

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

KIDNEY ADVISORY GROUP

NATIONAL DCD KIDNEY ALLOCATION SCHEME

2 YEAR 8 MONTH REVIEW

3 SEPTEMBER 2014 TO 30 APRIL 2017

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Statistics and Clinical Studies**

June 2017

Key points:

- 1 On 1st September 2016 the age range for offering the second kidney regionally increased from 5 to 54 years to 5 to 59 years.
- 2 The number of kidney only transplants performed under the new scheme is 2142. 1091 have been from donors through the scheme (donors aged 5-49 in year 1, 5-54 in year 2, 5-59 in year 3 and 5-64 in London) and 1051 have been from donors outside of the scheme.
- 3 128 SPK transplants have been performed under the new scheme. SPK transplants are now offered after high priority kidney only patients (long waiting patients, 000 mismatched paediatrics and 000 mismatched HSP or DR homozygous adults).
- 4 45% of all DCD kidney only transplants have been performed in the local kidney centre, 44% have been performed in a regional transplant centre and 11% have been fast tracked across the UK.
- 5 There has been an increase in the proportion of highly sensitised patients receiving a DCD transplant from 4% in the previous year to 7% during one year of the scheme, 7% during year two and 7% during year 3. Better matching has also been achieved with 19% of transplants were a level 4 mismatch in the previous year compared to 11% in year 1 and 9% in year 2. However the percentage of level 4 mismatched transplants increased to 13% in year 3.
- 6 94% of all kidneys have HLA available at time of offering. Five donor transplant coordinator teams have slightly lower rates of kidneys with HLA available at time of offering; South West (90%), Eastern (91%), Northern Ireland (91%), Northern (92%), North West (93%).
- 7 There has been no significant difference in cold ischaemia time for the second kidney comparing all donors before the scheme (15.8 hours) to donors aged 5-49 in year 1 (15.7 hours, $p=0.27$), donors aged 5-54 in year 2 (15.8 hours, $p=0.96$) and donors aged 5-59 in year 3 (15.5 hours, $p=0.48$). There is also no significant difference in cold ischaemia time for the second kidney comparing donors through the scheme and donors outside the scheme. Year 1, 5-49 vs <5 or 50+ $p=0.13$. Year 2, 5-54 vs <5 or 55+ $p=0.76$. Year 3, 5-59 vs <5 or 60+ $p=0.82$.

ACTION

- 8 Members are asked to review the information presented and make any recommendations that are appropriate.

DCD KIDNEY ALLOCATION SCHEME (2014)

