

**NHS BLOOD AND TRANSPLANT  
ORGAN DONATION AND TRANSPLANTATION DIRECTORATE**

**PANCREAS ADVISORY GROUP**

**PANCREAS TRANSPLANT OUTCOME**

## **INTRODUCTION**

- 1 For information, national data on outcomes following vascularised pancreas transplantation are presented.

## **DATA & METHODS**

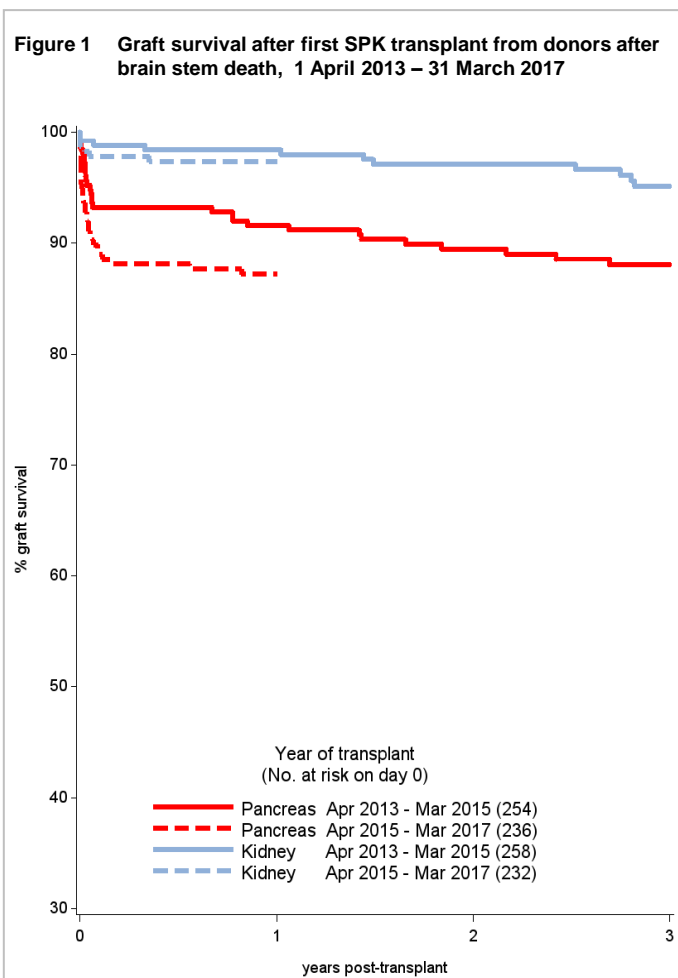
- 2 Data were obtained from the UK Transplant Registry and include deceased donor simultaneous pancreas and kidney (SPK) and pancreas only transplants performed in the UK between 1 April 2013 and 31 March 2017. Transplants using pancreases from donors after brain death (DBD) and donors after circulatory death (DCD) are analysed separately.
- 3 Pancreas and kidney one, two and three-year graft and patient survival are reported and presented in **Figures 1 to 5**. The survivor function was estimated using the Kaplan-Meier method. Graft survival is measured from date of transplant to graft failure, censoring for death with a functioning graft or, if functioning, the date of last known follow-up. Patient survival is measured from date of transplant to patient death, censoring for patients who were alive at their last known follow-up.

## **RESULTS**

- 4 There was a significant improvement in one-year pancreas graft survival following SPK transplants from DCD donors between the time periods, 81% in 2013-2015 cf. 91% in 2015-2017,  $p=0.05$ . There was not a significant difference in one-year pancreas graft survival following SPK transplants from DBD donors between the time periods, 92% in 2013-2015 cf. 87% in 2015-2017,  $p=0.1$ . Three-year pancreas graft survival following SPK transplant in 2013 and 2015 was 88% (95% CI: 83 – 92) for DBD donors and 79% (95% CI: 69 – 86) for DCD donors.
- 5 There was not a significant difference in pancreas graft survival following pancreas only transplants from DBD and DCD donors between the time periods 2013-2015 cf. 2015-2017,  $p=0.46$  and 0.32 respectively.
- 6 Further, there was not a significant difference in pancreas graft survival between pancreas transplants alone (PTA) and pancreas after kidney transplants (PAK) from DBD and DCD donors,  $p=0.76$  and 0.16 respectively.

