

# NHS BLOOD AND TRANSPLANT

## CARDIOTHORACIC ADVISORY GROUP

### GRADING OF RETRIEVED ORGAN FORMS RETURN RATES

#### INTRODUCTION

- 1 The **Grading of Retrieved Donor Heart (FRM5722)** and **Grading of Retrieved Donor Lung(s) (FRM5721)** forms were introduced as a pilot on 18 January 2017 for all hearts and lungs that were retrieved with the intention of transplantation.
- 2 One copy of these grading forms should be completed by the lead retrieval surgeon after retrieval, and one copy by the lead recipient (transplant) surgeon on receipt of the organ, prior to implantation. The aim is to collect more detailed data on organ retrieval damage beyond what is captured on the HTA-A and HTA-B forms, in order to provide feedback and improve retrieval standards.
- 3 The forms, shown in **Appendix A1**, should be completed at the time of retrieval/transplant. They can initially be filled in by hand, but they must be submitted to NHSBT electronically using the submit button on the form, which will automatically return the form as an attachment to [CardiothoracicStatistics@nhsbt.nhs.uk](mailto:CardiothoracicStatistics@nhsbt.nhs.uk).
- 4 This report examines the form return rates for organs retrieved during the first 20 months of this initiative; 18 January 2017 to 17 August 2018. Chase reports were sent to Organ Grading Form Champions on 12 September and teams given 2 weeks to return any outstanding forms. Any forms returned after 26 September 2018 were not considered.

#### DATA

- 5 Between 18 January 2017 and 17 August 2018 there were 330 hearts retrieved, of which 311 were transplanted in the UK, 5 were transplanted overseas and 14 were subsequently declined after retrieval. For those not transplanted, it was assumed that they were received by the accepting centre unless there was information in the notes to suggest otherwise. The overall return rate was 78% from retrieval teams and 66% from transplant teams (those transplanted overseas were not considered). See **Table 1a** and **Table 1b** for a breakdown of rates by retrieval team and transplant team, respectively.

**Table 1a Grading of Retrieved Donor Heart form return rate by heart retrieval team, during the first 20 months of the pilot**

Retrieval Team	18 Jan – 17 Jun 2017		18 Jun – 17 Nov 2017		18 Nov – 17 Apr 2018		18 Apr – 17 Aug 2018		TOTAL	
	Retrieved	Returned (%)	Retrieved	Returned (%)	Retrieved	Returned (%)	Retrieved	Returned (%)	Retrieved	Returned (%)
Birmingham	10	8 (80)	10	6 (60)	14	10 (71)	7	3 (43)	41	27 (66)
Glasgow	3	3 (100)	2	2 (100)	8	8 (100)	1	1 (100)	14	14 (100)
Harefield	19	19 (100)	15	15 (100)	24	23 (96)	12	12 (100)	70	69 (99)
Manchester	18	11 (61)	13	9 (69)	18	8 (44)	16	5 (31)	65	33 (51)
Newcastle	12	7 (58)	13	5 (38)	17	7 (41)	5	4 (80)	47	23 (49)
Papworth	18	17 (94)	35	35 (100)	26	26 (100)	14	13 (93)	93	91 (98)
<b>Total</b>	<b>80</b>	<b>65 (81)</b>	<b>88</b>	<b>72 (82)</b>	<b>107</b>	<b>82 (77)</b>	<b>55</b>	<b>38 (69)</b>	<b>330</b>	<b>257 (78)</b>

**Table 1b Grading of Retrieved Donor Heart form return rate by heart transplant team, during the first 20 months of the pilot**