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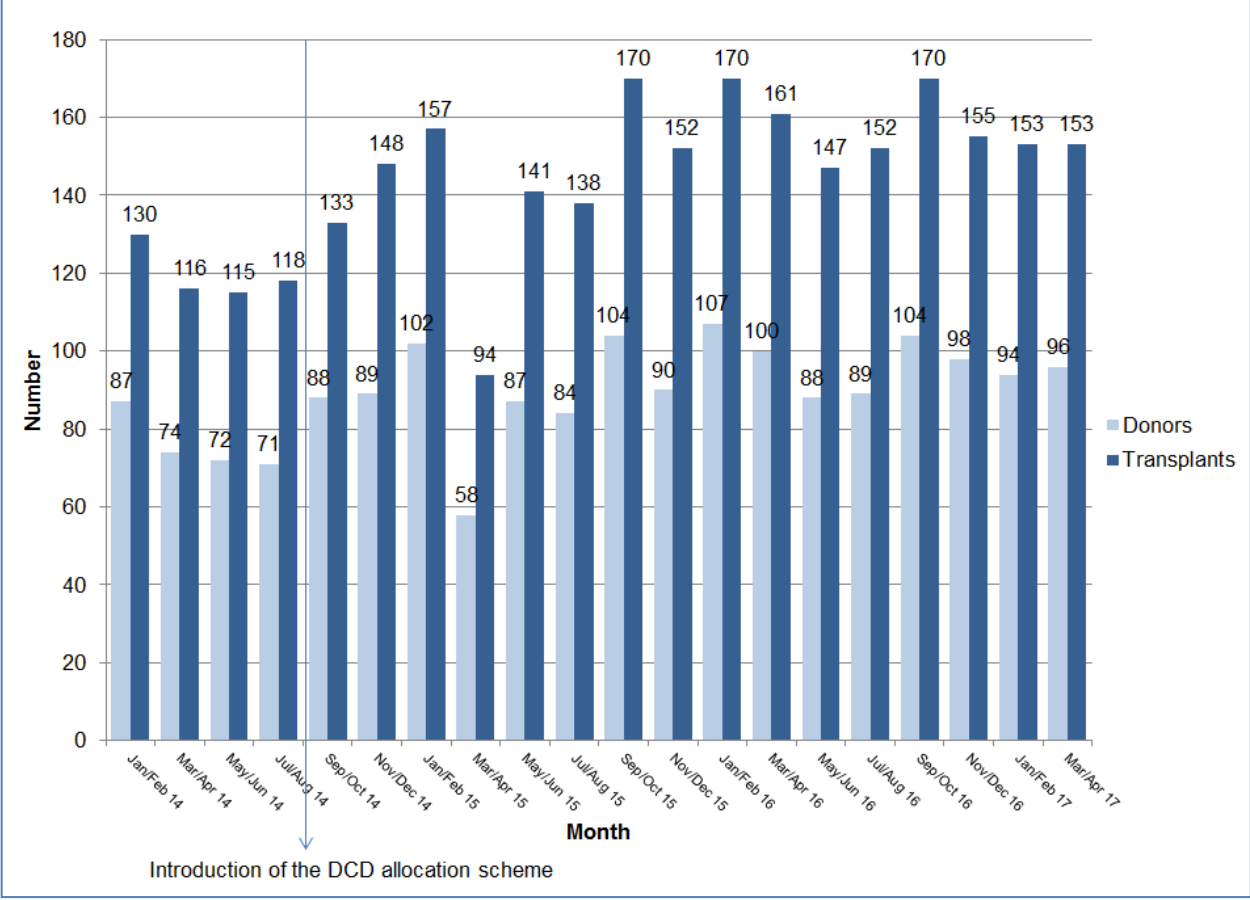
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TRANSPLANTATION

Donors age:	1 Sep 2013 - 31 Aug 2014				3 Sep 2014 – 31 Aug 2015				1 Sep 2015 – 31 Aug 2016				1 Sep 2016 – 30 Apr 2017			
	5-49		<5 or 50+		5-49		<5 or 50+		5-54		<5 or 55+		5-59		<5 or 60+	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Single kidney	211	85	454	88	313	84	395	91	434	91	429	91	344	91	227	89
Dual kidney	1	<1	58	11	1	<1	32	7	3	1	37	8	3	1	20	8
En-bloc kidney	-	-	4	1	-	-	7	2	-	-	8	2	-	-	7	3
SPK	37	15	2	<1	57	15	1	<1	40	8	-	-	29	8	1	<1
TOTAL	249	100	518	100	371	100	435	100	477	100	474	100	376	100	255	100

Donors age:	1 Sep 2013 - 31 Aug 2014				3 Sep 2014– 31 Aug 2015				1 Sep 2015 – 31 Aug 2016				1 Sep 2016 – 30 Apr 2017			
	5-49		<5 or 50+		5-49		<5 or 50+		5-54		<5 or 55+		5-59		<5 or 60+	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Local	129	61	248	48	138	44	206	47	186	43	219	46	152	44	118	46
Regional	67	32	194	38	151	48	167	38	207	47	200	42	160	46	107	42
Rest of UK	16	8	74	14	25	8	61	14	44	10	55	12	35	10	29	11
TOTAL	212	100	516	100	314	100	434	100	437	100	474	100	347	100	254	100

