**NHS BLOOD AND TRANSPLANT**

**PAEDIATRIC SUB GROUP OF THE KIDNEY ADVISORY GROUP**

KIDNEY DECLINE RATES OF PAEDIATRIC OFFERS

## INTRODUCTION

1 Historically there has been variation across centres in the acceptance of kidneys for transplantation in adult and paediatric patients. While it is accepted that offer decline rates do not necessarily impact on kidney utilisation, significant variation in these rates is likely to lead to delays in the offering process and inequities in access to transplant for patients listed at centres with notably higher offer decline rates.

2 Over the past few years, offer decline rates have been monitored. Adult centres were asked to consider their offer acceptance protocols with an aim to minimising offer decline rates and striving towards reducing the variation across centres wherever possible. For paediatric centres, a prospective audit was conducted in 2011, 2014 and 2017 examining the reasons for declining offers of kidneys for paediatric patients. Also, national guidelines for offer acceptance for paediatric patients were produced to help minimise variation in offer decline rates.

3 This paper continues monitoring the offer decline rates for paediatric patients, comparing to the previous 10 years of activity which includes the prospective audits in 2011, 2014 and 2017.

## DATA

4 Data were obtained from the UK Transplant Registry on all DBD donor single kidney-only transplants performed in the UK between 1 January 2010 and 31 December 2021. The outcomes of offering data relating to paediatric offers to named individual patients were analysed. Declined offers were defined as those immediately declined and those where the kidney was accepted but not used by the accepting centre. To note, centre based offering in Tier B occurred between 30 March 2020 – 16 June 2020.

5 On 11 September 2019 the new UK Kidney Offering Scheme was introduced. The scheme was designed to address some of the inequities observed in the 2006 scheme. Simulations of the scheme indicated that paediatric offers would initially decline whilst highly sensitised and long waiting patients are prioritised.

6 Since September 2014, the national DCD kidney allocation scheme and subsequent 2019 Kidney Offering Scheme has enabled paediatric patients to receive offers from DCD donors. Therefore, this report also includes decline rates for DCD donor offers over the shorter time period of 1 January 2015 to 31 December 2021.

7 Centre specific DBD offer decline rates were calculated for each centre and compared with the national rate using funnel plots. Centre specific decline rates have been calculated for the last five calendar years.

8 Funnel plots were used to compare centre specific DBD offer decline rates and indicate how consistent the rates of the individual transplant centres are with the national rate (**Figure 1**). The overall national offer decline rate is shown by the straight dotted line while the 95% and 99.8% confidence limits are indicated by a thin solid and thick dotted line, respectively. Each point on the plot represents an individual transplant centre. Centres that are positioned above the upper limits indicate an offer decline rate that is

higher than the national rate, whilst centres positioned below the lower limits indicate an offer decline rate that is lower than the national rate.

## CENTRE SPECIFIC OFFER DECLINE RATES

9 **Figure 1** and **Table 1** compare individual centre offer decline rates with the national rate for paediatric offers of DBD kidneys. The national decline rate is 46% which is lower than the national decline rate for adult offers of standard criteria DBD donors (61% in 2020/21).

10 The DBD decline rate ranged from 0% to 59%, rates should however be interpreted with caution when calculated from small numbers. Although the majority of paediatric centres have similar decline rates, there are a couple of notable differences. Manchester has a decline rate of 26% which is significantly lower than the national rate. Bristol has the highest decline rate at 59% which is significantly higher than the national rate.

**Figure 1 Funnel plot of kidney transplant centre DBD kidney decline rates for paediatric patients, 1 January 2017 – 31 December 2021**

