

# Organ Donation Activity

## Key messages

- There has been a 11% increase in deceased donors (to 1,574) and a <1% increase in living organ donors (to 1,051) compared with last year
- There has been an increase in donors after brain death of 15% to 955 and an increase of 6% in donors after circulatory death to 619, compared with last year
- Donors after brain death provide, on average, one more organ for transplantation than donors after circulatory death
- Donor characteristics are continuing to change: 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 an 11% increase in the number of deceased organ donors in 2017-2018 (1,574), 50 more than the target of 1,524 donors set for the year. There was an increase in donors after brain death (DBD) of 15% and a more modest increase of 6% in donors after circulatory death (DCD).

The 1,574 deceased organ donors gave 5,269 organs compared with 1,413 donors and 4,730 organs in 2016-2017. This represents an 11% increase in organs donated. **Table 3.1** shows deceased organ donors according to the organs they donated.

Nearly all deceased donors (94%) gave a kidney and of these the majority (76%) also donated at least one other organ. Only 15% of donors after brain death were single organ donors, with equal proportions being liver only and kidney only donors. By contrast, 49% of donors after circulatory death were single organ donors, the majority (93%) of these donating just their kidneys.

Although the vast majority of living organ donors donated a kidney, 30 donated part of their liver, and 1 donated part of their small bowel and liver. All living donations are approved by the Human Tissue Authority.

| <b>Table 3.1 Solid organ donors in the UK, 1 April 2017 - 31 March 2018, by organ types donated</b> |            |            |              |             |
|---|------------|------------|--------------|-------------|
|   | DBD        | DCD        | Living donor | TOTAL       |
| Kidney only   | 76         | 284        | 1020         | <b>1365</b> |
| Kidney & thoracic   | 13         | 11         | -            | <b>24</b>   |
| Kidney & liver  | 340        | 170        | -            | <b>510</b>  |
| Kidney & pancreas   | 6          | 18         | -            | <b>24</b>   |
| Kidney, thoracic & liver  | 94         | 11         | -            | <b>105</b>  |
| Kidney, thoracic & pancreas   | 4          | 4          | -            | <b>8</b>    |
| Kidney, liver & pancreas  | 159        | 62         | -            | <b>221</b>  |
| Kidney, liver, pancreas & bowel   | 11         | -          | -            | <b>11</b>   |
| Kidney, thoracic, liver & pancreas  | 167        | 36         | -            | <b>203</b>  |
| Kidney, thoracic, liver, pancreas & bowel   | 14         | -          | -            | <b>14</b>   |
| Thoracic only   | 6          | 3          | -            | <b>9</b>    |
| Thoracic & liver  | 5          | 1          | -            | <b>6</b>    |
| Thoracic, liver & pancreas  | 1          | -          | -            | <b>1</b>    |
| Liver only  | 57         | 19         | 30           | <b>106</b>  |
| Liver & pancreas  | 2          | -          | -            | <b>2</b>    |
| Liver & bowel   | -          | -          | 1            | <b>1</b>    |
| <b>TOTAL</b>  | <b>955</b> | <b>619</b> | <b>1051</b>  | <b>2610</b> |

Bowel may include abdominal wall/colon/stomach/spleen

## 3.2 Organ donors

Organ donor rates per million population (pmp) for 2017-2018 are given by country and former Strategic Health Authority according to where the donor lived in **Table 3.2**, while the number of deceased donors are shown based on location of the hospital in which they died in **Table 3.3**. **Table 3.4** shows the number of deceased donors by Organ Donation Services Team. **Appendix I** shows a more detailed breakdown of the number of donors from the donating hospitals and **Appendix III** details the populations used. Number and rates of utilised donors are given in Chapter 4.

