

NHS BLOOD AND TRANSPLANT

CARDIOTHORACIC ADVISORY GROUP – HEART

DCD HEART ACTIVITY

SUMMARY

INTRODUCTION

- 1 DCD heart retrieval and transplantation began in February 2015, initially with two centres; Harefield and Papworth. Since then, other centres have joined the programme and on 7 September 2020, a national DCD heart retrieval and allocation service was introduced. This paper presents activity from 1 February 2015 to 30 June 2025 and patient outcomes and offer data from 7 September 2020 to 30 June 2025.

KEY RESULTS

- 2 **Activity**
Five DCD Heart Passport forms were outstanding for the analysis period. Between 1 February 2015 and 30 June 2025, there were 654 DCD heart retrieval attendances, proceeding to 432 heart retrievals and 383 transplants. Since the start of the national service, 258 transplants have been performed, the conversion from retrieval to transplanted has increased from 84% to 91%, and 74% of transplants were retrieved and transplanted by a different team compared with 6% previously. Quarterly activity has increased over time, with the highest number of retrievals and transplants taking place in the latest quarter; April – June 2025.
- 3 **Utilisation of other organs**
Since September 2020, among DCD heart donors, organ utilisation rates (proportion transplanted out of offered) for lungs, kidneys, livers and pancreases were higher than in the non-heart DCD population.
- 4 **Post-transplant survival and support**
Of the 258 DCD heart transplants since September 2020, there have been 29 deaths reported within 1 year post-transplant; 11 within 30 days and 18 between 30 days and one year. The 1-year survival rate was 86.6% which is equivalent to DBD heart survival (86.8%). The percentage of recipients requiring mechanical support post-transplant was 32%, significantly higher than the DBD rate of 24% across the same period. Note also that the proportion of super-urgent transplants has increased since the allocation sequence was changed in August 2024; from 16% to 30%.
- 5 **DCD heart offering**
Between 7 September 2020 and 30 June 2025, 816 hearts were offered from potential DCD heart donors across the 6 heart allocation zones. The national utilisation rate was 32%, however centre acceptance rates varied between 2-11% (proportion accepted and transplanted out of total offers). Common reasons for decline were no suitable recipients, donor past history and poor function.

ACTION

- 6 This report is for monitoring and assurance purposes, there is no specific action, but teams are reminded to return DCD Heart Passport forms in a timely manner.

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DCD HEART ACTIVITY

INTRODUCTION

- 1 The UK DCD heart programme began in February 2015 with an initial 15-month evaluation period involving two centres, Harefield and Papworth. After the initial evaluation period ended, other centres joined the programme including Manchester in December 2016, Newcastle in October 2018 and Glasgow in July 2019. Great Ormond Street Hospital transplanted their first DCD heart in February 2020.
- 2 On 7 September 2020, national retrieval of DCD hearts was introduced as part of the Joint Innovation Fund (JIF) UK-wide DCD heart pilot. Under the JIF pilot, three teams were initially responsible for retrieving DCD hearts (Harefield, Manchester and Papworth) but due to resource constraints, Manchester's involvement in the service became limited, and so a Hybrid Team of Harefield and Papworth was formed to maintain the service. In September 2022, the Hybrid Team was discontinued and Glasgow joined the retrieval service.
- 3 Prior to the JIF pilot, DCD hearts were locally allocated, but since 7 September 2020, they have been allocated nationally, initially following the non-urgent DBD heart sequence but since August 2024, to super-urgent patients first, followed by centre offers for urgent or non-urgent patients.
- 4 This report presents DCD heart retrieval and transplant activity between 1 February 2015 and 30 June 2025 and patient outcomes after DCD heart transplant. Data on DCD heart offering and utilisation of other organs from DCD heart donors between 7 September 2020 and 30 June 2025 is also presented.

DATA

- 5 The DCD Heart Passport (FRM6356) was introduced alongside national retrieval and offering in September 2020, replacing the previous DCD Heart Supplementary Form. The data presented in this paper are a combination of the information collected on these forms and other data held on the UK Transplant Registry (UKTR).
- 6 **Table 1** shows the number of forms outstanding for the period 7 September 2020 to 30 June 2025, as of 3 September 2025. There were 5 forms outstanding for the analysis period. A form is required to be completed whenever a team goes out to a donor with the intention of DCD heart retrieval. For transplanted DCD hearts, the form should be returned after 30 days of transplant in order to capture key details about the short-term outcome of the recipient.

