

**NHS BLOOD AND TRANSPLANT
ORGAN DONATION AND TRANSPLANTATION DIRECTORATE**

KIDNEY ADVISORY GROUP

**IMPROVING ACCESS FOR LONG WAITING PATIENTS
REVIEW OF CHANGE TO 2006 DBD KIDNEY ALLCATION SCHEME**

INTRODUCTION

- 1 One of the objectives of the 2006 Kidney Allocation Scheme (KAS) was to reduce the number of long waiting patients on the transplant list by improving their access to transplantation. When the scheme was implemented in April 2006, 15% of the kidney only transplant list had been listed for five years or longer. Within one year, the scheme had reduced this proportion to 10% although it has remained unchanged ever since. The lack of further improvement is largely due to the complexity of finding a donor for these often very highly sensitised patients.
- 2 Given these difficulties, it was recommended and agreed that patients waiting over 7 years for transplant should receive absolute priority for kidney transplantation (second only to any clinically urgent paediatric patients). This is subject to their eligibility as defined for the 2006 Kidney Allocation Scheme: no HLA mismatch level 4 transplants [(2 B mismatch (mm) plus 1 DR mm) or (any 2 DR mm)] and HSPs only receive a level 2 or 3 mismatch if they are local to the donor or have no unexplained (residual) sensitisation. Long waiting recipients are ranked according to their total points score.
- 3 This prioritisation was implemented as part of the DCD Kidney Allocation Scheme work in September 2014 and applies to both DBD and DCD donor transplants. The impact of this change is presented.

DATA & METHODS

- 4 Data were obtained from the UK Transplant Registry on all kidney only transplants performed in the 26 months following the amendment to the KAS rules, 3 September 2014 to 31 October 2016 ('after'). For comparison, transplant data throughout the previous year were also obtained: 3 September 2013 to 2 September 2014 ('before'). Additionally the UK kidney-only active transplant lists as at 1 September 2014, 1 March 2015, 1 September 2015, 1 March 2016, 1 September 2016 and 1 November 2016 were examined.
- 5 Data were also obtained from the matching run history of 1497 transplanted DBD kidney donors between 3 September 2014 and 31 October 2016 to ascertain how many times a long waiting patient had been identified.

RESULTS

- 6 **Table 1** shows transplant activity before and after the change was introduced by key patient factors. The information is shown separately for DBD and DCD donor transplants. For DBD donor transplants, in the year prior to the change, 5.2% of all kidney only transplants were in patients that had waited 7 years or more. This has increased to 7.6% following the change. There does not appear to be any adverse effect on the transplant share for paediatric patients.
- 7 For DCD donor transplants, in the year prior to the change, 0.5% of all kidney only transplants were in patients that had waited 7 years or more. This has increased to 1.1% following the change.

		DBD		DCD	
		Before	After	Before	After
Number of transplants		1170	2534	728	1798
		%	%	%	%
Waiting time	<1 yr	20.0	25.0	32.3	30.9
	1-3 yrs	33.5	34.5	43.3	44.1
	3-5 yrs	27.2	24.2	20.6	19.3
	5-7 yrs	14.1	8.7	3.3	4.6
	≥7 yrs	5.2	7.6	0.5	1.1
HLA mismatch	1	17.0	13.9	1.9	3.8
	2	35.7	38.7	21.8	27.4
	3	44.6	44.1	57.3	58.8
	4	2.6	3.4	19.0	10.0
Highly sensitised	Yes	15.4	16.4	4.3	6.7
Matchability	Easy	40.5	41.3	47.9	45.1
	Moderate	42.3	39.4	41.0	41.6
	Difficult	17.2	19.3	11.0	13.2
Age (years)	<18	3.7	4.1	0.5	0.6
	18-29	7.6	7.5	4.5	4.6
	30-59	62.3	62.8	54.0	56.6
	60+	26.4	25.5	40.9	38.2
Blood group	O	43.9	42.8	43.5	44.5
	A	37.7	39.2	39.6	38.9
	B	13.8	12.7	12.2	12.2
	AB	4.5	5.4	4.7	4.3
Ethnicity	White	70.2	69.0	78.2	71.3
	Asian	17.9	16.8	12.9	16.4
	Black	8.5	9.5	6.2	8.0
	Other	2.8	3.5	2.3	3.1
	Unknown	0.6	1.2	0.4	1.2