| <b>Table 3.2 Organ donation rates per million population (pmp), in the UK, 1 April 2017 - 31 March 2018, by country/ Strategic Health Authority of donor residence<sup>1</sup></b> |            |               |            |               |             |               |             |               |
|--|------------|---------------|------------|---------------|-------------|---------------|-------------|---------------|
| <b>Country of donation/<br/>Strategic Health Authority</b>   | DBD        |               | DCD        |               | TOTAL       |               | Living      |               |
|  | N          | (pmp)         | N          | (pmp)         | N           | (pmp)         | N           | (pmp)         |
| North East   | 38         | (14.4)        | 25         | (9.5)         | 63          | (23.9)        | 68          | (25.8)        |
| North West   | 143        | (19.8)        | 81         | (11.2)        | 224         | (31.0)        | 119         | (16.5)        |
| Yorkshire and The Humber   | 66         | (12.2)        | 64         | (11.8)        | 130         | (23.9)        | 73          | (13.4)        |
| <b>North of England</b>  | <b>247</b> | <b>(16.2)</b> | <b>170</b> | <b>(11.1)</b> | <b>417</b>  | <b>(27.3)</b> | <b>260</b>  | <b>(17.0)</b> |
| East Midlands  | 48         | (10.2)        | 44         | (9.3)         | 92          | (19.5)        | 48          | (10.2)        |
| West Midlands  | 64         | (11.0)        | 54         | (9.3)         | 118         | (20.3)        | 88          | (15.2)        |
| East of England  | 103        | (16.8)        | 91         | (14.8)        | 194         | (31.6)        | 75          | (12.2)        |
| <b>Midlands and East</b>   | <b>215</b> | <b>(12.9)</b> | <b>189</b> | <b>(11.4)</b> | <b>404</b>  | <b>(24.3)</b> | <b>211</b>  | <b>(12.7)</b> |
| <b>London</b>  | <b>150</b> | <b>(17.1)</b> | <b>40</b>  | <b>(4.6)</b>  | <b>190</b>  | <b>(21.6)</b> | <b>165</b>  | <b>(18.8)</b> |
| South East Coast   | 78         | (16.7)        | 46         | (9.9)         | 124         | (26.6)        | 66          | (14.2)        |
| South Central  | 58         | (13.3)        | 38         | (8.7)         | 96          | (22.1)        | 60          | (13.8)        |
| South West   | 71         | (12.9)        | 47         | (8.5)         | 118         | (21.4)        | 87          | (15.8)        |
| <b>South of England</b>  | <b>207</b> | <b>(14.2)</b> | <b>131</b> | <b>(9.0)</b>  | <b>338</b>  | <b>(23.3)</b> | <b>213</b>  | <b>(14.7)</b> |
| <b>England</b>   | <b>819</b> | <b>(14.8)</b> | <b>530</b> | <b>(9.6)</b>  | <b>1349</b> | <b>(24.4)</b> | <b>849</b>  | <b>(15.4)</b> |
| Isle of Man  | 0          | (0.0)         | 1          | (12.5)        | 1           | (12.5)        | 0           | (0.0)         |
| Channel Islands  | 2          | (12.5)        | 0          | (0.0)         | 2           | (12.5)        | 2           | (12.5)        |
| <b>Wales</b>   | <b>49</b>  | <b>(15.8)</b> | <b>30</b>  | <b>(9.6)</b>  | <b>79</b>   | <b>(25.4)</b> | <b>40</b>   | <b>(12.9)</b> |
| <b>Scotland</b>  | <b>61</b>  | <b>(11.3)</b> | <b>43</b>  | <b>(8.0)</b>  | <b>104</b>  | <b>(19.3)</b> | <b>90</b>   | <b>(16.7)</b> |
| <b>Northern Ireland</b>  | <b>24</b>  | <b>(12.9)</b> | <b>15</b>  | <b>(8.1)</b>  | <b>39</b>   | <b>(21.0)</b> | <b>70</b>   | <b>(37.6)</b> |
| <b>TOTAL</b>   | <b>955</b> | <b>(14.5)</b> | <b>619</b> | <b>(9.4)</b>  | <b>1574</b> | <b>(23.9)</b> | <b>1051</b> | <b>(16.0)</b> |

<sup>1</sup> Includes 169 donors (31 deceased, 138 living) where the hospital postcode was used in place of an unknown donor postcode

**Table 3.2** shows variation in the number of DBD and DCD donors pmp across the UK. There were 14.5 DBD donors pmp for the UK as a whole, but across the former English Strategic Health Authorities (SHA) this ranged between 10.2 and 19.8 pmp. Across the four countries of the UK, Wales had the highest rate of 15.8 pmp. However, the number of eligible donors pmp also varies and further information can be seen in Chapter 13. It should be noted that these figures are not directly comparable, since not all donors are reported in the Potential Donor Audit. For DCD donors the UK rate is 9.4 pmp, ranging from 8.0 to 9.6 pmp across countries of the UK and from 4.6 to 14.8 pmp in the former English SHAs. No adjustment has been made for any differences in demographics of the populations across countries or SHAs.

