

Pancreas Activity

Key messages

- The number of patients waiting on the pancreas transplant list fell by 3% during the year, to 218 at 31 March 2018
- The number of pancreas donors after brain death increased by 1% to 364, while transplants from donors after brain death fell by 4% to 157
- The number of pancreas donors after circulatory death increased by 2% to 120, while transplants from donors after circulatory death increased by 8% to 54
- 26 islet transplants were made possible by the pancreas islet transplant programme, a fall of 24% compared with last year

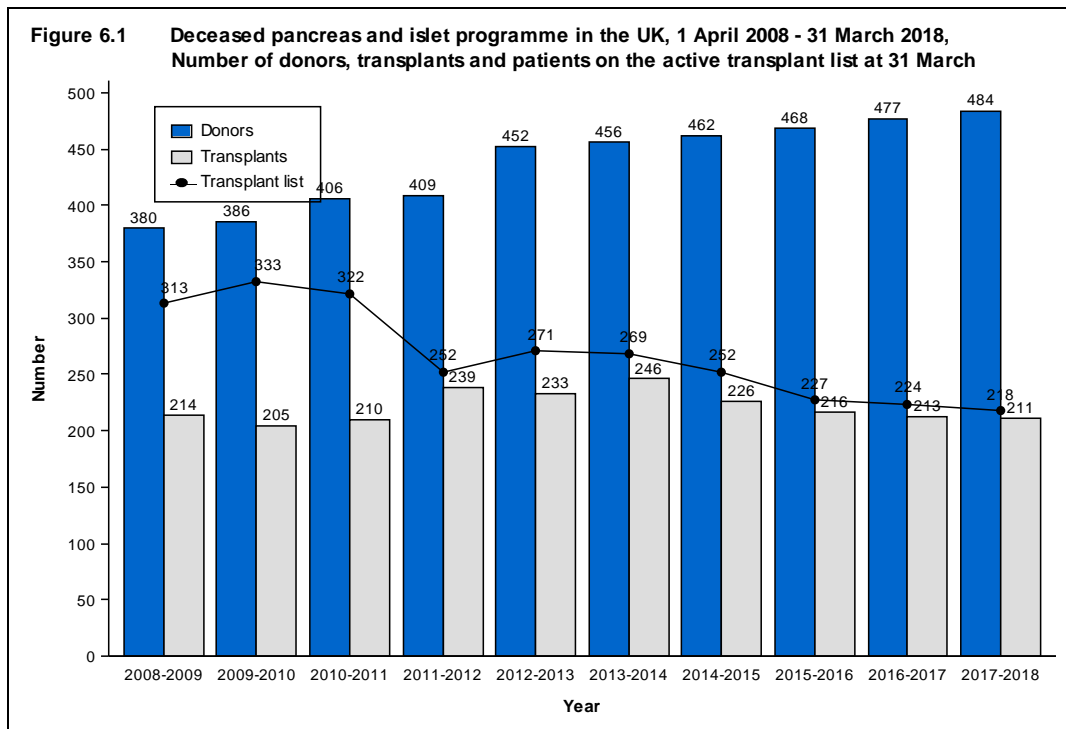
6.1 Overview

The number of patients registered on the active transplant list at 31 March for a pancreas, simultaneous kidney/pancreas (SPK) or islet transplant has decreased over the last ten years from 313 patients in 2009 to 218 patients in 2018. The number of pancreas donors has increased steadily from 380 to 484. However the number of transplants has decreased in the last 5 years to 211 transplants in 2017-2018. A summary of activity for deceased donor pancreas transplants and the transplant list for 1 April 2008 - 31 March 2018 is shown in **Figure 6.1**.

A National Pancreas Allocation Scheme was introduced on 1 December 2010. Patients are prioritised according to a points system based on a range of clinical factors. A score is calculated for every potentially suitable patient on the national active transplant list and the pancreas is allocated preferentially to the patient with the most points.

