

# Kidney Activity

## Key messages

- A new National DCD Kidney Allocation Scheme was introduced on 3 September 2014.
- The number of deceased kidney donors decreased by 3% to 1,204
- Kidney transplants from living donors decreased by 6% to 1,052, while transplants from deceased donors decreased by 3% to 2,069
- 77 kidney transplants were made possible by the paired living kidney donation programme
- Non-directed altruistic living kidney donation resulted in 107 living donor kidney transplants
- The number of patients registered on the kidney transplant list this year fell by 3% from 5,881 to 5,686

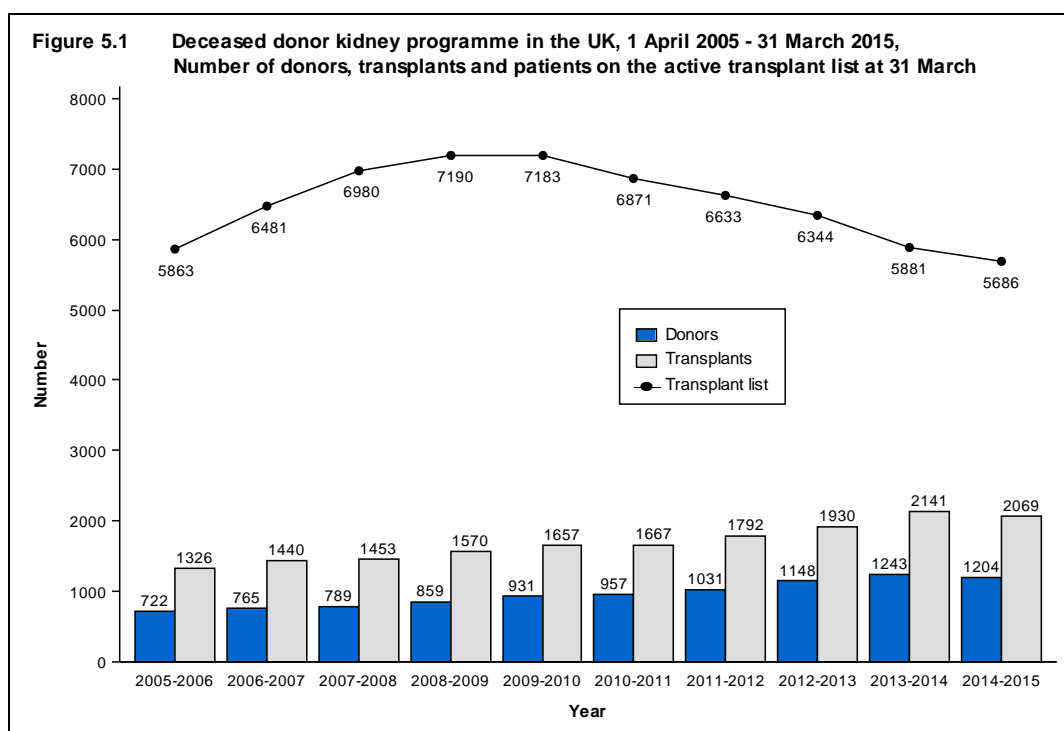
## 5.1 Overview

A new National DCD Kidney Allocation Scheme was introduced on 3 September 2014 which replaced previous local arrangements for the allocation of kidneys from DCD donors. One kidney from all DCD donors is now allocated primarily to the local centre, with the second kidney being offered to other centres on a regional basis for donors aged 5-49 years. The exceptions to this are in London and Scotland, where regional sharing schemes have been accepted by all centres for both kidneys. Patients are prioritised according to the 2006 DBD Kidney Allocation Scheme points system which is based on a range of clinical factors.

As part of the changes associated with implementation of this scheme, all offering of DCD kidneys has moved to the ODT Duty Office and Specialist Nurses for Organ Donation (SNODs) are no longer offering kidneys for transplant. The SNODs are contacting transplant centres for any advice about suitability of potential donors at an early stage in the donation process, however, and the way in which they are doing this has been formalised.

The number of deceased kidney donors fell by 3% in 2014-2015 compared to 2013-2014 and the number of deceased donor kidney transplants fell by 3%. There were 5686 patients waiting for a kidney transplant at 31 March 2015, and for the sixth year running the number of patients on the national list for a kidney transplant have declined.

A summary of activity for deceased donor kidney transplants and the transplant list at year end for the last ten years is shown in **Figure 5.1**. The number of patients registered on the active transplant list at 31 March 2015 for a kidney or kidney and pancreas transplant has fallen by 3% since 2006.



**Table 5.1** shows the number of deceased and living donor kidney transplants carried out in 2014-2015 at each centre. Kidney transplants from donors after circulatory death are increasingly common and in this financial year all adult kidney transplant centres performed such transplants. As yet, very few kidneys from donors after circulatory death are transplanted in paediatric patients (<18 years). Donation figures for centres in North and South Thames are not reported individually as they have shared designated areas and donor populations. Multi-organ transplants including a kidney are included in the table.

The total number of deceased kidney donors decreased to 1204 in 2014-2015 from 1243 in 2013-2014 and the number of transplants decreased from 2141 to 2069. The number of kidney donors after circulatory death decreased to 484 from 521 in 2013-2014 and the number of transplants from such donors decreased by 6% to 772.

Throughout this chapter, intestinal transplants involving a kidney are not included in the kidney transplant activity reported. Any kidneys retrieved and used for such transplants are however used in the kidney donor activity.

**Table 5.1 Kidney donors and transplants, 1 April 2014 - 31 March 2015 (2013-2014) and transplant list at 31 March 2015 (2014) in the UK, by centre/ alliance**

