

NHS BLOOD AND TRANSPLANT
CARDIOTHORACIC ADVISORY GROUP
ZONAL ACTIVITY
SUMMARY

INTRODUCTION

- 1 The current zonal arrangements for the English cardiothoracic transplant centres came into effect on 1 April 2003, although following the establishment of the CTAG Zonal Allocation Working Group, minor changes were made on 15 January 2015. This paper reviews adult cardiothoracic zonal activity between 1 April 2013 and 31 March 2016, and includes donation after circulatory death (DCD) lung activity. DCD hearts are not included in the analysis.
- 2 Currently, the allocation of hearts and lungs has the same zonal boundaries. This shared boundary policy has been reviewed and it has been established that the allocation zones should be split into heart and lung separately. This arrangement will be implemented in the imminent future.

RESULTS

- 3 The range of the heart balance of exchange decreased in 2015/2016. Newcastle, Papworth and Birmingham were net importers of donor hearts, while, Glasgow, Manchester and Harefield were net exporters. "Organ unsuitable", "No suitable recipient" and the UHAS were the main reasons for exporting hearts, influencing 23 (24%), 22 (23%) and 38 (39%) of the 97 exports in the last financial year, respectively.
- 4 The range of the DBD lung balance of exchange decreased in 2015/2016. Birmingham, Harefield, Papworth and Manchester were net importers of lungs for transplant, while Newcastle was the net exporters. Nationally, 'organ unsuitable – clinical' and 'no suitable recipients' were the main reasons given for exporting lungs, affecting 13 (26%) and 13 (26%) of the 50 exports in the last financial year, respectively.
- 5 The range of DCD lung balance of exchange increased in 2015/16 relative to the previous year. Over the last three years, Manchester, Birmingham and Newcastle were net exporters of DCD lung transplants, while Harefield was net importers. Import and export activity in Papworth was equal. 'Organ unsuitable – clinical' and 'no suitable recipients' were also the main reasons given for exporting DCD lungs in the last financial year.
- 6 Overall 35% of offered hearts, 25% of offered DBD lungs and 10% of offered DCD lungs were transplanted in 2015/2016.

CONCLUSION

- 7 Imbalances in the zonal arrangements change from year to year with few consistent features. It has been agreed that the cardiothoracic zones will be split into heart and lung separately in the imminent future.

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INTRODUCTION

- 1 The current zonal arrangements for the English cardiothoracic transplant centres came into effect on 1 April 2003, although following the establishment of the CTAG Zonal Allocation Working Group, minor changes were made on 15 January 2015. This paper reviews adult cardiothoracic zonal activity between 1 April 2013 and 31 March 2016, and includes donation after circulatory death (DCD) lung activity. DCD hearts are not included in the analysis.

METHODS

- 2 Data on adult cardiothoracic donation after brain death (DBD) and donation after circulatory death (DCD) donors from each cardiothoracic zone, and adult cardiothoracic transplants performed at each transplant centre were obtained from the UK Transplant Registry, for the period 1 April 2013 to 31 March 2016. Data on adult registrations on the cardiothoracic transplant list for the period 1 April 2015 to 31 March 2016 were also obtained.
- 3 Adult donors are those who were aged 16 years or older at the time of death. Adult patients are those aged 16 years or older at time of registration on the transplant list. Adult transplants are those where the recipient was aged 16 years or older at time of transplant.
- 4 Hearts only ever intended for research or retrieved for valves only are not included in these analyses.

RESULTS

Donors

- 5 **Table 1a** shows the number of adult cardiothoracic DBD donors provided by each cardiothoracic donation zone, and **Table 1b** the number of DCD donors. Note that if a donor donated both a heart and lung(s) then they are counted as both a heart and as a lung donor. Donors whose organs were offered for transplant, but declined and then subsequently used for research are included in the table, as well as donors whose organs were retrieved by overseas teams.
- 6 During the last three financial years, there were 552 adult DBD heart donors, 491 adult DBD lung donors and 116 adult DCD lung donors from the UK (10

DBD hearts and 10 DBD lungs and 13 DCD lungs were offered for transplant, but declined and then used for research).

