

**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 isolated pancreas transplants performed in the UK between 1 April 2014 and 31 March 2018. 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.

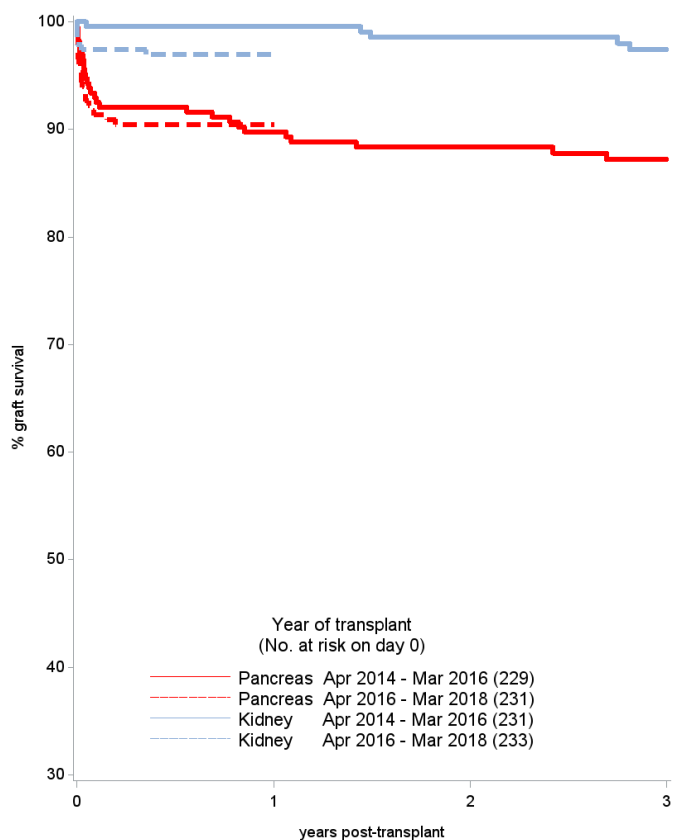
## **RESULTS**

- 4 There was no significant difference in one-year pancreas graft survival following first SPK transplants from DBD or DCD donors between the time periods 2014-2016 cf. 2016-2018,  $p=0.91$  and  $p=0.47$  respectively. Three-year pancreas graft survival following first SPK transplant in 2014-2016 was 87% and 84% for DBD and DCD donors, respectively. Following first SPK transplant from a DBD donor, there was a significant difference in one-year patient survival (96% and 99%,  $p=0.04$ ) and kidney graft survival (100% and 97%,  $p=0.03$ ) between 2014-2016 cf. 2016-2018.
- 5 There was no significant difference in one-year pancreas graft survival following pancreas only transplants from DBD donors between the time periods 2014-2016 cf. 2016-2018, 86% and 91% respectively,  $p=0.6$ .
- 6 Further, there was not a significant difference in one-year pancreas graft survival between pancreas transplants alone (PTA) and pancreas after kidney transplants (PAK) from DBD,  $p=0.46$ .

# 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 2014 - March 2016 and April 2016 - March 2018. 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.

