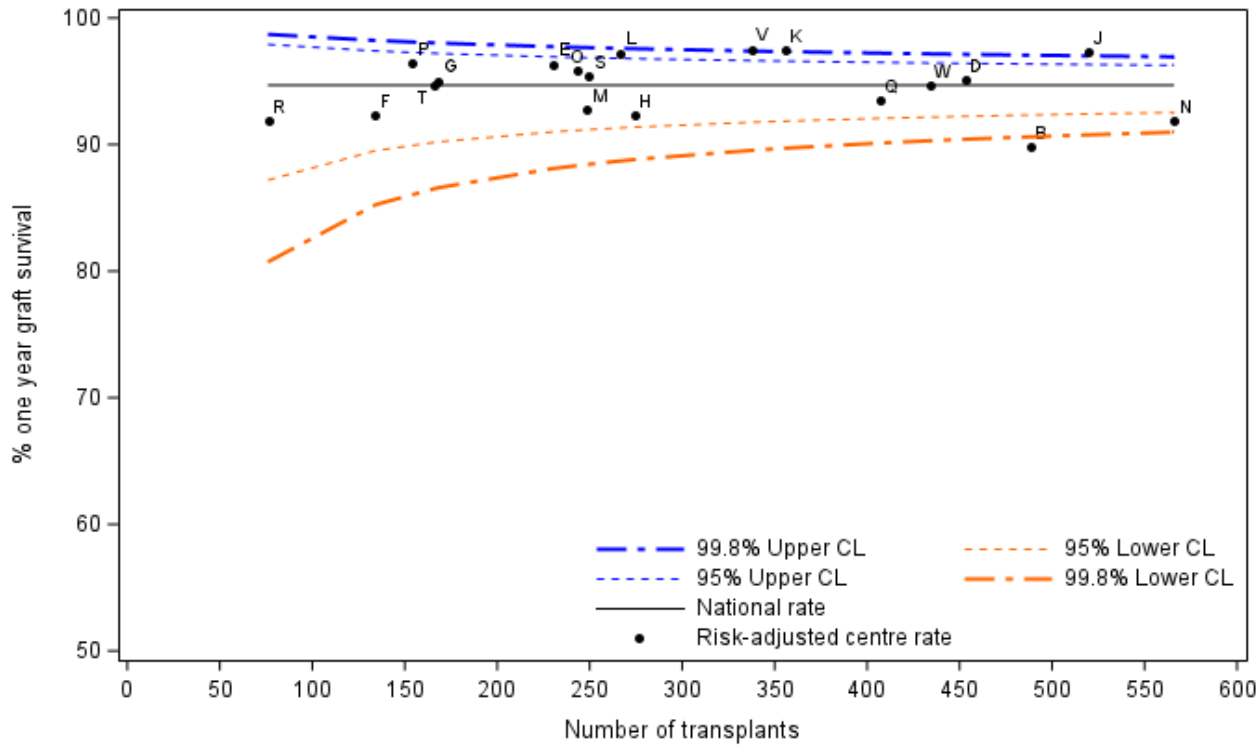


Figure 6.2 **Risk-adjusted one year patient survival rates for first deceased donor kidney transplants in adult patients, between 1 April 2021 and 31 March 2025**

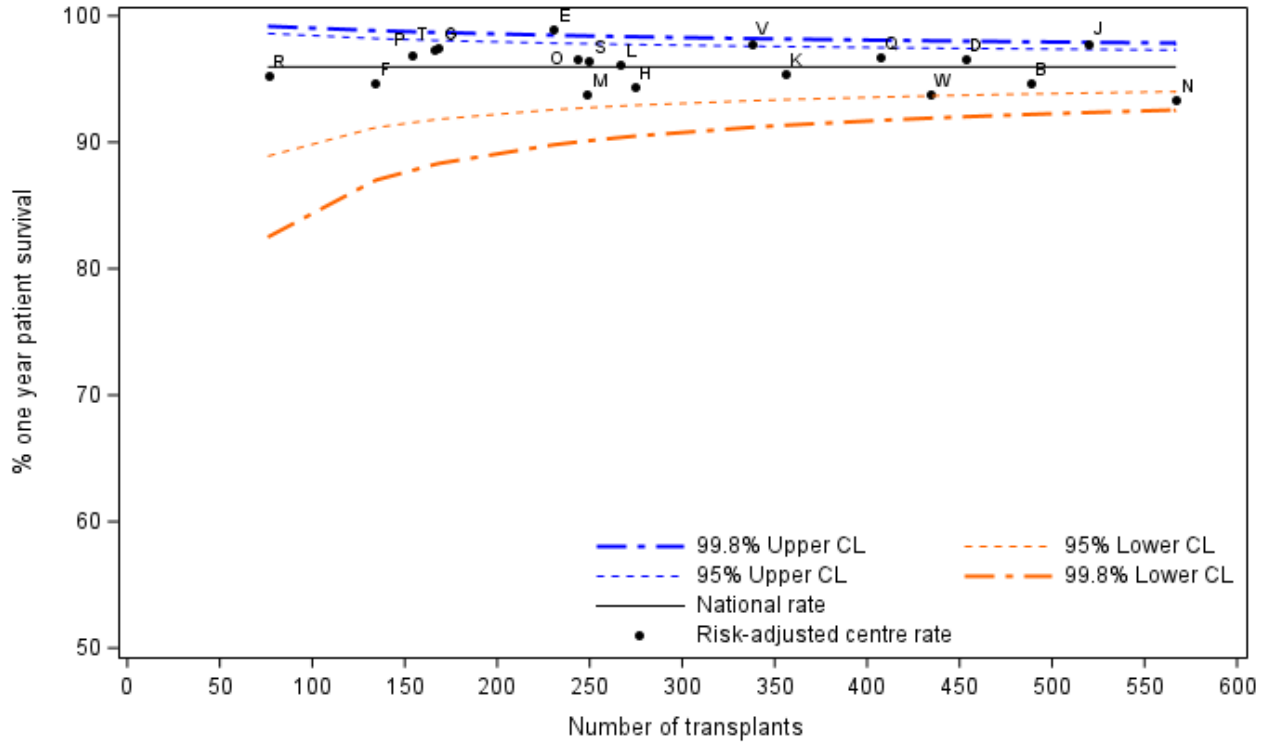


Figure 6.3 **Risk-adjusted five year graft (death censored) survival rates for first deceased donor kidney transplants in adult patients, between 1 April 2017 and 31 March 2021**

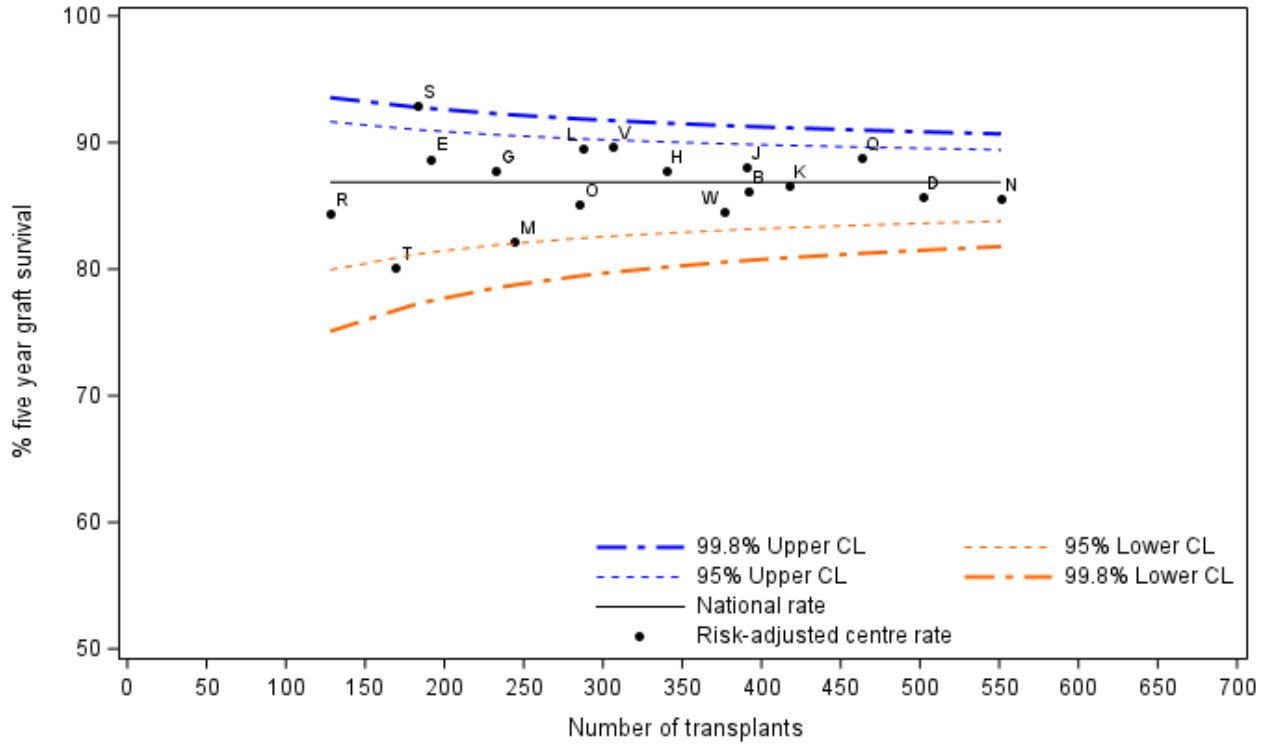


Figure 6.4 Risk-adjusted five year patient survival rates for first deceased donor kidney transplants in adult patients, between 1 April 2017 and 31 March 2021

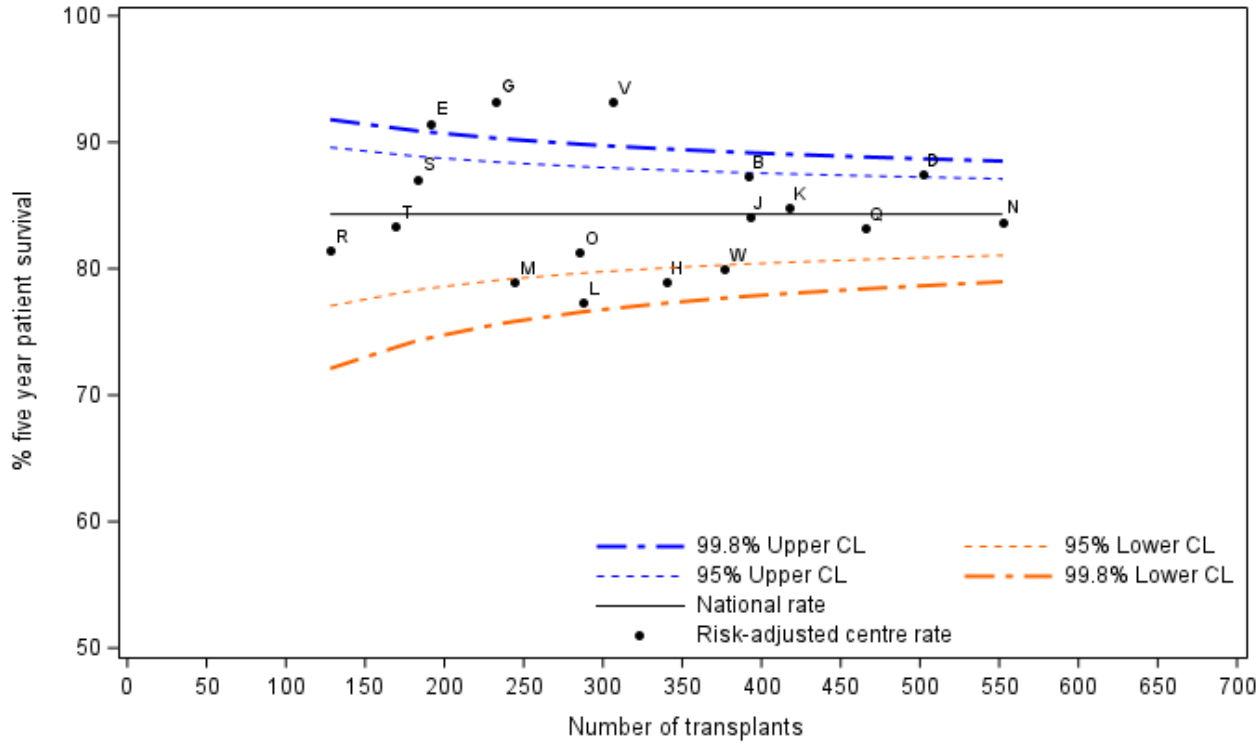


Table 6.1 One and five year first adult kidney-only graft and patient survival using kidneys from deceased donors

		Follow-up form return rates		Kidney graft survival				Patient survival			
		One-year*	Five-year**	One-year*		Five-year**		One-year*		Five-year**	
Centre	Code	%	%	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Belfast	A	63	67	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Birmingham	B	75	87	90	(86 - 93)	86	(82 - 90)	95	(92 - 97)	87	(83 - 91)
Bristol	C	66	63	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cambridge	D	85	84	95	(93 - 97)	86	(82 - 89)	97	(94 - 98)	88	(84 - 91)
Cardiff	E	98	91	96	(92 - 99)	89	(82 - 93)	99	(96 - 100	92	(86 - 95)
Coventry	F	81	41	92	(86 - 96)	N/A	N/A	95	(88 - 98)	N/A	N/A
Edinburgh	G	99	94	95	(90 - 98)	88	(82 - 92)	98	(94 - 99)	93	(89 - 96)
Glasgow	H	99	97	92	(88 - 95)	88	(83 - 91)	94	(91 - 97)	79	(73 - 84)
Guy's	J	76	84	97	(95 - 99)	88	(84 - 91)	98	(96 - 99)	84	(79 - 88)
Leeds	K	99	96	97	(95 - 99)	87	(82 - 90)	95	(93 - 97)	85	(80 - 89)
Leicester	L	91	77	97	(94 - 99)	90	(84 - 93)	96	(93 - 98)	77	(71 - 83)
Liverpool	M	98	89	93	(88 - 96)	82	(75 - 88)	94	(90 - 97)	79	(72 - 85)
Manchester	N	75	80	92	(89 - 94)	86	(82 - 89)	93	(90 - 96)	84	(80 - 87)
Newcastle	O	96	91	96	(92 - 98)	85	(79 - 90)	97	(93 - 99)	81	(75 - 86)
Nottingham	P	91	70	96	(92 - 99)	N/A	N/A	97	(93 - 99)	N/A	N/A
Oxford	Q	83	89	94	(90 - 96)	89	(85 - 92)	97	(94 - 98)	83	(79 - 87)
Plymouth	R	97	78	92	(82 - 97)	84	(74 - 91)	95	(88 - 99)	81	(71 - 89)
Portsmouth	S	90	92	95	(92 - 98)	93	(88 - 96)	96	(93 - 98)	87	(81 - 92)
Sheffield	T	99	96	95	(90 - 98)	80	(72 - 87)	97	(93 - 99)	83	(75 - 89)
St George's	U	71	74	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
The Royal Free	V	95	88	98	(95 - 99)	90	(85 - 93)	98	(96 - 99)	93	(89 - 96)
The Royal London	W	84	90	95	(92 - 97)	85	(80 - 88)	94	(90 - 96)	80	(74 - 85)
ICHNT	X	55	17	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
UK				**95**	**(94 - 95)**	**87**	**(86 - 88)**	**96**	**(95 - 96)**	**84**	**(83 - 85)**

Centre has reached the upper 99.8% confidence limit
Centre has reached the upper 95% confidence limit
Centre has reached the lower 95% confidence limit
Centre has reached the lower 99.8% confidence limit

* Includes transplants performed between 1 April 2021 - 31 March 2025
** Includes transplants performed between 1 April 2017 - 31 March 2021
Centres have been omitted where less than 75% of data reported and these are highlighted in grey

6.2 Living donor graft and patient survival

The funnel plots show that, for the most part, the centres lie within the confidence limits. Some of the funnel plots show some centres to be above the upper 95% confidence limit. This suggests that these centres may have survival rates that are considerably higher than the national rate. Centres can be identified by the information shown in **Table 6.2**. Living donor antibody incompatible kidney transplants are excluded from the analysis as these transplants are known to have inferior graft survival rates. Transplants where the donor age is unknown are excluded from the risk-adjusted analysis. Centres have been omitted where less than 75% of data reported. Work is currently in progress with centres to address follow up return issues and help improve follow up return rates.

Figure 6.5 **Risk-adjusted one year graft (death censored) survival rates for first live donor kidney transplants in adult patients, between 1 April 2021 and 31 March 2025**

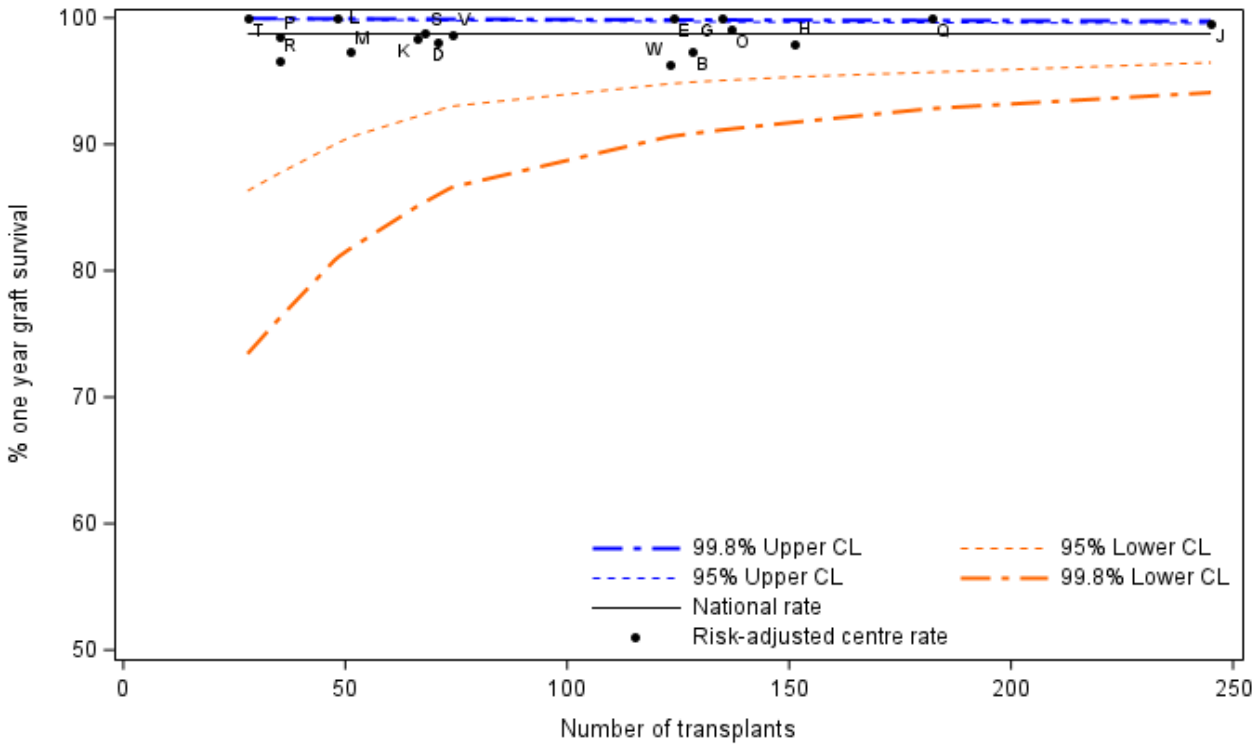


Figure 6.6 **Risk-adjusted one year patient survival rates for first live donor kidney transplants in adult patients, between 1 April 2021 and 31 March 2025**