Pancreases from donors after brain death and donors after circulatory death are allocated through this scheme. Patients listed for a vascularised pancreas or islet transplant are prioritised through one combined national transplant list. The scheme has reduced the incidence of long waiting patients and is improving equity in access to transplant irrespective of where in the UK each patient resides.

Throughout this chapter, intestinal transplants involving a pancreas are not included in the pancreas transplant activity reported. Any pancreases retrieved and used for such transplants are however included in the pancreas donor activity. In 2017-2018 there were 19 intestinal transplants including a pancreas.



6.2 Transplant list

Table 6.1 shows the number of patients on the active transplant lists at 31 March 2018 by centre. The number of patients registered on the pancreas transplant list fell by 3% in the year: on 31 March 2018, 218 patients were registered active, compared with 224 at the end of March 2017.

Of the 218 patients on the active transplant list at 31 March 2018, 175 required a SPK transplant (193 at 31 March 2017), 14 (6%) patients required a pancreas only transplant (10 at 31 March 2017) and 29 (13%) were registered for a pancreas islet transplant (including ten for a simultaneous islet and kidney (SIK) transplant).

The outcome of patients registered on the UK pancreas transplant list at 1 April 2017, or subsequently registered during the financial year, is shown in **Table 6.2**. 23 patients joined the pancreas transplant list while 211 joined the list for kidney and pancreas.

Patients listed for a routine islet transplant are generally waiting for their first islet graft. The majority of islet transplant recipients are likely to require more than one graft to complete their treatment. To optimise transplant outcome the follow-up graft should be performed within six to twelve months of the first. Patients requiring follow-up grafts are priority listed.

Table 6.1 Patients on the pancreas transplant lists at 31 March 2018 (2017) in the UK, by centre														
Centre	Active transplant lists											TOTAL		
	Kidney/ pancreas		Kidney/islet		Pancreas alone		Islet							
							Routine		Priority					
Bristol	-	-	0	(0)	-	-	0	(0)	0	(0)	0	(0)	0	(0)
Cambridge	9	(16)	-	-	0	(1)	-	-	-	-	-	-	9	(17)
Cardiff	9	(10)	-	-	2	(1)	-	-	-	-	-	-	11	(11)
Edinburgh	25	(27)	2	(2)	0	(0)	3	(6)	3	(0)	-	-	33	(35)
Guys	38	(36)	-	-	0	(0)	-	-	-	-	-	-	38	(36)
King's College	-	-	0	(0)	-	-	1	(0)	0	(0)	-	-	1	(0)
Manchester	18	(21)	7	(0)	2	(1)	1	(2)	1	(1)	-	-	29	(25)
Newcastle	6	(11)	1	(0)	2	(2)	7	(2)	1	(1)	-	-	17	(16)
Oxford	64	(62)	0	(0)	6	(5)	2	(4)	0	(3)	-	-	72	(74)
Royal Free	-	-	0	(0)	-	-	0	(0)	0	(0)	-	-	0	(0)
WLRTC	6	(10)	-	-	2	(0)	-	-	-	-	-	-	8	(10)
TOTAL	175	(193)	10	(2)	14	(10)	14	(14)	5	(5)	5	(5)	218	(224)

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Table 6.2 Whole pancreas transplant list and new registrations in the UK, 1 April 2017 - 31 March 2018

Outcome of patient at 31 March 2018	Active and suspended patients at 1 April 2017		New registrations in 2017-2018 ¹		TOTAL	
	N	%	N	%	N	%
Pancreas transplant list						
Remained active/suspended	66	90	9	39	75	78
Transplanted	4	5	13	57	17	18
Removed	1	1	0	0	1	1
Died	2	3	1	4	3	3
TOTAL	73		23		96	
Kidney/pancreas transplant list						
Remained active/suspended	157	48	172	82	330	61
Transplanted	139	42	35	17	174	32
Removed	15	5	2	1	17	3
Died	17	5	2	1	19	4
TOTAL	329		211		540	

¹ Includes re-registrations for second or subsequent transplants

The active pancreas transplant list rates by country/ Strategic Health Authority of patient's residence are shown in **Table 6.3**. At 31 March 2018, the overall transplant list rate was 3.3 pmp and across the Strategic Health Authorities ranged from 1.5 to 6.0 pmp.

