Preface
This report has been produced by Statistics and Clinical Studies, NHS Blood and Transplant.

All figures quoted in this report are as reported to NHS Blood and Transplant by 15 May 2014 for the UK Transplant Registry, maintained on behalf of the transplant community and National Health Service (NHS), or for the NHS Organ Donor Register, maintained on behalf of the UK Health Departments.

Former Strategic Health Authorities have been used throughout the report for convenience in comparisons with the previous year's figures.

The information provided in the tables and figures given in Chapters 2-10 does not always distinguish between adult and paediatric transplantation. For the most part, the data also do not distinguish between patients entitled to NHS treatment (Group 1 patients) and those who are not (Group 2 patients). It should also be noted that not all cornea donors or cornea grafts are necessarily reported to NHS Blood and Transplant.

The UK definition of an organ donor is any donor from whom at least one organ has been retrieved with the intention to transplant. Organs retrieved solely for research purposes have not been counted in this Activity Report. Organ donation has been recorded to reflect the number of organs retrieved. For example, if both lungs were retrieved, two lungs are recorded even if they were both used in one transplant. Similarly, if one liver is donated, one liver is recorded even if it results in two or more transplants.

The number of donors after brain death (DBD) and donors after circulatory death (DCD) by hospital are documented in Appendices I. Donation and transplant rates in this report are presented per million population (pmp): population figures used throughout this report are mid-2012 estimates based on ONS 2011 Census figures and are given in Appendix III.

All charts presented in this report are available as an accompanying slide set available from http://www.odt.nhs.uk.

**Acknowledgement**

NHS Blood and Transplant would like to thank all those in the donation and transplantation communities responsible for providing data to the UK Transplant Registry and the Potential Donor Audit, without whom this report would not be possible. Thanks also go to NHS Blood and Transplant staff responsible for data entry and accuracy and completeness of the data.
We are delighted to be introducing the Organ Donation and Transplantation Activity Report for 2013-14 on behalf of the Intensive Care Society and the British Transplantation Society.

More lives were saved or transformed through an organ transplant than ever before last year, thanks to 1,320 deceased donors and 1,146 living organ donors. In fact, 10% more people received a transplant than in the previous year. There was notably a marked increase in the number of patients benefitting from a cardiothoracic organ transplant (24%).

The deceased organ donor rate per million population in the UK is now 20.6. However, we have a long way still to go if we are to achieve the ambition set out in the UK strategy, Taking Organ Transplantation to 2020, to match the best countries in the world for deceased organ donation.

Living kidney and liver donors continue to play a vital role in transplantation. We have once again seen an increase in the number of living kidney donors giving an organ to someone unknown to them. Living donor kidney transplants now account for over a third of the total kidney transplant programme and we welcome the new Living Donor Kidney Transplantation Strategy.

Despite the advances we have seen in both living and deceased organ donation and transplantation over the last year, we must not forget the 456 patients who died while waiting for an organ on the active transplant list and the further 828 who were removed from the list due to deteriorating health and ineligibility for transplant. Many of these will have died shortly afterwards.

Deaths among patients who are in need of a transplant will sadly be unavoidable while the consent/authorisation rate for deceased organ donation remains lower than many other countries in the western world. Although the consent/authorisation rate increased slightly from 57% in 2012/13 to 59% in 2013/14, we have to make huge strides if we are to achieve the ambitious 80% target by 2020.

Changing the behaviour of UK society towards organ donation is a tough challenge, but one everyone involved in organ donation and transplantation should embrace. We know that families are much more likely to agree to donating a loved one’s organs when his or her wishes are known, so the more we can encourage people to sign up to the NHS Organ Donor Register and to discuss their decision to donate with their families, the better.

We need everyone to be proud to donate, when and if they can, if the NHS is to match the world leaders in the field of organ donation and transplantation and save even more lives in future years.

Professor Anthony Warrens
President,
The British Transplantation Society

Professor Mark Bellamy
President,
The Intensive Care Society
Summary of Donor and Transplant Activity
In the financial year to 31 March 2014, compared with the previous year

- there was a 9% increase in the number of deceased donors to 1,320, the largest number ever in the UK.
- the number of donors after brain death increased by 11% to 780, while the number of donors after circulatory death increased by 7% to 540
- the number of living donors increased by 4% to 1,146; living donors account for almost half of the total number of organ donors
- the number of patients whose lives were saved or improved by an organ transplant increased by 10% to 4,655
- 3,724 patients had their sight restored through a cornea transplant, comparable with the previous year

The total number of patients registered for a transplant has fallen slightly, so that:

- there were 7,026 patients waiting for a transplant at the end of March 2014, with a further 3,171 temporarily suspended from transplant lists
- 456 patients died while on the active waiting list for their transplant and a further 828 were removed from the transplant list. The removals were mostly as a result of deteriorating health and ineligibility for transplant and many of these patients would have died shortly afterwards.

Some of the other key messages from this report are that, compared with last year, there has been:

- an increase of 8% in the number of pancreas transplants
- an increase of 12% in the total number of liver transplants
- an increase of 24% in the total number of cardiothoracic organ transplants
- an increase of 9% in the total number of kidney transplants
- an increase in the overall referral rate of potential donors from 68% to 76% and the proportion of approaches involving a Specialist Nurse – Organ Donation from 71% to 76%
- an increase in the overall consent/authorisation rate for organ donation from 57% to 59%
Overview of Organ Donation and Transplantation

A summary of the main features of organ donation and transplantation activity in the UK during the financial year from 1 April 2013 to 31 March 2014
2.1 Summary of activity

As the total number of deceased donors and transplants continued to increase this year, the number of patients on the active transplant list at 31 March 2014 is 309 less than on the same date last year. This drop reflects an increasing number of transplants performed coupled with a reasonably steady number of patients joining the transplant list each year. The increase in donor and transplant numbers (1 April 2004 to 31 March 2014) and the number of patients registered on the transplant lists at 31 March each year are shown in Figure 2.1. There were 391 more deceased donor transplants in 2013-2014 than in the previous year, representing a 13% increase. The corresponding increase in the number of deceased donors was 9%. The numbers of transplants and transplant list patients in all years now include small bowel only patients, as these are now recorded on the UK Transplant Registry.
Figure 2.2 shows the number of deceased and living donors for 2004-2014. The number of deceased organ donors in the UK fell over a number of years but following the implementation of the Organ Donation Taskforce recommendations, the numbers rose and are continuing to increase. The number of donors after brain death (DBD) has increased by 28% over the last seven years, reversing the trend which had seen an 8% decrease between 2004-2005 and 2007-2008. Most of this increase has been in the last two years. The number of donors after circulatory death (DCD) has been increasing year-on-year in an effort to bridge the gap between the number of donors and the number of patients waiting for a transplant. In particular the number of these donors has increased by 170% since 2007-2008. Living donors remained relatively stable: 1,146 this year representing a 4% increase on last year.