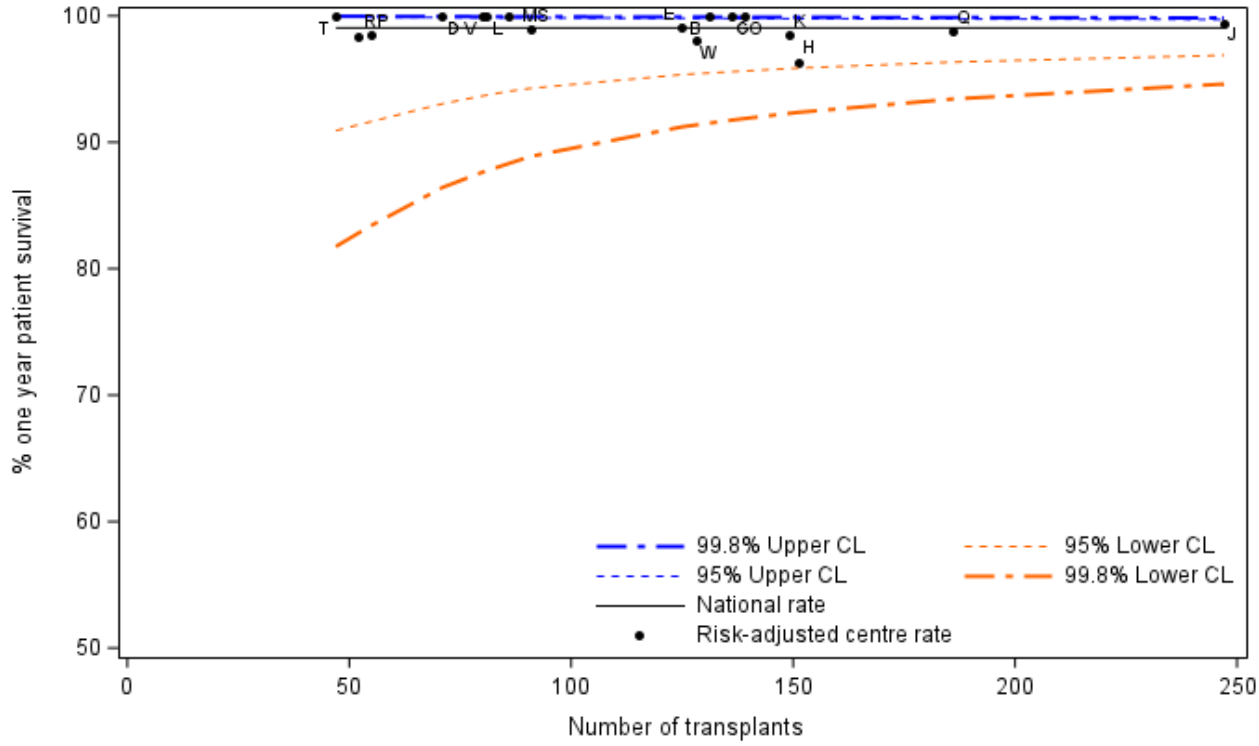


Figure 6.7 **Risk-adjusted five year graft (death censored) survival rates for first live donor kidney transplants in adult patients, between 1 April 2017 and 31 March 2021**

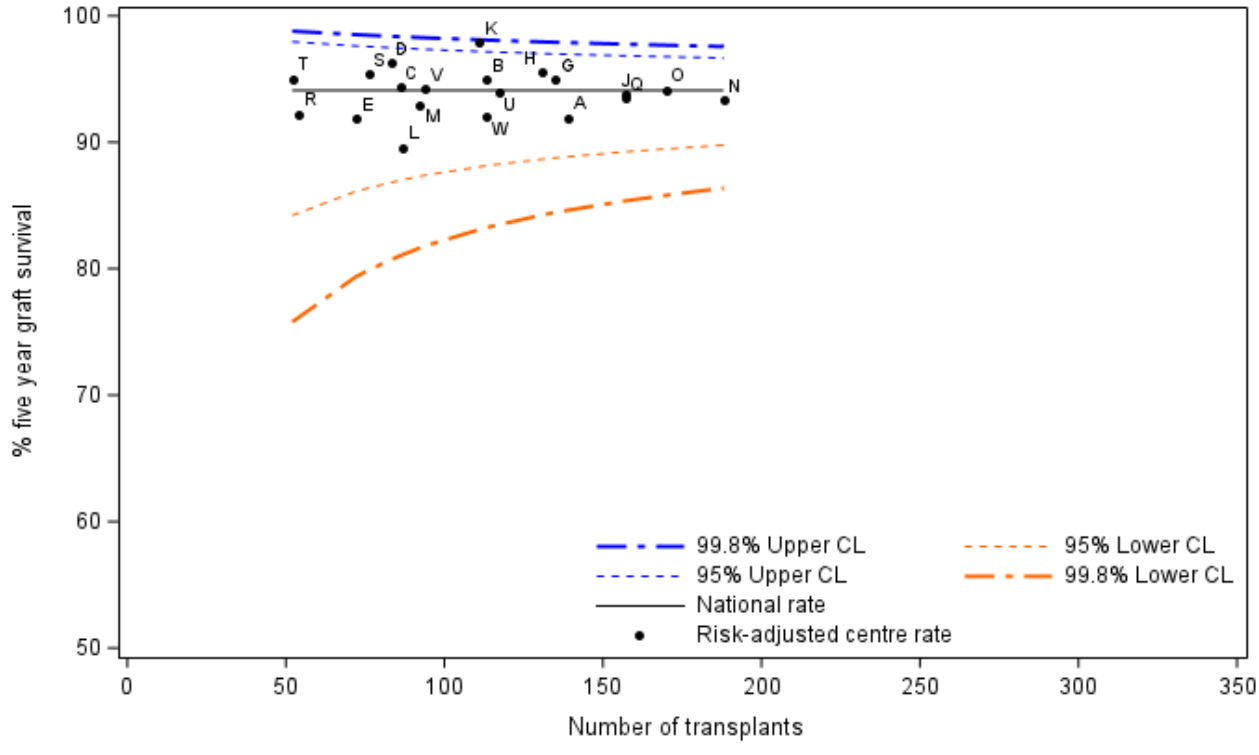


Figure 6.8 **Risk-adjusted five year patient survival rates for first live donor kidney transplants in adult patients, between 1 April 2017 and 31 March 2021**

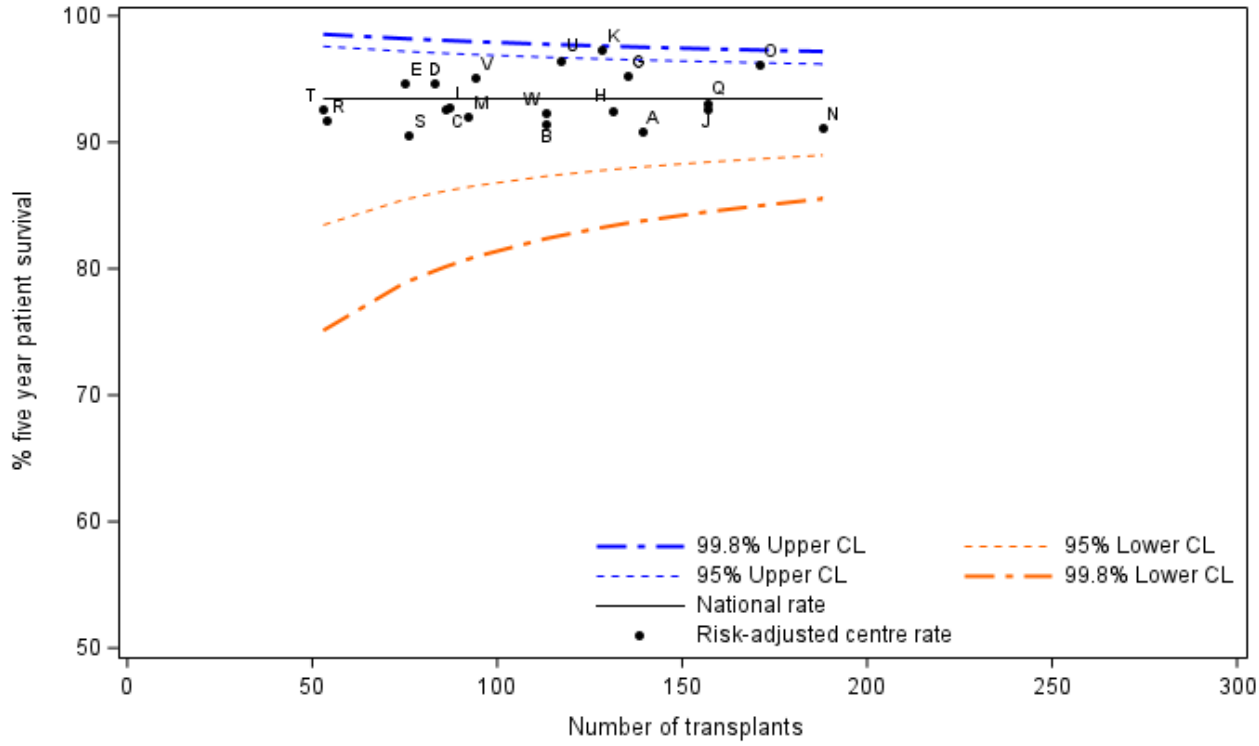


Table 6.2 One and five year first adult kidney-only graft and patient survival using kidneys from living donors

Centre	Code	Follow-up form return rates		Kidney graft survival				Patient survival			
		One-year*	Five-year**	One-year*		Five-year**		One-year*		Five-year**	
		%	%	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Belfast	A	71	76	N/A	N/A	92	(84 - 97)	N/A	N/A	91	(84 - 95)
Birmingham	B	75	88	97	(92 - 99)	95	(88 - 98)	100	N/A	91	(82 - 97)
Bristol	C	63	76	N/A	N/A	94	(86 - 98)	N/A	N/A	93	(83 - 98)
Cambridge	D	92	89	98	(89 - 100)	96	(89 - 99)	100	N/A	95	(86 - 99)
Cardiff	E	100	94	100	N/A	92	(79 - 98)	99	(95 - 100)	95	(85 - 99)
Coventry	F	70	44	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Edinburgh	G	99	93	100	N/A	95	(89 - 98)	100	N/A	95	(90 - 98)
Glasgow	H	100	95	98	(94 - 100)	96	(90 - 99)	96	(92 - 99)	93	(86 - 97)
Guy's	J	77	84	100	(97 - 100)	94	(89 - 97)	99	(97 - 100)	93	(86 - 96)
Leeds	K	100	96	98	(94 - 100)	98	(94 - 100)	99	(95 - 100)	97	(92 - 99)
Leicester	L	84	85	100	N/A	90	(79 - 96)	100	N/A	93	(85 - 97)
Liverpool	M	98	85	97	(90 - 100)	93	(85 - 97)	100	N/A	92	(83 - 97)
Manchester	N	71	78	N/A	N/A	93	(88 - 97)	N/A	N/A	91	(85 - 95)
Newcastle	O	96	91	99	(95 - 100)	94	(89 - 97)	100	N/A	96	(92 - 98)
Nottingham	P	93	59	99	(92 - 100)	N/A	N/A	98	(92 - 100)	N/A	N/A
Oxford	Q	83	89	100	N/A	93	(88 - 97)	99	(95 - 100)	93	(88 - 97)
Plymouth	R	89	81	97	(88 - 100)	92	(80 - 98)	98	(91 - 100)	92	(79 - 98)
Portsmouth	S	90	92	99	(93 - 100)	95	(87 - 99)	99	(94 - 100)	91	(80 - 96)
Sheffield	T	91	96	100	N/A	95	(82 - 99)	100	N/A	93	(78 - 98)
St George's	U	66	75	N/A	N/A	94	(87 - 98)	N/A	N/A	96	(90 - 99)
The Royal Free	V	96	87	99	(93 - 100)	94	(87 - 98)	100	N/A	95	(89 - 98)
The Royal London	W	82	92	96	(91 - 99)	92	(83 - 97)	98	(93 - 100)	92	(84 - 97)
ICHNT	X	39	8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
UK				**99**	**(98 - 99)**	**94**	**(93 - 95)**	**99**	**(99 - 99)**	**93**	**(92 - 94)**

Centre has reached the upper 99.8% confidence limit
Centre has reached the upper 95% confidence limit
Centre has reached the lower 95% confidence limit
Centre has reached the lower 99.8% confidence limit

* Includes transplants performed between 1 April 2021 - 31 March 2025
** Includes transplants performed between 1 April 2017 - 31 March 2021
Centres have been omitted where less than 75% of data reported and these are highlighted in grey

6.3 Patient survival from listing

Survival from listing was analysed for all adult (≥ 18 years) patients registered for the first time for a kidney only between 1 January 2014 and 31 December 2025. Survival time was defined as the time from joining the transplant list to death, regardless of the length of time on the transplant list, whether or not the patient was transplanted and any factors associated with such a transplant e.g. donor type. Survival time was censored at either the date of removal from the list, or at the last known follow up date post transplant when no death date was recorded, or at the time of analysis if the patient was still active on the transplant list.

Renal patients may receive a live donor kidney without prior registration on the transplant list, although centre practices differ in relation to listing of potential live donor recipients. Consequently, patients who received a live donor kidney transplant within 6 months of listing were excluded from the analysis to minimise centre bias.

Ten year risk-adjusted survival rates from the point of kidney transplant listing are shown by centre in **Figure 6.9**. Some centres were above the upper 99.8% confidence limit indicating that these centres have 10-year survival rates from listing that are considerably higher than the national rate. Some centres fell below the 99.8% lower confidence limit. This suggests that 10-year survival from listing at these centres may be significantly lower than the national rate.

Centres can be identified by the information shown in **Table 6.3**, which also shows one, five and ten year risk-adjusted survival rates from the point of kidney transplant listing.

Figure 6.9 **Risk-adjusted 10 year patient survival from listing in adult patients registered between 1 January 2014 and 31 December 2025 for deceased donor kidney transplants**

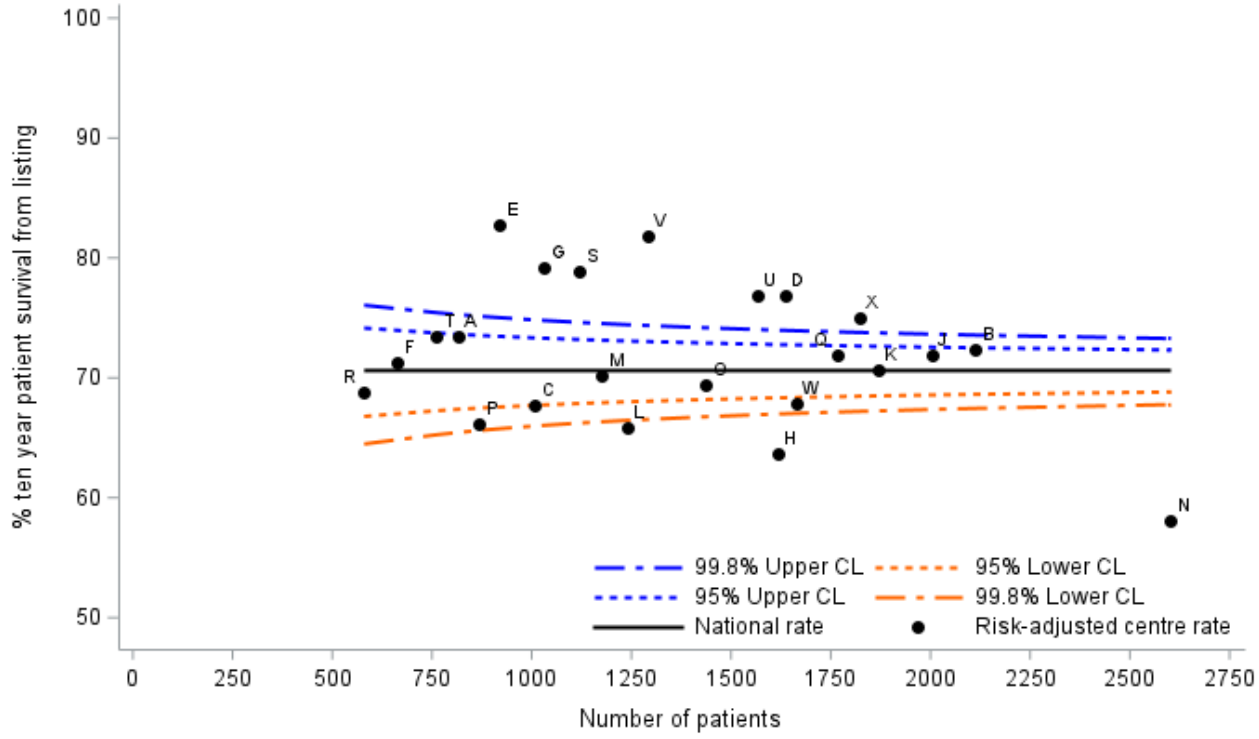


Table 6.3 **Risk-adjusted 1, 5 and 10 year patient survival from listing for adult patients registered between 1 January 2014 and 31 December 2025 for deceased donor kidney transplants**

Centre	Code	One year		Five year		Ten year	
		N	(%)	N	(%)	N	(%)
Belfast	A	814	(98)	814	(89)	814	(73)
Birmingham	B	2113	(98)	2113	(88)	2113	(72)
Bristol	C	1008	(98)	1008	(86)	1008	(68)
Cambridge	D	1637	(98)	1637	(90)	1637	(77)
Cardiff	E	919	(98)	919	(91)	919	(83)
Coventry	F	664	(98)	664	(88)	664	(71)
Edinburgh	G	1031	(98)	1031	(90)	1031	(79)
Glasgow	H	1616	(98)	1616	(84)	1616	(64)
Guy's	J	2003	(98)	2003	(88)	2003	(72)
Leeds	K	1869	(98)	1869	(87)	1869	(71)
Leicester	L	1241	(98)	1241	(85)	1241	(66)
Liverpool	M	1173	(98)	1173	(87)	1173	(70)
Manchester	N	2603	(98)	2603	(81)	2603	(58)
Newcastle	O	1438	(98)	1438	(86)	1438	(69)
Nottingham	P	868	(98)	868	(85)	868	(66)
Oxford	Q	1765	(98)	1765	(87)	1765	(72)
Plymouth	R	580	(98)	580	(86)	580	(69)
Portsmouth	S	1121	(98)	1121	(90)	1121	(79)
Sheffield	T	762	(98)	762	(89)	762	(73)
St George's	U	1564	(98)	1564	(89)	1564	(77)
The Royal Free	V	1291	(98)	1291	(91)	1291	(82)
The Royal London	W	1665	(98)	1665	(86)	1665	(68)
ICHNT	X	1822	(98)	1822	(89)	1822	(75)
UK		**31567**	**(98)**	**31567**	**(86)**	**31567**	**(71)**

Centre has reached the upper 99.8% confidence limit
Centre has reached the upper 95% confidence limit
Centre has reached the lower 95% confidence limit
Centre has reached the lower 99.8% confidence limit

Form Return Rates

7.1 Deceased donor form return rates, 1 April 2025 – 31 March 2026

Form return rates are reported in Table 7.1 for the kidney transplant record, three month and one year follow up form, along with lifetime follow up (more than two years). These include all adult deceased donor kidney only transplants between 1 April 2025 and 31 March 2026 for the transplant record, and all requests for follow up forms issued in this time period. Centres highlighted are transplant centres.

