

Pancreas Activity

Key messages

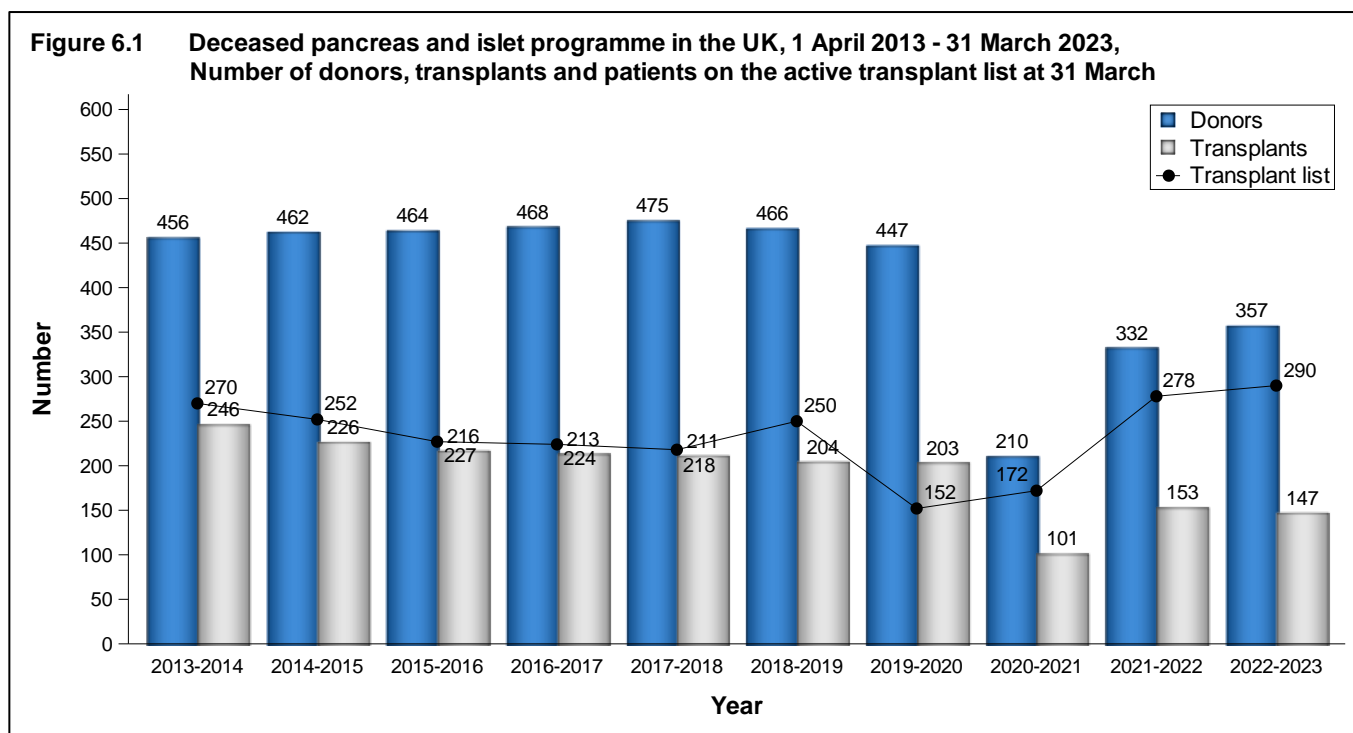
- The number of patients waiting on the pancreas transplant list increased by 4% during the year, to 290 at 31 March 2023
- The number of pancreas donors after brain death increased by 2% to 247, while transplants from donors after brain death decreased by 10% to 101
- The number of pancreas donors after circulatory death increased by 18% to 110, while transplants from donors after circulatory death increased by 12% to 46
- 18 islet transplants were made possible by the pancreas islet transplant programme

6.1 Overview

The number of patients registered on the active transplant list for a pancreas, simultaneous pancreas/kidney (SPK), simultaneous islet/kidney (SIK), or islet transplant has remained similar over the last ten years from 270 patients at 31 March 2014 to 290 patients at 31 March 2023. The number of pancreas donors fell from 456 to 357. The number of transplants has decreased in the last 10 years to 147 transplants in 2022-2023. A summary of activity for deceased donor pancreas transplants and the transplant list for 1 April 2013 - 31 March 2023 is shown in **Figure 6.1**.