Centre/ alliance	Deceased kidney donors				Deceased donor transplants				Living donor transplants		Active transplant list	
	DBD		DCD		DBD		DCD					
Belfast	34	(30)	14	(14)	31	(37)	13	(3)	54	(58)	131	(114)
Birmingham	49	(54)	27	(32)	101	(90)	18	(17)	67	(80)	458	(502)
Bristol	27	(26)	19	(28)	52	(67)	13	(22)	40	(54)	306	(314)
Cambridge	40	(37)	48	(43)	65	(59)	69	(85)	40	(40)	169	(191)
Cardiff	24	(23)	21	(17)	22	(38)	38	(47)	36	(37)	110	(121)
Coventry	9	(8)	10	(9)	24	(22)	8	(8)	30	(26)	112	(107)
Edinburgh	28	(35)	27	(26)	47	(53)	30	(34)	31	(35)	175	(185)
Glasgow	32	(24)	7	(18)	56	(64)	37	(41)	44	(45)	272	(311)
Great Ormond Street	0	(0)	0	(0)	5	(7)	2	(3)	23	(18)	7	(14)
Leeds	29	(30)	34	(31)	74	(61)	87	(98)	46	(44)	261	(262)
Leicester	20	(20)	12	(11)	58	(62)	25	(19)	32	(43)	234	(276)
Liverpool	37	(49)	19	(22)	35	(39)	26	(23)	41	(39)	185	(176)
Manchester	36	(37)	28	(24)	114	(140)	54	(45)	98	(89)	583	(597)
Newcastle	42	(48)	33	(39)	25	(35)	36	(52)	57	(57)	213	(181)
North Thames <sup>1</sup>	90	(98)	46	(54)	-	-	-	-	-	-	-	-
Royal Free	-	-	-	-	71	(38)	37	(37)	32	(35)	243	(274)
Royal London	-	-	-	-	65	(58)	17	(21)	47	(60)	317	(295)
WLRTC	-	-	-	-	87	(84)	29	(18)	64	(64)	423	(474)
Nottingham	12	(16)	21	(22)	28	(39)	27	(34)	17	(21)	131	(122)
Oxford	32	(27)	16	(26)	84	(86)	56	(52)	51	(42)	258	(258)
Plymouth	34	(28)	21	(22)	22	(18)	16	(27)	20	(22)	85	(84)
Portsmouth	19	(26)	11	(21)	52	(44)	10	(17)	23	(26)	205	(228)
Sheffield	30	(22)	12	(7)	37	(41)	18	(7)	20	(20)	179	(188)
South Thames <sup>1</sup>	96	(84)	58	(55)	-	-	-	-	-	-	-	-
Guy's	-	-	-	-	82	(79)	68	(77)	87	(100)	347	(336)
St George's	-	-	-	-	59	(59)	38	(34)	37	(44)	282	(271)
<b>TOTAL</b>	<b>720</b>	<b>(722)</b>	<b>484</b>	<b>(521)</b>	<b>1297<sup>2</sup></b>	<b>(1320)</b>	<b>772</b>	<b>(821)</b>	<b>1052<sup>3,5</sup></b>	<b>(1115<sup>4,6</sup>)</b>	<b>5686</b>	<b>(5881)</b>

WLRTC - West London Renal and Transplant Centre

<sup>1</sup> Donor figures in this area cannot be linked to individual transplant centres due to shared retrieval areas.

<sup>2</sup> Includes an additional 1 transplant performed at Manchester, Wythenshawe Hospital

<sup>3</sup> Includes an additional 8 transplants at London, Cromwell Hospital and 7 transplants at London, London Bridge Hospital

<sup>4</sup> Includes an additional 6 transplants performed at London, The London Clinic, 5 transplants at London, Cromwell Hospital and 5 transplants at London, London Bridge Hospital

<sup>5</sup> Includes 3 domino donors; <sup>6</sup> Includes 2 domino donors

## 5.2 Transplant list

The number of patients registered on the kidney or kidney and pancreas transplant list fell by 3% in the year: on 31 March 2015, 5,686 patients were registered as active, compared with 5,881 at the end of March 2014. The number of patients waiting for a kidney transplant represents 88.4 patients per million population (pmp).

Of the 5,686 patients on the active transplant list at 31 March 2015, 201 required a kidney and pancreas transplant (201 at 31 March 2014). Additionally, 51 patients were registered for a pancreas only transplant (69 at 31 March 2014).

The outcome of patients registered on the UK kidney and kidney/pancreas transplant list at 1 April 2014, or subsequently registered during the financial year, is shown in **Table 5.2**. A total of 3,579 patients joined the kidney transplant list last year, an increase of 4% from the previous year. A further 238 joined the kidney/pancreas transplant list.

<b>Table 5.2 Kidney transplant list and new registrations in the UK, 1 April 2014 - 31 March 2015</b>						
<b>Outcome of patient at 31 March 2015</b>	<b>Active and suspended patients at 1 April 2014</b>		<b>New registrations in 2014-2015<sup>1</sup></b>		<b>TOTAL</b>	
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>
<b>Kidney transplant list</b>						
Remained active/suspended	5713	66	2909	81	<b>8622</b>	<b>71</b>
Transplanted	2183	25	608	17	<b>2791</b>	<b>23</b>
Removed	491 <sup>2</sup>	6	40 <sup>3</sup>	1	<b>531</b>	<b>4</b>
Died	221	3	22	1	<b>243</b>	<b>2</b>
<b>TOTAL</b>	<b>8608</b>		<b>3579</b>		<b>12187</b>	
<b>Kidney/pancreas transplant list</b>						
Remained active/suspended	127	39	204	86	<b>331</b>	<b>59</b>
Transplanted	148	46	26	11	<b>174</b>	<b>31</b>
Removed	28	9	1	0	<b>29</b>	<b>5</b>
Died	19	6	7	3	<b>26</b>	<b>5</b>
<b>TOTAL</b>	<b>322</b>		<b>238</b>		<b>560</b>	

<sup>1</sup> Includes re-registrations for second or subsequent transplants  
<sup>2</sup> Includes 5 patients removed from kidney list and made active on kidney/pancreas list  
<sup>3</sup> Includes 7 patients removed from kidney list and made active on kidney/pancreas list

