

NHS BLOOD AND TRANSPLANT

BOWEL ADVISORY GROUP

POTENTIAL BOWEL DONORS AND LOCATION

BACKGROUND

- 1 From 14 April 2011 offering data for the bowel has been recorded for all deceased donors in the UK Transplant Registry (UKTR).
- 2 The bowels of donors after brain death (DBD) meeting the following criteria are considered for donation:
 - donor age less than or equal to 65 years, donor weight less than or equal to 100 kg and donor BMI less than or equal to 30 kg/m².These criteria are broad and intestinal transplant centres are permitted to specify additional donor criteria specific to the needs of the listed patients. The bowels of donors meeting these criteria are offered manually to blood group compatible patients on the national intestinal transplant list. If there are no blood group compatible patients on the list or the donor is outside of additional criteria specified for a blood group compatible patient, the bowel may not be offered for donation. Donors aged less than 16 years are offered to paediatric patients first.

DATA AND METHODS

- 3 Potential bowel donors were defined as those who donated at least one solid organ for the purposes of transplantation following brain stem death, where consent was obtained from the donor family for bowel donation and who met the criteria for bowel offering.
- 4 Data on 647 DBD donors who donated in the UK within the one year period, 1 October 2011 to 30 September 2012, were identified using data stored in the UKTR. Donors from overseas were excluded from the analysis; however one intestinal transplant was performed in the time period using a liver, bowel and pancreas from an overseas donors.
- 5 Reasons for not offering a donor bowel or for declining an offer of a donor bowel were analysed. Whether or not the donor family had consented to bowel donation was investigated and other reasons for non-use were categorised in terms of donor related, recipient related or logistical related reasons.
- 6 The number of donors, family consent rates, offering rates and acceptance rates were broken down by Organ Donation Services (ODS) team to investigate the location of donors and variations in these rates across the UK.

RESULTS

- 7 Of the 647 DBD donors, consent for bowel donation was provided by the donor family in 523 cases (81%). Of these, 337 (64%) met the donor criteria for bowel offering and so were potential bowel donors. Of these, the bowels of 177 (53%) were offered to patients on the national intestinal transplant list.

- 8 The reasons recorded for not offering the bowels of 160 potential bowel donors are presented in **Table 1**. The most common reason given was a lack of suitable recipients on the list at the time of donor notification (48%). Donor related reasons were cited in 43% of cases, of which the most common were related to age and size.

Table 1 Reasons for not offering bowels from potential bowel donors¹ in the UK between 1 October 2011 and 30 September 2012		
Reasons for not offering	Donor bowels not offered	
	N	%
Donor reasons	69	43
Age	27	17
Size	24	15
History	7	4
ABO type	6	4
DCD at time of offering (became DBD)	3	2
Cause of death	1	1
Poor function	1	1
Recipient reasons	76	48
No suitable recipients	76	48
Logistical reasons	8	5
Consent not given for one or more intestinal organ required for a MV or MMV transplant	7	4
Permission refused by coroner	1	1
Not reported	7	4
Total	160	100
¹ DBD donors where there was family consent for bowel donation and the bowel offering criteria were met		

- 9 The total number of patient specific offers associated with the 177 donor bowels that were offered for donation was 269: 248 (92%) to adult centres and 21 (8%) to paediatric centres. Adult centres accepted and transplanted 12 donor bowels (5% of offers made to them) and paediatric centres accepted and transplanted seven donor bowels (33% of offers made to them).
- 10 **Table 2** summarises the liver, pancreas and bowel transplants resulting from the pool of 177 potential bowel donors whose bowel was offered for donation, broken down by donor blood group, weight, BMI and age. A total of 19 (11%) bowels were transplanted, compared with 164 (93%) livers and 87 (49%) pancreases.
- 11 Utilisation of bowels from smaller and younger donors was much greater than from older and larger donors: 45% of bowels from donors weighing less than or equal to 50 kg were used compared with 6% from donors weighing greater than 50 kg. 59% of paediatric donor bowels were used compared with 6% of adult donor bowels.

