

Pancreas Activity

Key messages

- The number of patients waiting on the pancreas transplant list increased by 62% during the year, to 278 at 31 March 2022 due to changes reflecting the COVID pandemic
- The number of pancreas donors after brain death increased by 52% to 241, while transplants from donors after brain death increased by 45% to 112
- The number of pancreas donors after circulatory death increased by 79% to 93, while transplants from donors after circulatory death increased by 71% to 41
- 15 islet transplants were made possible by the pancreas islet transplant programme

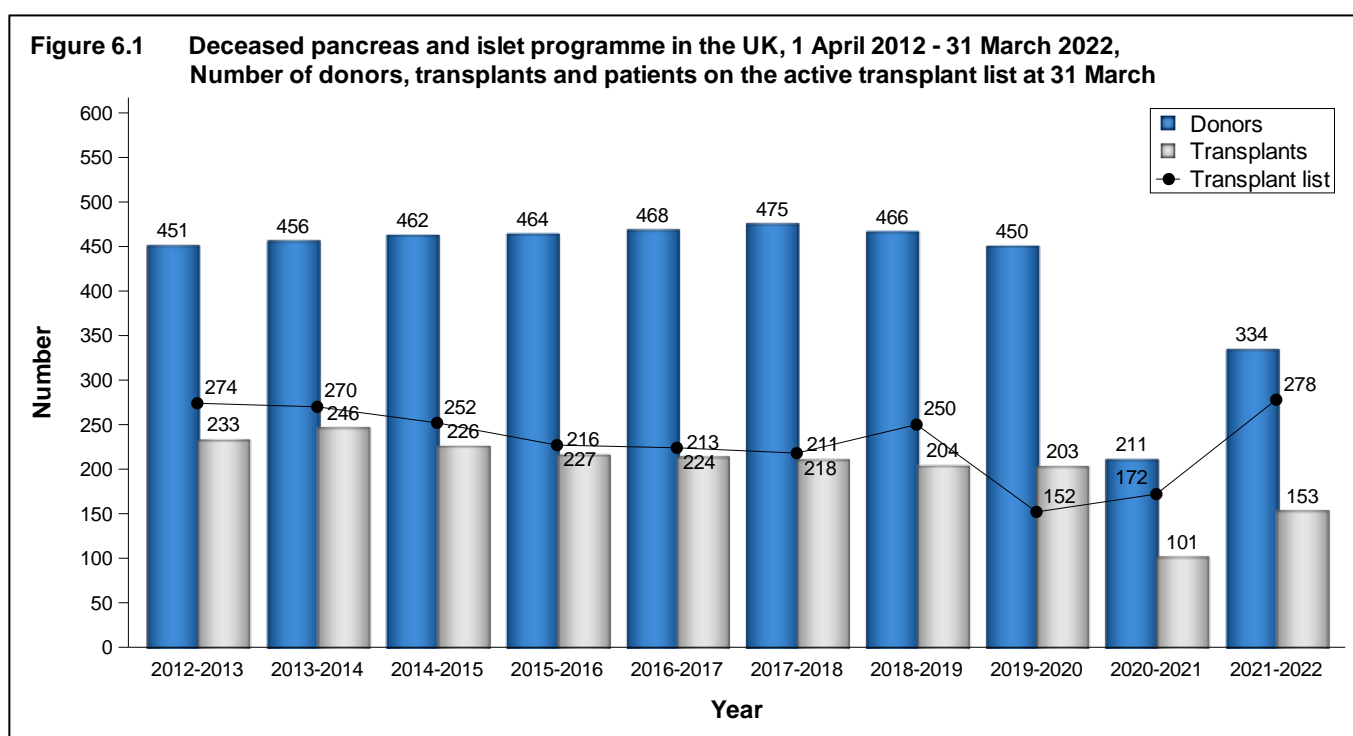
6.1 Overview

Note that the COVID-19 pandemic will have affected the number of offered, retrieved and transplanted organs in 2021-2022.