![Figure 2.2 Number of deceased and living donors in the UK, 1 April 2004 - 31 March 2014](image)

Figure 2.3 shows the potential deceased organ donor population in the UK. Not everyone can be a deceased organ donor and this figure highlights the small proportion of people dying in the UK that are potential organ donors. Please note that the information presented comes from several different sources. The NHSBT Potential Donor Audit, collects information on most but not all actual donors and the potential for donation could therefore be slightly underestimated. The quoted numbers of transplants and organs transplanted are those achieved using organs from deceased actual donors in the UK, some of which may have been performed overseas, and does not reflect the number of deceased donor transplants in the UK, which may have used organs from overseas donors.
Table 2.1 shows the number of deceased donors and transplants in 2013-2014 and patients on the transplant list at 31 March 2014 for each country in the UK.
Table 2.1  Deceased donors and transplants 1 April 2013 - 31 March 2014, and transplant lists as at 31 March 2014, by country of residence

<table>
<thead>
<tr>
<th>Organ</th>
<th>Country of residence</th>
<th>England (pmp)</th>
<th>Wales (pmp)</th>
<th>Scotland (pmp)</th>
<th>Northern Ireland (pmp)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Kidney</td>
<td>Deceased donors</td>
<td>1030 (19.3)</td>
<td>56 (18.2)</td>
<td>105 (19.8)</td>
<td>46 (25.3)</td>
</tr>
<tr>
<td></td>
<td>Transplants&lt;sup&gt;2,3&lt;/sup&gt;</td>
<td>1624 (30.4)</td>
<td>99 (32.2)</td>
<td>172 (32.4)</td>
<td>40 (22.0)</td>
</tr>
<tr>
<td></td>
<td>Transplant list</td>
<td>5084 (95.0)</td>
<td>162 (52.8)</td>
<td>492 (92.7)</td>
<td>123 (67.6)</td>
</tr>
<tr>
<td>Pancreas</td>
<td>Deceased donors</td>
<td>375 (7.0)</td>
<td>20 (6.5)</td>
<td>38 (7.2)</td>
<td>22 (12.1)</td>
</tr>
<tr>
<td></td>
<td>Transplants&lt;sup&gt;2&lt;/sup&gt;</td>
<td>201 (3.8)</td>
<td>14 (4.6)</td>
<td>26 (4.9)</td>
<td>5 (2.7)</td>
</tr>
<tr>
<td></td>
<td>Transplant list</td>
<td>193 (3.6)</td>
<td>18 (5.9)</td>
<td>19 (3.6)</td>
<td>5 (2.7)</td>
</tr>
<tr>
<td>Heart</td>
<td>Deceased donors</td>
<td>166 (3.1)</td>
<td>4 (1.3)</td>
<td>18 (3.4)</td>
<td>14 (7.7)</td>
</tr>
<tr>
<td></td>
<td>Transplants&lt;sup&gt;2&lt;/sup&gt;</td>
<td>163 (3.0)</td>
<td>4 (1.3)</td>
<td>21 (4.0)</td>
<td>5 (2.7)</td>
</tr>
<tr>
<td></td>
<td>Transplant list</td>
<td>223 (4.2)</td>
<td>7 (2.3)</td>
<td>19 (3.6)</td>
<td>8 (4.4)</td>
</tr>
<tr>
<td>Lung</td>
<td>Deceased donors</td>
<td>179 (3.3)</td>
<td>11 (3.6)</td>
<td>27 (5.1)</td>
<td>16 (8.8)</td>
</tr>
<tr>
<td></td>
<td>Transplants&lt;sup&gt;2&lt;/sup&gt;</td>
<td>179 (3.3)</td>
<td>14 (4.6)</td>
<td>20 (3.8)</td>
<td>3 (1.6)</td>
</tr>
<tr>
<td></td>
<td>Transplant list</td>
<td>239 (4.5)</td>
<td>16 (5.2)</td>
<td>19 (3.6)</td>
<td>9 (4.9)</td>
</tr>
<tr>
<td>Liver</td>
<td>Deceased donors</td>
<td>782 (14.6)</td>
<td>43 (14.0)</td>
<td>70 (13.2)</td>
<td>32 (17.6)</td>
</tr>
<tr>
<td></td>
<td>Transplants&lt;sup&gt;2&lt;/sup&gt;</td>
<td>703 (13.1)</td>
<td>28 (9.1)</td>
<td>100 (18.8)</td>
<td>19 (10.4)</td>
</tr>
<tr>
<td></td>
<td>Transplant list</td>
<td>433 (8.1)</td>
<td>16 (5.2)</td>
<td>56 (10.5)</td>
<td>21 (11.5)</td>
</tr>
<tr>
<td>Intestinal</td>
<td>Deceased donors</td>
<td>22 (0.4)</td>
<td>0 (0.0)</td>
<td>1 (0.2)</td>
<td>1 (0.5)</td>
</tr>
<tr>
<td></td>
<td>Transplants&lt;sup&gt;2&lt;/sup&gt;</td>
<td>24 (0.4)</td>
<td>0 (0.0)</td>
<td>2 (0.4)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td></td>
<td>Transplant list</td>
<td>11 (0.2)</td>
<td>1 (0.3)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>Total</td>
<td>Deceased donors</td>
<td>1097 (20.5)</td>
<td>60 (19.5)</td>
<td>108 (20.3)</td>
<td>48 (26.4)</td>
</tr>
<tr>
<td></td>
<td>Transplants&lt;sup&gt;2&lt;/sup&gt;</td>
<td>2894 (54.1)</td>
<td>159 (51.8)</td>
<td>341 (64.2)</td>
<td>72 (39.6)</td>
</tr>
<tr>
<td></td>
<td>Transplant list</td>
<td>6009 (112.3)</td>
<td>211 (68.7)</td>
<td>594 (111.9)</td>
<td>160 (87.9)</td>
</tr>
</tbody>
</table>

<sup>1</sup> Excludes patients resident in Channel Islands, Isle of Man, overseas and in the Republic of Ireland
<sup>2</sup> Deceased donor transplants
<sup>3</sup> Kidney only transplants
2.2 Transplant list

At 31 March 2014, 7,026 patients were registered for an organ transplant in the UK on the active transplant list. A further 3,171 patients were temporarily suspended from the active national transplant list because they were unfit or otherwise unavailable for transplant. Details of numbers of patients on each of the organ transplant lists are given in Table 2.2 for 31 March 2013 and 2014. The total number fell by 308 patients (4%) due to falls in the number of patients on the kidney transplant lists.