Table 1 Outstanding DCD heart passports for the period 7 September 2020 – 30 June 2025, as of 3 September 2025

Financial year	Centre	Attended not retrieved	Retrieved not transplanted	Transplanted	Total forms outstanding
1 Apr 2024 - 31 Mar 2025	GOSH	0	0	2	2
1 Apr 2025 - 30 Jun 2025	Birmingham	0	0	1	1
1 Apr 2025 - 30 Jun 2025	Glasgow	0	0	1	1
1 Apr 2025 - 30 Jun 2025	Newcastle	0	0	1	1

RESULTS

Activity

- 7 Between 1 February 2015 and 30 June 2025, 654 DCD heart retrieval attendances were recorded, of which 432 proceeded to DCD heart retrieval and 222 did not. There were a total of 383 DCD hearts successfully transplanted, including one heart-lung transplant, one heart-kidney, one heart-liver transplant, and 36 paediatric transplants (21 by Great Ormond Street Hospital and 15 by Newcastle). This activity is broken down by centre and time period in **Table 2**. Since national retrieval and offering, the conversion from retrieval to transplanted has improved from 84% to 91%, and 74% of transplants are retrieved and transplanted by a different team compared with 6% prior to September 2020.

Table 2 DCD heart activity by period and centre, 1 February 2015 – 30 June 2025

Period	Centre	Attended	Retrieved	Transplanted (retrieved by own team)	Transplanted (retrieved by another team)
1 February 2015 – 6 September 2020	Glasgow	2	2	1	0
	Great Ormond Street	0	0	0	5
	Harefield	80	28	20	0
	Manchester	14	10	9	0
	Newcastle (paediatric)	0	0	0	2
	Newcastle (adult)	2	2	2	0
	Papworth	137	107	86	0
	Total	235	149	118	7
7 September 2020 – 31 March 2025	Birmingham	0	0	0	26
	Glasgow	48	37	10	20
	Great Ormond Street	0	0	0	16
	Harefield	77	52	22	25
	Hybrid – Harefield/Papworth	41	22	0	0
	Manchester	6	4	1	19
	Newcastle (paediatric)	0	0	0	10
	Newcastle (adult)	0	0	0	34
	Papworth	213	142	29	21
	Total	385	257	62	171
1 April 2025 - 30 June 2025	Birmingham	0	0	0	6
	Glasgow	10	10	3	1
	Great Ormond Street	0	0	0	0
	Harefield	9	6	1	2
	Manchester	0	0	0	3
	Newcastle (paediatric)	0	0	0	3
	Newcastle (adult)	0	0	0	4
	Papworth	15	10	1	1
	Total	34	26	5	20
1 February 2015 – 30 June 2025	Birmingham	0	0	0	32
	Glasgow	60	49	14	21
	Great Ormond Street	0	0	0	21
	Harefield	166	86	43	27
	Hybrid – Harefield/Papworth	41	22	0	0
	Manchester	20	14	10	22
	Newcastle (paediatric)	0	0	0	15
	Newcastle (adult)	2	2	2	38
	Papworth	365	259	116	22
TOTAL		654	432	185	198

Notes:

- Non-proceeding attendances are identified by return of the DCD Heart Supplementary form/DCD heart passport, or where information on the Retrieval Team Information form suggests that DCD heart retrieval was intended, or where notified
- Papworth performed one DCD heart-kidney transplant and one DCD heart-lung transplant. Additionally, Birmingham performed a DCD heart-liver transplant
- Excluded from the total attendances is a case where a donor was changed to DBD after retrieval
- 18 hearts from hybrid team retrievals were transplanted, these are counted in the "Transplanted (retrieved by another team)" numbers for Newcastle (3), Birmingham (2), Manchester (1) and Papworth (5) and "Transplanted (retrieved by own team)" for Harefield (7)
- One of Glasgow's retrievals was performed with members of the Papworth team during the JIF period