## 1 Simultaneous kidney/pancreas transplants - donor after brain death (DBD)

**Figure 1** shows pancreas graft survival and kidney graft survival in recipients receiving their first simultaneous kidney/pancreas (SPK) transplant performed from donors after brain death, April 2013 - March 2015 and April 2015 - March 2017. Pancreas graft, kidney graft and patient survival estimates and confidence intervals are shown at one year, two years and three years in **Table 1.1**. Results are for adult patients only.



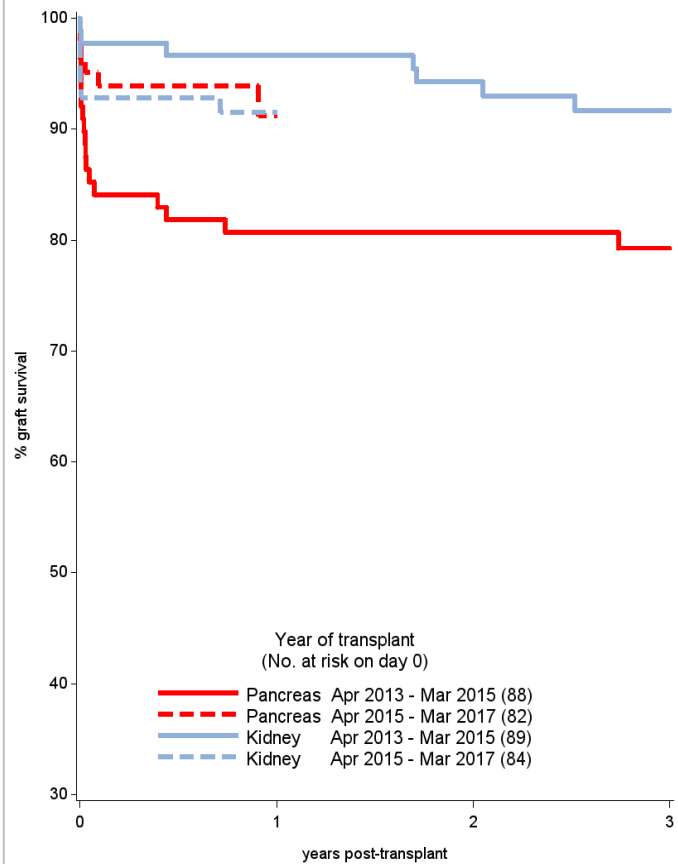
**Table 1.1** Graft and patient survival after first SPK transplant from a DBD, 1 April 2013 to 31 March 2017

Year of transplant	No. at risk on day 0	% Survival (95% confidence interval)			
		One year	Two year	Three year	
<b>Pancreas graft survival (one year, p=0.1)</b>					
Apr 2013 - Mar 2015	254	92 (87 - 94)	89 (85 - 93)	88 (83 - 92)	
Apr 2015 - Mar 2017	236	87 (82 - 91)			
<b>Kidney graft survival (one year, p=0.4)</b>					
Apr 2013 - Mar 2015	258	98 (96 - 99)	97 (94 - 99)	95 (91 - 97)	
Apr 2015 - Mar 2017	232	97 (94 - 99)			
<b>Patient survival (one year, p=0.98)</b>					
Apr 2013 - Mar 2015	254	97 (94 - 98)	97 (94 - 98)	93 (89 - 96)	
Apr 2015 - Mar 2017	236	97 (93 - 98)			

## 2 Simultaneous kidney/pancreas transplants - donor after circulatory death (DCD)

**Figure 2** shows pancreas graft survival and kidney graft survival in recipients receiving their first simultaneous kidney/pancreas (SPK) transplant performed from donors after circulatory death, April 2013 - March 2015 and April 2015 - March 2017. Pancreas graft, kidney graft and patient survival estimates and confidence intervals are shown at one year, two years and three years in **Table 1.2**. Results are for adult patients only.

