

Pancreas Activity

Key messages

- The number of patients waiting on the pancreas transplant list fell by 10% during the year, to 227 at 31 March 2016
- The number of pancreas donors after brain death fell by 3% to 343, while transplants from donors after brain death fell by 1% to 161
- The number of pancreas donors after circulatory death increased by 16% to 125, while transplants from donors after circulatory death fell by 13% to 55
- 31 islet transplants were made possible by the pancreas islet transplant programme, an increase of 35% compared with last year

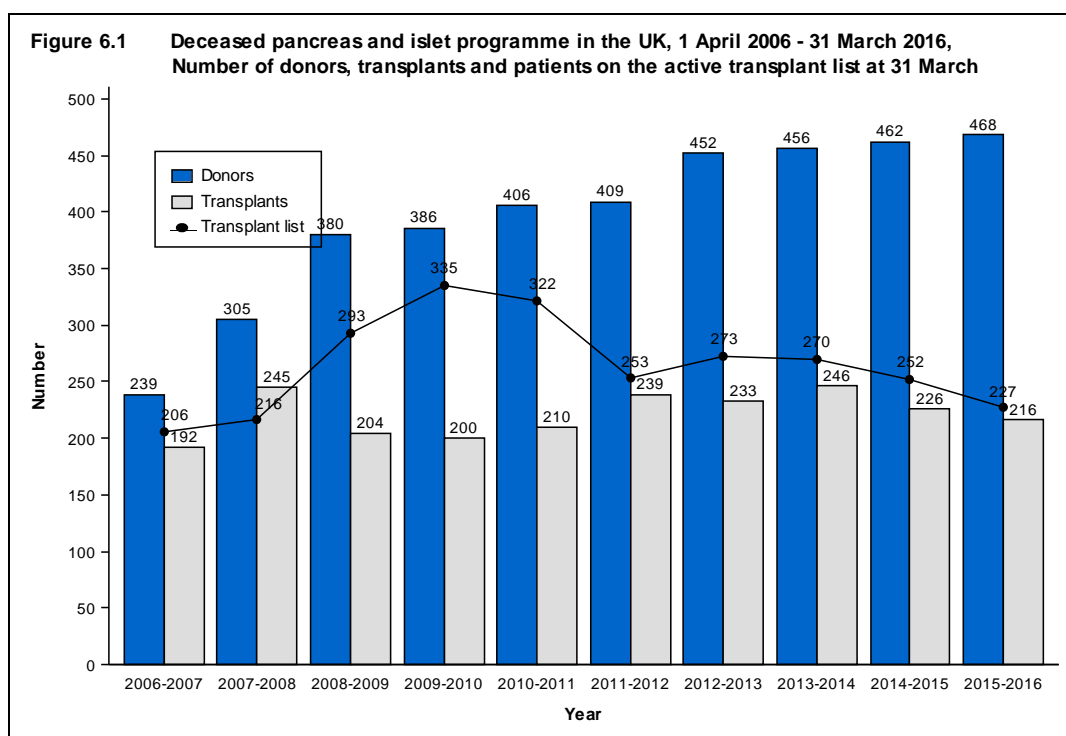
6.1 Overview

The number of patients registered on the active transplant list at 31 March for a pancreas only, simultaneous kidney/pancreas (SPK) or islet transplant has increased slightly over the last ten years from 206 patients in 2006 to 227 patients in 2016. The number of pancreas donors and transplants has increased steadily from 239 donors resulting in 192 transplants in 2006-2007, to 468 donors and 216 transplants in 2015-2016, although the actual number of transplants is less than in each of the previous 4 years. A summary of activity for deceased donor pancreas transplants and the transplant list for 1 April 2006 - 31 March 2016 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 2015-2016 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 2016 by centre. The number of patients registered on the pancreas transplant list fell by 10% in the year: on 31 March 2016, 227 patients were registered active, compared with 252 at the end of March 2015.

