

NHS BLOOD AND TRANSPLANT

BOWEL ADVISORY GROUP

POTENTIAL BOWEL DONORS

SUMMARY

BACKGROUND

- 1 Potential donors after brain death (DBD) who met the following criteria are considered for bowel donation:
Age < 56 years
Weight < 80 kg
- 2 Potential bowel donors were defined as DBD donors who donated at least one solid organ for the purpose of transplantation, who met the criteria for bowel donation and whose family gave consent for bowel donation. This paper examines the pathway from identification of potential bowel donors to transplantation of the bowel and the points at which potential bowel donors are "lost".

DATA ANALYSIS

- 3 The last financial year, 2015/16, was analysed. In this period there were 785 UK DBD donors and 253 (32%) of these met the criteria for bowel donation. Of these, consent for bowel donation was given in 211 cases (83%). Of these 211 potential bowel donors, the bowels of 159 (75%) were offered to intestinal transplant centres and 15 (9%) bowels were transplanted. In comparison with the previous two financial years, the consent rate for bowel donation has remained relatively stable.
- 4 Adult centres accepted and transplanted 12 donor bowels (5% of the total number of bowel offers made to them) and paediatric centres accepted and transplanted 3 donor bowels (1% of the total number of bowel offers made to them). Of the 144 bowels that were offered and declined, only 12 (8%) were from donors weighing < 50 kg. The most common reasons given by adult centres for declining bowel offers were donor history, donor size and HLA/ABO type. The vast majority of offers declined by paediatric centres were declined due to donor size.
- 5 146 (92%) livers and 83 (52%) pancreases were transplanted from the 159 potential bowel donors where bowel offering occurred, compared with just 15 (9%) bowels. These bowels came from 13 different donor hospitals across England and Wales. There were no additional intestinal transplants from overseas donors in the time period.

ACTION

- 6 Members are asked to note these results and agree any actions required.

Rachel Hogg
September 2016

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BACKGROUND

- 1 Potential donors after brain death (DBD) who met the following criteria are considered for bowel donation:
 - Age < 56 years
 - Weight < 80 kg
- 2 This paper examines the pathway from identification of potential bowel donors to transplantation of the bowel and the points at which potential bowel donors are “lost”. Small potential bowel donors (weight < 50 kg) are examined in more detail as these have the greatest potential. The geographical distribution of potential bowel donors is also examined.

DATA AND METHODS

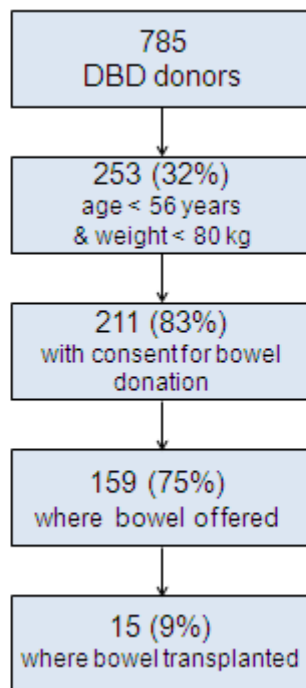
- 3 Potential bowel donors were defined as DBD donors who donated at least one solid organ for the purposes of transplantation, who met the criteria for bowel donation and whose family gave consent for bowel donation.
- 4 Data on 785 DBD donors who died in the UK between 1 April 2015 and 31 March 2016 were extracted from the UK Transplant Registry on 6 September 2016. Data from the previous two years were also extracted for comparison.
- 5 Reasons for the non-use of bowels from potential bowel donors were analysed. The reasons were reported by NHS Blood and Transplant’s Duty Officers or Specialist Nurses in Organ Donation in cases where no offering took place and by the centres themselves in cases where offering did take place. Donors were classed as not having consent for bowel donation if the reason recorded for non-use was that the family refused consent or consent was not sought for that organ.
- 6 There were 15 intestinal transplants carried out in the UK between 1 April 2015 and 31 March 2016. None of these transplants used organs from overseas donors.