Figure 1 DCD donor kidney programme in the UK, 1 January 2014 – 30 April 2017



	1 Sep 2013 – 31 Aug 2014		3 Sep 2014 – 31 Aug 2015		1 Sep 2015 – 31 Aug 2016		1 Sep 2016 – 30 Apr 2017	
	Donors	Txs	Donors	Txs	Donors	Txs	Donors	Txs
Belfast	10	5	21	23	11	13	10	10
Edinburgh	26	33	20	21	37	38	21	14
Glasgow	16	39	11	39	16	48	9	31
Leeds	36	87	29	69	27	58	22	39
Liverpool	21	27	20	23	34	37	20	25
Manchester	24	38	31	54	46	93	27	61
Newcastle	41	50	26	31	41	43	20	28
North Region	174	279	158	260	212	330	129	208
Birmingham	28	15	21	18	36	37	34	23
Cambridge	36	71	60	61	49	70	41	54
Coventry	9	7	9	7	8	14	4	8
Leicester	14	23	7	28	9	28	7	19
Nottingham	15	23	26	26	25	32	16	29
Sheffield	10	14	10	16	10	18	9	15
Midlands Region	112	153	133	156	137	199	111	148
Bristol	20	13	22	25	23	33	17	23
Cardiff	18	47	17	24	19	32	11	17
Oxford	18	37	18	49	23	66	15	46
Plymouth	28	25	21	21	22	24	11	14
Portsmouth	17	17	23	23	16	27	14	17
South West Region	101	139	101	142	103	182	68	117
GOSH	-	3	-	1	-	-	-	-
Guy's	-	62	-	49	-	65	-	35
The Royal Free	-	25	-	42	-	29	-	24
The Royal London	-	15	-	23	-	40	-	17
St George's	-	36	-	34	-	26	-	19
WLRTC	-	16	-	41	-	40	-	33
London Region	89	157	113	190	126	200	84	128
TOTAL	476	728	505	748	578	911	392	601

Table 1.4 Patients through the scheme – DCD transplant demographics						
Factor	Level	1 Sep 13 – 31 Aug 14 BEFORE	3 Sep 14 – 31 Aug 15 YEAR 1	1 Sep 15 – 31 Aug 16 YEAR 2	1 Sep 16 – 30 Apr 17 YEAR 3	3 Sep 14 – 30 Apr 17 LONDON
		5-64	5-49	5-54	5-59	5-64
Number of transplants		496	237	339	270	377
		%	%	%	%	%
HLA mismatch	1	2	4	5	6	6
	2	25	35	32	26	36
	3	59	53	59	59	53
	4	14	8	4	10	5
Highly sensitised	Yes	5	10	9	8	7
Waiting time	<1 year	30	28	35	38	25
	1-3 years	44	46	40	40	45
	3-5 years	21	19	17	18	24
	5-7 years	4	5	6	2	5
	>=7 years	1	3	2	2	1
Matchability ²	Easy (1-3)	47	40	45	43	30
	Moderate (4-7)	41	47	42	44	49
	Difficult (8-10)	13	13	14	13	20
Age (years)	<18	1	1	2	1	1
	18-29	7	12	7	6	6
	30-39	9	20	15	14	15
	40-49	24	26	28	22	26
	50-59	32	25	30	30	30
	60-69	23	13	16	22	20
	>=70	5	3	4	6	3
Blood group	O	45	41	43	42	42
	A	38	40	36	41	38
	B	13	14	15	12	15
	AB	5	4	6	5	5
Homozygosity	HLA-A	17	19	19	17	18
	HLA-B	11	8	10	13	11
	HLA-DR	17	15	17	17	20
	HLA-A,B,DR	1	2	2	2	3
Graft number	1	93	82	87	87	89
	2	7	16	10	12	10
	3	<1	3	3	1	1
	4	<1	0	0	0	<1
Diabetic	Yes	10	8	8	11	13
Donor-recipient age difference	<15 years	78	55	68	68	70
	15-25 years	15	25	23	20	21
	>25 years	7	20	10	12	9
Gender	Male	66	66	65	62	67
Ethnicity	White	78	80	81	77	39
	Asian	14	15	13	17	28
	Black	6	3	4	4	23
	Other	2	1	2	3	7
	Not Reported	<1	<1	1	<1	3