- 8 **Table 2** shows patient characteristics of the 213 transplants performed in prioritised long waiting patients (≥ 7 years) by donor type. 74% and 85% of long waiting patients receiving DBD and DCD donor kidneys, respectively, were highly sensitised. 42 patients (37 DBD and 5 DCD) were 100% sensitised. The majority of patients were blood group O and of white ethnicity. Also shown are the 227 long waiting patients remaining on the transplant list as at 1 November 2016. 199 patients (88%) are 100% sensitised.

Table 2		Long waiting (≥ 7 years) transplants by patient factors, 3 September 2014 to 31 October 2016				Patients still waiting >7years at 1 November 2016	
		DBD		DCD			
Number of transplants		193		20			
Number of patients						227	
		N	%	N	%	N	%
HLA mismatch	1	17	8.8	3	15.0		
	2	49	25.4	9	45.0		
	3	127	65.8	8	40.0		
	4						
Sensitisation (%)	0-84	50	25.9	3	15.0	3	1.3
	85-94	18	9.3	2	10.0	4	1.8
	95-98	54	28.0	4	20.0	5	2.2
	99	34	17.6	6	30.0	16	7.1
	100	37	19.2	5	25.0	199	87.7
Matchability	Easy	19	9.8	1	5.0		
	Moderate	45	23.3	7	35.0		
	Difficult	129	66.8	12	60.0		
Age (years)	<18						
	18-29	11	5.7			10	4.4
	30-59	133	68.9	10	50.0	166	73.1
	60+	49	25.4	10	50.0	51	22.5
Blood group	O	103	53.4	11	55.0	97	42.7
	A	43	22.3	5	25.0	84	37.0
	B	39	20.2	4	20.0	35	15.4
	AB	8	4.1			11	4.9
Ethnicity	White	133	68.9	11	55.0	142	62.6
	Asian	34	17.6	4	20.0	50	22.0
	Black	20	10.4	5	25.0	25	11.0
	Other	6	3.1			10	4.4

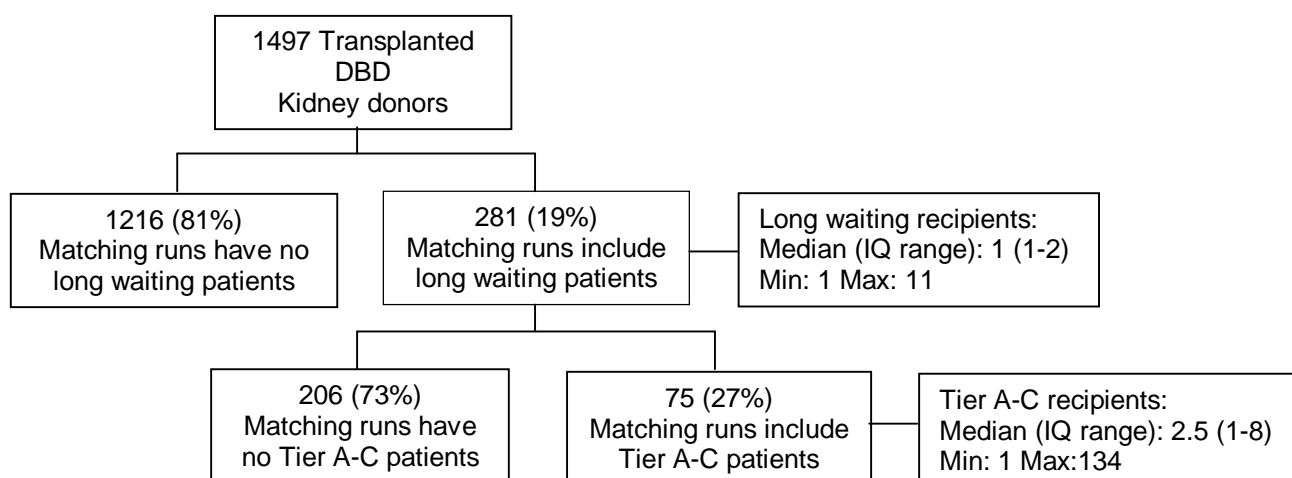
- 9 **Table 3** shows the active kidney only waiting list just prior to the change and six, 12, 18, 24 and 26 months following the change. The proportion of patients that have waited 7 years or longer has reduced slightly, however, numerically the actual number of patients waiting 7 years or more has decreased by 87 patients (from 314 to 227 patients) as at 1 November 2016.