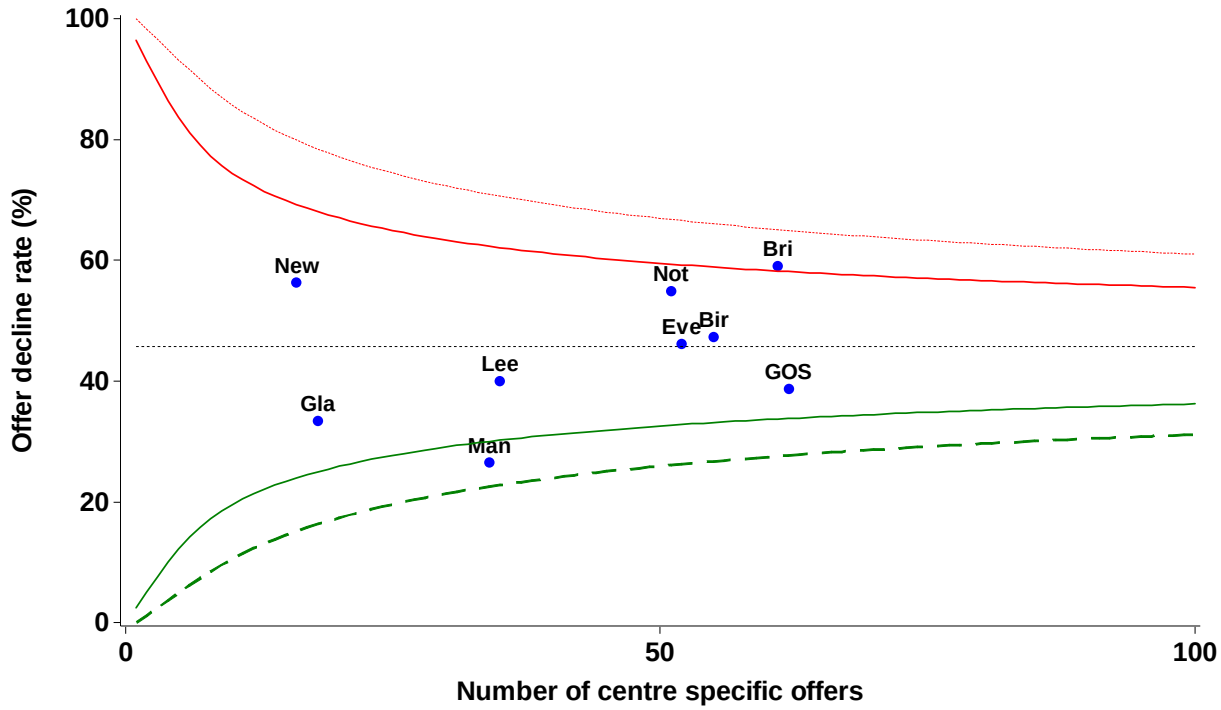


**Table 1 Paediatric donor kidney offer decline rates by kidney transplant centre, 1 January 2017 – 31 December 2021**

| Centre | No. offers | Decline rate |
|---|---|---|
| Belfast | 1 | (0) |
| Newcastle | 16 | (56) |
| Leeds | 35 | (40) |
| Nottingham | 51 | (55) |
| London, Evelina | 52 | (46) |
| Bristol | 61 | (59) |
| Birmingham | 55 | (47) |
| Manchester | 34 | (26) |
| Glasgow | 18 | (33) |
| London, Great Ormond Street | 62 | (39) |
| **UK** | **384** | **(46)** |

Significantly above the national limit
Significantly below the national limit

## NATIONAL OFFER DECLINE RATES

11 National decline rates by calendar year are presented in **Table 2**. Since 2010, the national paediatric offer decline rates have been fairly static at around 40%. The total number of offers reduced from 131 in 2010 to 84 in 2018 before increasing slightly to 93 in 2019. This increase coincided with a slight increase in paediatric patients on the waiting list. The COVID-19 pandemic impacted the number of offers made, with the number of offers in 2020 dropping to 58, before increasing slightly to 66 in 2021.

**Table 2 Paediatric DBD kidney offer decline rates by offer year where the kidney was subsequently transplanted, 1 January 2010 – 31 December 2021**

| Offer year | No. patients receiving offers | No. offers | Decline rate |
|---|---|---|---|
| 2010 | 95 | 131 | (50) |
| 2011 (One-year prospective offer decline audit carried out) | 79 | 113 | (40) |
| 2012 | 50 | 78 | (36) |
| 2013 | 61 | 91 | (40) |
| 2014 (One-year prospective offer decline audit carried out) | 46 | 69 | (42) |
| 2015 | 58 | 79 | (42) |
| 2016 | 55 | 85 | (36) |
| 2017 (One-year prospective offer decline audit carried out) | 51 | 84 | (48) |
| 2018 | 51 | 84 | (42) |
| 2019* | 53 | 93 | (45) |
| 2020 | 37 | 58 | (53) |
| 2021 | 48 | 66 | (42) |
| **Total** | **684** | **1031** | **(43)** |

*Note, 2019 includes offers from both the 2006 KAS and the 2019 KOS

12 Between 3rd September 2014 – 10 September 2019, the National DCD kidney allocation scheme meant that paediatric patients could receive offers from a DCD donor. During this period, only patient specific offers have been included in **Table 3** as they are easily identified. DCD kidney offers to the local centre where a paediatric patient ranked 1st, but was not named at offer, are not included. Following the introduction of the 2019 Kidney Offering Scheme, DBD and DCD kidneys are offered within the same national scheme. Numbers are small and so they are not presented by centre, however **Table 3** shows the decline rate in the last seven years.

**Table 3 Paediatric DCD kidney offer decline rates by offer year where the kidney was subsequently transplanted, 1 January 2015 – 31 December 2021**

| Offer year | No. patients receiving offers | No. offers | Decline rate |
|---|---|---|---|
| 2015 | 10 | 12 | (58) |
| 2016 | 4 | 4 | (0) |
| 2017 | 12 | 13 | (85) |
| 2018 | 11 | 12 | (67) |
| 2019* | 2 | 2 | (50) |
| 2020 | 17 | 19 | (58) |
| 2021 | 21 | 25 | (36) |
| **Total** | **77** | **87** | **(54)** |

Note: Only patient named offers included up to 10 September 2019.
*Note, 2019 includes offers from both the 2006 KAS and the 2019 KOS

## SUMMARY

13 Since 2010, the national DBD paediatric offer decline rates have been fairly static at around 40%. Manchester has a significantly lower decline rate than the national rate and Bristol has a significantly higher decline rate than the national rate. The national decline rate for DCD offers over the last seven years was 54%.

## RECOMMENDATION

14 While it is accepted that offer decline rates do not necessarily impact on kidney utilisation, significant variation in these rates is likely to lead to delays in the offering process and inequities in access to transplant for children and young people listed at centres with notably higher offer decline rates. For this reason, it is important to ensure centre practice is consistent.

15 Members are asked, where possible, to consider ways in which to minimise offer decline rates within their individual transplant centres. Examples of how this can be achieved are not limited to but include robust reporting of known unacceptable antigens, maintaining up-to-date centre specific offering criteria, suspending patients when known to be unavailable for transplantation and the use of minimum match requirements for individual patients.

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