On 11 September 2019, an additional top tier of patients was introduced to the National Pancreas Offering Scheme. Patients in this top tier are either categorised as very difficult to HLA match to a donor or have been waiting for more than 3 years for a pancreas or islet transplant. All other patients appear in subsequent tiers and are prioritised according to a point system based on a range of clinical factors. A score is calculated for every potentially suitable patient and the pancreas is allocated preferentially to the patient with the most points after those in the top tier. 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.

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 2022-2023 there were 20 intestinal transplants including a pancreas. Intestinal transplant activity is reported in Chapter 9.



6.2 Transplant list

Table 6.1 shows the number of patients on the active transplant lists at 31 March 2023 by centre. The number of patients registered on the pancreas transplant list increased by 4% in the year: on 31 March 2023, 290 patients were registered active, compared with 278 at the end of March 2022.

Of the 290 patients on the active transplant list at 31 March 2023, 258 (89%) required a SPK transplant (243 at 31 March 2022), 7 (2%) patients required a pancreas only transplant (9 at 31 March 2022) and 25 (9%) were registered for a pancreas islet transplant (including 13 for a SIK transplant).

The outcome of patients registered on the UK pancreas transplant list at 1 April 2022, or subsequently registered during the financial year, is shown in **Table 6.2**. Four patients joined the pancreas transplant list while 205 joined the list for a 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 2023 (2022) in the UK, by centre												
Centre	Kidney/ pancreas		Kidney/islet		Active transplant lists						TOTAL	
					Pancreas alone		Islet					
							Routine	Priority				
Cambridge	19	(13)	0	(0)	0	(0)	-	-	-	-	19	(13)
Cardiff	10	(6)	-	-	0	(1)	-	-	-	-	10	(7)
Edinburgh	28	(35)	2	(1)	0	(0)	4	(4)	0	(0)	34	(40)
Guy's	32	(31)	-	-	0	(0)	-	-	-	-	32	(31)
King's College	-	-	0	(0)	-	-	0	(0)	0	(0)	0	(0)
Manchester	88	(70)	8	(6)	3	(3)	0	(3)	1	(1)	100	(83)
Newcastle	9	(13)	0	(0)	1	(2)	4	(5)	1	(3)	15	(23)
Oxford	64	(64)	3	(1)	3	(3)	2	(2)	0	(0)	72	(70)
Royal Free	-	-	0	(0)	-	-	0	(0)	0	(0)	0	(0)
WLRTC	8	(11)	-	-	0	(0)	-	-	-	-	8	(11)
TOTAL	258	(243)	13	(8)	7	(9)	10	(14)	2	(4)	290	(278)

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Table 6.2 Whole pancreas transplant list and new registrations in the UK, 1 April 2022 - 31 March 2023

Outcome of patient at 31 March 2023	Active and suspended patients at 1 April 2022		New registrations in 2022-2023 ¹		TOTAL	
	N	%	N	%	N	%
Pancreas transplant list						
Remained active/suspended	55	82	4	100	59	83
Transplanted	8	12	0	0	8	11
Removed	3	4	0	0	3	4
Died	1	1	0	0	1	1
TOTAL	67		4		71	
Kidney/pancreas transplant list						
Remained active/suspended	293	64	178	87	471	71
Transplanted ²	110	24	17	8	127	19
Removed ³	31	7	5	2	36	5
Died	21	5	5	2	26	4
TOTAL	455		205		660	

¹ Includes re-registrations for second or subsequent patients
² Includes 6 patients that received a kidney only transplant
³ Includes 2 patients removed from kidney/pancreas list and made active on kidney/islet list

The active pancreas transplant list rates by country/NHS region of patient's residence are shown in **Table 6.3**. At 31 March 2023, the overall transplant list rate was 4.3 pmp and across NHS regions ranged from 1.7 to 6.7 pmp.