Of the 227 patients on the active transplant list at 31 March 2016, 184 required a SPK transplant (201 at 31 March 2015), 43 (19%) patients required a pancreas only transplant (51 at 31 March 2015) and 28 (12%) were registered for a pancreas islet transplant.

The outcome of patients registered on the UK pancreas transplant list at 1 April 2015, or subsequently registered during the financial year, is shown in **Table 6.2**. 23 patients joined the pancreas transplant list while 213 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 2016 (2015) in the UK, by centre										
Centre	Kidney/pancreas		Active transplant lists						TOTAL	
			Pancreas alone		Islet					
					Routine	Priority				
Bristol	-	-	-	-	2	(4)	1	(0)	3	(4)
Cambridge	18	(18)	0	(0)	0	(0)	0	(0)	18	(18)
Cardiff	4	(7)	1	(2)	0	(0)	0	(0)	5	(9)
Edinburgh	32	(30)	0	(0)	9	(15)	2	(3)	43	(48)
Guys	31	(26)	1	(1)	0	(0)	0	(0)	32	(27)
King's College	0	(0)	0	(0)	2	(1)	0	(0)	2	(1)
Manchester	24	(32)	2	(0)	1	(2)	1	(1)	28	(35)
Newcastle	9	(15)	1	(0)	1	(4)	4	(2)	15	(21)
Oxford	64	(64)	8	(10)	5	(4)	0	(0)	77	(78)
WLRTC	2	(9)	2	(2)	0	(0)	0	(0)	4	(11)
TOTAL	184	(201)	15	(15)	20	(30)	8	(6)	227	(252)

Table 6.2 Whole pancreas transplant list and new registrations in the UK, 1 April 2015 - 31 March 2016

Outcome of patient at 31 March 2016	Active and suspended patients at 1 April 2015		New registrations in 2015-2016 ¹		TOTAL	
	N	%	N	%	N	%
Pancreas transplant list						
Remained active/suspended	77	74	14	61	91	72
Transplanted	10	10	8	35	18	14
Removed	14 ²	13	1 ³	4	15	12
Died	3	3	0	0	3	2
TOTAL	104		23		127	
Kidney/pancreas transplant list						
Remained active/suspended	153	47	173	81	326	61
Transplanted	139	43	31	15	170	32
Removed	13	4	6	3	19	4
Died	20	6	3	1	23	4
TOTAL	325		213		538	

¹ Includes re-registrations for second or subsequent transplants

² Includes 2 patients removed from pancreas list but active on kidney/pancreas list

³ Includes 2 patients removed from pancreas list but active on kidney/pancreas list

The active pancreas transplant list rates by country/Strategic Health Authority of patient's residence are shown in **Table 6.3**. At 31 March 2016, the overall transplant list rate was 3.1 pmp and across the Strategic Health Authorities ranged from 1.4 to 5.8 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)			
	2016		2015	
North East	8	(3.1)	12	(4.6)
North West	10	(1.4)	16	(2.2)
Yorkshire and The Humber	11	(2.1)	13	(2.4)
North of England	29	(1.9)	41	(2.7)
East Midlands	18	(3.9)	17	(3.7)
West Midlands	21	(3.7)	17	(3.0)
East of England	16	(2.7)	20	(3.3)
Midlands and East	55	(3.4)	54	(3.3)
London	22	(2.6)	21	(2.5)
South East Coast	13	(2.8)	13	(2.8)
South Central	25	(5.8)	20	(4.7)
South West	19	(3.5)	26	(4.8)
South of England	57	(4.0)	59	(4.1)
England	163	(3.0)	175	(3.2)
Isle of Man	0	(0.0)	0	(0.0)
Channel Islands	0	(0.0)	0	(0.0)
Wales	4	(1.3)	11	(3.6)
Scotland	29	(5.4)	24	(4.5)
Northern Ireland	3	(1.6)	6	(3.3)
TOTAL	199	(3.1)	216	(3.3)

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. 35% 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 353 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.

