

NHS BLOOD AND TRANSPLANT**BOWEL ADVISORY GROUP****SUMMARY OF REGISTRATIONS AND TRANSPLANT ACTIVITY****SUMMARY****INTRODUCTION**

- 1 This paper provides information on recent registrations for an intestinal transplant and a summary of recent transplant activity in the UK. Median waiting time to transplant is also provided.

DATA ANALYSIS

- 2 Data on 26 registrations for an intestinal transplant between 1 September 2013 and 31 August 2014 were analysed. Of these registrations, 21 (81%) resulted in a transplant, 1 (4%) resulted in removal, none resulted in suspension and 4 (15%) remained active as at 10 September 2014.
- 3 Median waiting time to intestinal transplant was approximately 6 months for elective registrations between 1 April 2010 and 31 March 2013, calculated as at 10 September 2014. Median waiting time was comparable for patients requiring a bowel only, patients requiring a liver, bowel and pancreas and patients requiring a bowel and pancreas but no liver (log-rank test, $p>0.05$).
- 4 Thirteen patients were awaiting an intestinal transplant on 10 September 2014; 4 paediatric and 9 adult. Three patients had some degree of sensitisation, as indicated by the reporting of unacceptable HLA specificities. Five of these patients have been on the transplant list for more than two years; however at least two of them have spent some of this time suspended from the list. There were no patients active or suspended on the super-urgent intestinal transplant list as at 10 September 2014.
- 5 Twenty four intestinal transplants were performed between 1 September 2013 and 31 August 2014, three more than the number performed in the previous year, 1 September 2012 to 31 August 2013. Six (25%) of these transplants were performed in paediatric patients in the recent time period, compared with 2 (10%) in the previous year.

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- 6 NHSBT is aware of three transplanted patients who required a short length of donor jejunum because of anatomical reasons and not because of intestinal disease. For this reason, the full small bowel was not transplanted. These patients have been excluded from this report and so have liver-only intestinal registrations and transplants.
- 7 The data and analyses presented in this paper are for information and to identify any issues that warrant more detailed investigation or discussion.

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SUMMARY OF REGISTRATIONS AND TRANSPLANT ACTIVITY

INTRODUCTION

- 1 This paper provides information on recent registrations for an intestinal transplant and a summary of recent transplant activity in the UK. Median waiting time to transplant is also provided.
- 2 When considering the data presented in this paper it should be borne in mind that the time period presented covers a change in the rules by which donor bowels are allocated to patients who require an intestinal transplant.

DATA AND METHODS

- 3 Data on elective and super-urgent registrations for an intestinal transplant between 1 September 2013 and 31 August 2014 are provided as well as a summary of the intestinal transplant activity between 1 September 2012 and 31 August 2014.
- 4 The Kaplan-Meier method was used to estimate median waiting time to intestinal transplantation for elective registrations between 1 April 2010 and 31 March 2013. Any periods of suspension from the transplant list were included in the calculation of a patient's waiting time.

RESULTS

REGISTRATION ACTIVITY

- 5 In the period between 1 September 2013 and 31 August 2014, there were 26¹ registrations for an intestinal transplant. The outcome of these registrations for paediatric and adult patients, as at 10 September 2014, broken down by transplant centre, is shown in **Table 1**. Note that none of the patients registered in this time period had died on the list at time of analysis.
- 6 Cambridge had one super-urgent intestinal registration in the time period, ending in a transplant. The patient was initially registered onto the elective list but was, shortly afterwards, removed from this list and registered as super-urgent. This elective registration is shown in **Table 1** under the removal column for Cambridge.
- 7 Of the 26 registrations for an intestinal transplant between 1 September 2013 and 31 August 2014, 21¹ (81%) resulted in a transplant as at 10 September 2014. A breakdown of these transplants by transplant centre and type is shown in **Table 2** for paediatric and adult recipients.

¹ There was one additional registration, from Birmingham, for a liver-only transplant. The patient was registered and transplanted within the reported time period.

Table 1 Outcome of intestinal transplant registrations in the UK between 1 September 2013 and 31 August 2014, by patient age group and transplant centre

Transplant centre	Outcome of registrations as at 10 September 2014								No. regns
	Transplanted		Suspended		Removed		Active		
	N	%	N	%	N	%	N	%	N
Paediatric recipients									
Birmingham	2	67	0	0	0	0	1	33	3
King's College	4	100	0	0	0	0	0	0	4
Total	6	86	0	0	0	0	1	14	7
Adult recipients									
Cambridge	9 ¹	69	0	0	1	8	3	23	13
Oxford	6	100	0	0	0	0	0	0	6
Total	15	79	0	0	1	5	3	16	19
TOTAL	21	81	0	0	1	4	4	15	26

¹ Includes one super-urgent intestinal registration

Note: None of the patients registered in this time period had died at time of analysis
Percentages have been rounded to the nearest whole number

Table 2 Number of intestinal transplants in the UK, by recipient age group, transplant centre and type, that resulted from registrations between 1 September 2013 and 31 August 2014

Transplant centre	Transplant type				Total
	BO	MV	MMV	LBP	
Paediatric recipients					
Birmingham	1	0	0	1	2
King's College	1	2	0	1	4
Total	2	2	0	2	6
Adult recipients					
Cambridge	0	6 ¹	2	1	9
Oxford	4	0	2	0	6
Total	4	6	4	1	15
TOTAL	6	8	4	3	21

¹ Includes one super-urgent intestinal transplant

Note: BO=Bowel only, MV=Multivisceral, MMV=Modified multivisceral, LBP=Liver, bowel and pancreas
BO comprises all intestinal transplants that did not include a liver or pancreas

- 8 **Table 3** shows the median waiting time to intestinal transplantation by registration type for elective patients registered between 1 April 2010 and 31 March 2013, calculated as at 10 September 2014 (including re-registrations). The overall median waiting time was 183 days (95% CI: 112 - 254 days). There was not a statistically significant difference between the median waiting times of the different types of registration (log-rank test, $p>0.05$).
- 9 For comparison, the median waiting time to elective liver only transplantation, as reported in the 2013/14 Organ Donation and Transplantation Activity Report, is 145 days for adults (95% CI: 134 - 156 days) and 72 days for paediatric patients (95% CI: 53 - 91 days) (based on 2391 and 208 registrations, respectively, between 1 April 2009 and 31 March 2012).