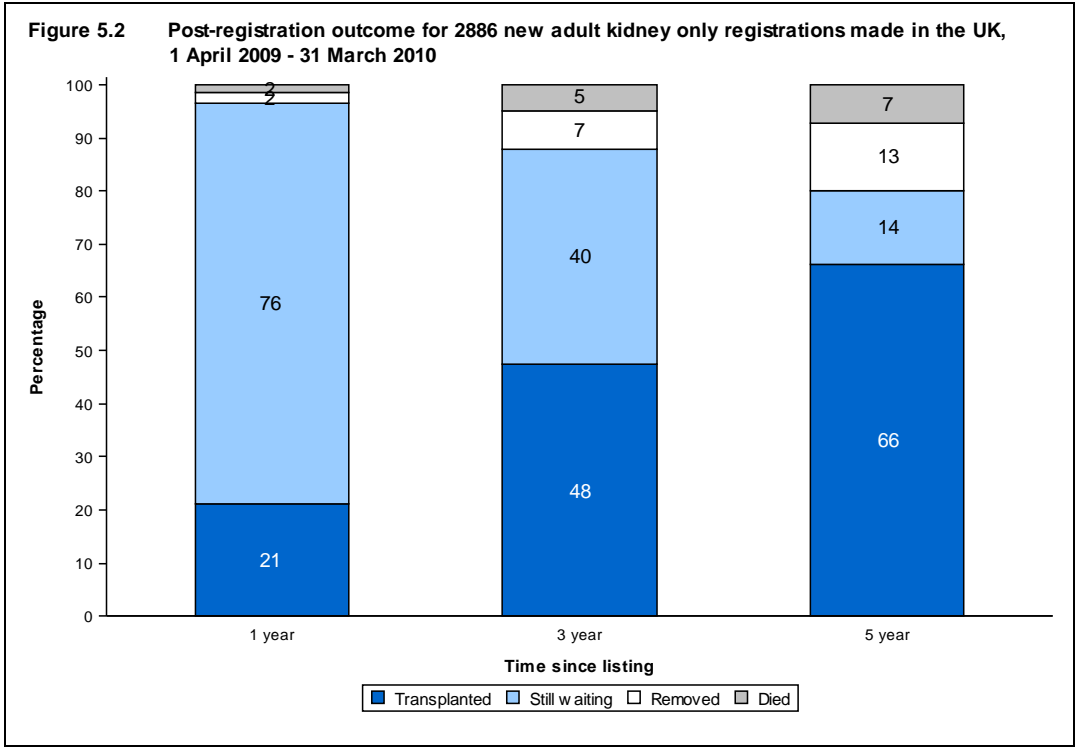
**Table 5.3** shows the active transplant list in the UK at 31 March 2015 and 2014 by country/ former Strategic Health Authority of patient's residence. In 2015, the overall kidney transplant list rate was 88.4 pmp with rates across the Strategic Health Authorities ranging from 58.5 pmp to 138.5 pmp.

<b>Table 5.3 Active kidney transplant list at 31 March, by country/ Strategic Health Authority of patient residence</b>				
<b>Country/ Strategic Health Authority of residence</b>	<b>Kidney transplant list (pmp)</b>			
	<b>2015</b>		<b>2014</b>	
North East	173	(66.3)	149	(57.1)
North West	714	(100.6)	720	(101.4)
Yorkshire and The Humber	425	(79.6)	436	(81.6)
<b>North of England</b>	<b>1312</b>	<b>(87.2)</b>	<b>1305</b>	<b>(86.7)</b>
East Midlands	413	(89.8)	460	(100.0)
West Midlands	587	(103.5)	624	(110.1)
East of England	362	(60.8)	375	(63.0)
<b>Midlands and East</b>	<b>1362</b>	<b>(84.0)</b>	<b>1459</b>	<b>(90.0)</b>
<b>London</b>	<b>1166</b>	<b>(138.5)</b>	<b>1217</b>	<b>(144.5)</b>
South East Coast	266	(58.5)	265	(58.2)
South Central	371	(87.3)	389	(91.5)
South West	450	(83.6)	449	(83.5)
<b>South of England</b>	<b>1087</b>	<b>(76.7)</b>	<b>1103</b>	<b>(77.8)</b>
<b>England</b>	<b>4927</b>	<b>(91.5)</b>	<b>5084</b>	<b>(94.4)</b>
Isle of Man	10	(125.0)	7	(87.5)
Channel Islands	4	(25.0)	8	(50.0)
<b>Wales</b>	<b>159</b>	<b>(51.6)</b>	<b>162</b>	<b>(52.6)</b>
<b>Scotland</b>	<b>442</b>	<b>(82.9)</b>	<b>492</b>	<b>(92.3)</b>
<b>Northern Ireland</b>	<b>141</b>	<b>(77.0)</b>	<b>123</b>	<b>(67.2)</b>
<b>TOTAL<sup>1</sup></b>	<b>5686</b>	<b>(88.4)</b>	<b>5881</b>	<b>(91.4)</b>

<sup>1</sup> Includes patients in 2015 (2014) residing in: Unspecified UK 1 (1); Republic of Ireland 0 (1); Overseas 2 (3)

An indication of outcomes for adult patients listed for a kidney only transplant is summarised in **Figure 5.2**. This shows the proportion of patients transplanted or still waiting one, three and five years after joining the list. It also shows the proportion removed from the transplant list (typically because they become too unwell for transplant) and those dying while on the transplant list. Only 21% of patients are transplanted within one year, while five years after listing 66% of patients have received a transplant.

The median (average) waiting time for a kidney only transplant is 1,022 days for an adult patient and is shown by blood group in **Table 5.4** and patient ethnicity in **Table 5.5**. Because of the need to match donor and recipient blood groups and tissue types, waiting times to transplant differ according to patient blood groups and ethnicity due to differences between the donor pool and patients awaiting a kidney transplant. Note that these waiting times are not adjusted for other relevant factors which may be influential and which may differ across blood or ethnic groups.



**Table 5.4 Median waiting time to kidney only transplant in the UK, for patients registered 1 April 2008 - 31 March 2012**

Blood group	Number of patients registered	Waiting time (days)	
		Median	95% Confidence interval
<b>Adult</b>			
O	4032	1198	1167 - 1229
A	3213	829	800 - 858
B	1216	1187	1118 - 1256
AB	363	464	405 - 523
<b>TOTAL</b>	<b>8824</b>	<b>1022</b>	<b>1000 - 1044</b>
<b>Paediatric</b>			
O	151	384	294 - 474
A	106	228	145 - 311
B	41	210	143 - 277
AB	15	450	175 - 725
<b>TOTAL</b>	<b>313</b>	<b>316</b>	<b>259 - 373</b>

**Table 5.5 Median waiting time to kidney only transplant in the UK, for patients registered 1 April 2008 - 31 March 2012**

Ethnicity	Number of patients registered	Waiting time (days)	
		Median	95% Confidence interval
<b>Adult</b>			
White	6477	955	930 - 980
Asian	1350	1208	1148 - 1268
Black	734	1226	1154 - 1298
Other	239	1087	982 - 1192
<b>TOTAL<sup>1</sup></b>	<b>8824</b>	<b>1022</b>	<b>1000 - 1044</b>
<b>Paediatric</b>			
White	207	238	180 - 296
Asian	74	541	386 - 696
Black	22	466	265 - 667
Other <sup>3</sup>	9	-	-
<b>TOTAL<sup>2</sup></b>	<b>313</b>	<b>316</b>	<b>259 - 373</b>

<sup>1</sup> Includes 24 patients whose ethnicity was not reported

<sup>2</sup> Includes 1 patient whose ethnicity was not reported

<sup>3</sup> Median waiting time not reported for fewer than 10 patients



### 5.3 Donor and organ supply

Of the 772 organ donors after brain death in the UK in 2014-2015, 720 (93%) were kidney donors. From these donors, 1,425 kidneys were retrieved. There were 484 kidney donors after circulatory death in 2014-2015. From these donors, 962 kidneys were retrieved. **Table 5.6** shows this activity by donor country/Strategic Health Authority of donor's residence. No adjustments have been made for potential demographic differences in populations.

