

Pancreas Activity

Key messages

- The number of patients waiting on the pancreas transplant list fell by 1% during the year, to 224 at 31 March 2017
- The number of pancreas donors after brain death increased by 5% to 360, while transplants from donors after brain death increased by 2% to 164
- The number of pancreas donors after circulatory death fell by 6% to 117, while transplants from donors after circulatory death fell by 11% to 49
- 34 islet transplants were made possible by the pancreas islet transplant programme, an increase of 10% compared with last year

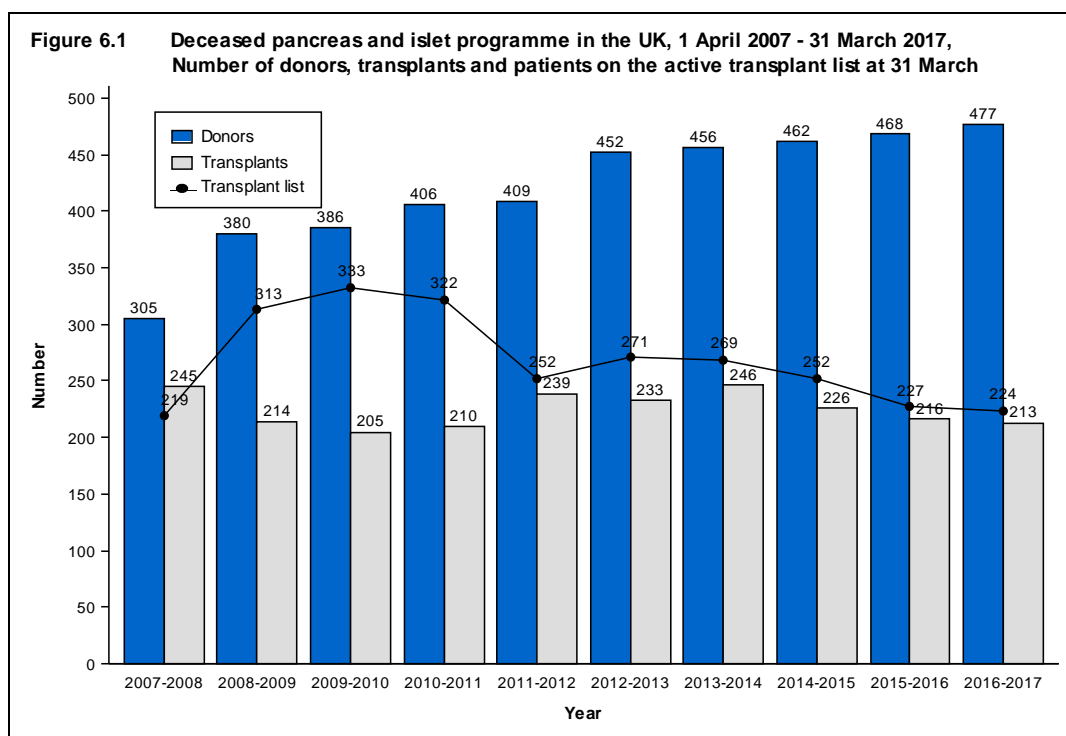
6.1 Overview

The number of patients registered on the active transplant list at 31 March for a pancreas, simultaneous kidney/pancreas (SPK) or islet transplant has increased slightly over the last ten years from 219 patients in 2008 to 224 patients in 2017. The number of pancreas donors has increased steadily from 305 to 477. However the number of transplants has decreased in the last 4 years to 213 transplants in 2016-2017. A summary of activity for deceased donor pancreas transplants and the transplant list for 1 April 2007 - 31 March 2017 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 vascularized 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 2016-2017 there were 14 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 2017 by centre. The number of patients registered on the pancreas transplant list fell by 1% in the year: on 31 March 2017, 224 patients were registered active, compared with 227 at the end of March 2016.