Table 7.1 Deceased donor form return rates, 1 April 2025 and 31 March 2026

Centre	TX RECORD		THREE MONTHS		ONE YEAR		LIFETIME	
	N	% returned	N	% returned	N	% returned	N	% returned
Aberdeen, Aberdeen Royal Infirmary							189	80
Airdrie, University Hospital Monklands							36	94
Bangor, Ysbyty Gwynedd District General Hospital							64	98
Basildon, Basildon Hospital							71	93
Belfast, Antrim Hospital							106	52
Belfast, Belfast City Hospital	22	100	28	86	25	36	304	99
Belfast, The Ulster Hospital							84	1
Birmingham, Birmingham Heartlands Hospital							91	93
Birmingham, Queen Elizabeth Hospital Birmingham	170	97	173	99	151	31	849	2
Bodelwyddan, Glan Clwyd District General Hospital							43	100
Bradford, St Lukes Hospital							300	94
Brighton, Royal Sussex County Hospital							334	1
Bristol, Southmead Hospital	70	100	73	96	81	27	610	1
Cambridge, Addenbrooke's Hospital	145	74	143	98	136	43	713	29
Canterbury, Kent And Canterbury Hospital							304	16
Cardiff, University Of Wales Hospital	81	100	75	100	76	100	885	77
Carlisle, Cumberland Infirmary							105	24
Carshalton, St Helier Hospital							498	66
Chelmsford, Broomfield Hospital							65	83
Chester, Countess Of Chester Hospital							28	7
County Down, Daisy Hill Hospital							97	82
Coventry, University Hospital	45	100	47	98	37	57	416	10
Derby, Royal Derby Hospital							208	99
Doncaster, Doncaster Royal Infirmary							93	97
Dorchester, Dorset County Hospital							311	0
Dundee, Ninewells Hospital							131	56
Dunfermline, Queen Margaret Hospital							87	85
Edinburgh, Royal Infirmary Of Edinburgh	51	100	53	92	56	95	303	97
Exeter, Royal Devon And Exeter Hospital (Wonford)							298	95
Glasgow, Queen Elizabeth University Hospital/ Western Infirmary	80	100	82	99	65	100	1076	87
Gloucester, Gloucestershire Royal Hospital							196	64
Great Yarmouth, James Paget Hospital							30	97
Hereford, The County Hospital							32	13
Hull, Hull Royal Infirmary							268	93
Inverness, Raigmore Hospital							86	99
Ipswich, Ipswich Hospital							160	33
Leeds, St James's University Hospital	127	97	121	93	125	93	805	91
Leicester, Leicester General Hospital	82	99	92	99	87	77	730	0
Liverpool, Royal Liverpool University Hospital	63	100	66	97	89	99	464	99
London, Guy's Hospital	180	99	185	92	164	54	630	99
London, Imperial College Healthcare NHS Trust	130	96	124	99	109	1	1381	0
London, Royal Free Hospital	99	99	98	100	112	95	1085	80
London, St George's Hospital	112	99	112	85	105	36	462	8
London, The Royal London Hospital (Whitechapel)	131	95	123	100	119	41	997	53
Manchester, Manchester Royal Infirmary	184	99	202	99	150	47	870	1
Middlesbrough, The James Cook University Hospital							340	65
Newcastle, Freeman Hospital	75	100	79	92	80	86	407	66
Northampton, Northampton General Hospital							59	7
Norwich, Norfolk And Norwich University Hospital							269	97
Nottingham, Nottingham City Hospital	30	100	36	100	44	86	505	2
Omagh, Tyrone County Hospital							86	1
Oxford, Churchill Hospital	115	98	114	95	128	40	783	45

Table 7.1 Deceased donor form return rates, 1 April 2025 and 31 March 2026

Centre	TX RECORD		THREE MONTHS		ONE YEAR		LIFETIME	
	N	% returned	N	% returned	N	% returned	N	% returned
Peterborough, Peterborough City Hospital							49	2
Plymouth, Derriford Hospital	28	100	33	88	26	85	182	99
Portsmouth, Portsmouth, Queen Alexandra Hospital/ St Mary's Hospital	60	100	55	100	55	82	764	83
Preston, Royal Preston Hospital							439	80
Reading, Royal Berkshire Hospital							334	61
Redhill, East Surrey Hospital							20	85
Sheffield, Northern General Hospital	33	100	40	100	44	95	476	85
Shrewsbury, Royal Shrewsbury Hospital							100	97
St Helier, Jersey General Hospital							40	78
Stevenage, Lister Hospital							234	85
Stoke-On-Trent, Royal Stoke University Hospital							210	84
Sunderland, Sunderland Royal Hospital							171	92
Swansea, Morriston Hospital							138	99
Truro, Royal Cornwall Hospital (Treliske)							269	0
Westcliff On Sea, Southend Hospital							63	84
Wirral, Arrowe Park Hospital							156	9
Wolverhampton, New Cross Hospital							165	98
Wrexham, Maelor General Hospital							88	98
York, York District Hospital							223	87

7.2 Living donor form return rates, 1 April 2025 – 31 March 2026

Form return rates are reported in Table 7.2 for the kidney transplant record, three month and one year follow up form, along with lifetime follow up (more than two years). These include all adult living donor kidney only transplants between 1 April 2025 and 31 March 2026 for the transplant record, and all requests for follow up forms issued in this time period. Centres highlighted are transplant centres.

Table 7.2 Living donor form return rates, 1 April 2025 and 31 March 2026

Centre	TX RECORD		THREE MONTHS		ONE YEAR		LIFETIME	
	N	% returned	N	% returned	N	% returned	N	% returned
Aberdeen, Aberdeen Royal Infirmary							112	81
Bangor, Ysbyty Gwynedd District General Hospital							25	100
Basildon, Basildon Hospital							31	87
Belfast, Antrim Hospital							76	49
Belfast, Belfast City Hospital	67	100	66	91	53	83	320	98
Belfast, The Ulster Hospital							65	2
Birmingham, Birmingham Heartlands Hospital							33	88
Birmingham, Queen Elizabeth Hospital Birmingham	52	96	56	98	48	35	451	3
Bodelwyddan, Glan Clwyd District General Hospital							25	100
Bradford, St Lukes Hospital							80	93
Brighton, Royal Sussex County Hospital							210	1
Bristol, Southmead Hospital	35	97	34	97	34	26	328	2
Cambridge, Addenbrooke's Hospital	29	45	28	100	22	45	275	35
Canterbury, Kent And Canterbury Hospital							264	21
Cardiff, University Of Wales Hospital	37	97	41	100	46	100	486	84
Carlisle, Cumberland Infirmary							46	28
Carshalton, St Helier Hospital							297	65
Chelmsford, Broomfield Hospital							27	89
County Down, Daisy Hill Hospital							81	75
Coventry, University Hospital	25	100	30	97	20	35	256	5
Derby, Royal Derby Hospital							52	98
Doncaster, Doncaster Royal Infirmary							45	98
Dundee, Ninewells Hospital							94	67
Dunfermline, Queen Margaret Hospital							51	84
Edinburgh, Royal Infirmary Of Edinburgh	39	100	40	90	43	88	208	100

Table 7.2 Living donor form return rates, 1 April 2025 and 31 March 2026

Centre	TX RECORD		THREE MONTHS		ONE YEAR		LIFETIME	
	N	% returned	N	% returned	N	% returned	N	% returned
Exeter, Royal Devon And Exeter Hospital (Wonford)							171	95
Glasgow, Queen Elizabeth University Hospital/ Western Infirmary	48	100	45	100	46	100	532	91
Gloucester, Gloucestershire Royal Hospital							101	58
Hereford, The County Hospital							23	9
Hull, Hull Royal Infirmary							152	92
Inverness, Raigmore Hospital							64	98
Ipswich, Ipswich Hospital							52	23
Leeds, St James's University Hospital	43	100	39	97	47	98	316	90
Leicester, Glenfield General Hospital							31	3
Leicester, Leicester General Hospital	20	90	19	100	25	48	436	0
Liverpool, Royal Liverpool University Hospital	30	100	27	100	28	96	278	98
London, Cromwell Hospital	2	100	6	67	5	40	33	3
London, Guy's Hospital	69	99	69	97	64	44	468	99
London, Imperial College Healthcare NHS Trust	35	54	29	100			629	0
London, Royal Free Hospital	34	100	31	100	24	88	451	80
London, St George's Hospital	27	100	29	86	41	37	178	12
London, The Royal London Hospital (Whitechapel)	50	92	44	100	33	24	416	55
Manchester, Manchester Royal Infirmary	71	99	71	100	58	41	415	1
Middlesbrough, The James Cook University Hospital							231	73
Newcastle, Freeman Hospital	44	93	42	95	37	89	281	72
Northampton, Northampton General Hospital							25	8
Norwich, Norfolk And Norwich University Hospital							60	97
Nottingham, Nottingham City Hospital	21	90	19	100	16	88	169	2
Oxford, Churchill Hospital	63	100	65	95	62	39	501	41
Plymouth, Derriford Hospital	16	100	17	82	22	55	101	98
Portsmouth, Queen Alexandra Hospital/ St Mary's Hospital	28	100	29	100	23	87	340	81
Preston, Royal Preston Hospital							240	83
Reading, Royal Berkshire Hospital							121	67
Sheffield, Northern General Hospital	15	100	18	100	20	80	223	78
Shrewsbury, Royal Shrewsbury Hospital							63	97
Stevenage, Lister Hospital							83	89
Stoke-On-Trent, Royal Stoke University Hospital							157	89
Sunderland, Sunderland Royal Hospital							105	93
Swansea, Morriston Hospital							49	100
Truro, Royal Cornwall Hospital (Treliske)							111	1
Westcliff On Sea, Southend Hospital							38	68
Wirral, Arrowe Park Hospital							67	6
Wolverhampton, New Cross Hospital							57	95
Wrexham, Maelor General Hospital							48	100
York, York District Hospital							86	86

Paediatric kidney transplant list

8.1 Paediatric patients on the kidney transplant list as at 31 March, 2017 – 2026

Figure 8.1 shows the number of paediatric patients on the kidney only transplant list at 31 March each year between 2017 and 2026.

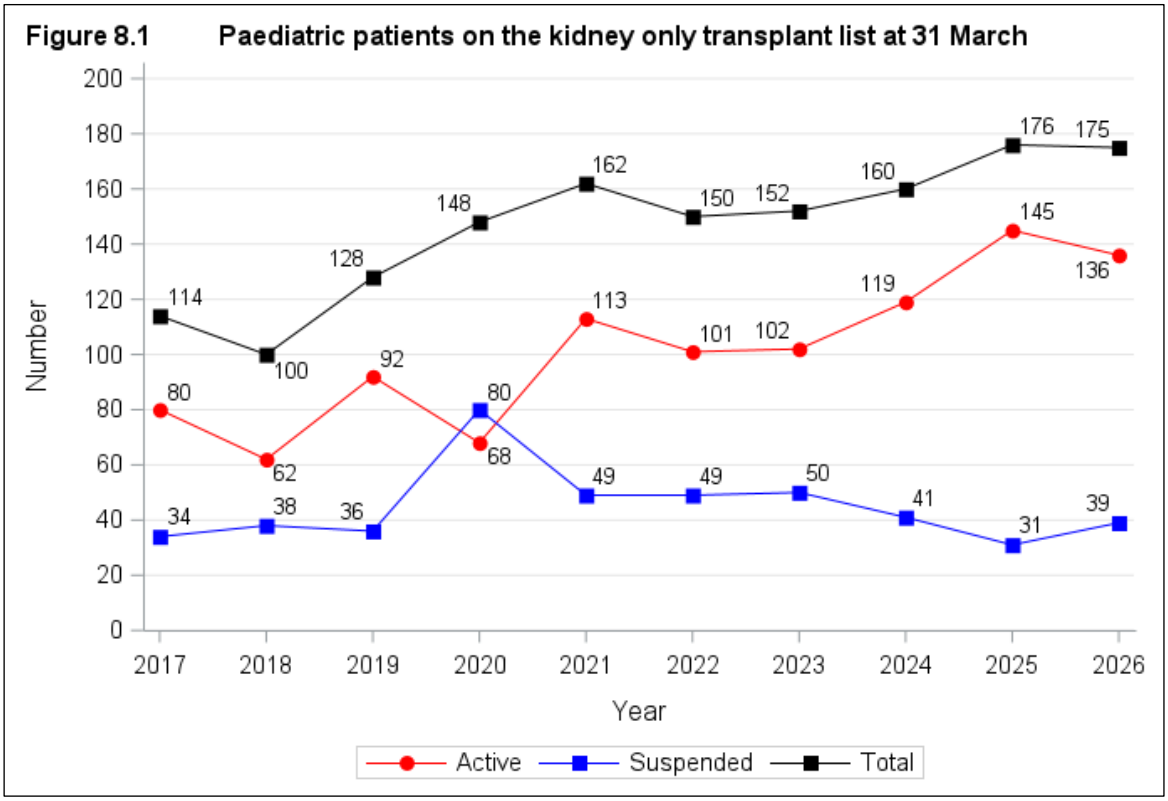


Figure 8.2 shows the number of paediatric patients on the active kidney only transplant list at 31 March 2026 by centre.

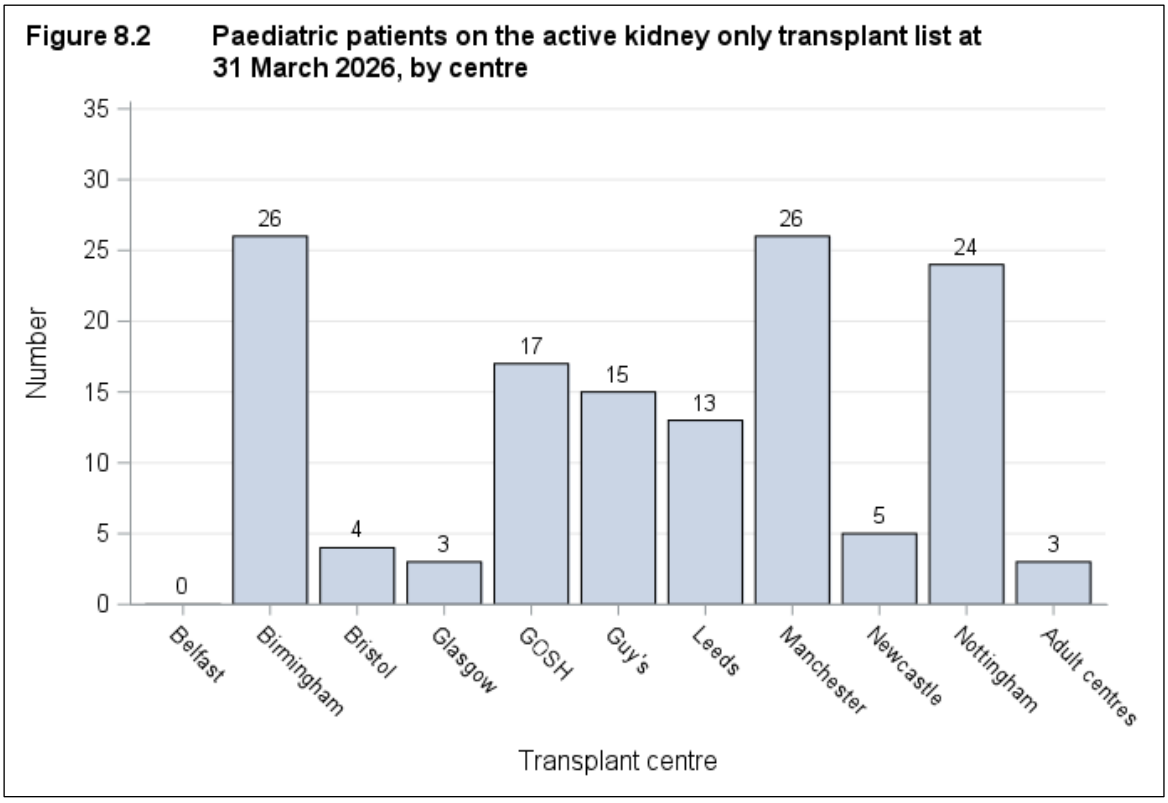


Figure 8.3 shows the number of paediatric patients on the suspended kidney only transplant list at 31 March 2026 by centre.

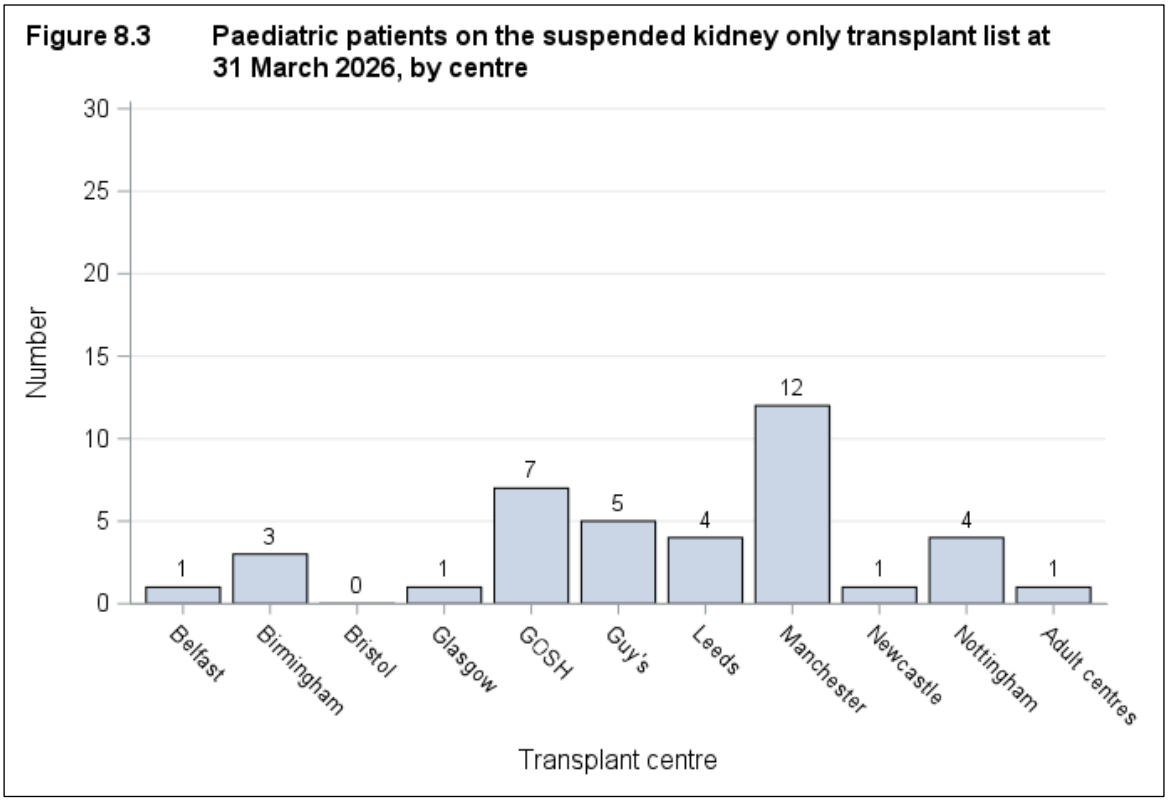
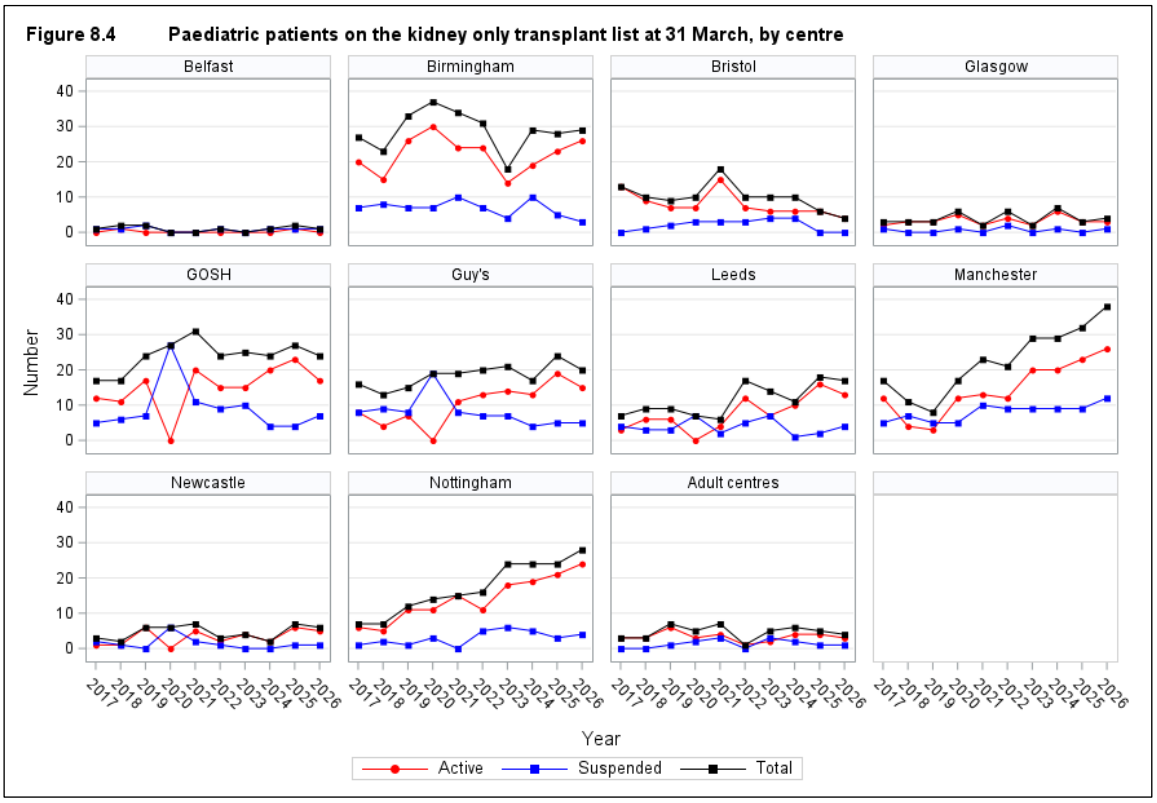


Figure 8.4 shows the number of paediatric patients on the transplant list at 31 March each year between 2017 and 2026 for each transplant centre.