Table 6.3 Active pancreas alone and kidney/pancreas transplant list at 31 March, by country/ Strategic Health Authority of patient residence				
Country/ Strategic Health Authority of residence	Pancreas transplant list (pmp)			
	2018		2017	
North East	11	(4.2)	10	(3.8)
North West	11	(1.5)	15	(2.1)
Yorkshire and The Humber	10	(1.8)	7	(1.3)
North of England	32	(2.1)	32	(2.1)
East Midlands	12	(2.5)	14	(3.0)
West Midlands	20	(3.4)	22	(3.8)
East of England	10	(1.6)	18	(2.9)
Midlands and East	42	(2.5)	54	(3.2)
London	34	(3.9)	30	(3.4)
South East Coast	17	(3.6)	17	(3.6)
South Central	26	(6.0)	26	(6.0)
South West	18	(3.3)	15	(2.7)
South of England	61	(4.2)	58	(4.0)
England	169	(3.1)	174	(3.1)
Isle of Man	0	(0.0)	0	(0.0)
Channel Islands	0	(0.0)	0	(0.0)
Wales	16	(5.1)	15	(4.8)
Scotland	30	(5.6)	32	(5.9)
Northern Ireland	3	(1.6)	3	(1.6)
TOTAL	218	(3.3)	224	(3.4)

An indication of longer term outcomes for patients listed for a pancreas or kidney/pancreas transplant are summarised in **Figure 6.2**. This shows the proportion of patients transplanted or still waiting six months, one year, two years and three years after joining the list. It also shows the proportion removed from the transplant list (typically because they become too unwell for transplant) and those dying while on the transplant list. 32% of patients are transplanted within one year, while three years after listing 75% of patients have received a transplant. The median (average) waiting time for a pancreas transplant is 348 days and is shown by blood group in **Table 6.4** and ethnicity in **Table 6.5**. Note that these waiting times are not adjusted for other relevant factors which may be influential and which may differ across blood or ethnic groups.