Of the 224 patients on the active transplant list at 31 March 2017, 193 required a SPK transplant (184 at 31 March 2016), 10 (4%) patients required a pancreas only transplant (15 at 31 March 2016) and 21 (9%) were registered for a pancreas islet transplant (including two for a simultaneous islet and kidney (SIK) transplant).

The outcome of patients registered on the UK pancreas transplant list at 1 April 2016, or subsequently registered during the financial year, is shown in **Table 6.2**. 19 patients joined the pancreas transplant list while 215 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 2017 (2016) in the UK, by centre												
Centre	Active transplant lists										TOTAL	
	Kidney/ pancreas		Kidney/islet		Pancreas alone		Islet					
							Routine	Priority				
Bristol	-	-	0	(0)	-	-	0	(2)	0	(1)	0	(3)
Cambridge	16	(18)	-	-	1	(0)	-	-	-	-	17	(18)
Cardiff	10	(4)	-	-	1	(1)	-	-	-	-	11	(5)
Edinburgh	27	(32)	2	(0)	0	(0)	6	(9)	0	(2)	35	(43)
Guys	36	(31)	-	-	0	(1)	-	-	-	-	36	(32)
King's College	-	-	0	(0)	-	-	0	(2)	0	(0)	0	(2)
Manchester	21	(24)	0	(0)	1	(2)	2	(1)	1	(1)	25	(28)
Newcastle	11	(9)	0	(0)	2	(1)	2	(1)	1	(4)	16	(15)
Oxford	62	(64)	0	(0)	5	(8)	4	(5)	3	(0)	74	(77)
Royal Free	-	-	0	(0)	-	-	0	(0)	0	(0)	0	(0)
WLRTC	10	(2)	-	-	0	(2)	-	-	-	-	10	(4)
TOTAL	193	(184)	2	(0)	10	(15)	14	(20)	5	(8)	224	(227)

Table 6.2 Whole pancreas transplant list and new registrations in the UK, 1 April 2016 - 31 March 2017

Outcome of patient at 31 March 2017	Active and suspended patients at 1 April 2016		New registrations in 2016-2017 ¹		TOTAL	
	N	%	N	%	N	%
Pancreas transplant list						
Remained active/suspended	67	71	7	37	74	65
Transplanted	6	6	11	58	17	15
Removed	21	22	1	5	22	19
Died	1	1	0	0	1	1
TOTAL	95		19		114	
Kidney/pancreas transplant list						
Remained active/suspended	152	47	180	84	332	62
Transplanted	132	41	30	14	162	30
Removed	24	7	1	0	25	5
Died	14	4	4	2	18	3
TOTAL	322		215		537	

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 2017, the overall transplant list rate was 3.4 pmp and across the Strategic Health Authorities ranged from 1.3 to 6.0 pmp.

Table 6.3 Active pancreas transplant lists at 31 March, by country/Strategic Health Authority of patient residence				
Country/ Strategic Health Authority of residence	Pancreas transplant list (pmp)			
	2017		2016	
North East	10	(3.8)	12	(4.6)
North West	15	(2.1)	12	(1.7)
Yorkshire and The Humber	7	(1.3)	12	(2.2)
North of England	32	(2.1)	36	(2.4)
East Midlands	14	(3.0)	18	(3.8)
West Midlands	22	(3.8)	24	(4.2)
East of England	18	(3.0)	17	(2.8)
Midlands and East	54	(3.3)	59	(3.6)
London	30	(3.5)	23	(2.7)
South East Coast	17	(3.7)	13	(2.8)
South Central	26	(6.0)	27	(6.3)
South West	15	(2.7)	22	(4.0)
South of England	58	(4.0)	62	(4.3)
England	174	(3.2)	180	(3.3)
Isle of Man	0	(0.0)	0	(0.0)
Channel Islands	0	(0.0)	0	(0.0)
Wales	15	(4.8)	4	(1.3)
Scotland	32	(6.0)	40	(7.4)
Northern Ireland	3	(1.6)	3	(1.6)
TOTAL	224	(3.4)	227	(3.5)

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. 40% of patients are transplanted within one year, while three years after listing 76% of patients have received a transplant. The median (average) waiting time for a pancreas transplant is 346 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.