Table 2 Transplants performed using organs from potential bowel donors¹ whose bowel was offered for donation, between 1 October 2011 and 30 September 2012

	No. donors N	Organs transplanted					
		Liver		Pancreas		Bowel	
		N	%	N	%	N	%
Donor blood group							
O	98	90	92	49	50	10	10
A	57	53	93	28	49	8	14
B	19	18	95	9	47	1	5
AB	3	3	100	1	33	0	0
Donor weight (kg)							
<20	4	3	75	2	50	3	75
20-<35	1	1	100	1	100	1	100
35-50	15	14	93	9	60	5	33
>50	157	146	93	75	48	10	6
Donor BMI (kg/m²)							
<18.5	14	14	100	10	71	8	57
18.5-<25	106	99	93	57	54	9	8
25-<30	57	51	89	20	35	2	4
Donor age (years)							
0-15	17	15	88	11	65	10	59
16-35	53	52	98	34	64	4	8
36-50	60	53	88	34	57	5	8
51-65	47	44	94	8	17	0	0
Total	177	164	93	87	49	19	11

¹ DBD donors where there was family consent for bowel donation and the bowel offering criteria were met

- 12 The 158 donor bowels that were offered for donation but declined corresponded to 241 declined offers: 233 (97%) declined by adult centres and 8 (3%) declined by paediatric centres. Reasons provided by adult centres for declining offers are shown in **Table 3** and reasons provided by paediatric centres are shown in **Table 4**. Donors weighing less than or equal to 50 kg or with a BMI less than 25 kg/m² are shown in parentheses.
- 13 Donor reasons were cited most frequently by adult centres (89%) of which the most common were related to HLA incompatibility (30%), donor size (22%) and history (16%). Similarly, these three reasons were most frequently cited for those offers that came from donors weighing less than or equal to 50 kg or with a BMI less than 25 kg/m².
- 14 Donor size was the most common reason for decline cited by paediatric centres. Of the six offers declined on donor size, only one was from a donor weighing more than 50 kg, with a BMI of 25 kg/m² or more.

Table 3 Reasons for decline of offers of bowels from potential bowel donors¹ (potential bowel donors weighing ≥ 50 kg or with a BMI < 25 kg/m²), between 1 October 2011 and 30 September 2012, by adult transplant centre

Reasons for decline	Transplant centre								All declined offers			
	Cambridge				Oxford							
	N	%	(N)	(%)	N	%	(N)	(%)	N	%	(N)	(%)
Donor reasons	78	91	(58)	(91)	129	88	(87)	(89)	207	89	(145)	(90)
HLA type	9	10	(6)	(9)	61	41	(47)	(48)	70	30	(53)	(33)
Size	34	40	(23)	(36)	17	12	(5)	(5)	51	22	(28)	(17)
History	13	15	(13)	(20)	25	17	(17)	(17)	38	16	(30)	(19)
Poor function	8	9	(5)	(8)	5	3	(4)	(4)	13	6	(9)	(6)
ABO type	5	6	(4)	(6)	7	5	(5)	(5)	12	5	(9)	(6)
Age	0	0	(0)	(0)	8	5	(4)	(4)	8	3	(4)	(2)
Cause of death	2	2	(1)	(2)	1	1	(1)	(1)	3	1	(2)	(1)
Anatomical	1	1	(1)	(2)	2	1	(1)	(1)	3	1	(2)	(1)
Donor unstable	1	1	(1)	(2)	1	1	(1)	(1)	2	1	(2)	(1)
Virology	2	2	(2)	(3)	0	0	(0)	(0)	2	1	(2)	(1)
Other ²	3	3	(2)	(3)	2	1	(2)	(2)	5	2	(4)	(2)
Recipient reasons	5	6	(3)	(5)	7	5	(2)	(2)	12	5	(5)	(3)
Recipient unfit	3	3	(3)	(5)	5	3	(2)	(2)	8	3	(5)	(3)
No suitable recipients	2	2	(0)	(0)	2	1	(0)	(0)	4	2	(0)	(0)
Logistical reasons	3	3	(3)	(5)	11	7	(9)	(9)	14	6	(12)	(7)
No staff/beds/time	0	0	(0)	(0)	7	5	(6)	(6)	7	3	(6)	(4)
Centre already transplanting	3	3	(3)	(5)	1	1	(1)	(1)	4	2	(4)	(2)
Other	0	0	(0)	(0)	3	2	(2)	(2)	3	1	(2)	(1)
Total	86	100	(64)	(100)	147	100	(98)	(100)	233	100	(162)	(100)