- 7 **Tables 2a, 2c and 2e** show the exchange of adult organs. **Tables 2b, 2d and 2f** show the reasons for exporting adult organs. Organs that were offered for transplant, but declined and then subsequently used for research are excluded.
- 8 The range of the heart balance of exchange decreased in 2015/2016. Newcastle, Papworth and Birmingham were net importers of donor hearts, while, Glasgow, Manchester and Harefield were net exporters. “Organ unsuitable”, “No suitable recipient” and the UHAS were the main reasons for exporting hearts, influencing 23 (24%), 22 (23%) and 38 (39%) of the 97 exports in the last financial year, respectively.
- 9 The range of the DBD lung balance of exchange decreased in 2015/2016. Birmingham, Harefield, Papworth and Manchester were net importers of lungs for transplant, while Newcastle was the net exporters. Nationally, ‘organ unsuitable – clinical’ and ‘no suitable recipients’ were the main reasons given for exporting lungs, affecting 13 (26%) and 13 (26%) of the 50 exports in the last financial year, respectively.
- 10 The range of DCD lung balance of exchange increased in 2015/16 relative to the previous year. Over the last three years, Manchester, Birmingham and Newcastle were net exporters of DCD lung transplants, while Harefield was net importers. Import and export activity in Papworth was equal. ‘Organ unsuitable – clinical’ and ‘no suitable recipients’ were also the main reasons given for exporting DCD lungs in the last financial year.
- 11 **Table 3a** shows the total number of adult DBD donor hearts that were offered for transplant by UK donation zones, together with the final outcome of each organ. The same information for DBD lungs offered for transplant is shown in **Table 3b**, and DCD lungs in **Table 3c**.
- 12 **Table 4a and 4b** show the percentage of organs offered from each donation zone that were subsequently transplanted. Overall 35% of offered hearts, 25% of offered DBD lungs and 10% of offered DCD lungs were transplanted in 2015/2016.

Transplant list

- 13 **Tables 5a and 5b** show the registration outcome by centre as at 31 March 2016 of adult patients registered on the UK active and suspended cardiothoracic transplant list as at 1 April 2015 and those new registrations during the financial year.

Transplants

- 14 **Tables 6a and 6b** show the distribution of adult deceased donor cardiothoracic transplants by transplant centre for the period 1 April 2013 to 31 March 2016.

Overall activity

- 15 **Tables 7a and 7b** summarise the overall activity for each zone/centre by financial year.

CONCLUSION

- 16 Imbalances in the zonal arrangements change from year to year with few consistent features. It has been agreed that the cardiothoracic zones will be split into heart and lung separately in the imminent future.

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September 2016

Table 1a Adult cardiothoracic DBD donors from UK donor hospitals, 1 April 2013 – 31 March 2016

Donation zone	2013/2014 ¹					2014/2015 ²					2015/2016				
	Heart donors		Lung donors		Lungs donated	Heart donors		Lung donors		Lungs donated	Heart donors		Lung donors		Lungs donated
	N	%	N	%		N	%	N	%		N	%	N	%	
Birmingham	23	12	26	14	49	26	16	24	16	43	18	10	18	12	34
Glasgow	16	8	22	12	41	17	11	11	7	21	10	6	16	11	32
Harefield	45	24	46	24	90	32	20	41	27	82	45	26	37	25	74
Manchester	23	12	23	12	44	25	16	17	11	32	39	23	19	13	34
Newcastle	33	17	32	17	61	23	14	25	17	47	25	15	29	19	54
Papworth	49	26	41	22	79	38	24	32	21	63	35	20	32	21	63
TOTAL	189	100	190	100	364	161	100	150	100	288	172	100	151	100	291

¹ Includes 3 hearts and 2 DBD lungs declined for transplant but subsequently used for research, also includes 1 heart and 8 lungs that were retrieved by an overseas centre

² Includes 2 hearts and 2 DBD lungs declined for transplant but subsequently used for research, also includes 2 heart and 4 lungs that were retrieved by an overseas centre