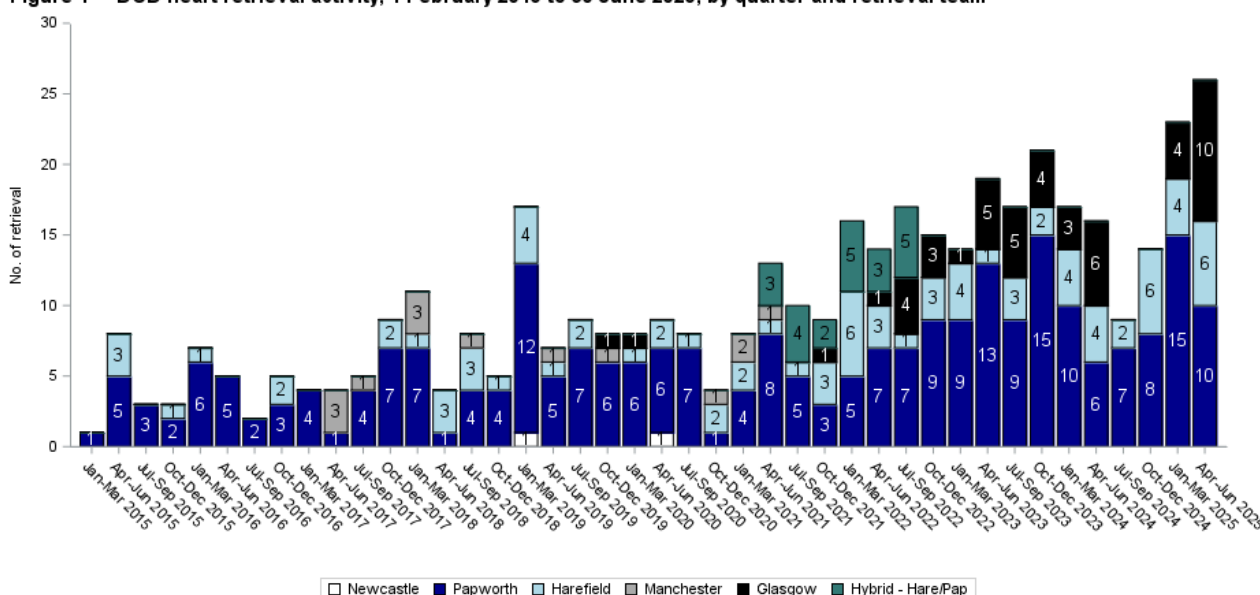
- 8 Since September 2020, 25 (9%) DCD hearts were retrieved but not transplanted (note for reference, the discard rate for DBD hearts is 1%¹). The reason for non-use for each is seen below in **Table 3**. This information was primarily taken from the DCD Heart Passport, but where this was missing or incomplete, the reason was taken from ODT Hub Operations records.

Table 3 Reasons for non-use of hearts retrieved from DCD donors, 7 September 2020 – 30 June 2025

Centre intending to transplant	Donation Date	Reason for non-use
Glasgow	July 2022	Liver malignancy
	August 2023	Declined due to delay putting on the OCS machine
	October 2023	Function
Harefield	October 2021	Low aortic pressure
	May 2022	Poor function on OCS
	April 2023	Decline in function, not happy with gases
	October 2023	Poor function
	October 2023	Worsening ABG, high lactate, high AOP
	October 2023	Worsening ???, lactate increasing
	February 2024	Poor function
Manchester	July 2022	Suspected aortic regurgitation, poor output - recipient centre declined
	October 2024	Deemed un-transplantable
Newcastle	May 2022	Increasing lactate, distended right ventricle
	January 2023	Poor function
	October 2023	Poor gases
Papworth	November 2020	Deemed un-transplantable
	December 2020	Deemed un-transplantable
	September 2021	Poor function
	October 2021	Coronary artery disease. Deemed un-transplantable.
	January 2022	Heart on OCS, CAD identified
	August 2023	Leakage from OCS reservoir, leading to volume loss
	May 2024	Poor function
	August 2024	Poor function on OCS
	June 2025	Anatomical anomaly

- 9 **Figure 1** shows the number of DCD heart retrievals by quarter and retrieval team. There has been a general increase over time, particularly since 2021. The highest number of retrievals were performed in the most recent quarter, April - June 2025 (26).

