

ANNUAL REPORT ON HEART TRANSPLANTATION

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

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EXECUTIVE SUMMARY



1. Executive Summary

This report presents key data about heart transplantation in the UK. The period reported covers 10 years, from 1 April 2016 to 31 March 2026. The data include number of people listed for a transplant, number of transplants performed and survival rates following heart transplantation; both on a national and centre-specific basis. Most of the data were extracted on 17 June 2026.

Key findings

ADULT HEART TRANSPLANTATION

- On 31 March 2026 there were 257 adults waiting for a heart transplant: 227 on the non-urgent list, 26 on the urgent list and 4 on the super-urgent list. This is a 14% decrease since the peak of 300 patients waiting on 31 March 2020.
- Of the 257 adults waiting, 50% were on long-term VAD support and 2% were on short-term mechanical circulatory support.
- The 1 year waiting list mortality rate was 8% on the non-urgent list and 9% on the urgent list (including removals due to deteriorating condition and deaths within 30 days of removal). On the super-urgent list, 14% of patients had died without receiving a transplant by 4 months.
- Median waiting time to heart transplant was 788 days from non-urgent registration, 42 days from urgent registration and 13 days from super-urgent registration.
- During 2025/2026 there were 187 adult heart transplants performed of which 41% were from DCD donors. The number of adult heart transplants performed in 2025/2026 was 7% higher than the previous year in which there were 174 transplants. The proportion of super-urgent transplants has increased overtime, representing 38% of transplants in 2025/2026.
- The national rates of patient survival following adult heart transplant were 91.9% at 90 days, 87.2% at 1 year and 76.1% at 5 years (including both DBD and DCD heart transplants).

PAEDIATRIC HEART TRANSPLANTATION

- On 31 March 2026 there were 33 paediatric patients waiting for a heart transplant: 17 on the non-urgent list, 16 on the urgent list and none on the super-urgent list. This was 15% lower than on 31 March 2025, and 30% of those waiting were on mechanical circulatory support.
- The 1 year waiting list mortality rate was 16% on the urgent list (including removals due to deteriorating condition and deaths within 30 days of removal), while the mortality rate on the non-urgent list was much lower.
- Median waiting time to transplant from non-urgent registration could not be calculated due to the low transplant rate. However, the median waiting time from urgent registration was 210 days.
- During 2025/2026 there were 27 paediatric heart transplants (1 more than the previous year) of which 9 were from DCD donors. A total of 22 of the 27 transplants were either urgent or super-urgent.
- The national rates of patient survival following paediatric heart transplant were 95.8% at 90 days, 94.0% at 1 year and 85.6% at 5 years (including both DBD and DCD heart transplants).

Use of the contents of this report should be acknowledged as follows: *Annual Report on Heart Transplantation 2025/2026, NHS Blood and Transplant*

INTRODUCTION



2. Introduction

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

Heart activity results are described separately for adults (aged 16 years or over) and paediatric patients (aged less than 16 years). There are seven heart transplant centres in the UK; six in England and one in Scotland. Five of the seven centres specialise in adult transplantation, one in paediatric transplantation (Great Ormond Street Hospital) and one in both adult and paediatric transplantation (Newcastle). Any transplants carried out at Great Ormond Street Hospital in recipients aged 16 or over are included in the paediatric analysis, and any transplants carried out at adult only centres in recipients less than 16 are included in the adult analysis.

[Multi-organ transplants](#) are presented separately in [Section 6.5](#) and are excluded from the rest of the main report.

The time period of analysis covers the introduction of the super-urgent heart allocation scheme in October 2016 (later expanded to paediatric patients in October 2020).

Methods used are described in the [Appendix](#). The centre specific adult [survival rates](#) are adjusted for differences in [risk factors](#) between the centres. The risk models used are described in the [Appendix](#). The adult heart risk model was revised in August 2022 in consultation with the clinical community.

2.1 Overview

Figure 2.1 shows the number of transplant candidates on the [active transplant list](#) at financial year end between 2017 and 2026. The number of people waiting for a heart transplant increased significantly between 2017 and 2020, from 248 to 340. Since 2020, there has been a slight downward trend, with 293 waiting on 31 March 2026, however this still represents an 18% increase from 31 March 2017.

Figure 2.1 Number of people on the national active heart transplant list on 31 March each year, 2017 to 2026

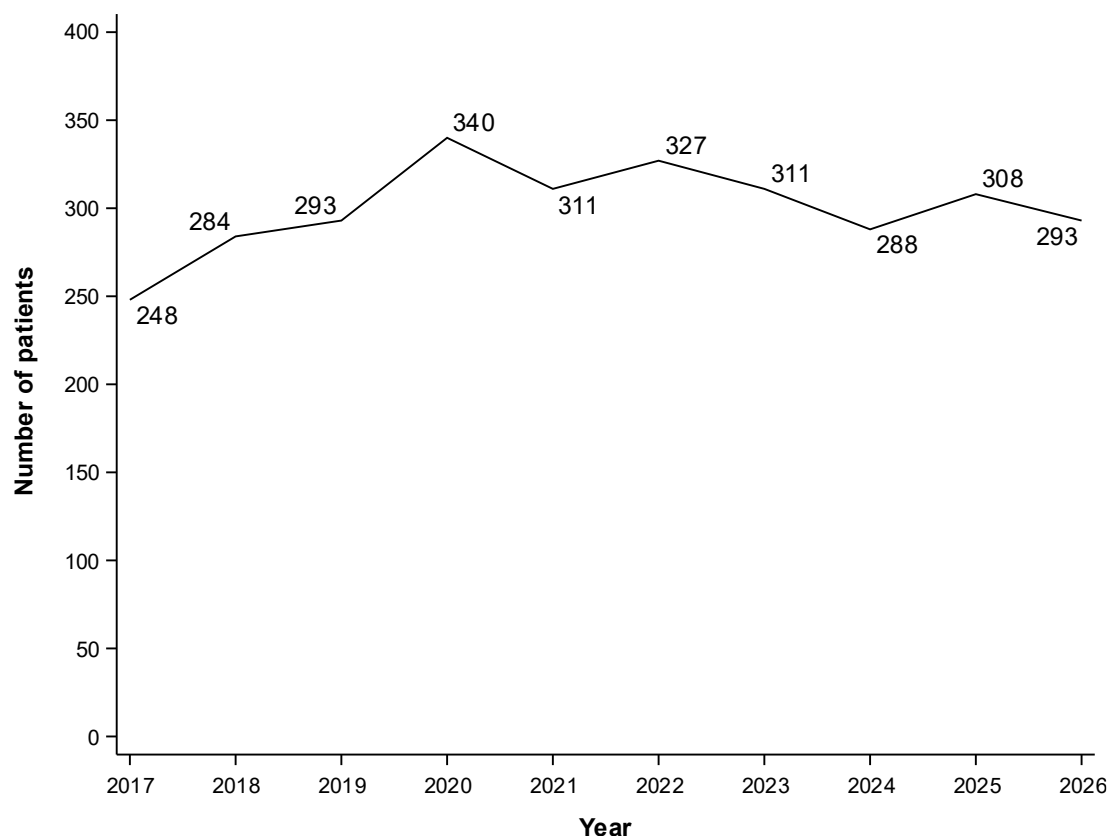


Figure 2.2 and **Figure 2.3** show the number of adult and paediatric patients on the [active transplant list](#) on 31 March 2026 at each centre. In total, there were 260 adults and 33 paediatric patients waiting for a heart transplant. These numbers include 3 people waiting for a multi-organ transplant (1 heart and liver, 2 heart and kidney). Newcastle had the highest number of both adult and paediatric patients on the heart transplant list.

Figure 2.2 Number of adults on the active heart transplant list on 31 March 2026, by centre

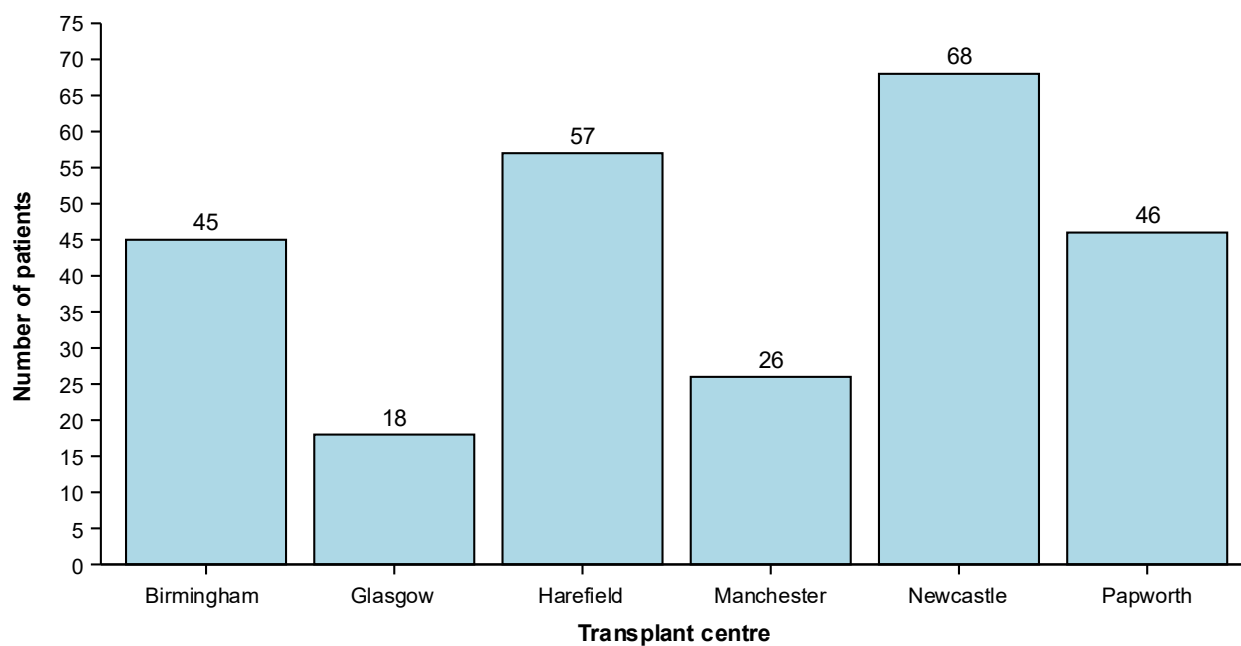


Figure 2.3 Number of paediatric patients on the active heart transplant list on 31 March 2026, by centre

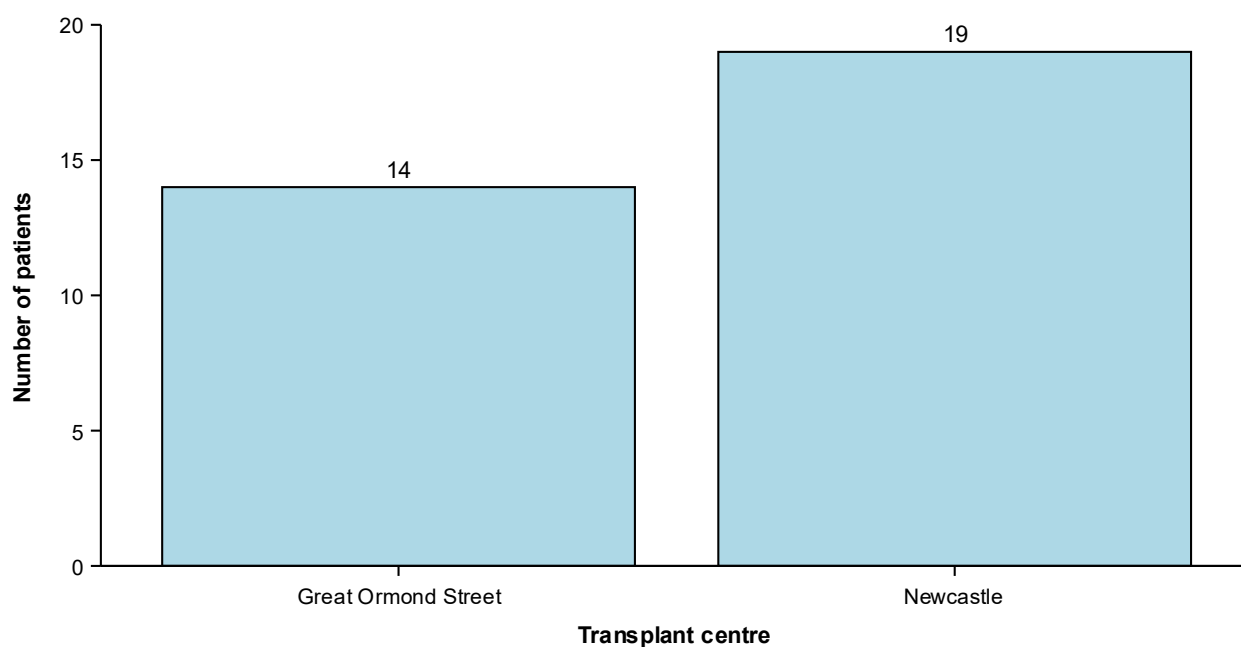


Figure 2.4 shows the total number of heart transplants performed in each of the last 10 financial years (excluding heart-lung transplants but including other multi-organ transplants). The number of transplants last year was 215, 7.5% higher than in 2024/2025.

Figure 2.4 Number of heart transplants in the UK, by financial year, 1 April 2016 to 31 March 2026

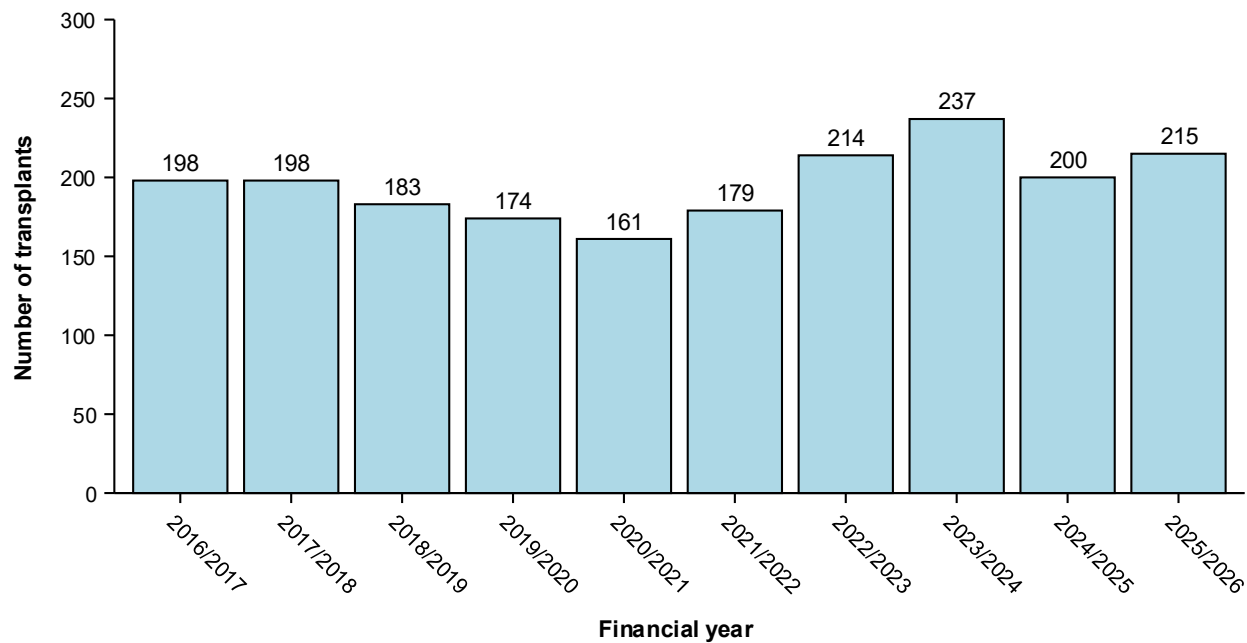


Figure 2.5 and **Figure 2.6** show the number of adult and paediatric transplants carried out in the most recent financial year at each centre. Glasgow performed the highest number of adult transplants and Great Ormond Street Hospital performed the highest number of paediatric transplants.

Figure 2.5 Number of adult heart transplants in the UK, by centre, 1 April 2025 to 31 March 2026

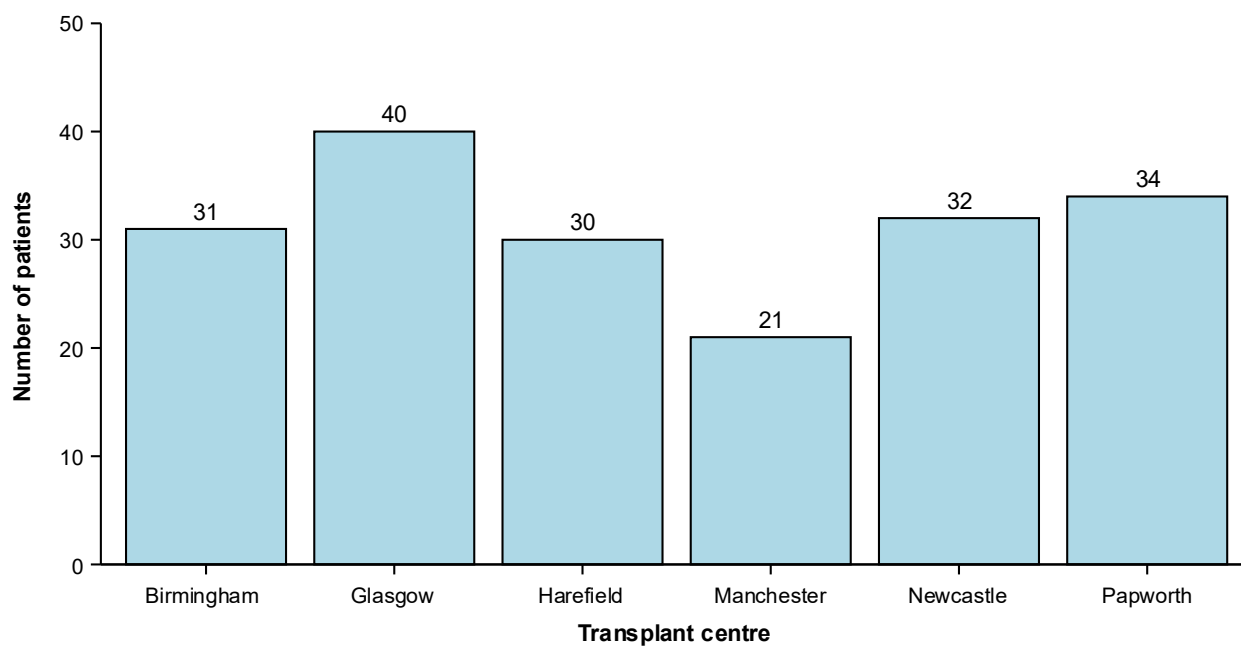


Figure 2.6 Number of paediatric heart transplants in the UK, by centre, 1 April 2025 to 31 March 2026

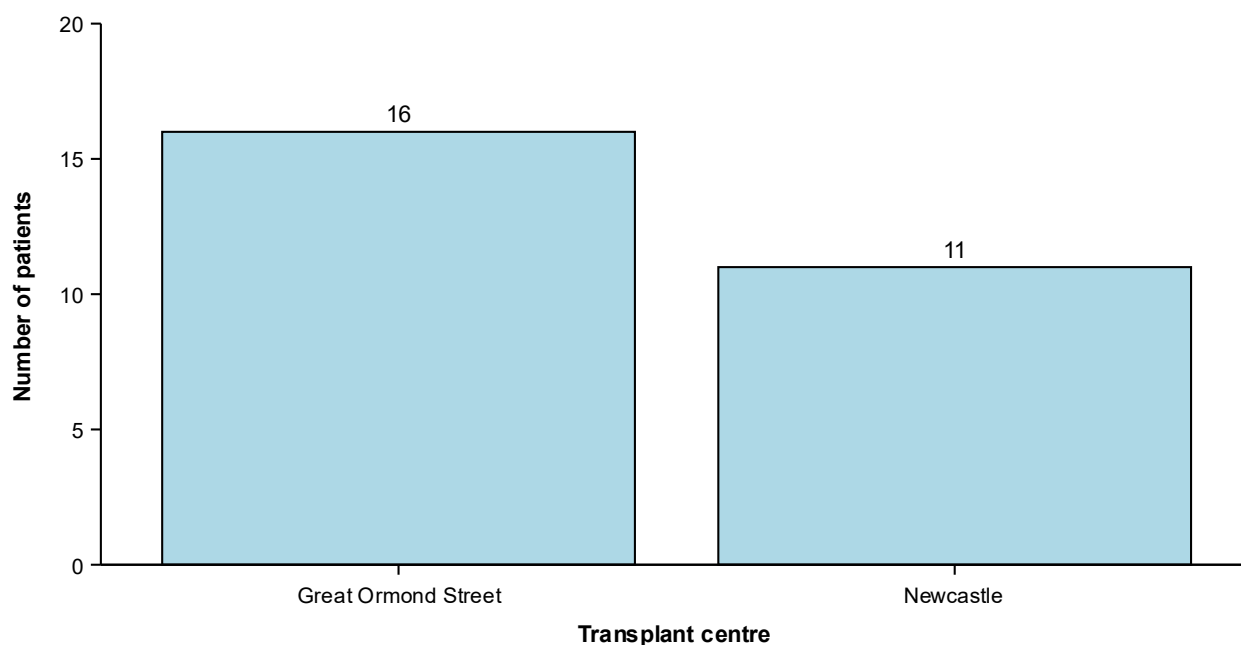
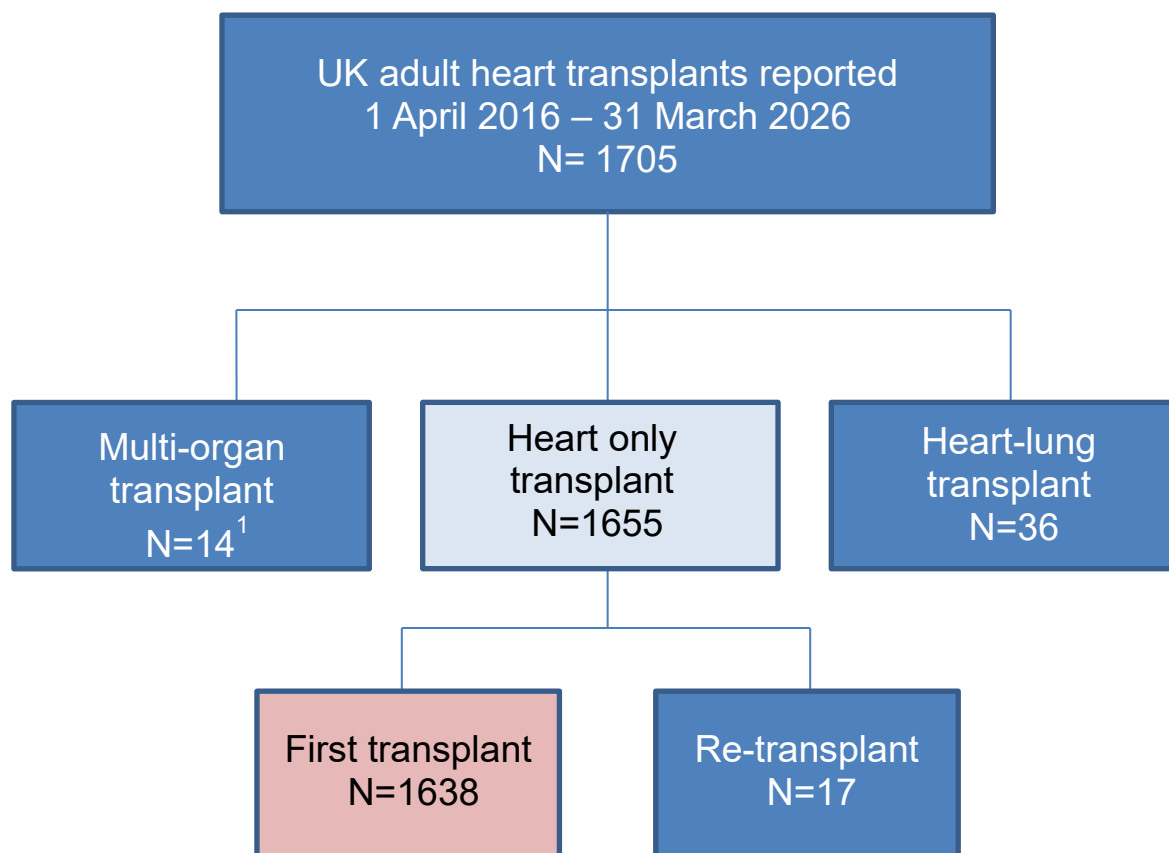


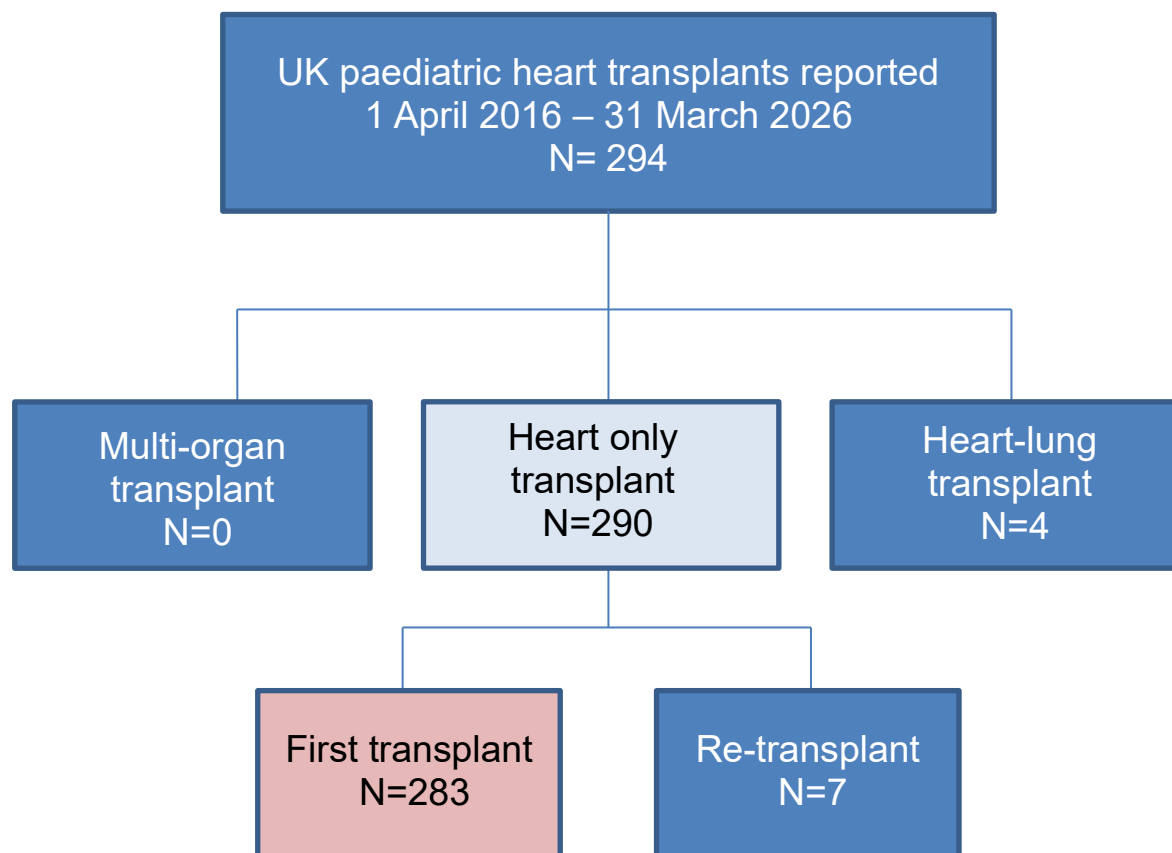
Figure 2.7 shows a breakdown of the 1,705 adult heart transplants performed in the UK in the ten-year period while **Figure 2.8** shows a similar breakdown for the 294 paediatric transplants performed during the same period. Re-transplants are included in the transplant activity sections of this report but excluded from the survival analysis sections. [Multi-organ transplants](#) are excluded from the rest of the report apart from the separate multi-organ outcome sections ([Section 6.5](#)). Heart-lung transplants are considered in the Annual Report on Lung Transplantation and are excluded from the rest of this report.

Figure 2.7 Adult heart transplants performed in the UK, 1 April 2016 to 31 March 2026



¹ Includes 5 heart and kidney transplants, and 9 heart and liver transplants

Figure 2.8 Paediatric heart transplants performed in the UK, 1 April 2016 to 31 March 2026



2.2 Geographical variation in registration and transplant rates

Figure 2.9 shows rates of registration to the heart transplant list per million population (pmp) between 1 April 2025 and 31 March 2026 and rates of heart transplantation pmp for the same time period, by [recipient country/NHS region of residence](#). **Table 2.1** shows the actual numbers as well as rates. The UK heart registration and transplant rates are 4.1 pmp and 3.1 pmp respectively.