### Table 2.2 Active transplant lists in the UK at 31 March 2013 and 2014

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kidney &amp; pancreas patients</td>
<td>6386</td>
<td>5932</td>
<td>-7</td>
</tr>
<tr>
<td>Kidney</td>
<td>6115</td>
<td>5663</td>
<td>-7</td>
</tr>
<tr>
<td>Kidney &amp; pancreas</td>
<td>208</td>
<td>201</td>
<td>-3</td>
</tr>
<tr>
<td>Pancreas</td>
<td>36</td>
<td>35</td>
<td>0</td>
</tr>
<tr>
<td>Pancreas islets</td>
<td>27</td>
<td>33</td>
<td>+22</td>
</tr>
<tr>
<td>Cardiothoracic patients</td>
<td>439</td>
<td>531</td>
<td>+21</td>
</tr>
<tr>
<td>Heart</td>
<td>197</td>
<td>245</td>
<td>+24</td>
</tr>
<tr>
<td>Heart/lung</td>
<td>16</td>
<td>15</td>
<td>0</td>
</tr>
<tr>
<td>Lung(s)</td>
<td>226</td>
<td>271</td>
<td>+20</td>
</tr>
<tr>
<td>Liver patients</td>
<td>472</td>
<td>531</td>
<td>+13</td>
</tr>
<tr>
<td>Intestinal patients</td>
<td>14</td>
<td>13</td>
<td>0</td>
</tr>
<tr>
<td>Other multi-organ patients</td>
<td>23</td>
<td>19</td>
<td>-17</td>
</tr>
<tr>
<td>ALL PATIENTS</td>
<td>7334</td>
<td>7026</td>
<td>-4</td>
</tr>
</tbody>
</table>

Percentages not reported when fewer than 10 in either year

1 Includes patients waiting for kidney and liver transplants (18 in 2013, 16 in 2014), kidney and heart transplants (3 in 2013, 1 in 2014), liver and pancreas transplants (2 in 2013, 1 in 2014), liver and lung transplants (1 in 2014)

During 2013-2014, 456 patients died whilst on the transplant list or after being removed from the list due to their condition deteriorating. This information is shown by organ in Table 2.3.
<table>
<thead>
<tr>
<th>Table 2.3</th>
<th>Number of patient deaths on transplant lists in the UK, 1 April 2013 and 31 March 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kidney &amp; pancreas patients</td>
<td>280</td>
</tr>
<tr>
<td>Kidney</td>
<td>263</td>
</tr>
<tr>
<td>Kidney &amp; pancreas</td>
<td>16</td>
</tr>
<tr>
<td>Pancreas</td>
<td>1</td>
</tr>
<tr>
<td>Cardiothoracic patients</td>
<td>95</td>
</tr>
<tr>
<td>Heart</td>
<td>35</td>
</tr>
<tr>
<td>Heart/lung</td>
<td>4</td>
</tr>
<tr>
<td>Lung</td>
<td>56</td>
</tr>
<tr>
<td>Liver patients</td>
<td>81</td>
</tr>
<tr>
<td>Intestinal patients</td>
<td>0</td>
</tr>
<tr>
<td>ALL PATIENTS</td>
<td>456</td>
</tr>
</tbody>
</table>

### 2.3 Transplants

There was a 10% increase in the total number of organ transplants (from deceased and living donors) last year: 4,655 transplants were performed in 2013-2014 compared with 4,219 in 2012-2013 (Table 2.4). All multi-organ transplants are identified separately as are transplants from living donors.

The total number of kidney transplants increased by 9% in 2013-2014; kidney transplants from donors after circulatory death increased by 9%, while the number of living donor kidney transplants increased by 4%. The total number of cardiothoracic organ transplants rose by 24%, the number of liver transplants rose by 12% and the number of pancreas transplants (including pancreas only, kidney/pancreas and pancreas islets) increased by 7%.
Table 2.4  Transplants performed in the UK, 1 April 2012 - 31 March 2014

<table>
<thead>
<tr>
<th>Transplant</th>
<th>2012-2013</th>
<th>2013-2014</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>DBD kidney</td>
<td>1034</td>
<td>1157</td>
<td>+12</td>
</tr>
<tr>
<td>DCD kidney</td>
<td>716</td>
<td>784</td>
<td>+9</td>
</tr>
<tr>
<td>Living donor kidney</td>
<td>1068</td>
<td>1114</td>
<td>+4</td>
</tr>
<tr>
<td>DBD Kidney &amp; pancreas</td>
<td>133</td>
<td>153</td>
<td>+15</td>
</tr>
<tr>
<td>DCD Kidney &amp; pancreas</td>
<td>33</td>
<td>35</td>
<td>+6</td>
</tr>
<tr>
<td>DBD Pancreas</td>
<td>32</td>
<td>22</td>
<td>-31</td>
</tr>
<tr>
<td>DCD Pancreas</td>
<td>5</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>Pancreas islets</td>
<td>30</td>
<td>32</td>
<td>+7</td>
</tr>
<tr>
<td>Deceased heart&lt;sup&gt;1&lt;/sup&gt;</td>
<td>142</td>
<td>197</td>
<td>+39</td>
</tr>
<tr>
<td>Heart/lung</td>
<td>3</td>
<td>8</td>
<td>-</td>
</tr>
<tr>
<td>DBD Single lung</td>
<td>19</td>
<td>27</td>
<td>+42</td>
</tr>
<tr>
<td>DCD Single lung</td>
<td>9</td>
<td>5</td>
<td>-</td>
</tr>
<tr>
<td>DBD Double lung</td>
<td>134</td>
<td>148</td>
<td>+10</td>
</tr>
<tr>
<td>DCD Double lung</td>
<td>25</td>
<td>30</td>
<td>+20</td>
</tr>
<tr>
<td>Partial lung</td>
<td>1</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>DBD liver</td>
<td>520</td>
<td>582</td>
<td>+12</td>
</tr>
<tr>
<td>DCD liver</td>
<td>135</td>
<td>151</td>
<td>+12</td>
</tr>
<tr>
<td>Domino liver</td>
<td>2</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>DBD liver lobe</td>
<td>117</td>
<td>135</td>
<td>+15</td>
</tr>
<tr>
<td>DCD liver lobe</td>
<td>1</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>Living donor liver lobe</td>
<td>31</td>
<td>28</td>
<td>-10</td>
</tr>
<tr>
<td>Bowel only&lt;sup&gt;2&lt;/sup&gt;</td>
<td>7</td>
<td>11</td>
<td>-</td>
</tr>
<tr>
<td>Liver, bowel &amp; pancreas</td>
<td>3</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>Multivisceral</td>
<td>4</td>
<td>10</td>
<td>-</td>
</tr>
<tr>
<td>Modified multivisceral</td>
<td>1</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>Kidney &amp; heart</td>
<td>3</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Kidney &amp; liver</td>
<td>11</td>
<td>12</td>
<td>+9</td>
</tr>
<tr>
<td><strong>TOTAL ORGAN TRANSPLANTS</strong></td>
<td><strong>4219</strong></td>
<td><strong>4655</strong></td>
<td><strong>+10</strong></td>
</tr>
<tr>
<td>Total kidney transplants</td>
<td><strong>2998</strong></td>
<td><strong>3257</strong></td>
<td><strong>+9</strong></td>
</tr>
<tr>
<td>Total pancreas transplants&lt;sup&gt;3&lt;/sup&gt;</td>
<td><strong>241</strong></td>
<td><strong>261</strong></td>
<td><strong>+8</strong></td>
</tr>
<tr>
<td>Total cardiothoracic transplants</td>
<td><strong>336</strong></td>
<td><strong>416</strong></td>
<td><strong>+24</strong></td>
</tr>
<tr>
<td>Total liver transplants</td>
<td><strong>824</strong></td>
<td><strong>924</strong></td>
<td><strong>+12</strong></td>
</tr>
<tr>
<td>Total intestinal transplants</td>
<td><strong>15</strong></td>
<td><strong>26</strong></td>
<td><strong>+73</strong></td>
</tr>
</tbody>
</table>