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 274 patients at 31 March 2013 to 278 patients at 31 March 2022. The number of pancreas donors fell from 451 to 334. The number of transplants has decreased in the last 4 years to 153 transplants in 2021-2022. A summary of activity for deceased donor pancreas transplants and the transplant list for 1 April 2012 - 31 March 2022 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 new 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 2021-2022 there were 18 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 2022 by centre. The number of patients registered on the pancreas transplant list increased by 62% in the year: on 31 March 2022, 278 patients were registered active, compared with 172 at the end of March 2021.

Of the 278 patients on the active transplant list at 31 March 2022, 243 (87%) required a SPK transplant (143 at 31 March 2021), 9 (3%) patients required a pancreas only transplant (10 at 31 March 2021) and 26 (9%) were registered for a pancreas islet transplant (including 8 for a SIK transplant).

The outcome of patients registered on the UK pancreas transplant list at 1 April 2021, or subsequently registered during the financial year, is shown in **Table 6.2**. Twelve patients joined the pancreas transplant list while 256 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 2022 (2021) in the UK, by centre														
Centre	Kidney/ pancreas		Kidney/islet		Active transplant lists						TOTAL			
					Pancreas alone		Islet		Priority					
Bristol	-	-	0	(0)	-	-	0	(0)	0	(0)	0	(0)	0	(0)
Cambridge	13	(5)	-	-	0	(0)	-	-	-	-	-	-	13	(5)
Cardiff	6	(1)	-	-	1	(0)	-	-	-	-	-	-	7	(1)
Edinburgh	35	(22)	1	(2)	0	(0)	4	(1)	0	(0)	0	(0)	40	(25)
Guy's	31	(0)	-	-	0	(0)	-	-	-	-	-	-	31	(0)
King's College	-	-	0	(0)	-	-	0	(0)	0	(0)	0	(0)	0	(0)
Manchester	70	(43)	6	(8)	3	(2)	3	(0)	1	(1)	1	(1)	83	(54)
Newcastle	13	(10)	0	(1)	2	(3)	5	(3)	3	(1)	3	(1)	23	(18)
Oxford	64	(62)	1	(0)	3	(5)	2	(1)	0	(1)	0	(1)	70	(69)
Royal Free	-	-	0	(0)	-	-	0	(0)	0	(0)	0	(0)	0	(0)
WLRTC	11	(0)	-	-	0	(0)	-	-	-	-	-	-	11	(0)
TOTAL	243	(143)	8	(11)	9	(10)	14	(5)	4	(3)	4	(3)	278	(172)

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Table 6.2 Whole pancreas transplant list and new registrations in the UK, 1 April 2021 - 31 March 2022

Outcome of patient at 31 March 2022	Active and suspended patients at 1 April 2021		New registrations in 2021-2022 ¹		TOTAL	
	N	%	N	%	N	%
Pancreas transplant list						
Remained active/suspended	58	87	7	58	65	82
Transplanted	6	9	5	42	11	14
Removed	2	3	0	0	2	3
Died	1	1	0	0	1	1
TOTAL	67		12		79	
Kidney/pancreas transplant list						
Remained active/suspended	226	62	227	89	453	73
Transplanted	100	27	23	9	123	20
Removed ²	28	8	2	1	30	5
Died	11	3	4	2	15	2
TOTAL	365		256		621	

¹ Includes re-registrations for second or subsequent patients
² Includes 3 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 2022, the overall transplant list rate was 4.1 pmp and across NHS regions ranged from 2.7 to 6.2 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)			
	2022		2021	
North East and Yorkshire	42	(4.9)	37	(4.3)
North West	44	(6.2)	26	(3.7)
Midlands	48	(4.5)	31	(2.9)
East of England	18	(2.7)	6	(0.9)
London	28	(3.1)	5	(0.6)
South East	24	(2.7)	19	(2.1)
South West	20	(3.5)	18	(3.2)
England	224	(4.0)	142	(2.5)
Isle of Man	0	(0.0)	0	(0.0)
Channel Islands	0	(0.0)	0	(0.0)
Wales	11	(3.5)	5	(1.6)
Scotland	38	(6.9)	23	(4.2)
Northern Ireland	2	(1.1)	2	(1.1)
TOTAL	278	(4.1)	172	(2.6)