The overall rate for kidney donors after brain death is 11.2 pmp, with rates across the Strategic Health Authorities ranging from 9.0 to 12.8 pmp. The number of kidneys retrieved from donors after brain death in the UK is 22.1 pmp and varies from 18.2 to 26.2 pmp.

The overall rate for kidney donors after circulatory death is 7.5 pmp, with rates across the Strategic Health Authorities ranging from 4.5 to 11.8 pmp. The number of kidneys retrieved from donors after circulatory death is 14.9 pmp and varies from 8.9 to 23.2 pmp.

<b>Table 5.6 Kidney donation and retrieval rates for deceased donors in the UK, 1 April 2014 - 31 March 2015, by country/ Strategic Health Authority</b>								
<b>Country/ Strategic Health Authority of residence</b>	<b>Kidney donors (pmp)</b>				<b>Kidneys retrieved (pmp)</b>			
	DBD		DCD		DBD		DCD	
North East	30	(11.5)	29	(11.1)	54	(20.7)	58	(22.2)
North West	68	(9.6)	47	(6.6)	129	(18.2)	91	(12.8)
Yorkshire and The Humber	51	(9.6)	46	(8.6)	103	(19.3)	93	(17.4)
<b>North of England</b>	<b>149</b>	<b>(9.9)</b>	<b>122</b>	<b>(8.1)</b>	<b>286</b>	<b>(19.0)</b>	<b>242</b>	<b>(16.1)</b>
East Midlands	47	(10.2)	40	(8.7)	91	(19.8)	80	(17.4)
West Midlands	51	(9.0)	30	(5.3)	104	(18.3)	61	(10.8)
East of England	73	(12.3)	70	(11.8)	143	(24.0)	138	(23.2)
<b>Midlands and East</b>	<b>171</b>	<b>(10.5)</b>	<b>140</b>	<b>(8.6)</b>	<b>338</b>	<b>(20.8)</b>	<b>279</b>	<b>(17.2)</b>
<b>London</b>	<b>95</b>	<b>(11.3)</b>	<b>43</b>	<b>(5.1)</b>	<b>186</b>	<b>(22.1)</b>	<b>82</b>	<b>(9.7)</b>
South East Coast	57	(12.5)	42	(9.2)	112	(24.6)	86	(18.9)
South Central	42	(9.9)	19	(4.5)	87	(20.5)	38	(8.9)
South West	69	(12.8)	43	(8.0)	141	(26.2)	87	(16.2)
<b>South of England</b>	<b>168</b>	<b>(11.8)</b>	<b>104</b>	<b>(7.3)</b>	<b>340</b>	<b>(24.0)</b>	<b>211</b>	<b>(14.9)</b>
<b>England</b>	<b>583</b>	<b>(10.8)</b>	<b>409</b>	<b>(7.6)</b>	<b>1150</b>	<b>(21.3)</b>	<b>814</b>	<b>(15.1)</b>
<b>Isle of Man</b>	<b>5</b>	<b>(62.5)</b>	<b>0</b>	<b>(0.0)</b>	<b>10</b>	<b>125.0)</b>	<b>0</b>	<b>(0.0)</b>
<b>Channel Islands</b>	<b>1</b>	<b>(6.3)</b>	<b>0</b>	<b>(0.0)</b>	<b>2</b>	<b>(12.5)</b>	<b>0</b>	<b>(0.0)</b>
<b>Wales</b>	<b>35</b>	<b>(11.4)</b>	<b>29</b>	<b>(9.4)</b>	<b>72</b>	<b>(23.4)</b>	<b>57</b>	<b>(18.5)</b>
<b>Scotland</b>	<b>62</b>	<b>(11.6)</b>	<b>32</b>	<b>(6.0)</b>	<b>123</b>	<b>(23.1)</b>	<b>64</b>	<b>(12.0)</b>
<b>Northern Ireland</b>	<b>34</b>	<b>(18.6)</b>	<b>14</b>	<b>(7.7)</b>	<b>68</b>	<b>(37.2)</b>	<b>27</b>	<b>(14.8)</b>
<b>TOTAL<sup>1</sup></b>	<b>720</b>	<b>(11.2)</b>	<b>484</b>	<b>(7.5)</b>	<b>1425</b>	<b>(22.1)</b>	<b>962</b>	<b>(14.9)</b>

<sup>1</sup> Includes 26 donors where the hospital postcode was used in place of an unknown donor postcode

## 5.4 Transplants

The number of kidney transplants by recipient country/Strategic Health Authority of residence is shown in **Table 5.7**. No adjustments have been made for potential demographic differences in populations. The deceased donor transplant rate ranged from 16.9 to 41.6 pmp across Strategic Health Authorities and overall was 29.2 pmp. The living donor transplant rate ranged from 12.0 to 19.2 pmp across the Strategic Health Authorities and overall was 15.9 pmp.