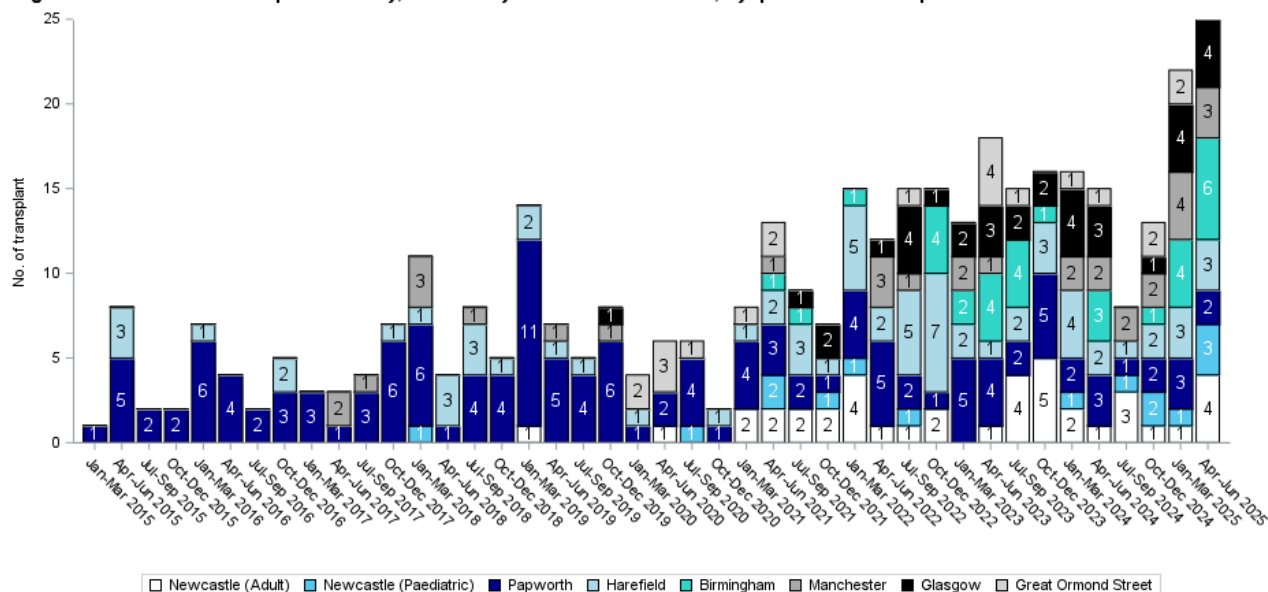
Figure 1 DCD heart retrieval activity, 1 February 2015 to 30 June 2025, by quarter and retrieval team



¹ Organ and Tissue Donation and Transplantation Activity Report 2024/2025, Table 4.3

- 10 **Figure 2** shows the number of DCD heart transplants by quarter and transplanting centre. The highest number of transplants were performed in the most recent quarter, April - June 2025 (25).

Figure 2 DCD heart transplant activity, 1 February 2015 to 30 June 2025, by quarter and transplant centre



- 11 **Table 4** shows the retrieval methods used for the 283 DCD hearts retrieved since September 2020, broken down by retrieval team; 84% were retrieved using DRP only, 16% with A-NRP and DRP and none using TA-NRP.

Table 4 Retrieval method for DCD heart donors during the period 7 September 2020 – 30 June 2025				
Retrieval team	Total retrieved	TA-NRP	A-NRP and DRP	DRP only
Glasgow	47	0	10	37
Harefield	58	0	9	49
Hybrid – Harefield/Papworth	22	0	4	18
Manchester	4	0	0	4
Papworth	152	0	21	131
Total	283	0	44	239

Utilisation of other organs

- 12 Of the 283 DCD heart donors since September 2020, 4 only donated their heart. Utilisation of other organs from these donors are displayed in **Table 5** and are broken down by whether or not A-NRP was used. For comparison, utilisation rates of lungs and abdominal organs from standard DCDs not undergoing NRP or DCD heart retrieval, and NRP donors not undergoing DCD heart retrieval, are also shown. Organ utilisation rates (the proportion transplanted out of offered) for lungs, kidneys, livers and pancreases were higher for DCD heart donors than in the non-heart DCD population; 26% vs 13% for lungs, 96% vs 94% for kidneys, 54% vs 37% for livers and 29% vs 17% for pancreases. Lower utilisation was observed in the subset of DCD heart donors where A-NRP was used, except for livers (61% transplanted).