³ Includes 5 hearts and 6 DBD lungs declined for transplant but subsequently used for research, also includes 1 heart and 2 lungs that were retrieved by an overseas centre

Donation zone	2013/2014			2014/2015 ¹			2015/2016 ²		
	Lung donors N	%	Lungs donated	Lung donors N	%	Lungs donated	Lung donors N	%	Lungs donated
Birmingham	6	16	12	6	14	12	6	17	12
Glasgow	4	11	8	3	7	6	5	14	10
Harefield	10	27	20	5	11	10	10	29	20
Manchester	2	5	4	10	23	20	4	11	8
Newcastle	10	27	20	8	18	16	6	17	12
Papworth	5	14	8	12	27	21	4	11	7
TOTAL	37	100	72	44	100	85	35	100	69

¹ Includes 7 DCD lungs declined for transplant but subsequently used for research and there was also 1 DCD heart donor from Papworth.

² Includes 6 DCD lungs declined for transplant but subsequently used for research and there were also 21 DCD heart donors (16 from Papworth, 5 from Harefield).

Table 2a Balance of exchange of adult DBD donor hearts donated in the UK, 1 April 2013 - 31 March 2016

Donation zone	2013/2014				2014/2015				2015/2016			
	Number of hearts donated	Hearts exported from zone	Hearts imported to zone	Activity balance	Number of hearts donated	Hearts exported from zone	Hearts imported to zone	Activity balance	Number of hearts donated	Hearts exported from zone	Hearts imported to zone	Activity balance
Birmingham	23	11	8	+3	25	9	14	-5	18	9	18	-9
Glasgow	16	10	13	-3	17	11	7	+4	10	8	5	+3
Harefield	44	28	12	+16	32	18	11	+7	45	30	8	+22
Manchester	23	12	17	-5	24	11	13	-2	37	21	15	+6
Newcastle	32	18	19	-1	23	11	8	+3	25	12	19	-7
Papworth	48	17	16	+1	39	15	12	+3	32	11	17	-6
TOTAL	186¹	96	85²	+11²	160³	75	65⁴	+10⁴	167⁵	91	82⁶	+9⁶

¹ Excludes 3 hearts declined for transplant but subsequently used for research

² An additional 9 hearts were received by Great Ormond St. and 2 went overseas

³ Excludes 2 hearts declined for transplant but subsequently used for research

⁴ An additional 8 hearts were received by Great Ormond St. and 2 went overseas

⁵ Excludes 5 hearts declined for transplant but subsequently used for research

⁶ An additional 6 hearts were received by Great Ormond St. and 3 went overseas

Table 2b Primary reasons¹ for exporting adult DBD donor hearts donated in the UK, 1 April 2013 - 31 March 2016

		Birmingham N	Glasgow N	Harefield N	Manchester N	Newcastle N	Papworth N	Total
Urgent Heart	2013/14	4	4	8	2	10	7	35
	2014/15	2	6	0	1	2	4	15
	2015/16	5	2	10	12	1	6	36
Logistics	2013/14	1	0	0	0	2	1	4
	2014/15	0	0	2	0	0	0	2
	2015/16	0	0	2	1	0	0	3
Donor unsuitable – age	2013/14	0	0	1	0	0	0	1
	2014/15	0	0	0	0	0	1	1
	2015/16	0	1	0	0	0	0	1
Donor unsuitable - medical	2013/14	0	0	1	0	0	0	1
	2014/15	0	0	1	0	0	0	1
	2015/16	0	1	0	1	0	0	2
Organ unsuitable - clinical	2013/14	1	1	4	2	0	5	13
	2014/15	0	3	5	2	0	2	12
	2015/16	0	3	10	3	4	3	23
No suitable recipients	2013/14	4	5	9	7	6	4	35
	2014/15	6	1	9	7	6	8	37
	2015/16	4	1	5	4	6	2	22
Other	2013/14	1	0	1	1	0	0	3
	2014/15	1	1	1	1	3	0	7
	2015/16	0	0	3	0	1	0	4
Distance (euro)	2013/14	0	0	1	0	0	0	1
Donor Unsuitable - cod	2013/14	0	0	2	0	0	0	2
Not Reported	2013/14	0	0	1	0	0	0	1
TOTAL	2013/14	11	10	28	12	18	17	96
	2014/15	9	11	18	11	11	15	75
	2015/16	9	8	30	21	12	11	91

