

NHS BLOOD AND TRANSPLANT

BOWEL ADVISORY GROUP

POTENTIAL BOWEL DONORS AND LOCATION

SUMMARY

BACKGROUND

- 1 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.
- 2 DBD donors who met these criteria and whose family had provided consent for bowel donation were defined as potential bowel donors. This paper examines the pathway from identification of potential bowel donors to transplantation of the bowel and points at which potential bowel donors are “lost”.

DATA ANALYSIS

- 3 Data on 678 DBD donors, who donated at least one solid organ for the purposes of transplantation in the UK within the one year period, 1 February 2012 to 31 January 2013, were analysed.
- 4 Of these, 336 (50%) were defined as potential bowel donors and the bowels of 164 (49%) were offered to patients on the national intestinal transplant list. The most common reason cited for not offering the bowel was a lack of suitable recipients, followed by donor reasons most commonly relating to age and size.
- 5 Of the 164 potential bowel donors whose bowel was offered for donation, a total of 15 (9%) bowels were transplanted. Utilisation of bowels from smaller and younger donors was much greater than from older and larger donors.
- 6 Many more offers were made to and declined by adult centres compared with paediatric centres. HLA incompatibility, donor size and donor history were the most frequent reasons given by adult centres for declining offers and logistical reasons were given in 11% of cases. Donor size was the most common reason for decline cited by paediatric centres.

ACTION

- 7 Members are asked to consider whether further investigation is required based on the data presented on instances of logistical barriers to organ acceptance (especially lack of resources).
- 8 Members are also asked to consider whether all the information provided is required, and whether on a 6-monthly or annual basis.

Sally Rushton
February 2013

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BACKGROUND

- 9 From 14 April 2011 offering data for the bowel have been recorded for all deceased donors in the UK Transplant Registry (UKTR).
- 10 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 currently 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.
- 11 Although the number of new registrations in a year for an intestinal transplant is small (28 in 2011/2012), some patients still die while waiting for a transplant (2 (7%) in 2011/2012). This paper examines the pathway from identification of potential bowel donors to transplantation of the bowel and points at which potential bowel donors are "lost".

DATA AND METHODS

- 12 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.
- 13 Data on 678 DBD donors who donated at least one solid organ in the UK within the one year period, 1 February 2012 to 31 January 2013, were identified from 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 donor.
- 14 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 by donor, recipient or logistical reasons.
- 15 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

- 16 Of the 678 DBD donors, consent for bowel donation was provided by the donor family in 537 cases (79%). Of these, 336 (63%) met the donor criteria for bowel offering and so were potential bowel donors. Of these, the bowels of 164 (49%) were offered to patients on the national intestinal transplant list.
- 17 The reasons recorded for not offering the bowels of 172 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 (53%). Donor related reasons were cited in 37% 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 February 2012 and 31 January 2013

Reasons for not offering	Donor bowels not offered	
	N	%
Donor reasons	63	37
Age	21	12
Size	21	12
History	6	3
ABO type	7	4
DCD at time of offering (became DBD)	5	3
Cause of death	1	1
Virology	1	1
Donor unstable	1	1
Recipient reasons		
No suitable recipients	91	53
Logistical reasons	11	6
No consent for part of a MV or MMV transplant and no suitable bowel only patients	5	3
Liver accepted for super urgent liver only patient and no suitable intestinal patients not requiring a liver	2	1
Pancreas deemed unusable and no suitable intestinal patients not requiring a pancreas	1	1
Permission refused by coroner	3	2
Not reported	7	4
Total	172	100

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

- 18 The total number of patient specific offers associated with the 164 donor bowels that were offered for donation was 231: 214 (93%) to adult centres and 17 (7%) to paediatric centres. Adult centres accepted and transplanted 11 donor bowels (5% of offers made to them) and paediatric centres accepted and transplanted four donor bowels (24% of offers made to them).