Table 6.3 Active pancreas, kidney/pancreas, and islet transplant list at 31 March, by Country/ NHS region of patient residence				
Country/ NHS region of residence	Pancreas/Islet transplant list (pmp)			
	2023		2022	
North East and Yorkshire	42	(5.2)	42	(5.2)
North West	50	(6.7)	44	(5.9)
Midlands	59	(5.4)	48	(4.4)
East of England	11	(1.7)	18	(2.8)
London	30	(3.4)	28	(3.2)
South East	31	(3.3)	24	(2.6)
South West	16	(2.8)	20	(3.5)
England	239	(4.2)	224	(4.0)
Isle of Man	0	(0.0)	0	(0.0)
Channel Islands	0	(0.0)	0	(0.0)
Wales	14	(4.5)	11	(3.5)
Scotland	32	(5.8)	38	(6.9)
Northern Ireland	3	(1.6)	2	(1.1)
TOTAL¹	290	(4.3)	278	(4.1)

¹Includes patients in 2023 (2022) residing in: Unspecified UK 2 (3)

An indication of longer-term outcomes for patients listed for a pancreas or kidney/pancreas transplant is shown 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. 24% of patients are transplanted within one year, while three years after listing 62% of patients have received a transplant. The median (average) waiting time for a pancreas transplant is 375 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.

Figure 6.2 Post-registration outcome for 245 new pancreas only and kidney/pancreas registrations made in the UK, 1 April 2019 - 31 March 2020

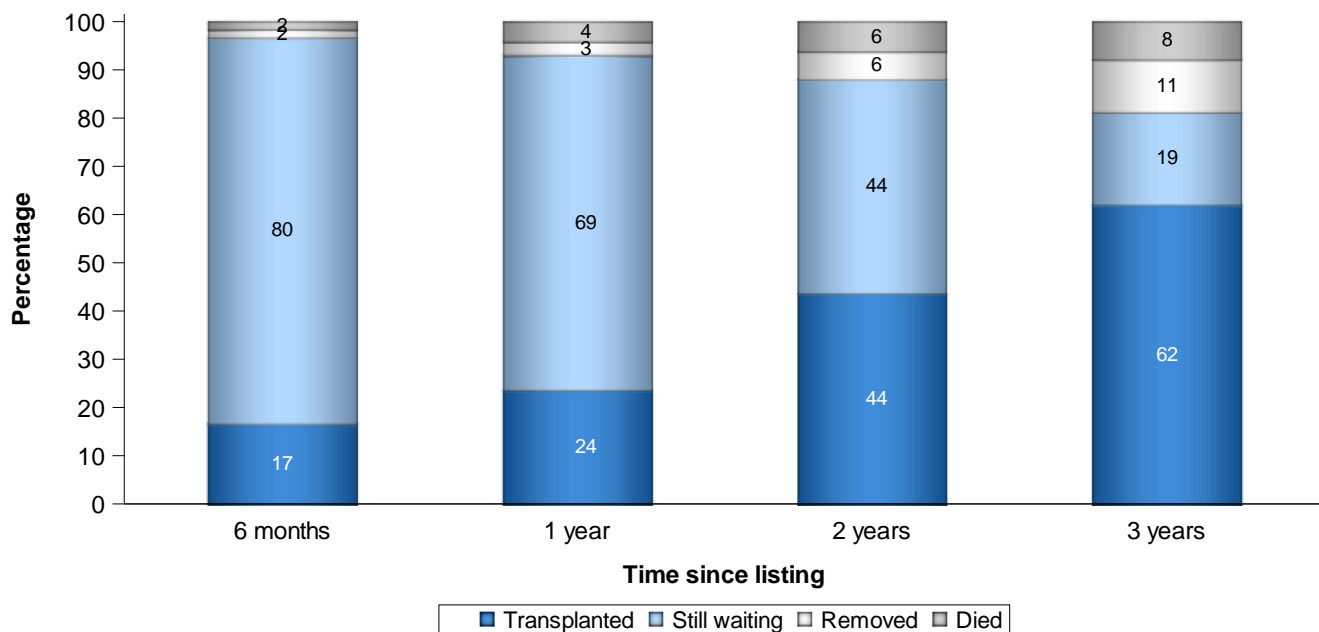


Table 6.4 Median waiting time to pancreas only and kidney/pancreas transplant in the UK, for patients registered 1 April 2017 - 31 March 2021

Blood group	Number of patients registered	Waiting time (days)	
		Median	95% Confidence interval
Adult			
O	379	468	439 - 497
A	331	245	209 - 281
B	97	437	363 - 511
AB	32	130	100 - 160
TOTAL	839	375	343 - 407