RESULTS

The pathway to bowel donation

- 7 Of the 785 DBD donors in the time period, 253 (32%) met the criteria for bowel donation. Of these, consent for bowel donation was gained from the donor family in 211 cases (83%). Of these 211 potential bowel donors, the bowels of 159 (75%) were offered to intestinal transplant centres and 15 (9%) bowels were transplanted. A flow diagram of this pathway is shown below.

Figure 1 Flow diagram of the pathway from DBD donors during 2015/16 to bowel donors



8 These rates are compared with the corresponding rates between 1 April 2013 and 31 March 2014 and between 1 April 2014 and 31 March 2015 in **Figure 2** and **Table 1**. The consent rate has remained relatively stable in the time period (ranging 80% to 84%) but the offering rate for the past year has decreased in comparison to the rest of the period (75% compared to 84% in 2014/2015). An equivalent figure and table just for donors weighing < 50 kg is shown in the **Appendix** (page 9).

Figure 2 The pathway from DBD donors between 1 April 2013 and 31 March 2016 to bowel donors, by time period

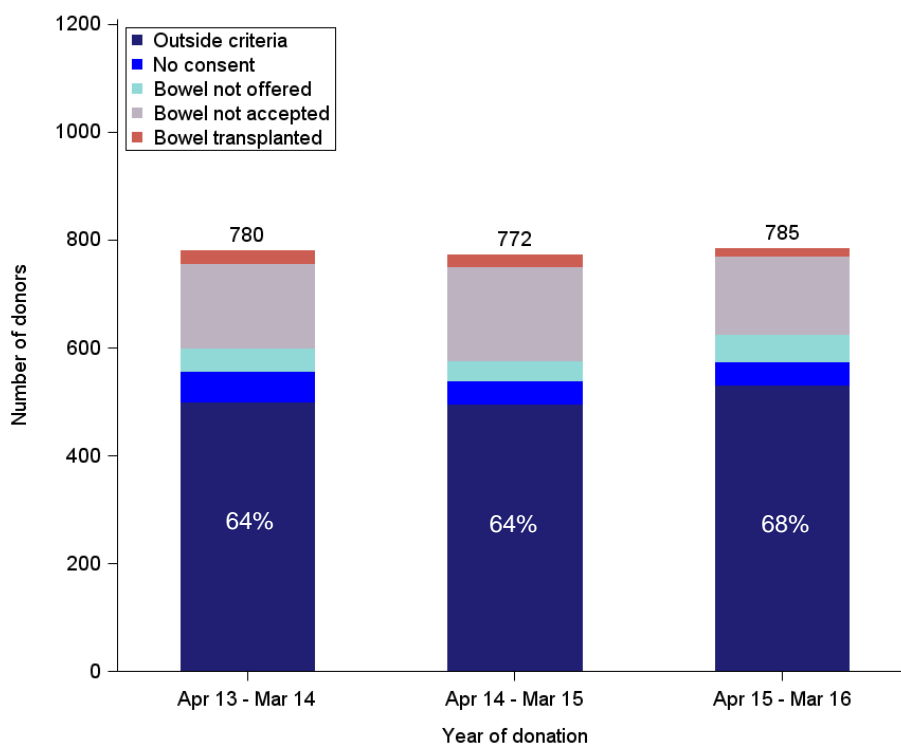


Table 1 The pathway from DBD donors between 1 April 2013 and 31 March 2016 to bowel donors, by time period

		Time period			Total
		2013/14	2014/15	2015/16	
DBD donors	N	780	772	785	2337
Met criteria for bowel donation (age < 56 years & weight < 80 kg)	N	279	276	253	808
	% of previous	36	36	32	35
Consent given for bowel donation	N	223	232	211	666
	% of previous	80	84	83	82
Bowel offered	N	179	196	159	534
	% of previous	80	84	75	80
Bowel transplanted	N	23	21	15	59
	% of previous	13	11	9	11

Potential bowel donors

- 9 The reasons for not offering the bowels of 52 potential bowel donors between 1 April 2015 and 31 March 2016 are presented in **Table 2**. The most common reasons given were no suitable recipients on the list for that donor (63%) and donor history (15%).

