

**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 2015 and 31 December 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.

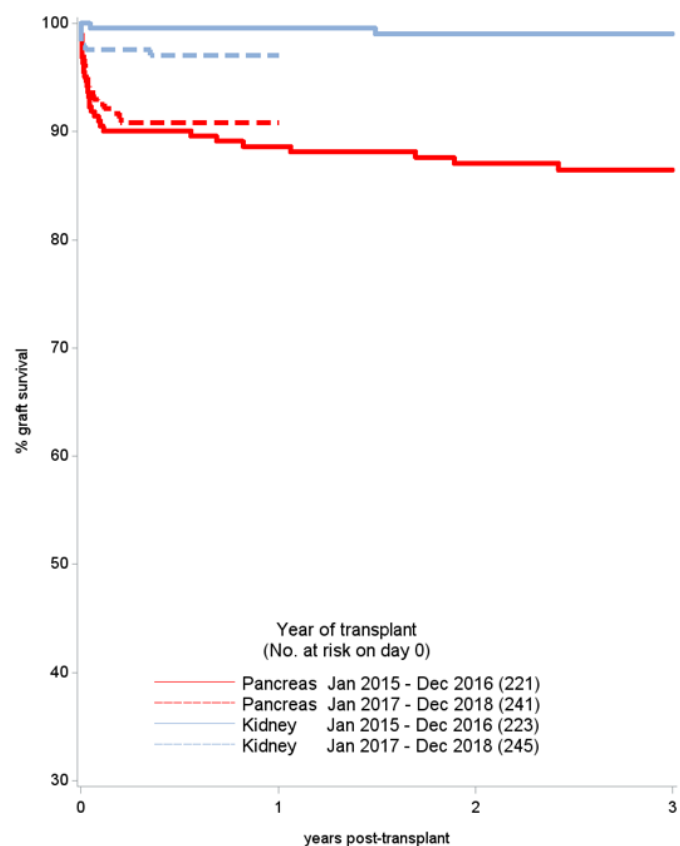
## **RESULTS**

- 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 2015-2016 cf. 2017-2018,  $p=0.48$  and  $p=0.07$  respectively. Three-year pancreas graft survival following first SPK transplant in 2015-2016 was 86% and 83% for DBD and DCD donors, respectively. Following first SPK transplant from a DBD donor, there was no significant difference in one-year patient survival (97% and 99%,  $p=0.2$ ) between 2015-2016 cf. 2017-2018.
- 5 There was no significant difference in one-year pancreas graft survival following pancreas only transplants from DBD donors between the time periods 2015-2016 cf. 2017-2018, 81% and 87% respectively,  $p=0.82$ .
- 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,  $p=0.44$ .

# 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 2015 - December 2016 and January 2017 - December 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 January 2015 to 31 December 2018



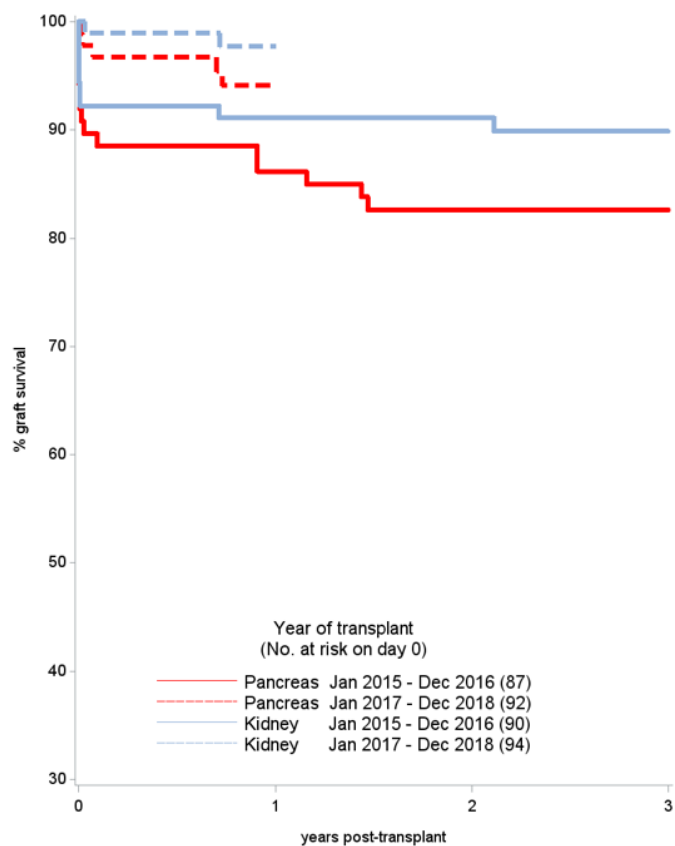
**Table 1.1** Graft and patient survival after first SPK transplant from a DBD, 1 January 2015 to 31 December 2018