Country/ Strategic Health Authority of residence	DBD		DCD		TOTAL		Living	
	N	(pmp)	N	(pmp)	N	(pmp)	N	(pmp)
North East	14	(5.4)	30	(11.5)	44	(16.9)	50	(19.2)
North West	128	(18.0)	67	(9.4)	195	(27.5)	133	(18.7)
Yorkshire and The Humber	106	(19.9)	99	(18.5)	205	(38.4)	66	(12.4)
<b>North of England</b>	<b>248</b>	<b>(16.5)</b>	<b>196</b>	<b>(13.0)</b>	<b>444</b>	<b>(29.5)</b>	<b>249</b>	<b>(16.5)</b>
East Midlands	94	(20.4)	61	(13.3)	155	(33.7)	55	(12.0)
West Midlands	113	(19.9)	30	(5.3)	143	(25.2)	92	(16.2)
East of England	91	(15.3)	76	(12.8)	167	(28.1)	92	(15.5)
<b>Midlands and East</b>	<b>298</b>	<b>(18.4)</b>	<b>167</b>	<b>(10.3)</b>	<b>465</b>	<b>(28.7)</b>	<b>239</b>	<b>(14.7)</b>
<b>London</b>	<b>231</b>	<b>(27.4)</b>	<b>119</b>	<b>(14.1)</b>	<b>350</b>	<b>(41.6)</b>	<b>154</b>	<b>(18.3)</b>
South East Coast	60	(13.2)	44	(9.7)	104	(22.9)	67	(14.7)
South Central	87	(20.5)	39	(9.2)	126	(29.6)	60	(14.1)
South West	84	(15.6)	38	(7.1)	122	(22.7)	74	(13.8)
<b>South of England</b>	<b>231</b>	<b>(16.3)</b>	<b>121</b>	<b>(8.5)</b>	<b>352</b>	<b>(24.8)</b>	<b>201</b>	<b>(14.2)</b>
<b>England</b>	<b>1008</b>	<b>(18.7)</b>	<b>603</b>	<b>(11.2)</b>	<b>1611</b>	<b>(29.9)</b>	<b>843</b>	<b>(15.6)</b>
<b>Isle of Man</b>	<b>3</b>	<b>(37.5)</b>	<b>0</b>	<b>(0.0)</b>	<b>3</b>	<b>(37.5)</b>	<b>4</b>	<b>(50.0)</b>
<b>Channel Islands</b>	<b>2</b>	<b>(12.5)</b>	<b>0</b>	<b>(0.0)</b>	<b>2</b>	<b>(12.5)</b>	<b>3</b>	<b>(18.8)</b>
<b>Wales</b>	<b>30</b>	<b>(9.7)</b>	<b>36</b>	<b>(11.7)</b>	<b>66</b>	<b>(21.4)</b>	<b>44</b>	<b>(14.3)</b>
<b>Scotland</b>	<b>88</b>	<b>(16.5)</b>	<b>65</b>	<b>(12.2)</b>	<b>153</b>	<b>(28.7)</b>	<b>76</b>	<b>(14.3)</b>
<b>Northern Ireland</b>	<b>31</b>	<b>(16.9)</b>	<b>13</b>	<b>(7.1)</b>	<b>44</b>	<b>(24.0)</b>	<b>55</b>	<b>(30.1)</b>
<b>TOTAL<sup>1</sup></b>	<b>1162</b>	<b>(18.1)</b>	<b>717</b>	<b>(11.1)</b>	<b>1879</b>	<b>(29.2)</b>	<b>1025</b>	<b>(15.9)</b>

<sup>1</sup> Excludes 27 recipients of a living donor kidney and 1 recipient of a DBD kidney who reside outside of the UK

The number of kidney only transplants from deceased donors at each transplant centre is shown in **Table 5.8** for adult patients only. Kidney transplants from donors after brain death include 2 en bloc kidneys and 15 double kidney transplants in 2014-2015 (5 and 25 in 2013-2014). Kidney transplants from donors after circulatory death include 6 en bloc and 41 double kidney transplants in 2014-2015 (4 and 66 in 2013-2014). This table excludes multi-organ transplants: 12 kidney and liver, 1 kidney and heart, 173 kidney and pancreas, and 1 kidney and lung.

**Table 5.8 Adult kidney only transplants in the UK,  
1 April 2013 - 31 March 2015, by transplant centre/ region**

Transplant centre/ region	2013-2014				2014-2015			
	DBD	DCD	Living donor	TOTAL	DBD	DCD	Living donor	TOTAL
Belfast	37	3	57	97	30	13	53	96
Birmingham	79	17	77	173	88	17	58	163
Bristol	61	22	49	132	50	13	32	95
Cambridge	41	78	40	159	50	57	40	147
Cardiff	31	44	37	112	20	32	35	87
Coventry	22	8	26	56	23	8	30	61
Edinburgh	33	34	35	102	32	28	30	90
Glasgow	58	41	41	140	53	37	37	127
Guys	47	69	87	203	56	56	73	185
Leeds	52	98	44	194	62	86	43	191
Leicester	62	19	43	124	58	25	32	115
Liverpool	39	23	39	101	35	26	41	102
Manchester	111	37	76	224	91	42	82	215
Newcastle	27	51	54	132	20	36	53	109
Nottingham	30	34	17	81	27	27	13	67
Oxford	34	42	42	118	41	43	51	135
Plymouth	18	27	22	67	22	16	20	58
Portsmouth	44	17	26	87	52	10	23	85
Sheffield	41	7	20	68	37	18	20	75
St Georges	59	34	44	137	59	38	37	134
The Royal Free	37	35	35	107	68	37	32	137
The Royal London	58	21	60	139	65	17	47	129
WLRTC	80	18	64	162	82	29	64	175
<b>TOTAL</b>	<b>1101</b>	<b>779</b>	<b>1051<sup>1</sup></b>	<b>2931</b>	<b>1121</b>	<b>711</b>	<b>961<sup>2</sup></b>	<b>2793</b>

<sup>1</sup> Includes 6 transplants performed at The London Clinic, 5 at London Cromwell Hospital, 4 at London Bridge and 1 at Great Ormond Street Hospital

<sup>2</sup> Includes 8 transplants performed at London Cromwell Hospital and 7 at London Bridge  
WLRTC - West London Renal and Transplant Centre

Living donor kidney transplants fell by 6% to 1052 in 2014-2015, representing 34% of the total kidney transplant programme. The total number of living donor adult transplants performed by each transplant centre is shown in **Table 5.9**. Also shown is the number as a percentage of patients listed at the end of the year, to indicate the size of the living donor programme relative to the centre's transplant list.

Most living donor transplants are 'directed'. This means that a kidney is donated to a specific recipient known to the donor - a close family member or friend. There has been a 10% decrease in these transplants. In addition there are now a number of 'non-directed' living donor transplants (also known as altruistic donor transplants). Last year 107 such donors donated a kidney to a recipient, 105 transplanted into an adult recipient and 2 transplanted into a paediatric recipient. Of the 105 transplanted into an adult recipient, 17 went into an altruistic donor chain, benefitting patients in the paired/pooled scheme. The kidneys from the paired donors of these recipients led to 15 adult and 2 paediatric transplants for patients on the deceased donor transplant list. Thus 17 altruistic donors creating chains benefited 32 adult and 2 paediatric patients.