Percentage not reported when fewer than 10 in either year
<sup>1</sup> Including DCD heart (1 in 2013-2014)
<sup>2</sup> Including a kidney (1 in 2013-2014)
<sup>3</sup> Includes intestinal transplants
The total approximate number of patients with a functioning transplant on 31 March 2014 being followed up on the UK Transplant Registry is 43,300 (Table 2.5). This excludes those patients who are known to be lost to follow-up. The number of functioning kidney transplants is approximately 31,000.

<table>
<thead>
<tr>
<th>Table 2.5</th>
<th>Number of transplants functioning at 31 March 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functioning transplants¹</td>
<td></td>
</tr>
<tr>
<td>Kidney</td>
<td>31000</td>
</tr>
<tr>
<td>Pancreas</td>
<td>1800</td>
</tr>
<tr>
<td>Cardiothoracic</td>
<td>3600</td>
</tr>
<tr>
<td>Liver</td>
<td>8300</td>
</tr>
<tr>
<td>Intestinal</td>
<td>100</td>
</tr>
<tr>
<td><strong>ALL PATIENTS²</strong></td>
<td><strong>43300</strong></td>
</tr>
</tbody>
</table>

¹ Approximate number being followed-up  
² Number of patients with a functioning transplant  
Multi-organ transplants (excluding intestinal transplants) are counted in each organ  
Excludes those patients known to be lost to follow-up
Organ Donation Activity

Key messages

- There has been a 9% increase in deceased donors (to 1,320) and a 4% increase in living organ donors (to 1,146) compared with last year.

- Compared with 809 deceased donors in 2007-2008, there has been an increase of 63% to 1,320 in 2013-2014.

- There has been an increase in donors after brain death of 11% to 780 and a more modest increase of 7% in donors after circulatory death to 540.

- Donors after circulatory death provide, on average, one less organ for transplantation than donors after brain 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 a 9% increase in the number of deceased organ donors in 2013-2014 (1,320 donors), much higher than the target increase of 5% (1,272 donors) set for the year. This was the result of an increase in donors after brain death (DBD) of 11% and a more modest increase of 7% in donors after circulatory death (DCD). The 1,320 donors represented a 63% increase over the number of organ donors in 2007-2008 (809).

The 1,320 deceased organ donors gave 4,511 organs compared with 1,212 donors and 4,099 organs in 2012-2013. This represents a 10% 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 (72%) also donated at least one other organ. Only 13% of donors after brain death were single organ donors, with equal proportions being liver only and kidney only donors. By contrast, 58% of donors after circulatory death were single organ donors, the majority (94%) of these donating just their kidneys.

Although the vast majority of living organ donors donated a kidney, 32 donated part of their liver. All living donations are approved by the Human Tissue Authority.

<table>
<thead>
<tr>
<th>Table 3.1</th>
<th>Solid organ donors in the UK, 1 April 2013 - 31 March 2014, by organ types donated</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DBD</td>
</tr>
<tr>
<td>Kidney only</td>
<td>48</td>
</tr>
<tr>
<td>Kidney &amp; thoracic</td>
<td>14</td>
</tr>
<tr>
<td>Kidney &amp; liver</td>
<td>233</td>
</tr>
<tr>
<td>Kidney &amp; pancreas</td>
<td>2</td>
</tr>
<tr>
<td>Kidney, thoracic &amp; liver</td>
<td>67</td>
</tr>
<tr>
<td>Kidney, thoracic &amp; pancreas</td>
<td>2</td>
</tr>
<tr>
<td>Kidney, liver &amp; pancreas</td>
<td>136</td>
</tr>
<tr>
<td>Kidney, liver, pancreas &amp; bowel</td>
<td>8</td>
</tr>
<tr>
<td>Kidney, thoracic, liver &amp; pancreas</td>
<td>195</td>
</tr>
<tr>
<td>Kidney, thoracic, liver, pancreas &amp; bowel</td>
<td>17</td>
</tr>
<tr>
<td>Thoracic only</td>
<td>2</td>
</tr>
<tr>
<td>Thoracic &amp; liver</td>
<td>2</td>
</tr>
<tr>
<td>Thoracic, liver &amp; pancreas</td>
<td>4</td>
</tr>
<tr>
<td>Liver only</td>
<td>49</td>
</tr>
<tr>
<td>Liver &amp; pancreas</td>
<td>1</td>
</tr>
<tr>
<td>TOTAL</td>
<td>780</td>
</tr>
</tbody>
</table>
3.2 Organ donors

Organ donor rates per million population (pmp) for 2013-2014 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.