**Figure 2** Graft survival after first SPK transplant from donors after circulatory death, 1 April 2013 – 31 March 2017



**Table 1.2** Graft and patient survival after first SPK transplant from a DCD, 1 April 2013 to 31 March 2017

Year of transplant	No. at risk on day 0	% Survival (95% confidence interval)					
		One year	Two year	Three year			
<b>Pancreas graft survival (one year, p=0.05)</b>							
Apr 2013 - Mar 2015	88	81	(71 - 88)	81	(71 - 88)	79	(69 - 86)
Apr 2015 - Mar 2017	82	91	(82 - 96)				
<b>Kidney graft survival (one year, p=0.15)</b>							
Apr 2013 - Mar 2015	89	97	(90 - 99)	94	(87 - 98)	92	(83 - 96)
Apr 2015 - Mar 2017	84	92	(83 - 96)				
<b>Patient survival (one year, p=0.32)</b>							
Apr 2013 - Mar 2015	88	100	(-)	97	(90 - 99)	96	(87 - 99)
Apr 2015 - Mar 2017	82	99	(91 - 100)				

### 3 Pancreas only transplants – deceased donors

**Figure 3** shows pancreas graft survival in recipients receiving their first pancreas only transplant performed from deceased donors, April 2013 - March 2015 and April 2015 - March 2017. Graft and patient survival estimates and confidence intervals are shown at one year, two years and three years in **Table 1.3**. Results are for adult patients only.

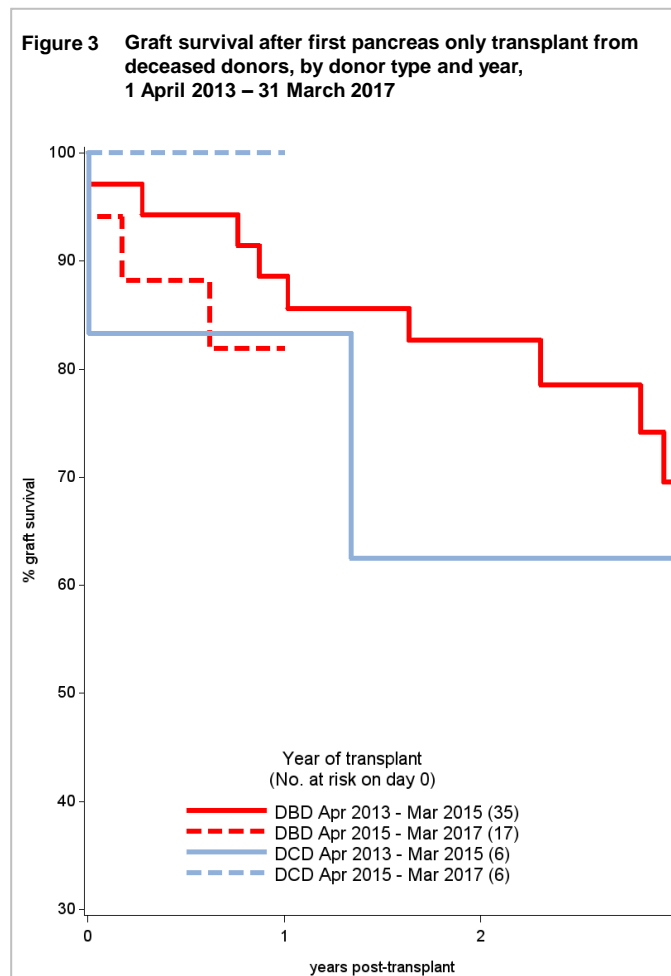
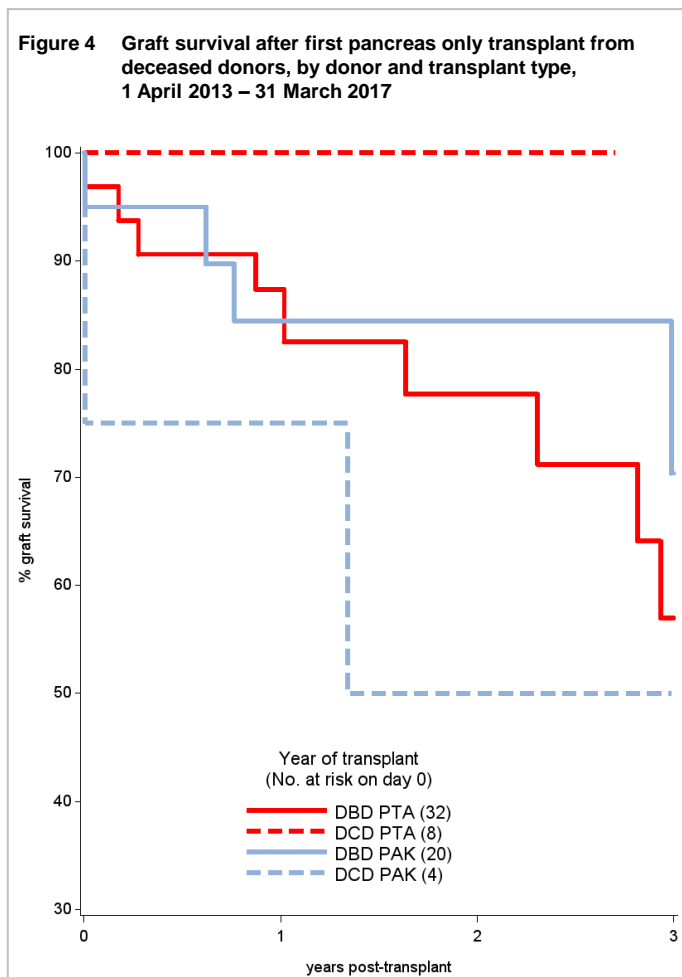