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=0.48)</b>					
Jan 2015 - Dec 2016	221	89 (84 - 92)	87 (82 - 91)	86 (81 - 90)	
Jan 2017 - Dec 2018	241	91 (86 - 94)			
<b>Pancreas patient survival (one year, p=0.2)</b>					
Jan 2015 - Dec 2016	220	97 (94 - 99)	96 (93 - 98)	95 (90 - 97)	
Jan 2017 - Dec 2018	241	99 (96 - 100)			
<b>Kidney graft survival (one year, p=0.04)</b>					
Jan 2015 - Dec 2016	223	100 (97 - 100)	99 (96 - 100)	99 (96 - 100)	
Jan 2017 - Dec 2018	245	97 (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 2015 - December 2016 and January 2017 - December 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 January 2015 to 31 December 2018



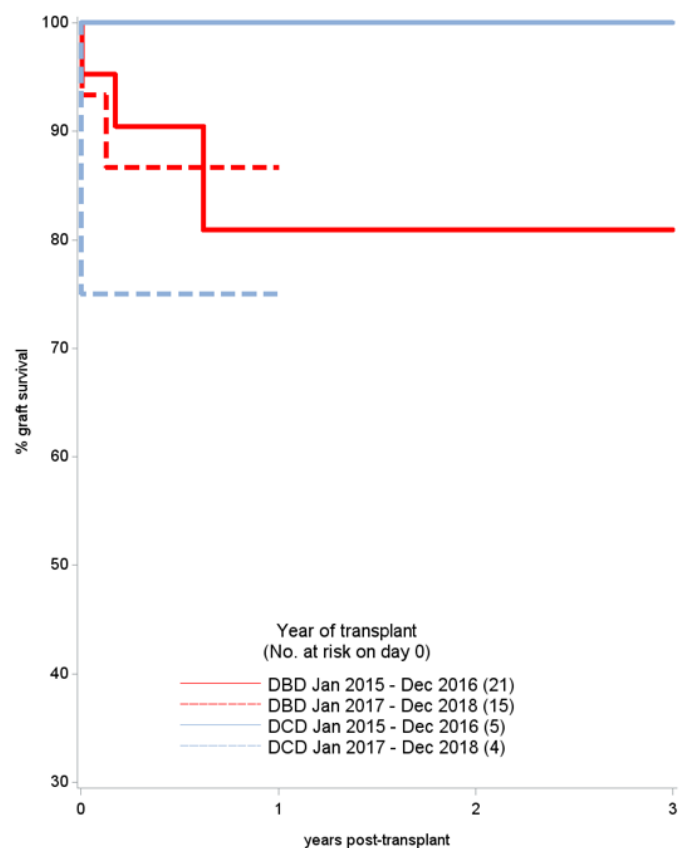
**Table 1.2** Graft and patient survival after first SPK transplant from a DCD, 1 January 2015 to 31 December 2018

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=0.07)</b>				
Jan 2015 - Dec 2016	87	86 (77 - 92)	83 (73 - 89)	83 (73 - 89)
Jan 2017 - Dec 2018	92	94 (86 - 98)		
<b>Pancreas patient survival (one year, p=0.98)</b>				
Jan 2015 - Dec 2016	87	99 (92 - 100)	97 (90 - 99)	94 (85 - 98)
Jan 2017 - Dec 2018	92	99 (91 - 100)		
<b>Kidney graft survival (one year, p=0.05)</b>				
Jan 2015 - Dec 2016	90	91 (83 - 95)	91 (83 - 95)	90 (81 - 95)
Jan 2017 - Dec 2018	94	98 (91 - 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 2015 - December 2016 and January 2017 - December 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 January 2015 to 31 December 2018



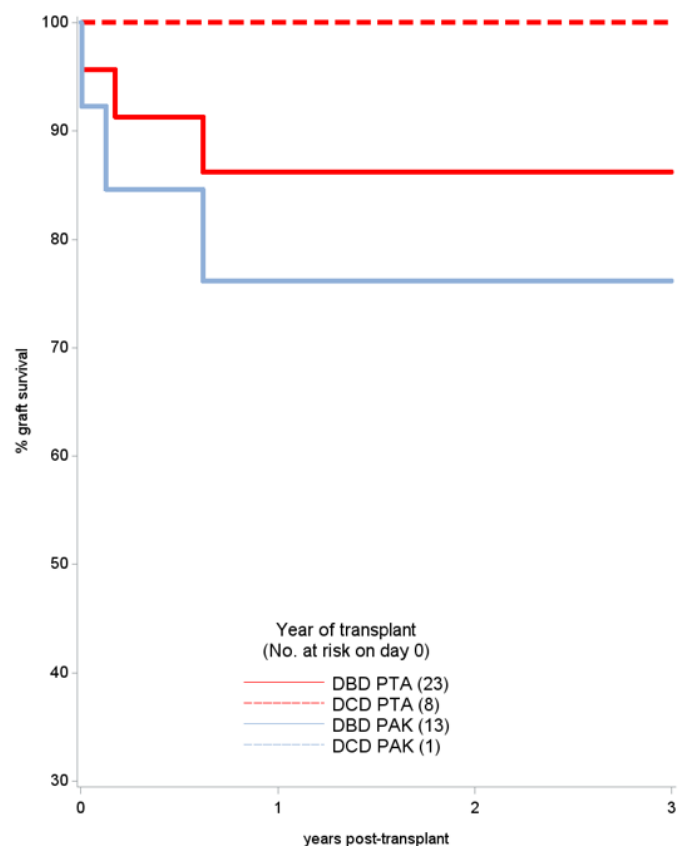
**Table 1.3** Graft and patient survival after first pancreas only transplant, 1 January 2015 to 31 December 2018

