

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 2017 and 31 December 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 2017-2018 cf. 2019-2020, although neither were statistically significant $p=0.16$, $p=0.50$, respectively. Three-year pancreas graft survival following first SPK transplant in 2017-2018 was 88% for DBD and 92% for DCD donors. One-year kidney graft survival following first SPK transplant in 2019-2020 was 96% 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 2017-2018 cf. 2019-2020, 87% and 92% respectively, $p=0.69$.
- 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, $p=0.50$.

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 2017 – December 2018 and January 2019 – December 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 transplants from donors after death, 1 January 2017 – 31 December 2020

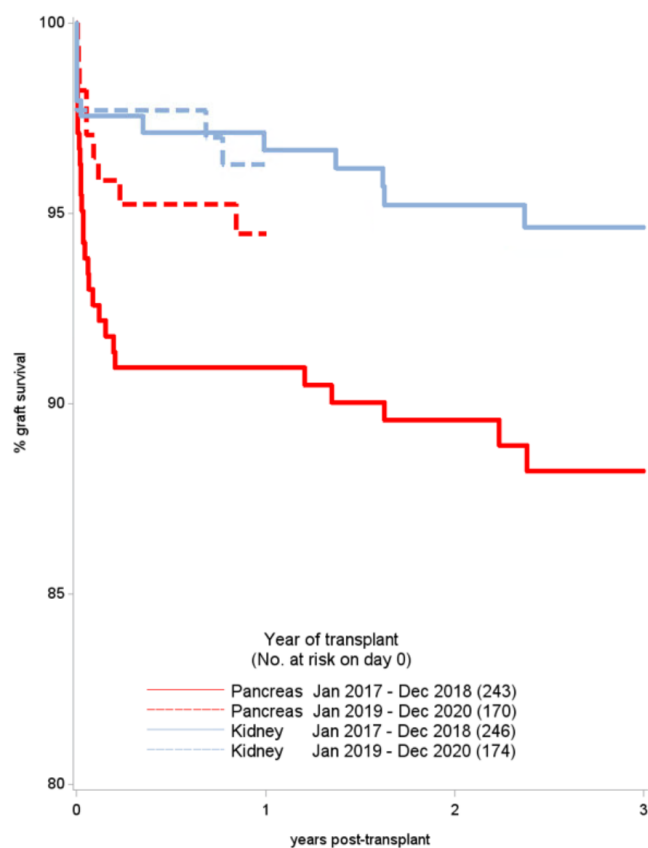


Table 1.1 Graft and patient survival after first SPK transplant from a DBD, 1 January 2017 to 31 December 2020

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=0.16)				
Jan 2017 - Dec 2018	243	91 (87 - 94)	90 (85 - 93)	88 (83 - 92)
Jan 2019 - Dec 2020	170	94 (90 - 97)		
Pancreas patient survival (one year, p=0.13)				
Jan 2017 - Dec 2018	243	99 (96 - 100)	97 (94 - 99)	96 (91 - 98)
Jan 2019 - Dec 2020	171	97 (92 - 99)		
Kidney graft survival (one year, p=0.84)				
Jan 2017 - Dec 2018	246	97 (93 - 98)	95 (92 - 97)	95 (91 - 97)
Jan 2019 - Dec 2020	174	96 (92 - 98)		

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 2017 – December 2018 and January 2019 – December 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 transplants from donors after circulatory death, 1 January 2017 – 31 December 2020

