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## 3 ORGAN DONATION ACTIVITY

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### Key messages

- There has been a 5% increase in deceased donors (to 1,010) and a 2% fall in living organ donors (to 1,045)
- The number of donors after brain death increased by 2% and there was an 11% increase in donors after circulatory death
- Donors after circulatory death provide, on average, one less organ for transplantation than donors after brain death
- Donor characteristics are changing: donors are older, more obese, and less likely to have suffered a trauma-related death, all of which have adverse effects on transplant outcomes

### 3.1 Summary of activity

There was a 5% increase in the number of deceased organ donors in 2010-2011. This was a result of 2% more donors after brain death (DBD) and 11% more donors after circulatory death (DCD). The 1,010 deceased organ donors gave 3,495 organs compared with 959 donors and 3,361 organs in 2009-2010. This represents a 4% increase in organs donated. This is lower than the increase in the number of donors because fewer organs can be used from donors after circulatory death, which is where the greatest increase was seen. In particular DCD cannot provide hearts for transplant. **Table 3.1** shows deceased organ donors according to the organs they donated. On average in the UK, 3.9 organs were retrieved per DBD and 2.5 per DCD in 2010-2011.

Nearly all deceased donors (95%) gave a kidney and of these the majority (74%) also donated at least one other organ. Only 12% of donors after brain death were single organ donors, the majority of which were kidney only donors. By contrast, 57% of donors after circulatory death were single organ donors, the majority (92%) of these donating just their kidneys.

Although the vast majority of living organ donors donated a kidney, 25 donors donated part of their liver. All living organ donations are approved by the Human Tissue Authority.

**Table 3.1 Solid organ donors in the UK, 1 April 2010 - 31 March 2011, by organ types donated**

	DBD	DCD	Living donor	TOTAL
Kidney only	51	196	1020	1267
Kidney & thoracic	7	8	-	15
Kidney & liver	168	79	-	247
Kidney & pancreas	6	17	-	23
Kidney, thoracic & liver	46	3	-	49
Kidney, thoracic & pancreas	5	7	-	12
Kidney, liver & pancreas	153	38	-	191
Kidney, thoracic, liver & pancreas	166	7	-	173
Thoracic only	1	-	-	1
Thoracic & liver	2	1	-	3
Liver only	26	16	25	67
Liver & pancreas	6	1	-	7
<b>TOTAL</b>	<b>637</b>	<b>373</b>	<b>1045</b>	<b>2055</b>

### 3.2 Organ donors

Organ donor rates per million population (pmp) for 2010-2011 are given by country and Strategic Health Authority according to where the donor lived in **Table 3.2a** while the number of deceased donors are shown based on the location of the hospital in which they died in **Table 3.2b**. **Appendix 1** shows a more detailed breakdown of the donating hospitals.

**Table 3.2a Organ donor rates per million population (pmp), in the UK, 1 April 2010 - 31 March 2011, by country and English Strategic Health Authority of donor residence<sup>1</sup>**

Country/ Strategic Health Authority of residence	DBD		DCD		TOTAL		Living	
	N	(pmp)	N	(pmp)	N	(pmp)	N	(pmp)
North East	33	(12.8)	22	(8.5)	55	(21.3)	36	(14.0)
North West	52	(7.5)	40	(5.8)	92	(13.3)	105	(15.2)
Yorkshire and The Humber	49	(9.3)	35	(6.7)	84	(16.0)	61	(11.6)
East Midlands	37	(8.3)	23	(5.2)	60	(13.5)	85	(19.1)
West Midlands	50	(9.2)	37	(6.8)	87	(16.0)	90	(16.6)
East of England	57	(9.9)	45	(7.8)	102	(17.7)	100	(17.3)
London	66	(8.5)	28	(3.6)	94	(12.1)	170	(21.9)
South East Coast	55	(12.7)	24	(5.5)	79	(18.2)	75	(17.3)
South Central	50	(12.2)	21	(5.1)	71	(17.3)	80	(19.5)
South West	45	(8.6)	49	(9.4)	94	(18.0)	75	(14.3)
<b>England</b>	<b>494</b>	<b>(9.5)</b>	<b>324</b>	<b>(6.3)</b>	<b>818</b>	<b>(15.8)</b>	<b>877</b>	<b>(16.9)</b>
<b>Isle of Man</b>	<b>1</b>	<b>(12.5)</b>	<b>0</b>	<b>(0.0)</b>	<b>1</b>	<b>(12.5)</b>	<b>3</b>	<b>(37.5)</b>
<b>Channel Islands</b>	<b>2</b>	<b>(13.3)</b>	<b>0</b>	<b>(0.0)</b>	<b>2</b>	<b>(13.3)</b>	<b>11</b>	<b>(73.3)</b>
<b>Wales</b>	<b>53</b>	<b>(17.7)</b>	<b>30</b>	<b>(10.0)</b>	<b>83</b>	<b>(27.7)</b>	<b>44</b>	<b>(14.7)</b>
<b>Scotland</b>	<b>49</b>	<b>(9.4)</b>	<b>17</b>	<b>(3.3)</b>	<b>66</b>	<b>(12.7)</b>	<b>59</b>	<b>(11.4)</b>
<b>Northern Ireland</b>	<b>38</b>	<b>(21.2)</b>	<b>2</b>	<b>(1.1)</b>	<b>40</b>	<b>(22.3)</b>	<b>51</b>	<b>(28.5)</b>
<b>TOTAL</b>	<b>637</b>	<b>(10.3)</b>	<b>373</b>	<b>(6.0)</b>	<b>1010</b>	<b>(16.3)</b>	<b>1045</b>	<b>(16.8)</b>