	1 Sep 2014		1 Mar 2015		1 Sep 2015		1 Mar 2016		1 Sep 2016		1 Nov 2016	
	N	%	N	%	N	%	N	%	N	%	N	%
Number of patients	5616		5433		5439		5070		5137		5072	
Waiting time												
<1 year	2199	39.2	2190	40.3	2240	41.2	2102	41.5	2169	42.2	2217	43.7
1-3 years	2117	37.7	2066	38.0	2096	38.5	1941	38.3	1970	38.4	1899	37.4
3-5 years	738	13.1	668	12.3	603	11.1	582	11.5	590	11.5	556	11.0
5-7 years	248	4.4	234	4.3	222	4.1	194	3.8	168	3.3	173	3.4
≥7 years	314	5.6	275	5.1	278	5.1	251	5.0	240	4.7	227	4.5

- 10 **Figure 1** shows the impact the change has had on the DBD kidney donor matching runs for all donors where at least one kidney was retrieved and transplanted. During the 26 month period following the implementation of the change, 1497 DBD donors had at least one kidney retrieved and transplanted. Of the 1497 DBD Kidney Allocation Scheme matching runs that were produced, 281 (19%) had at least one long waiting patient appearing at the top of the matching run and receiving absolute priority. In 75 (27%) of the 281 matching runs where a long waiting patient was identified, at least one patient appeared in Tier A-C and could potentially miss out on the offer of a kidney.
- 11 Of the 281 matching runs that had at least one long waiting patient, 402 offers of a kidney were made. 195 (49%) of these resulted in a transplant and 207 (51%) offers were declined. The reasons cited for decline were:

Donor reasons	51 (25%)
Centre reasons	7 (3%)
Poor function	12 (6%)
Positive cross-match	26 (13%)
Better match required	5 (2%)
Recipient unfit	32 (15%)
Recipient unavailable	5 (2%)
Recipient refused	17 (8%)
Recipient did not need transplant	18 (9%)
Recipient due to receive live donor tx	1 (0%)
Other	33 (16%)

Figure 1 Matching run outcome of 1497 transplanted DBD kidney donors, 3 September 2014 and 31 October 2016



SUMMARY

- 12 On 3 September 2014 a change to the National Kidney Allocation Scheme was introduced that allowed patients waiting 7 years or more absolute priority for kidney transplantation.
- 13 In the first 26 months, 213 (193 DBD and 20 DCD) such patients received a transplant as a result of this priority in allocation. 66% had a cRF of 95-100% and 66% were classed as difficult to match. There would appear to be little impact on other priority groups and the number of patients waiting over 7 years has fallen by 28% from 314 to 227.
- 14 34% of all offers declined for long waiting patients were due to recipient reasons.

RECOMMENDATION

- 15 It is recommended to continue to give absolute priority to patients that have waited 7 years or more for kidney transplantation and to continue to monitor the impact this has on other high priority patients.
- 16 Centres are asked to review the list of patients eligible for this prioritisation to ensure that all patients remain suitable for transplant.