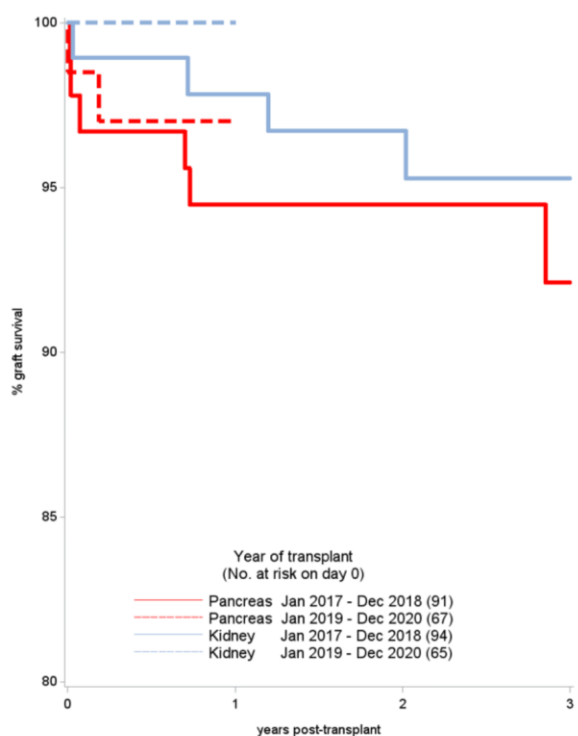


Table 1.2 Graft and patient survival after first SPK transplant from a DCD, 1 January 2017 to 31 December 2020

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=0.50)				
Jan 2017 - Dec 2018	91	94 (87 - 98)	94 (87 - 98)	92 (82 - 97)
Jan 2019 - Dec 2020	67	97 (89 - 99)	97 (89 - 99)	97 (89 - 99)
Pancreas patient survival (one year, p=0.74)				
Jan 2017 - Dec 2018	92	99 (92 - 100)	98 (91 - 99)	98 (91 - 99)
Jan 2019 - Dec 2020	67	98 (88 - 100)	98 (91 - 99)	98 (91 - 99)
Kidney graft survival (one year, p=0.25)				
Jan 2017 - Dec 2018	94	98 (92 - 99)	97 (90 - 99)	95 (88 - 98)
Jan 2019 - Dec 2020	65	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, January 2017 – December 2018 and January 2019 – December 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 January 2017 – 31 December 2020

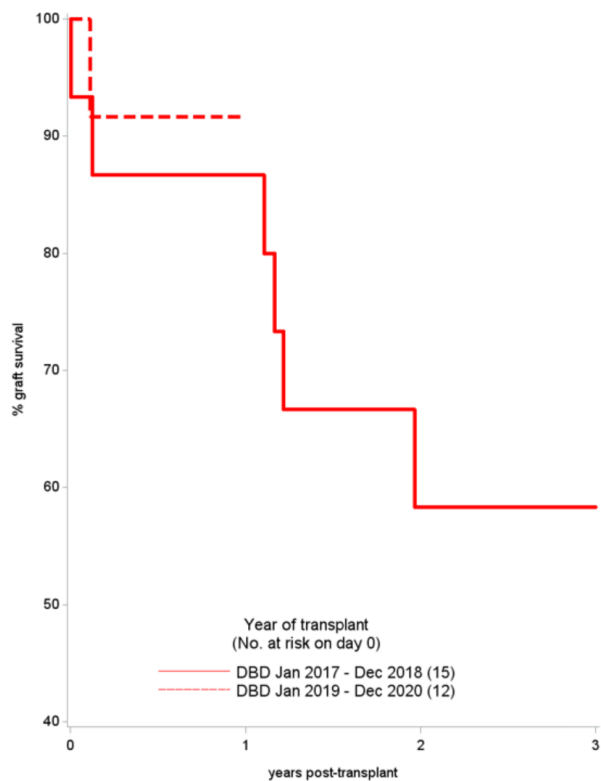


Table 1.3 Graft and patient survival after first pancreas only transplant, 1 January 2017 to 31 December 2020

Year of transplant	No. at risk on day 0	% Survival (95% confidence interval)		
		One year	Two year	Three year
DBD graft survival (one year, $p=0.69$)				
Jan 2017 - Dec 2018	15	87 (56 - 96)	58 (29 - 79)	58 (29 - 79)
Jan 2019 - Dec 2020	12	92 (54 - 99)		
DBD patient survival (one year, $p=0.28$)				
Jan 2017 - Dec 2018	15	100 -	91 (51 - 99)	80 (39 - 95)
Jan 2019 - Dec 2020	12	91 (51 - 99)		

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, January 2017 – December 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 January 2017- 31 December 2020

