

NHS BLOOD AND TRANSPLANT
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 2016 and 31 March 2020. 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 an improvement in one-year pancreas graft survival following first SPK transplants from DBD donors and DCD donors between the time periods 2016-2018 cf. 2018-2020, although only the DCD donors were statistically significant $p=0.14$, $p=0.03$, respectively. Three-year pancreas graft survival following first SPK transplant in 2016-2018 was 88% for DBD and 87% for DCD donors. One-year kidney graft survival following first SPK transplant in 2018-2020 was 97% for DBD and 100% for DCD donors.
- 5 There was no significant difference in one-year pancreas graft survival following pancreas only transplants from DBD donors between the time periods 2016-2018 cf. 2018-2020, 92% and 87% respectively, $p=0.47$.
- 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, $p=0.41$.

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 2016 - March 2018 and April 2018 – March 2020. 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 2016 to 31 March 2020

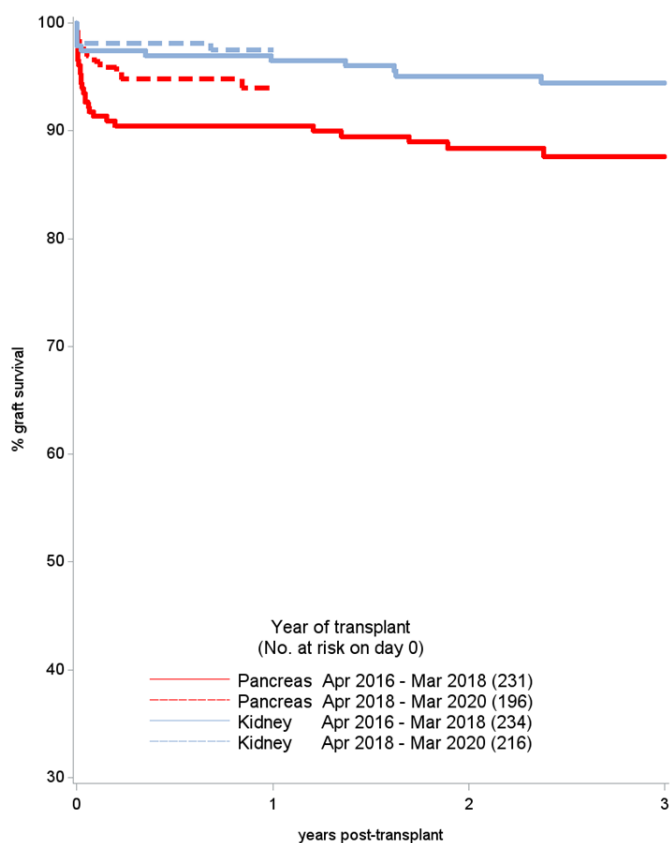


Table 1.1 Graft and patient survival after first SPK transplant from a DBD, 1 April 2016 to 31 March 2020

Year of transplant	No. at risk on day 0	% Survival (95% confidence interval)			
		One year	Two year	Three year	
Pancreas graft survival (one year, p=0.14)					
Apr 2016 - Mar 2018	231	90 (86 - 94)	88 (83 - 92)	88 (82 - 91)	
Apr 2018 - Mar 2020	196	94 (89 - 97)			
Pancreas patient survival (one year, p=0.89)					
Apr 2016 - Mar 2018	231	99 (96 - 100)	98 (95 - 99)	97 (92 - 99)	
Apr 2018 - Mar 2020	198	99 (95 - 100)			
Kidney graft survival (one year, p=0.6)					
Apr 2016 - Mar 2018	234	97 (93 - 98)	95 (91 - 97)	94 (90 - 97)	
Apr 2018 - Mar 2020	216	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, April 2016 – March 2018 and April 2018 – March 2020. 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 2016 to 31 March 2020

