

**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 January 2014 and 31 December 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.

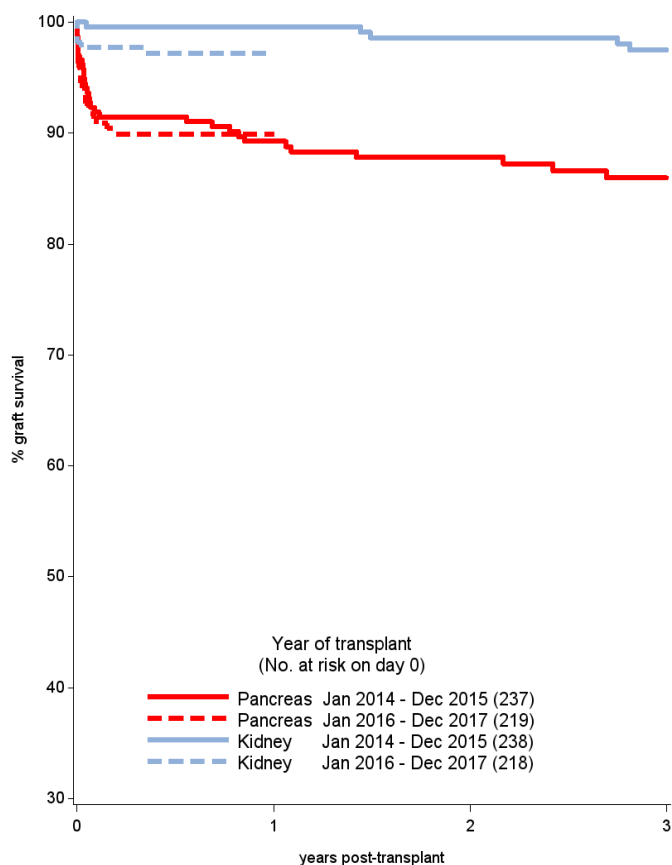
## **RESULTS**

- 4 There was no significant difference in one-year pancreas graft survival following first SPK transplants from DBD or DCD donors between the time periods 2014-2015 cf. 2016-2017,  $p=0.93$  and  $p=0.13$  respectively. Three-year pancreas graft survival following first SPK transplant in 2014 - 2015 was 86% (95% CI: 81 – 90) for DBD donors and 81% (95% CI: 71 – 88) for DCD donors. There was a significant difference in one-year kidney graft survival following first SPK transplants from DBD donor between 2014-2015 cf. 2016-2017, 100% (95% CI: 97 – 100) and 97% (95% CI: 94 – 99) respectively,  $p=0.04$ .
- 5 There was no significant difference in one-year pancreas graft survival following pancreas only transplants from DBD donors between the time periods 2014-2015 cf. 2016-2017, 87% and 93% respectively,  $p=0.74$ .
- 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, both were 88%,  $p=0.96$ .

# 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, January 2014 - December 2015 and January 2016 - December 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.

**Figure 1** Graft survival after first SPK transplant from donors after brain stem death, 1 January 2014 – 31 December 2017

