

NHS BLOOD AND TRANSPLANT
CARDIOTHORACIC ADVISORY GROUP
DCD HEART ACTIVITY

INTRODUCTION

- 1 DCD heart retrieval began in February 2015 for a 15 month initial evaluation period involving two centres; Harefield and Papworth. Since the end of the evaluation period, activity has continued with a third centre, Manchester, joining the programme in December 2016.
- 2 This paper looks at activity and patient outcomes from 1 February 2015 to 30 June 2017. It evaluates the number of retrievals and transplants performed by each team in the time period, along with the short and medium term outcomes of the recipients. For any donors who had their heart retrieved but not transplanted, the reason for non-use is also documented. All DCD Heart Transplant Supplementary Record forms have been received for this cohort.

RESULTS

- 3 In the time period, there have been 42 DCD heart donors, with 37 hearts successfully transplanted. In the initial evaluation period (ended 12 May 2016) there were 25 donations, resulting in 23 transplants and since this ended there have been a further 17 donations with 14 transplants. This activity is shown broken down by centre in **Table 1**. Manchester joined the programme on 5 December 2016 and so are only included after the initial evaluation period.

Period	Centre	Retrieved	Transplanted
1 February 2015 – 12 May 2016	Harefield	5	4
	Papworth	20	19
	Total	25	23
13 May 2016 – 30 June 2017	Harefield	2	2
	Papworth	12	10
	Manchester	3	2
	Total	17	14
Total		42	37

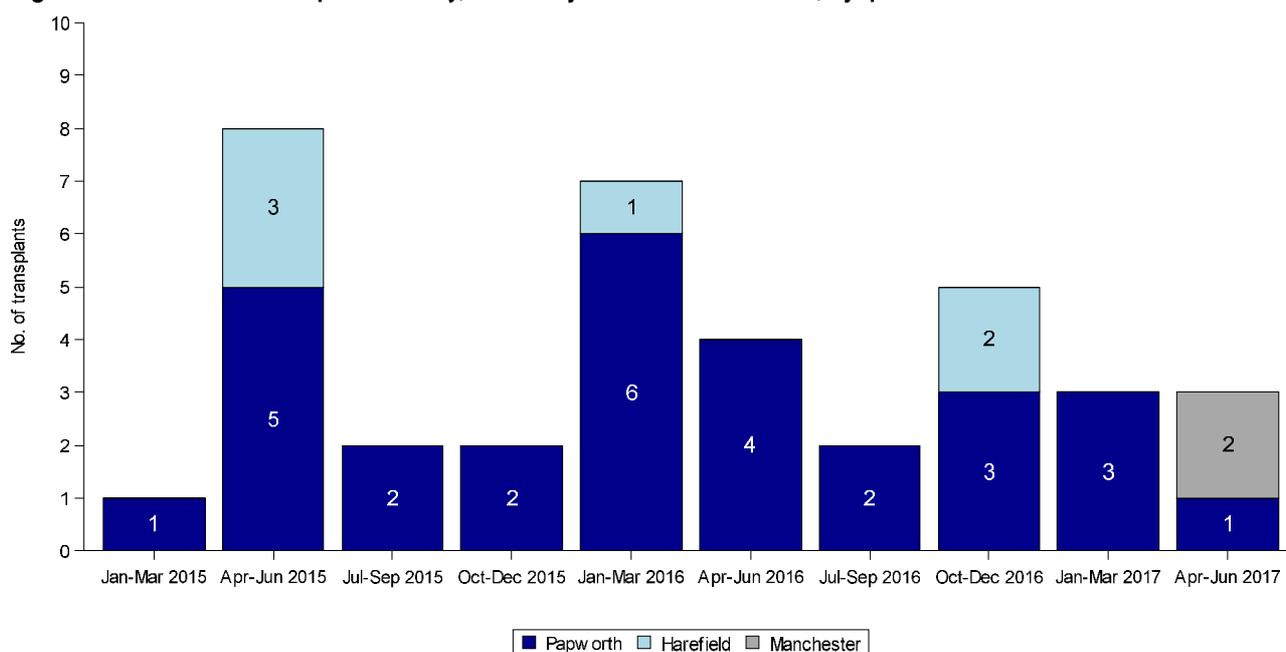
- 4 Across the whole time period, there have been 5 DCD hearts retrieved but not transplanted. The reason for non-use for each is seen below in **Table 2**. The reason is taken from the DCD Heart Transplant Supplementary Record form. Where this is not available, as the form was returned incomplete, the reason was taken from the Duty Office records.