<table>
<thead>
<tr>
<th>Country of donation/ Strategic Health Authority</th>
<th>DBD (pmp)</th>
<th>DCD (pmp)</th>
<th>TOTAL (pmp)</th>
<th>Living (pmp)</th>
</tr>
</thead>
<tbody>
<tr>
<td>North East</td>
<td>48 (18.5)</td>
<td>35 (13.5)</td>
<td>83 (31.9)</td>
<td>48 (18.5)</td>
</tr>
<tr>
<td>North West</td>
<td>81 (11.4)</td>
<td>42 (5.9)</td>
<td>123 (17.4)</td>
<td>119 (16.8)</td>
</tr>
<tr>
<td>Yorkshire and The Humber</td>
<td>48 (9.0)</td>
<td>38 (7.1)</td>
<td>86 (16.2)</td>
<td>82 (15.4)</td>
</tr>
<tr>
<td><strong>North of England</strong></td>
<td>177 (11.8)</td>
<td>115 (7.7)</td>
<td>292 (19.5)</td>
<td>249 (16.6)</td>
</tr>
<tr>
<td>East Midlands</td>
<td>51 (11.2)</td>
<td>48 (10.5)</td>
<td>99 (21.7)</td>
<td>62 (13.6)</td>
</tr>
<tr>
<td>West Midlands</td>
<td>61 (10.8)</td>
<td>41 (7.3)</td>
<td>102 (18.1)</td>
<td>107 (19.0)</td>
</tr>
<tr>
<td>East of England</td>
<td>66 (11.2)</td>
<td>58 (9.8)</td>
<td>124 (21.0)</td>
<td>85 (14.4)</td>
</tr>
<tr>
<td><strong>Midlands and East</strong></td>
<td>178 (11.0)</td>
<td>147 (9.1)</td>
<td>325 (20.2)</td>
<td>254 (15.8)</td>
</tr>
<tr>
<td>London</td>
<td>99 (11.9)</td>
<td>57 (6.9)</td>
<td>156 (18.8)</td>
<td>192 (23.1)</td>
</tr>
<tr>
<td>South East Coast</td>
<td>66 (14.6)</td>
<td>33 (7.3)</td>
<td>99 (22.0)</td>
<td>73 (16.2)</td>
</tr>
<tr>
<td>South Central</td>
<td>59 (14.0)</td>
<td>36 (8.6)</td>
<td>95 (22.6)</td>
<td>74 (17.6)</td>
</tr>
<tr>
<td>South West</td>
<td>65 (12.2)</td>
<td>65 (12.2)</td>
<td>130 (24.3)</td>
<td>96 (18.0)</td>
</tr>
<tr>
<td><strong>South of England</strong></td>
<td>190 (13.5)</td>
<td>134 (9.5)</td>
<td>324 (23.0)</td>
<td>243 (17.3)</td>
</tr>
<tr>
<td>England</td>
<td>644 (12.0)</td>
<td>453 (8.5)</td>
<td>1097 (20.5)</td>
<td>938 (17.5)</td>
</tr>
<tr>
<td>Isle of Man</td>
<td>4 (50.0)</td>
<td>0 (0.0)</td>
<td>4 (50.0)</td>
<td>1 (12.5)</td>
</tr>
<tr>
<td>Channel Islands</td>
<td>0 (0.0)</td>
<td>3 (18.8)</td>
<td>3 (18.8)</td>
<td>3 (18.8)</td>
</tr>
<tr>
<td>Wales</td>
<td>37 (12.1)</td>
<td>23 (7.5)</td>
<td>60 (19.5)</td>
<td>55 (17.9)</td>
</tr>
<tr>
<td>Scotland</td>
<td>62 (11.7)</td>
<td>46 (8.7)</td>
<td>108 (20.3)</td>
<td>88 (16.6)</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>33 (18.1)</td>
<td>15 (8.2)</td>
<td>48 (26.4)</td>
<td>61 (33.5)</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>780 (12.2)</td>
<td>540 (8.4)</td>
<td>1320 (20.6)</td>
<td>1146 (17.9)</td>
</tr>
</tbody>
</table>

1 Includes 102 donors (22 deceased, 80 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 12.2 DBD donors pmp for the UK as a whole, but across the former English Strategic Health Authorities (SHA) this ranged between 9.0 and 18.5 pmp. Across the four countries of the UK, Northern Ireland had the highest rate of 18.1 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, however, because certain categories of patients are excluded from the Potential Donor Audit. For DCD donors the UK rate is 8.4 pmp, ranging from 7.5 to 8.7 pmp across countries of the UK and from 5.9 to 13.5 pmp in the former English SHAs. No adjustment has been made for any differences in demographics of the populations across countries or SHAs.

<table>
<thead>
<tr>
<th>Country of donation/ Strategic Health Authority</th>
<th>DBD</th>
<th>DCD</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>North East</td>
<td>51</td>
<td>40</td>
<td>91</td>
</tr>
<tr>
<td>North West</td>
<td>86</td>
<td>44</td>
<td>130</td>
</tr>
<tr>
<td>Yorkshire and The Humber</td>
<td>49</td>
<td>38</td>
<td>87</td>
</tr>
<tr>
<td><strong>North of England</strong></td>
<td><strong>186</strong></td>
<td><strong>122</strong></td>
<td><strong>308</strong></td>
</tr>
<tr>
<td>East Midlands</td>
<td>40</td>
<td>41</td>
<td>81</td>
</tr>
<tr>
<td>West Midlands</td>
<td>66</td>
<td>42</td>
<td>108</td>
</tr>
<tr>
<td>East of England</td>
<td>60</td>
<td>59</td>
<td>119</td>
</tr>
<tr>
<td><strong>Midlands and East</strong></td>
<td><strong>166</strong></td>
<td><strong>142</strong></td>
<td><strong>308</strong></td>
</tr>
<tr>
<td>London</td>
<td>143</td>
<td>72</td>
<td>215</td>
</tr>
<tr>
<td>South East Coast</td>
<td>40</td>
<td>30</td>
<td>70</td>
</tr>
<tr>
<td>South Central</td>
<td>52</td>
<td>31</td>
<td>83</td>
</tr>
<tr>
<td>South West</td>
<td>63</td>
<td>62</td>
<td>125</td>
</tr>
<tr>
<td><strong>South of England</strong></td>
<td><strong>155</strong></td>
<td><strong>123</strong></td>
<td><strong>278</strong></td>
</tr>
<tr>
<td>England</td>
<td>650</td>
<td>459</td>
<td>1109</td>
</tr>
<tr>
<td>Isle of Man</td>
<td>4</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Channel Islands</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Wales</td>
<td>32</td>
<td>22</td>
<td>54</td>
</tr>
<tr>
<td>Scotland</td>
<td>62</td>
<td>44</td>
<td>106</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>32</td>
<td>14</td>
<td>46</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>780</strong></td>
<td><strong>540</strong></td>
<td><strong>1320</strong></td>
</tr>
</tbody>
</table>
The mean number of organs retrieved per donor in 2013-2014 is given by country in Table 3.5. Overall, an average of 4.0 organs were donated per DBD donor and 2.6 per DCD donor. For DBD donors the rate ranged from 3.8 organs per donor in Wales to 4.5 organs per donor in Northern Ireland.