¹Includes patients in 2022 (2021) residing in: Unspecified UK 3 (0)

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. 33% of patients are transplanted within one year, while three years after listing 71% of patients have received a transplant. The median (average) waiting time for a pancreas transplant is 364 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 227 new pancreas only and kidney/pancreas registrations made in the UK, 1 April 2018 - 31 March 2019

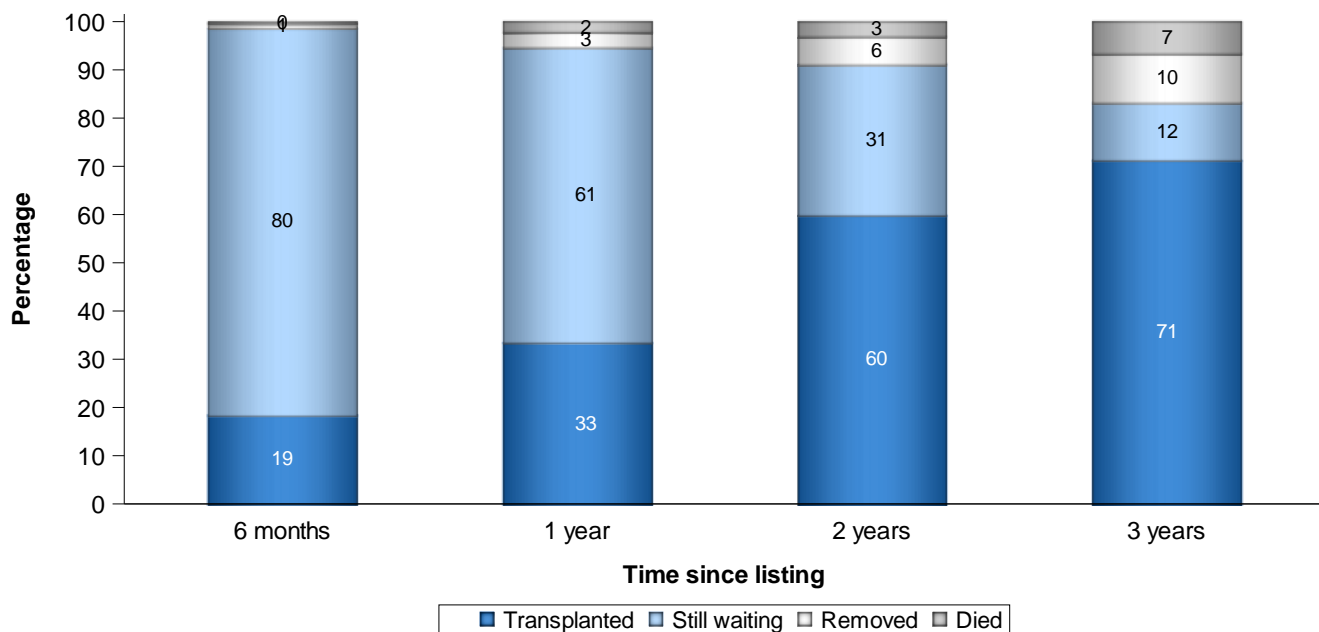


Table 6.4 Median waiting time to pancreas only and kidney/pancreas transplant in the UK, for patients registered 1 April 2016 - 31 March 2020, by blood group

Blood group	Number of patients registered	Waiting time (days)	
		Median	95% Confidence interval
Adult			
O	418	453	425 - 481
A	368	229	195 - 263
B	120	471	398 - 544
AB	32	136	113 - 159
TOTAL	938	364	336 - 392

Table 6.5 Median waiting time to pancreas only and kidney/pancreas transplant in the UK, for patients registered 1 April 2016 - 31 March 2020, by ethnicity