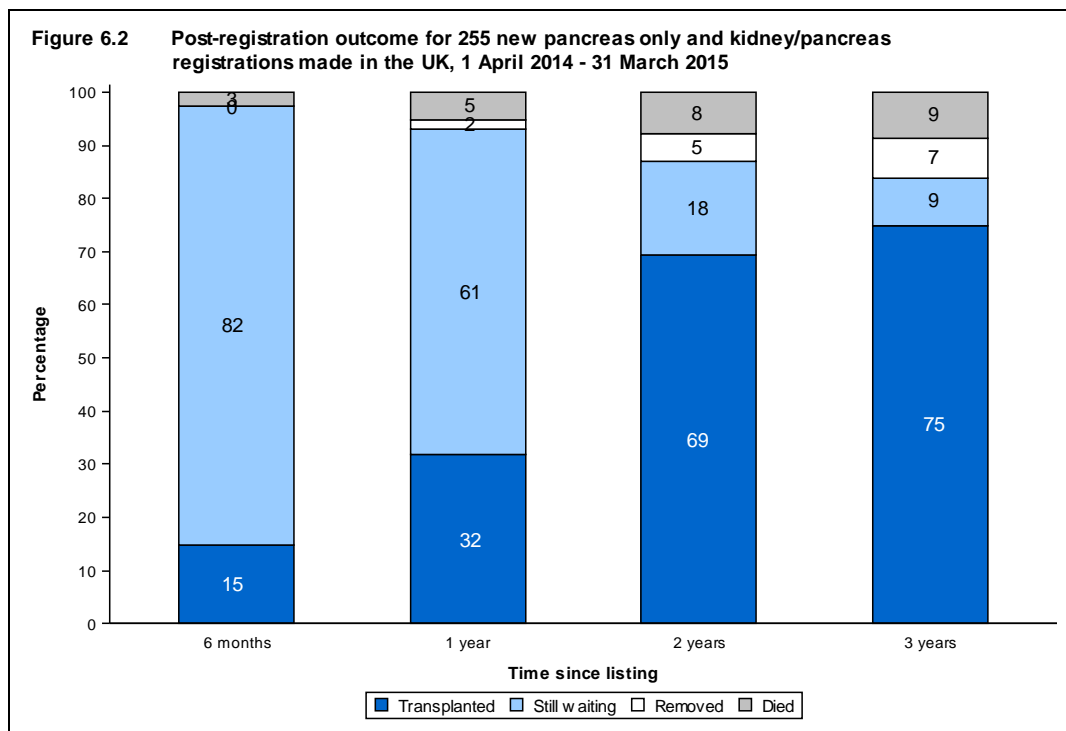


Table 6.4 Median waiting time to pancreas only and kidney/pancreas transplant in the UK, for patients registered 1 April 2012 - 31 March 2016, by blood group

Blood group	Number of patients registered	Waiting time (days)	
		Median	95% Confidence interval
Adult			
O	453	449	429 – 469
A	381	287	267 – 307
B	118	254	166 – 342
AB	45	149	103 – 195
TOTAL	997	348	332 – 364

Table 6.5 Median waiting time to pancreas only and kidney/pancreas transplant in the UK, for patients registered 1 April 2012 - 31 March 2016, by ethnicity

Ethnicity	Number of patients registered	Waiting time (days)	
		Median	95% Confidence interval
Adult			
White	870	353	334 – 374
Asian	57	279	204 – 354
Black	42	316	220 – 412
Other	13	278	78 – 478
TOTAL¹	997	348	332 – 364

¹ Includes 15 patients whose ethnicity was not reported

6.3 Donor and organ supply

Of the 955 organ donors after brain death in the UK in 2017-2018, 364 (38%) donated a pancreas. There were 120 pancreas donors after circulatory death in 2017-2018. **Table 6.6** shows this activity by country/Strategic Health Authority of the donor's residence. No adjustments have been made for potential demographic differences in populations.

The overall rate for pancreas donors after brain death is 5.5 pmp, with rates ranging from 3.8 to 7.1 pmp across the Strategic Health Authorities and for donors after circulatory death is 1.8 pmp, with rates ranging from 0.9 to 2.9 pmp across the Strategic Health Authorities.

Table 6.6 Pancreas donation rates for deceased donors in the UK, 1 April 2017 - 31 March 2018, by country/ Strategic Health Authority						
Country/ Strategic Health Authority of residence	DBD		Pancreas donors (pmp)		TOTAL	
			DCD			
North East	12	(4.5)	6	(2.3)	18	(6.8)
North West	51	(7.1)	13	(1.8)	64	(8.9)
Yorkshire and The Humber	27	(5.0)	13	(2.4)	40	(7.4)
North of England	90	(5.9)	32	(2.1)	122	(8.0)
East Midlands	18	(3.8)	11	(2.3)	29	(6.1)
West Midlands	31	(5.3)	8	(1.4)	39	(6.7)
East of England	40	(6.5)	18	(2.9)	58	(9.5)
Midlands and East	89	(5.3)	37	(2.2)	126	(7.6)
London	50	(5.7)	8	(0.9)	58	(6.6)
South East Coast	32	(6.9)	4	(0.9)	36	(7.7)
South Central	20	(4.6)	8	(1.8)	28	(6.4)
South West	25	(4.5)	11	(2.0)	36	(6.5)
South of England	77	(5.3)	23	(1.6)	100	(6.9)
England	306	(5.5)	100	(1.8)	406	(7.3)
Isle of Man	0	(0.0)	1	(12.5)	1	(12.5)
Channel Islands	0	(0.0)	0	(0.0)	0	(0.0)
Wales	17	(5.5)	8	(2.6)	25	(8.0)
Scotland	30	(5.6)	6	(1.1)	36	(6.7)
Northern Ireland	11	(5.9)	5	(2.7)	16	(8.6)
TOTAL¹	364	(5.5)	120	(1.8)	484	(7.3)