Table 2 Reasons for non-use of hearts retrieved from DCD donors, 1 February 2015 – 30 June 2017

Centre	Donation Date	Reason for non-use
Harefield	October 2015	Continuous ventricular fibrillation after reperfusion on OCS
Papworth	July 2015 June 2016 January 2017	Declined for transplantation due to rising lactate level Function Donation ceased at recipient hospital - due to donor pancreatic tumour results from histology
Manchester	June 2017	Function

- 5 **Figure 1** shows the number of DCD heart transplants by quarter and centre. The beginning and end of the evaluation period saw the biggest peaks in activity, with activity remaining relatively stable since it ended in May 2016.

Figure 1 DCD heart transplant activity, 1 January 2015 to 30 June 2017, by quarter and centre



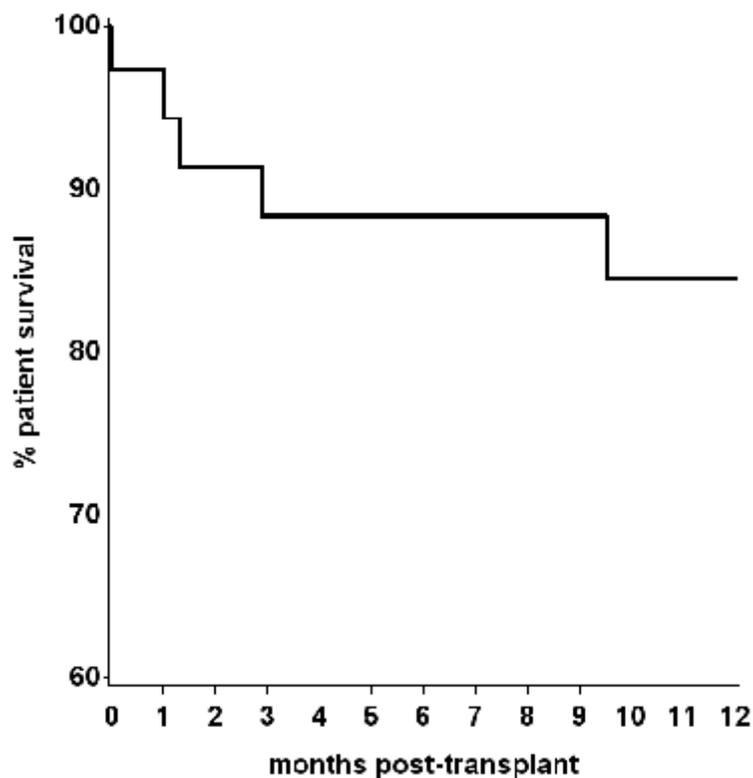
- 6 Of the 42 DCD heart donors, all but one donated at least one other organ; 6 donated their lungs and at least one abdominal organ, and 29 donated at least one abdominal organ but not their lungs. Two had no consent for lung donation.
- 7 The 30 day outcomes of all 37 transplants are summarised in **Table 3**. This information is based on the receipt of one of the following three forms: a DCD Heart Supplementary Record form, a transplant record form, or a three month follow up form. One patient at Papworth required a re-transplant with a DBD heart on day 26 and so their 30 day status is unknown as information regarding the re-transplant has not yet been received.

Centre	Alive at 30 days	Dead at 30 days	Unknown at 30 days
Harefield	5	1	0
Papworth	28	0	1 ¹
Manchester	2	0	0
Total	35	1	1

¹ Re-transplanted on day 26 and no follow-up returned yet for second transplant

- 8 **Figure 2** below shows the Kaplan-Meier patient survival function up to one year for the cohort. The one year survival estimate for DCD heart recipients is 84.5% (95% CI: 66.4–93.3) (for reference: one year survival rate for DBD heart recipients is 82.8% in 2015/16 NHSBT Cardiothoracic Annual Report). As at 15 August 2017, there have been 5 recorded deaths of DCD heart recipients; two were due to donor organ failure, one due to septicaemia, one due to a CVA and one was a sudden unexplained cardiac death.

Figure 2 Kaplan-Meier patient survival function for DCD heart transplant recipients, 1 February 2015 – 30 June 2017



- 9 The need for post-transplant mechanical support within 30 days is shown in **Table 4** along with the devices used. Out of the 37 patients, 12 (32%) required mechanical support; most of which were IABP only.

Table 4 Use of mechanical support within 30 days post-transplant, for DCD heart transplants performed 1 February 2015 – 30 June 2017

Mechanical support post-transplant	Number of patients
Yes	12
- <i>IABP only</i>	5
- <i>ECMO only</i>	4
- <i>ECMO and IABP</i>	1
- <i>ST VAD and ECMO</i>	2
No	25