### Table 3.4 Deceased organ donors in the UK, 1 April 2013 - 31 March 2014 by Organ Donation Services Team

<table>
<thead>
<tr>
<th>Team</th>
<th>DBD N</th>
<th>DCD N</th>
<th>TOTAL N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastern</td>
<td>67</td>
<td>60</td>
<td>127</td>
</tr>
<tr>
<td>London</td>
<td>116</td>
<td>64</td>
<td>180</td>
</tr>
<tr>
<td>Midlands</td>
<td>87</td>
<td>71</td>
<td>158</td>
</tr>
<tr>
<td>North West</td>
<td>95</td>
<td>47</td>
<td>142</td>
</tr>
<tr>
<td>Northern</td>
<td>53</td>
<td>40</td>
<td>93</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>32</td>
<td>14</td>
<td>46</td>
</tr>
<tr>
<td>Scotland</td>
<td>62</td>
<td>44</td>
<td>106</td>
</tr>
<tr>
<td>South Central</td>
<td>60</td>
<td>47</td>
<td>107</td>
</tr>
<tr>
<td>South East</td>
<td>67</td>
<td>39</td>
<td>106</td>
</tr>
<tr>
<td>South Wales</td>
<td>25</td>
<td>20</td>
<td>45</td>
</tr>
<tr>
<td>South West</td>
<td>56</td>
<td>51</td>
<td>107</td>
</tr>
<tr>
<td>Yorkshire</td>
<td>60</td>
<td>43</td>
<td>103</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>780</strong></td>
<td><strong>540</strong></td>
<td><strong>1320</strong></td>
</tr>
</tbody>
</table>

### Table 3.5 Organs retrieved per donor, in the UK, 1 April 2013 - 31 March 2014, by country of donor residence

<table>
<thead>
<tr>
<th>Country</th>
<th>DBD</th>
<th>Adult</th>
<th>TOTAL</th>
<th>DBD</th>
<th>Paediatric</th>
<th>TOTAL</th>
<th>DBD</th>
<th>All</th>
<th>DCD</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>England</td>
<td>3.9</td>
<td>2.6</td>
<td>3.4</td>
<td>4.8</td>
<td>3.3</td>
<td>4.3</td>
<td>3.9</td>
<td>2.6</td>
<td>3.4</td>
<td></td>
</tr>
<tr>
<td>Wales</td>
<td>3.8</td>
<td>2.6</td>
<td>3.3</td>
<td>4.0</td>
<td>-</td>
<td>4.0</td>
<td>3.8</td>
<td>2.6</td>
<td>3.3</td>
<td></td>
</tr>
<tr>
<td>Scotland</td>
<td>4.3</td>
<td>2.6</td>
<td>3.5</td>
<td>-</td>
<td>2.0</td>
<td>2.0</td>
<td>4.3</td>
<td>2.5</td>
<td>3.5</td>
<td></td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>4.4</td>
<td>2.7</td>
<td>3.8</td>
<td>6.0</td>
<td>-</td>
<td>6.0</td>
<td>4.5</td>
<td>2.7</td>
<td>4.0</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>3.9</strong></td>
<td><strong>2.6</strong></td>
<td><strong>3.4</strong></td>
<td><strong>4.8</strong></td>
<td><strong>3.2</strong></td>
<td><strong>4.3</strong></td>
<td><strong>4.0</strong></td>
<td><strong>2.6</strong></td>
<td><strong>3.4</strong></td>
<td></td>
</tr>
</tbody>
</table>
3.3 Demographic characteristics

While the number of donors overall is increasing, it is important to be aware that there have been changes over time with regard to donor characteristics (Table 3.6). In 2013-2014, 37% of deceased donors were aged 60 years or more compared with 18% in 2004-2005 (Figure 3.1). In particular the proportion of these donors aged at least 70 years has increased from 3% to 15% 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 16% to 24% in deceased donors in the last 10 years (Figure 3.2) and the trend was similar for both DBD and DCD donors. In addition, the proportion of all deceased donors after a trauma death has decreased from 16% to 8% 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 3.6 also indicates the ethnicity of deceased organ donors, highlighting that 6% of donors are from ethnic minority groups. By contrast, ethnic minority groups represent 11% of the UK population.

| Table 3.6 Demographic characteristics of organ donors in the UK 1 April 2013 - 31 March 2014 |
|-------------------------------------------------|---------------------------------|---------------------------------|---------------------------------|
| Age                                              | DBD  | DCD  | TOTAL             |
| 0-17                                             | 38   | 17   | 55                |
| 18-49                                            | 339  | 154  | 493               |
| 50-59                                            | 165  | 119  | 284               |
| 60-69                                            | 149  | 135  | 284               |
| 70+                                              | 89   | 115  | 204               |
| Mean (SD)                                        | 49   | 55   | 51                |
| BMI                                              |      |      |                   |
| 0-19                                             | 50   | 33   | 83                |
| 20-29                                            | 566  | 352  | 918               |
| 30+                                              | 164  | 153  | 317               |
| Unknown                                          | 2    | <1   | 2                 |
| Mean (SD)                                        | 26   | 6    | 27                |
| Cause of death                                   |      |      |                   |
| Intracranial                                     | 673  | 406  | 1079              |
| Trauma                                           | 61   | 39   | 100               |
| Other                                            | 46   | 95   | 141               |
| Ethnicity                                        |      |      |                   |
| White                                            | 723  | 522  | 1245              |
| Asian                                            | 24   | 15   | 39                |
| Black                                            | 15   | 2    | 17                |
| Other                                            | 17   | 1    | 18                |
| Unknown                                          | 1    | 0    | 1                 |
| Blood group                                      |      |      |                   |
| O                                                | 358  | 247  | 605               |
| A                                                | 305  | 218  | 523               |
| B                                                | 94   | 54   | 148               |
| AB                                               | 23   | 21   | 44                |
| Sex                                              |      |      |                   |
| Male                                             | 405  | 328  | 733               |
| Female                                           | 375  | 212  | 587               |
| TOTAL                                            | 780  | 540  | 1320              |
Figure 3.1  Age of deceased donors in the UK, 1 April 2004 - 31 March 2014

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.
The National Organ Retrieval Service and Usage of Organs

Key messages

- National Organ Retrieval Service teams attended 797 DBD donors and 941 DCD donors; 2% of DBD donors and 43% of DCD donors attended did not proceed to donation.

- From the 1,320 proceeding deceased donors, 85% of deceased donor kidneys offered to transplant centres were subsequently transplanted, compared with 65% of livers, 36% of pancreases, 6% of bowels, 37% of hearts and 23% of lungs; the remaining organs were not transplanted due to lack of suitability of the donor or organ for any patient on the transplant list.

- The UK actual donor rate was 20.6 pmp, while the utilised donor rate was 19.8 pmp reflecting that 4% of organ donors resulted in no organs being transplanted.
4.1 The National Organ Retrieval Service (NORS)

At any one time, 7 abdominal teams and all 6 cardiothoracic teams are on call – 24 hours per day, seven days a week. In two areas of the country, two abdominal retrieval teams share the on call responsibilities, each being on-call for different weeks. If a team is the first on-call for a particular donor hospital, they are required to attend within an agreed timescale if at least one organ has been accepted for transplant when offered to the transplant centres in the UK. Each team has a designated area for which they are first on-call, based on the premise that the travel time to any hospital in their area should be less than three hours. There are some exceptions to this principle for remote hospitals. If a team is already retrieving when they are called to attend a donor, then a second team will be called in to retrieve, and so on.