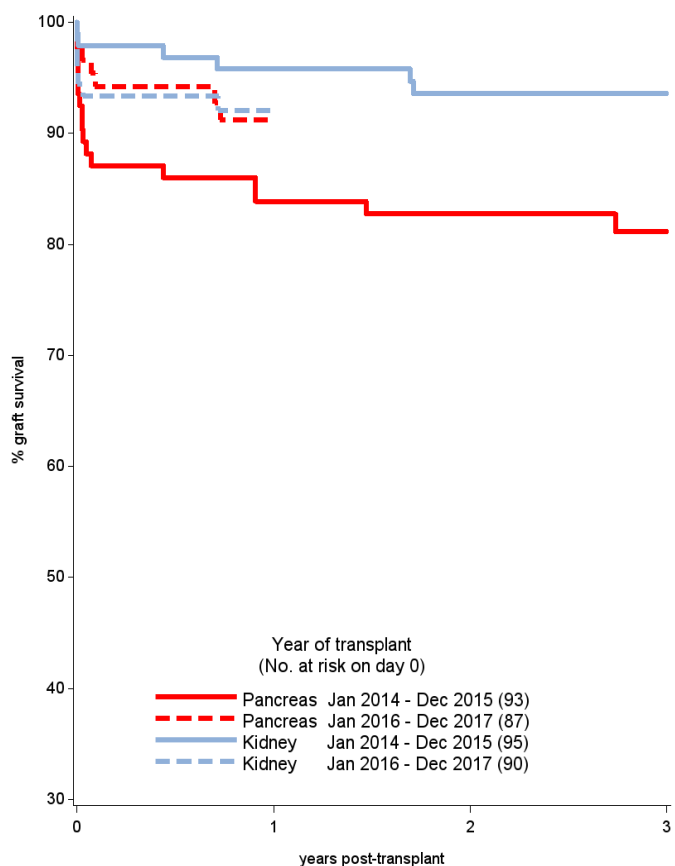


Year of transplant	No. at risk on day 0	% Survival (95% confidence interval)			
		One year	Two year	Three year	
<b>Pancreas graft survival (one year, p=0.93)</b>					
Jan 2014 - Dec 2015	237	89 (85 - 93)	88 (83 - 91)	86 (81 - 90)	
Jan 2016 - Dec 2017	219	90 (85 - 93)			
<b>Kidney graft survival (one year, p=0.04)</b>					
Jan 2014 - Dec 2015	238	100 (97 - 100)	99 (96 - 100)	97 (94 - 99)	
Jan 2016 - Dec 2017	218	97 (94 - 99)			
<b>Patient survival (one year, p=0.40)</b>					
Jan 2014 - Dec 2015	236	96 (93 - 98)	96 (93 - 98)	94 (89 - 96)	
Jan 2016 - Dec 2017	219	98 (94 - 99)			

## 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, January 2014 - December 2015 and January 2016 - December 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 January 2014 – 31 December 2017