Table 1.4 cont'd		Patients through the scheme – DCD transplant demographics				
Factor	Level	1 Sep 13 – 31 Aug 14 BEFORE	3 Sep 14 – 31 Aug 15 YEAR 1	1 Sep 15 – 31 Aug 16 YEAR 2	1 Sep 16 – 30 Apr 17 YEAR 3	3 Sep 14 – 30 Apr 17 LONDON
		5-64	5-49	5-54	5-59	5-64
Number of transplants		496	237	339	270	377
		%	%	%	%	%
Tier	A	0	0	0	<1	0
	B	0	0	0	0	0
	C	1	2	2	2	2
	D	1	3	4	4	5
	E	84	87	90	84	88
	Other (HLA level 4)	14	8	4	10	5

Table 1.5		All patients – DCD transplant demographics							
Factor	Level	1 Sep 2013 – 31 Aug 2014		3 Sep 2014 – 31 Aug 2015		1 Sep 2015 – 31 Aug 2016		1 Sep 2016 – 30 Apr 2017	
Number of transplants		728		748		911		601	
		N	%	N	%	N	%	N	%
HLA mismatch	1	14	2	22	3	40	4	30	5
	2	159	22	220	29	238	26	142	24
	3	416	57	422	56	550	60	351	58
	4	139	19	84	11	83	9	78	13
Highly sensitised	Yes	29	4	53	7	59	7	40	7
Waiting time	<1 year	235	32	228	30	289	32	210	35
	1-3 years	314	43	329	44	400	44	268	45
	3-5 years	151	21	147	20	171	19	103	17
	5-7 years	24	3	34	5	43	5	14	2
	>=7 years	4	1	10	1	8	1	6	1
Matchability ²	Easy (1-3)	347	48	340	46	418	46	251	42
	Moderate (4-7)	299	41	311	42	374	41	269	45
	Difficult (8-10)	80	11	97	13	119	13	79	13
Age (years)	<18	4	1	5	1	6	1	2	<1
	18-29	33	5	44	6	35	4	22	4
	30-39	49	7	77	10	82	9	49	8
	40-49	128	18	151	20	168	18	97	16
	50-59	216	30	204	27	260	29	165	28
	60-69	225	31	209	28	273	30	202	34
	>=70	73	10	58	8	87	10	64	11
Blood group ³	O	319	44	324	43	410	45	243	40
	A	286	39	298	40	350	38	244	41
	B	89	12	94	13	109	12	85	14
	AB	34	5	32	4	42	5	29	5
Homozygosity	HLA-A	132	18	127	17	164	18	117	20
	HLA-B	83	11	61	8	103	11	74	12
	HLA-DR	115	16	117	16	157	17	105	18
	HLA-A,B,DR	13	2	11	1	19	2	16	3
Graft number	1	681	94	659	88	825	91	538	90
	2	44	6	81	11	75	8	57	10
	3	2	0	8	1	11	1	5	1
	4	1	0	0	0	0	0	1	<1
Diabetic	Yes	85	12	78	10	102	11	82	14
Donor-recipient age difference	<15 years	571	79.0	539	72	699	77	446	75
	15-25 years	114	15.8	142	19	147	16	104	17
	>25 years	38	5	64	9	59	7	48	8
Gender	Male	481	66	499	67	586	64	384	64
Ethnicity	White	570	78	531	71	664	73	414	69
	Asian	93	13	120	16	146	16	112	19
	Black	45	6	63	8	65	7	46	8
	Other	17	2	25	3	24	3	23	4
	Not Reported	3	<1	9	1	12	1	6	1

Table 1.5 cont'd		All patients – DCD transplant demographics							
Factor	Level	1 Sep 2013 – 31 Aug 2014		3 Sep 2014 – 31 Aug 2015		1 Sep 2015 – 31 Aug 2016		1 Sep 2016 – 30 Apr 2017	
		N	%	N	%	N	%	N	%
Number of transplants		728		748		911		601	
Tier	A	0	0	0	0	0	0	1	<1
	B	0	0	0	0	0	0	0	0
	C	7	1	10	1	12	1	11	2
	D	7	1	17	2	32	4	18	3
	E	575	79	637	85	784	86	493	82
	Other (HLA level 4)	139	19	84	11	83	9	78	13

