

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 2018 and 31 December 2021. 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 For one-year pancreas graft survival following first SPK transplant between the time periods 2018-2019 cf. 2020-2021, there was a decline for DBD donors and an improvement for DCD donors, although neither were statistically significant $p=0.21$, $p=0.57$, respectively. Three-year pancreas graft survival following first SPK transplant in 2018-2019 was 90% for DBD and 92% for DCD donors. One-year kidney graft survival following first SPK transplant in 2020-2021 was 95% for DBD and 98% for DCD donors.
- 5 There was a decline in one-year patient survival following first SPK transplant in both DBD and DCD donors between the time periods 2018-2019 cf. 2020-2021, for DBD donors 100% and 96% respectively, $p=0.01$, and for DCD donors 100% and 93% respectively, $p=0.01$.
- 6 There was no significant difference in one-year pancreas graft survival following pancreas only transplants from DBD donors between the time periods 2018-2019 cf. 2020-2021, 83% and 65% respectively, $p=0.25$.
- 7 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, $p=0.72$.
- 8 For first pancreas after kidney transplants performed between 2012-2021, there was no difference in one-year graft or patient survival between pancreas after living kidney (PALK) and pancreas after deceased kidney (PADK), $p=0.64$ and $p=0.59$ respectively.

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 2018 – December 2019 and January 2020 – December 2021. 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 brain death, 1 January 2018 – 31 December 2021

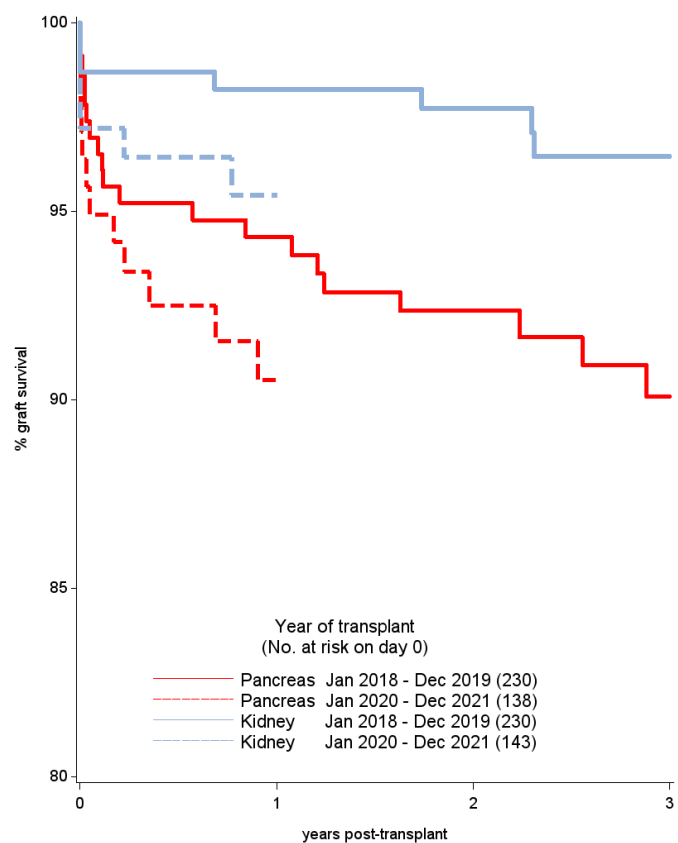


Table 1.1 Graft and patient survival after first SPK transplant from a DBD, 1 January 2018 to 31 December 2021

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=0.21)						
Jan 2018 - Dec 2019	230	94	(90 - 97)	92	(88 - 95)	90 (85 - 94)
Jan 2020 - Dec 2021	138	91	(84 - 95)			
Pancreas patient survival (one year, p=0.01)						
Jan 2018 - Dec 2019	231	100	(97 - 100)	98	(95 - 100)	96 (91 - 98)
Jan 2020 - Dec 2021	140	96	(90 - 98)			
Kidney graft survival (one year, p=0.12)						
Jan 2018 - Dec 2019	230	98	(95 - 99)	98	(95 - 99)	96 (93 - 98)
Jan 2020 - Dec 2021	143	95	(90 - 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 2018 – December 2019 and January 2020 – December 2021. 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 2018 – 31 December 2021