Table 1.3 Graft and patient survival after first pancreas transplant, 1 April 2013 to 31 March 2017				Table 1.3 Graft and patient survival after first pancreas only transplant, 1 April 2013 to 31 March 2017							
Year of transplant	No. at risk on day 0	% Survival (95% confidence interval) One year		Year of transplant	No. at risk on day 0	% Survival (95% confidence interval) One year Two year Three year					
<b>DBD Pancreas graft survival (one year, p=0.46)</b>				<b>DBD Pancreas graft survival (one year, p=0.46)</b>							
Apr 2013 - Mar 2015	35	89	(72 - 96)	Apr 2013 - Mar 2015	6	83	(27 - 97)	63	(14 - 89)	63	(14 - 89)
Apr 2015 - Mar 2017	17	82	(54 - 94)	Apr 2015 - Mar 2017	6	100	(-)				
<b>DBD Patient survival (one year, p=0.53)</b>				<b>DCD Pancreas graft survival (one year, p=0.32)</b>							
Apr 2013 - Mar 2015	35	97	(81 - 100)	Apr 2013 - Mar 2015	6	100	(-)	100	(-)	50	(6 - 84)
Apr 2015 - Mar 2017	17	93	(61 - 99)	Apr 2015 - Mar 2017	6	100	(-)				
<b>DCD Patient survival</b>				<b>DCD Patient survival</b>							
Apr 2013 - Mar 2015	35	97	(81 - 100)	Apr 2013 - Mar 2015	6	100	(-)	100	(-)	50	(6 - 84)
Apr 2015 - Mar 2017	17	93	(61 - 99)	Apr 2015 - Mar 2017	6	100	(-)				

#### 4 Pancreas only transplants by transplant type – deceased donors

**Figure 4** shows pancreas graft survival in recipients receiving their first pancreas only transplant performed from deceased donors, 1 April 2013 – 31 March 2017. Graft and patient survival estimates and confidence intervals are shown at one year, two years and three years in **Table 1.4**. Results are for adult patients only.