¹ Primary reason for non-acceptance of zonal organ, hence export, as reported on the UK Transplant Registry

Logistics = (No staff, No beds, No beds/staff/theatre, Centre already transplanting, Centre closed, Poor weather), Donor unsuitable - medical = (X-match positive, Better match required, Tumour, Medication, Infection, Donor unsuitable – virology), Organ unsuitable - clinical = (Poor perfusion, HLA/ABO type, Poor function, Donor unsuitable - past history), No suitable recipients = (NSR, Donor unsuitable - size), Other = (Other, Organ used elsewhere, Offer waived, Recipient did not need transplant, Recipient refused transplant, Recipient died, Centre criteria not achieved).

Table 2c Balance of exchange of lung transplants using adult DBD donor lungs donated in the UK, 1 April 2013 - 31 March 2016

Donation zone	2013/2014				2014/2015				2015/2016			
	Number of txs	Lung txs exported from zone	Lung txs imported to zone	Activity balance	Number of txs	Lung txs exported from zone	Lung txs imported to zone	Activity balance	Number of txs	Lung txs exported from zone	Lung txs imported to zone	Activity balance
Birmingham	24	16	11	+5	21	10	6	+4	18	8	10	-2
Harefield	45	18	22	-4	37	8	8	0	35	14	15	-1
Manchester	24	11	15	-4	17	6	8	-2	19	8	9	-1
Newcastle ¹	50	19	16	+3	32	7	9	-2	37	16	6	+10
Papworth	40	18	12	+6	34	9	5	+4	32	10	11	-1
TOTAL	183²	82	76³	+6³	141⁴	40	36⁵	+4⁵	141⁶	56	51⁷	+6⁷

¹ Includes 39 lung transplants from Scottish donors (19 in 2013/14, 9 in 2014/15 and 11 in 2015/16).

² Excludes 2 lungs declined for transplant but subsequently used for research.

³ An additional 6 lung transplants performed by an overseas centre

⁴ Excludes 2 lungs declined for transplant but subsequently used for research.

⁵ An additional 1 lung transplants were performed by Great Ormond St. and 3 by an overseas centre

⁶ Excludes 6 lungs declined for transplant but subsequently used for research.

⁷ An additional 3 lung transplants were performed by Great Ormond St. and 2 by an overseas centre

Table 2d Primary reasons¹ for exporting adult DBD donor lungs donated in the UK, 1 April 2013 - 31 March 2016

		Birmingham N	Harefield N	Manchester N	Newcastle N	Papworth N	Total
Logistics	2013/2014	4	3	1	6	1	15
	2014/2015	2	1	1	3	0	7
	2015/2016	0	2	3	6	1	12
Donor unsuitable - age	2013/2014	0	0	1	0	0	1
	2014/2015	1	1	0	0	0	2
Donor unsuitable - medical	2013/2014	0	1	0	0	0	1
	2014/2015	0	0	0	1	0	1
	2015/2016	1	0	0	1	0	2
Organ unsuitable - clinical	2013/2014	3	5	2	3	7	20
	2014/2015	3	3	3	2	2	13
	2015/2016	3	4	2	1	3	13
No suitable recipients	2013/2014	5	6	5	6	5	27
	2014/2015	2	1	0	0	5	8
	2015/2016	2	3	1	5	2	13
Other	2013/2014	0	2	0	2	3	7
	2014/2015	0	2	1	0	1	4
	2015/2016	2	5	1	0	2	10
Anatomical	2013/2014	0	0	0	0	1	1
Donor unstable	2013/2014	0	0	0	1	0	1
Donor unsuitable - cod	2013/2014	1	0	0	0	0	1
Not reported	2015/2016	0	0	0		1	1
Total	2013/2014	13	17	9	18	17	74
	2014/2015	8	8	5	6	8	35
	2015/2016	8	14	7	13	9	51