8.2 Demographic characteristics, 1 April 2025 – 31 March 2026

The sex, ethnicity, age group and calculated reaction frequency of patients on the transplant list are shown by centre in **Figure 8.5, 8.6, 8.7 and 8.8**, respectively. Note that all percentages quoted are based only on data where relevant information was available. Centres with less than three paediatric registrations or unavailable data in the reporting year are omitted from the figures in this section.

Figure 8.5 Sex of paediatric registrations on the active kidney only transplant list, 1 April 2025 and 31 March 2026, by centre

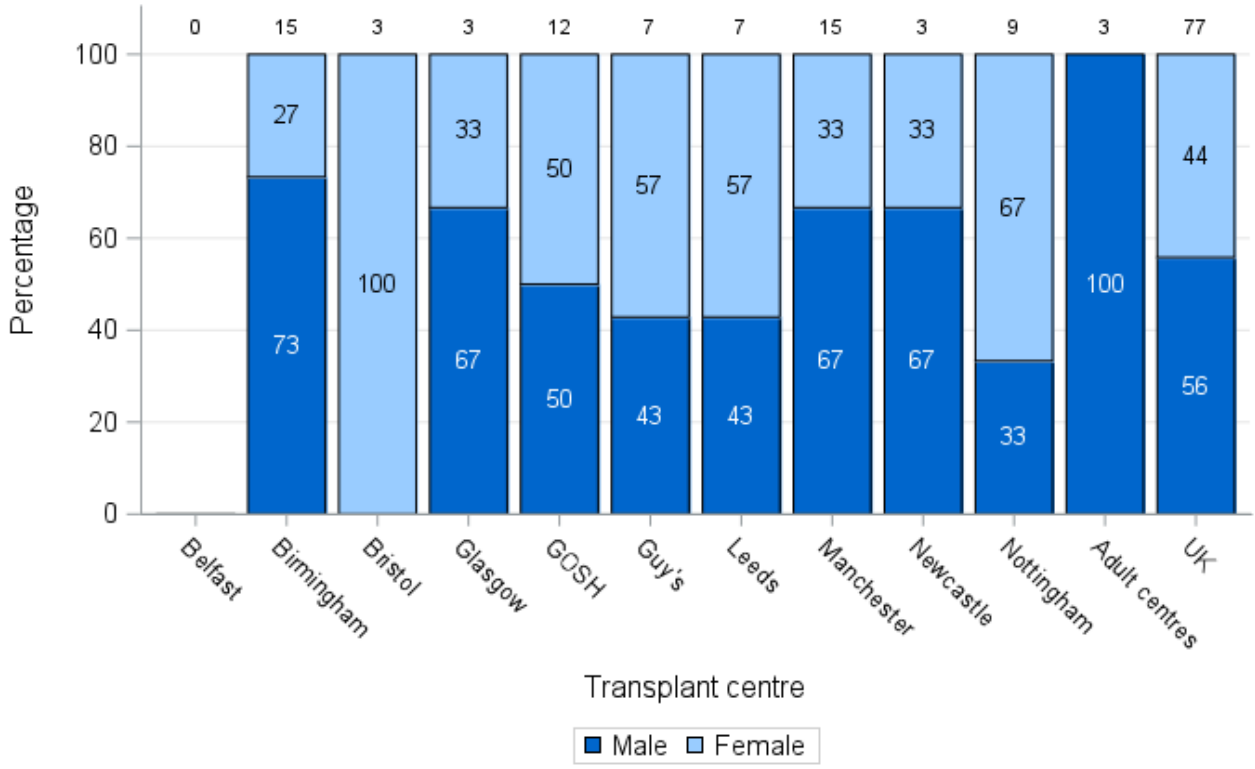


Figure 8.6 **Ethnicity of paediatric registrations on the active kidney only transplant list, 1 April 2025 and 31 March 2026, by centre**

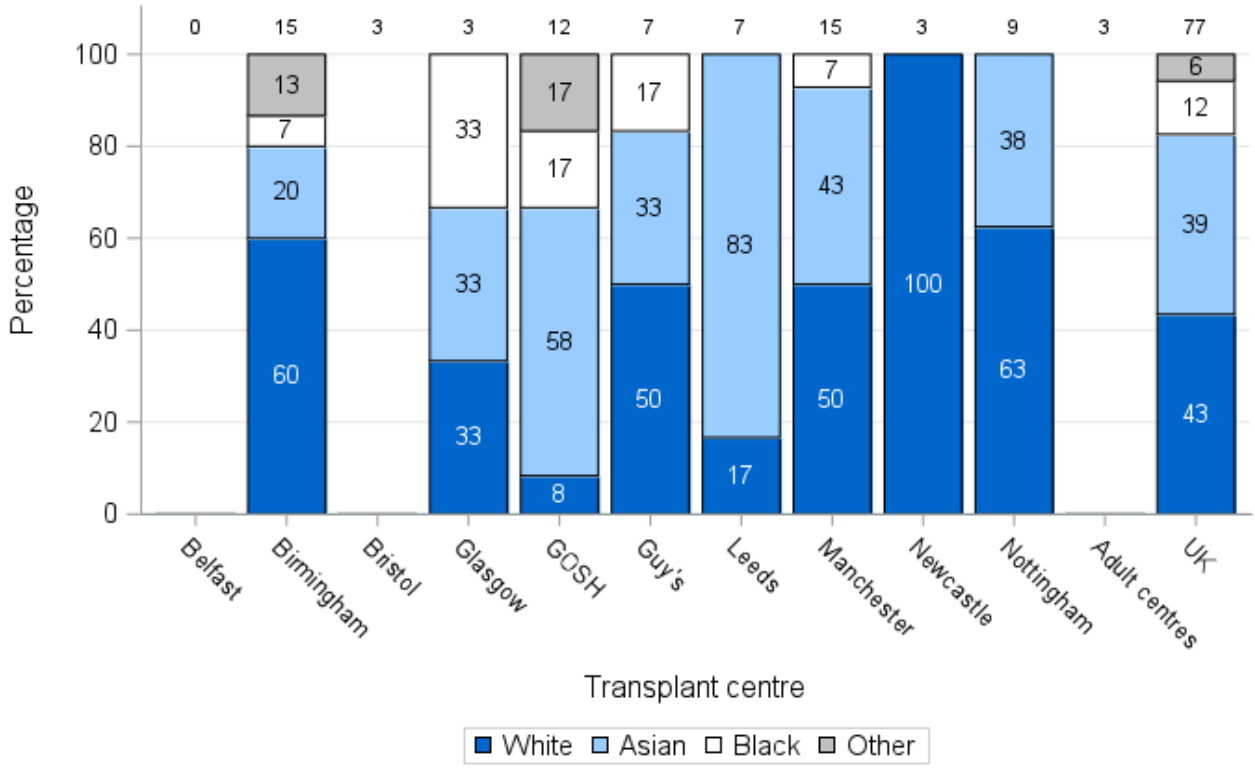


Figure 8.7 **Age of paediatric registrations on the active kidney only transplant list, 1 April 2025 and 31 March 2026, by centre**

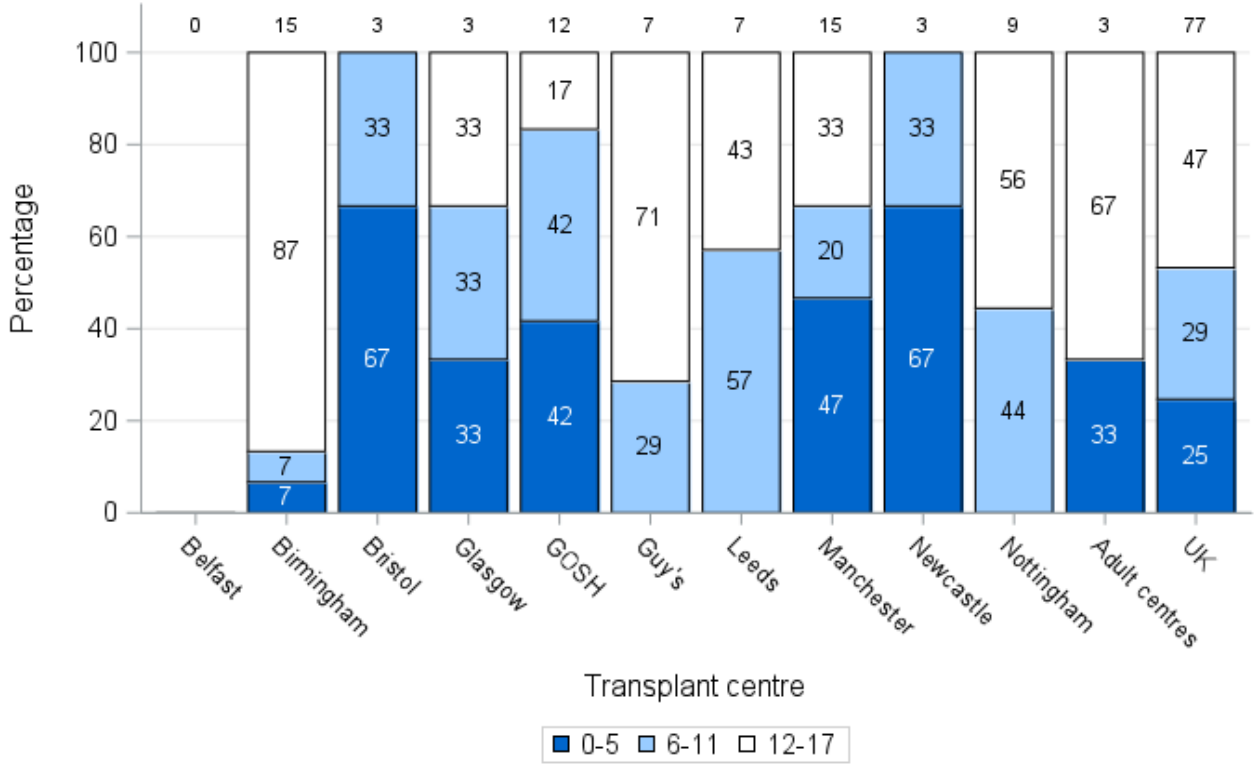
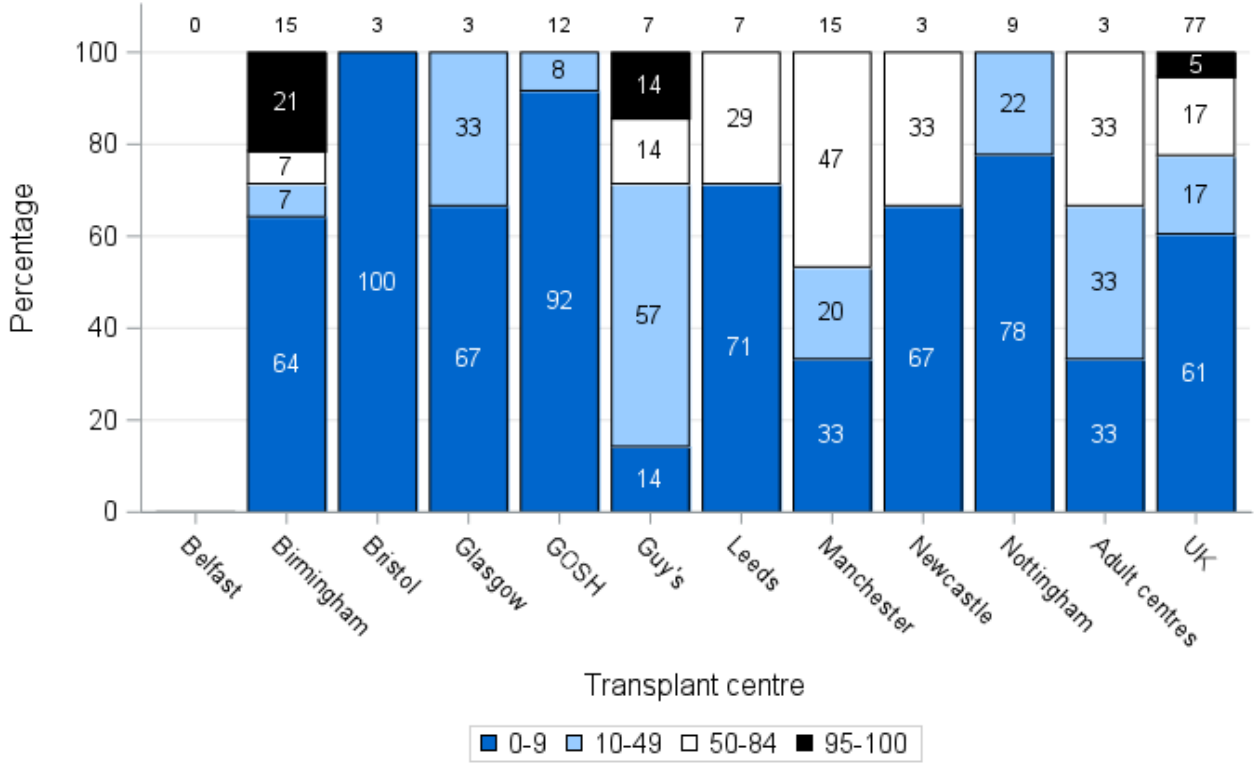


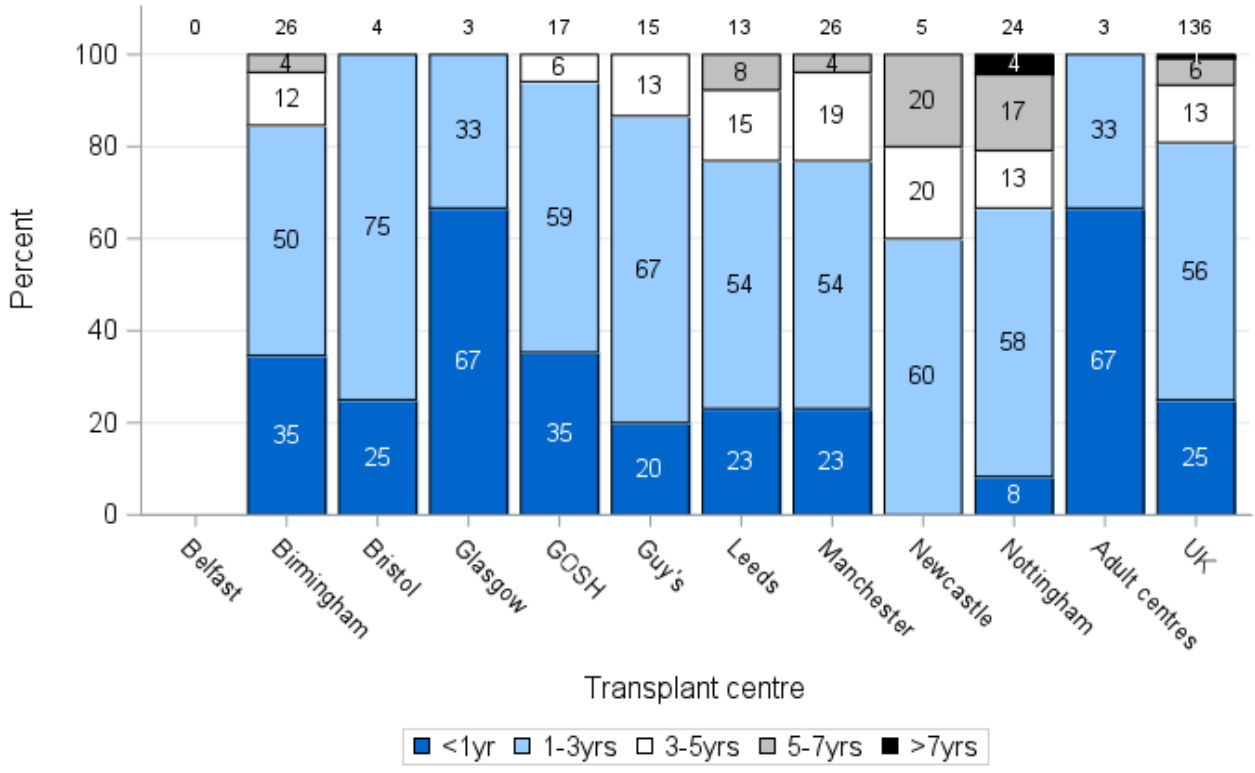
Figure 8.8 cRF of paediatric registrations on the active kidney only transplant list, 1 April 2025 and 31 March 2026, by centre



8.3 Paediatric waiting times for those currently on the list, 31 March 2026

Figure 8.9 shows the length of time paediatric patients have been waiting on the kidney only transplant list at 31 March 2026 by centre.

Figure 8.9 Paediatric patients on the active kidney only transplant list as at 31 March 2026, by centre and waiting time



8.4 Median waiting time to transplant, 1 April 2020 - 31 March 2023

The length of time a patient waits for a kidney transplant varies across the UK. The median active waiting time for adult deceased donor kidney only transplantation is shown in **Figure 8.10a** and **Table 8.1a** for patients registered at each individual unit. The median total waiting time (including dialysis and periods of suspension) for adult deceased donor kidney only transplantation is shown in **Figure 8.10b** and **Table 8.1b** for patients registered at each individual unit. The data shown are for all paediatric patients, joining the list within the time period shown, including those still awaiting a transplant on the day of analysis. Patients who received a live donor or multi-organ transplant are not included. The national allocation scheme introduced in April 2006 helped to reduce the variability in deceased donor kidney waiting times across the country but currently some variability remains. Waiting times across centres continue to differ in a way that it is difficult for centres to control, given that the 2006 National Kidney Allocation Scheme determined allocation of all kidneys available for transplant from donors after brain death (DBD). This has continued following the introductions of the 2019 National Kidney Offering Scheme which determines allocation of all DBD kidneys and kidneys from donations after circulatory death (DCD).

2006 National Kidney Allocation Scheme
Only kidneys from donors after brain death were allocated via a national allocation scheme during the majority of the time period analysed. DCD kidneys were allocated to patients through local allocation arrangements and these vary across the country because some centres have a larger DCD programme than others. From 3 September 2014 one kidney from DCD donors aged between 5 and 49 years were allocated within four pre-defined regions using the 2006 DBD allocation principles and as such should reduce variability in waiting times across the country.

Kidneys from DBD are allocated to patients listed nationally through the 2006 Kidney Allocation Scheme. The 2006 Kidney Allocation Scheme introduced in April 2006 prioritised patients with ideal tissue matches (000 HLA mismatches) and then assigned points to patients based on the level of tissue match between donor and recipient, the length of time spent waiting for a transplant, age of the recipient (with a progressive reduction in points given after the age of thirty) and location points such that patients geographically close to the retrieval centre received more points. The patients with the highest number of points for a donated kidney were preferentially offered the kidney, no matter where in the UK they received their treatment.

2019 National Kidney Offering Scheme
The 2019 Kidney Offering Scheme was introduced on 11 September 2019 and this is a single scheme for offering all kidneys from deceased donors in the UK. This scheme prioritises patients who are difficult to match or have waited a long time for a transplant. Waiting time was updated from time from first active listing under the 2006 scheme to time from the earliest of starting permanent dialysis (HD or PD) in the UK or first active listing. On 25 February 2025, a cap on suspension time points for pre-dialysis patients on the transplant list. The number of points accrued for days of suspension before a patient has started permanent dialysis was capped at 180 days. This cap is only applicable to a patient's first registration.

The median active waiting time to transplant for paediatric patients registered on the kidney only transplant list between 1 April 2020 and 31 March 2023 is 512 days. The median total waiting time to transplant for paediatric patients registered on the kidney only

transplant list between 1 April 2020 and 31 March 2023 is 929 days. Median values are not presented for Belfast, Glasgow and Newcastle as they had no paediatric patients registered and transplanted in the time period.