¹ There were 5 donors where hospital postcode was used in place of an unknown postcode

6.4 Transplants

The number of pancreas transplants by recipient country/ Strategic Health Authority of residence is shown in **Table 6.7**. No adjustments have been made for potential demographic differences in populations. For donors after brain death the transplant rate ranged from 1.3 to 3.4 pmp across Strategic Health Authorities and overall was 2.4 pmp. For donors after circulatory death the overall rate was 0.8 pmp and ranged from 0 to 1.4 pmp across Strategic Health Authorities.

Table 6.7 Pancreas transplant rates per million population (pmp), in the UK, 1 April 2017 - 31 March 2018, by country and English Strategic Health Authority						
Country/ Strategic Health Authority of residence	DBD		DCD		TOTAL	
	N	(pmp)	N	(pmp)	N	(pmp)
North East	5	(1.9)	0	(0.0)	5	(1.9)
North West	12	(1.7)	10	(1.4)	22	(3.0)
Yorkshire and The Humber	7	(1.3)	7	(1.3)	14	(2.6)
North of England	24	(1.6)	17	(1.1)	41	(2.7)
East Midlands	13	(2.8)	3	(0.6)	16	(3.4)
West Midlands	20	(3.4)	2	(0.3)	22	(3.8)
East of England	12	(2.0)	6	(1.0)	18	(2.9)
Midlands and East	45	(2.7)	11	(0.7)	56	(3.4)
London	20	(2.3)	7	(0.8)	27	(3.1)
South East Coast	15	(3.2)	2	(0.4)	17	(3.6)
South Central	14	(3.2)	5	(1.1)	19	(4.4)
South West	10	(1.8)	2	(0.4)	12	(2.2)
South of England	39	(2.7)	9	(0.6)	48	(3.3)
England	128	(2.3)	44	(0.8)	172	(3.1)
Isle of Man	0	(0.0)	0	(0.0)	0	(0.0)
Channel Islands	0	(0.0)	0	(0.0)	0	(0.0)
Wales	4	(1.3)	5	(1.6)	9	(2.9)
Scotland	23	(4.3)	3	(0.6)	26	(4.8)
Northern Ireland	2	(1.1)	1	(0.5)	3	(1.6)
TOTAL¹	157	(2.4)	54	(0.8)	211	(3.2)

¹ Includes 1 recipient with an unknown UK postcode

There were 211 deceased donor pancreas transplants in 2017-2018 representing a fall of 1% on the 213 transplants performed in 2016-2017. Of these 211, 168 (80%) were SPK transplants, 17 (8%) were pancreas only transplants (pancreas alone (PTA) or pancreas after kidney (PAK)) and 26 (12%) were islet transplants (including four simultaneous islet and kidney transplant SIK). The number of transplants performed at each centre is shown in **Table 6.8** by transplant type and **Table 6.9** by donor type. Note that King's College, The Royal Free and Bristol only perform islet transplants. Cambridge, Guy's, WLRTC and Cardiff only perform pancreas transplants.

The length of time that elapses between a pancreas being removed from the donor to its transplantation into the recipient is called the cold ischaemia time (CIT). Generally, the shorter this time, the more likely the pancreas is to work immediately and the better the long-term outcome. The median CIT for a DBD donor whole pancreas transplant is 10.4 hours (Inter-Quartile (IQ) range 9.2 – 11.8) and for a DCD donor transplant is 9.9 hours (IQ range 8.5 – 11.7) and overall is 10.2 hours (IQ range 9.2 – 11.7).

At 31 March 2018, there were approximately 1,900 recipients with a functioning pancreas transplant (including multi-organ transplants) being followed-up, as reported to the UK Transplant Registry.