Since there will inevitably be some random variation in rates between areas, the systematic coefficient 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. The larger the SCV the greater the evidence of a high level of systematic variation between areas. Registration and transplant rates yielded an SCV of 0 (p-value >0.999) 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 there is no evidence of geographical variation beyond what would be expected at random across English NHS regions. 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 2.9 Comparison of heart registration rates (pmp) with transplant rates (pmp) by recipient country/NHS region of residence

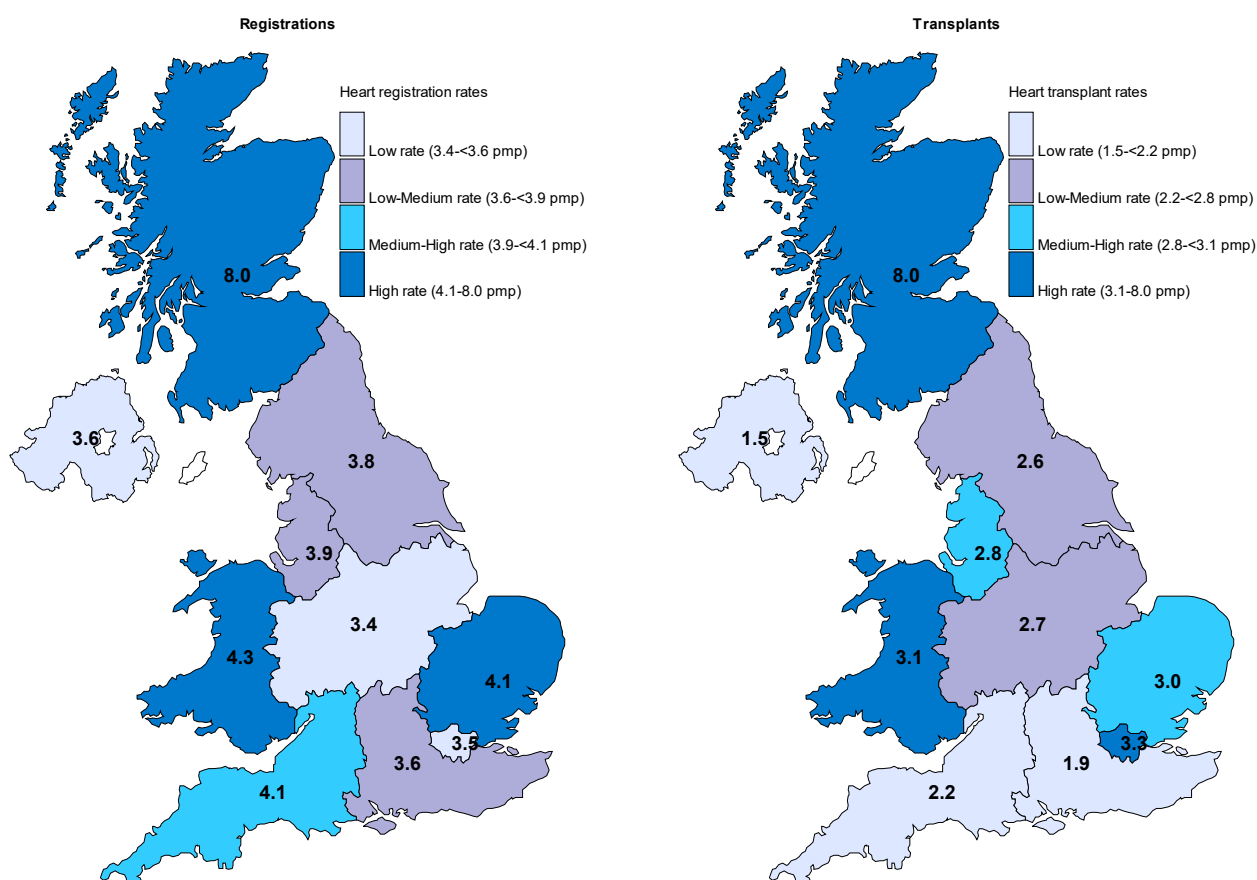


Table 2.1 Heart registration and transplant rates per million population (pmp) in the UK, 1 April 2025 and 31 March 2026, by Country/NHS region				
Country/ NHS region	Registrations (pmp)		Transplants (pmp)	
North East and Yorkshire	32	(3.8)	22	(2.6)
North West	30	(3.9)	22	(2.8)
Midlands	38	(3.4)	30	(2.7)
East of England	27	(4.1)	20	(3.0)
London	32	(3.5)	30	(3.3)
South East	35	(3.6)	18	(1.9)
South West	24	(4.1)	13	(2.2)
England	218	(3.7)	155	(2.6)
Isle of Man	1	(12.5)	0	(0.0)
Channel Islands	0	(0.0)	0	(0.0)
Wales	14	(4.3)	10	(3.1)
Scotland	45	(8.0)	45	(8.0)
Northern Ireland	7	(3.6)	3	(1.5)
TOTAL	286¹	(4.1)	214²	(3.1)
¹ Registrations include 1 patient whose postcode was unknown and excludes 6 patients who reside in the Republic of Ireland ² Transplants include 1 recipient whose postcode was unknown and excludes 1 recipient who resides in the Republic of Ireland				

ADULT HEART TRANSPLANTATION

Transplant List



3.1 Adult heart only transplant list on 31 March, 2017 – 2026

Figure 3.1 shows the number of adult patients on the heart transplant list on 31 March each year between 2017 and 2026, split by urgency status of the patient. The number of adults on the active non-urgent heart transplant list increased from 194 in 2017 to a peak of 271 in 2020, before falling to 227 in 2026. The number of adults on the urgent list has remained relatively stable, with 26 as of 31 March 2026. There were 4 adults waiting on the super-urgent list on 31 March 2026. There has been a recent decrease in the number of adults suspended from the heart waiting list, but a general increase since the start of the decade.

Figure 3.1 Number of adults on the heart transplant list on 31 March each year, by urgency status

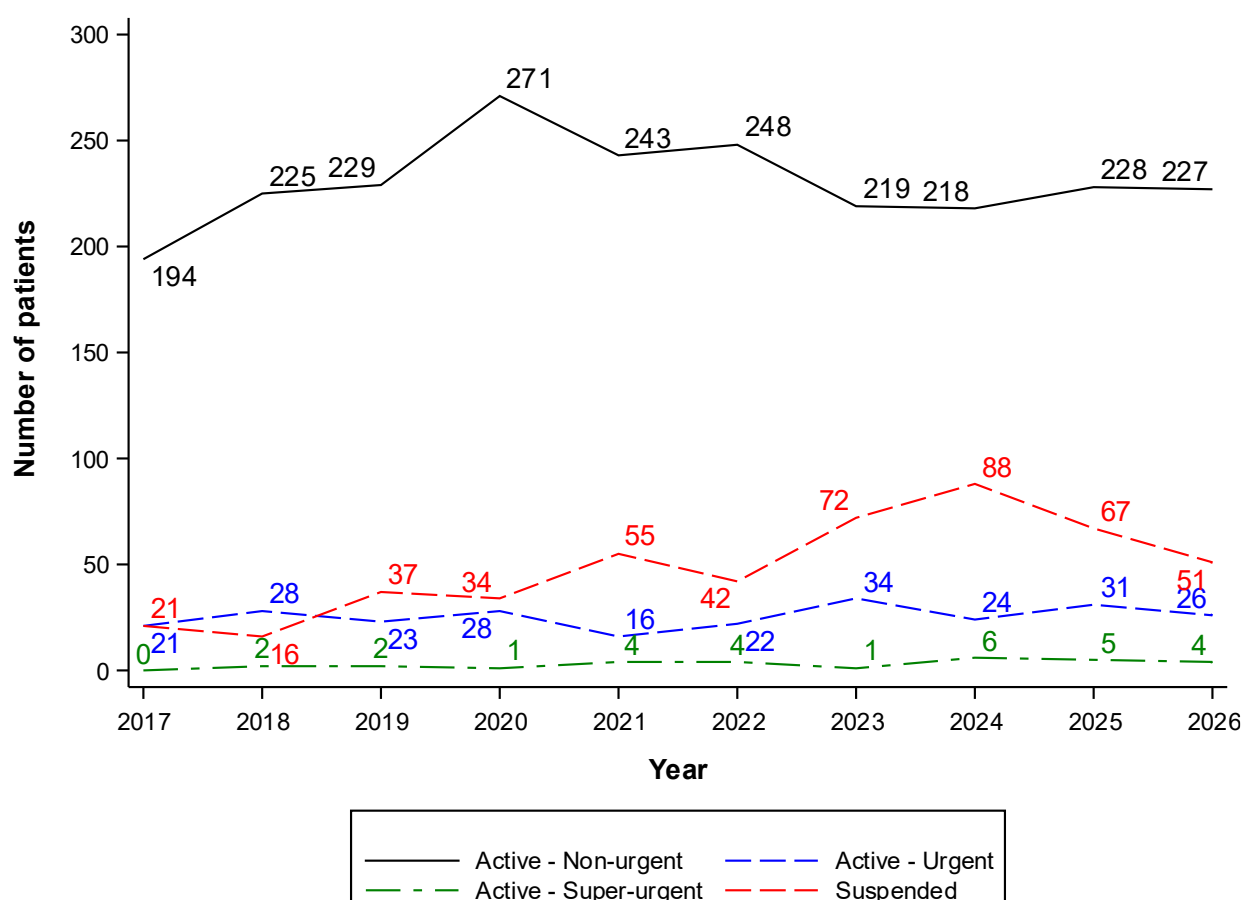


Figure 3.2 shows the number of adults on the [active heart transplant list](#) on 31 March 2026, by centre and urgency. **Figure 3.3** provides a similar breakdown by centre and mechanical circulatory support (MCS) status. In total, there were 257 adults waiting for a heart. The number on the urgent transplant list on 31 March 2026 ranged from 1 at Glasgow to 9 at Harefield and Newcastle. Harefield had 2 adults on the super-urgent transplant list, while Birmingham and Manchester each had 1. A total of 129 adult patients were on long-term MCS (including implantable VADs for left, right and biventricular support), representing 50% of the national waiting list, but varying between 17% and 81% across centres.

Figure 3.2 Number of adults on the active heart transplant list on 31 March 2026, by centre and urgency

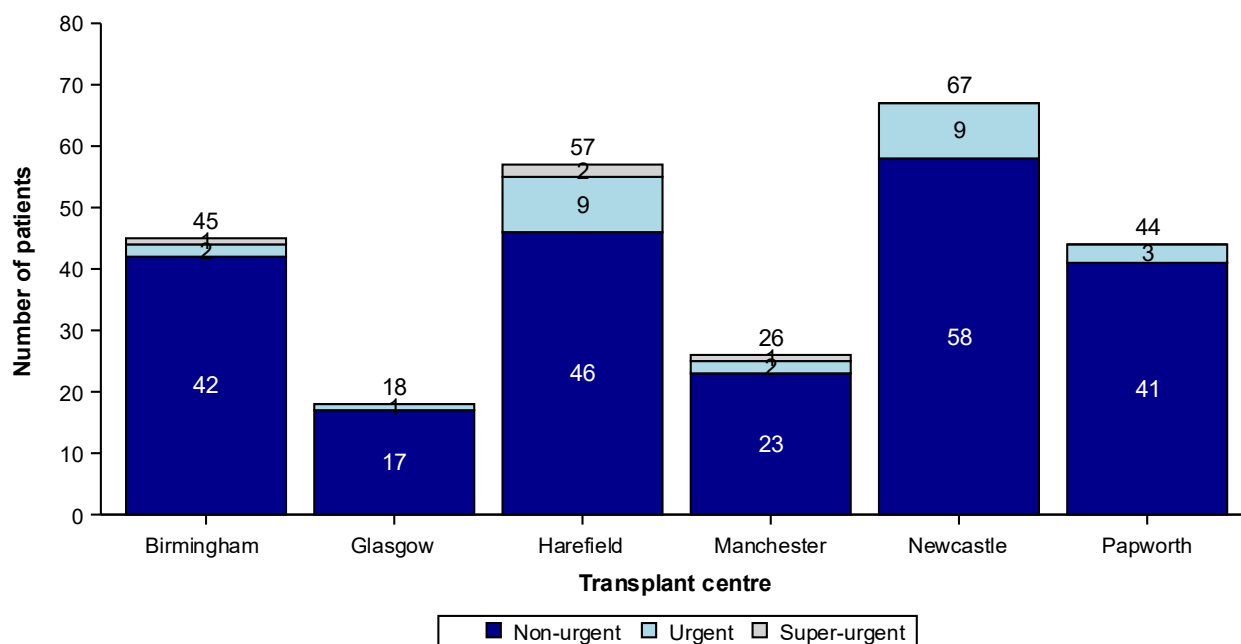


Figure 3.3 Number of adults on the active heart transplant list on 31 March 2026, by centre and mechanical circulatory support status

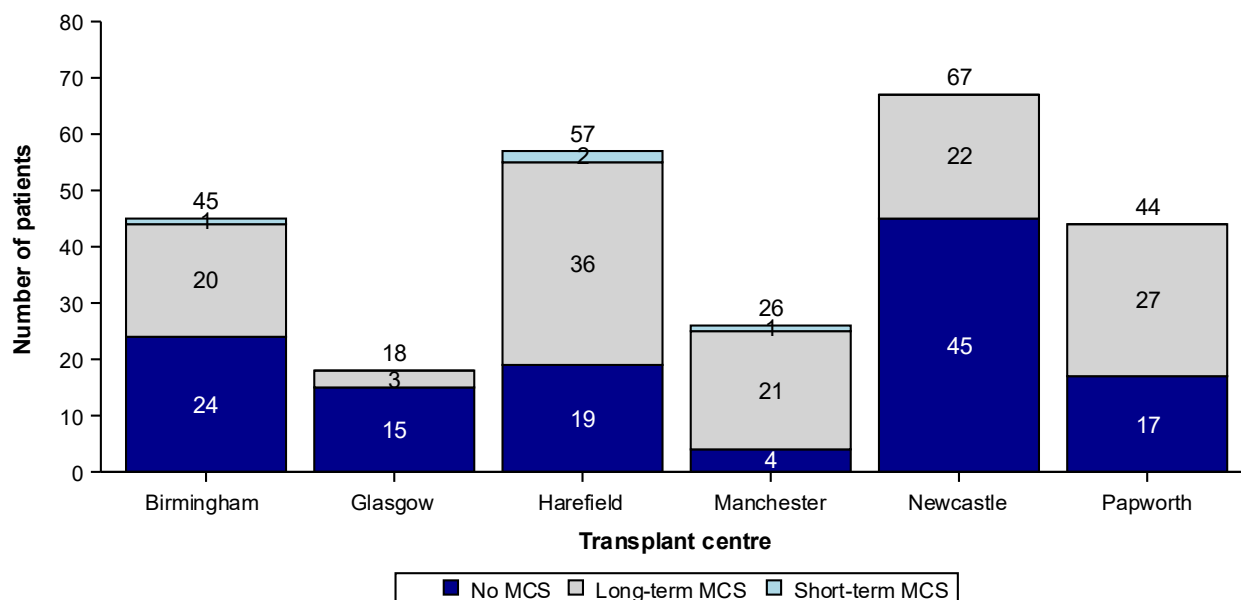
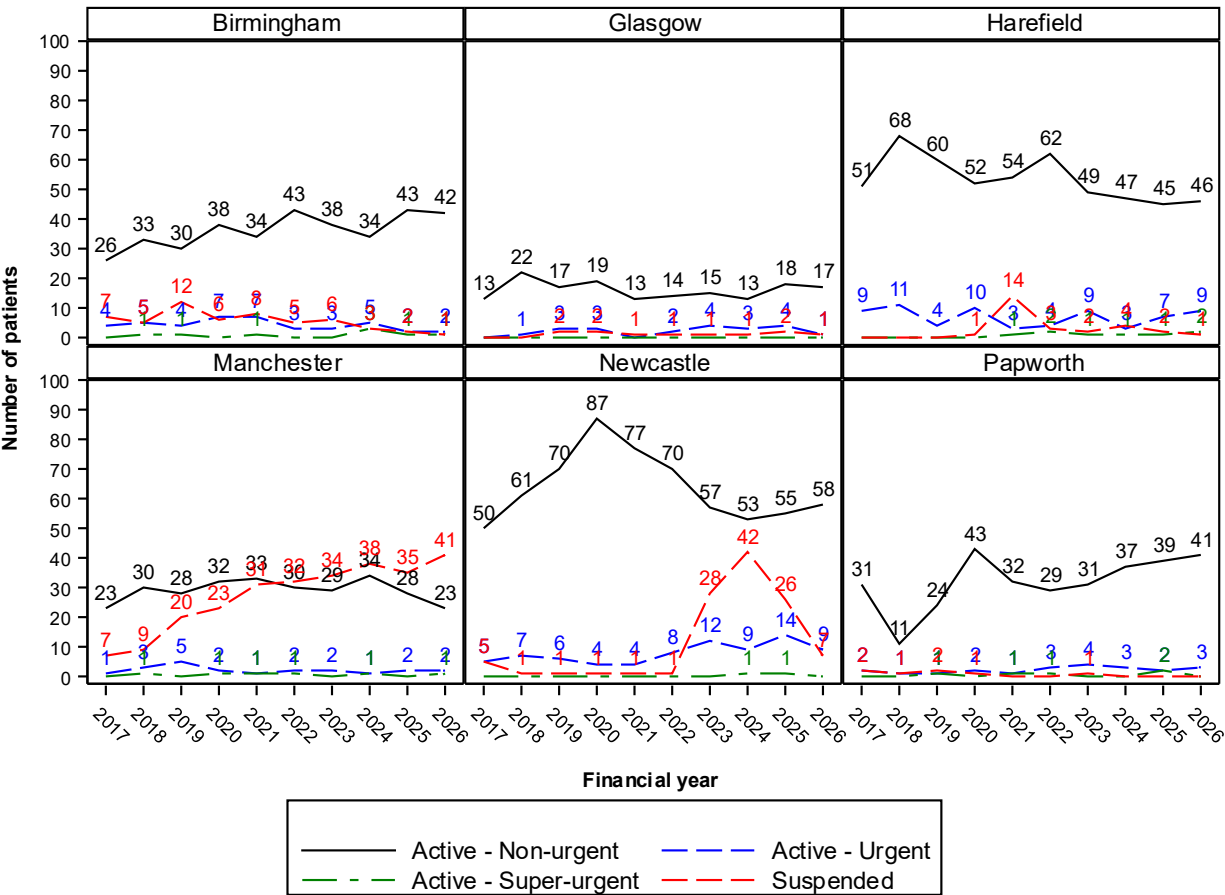


Figure 3.4 shows the trend over time in the number of adults on the heart transplant list on 31 March each year across centres. Harefield and Newcastle centres have had an overall decrease in their active non-urgent patient lists compared to their respective peak-volume years, while Birmingham and Papworth have seen rising trends in these lists over recent years. Additionally, Manchester has recently had a notable increase in the number of suspended patients.

Figure 3.4 Number of adults on the heart transplant list on 31 March each year, for the last 10 years, by centre



3.2 Demographic characteristics, 1 April 2025 – 31 March 2026

There were 247 adult registrations onto the heart transplant list between 1 April 2025 and 31 March 2026. Demographic characteristics of these patients are shown by centre and overall, in **Table 3.1**. Nationally, 70% were male and the [median](#) age was 47 years. The most common primary disease group was cardiomyopathy. For some characteristics, due to rounding, percentages may not add up to 100.

		Birmingham N (%)	Glasgow N (%)	Harefield N (%)	Manchester N (%)	Newcastle N (%)	Papworth N (%)	TOTAL N (%)
Number of registrations		41 (100)	42 (100)	56 (100)	28 (100)	41 (100)	39 (100)	247 (100)
Highest urgency during year	Non-urgent	19 (46)	9 (21)	24 (43)	8 (29)	21 (51)	18 (46)	99 (40)
	Urgent	6 (15)	18 (43)	16 (29)	10 (36)	13 (32)	13 (33)	76 (31)
	Super-urgent	16 (39)	15 (36)	16 (29)	10 (36)	7 (17)	8 (21)	72 (29)
Recipient sex	Male	29 (71)	33 (79)	40 (71)	19 (68)	30 (73)	22 (56)	173 (70)
	Female	12 (29)	9 (21)	15 (27)	9 (32)	11 (27)	17 (44)	73 (30)
	Missing	0 (0)	0 (0)	1 (2)	0 (0)	0 (0)	0 (0)	1 (0)
Recipient ethnicity	White	23 (56)	35 (83)	39 (70)	24 (86)	39 (95)	25 (64)	185 (75)
	Asian	7 (17)	3 (7)	6 (11)	0 (0)	2 (5)	8 (21)	26 (11)
	Black	9 (22)	3 (7)	4 (7)	1 (4)	0 (0)	4 (10)	21 (9)
	Other	2 (5)	1 (2)	3 (5)	1 (4)	0 (0)	2 (5)	9 (4)
	Missing	0 (0)	0 (0)	4 (7)	2 (7)	0 (0)	0 (0)	6 (2)
Recipient age (years)	Median (IQR)	46 (39, 59)	55 (43, 61)	54 (43, 59)	45 (39, 53)	42 (34, 48)	43 (31, 55)	47 (38, 58)
	Missing	0	0	0	0	0	0	0
Primary Disease	Coronary heart disease	8 (20)	6 (14)	6 (11)	4 (14)	7 (17)	7 (18)	38 (15)
	Cardiomyopathy	29 (71)	33 (79)	42 (75)	23 (82)	11 (27)	29 (74)	167 (68)
	Congenital heart disease	2 (5)	0 (0)	1 (2)	1 (4)	21 (51)	1 (3)	26 (11)
	Graft failure/Rejection	0 (0)	0 (0)	0 (0)	0 (0)	1 (2)	0 (0)	1 (0)
	Other/Not reported	2 (5)	3 (7)	7 (13)	0 (0)	1 (2)	2 (5)	15 (6)
Previous open heart surgery	None	28 (68)	33 (79)	33 (59)	14 (50)	13 (32)	28 (72)	149 (60)
	One	9 (22)	3 (7)	23 (41)	10 (36)	14 (34)	10 (26)	69 (28)
	More than one	4 (10)	2 (5)	0 (0)	1 (4)	14 (34)	1 (3)	22 (9)
	Missing	0 (0)	4 (10)	0 (0)	3 (11)	0 (0)	0 (0)	7 (3)
Serum bilirubin (umol/l)	Median (IQR)	16 (11, 25)	9 (7, 15)	13 (9, 19)	16 (11, 25)	15 (10, 23)	12 (10, 20)	14 (9, 21)
	Missing	1	1	3	3	1	0	9

Table 3.1 Demographic characteristics of adult patient registrations onto the heart transplant list between 1 April 2025 and 31 March 2026, by centre								
		Birmingham N (%)	Glasgow N (%)	Harefield N (%)	Manchester N (%)	Newcastle N (%)	Papworth N (%)	TOTAL N (%)
Serum creatinine (umol/l)	Median (IQR)	88 (65, 108)	109 (79, 127)	96 (81, 130)	73 (57, 108)	93 (76, 123)	87 (68, 104)	93 (72, 122)
	Missing	1	1	3	3	1	0	9

3.3 Post-registration outcomes, 1 April 2021 – 31 March 2023

The registration outcomes of adults listed for a heart transplant between 1 April 2021 and 31 March 2023 are summarised in **Figures 3.5 - 3.9**, nationally and by centre, for non-urgent, urgent and super-urgent registrations respectively. The possible outcomes on the list include receiving a transplant, removal from the list, moving lists, dying on the list, or remaining on the list at a given time point post-registration. Removals from the list due to deteriorating condition and deaths within 30 days of removal are grouped with deaths in this analysis. In these figures, the *first* outcome is considered, so if an individual was transplanted then died their registration outcome would be “transplanted”. If they moved lists, e.g. from the non-urgent to the urgent list, they would be included in both the non-urgent and the urgent charts and analysed according to the outcome on each list.

Figure 3.5 shows the non-urgent post-registration outcomes; within 6 months of listing 14% of non-urgent heart registrations resulted in transplant and 5% had died on the list, while after 3 years 29% had been transplanted and 17% had died on the list. Also, 13% had moved to the urgent heart list within 6 months, reaching 21% by 3 years. Removals from the list not due to deteriorating condition were for a variety of reasons, most commonly due to improving condition.

Figure 3.5 Post-registration outcome for 238 non-urgent heart only registrations made in the UK, 1 April 2021 to 31 March 2023

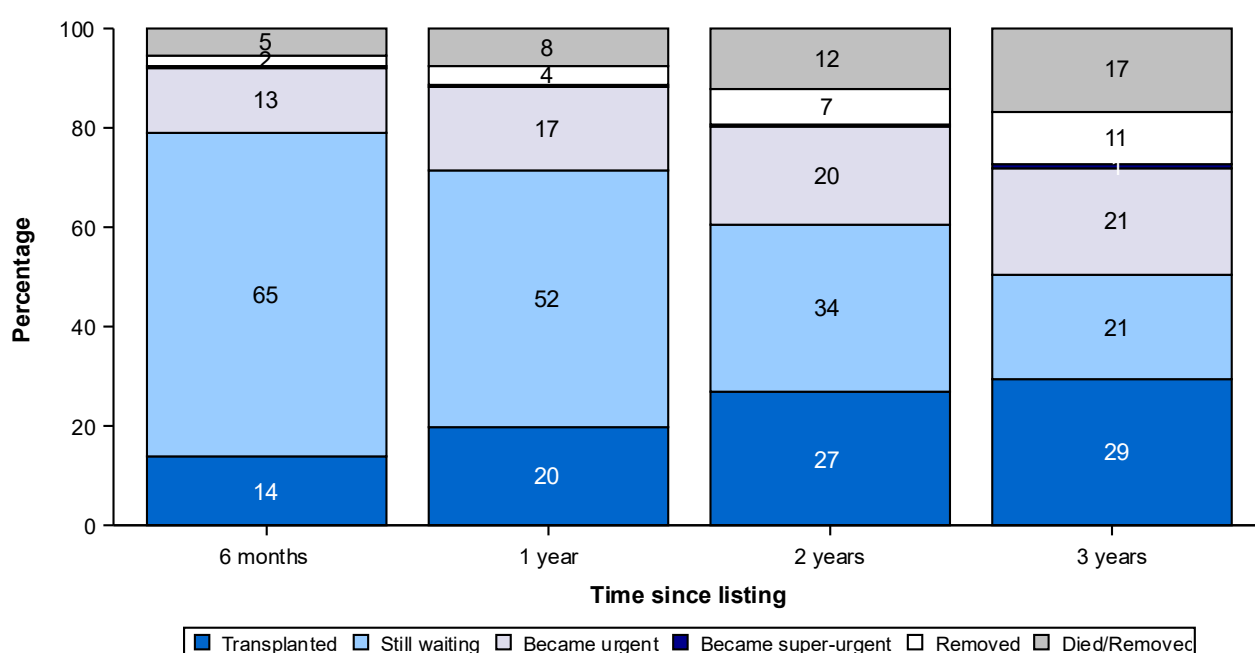
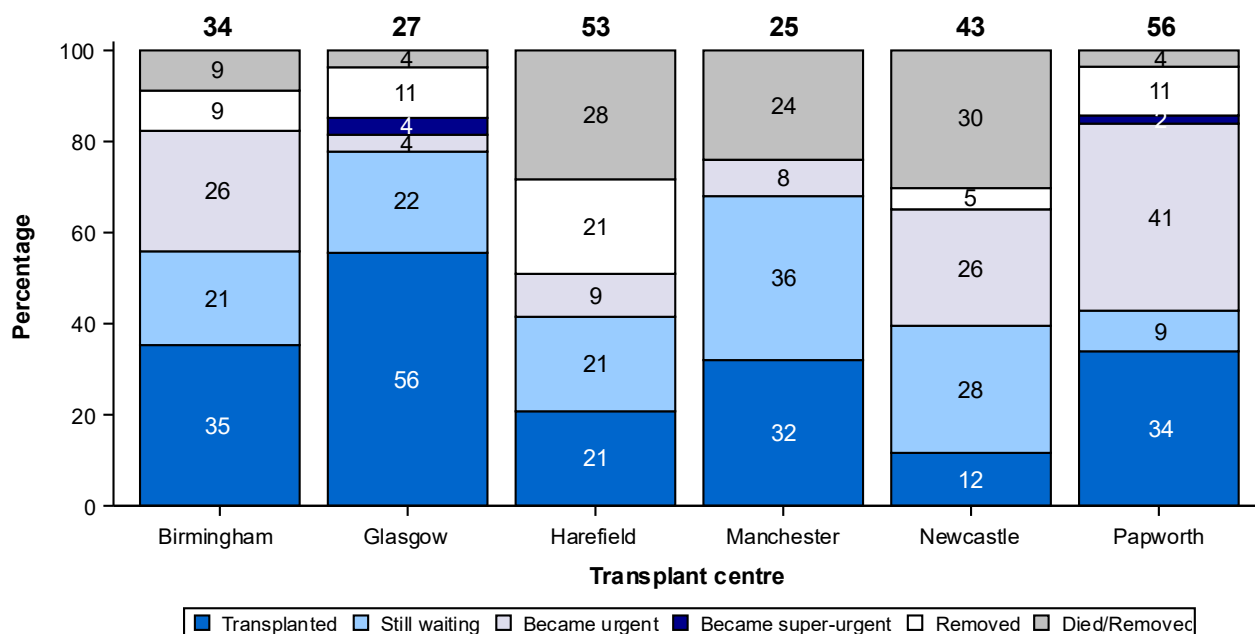


Figure 3.6 shows the 3 year non-urgent registration outcomes by centre. The non-urgent transplant rate at 3 years was highest at Glasgow (56%) and lowest at Newcastle (12%). The mortality rate (including removals from the list due to deteriorating condition and deaths within 30 days of removal) was highest at Newcastle (30%) and lowest at Glasgow (4%).

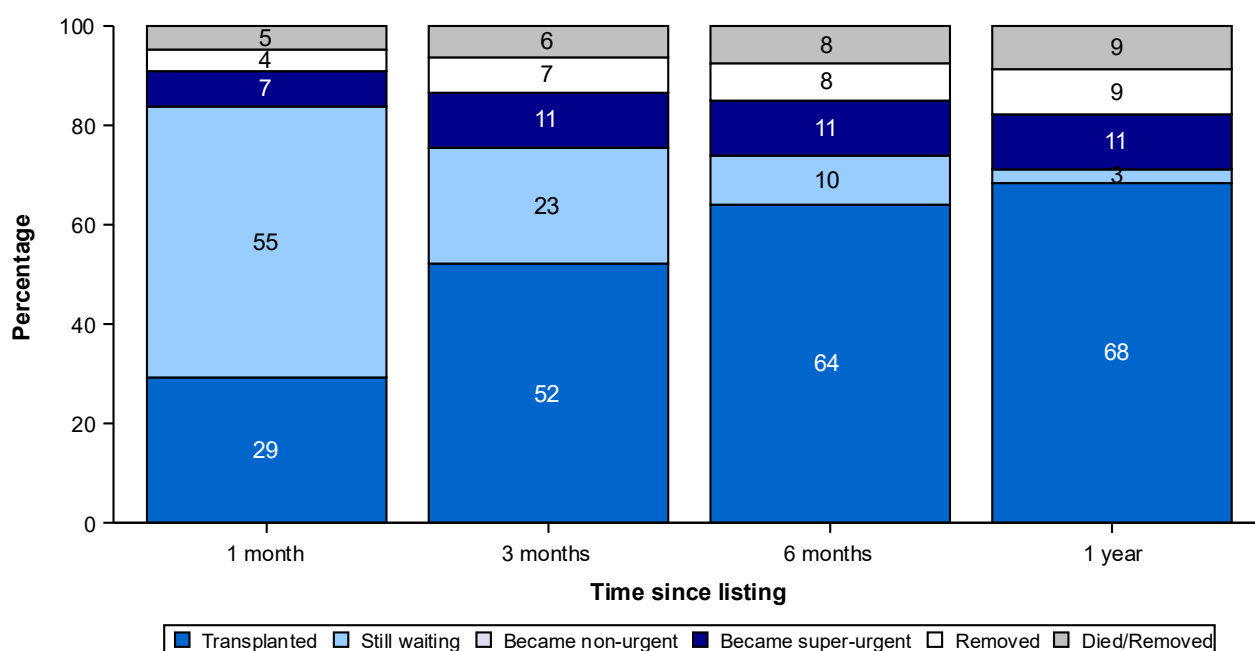
Figure 3.6 3 year post-registration outcomes for 238 non-urgent heart only registrations made in the UK, by centre, 1 April 2021 to 31 March 2023



Deaths include removals due to deteriorating condition and patients who died within 30 days of removal

Figure 3.7 shows outcomes on the urgent heart list. The chance of transplant is considerably higher from the urgent list compared with the non-urgent list; within 6 months, 64% had received a transplant, 8% had died on the list and 8% were removed for other reasons (including the patient receiving an LVAD, improving condition, or contra-indication to transplant).