Table 5 Abdominal and lung offer outcomes during the period 7 September 2020 – 30 June 2025

Outcome	Lungs¹	Kidney¹	Liver	Pancreas
<i>Overall DCD heart donors (number of donors = 283)</i>				
offered	204	280	270	262
accepted	113	278	234	185
retrieved	63	274	207	149
transplanted (% of offered)	54 (26%)	269 (96%)	147 (54%)	75 (29%)
<i>DCD heart donors without A-NRP (number of donors = 239)</i>				
offered	171	236	226	220
accepted	97	234	193	154
retrieved	57	232	169	125
transplanted (% of offered)	48 (28%)	229 (97%)	120 (53%)	65 (30%)
<i>DCD heart donors with A-NRP (number of donors = 44)</i>				
offered	33	44	44	42
accepted	16	44	41	31
retrieved	6	42	38	24
transplanted (% of offered)	6 (18%)	40 (91%)	27 (61%)	10 (24%)
<i>National standard DCD excluding DCD Heart donors² (number of donors = 590)</i>				
offered	282	580	530	482
accepted	111	576	390	277
retrieved	47	574	310	189
transplanted (% of offered)	36 (13%)	545 (94%)	198 (37%)	81 (17%)
<i>National A-NRP donors excluding DCD Heart donors³ (number of donors = 176)</i>				
offered	98	173	175	155
accepted	42	173	170	102
retrieved	13	171	152	69
transplanted (% of offered)	10 (10%)	165 (95%)	127 (73%)	34 (22%)

¹ at least one

² DCD donors between 7 September 2020 – 30 June 2025, aged 16-50 and excluding cases where A-NRP was performed

³ DCD donors between 7 September 2020 – 30 June 2025, aged 16-50 where A-NRP was performed

Post-transplant survival and support

- 13 The 30-day outcomes of the 258 DCD heart transplant recipients since 7 September 2020 are summarised in **Table 6**. There have been 11 deaths within 30 days.

Table 6 DCD heart patient outcomes at 30 days post-transplant, by centre, for transplants performed 7 September 2020 – 30 June 2025

Centre	Alive at 30 days	Died within 30 days	Unknown
Birmingham	29	3	0
Glasgow	33	1	0
Great Ormond Street	15	0	1
Harefield	48	2	0
Manchester	23	0	0
Newcastle (paediatric)	11	1	1
Newcastle (adult)	35	2	1
Papworth	49	2	1
Total	243	11	4
DBD¹	561	35	25

¹ Includes heart-only transplants performed in the UK where the donor weighed > 50 kg

- 14 **Figure 3** shows Kaplan-Meier patient survival to one year for DCD heart transplants since September 2020, excluding 4 transplants where survival was unknown at time of analysis. Survival for adult DBD heart-only transplants performed in the UK where the donor weighed > 50 kg is shown for comparison. The survival rates at one year are presented in **Table 7**. There was no difference in one year survival for DCD transplants compared with DBD transplants ($p=0.78$).

Figure 3 Patient survival post- DCD heart transplant with DBD comparison, 7 September 2020 – 30 June 2025

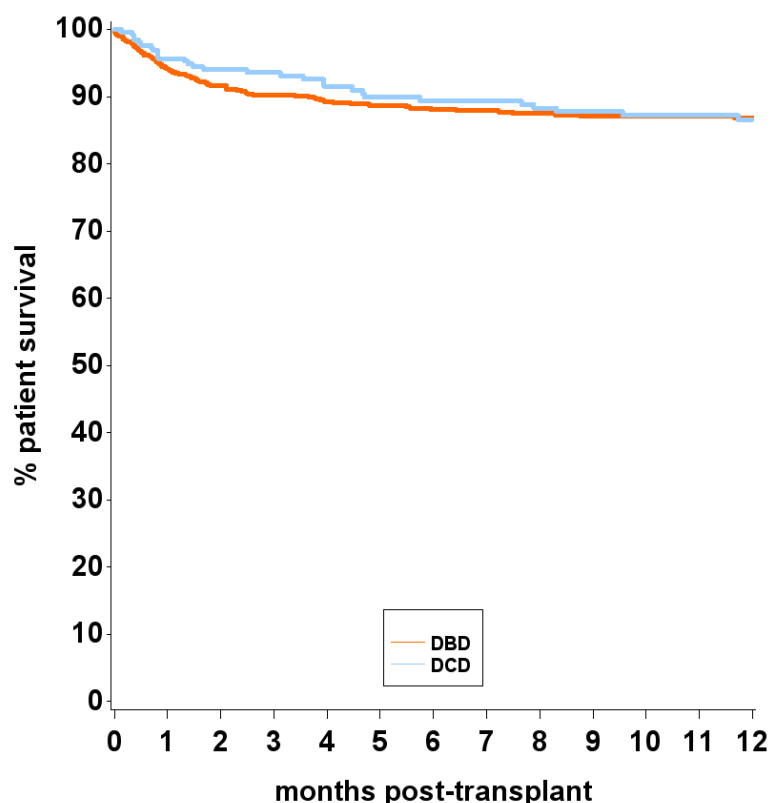


Table 7 1-year patient survival rates after DCD heart transplant compared with adult DBD heart transplant survival, 7 September 2020 – 30 June 2025