Table 6.5 Median waiting time to pancreas only and kidney/pancreas transplant in the UK, for patients registered 1 April 2017 - 31 March 2021

Ethnicity	Number of patients registered	Waiting time (days)	
		Median	95% Confidence interval
Adult			
White	713	378	343 - 413
Asian	62	437	268 - 606
Black	43	372	239 - 505
Other	18	209	148 - 270
TOTAL¹	839	375	343 - 407

¹ Includes 3 recipients with unknown ethnicity

6.3 Donor and organ supply

Of the 772 organ donors after brain death in the UK in 2022-2023, 247 (32%) donated a pancreas. There were 110 pancreas donors after circulatory death in 2022-2023. **Table 6.6** shows this activity by country/NHS region 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 3.7 pmp, with rates ranging from 1.8 to 4.9 pmp across NHS regions and for donors after circulatory death is 1.6 pmp, with rates ranging from 0.9 to 2.4 pmp across NHS regions.

Table 6.6 Pancreas donation rates for deceased donors in the UK, 1 April 2022 - 31 March 2023, by Country/ NHS region						
Country/ NHS region of residence	Pancreas donors (pmp)					
	DBD		DCD		TOTAL	
North East and Yorkshire	40	(4.9)	15	(1.8)	55	(6.8)
North West	32	(4.3)	10	(1.3)	42	(5.7)
Midlands	31	(2.9)	21	(1.9)	52	(4.8)
East of England	16	(2.5)	9	(1.4)	25	(3.9)
London	16	(1.8)	8	(0.9)	24	(2.7)
South East	32	(3.4)	22	(2.4)	54	(5.8)
South West	18	(3.2)	6	(1.1)	24	(4.2)
England	185	(3.3)	91	(1.6)	276	(4.9)
Isle of Man	0	(0.0)	0	(0.0)	0	(0.0)
Channel Islands	1	(5.9)	0	(0.0)	1	(5.9)
Wales	12	(3.9)	6	(1.9)	18	(5.8)
Scotland	22	(4.0)	6	(1.1)	28	(5.1)
Northern Ireland	11	(5.8)	3	(1.6)	14	(7.4)
TOTAL¹	247	(3.7)	110	(1.6)	357	(5.3)

¹ Includes 20 donors with unknown UK postcode (16 DBD and 4 DCD)

6.4 Transplants

The number of pancreas and islet transplants by recipient country/NHS region 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 0.8 to 1.8 pmp across NHS regions and overall was 1.5 pmp. For donors after circulatory death, the overall rate was 0.7 pmp and ranged from 0.4 to 0.9 pmp across NHS regions.

Table 6.7 Pancreas and islet transplant rates per million population (pmp), in the UK, 1 April 2022 - 31 March 2023, by country and English NHS region						
Country/ NHS region of residence	DBD		DCD		TOTAL	
	N	(pmp)	N	(pmp)	N	(pmp)
North East and Yorkshire	12	(1.5)	4	(0.5)	16	(2.0)
North West	10	(1.3)	3	(0.4)	13	(1.8)
Midlands	19	(1.8)	7	(0.6)	26	(2.4)
East of England	10	(1.6)	4	(0.6)	14	(2.2)
London	11	(1.3)	8	(0.9)	19	(2.2)
South East	7	(0.8)	4	(0.4)	11	(1.2)
South West	8	(1.4)	3	(0.5)	11	(1.9)
England	77	(1.4)	33	(0.6)	110	(1.9)
Isle of Man	0	(0.0)	0	(0.0)	0	(0.0)
Channel Islands	0	(0.0)	0	(0.0)	0	(0.0)
Wales	7	(2.3)	5	(1.6)	12	(3.9)
Scotland	17	(3.1)	8	(1.5)	25	(4.6)
Northern Ireland	0	(0.0)	0	(0.0)	0	(0.0)
TOTAL	101	(1.5)	46	(0.7)	147	(2.2)

There were 147 deceased donor pancreas and islet transplants in 2022-2023, less than the 153 transplants performed in 2021-2022. Of these 147, 121 (82%) were SPK transplants, 8 (5%) were pancreas only transplants (pancreas alone (PTA) or pancreas after kidney (PAK)) and 18 (12%) were islet transplants (including 5 SIK). The number of transplants performed at each centre is shown in **Table 6.8** by transplant type and **Table 6.9** by transplant and 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. In 2022-2023, the median CIT for a DBD donor whole pancreas transplant is 10.1 hours (Inter-Quartile (IQ) range 8.6 – 10.7) and for a DCD donor transplant is 11.3 hours (IQ range 10.0 – 12.5) and overall is 10.1 hours (IQ range 10.0 – 10.7).