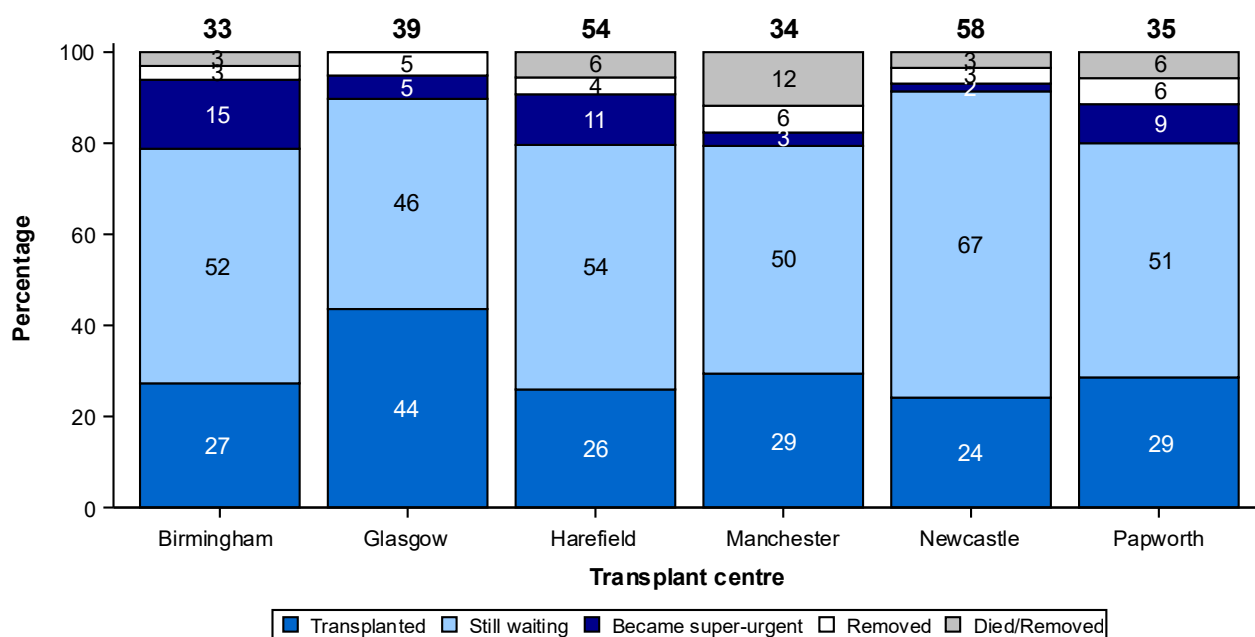
Figure 3.7 Post-registration outcome for 253 urgent heart only registrations made in the UK, 1 April 2021 to 31 March 2023



Deaths include removals due to deteriorating condition and patients who died within 30 days of removal

Figure 3.8 shows the 1 month urgent registration outcomes by centre. The urgent transplant rate at 1 month was highest at Glasgow (44%) and lowest at Newcastle (24%).

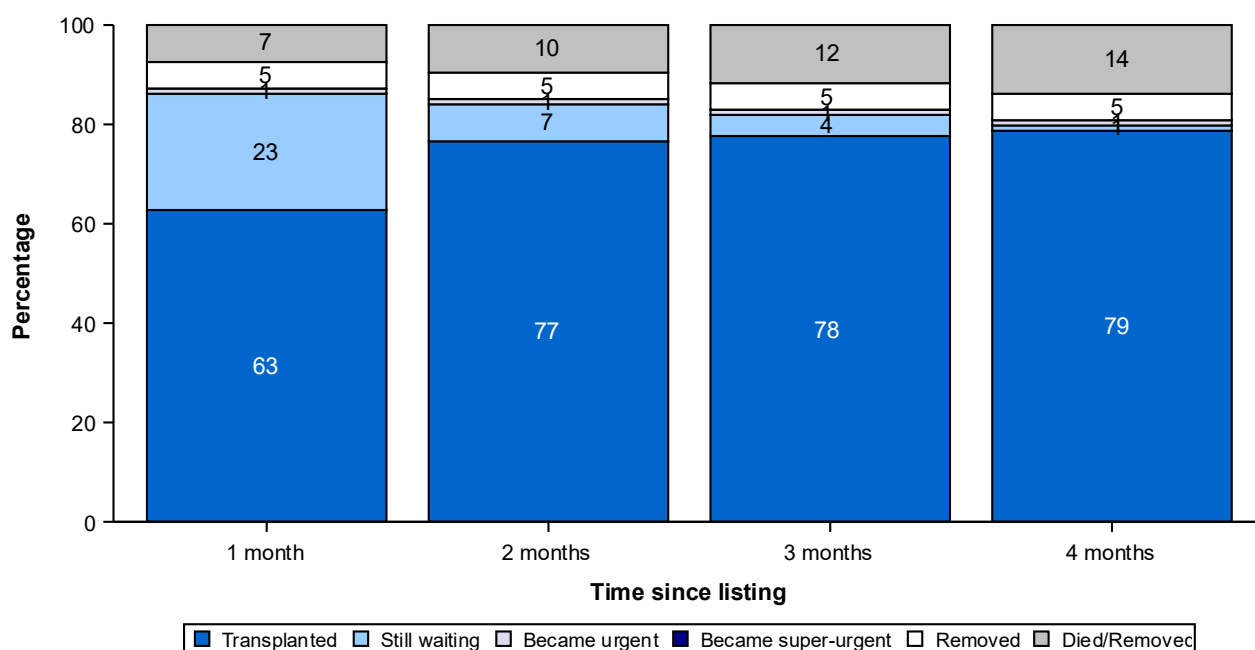
Figure 3.8 1 month post-registration outcomes for 253 urgent heart only registrations made in the UK, by centre, 1 April 2021 to 31 March 2023



Deaths include removals due to deteriorating condition and patients who died within 30 days of removal

Figure 3.9 shows outcomes on the super-urgent list. The chance of transplant is higher from the super-urgent list compared with the non-urgent and urgent lists; within 4 months, 79% had been transplanted, 5% were removed and 14% had died on the list (including removals due to deteriorating condition). There is no break down by centre due to the small numbers.

Figure 3.9 Post-registration outcome for 94 super-urgent heart only registrations made in the UK, 1 April 2021 to 31 March 2023



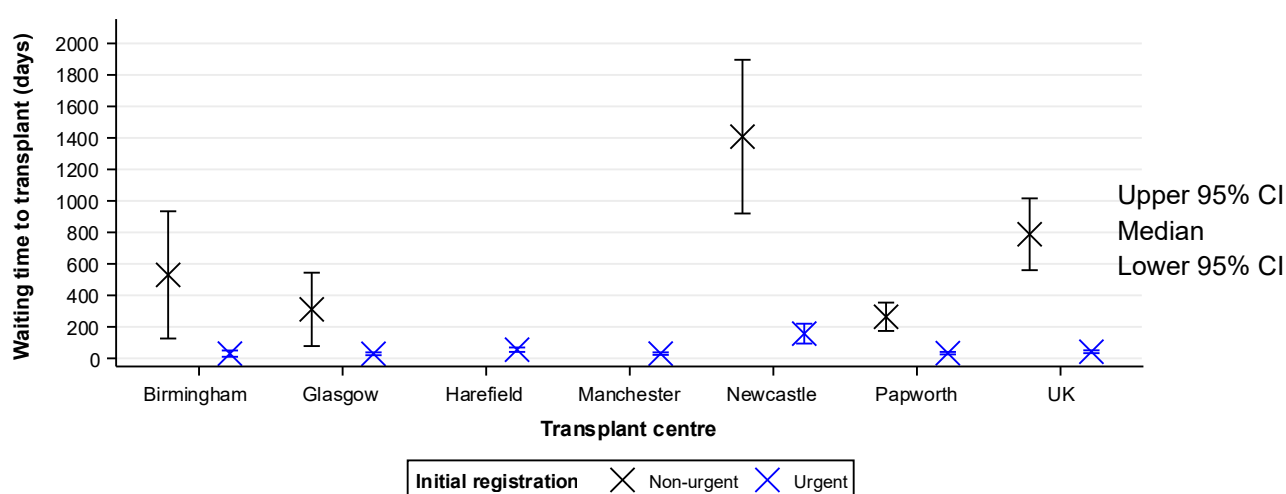
Deaths include removals due to deteriorating condition and patients who died within 30 days of removal

3.4 Median waiting time to transplant, 1 April 2019 - 31 March 2025

The [median](#) waiting time to heart transplant from registration for adults is shown in **Figure 3.10** and **Table 3.2**. This is estimated using the [Kaplan Meier](#) method, to allow for censoring, for non-urgent registrations onto the heart only transplant list between 1 April 2019 and 31 March 2022 and urgent and super-urgent registrations between 1 April 2022 and 31 March 2025. The urgency groups are defined by urgency at initial registration and all waiting time from initial registration is considered, regardless of any change in urgency. Any suspended time is discounted.

The overall national [median](#) waiting time to transplant from non-urgent registration was 788 days (2.2 years) and ranged from 264 days at Papworth to 1,408 days at Newcastle but could not be calculated for Harefield and Manchester due to a low transplant rate from the non-urgent list. For urgent registrations, the national [median](#) waiting time was 42 days and ranged from 29 days at Glasgow to 157 days at Newcastle. The national [median](#) waiting time for super-urgent registrations was 13 days. The 95% [confidence intervals](#) for some of these medians are very wide, indicating the imprecision of some of the estimates.

Figure 3.10 Median active waiting time to heart transplant for adults registered on the non-urgent transplant list (1 April 2019 to 31 March 2022) or urgent transplant list (1 April 2022 to 31 March 2025), by centre and urgency status at registration



Note: Median waiting times could not be estimated for non-urgent registrations at Harefield and Manchester due to low transplant rate

Table 3.2 Median active waiting time to heart transplant for adult patients registered on the non-urgent transplant list (1 April 2019 to 31 March 2022) or urgent/super-urgent transplant list (1 April 2022 to 31 March 2025), by centre

Transplant centre	Number of patients registered	Number transplanted	Waiting time (days)	
			Median	95% Confidence interval
Non-urgent at initial registration				
Birmingham	50	25	530	126 - 934
Glasgow	32	25	311	78 - 544
Harefield ¹	69	17	-	-
Manchester ¹	47	9	-	-
Newcastle	76	32	1408	920 - 1896
Papworth	100	78	264	174 - 354
UK	374	186	788	560 - 1016
Urgent at initial registration				
Birmingham	54	45	30	10 - 50
Glasgow	64	60	29	20 - 38
Harefield	73	59	55	41 - 69
Manchester	30	23	30	22 - 38
Newcastle	53	33	157	94 - 220
Papworth	25	17	33	25 - 41
UK	299	237	42	33 - 51
Super-urgent at initial registration				
Birmingham	17	13	33	21 - 45
Glasgow	21	18	6	3 - 9
Harefield	34	28	13	6 - 20
Manchester	19	16	12	10 - 14
Newcastle	13	10	21	6 - 36
Papworth	28	26	17	14 - 20
UK	132	111	13	10 - 16

¹ Medians and 95% confidence intervals could not be calculated due to low transplant rate

The [median](#) waiting time to heart transplant for adults is also considered by blood group. This is shown in **Figure 3.11** and **Table 3.3** by both blood group and urgency status at registration. Blood group O has the longest average wait across non-urgent, urgent, and super-urgent registrations.

Figure 3.11 Median active waiting time to heart transplant for adults registered on the non-urgent transplant list (1 April 2019 to 31 March 2022) or urgent transplant list (1 April 2022 to 31 March 2025), by blood group and urgency status at registration

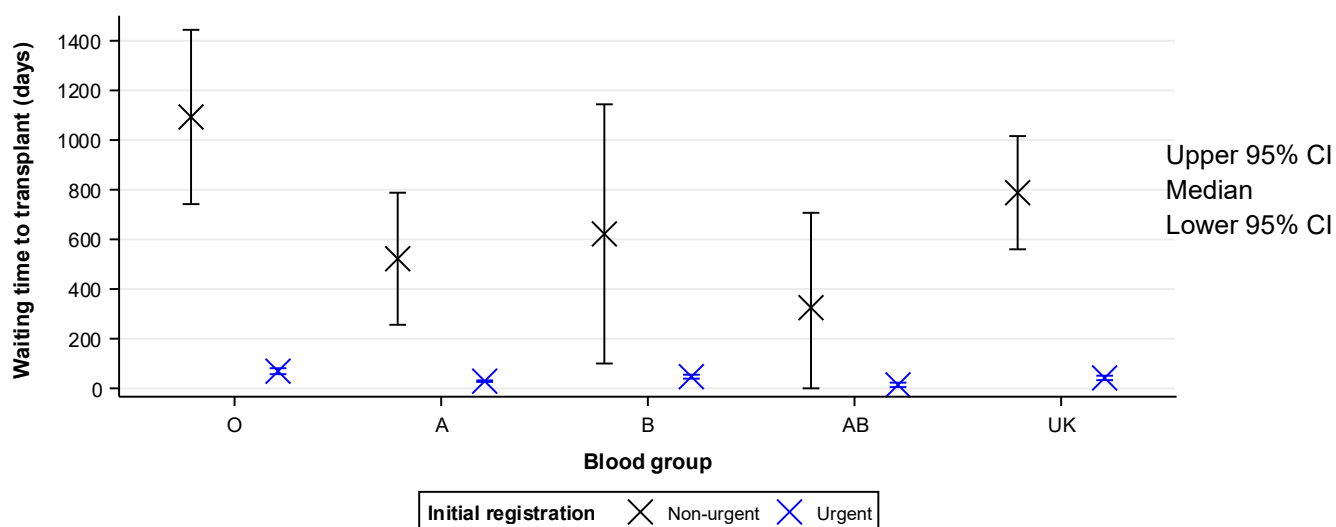
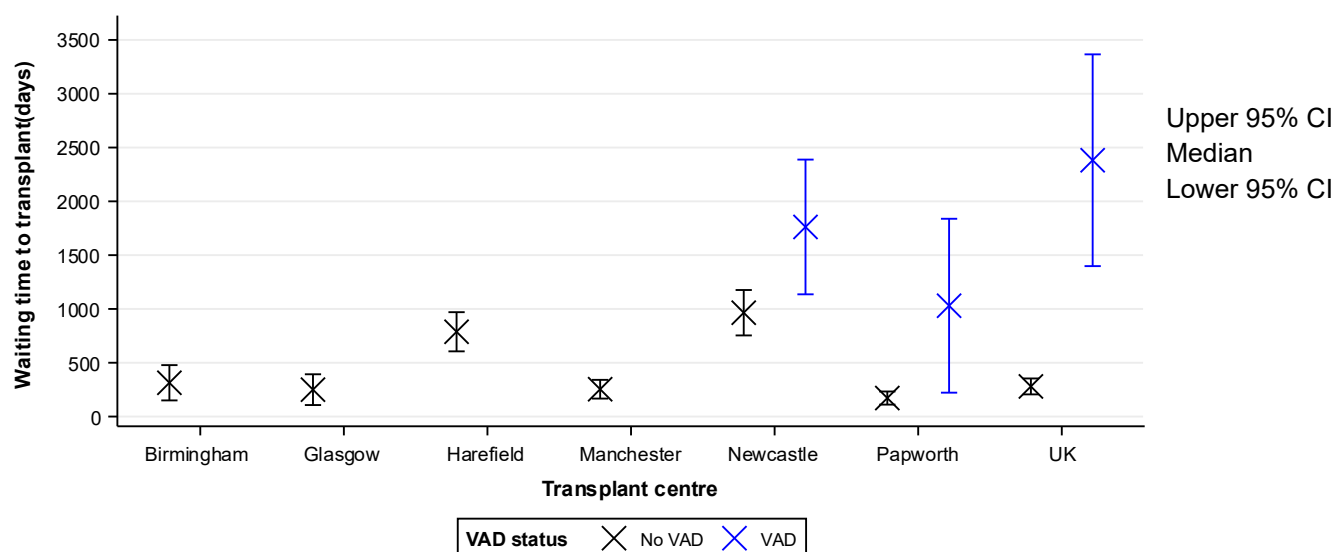


Table 3.3 Median active waiting time to heart transplant for adult patients registered on the non-urgent transplant list (1 April 2019 to 31 March 2022) or urgent/super-urgent transplant list (1 April 2022 to 31 March 2025), by blood group				
Blood Group	Number of patients registered	Number transplanted	Waiting time (days) Median	95% Confidence interval
Non-urgent at initial registration				
O	163	73	1093	742 - 1444
A	151	82	522	256 - 788
B	47	23	622	100 - 1144
AB	13	8	325	0 - 707
UK	374	186	788	560 - 1016
Urgent at initial registration				
O	116	85	69	57 - 81
A	123	100	29	26 - 32
B	47	40	47	39 - 55
AB	13	12	14	5 - 23
UK	299	237	42	33 - 51
Super-urgent at initial registration				
O	63	47	21	9 - 33
A	54	50	11	8 - 14
B	15	14	13	10 - 16
AB	0	-	-	-
UK	132	111	13	10 - 16

The [median](#) waiting time to heart transplant for adults is shown by [VAD](#) status in **Figure 3.12** and **Table 3.4**. This considers whether a patient ever had an implantable left-ventricular assist device (LVAD) as a bridge to heart transplant compared with not and is restricted to those who were initially non-urgent. the national median waiting time for those on LVAD support was 2,382 days, but could not be estimated for most centres, as not enough patients had been transplanted in this group at time of analysis. The national median for those not on LVAD support was substantially lower than the overall median for non-urgent patients; 280 compared with 788 days.

Figure 3.12 Median active waiting time to heart transplant for adults registered on the non-urgent transplant list between 1 April 2019 and 31 March 2022, by centre and VAD status



Note: Median waiting times for those on LVAD support could only be estimated for Newcastle and Papworth.

Table 3.4 Median active waiting time to heart transplant for adult patients registered on the non-urgent transplant list, by centre and whether the patient had an implantable left-ventricular assist device (LVAD), 1 April 2019 to 31 March 2022

Transplant centre	Number of patients registered	Number transplanted	Waiting time (days)	
			Median	95% Confidence interval
Never on LVAD support				
Birmingham	33	24	314	150 - 478
Glasgow	29	24	250	107 - 393
Harefield	22	10	788	606 - 970
Manchester ¹	9	7	-	-
Newcastle	41	23	965	754 - 1176
Papworth	77	62	172	111 - 233
UK	211	150	280	206 - 354
Ever on LVAD support				
Birmingham ²	17	1	-	-
Glasgow ¹	3	1	-	-
Harefield ²	47	7	-	-
Manchester ²	38	2	-	-
Newcastle ²	35	9	-	-
Papworth	23	16	1030	222 - 1838
UK	163	36	2382	1398 - 3366

¹ Median waiting time for groups with less than 10 are not presented due to small numbers

² Medians and 95% confidence intervals could not be calculated due to low transplant rate

ADULT HEART TRANSPLANTATION

Response to Offers

4. Response to Offers

This section presents an analysis of adult DBD donor heart offer decline rates. This only considers offers of hearts between 1 April 2023 and 31 March 2026 that were eventually transplanted and excludes all fast track offers. Hearts offered as part of a heart-lung block are included. Super-urgent, urgent and non-urgent offers are all considered. Offers to paediatric patients at Newcastle are excluded. Additionally, offers where the reason for decline was HLA related, or because another donor had already been accepted for this recipient, were excluded.

In 2017, group offering for non-urgent cardiothoracic organ offers was introduced, where all centres receive a simultaneous offer for their non-urgent patients but acceptance is determined by a centre's position in the allocation sequence. In this analysis, adjustments have been made to count any centre who is ranked above the accepting centre in the allocation sequence for that donor as declining the heart, even if they did not respond to the group offer, and any declines recorded for a centre ranked below the accepting centre were discounted.

Figure 4.1 compares individual centre decline rates with the national rate using a [funnel plot](#). The offer decline rate for Newcastle is above the upper 99.8% [confidence limit](#), indicating a significantly higher decline rate than the national rate. The offer decline rate for Papworth falls below the 99.8% lower [confidence limit](#), indicating a significantly low decline rate at this centre. There is also some evidence of a low decline rate at Glasgow as their rate falls below the 95% lower [confidence limit](#). The offer decline rates for Birmingham, Harefield and Manchester are consistent with the national rate.

Figure 4.1 UK adult DBD donor heart offer decline rates by centre, 1 April 2023 to 31 March 2026

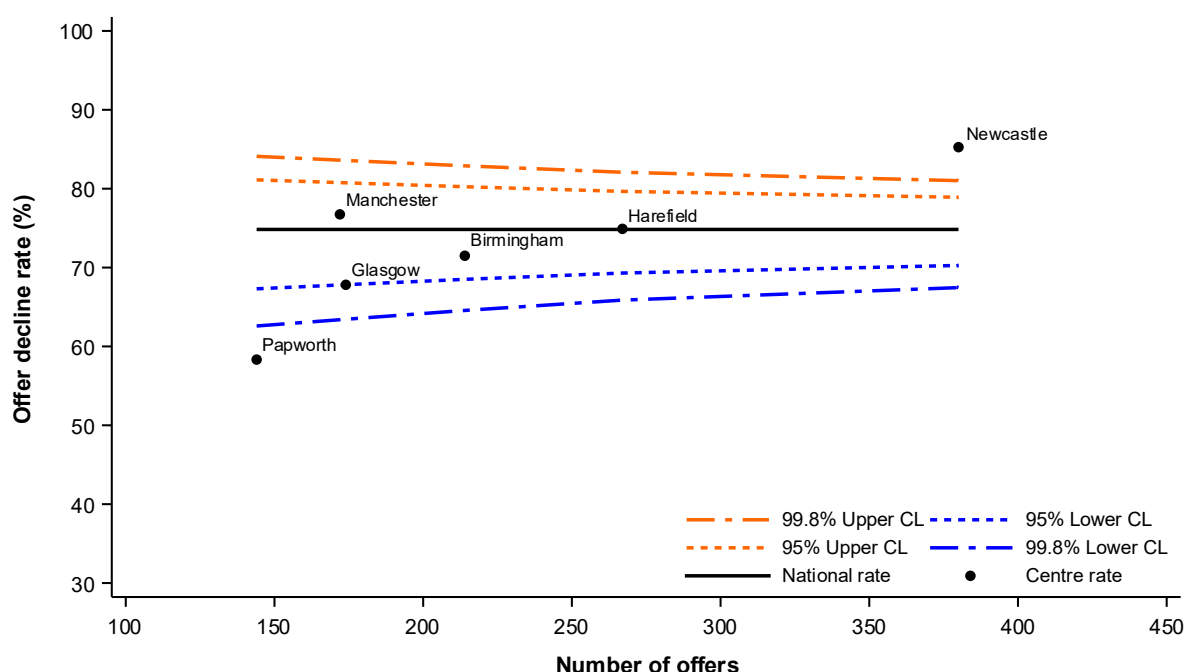
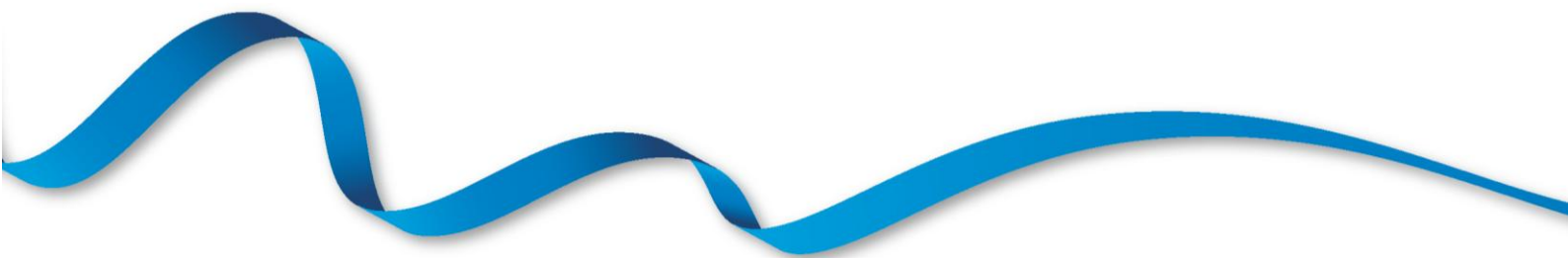


Table 4.1 shows a breakdown of each centre's decline rate across the three years analysed. Nationally, the highest number of offers (for hearts that were eventually transplanted) occurred in the financial year 2023/24, although the offer decline rate was also highest in this year.

Table 4.1 Adult Heart (including cardiac block) offer results by transplant centre, between 1 April 2023 and 31 March 2026								
Centre	2023/24		2024/25		2025/26		Overall	
	No. offers	Decline rate (%)	No. offers	Decline rate (%)	No. offers	Decline rate (%)	No. offers	Decline rate (%)
Birmingham	91	(72.5)	59	(69.5)	64	(71.9)	214	(71.5)
Glasgow	66	(71.2)	60	(68.3)	48	(62.5)	174	(67.8)
Harefield	122	(75.4)	98	(75.5)	47	(72.3)	267	(74.9)
Manchester	84	(83.3)	55	(72.7)	33	(66.7)	172	(76.7)
Newcastle	186	(88.7)	89	(80.9)	105	(82.9)	380	(85.3)
Papworth	62	(62.9)	45	(57.8)	37	(51.4)	144	(58.3)
UK	611	(78.4)	406	(72.4)	334	(71.3)	1351	(74.8)
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								

ADULT HEART TRANSPLANTATION

Transplants



5.1 Adult heart transplants, 1 April 2016 – 31 March 2026

Figure 5.1 shows the number of adult heart transplants performed per year over the last 10 years, by donor type. Last year there were 187 adult heart transplants nationally, 13 more than the previous year, with DCD heart transplants comprising 41%.