Figure 8.10a Median active waiting time to deceased donor transplant for paediatric patients registered on the kidney transplant list, 1 April 2020 - 31 March 2023

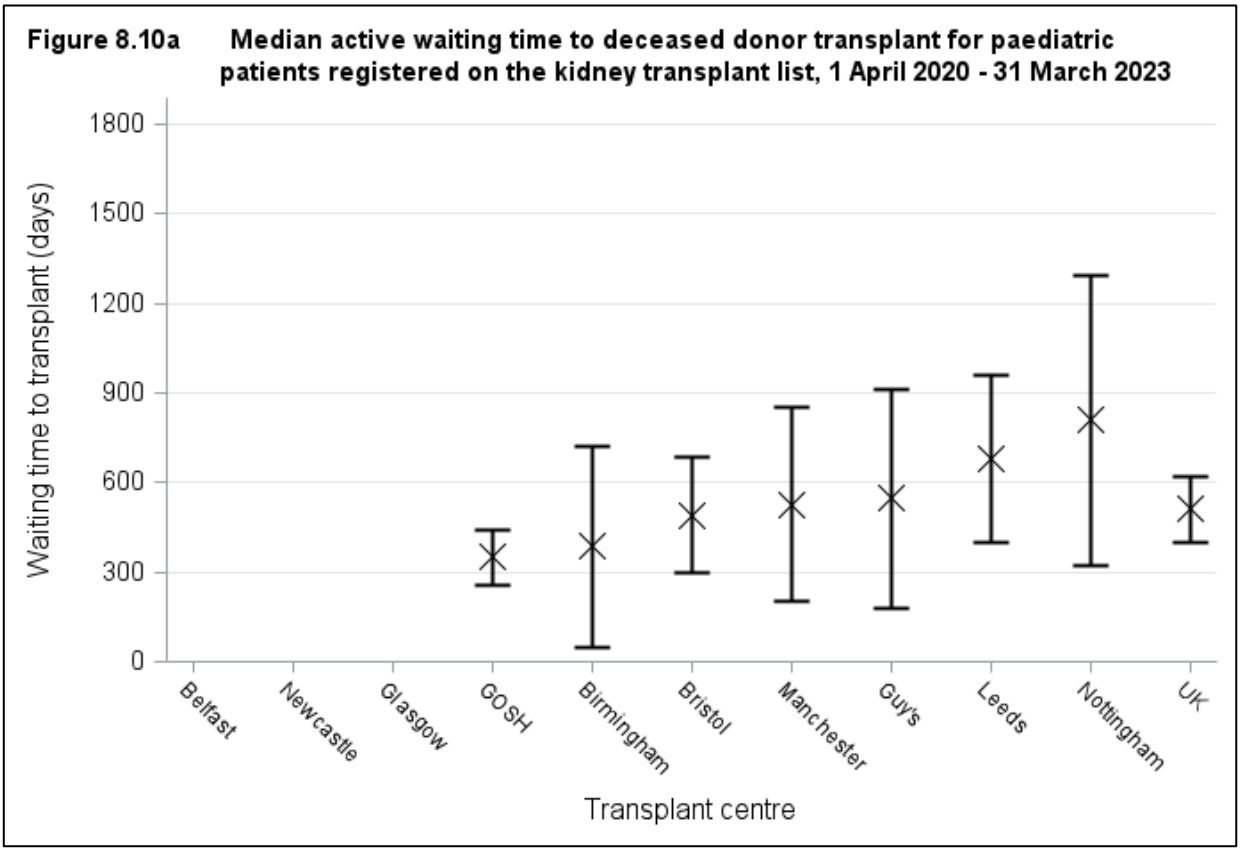


Figure 8.10b Median total waiting time to deceased donor transplant for paediatric patients registered on the kidney transplant list, 1 April 2020 - 31 March 2023

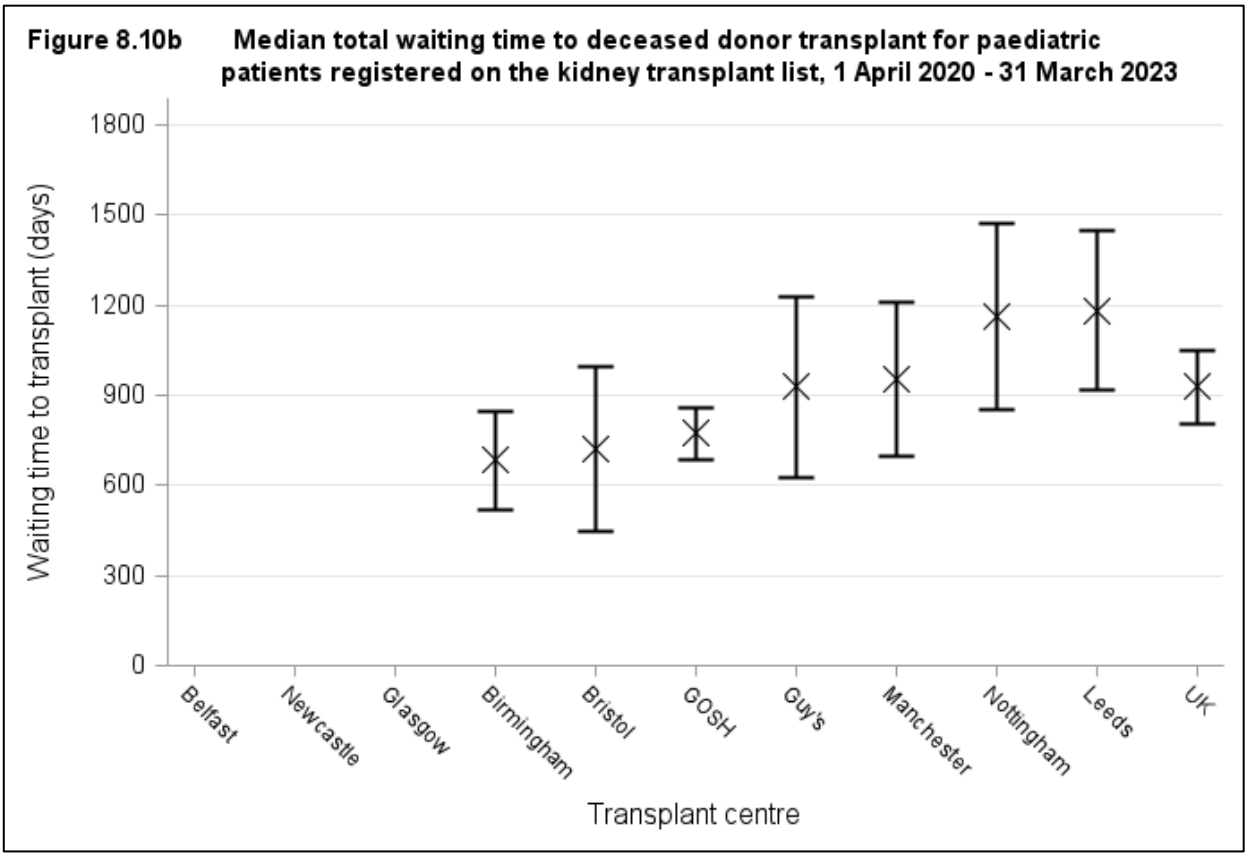


Table 8.1a Median active waiting time to kidney only transplant in the UK, for paediatric patients registered 1 April 2020 - 31 March 2023

Transplant centre	Number of patients registered	Waiting time (days) Unadjusted Median	95% Confidence interval
Belfast	0	-	
Newcastle	0	-	
Glasgow	0	-	
GOSH	24	350	256 - 444
Birmingham	30	387	50 - 724
Bristol	19	491	296 - 686
Manchester	34	526	202 - 850
Guy's	22	547	179 - 915
Leeds	13	681	400 - 962
Nottingham	19	808	323 - 1293
UK	**194**	**512**	**403 - 621**

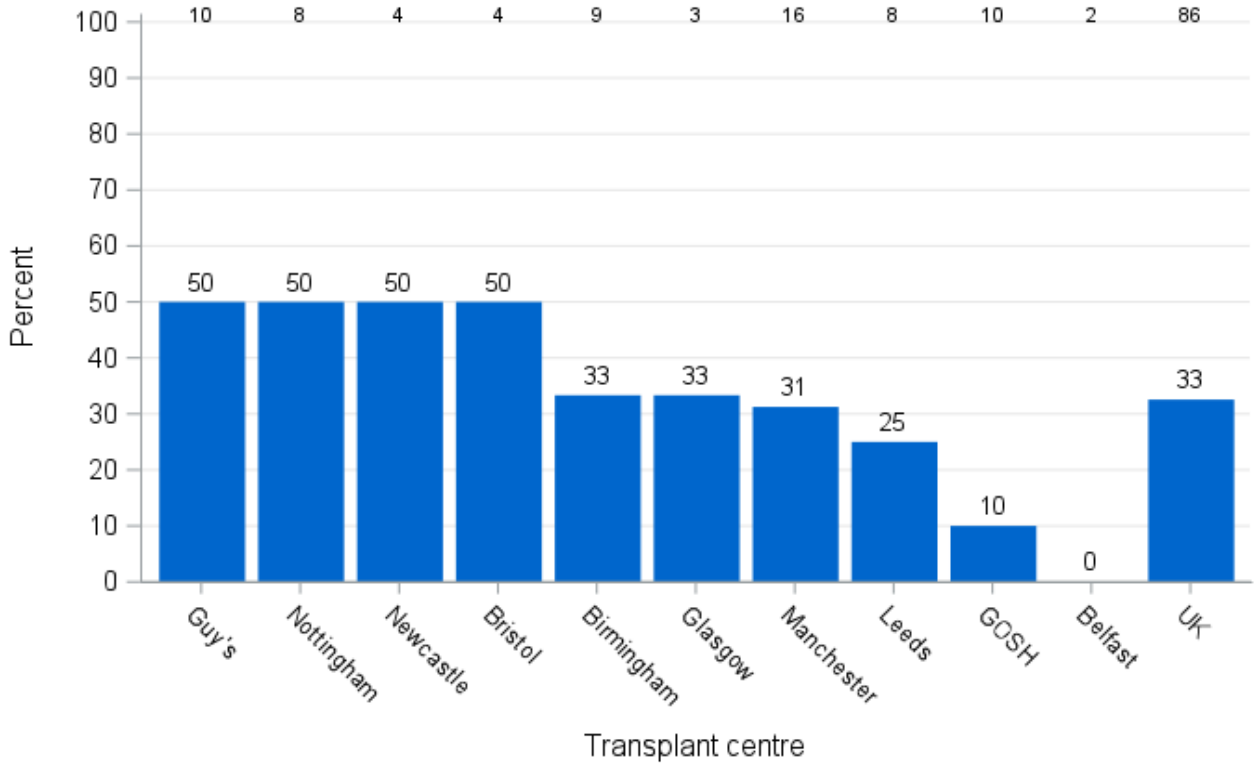
Table 8.1b Median total waiting time to kidney only transplant in the UK, for paediatric patients registered 1 April 2020 - 31 March 2023

Transplant centre	Number of patients registered	Waiting time (days) Unadjusted Median	95% Confidence interval
Belfast	0	-	
Newcastle	0	-	
Glasgow	0	-	
Birmingham	30	683	521 - 845
Bristol	19	721	448 - 994
GOSH	24	773	685 - 861
Guy's	22	929	629 - 1229
Manchester	34	952	695 - 1209
Nottingham	19	1162	855 - 1469
Leeds	13	1183	917 - 1449
UK	**194**	**929**	**807 - 1051**

8.5 Pre-emptive listing rates, 1 April 2024 - 31 March 2025

Rates of pre-emptive kidney only listings are shown in **Figure 8.11** for paediatric patients joining the list between 1 April 2024 and 31 March 2025. Patients listed on the deceased donor transplant list prior to receiving a living donor transplant are excluded and in order to remove the effect of these patients an earlier cohort was selected. Pre-emptive listing accounted for 33% of all paediatric registrations across the UK. There were no pre-emptive registrations at Belfast.

Figure 8.11 Paediatric pre-emptive listing rates by centre, registrations between 1 April 2024 and 31 March 2025



Response to paediatric kidney offers

Offer decline rates

Kidney-only offers from DBD donors who had at least one kidney retrieved, offered directly and on behalf of a named individual patient and resulted in transplantation are included in the analysis. Any offers made through the reallocation of kidneys, declined kidney or fast track schemes were excluded, as were offers of kidneys from donations after circulatory death donors.

Funnel plots were used to compare centre specific offer decline rates and indicate how consistent the rates of the individual transplant centres are with the national rate. The overall national unadjusted offer decline rate is shown by the solid line while the 95% and 99.8% confidence lines are indicated via a thin and thick dotted line, respectively. Each dot in the plot represents an individual transplant centre. Centres that are positioned above the upper limits indicate on offer decline rate that is higher than the national rate, while centres positioned below the lower limits indicates on offer decline rate that is lower than the national rate. Patient case mix is known to influence the number of offers a centre may receive. In this analysis however only individual offers for named patients were considered which excluded any ABO- and HLA-incompatible patients. For this reason it was decided not to risk adjust for known centre differences in patient case mix.

9.1 DBD donor offer decline rates, 1 April 2023 – 31 March 2026

Figure 9.1 compares individual centre offer decline rates with the national rate for DBD donors over the time period, 1 April 2023 and 31 March 2026. Centres can be identified by the information shown in **Table 9.1**.

Figure 9.1 Paediatric DBD donor kidney offer decline rates for kidneys that resulted in a transplant, 1 April 2023 and 31 March 2026

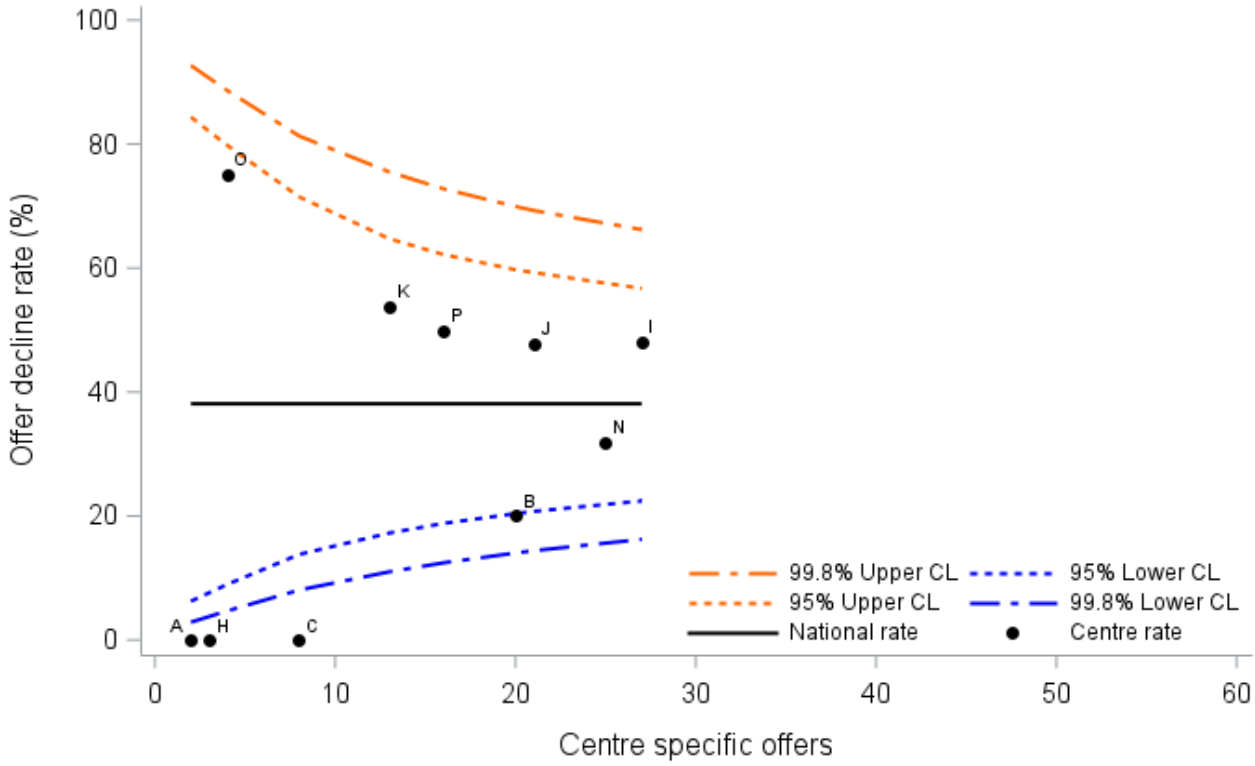


Table 9.1 compares individual centre offer decline rates for DBD donors over time by financial year.

Table 9.1 Paediatric DBD donor kidney offer decline rates by transplant centre, 1 April 2023 and 31 March 2026

Centre	Code	2023/24		2024/25		2025/26		Overall	
		N	(%)	N	(%)	N	(%)	N	(%)
Belfast	A	1	(0)	0	(0)	1	(0)	2	(0)
Birmingham	B	10	(20)	7	(29)	3	(0)	20	(20)
Bristol	C	4	(0)	2	(0)	2	(0)	8	(0)
Glasgow	H	0	(0)	2	(0)	1	(0)	3	(0)
GOSH	I	10	(60)	6	(50)	11	(36)	27	(48)
Guy's	J	10	(40)	2	(50)	9	(56)	21	(48)
Leeds	K	1	(0)	4	(75)	8	(50)	13	(54)
Manchester	N	6	(33)	11	(36)	8	(25)	25	(32)
Newcastle	O	1	(100)	1	(100)	2	(50)	4	(75)
Nottingham	P	9	(56)	3	(33)	4	(50)	16	(50)
UK		**52**	**(38)**	**38**	**(39)**	**49**	**(37)**	**139**	**(38)**

Paediatric kidney transplants

10.1 Kidney only transplants, 1 April 2016 – 31 March 2026

Figure 10.1 shows the total number of paediatric kidney only transplants performed in the last ten years, by type of donor.

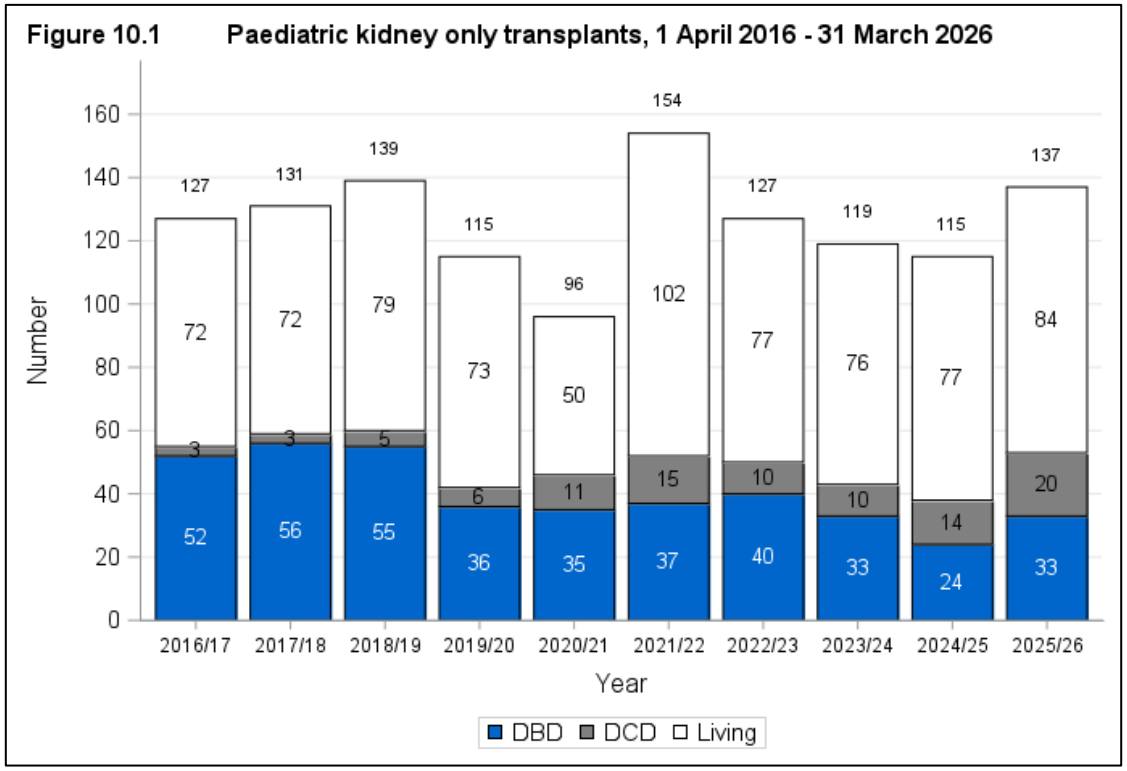
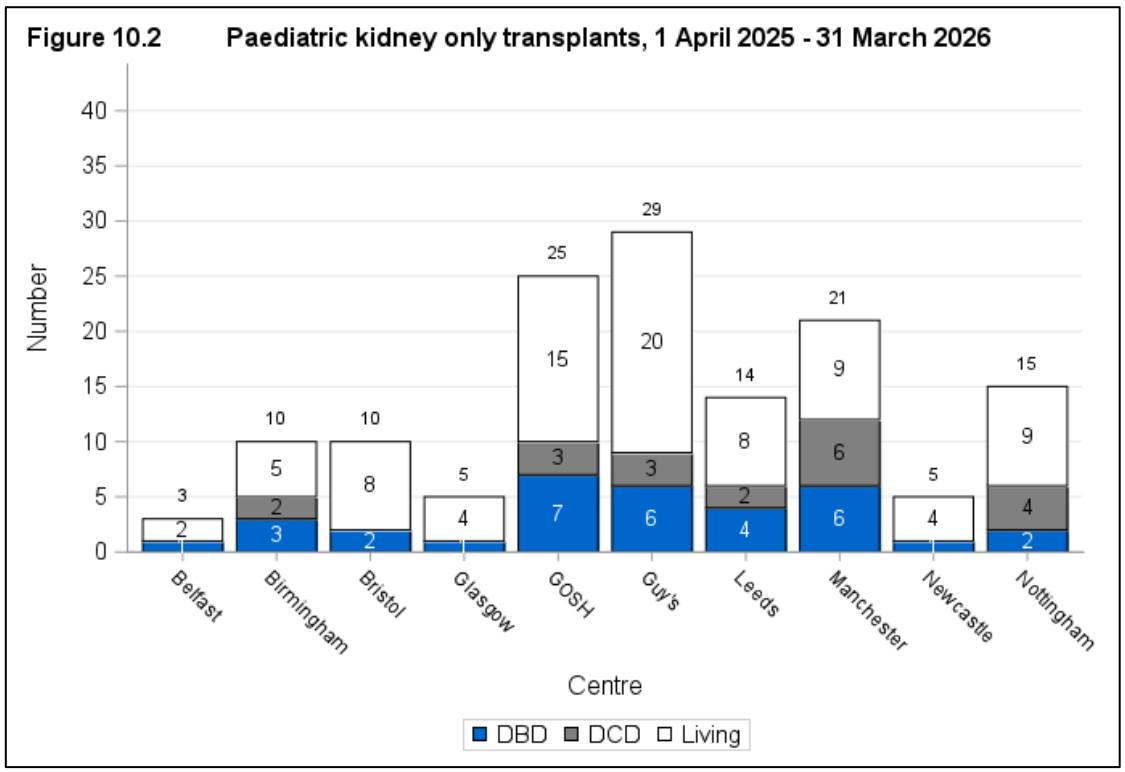


Figure 10.2 shows the total number of paediatric kidney only transplants performed in 2025/26, by centre and type of donor. The same information is presented in **Figure 10.3** but this shows the proportion of DBD, DCD and living donor transplants performed at each centre.