¹ Primary reason for non-acceptance of zonal organ, hence export, as reported on the UK Transplant Registry

Logistics = (No staff, No beds, No beds/staff/theatre, Centre already transplanting, Centre closed), Donor unsuitable - medical = (X-match positive, Better match required, Tumour, Medication, Infection, Donor unsuitable - virology, Donor unsuitable – medical reason), Organ unsuitable - clinical = (Poor perfusion, HLA/ABO type, Poor function, Donor unsuitable - past history), No suitable recipients = (NSR, Donor unsuitable - size), Other = (Other, Organ used elsewhere, Offer waived, Recipient did not need transplant, Recipient refused transplant, Recipient died, Organ damaged).

Table 2e Balance of exchange of lung transplants using adult DCD donor lungs donated in the UK, 1 April 2013 - 31 March 2016

Donation zone	2013/2014				2014/2015				2015/2016			
	Number of txs	Lung txs exported from zone	Lung txs imported to zone	Activity balance	Number of txs	Lung txs exported from zone	Lung txs imported to zone	Activity balance	Number of txs	Lung txs exported from zone	Lung txs imported to zone	Activity balance
Birmingham	5	4	2	+2	4	1	3	-2	4	3	1	+2
Harefield	9	3	6	-3	5	2	7	-5	8	0	4	-4
Manchester	3	1	1	0	11	7	1	+5	4	2	1	+1
Newcastle ¹	11	3	2	+1	7	2	3	-1	11	3	2	+1
Papworth	5	2	1	+1	12	7	4	+3	4	2	2	0
TOTAL	33	13	12²	+1²	39³	19	18⁴	0⁴	31⁵	10	10	0

¹ Includes 6 lung transplants from Scottish donors (2 in 2013/14, 2 in 2014/15 and 2 in 2015/16).

² An additional 1 lung transplant was performed by Great Ormond St.

³ Excludes 7 lungs declined for transplant but subsequently used for research.

⁴ An additional 1 lung transplant was performed by Great Ormond St.

⁵ Excludes 6 lungs declined for transplant but subsequently used for research.

Table 2f Primary reasons¹ for exporting adult DCD donor lungs donated in the UK, 1 April 2013 - 31 March 2016

		Birmingham	Harefield	Manchester	Newcastle	Papworth	Total
		N	N	N	N	N	
Logistics	2013/2014	1	1	0	0	0	2
	2014/2015	0	0	0	1	0	1
	2015/2016	0	0	0	1	0	1
Donor unsuitable - age	2013/2014	0	1	0	0	0	1
	2014/2015	0	0	1	0	1	2
	2015/2016	0	0	0	0	1	1
Donor unsuitable - medical	2013/2014	0	0	0	0	1	1
	2014/2015	0	1	0	0	0	1
	2015/2016	1	0	0	0	0	1
Organ unsuitable - clinical	2013/2014	1	0	0	2	0	3
	2014/2015	0	0	4	1	0	5
	2015/2016	1	0	2	1	0	4
No suitable recipients	2013/2014	2	1	0	0	0	3
	2014/2015	1	0	1	0	4	6
	2015/2016	1	0	0	0	1	2
Other	2014/2015	0	1	1	0	1	3
	2015/2016	0	0	0	1	1	2
Anatomical	2013/2014	0	0	0	1	0	1
Total	2013/2014	4	3	0	3	1	11
	2014/2015	1	2	7	2	6	18
	2015/2016	3	0	2	3	2	10

¹ Primary reason for non-acceptance of zonal organ, hence export, as reported on the UK Transplant Registry

Logistics = (No staff, No beds, No beds/staff/theatre, Centre already transplanting, Centre closed), Donor unsuitable - medical = (X-match positive, Better match required, Tumour, Medication, Infection, Donor unsuitable - virology, Donor unsuitable – medical reason), Organ unsuitable - clinical = (Poor perfusion, HLA/ABO type, Poor function, Donor unsuitable - past history), No suitable recipients = (NSR, Donor unsuitable - size), Other = (Other, Organ used elsewhere, Offer waived, Recipient did not need transplant, Recipient refused transplant, Recipient died, Organ damaged).