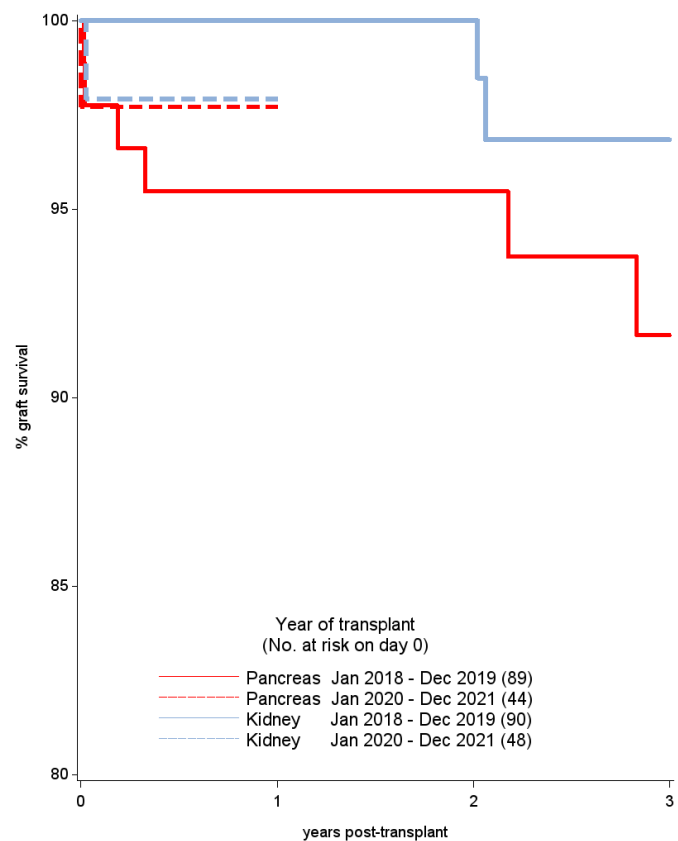


Table 1.2 Graft and patient survival after first SPK transplant from a DCD, 1 January 2018 to 31 December 2021

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=0.57)				
Jan 2018 - Dec 2019	89	95 (88 - 98)	95 (88 - 98)	92 (82 - 96)
Jan 2020 - Dec 2021	44	98 (85 - 100)		
Pancreas patient survival (one year, p=0.01)				
Jan 2018 - Dec 2019	90	100 -	100 -	95 (83 - 99)
Jan 2020 - Dec 2021	46	93 (78 - 98)		
Kidney graft survival (one year, p=0.17)				
Jan 2018 - Dec 2019	90	100 -	100 -	97 (88 - 99)
Jan 2020 - Dec 2021	48	98 (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, January 2018 – December 2019 and January 2020 – December 2021. 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

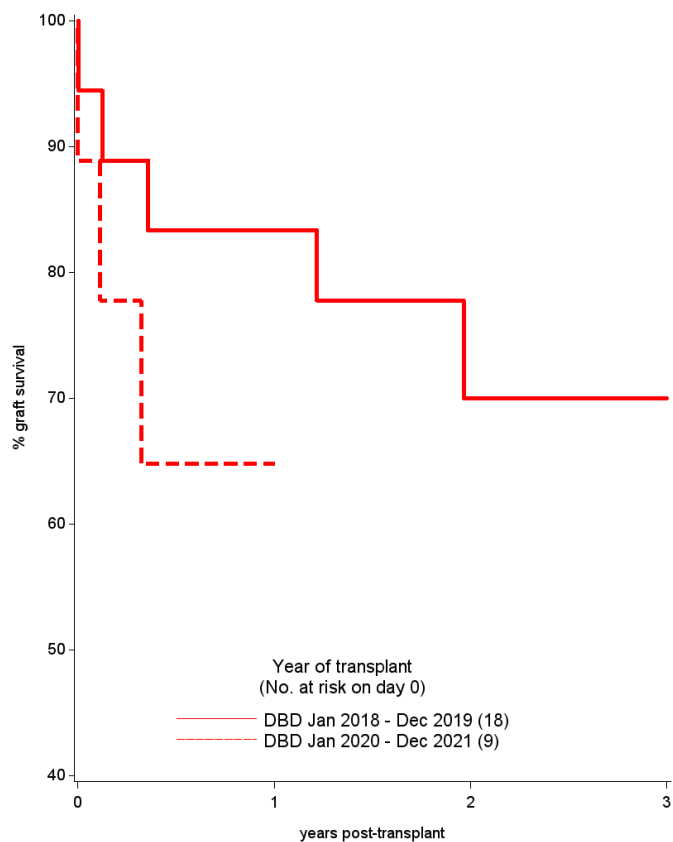


Table 1.3 Graft and patient survival after first pancreas only transplant, 1 January 2018 to 31 December 2021

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=0.25)				
Jan 2018 - Dec 2019	18	83 (57 - 94)	70 (41 - 87)	70 (41 - 87)
Jan 2020 - Dec 2021	9	65 (25 - 87)		
DBD patient survival (one year, p=0.62)				
Jan 2018 - Dec 2019	18	94 (63 - 99)	87 (57 - 97)	87 (57 - 97)
Jan 2020 - Dec 2021	9	100 -		