Table 2 Reasons for not offering bowels from potential bowel donors during 2015/16

Reasons for not offering	Donor bowels not offered	
	N	%
Donor reasons		
History	8	15
Donor unstable	2	4
Organ damaged	1	2
Size ¹	3	6
Logistical reasons		
No suitable recipients ²	33	63
Other organs required were not available ³	4	8
Permission refused by coroner	1	2
Total	52	100.0

¹ Weights of these donors were 60, 74 and 70 kg

² Not blood group or HLA compatible

³ For example liver accepted for super-urgent liver recipient and no blood group compatible intestinal recipients not requiring a liver

- 10 The total number of patient specific offers associated with the 159 donor bowels that were offered was reported to be 425: 221 (52%) to adult centres and 204 (48%) to paediatric centres. Adult centres accepted and transplanted 12 donor bowels (5% of offers made to them) and paediatric centres accepted and transplanted 3 donor bowels (1% of offers made to them).

Small potential bowel donors (< 50 kg)

- 11 Of the 144 bowels that were offered and declined, 12 (8%) were from donors weighing < 50 kg. The details of why these bowels were not used are shown in **Table 3 (removed as patient specific)**.

Large potential bowel donors (≥ 50 kg and < 80 kg)

- 12 The 132 declined bowels from donors who weighed ≥ 50 kg corresponded to 172 paediatric offers and 178 adult offers. 93% of the offers declined by paediatric centres were declined on size. The most common reasons for decline cited by adult centres were donor history (29%) and size (12%).

Organs transplanted from potential bowel donors

- 13 **Table 4** shows summary statistics on the 159 potential bowel donors where bowel offering occurred, by whether the liver was transplanted, whether the pancreas was transplanted and whether the bowel was transplanted. Note that these are not mutually exclusive groups. Note also that those livers that went to super-urgent liver only recipients have been shown for additional information. 146 (92%) livers and 83 (52%) pancreases were transplanted compared with just 15 (9%) bowels. 25 of the livers that were transplanted were used in super-urgent liver only recipients but these were mainly the heavier donors.

Table 4 Transplants performed using organs from potential bowel donors where bowel offering occurred, during 2015/16

	No. donors	Organs transplanted							
		Liver		(Liver only super-urgent transplants)*		Pancreas		Bowel	
		N	% of donors	(N)	(% of donors)	N	% of donors	N	% of donors
Donor blood group									
O	84	76	90.5	(25)	(29.8)	32	38.1	10	11.9
A	57	54	94.7	(0)	(0.0)	41	71.9	5	8.8
B	17	15	88.2	(0)	(0.0)	10	58.8	0	0.0
AB	1	1	100.0	(0)	(0.0)	0	0.0	0	0.0
Donor weight (kg)									
<20	2	2	100.0	(0)	(0.0)	2	100.0	2	100.0
20-<35	4	4	100.0	(1)	(25.0)	1	25.0	1	25.0
35-<50	9	8	88.9	(1)	(11.1)	4	44.4	0	0.0
50-<80	144	132	91.7	(23)	(16.0)	76	52.7	12	8.3
Donor BMI (kg/m²)									
<18.5	17	13	76.5	(2)	(11.8)	6	35.3	3	17.6
18.5-<25	112	103	92.0	(17)	(15.2)	68	60.7	12	10.7
25+	30	30	100.0	(6)	(20.0)	9	30.0	0	0.0
Donor age (years)									
0-15	19	19	100.0	(3)	(15.8)	12	63.2	4	21.1
16-35	60	54	90.0	(9)	(15.0)	39	65.0	9	15.0
36-50	60	55	91.7	(7)	(11.7)	25	41.7	2	3.3
51-55	20	18	90.0	(6)	30.0	7	35.0	0	0.0
Total	159	146	91.8	(25)	(15.7)	83	52.2	15	9.4