| <b>Table 3.3 Deceased organ donors in the UK, 1 April 2017 - 31 March 2018, by country/ Strategic Health Authority of hospital of donor death</b> |                  |                  |                    |
|---|------------------|------------------|--------------------|
| <b>Country of donation/<br/>Strategic Health Authority</b>  | <b>DBD<br/>N</b> | <b>DCD<br/>N</b> | <b>TOTAL<br/>N</b> |
| North East  | 44               | 29               | 73                 |
| North West  | 142              | 76               | 218                |
| Yorkshire and The Humber  | 67               | 67               | 134                |
| <b>North of England</b>   | <b>253</b>       | <b>172</b>       | <b>425</b>         |
| East Midlands   | 33               | 38               | 71                 |
| West Midlands   | 67               | 58               | 125                |
| East of England   | 84               | 78               | 162                |
| <b>Midlands and East</b>  | <b>184</b>       | <b>174</b>       | <b>358</b>         |
| <b>London</b>   | <b>201</b>       | <b>67</b>        | <b>268</b>         |
| South East Coast  | 55               | 31               | 86                 |
| South Central   | 56               | 44               | 100                |
| South West  | 72               | 46               | 118                |
| <b>South of England</b>   | <b>183</b>       | <b>121</b>       | <b>304</b>         |
| <b>England</b>  | <b>821</b>       | <b>534</b>       | <b>1355</b>        |
| <b>Isle of Man</b>  | <b>0</b>         | <b>0</b>         | <b>0</b>           |
| <b>Channel Islands</b>  | <b>3</b>         | <b>0</b>         | <b>3</b>           |
| <b>Wales</b>  | <b>45</b>        | <b>29</b>        | <b>74</b>          |
| <b>Scotland</b>   | <b>61</b>        | <b>41</b>        | <b>102</b>         |
| <b>Northern Ireland</b>   | <b>25</b>        | <b>15</b>        | <b>40</b>          |
| <b>TOTAL</b>  | <b>955</b>       | <b>619</b>       | <b>1574</b>        |

| <b>Table 3.4 Deceased organ donors in the UK, 1 April 2017 - 31 March 2018 by Organ Donation Services Team</b> |                  |                  |                    |
|--|------------------|------------------|--------------------|
| <b>Team</b>  | <b>DBD<br/>N</b> | <b>DCD<br/>N</b> | <b>TOTAL<br/>N</b> |
| Eastern  | 99               | 87               | 186                |
| London   | 148              | 46               | 194                |
| Midlands   | 88               | 86               | 174                |
| North West   | 149              | 78               | 227                |
| Northern   | 47               | 30               | 77                 |
| Northern Ireland   | 25               | 15               | 40                 |
| Scotland   | 61               | 41               | 102                |
| South Central  | 65               | 51               | 116                |
| South East   | 99               | 46               | 145                |
| South Wales  | 36               | 26               | 62                 |
| South West   | 65               | 42               | 107                |
| Yorkshire  | 73               | 71               | 144                |
| <b>TOTAL</b>   | <b>955</b>       | <b>619</b>       | <b>1574</b>        |

The mean number of organs retrieved per donor in 2017-2018 is given by country in **Table 3.5**. Overall, an average of 3.7 organs were donated per DBD donor and 2.8 per DCD donor. For DBD donors, the rate ranged from 3.6 organs per donor in Wales to 4.0 in Scotland.