<sup>1</sup> Includes 29 donors (11 deceased, 18 living) where the hospital postcode was used where postcode of donor residence was not known

**Table 3.2a** shows variation in the number of DBD and DCD pmp across the UK. There are 10.3 DBD pmp for the UK as a whole, but across the English Strategic Health Authorities (SHA) this ranges between 7.5 and 12.8 pmp. However, the number of potential donors pmp also varies and further information can be seen in Chapter 13. It should be noted that these figures are not directly comparable, however, due to exclusions from the Potential Donor Audit. For DCD the UK rate is 6.0 pmp, ranging from 0.0 to 10.0 pmp across countries of the UK and from 3.6 to 9.4 pmp in the English SHAs. No adjustment has been made for any differences in demographics of the populations across centres or SHAs.

<b>Country of donation/ Strategic Health Authority</b>	<b>DBD N</b>	<b>DCD N</b>	<b>TOTAL N</b>
North East	35	25	60
North West	66	39	105
Yorkshire and The Humber	45	34	79
East Midlands	31	16	47
West Midlands	55	35	90
East of England	49	46	95
London	107	42	149
South East Coast	36	18	54
South Central	47	20	67
South West	38	51	89
<b>England</b>	<b>509</b>	<b>326</b>	<b>835</b>
<b>Isle of Man</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Channel Islands</b>	<b>2</b>	<b>0</b>	<b>2</b>
<b>Wales</b>	<b>39</b>	<b>27</b>	<b>66</b>
<b>Scotland</b>	<b>49</b>	<b>18</b>	<b>67</b>
<b>Northern Ireland</b>	<b>38</b>	<b>2</b>	<b>40</b>
<b>TOTAL</b>	<b>637</b>	<b>373</b>	<b>1010</b>

The mean number of organs retrieved per donor in 2010-2011 is given by country in **Table 3.3**. Overall for adult donors, an average of 3.9 organs were donated per DBD and 2.5 per DCD. For adult DBD, the rate ranged from 3.4 organs per donor in Wales to 4.2 in Scotland.

<b>Country/ Strategic Health Authority of residence</b>	<b>Mean organs retrieved</b>					
	<b>DBD</b>	<b>Adult DCD</b>	<b>TOTAL</b>	<b>DBD</b>	<b>Paediatric DCD</b>	<b>TOTAL</b>
England	3.9	2.5	<b>3.4</b>	4.2	3.3	<b>3.9</b>
Wales	3.4	2.6	<b>3.1</b>	3.0	-	<b>3.0</b>
Scotland	4.2	2.7	<b>3.8</b>	4.6	3.0	<b>4.3</b>
Northern Ireland	4.1	4.0	<b>4.1</b>	5.5	-	<b>5.5</b>
<b>TOTAL</b>	<b>3.9</b>	<b>2.5</b>	<b>3.4</b>	<b>4.4</b>	<b>3.3</b>	<b>4.1</b>

