

NHS BLOOD AND TRANSPLANT

CARDIOTHORACIC ADVISORY GROUP

CENTRE SPECIFIC CARDIOTHORACIC ORGAN UTILISATION RATES

BACKGROUND

1. Organ offer decline rates are analysed by centre and presented as funnel plots in the NHSBT Annual Report on Cardiothoracic Transplantation. These analyses are restricted to organs that were eventually transplanted and so do not include *all* offers made to a centre. They also include multiple offers per donor, for example if an organ was declined for several urgent patients at a centre each decline will be counted as a separate observation.
2. There is interest in an alternative analysis which shows the conversion from donors offered into transplants performed by UK adult centres. This would count each organ that was offered to a centre only once and class it as either 'used by them' or 'declined by them'. The number of organs used out of the total number offered to them can be interpreted as a centre-specific utilisation rate.
3. This report presents cardiothoracic centre-specific utilisation rates for adult DBD donor hearts and lungs offered between 1 April 2016 and 28 February 2019.

DATA AND METHODS

4. Data were extracted on all UK adult DBD donor hearts and lungs that were offered to UK adult cardiothoracic centres between 1 April 2016 and 28 February 2019 where the donor went onto donate at least one organ for the purposes of transplantation. DCD donors were excluded. Heart and lungs were analysed separately; donors aged 65 or older or who died due to myocardial infarction were excluded from the heart analysis and donors aged 70 or older were excluded from the lung analysis.
5. An organ was counted as being offered to a centre if they received an offer for a named patient (super-urgent or urgent) or if they received a centre offer. Offers to paediatric patients at Newcastle were excluded. Fast track offers, single lung offers, back-up offers and overseas offers were excluded, but Group Offers were included (applicable from June 2017 onwards).
6. Under Group Offering, some offers that are recorded are not viable offers because a centre higher in the sequence accepted. Also, centres that do not respond to a Group Offer are assumed to have declined but there is not record of this in the data. Therefore, adjustments were made to the data in these cases (i.e. declines were added for a centre that didn't respond, if appropriate, and offers were removed for centres lower down in the sequence that wouldn't have received the offer had offering been made sequentially).
7. Offers of heart-lung blocks were counted as both a heart offer and a lung offer and if a centre accepted one part of the block this was counted as a decline for the other part. If the centre transplanted the heart lung block this was counted as 'utilised' in both analyses. Offers that were accepted but not used were equivalent to a decline. Organs were counted as being utilised by the centre if they were transplanted into any adult recipient. Lungs were counted as being utilised if either both lungs were transplanted or just a single lung was transplanted (the other lung was not counted as a decline).
8. No adjustment was made for the case mix of donors offered and so comparisons across centres can only be made under the assumption that the case mix of donors offered to each centre is similar. An adjusted analysis could be performed using a multivariable logistic regression model, if the relevant donor data are available.

RESULTS

9. **Table 1** shows the centre-specific heart utilisation rates over the last three financial year and for the entire time period. Overall, the national utilisation rate was 29.2%, but it was lower during the current financial year. On a centre basis the utilisation rate ranged between 3.7% and 11.3% with Papworth having the highest utilisation rate. Some centres have experienced a decrease in their utilisation over time, in particular Glasgow and Newcastle.

Centre	2016/17			2017/18			2018/19 (-Feb)			Total		
	No. donors offered	No. transplanted	Utilisation %	No. donors offered	No. transplanted	Utilisation %	No. donors offered	No. transplanted	Utilisation %	No. donors offered	No. transplanted	Utilisation %
Birmingham	296	26	8.8	276	22	8.0	289	23	8.0	861	71	8.2
Glasgow	292	15	5.1	315	11	3.5	275	7	2.5	882	33	3.7
Harefield	401	18	4.5	395	35	8.9	369	23	6.2	1165	76	6.5
Manchester	282	29	10.3	281	16	5.7	316	18	5.7	879	63	7.2
Newcastle	338	28	8.3	328	25	7.6	324	17	5.2	990	70	7.1
Papworth	306	35	11.4	297	40	13.5	279	25	9.0	882	100	11.3
Average	319	25	7.9	315	25	7.9	309	19	6.1	943	69	7.3
UK	491	151	30.8	481	149	31.0	440	113	25.7	1412	413	29.2

10. **Table 2** shows the centre-specific lung utilisation rates over the last three financial year and for the entire time period. Overall, the national utilisation rate was 26.1%, but it was lower during the current financial year at just 20.4%. On a centre basis the utilisation rate ranged between 3.5% and 9.1% with Harefield having the highest overall utilisation rate. Some centres have experienced a decrease in their utilisation over time, in particular Manchester, Newcastle and Papworth.

Centre	2016/17			2017/18			2018/19 (-Feb)			Total		
	No. donors offered	Number transplanted	Utilisation %	No. donors offered	Number transplanted	Utilisation %	No. donors offered	Number transplanted	Utilisation %	No. donors offered	Number transplanted	Utilisation %
Birmingham	313	10	3.2	429	19	4.4	445	12	2.7	1187	41	3.5
Harefield	369	36	9.8	463	48	10.4	459	34	7.4	1290	118	9.1
Manchester	330	28	8.5	420	25	6.0	435	14	3.2	1185	67	5.7
Newcastle	337	26	7.7	457	34	7.4	457	15	3.3	1251	75	6.0
Papworth	310	35	11.3	433	38	8.8	417	26	6.2	1160	99	8.5
Average	332	27	8.1	440	33	7.4	443	20	4.6	1215	80	6.6
UK	501	135	26.9	535	164	30.7	496	101	20.4	1532	400	26.1