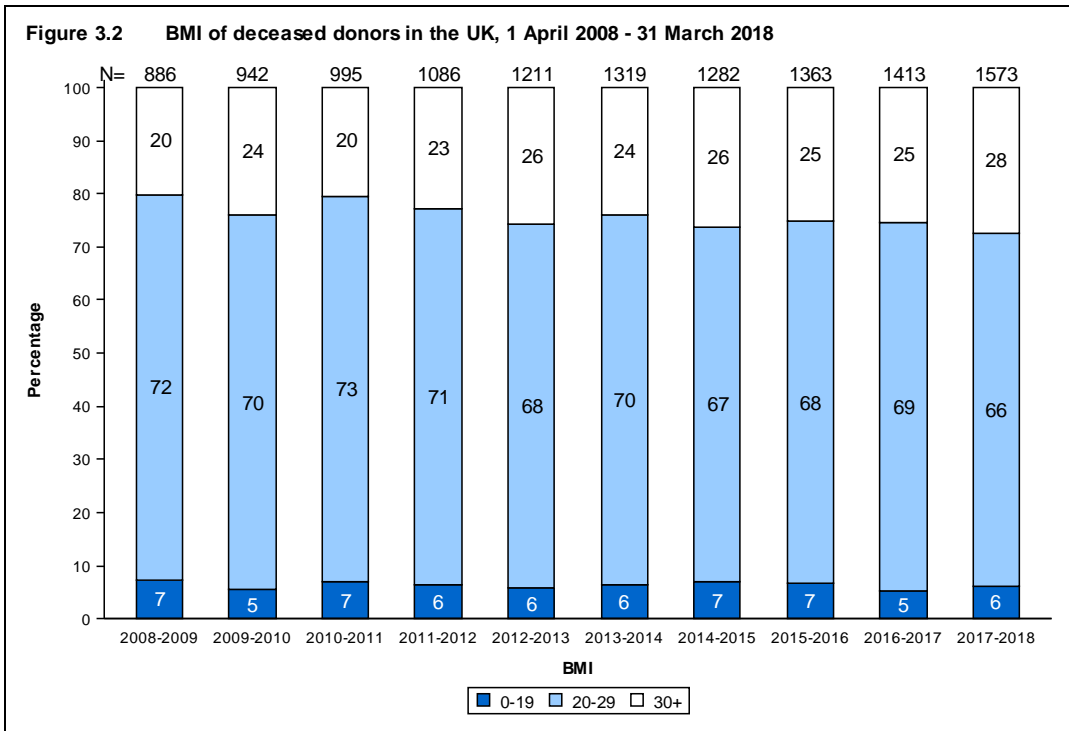
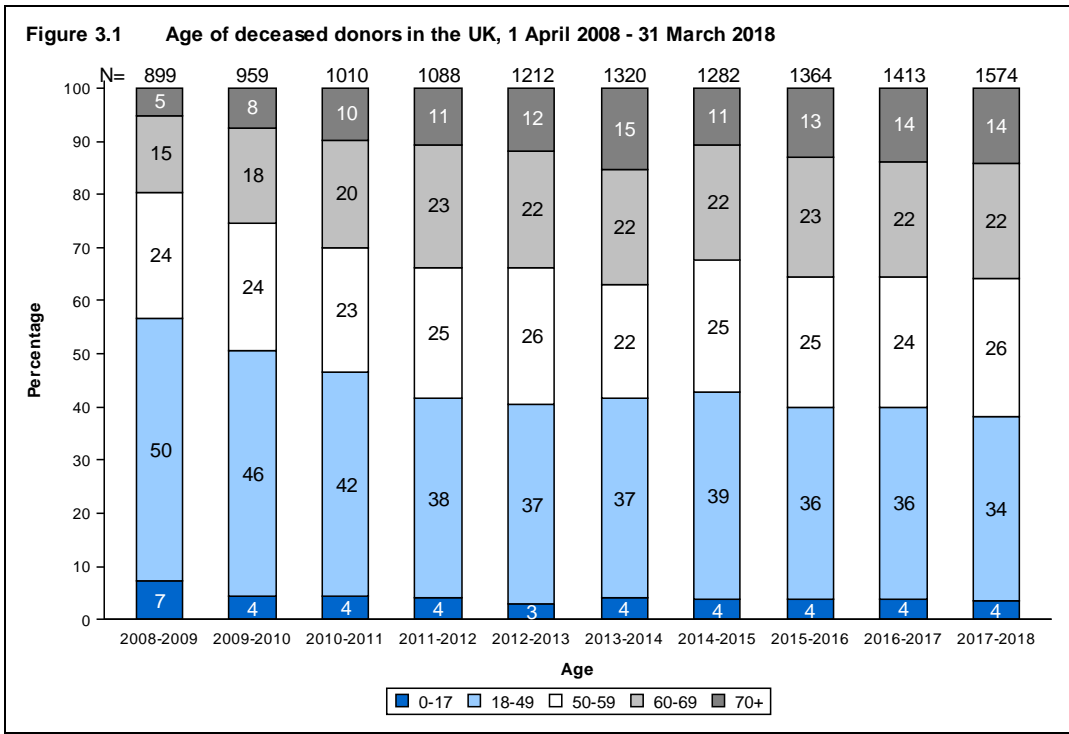
| <b>Table 3.5 Organs retrieved per donor, in the UK, 1 April 2017 - 31 March 2018, by country of donor residence</b> |              |            |              |                   |            |              |            |            |              |
|---|--------------|------------|--------------|-------------------|------------|--------------|------------|------------|--------------|
| <b>Country</b>  | <b>Adult</b> |            |              | <b>Paediatric</b> |            |              | <b>All</b> |            |              |
|   | <b>DBD</b>   | <b>DCD</b> | <b>TOTAL</b> | <b>DBD</b>        | <b>DCD</b> | <b>TOTAL</b> | <b>DBD</b> | <b>DCD</b> | <b>TOTAL</b> |
| England   | 3.7          | 2.8        | <b>3.3</b>   | 4.6               | 3.2        | <b>4.1</b>   | 3.7        | 2.8        | <b>3.3</b>   |
| Wales   | 3.6          | 2.7        | <b>3.2</b>   | -                 | 4.0        | <b>4.0</b>   | 3.6        | 2.7        | <b>3.2</b>   |
| Scotland  | 4.1          | 2.3        | <b>3.3</b>   | 3.0               | 2.0        | <b>2.7</b>   | 4.0        | 2.3        | <b>3.3</b>   |
| Northern Ireland  | 3.7          | 2.6        | <b>3.3</b>   | 5.0               | -          | <b>5.0</b>   | 3.8        | 2.6        | <b>3.3</b>   |
| <b>TOTAL</b>  | <b>3.7</b>   | <b>2.7</b> | <b>3.3</b>   | <b>4.5</b>        | <b>3.2</b> | <b>4.0</b>   | <b>3.7</b> | <b>2.8</b> | <b>3.3</b>   |