Table 3a Final outcome of adult DBD donor hearts offered for transplant by UK donation zones, 1 April 2013 - 31 March 2016

Donation zone	2013/2014 ¹							2014/2015 ²							2015/2016						
	Hearts offered, not retrieved ⁴	Hearts retrieved, not transplanted		Hearts transplanted		Total hearts offered		Hearts offered, not retrieved ⁴	Hearts retrieved, not transplanted		Hearts transplanted		Total hearts offered		Hearts offered, not retrieved ⁴	Hearts retrieved, not transplanted		Hearts transplanted		Total hearts offered	
		Zonal	Non-zonal	Zonal	Non-zonal	N	%		Zonal	Non-zonal	Zonal	Non-zonal	N	%		Zonal	Non-zonal	Zonal	Non-zonal	N	%
Birmingham	46	0	1	12	10	69	14	49	0	1	16	9	75	15	48	0	0	9	9	66	14
Glasgow	32	0	0	6	10	48	10	33	0	0	6	11	50	10	33	0	1	2	7	43	9
Harefield	61	2	0	15	28	106	22	72	0	0	14	18	104	21	80	1	0	14	30	125	26
Manchester	42	0	1	11	11	65	13	42	0	1	13	11	67	14	51	0	2	16	21	90	19
Newcastle	37	1	0	14	18	70	14	47	0	0	12	11	70	14	38	0	0	13	12	63	13
Papworth	79	0	2	31	16	128	26	83	1	0	22	15	121	25	54	0	3	21	11	89	19
TOTAL	297	3	4	89	93	486	100	326	1	2	83	75	487	100	304	1	6	75	90	476	100

¹Includes 3 hearts offered for transplant but subsequently used for research and 1 heart retrieved by an overseas centre

²Includes 2 hearts offered for transplant but subsequently used for research and 2 hearts retrieved by overseas centres

²Includes 5 hearts offered for transplant but subsequently used for research and 1 heart retrieved by overseas centres

Table 3b Final outcome of adult DBD donor lungs offered for transplant by UK donation zones, 1 April 2013 - 31 March 2016

Donation zone	2013/2014 ¹							2014/2015 ²							2015/2016						
	Lungs offered, not retrieved	Lungs retrieved, not transplanted		Lungs transplanted		Total lungs offered		Lungs offered, not retrieved	Lungs retrieved, not transplanted		Lungs transplanted		Total lungs offered		Lungs offered, not retrieved	Lungs retrieved, not transplanted		Lungs transplanted		Total lungs offered	
		Zonal	Non-zonal	Zonal	Non-zonal	N	%		Zonal	Non-zonal	Zonal	Non-zonal	N	%		Zonal	Non-zonal	Zonal	Non-zonal	N	%
Birmingham	99	2	4	14	29	148	13	121	5	0	21	17	164	15	100	0	0	20	14	134	13
Glasgow	71	4	3	15	19	112	10	83	2	2	17	0	104	9	68	6	0	8	18	100	9
Harefield	145	2	0	54	34	235	21	186	8	0	58	16	268	24	231	4	1	42	27	305	29
Manchester	116	0	2	23	19	160	15	106	1	0	19	12	138	13	140	0	0	18	16	174	16
Newcastle	99	2	0	41	18	160	15	111	4	0	32	11	158	14	100	6	4	32	12	154	14
Papworth	206	5	3	41	30	285	26	203	0	1	47	15	266	24	136	0	0	43	20	199	19
TOTAL	736	15	12	188	149	1100	100	810	20	3	194	71	1098	100	775	16	5	163	107	1066	100

¹ Includes 2 lungs declined for transplant but subsequently used for research and 8 lungs retrieved by overseas centres

² Includes 2 lungs offered for transplant but subsequently used for research and 4 lungs retrieved by overseas centres

² Includes 6 lungs offered for transplant but subsequently used for research and 2 lungs retrieved by overseas centres

Table 3c Final outcome of adult DCD donor lungs offered for transplant by UK donation zones, 1 April 2013 - 31 March 2016