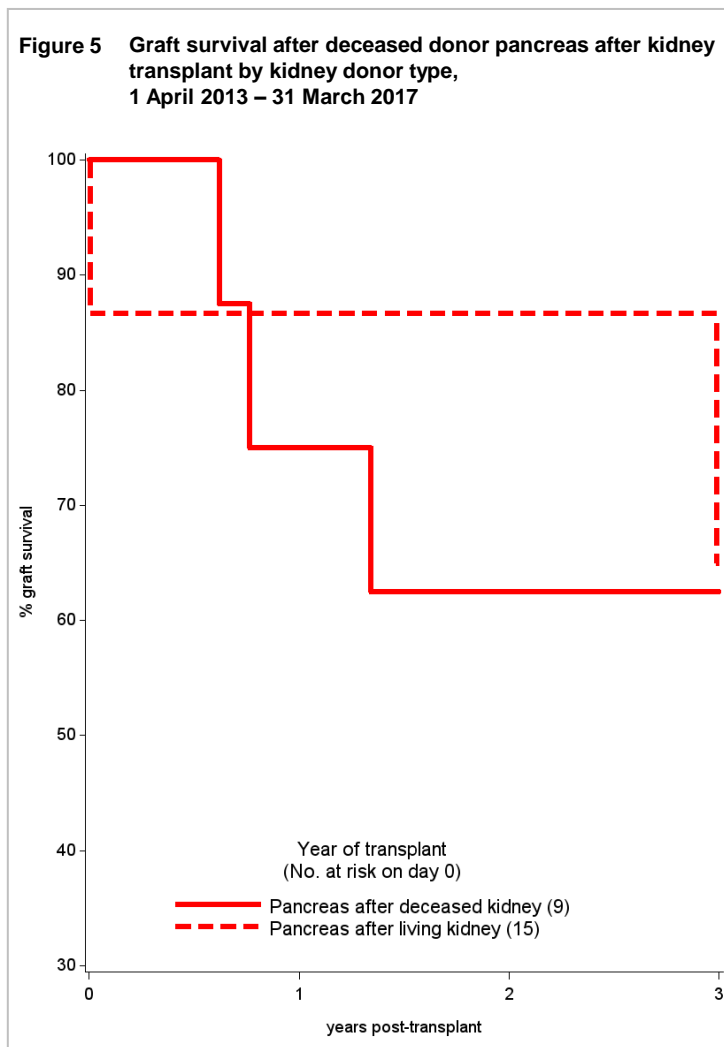
**Table 1.4** Graft and patient survival after first pancreas only transplant by transplant type, 1 April 2013 to 31 March 2017

Transplant type	No. at risk on day 0	% Survival (95% confidence interval)			
		One year	Two year	Three year	
<b>DBD Pancreas graft survival (one year, p=0.76)</b>					
PTA	32	87 (70 - 95)	78 (56 - 90)	57 (31 - 76)	
PAK	20	84 (59 - 95)	84 (59 - 95)	70 (33 - 90)	
<b>DBD Patient survival (one year, p=0.74)</b>					
PTA	32	97 (79 - 100)	92 (71 - 98)	85 (59 - 95)	
PAK	20	95 (68 - 99)	95 (68 - 99)	95 (68 - 99)	
<b>DCD Pancreas graft survival (one year, p=0.16)</b>					
PTA	8	100 (-)	100 (-)	100 (-)	
PAK	4	75 (13 - 96)	50 (6 - 84)	50 (6 - 84)	
<b>DCD Patient survival</b>					
PTA	8	100 (-)	100 (-)	100 (-)	
PAK	4	100 (-)	100 (-)	33 (1 - 77)	



## 5 Pancreas after kidney transplants by kidney donor type – deceased donors

**Figure 5** shows pancreas graft survival in recipients receiving their first pancreas after kidney transplant performed from deceased donors, 1 April 2013 – 31 March 2017. Graft and patient survival estimates and confidence intervals are shown at one year, two years and three years in **Table 1.5**. Results are for adult patients only.



**Table 1.5** Graft and patient survival after first pancreas after kidney transplant, 1 April 2013 to 31 March 2017

Transplant type	No. at risk on day 0	% Survival (95% confidence interval)					
		One year		Two year		Three year	
<b>Pancreas graft survival (one year, p=0.6)</b>							
PADK	9	75	(31 - 93)	63	(23 - 86)	63	(23 - 86)
PALK	15	87	(56 - 96)	87	(56 - 96)	65	(18 - 90)
<b>Patient survival</b>							
PADK	9	100	( - )	100	( - )	80	(20 - 97)
PALK	15	93	(61 - 99)	93	(61 - 99)	75	(25 - 94)

PADK – pancreas after deceased kidney  
PALK – pancreas after living kidney