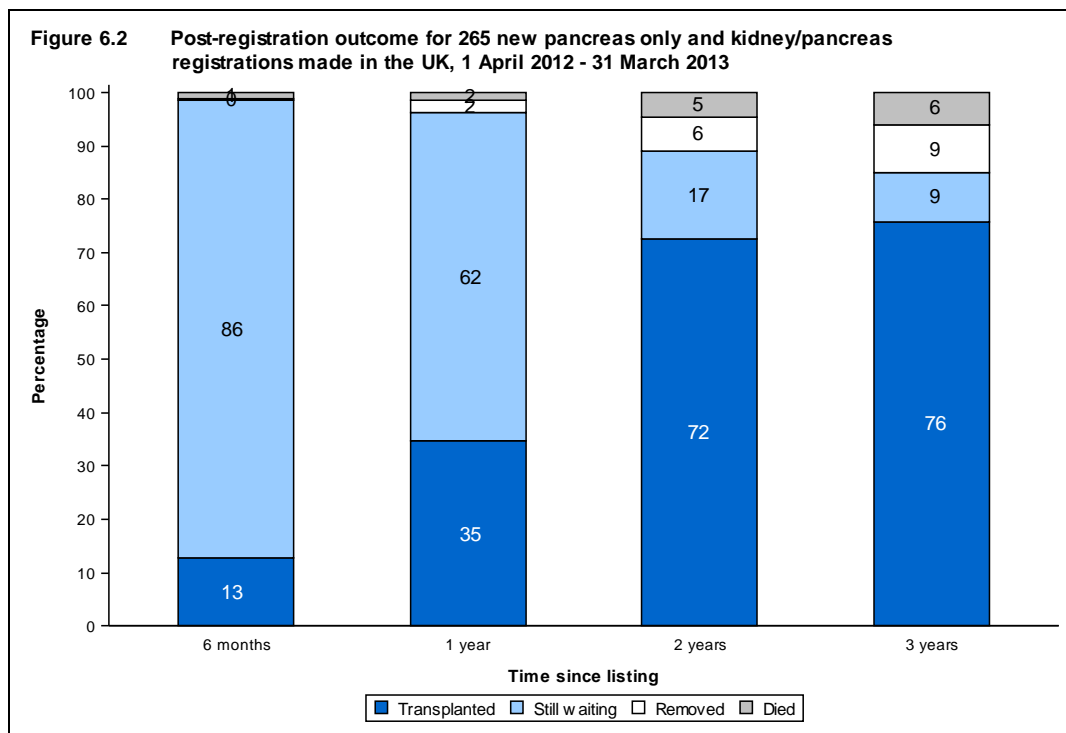


Table 6.4 Median waiting time to pancreas only and kidney/pancreas transplant in the UK, for patients registered 1 April 2010 - 31 March 2014

Blood group	Number of patients registered	Waiting time (days)	
		Median	95% Confidence interval
Adult			
O	462	459	435 - 483
A	381	306	276 - 336
B	107	233	176 - 290
AB	39	107	87 - 127
TOTAL	989	353	333 - 373

Table 6.5 Median waiting time to pancreas only and kidney/pancreas transplant in the UK, for patients registered 1 April 2010 - 31 March 2014

Ethnicity	Number of patients registered	Waiting time (days)	
		Median	95% Confidence interval
Adult			
White	865	366	343 - 389
Asian	59	307	216 - 398
Black	40	279	217 - 341
Other	13	188	58 - 318
TOTAL¹	989	353	333 - 373

¹ Includes 12 patients whose ethnicity was not reported

6.3 Donor and organ supply

Of the 785 organ donors after brain death in the UK in 2015-2016, 343 (44%) donated a pancreas. There were 125 pancreas donors after circulatory death in 2015-2016. **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 5.3 pmp, with rates ranging from 4 to 7 pmp across the Strategic Health Authorities and for donors after circulatory death is 1.9 pmp, with rates ranging from 1.2 to 3.4 pmp across the Strategic Health Authorities.