Figure 5.1 Number of adult heart transplants in the UK, by financial year and donor type, 1 April 2016 to 31 March 2026

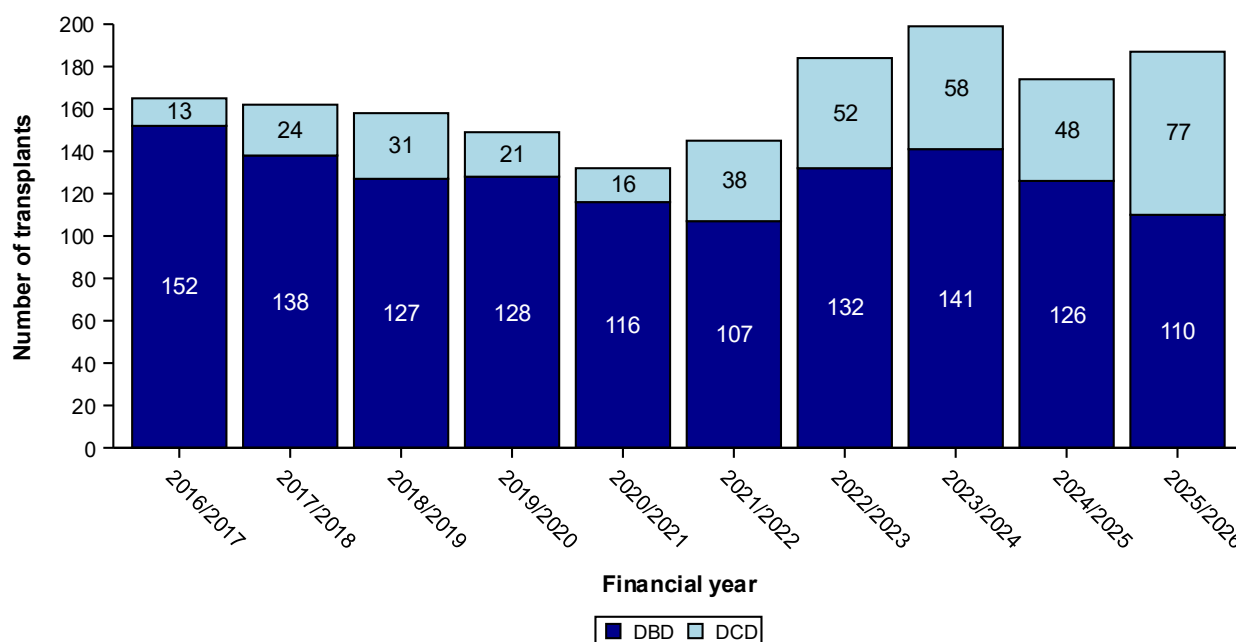
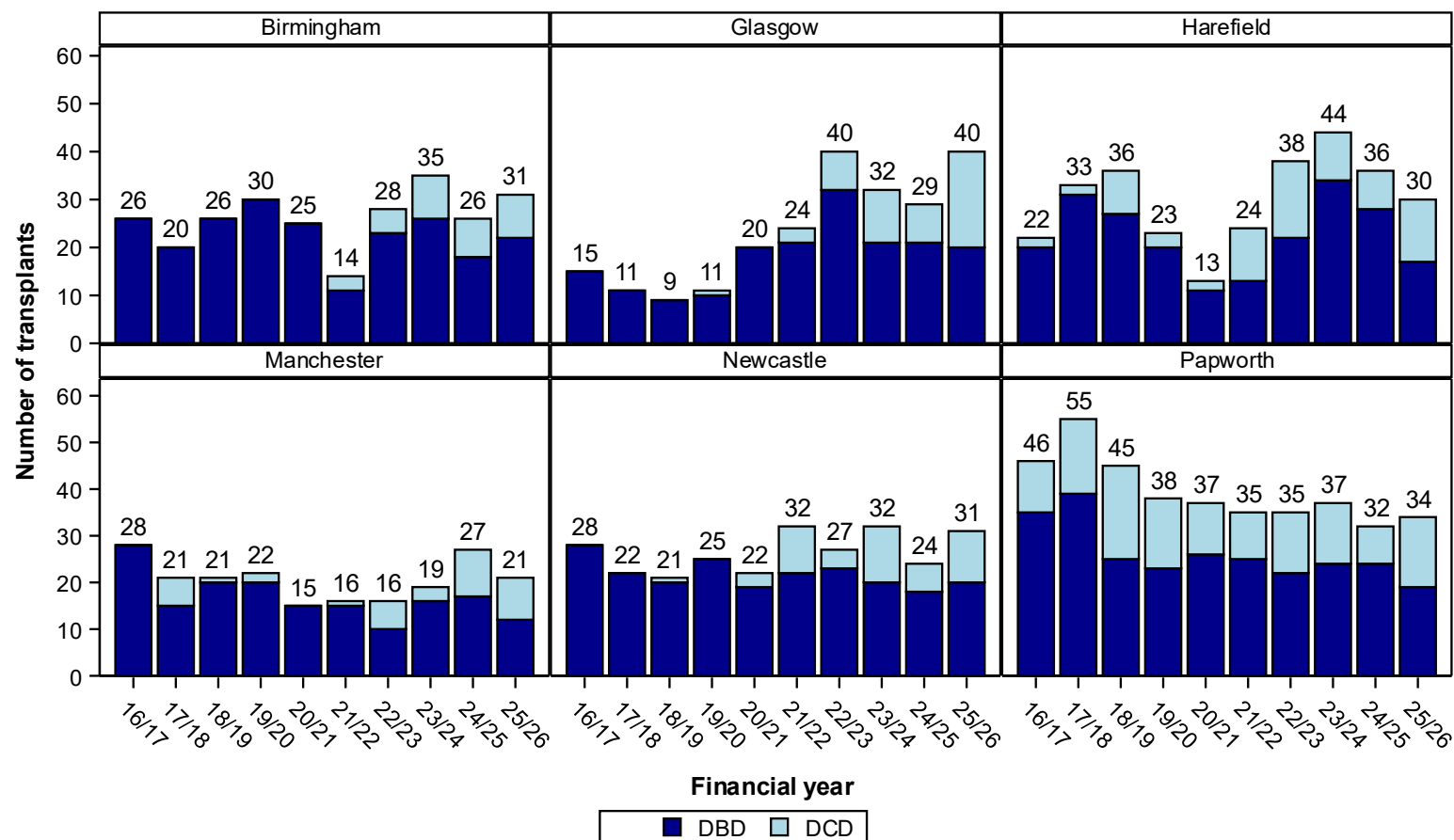


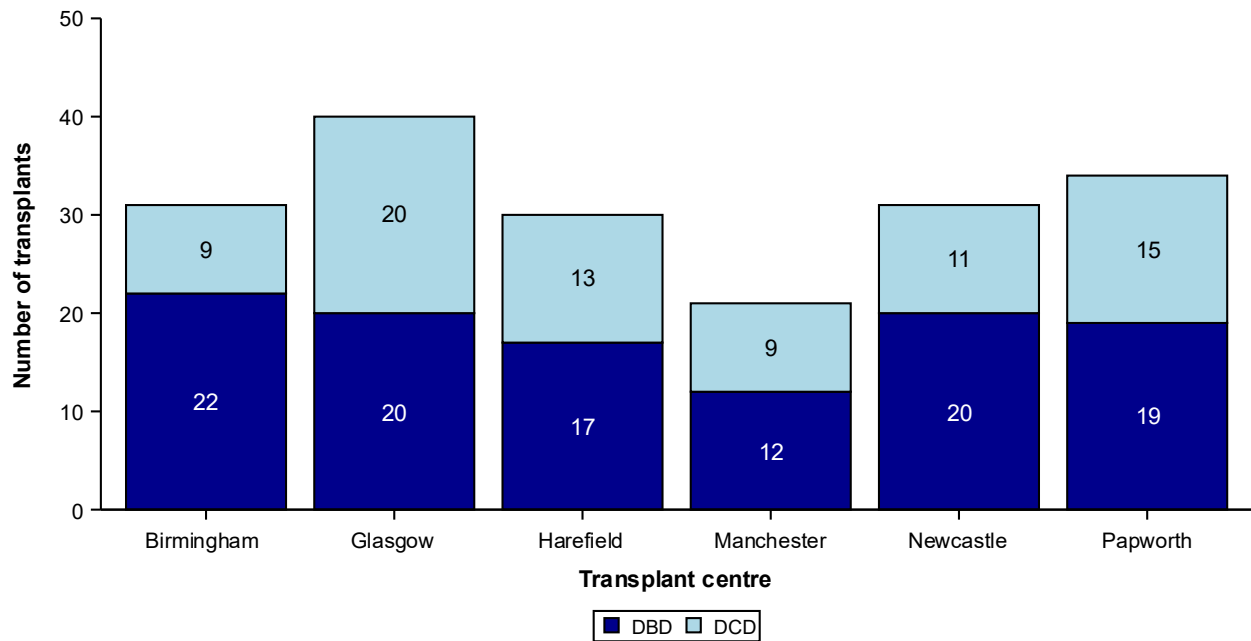
Figure 5.2 shows the number of adult heart transplants performed per centre, per year, over the last 10 years, by donor type. The number of transplants performed increased at all centres in 2025/2026 compared with 2024/2025, except for Manchester and Harefield, where the number decreased.

Figure 5.2 Number of adult heart transplants in the UK, by financial year, centre and donor type, 1 April 2016 to 31 March 2026



Last year's activity is shown by centre and donor type in **Figure 5.3**. The highest number of DBD heart transplants were performed by Birmingham and the highest number of DCD transplants were performed by Glasgow. Overall, Glasgow performed the highest number of transplants, at 40.

Figure 5.3 Number of adult heart transplants in the UK, by centre and donor type, 1 April 2025 to 31 March 2026



Figures 5.4 and **5.5** show the number of adult heart transplants performed in the last 10 years, by urgency status of recipient, nationally and by centre, respectively. Over the decade, the proportion of non-urgent transplants remained broadly stable, at 21% in 2016/2017 and 22% in 2025/2026. Meanwhile, the proportion of super-urgent transplants increased from 9% in 2016/2017 (the year the scheme was introduced) to 38% in 2025/2026.

Figure 5.4 Number of adult heart transplants in the UK, by financial year and urgency status, 1 April 2016 to 31 March 2026

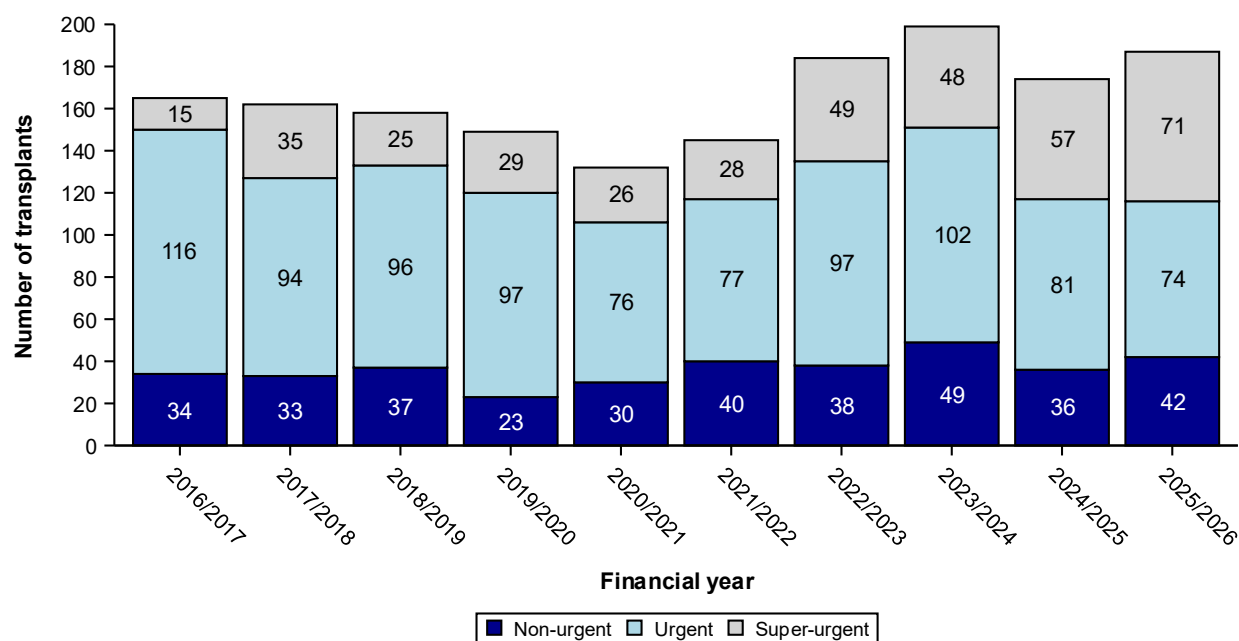
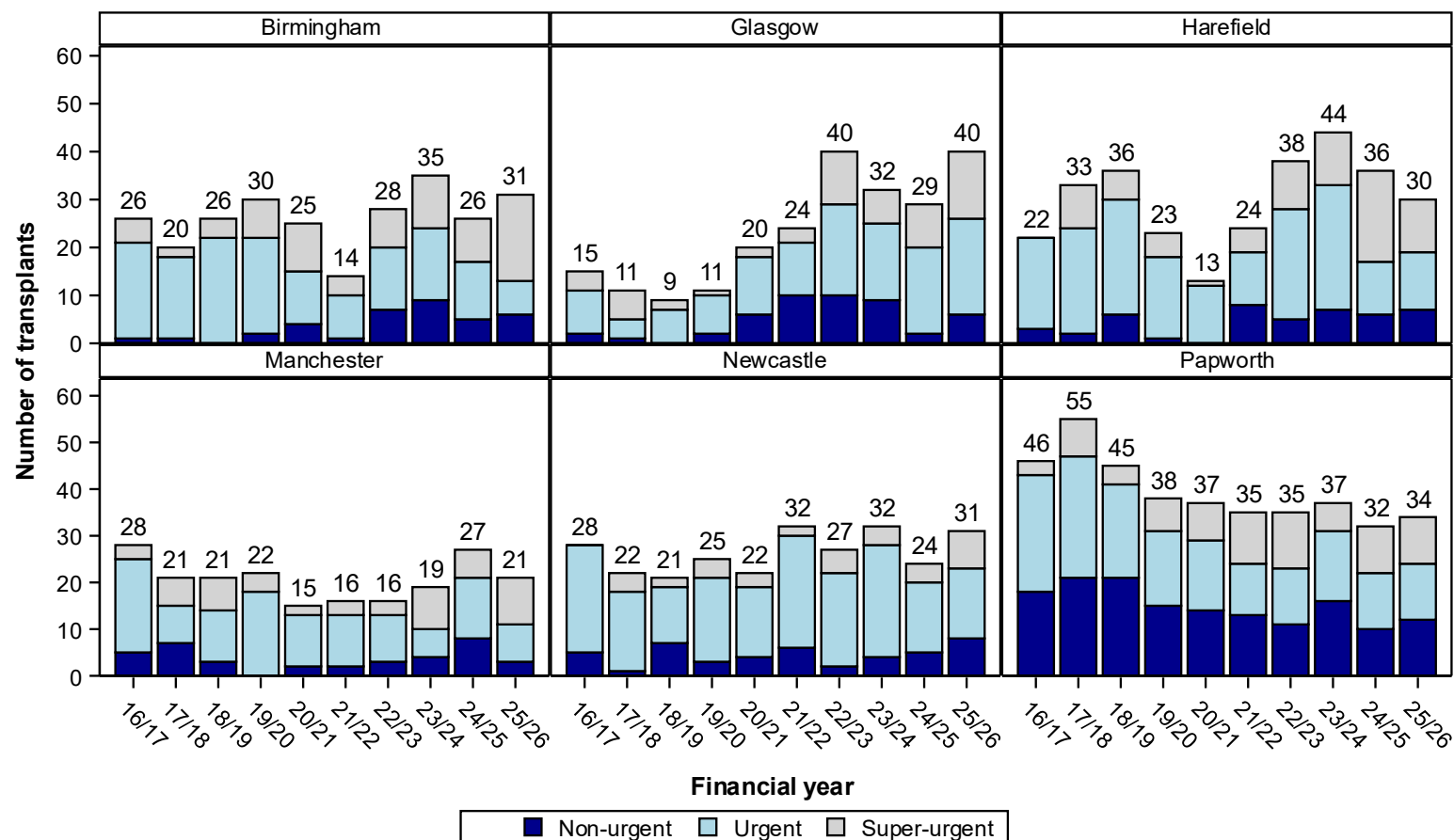
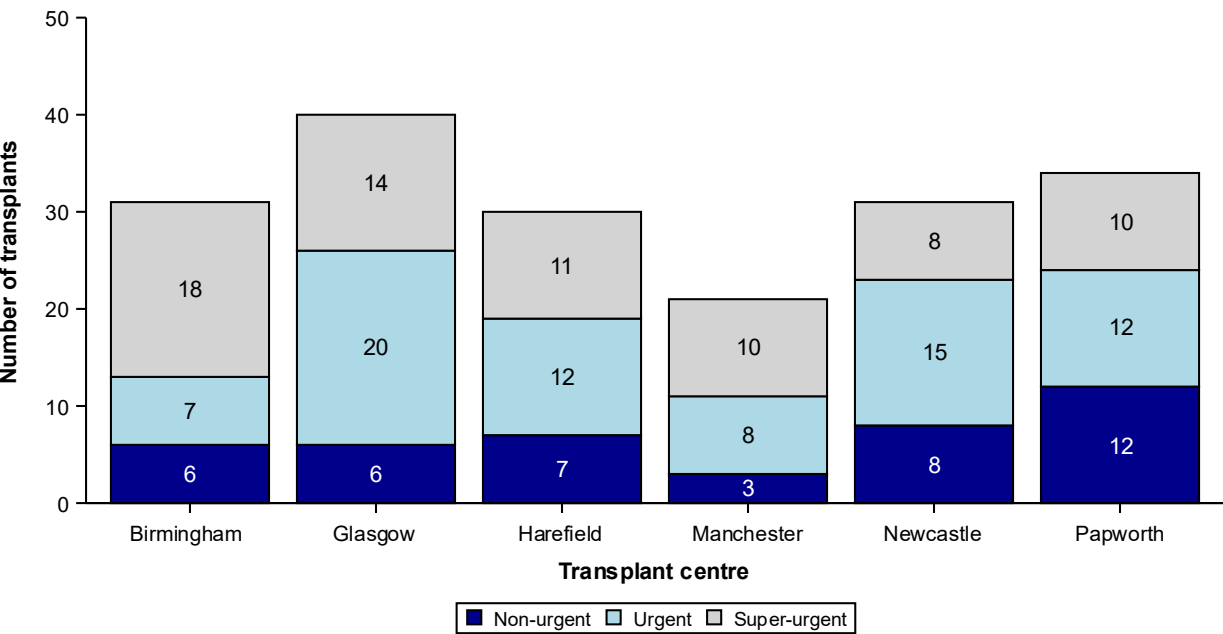


Figure 5.5 Number of adult heart transplants in the UK, by financial year centre and urgency status, 1 April 2016 to 31 March 2026



Last year’s activity is shown by centre and urgency status in **Figure 5.6**. Birmingham performed the highest number of super-urgent transplants and Papworth performed the highest number of non-urgent transplants.

Figure 5.6 Number of adult heart transplants in the UK, by centre and urgency status, 1 April 2025 to 31 March 2026



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

The demographic characteristics of the 187 adult heart transplant recipients and donors in the latest year are shown by centre and overall, in **Table 5.1**. Nationally, 65% of heart recipients were male and the [median](#) age was 46 years while the median age of donors was 38 years. For some characteristics, due to rounding, percentages may not add up to 100.

Table 5.1 Demographic characteristics of UK adult heart transplants performed between 1 April 2025 and 31 March 2026, by centre								
		Birmingham N (%)	Glasgow N (%)	Harefield N (%)	Manchester N (%)	Newcastle N (%)	Papworth N (%)	TOTAL N (%)
Number of transplants		31 (100)	40 (100)	30 (100)	21 (100)	31 (100)	34 (100)	187 (100)
Urgency status at transplant	Non-urgent	6 (19)	6 (15)	7 (23)	3 (14)	8 (26)	12 (35)	42 (23)
	Urgent	7 (23)	20 (50)	12 (40)	8 (38)	15 (48)	12 (35)	74 (40)
	Super-urgent	18 (58)	14 (35)	11 (37)	10 (48)	8 (26)	10 (29)	71 (38)
Recipient sex	Male	22 (71)	32 (80)	19 (63)	11 (52)	22 (71)	16 (47)	122 (65)
	Female	9 (29)	8 (20)	11 (37)	10 (48)	9 (29)	18 (53)	65 (35)
Recipient ethnicity	White	20 (65)	36 (90)	20 (67)	18 (86)	28 (90)	25 (74)	147 (79)
	Asian	3 (10)	1 (3)	5 (17)	1 (5)	2 (6)	6 (18)	18 (10)
	Black	6 (19)	2 (5)	2 (7)	1 (5)	0 (0)	2 (6)	13 (7)
	Other	2 (6)	1 (3)	2 (7)	0 (0)	0 (0)	1 (3)	6 (3)
	Missing	0 (0)	0 (0)	1 (3)	1 (5)	1 (3)	0 (0)	3 (2)
Recipient age (years)	Median (IQR)	42 (27, 59)	53 (45, 61)	54 (38, 60)	42 (33, 52)	43 (34, 52)	46 (36, 56)	46 (37, 57)
	Missing	0	0	0	0	0	0	0
Recipient weight (kg)	Median (IQR)	79 (68, 86)	79 (67, 89)	79 (58, 87)	74 (58, 84)	67 (58, 75)	74 (61, 82)	75 (61, 86)
	Missing	0	0	0	0	0	0	0
Recipient primary disease	Coronary heart disease	4 (13)	3 (8)	5 (17)	1 (5)	3 (10)	3 (9)	19 (10)
	Cardiomyopathy	25 (81)	34 (85)	22 (73)	19 (90)	12 (39)	29 (85)	141 (75)
	Congenital heart disease	2 (6)	0 (0)	0 (0)	0 (0)	15 (48)	1 (3)	18 (10)
	Other	0 (0)	3 (8)	3 (10)	1 (5)	1 (3)	1 (3)	9 (5)

Table 5.1		Demographic characteristics of UK adult heart transplants performed between 1 April 2025 and 31 March 2026, by centre						
		Birmingham N (%)	Glasgow N (%)	Harefield N (%)	Manchester N (%)	Newcastle N (%)	Papworth N (%)	TOTAL N (%)
NYHA class	II	0 (0)	0 (0)	2 (7)	0 (0)	1 (3)	2 (6)	5 (3)
	III	3 (10)	3 (8)	9 (30)	0 (0)	17 (55)	20 (59)	52 (28)
	IV	25 (81)	35 (88)	12 (40)	12 (57)	13 (42)	12 (35)	109 (58)
	Missing	3 (10)	2 (5)	7 (23)	9 (43)	0 (0)	0 (0)	21 (11)
Recipient in hospital	No	7 (23)	6 (15)	8 (27)	5 (24)	11 (35)	13 (38)	50 (27)
	Yes	24 (77)	34 (85)	22 (73)	16 (76)	20 (65)	21 (62)	137 (73)
In hospital, recipient on ventilator	No	24 (100)	33 (97)	22 (100)	15 (94)	20 (100)	21 (100)	135 (99)
	Yes	0 (0)	1 (3)	0 (0)	1 (6)	0 (0)	0 (0)	2 (2)
In hospital, recipient VAD	None	6 (25)	29 (85)	12 (55)	6 (38)	16 (80)	13 (62)	82 (60)
	Left	2 (8)	1 (3)	3 (14)	0 (0)	2 (10)	1 (5)	9 (7)
	Right	0 (0)	1 (3)	0 (0)	0 (0)	0 (0)	0 (0)	1 (1)
	Both	16 (67)	3 (9)	7 (32)	10 (63)	2 (10)	7 (33)	45 (33)
In hospital, recipient TAH	No	24 (100)	34 (100)	22 (100)	16 (100)	20 (100)	21 (100)	137 (100)
In hospital, recipient ECMO	No	24 (100)	25 (74)	22 (100)	16 (100)	15 (75)	21 (100)	123 (90)
	Yes	0 (0)	9 (26)	0 (0)	0 (0)	5 (25)	0 (0)	14 (10)
In hospital, recipient on inotropes	No	13 (54)	2 (6)	5 (23)	10 (63)	4 (20)	9 (43)	43 (31)
	Yes	11 (46)	32 (94)	17 (77)	6 (38)	16 (80)	12 (57)	94 (69)
In hospital, recipient IABP	No	24 (100)	12 (35)	22 (100)	15 (94)	18 (90)	21 (100)	112 (82)
	Yes	0 (0)	22 (65)	0 (0)	1 (6)	2 (10)	0 (0)	25 (18)
Recipient CMV status	Negative	17 (55)	22 (55)	12 (40)	12 (57)	26 (84)	19 (56)	108 (58)
	Positive	14 (45)	18 (45)	18 (60)	9 (43)	5 (16)	15 (44)	79 (42)
Recipient HCV status	Negative	31 (100)	40 (100)	30 (100)	21 (100)	31 (100)	34 (100)	187 (100)
Recipient HBV status	Negative	31 (100)	40 (100)	29 (97)	21 (100)	31 (100)	34 (100)	186 (100)
	Positive	0 (0)	0 (0)	1 (3)	0 (0)	0 (0)	0 (0)	1 (1)

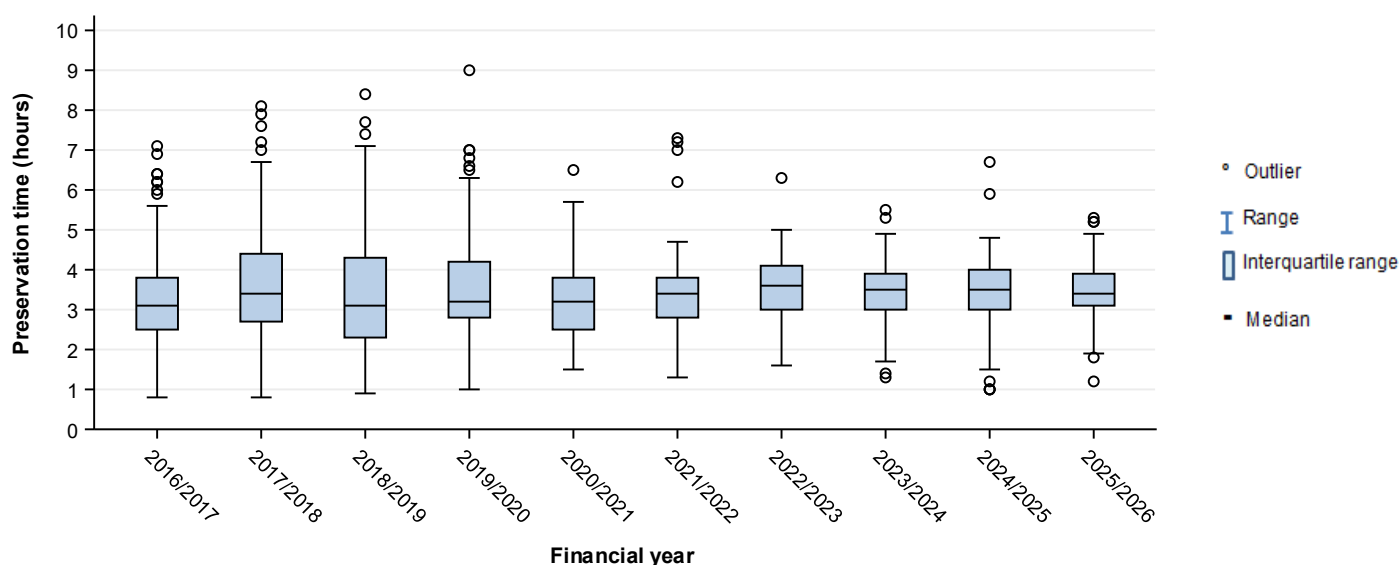
Table 5.1 Demographic characteristics of UK adult heart transplants performed between 1 April 2025 and 31 March 2026, by centre								
		Birmingham N (%)	Glasgow N (%)	Harefield N (%)	Manchester N (%)	Newcastle N (%)	Papworth N (%)	TOTAL N (%)
Recipient HIV status	Negative	31 (100)	40 (100)	30 (100)	21 (100)	31 (100)	34 (100)	187 (100)
Recipient serum creatinine (umol/l)	Median (IQR) Missing	73 (57, 93) 2	86 (69, 123) 3	107 (88, 129) 0	61 (46, 102) 0	93 (77, 122) 0	91 (69, 119) 0	89 (65, 118) 5
Donor sex	Male Female	26 (84) 5 (16)	27 (68) 13 (33)	18 (60) 12 (40)	15 (71) 6 (29)	18 (58) 13 (42)	20 (59) 14 (41)	124 (66) 63 (34)
Donor ethnicity	White Asian Other Missing	29 (94) 0 (0) 1 (3) 1 (3)	37 (93) 1 (3) 0 (0) 2 (5)	24 (80) 3 (10) 2 (7) 1 (3)	19 (90) 1 (5) 1 (5) 0 (0)	27 (87) 2 (6) 0 (0) 2 (6)	32 (94) 2 (6) 0 (0) 0 (0)	168 (90) 9 (5) 4 (2) 6 (3)
Donor age (years)	Median (IQR) Missing	36 (24, 43) 0	39 (31, 49) 0	37 (30, 49) 0	38 (30, 45) 0	37 (32, 45) 0	42 (31, 50) 0	38 (30, 46) 0
Donor BMI (kg/m ²)	Median (IQR) Missing	27 (24, 30) 0	26 (23, 29) 0	26 (21, 30) 0	25 (22, 30) 0	25 (22, 27) 0	25 (22, 28) 0	26 (22, 29) 0
Donor cause of death	Intracranial/CVA Trauma Others	29 (94) 1 (3) 1 (3)	34 (85) 1 (3) 5 (13)	25 (83) 2 (7) 3 (10)	19 (90) 1 (5) 1 (5)	24 (77) 2 (6) 5 (16)	26 (76) 3 (9) 5 (15)	157 (84) 10 (5) 20 (11)
Donor hypotension	No Yes Missing	19 (61) 9 (29) 3 (10)	12 (30) 1 (3) 27 (68)	22 (73) 5 (17) 3 (10)	18 (86) 3 (14) 0 (0)	10 (32) 5 (16) 16 (52)	28 (82) 6 (18) 0 (0)	109 (58) 29 (16) 49 (26)
Donor past diabetes	No Yes	30 (97) 1 (3)	38 (95) 2 (5)	28 (93) 2 (7)	18 (86) 3 (14)	29 (94) 2 (6)	34 (100) 0 (0)	177 (95) 10 (5)
Donor past cardio disease	No Missing	31 (100) 0 (0)	40 (100) 0 (0)	29 (97) 1 (3)	21 (100) 0 (0)	31 (100) 0 (0)	33 (97) 1 (3)	185 (99) 2 (1)
Donor past hypertension	No Yes	29 (94) 2 (6)	40 (100) 0 (0)	29 (97) 1 (3)	21 (100) 0 (0)	31 (100) 0 (0)	31 (91) 3 (9)	181 (97) 6 (3)

Table 5.1 Demographic characteristics of UK adult heart transplants performed between 1 April 2025 and 31 March 2026, by centre								
		Birmingham N (%)	Glasgow N (%)	Harefield N (%)	Manchester N (%)	Newcastle N (%)	Papworth N (%)	TOTAL N (%)
Donor past tumour	No	30 (97)	38 (95)	29 (97)	18 (86)	30 (97)	32 (94)	177 (95)
	Yes	1 (3)	2 (5)	1 (3)	3 (14)	1 (3)	1 (3)	9 (5)
	Missing	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (3)	1 (1)
Donor past smoker	No	10 (32)	19 (48)	14 (47)	8 (38)	15 (48)	16 (47)	82 (44)
	Yes	20 (65)	21 (53)	16 (53)	13 (62)	16 (52)	18 (53)	104 (56)
	Missing	1 (3)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (1)
Total preservation time (hours) ¹	Median (IQR)	3.8 (3.3, 4.2)	3.5 (3.0, 4.1)	4.1 (3.7, 5.7)	4.8 (3.4, 6.1)	3.9 (3.4, 4.8)	4.0 (3.1, 5.1)	3.9 (3.3, 5.0)
	Missing	4	28	2	0	0	0	34
¹ Time from cross clamp in the donor to reperfusion in the recipient, regardless of donor type								

5.3 Total preservation time, 1 April 2016 – 31 March 2026

Figure 5.7 shows [boxplots](#) of the total preservation time for [DBD](#) donor hearts transplanted into adult recipients over the last 10 years. The total preservation time is the difference between donor cross-clamp and recipient reperfusion and can be considered the out of body time. Total preservation time was reported for 1,186 out of 1,277 adult DBD heart transplants. Of those 1,186, 127 (11%) donor hearts underwent machine perfusion. The national [median](#) total preservation time has increased slightly over the decade, from 3.1 hours in 2016/2017 to 3.4 hours in 2025/2026.

Figure 5.7 Boxplots of total preservation time for DBD donor hearts transplanted into adult recipients, by financial year, 1 April 2016 to 31 March 2026



Note: No adjustment has been made for the use of organ machine perfusion which was reported in 11% of transplants analysed

Figure 5.8 and **Figure 5.9** show [boxplots](#) of total preservation time by centre in the latest financial year and over the last 10 years, respectively. Between 2016/2017 and 2019/2020, Harefield used the Organ Care System (OCS) for 100% of DBD hearts transplanted, compared with 2%-9% for other centres during the same period. In 2023/2024, hypothermic oxygenated perfusion was used in 1 [DBD](#) heart transplant performed at Papworth as part of a randomised controlled trial.