In 2014-2015, there were also 62 paired living kidney donor transplants. When a potential donor and recipient are biologically incompatible (blood group or tissue type), they may consider joining a list of others in the same situation with the hope that an exchange of kidneys between them can lead to a compatible living donor transplant. The scheme also includes compatible pairs who would like a better match. This type of exchange is known as paired donation and most exchanges are between two pairs (i.e. two donors and their respective incompatible recipients), or between three pairs.

As a percentage of the number of patients on the active transplant list at 31 March 2015, the number of living donor adult transplants in the year was 17% and ranged from 11% to 40% at individual transplant centres.

<b>Table 5.9 Adult living donor kidney transplants in the UK, 1 April 2014 - 31 March 2015, and percentage of active transplant list at 31 March, by transplant centre/ region</b>						
<b>Transplant centre/ region</b>	<b>2014-2015</b>				<b>TOTAL</b>	
	<b>Directed</b>	<b>Non-directed (altruistic) to waiting list</b>	<b>Paired/ pooled exchanges</b>	<b>Altruistic donor chain<sup>3</sup></b>	<b>N</b>	<b>% list</b>
Belfast	43	5	5	0	53	40
Birmingham	43	9	2	4	58	13
Bristol	22	6	3	1	32	11
Cambridge	26	4	8	2	40	24
Cardiff	27	4	2	2	35	32
Coventry	23	1	5	1	30	27
Edinburgh	23	3	4	0	30	17
Glasgow	30	3	3	1	37	14
Guy's	67	3	1	2	73	21
Leeds	38	2	3	0	43	17
Leicester	28	3	0	1	32	14
Liverpool	36	4	1	0	41	22
Manchester	66	8	8	0	82	14
Newcastle	47	3	2	1	53	25
Nottingham	9	4	0	0	13	11
Oxford	40	2	3	6	51	20
Plymouth	15	3	2	0	20	24
Portsmouth	18	3	1	1	23	11
Sheffield	17	1	2	0	20	11
St George's	27	9	1	0	37	13
The Royal Free	24	3	1	4	32	13
The Royal London	37	5	1	4	47	15
WLRTC	55	3	4	2	64	15
<b>TOTAL</b>	<b>776<sup>1</sup></b>	<b>91<sup>2</sup></b>	<b>62</b>	<b>32</b>	<b>961<sup>1</sup></b>	<b>17</b>

<sup>1</sup> Includes 8 transplants performed at London Cromwell Hospital and 7 at London Bridge  
<sup>2</sup> Includes 3 domino donor transplants  
<sup>3</sup> Includes transplants for paired pooled and deceased donor transplant list patients

Non-directed, altruistic donor kidneys are matched to a suitable recipient on a national basis and thus are rarely used in the transplant centre responsible for the 'work-up' of the donor. The number of non-directed donors according to donor hospital (rather than transplant hospital) and whether the altruistic donor donated as part of a chain within the paired/ pooled scheme or directly to the deceased donor list is shown in **Table 5.10**.

<b>Table 5.10 Altruistic kidney donors in the UK, 1 April 2013 - 31 March 2015, by donor centre</b>								
Donor centre	2013-2014				2014-2015			
	Transplant list	Chain	Total	%	Transplant list	Chain	Total	%
Belfast	5	1	6	5	6	4	10	9
Birmingham	2	1	3	3	5	1	6	6
Bristol	2	1	3	3	4	0	4	4
Cambridge	6	1	7	6	3	1	4	4
Cardiff	1	2	3	3	3	1	4	4
Coventry	0	0	0	0	2	0	2	2
Edinburgh	9	1	10	8	6	3	9	8
Glasgow	3	0	3	3	4	0	4	4
Guy's	11	1	12	10	10	0	10	9
Leeds	2	2	4	3	2	2	4	4
Leicester	0	0	0	0	0	0	0	0
Liverpool	3	0	3	3	5	0	5	5
Manchester	8	5	13	11	8	0	8	7
Newcastle	1	0	1	1	4	0	4	4
Nottingham	2	0	2	2	3	0	3	3
Oxford	7	4	11	9	4	2	6	6
Plymouth	10	4	14	12	6	2	8	7
Portsmouth	10	2	12	10	7	0	7	7
Sheffield	1	1	2	2	1	0	1	1
St George's	4	1	5	4	2	0	2	2
The Royal Free	2	0	2	2	2	0	2	2
The Royal London	1	0	1	1	0	1	1	1
WLRTC	1	0	1	1	3	0	3	3
<b>Total donors</b>	<b>91</b>	<b>27</b>	<b>118</b>	<b>100</b>	<b>90</b>	<b>17</b>	<b>107</b>	<b>100</b>

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The number of deceased donor and living donor transplants in paediatric patients (<18 years) performed by each paediatric transplant centre is shown in **Table 5.11**. There were 91 living donor transplants and 48 deceased donor transplants in paediatric patients in 2014-2015. The paediatric transplant list has increased by 4% from 70 patients at 31 March 2014 to 73 at the end of March 2015.

Occasionally older paediatric patients are listed and/or transplanted at adult kidney transplant centres and these are indicated in **Table 5.11**.

<b>Table 5.11 Paediatric patient kidney transplants in the UK, 1 April 2013 - 31 March 2015, by transplant centre</b>								
<b>Paediatric transplant centre</b>	<b>2013-2014</b>				<b>2014-2015</b>			
	DBD	DCD	Living donor	<b>TOTAL</b>	DBD	DCD	Living donor	<b>TOTAL</b>
Belfast	0	0	1	<b>1</b>	1	0	1	<b>2</b>
Birmingham	6	0	3	<b>9</b>	10	1	9	<b>20</b>
Bristol	6	0	5	<b>11</b>	2	0	8	<b>10</b>
Glasgow	6	0	4	<b>10</b>	3	0	7	<b>10</b>
Great Ormond Street	7	3	17	<b>27</b>	5	2	23	<b>30</b>
Guy's	4	1	13	<b>18</b>	4	1	14	<b>19</b>
Leeds	8	0	0	<b>8</b>	10	1	3	<b>14</b>
Manchester	6	1	13	<b>20</b>	5	1	16	<b>22</b>
Newcastle	2	0	3	<b>5</b>	0	0	4	<b>4</b>
Nottingham	9	0	4	<b>13</b>	1	0	4	<b>5</b>
Adult centres	1	0	1	<b>2</b>	1	0	2	<b>3</b>
<b>TOTAL</b>	<b>55</b>	<b>5</b>	<b>64<sup>1</sup></b>	<b>124</b>	<b>42</b>	<b>6</b>	<b>91<sup>2</sup></b>	<b>139</b>

<sup>1</sup> Includes 1 non-directed donor transplant  
<sup>2</sup> Includes 2 non-directed donor transplants and 2 altruistic donor chains (as patients on transplant list at end of chain)

At 31 March 2015, there were approximately 32,700 recipients with a functioning kidney transplant (including multi-organ transplants) being followed-up as reported to the UK Transplant Registry.