Transplant Team	18 Jan – 17 Jun 2017		18 Jun – 17 Nov 2017		18 Nov – 17 Apr 2018		18 Apr – 17 Aug 2018		TOTAL	
	Received	Returned (%)	Received	Returned (%)	Received	Returned (%)	Received	Returned (%)	Received	Returned (%)
Birmingham	7	0 (0)	11	5 (45)	10	1 (10)	8	2 (25)	36	8 (22)
GOSH	3	0 (0)	7	3 (43)	8	7 (88)	4	3 (75)	22	13 (59)
Glasgow	6	6 (100)	4	4 (100)	4	4 (100)	2	2 (100)	16	16 (100)
Harefield	16	16 (100)	19	16 (84)	21	20 (95)	11	9 (82)	67	61 (91)
Manchester	9	7 (78)	6	3 (50)	13	11 (85)	10	7 (70)	38	28 (74)
Newcastle	12	0 (0)	16	4 (25)	22	4 (18)	10	0 (0)	60	8 (13)
Papworth	24	23 (96)	24	21 (88)	26	24 (92)	9	9 (100)	83	77 (93)
<b>Total</b>	<b>77</b>	<b>52 (68)</b>	<b>87</b>	<b>56 (64)</b>	<b>104</b>	<b>71 (68)</b>	<b>54</b>	<b>32 (59)</b>	<b>322</b>	<b>211 (66)</b>

Note: all but 14 hearts were transplanted and for those that were not it was assumed that they were received by the accepting centre, except in 3 cases. 5 of the hearts in Table 1a were transplanted overseas and so are not included in this table as we would not expect a form.

- 6 There were 348 lung retrievals during the 20 month period, which led to 306 lung transplants in the UK, 9 overseas and 40 were subsequently declined after retrieval. For those not transplanted, it was assumed that they were received by the accepting centre except in 6 cases where there was information in the notes to suggest otherwise. The overall return rate was 71% from retrieval teams and 67% from transplant teams (excluding those transplanted overseas or not received). See **Table 2a** and **Table 2b** for a breakdown of rates by retrieval team and transplant team.

**Table 2a Grading of Retrieved Donor Lung form return rate by lung retrieval team, during the first 20 months of the pilot**

Retrieval Team	18 Jan – 17 Jun 2017		18 Jun – 17 Nov 2017		18 Nov – 17 Apr 2018		18 Apr – 17 Aug 2018		TOTAL	
	Retrieved	Returned (%)	Retrieved	Returned (%)	Retrieved	Returned (%)	Retrieved	Returned (%)	Retrieved	Returned (%)
Birmingham	18	14 (78)	11	8 (73)	20	14 (70)	6	5 (83)	55	41 (75)
Glasgow	8	8 (100)	9	8 (89)	3	2 (67)	5	4 (80)	25	22 (88)
Harefield	21	20 (95)	18	17 (94)	21	21 (100)	19	18 (95)	79	76 (96)
Manchester	15	6 (40)	15	9 (60)	19	7 (37)	11	3 (27)	60	25 (42)
Newcastle	17	5 (29)	15	4 (27)	14	3 (21)	7	2 (29)	53	14 (26)
Papworth	17	17 (100)	20	19 (95)	26	24 (92)	11	9 (82)	74	69 (93)
<b>Total</b>	<b>96</b>	<b>70 (73)</b>	<b>88</b>	<b>65 (74)</b>	<b>103</b>	<b>71 (69)</b>	<b>59</b>	<b>41 (69)</b>	<b>346</b>	<b>247 (71)</b>

**Table 2b Grading of Retrieved Donor Lung form return rate by lung transplant team, during the first 20 months of the pilot**

Transplant Team	18 Jan – 17 Jun 2017		18 Jun – 17 Nov 2017		18 Nov – 17 Apr 2018		18 Apr – 17 Aug 2018		TOTAL	
	Received	Returned (%)	Received	Returned (%)	Received	Returned (%)	Received	Returned (%)	Received	Returned (%)
Birmingham	8	4 (50)	7	5 (71)	10	6 (60)	5	4 (80)	30	19 (63)
GOSH	3	3 (100)	1	1 (100)	2	2 (100)	0	-	6	6 (100)
Harefield	28	27 (96)	24	23 (96)	26	22 (85)	20	17 (85)	98	89 (91)
Manchester	14	9 (64)	13	11 (85)	14	8 (57)	7	6 (86)	48	34 (71)
Newcastle	15	0 (0)	22	6 (27)	25	5 (20)	12	0 (0)	74	11 (15)
Papworth	24	19 (79)	19	15 (79)	23	20 (87)	12	10 (83)	78	64 (82)
<b>Total</b>	<b>92</b>	<b>62 (67)</b>	<b>86</b>	<b>61 (71)</b>	<b>100</b>	<b>63 (63)</b>	<b>56</b>	<b>37 (66)</b>	<b>334</b>	<b>223 (67)</b>