Figure 5.8 Boxplots of total preservation time for DBD donor hearts transplanted into adult recipients, by transplant centre, 1 April 2025 to 31 March 2026

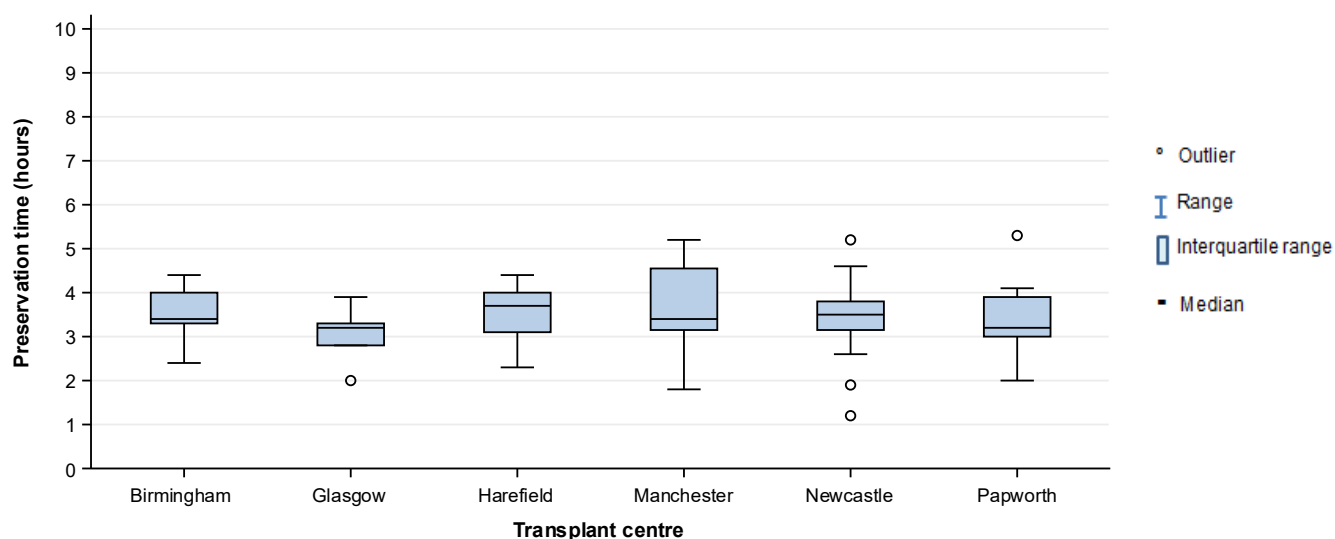
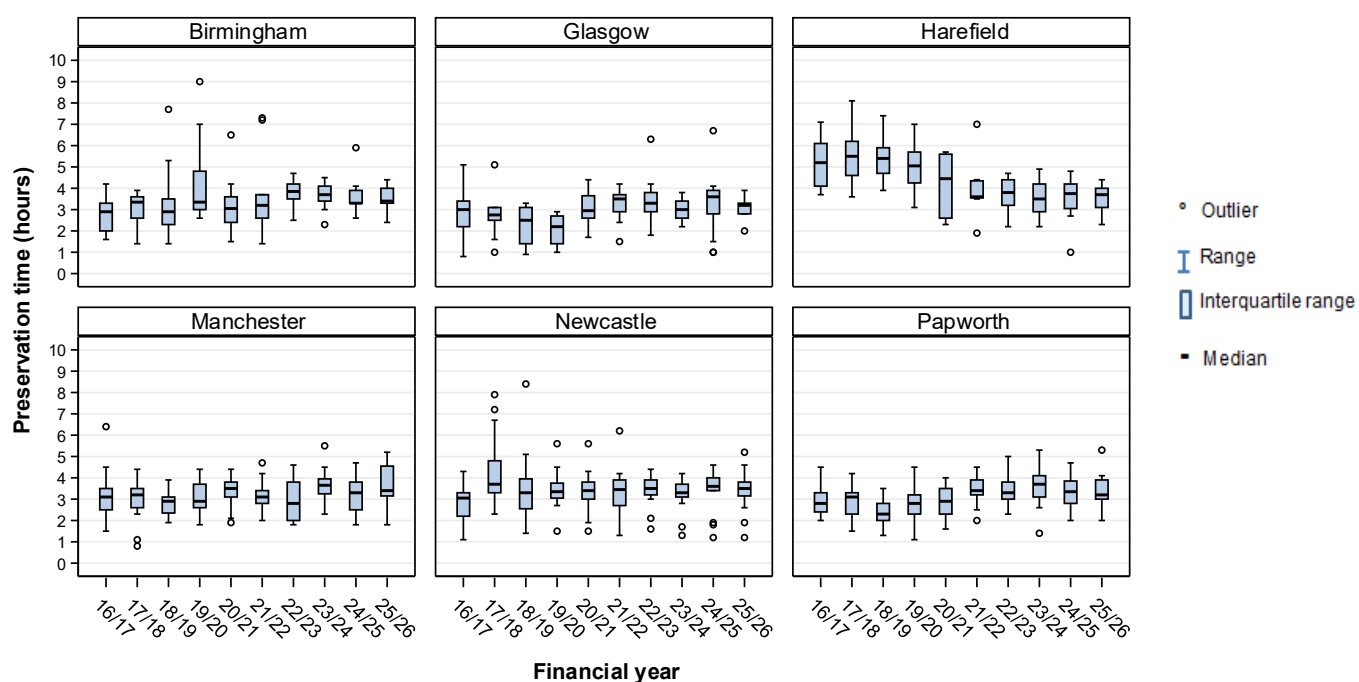


Figure 5.9 Boxplots of total preservation time for DBD donor hearts transplanted into adult recipients, by transplant centre and financial year, 1 April 2016 to 31 March 2026



Note: Includes time on the Organ Care System (OCS), where most centres used the OCS in a small proportion of transplants, except Harefield who used the OCS in 100% of transplants between 2016/2017 and 2019/2020. Hypothermic oxygenated perfusion was used in 1 DBD heart transplant performed at Papworth in 2023/2024. No adjustment has been made for use of machine perfusion.

ADULT HEART TRANSPLANTATION

Post-Transplant Survival



6. Post-Transplant Survival

This section presents survival post adult heart transplantation. [Funnel plots](#) are used to compare the [risk-adjusted](#) survival rate at each centre with the national rate. The [risk-adjusted](#) rates seek to compare centre performance after accounting for differences in [case mix](#) across centres. The [unadjusted survival rates](#) are also presented in the tables, showing the observed survival experience at that centre. The [risk factors](#) used to produce the [risk-adjusted survival rates](#) are listed in [Appendix A3](#).

The survival analyses in **Section 6.1-6.3** include all first-time heart only transplants for the unadjusted analyses, and first time DBD heart only transplants for the risk-adjusted analyses. Ninety-day and 1-year [survival rates](#) are based on transplants performed in the period 1 April 2021 to 31 March 2025 while 5-year [survival rates](#) are based on transplants performed in the period 1 April 2017 to 31 March 2021. [Survival rates](#) are presented by transplant centre in **Tables 6.1-6.3** and **Figures 6.1-6.3**, by disease group in **Tables 6.4-6.5** and by [VAD](#) status at time of transplant in **Table 6.6**. Survival following DCD heart transplantation is provided separately in **Section 6.4** and survival outcomes following [multi-organ](#) heart transplantation are summarised in **Section 6.5**.

6.1 Survival by centre

Table 6.1, Figure 6.1a, and Figure 6.1b, show the 90-day post-transplant [unadjusted](#) (DBD and DCD transplants) and [risk-adjusted](#) (DBD transplants only) patient [survival rates](#) for each centre and nationally for the 695 (501 DBD) first adult heart only transplants in the period 1 April 2021 to 31 March 2025. All centres' risk-adjusted DBD patient survival rates were statistically consistent with the national DBD rate of survival. The overall (DBD and DCD) national patient survival rate at 90 days post-transplant was 91.9%.

Centre	Number of transplants	Unadjusted % 90 day survival (95% CI)		DBD transplants	Risk-adjusted % 90 day survival (95% CI)	
Birmingham	101	92.1	(84.8 - 96.0)	76	93.3	(83.9 - 97.2)
Glasgow	124	94.4	(88.5 - 97.3)	95	92.9	(84.2 - 96.8)
Harefield	139	95.0	(89.7 - 97.6)	95	94.1	(86.8 - 97.3)
Manchester	77	92.2	(83.5 - 96.4)	57	90.8	(77.9 - 96.2)
Newcastle	115	87.8	(80.3 - 92.6)	83	88.1	(79.0 - 93.2)
Papworth	139	89.9	(83.6 - 93.9)	95	87.2	(76.9 - 92.9)
UK	695	91.9	(89.7 - 93.7)	501	91.0	(88.2 - 93.2)

	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

Figure 6.1a Risk-adjusted 90 day patient survival rates for adult DBD heart transplants, by centre, 1 April 2021 to 31 March 2025

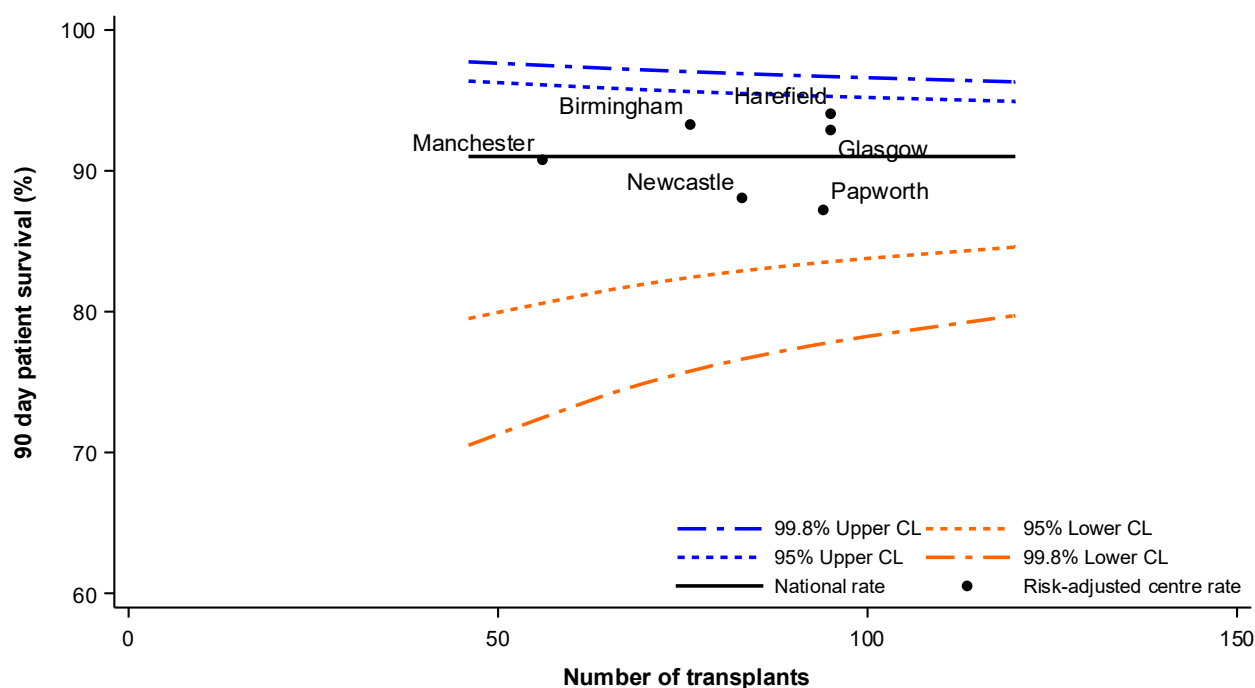


Figure 6.1b Unadjusted 90 day patient survival rates for adult heart transplants, by centre, 1 April 2021 to 31 March 2025

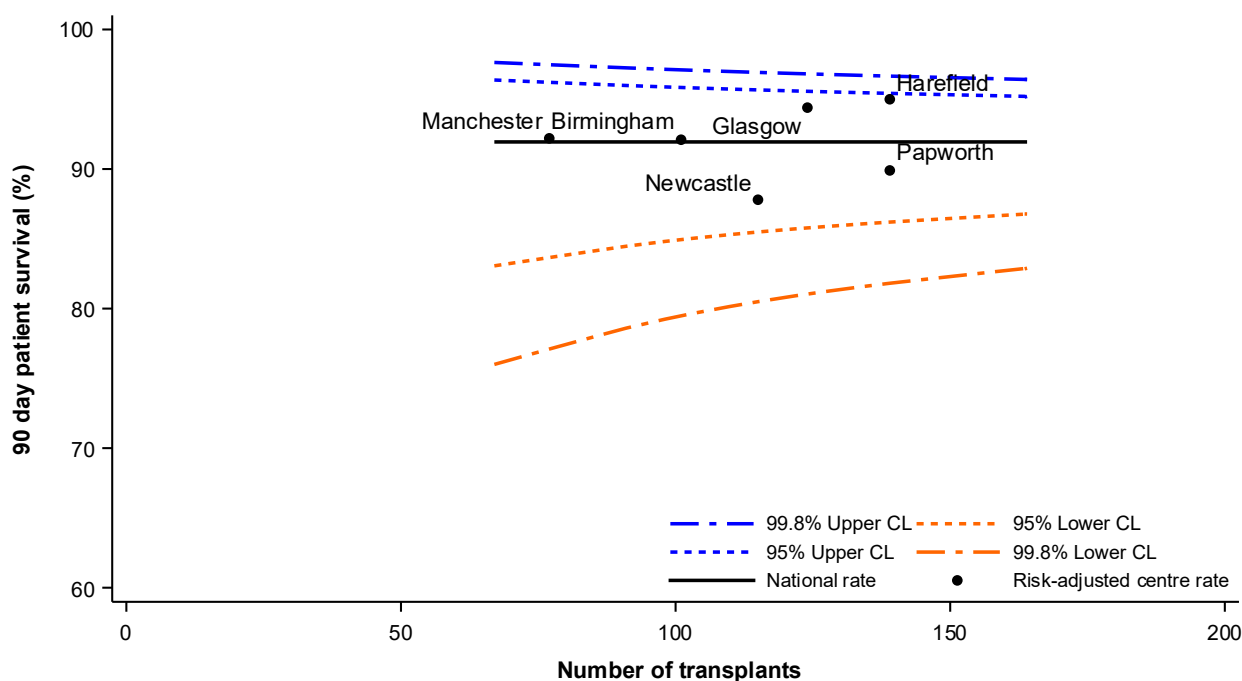


Table 6.2, Figure 6.2a, and Figure 6.2b, show the 1-year post-transplant [unadjusted](#) (DBD and DCD transplants) and [risk-adjusted](#) (DBD transplants only) patient [survival rates](#). All centres' risk-adjusted DBD patient survival rates were statistically consistent with the national DBD rate of survival. The overall (DBD and DCD) national patient survival rate at 1-year post-transplant was 87.2%.

Table 6.2 1 year patient survival after first adult heart transplant, by centre, 1 April 2021 to 31 March 2025						
Centre	Number of transplants	Unadjusted % 1 year survival (95% CI)		DBD transplants	Risk-adjusted % 1 year survival (95% CI)	
Birmingham	101	85.0	(76.4 - 90.7)	76	90.5	(81.1 - 95.3)
Glasgow	124	90.3	(83.6 - 94.4)	95	87.9	(78.2 - 93.3)
Harefield	139	87.7	(81.0 - 92.2)	95	91.8	(84.3 - 95.8)
Manchester	77	90.9	(81.9 - 95.6)	57	87.4	(72.0 - 94.4)
Newcastle	115	84.3	(76.3 - 89.8)	83	81.1	(68.6 - 88.6)
Papworth	139	85.6	(78.6 - 90.5)	95	84.0	(73.0 - 90.5)
UK	695	87.2	(84.4 - 89.4)	501	87.4	(84.2 - 90.0)
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						

Figure 6.2a Risk-adjusted one year patient survival rates for adult DBD heart transplants, by centre, 1 April 2021 to 31 March 2025

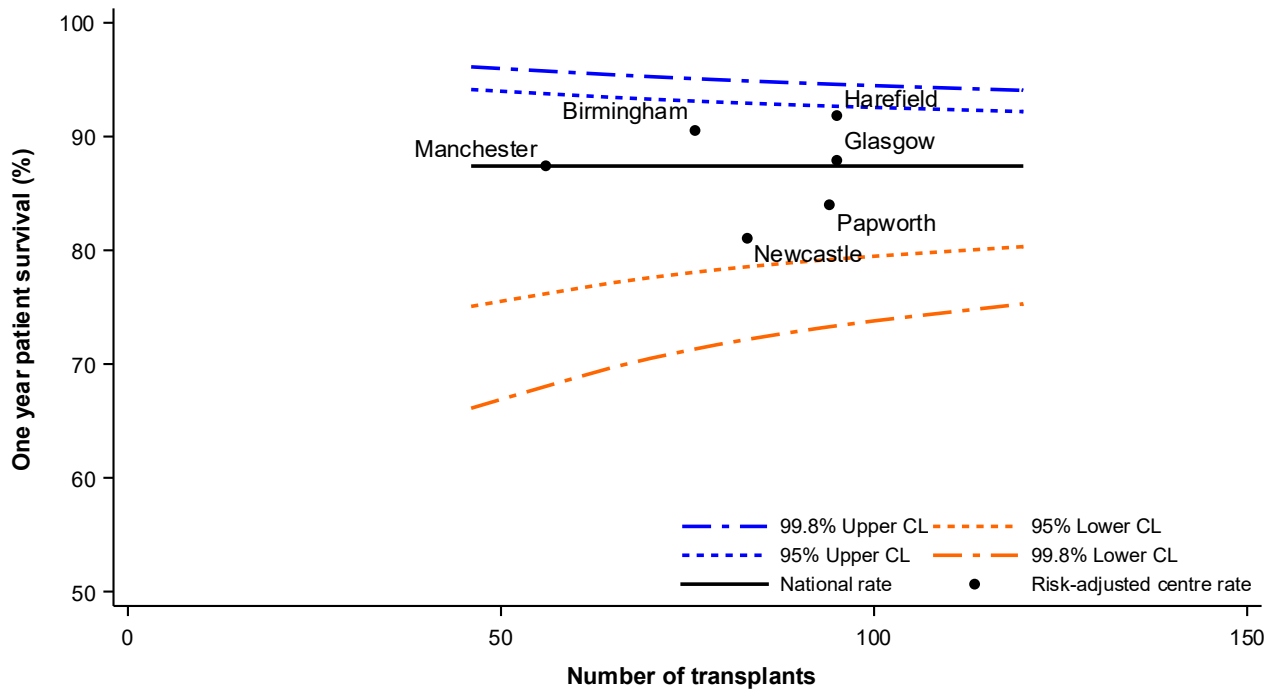


Figure 6.2b Unadjusted one year patient survival rates for adult heart transplants, by centre, 1 April 2021 to 31 March 2025

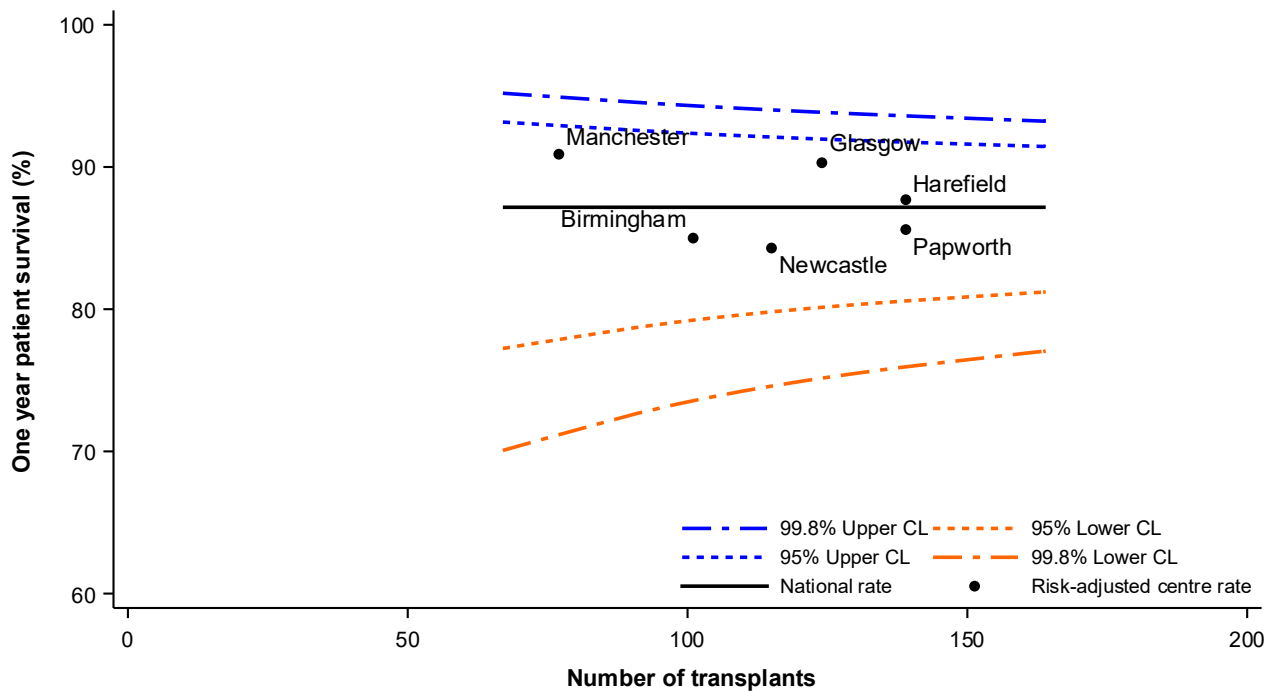


Table 6.3, Figure 6.3a, and Figure 6.3b, show the 5-year post-transplant unadjusted (DBD and DCD transplants) and risk-adjusted (DBD transplants only) patient survival rates for each centre and nationally for the 592 (500 DBD) first adult heart only transplants in the period 1 April 2017 to 31 March 2021. There was evidence of a higher risk-adjusted DBD patient survival rate at Manchester compared with the national DBD survival rate. The overall (DBD and DCD) national patient survival rate at 5 years post-transplant was 76.1%.

Centre	Number of transplants	Unadjusted % 5 year survival (95% CI)		DBD transplants	Risk-adjusted % 5 year survival (95% CI)	
Birmingham	100	73.8	(64.0 - 81.3)	100	72.9	(60.3 - 81.6)
Glasgow	51	82.1	(68.4 - 90.3)	50	76.2	(54.3 - 87.6)
Harefield	104	67.2	(57.3 - 75.4)	88	73.2	(61.4 - 81.4)
Manchester	78	82.1	(71.6 - 89.0)	69	84.5	(71.2 - 91.7)
Newcastle	86	70.8	(60.0 - 79.3)	82	73.0	(60.1 - 81.8)
Papworth	173	80.8	(74.1 - 86.0)	111	75.8	(63.9 - 83.8)
UK	592	76.1	(72.4 - 79.3)	500	75.3	(71.3 - 78.9)

	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

Figure 6.3a Risk-adjusted five year patient survival rates for adult DBD heart transplants, by centre, 1 April 2017 to 31 March 2021

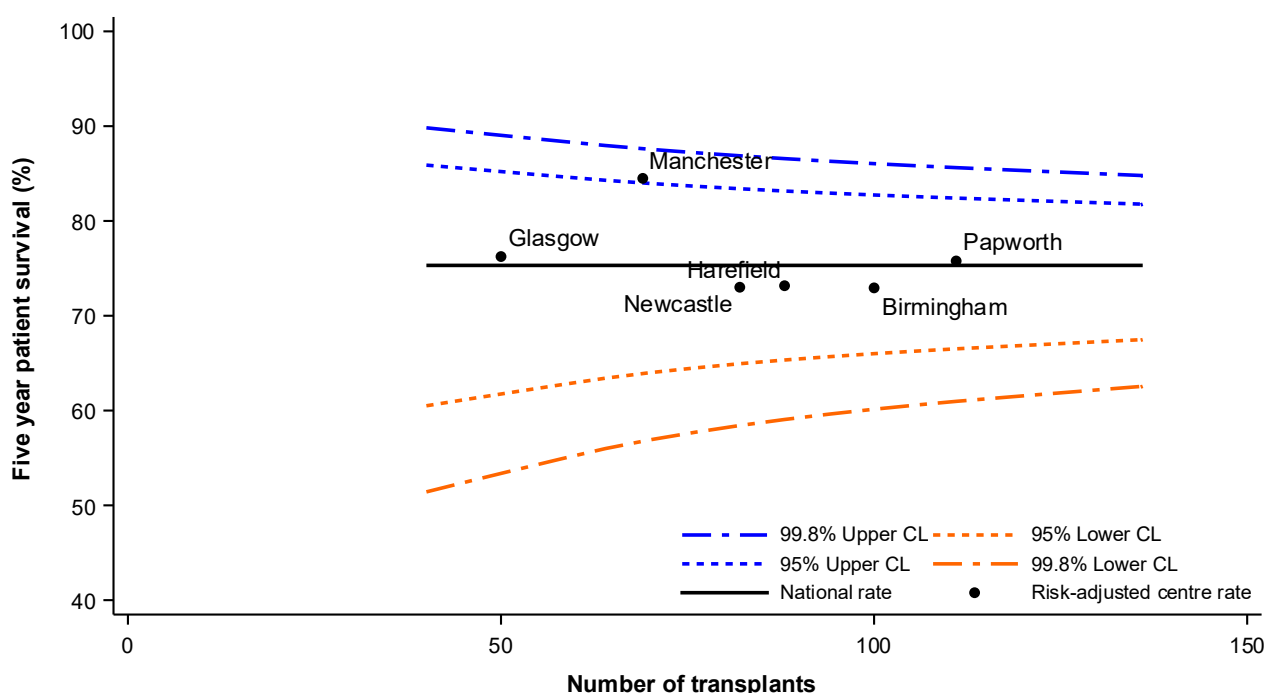
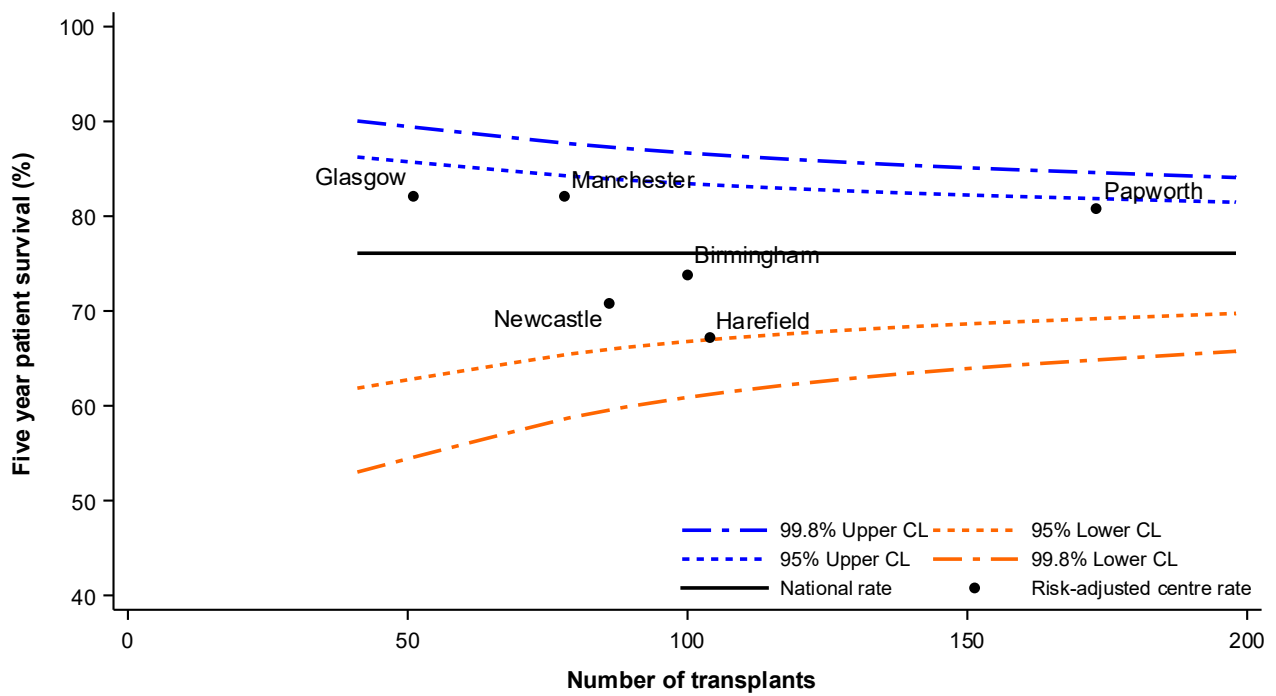


Figure 6.3b Unadjusted five year patient survival rates for adult heart transplants, by centre, 1 April 2017 to 31 March 2021



6.2 Survival by disease group

Tables 6.4 and 6.5 present [unadjusted](#) and [risk-adjusted survival rates](#) by primary disease group, at 1 year and 5 years post-transplant, respectively, for adult DBD heart transplants. The [risk factors](#) used to produce the [risk-adjusted survival rates](#) are listed in [Appendix A3](#) (except centre was used in place of disease group). Recipients in the congenital heart disease group had a lower than average [risk-adjusted survival rate](#) at 5 years.

Table 6.4 1 year patient survival after first adult DBD heart transplant, by disease group, 1 April 2021 to 31 March 2025

Disease group	Number of transplants	% 1 year survival (95% CI)			
		Unadjusted		Risk-adjusted	
Cardiomyopathy	342	87.4	(83.4 - 90.5)	86.3	(81.5 - 89.8)
Congenital heart disease	53	84.9	(72.1 - 92.1)	89.0	(78.0 - 94.5)
Coronary heart disease	89	87.6	(78.8 - 93.0)	89.0	(80.1 - 93.9)
Other/not reported	17	94.1	(65.0 - 99.1)	93.0	(50.4 - 99.0)
UK	501	87.4	(84.2 - 90.0)		

Table 6.5 5 year patient survival after first adult DBD heart transplant, by disease group, 1 April 2017 to 31 March 2021

Disease group	Number of transplants	% 5 year survival (95% CI)			
		Unadjusted		Risk-adjusted	
Cardiomyopathy	370	76.7	(72.0 - 80.7)	76.9	(71.4 - 81.3)
Congenital heart disease	34	61.8	(43.4 - 75.7)	60.8	(32.4 - 77.2)
Coronary heart disease	74	77.0	(65.7 - 85.0)	76.8	(62.7 - 85.6)
Other/not reported	22	67.4	(43.4 - 83.0)	65.3	(27.2 - 83.5)
UK	500	75.3	(71.3 - 78.9)		

6.3 Survival by VAD status

Table 6.6 presents [unadjusted survival rates](#) by mechanical circulatory support ([MCS](#)) status at time of transplant at 30 days, 90 days, and 1 year post-transplant, respectively. Short-term [MCS](#) includes CentriMag, percutaneous [VADs](#) and extracorporeal membrane oxygenation and long-term [MCS](#) includes implantable [VADs](#) for left, right and biventricular support and total artificial hearts. There was a significant difference in 30-day and 90-day survival rates across [MCS](#) status in this [unadjusted](#) analysis (log-rank $p=0.01$) and $p<0.01$, respectively), with those on long-term support at the time of transplant having poorer survival. There was no significant difference in 1-year survival rates ($p=0.13$).