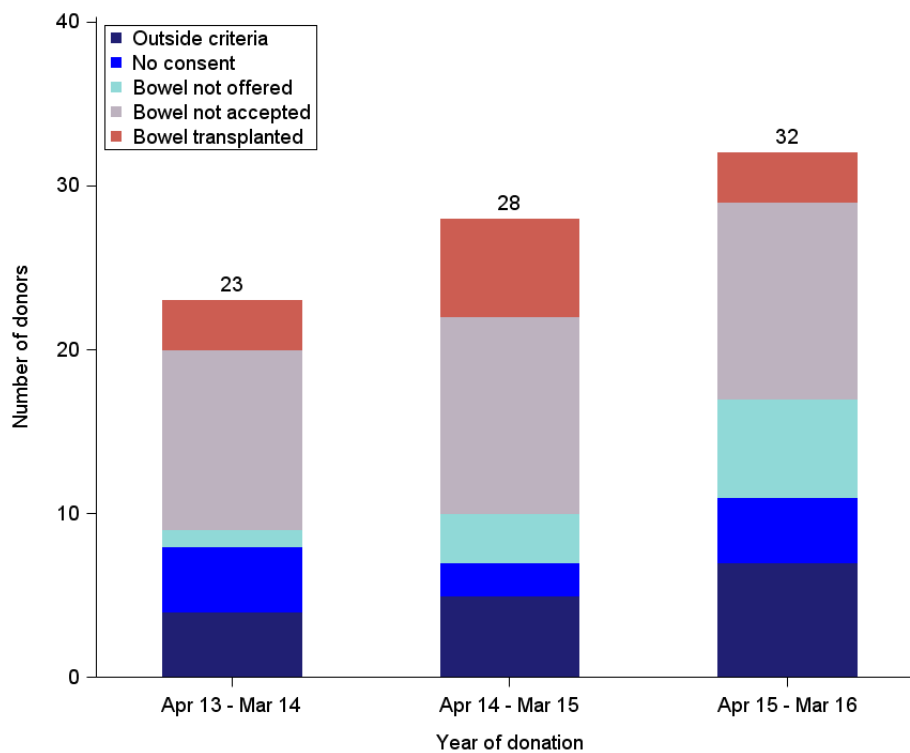
* This is a subset of the "Liver" column, showing those that were transplanted into super-urgent liver only recipients

Location of potential bowel donors

- 14 **Figure 3 (removed because it contains patient-sensitive information)** shows the location of the 211 potential bowel donors (those meeting the criteria and with consent) during the time period, using the location of the donor hospital. Overlaid on the potential bowel donors (●) are the donors where bowel offering occurred (●) and overlaid on those are the donors where the bowel was transplanted (●). See **Appendix III (removed because it contains patient-sensitive information)** for a comparison of the geographical distribution of liver offers and bowel offers.

APPENDIX

Appendix I The pathway from DBD donors weighing < 50 kg between 1 April 2013 and 31 March 2016 to bowel donors, by time period



Appendix II The pathway from DBD donors weighing < 50 kg between 1 April 2013 and 31 March 2016 to bowel donors, by time period

		Time period			Total
		2013/14	2014/15	2015/16	
DBD donors	N	23	28	32	83
Met criteria for bowel donation (age < 56 years)	N	19	23	25	67
	% of previous	83	82	78	81
Consent given for bowel donation	N	15	21	21	57
	% of previous	79	91	84	85
Bowel offered	N	14	18	15 ¹	47
	% of previous	93	86	71	82
Bowel transplanted	N	3	6	3	12
	% of previous	21	33	20	26

¹ The details of why 12 of these bowels were not used are shown in **Table 3**.