Ethnicity	Number of patients registered	Waiting time (days)	
		Median	95% Confidence interval
Adult			
White	794	363	331 - 395
Asian	66	366	327 - 405
Black	50	414	376 - 452
Other	21	209	38 - 380
TOTAL¹	938	364	336 - 392

¹ Includes 7 recipients with unknown ethnicity

6.3 Donor and organ supply

Of the 785 organ donors after brain death in the UK in 2021-2022, 241 (31%) donated a pancreas. There were 93 pancreas donors after circulatory death in 2021-2022. **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 3.6 pmp, with rates ranging from 2.8 to 5.0 pmp across NHS regions and for donors after circulatory death is 1.4 pmp, with rates ranging from 0.2 to 2.5 pmp across NHS regions.

Table 6.6 Pancreas donation rates for deceased donors in the UK, 1 April 2021 - 31 March 2022, by Country/ NHS region						
Country/ NHS region of residence	Pancreas donors (pmp)					
	DBD		DCD		TOTAL	
North East and Yorkshire	37	(4.3)	11	(1.3)	48	(5.6)
North West	20	(2.8)	8	(1.1)	28	(3.9)
Midlands	32	(3.0)	18	(1.7)	50	(4.7)
East of England	21	(3.2)	8	(1.2)	29	(4.4)
London	26	(2.9)	2	(0.2)	28	(3.1)
South East	45	(5.0)	22	(2.5)	67	(7.5)
South West	19	(3.4)	9	(1.6)	28	(4.9)
England	200	(3.5)	78	(1.4)	278	(4.9)
Isle of Man	0	(0.0)	0	(0.0)	0	(0.0)
Channel Islands	1	(5.9)	1	(5.9)	2	(11.8)
Wales	13	(4.1)	2	(0.6)	15	(4.7)
Scotland	8	(1.5)	4	(0.7)	12	(2.2)
Northern Ireland	9	(4.7)	1	(0.5)	10	(5.3)
TOTAL¹	241	(3.6)	93	(1.4)	334	(5.0)

¹ Includes 17 donors with unknown UK postcode (10 DBD and 7 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 0.9 to 2.2 pmp across NHS regions and overall was 1.7 pmp. For donors after circulatory death, the overall rate was 0.6 pmp and ranged from 0.3 to 1.1 pmp across NHS regions.

Table 6.7 Pancreas and islet transplant rates per million population (pmp), in the UK, 1 April 2021 - 31 March 2022, by country and English NHS region						
Country/ NHS region of residence	DBD		DCD		TOTAL	
	N	(pmp)	N	(pmp)	N	(pmp)
North East and Yorkshire	16	(1.9)	3	(0.3)	19	(2.2)
North West	10	(1.4)	3	(0.4)	13	(1.8)
Midlands	17	(1.6)	6	(0.6)	23	(2.2)
East of England	6	(0.9)	7	(1.1)	13	(2.0)
London	13	(1.4)	4	(0.4)	17	(1.9)
South East	20	(2.2)	5	(0.6)	25	(2.8)
South West	8	(1.4)	4	(0.7)	12	(2.1)
England	90	(1.6)	32	(0.6)	122	(2.2)
Isle of Man	0	(0.0)	0	(0.0)	0	(0.0)
Channel Islands	0	(0.0)	0	(0.0)	0	(0.0)
Wales	5	(1.6)	5	(1.6)	10	(3.2)
Scotland	13	(2.4)	4	(0.7)	17	(3.1)
Northern Ireland	4	(2.1)	0	(0.0)	4	(2.1)
TOTAL	112	(1.7)	41	(0.6)	153	(2.3)

There were 153 deceased donor pancreas and islet transplants in 2021-2022, more than the 101 transplants performed in 2020-2021. Of these 153, 120 (78%) were SPK transplants, 11 (7%) were pancreas only transplants (pancreas alone (PTA) or pancreas after kidney (PAK)) and 22 (15%) were islet transplants (including 7 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 2021-2022, the median CIT for a DBD donor whole pancreas transplant is 10.8 hours (Inter-Quartile (IQ) range 9.1 – 13.9) and for a DCD donor transplant is 8.0 hours (IQ range 8.0 – 8.0) and overall is 10.7 hours (IQ range 8.9 – 13.9).