Table 6.6 Pancreas donation rates for deceased donors in the UK, 1 April 2015 - 31 March 2016, by country/ Strategic Health Authority						
Country/ Strategic Health Authority of residence	DBD		Pancreas donors (pmp)		TOTAL	
			DCD			
North East	18	(6.9)	9	(3.4)	27	(10.3)
North West	35	(4.9)	16	(2.2)	51	(7.2)
Yorkshire and The Humber	30	(5.6)	8	(1.5)	38	(7.1)
North of England	83	(5.5)	33	(2.2)	116	(7.7)
East Midlands	20	(4.3)	7	(1.5)	27	(5.8)
West Midlands	27	(4.7)	7	(1.2)	34	(6.0)
East of England	31	(5.1)	19	(3.2)	50	(8.3)
Midlands and East	78	(4.8)	33	(2.0)	111	(6.8)
London	34	(4.0)	15	(1.8)	49	(5.7)
South East Coast	32	(7.0)	8	(1.7)	40	(8.7)
South Central	25	(5.8)	6	(1.4)	31	(7.2)
South West	32	(5.9)	9	(1.7)	41	(7.6)
South of England	89	(6.2)	23	(1.6)	112	(7.8)
England	284	(5.2)	104	(1.9)	388	(7.1)
Isle of Man	1	(12.5)	0	(0.0)	1	(12.5)
Channel Islands	0	(0.0)	0	(0.0)	0	(0.0)
Wales	17	(5.5)	5	(1.6)	22	(7.1)
Scotland	26	(4.9)	15	(2.8)	41	(7.7)
Northern Ireland	15	(8.2)	1	(0.5)	16	(8.7)
TOTAL¹	343	(5.3)	125	(1.9)	468	(7.2)

¹ Includes 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 1.4 to 3.8 pmp across Strategic Health Authorities and overall was 2.5 pmp. For donors after circulatory death the overall rate was 0.8 pmp and ranged from 0 to 1.8 pmp across Strategic Health Authorities.

Table 6.7 Pancreas transplant rates per million population (pmp), in the UK, 1 April 2015 - 31 March 2016, by country/ Strategic Health Authority						
Country/ Strategic Health Authority of residence	DBD		DCD		TOTAL	
	N	(pmp)	N	(pmp)	N	(pmp)
North East	10	(3.8)	0	(0)	10	(3.8)
North West	11	(1.5)	7	(1)	18	(2.5)
Yorkshire and The Humber	8	(1.5)	2	(0.4)	10	(1.9)
North of England	29	(1.9)	9	(0.6)	38	(2.5)
East Midlands	10	(2.2)	4	(0.9)	14	(3)
West Midlands	8	(1.4)	5	(0.9)	13	(2.3)
East of England	14	(2.3)	11	(1.8)	25	(4.2)
Midlands and East	32	(2)	20	(1.2)	52	(3.2)
London	15	(1.8)	9	(1.1)	24	(2.8)
South East Coast	14	(3.1)	1	(0.2)	15	(3.3)
South Central	16	(3.7)	3	(0.7)	19	(4.4)
South West	17	(3.1)	3	(0.6)	20	(3.7)
South of England	47	(3.3)	7	(0.5)	54	(3.8)
England	123	(2.3)	45	(0.8)	168	(3.1)
Isle of Man	0	(0)	0	(0)	0	(-)
Channel Islands	0	(0)	0	(0)	0	(-)
Wales	9	(2.9)	4	(1.3)	13	(4.2)
Scotland	24	(4.5)	6	(1.1)	30	(5.6)
Northern Ireland	5	(2.7)	0	(0)	5	(2.7)
TOTAL	161	(2.5)	55	(0.8)	216	(3.3)

There were 216 deceased donor pancreas transplants in 2015-2016 representing a decrease of 4% on the 226 transplants performed in 2014-2015. Of these 216, 167 (77%) were SPK transplants, 18 (8%) were pancreas only transplants (pancreas alone (PTA) or pancreas after kidney (PAK)) and 31 (14%) were islet transplants. 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 whole 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 10.8 hours (Inter-Quartile (IQ) range 9.6 – 12.1) and for a DCD donor transplant is 10.2 hours (IQ range 9.3 – 11.9) and overall is 10.6 hours (IQ range 9.5 – 12.1).

