

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 January 2016 and 31 December 2019. 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 2016-2017 cf. 2018-2019, although not statistically significant $p=0.05$, $p=0.26$, respectively. Three-year pancreas graft survival following first SPK transplant in 2016-2017 was 88% for both DBD and DCD donors. Following first SPK transplant from a DCD donor, there was a significant improvement in one-year kidney graft survival between the time periods 2016-2017 cf. 2018-2019, $p=0.01$.
- 5 There was no significant difference in one-year pancreas graft survival following pancreas only transplants from DBD donors between the time periods 2016-2017 cf. 2018-2019, 86% and 88% respectively, $p=0.96$.
- 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, $p=0.64$.

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 2016 - December 2017 and January 2018 - December 2019. 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 2016 to 31 December 2019

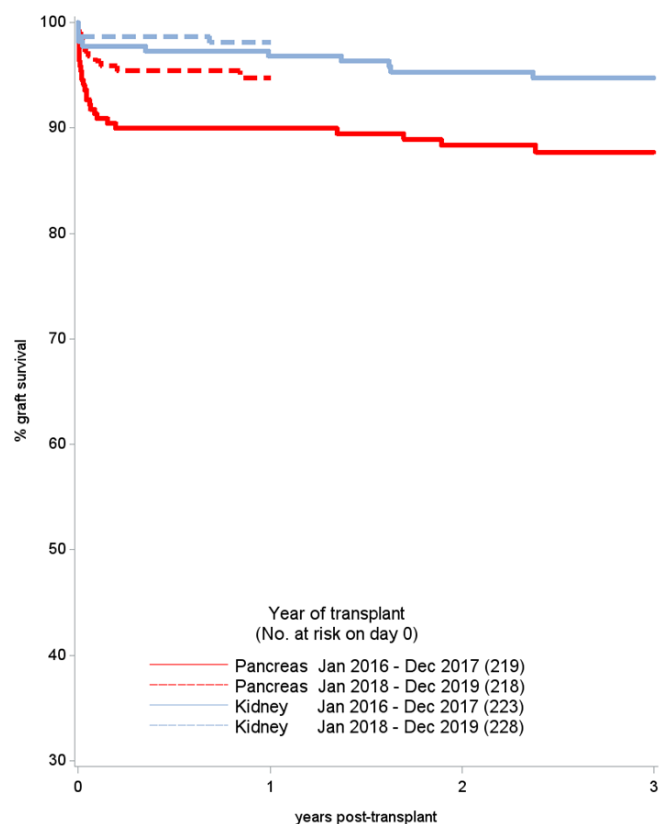


Table 1.1 Graft and patient survival after first SPK transplant from a DBD, 1 January 2016 to 31 December 2019

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=0.05)					
Jan 2016 - Dec 2017	219	90 (85 - 93)	88 (83 - 92)	88 (82 - 91)	
Jan 2018 - Dec 2019	218	95 (91 - 97)			
Pancreas patient survival (one year, p=0.29)					
Jan 2016 - Dec 2017	219	98 (95 - 99)	96 (93 - 98)	96 (91 - 98)	
Jan 2018 - Dec 2019	218	99 (96 - 100)			
Kidney graft survival (one year, p=0.42)					
Jan 2016 - Dec 2017	223	97 (93 - 98)	95 (91 - 97)	95 (91 - 97)	
Jan 2018 - Dec 2019	228	98 (95 - 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 2016 - December 2017 and January 2018 - December 2019. 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 2016 to 31 December 2019