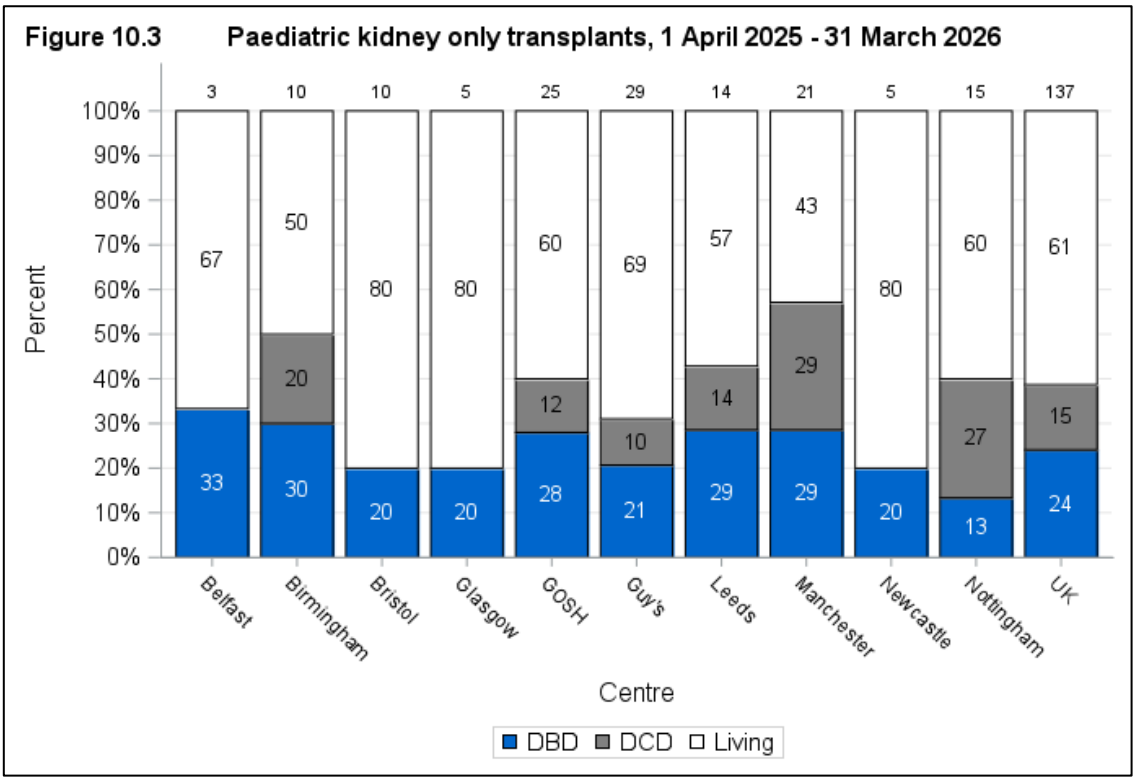
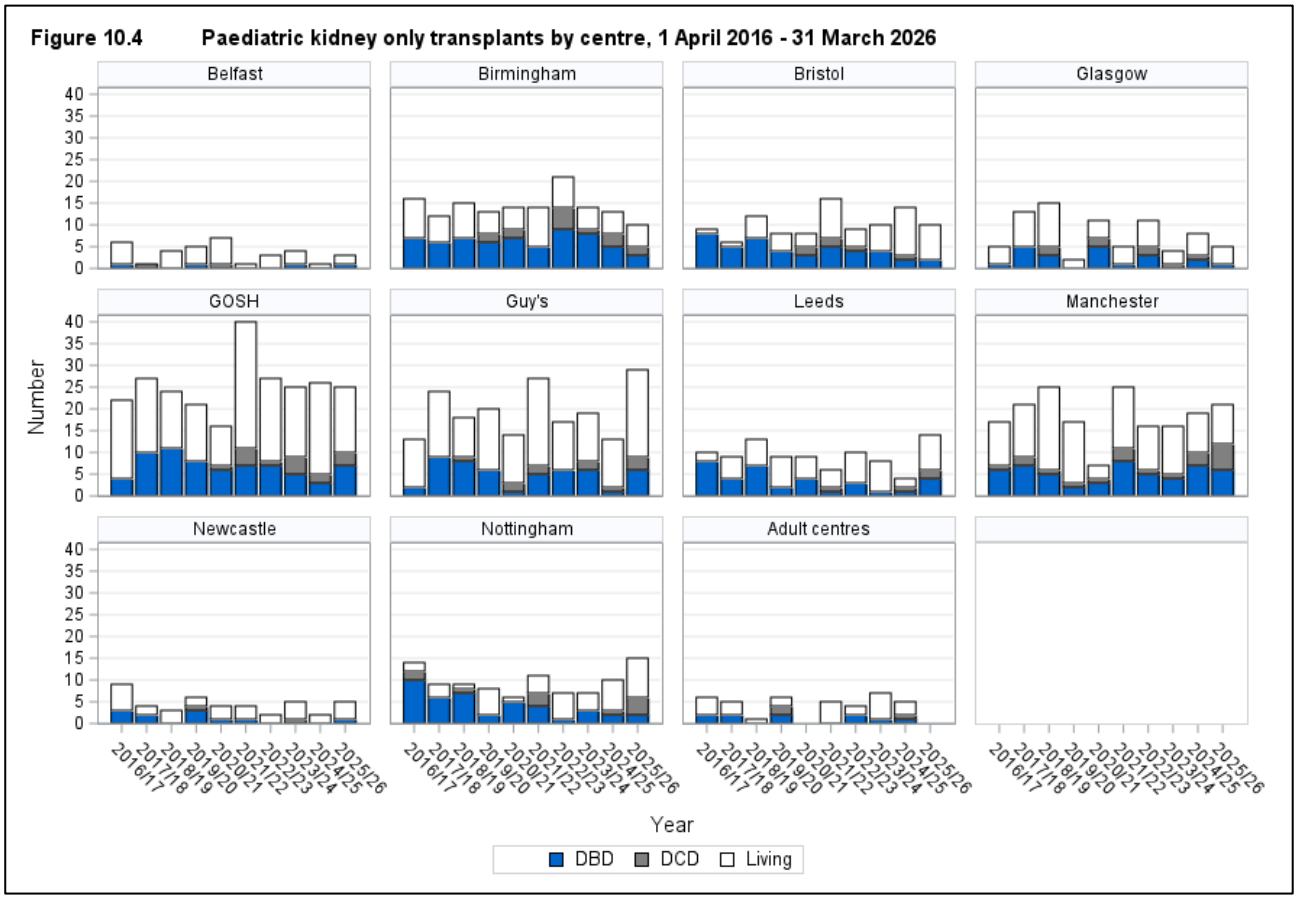


Figure 10.4 shows the total number of paediatric kidney only transplants performed in last ten years, by centre and type of donor.



10.2 Pre-emptive transplant rates, 1 April 2025 - 31 March 2026

Rates of pre-emptive kidney only transplantation are shown in **Figure 10.5** for paediatric deceased donor transplants and **Figure 10.6** for paediatric living donor transplants. Living donor transplants are more likely to be carried out before the need for dialysis than deceased donor transplants: 27% and 20% 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.

Figure 10.5 Paediatric deceased donor pre-emptive transplant rates by centre, 1 April 2025 - 31 March 2026

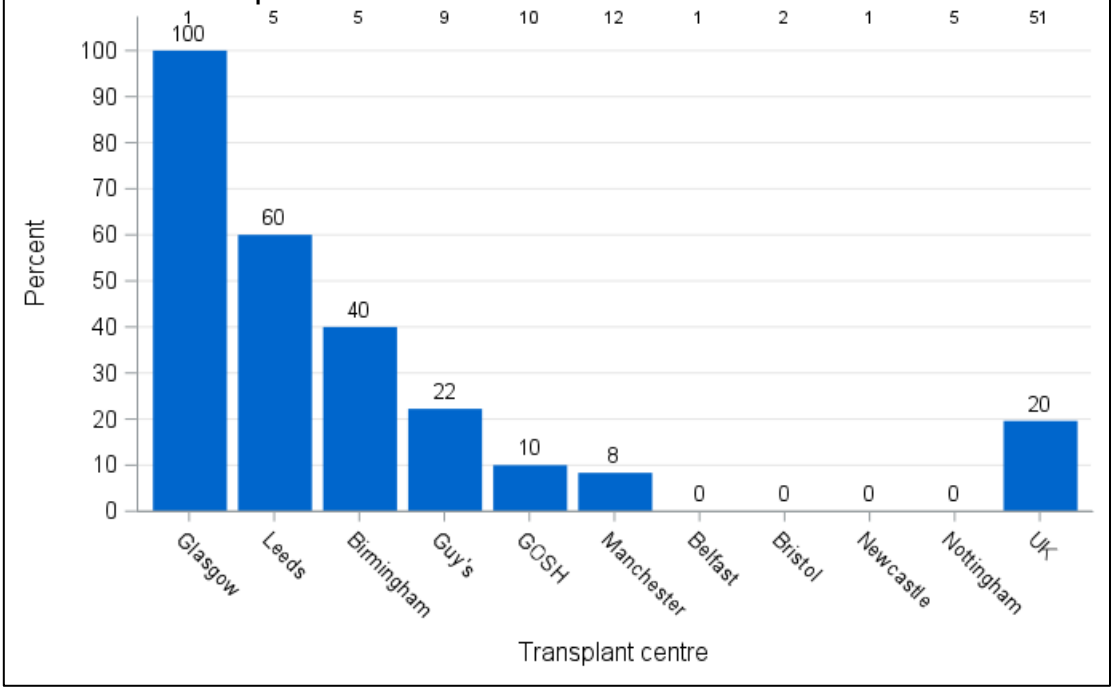
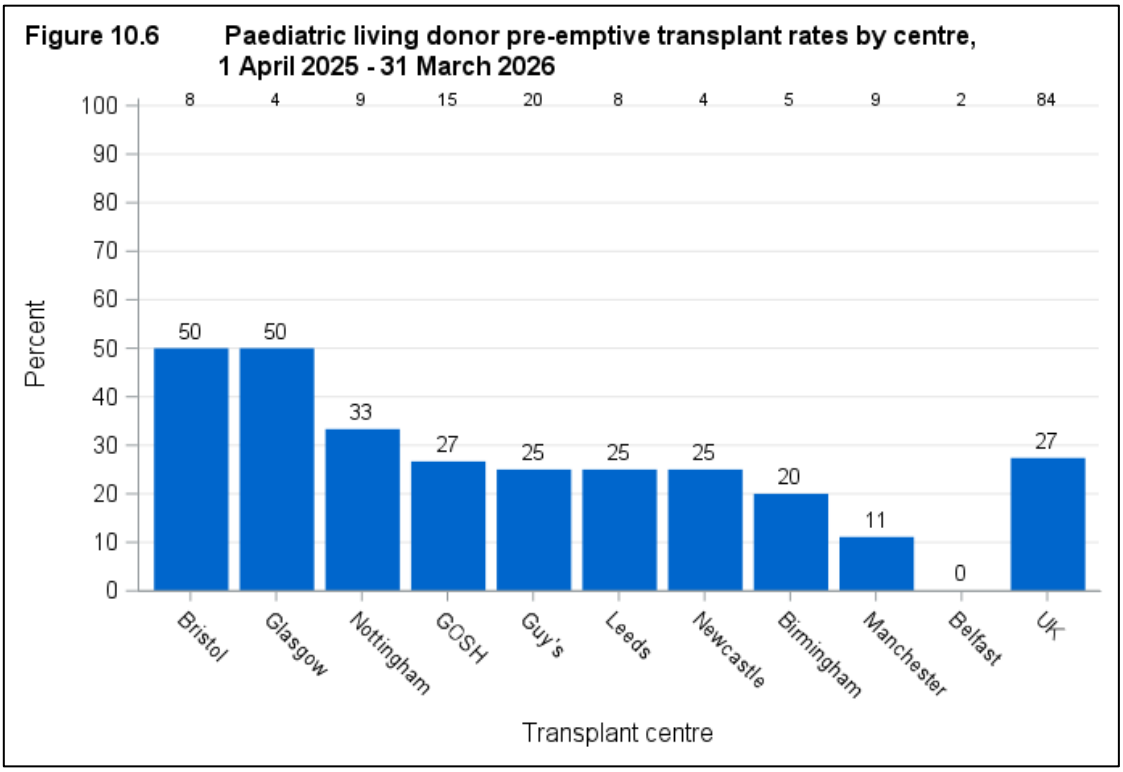


Figure 10.6 Paediatric living donor pre-emptive transplant rates by centre, 1 April 2025 - 31 March 2026



Paediatric kidney outcomes

We present a visual comparison of survival rates among centres that is based on a graphical display known as a funnel plot (1, 2). This display is used to show how consistent the rates of the different transplant units are with the national rate. Funnel plots show the risk-adjusted survival rate plotted against the number of transplants for each centre, with the overall national unadjusted survival rate (solid line), and its 95% (thin dotted lines) and 99.8% (thick dotted lines) confidence limits superimposed. Each dot in the plot represents one of the centres. Note that many patients return to local renal units for follow-up care after their transplant and although we report survival according to transplant unit, patients may in fact be followed up quite distantly from their transplant centre.

Interpreting the funnel plots
If a centre lies within all the limits, then that centre has a survival rate that is statistically consistent with the national rate. If a centre lies outside the 95% confidence limits, this serves as an alert that the centre may have a rate that is significantly different from the national rate. If a centre lies outside the 99.8% limits, then further investigations may be carried out to determine the reasons for the possible difference. When a centre lies above the upper limits, this indicates a survival rate that is higher than the national rate, while a centre that lies below the lower limits has a survival rate that is lower than the national rate. It is important to note that adjusting for patient mix through the use of risk-adjustment models may not account for all possible causes of centre differences. There may be other factors that are not taken into account in the risk-adjustment process that may affect the survival rate of a particular centre.

References
1. Tekkis PP, McCulloch P, Steger AC, Benjamin IS, Poloniecki JD. Mortality control charts for comparing performance of surgical units: validation study using hospital mortality data. British Medical Journal 2003; 326: 786 – 788.

2. Stark J, Gallivan S, Lovegrove J, Hamilton JRL, Monro JL, Pollock JCS, Watterson KG. Mortality rates after surgery for congenital heart defects in children and surgeons' performance. Lancet 2000; 355: 1004 – 1007.

11.1 Deceased donor graft and patient survival

The funnel plots show that, for the most part, the centres lie within the confidence limits. None of the funnel plots show any centres that lie outside the lower 95% confidence limits. Some of the funnel plots show some centres to be above the upper 99.8% confidence limit. This suggests that these centres may have survival rates that are considerably higher than the national rate. Centres can be identified by the information shown in **Table 11.1**. Transplants where cold ischaemia time (CIT) is unknown are excluded from the one year risk-adjusted analysis. Centres have been omitted where less than 75% of data reported. Work is currently in progress with centres to address follow up return issues and help improve follow up return rates.

Figure 11.1 Risk-adjusted one year graft (death censored) survival rates for first deceased donor kidney transplants in paediatric patients, between 1 April 2021 and 31 March 2025

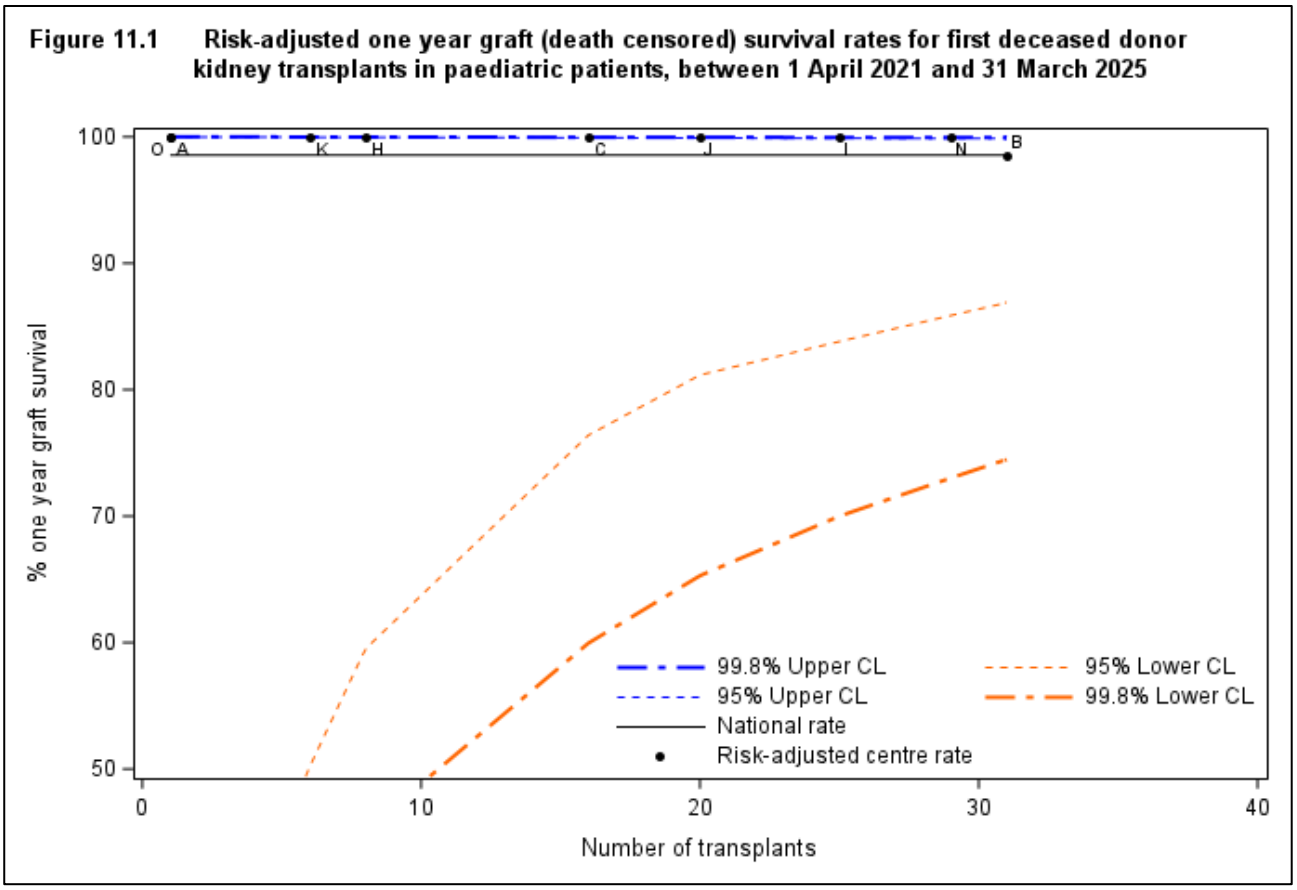


Figure 11.2 is not included. There were no one year patient mortalities for first paediatric kidney-only transplants using kidneys from deceased donors, for transplants between 1 April 2021 and 31 March 2025.