Table 3 Median waiting time to intestinal transplant for elective patients registered between 1 April 2010 and 31 March 2013 in the UK, as at 10 September 2014

Registration type	No. regns	Waiting time (days)	
		Median	95% Confidence interval
Bowel only ¹	22	125	22 – 228
Liver, bowel and pancreas ¹	30	274	110 – 438
Bowel and pancreas ¹	15	215	4 – 426
Total	67	183	112 - 254

¹ May also include any of: stomach, spleen, abdominal wall, colon, kidney

Note: Any periods of suspension are included in the calculation of a patient's waiting time

TRANSPLANT LIST

- 10 As at 10 September 2014, there were 13 patients who were active or suspended on the elective intestinal transplant list. A description of these patients is presented in **Table 4**, by transplant centre. Note that unacceptable HLA specificities were reported via the intestinal transplant recipient registration form in three cases.
- 11 The waiting times reported include any periods when the patient was suspended from the transplant list as this is taken into account in the calculation of the points used in the new elective intestinal allocation scheme. Five of these patients have been on the transplant list for more than two years; however at least two of them have spent some of this time suspended from the list.
- 12 There were no patients active or suspended on the super-urgent intestinal transplant list as at 10 September 2014.

Table 4 Active or suspended patients on the elective intestinal transplant list in the UK as at 10 September 2014

Organs required	Weight (kg)	BMI (kg/m ²)	Blood group	CRF (%) at registration	Disease	Waiting times (days)
Birmingham						
Liver, bowel, pancreas ¹	9	15	B	0	Volvulus	467
Liver, bowel, pancreas	6	14	A	0	Hirschprung's disease	174
King's College						
Liver, bowel, pancreas, colon	18	18	A	-	Hirschprung's disease	548
Liver, bowel, pancreas	12	16	O	0	Gastroschisis	376
Cambridge						
Liver, bowel, pancreas, stomach, colon	71	26	O	0	Budd-Chiari Syndrome	2535
Liver, bowel, pancreas, stomach, abdominal wall ¹	62	21	A	-	Gardner's Syndrome and Desmoid	918
Liver, bowel, pancreas, stomach, abdominal wall, colon	59	18	O	87	Primary vascular disease	838
Liver, bowel, pancreas, kidney, stomach, colon ¹	72	27	O	0	Budd-Chiari syndrome JAK2 positive with myeloproliferative disorder, extensive SMV and splenic vein thrombosis necessitating multivisceral transplant	558
Bowel, pancreas, colon	73	22	B	56	Primary vascular disease	127
Liver, bowel, pancreas, stomach, colon	72	22	A	0	Primary sclerosing cholangitis with hepatocellular carcinoma, extensive portomesenteric thrombosis	127
Liver, bowel, pancreas, stomach, abdominal wall, colon	55	19	O	0	Ulcerative colitis, primary sclerosing cholangitis, dependence on intravenous nutrition, subacute obstructive symptoms and malfunctioning pouch	72
Oxford						
Bowel, kidney	63	22	B	99	Crohn's disease	2071
Bowel, abdominal wall ¹	51	21	B	0	Ulcerative colitis, injury to small bowel during laparotomy	1661

¹ Patient currently suspended as at 10 September 2014

Note: Waiting times are calculated including any periods of suspension.

Calculated reaction frequency (CRF) is equal to 0% where HLA data had been entered on the intestinal transplant recipient registration form but no unacceptable HLA specificities had been entered. CRF is missing where no HLA data had been provided.

TRANSPLANT ACTIVITY

- 13 Between 1 September 2013 and 31 August 2014 24 intestinal transplants were performed compared with 21 transplants in the previous year, 1 September 2012 to 31 August 2013.
- 14 A summary of these transplants for paediatric and adult patients, broken down by transplant centre and type is shown in **Table 5**, for each of the two time periods. Six (25%) transplants were performed in paediatric patients between 1 September 2013 and 31 August 2014, compared with 2 (10%) in the previous year.

Table 5 Intestinal transplants in the UK between 1 September 2013 and 31 August 2014 (1 September 2012 and 31 August 2013), by recipient age group, transplant centre and type										
Transplant centre	Transplant type									
	BO		LBP		MV		MMV		Total	
	N	N	N	N	N	N	N	N	N	N
Paediatric recipients										
Birmingham	2	(0)	1	(0)	0	(1)	0	(0)	3	(1)
King's College	1	(0)	1	(1)	1	(0)	0	(0)	3	(1)
Total	3	(0)	2	(1)	1	(1)	0	(0)	6	(2)
Adult recipients										
Cambridge	4	(1)	1	(0)	5	(9)	2	(1)	12	(11)
Oxford	4	(7)	0	(0)	0	(0)	2	(1)	6	(8)
Total	8	(8)	1	(0)	5	(9)	4	(2)	18	(19)
TOTAL	11	(8)	3	(1)	6	(10)	4	(2)	24	(21)
Note: BO=Bowel only, LBP=Liver, bowel and pancreas, MV=Multivisceral, MMV=Modified multivisceral, BO comprises all transplants not including a liver or a pancreas										

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