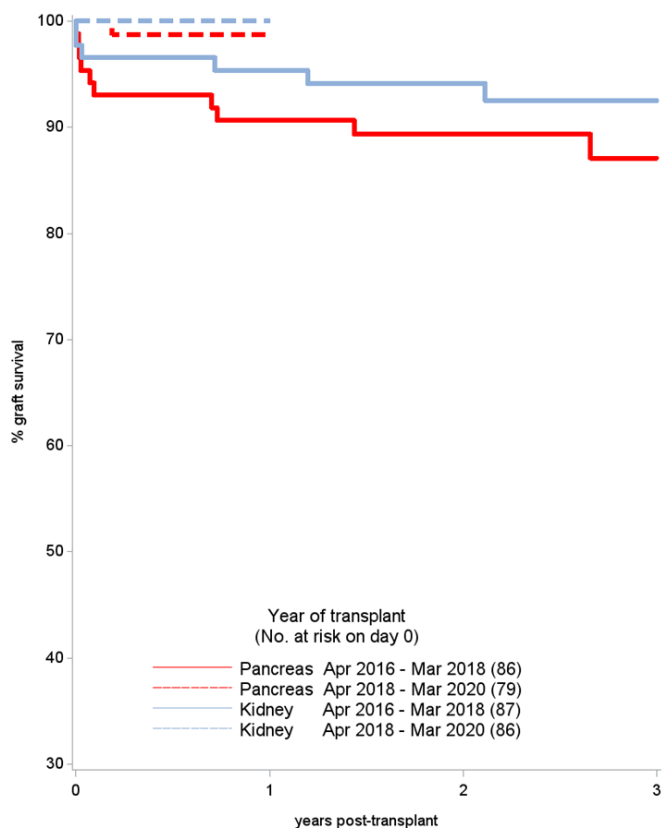


Table 1.2 Graft and patient survival after first SPK transplant from a DCD, 1 April 2016 to 31 March 2020

Year of transplant	No. at risk on day 0	% Survival (95% confidence interval)			
		One year	Two year	Three year	
Pancreas graft survival (one year, p=0.03)					
Apr 2016 - Mar 2018	86	91 (82 - 95)	89 (80 - 94)	87 (77 - 93)	
Apr 2018 - Mar 2020	79	99 (91 - 100)			
Pancreas patient survival (one year, p=0.39)					
Apr 2016 - Mar 2018	86	99 (92 - 100)	97 (90 - 99)	95 (85 - 98)	
Apr 2018 - Mar 2020	80	100 -			
Kidney graft survival (one year, p=0.05)					
Apr 2016 - Mar 2018	87	95 (88 - 98)	94 (87 - 98)	93 (84 - 97)	
Apr 2018 - Mar 2020	86	100 -			

3 Pancreas only transplants – donor after brain death (DBD)

Figure 3 shows pancreas graft survival in recipients receiving their first pancreas only transplant performed from DBD donors, April 2016 – March 2018 and April 2018 - March 2020. There were too few DCD donor pancreas only transplants in each time period to analyse (n<5). 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 and survival estimates should be interpreted with caution due to small numbers.

Figure 3 Graft survival after first pancreas only transplant from deceased donors, by donor type and year, 1 April 2016 to 31 March 2020

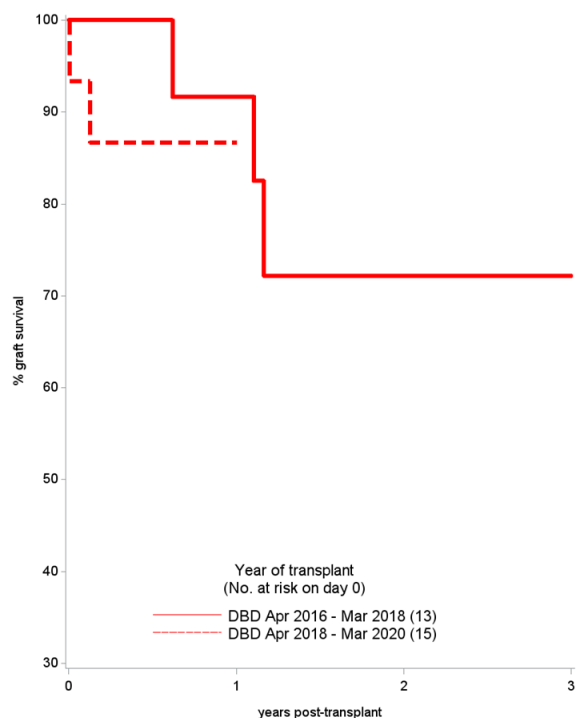


Table 1.3 Graft and patient survival after first pancreas only transplant, 1 April 2016 to 31 March 2020

Year of transplant	No. at risk on day 0	% Survival (95% confidence interval)		
		One year	Two year	Three year
DBD graft survival (one year, p=0.47)				
Apr 2016 - Mar 2018	13	92 (54 - 99)	72 (36 - 90)	72 (36 - 90)
Apr 2018 - Mar 2020	15	87 (56 - 96)		
DBD patient survival (one year, p=0.19)				
Apr 2016 - Mar 2018	13	100 -	100 -	75 (13 - 96)
Apr 2018 - Mar 2020	15	86 (33 - 98)		

4 Pancreas only transplants by transplant type – donor after brain death (DBD)

Figure 4 shows pancreas graft survival in recipients receiving their first pancreas only transplant performed from DBD donors, April 2016 – March 2020. There were too few DCD donor pancreas only transplants in each time period to analyse (n<5). 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 and survival estimates should be interpreted with caution due to small numbers.

