

NHS BLOOD AND TRANSPLANT

CARDIOTHORACIC ADVISORY GROUP – LUNG

LUNGS TURNED DOWN IN FAVOUR OF HEART TRANSPLANT

INTRODUCTION

1. There is concern that due to resource constraints, centres are not able to accept lungs from a donor if they have already accepted a heart for transplant. This report investigates the extent to which this is an issue, examining a recent time period of 1 January to 30 June 2022.

DATA AND METHODS

2. All lung declines from proceeding UK DBD and DCD donors between 1 January and 30 June 2022 were extracted. The lungs may have gone on to be accepted by a centre, or may have been declined by all. Offers that were initially accepted but not used were not considered. Declines were then restricted to those where any of the reasons (primary, secondary or free-text) were capacity related and then subsequently restricted to cases where the same centre accepted a heart within 24 hours of the lung decline (this could be from the same donor, or a different donor and the heart may have been accepted but then not used). Following this, we identified whether the turned down lungs met the Higher Quality Lung definition using the following definition:

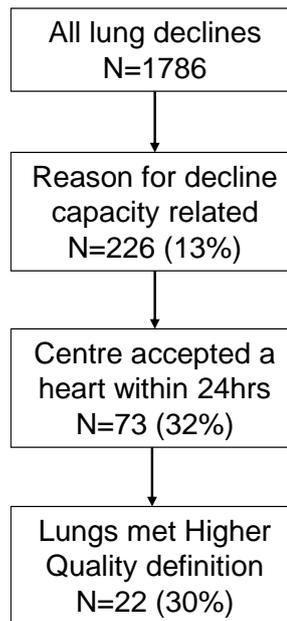
Higher Quality Lungs were defined as from a donor;

- between 16 and 55 years,
- with no history of malignancy,
- that was HBsAg, HCV Ab, HIV and HTLV negative,
- that smoked a maximum of 20 packs per year,
- with a pO₂ of a maximum of 40 kPa with FiO₂ 1 and PEEP 5 at offering,
- that had been mechanically ventilated for not more than 7 days.

RESULTS

3. There were 1786 lung declined offers in the analysis period, relating to 308 donors. Of these, there were 226 declines relating to capacity issues, and of these there were 73 cases where the same centre accepted a heart within the last 24 hours. Of these, 22 were classed as higher quality lungs, 37 were classed as not higher quality and 14 were unclassified. The 22 lung declines relate to 20 donors, of which 11 were turned down by all centres, 8 were transplanted by another centre and 1 was retrieved but not transplanted. See **Figure 1** for flow diagram of study cohort. In 9 of the 22, the lungs were declined from the same donor that the heart was accepted from. **Table 1** contains the declining centre, the reasons for decline of the lungs and the time interval between heart acceptance and lung decline. The outcome of the heart offer is also provided.

Figure 1 **Diagram of study cohort**



CONCLUSIONS

- 4. Within a 6 month period, we identified 22 instances where Higher Quality Lungs were declined due to capacity constraints within 24 hours of the centre accepting a heart. This related to 20 donors of which 11 were not utilised for lung transplantation. This equates to approximately 2 higher quality donors not used per month.

- 5. This is a preliminary analysis and is intended to be a starting point for refining the criteria of interest for identifying such cases. Therefore, feedback is welcome on changes to the approach/analysis.

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Table 1 Higher quality lungs declined by centres for capacity related reasons within 24 hours of accepting a heart between 1 January and 30 June 2022

	Centre	Reason 1	Reason 2	Heart Result	Reason for not transplanting heart, if applicable	Duration between heart acceptance and lung decline (hours)	Lungs declined but heart accepted from same donor	Final Lung Status
1	Birmingham	Centre already transplanting		Transplanted		4:15	No	Transplanted by other centre
2	Birmingham	Centre already transplanting		Transplanted		3:33	Yes	Retrieved not transplanted
3	Harefield	Centre already transplanting		Transplanted		13:30	No	Declined by all
4	Harefield	Centre already transplanting		Accepted, not transplanted	Other	21:01	No	Transplanted by other centre
5	Harefield	Centre already transplanting		Accepted, not transplanted	Globally hypertrophied heart.	0:30	No	Declined by all
6	Harefield	Centre already transplanting		Accepted, not transplanted	Poor function	5:43	No	Declined by all
7	Harefield	Donor unsuitable - past history	Centre already transplanting	Accepted, not transplanted	Poor function	2:13	No	Declined by all
8	Manchester	Centre already transplanting		Transplanted		1:12	Yes	Transplanted by other centre
9	Newcastle	Centre already transplanting		Accepted, not transplanted	Poor function (Declined for all recipients after repeat Echo)	0:04	Yes	Declined by all
10	Newcastle	Centre already transplanting		Accepted, not transplanted	Organ unsuitable for transplant	3:20	Yes	Declined by all
11	Newcastle	Centre already transplanting		Transplanted		4:31	No	Transplanted by other centre
12	Newcastle	Centre already transplanting		Accepted, not transplanted	Poor function	0:00	Yes	Declined by all
13	Newcastle	Donor unsuitable - size	Centre already transplanting	Accepted, not transplanted	PTA	5:53	No	Declined by all
14	Newcastle	Centre already transplanting		Accepted, not transplanted	Donor unsuitable - size	0:00	No	Transplanted by other centre
15	Newcastle	Centre already transplanting		Transplanted		11:57	No	Transplanted by other centre
16	Newcastle	Centre already transplanting		Transplanted		0:07	Yes	Transplanted by other centre
17	Papworth	Centre already transplanting		Transplanted		2:28	No	Transplanted by other centre

18	Papworth	Recipient unfit	Centre already transplanting	Transplanted		1:06	No	Declined by all
19	Papworth	No time		Accepted, not transplanted	Transport difficulties (Distance)	5:46	No	Declined by all
20	Papworth	Donor unsuitable - past history	Centre already transplanting	Transplanted		1:57	Yes	Declined by all
21	Papworth	Centre already transplanting		Transplanted		0:49	Yes	Declined by all
22	Papworth	Centre already transplanting	Decline for all Recipients	Accepted, not transplanted	Poor function (Declined for all recipients – Untransplantable)	0:06	Yes	Transplanted by other centre