The number of donors after brain death and donors after circulatory death that were attended by each of the teams is shown in Table 4.1. The table also shows the number of proceeding (actual) organ donors and the number that did not proceed to donation. Many of the potential donors after circulatory death prove unsuitable for organ donation due to a prolonged time to death in which time the organs deteriorate. The number of donors attended per team varies according to the number of potential donors identified in each of the areas, as the areas are not of equal size.

A small number of donors are attended by local kidney transplant teams. This is typically for donors after circulatory death when only the donor's kidneys have been accepted for transplant. There is no expectation that local kidney teams retrieve organs, but they are appropriately reimbursed if they are willing and able to do so.
### Table 4.1  Number of actual and non-proceeding donors per retrieval team

<table>
<thead>
<tr>
<th>Retrieval team</th>
<th>Donors after brain death</th>
<th>Donors after circulatory death</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Actual</td>
<td>% non-proc</td>
</tr>
<tr>
<td>Abdominal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Birmingham</td>
<td>96</td>
<td>-</td>
</tr>
<tr>
<td>Cambridge</td>
<td>101</td>
<td>5</td>
</tr>
<tr>
<td>Cardiff</td>
<td>43</td>
<td>1</td>
</tr>
<tr>
<td>King's</td>
<td>125</td>
<td>2</td>
</tr>
<tr>
<td>Leeds / Manchester</td>
<td>123</td>
<td>1</td>
</tr>
<tr>
<td>Newcastle</td>
<td>84</td>
<td>3</td>
</tr>
<tr>
<td>Oxford</td>
<td>61</td>
<td>3</td>
</tr>
<tr>
<td>Royal Free</td>
<td>73</td>
<td>1</td>
</tr>
<tr>
<td>Scotland</td>
<td>72</td>
<td>2</td>
</tr>
<tr>
<td>Abdominal total</td>
<td>778</td>
<td>18</td>
</tr>
<tr>
<td>Cardiothoracic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Birmingham</td>
<td>39</td>
<td>13</td>
</tr>
<tr>
<td>Harefield</td>
<td>81</td>
<td>34</td>
</tr>
<tr>
<td>Manchester</td>
<td>50</td>
<td>17</td>
</tr>
<tr>
<td>Newcastle</td>
<td>43</td>
<td>8</td>
</tr>
<tr>
<td>Papworth</td>
<td>63</td>
<td>27</td>
</tr>
<tr>
<td>Scotland</td>
<td>24</td>
<td>35</td>
</tr>
<tr>
<td>Cardiothoracic total</td>
<td>300</td>
<td>134</td>
</tr>
<tr>
<td>Total donors</td>
<td>780</td>
<td>17</td>
</tr>
</tbody>
</table>

Note: There were 11 additional donors attended by a local team (9 abdominal donors were attended by St George’s (7), Plymouth (1) and Liverpool (1) and 2 cardiothoracic donors attended by Great Ormond Street (1) and Newcastle scout team (1)). Two donors were attended by an overseas team.

### 4.2 Retrieval and usage of organs

The number of consented donors and ‘offered’ donors, where at least one organ was offered for transplant, are shown in Table 4.2. The number of organs offered from these ‘offered’ donors is also shown. Each year, a number of actual organ donors result in no transplants. Donors resulting in at least one transplant are termed ‘utilised’ donors and the number of actual and utilised donors is shown in Table 4.2. The number of donors per million of population is also shown. In 2013/2014, 4% of actual donors resulted in no organ transplants compared with 8% in the previous year.

There were 1,320 actual deceased organ donors last year, but not all organs from these donors were offered for transplantation. Table 4.3 shows the number of organs offered, retrieved and transplanted from the 780 DBD and 540 DCD actual donors. The number of organs from these donors that were subsequently used for research purposes is also shown. The number of organs offered for transplant excludes those where the donor did not meet the nationally agreed age criteria for suitability for donation of that specific organ. There are no age cut-offs agreed for kidney and liver donation.
Figures 4.1 and 4.2 show offering, retrieval and transplantation of organs, in terms of percentages. Charts start at 100% for each organ, representing all organs from the 780 DBD and 540 DCD donors. The charts indicate the proportion of those organs following the pathway through each step to transplantation eg meeting national donor age criteria, having consent (authorisation in Scotland), being offered out to transplant centres, being retrieved for transplant and resulting in transplantation. For example, Figure 4.1 shows that 28% of the pancreases from the 780 DBD donors were transplanted, but that 39% of pancreases from donors within the nationally agreed age limit of 60 years were transplanted. Transplant rates of kidneys and livers are generally high, while other organs, even allowing for the agreed age limits, are less often transplanted.

Reasons for organs not being offered for transplant, being offered but not accepted and retrieved and for being retrieved but not subsequently transplanted are shown in Table 4.4 for abdominal organs from DBD donors, Table 4.5 for abdominal organs from DCD donors and in Table 4.6 for cardiothoracic organs. Reasons for the medical unsuitability of a donor include infections, tumours, anatomy and disease. Non-medical reasons include donor size and donor unstable. Clinical unsuitability of an organ encompasses poor perfusion, prolonged ischaemia time, past history of donor and, in the case of pancreases for islets, insufficiency of viable islet yield. Reasons reported under ‘other’ include logistical and recipient related issues in addition to un-coded reasons reported of a miscellaneous nature.

These tables also indicate the number of organs from UK donors that were transplanted overseas. These organs were not accepted for transplant by any UK transplant centre, but were accepted for suitable recipients identified elsewhere, usually in Europe. Other than livers fulfilling an arrangement for the transplantation of super-urgent patients in the Republic of Ireland, kidneys, hearts and lungs were exported for transplant outside the UK. Organs from outside the UK are occasionally imported for transplant. Further information on the import and export of organs can be found in Appendix IV.

<table>
<thead>
<tr>
<th>Table 4.2</th>
<th>Consented, offered, actual and utilised deceased donors in the UK, 1 April 2013 - 31 March 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DBD (pmp)</td>
</tr>
<tr>
<td>Consented donors¹</td>
<td>843 (13.2)</td>
</tr>
<tr>
<td>Offered donors²</td>
<td>821 (12.8)</td>
</tr>
<tr>
<td>Kidneys offered</td>
<td>1601</td>
</tr>
<tr>
<td>Livers offered</td>
<td>798</td>
</tr>
<tr>
<td>Pancreases offered</td>
<td>576</td>
</tr>
<tr>
<td>Bowels offered</td>
<td>262</td>
</tr>
<tr>
<td>Hearts offered</td>
<td>503</td>
</tr>
<tr>
<td>Lungs offered</td>
<td>1138</td>
</tr>
<tr>
<td>Actual donors</td>
<td>780 (12.2)</td>
</tr>
<tr>
<td>Utilised donors³</td>
<td>773 (12.1)</td>
</tr>
</tbody>
</table>