Figure 4 Graft survival after first pancreas only transplant from deceased donors, by donor and transplant type, 1 April 2016 to 31 March 2020

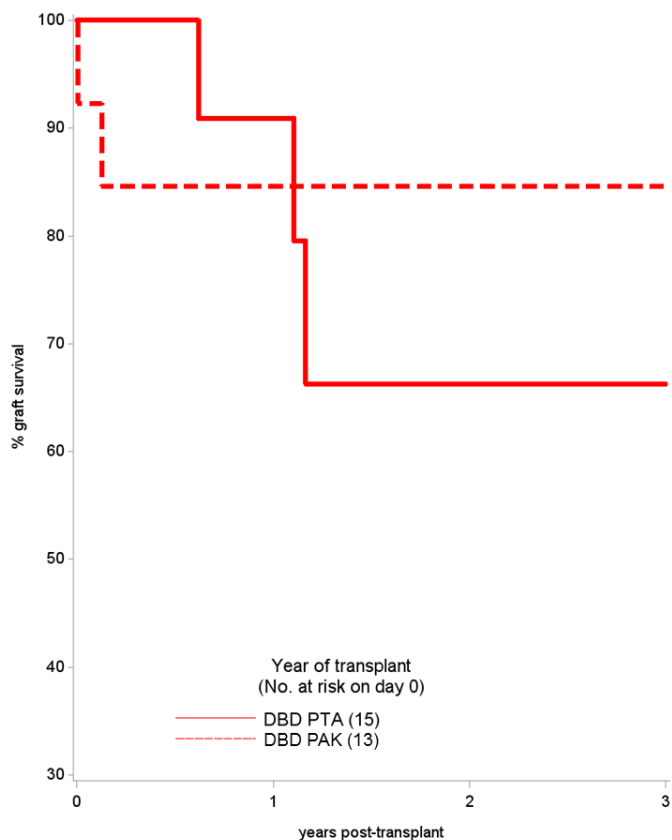


Table 1.4 Graft and patient survival after first pancreas only transplant by transplant type, 1 April 2016 to 31 March 2020

Year of transplant	No. at risk on day 0	% Survival (95% confidence interval)		
		One year	Two year	Three year
DBD graft survival (one year, p=0.41)				
PTA	15	91 (51 - 99)	66 (27 - 88)	66 (27 - 88)
PAK	13	85 (51 - 96)	85 (51 - 96)	85 (51 - 96)
DBD patient survival (one year, p=0.24)				
PTA	15	100 -	100 -	100 -
PAK	13	88 (39 - 98)	66 (16 - 91)	44 (6 - 78)

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 (DBD and DCD) donors, April 2016 – March 2020. 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 and survival estimates should be interpreted with caution due to small numbers.

Figure 5 Graft survival after deceased donor pancreas after kidney transplant by kidney donor type, 1 April 2016 to 31 March 2020

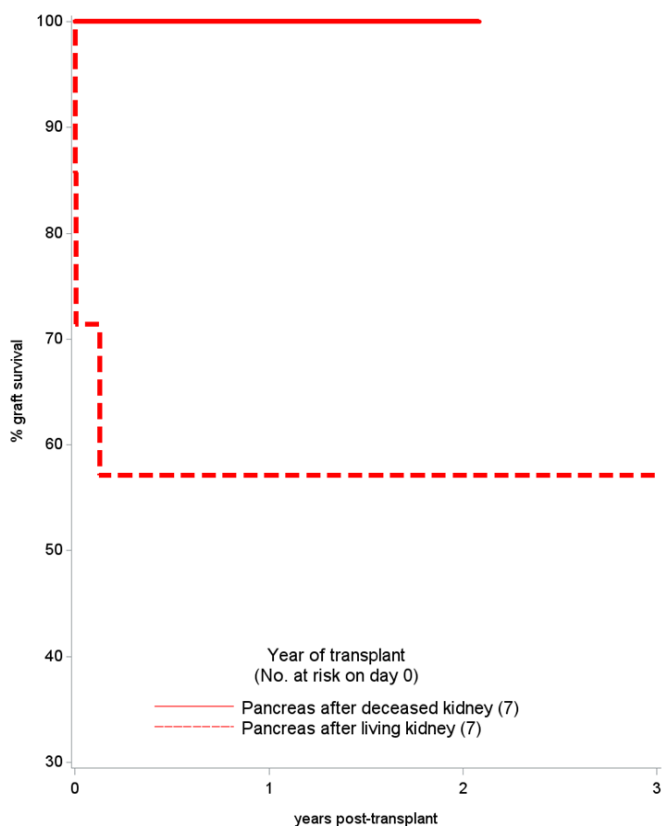


Table 1.5 Graft and patient survival after first pancreas after kidney transplant, 1 April 2016 to 31 March 2020

Year of transplant	No. at risk on day 0	% Survival (95% confidence interval)			
		One year	Two year	Three year	
Pancreas graft survival					
PADK	7	100 (-)	100 (-)		
PALK	7	57 (17 - 84)	57 (17 - 84)	57 (17 - 84)	
Pancreas patient survival					
PADK	7	80 (20 - 97)	53 (7 - 86)	27 (1 - 69)	
PALK	7	100 (-)	100 (-)	100 (-)	