Donor type	Number of transplants	Number of deaths	1-year survival (95% CI)
DCD¹	254	29	86.6 (81.1 – 90.5)
DBD²	596	75	86.8 (83.8 – 89.4)

¹ Includes 27 paediatric transplants and 3 re-transplants, excludes 4 transplants with missing survival data

² Includes heart-only transplants performed in the UK where the donor weighed > 50 kg, excludes transplants with missing survival data

- 15 **Table 8** presents a breakdown of the urgency status of DCD heart recipients at the time of transplant since September 2020, split by centre and the date the allocation sequence was changed (post-19 August 2024 offers are made to super-urgent patients before centre offers). Overall, 60% of DCD heart transplants in this period were urgent or super-urgent, significantly lower than in DBD transplants (83%, $p < 0.0001$). The proportion of super-urgent transplants has increased since the allocation sequence change in August 2024; from 16% to 30%. Meanwhile, the proportion of non-urgent transplants has remained unchanged (from 40% to 41%).

Table 8 Urgency status of DCD heart recipients, by centre, 7 September 2020 – 30 June 2025, by centre and the date the allocation sequence was changed

Transplant centre	Non-urgent (%)	Urgent (%)	Super-urgent (%)	(% DBD* transplant urgent/super-urgent)
<i>Pre-19 August 2024 allocation sequence</i>				
Birmingham	10(48)	10(48)	1(5)	(88)
Glasgow	10(40)	10(40)	5(20)	(76)
Great Ormond Street	7(58)	2(17)	3(25)	(75)
Harefield	13(31)	21(50)	8(19)	(90)
Manchester	6(46)	6(46)	1(8)	(88)
Newcastle (paediatric)	4(67)	1(17)	1(17)	(71)
Newcastle (adult)	8(26)	19(61)	4(13)	(90)
Papworth	19(42)	17(38)	9(20)	(68)
Total	77(40)	86(44)	32(16)	(82)
<i>Post-19 August 2024 allocation sequence</i>				
Birmingham	4(36)	3(27)	4(36)	(100)
Glasgow	2(22)	5(56)	2(22)	(94)
Great Ormond Street	1(25)	1(25)	2(50)	(100)
Harefield	2(25)	1(13)	5(63)	(79)
Manchester	6(60)	0(0)	4(40)	(100)
Newcastle (paediatric)	2(29)	4(57)	1(14)	(100)
Newcastle (adult)	4(57)	2(29)	1(14)	(92)
Papworth	5(71)	2(29)	0(0)	(76)
Total	26(41)	18(29)	19(30)	(87)
Total	103(40)	104(40)	51(20)	(83)

* Includes heart-only transplants performed in the UK where the donor weighed > 50 kg

- 16 The need for post-transplant mechanical support within 30 days is shown in **Table 9** along with the devices used. Information on whether mechanical support was needed was received for 250 of the 258 DCD heart transplants. Of these, 79 (32%) required support. This is significantly higher than in DBD transplants (24%, $p = 0.0157$).

Table 9 Use of mechanical support within 30 days post-transplant, for DCD and DBD heart transplants performed 7 September 2020 – 30 June 2025

Mechanical support post-transplant ¹	DCD	DBD ²
Yes	79 (32%)	147 (24%)
-ECMO only	73	125
-ST VAD only	1	2
-ST VAD and ECMO	5	20
No	171	474
Unknown	8	0
Total	258	621

¹ Data on MCS post-transplant for DBD transplants is taken from the MCS Database and “no” is assumed if no post-transplant implant form was reported; for DCD, this information is taken from the DCD Heart Passport and then MCS Database

² Includes heart-only transplants performed in the UK where the donor weighed > 50 kg

DCD heart offering

- 16 **Table 10** shows a breakdown of the number of potential DCD donors whose heart was offered between 7 September 2020 and 30 June 2025 by heart allocation zone and whether the heart was accepted, retrieved, transplanted and if transplanted whether it was by the zonal centre. The 816 potential donors include 151 who did not donate any organs, it also includes 23 donors aged less than 16 years whose heart was offered to paediatric centres first. Of the 816 hearts offered, 560 (69%) were accepted, 283 (35%) were retrieved and 258 (32%) were transplanted. Overall, 59% of DCD hearts were transplanted by the zonal centre.