At 31 March 2022, 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 2021 - 31 March 2022 (2020-2021) by centre												
Centre	SPK		SIK		Transplant type				Islet			
					PTA		PAK		Routine	Priority		
Bristol	-	-	0	(0)	-	-	-	-	0	(0)	0	(0)
Cambridge	11	(27)	-	-	0	(0)	0	(1)	-	-	-	-
Cardiff	5	(7)	-	-	0	(0)	1	(0)	-	-	-	-
Edinburgh	8	(11)	3	(1)	0	(0)	0	(0)	5	(2)	5	(2)
Guy's	21	(5)	-	-	0	(0)	0	(0)	-	-	-	-
King's College	-	-	0	(0)	-	-	-	-	0	(0)	0	(1)
Manchester	20	(9)	3	(3)	1	(0)	3	(0)	0	(0)	1	(0)
Newcastle	4	(2)	0	(0)	1	(0)	1	(0)	2	(3)	1	(1)
Oxford	45	(21)	1	(1)	3	(2)	1	(0)	1	(1)	0	(0)
Royal Free	-	-	0	(0)	-	-	-	-	0	(0)	0	(0)
WLRTC	6	(1)	-	-	0	(0)	0	(0)	-	-	-	-
TOTAL	120	(83)	7	(5)	5	(2)	6	(1)	8	(6)	7	(4)

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Table 6.9 Pancreas and islet transplants, 1 April 2021 - 31 March 2022 by centre and donor type										
Centre	SPK		SIK		PTA/PAK		Islet		TOTAL	
	DBD	DCD	DBD	DCD	DBD	DCD	DBD	DCD	DBD	DCD
Bristol	-	-	0	0	-	-	0	0	0	0
Cambridge	5	6	-	-	0	0	-	-	5	6
Cardiff	4	1	-	-	0	1	-	-	4	2
Edinburgh	5	3	3	0	0	0	9	1	17	4
Guy's	14	7	-	-	0	0	-	-	14	7
King's College	-	-	0	0	-	-	0	0	0	0
Manchester	14	6	2	1	4	0	0	1	20	8
Newcastle	4	0	0	0	2	0	3	0	9	0
Oxford	34	11	1	0	3	1	0	1	38	13
Royal Free	-	-	0	0	-	-	0	0	0	0
WLRTC	5	1	-	-	0	0	-	-	5	1
TOTAL	85	35	6	1	9	2	12	3	112	41

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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 2021 - 31 March 2022, and transplant list patients at 31 March							
		Donors		Transplant recipients		Active transplant list patients	
		N	(%)	N	(%)	N	(%)
Age	0-17	25	(7)	-	-	-	-
	18-34	104	(31)	40	(26)	68	(24)
	35-49	131	(39)	63	(41)	140	(50)
	50-59	70	(21)	40	(26)	65	(23)
	60-69	3	(1)	9	(6)	5	(2)
	70+	1	(0)	1	(1)	-	-
	mean (SD)	38	(14)	43	(10)	42	(9)
Sex	Male	185	(55)	79	(52)	139	(50)
	Female	149	(45)	74	(48)	138	(50)
	Unknown	0	-	0	-	1	-
Ethnicity	White	294	(89)	129	(85)	252	(91)
	Asian	8	(2)	13	(9)	11	(4)
	Black	6	(2)	7	(5)	9	(3)
	Other	22	(7)	3	(2)	5	(2)
	Unknown	4	-	1	-	1	-
Blood group	O	157	(47)	56	(37)	152	(55)
	A	136	(41)	63	(41)	86	(31)
	B	34	(10)	26	(17)	35	(13)
	AB	7	(2)	8	(5)	5	(2)
Graft number	First graft	-	-	136	(89)	252	(91)
	Re-graft	-	-	17	(11)	26	(9)
TOTAL		334	(100)	153	(100)	278	(100)