Table 6.6 Unadjusted patient survival rates after first adult DBD heart transplant, by mechanical support status, 1 April 2021 to 31 March 2025

Mechanical support status	Number of transplants	% 30 day survival (95% CI) Unadjusted		% 90 day survival (95% CI) Unadjusted		% 1 year survival (95% CI) Unadjusted	
Short-term support	135	95.6	(90.4 - 98.0)	91.9	(85.8 - 95.4)	88.8	(82.1 - 93.1)
Long-term support	41	85.4	(70.3 - 93.1)	78.0	(62.1 - 87.9)	78.0	(62.1 - 87.9)
No support	325	96.0	(93.2 - 97.7)	92.3	(88.8 - 94.7)	88.0	(83.9 - 91.1)
UK	501	95.0	(92.7 - 96.6)	91.0	(88.2 - 93.2)	87.4	(84.2 - 90.0)

6.4 Survival post DCD heart transplant

Tables 6.7 and **6.8** present short-term patient [survival rates](#) following DCD heart only transplant, by centre and nationally, for the period 1 April 2017 to 31 March 2025.

Table 6.7 90 day patient survival after first DCD adult heart transplant, by centre, 1 April 2017 to 31 March 2025				
Centre	Number of patients	Number of deaths	% 90 day survival (95% CI) (unadjusted)	
Birmingham	25	3	88.0	(67.3 – 96.0)
Glasgow	30	1	96.7	(78.6 - 99.5)
Harefield	60	4	93.3	(83.2 - 97.4)
Manchester	29	3	89.7	(71.3 - 96.5)
Newcastle	36	2	94.4	(79.6 - 98.6)
Papworth	106	6	94.3	(87.8 - 97.4)
UK	286	19	93.4	(89.8 - 95.7)

Table 6.8 1 year patient survival rates after first adult DCD heart only transplant, by 1 April 2017 to 31 March 2025				
Centre	Number of patients	Number of deaths	% 1 year survival (95% CI) (unadjusted)	
Birmingham	25	7	71.3	(48.8 - 85.2)
Glasgow	30	1	96.7	(78.6 - 99.5)
Harefield	60	13	78.3	(65.6 - 86.8)
Manchester	29	4	86.2	(67.3 - 94.6)
Newcastle	36	3	91.7	(76.3 - 97.2)
Papworth	106	10	90.6	(83.2 - 94.8)
UK	286	38	86.7	(82.2 - 90.1)

6.5 Survival post multi-organ heart transplant

The survival outcomes of the small number of recipients of multi-organ heart transplants are reported in **Table 6.9**, at 90 days and 1 year post transplant. This includes all first-time multi-organ transplants involving the heart, from DBD or DCD donors, between 1 April 2017 and 31 March 2025. It does not include heart-lung transplants which are reported in the Annual Report on Lung Transplantation.

Table 6.9 Survival outcomes following multi-organ heart transplant performed between 1 April 2017 and 31 March 2025			
Transplant type	Number of transplants	Number of patients alive at 90 days post-transplant	Number of patients alive at 1 year post-transplant
	N	N	N
Heart & kidney	4	3	3
Heart & liver	8	5	5

ADULT HEART TRANSPLANTATION

Survival from Listing



7. Survival from Listing

Survival from listing was analysed for patients 16 years or older registered for the first time for a heart transplant between 1 April 2017 and 31 March 2025. Survival time was defined as the time from joining the transplant list to death, regardless of whether the patient was transplanted and any factors associated with such a transplant e.g. ischaemia time.

Survival time was censored at the last known follow-up date post-transplant when no death date was recorded, or at time of analysis if the patient was still active on the transplant list. For patients who were removed from the transplant list without receiving a transplant, and where there was no recorded death date, if the reason for removal was due to deteriorating condition, then this was classed as an event, while all other cases were censored. The [risk-adjusted](#) rates seek to compare centre performance after accounting for differences in [case mix](#) across centres. The [unadjusted survival rates](#) are also presented in the tables, showing the observed survival experience at that centre. The [risk factors](#) used to produce the [risk-adjusted survival rates](#) are listed in [Appendix A2.1](#).

1 and 5 year [risk-adjusted survival rates](#) from the point of heart transplant listing are shown as [funnel plots](#) in **Figures 7.1** and **7.2**, respectively. These rates are also shown in **Tables 7.1** and **7.2**, respectively, along with the unadjusted rates. Note that the rates for 1 year and 5-year survival are calculated from disjoint cohorts of patients, to allow for the full 1- and 5-year follow-up periods to elapse.

The centre specific 1-year survival from listing rates were all consistent with the national rate of 85.1%, with the exception of Glasgow, whose rate lies above the 95% upper [confidence limits](#), indicating evidence of a higher survival rate at this centre. At 5 years, the survival from listing rates for Manchester and Papworth were above the 99.8% upper [confidence limits](#), indicating significantly high survival at these centres, while the rates for Harefield and Newcastle fell below the 99.8% lower [confidence limits](#), indicating significantly low survival. Glasgow and Birmingham had 5-year survival from listing rates that were consistent with the national rate.

Table 7.1 1 year patient survival from listing for adult heart patients registered between 1 April 2021 to 31 March 2025					
Centre	Number of patients	Unadjusted % 1 year survival (95% CI)		Risk-adjusted % 1 year survival (95% CI)	
Birmingham	141	84.6	(77.4 - 89.7)	86.6	(79.5 - 91.3)
Glasgow	137	90.5	(84.2 - 94.4)	91.0	(84.5 - 94.8)
Harefield	195	81.7	(75.5 - 86.5)	83.1	(76.5 - 87.9)
Manchester	110	81.6	(73.0 - 87.7)	80.5	(69.7 - 87.4)
Newcastle	167	87.3	(81.2 - 91.5)	84.8	(76.7 - 90.1)
Papworth	172	85.3	(79.0 - 89.8)	84.3	(76.7 - 89.4)
UK	922	85.1	(82.7 - 87.3)		

	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

Figure 7.1 Risk-adjusted one year patient survival rates from listing by centre 1 April 2021 to 31 March 2025

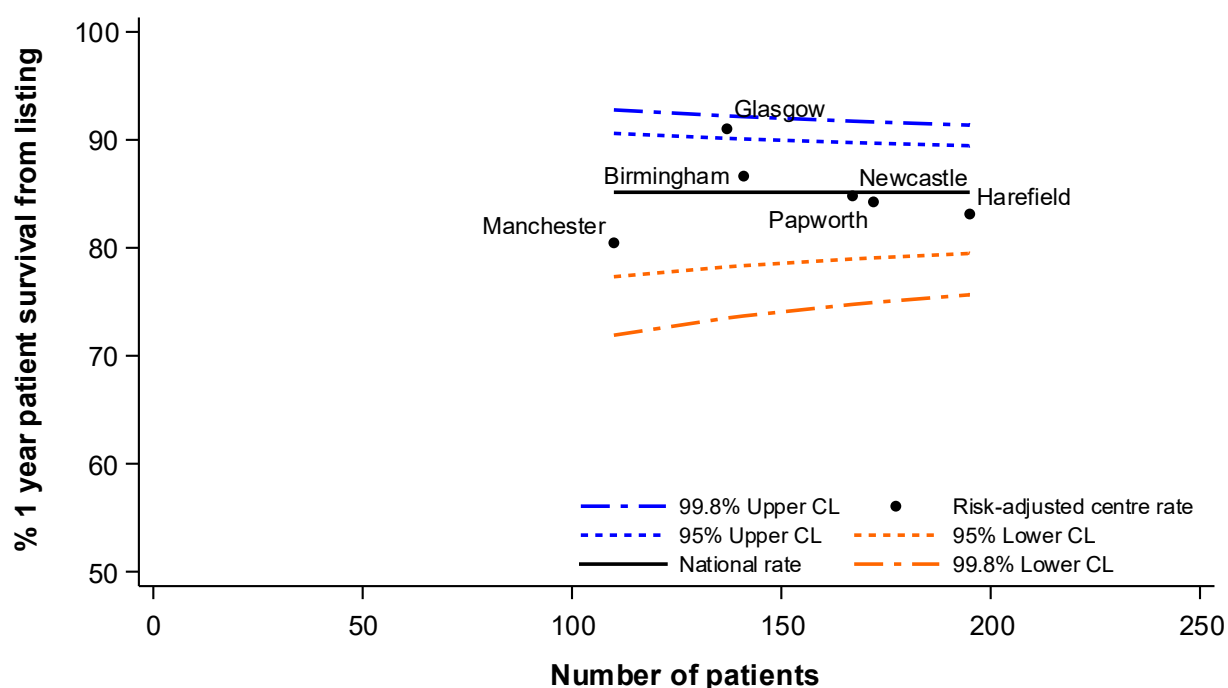
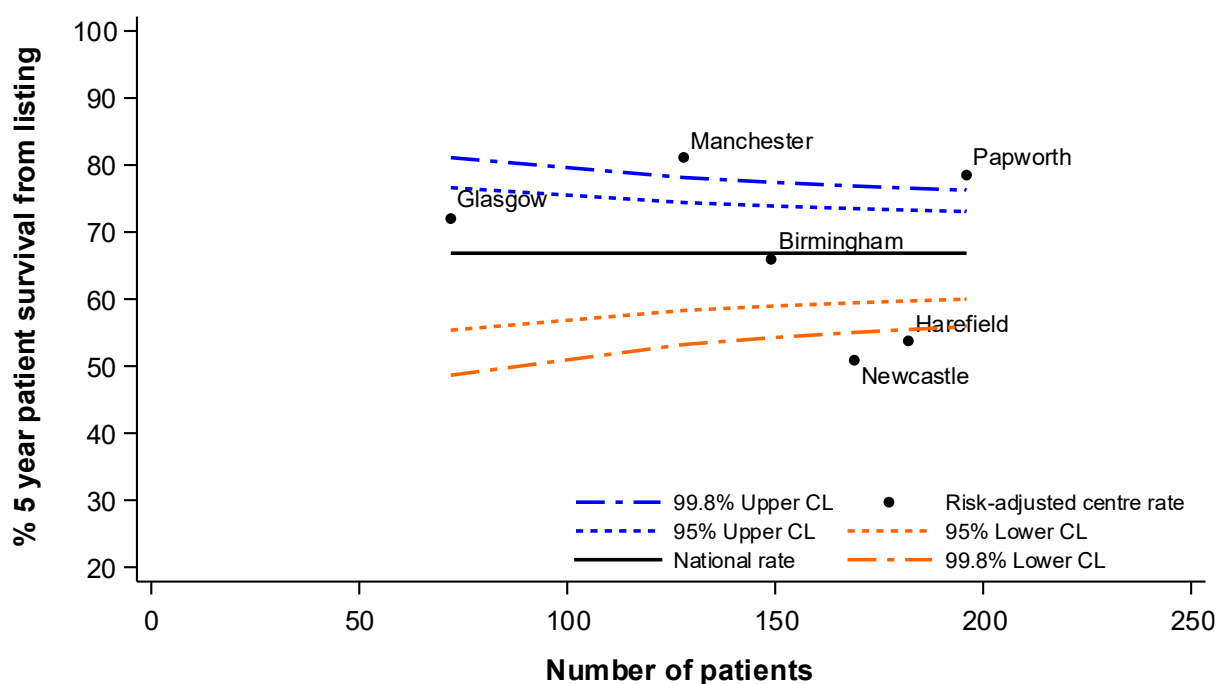


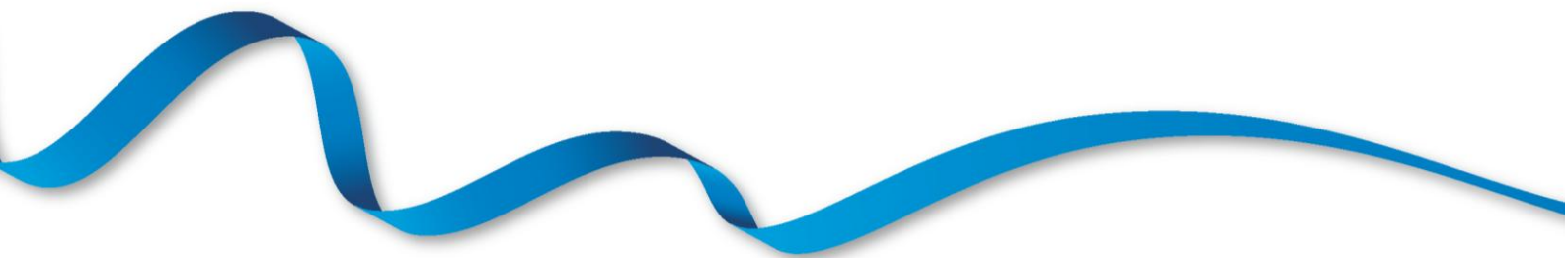
Table 7.2 5 year patient survival from listing for adult heart patients registered between 1 April 2017 to 31 March 2021					
Centre	Number of patients	<u>Unadjusted</u> % 5 year survival (95% CI)		<u>Risk-adjusted</u> % 5 year survival (95% CI)	
Birmingham	149	65.6	(57.0 - 72.8)	65.9	(54.8 - 74.3)
Glasgow	72	77.1	(65.3 - 85.3)	72.0	(54.3 - 82.9)
Harefield	182	56.0	(48.1 - 63.2)	53.8	(41.9 - 63.2)
Manchester	128	77.8	(69.4 - 84.1)	81.1	(72.7 - 87.0)
Newcastle	169	53.4	(45.4 - 60.7)	50.9	(38.5 - 60.8)
Papworth	196	77.9	(71.3 - 83.2)	78.5	(70.9 - 84.1)
UK	896	66.8	(63.6 - 69.9)		
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					

Figure 7.2 Risk-adjusted five year patient survival rates from listing by centre 1 April 2017 to 31 March 2021



ADULT HEART TRANSPLANTATION

Form Return Rates



8. Adult heart form return rates, 1 January 2025 – 31 December 2025

Form return rates are reported in **Table 8.1** for the cardiothoracic transplant record and the 3 month and 1 year follow up form, along with lifetime follow up (2 years or more). These include all adult heart transplants between 1 January 2025 to 31 December 2025 for the transplant record, and all follow up forms issued in this time period. Centres highlighted are the currently active transplant centres. All active centres have a 96% or greater return rate for this period. Note that any skipped follow-up forms are counted as not returned.

Table 8.1 Form return rates for adult heart transplants, 1 January 2025 to 31 December 2025								
Centre	Transplant record		3 month follow-up		1 year follow-up		Lifetime follow-up	
	No. required	% returned	No. required	% returned	No. required	% returned	No. required	% returned
Belfast, Belfast City Hospital	-	-	-	-	-	-	4	0
Birmingham, Queen Elizabeth Hospital	32	100	26	100	27	100	292	97
Royal Devon And Exeter Hospital	-	-	-	-	-	-	1	0
Glasgow, Golden Jubilee Hospital	40	100	34	100	24	100	222	99
Harefield, Harefield Hospital	38	100	41	100	34	100	542	96
Londonderry, Altnagelvin Area Hospital	-	-	-	-	-	-	1	0
Manchester, Wythenshawe Hospital	25	100	23	100	27	100	285	99
Newcastle, Freeman Hospital	27	100	18	100	21	100	335	98
Oxford, John Radcliffe Hospital	-	-	-	-	-	-	1	0
Papworth, Papworth Hospital	38	100	37	100	29	100	661	97
Plymouth, Derriford Hospital	-	-	-	-	-	-	2	0
Sheffield, Northern General Hospital	-	-	-	-	-	-	26	100
Truro, Royal Cornwall Hospital (Treliske)	-	-	-	-	-	-	2	0
Overall	200	100	179	100	162	100	2374	97

PAEDIATRIC HEART TRANSPLANTATION

Transplant List



9.1 Paediatric heart only transplant list on 31 March, 2017 – 2026

Figure 9.1 shows the number of paediatric patients active on the heart transplant list on 31 March each year between 2017 and 2026, by urgency status. The number on the active non-urgent list generally increased over the decade, peaking at 35 in 2023 before falling to 17 on 31 March 2026. The number on the active urgent list also increased, with 16 patients waiting in 2026 compared with 8 in 2017. The number on the active super-urgent list, introduced for paediatric patients in October 2020, has remained very low, with no patients waiting on 31 March 2026.

Figure 9.1 Number of paediatric patients on the heart transplant list at 31 March each year, by urgency status

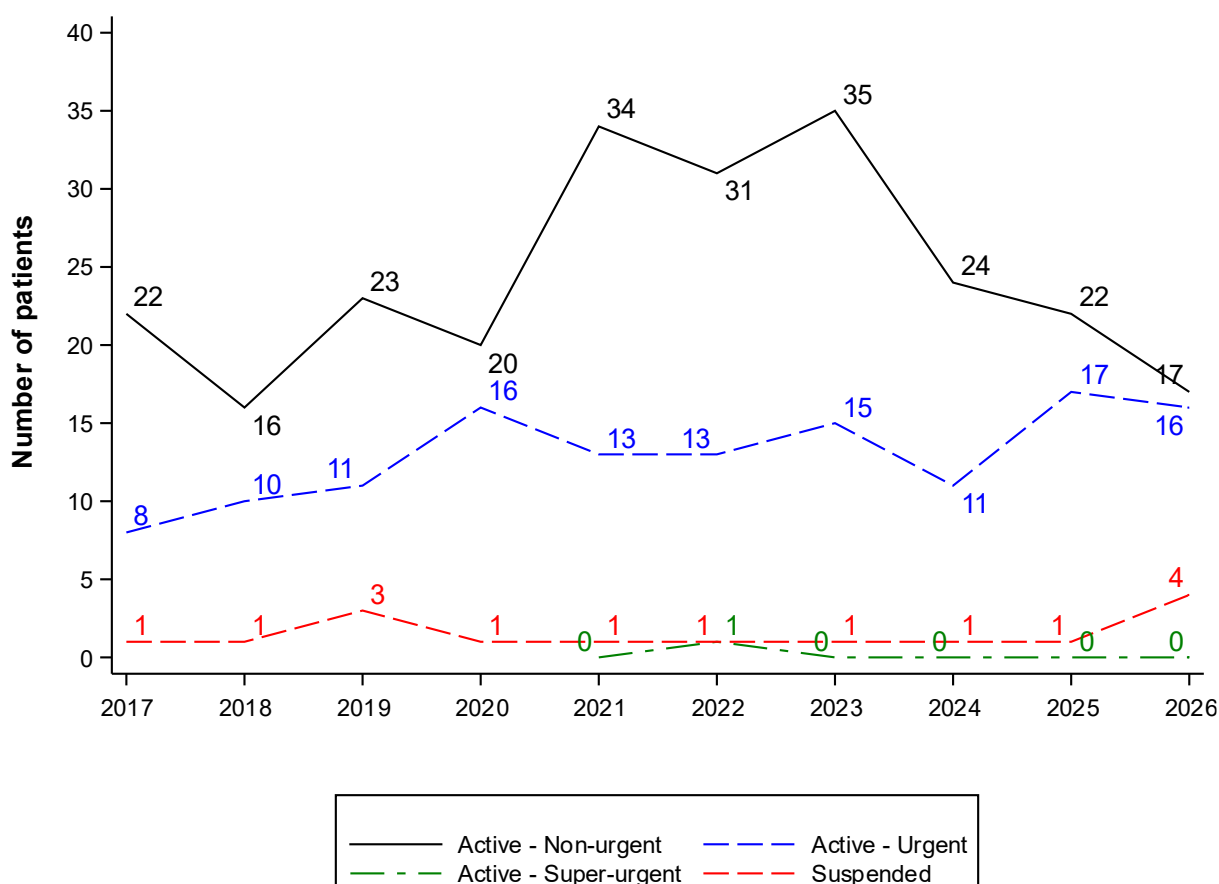


Figure 9.2 shows the number of paediatric patients on the [active heart transplant list](#) on 31 March 2026 by centre and urgency. In total, there were 33 paediatric patients waiting; 14 at Great Ormond Street Hospital, of which 9 were urgent, and 19 at Newcastle, of which 7 were urgent. **Figure 9.3** shows the number split by centre and mechanical circulatory support ([MCS](#)) status where [MCS](#) includes ventricular assist devices and extracorporeal membrane oxygenation. A total of 10 (30%) patients on the paediatric heart list were on [MCS](#) on 31 March 2026.

Figure 9.2 Number of paediatric patients on the active heart transplant list at 31 March 2026, by centre and urgency

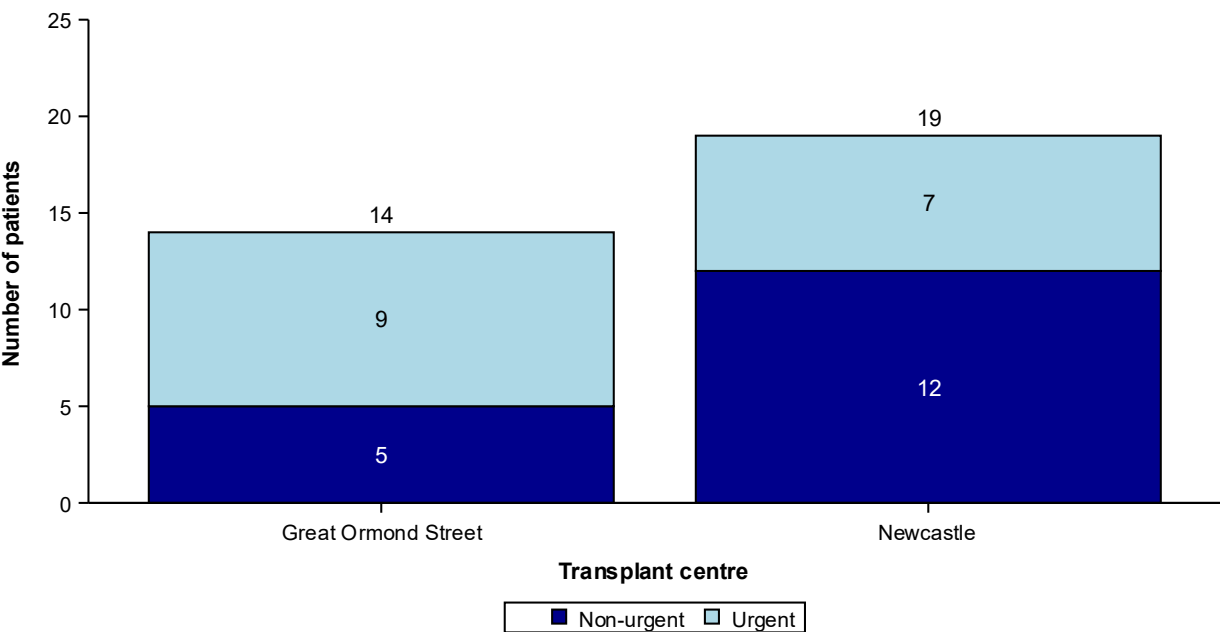


Figure 9.3 Number of paediatric patients on the active heart transplant list at 31 March 2026, by centre and mechanical circulatory support status

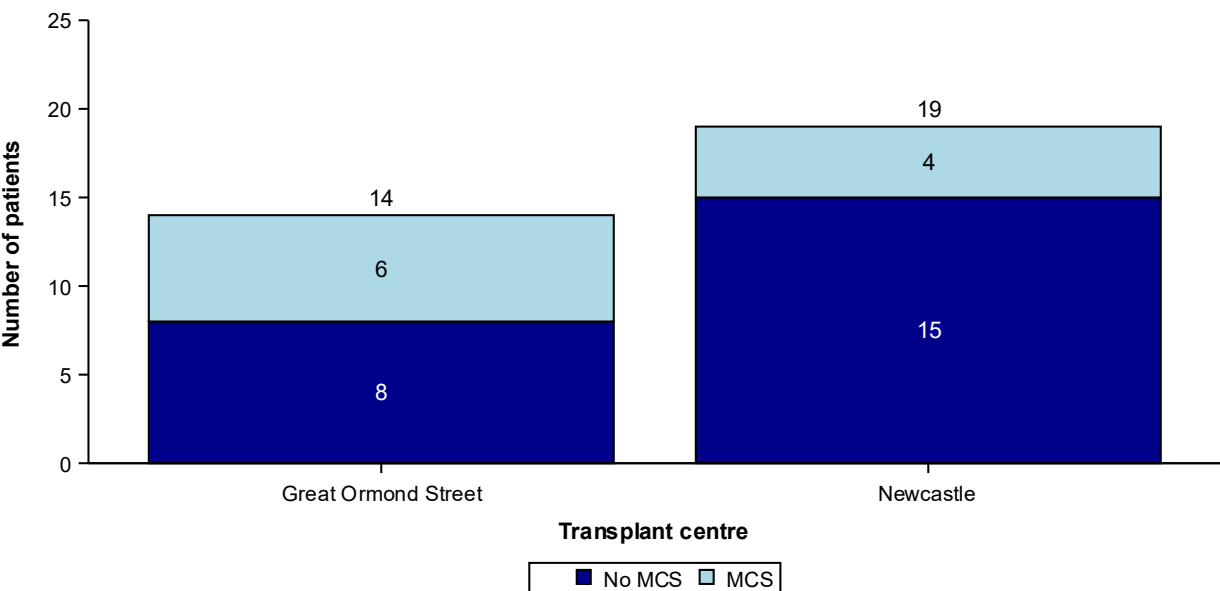
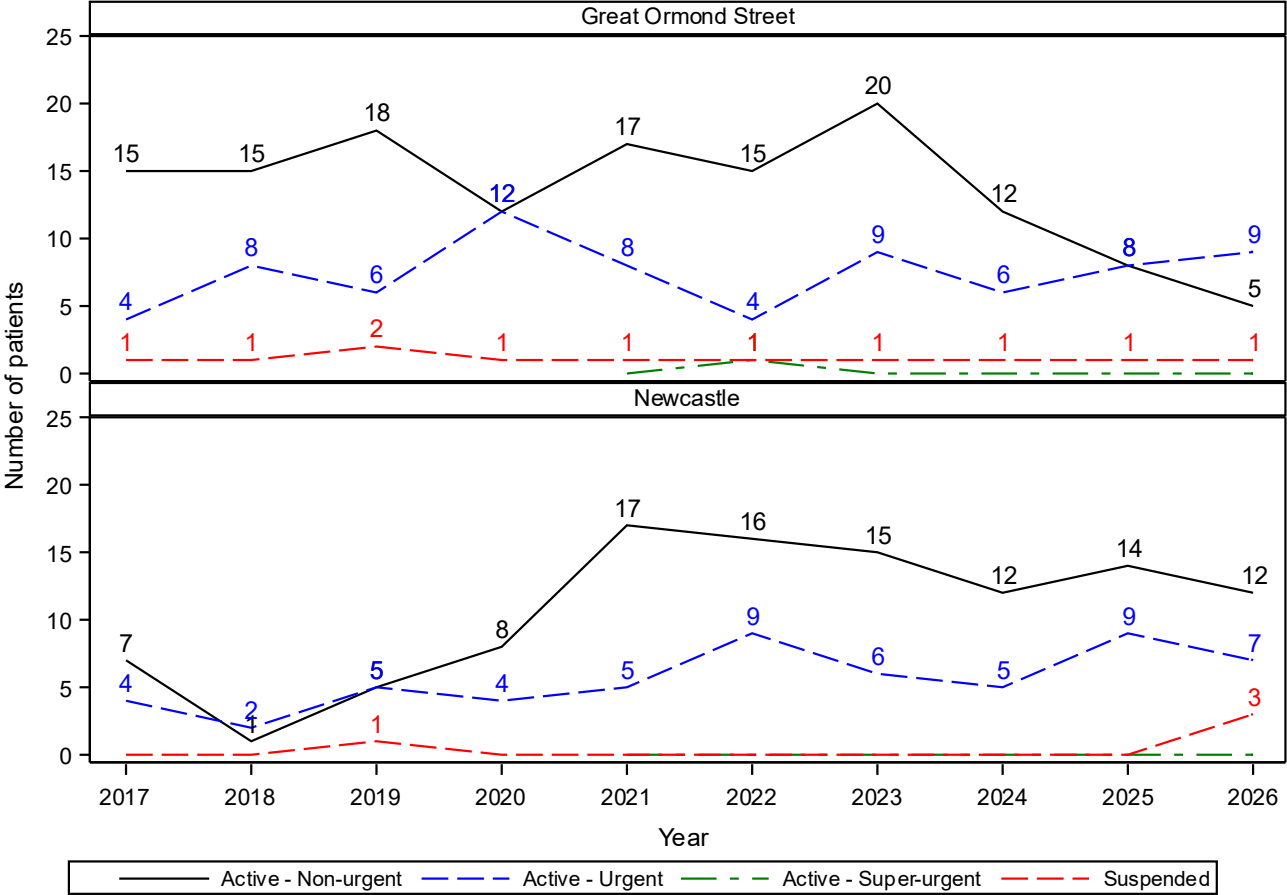


Figure 9.4 shows the number of paediatric patients on the heart transplant list on 31 March each year at each centre, by urgency status. Great Ormond Street Hospital's non-

urgent waiting list has decreased in recent years, while the urgent list has increased. Over the last five years, Newcastle's non-urgent waiting list has decreased slightly, whereas the urgent list has remained relatively stable.

Figure 9.4 Number of paediatric patients on the heart transplant list at 31 March each year, for the last 10 years, by centre and urgency status



9.2 Demographic characteristics, 1 April 2025 and 31 March 2026

There were 46 paediatric registrations onto the heart transplant list between 1 April 2025 and 31 March 2026. Demographic characteristics of these individuals are shown by centre and overall, in **Table 9.1**. Nationally, 57% were male and the [median](#) age was 5 years. The most common primary disease group was cardiomyopathy. For some characteristics, due to rounding, percentages may not add up to 100.