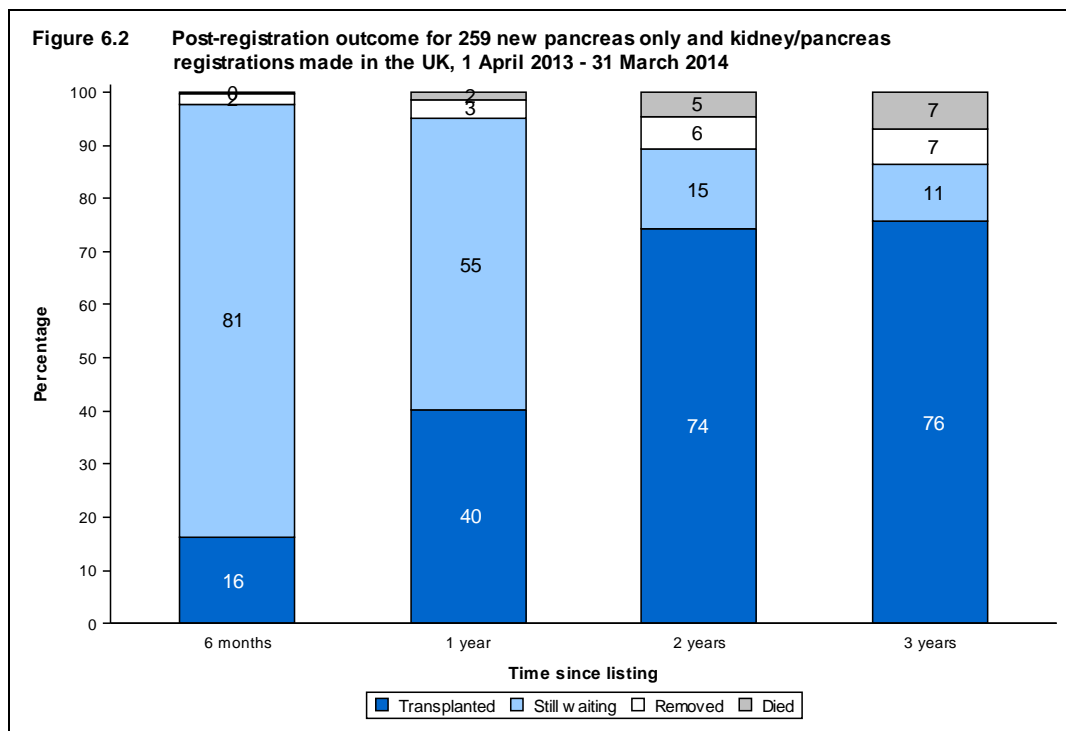


Table 6.4 Median waiting time to pancreas only and kidney/pancreas transplant in the UK, for patients registered 1 April 2011 - 31 March 2015

Blood group	Number of patients registered	Waiting time (days)	
		Median	95% Confidence interval
Adult			
O	454	452	428 - 476
A	392	290	264 - 316
B	108	258	190 - 326
AB	44	121	82 - 160
TOTAL	998	346	329 - 363

Table 6.5 Median waiting time to pancreas only and kidney/pancreas transplant in the UK, for patients registered 1 April 2011 - 31 March 2015

Ethnicity	Number of patients registered	Waiting time (days)	
		Median	95% Confidence interval
Adult			
White	881	355	334 - 376
Asian	53	279	196 - 362
Black	38	279	219 - 339
Other	12	320	107 - 533
TOTAL¹	998	346	329 - 363

¹ Includes 14 patients whose ethnicity was not reported

6.3 Donor and organ supply

Of the 829 organ donors after brain death in the UK in 2016-2017, 360 (43%) donated a pancreas. There were 117 pancreas donors after circulatory death in 2016-2017. **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 10.3 pmp across the Strategic Health Authorities and for donors after circulatory death is 1.8 pmp, with rates ranging from 1.3 to 2.4 pmp across the Strategic Health Authorities.