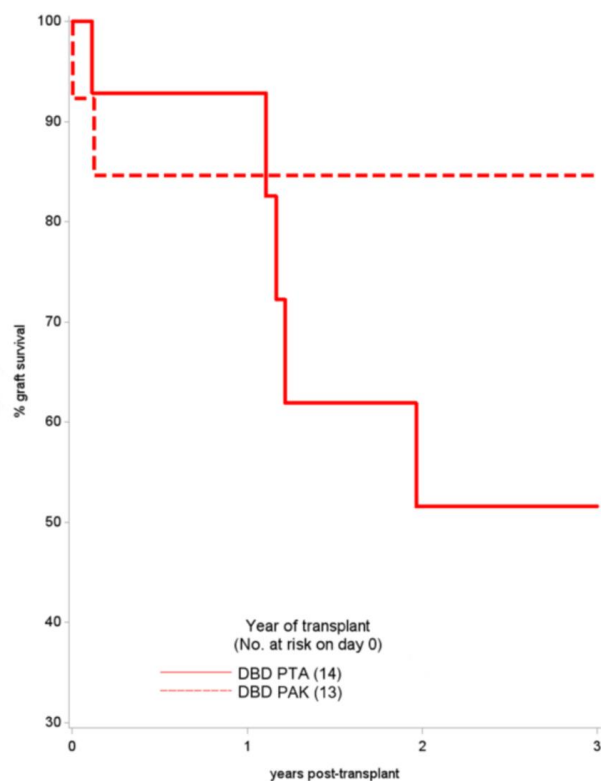


Table 1.4 Graft and patient survival after first pancreas only transplant by transplant type, 1 January 2017 to 31 December 2020

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=0.50)					
PTA	14	93 (59 - 99)	52 (19 - 77)	52 (19 - 77)	
PAK	13	85 (51 - 96)	85 (51 - 96)	85 (51 - 96)	
DBD patient survival (one year, p=0.28)					
PTA	14	100 -	100 -	100 -	
PAK	13	91 (51 - 99)	80 (39 - 95)	40 (1 - 82)	

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, January 2017 – December 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 January 2017 – 31 December 2021

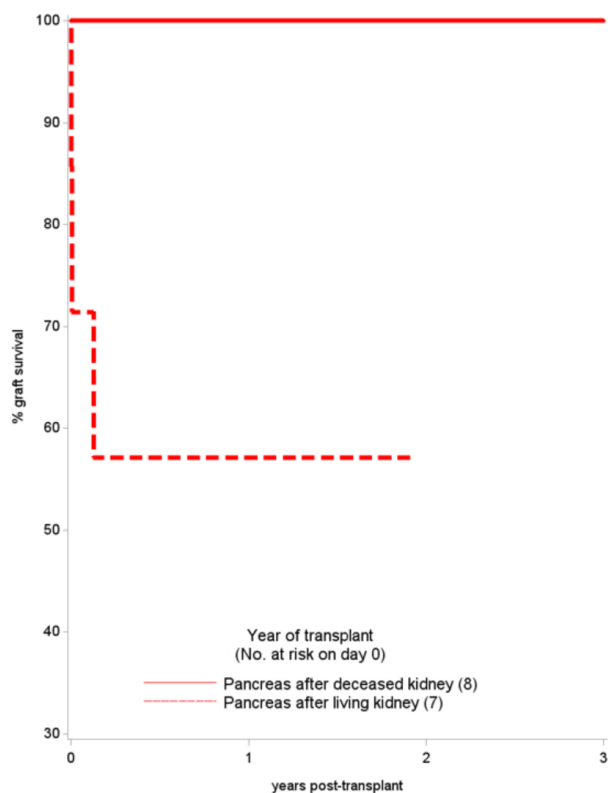


Table 1.5 Graft and patient survival after first pancreas after kidney transplant, 1 January 2017 to 31 December 2020

Year of transplant	No. at risk on day 0	% Survival (95% confidence interval)			
		One year	Two year	Three year	
Pancreas graft survival					
PADK	8	100 -	100 -	100 -	
PALK	7	57 (17 - 84)	57 (17 - 84)	57 (17 - 84)	
Pancreas patient survival					
PADK	8	88 (39 - 98)	73 (28 - 93)	36 (1 - 79)	
PALK	7	100 -	100 -	100 -	