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 2018 – December 2021. 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 2018 – 31 December 2021

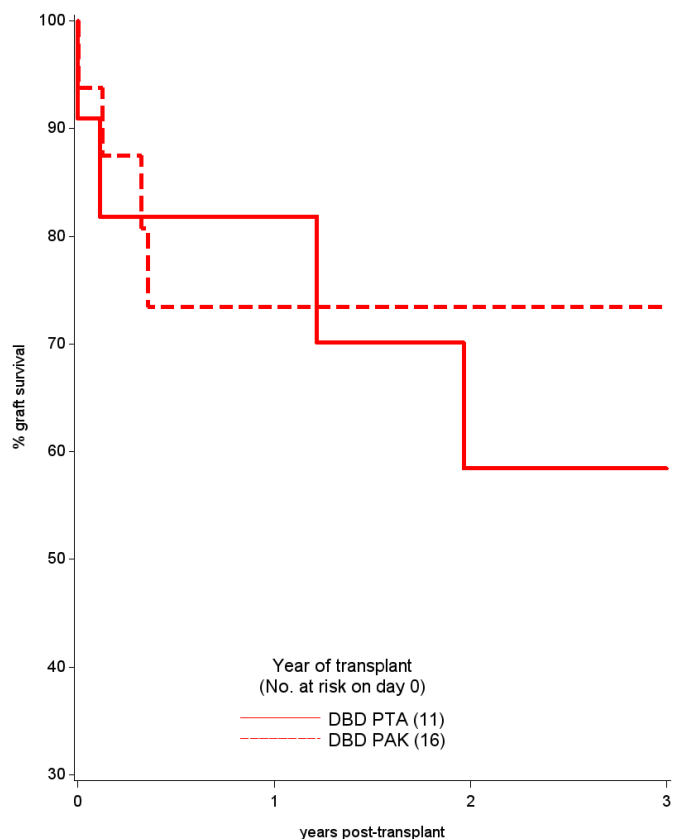


Table 1.4 Graft and patient survival after first pancreas only transplant by transplant type, 1 January 2018 to 31 December 2021

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=0.72)					
PTA	11	82 (45 - 95)	58 (23 - 82)	58 (23 - 82)	
PAK	16	73 (43 - 89)	73 (43 - 89)	73 (43 - 89)	
DBD patient survival (one year, p=0.37)					
PTA	11	100 -	100 -	100 -	
PAK	16	91 (51 - 99)	80 (39 - 95)	80 (39 - 95)	

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 2012 – December 2021. 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 2012 – 31 December 2021

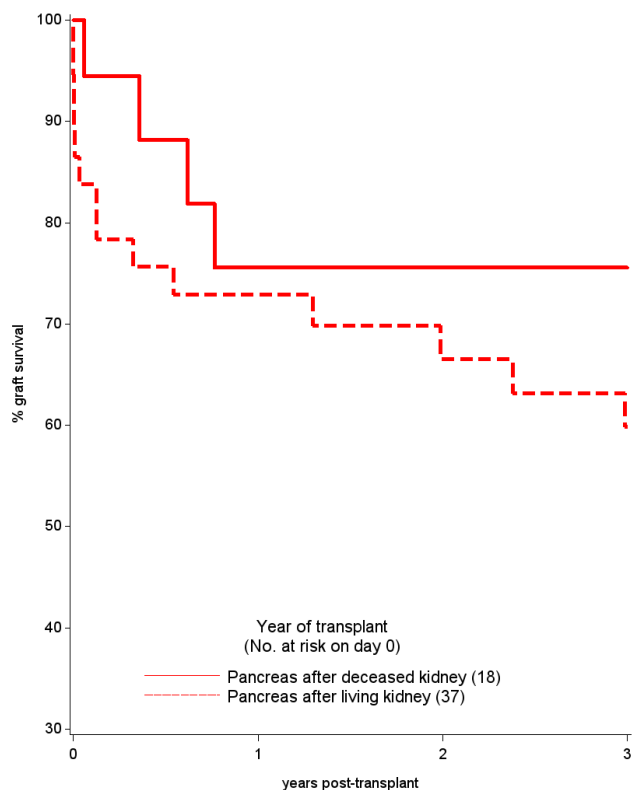


Table 1.5 Graft and patient survival after first pancreas after kidney transplant, 1 January 2012 to 31 December 2021

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=0.64)				
PADK	18	76 (47 - 90)	76 (47 - 90)	76 (47 - 90)
PALK	37	73 (55 - 84)	67 (48 - 79)	60 (42 - 74)
Pancreas patient survival (one year, p=0.59)				
PADK	18	94 (63 - 99)	86 (54 - 96)	69 (36 - 87)
PALK	37	97 (81 - 100)	97 (81 - 100)	94 (76 - 98)