### 3.3 Demographic characteristics

While the number of donors overall has increased over the last 10 years, it is important to be aware that there have been changes over time with regard to donor characteristics (**Table 3.6**). In 2017-2018, 36% of deceased donors were aged 60 years or more compared with 20% in 2008-2009 (**Figure 3.1**). In particular the proportion of donors aged at least 70 years has increased from 5% to 14% over the same time period. The proportion of clinically obese donors (Body Mass Index (BMI) of 30 or higher) has increased from 20% to 28% in deceased donors in the last 10 years (**Figure 3.2**). In addition, the proportion of all deceased donors after a trauma death has decreased from 13% to 3% over the same time period. All of these changes may have an adverse impact on the quality and utilisation of the organs, and the subsequent transplant outcome for the recipient.

**Table 3.6** also indicates the ethnicity of deceased organ donors, highlighting that 7% of donors are from ethnic minority groups. By contrast, ethnic minority groups represent 11% of the UK population.

|                |              | DBD        |            | DCD        |            | TOTAL       |            |
|----------------|--------------|------------|------------|------------|------------|-------------|------------|
|                |              | N          | %          | N          | %          | N           | %          |
| Age            | 0-17         | 36         | 4          | 21         | 3          | 57          | 4          |
|                | 18-49        | 358        | 37         | 184        | 30         | 542         | 34         |
|                | 50-59        | 246        | 26         | 165        | 27         | 411         | 26         |
|                | 60-69        | 183        | 19         | 156        | 25         | 339         | 22         |
|                | 70+          | 132        | 14         | 93         | 15         | 225         | 14         |
|                | Mean (SD)    | 51         | 17         | 53         | 16         | 52          | 17         |
| BMI            | 0-19         | 55         | 6          | 42         | 7          | 97          | 6          |
|                | 20-29        | 639        | 67         | 404        | 65         | 1043        | 66         |
|                | 30+          | 260        | 27         | 173        | 28         | 433         | 28         |
|                | Unknown      | 1          | -          | 0          | -          | 1           | -          |
|                | Mean (SD)    | 27         | 5          | 27         | 6          | 27          | 6          |
| Cause of death | Intracranial | 830        | 87         | 489        | 79         | 1319        | 84         |
|                | Trauma       | 31         | 3          | 23         | 4          | 54          | 3          |
|                | Other        | 94         | 10         | 107        | 17         | 201         | 13         |
| Ethnicity      | White        | 862        | 91         | 579        | 95         | 1441        | 93         |
|                | Asian        | 25         | 3          | 12         | 2          | 37          | 2          |
|                | Black        | 22         | 2          | 3          | 0          | 25          | 2          |
|                | Other        | 36         | 4          | 16         | 3          | 52          | 3          |
|                | Unknown      | 10         | -          | 9          | -          | 19          | -          |
| Blood group    | O            | 479        | 50         | 286        | 46         | 765         | 49         |
|                | A            | 349        | 37         | 261        | 42         | 610         | 39         |
|                | B            | 97         | 10         | 50         | 8          | 147         | 9          |
|                | AB           | 30         | 3          | 22         | 4          | 52          | 3          |
| Donor gender   | Male         | 506        | 53         | 387        | 63         | 893         | 57         |
|                | Female       | 449        | 47         | 232        | 37         | 681         | 43         |
| <b>TOTAL</b>   |              | <b>955</b> | <b>100</b> | <b>619</b> | <b>100</b> | <b>1574</b> | <b>100</b> |



Note that BMI cannot be determined for all deceased donors thus numbers indicated in **Figure 3.2** are the numbers of donors for which BMI was available, not total number of donors.