Table 6.6 Pancreas donation rates for deceased donors in the UK, 1 April 2016 - 31 March 2017, by country/ Strategic Health Authority						
Country/ Strategic Health Authority of residence	DBD		Pancreas donors (pmp)		TOTAL	
			DCD			
North East	27	(10.3)	6	(2.3)	33	(12.6)
North West	33	(4.6)	10	(1.4)	43	(6.0)
Yorkshire and The Humber	30	(5.6)	12	(2.2)	42	(7.8)
North of England	90	(5.9)	28	(1.8)	118	(7.8)
East Midlands	18	(3.8)	11	(2.4)	29	(6.2)
West Midlands	34	(5.9)	14	(2.4)	48	(8.3)
East of England	29	(4.8)	14	(2.3)	43	(7.1)
Midlands and East	81	(4.9)	39	(2.4)	120	(7.3)
London	35	(4.0)	11	(1.3)	46	(5.3)
South East Coast	26	(5.6)	10	(2.2)	36	(7.8)
South Central	26	(6.0)	7	(1.6)	33	(7.6)
South West	32	(5.9)	9	(1.6)	41	(7.5)
South of England	84	(5.8)	26	(1.8)	110	(7.6)
England	290	(5.3)	104	(1.9)	394	(7.2)
Isle of Man	2	(25.0)	0	(0.0)	2	(25.0)
Channel Islands	1	(6.3)	1	(6.3)	2	(12.5)
Wales	17	(5.5)	5	(1.6)	22	(7.1)
Scotland	34	(6.3)	6	(1.1)	40	(7.4)
Northern Ireland	16	(8.6)	1	(0.5)	17	(9.2)
TOTAL¹	360	(5.5)	117	(1.8)	477	(7.3)

¹ There were 7 hospitals 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 to 3.9 pmp across Strategic Health Authorities and overall was 2.5 pmp. For donors after circulatory death the overall rate was 0.7 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 2016 - 31 March 2017, by country and English Strategic Health Authority						
Country/ Strategic Health Authority of residence	DBD		DCD		TOTAL	
	N	(pmp)	N	(pmp)	N	(pmp)
North East	8	(3.1)	0	(0.0)	8	(3.1)
North West	8	(1.1)	6	(0.8)	14	(2)
Yorkshire and The Humber	10	(1.9)	5	(0.9)	15	(2.8)
North of England	26	(1.7)	11	(0.7)	37	(2.4)
East Midlands	12	(2.6)	5	(1.1)	17	(3.6)
West Midlands	22	(3.8)	5	(0.9)	27	(4.7)
East of England	18	(3)	4	(0.7)	22	(3.6)
Midlands and East	52	(3.1)	14	(0.8)	66	(4)
London	9	(1)	6	(0.7)	15	(1.7)
South East Coast	7	(1.5)	5	(1.1)	12	(2.6)
South Central	17	(3.9)	6	(1.4)	23	(5.3)
South West	15	(2.7)	4	(0.7)	19	(3.5)
South of England	39	(2.7)	15	(1)	54	(3.7)
England	126	(2.3)	46	(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	3	(1)	1	(0.3)	4	(1.3)
Scotland	32	(6)	2	(0.4)	34	(6.3)
Northern Ireland	3	(1.6)	0	(0.0)	3	(1.6)
TOTAL	164	(2.5)	49	(0.7)	213	(3.3)

There were 213 deceased donor pancreas transplants in 2016-2017 representing a fall of 1% on the 216 transplants performed in 2015-2016. Of these 213, 162 (76%) were SPK transplants, 17 (8%) were pancreas only transplants (pancreas alone (PTA) or pancreas after kidney (PAK)) and 34 (16%) were islet transplants (including one 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 10.5 hours (Inter-Quartile (IQ) range 9.3 - 12) and for a DCD donor transplant is 10.5 hours (IQ range 9.1 – 12.1) and overall is 10.5 hours (IQ range 9.2 – 12.1).