- 19 **Table 2** summarises the liver, pancreas and bowel transplants resulting from the pool of 164 potential bowel donors whose bowel was offered for donation, broken down by donor blood group, weight, BMI and age. A total of 15 (9%) bowels were transplanted, compared with 149 (91%) livers and 76 (46%) pancreases.
- 20 Utilisation of bowels from smaller and younger donors was much greater than from older and larger donors: 28% of bowels from donors weighing less than or equal to 50 kg were used compared with 7% from donors weighing greater than 50 kg. 46% 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 February 2012 and 31 January 2013

	No. donors N	Organs transplanted					
		Liver		Pancreas		Bowel	
		N	%	N	%	N	%
Donor blood group							
O	91	82	90	44	48	7	8
A	57	52	91	25	44	7	12
B	16	15	94	7	44	1	6
AB	0	0	-	0	-	0	-
Donor weight (kg)							
<20	3	2	67	1	33	2	67
20-<35	0	0	-	0	-	0	-
35-50	15	14	93	9	60	3	20
>50	146	133	91	66	45	10	7
Donor BMI (kg/m²)							
<18.5	11	10	91	6	55	4	36
18.5-<25	98	91	93	52	53	10	10
25-<30	55	48	87	18	33	1	2
Donor age (years)							
0-15	13	11	85	8	62	6	46
16-35	44	42	95	28	64	2	5
36-50	57	50	88	28	49	6	11
51-65	50	46	92	12	24	1	2
Total	164	149	91	76	46	15	9

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

- 21 The 149 donor bowels that were offered for donation but declined corresponded to 209 declined offers: 201 (97%) declined by adult centres and 8 (3%) declined by paediatric centres. Reasons provided by adult and paediatric centres for declining offers are shown in **Tables 3** and **4**, respectively. As previously requested, donors weighing less than or equal to 50 kg or with a BMI less than 25 kg/m² are shown in parentheses.

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 February 2012 and 31 January 2013, by adult transplant centre

Reasons for decline	Transplant centre								All declined offers			
	Cambridge				Oxford							
	N	%	(N)	(%)	N	%	(N)	(%)	N	%	(N)	(%)
Donor reasons	72	84	(50)	(82)	98	85	(61)	(85)	170	85	(111)	(83)
HLA type	4	5	(2)	(3)	46	40	(34)	(47)	50	25	(36)	(27)
Size	23	27	(14)	(23)	14	12	(2)	(3)	37	18	(16)	(12)
History	14	16	(12)	(20)	18	16	(12)	(17)	32	16	(24)	(18)
Age	4	5	(2)	(3)	10	9	(4)	(6)	14	7	(6)	(5)
Poor function	8	9	(5)	(8)	4	3	(3)	(4)	12	6	(8)	(6)
ABO type	5	6	(4)	(7)	2	2	(2)	(3)	7	3	(6)	(5)
Medication	4	5	(3)	(5)	0	0	(0)	(0)	4	2	(3)	(2)
Cause of death	2	2	(1)	(2)	1	1	(1)	(1)	3	1	(2)	(2)
Donor unstable	2	2	(2)	(3)	1	1	(1)	(1)	3	1	(3)	(2)
Donor arrested	2	2	(1)	(2)	0	0	(0)	(0)	2	1	(1)	(1)
Virology	2	2	(2)	(3)	0	0	(0)	(0)	2	1	(2)	(2)
Anatomical	1	1	(1)	(2)	1	1	(1)	(1)	2	1	(2)	(2)
Other	1	1	(1)	(2)	1	1	(1)	(1)	2	1	(2)	(2)
Recipient reasons	5	6	(4)	(7)	4	3	(0)	(0)	9	4	(4)	(3)
Recipient unfit	2	2	(2)	(3)	2	2	(0)	(0)	4	2	(2)	(2)
No suitable recipients	3	3	(2)	(3)	2	2	(0)	(0)	5	2	(2)	(2)
Logistical reasons	9	10	(7)	(11)	13	11	(11)	(15)	22	11	(18)	(14)
No staff/beds/theatre/time	6	7	(5)	(8)	8	7	(7)	(10)	14	7	(12)	(9)
Distance	1	1	(1)	(2)	2	2	(1)	(1)	3	1	(2)	(2)
Only split liver available and whole liver required	2	2	(1)	(2)	0	0	(0)	(0)	2	1	(1)	(1)
Other	0	0	(0)	(0)	3	3	(3)	(4)	3	1	(3)	(2)
Total	86	100	(61)	(100)	115	100	(72)	(100)	201	100	(133)	(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