Table 1.6a		Cold ischaemia time								
	N	All Kidneys		N	First Kidney		N	Second Kidney		
		Median	IQ Range		Median	IQ Range		Median	IQ Range	
All DCD Donors										
Before	721	13.5	10.5-16.5	439	11.7	9.3-14.3	282	15.8	13.6-18.4	
Year 1	741	13.1	10.3-16.3	444	11.5	9.0-14.3	297	16.0	13.3-18.9	
Year 2	895	13.3	10.3-16.5	516	11.1	8.9-14.2	379	15.7	13.4-19.5	
Year 3*	479	12.7	9.7-16.1	288	11.0	8.6-13.8	191	15.5	12.6-19.0	
Donors Through Scheme										
Year 1	368	12.7	10.0-16.0	224	11.4	8.9-13.8	144	15.7	13.0-18.1	
Year 2	483	13.0	10.2-16.5	274	11.0	9.0-13.8	209	15.8	13.3-19.5	
Year 3*	289	12.4	9.6-16.1	171	10.6	8.6-13.4	118	15.5	12.5-19.1	
Donors Outside Scheme										
Year 1	373	13.7	10.5-16.7	220	11.6	9.1-14.5	153	16.0	13.7-19.1	
Year 2	412	13.7	10.5-16.4	242	11.2	8.7-14.3	170	15.5	13.7-19.4	
Year 3*	190	13.0	10.4-16.0	117	11.4	8.9-13.9	73	15.5	13.0-18.5	

*1 Sep 2016 – 30 Apr 2017.

Comparison of second kidney:

Before vs Yr1 (age 5-49): p=0.27,

Before vs Yr3 (age 5-59): p=0.48

Yr1 (age 5-49) vs Yr1 (age <5, 50+): p=0.13,

Yr3 (age 5-59) vs Yr3 (age <5, 60+): p=0.82

Before vs Yr2 (age 5-54): p=0.96,

Yr2 (age 5-54) vs Yr2 (age <5, 55+): p=0.76,

Table 1.6b Cold ischaemia time in London, 3 September 2014 – 30 April 2017

	All Kidneys			First Kidney			Second Kidney		
	N	Median	IQ Range	N	Median	IQ Range	N	Median	IQ Range
All DCD Donors	489	13.0	10.0-15.7	318	11.6	9.2-14.4	171	15.1	12.6-17.7
Donors Through Scheme	358	12.6	9.8-15.5	226	11.3	9.0-14.2	132	14.8	12.2-17.2
Donors Outside Scheme	131	13.7	10.7-16.2	92	12.4	9.7-15.0	39	15.7	14.0-18.6

Table 1.7 Blood group matching, 3 Sep 2014 – 30 Apr 2017

Donor blood group	Recipient blood group									
	O		A		B		AB		TOTAL	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
O	977	(93)	5	(<1)	69	(7)	1	(<1)	1052	(47)
A			887	(96)			35	(4)	922	(41)
B					219	(100)	1	(<1)	220	(10)
AB							66	(100)	66	(3)
TOTAL	977	(43)	892	(39)	288	(13)	103	(5)	2260	(100)

Table 1.8 Number of potential kidney donors with known HLA Type at offering, 3 September 2014 – 30 April 2017

Donor transplant coordinator team	Number of potential donors where kidney(s) offered for transplant	Offered with HLA		Offered without HLA	
		N (%)	Transplanted	N	Transplanted
Eastern	336	307 (91)	147	29	12
London	218	204 (94)	111	14	8
Midlands	307	290 (94)	162	17	12
North West	307	287 (93)	156	20	9
Northern	162	149 (92)	67	13	7
Northern Ireland	77	70 (91)	37	7	4
Scotland	198	191 (96)	103	7	3
South Central	221	208 (94)	89	13	4
South East	274	263 (96)	130	11	3
South Wales	94	88 (94)	42	6	1
South West	192	172 (90)	93	20	11
Yorkshire	226	217 (96)	100	9	4
Total	2612	2446 (94%)	1237 (94%)	166 (6%)	78 (6%)