¹ DBD donors where there was family consent for bowel donation and the bowel offering criteria were met

² Includes infection, medication, organ damage and other disease

Percentages have been rounded to the nearest whole number and are based on small numbers

Table 4 Reasons for decline of offers of bowels from potential bowel donors¹ (potential bowel donors weighing ≥ 50 kg or with a BMI < 25 kg/m²), between 1 October 2011 and 30 September 2012, by paediatric transplant centre

Reasons for decline	Transplant centre								All declined offers			
	King's College				Birmingham							
	N	%	(N)	(%)	N	%	(N)	(%)	N	%	(N)	(%)
Donor reasons	5	100	(4)	(100)	2	67	(2)	(100)	7	88	(6)	(100)
Size	4	80	(3)	(75)	2	67	(2)	(100)	6	75	(5)	(83)
History	1	20	(1)	(25)	0	0	(0)	(0)	1	13	(1)	(17)
Logistical reasons	0	0	(0)	(0)	1	33	(0)	(0)	1	13	(0)	(0)
Liver not available as taken for super-urgent liver recipient	0	0	(0)	(0)	1	33	(0)	(0)	1	13	(0)	(0)
Total	5	100	(4)	(100)	3	100	(2)	(100)	8	100	(6)	(100)

¹ DBD donors where there was family consent for bowel donation and the bowel offering criteria were met
Percentages have been rounded to the nearest whole number and are based on small numbers

- 15 **Table 5** shows the location of DBD donors by Organ Donation Services Team. The number of these donors with consent for bowel donation, who met the bowel offering criteria, whose bowel was offered and whose bowel was transplanted is also shown.

Table 5 Location of donor study population, starting from DBD donors in the UK between 1 October 2011 and 30 September 2012, by Organ Donation Services Team									
Organ Donation Services Team	DBD donors	Family consent for bowel donation		Potential bowel donors (met the bowel offering criteria)		Bowel was offered to centres		Bowel was transplanted	
	N	N	%	N	%	N	%	N	%
Eastern	54	47	87	27	57	17	63	5	29
London	109	89	82	61	69	28	46	1	4
Midlands	79	61	77	41	67	22	54	1	5
North West	68	54	79	33	61	20	61	2	10
Northern	57	45	79	30	67	15	50	1	7
Northern Ireland	38	31	82	21	68	10	48	1	10
Scotland	49	44	90	28	64	18	64	2	11
South Central	59	53	90	35	66	22	63	4	18
South East	39	30	77	18	60	7	39	0	0
South Wales	26	19	73	10	53	5	50	0	0
South West	29	26	90	18	69	9	50	2	22
Yorkshire	40	24	60	15	63	4	27	0	0
Total	647	523	81	337	64	177	53	19	11

- 16 The Scotland, South Central and South West teams had the highest family consent rates for bowel donation (90%) whilst the Yorkshire team had the lowest (60%). The Yorkshire team also had the lowest offering rate (27%) whilst the Scotland, South Central and Eastern teams had the highest (63-64%). The highest number of donors proceeding to bowel donation and transplantation, came from donors in the Eastern team (N=5) whereas none of the 16 bowels offered from donors in the South East, South Wales or Yorkshire teams were transplanted.