Table 10 DCD hearts offered, accepted, retrieved, transplanted, and transplanted by heart allocation zone, 7 September 2020 – 30 June 2025

Allocation zone	Number of hearts offered	Number accepted	Number retrieved	Number transplanted	Number transplanted by zonal centre
Birmingham	119	82	43	42	22 (52%)
Glasgow	88	59	31	25	20 (80%)
Harefield	181	125	60	55	30 (55%)
Manchester	104	65	36	31	16 (52%)
Newcastle	171	123	64	61	35 (57%)
Papworth	153	106	49	44	30 (68%)
Total	816	560	283	258	153 (59%)

- 17 The 816 DCD hearts offered between 7 September 2020 and 30 June 2025 generated 3,535 offers. The results of these offers are shown in **Table 11**, split by centre. Each centre received over 400 DCD heart offers across the time period, with each centre utilising at least 16 offers. The highest utilisation of offers was for Papworth (11%), followed by Harefield and Newcastle (10%).

Table 11 DCD heart offers made during 7 September 2020 – 30 June 2025, by centre and result

Centre	Offers received	Declined		Accepted, not used		Accepted and used	
	N	N	%	N	%	N	%
Birmingham	470	389	83	49	10	32	7
Glasgow	433	340	79	59	14	34	8
Great Ormond Street	645	610	95	19	3	16	2
Harefield	511	376	74	85	17	50	10
Manchester	482	438	91	21	4	23	5
Newcastle	519	416	80	52	10	51	10
Papworth	475	336	71	88	19	51	11
Total	3535	2905	82	373	11	257	7

- 18 The reasons for decline recorded for the 2,905 declined offers, and 373 offers accepted but not used, as shown in **Table 11**, are presented in **Tables 12** and **13**, respectively. The most common reasons for decline of DCD hearts at time of offer were no suitable recipients (27%), donor past history (18%) and poor function (16%). For those that were accepted but not used, a high proportion were declined for poor function (29%), followed by prolonged time to asystole (13%) and coronary artery disease (10%).

Table 12 Primary reason for decline of DCD heart offers declined, 7 September 2020 – 30 June 2025

Reason for decline	Birmingham		Glasgow		GOSH		Harefield		Manchester		Newcastle		Papworth			Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%		N	%
Donor	98	25	114	34	262	43	127	34	157	36	115	28	115	34	0	988	34
Donor unsuitable - past history	51	13	52	15	122	20	74	20	70	16	75	18	82	24	0	526	18
Donor unsuitable - size	33	8	51	15	103	17	40	11	27	6	17	4	24	7	0	295	10
Donor unsuitable - age	2	1	2	1	28	5	3	1	45	10	5	1	1	0	0	86	3
Donor unsuitable - virology	2	1	8	2	4	1	7	2	9	2	7	2	4	1	0	41	1
Infection	2	1	1	0	2	0	2	1	3	1	3	1	2	1	0	15	1
Donor unsuitable - other	4	1	0	0	2	0	0	0	1	0	5	1	2	1	0	14	0
Donor unsuitable - cause of death	4	1	0	0	0	0	1	0	1	0	2	0	0	0	0	8	0
Donor unstable	0	0	0	0	1	0	0	0	1	0	1	0	0	0	0	3	0
Logistics	53	14	22	6	8	1	57	15	114	26	75	18	29	9	0	358	12
Capacity/resource issues	39	10	8	2	3	0	40	11	26	6	67	16	13	4	0	196	7
Distance/transport difficulties	4	1	2	1	1	0	4	1	78	18	1	0	4	1	0	94	3
Logistics - other	5	1	7	2	3	0	7	2	9	2	3	1	5	1	0	39	1
No ECHO available	3	1	3	1	1	0	5	1	1	0	1	0	7	2	0	21	1
Unable to x-match	2	1	1	0	0	0	1	0	0	0	0	0	0	0	0	4	0
Prolonged time to asystole	0	0	1	0	0	0	0	0	0	0	3	1	0	0	0	4	0
Organ	80	21	48	14	49	8	84	22	61	14	97	23	75	22	0	494	17
Poor function	63	16	39	11	36	6	66	18	44	10	75	18	58	17	0	381	13
Poor function - initial assessment	14	4	9	3	12	2	16	4	15	3	13	3	15	4	0	94	3
Organ - other	1	0	0	0	0	0	0	0	1	0	6	1	1	0	0	9	0
Untransplantable (ECHO)	2	1	0	0	0	0	1	0	0	0	2	0	1	0	0	6	0
Ischaemia time too long - warm	0	0	0	0	1	0	0	0	1	0	1	0	0	0	0	3	0
Poor function at retrieval	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0
Recipient	125	32	113	33	209	34	76	20	73	17	96	23	89	26	0	781	27
No suitable recipients	125	32	113	33	209	34	76	20	73	17	96	23	89	26	0	781	27
Other	33	8	43	13	82	13	32	9	33	8	33	8	28	8	0	284	10
HLA/ABO type	7	2	27	8	64	10	10	3	7	2	9	2	11	3	0	135	5
No response to fast track/group offer	20	5	7	2	10	2	9	2	15	3	7	2	5	1	0	73	3
Other/not reported	6	2	8	2	8	1	11	3	8	2	15	4	9	3	0	65	2
COVID-19	0	0	1	0	0	0	2	1	3	1	2	0	3	1	0	11	0
Total	389	13	340	12	610	21	376	13	438	15	416	14	336	12	0	2905	100