At 31 March 2023, there were approximately 2,200 recipients with a functioning pancreas transplant (including multi-organ transplants) being followed-up, as reported to the UK Transplant Registry.

Table 6.8 Pancreas and islet transplants, 1 April 2022 - 31 March 2023 (2021-2022) by centre												
Centre	SPK		SIK		Transplant type				Islet			
					PTA		PAK		Routine		Priority	
Cambridge	15	(11)	-	-	0	(0)	0	(0)	-	-	-	-
Cardiff	7	(5)	-	-	0	(0)	2	(1)	-	-	-	-
Edinburgh	16	(8)	2	(3)	0	(0)	0	(0)	3	(5)	4	(5)
Guy's	21	(21)	-	-	0	(0)	0	(0)	-	-	-	-
King's College	-	-	0	(0)	-	-	-	-	0	(0)	0	(0)
Manchester	17	(20)	3	(3)	3	(1)	0	(3)	0	(0)	2	(1)
Newcastle	8	(4)	0	(0)	0	(1)	0	(1)	2	(2)	1	(1)
Oxford	32	(45)	0	(1)	2	(3)	1	(1)	1	(1)	0	(0)
Royal Free	-	-	0	(0)	-	-	-	-	0	(0)	0	(0)
WLRTC	5	(6)	-	-	0	(0)	0	(0)	-	-	-	-
TOTAL	121	(120)	5	(7)	5	(5)	3	(6)	6	(8)	7	(7)

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Table 6.9 Pancreas and islet transplants, 1 April 2022 - 31 March 2023 by centre and donor type										
Centre	Transplant and donor type									
	SPK		SIK		PTA/PAK		Islet		TOTAL	
	DBD	DCD	DBD	DCD	DBD	DCD	DBD	DCD	DBD	DCD
Cambridge	10	5	-	-	0	0	-	-	10	5
Cardiff	4	3	-	-	0	2	-	-	4	5
Edinburgh	11	5	1	1	0	0	5	2	17	8
Guy's	12	9	-	-	0	0	-	-	12	9
King's College	-	-	0	0	-	-	0	0	0	0
Manchester	13	4	3	0	2	1	2	0	20	5
Newcastle	5	3	0	0	0	0	3	0	8	3
Oxford	23	9	0	0	3	0	1	0	27	9
Royal Free	-	-	0	0	-	-	0	0	0	0
WLRTC	3	2	-	-	0	0	-	-	3	2
TOTAL	81	40	4	1	5	3	11	2	101	46

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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**.

		Donors		Transplant recipients		Active transplant list patients	
		N	(%)	N	(%)	N	(%)
Age (years)	0-17	26	(7)	-	-	-	-
	18-34	114	(32)	42	(29)	65	(22)
	35-49	147	(41)	71	(48)	150	(52)
	50-59	68	(19)	31	(21)	67	(23)
	60-69	1	(0)	3	(2)	8	(3)
	70+	1	(0)	0	(0)	0	(0)
	Mean (SD)	37	(13)	42	(9)	43	(9)
Sex	Male	212	(59)	79	(54)	144	(50)
	Female	145	(41)	68	(46)	145	(50)
	Unknown	0	-	0	-	1	-
Ethnicity	White	322	(93)	132	(90)	250	(88)
	Asian	12	(3)	7	(5)	16	(6)
	Black	6	(2)	6	(4)	14	(5)
	Other	8	(2)	2	(1)	5	(2)
	Unknown	9	-	0	-	5	-
Blood group	O	168	(47)	54	(37)	155	(53)
	A	145	(41)	65	(44)	94	(32)
	B	35	(10)	21	(14)	35	(12)
	AB	9	(3)	7	(5)	6	(2)
Graft number	First graft	-	-	129	(88)	260	(90)
	Re-graft	-	-	18	(12)	30	(10)
TOTAL		357	(100)	147	(100)	290	(100)