

# NHS BLOOD AND TRANSPLANT

## BOWEL ADVISORY GROUP

### PAEDIATRIC DONOR ALLOCATION

#### INTRODUCTION

- At the March 2015 Bowel Advisory Group meeting it was agreed that an amendment should be made to the National Bowel Allocation Scheme (NBAS) algorithm to ensure that paediatric intestinal transplant recipients are always offered paediatric donor organs before adult intestinal transplant recipients. This report describes the current system and a proposal for change.

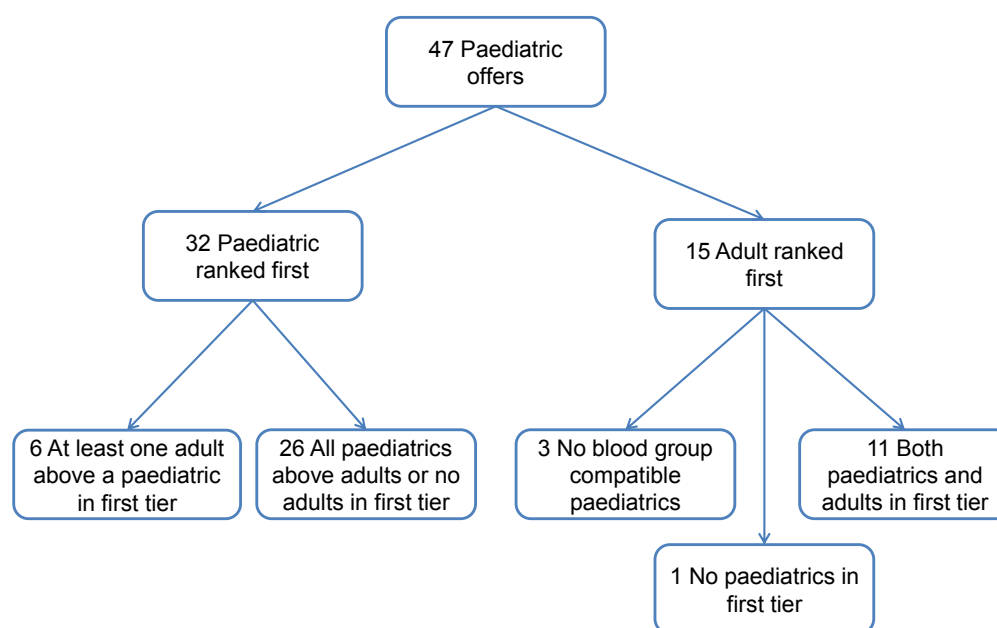
#### CURRENT SYSTEM

- In the NBAS, at time of offering, a paediatric recipient is classed as < 18 years and a paediatric donor is < 16 years. An adult recipient weighing  $\leq 35$  kg may be treated as a paediatric recipient if indicated on the intestinal transplant registration form. The following points are awarded to recipients on the list when a paediatric or adult donor arises.

Donor	Recipient	Points
Paediatric	Paediatric	1000
Adult	Adult	500
Adult	Paediatric	250
Paediatric	Adult	0

- As points are awarded for a number of other factors, including waiting time, medical urgency, organs required and sensitisation, it is possible for an adult patient to be ranked higher than a paediatric patient when a paediatric donor arises. Specifically, the same number of points as a paediatric-paediatric match (1000) would be awarded to an adult recipient if they had 1000 waiting days, loss of intravenous line access or were 100% sensitised, and 1500 would be awarded if they have liver failure (defined by bilirubin  $\geq 200$   $\mu\text{mol/l}$ ).
- Crucially, there are two tiers of offering: first blood group identical recipients are ranked and, in the case of a blood group A or O donor, blood group AB or B recipients, respectively, then all other blood group compatible recipients are ranked. It is possible in this two-tiered system for a recipient in the second tier to have a higher point score than the top ranked recipient in the first tier.
- Between the start of the NBAS (22 July 2013) and 19 August 2015, 47 paediatric bowels were offered through the scheme and in 15 (32%) cases an adult recipient was ranked first. In three of these cases there were no blood group compatible paediatric recipients for that donor and in one case there were no paediatric recipients in the first offering tier. In 11 cases there were both adult and paediatric recipients in the first offering tier. There were also 6 cases where a paediatric recipient was ranked first but not all paediatric recipients were ranked above an adult recipient in the first offering tier (see **Figure 1**). The maximum difference in point scores between the highest ranked adult recipient and the lowest ranked paediatric recipient was 2805 which happened three times with the same adult, who had been waiting over 2000 days, had loss of intravenous line access and was 99% sensitised.