Table 6.8 Pancreas transplants, 1 April 2017 - 31 March 2018 (2016-2017) by centre												
Centre	Transplant type											
	SPK		SIK		PTA		PAK		Islet			
									Routine		Priority	
Bristol	-	-	0	(0)	-	-	-	-	0	(0)	0	(1)
Cambridge	22	(24)	-	-	0	(0)	1	(0)	-	-	-	-
Cardiff	6	(4)	-	-	1	(1)	0	(0)	-	-	-	-
Edinburgh	16	(20)	2	(0)	0	(0)	0	(0)	7	(9)	4	(8)
Guys	27	(22)	-	-	0	(0)	0	(0)	-	-	-	-
King's College	-	-	-	-	-	-	-	-	1	(2)	0	(1)
Manchester	33	(27)	2	(1)	1	(0)	2	(4)	1	(1)	3	(1)
Newcastle	8	(7)	0	(0)	0	(0)	0	(1)	0	(1)	0	(2)
Oxford	48	(51)	0	(0)	6	(6)	4	(5)	3	(6)	3	(1)
Royal Free	-	-	0	(0)	-	-	-	-	0	(0)	0	(0)
WLRTC	8	(7)	-	-	2	(0)	0	(0)	-	-	-	-
TOTAL	168	(162)	4	(1)	10	(7)	7	(10)	12	(19)	10	(14)

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Table 6.9 Pancreas transplants, 1 April 2017 - 31 March 2018 by centre												
Centre	Transplant and donor type											
	SPK		SIK		PTA		Islet		TOTAL			
	DBD	DCD	DBD	DCD	DBD	DCD	DBD	DCD	DBD	DCD	DBD	DCD
Bristol	-	-	0	0	-	-	0	0	0	0	0	0
Cambridge	15	7	-	-	0	1	-	-	15	8	15	8
Cardiff	4	2	-	-	1	0	-	-	5	2	5	2
Edinburgh	13	3	2	0	0	0	10	1	25	4	25	4
Guys	21	6	-	-	0	0	-	-	21	6	21	6
King's College	-	-	0	0	-	-	1	0	1	0	1	0
Manchester	13	20	1	1	2	1	4	0	20	22	20	22
Newcastle	8	0	0	0	0	0	0	0	8	0	8	0
Oxford	40	8	0	0	8	2	6	0	54	10	54	10
Royal Free	-	-	0	0	-	-	0	0	0	0	0	0
WLRTC	6	2	-	-	2	0	-	-	8	2	8	2
TOTAL	120	48	3	1	13	4	21	1	157	54	157	54

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6.5 Demographic characteristics

The age group, sex, ethnicity and blood group of deceased donors, transplant recipients and patients on the transplant list are shown in **Table 6.10**.

Table 6.10 Demographic characteristics of deceased pancreas donors and transplant recipients, 1 April 2017 - 31 March 2018, and transplant list patients at 31 March						
Age group (years)	Donors		Transplant recipients		Active transplant list patients	
	N	(%)	N	(%)	N	(%)
0 - 17	35	(7)	-	-	-	-
18 - 34	133	(27)	42	(20)	49	(22)
35 - 49	164	(34)	103	(49)	112	(51)
50 - 59	133	(27)	51	(24)	46	(21)
60 - 69	19	(4)	15	(7)	10	(5)
70+	0	(0)	0	(0)	1	(0)
mean (SD)	40	(14)	44	(10)	43	(10)
Male	257	(53)	119	(56)	106	(49)
Female	227	(47)	92	(44)	112	(51)
White	443	(92)	185	(89)	187	(86)
Asian	7	(1)	16	(8)	10	(5)
Black	8	(2)	5	(2)	18	(8)
Chinese	4	(1)	1	(0)	0	(0)
Other	17	(4)	2	(1)	3	(1)
Not reported	5	-	2	-	0	-
O	246	(51)	100	(47)	112	(51)
A	184	(38)	81	(38)	64	(29)
B	49	(10)	25	(12)	39	(18)
AB	5	(1)	5	(2)	3	(1)
First graft			190	(90)	191	(88)
Re-graft			21	(10)	27	(12)
TOTAL	484	(100)	211	(100)	218	(100)