Figure 11.3 Risk-adjusted five year graft (death censored) survival rates for first deceased donor kidney transplants in paediatric patients, between 1 April 2017 and 31 March 2021

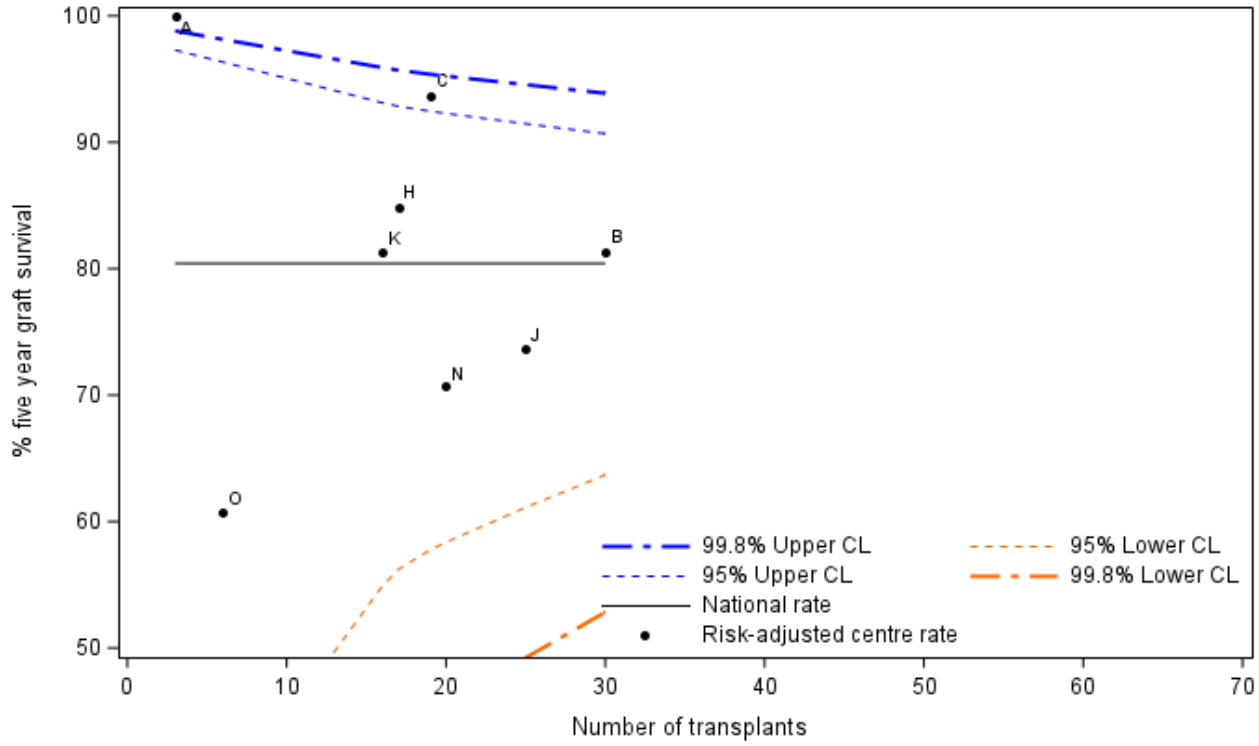


Figure 11.4 Risk-adjusted five year patient survival rates for first deceased donor kidney transplants in paediatric patients, between 1 April 2017 and 31 March 2021

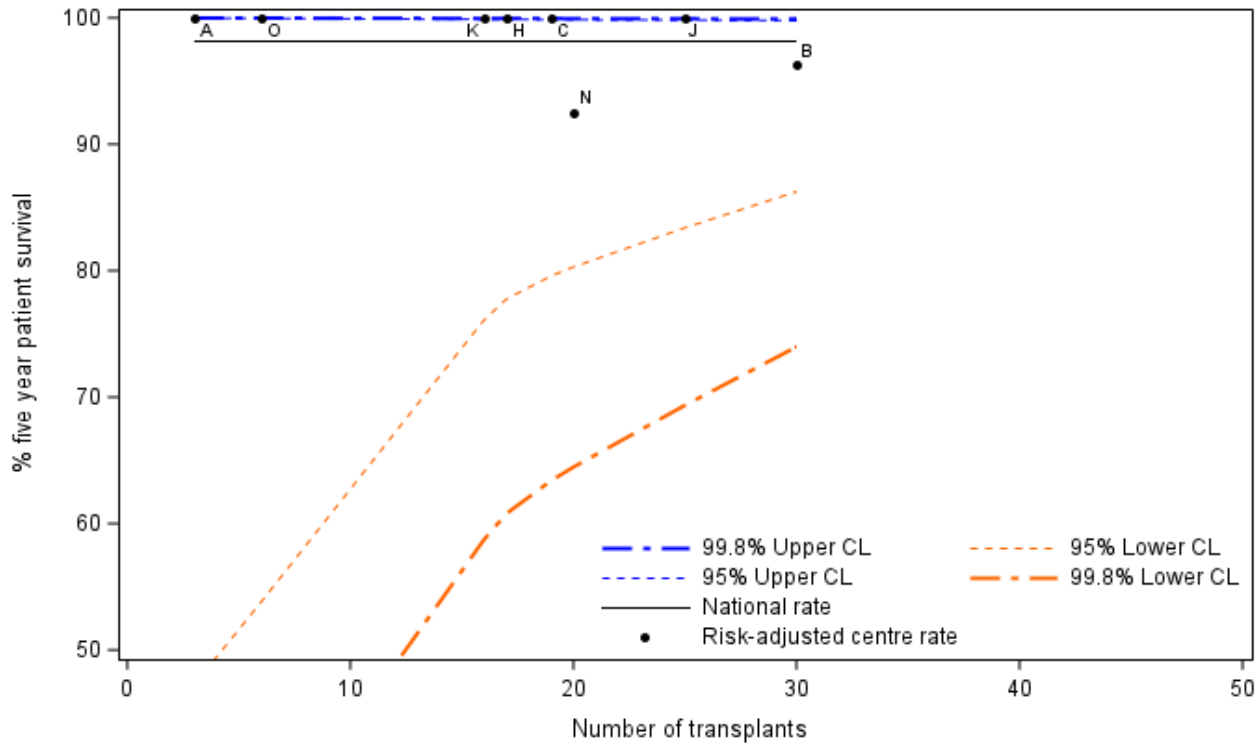


Table 11.1 One and five year first paediatric kidney-only graft and patient survival using kidneys from deceased donors

		Follow-up form return rates		Kidney graft survival				Patient survival			
		One-year*	Five-year**	One-year*		Five-year**		One-year*		Five-year**	
Centre	Code	%	%	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Belfast	A	100	100	100	N/A	100	N/A	100	N/A	100	N/A
Birmingham	B	97	83	98	(91 - 100)	81	(57 - 94)	100	N/A	96	(79 - 100)
Bristol	C	94	84	100	N/A	94	(65 - 100)	100	N/A	100	N/A
Glasgow	H	100	88	100	N/A	85	(45 - 98)	100	N/A	100	N/A
GOSH	I	100	72	100	N/A	N/A	N/A	100	N/A	N/A	N/A
Guy's	J	91	76	100	N/A	74	(39 - 91)	100	N/A	100	N/A
Leeds	K	100	94	100	N/A	81	(45 - 96)	100	N/A	100	N/A
Manchester	N	86	90	100	N/A	71	(32 - 90)	100	N/A	93	(73 - 99)
Newcastle	O	100	100	100	N/A	61	(0 - 95)	100	N/A	100	N/A
Nottingham	P	67	42	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
UK				**99**	**(94 – 100)**	**80**	**(73 - 86)**	**100**	**N/A**	**98**	**(94 - 99)**

* Includes transplants performed between 1 April 2021 - 31 March 2025
** Includes transplants performed between 1 April 2017 - 31 March 2021
Centres have been omitted where less than 75% of data reported and these are highlighted in grey
Transplants where CIT is unknown are excluded from the one year risk-adjusted analysis

11.2 Living donor graft and patient survival

The funnel plots show that, for the most part, the centres lie within the confidence limits. None of the funnel plots show any centres that lie outside the lower 95% confidence limits. Some of the funnel plots show some centres to be above the upper 99.8% confidence limit. This suggests that these centres may have survival rates that are considerably higher than the national rate. Centres can be identified by the information shown in **Table 11.2**. Transplants where the donor age is unknown are excluded from the risk-adjusted analysis. Centres have been omitted where less than 75% of data reported. Work is currently in progress with centres to address follow up return issues and help improve follow up return rates.

Figure 11.5 Risk-adjusted one year graft (death censored) survival rates for first live donor kidney transplants in paediatric patients, between 1 April 2021 and 31 March 2025

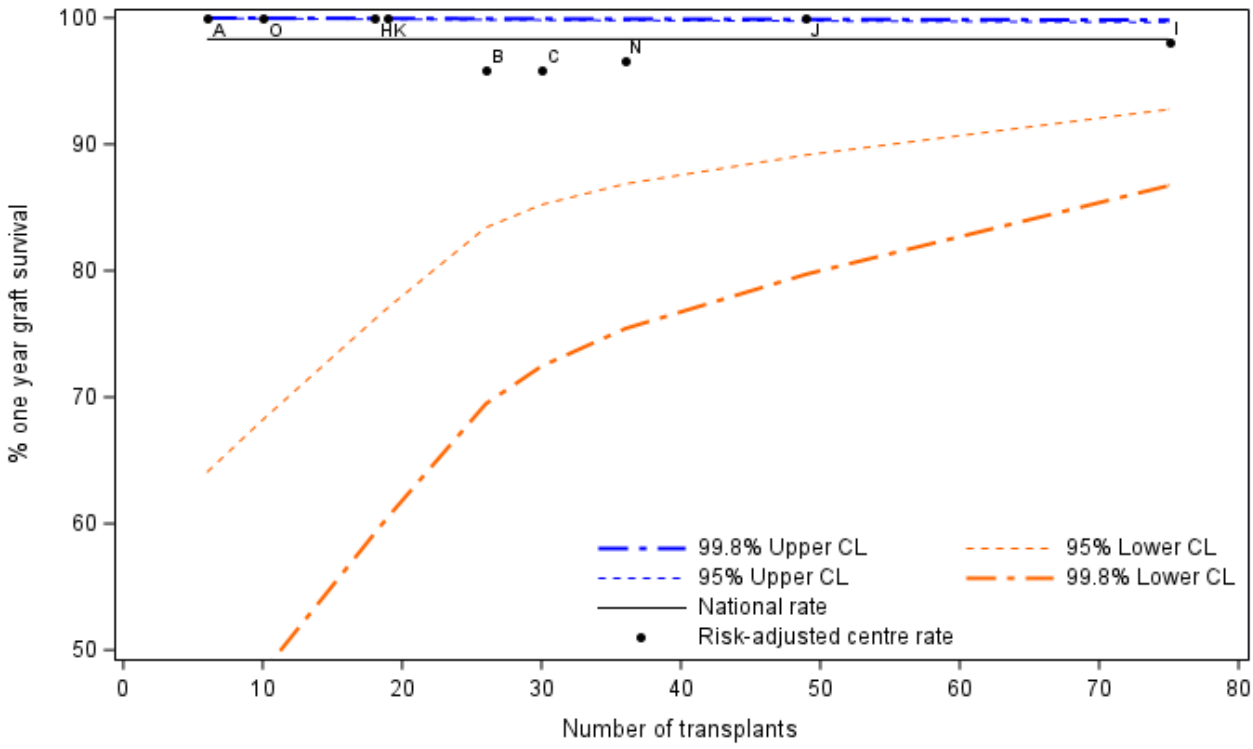


Figure 11.6 Risk-adjusted one year patient survival rates for first live donor kidney transplants in paediatric patients, between 1 April 2021 and 31 March 2025

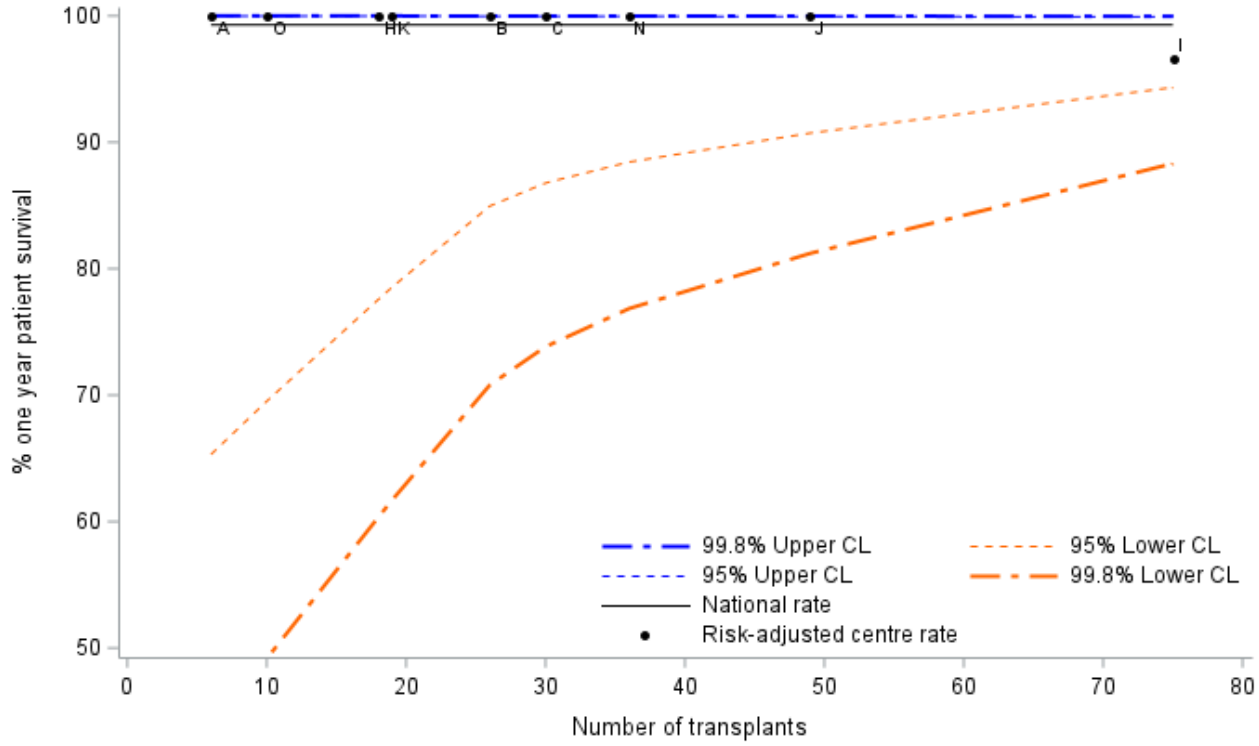


Figure 11.7 Risk-adjusted five year graft (death censored) survival rates for first live donor kidney transplants in paediatric patients, between 1 April 2017 and 31 March 2021

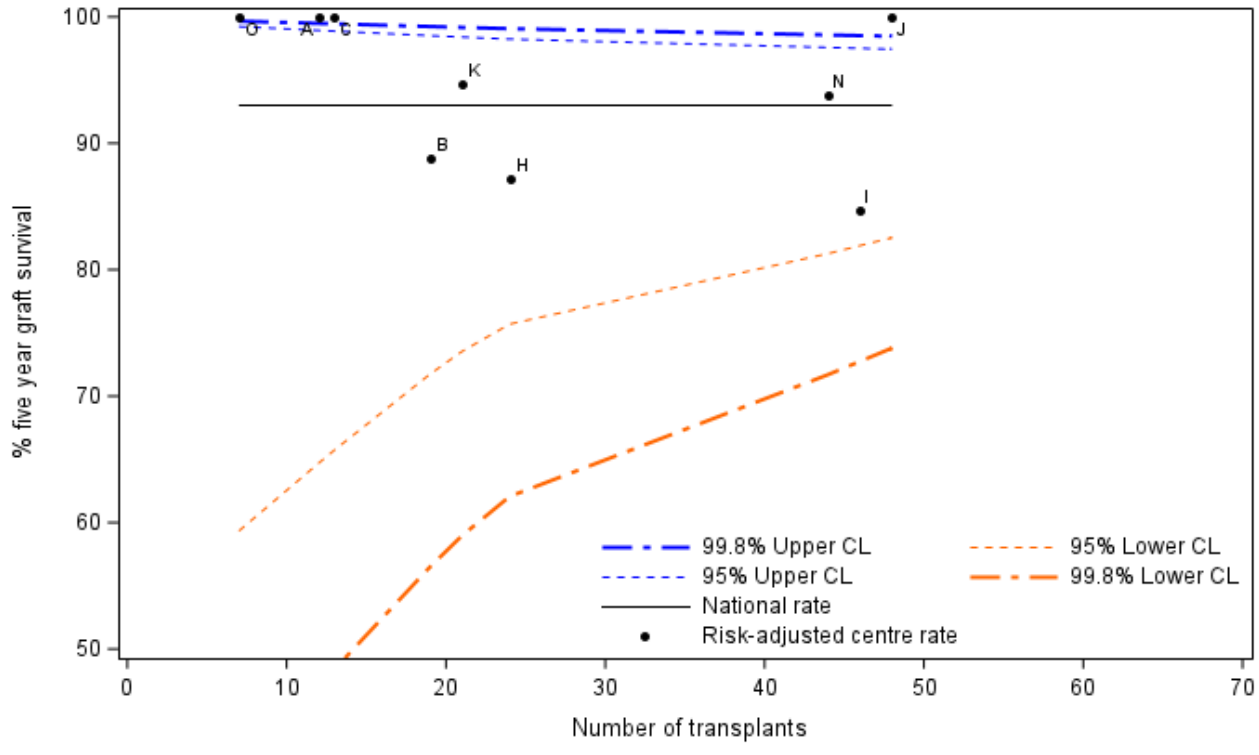


Figure 11.8 Risk-adjusted five year patient survival rates for first live donor kidney transplants in paediatric patients, between 1 April 2017 and 31 March 2021