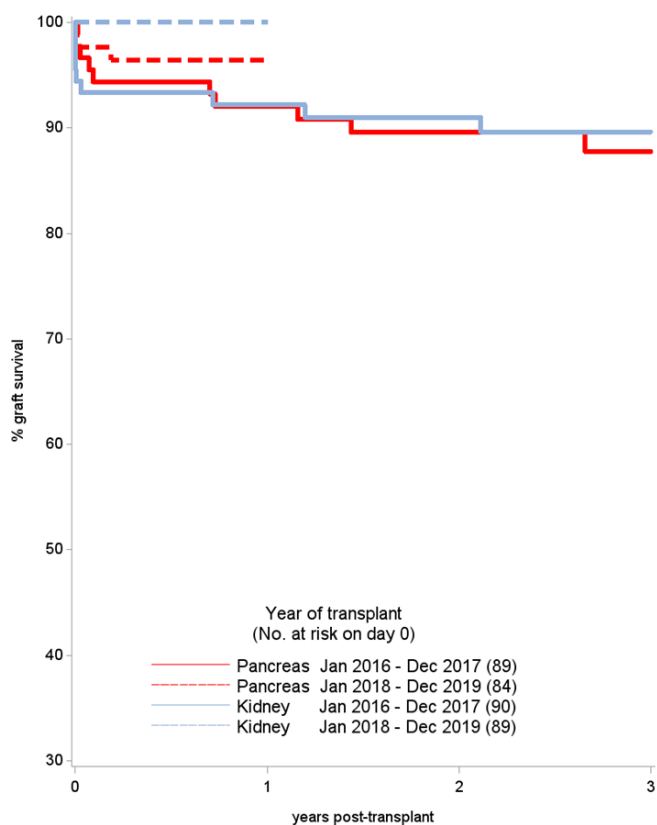


Table 1.2 Graft and patient survival after first SPK transplant from a DCD, 1 January 2016 to 31 December 2019

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=0.26)					
Jan 2016 - Dec 2017	89	92 (84 - 96)	90 (81 - 94)	88 (78 - 93)	
Jan 2018 - Dec 2019	84	96 (89 - 99)			
Pancreas patient survival (one year, p=0.19)					
Jan 2016 - Dec 2017	89	98 (91 - 99)	96 (89 - 99)	95 (86 - 98)	
Jan 2018 - Dec 2019	85	100 -			
Kidney graft survival (one year, p=0.01)					
Jan 2016 - Dec 2017	90	92 (84 - 96)	91 (83 - 95)	90 (81 - 94)	
Jan 2018 - Dec 2019	89	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, January 2016 - December 2017 and January 2018 - December 2019. 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 January 2016 to 31 December 2019

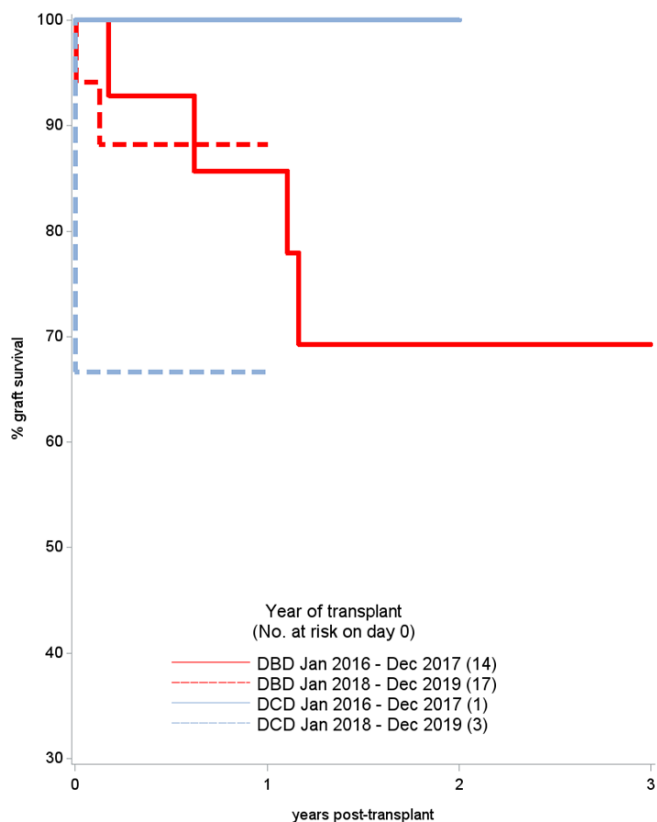


Table 1.3 Graft and patient survival after first pancreas only transplant, 1 January 2016 to 31 December 2019

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=0.96)					
Jan 2016 - Dec 2017	14	86 (54 - 96)	69 (37 - 87)	69 (37 - 87)	
Jan 2018 - Dec 2019	17	88 (61 - 97)			
DBD patient survival (one year, p=0.84)					
Jan 2016 - Dec 2017	14	93 (59 - 99)	84 (48 - 96)	67 (24 - 89)	
Jan 2018 - Dec 2019	17	88 (39 - 98)			
DCD graft survival (one year, p=0.56)					
Jan 2016 - Dec 2017	1	100 -	100 -	- -	
Jan 2018 - Dec 2019	3	67 (5 - 95)			
DCD patient survival					
Jan 2016 - Dec 2017	1	100 -	100 -	- -	
Jan 2018 - Dec 2019	3	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, January 2016 - December 2019. 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 January 2016 to 31 December 2019