**Figure 1** Graft survival after first SPK transplant from donors after brain stem death, 1 April 2014 to 31 March 2018

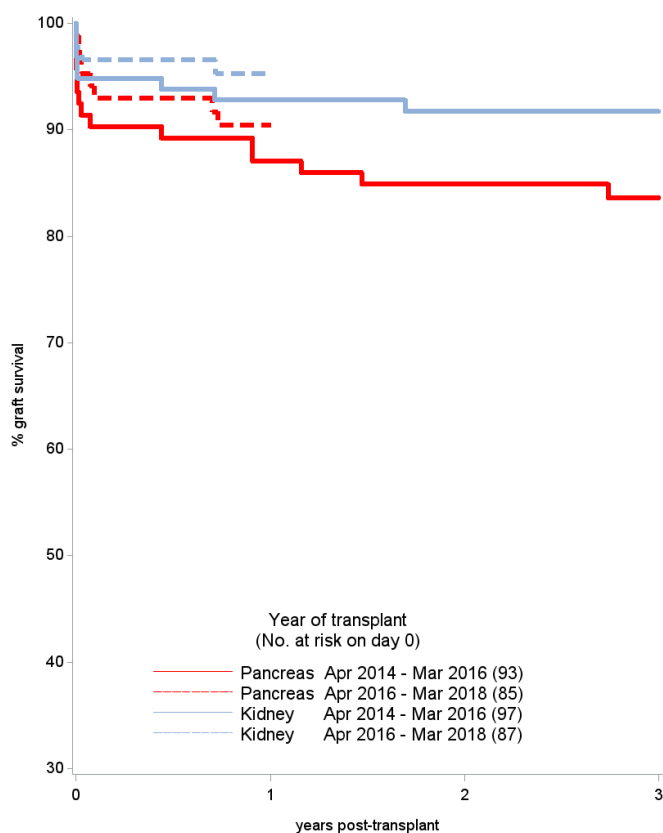


<b>Table 1.1 Graft and patient survival after first SPK transplant from a DBD, 1 April 2014 to 31 March 2018</b>						
Year of transplant	No. at risk on day 0	% Survival (95% confidence interval)				
		One year	Two year	Three year		
<b>Pancreas graft survival (one year, p=0.91)</b>						
Apr 2014 - Mar 2016	229	90 (85 - 93)	88 (83 - 92)	87 (82 - 91)		
Apr 2016 - Mar 2018	231	90 (86 - 94)				
<b>Kidney graft survival (one year, p=0.03)</b>						
Apr 2014 - Mar 2016	231	100 (97 - 100)	99 (96 - 100)	97 (94 - 99)		
Apr 2016 - Mar 2018	233	97 (94 - 99)				
<b>Patient survival (one year, p=0.04)</b>						
Apr 2014 - Mar 2016	228	96 (92 - 98)	95 (92 - 97)	93 (88 - 96)		
Apr 2016 - Mar 2018	231	99 (96 - 100)				

## 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 2014 - March 2016 and April 2016 - March 2018. 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 2014 to 31 March 2018