Note: this table counts double lungs accepted for a bilateral lung transplant just once. If both lungs were retrieved and accepted by different centres this is counted once in Table 2a but twice in this table. Lungs transplanted overseas were removed as were those where the notes suggested the lungs were declined before travelling to the accepting centre

## CONCLUSIONS AND OTHER FINDINGS

- 7 The form return rates are much higher than previously reported. This is due to two reasons:
  - a. We performed a one-off chase for outstanding forms prior to creating this report and this was sent to identified form champions as listed below. Harefield, Glasgow, Great Ormond Street, and Papworth all sent in a large number of forms following this chase which is reflected in their return rates.
  - b. We detected an error in the way forms were previously being imputed for analysis which meant some forms were being missed.
- 8 It has been agreed that return rates must be above 60% before any meaningful analysis can be done. This rate has now been achieved across all four forms, so an analysis of the organ grading data will be performed for the next CTAG meeting.
- 9 We need the forms to be kept in editable pdf format in order for the data to be extracted. Several forms were received in the time period that were in a "flattened" format (had been scanned in or saved as read-only and emailed) meaning the data could not be extracted, so these have not been counted as returned.

- 9 If you would like the form resending to you, or have any queries about how to use them, please email [CardiothoracicStatistics@nhsbt.nhs.uk](mailto:CardiothoracicStatistics@nhsbt.nhs.uk)

**Table 3 Organ Grading Forms Champion for each centre**

<b>Centre</b>	<b>Champion</b>
Birmingham	David Quinn
Glasgow	Lorraine Jerrett
Great Ormond Street	Ben Davies
Harefield	Anand Jothidasan
Manchester	Venkat, Jane Nuttall
Newcastle	Alison Davidson
Papworth	Marius Berman

**Rachel Hogg**  
**Statistics and Clinical Studies**

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Appendix A1 – screen shots of Grading of Retrieved Donor Heart (FRM5722) and Grading of Retrieved Donor Lung(s) (FRM5721)

Heart

UK TRANSPLANT REGISTRY		<b>Submit form</b>	*Mandatory field	<b>NHS</b> <i>Blood and Transplant</i>
<b>DONOR DETAILS</b> <span style="float:right">Section 1</span>				
Date donor notified*	<input type="text"/>	Donor hospital	<input type="text"/>	ODT Donor number*
<b>Heart Structure</b> <span style="float:right">Section 2</span>				
<i>(Please tick ONE of the following options) *</i>				
<input checked="" type="checkbox"/> H0	No repair to heart required	<input type="text"/>		
<input checked="" type="checkbox"/> H1	Repair required – will not affect function (please specify):	<input type="text"/>		
<input checked="" type="checkbox"/> H2	Repair required – will affect function (please specify):	<input type="text"/>		
<input checked="" type="checkbox"/> H3	Damage beyond repair (please specify):	<input type="text"/>		
Suffix: <i>(Please tick all that apply)</i>				
<input type="checkbox"/> a	ASD or PFO present	<input type="text"/>		
<input type="checkbox"/> b	bicuspid aortic valve	<input type="text"/>		
<input type="checkbox"/> c	congenital anomaly (please specify):	<input type="text"/>		
<input type="checkbox"/> p	palpable coronary disease (please specify):	<input type="text"/>		
<b>Vascular Cuffs</b> <span style="float:right">Section 3</span>				
<i>(Please tick ONE of the following options) *</i>				
<input checked="" type="checkbox"/> V0	Tissue to spare	<input type="text"/>		
<input checked="" type="checkbox"/> V1	No tissue to spare (please specify):	<input type="text"/>		
<input checked="" type="checkbox"/> V2	Material required to bridge anastomosis (please specify):	<input type="text"/>		
<b>Completed by</b> <span style="float:right">Section 4</span>				
<input checked="" type="checkbox"/> Lead retrieval surgeon	(forename & surname): <input type="text"/>	NORS team*	<input type="text"/>	
OR	<input type="text"/>	Recipient centre*	<input type="text"/>	
<input checked="" type="checkbox"/> Lead recipient surgeon	(forename & surname): <input type="text"/>			
Recipient surgeon ONLY, grade communication from retrieval surgeon <i>(Please tick ONE of the following options) *</i>				
<input checked="" type="checkbox"/> C0	Excellent	<input checked="" type="checkbox"/> C1	Good	<input checked="" type="checkbox"/> C2
<input checked="" type="checkbox"/> C3	Poor	<input checked="" type="checkbox"/> C4	Required but omitted	<input checked="" type="checkbox"/> NR
Not required				
Comments: <input type="text"/>				
FRM5722/1		Effective: 18/01/2017		