At 31 March 2016, there were approximately 2,100 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 2015 - 31 March 2016 (2014-2015) by centre										
Centre	SPK		PTA		Transplant type PAK		Islet			
							Routine		Priority	
Bristol	-	-	-	-	-	-	1	(1)	0	(0)
Cambridge	26	(26)	0	(1)	0	(2)	-	-	-	-
Cardiff	6	(8)	1	(2)	2	(6)	-	-	-	-
Edinburgh	16	(16)	0	(0)	0	(0)	10	(6)	9	(1)
Guys	28	(28)	0	(1)	0	(1)	-	-	-	-
King's College	-	-	-	-	-	-	1	(0)	0	(0)
Manchester	26	(29)	1	(1)	2	(2)	0	(2)	1	(0)
Newcastle	7	(5)	0	(1)	0	(1)	5	(3)	2	(1)
Oxford	46	(56)	10	(8)	2	(2)	1	(2)	1	(3)
Royal Free	-	-	-	-	-	-	0	(2)	0	(2)
WLRTC	12	(5)	0	(0)	0	(2)	-	-	-	-
TOTAL	167	(173)	12	(14)	6	(16)	18	(16)	13	(7)

WLRTC - West London Renal and Transplant Centre

Table 6.9 Pancreas transplants, 1 April 2015 - 31 March 2016 by centre									
Centre	SPK		Transplant and donor type PTA		Islet		TOTAL		
	DBD	DCD	DBD	DCD	DBD	DCD	DBD	DCD	
Bristol	-	-	-	-	1	0	1	0	
Cambridge	16	10	0	0	-	-	16	10	
Cardiff	4	2	3	0	-	-	7	2	
Edinburgh	16	0	0	0	13	6	29	6	
Guys	20	8	0	0	-	-	20	8	
King's College	-	-	-	-	1	0	1	0	
Manchester	14	12	3	0	1	0	18	12	
Newcastle	7	0	0	0	7	0	14	0	
Oxford	37	9	7	5	2	0	46	14	
WLRTC	9	3	0	0	-	-	9	3	
TOTAL	123	44	13	5	25	6	161	55	

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 2015 - 31 March 2016, and transplant list patients at 31 March						
Age group (years)	Donors		Transplant recipients		Active transplant list patients	
	N	(%)	N	(%)	N	(%)
0 - 17	34	(7)	-	-	1	(0)
18 - 34	119	(25)	39	(18)	43	(19)
35 - 49	171	(37)	111	(51)	123	(54)
50 - 59	126	(27)	55	(25)	48	(21)
60 - 69	17	(4)	9	(4)	11	(5)
70+	1	(0)	2	(1)	1	(0)
mean (SD)	40	(14)	45	(9)	44	(10)
Male	256	(55)	104	(48)	119	(52)
Female	212	(45)	112	(52)	108	(48)
White	445	(95)	191	(89)	206	(91)
Asian	10	(2)	13	(6)	12	(5)
Black	6	(1)	7	(3)	8	(4)
Chinese	0	(0)	1	(0)	0	(0)
Other	6	(1)	2	(1)	0	(0)
Not reported	1		2		1	
O	213	(46)	87	(40)	134	(59)
A	208	(44)	97	(45)	67	(30)
B	41	(9)	24	(11)	22	(10)
AB	6	(1)	8	(4)	4	(2)
First graft			198	(92)	196	(86)
Re-graft			18	(8)	31	(14)
TOTAL	468	(100)	216	(100)	227	(100)