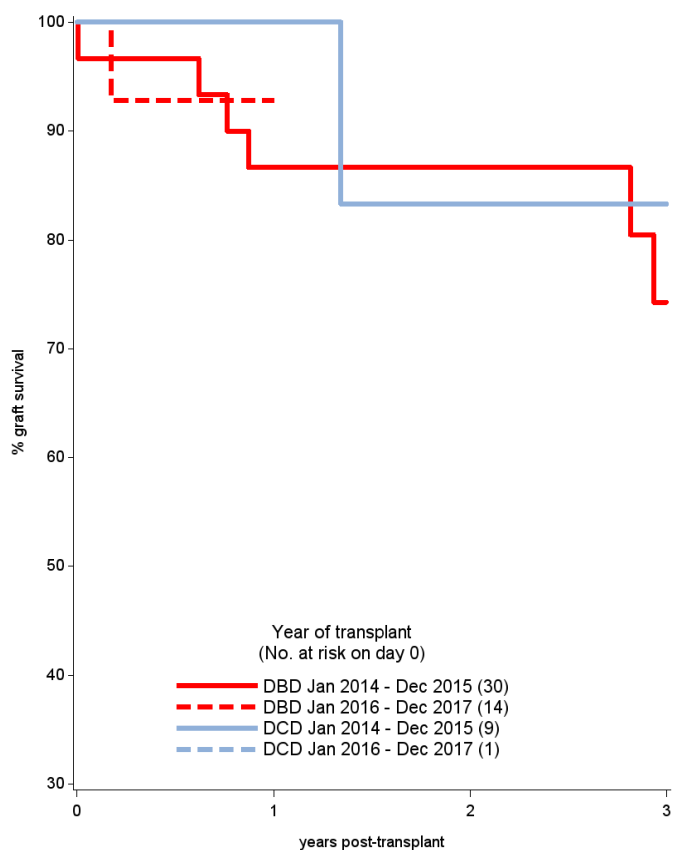


Year of transplant	No. at risk on day 0	% Survival (95% confidence interval)			
		One year	Two year	Three year	
<b>Pancreas graft survival (one year, p=0.13)</b>					
Jan 2014 - Dec 2015	93	84 (75 - 90)	83 (73 - 89)	81 (71 - 88)	
Jan 2016 - Dec 2017	87	91 (82 - 96)			
<b>Kidney graft survival (one year, p=0.27)</b>					
Jan 2014 - Dec 2015	95	96 (89 - 98)	94 (86 - 97)	94 (86 - 97)	
Jan 2016 - Dec 2017	90	92 (84 - 96)			
<b>Patient survival (one year, p=0.13)</b>					
Jan 2014 - Dec 2015	93	100 (-)	98 (90 - 99)	96 (88 - 99)	
Jan 2016 - Dec 2017	87	97 (90 - 99)			

### 3 Pancreas only transplants – deceased donors

**Figure 3** shows pancreas graft survival in recipients receiving their first pancreas only transplant performed from deceased donors, January 2014 - December 2015 and January 2016 - December 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.

**Figure 3** Graft survival after first pancreas only transplant from deceased donors, by donor type and year, 1 January 2014 – 31 December 2017



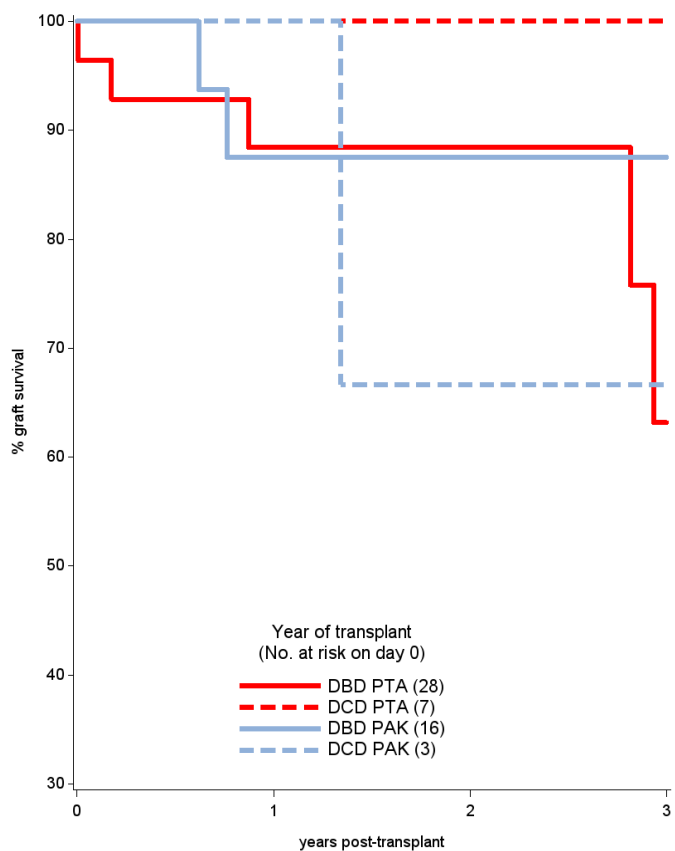
**Table 1.3** Graft and patient survival after first pancreas only transplant, 1 January 2014 to 31 December 2017

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=0.74)</b>							
Jan 2014 - Dec 2015	30	87	(68 - 95)	87	(68 - 95)	74	(50 - 88)
Jan 2016 - Dec 2017	14	93	(59 - 99)				
<b>DBD Patient survival (one year, p=0.10)</b>							
Jan 2014 - Dec 2015	30	100	(-)	100	(-)	94	(65 - 99)
Jan 2016 - Dec 2017	14	91	(51 - 99)				
<b>DCD Pancreas graft survival</b>							
Jan 2014 - Dec 2015	9	100	(-)	83	(27 - 97)	83	(27 - 97)
Jan 2016 - Dec 2017	1	100	(-)				
<b>DCD Patient survival</b>							
Jan 2014 - Dec 2015	9	100	(-)	100	(-)	50	(6 - 84)
Jan 2016 - Dec 2017	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 January 2014 – 31 December 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.