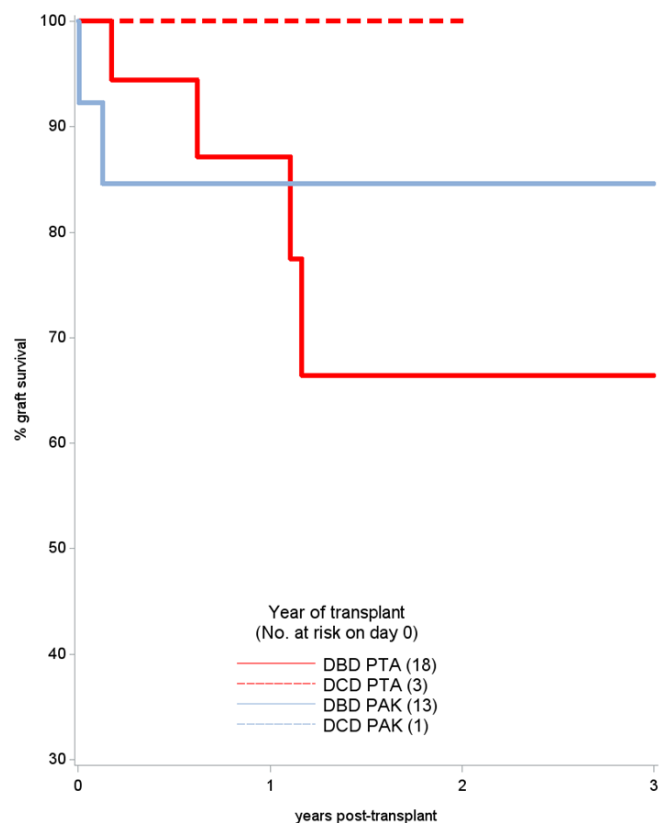


Table 1.4 Graft and patient survival after first pancreas only transplant by transplant type, 1 January 2016 to 31 December 2019

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=0.64)					
PTA	18	87 (57 - 97)	66 (31 - 87)	66 (31 - 87)	
PAK	13	85 (51 - 96)	85 (51 - 96)	85 (51 - 96)	
DBD patient survival (one year, p=0.67)					
PTA	18	94 (67 - 99)	83 (43 - 96)	83 (43 - 96)	
PAK	13	88 (39 - 98)	66 (16 - 91)	44 (6 - 78)	
DCD graft survival (one year, p=0.08)					
PTA	3	100 -	100 -	- -	
PAK	1	0 (0 - 0)	- -	- -	
DCD patient survival					
PTA	3	100 -	100 -	- -	
PAK	1	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, January 2016 - December 2019. 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 January 2016 to 31 December 2019

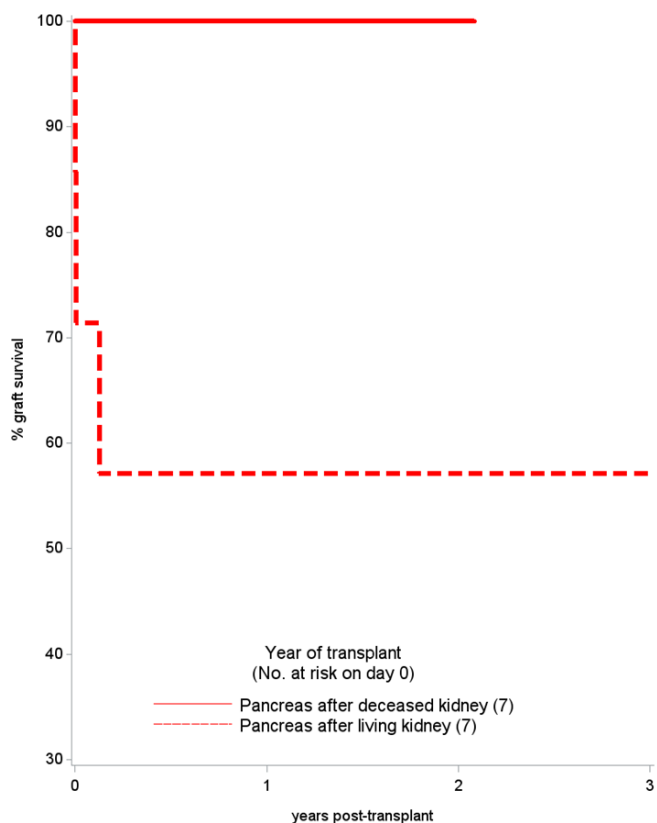


Table 1.5 Graft and patient survival after first pancreas after kidney transplant, 1 January 2016 to 31 December 2019

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 -	