At 31 March 2017, there were approximately 1,800 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 2016 - 31 March 2017 (2015-2016) by centre														
Centre	Transplant type													
	SPK		SIK		PTA				PAK				Islet	
											Routine	Priority		
Bristol	-	-	0	(0)	-	-	-	-	-	-	0	(1)	1	(0)
Cambridge	24	(26)	-	-	0	(0)	0	(0)	-	-	-	-	-	-
Cardiff	4	(6)	-	-	1	(1)	0	(2)	-	-	-	-	-	-
Edinburgh	20	(16)	0	(0)	0	(0)	0	(0)	9	(10)	8	(9)	-	-
Guys	22	(28)	-	-	0	(0)	0	(0)	-	-	-	-	-	-
King's College	-	-	-	-	-	-	-	-	2	(1)	1	(0)	-	-
Manchester	27	(26)	1	(0)	0	(1)	4	(2)	1	(0)	1	(1)	-	-
Newcastle	7	(7)	0	(0)	0	(0)	1	(0)	1	(5)	2	(2)	-	-
Oxford	51	(46)	0	(0)	6	(10)	5	(2)	6	(1)	1	(1)	-	-
WLRTC	7	(12)	-	-	0	(0)	0	(0)	-	-	-	-	-	-
TOTAL	162	(167)	1	(0)	7	(12)	10	(6)	19	(18)	14	(13)		

WLRTC - West London Renal and Transplant Centre

Table 6.9 Pancreas transplants, 1 April 2016 - 31 March 2017 by centre										
Centre	Transplant and donor type									
	SPK		SIK DCD	PTA		Islet		TOTAL		
	DBD	DCD		DBD	DCD	DBD	DCD	DBD	DCD	
Bristol	-	-	0	-	-	1	0	1	0	
Cambridge	17	7	-	0	0	-	-	17	7	
Cardiff	3	1	-	1	0	-	-	4	1	
Edinburgh	20	0	0	0	0	15	2	35	2	
Guys	14	8	-	0	0	-	-	14	8	
King's College	-	-	-	-	-	3	0	3	0	
Manchester	16	11	1	2	2	2	0	20	14	
Newcastle	7	0	0	1	0	3	0	11	0	
Oxford	39	12	0	10	1	6	1	55	14	
WLRTC	4	3	-	0	0	-	-	4	3	
TOTAL	120	42	1	14	3	30	3	164	49	

WLRTC - West London Renal and Transplant Centre

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 2016 - 31 March 2017, and transplant list patients at 31 March						
Age group (years)	Donors		Transplant recipients		Active transplant list patients	
	N	(%)	N	(%)	N	(%)
0 - 17	30	(6)		-		-
18 - 34	120	(25)	41	(19)	49	(22)
35 - 49	175	(37)	115	(54)	120	(54)
50 - 59	132	(28)	48	(23)	49	(22)
60 - 69	17	(4)	8	(4)	5	(2)
70+	3	(1)	1	(0)	1	(0)
mean (SD)	41	(14)	44	(9)	43	(9)
Male	280	(59)	106	(50)	122	(54)
Female	197	(41)	107	(50)	102	(46)
White	441	(93)	194	(93)	193	(87)
Asian	9	(2)	10	(5)	12	(5)
Black	7	(1)	5	(2)	13	(6)
Chinese	2	(0)	0	(0)	0	(0)
Other	14	(3)	0	(0)	3	(1)
Not reported	4		4		3	
O	229	(48)	93	(44)	127	(57)
A	197	(41)	86	(40)	64	(29)
B	44	(9)	20	(9)	32	(14)
AB	7	(1)	14	(7)	1	(0)
First graft			185	(87)	201	(90)
Re-graft			28	(13)	23	(10)
TOTAL	477	(100)	213	(100)	224	(100)