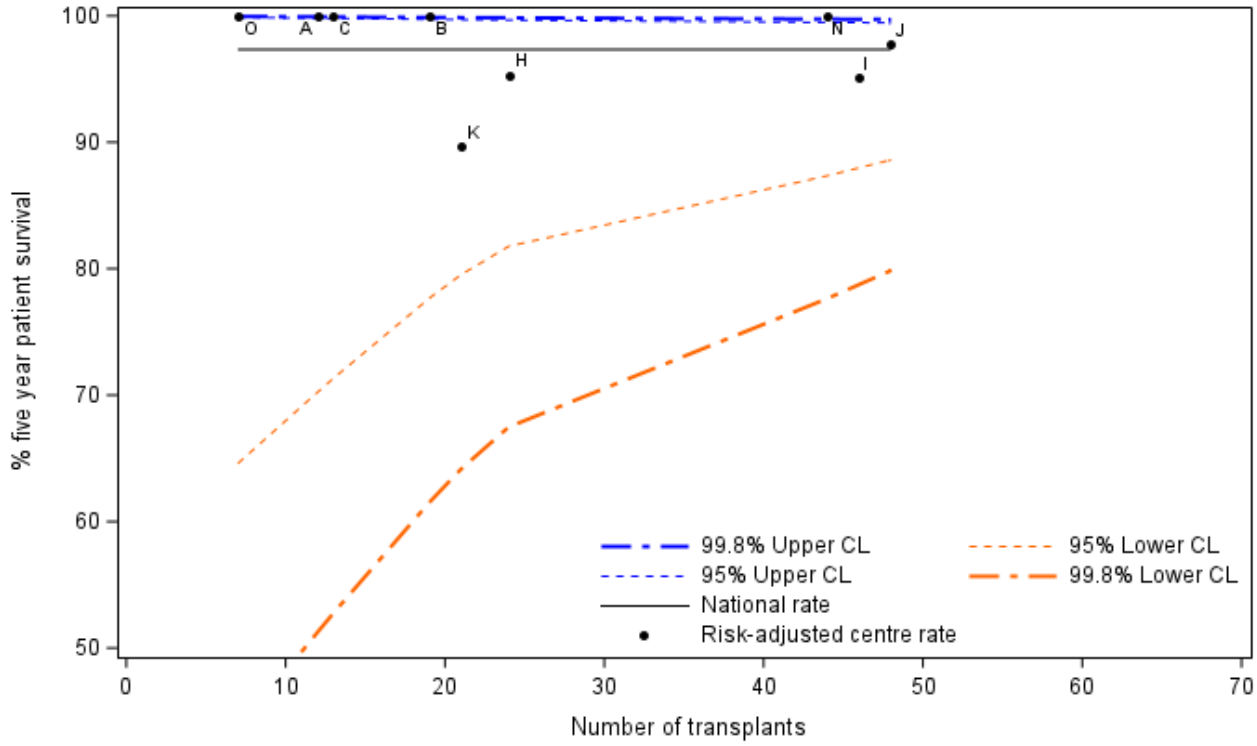


Table 11.2 One and five year first paediatric kidney-only graft and patient survival using kidneys from living donors

		Follow-up form return rates		Kidney graft survival				Patient survival			
		One-year*	Five-year**	One-year*		Five-year**		One-year*		Five-year**	
Centre	Code	%	%	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Belfast	A	83	75	100	N/A	100	N/A	100	N/A	100	N/A
Birmingham	B	88	79	96	(77 - 100)	89	(60 - 99)	100	N/A	100	N/A
Bristol	C	87	100	96	(77 - 100)	100	N/A	100	N/A	100	N/A
Glasgow	H	94	100	100	N/A	87	(54 - 98)	100	N/A	95	(74 - 100)
GOSH	I	88	87	98	(89 - 100)	85	(67 - 94)	97	(88 - 100)	95	(82 - 99)
Guy's	J	90	75	100	N/A	100	N/A	100	N/A	98	(88 - 100)
Leeds	K	95	100	100	N/A	95	(71 - 100)	100	N/A	90	(63 - 99)
Manchester	N	97	91	97	(81 - 100)	94	(82 - 99)	100	N/A	100	N/A
Newcastle	O	100	100	100	N/A	100	N/A	100	N/A	100	N/A
Nottingham	P	72	11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
UK				**98**	**(96 - 99)**	**93**	**(89 - 96)**	**99**	**(97 - 100)**	**97**	**(94 - 99)**

* Includes transplants performed between 1 April 2021 - 31 March 2025
** Includes transplants performed between 1 April 2017 - 31 March 2021
Centres have been omitted where less than 75% of data reported and these are highlighted in grey

Form return rates

12.1 Deceased donor form return rates, 1 April 2025 – 31 March 2026

Form return rates are reported in **Table 12.1** for the kidney transplant record, three month and one year follow up form, along with lifetime follow up (more than two years). These include all paediatric deceased donor kidney only transplants between 1 April 2025 and 31 March 2026 for the transplant record, and all requests for follow up forms issued in this time period.

Table 12.1 Deceased donor form return rates, 1 April 2025 and 31 March 2026

Centre	TX RECORD		THREE MONTHS		ONE YEAR		LIFETIME	
	N	% returned	N	% returned	N	% returned	N	% returned
Birmingham, Birmingham Children's Hospital							25	100
Birmingham, Queen Elizabeth Hospital Birmingham	5	100	7	100	7	86	85	9
Bradford, St Lukes Hospital							24	100
Bristol, Southmead Hospital	2	100	3	100	2	100	50	2
Cardiff, University Of Wales Hospital					1	100	51	69
Glasgow, Queen Elizabeth University Hospital							47	64
Leeds, St James's University Hospital	6	83	5	100	1	100	90	74
London, Great Ormond Street Hospital For Children	10	100	8	88	6	83	36	94
London, Guy's Hospital	9	100	9	89			62	92
London, Royal Free Hospital							32	69
London, The Royal London Hospital (Whitechapel)							36	22
Manchester, Manchester Royal Infirmary	12	100	13	92	10	80	48	2
Nottingham, Nottingham City Hospital	6	83	8	100	3	33	69	1
Oxford, Churchill Hospital							21	38
Sheffield, Northern General Hospital							27	70

12.2 Living donor form return rates, 1 April 2025 – 31 March 2026

Form return rates are reported in **Table 12.2** for the kidney transplant record, three month and one year follow up form, along with lifetime follow up (more than two years). These include all paediatric living donor kidney only transplants between 1 April 2025 and 31 March 2026 for the transplant record, and all requests for follow up forms issued in this time period.

Table 12.2 Living donor form return rates, 1 April 2025 and 31 March 2026

Centre	TX RECORD		THREE MONTHS		ONE YEAR		LIFETIME	
	N	% returned	N	% returned	N	% returned	N	% returned
Belfast, Royal Belfast Hospital For Sick Children							23	61
Birmingham, Birmingham Children's Hospital							32	100
Birmingham, Queen Elizabeth Hospital Birmingham	5	100	5	100	4	25	45	4
Bristol, Southmead Hospital	8	100	9	89	10	100		
Cardiff, University Of Wales Hospital							59	68
Glasgow, Queen Elizabeth University Hospital							49	88
Leeds, St James's University Hospital	8	100	6	100	3	100	62	87
Liverpool, Alder Hey Children's Hospital							30	100
Liverpool, Royal Liverpool University Hospital							29	93
London, Great Ormond Street Hospital For Children	16	100	15	87	17	88	87	94
London, Guy's Hospital	20	100	20	65	12	58	124	89
London, Royal Free Hospital							33	76
London, The Royal London Hospital (Whitechapel)							25	16
Manchester, Manchester Royal Infirmary	9	100	8	88	7	100	45	4
Manchester, Royal Manchester Children's Hospital							34	97
Nottingham, Nottingham City Hospital	9	100	8	100	7	57	53	4
Oxford, Churchill Hospital							26	46
Portsmouth, Queen Alexandra Hospital							24	63

Appendix

A1 Glossary of terms

ABO
The most important human blood group system for transplantation is the ABO system. Every human being is of blood group O, A, B or AB, or of one of the minor variants of these four groups. ABO blood groups are present on other tissues and, unless special precautions are taken, a group A kidney transplanted to a group O patient will be rapidly rejected.

Active transplant list
When a patient is registered for a transplant, they are registered on what is called the 'active' transplant list. This means that when a donor kidney becomes available, the patient is included among those who are matched against the donor to determine whether or not the kidney is suitable for them. It may sometimes be necessary to take a patient off the transplant list, either temporarily or permanently. This may be done, for example, if someone becomes too ill to receive a transplant. The patient is told about the decision to suspend them from the list and is informed whether the suspension is temporary or permanent. If a patient is suspended from the list, they are not included in the matching of any donor kidneys that become available.

Case mix
The types of patients treated at a unit for a common condition. This can vary across units depending on the facilities available at the unit as well as the types of people in the catchment area of the unit. The definition of what type of patient a person is depends on the patient characteristics that influence the outcome of the treatment. For example the case mix for patients registered for a kidney transplant is defined in terms of various factors such as the blood group, tissue type and age of the patient. These factors have an influence on the chance of a patient receiving a transplant.

Confidence interval (CI)
When an estimate of a quantity such as a survival rate is obtained from data, the value of the estimate depends on the set of patients whose data were used. If, by chance, data from a different set of patients had been used, the value of the estimate may have been different. There is therefore some uncertainty linked with any estimate. A confidence interval is a range of values whose width gives an indication of the uncertainty or precision of an estimate. The number of transplants or patients analysed influences the width of a confidence interval. Smaller data sets tend to lead to wider confidence intervals compared to larger data sets. Estimates from larger data sets are therefore more precise than those from smaller data sets. Confidence intervals are calculated with a stated probability, usually 95%. We then say that there is a 95% chance that the confidence interval includes the true value of the quantity we wish to estimate.

Confidence limit
The upper and lower bounds of a confidence interval.

Cox Proportional Hazards model
A statistical model that relates the instantaneous risk (hazard) of an event occurring at a given time point to the risk factors that influence the length of time it takes for the event to occur. This model can be used to compare the hazard of an event of interest, such as graft failure or patient death, across different groups of patients.

Cross-match
A cross-match is a test for patient antibodies against donor antigens. A positive cross-match shows that the donor and patient are incompatible. A negative cross-match means there is no reaction between donor and patient and that the transplant may proceed.

Donor after brain death (DBD)
A donor whose heart is still beating when their entire brain has stopped working so that they cannot survive without the use of a ventilator. Organs for transplant are removed from the donor while their heart is still beating, but only after extensive tests determine that the brain cannot recover and they have been certified dead.

Donor after circulatory death (DCD)
A donor whose heart stops beating before their brain stops working and who is then certified dead. The organs are then removed.

Funnel plot
A graphical method that shows how consistent the survival rates of the different transplant units are compared to the national rate. The graph shows for each unit, a survival rate plotted against the number of transplants undertaken, with the national rate and confidence limits around this national rate superimposed. In this report, 95% and 99.8% confidence limits were used. Units that lie within the confidence limits have survival rates that are statistically consistent with the national rate. When a unit is close to or outside the limits, this is an indication that the centre may have a rate that is considerably different from the national rate.

Graft survival rate
The percentage of recipients whose grafts are still functioning. This is usually specified for a given time period after transplant. For example, a five-year transplant survival rate is the percentage of transplants still functioning five years after transplant. If a patient dies with a functioning graft, the graft survival is censored at time of death.

HLA mismatch
Human Leucocyte Antigen (HLA) antigens are carried on many cells in the body and the immune system can distinguish between those that can be recognised as ‘self’ (belonging to you or identical to your own) and those that can be recognised as ‘nonself’. The normal response of the immune system is to attack foreign/non-self material by producing antibodies against the foreign material. This is one of the mechanisms that provide protection against infection. This is unfortunate from the point of view of transplantation as the immune system will see the graft as just another ‘infection’ to be destroyed, produce antibodies against the graft and rejection of the grafted organ will take place. To help overcome this response, it is recognised that ‘matching’ the recipient and donor on the basis of HLA (and blood group) reduces the chances of acute rejection and, with the added use of immunosuppressive drugs, very much improves the chances of graft survival. ‘Matching’ refers to the similarity of the recipient HLA type and donor HLA type. HLA mismatch refers to the number of mismatches between the donor and the recipient at the A, B and DR (HLA) loci. There can only be a total of two mismatches at each locus. For example, an HLA mismatch value of 000, means that the donor and recipient are identical at all three loci, while an HLA mismatch value of 210 means that the donor and recipient differ completely at the A locus, are partly the same at the B locus and are identical at the DR locus.

Inter-quartile range
The values between which the middle 50% of the data fall. The lower boundary is the lower quartile, the upper boundary the upper quartile.

Kaplan-Meier method
A method that allows recipients with incomplete follow-up information to be included in estimating survival rates. For example, in a cohort for estimating one year patient survival rates, a recipient was followed up for only nine months before they relocated. If we calculated a crude survival estimate using the number of recipients who survived for at least a year, this recipient would have to be excluded as it is not known whether or not the recipient was still alive at one year after transplant. The Kaplan-Meier method allows information about such recipients to be used for the length of time that they are followed-up, when this information would otherwise be discarded. Such instances of incomplete follow-up are not uncommon and the Kaplan-Meier method allows the computation of estimates that are more meaningful in these cases.

Live donor
A donor who is a living person and who is usually, but not always, a relative of the transplant recipient. For example, a parent may donate one of their kidneys to their child.

Median
The midpoint in a series of numbers, so that half the data values are larger than the median, and half are smaller.

Multi-organ transplant
A transplant in which the recipient receives more than one organ. For example, a recipient may undergo a transplant of a kidney and liver.

National Kidney Allocation Scheme
A nationally agreed set of rules for sharing and allocating kidneys for transplant between transplant centres in the UK. The scheme is administered by NHS Blood and Transplant.

Patient survival rate
The percentage of recipients who are still alive (whether the graft is still functioning or not). This is usually specified for a given time period after transplant. For example, a five-year patient survival rate is the percentage of recipients who are still alive five years after their first transplant.

p value
In the context of comparing survival rates across centres, the p value is the probability that the differences observed in the rates across centres occurred by chance. As this is a probability, it takes values between 0 and 1. If the p value is small, say less than 0.05, this implies that the differences are unlikely to be due to chance and there may be some identifiable cause for these differences. If the p value is large, say greater than 0.1, then it is quite likely that any differences seen are due to chance.

Pre-emptive
Patients that are placed on the kidney transplant list or receive a transplant prior to the need for dialysis are termed as pre-emptive. Patients listed pre-emptively will usually require dialysis within six months of being placed on the transplant list.

Risk-adjusted survival rate

Some transplants have a higher chance than others of failing at any given time. The differences in expected survival times arise due to differences in certain factors, the risk factors, among recipients. A risk-adjusted survival rate for a centre is the expected survival rate for that centre given the case mix of their recipients. Adjusting for case mix in estimating centre-specific survival rates allows valid comparison of these rates across centres and to the national rate.

Risk factors
These are the characteristics of a recipient, transplant or donor that influence the length of time that a graft is likely to function or a recipient is likely to survive following a transplant. For example, when all else is equal, a transplant from a younger donor is expected to survive longer than that from an older donor and so donor age is a risk factor.

Unadjusted survival rate
Unadjusted survival rates do not take account of risk factors and are based only on the number of transplants at a given centre and the number and timing of those that fail within the post-transplant period of interest. In this case, unlike for risk-adjusted rates, all transplants are assumed to be equally likely to fail at any given time. However, some centres may have lower unadjusted survival rates than others simply because they tend to undertake transplants that have increased risks of failure. Comparison of unadjusted survival rates across centres and to the national rate is therefore inappropriate.

A2 Statistical methodology and risk-adjustment for survival rate estimation

Unadjusted and risk-adjusted estimates of patient and graft survival are given for each centre. Unadjusted rates give an estimate of what the survival rate at a centre is, assuming that all recipients at the centre have the same chance of surviving a given length of time after transplant. In reality, recipients differ and a risk-adjusted rate that allows for these differences would give a more meaningful estimate of survival.

Computing unadjusted survival rates

Unadjusted survival rates were calculated using the Kaplan-Meier method, which allows recipients with incomplete follow-up information to be included in the computation. For example, in a cohort for estimating one-year patient survival rates, a recipient was followed up for only nine months before they relocated. If we calculated a crude survival estimate using the number of recipients who survived for at least a year, this recipient would have to be excluded, as it is not known whether or not the recipient was still alive one year after transplant. The Kaplan-Meier method allows information about such recipients to be used for the length of time that they are followed-up, when this information would otherwise be discarded. Such instances of incomplete follow-up are not uncommon in the analysis of survival data and the Kaplan-Meier method therefore allows the computation of survival estimates that are more meaningful.

Computing risk-adjusted survival rates

A risk-adjusted survival rate is an estimate of what the survival rate at a centre would have been if they had had the same mix of recipients as that seen nationally. The risk-adjusted rate therefore presents estimates in which differences in recipient mix across centres have been removed as much as possible. For that reason, it is valid to only compare centres using risk-adjusted rather than unadjusted rates, as differences among the latter can be attributed to differences in recipient mix.

Risk-adjusted survival estimates were obtained through indirect standardisation. A Cox Proportional Hazards model was used to determine the probability of survival for each recipient based on their individual risk factor values. The sum of these probabilities for all recipients at a centre gives the number, E, of recipients or grafts expected to survive at least one year or five years after transplant at that centre. The number of recipients who actually survive the given time period is given by O. The risk-adjusted estimate is then calculated by multiplying the ratio O/E by the overall unadjusted survival rate across all centres.

The risk-adjustment models used were based on results from previous studies that looked at factors affecting the survival rates of interest. The factors included in the models are shown in the table below.

Registration rates

All NHS group 1 patients who were registered onto the kidney transplant list with an active status between 1 April 2025 and 31 March 2026 were extracted from the UK Transplant Registry on 10 July 2026 (numerator). Only patients registered for kidney only were considered. Patients were assigned to NHS regions in England using their postcode of residence, as reported at registration. The number of registrations per million population (pmp) by NHS region was obtained using mid-2025 population estimates based on the Office for National Statistics (ONS) 2021 Census figures (denominator). No NHS region age- or sex-specific standardisation of rates was performed.

The registration rates pmp were categorised into four groups – low, low-medium, medium-high and high – based on the quartiles of their distribution and visualised in a map using contrasting colours.

Transplant rates

Transplant rates pmp were obtained as the number of kidney only transplants on NHS group 1 recipients between 1 April 2025 and 31 March 2026 (numerator), divided by the mid-2025 population estimates from the ONS (denominator). Transplant rates pmp were categorised and visualised in a map as done for the registration rates.

Systematic component of variation

Only registrations or transplants in England between 1 April 2025 and 31 March 2026 were included. If a patient was re-registered during the time period, only the first registration was considered. If a patient underwent more than one deceased donor kidney transplant in the time period, only the first transplant was considered, similarly for living donor kidney transplants.

For a given individual who is a resident in a given English Strategic Health Authority (SHA), registration to the transplant list is modelled as a Bernoulli trial. At the whole area level, this becomes a Binomial process which can be approximated by a Poisson distribution when rare events are modelled. Transplant counts follow similar assumptions.

To allow for the possibility that, even after allowing for area-specific Poisson rates, area differences remain, introduce an additional multiplicative rate factor which varies from area to area. Postulate a non-parametric distribution for the multiplicative factor, with variance σ^2. If the factor is one for all areas, then area differences are fully explained by the area-specific Poisson rate. If the factor varies with a nonzero variance, σ^2, then we conclude that there are unexplained area differences.

The systematic component of variation (SCV; McPherson *et al., N Engl J Med* 1982, 307: 1310-4) is the moment estimator of σ^2. Under the null hypothesis of homogeneity across areas, the SCV would be zero. The SCV, therefore, allows us to detect variability across areas beyond that expected by chance; the larger the SCV, the greater the evidence of systematic variation across areas.

Risk adjustment factors

Adult waiting time

Median active waiting time	Age at registration, sex, ethnicity, highly sensitised, blood group, dialysis at registration, matchability score
Median total waiting time	Age at registration, sex, ethnicity, highly sensitised, blood group, matchability score

Adult transplants
First transplants from deceased donors

1 year graft survival	Donor age, donor type, donor cause of death, recipient age, waiting time to transplant, primary renal disease, HLA mismatch group, total preservation time*, recipient ethnicity
1 year patient survival	Donor age, recipient age, waiting time to transplant, primary renal disease, HLA mismatch group, total preservation time*
5 year graft survival	Graft year, donor age, donor type, donor cause of death, recipient age, waiting time to transplant, primary renal disease, HLA mismatch group, recipient ethnicity
5 year patient survival	Graft year, donor age, recipient age, waiting time to transplant, primary renal disease

Transplants from live donors

1 year graft survival	Donor age, recipient age, primary renal disease, number of HLA mismatches
1 year patient survival	Recipient age
5 year graft survival	Graft year, donor age, recipient age, primary renal disease, number of HLA mismatches
5 year patient survival	Recipient age, primary renal disease

Paediatric transplants

First transplants from deceased donors

1 year graft survival	Donor age, recipient age, HLA mismatch group, total preservation time*
1 year patient survival	Recipient age
5 year graft survival	Donor age, recipient age, HLA mismatch group
5 year patient survival	Recipient age

Transplants from live donors

1 year graft survival	Donor age, recipient age
1 year patient survival	Recipient age
5 year graft survival	Donor age, recipient age
5 year patient survival	Recipient age

*Time between retrieval of kidney from the donor and time of transplant in the recipient.

A3 Factors used in risk-adjusted models for patient survival from listing

Adult registrations

First registrations for deceased donor transplant

1, 5 and 10 year patient survival from listing	age, gender, ethnicity, blood group, BMI, cRF*>=85%, primary disease, dialysis status

* Calculated reaction frequency

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