Rates of pre-emptive kidney only transplantation are shown in **Table 5.12**. Of the 2,932 kidney only transplant recipients in 2014-2015, dialysis status at time of transplant was reported for 2,829 (96%). Of these 2,829 transplants, 671 (24%) were carried out in pre-dialysis patients.

Pre-emptive transplants accounted for 31% of all paediatric kidney only transplants with reported dialysis status, compared with 22% of those in adults. Living donor transplants are more likely to be carried out before the need for dialysis than deceased donor transplants: 35% and 16% respectively. This is because a living donor transplant can often be carried out more quickly than a deceased donor kidney transplant as the latter often necessitates a long waiting time.

**Table 5.12 Pre-emptive kidney only transplants in the UK, 1 April 2014 - 31 March 2015**

	Number of kidney only transplants	Number of transplants with known dialysis status at transplant (% of all)	Percentage of patients transplanted prior to the need for dialysis (of those with known status)
<b>Adult</b>			
Deceased donor transplant	1832	1799 (98.2)	16.1
Living donor transplant	961	894 (93.0)	34.4
<b>Paediatric</b>			
Deceased donor transplant	48	48 (100.0)	25.0
Living donor transplant	91	88 (96.7)	36.3

The length of time that elapses between a kidney being removed from the donor to its transplantation into the recipient is called Cold Ischaemia Time (CIT). Generally, the shorter this time, the more likely the kidney is to work immediately and the better the long-term outcome. The factors which determine CIT include a) transportation of the kidney from the retrieval hospital to the hospital where the transplant is performed, b) the need to tissue type the donor and cross-match the donor and potential recipients, c) the occasional necessity of moving the kidney to another hospital if a transplant cannot go ahead, d) contacting and preparing the recipient for the transplant and e) access to the operating theatre. Median CITs are shown in addition to inter-quartile ranges in **Table 5.13**.

**Table 5.13 Median cold ischaemia time for kidney only transplants in the UK, 1 April 2014 - 31 March 2015**

	Number of kidney only transplants <sup>1</sup>	Median (hours)	Inter-quartile range <sup>2</sup>	
			Q1	Q3
<b>Adult</b>				
DBD donor transplant	1121	14.3	11.3	18.1
DCD donor transplant	711	13.3	10.3	16.6
<b>Total</b>	<b>1832</b>	<b>14.0</b>	<b>10.9</b>	<b>17.6</b>
<b>Paediatric</b>				
DBD donor transplant	42	12.5	10.3	16.1
DCD donor transplant	6	9.6	7.3	11.3
<b>Total</b>	<b>48</b>	<b>12.3</b>	<b>9.9</b>	<b>16.1</b>
<b>TOTAL</b>	<b>1880</b>	<b>13.9</b>	<b>10.9</b>	<b>17.6</b>

<sup>1</sup> Not all cold ischaemia times are reported  
<sup>2</sup> 25% of times are shorter than Q1, 25% are longer than Q3



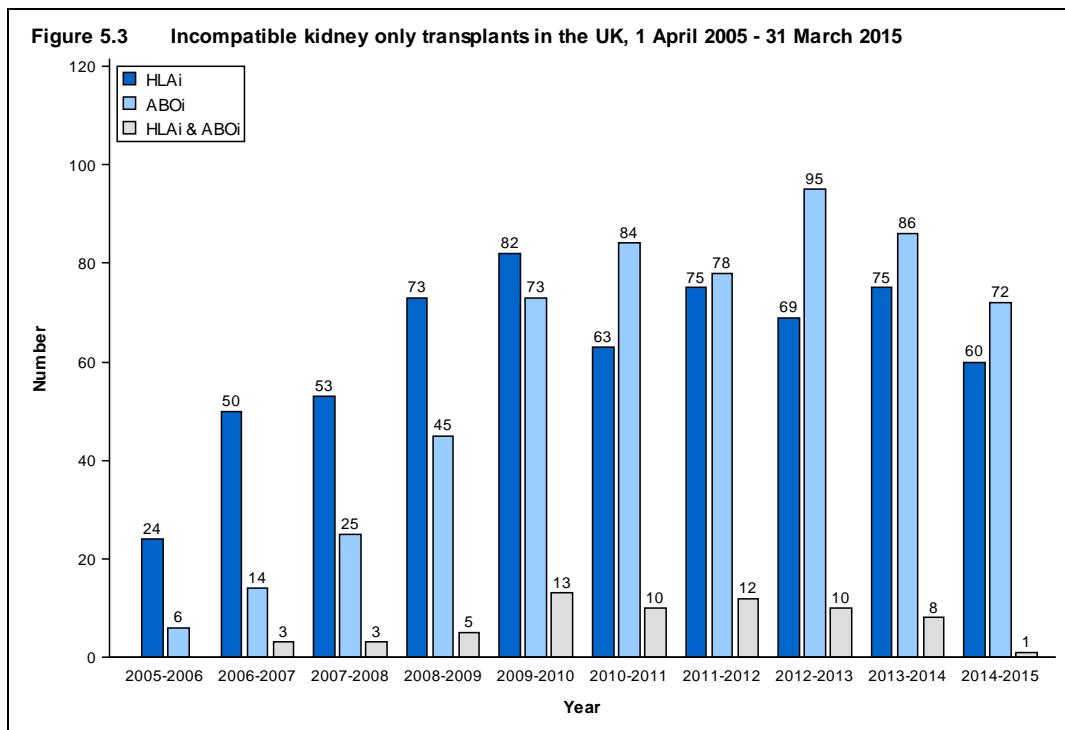
Kidneys from donors after brain death are allocated on the basis of a national Kidney Allocation Scheme which incorporates HLA matching between donor and recipient. These HLA matches are based on four levels which are described in **Table 5.14**. Patients with 000 HLA-A, B, DR mismatch (Level 1) are prioritised in the schemes, whereas kidneys are rarely transplanted as a Level 4 match. More information about the allocation scheme can be found at [www.odt.nhs.uk](http://www.odt.nhs.uk). **Table 5.15** gives the HLA mismatch group for adult and paediatric patients for DBD donor transplants but also for DCD and living donor transplants. For half of the year, DCD kidneys were allocated according to local transplant centre policies and on a local basis and consequently the levels of HLA match are inferior. For living donor transplantation, many transplants have a less good HLA match between donor and recipient. Very often there is no genetic relationship between donor and recipient.