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 February 2012 and 31 January 2013, by paediatric transplant centre

Reasons for decline	Transplant centre								All declined offers			
	Birmingham				King's College							
	N	%	(N)	(%)	N	%	(N)	(%)	N	%	(N)	(%)
Donor reasons	4	100	(3)	(100)	4	100	(4)	(100)	8	100	(7)	(100)
Size	3	75	(3)	(100)	3	75	(3)	(75)	6	75	(6)	(86)
Age	1	25	(0)	(0)	0	0	(0)	(0)	1	13	(0)	(0)
History	0	0	(0)	(0)	1	25	(1)	(25)	1	13	(1)	(14)
Total	4	100	(3)	(100)	4	100	(4)	(100)	8	100	(7)	(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

- 22 Donor reasons were cited most frequently by adult centres (85%) of which the most common were related to HLA incompatibility (25%), donor size (18%) 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. Logistical reasons for declining an offer accounted for 11% (14% for smaller donors) of reasons.
- 23 Donor size was the most common reason for decline cited by paediatric centres. Only one of the eight declined offers was from a donor weighing more than 50 kg, with a BMI of 25 kg/m² or more.
- 24 **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 February 2012 and 31 January 2013, 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	71	61	86	33	54	20	61	3	15
London	92	70	76	44	63	13	30	0	0
Midlands	84	62	74	42	68	22	52	3	14
North West	76	60	79	34	57	21	62	2	10
Northern	53	40	75	28	70	14	50	2	14
Northern Ireland	29	26	90	19	73	10	53	1	10
Scotland	50	44	88	27	61	14	52	0	0
South Central	58	49	84	33	67	18	55	2	11
South East	55	45	82	28	62	11	39	0	0
South Wales	26	19	73	10	53	3	30	0	0
South West	39	32	82	20	63	12	60	2	17
Yorkshire	45	29	64	18	62	6	33	0	0
Total	678	537	79	336	63	164	49	15	9

- 25 The Northern Ireland team had the highest family consent rate for bowel donation (90%) whilst the Yorkshire team had the lowest (64%). The North West team had the largest proportion of potential bowel donors offered to centres (62%) whilst the South Wales team had the lowest (30%). The highest number of donors proceeding to bowel donation and transplantation came from donors in the Eastern and Midlands teams (N=3, respectively) whereas none of the 47 bowels offered from donors in the London, Scotland, South East, South Wales or Yorkshire teams were transplanted.

SUMMARY

- 26 The family consent rate for bowel donation was 79% for DBD donors who donated at least one solid organ between 1 February 2012 and 31 January 2013. Of those with

consent and meeting the donor criteria for bowel offering, 49% were offered to patients on the national intestinal transplant list. A lack of suitable recipients on the list at the time of donor notification was the most common reason cited for not offering the bowel, followed by donor reasons most commonly relating to age and size.

- 27 Of the 164 potential bowel donors whose bowel was offered for donation, a total of 15 (9%) bowels were transplanted, compared with 149 (91%) livers and 76 (46%) pancreases. Utilisation of bowels from smaller and younger donors was much greater than from older and larger donors.
- 28 Many more offers were made to and declined by adult centres compared with paediatric centres. HLA incompatibility, donor size and donor history were the most frequent reasons given by adult centres for declining offers and logistical reasons were given in 11% of cases. Donor size was the most common reason for decline cited by paediatric centres.

ACTION

- 29 Members are asked to consider whether further investigation is required based on the data presented on instances of logistical barriers to organ acceptance (especially lack of resources).
- 30 Members are also asked to consider whether all the information provided is required, and whether on a 6-monthly or annual basis.

Sally Rushton
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February 2013