Table 9.1 Demographic characteristics of paediatric patient registrations onto the heart transplant list between 1 April 2025 and 31 March 2026, by centre				
		Great Ormond Street N (%)	Newcastle N (%)	TOTAL N (%)
Number of registrations		19 (100)	27 (100)	46 (100)
Highest urgency during registration	Non-urgent	0 (0)	12 (44)	12 (26)
	Urgent	12 (63)	14 (52)	26 (57)
	Super-urgent	7 (37)	1 (4)	8 (17)
Recipient sex	Male	13 (68)	13 (48)	26 (57)
	Female	6 (32)	14 (52)	20 (44)
Recipient ethnicity	White	10 (53)	16 (59)	26 (57)
	Asian	5 (26)	11 (41)	16 (35)
	Black	3 (16)	0 (0)	3 (7)
	Missing	1 (5)	0 (0)	1 (2)
Recipient age (years)	Median (IQR)	8 (1, 14)	2 (1, 9)	5 (1, 13)
	Missing	0	0	0
Height (cm)	Median (IQR)	145 (76, 166)	91 (79, 130)	106 (76, 146)
	Missing	0	0	0
Weight (kg)	Median (IQR)	31 (10, 50)	12 (9, 23)	15 (10, 36)
	Missing	0	0	0
Primary Disease	Cardiomyopathy	19 (100)	18 (67)	37 (80)
	Congenital heart disease	0 (0)	8 (30)	8 (17)
	Other/Not reported	0 (0)	1 (4)	1 (2)
Previous open heart surgery	None	13 (68)	11 (41)	24 (52)
	One	5 (26)	9 (33)	14 (30)
	More than one	0 (0)	6 (22)	6 (13)
	Missing	1 (5)	1 (4)	2 (4)
Serum bilirubin (umol/l)	Median (IQR)	14 (10, 17)	7 (5, 14)	12 (6, 16)
	Missing	0	2	2
Serum creatinine (umol/l)	Median (IQR)	53 (36, 83)	31 (22, 45)	40 (27, 54)
	Missing	0	1	1

9.3 Post-registration outcomes, 1 April 2021 – 31 March 2023

The registration outcomes of paediatric patients listed for a heart transplant between 1 April 2021 and 31 March 2023 are summarised in **Figure 9.5** and **Figure 9.6**, for non-urgent and urgent registrations, respectively (super-urgent registration outcomes are not presented due to small numbers). The possible outcomes on the non-urgent or urgent list include receiving a transplant, removal from the list, moving lists, dying on the list, or remaining on the list at a given time point post-registration. Removals from the list due to deteriorating condition and deaths within 30 days of removal are grouped with deaths in this analysis. In these figures, the *first* outcome is used, so if an individual was transplanted then died their registration outcome would be “transplanted”. If they moved lists, e.g. from the non-urgent to the urgent list, they would be included in both the non-urgent and the urgent charts and analysed according to the outcome on each list.

Figure 9.5 shows the non-urgent post-registration outcomes; within 6 months of listing 10% had received a transplant, none had died and 10% had been moved to the urgent list. At 3 years, 28% had been transplanted, 3% had died and 38% had been added to the urgent list. As can be seen in **Figure 9.6**, there is a greater chance of transplant on the urgent heart list compared to the non-urgent list, with 30% receiving a transplant by 6 months, however there is also a greater chance of waiting list mortality. Removals from the urgent list were mainly due to improved condition (excluding those removals from the list due to deteriorating condition and deaths within 30 days of removal which are grouped with deaths).

Figure 9.5 Post-registration outcome for 29 new non-urgent heart only registrations made in the UK, 1 April 2021 to 31 March 2023

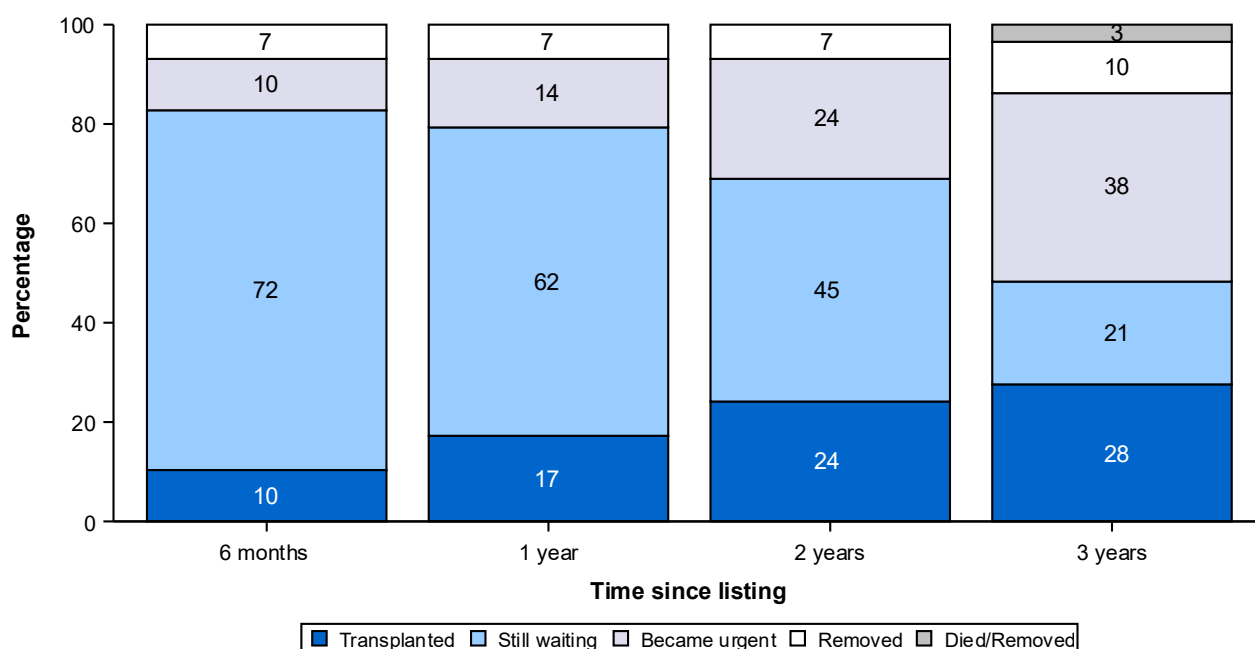
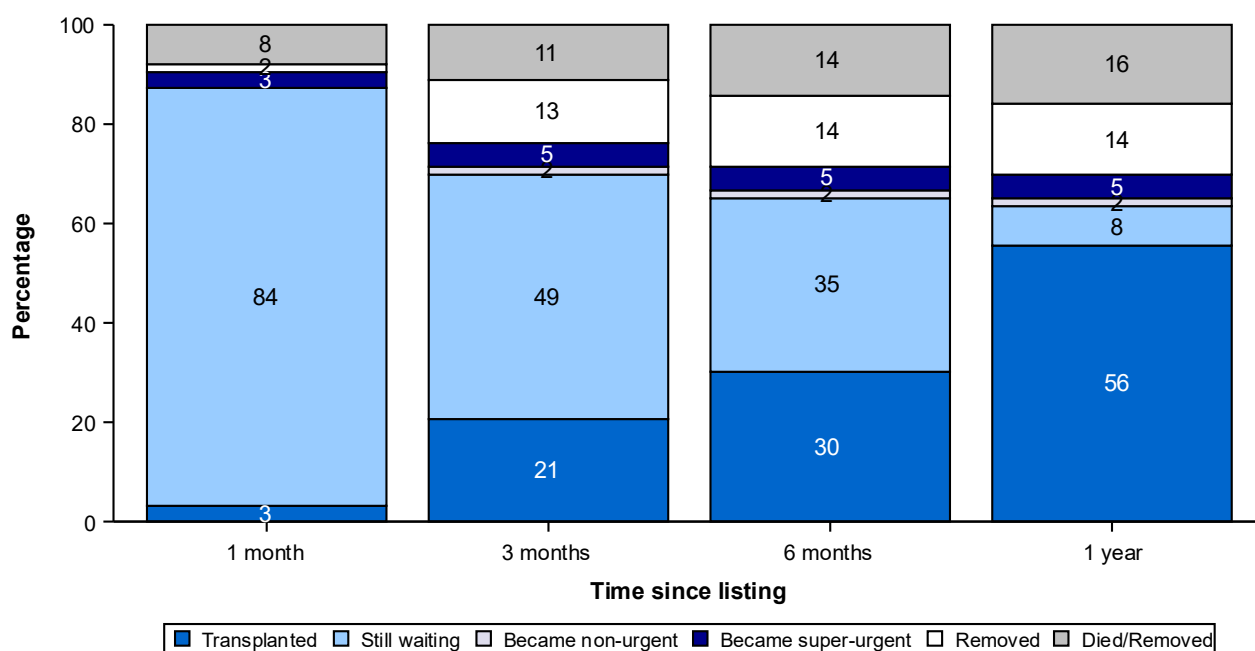


Figure 9.6 Post-registration outcome for 63 new urgent heart only registrations made in the UK, 1 April 2021 to 31 March 2023



9.4 Median waiting time to transplant, 1 April 2022 to 31 March 2025

Table 9.2 shows the [median](#) waiting time to heart transplant from listing for paediatric patients registered between 1 April 2022 to 31 March 2025. This is estimated using the [Kaplan Meier](#) method to allow for censoring, and is split by urgency at initial registration; non-urgent or urgent. All waiting time from initial registration is considered, regardless of any change in urgency. Any suspended time is discounted.

The national [median](#) waiting time to paediatric heart transplant from non-urgent listing could not be calculated due to the low transplant rate for this group. For those initially urgent listed, the median waiting time was 210 days (although the wide 95% [confidence interval](#) indicates uncertainty in this estimate). The [median](#) waiting time to heart transplant for paediatric patients is also considered by blood group in **Table 9.3**. Median waiting time to super-urgent transplant is not presented due to small numbers.

Table 9.2 Median active waiting time to heart transplant for paediatric patients registered on the transplant list, by urgency at registration and centre, 1 April 2022 to 31 March 2025				
Transplant centre	Number of patients registered	Number transplanted	Median	Waiting time (days) 95% Confidence interval
Non-urgent at initial registration				
Great Ormond Street	18	9	357	0 - 1108
Newcastle ¹	18	6	-	-
UK¹	36	15	-	-
Urgent at initial registration				
Great Ormond Street	48	34	210	54 - 366
Newcastle	36	21	225	0 - 456
UK	84	55	210	94 - 326
¹ Median and 95% confidence intervals could not be calculated due to low transplant rate				

Table 9.3 Median active waiting time to heart transplant for paediatric patients registered on the transplant list, by urgency at registration and blood group, 1 April 2022 to 31 March 2025

Blood Group	Number of patients registered	Number transplanted	Waiting time (days)	
			Median	95% Confidence interval
Non-urgent at initial registration				
O ¹	20	5	-	-
A	10	7	320	238 - 402
B ²	5	3	-	-
AB ²	1	-	-	-
UK ¹	36	15	-	-
Urgent at initial registration				
O	40	26	288	227 - 349
A	27	18	65	37 - 93
B	15	9	177	6 - 348
AB ²	2	2	-	-
UK	84	55	210	94 - 326

¹ Median and 95% confidence intervals could not be calculated due to low transplant rate

² Median waiting time for groups with less than 10 are not presented due to small numbers

PAEDIATRIC HEART TRANSPLANTATION

Response to Offers



10. Response to Offers

Table 10.1 compares individual centre paediatric heart offer decline rates over the 3 years between 1 April 2023 and 31 March 2026. This only considers offers of hearts from UK [DBD donors](#) aged less than 16 that were eventually transplanted and excludes fast track offers. Hearts offered as part of a heart-lung block are included. Non-urgent, urgent and super-urgent offers are all considered. Offers to adults at Newcastle are excluded. The number of offers received and the corresponding decline rates were similar between centres.

Table 10.1 UK paediatric DBD donor heart offer decline rates by transplant centre and year, 1 April 2023 and 31 March 2026		
Centre	Number of offers	Decline rate (%)
Great Ormond Street Hospital	26	69.2
Newcastle	25	68.0
UK	51	68.6

PAEDIATRIC HEART TRANSPLANTATION

Transplants



11.1 Paediatric heart transplants, 1 April 2016 – 31 March 2026

Figures 11.1 and **11.2** show the number of paediatric heart transplants performed in the last 10 years by donor type, nationally and by centre, respectively. Nationally, the number of paediatric heart transplants decreased to its lowest point in 2019/2020 (23), then steadily increased, reaching 37 in 2023/2024, a level comparable to the start of the decade, before dropping again to 27 in 2025/2026. Last year's activity is shown by centre in **Figure 11.3**. The 27 transplants carried out in 2025/2026 comprised 16 at Great Ormond Street Hospital and 11 at Newcastle, and there was a total of 9 DCD heart transplants.

Figure 11.1 Number of paediatric heart transplants in the UK, by financial year and donor type, 1 April 2016 to 31 March 2026

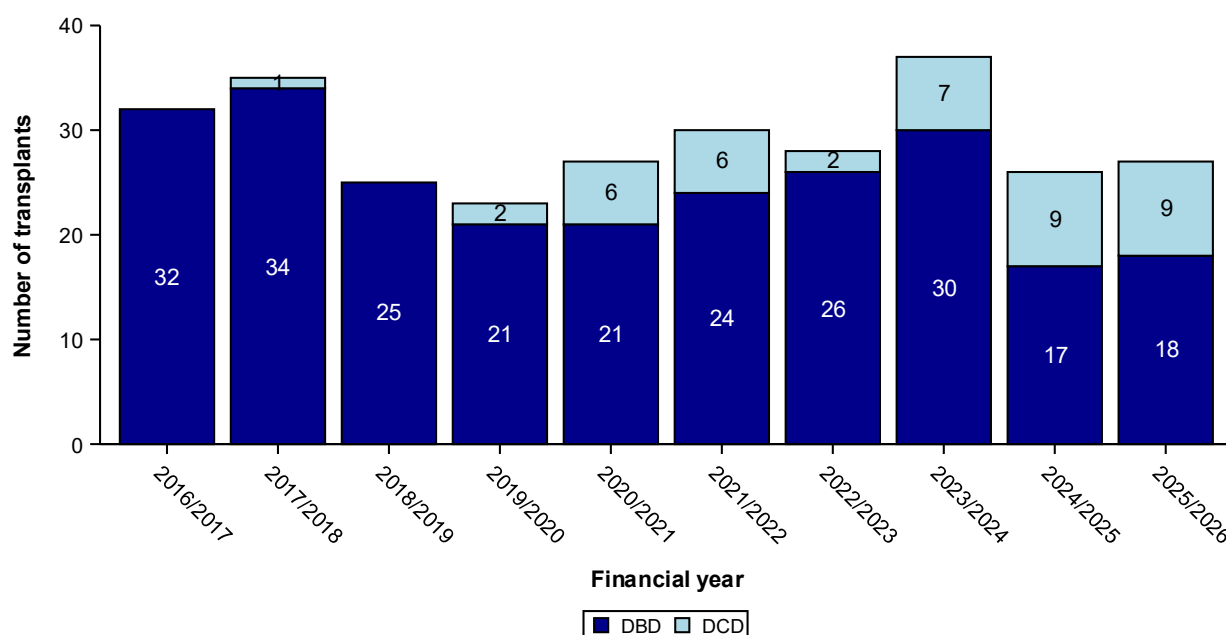


Figure 11.2 Number of paediatric heart transplants in the UK, by financial year, centre and donor type, 1 April 2016 to 31 March 2026

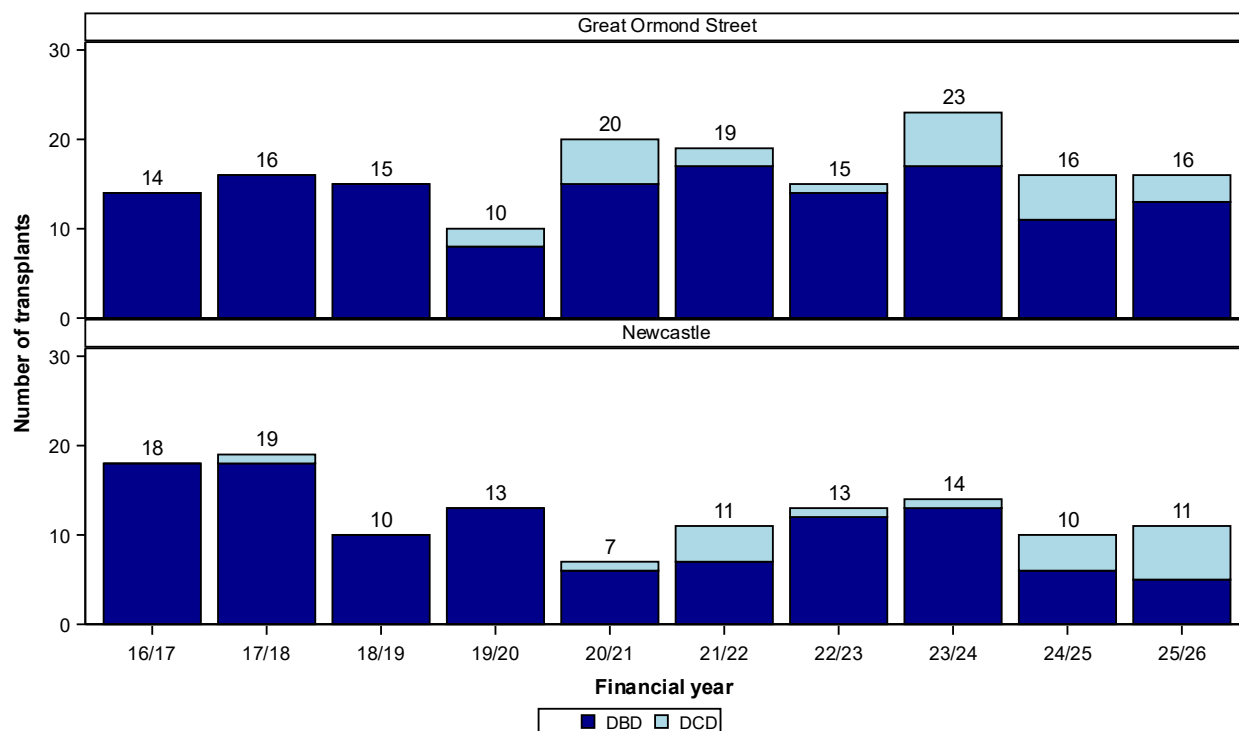
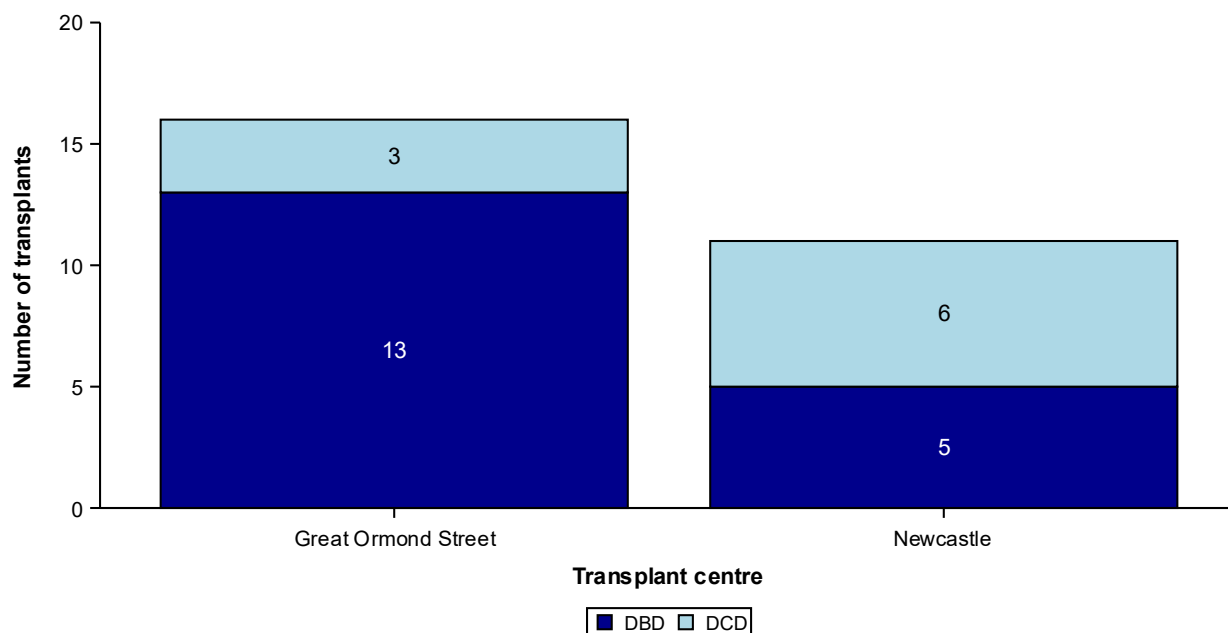


Figure 11.3 Number of paediatric heart transplants in the UK, by centre and donor type, 1 April 2025 to 31 March 2026



Figures 11.4 and 11.5 show the number of paediatric heart transplants performed in the last 10 years, by urgency status of recipient, nationally and by centre, respectively. The majority of transplants over the last 10 years were urgent (68%), but in recent years the number of super-urgent transplants has grown. Last year's activity is presented by centre and urgency status in **Figure 11.6**, showing that half of Great Ormond Street Hospital's transplants were super-urgent.

Figure 11.4 Number of paediatric heart transplants in the UK, by financial year and urgency status, 1 April 2016 to 31 March 2026

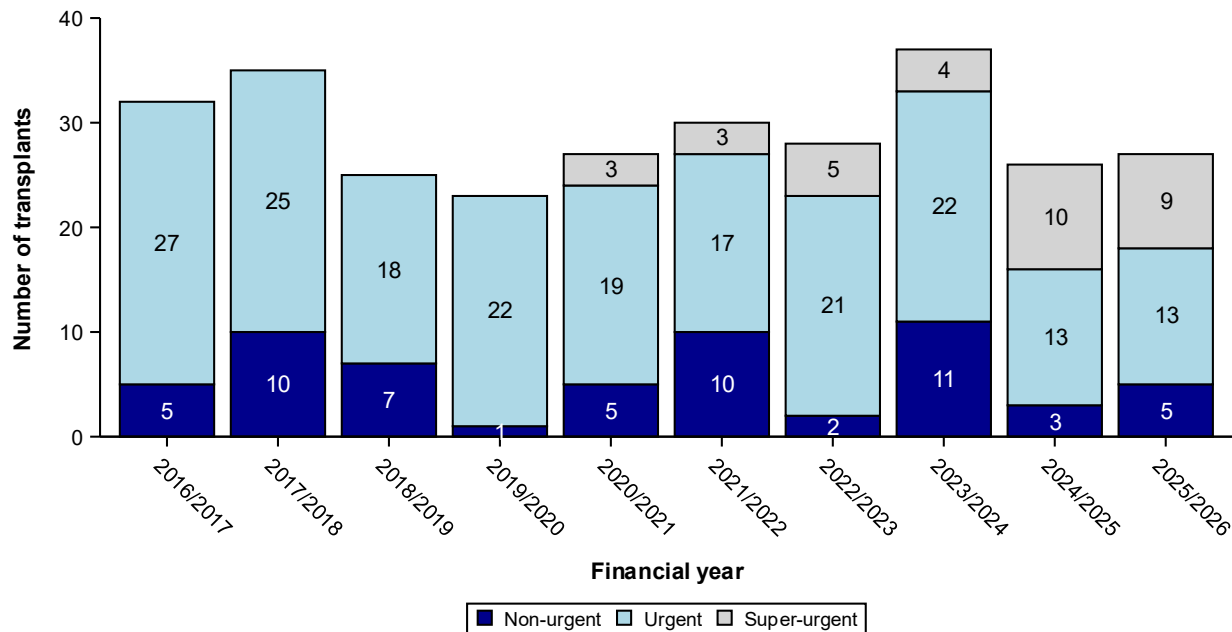


Figure 11.5 Number of paediatric heart transplants in the UK, by financial year, centre and urgency status, 1 April 2016 to 31 March 2026

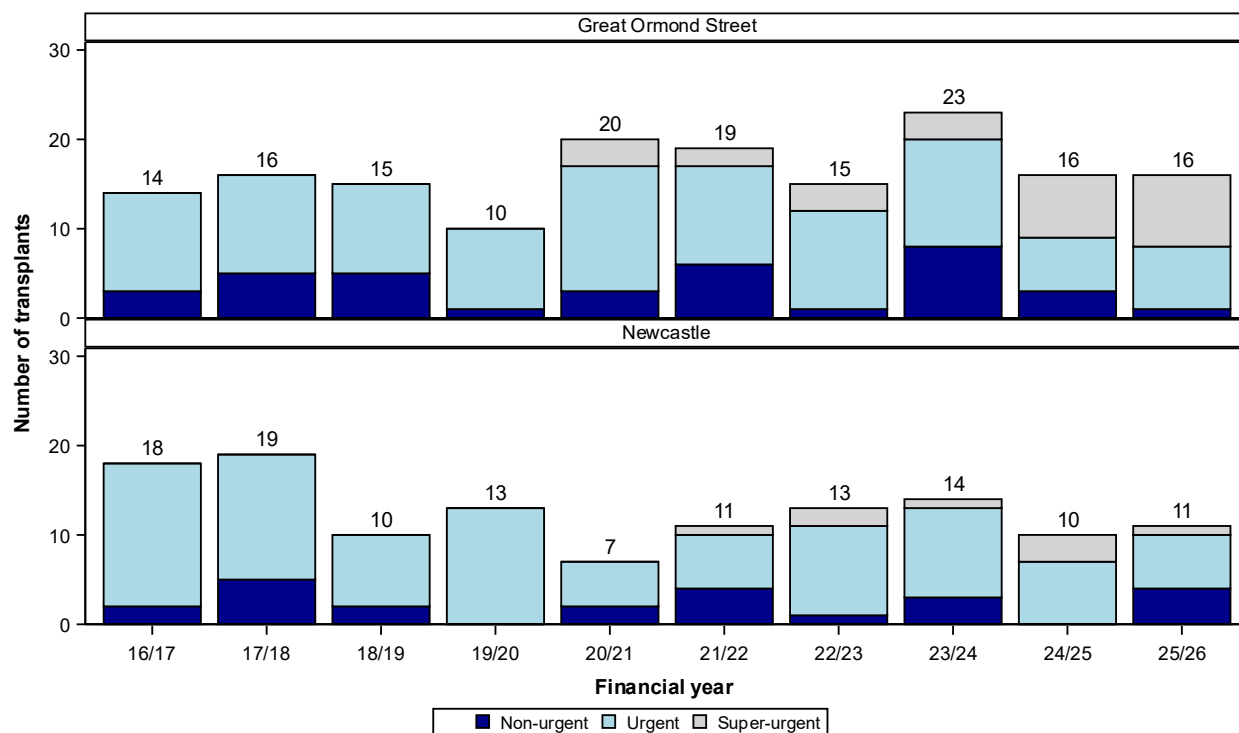
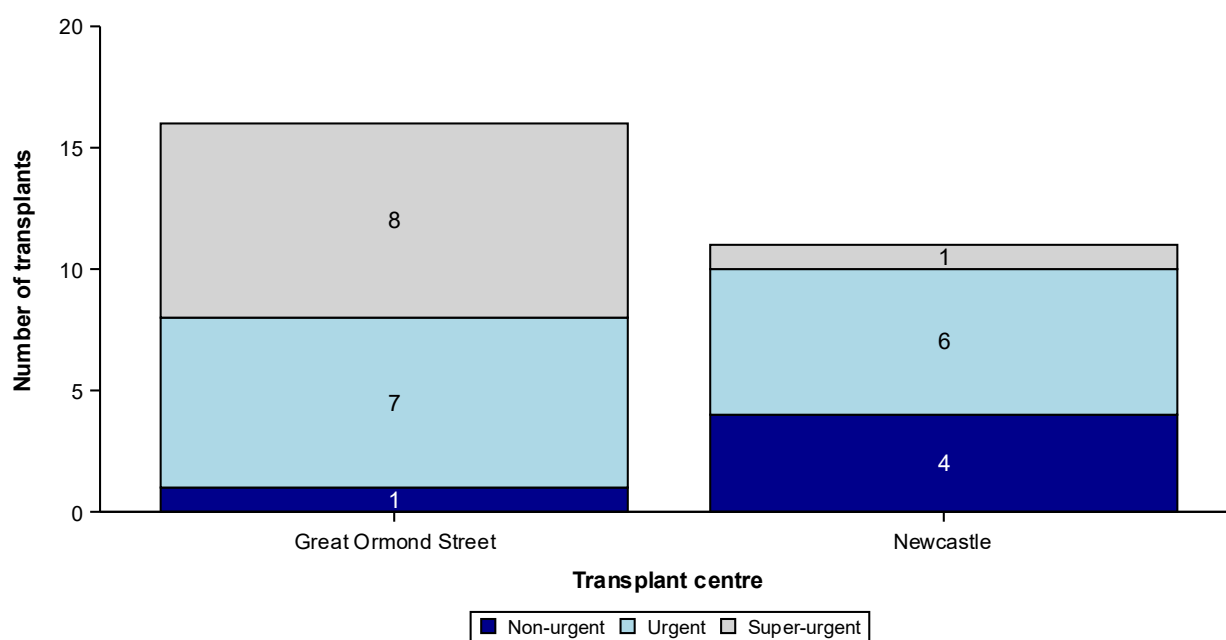


Figure 11.6 Number of paediatric heart transplants in the UK, by centre and urgency status, 1 April 2025 to 31 March 2026



11.2 Demographic characteristics of transplants, 1 April 2025 – 31 March 2026

The demographic characteristics of the 27 paediatric heart transplant recipients and donors in the latest year are shown by centre and overall in **Table 11.1**. Nationally, 44% of heart recipients were male and the [median](#) age was 11 years, while the median donor age was 13 years. For some characteristics, due to rounding, percentages may not add up to 100.