Table 5.14 HLA mismatch groups		
Level	HLA mismatch summary	HLA mismatch combinations included
1	000	000
2	[0 DR and 0/1 B]	100, 010, 110, 200, 210
3	[0 DR and 2 B] or [1 DR and 0/1 B]	020, 120, 220, 001, 101, 201, 011, 111, 211
4	[1 DR and 2 B] or [2 DR]	021, 121, 221, 002, 102, 202, 012, 112, 212, 022, 122, 222

Table 5.15 HLA matching for kidney only transplants in the UK, 1 April 2014 - 31 March 2015,						
	DBD		DCD		Living	
	N	(%)	N	(%)	N	(%)
<b>Adult</b>						
Level 1	155	(14)	16	(2)	103	(11)
Level 2	386	(34)	184	(26)	143	(15)
Level 3	544	(49)	412	(58)	423	(44)
Level 4	36	(3)	99	(14)	277	(29)
Not reported					15	
<b>Paediatric</b>						
Level 1	3	(7)	0	(0)	9	(10)
Level 2	33	(79)	5	(83)	26	(29)
Level 3	6	(14)	0	(0)	53	(58)
Level 4	0	(0)	1	(17)	2	(2)
Not reported					1	



Often, potential living donors and their recipients are HLA or blood group incompatible. Increasingly it is possible to proceed with transplantation across the incompatibilities with appropriate management. The number of HLA and ABO blood group incompatible transplants over the last ten years is shown in **Figure 5.3**. Of the 624 HLA incompatible (HLAi) transplants performed; 176 used kidneys from deceased donors and 448 used living donor kidneys whilst the vast majority of ABO incompatible (ABOi) transplants used living donor kidneys (573 of 578). Due to the nature of reporting HLA incompatible transplants the numbers presented may be subject to change over time.



## 5.5 Demographic characteristics

The age group, sex, ethnicity and blood group of deceased donors, transplant recipients and patients on the transplant list is shown in **Table 5.16** and living donors and transplants in **Table 5.17**. Note that all percentages quoted are based only on data where relevant information was available. Changes made to the Kidney Allocation Scheme in 2006 mean that tissue matching criteria between donor and recipient are less strict than previously and waiting time to transplant is now more important than it was in deciding kidney allocation. These changes have an indirect benefit for patients from ethnic minority groups, who are less often a good tissue match with the predominantly white donor pool. As a result, access to transplantation is becoming more equitable.

<b>Table 5.16 Demographic characteristics of deceased kidney donors and transplant recipients, 1 April 2014 - 31 March 2015, and transplant list patients at 31 March</b>						
	<b>Donors</b>		<b>Transplant recipients</b>		<b>Active transplant list patients</b>	
	<b>N</b>	<b>(%)</b>	<b>N</b>	<b>(%)</b>	<b>N</b>	<b>(%)</b>
<b>Age group (years)</b>						
0 - 17	48	(4)	50	(2)	73	(1)
18 - 34	186	(15)	293	(14)	624	(11)
35 - 49	285	(24)	623	(30)	1608	(28)
50 - 59	306	(25)	528	(26)	1592	(28)
60 - 69	254	(21)	431	(21)	1301	(23)
70+	125	(10)	144	(7)	488	(9)
mean (SD)	50	(17)	49	(15)	52	(14)
<b>Sex</b>						
Male	656	(54)	1248	(60)	3373	(59)
Female	548	(46)	818	(40)	2311	(41)
Not reported			3	(0)	2	(0)
<b>Ethnicity</b>						
White	1130	(94)	1497	(72)	3785	(67)
Asian	29	(2)	328	(16)	990	(17)
Black	19	(2)	161	(8)	631	(11)
Chinese	3	(0)	33	(2)	81	(1)
Other	23	(2)	31	(1)	95	(2)
Not reported			19	(1)	104	(2)
<b>Blood group</b>						
O	568	(47)	921	(45)	2980	(52)
A	466	(39)	757	(37)	1656	(29)
B	123	(10)	261	(13)	910	(16)
AB	47	(4)	130	(6)	140	(2)
<b>Graft number</b>						
First graft			1781	(86)	4360	(77)
Re-graft			287	(14)	1326	(23)
Not reported			1	(0)		
<b>TOTAL</b>	<b>1204</b>	<b>(100)</b>	<b>2069</b>	<b>(100)</b>	<b>5686</b>	<b>(100)</b>

**Table 5.17 Demographic characteristics of living kidney donors and transplant recipients, 1 April 2014 - 31 March 2015**

	Donors		Transplant recipients	
	N	(%)	N	(%)
<b>Age group (years)</b>				
0 - 17	0	(0)	91	(9)
18 - 34	201	(19)	219	(21)
35 - 49	384	(37)	342	(33)
50 - 59	262	(25)	230	(22)
60 - 69	169	(16)	131	(12)
70+	34	(3)	39	(4)
Not reported	2	(0)		
mean (SD)	47	(13)	43	(17)
<b>Sex</b>				
Male	494	(47)	627	(60)
Female	557	(53)	422	(40)
Not reported	1	(0)	3	(0)
<b>Ethnicity</b>				
White	901	(86)	858	(82)
Asian	70	(7)	92	(9)
Black	37	(4)	42	(4)
Chinese	6	(1)	4	(0)
Other	27	(3)	33	(3)
Not reported	11	(1)	23	(2)
<b>Blood group</b>				
O	582	(55)	470	(45)
A	339	(32)	411	(39)
B	106	(10)	142	(13)
AB	15	(1)	29	(3)
Not reported	10	(1)		
<b>Graft number</b>				
First graft			909	(86)
Re-graft			143	(14)
<b>TOTAL</b>	<b>1052</b>	<b>(100)</b>	<b>1052</b>	<b>(100)</b>