**Figure 4** Graft survival after first pancreas only transplant from deceased donors, by donor and transplant type, 1 January 2014 – 31 December 2017



**Table 1.4** Graft and patient survival after first pancreas only transplant by transplant type, 1 January 2014 to 31 December 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=0.96)</b>						
PTA	28	88	(68 - 96)	88	(68 - 96)	63 (26 - 85)
PAK	16	88	(59 - 97)	88	(59 - 97)	88 (59 - 97)
<b>DBD Patient survival (one year, p=0.41)</b>						
PTA	28	96	(74 - 99)	89	(63 - 97)	81 (49 - 94)
PAK	16	100	(-)	100	(-)	100 (-)
<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	(-)	0 (0 - 0)

## 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 January 2014 – 31 December 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.

Figure 5 Graft survival after deceased donor pancreas after kidney transplant by kidney donor type, 1 January 2014 – 31 December 2017

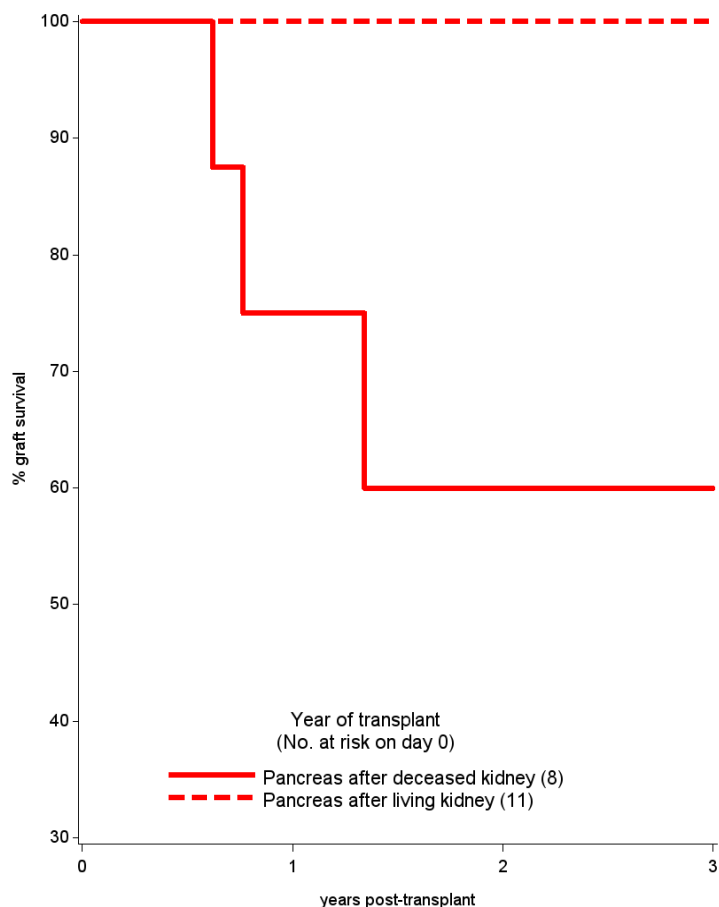


Table 1.5 Graft and patient survival after first pancreas after kidney transplant, 1 January 2014 to 31 December 2017

Transplant type	No. at risk on day 0	% Survival (95% confidence interval)			
		One year	Two year	Three year	
<b>Pancreas graft survival</b>					
PADK	8	75 (31 - 93)	60 (20 - 85)	60 (20 - 85)	
PALK	11	100 (-)	100 (-)	100 (-)	
<b>Patient survival</b>					
PADK	8	100 (-)	100 (-)	80 (20 - 97)	
PALK	11	100 (-)	100 (-)	75 (13 - 96)	

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