Table 11.1 Demographic characteristics of UK paediatric heart transplants performed between 1 April 2025 and 31 March 2026, by centre				
		Great Ormond Street N (%)	Newcastle N (%)	TOTAL N (%)
Number of transplants		16 (100)	11 (100)	27 (100)
Urgency status at transplant	Non-urgent	1 (6)	4 (36)	5 (19)
	Urgent	7 (44)	6 (55)	13 (48)
	Super-urgent	8 (50)	1 (9)	9 (33)
Recipient sex	Male	8 (50)	4 (36)	12 (44)
	Female	8 (50)	7 (64)	15 (56)
Recipient ethnicity	White	6 (38)	6 (55)	12 (44)
	Asian	5 (31)	3 (27)	8 (30)
	Black	4 (25)	2 (18)	6 (22)
	Other	1 (6)	0 (0)	1 (4)
Recipient age (years)	Median (IQR)	12 (6, 14)	7 (4, 14)	11 (5, 14)
	Missing	0	0	0
Recipient weight (kg)	Median (IQR)	40 (16, 59)	23 (19, 49)	32 (17, 56)
	Missing	0	0	0
Recipient primary disease	Cardiomyopathy	13 (81)	7 (64)	20 (74)
	Congenital heart disease	3 (19)	4 (36)	7 (26)
NYHA class	II	1 (6)	1 (9)	2 (7)
	III	4 (25)	6 (55)	10 (37)
	IV	8 (50)	4 (36)	12 (44)
	Missing	3 (19)	0 (0)	3 (11)
Recipient in hospital	No	1 (6)	3 (27)	4 (15)
	Yes	12 (75)	8 (73)	20 (74)
	Missing	3 (19)	0 (0)	3 (11)
In hospital, recipient on ventilator	No	7 (58)	7 (88)	14 (70)
	Yes	5 (42)	1 (13)	6 (30)
In hospital, recipient VAD	None	7 (58)	2 (25)	9 (45)
	Left	4 (33)	4 (50)	8 (40)
	Both	0 (0)	2 (25)	2 (10)
	Missing	1 (8)	0 (0)	1 (5)
In hospital, recipient TAH	No	12 (100)	8 (100)	20 (100)

Table 11.1 Demographic characteristics of UK paediatric heart transplants performed between 1 April 2025 and 31 March 2026, by centre

		Great Ormond Street N (%)	Newcastle N (%)	TOTAL N (%)
In hospital, recipient ECMO	No	5 (42)	7 (88)	12 (60)
	Yes	7 (58)	1 (13)	8 (40)
In hospital, recipient on inotropes	No	4 (33)	6 (75)	10 (50)
	Yes	8 (67)	2 (25)	10 (50)
In hospital, recipient IABP	No	12 (100)	8 (100)	20 (100)
Recipient CMV status	Negative	7 (44)	5 (45)	12 (44)
	Positive	9 (56)	6 (55)	15 (56)
Recipient HCV status	Negative	12 (75)	11 (100)	23 (85)
	Missing	4 (25)	0 (0)	4 (15)
Recipient HBV status	Negative	12 (75)	11 (100)	23 (85)
	Missing	4 (25)	0 (0)	4 (15)
Recipient HIV status	Negative	12 (75)	11 (100)	23 (85)
	Missing	4 (25)	0 (0)	4 (15)
Recipient serum creatinine (umol/l)	Median (IQR)	50 (28, 62)	41 (24, 53)	43 (27, 60)
	Missing	3	0	3
Donor sex	Male	7 (44)	6 (55)	13 (48)
	Female	8 (50)	5 (45)	13 (48)
	Missing	1 (6)	0 (0)	1 (4)
Donor ethnicity	White	11 (69)	6 (55)	17 (63)
	Asian	1 (6)	1 (9)	2 (7)
	Missing	4 (25)	4 (36)	8 (30)
Donor age (years)	Median (IQR)	22 (13, 36)	11 (3, 13)	13 (8, 26)
	Missing	0	0	0
Donor BMI (kg/m2)	Median (IQR)	20 (19, 24)	18 (17, 21)	20 (17, 23)
	Missing	0	0	0
Donor cause of death	Intracranial/CVA	10 (63)	7 (64)	17 (63)
	Others	6 (38)	4 (36)	10 (37)
Donor hypotension	No	6 (38)	5 (45)	11 (41)
	Yes	6 (38)	2 (18)	8 (30)
	Missing	4 (25)	4 (36)	8 (30)
Donor past diabetes	No	12 (75)	11 (100)	23 (85)
	Missing	4 (25)	0 (0)	4 (15)
Donor past cardio disease	No	12 (75)	7 (64)	19 (70)
	Missing	4 (25)	4 (36)	8 (30)

Table 11.1 Demographic characteristics of UK paediatric heart transplants performed between 1 April 2025 and 31 March 2026, by centre

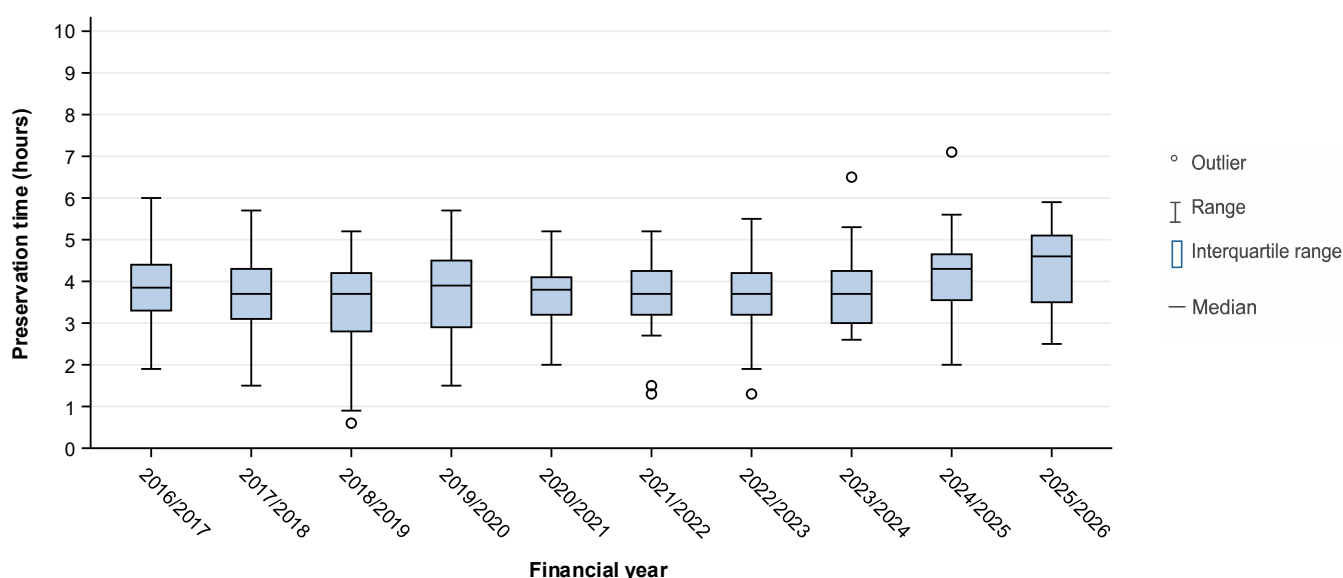
		Great Ormond Street N (%)	Newcastle N (%)	TOTAL N (%)
Donor past hypertension	No	9 (56)	11 (100)	20 (74)
	Yes	3 (19)	0 (0)	3 (11)
	Missing	4 (25)	0 (0)	4 (15)
Donor past tumour	No	12 (75)	11 (100)	23 (85)
	Missing	4 (25)	0 (0)	4 (15)
Donor past smoker	No	7 (44)	11 (100)	18 (67)
	Yes	5 (31)	0 (0)	5 (19)
	Missing	4 (25)	0 (0)	4 (15)
Total preservation time (hours) ¹	Median (IQR)	5.0 (3.9, 5.5)	5.0 (4.6, 5.4)	5.0 (4.5, 5.4)
	Missing	5	0	5

¹ Time from cross clamp in the donor to reperfusion in the recipient, regardless of donor type

11.3 Total preservation time, 1 April 2016 – 31 March 2026

Figure 11.7 shows [boxplots](#) of total preservation time for [DBD](#) donor hearts transplanted into paediatric recipients over the last 10 years. The total preservation time is the difference between donor cross-clamp and recipient reperfusion and can be considered the out of body time. Total preservation time was reported for 227 out of 248 paediatric DBD heart transplants. Of those 227, 3 (1%) donor hearts underwent machine perfusion. The national [median](#) total preservation time increased from 3.9 at the beginning of the decade, to 4.6 hours in 2025/2026. **Figure 11.8** and **Figure 11.9** show [boxplots](#) of total preservation time by centre in the latest financial year and over the last 10 years, respectively.

Figure 11.7 Boxplots of total preservation time for DBD donor hearts transplanted into paediatric recipients, by financial year, 1 April 2016 to 31 March 2026



Note: No adjustment has been made for the use of organ machine perfusion which was reported in 3 transplants in 2024/2025

Figure 11.8 Boxplots of total preservation time for DBD donor hearts transplanted into paediatric recipients, by transplant centre, 1 April 2025 to 31 March 2026

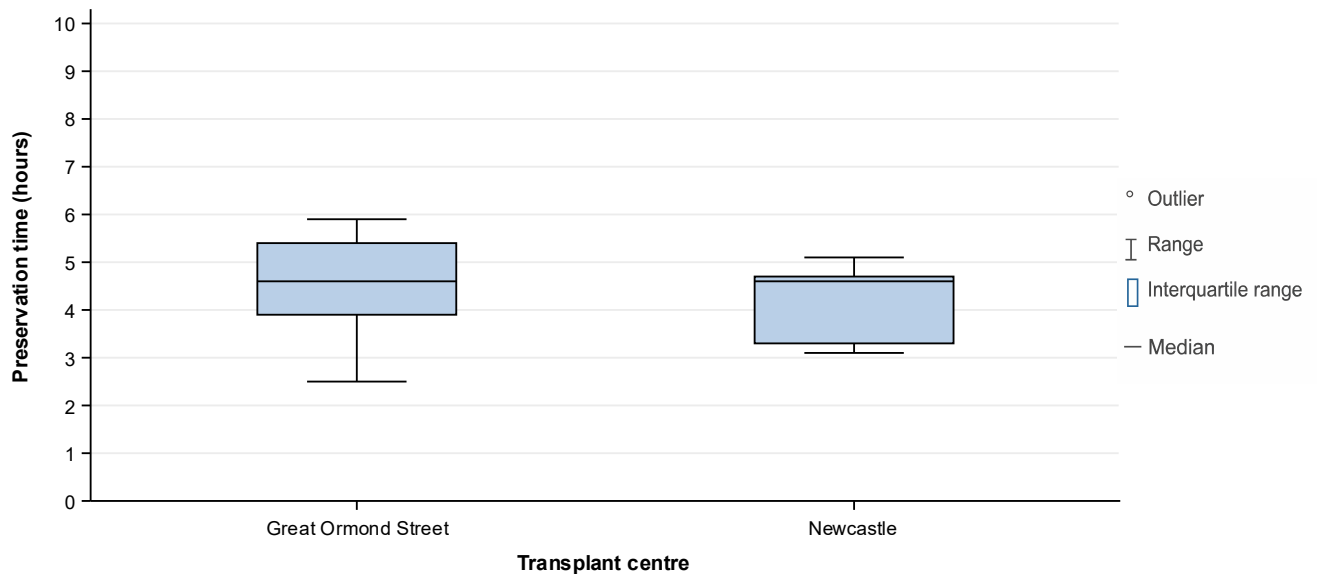
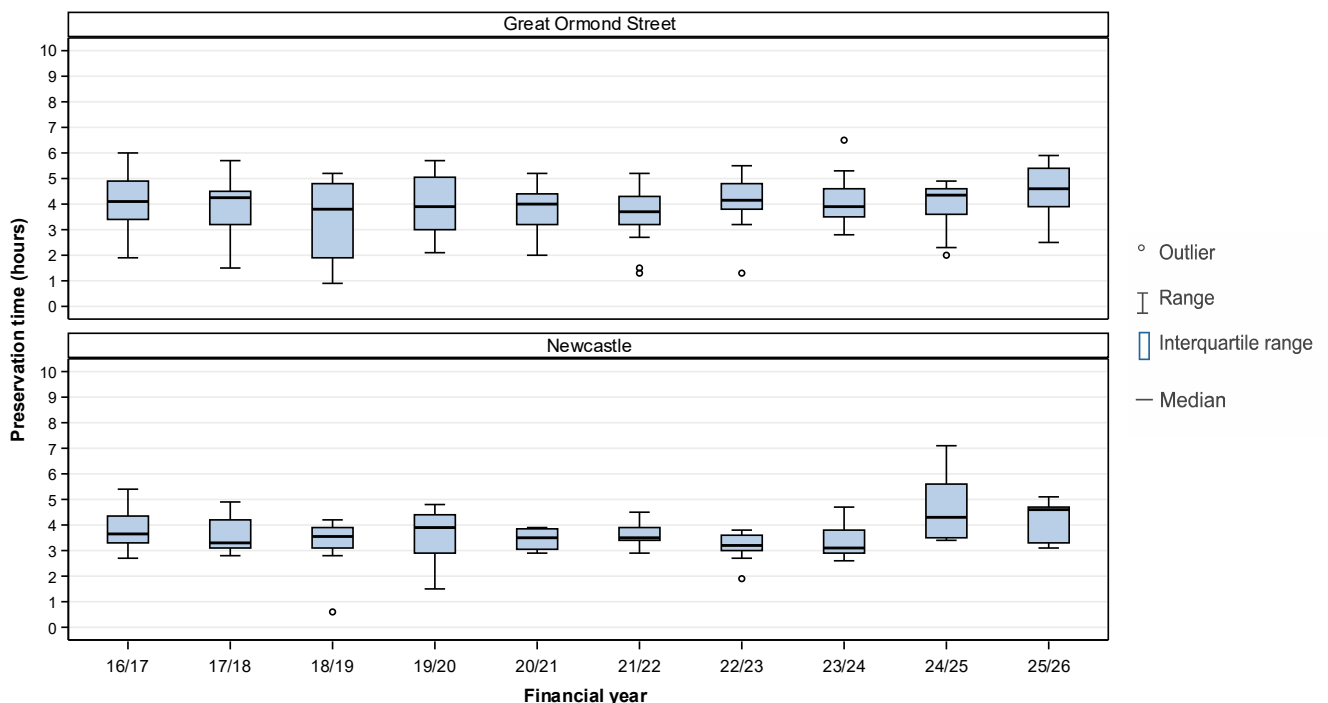


Figure 11.9 Boxplots of total preservation time for DBD donor hearts transplanted into paediatric recipients, by transplant centre and financial year, 1 April 2016 to 31 March 2026



Note: No adjustment has been made for the use of organ machine perfusion which was reported in 3 transplants in 2024/2025

PAEDIATRIC HEART TRANSPLANTATION

Post-Transplant Survival



12. Post-Transplant Survival

The survival analyses presented in this section exclude [multi-organ transplants](#) and include first time transplants only. **Section 12.1** includes [DBD](#) and [DCD](#) heart transplants where 90-day and 1-year [survival rates](#) are based on transplants performed in the period 1 April 2021 to 31 March 2025 and 5-year [survival rates](#) are based on transplants performed in the 1 April 2017 to 31 March 2021. **Section 12.2** presents survival following [DCD](#) heart transplant separately for paediatric recipients of DCD hearts.

12.1 Survival post heart transplant

The 90-day post-transplant [unadjusted](#) patient survival rates for each centre and nationally are shown in **Table 12.1** for the 119 first paediatric heart only transplants in the period 1 April 2021 to 31 March 2025. There was no statistically significant difference in unadjusted survival rates between Great Ormond Street Hospital and Newcastle (log-rank test, $p=0.15$). The national rate of survival was 95.8% at 90 days.

Table 12.1 90 day patient survival after first paediatric heart transplant, by centre, 1 April 2021 to 31 March 2025				
Centre	Number of transplants	Number of deaths	% 90 day survival (95% CI) (unadjusted)	
Great Ormond Street	73	1	98.6	(90.7 - 99.8)
Newcastle	46	4	91.3	(78.5 - 96.6)
UK	119	5	95.8	(90.2 - 98.2)

The 1 year post-transplant [unadjusted survival rates](#) are shown in **Table 12.2**. There was no statistically significant difference in unadjusted survival rates between Great Ormond Street Hospital and Newcastle (log-rank test, $p=0.56$) and the national rate of survival was 94.0%.

Table 12.2 1 year patient survival after first paediatric heart transplant, by centre, 1 April 2021 to 31 March 2025				
Centre	Number of transplants	Number of deaths	% 1 year survival (95% CI) (unadjusted)	
Great Ormond Street	73	3	95.8	(87.5 - 98.6)
Newcastle	46	4	91.3	(78.5 - 96.6)
UK	119	7	94.0	(87.9 - 97.1)

The 5 year [survival rates](#) were estimated from the 105 first paediatric heart only transplants performed in the period 1 April 2017 to 31 March 2021. The [unadjusted](#) patient [survival rates](#) are shown in **Table 12.3**. There was no statistically significant difference in unadjusted survival rates between Great Ormond Street Hospital and Newcastle (log-rank test, $p=0.13$) and the national rate of survival was 85.6%.

Table 12.3 5 year patient survival after first paediatric heart transplant, by centre, 1 April 2017 to 31 March 2021				
Centre	Number of transplants	Number of deaths	% 5 year survival (95% CI) (unadjusted)	
Great Ormond Street	59	5	91.0	(79.6 - 96.2)
Newcastle	46	10	78.3	(63.4 - 87.7)
UK	105	15	85.6	(77.2 – 91.0)

12.2 Survival post DCD heart transplant

The 90-day and 1 year post-transplant [unadjusted](#) patient [survival rates](#) following paediatric DCD heart transplant are shown in **Table 12.4** and **Table 12.5**, by centre, for the 31 first time transplants in the period 1 April 2017 to 31 March 2025. There was no statistically significant difference in survival rates between the two centres (log-rank $p=0.24$) and the 90 day and 1 year rates were equivalent due to no deaths between these time points within this cohort. However, note that this analysis is based on a small number of patients.

Table 12.4 90 day patient survival rates after first DCD paediatric heart only transplants, by centre, 1 April 2017 and 31 March 2025

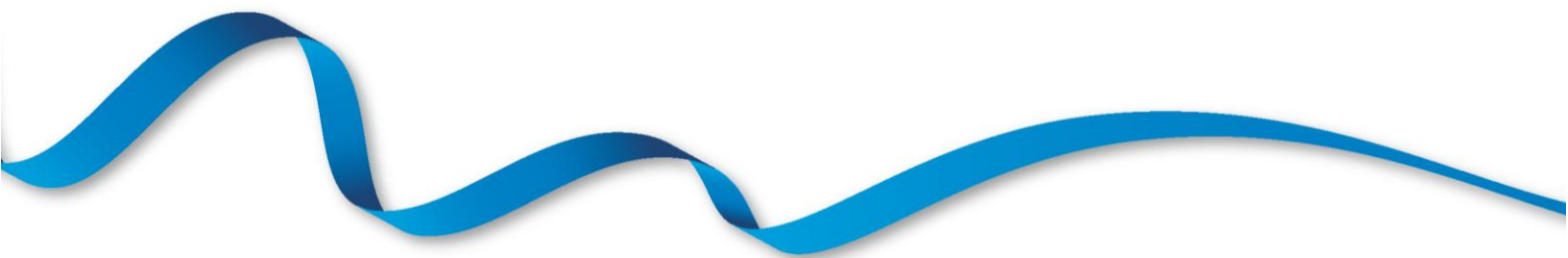
Centre	Number of patients	Number of deaths	% 90 day survival (95% CI) (unadjusted)	
Great Ormond Street Hospital	20	1	95.0	69.5 - 99.3
Newcastle	11	2	81.8	44.7 - 95.1
UK	31	3	90.3	72.9 - 96.8

Table 12.5 1 year patient survival rates after first DCD paediatric heart only transplants, by centre, 1 April 2017 and 31 March 2025

Centre	Number of patients	Number of deaths	% 1 year survival (95% CI) (unadjusted)	
Great Ormond Street Hospital	20	1	95.0	69.5 - 99.3
Newcastle	11	2	81.8	44.7 - 95.1
UK	31	3	90.3	72.9 - 96.8

PAEDIATRIC HEART TRANSPLANTATION

Form Return Rates



13. Paediatric heart form return rates, 1 January – 31 December 2025

Form return rates are reported in **Table 13.1** for the cardiothoracic transplant record and the 3 month and 1 year follow up form, along with lifetime follow up (2 years or more). These include all paediatric heart transplants between 1 January and 31 December 2025 for the transplant record, and all follow up forms issued in this time period. There were a small number of outstanding follow-up forms, along with some outstanding transplant record forms from Great Ormond Street Hospital.

Table 13.1 Form return rates for paediatric heart transplants, 1 January 2025 to 31 December 2025

Centre	Transplant record		3 month follow-up		1 year follow-up		Lifetime follow-up	
	No. requested	% returned	No. requested	% returned	No. requested	% returned	No. requested	% returned
Great Ormond Street Hospital	15	67	16	100	17	100	115	98
Newcastle, Freeman Hospital	11	100	13	100	12	100	207	96
Overall	26	81	29	100	29	100	322	97

APPENDIX



A1: Number of patients analysed

The cohort of patients in this report varies by section/analysis. Tables **A1.1** and **A1.2** below summarise the number of adult and paediatric (respectively) transplants in each cohort and the section this applies to. For the survival from listing analysis, see the Methods section in [A2](#) below.

Table A1.1 Adult transplants analysed			
Time period	Report Section	Exclusion criteria	No. heart transplants
1 April 2016 – 31 March 2026	• Introduction	None	1705
1 April 2016 – 31 March 2026	• Transplants	• Multi-organ transplants • Heart-lung transplants	1655
1 April 2021 – 31 March 2025	Post-transplant survival – • 90-day • 1-year survival	• Multi-organ transplants • DCD heart transplants excluded from risk-adjusted analysis • Heart-lung transplants • Second (or more) transplants • Group 2 transplants	695 (501 DBD)
1 April 2017 – 31 March 2021	Post-transplant survival – • 5-year survival	• Multi-organ transplants • DCD heart transplants excluded from risk-adjusted analysis • Heart-lung transplants • Second (or more) transplants • Group 2 transplants	592 (500 DBD)

Table A1.2 Paediatric transplants analysed			
Time period	Report Section	Exclusion criteria	No. heart transplants
1 April 2016 – 31 March 2026	• Introduction	None	294
1 April 2016 – 31 March 2026	• Transplants	• Multi-organ transplants • Heart-lung transplants	290
1 April 2021 – 31 March 2025	Post-transplant survival – • 90-day • 1-year survival	• Multi-organ transplants • Heart-lung transplants • Second (or more) transplants • Group 2 transplants	119
1 April 2017 – 31 March 2021	Post-transplant survival – • 5-year survival	• Multi-organ transplants • Heart-lung transplants • Second (or more) transplants • Group 2 transplants	105

Geographical variation analysis

Registration rates

All NHS group 1 patients who were registered onto the heart transplant list with an active status between 1 April 2016 and 31 March 2026 were extracted from the UK Transplant Registry on 16 July 2026 (numerator). Patients registered for a heart-lung block were excluded. 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-2022 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 heart transplants on NHS group 1 recipients between 1 April 2016 and 31 March 2026 (numerator), divided by the mid-2022 population estimates from the ONS (denominator). Patients who received a heart-lung block transplant were excluded. 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 heart transplant in the time period, only the first transplant was considered.

A2: Methods

Offer decline rates

The offer decline rate analysis was limited to heart offers from [DBD](#) donors who died at a UK hospital and the heart was eventually accepted and transplanted. Any offers from DCD donors were excluded. The decline rate is defined as the number of offers declined divided by the number of offers made to that centre. [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 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 an offer decline rate that is higher than the national rate, while centres positioned below the lower limits indicate an offer decline

Unadjusted post-transplant survival rates

[Kaplan-Meier](#) methods were used to estimate the [unadjusted](#) patient [survival rates](#). Patients can be included in this method of analysis irrespective of the length of follow-up recorded. If a patient is alive at the end of the follow-up then information about the survival of the patient is censored.

Risk-adjusted post-transplant 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 patients as that seen nationally. The risk-adjusted rate therefore presents estimates in which differences in patient 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 patient 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 patient based on their individual risk factor values. The sum of these probabilities for all patients at a centre gives the number, E, of patients or grafts expected to survive at least 1 year or 5 years after transplant at that centre. The number of patients 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 developed in consultation with clinicians and were based on statistical significance as well as previous studies of factors affecting the [survival rates](#) of interest. The factors included in the models are shown in [A3](#).

Missing values for [risk factors](#) were imputed using simple imputation of the median or most common group for the adult heart model (where missing values represented <10% of the cohort). Missing preservation time (5% of cohort) was imputed with a centre and year specific median

Funnel plots

The funnel plot is a graphical method to show how consistent the [survival rates](#) of the different transplant centres are compared to the national rate. The graph shows for each centre, 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.

Systematic component of variation

For a given individual who is a resident in a given NHS region, 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.

Survival from listing

Data were obtained for all patients ≥ 16 years registered for the first time for a heart transplant between 1 April 2017 to 31 March 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. ischaemia time. Survival time was censored at the last known follow up date post-transplant when no death date was recorded, or on 10 June 2026 if the patient was on the transplant list at time of analysis. For patients who were removed from the transplant list without receiving a transplant, and where there was no recorded death date, if the reason for removal was due to deteriorating condition, then this was classed as an event, while all other cases were censored.

Exclusions from the analysis:

- patient registered for a heart-lung block or other [multi-organ transplant](#)
- patients who were not listed prior to transplant
- patients first registered on another transplant list (e.g. kidney list)
- patients registered outside the UK or not entitled to NHS treatment
- adult patients registered at GOSH

Patients registered for a heart transplant who were non-urgent and then urgently listed on the same day (or vice-versa) were recorded as urgent at registration. Patients who received

a [VAD](#) and were registered on the transplant list on the same day were assumed to have received the [VAD](#) prior to registration.

In [risk-adjusted](#) survival analysis, factors recorded at time of transplant listing were adjusted for. These are detailed in **Table A2.1** and were included in the modelling whether or not statistically significant. Missing data for these risk factors have been imputed using the median or modal value to ensure that cases with missing data are not excluded from the risk-adjusted analysis.

Table A2.1 Factors used in risk-adjusted model for patient survival from listing	
Heart	Age, blood group, urgency status (non-urgent vs urgent/super-urgent), Mechanical Circulatory Support (MCS) at registration (none/long-term/short-term), diabetes, height, bilirubin (logarithm)

[Survival rates](#) at 1 and 5 years post registration were calculated from the risk adjusted survival rate (RASR), obtained as $1 - \{\text{observed number of deaths in follow up period} / \text{expected number}\} \times \text{national mortality rate}$. The expected survival rates were estimated from fitting a [Cox model](#) to the national data, excluding transplant centre, evaluated at each patient's observed survival time. Interval estimates for 1 and 5 year rates, and the significance of differences between them across centres, were found using Poisson regression models for the logarithm of the observed number of deaths, with centre as a random effect. If the model failed to converge, centre was instead included as a fixed effect.

A3: Risk models

Table A3.1 Risk factors and categories used in the adult heart risk adjusted 90-day, 1-year and 5-year post-transplant survival models	
Donor age	(modelled as continuous variable)
Recipient age 60 or over	Yes No
Recipient CMV status	Positive Negative
Recipient bilirubin at registration	(continuous, logged)
VAD at transplant	Short-term (including ECMO) Long-term (including total artificial hearts) None
Recipient IABP at transplant	Yes No
Primary disease group	Cardiomyopathy Coronary heart disease Congenital heart disease Other
Recipient eGFR group at transplant	44 ml/min or below 45-59 ml/min 60-89 ml/min 90 or above
Recipient diabetes at registration	Yes No
Recipient hypertension at registration	Yes No
Recipient blood group	O A B AB
Total preservation time (hours)	(modelled as continuous variable)
OCS used on heart	Yes No
Interaction between ischaemia time and OCS	

A4: Glossary of terms

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 organ becomes available, the patient is included among those who are matched against the donor to determine whether or not the organ 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 organs that become available.

Boxplots

The length of the box in this plot represents the [inter-quartile range](#). The line inside the box indicates the [median](#) value. The vertical lines issuing from the box are called the whiskers and indicate the range of values that are outside of the inter-quartile range but are close enough not to be considered outliers. The circles that are outside the box indicate the outliers (any points that are a distance of more than $1.5 \times \text{IQR}$ from the box).

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.

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 patient death, across different groups of patients.

Donor after brain death (DBD)

Donation after brainstem death means donation which takes place following the diagnosis of death using neurological criteria.

Donor after circulatory death (DCD)

Donation after circulatory death means donation which takes place following the diagnosis of death using circulatory criteria.

Funnel plot

A graphical method that shows how consistent the rates, such as [survival rates](#) or decline rates, of the different transplant units are compared to the national rate. For survival rates, 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.

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 patients with incomplete follow-up information to be included in estimating [survival rates](#). For example, when estimating 1 year [patient survival rates](#), a patient may be followed up for only 9 months before they relocate. If we calculated a crude survival estimate using the number of patients who survived for at least a year, this patient would have to be excluded as it is not known whether or not the patient was still alive at 1 year after transplant. The Kaplan-Meier method allows information about such patients 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. The Kaplan-Meier method can be used for any time to event analysis, including time to transplant. If not enough events have occurred or if there are not enough patients in the cohort, an estimate of the [median](#) may not be possible.

Long-term device

Long-term devices are implantable and intended to support the patient for years. Patients can be discharged from hospital with a long-term device.

Mechanical Circulatory Support

An umbrella term for devices used to assist the heart, including long-term devices such as implantable [VADs](#) for left, right and biventricular support and total artificial hearts, and short-term devices such as CentriMag, percutaneous [VADs](#) and extracorporeal membrane oxygenation (ECMO).

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 patient receives more than one organ. For example, a patient may undergo a transplant of a heart and kidney.

Patient survival rate

The percentage of patients 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 patients who are still alive 5 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.

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 patients. A risk-adjusted [survival rate](#) for a centre is the expected survival rate for that centre given the [case mix](#) of their patients. 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 patient, transplant or donor that influence the length of time that a graft is likely to function or a patient 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.

VAD

Ventricular Assist Device. A mechanical pump used to increase the amount of blood that flows through the body, relieving the symptoms of advanced heart failure.

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