OFFERING, RETRIEVAL AND ORGAN USE

Table 2.1 Use of kidneys from solid organ donors

	Solid organ donors N	Offered		Kidneys Retrieved		Transplanted		Conversion %
		N	(%)	N	(%)	N	(%)	
DCD Donors through scheme								
Before	148	283	(96)	275	(97)	250	(91)	84
Year 1	210	410	(98)	398	(97)	372	(93)	89
Year 2	270	530	(98)	519	(98)	481	(93)	89
Year 3*	222	434	(98)	429	(99)	380	(89)	86
DCD Donors outside of scheme								
Before	354	696	(98)	671	(96)	580	(86)	82
Year 1	322	637	(99)	603	(95)	477	(79)	74
Year 2	326	647	(99)	632	(98)	517	(82)	79
Year 3*	184	363	(99)	353	(97)	282	(80)	77
All DCD donors								
Before	502	979	(98)	946	(97)	830	(88)	83
Year 1	532	1047	(98)	1001	(96)	849	(85)	80
Year 2	596	1177	(99)	1151	(98)	998	(87)	84
Year 3*	406	797	(98)	782	(98)	662	(85)	82

*1 Sep 2016 – 30 Apr 2017.

Table 2.2 Summary of kidney offers for named patients made through the DCD scheme (donors aged 5 to 49 for year 1, 5-54 for year 2, 5-59 for year 3, 5-64 for London)

	Total offers		Offer accepted, used		Offer accepted, used in alternative patient		Offer declined	
	N	(%)	N	(%)	N	(%)	N	(%)
Belfast	42	(4)	1	(2)	1	(2)	38	(90)
Edinburgh	34	(3)	12	(35)	1	(3)	18	(53)
Glasgow	52	(5)	16	(31)	4	(8)	27	(52)
Leeds	51	(5)	16	(31)	6	(12)	25	(49)
Liverpool	38	(4)	7	(18)	2	(5)	25	(66)
Manchester	76	(8)	30	(39)	4	(5)	40	(53)
Newcastle	36	(4)	8	(22)	0	(0)	25	(69)
North Region	329	(33)	90	(27)	18	(5)	198	(60)
Birmingham	98	(10)	14	(14)	1	(1)	79	(81)
Cambridge	26	(3)	7	(27)	3	(12)	13	(50)
Coventry	25	(3)	5	(20)	2	(8)	16	(64)
Leicester	49	(5)	13	(27)	3	(6)	29	(59)
Nottingham	26	(3)	5	(19)	1	(4)	19	(73)
Sheffield	51	(5)	11	(22)	3	(6)	33	(65)
Midlands Region	275	(28)	55	(20)	13	(5)	189	(69)
Bristol	83	(8)	23	(28)	4	(5)	54	(65)
Cardiff	33	(3)	7	(21)	0	(0)	26	(79)
Oxford	43	(4)	10	(23)	8	(19)	17	(40)
Plymouth	13	(1)	3	(23)	1	(8)	9	(69)
Portsmouth	54	(5)	10	(19)	2	(4)	41	(76)
South West Region	226	(23)	53	(23)	15	(7)	147	(65)
GOSH								
Guy's	25	(3)	5	(20)	2	(8)	17	(68)
St George's	34	(3)	9	(26)	3	(9)	20	(59)
The Royal Free	25	(3)	8	(32)	2	(8)	12	(48)
The Royal London	35	(4)	8	(23)	3	(9)	23	(66)
WLRTC	42	(4)	9	(21)	1	(2)	26	(62)
London Region	161	(16)	39	(24)	11	(7)	98	(61)
TOTAL	991	(100)	237	(24)	57	(6)	632	(64)

DCD OUTCOME

Figure 3: Adult patients – Graft and patient survival after first kidney only transplant from a DCD donor in the UK