Table 13 Primary reason for non-use of DCD heart offers accepted but not used, 7 September 2020 – 30 June 2025

Reason for decline	Birmingham		Glasgow		GOSH		Harefield		Manchester		Newcastle		Papworth			Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%		N	%
Donor	11	22	15	25	4	21	24	28	5	24	7	13	21	24	0	87	23
Coronary artery disease	3	6	6	10	0	0	11	13	2	10	4	8	10	11	0	36	10
Donor unsuitable - past history	4	8	4	7	2	11	6	7	2	10	2	4	6	7	0	26	7
Donor unsuitable - size	1	2	3	5	0	0	1	1	1	5	0	0	1	1	0	7	2
Donor unstable	1	2	0	0	1	5	2	2	0	0	0	0	2	2	0	6	2
Infection	0	0	0	0	1	5	3	4	0	0	0	0	1	1	0	5	1
Donor unsuitable - other	2	4	1	2	0	0	1	1	0	0	0	0	0	0	0	4	1
Donor unsuitable - virology	0	0	0	0	0	0	0	0	0	0	1	2	1	1	0	2	1
Logistics	13	27	10	17	1	5	15	18	6	29	19	37	24	27	0	88	24
Prolonged time to asystole	5	10	5	8	1	5	10	12	4	19	7	13	15	17	0	47	13
Capacity/resource issues	7	14	2	3	0	0	4	5	0	0	9	17	3	3	0	25	7
Distance/transport difficulties	1	2	0	0	0	0	1	1	1	5	2	4	4	5	0	9	2
Logistics - other	0	0	3	5	0	0	0	0	1	5	0	0	1	1	0	5	1
No ECHO available	0	0	0	0	0	0	0	0	0	0	1	2	1	1	0	2	1
Organ	11	22	23	39	10	53	31	36	5	24	14	27	30	34	0	124	33
Poor function	6	12	12	20	9	47	23	27	2	10	8	15	18	20	0	78	21
Poor function - initial assessment	1	2	7	12	1	5	3	4	1	5	3	6	4	5	0	20	5
Poor function at retrieval	2	4	3	5	0	0	0	0	2	10	1	2	4	5	0	12	3
Untransplantable (ECHO)	1	2	0	0	0	0	2	2	0	0	1	2	4	5	0	8	2
Ischaemia time too long - warm	0	0	1	2	0	0	3	4	0	0	1	2	0	0	0	5	1
Organ - other	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Recipient	2	4	0	0	0	0	1	1	0	0	0	0	1	1	0	4	1
No suitable recipients	2	4	0	0	0	0	1	1	0	0	0	0	1	1	0	4	1
Other	12	24	11	19	4	21	14	16	5	24	12	23	12	14	0	70	19
Other/not reported	7	14	10	17	1	5	10	12	5	24	11	21	12	14	0	56	15
HLA/ABO type	5	10	1	2	3	16	1	1	0	0	1	2	0	0	0	11	3
COVID-19	0	0	0	0	0	0	3	4	0	0	0	0	0	0	0	3	1
Total	49	13	59	16	19	5	85	23	21	6	52	14	88	24	0	373	100