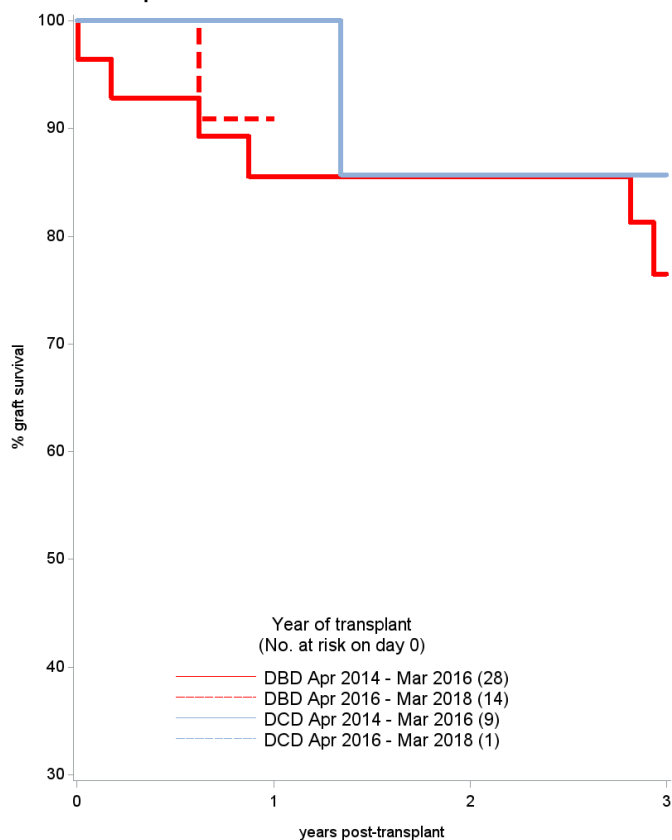


Year of transplant	No. at risk on day 0	% Survival (95% confidence interval)			
		One year	Two year	Three year	
<b>Pancreas graft survival (one year, p=0.47)</b>					
Apr 2014 - Mar 2016	93	87 (78 - 92)	85 (76 - 91)	84 (74 - 90)	
Apr 2016 - Mar 2018	85	90 (82 - 95)			
<b>Kidney graft survival (one year, p=0.49)</b>					
Apr 2014 - Mar 2016	97	93 (85 - 96)	92 (84 - 96)	92 (84 - 96)	
Apr 2016 - Mar 2018	87	95 (88 - 98)			
<b>Patient survival (one year, p=0.95)</b>					
Apr 2014 - Mar 2016	93	99 (92 - 100)	96 (89 - 99)	95 (88 - 98)	
Apr 2016 - Mar 2018	85	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 2014 - March 2016 and April 2016 - March 2018. 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.

**Figure 3** Graft survival after first pancreas only transplant from deceased donors, by donor type and year, 1 April 2014 to 31 March 2018



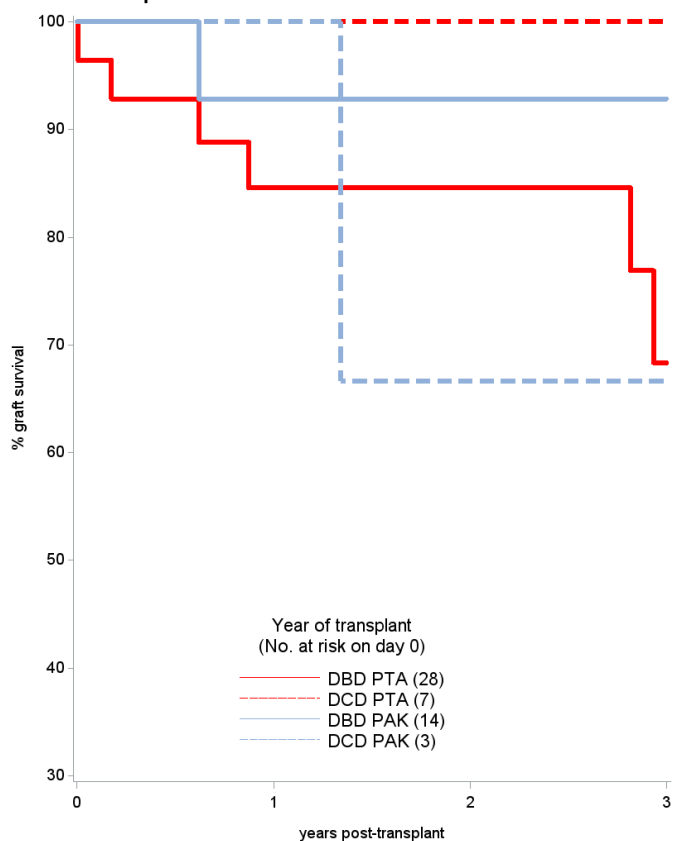
**Table 1.3** Graft and patient survival after first pancreas only transplant, 1 April 2014 to 31 March 2018

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=0.6)</b>						
Apr 2014 - Mar 2016	28	86 (66 - 94)	86 (66 - 94)	77 (55 - 89)		
Apr 2016 - Mar 2018	14	91 (51 - 99)				
<b>DBD Patient survival (one year, p=0.5)</b>						
Apr 2014 - Mar 2016	28	96 (76 - 99)	92 (73 - 98)	88 (68 - 96)		
Apr 2016 - Mar 2018	14	100 (-)				
<b>DCD Pancreas graft survival</b>						
Apr 2014 - Mar 2016	9	100 (-)	86 (33 - 98)	86 (33 - 98)		
Apr 2016 - Mar 2018	1	100 (-)				
<b>DCD Patient survival</b>						
Apr 2014 - Mar 2016	9	100 (-)	100 (-)	75 (31 - 93)		
Apr 2016 - Mar 2018	1	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 2014 – 31 March 2018. 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.