Lung

UK TRANSPLANT REGISTRY		<b>Submit form</b>	*Mandatory field	<b>NHS</b> <i>Blood and Transplant</i>
<b>DONOR DETAILS</b> <span style="float:right">Section 1</span>				
Date donor notified*	<input type="text"/>	Donor hospital	<input type="text"/>	ODT Donor number*
<b>Lung Structure</b> <span style="float:right">Section 2</span>				
<i>(Please tick ONE of the following options) *</i>				
<input checked="" type="checkbox"/> L0	No lung parenchymal injury	<input checked="" type="checkbox"/> B	Bilateral lungs	<input checked="" type="checkbox"/> LS
<input checked="" type="checkbox"/> L1	Lung parenchymal injury requiring repair (please specify):	<input checked="" type="checkbox"/> RS	Left single lung	<input checked="" type="checkbox"/> RS
<input checked="" type="checkbox"/> L2	Lung injury requiring lung resection (please specify):	<input type="text"/>		
<input checked="" type="checkbox"/> L3	Lung untransplantable (please specify):	<input type="text"/>		
Suffix: <i>(Please tick all that apply)</i>				
<input type="checkbox"/> h	"hyper-inflated"	<input type="checkbox"/> u	"under inflated with atelectasis"	
<input type="checkbox"/> b	bullous disease (please specify):	<input type="text"/>		
<b>Airway</b> <span style="float:right">Section 3</span>				
<i>(Please tick ONE of the following options) *</i>				
<input checked="" type="checkbox"/> A0	Airway to spare	<input checked="" type="checkbox"/> A1	No airway to spare	
<input checked="" type="checkbox"/> A2	Airway repair required (please specify):	<input type="text"/>		
Suffix: <i>(Please tick if applies)</i>				
<input type="checkbox"/> d	airway denude of surrounding tissues	<input type="text"/>		
<b>Vascular Cuffs</b> <span style="float:right">Section 4</span>				
<i>(Please tick ONE of the following options) *</i>				
<input checked="" type="checkbox"/> V0	Tissue to spare	<input type="text"/>		
<input checked="" type="checkbox"/> V1	No tissue to spare (please specify):	<input type="text"/>		
<input checked="" type="checkbox"/> V2	Material required to bridge anastomosis (please specify):	<input type="text"/>		
<b>Completed by</b> <span style="float:right">Section 5</span>				
<input checked="" type="checkbox"/> Lead retrieval surgeon	(forename & surname): <input type="text"/>	NORS team*	<input type="text"/>	
OR	<input type="text"/>	Recipient centre*	<input type="text"/>	
<input checked="" type="checkbox"/> Lead recipient surgeon	(forename & surname): <input type="text"/>			
Recipient surgeon ONLY, grade communication from retrieval surgeon <i>(Please tick ONE of the following options) *</i>				
<input checked="" type="checkbox"/> C0	Excellent	<input checked="" type="checkbox"/> C1	Good	<input checked="" type="checkbox"/> C2
<input checked="" type="checkbox"/> C3	Poor	<input checked="" type="checkbox"/> C4	Required but omitted	<input checked="" type="checkbox"/> NR
Not required				
Comments: <input type="text"/>				
FRM5721/1		Effective: 18/01/2017		