Year of transplant	No. at risk on day 0	% Survival (95% confidence interval)		
		One year	Two year	Three year
<b>DBD graft survival (one year, p=0.82)</b>				
Jan 2015 - Dec 2016	21	81 (57 - 92)	81 (57 - 92)	81 (57 - 92)
Jan 2017 - Dec 2018	15	87 (56 - 96)		
<b>DBD patient survival (one year, p=0.46)</b>				
Jan 2015 - Dec 2016	21	95 (69 - 99)	89 (63 - 97)	89 (63 - 97)
Jan 2017 - Dec 2018	15	100 -		
<b>DCD graft survival (one year, p=0.26)</b>				
Jan 2015 - Dec 2016	5	100 -	100 -	100 -
Jan 2017 - Dec 2018	4	75 (13 - 96)		
<b>DCD patient survival</b>				
Jan 2015 - Dec 2016	5	100 -	100 -	100 -
Jan 2017 - Dec 2018	4	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 2015 – 31 December 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 January 2015 to 31 December 2018



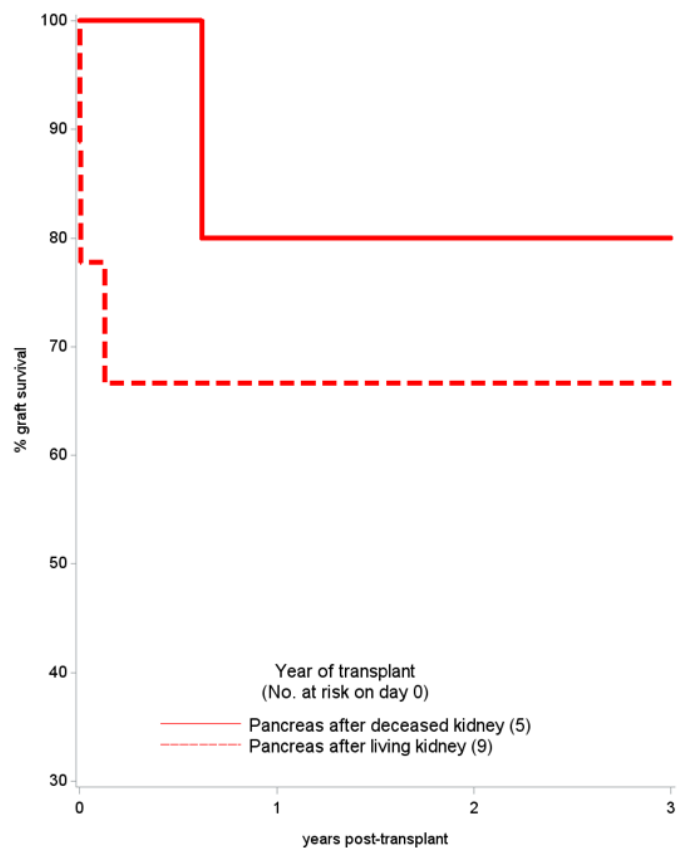
**Table 1.4** Graft and patient survival after first pancreas only transplant by transplant type, 1 January 2015 to 31 December 2018

Year of transplant	No. at risk on day 0	% Survival (95% confidence interval)			
		One year	Two year	Three year	
<b>DBD graft survival (one year, p=0.44)</b>					
PTA	23	86 (63 - 95)	86 (63 - 95)	86 (63 - 95)	86 (63 - 95)
PAK	13	76 (43 - 92)	76 (43 - 92)	76 (43 - 92)	76 (43 - 92)
<b>DBD patient survival (one year, p=0.49)</b>					
PTA	23	95 (71 - 99)	87 (54 - 97)	87 (54 - 97)	87 (54 - 97)
PAK	13	100 -	100 -	83 (27 - 97)	83 (27 - 97)
<b>DCD graft survival</b>					
PTA	8	100 -	100 -	100 -	100 -
PAK	1	0 -	0 -	0 -	0 -
<b>DCD patient survival</b>					
PTA	8	100 -	100 -	100 -	100 -
PAK	1	100 -	100 -	100 -	100 -

## 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 2015 – 31 December 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 January 2015 to 31 December 2018



**Table 1.5** Graft and patient survival after first pancreas after kidney transplant, 1 January 2015 to 31 December 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=0.5)</b>					
PADK	5	80 (20 - 97)	80 (20 - 97)	80 (20 - 97)	80 (20 - 97)
PALK	9	67 (28 - 88)	67 (28 - 88)	67 (28 - 88)	67 (28 - 88)
<b>Pancreas patient survival</b>					
PADK	5	100 -	100 -	50 (1 - 91)	
PALK	9	100 -	100 -	100 -	