Donation zone	2013/2014							2014/2015 ¹							2015/2016 ²						
	Lungs offered, not retrieved	Lungs retrieved, not transplanted		Lungs transplanted		Total lungs offered		Lungs offered, not retrieved	Lungs retrieved, not transplanted		Lungs transplanted		Total lungs offered		Lungs offered, not retrieved	Lungs retrieved, not transplanted		Lungs transplanted		Total lungs offered	
		Zonal	Non-zonal	Zonal	Non-zonal	N	%		Zonal	Non-zonal	Zonal	Non-zonal	N	%		Zonal	Non-zonal	Zonal	Non-zonal	N	%
Birmingham	110	2	0	2	8	122	16	92	0	4	6	2	104	15	70	2	2	2	6	82	11
Glasgow	58	2	2	4	0	66	9	64	2	0	4	0	70	10	100	0	0	4	6	110	15
Harefield	142	0	2	12	6	162	22	114	0	0	6	4	124	18	144	4	0	16	0	164	22
Manchester	70	0	0	3	1	74	10	80	0	0	7	13	100	14	124	1	0	3	4	132	18
Newcastle	105	2	1	12	5	125	17	100	2	4	6	4	116	17	98	0	0	12	0	110	15
Papworth	186	0	0	4	4	194	26	167	0	1	8	12	188	27	149	0	0	3	4	156	21
TOTAL	671	6	5	37	24	743	100	617	4	9	37	35	702	100	685	7	2	40	20	754	100

¹ Includes 7 DCD lung offers declined for transplant but subsequently used for research

² Includes 6 DCD lung offers declined for transplant but subsequently used for research

Table 4a Percentage of adult DBD donor offered organs that were transplanted, by UK donation zone, 1 April 2013 - 31 March 2016

Donation zone	2013/2014		2014/2015		2015/2016	
	% Hearts transplanted	% Lungs transplanted	% Hearts transplanted	% Lungs transplanted	% Hearts transplanted	% Lungs transplanted
Birmingham	32	29	33	23	27	25
Glasgow	33	30	34	16	21	26
Harefield	41	37	31	28	35	23
Manchester	34	26	36	22	41	20
Newcastle	46	37	33	27	40	29
Papworth	37	25	31	23	36	32
TOTAL	37	31	32	24	35	25

Table 4b Percentage of adult DCD donor offered organs that were transplanted, by UK donation zone, 1 April 2013 - 31 March 2016

Donation zone	2013/2014	2014/2015	2015/2016
	% Lungs transplanted	% Lungs transplanted	% Lungs transplanted
Birmingham	8	8	10
Glasgow	6	6	9
Harefield	11	8	10
Manchester	5	20	5
Newcastle	14	9	11
Papworth	4	11	4
TOTAL	8	10	8

Centre	No. on active and suspended list (as at 1 April 2015)	New registrations (1 April 2015 – 31 March 2016)	TOTAL	Registration outcome (as at 31 March 2016)							
				Active/Suspended		Transplanted		Removed		Died	
				N	%	N	%	N	%	N	%
Birmingham	27	40	67	27	40	27	40	9	13	4	6
Glasgow	10	25	35	18	51	7	20	9	26	1	3
Harefield	65	34	99	67	68	25	25	4	4	3	3
Manchester	29	26	55	20	36	28	51	5	9	2	4
Newcastle	53	40	93	49	53	22	24	8	9	14	15
Papworth	50	58	108	41	38	50	46	9	8	8	7
TOTAL	234	223	457	222	49	159	35	44	10	32	7

Table 5b

Registration outcome of adult patients on the lung (inc. heart/lung) transplant list, 1 April 2015 - 31 March 2016