**Figure 4** Graft survival after first pancreas only transplant from deceased donors, by donor and transplant type, 1 April 2014 to 31 March 2018



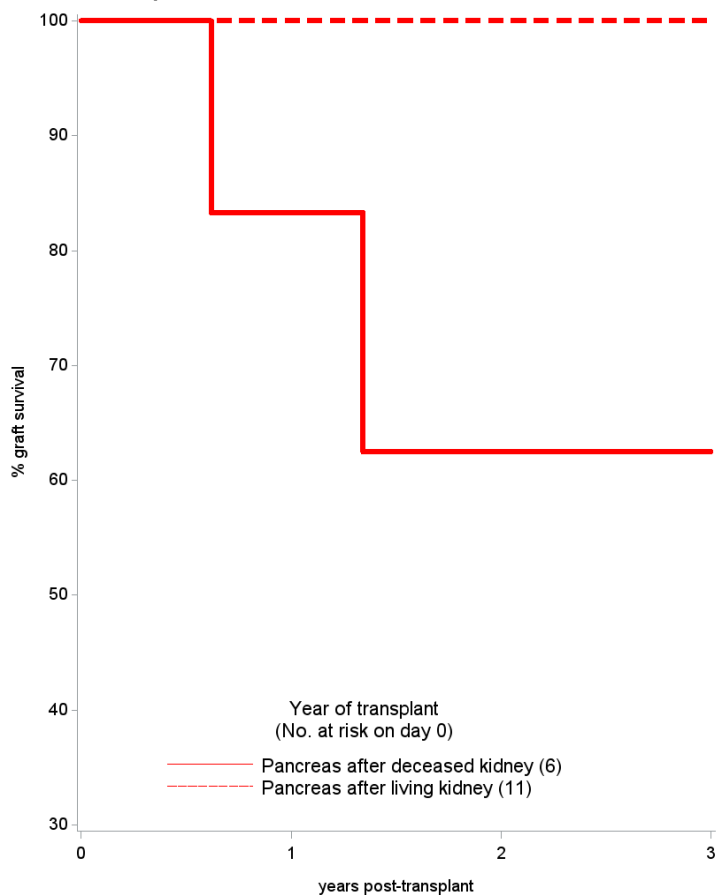
**Table 1.4** Graft and patient survival after first pancreas only transplant by transplant type, 1 April 2014 to 31 March 2018

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=0.46)</b>					
PTA	28	85 (64 - 94)	85 (64 - 94)	68 (39 - 86)	
PAK	14	93 (59 - 99)	93 (59 - 99)	93 (59 - 99)	
<b>DBD Patient survival (one year, p=0.45)</b>					
PTA	28	96 (75 - 99)	90 (66 - 98)	83 (56 - 95)	
PAK	14	100 (-)	100 (-)	90 (47 - 99)	
<b>DCD Pancreas graft survival</b>					
PTA	7	100 (-)	100 (-)	100 (-)	
PAK	3	100 (-)	67 (5 - 95)	67 (5 - 95)	
<b>DCD Patient survival</b>					
PTA	7	100 (-)	100 (-)	100 (-)	
PAK	3	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 2014 – 31 March 2018. 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.

**Figure 5** Graft survival after deceased donor pancreas after kidney transplant by kidney donor type, 1 April 2014 to 31 March 2018



**Table 1.5** Graft and patient survival after first pancreas after kidney transplant, 1 April 2014 to 31 March 2018

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=0.1)</b>							
PADK	6	83 (27 - 97)	63 (14 - 89)	63 (14 - 89)			
PALK	11	100 (-)	100 (-)	100 (-)			
<b>Patient survival</b>							
PADK	6	100 (-)	100 (-)	60 (13 - 88)			
PALK	11	100 (-)	100 (-)	83 (27 - 97)			

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