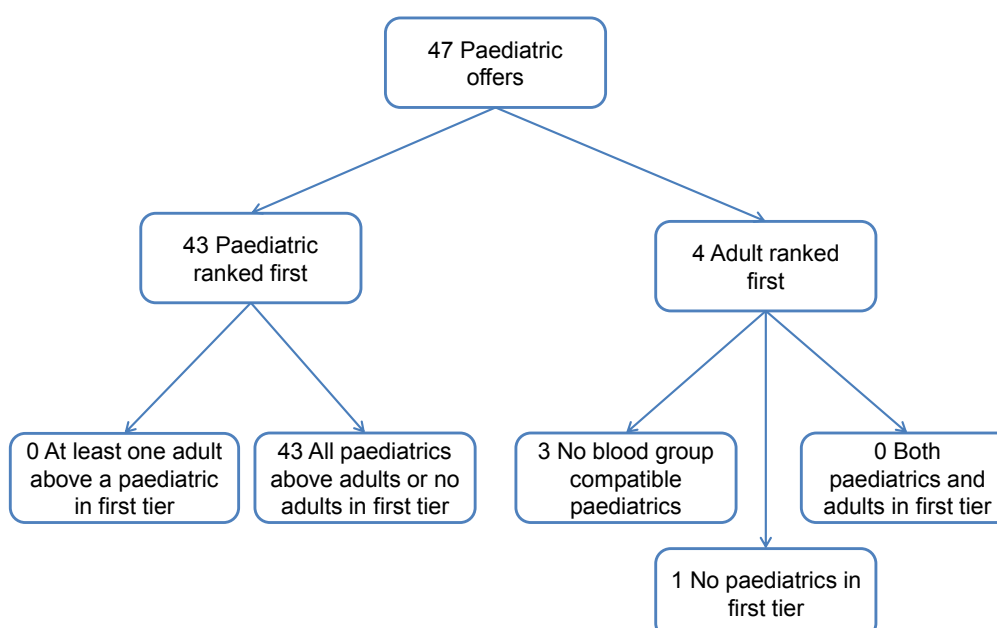
**Figure 1** Flow diagram of the observed sequence of offering for 47 paediatric donor bowels offered through the NBAS between the start of the scheme and 19 August 2015



## PROPOSED AMENDMENT

- 6 If 5000 points were awarded for a paediatric-paediatric match instead of 1000 then the following results would have been obtained: four cases where an adult recipient was ranked first (three of these had no blood group compatible paediatric recipients and one had no paediatric recipients in the first offering tier) and 43 cases where the additional points would have resulted in all paediatric patients appearing before any adult patients in the first offering tier (see **Figure 2**). The smallest difference between the lowest rank paediatric and highest rank adult becomes 1195 meaning an adult would need a significant change in their status to overtake a paediatric.

**Figure 2** Flow diagram of the sequence of offering for 47 paediatric donor bowels offered through the NBAS between the start of the scheme and 19 August 2015 if 5000 points were awarded to a paediatric-paediatric match instead of 1000



**ACTION**

- 7 Do members agree with the proposed amendment to increase the number of points awarded to a paediatric-paediatric match to 5000 from 1000? This change would make it very unlikely, but not impossible, for an adult recipient to be ranked higher than a paediatric recipient in the first offering tier. However, if there are no paediatric recipients in the first offering tier it will still be possible for an adult to be offered a paediatric bowel first.

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