Centre		No. on active and suspended list (as at 1 April 2015)	New registrations (1 April 2015 – 31 March 2016)	TOTAL	Registration outcome (as at 31 March 2016)							
					Active/Suspended		Transplanted		Removed		Died	
					N	%	N	%	N	%	N	%
Birmingham	L	30	37	67	29	43	24	36	4	6	10	15
	HL	0	2	2	1	50	0	0	0	0	1	50
Harefield	L	105	92	197	124	63	48	24	11	6	14	7
	HL	3	2	5	2	40	2	40	0	0	1	20
Manchester	L	53	33	86	49	57	20	23	9	10	8	9
	HL	2	2	4	1	25	3	75	0	0	0	0
Newcastle	L	81	35	116	60	52	39	34	4	3	13	11
	HL	4	0	4	4	100	0	0	0	0	0	0
Papworth	L	29	63	92	41	45	36	39	4	4	11	12
	HL	4	4	8	6	75	2	25	0	0	0	0
TOTAL	L	298	260	558	303	54	167	30	32	6	56	10
	HL	13	10	23	14	61	7	30	0	0	2	9

Table 6a Adult deceased donor heart transplant activity in the UK, 1 April 2013 - 31 March 2016

Transplant centre	2013/2014				2014/2015				2015/2016			
	Non-urgent	Urgent	Total		Non-urgent	Urgent	Total		Non-urgent	Urgent	Total	
	N	N	N	%	N	N	N	%	N	N	N	%
Birmingham	3	17	20	12	3	28	31	22	3	23	26	16
Glasgow	5	14	19	11	5	8	13	9	0	7	7	4
Harefield	3	23	26	15	2	23	25	17	4	21	25	16
Manchester	5	26	31	18	2	24	26	18	2	27	29	18
Newcastle	8	20	28	16	2	13	15	10	4	19	23	14
Papworth	17	27	44	26	11	22	33	23	21	30	51	32
<i>GOSH</i>	1	2	3	2	0	0	0	0	0	0	0	0
TOTAL	42	129	171¹	100	25	118	143²	100	34	127	161³	100

¹ Includes 1 heart/kidney transplant

² Includes 1 heart/kidney transplant

³ Includes 1 heart/liver transplant

Table 6b Adult deceased donor lung transplant activity in the UK, 1 April 2013 - 31 March 2016

Transplant centre	2013/2014					2014/2015					2015/2016				
	HL	L		Total		HL	L		Total		HL	L		Total	
	N	DBD	DCD	N	%	N	DBD	DCD	N	%	N	DBD	DCD	N	%
Birmingham	1	18	3	22	10	0	18	6	24	13	1	21	3	25	14
Harefield	0	50	12	62	29	0	39	10	49	27	1	37	12	50	28
Manchester	0	28	3	31	15	0	19	5	24	13	2	18	3	23	13
Newcastle	1	45	11	57	27	0	34	8	42	23	0	31	11	42	23
Papworth	5	29	4	38	18	1	30	9	40	22	2	33	4	39	22
<i>GOSH</i>	<i>0</i>	<i>1</i>	<i>0</i>	<i>1</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
TOTAL	7	171	33	211	100	1	140	39	180¹	100	6	140	33	179	100

HL – heart/lung, L - lung

¹ Includes 1 lung/kidney transplant

Donation zone/ Centre	2013/2014		2014/2015		% Total donors	2015/2016 % Total transplants	% Total registrations
	% Total donors	% Total transplants	% Total donors	% Total transplants			
Birmingham	12	12	16	22	9	16	15
Glasgow	8	11	10	9	5	4	8
Harefield	24	15	20	17	25	16	22
Manchester	12	18	15	18	21	18	12
Newcastle	17	17	14	10	13	14	20
Papworth	26	26	24	23	26	32	24
TOTAL	100	100¹	100	100¹	100	100	100

¹ Includes 1% performed at Great Ormond Street

**Table 7b Summary of adult deceased donor lung (including DCD and heart/lung) activity in the UK,
1 April 2013 – 31 March 2016**

Donation zone/ Centre	2013/2014		2014/2015		% Total donors	2015/2016		% Total registrations
	% Total donors	% Total transplants	% Total donors	% Total transplants		% Total transplants		
Birmingham	14	10	15	13	13	14	12	
Harefield	25	29	24	27	25	28	35	
Manchester	11	15	14	13	12	13	15	
Newcastle*	30	27	24	23	30	23	21	
Papworth	20	18	23	22	19	22	17	
TOTAL	100	100	100	100	100	100	100	

*Glasgow lung donors are counted within Newcastle's zone.