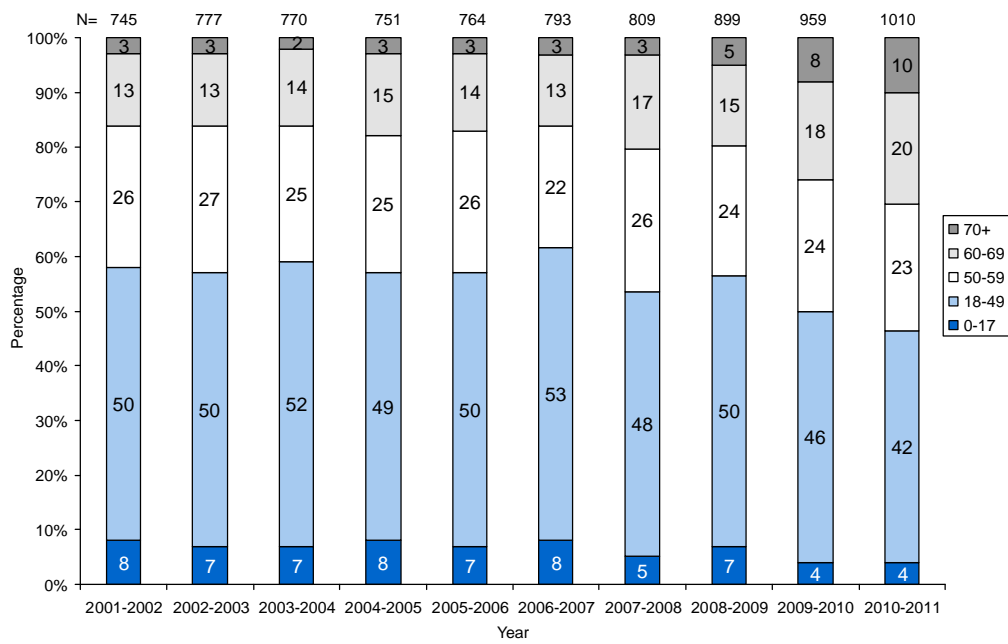
### 3.3 Demographic characteristics

While the number of donors overall is increasing, it is important to be aware that there are changes over time with regard to donor characteristics (**Table 3.4**). In 2010-2011, 30% of deceased donors were aged at least 60 years or more compared with 16% in 2001-2002 (**Figure 3.1**). In particular the proportion of these donors aged at least 70 years has increased from 3% to 10% over the same time period. The trend is similar for both DBD and DCD. The proportion of clinically obese donors (Body Mass Index (BMI) of 30 or higher) has increased from 12% to 20% in deceased donors in the last 10 years (**Figure 3.2**) and the trend is similar for both DBD and DCD. In addition, the proportion of all deceased donors after a trauma death has decreased from 18% to 7% over the same time period. All of these changes may have an adverse impact on the quality of the organs and the subsequent transplant outcome for the recipient.

**Table 3.4** also indicates the ethnicity of deceased organ donors, highlighting that 4% of donors are from ethnic minority groups. By contrast, ethnic minority groups represent 8% of the UK population.

		DBD		DCD		TOTAL	
		N	%	N	%	N	%
Age	0-17	31	5	13	3	44	4
	18-49	301	47	124	33	425	42
	50-59	150	24	87	23	237	23
	60-69	111	17	94	25	205	20
	70+	44	7	55	15	99	10
BMI	0-19	49	8	20	5	69	7
	20-29	467	73	256	69	723	72
	30+	119	19	84	23	203	20
	Unknown	2	0	13	3	15	1
Cause of death	Intracranial	546	86	276	74	822	81
	Trauma	39	6	33	9	72	7
	Other	52	8	64	17	116	11
Ethnicity	White	608	95	360	97	968	96
	Asian	8	1	5	1	13	1
	Black	7	1	2	1	9	1
	Other	14	2	6	2	20	2
Blood group	O	271	43	186	50	457	45
	A	275	43	143	38	418	41
	B	66	10	31	8	97	10
	AB	25	4	13	3	38	4
<b>TOTAL</b>		<b>637</b>	<b>100</b>	<b>373</b>	<b>100</b>	<b>1010</b>	<b>100</b>

**Figure 3.1 Age of deceased donors in the UK, 1 April 2001 - 31 March 2011**



**Figure 3.2 BMI of deceased donors in the UK, 1 April 2001 - 31 March 2011**