¹ Consented donors defined as patients where consent for at least one organ was given
² Offered donors defined as donors where one or more organs were offered for transplantation
³ Utilised donors defined as donors where one or more organs were retrieved and transplanted
Table 4.3  Donation and transplantation of organs from 1320 deceased donors in the UK, 1 April 2013 – 31 March 2014

<table>
<thead>
<tr>
<th>Organ</th>
<th>Organs meeting initial suitability criteria and offered for transplant</th>
<th>Organs retrieved for transplant N</th>
<th>% of offered</th>
<th>Organs transplanted N</th>
<th>% of offered</th>
<th>% of offered</th>
<th>Organs used for research (from actual organ donors)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DBD donor organs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kidney</td>
<td>1556</td>
<td>1437</td>
<td>92</td>
<td>1351</td>
<td>94</td>
<td>87</td>
<td>56</td>
</tr>
<tr>
<td>Liver</td>
<td>768</td>
<td>712</td>
<td>93</td>
<td>677</td>
<td>95</td>
<td>88</td>
<td>24</td>
</tr>
<tr>
<td>Pancreas(^1)</td>
<td>504</td>
<td>354</td>
<td>70</td>
<td>215</td>
<td>61</td>
<td>43</td>
<td>81</td>
</tr>
<tr>
<td>Bowel(^2,3)</td>
<td>210</td>
<td>25</td>
<td>12</td>
<td>25</td>
<td>100</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>Heart(^4)</td>
<td>526</td>
<td>202</td>
<td>38</td>
<td>195</td>
<td>97</td>
<td>37</td>
<td>2</td>
</tr>
<tr>
<td>Lung(^5)</td>
<td>1124</td>
<td>361</td>
<td>32</td>
<td>334</td>
<td>93</td>
<td>30</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td><strong>4688</strong></td>
<td><strong>3091</strong></td>
<td><strong>66</strong></td>
<td><strong>2797</strong></td>
<td><strong>90</strong></td>
<td><strong>60</strong></td>
<td><strong>165</strong></td>
</tr>
<tr>
<td></td>
<td>DCD donor organs(^6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kidney</td>
<td>1076</td>
<td>1032</td>
<td>96</td>
<td>893</td>
<td>87</td>
<td>83</td>
<td>103</td>
</tr>
<tr>
<td>Liver</td>
<td>515</td>
<td>220</td>
<td>43</td>
<td>153</td>
<td>70</td>
<td>30</td>
<td>54</td>
</tr>
<tr>
<td>Pancreas(^1)</td>
<td>221</td>
<td>91</td>
<td>41</td>
<td>43</td>
<td>47</td>
<td>19</td>
<td>27</td>
</tr>
<tr>
<td>Lung(^5)</td>
<td>628</td>
<td>74</td>
<td>12</td>
<td>63</td>
<td>85</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td><strong>2440</strong></td>
<td><strong>1417</strong></td>
<td><strong>58</strong></td>
<td><strong>1152</strong></td>
<td><strong>81</strong></td>
<td><strong>47</strong></td>
<td><strong>184</strong></td>
</tr>
<tr>
<td></td>
<td>Deceased donor organs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kidney</td>
<td>2632</td>
<td>2469</td>
<td>94</td>
<td>2244</td>
<td>91</td>
<td>85</td>
<td>159</td>
</tr>
<tr>
<td>Liver</td>
<td>1283</td>
<td>932</td>
<td>73</td>
<td>830</td>
<td>89</td>
<td>65</td>
<td>78</td>
</tr>
<tr>
<td>Pancreas(^1)</td>
<td>725</td>
<td>445</td>
<td>61</td>
<td>258</td>
<td>58</td>
<td>36</td>
<td>108</td>
</tr>
<tr>
<td>Bowel(^2,3)</td>
<td>210</td>
<td>25</td>
<td>12</td>
<td>25</td>
<td>100</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>Heart(^4)</td>
<td>526</td>
<td>202</td>
<td>38</td>
<td>195</td>
<td>97</td>
<td>37</td>
<td>2</td>
</tr>
<tr>
<td>Lung(^5)</td>
<td>1752</td>
<td>435</td>
<td>25</td>
<td>397</td>
<td>91</td>
<td>23</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td><strong>7128</strong></td>
<td><strong>4508</strong></td>
<td><strong>63</strong></td>
<td><strong>3949</strong></td>
<td><strong>88</strong></td>
<td><strong>55</strong></td>
<td><strong>349</strong></td>
</tr>
</tbody>
</table>

1 Excludes donors aged > 60 years
2 Excludes one bowel transplanted from an overseas donor
3 Excludes donors aged > 55 years or weighing > 80kg
4 Excludes donors aged > 65 years or died due to myocardial infarction
5 Excludes donors aged > 65 years
6 Excludes DCD hearts
Donation and transplantation rates of organs from DBD organ donors in the UK, 1 April 2013 – 31 March 2014

Hearts – in addition to age criteria, donors who died due to myocardial infarction are excluded
Bowels – in addition to age criteria, donors who weigh >80kg are excluded

Figure 4.1

<table>
<thead>
<tr>
<th>Donor age criteria met</th>
<th>Consent for organ donation</th>
<th>Organs offered for donation</th>
<th>Organs retrieved for transplant</th>
<th>Organs transplanted</th>
</tr>
</thead>
<tbody>
<tr>
<td>87%</td>
<td>28%</td>
<td>25%</td>
<td>21%</td>
<td>3%</td>
</tr>
<tr>
<td>87%</td>
<td>28%</td>
<td>25%</td>
<td>21%</td>
<td>3%</td>
</tr>
<tr>
<td>83%</td>
<td>16%</td>
<td>9%</td>
<td>6%</td>
<td>8%</td>
</tr>
</tbody>
</table>

Transplanted:

- Kidney
- Liver
- Pancreas
- Bowel
- Heart
- Lungs

% of all organs
% of all organs meeting age criteria

Donation and transplantation rates of organs from DCD organ donors in the UK, 1 April 2013 – 31 March 2014

Figure 4.2

<table>
<thead>
<tr>
<th>Donor age criteria met</th>
<th>Consent for organ donation</th>
<th>Organs offered for donation</th>
<th>Organs retrieved for transplant</th>
<th>Organs transplanted</th>
</tr>
</thead>
<tbody>
<tr>
<td>83%</td>
<td>28%</td>
<td>25%</td>
<td>21%</td>
<td>3%</td>
</tr>
<tr>
<td>83%</td>
<td>28%</td>
<td>25%</td>
<td>21%</td>
<td>3%</td>
</tr>
<tr>
<td>83%</td>
<td>16%</td>
<td>9%</td>
<td>6%</td>
<td>8%</td>
</tr>
</tbody>
</table>

Transplanted:

- Kidney
- Liver
- Pancreas
- Lungs

% of all organs
% of all organs meeting age criteria
### Table 4.4 Reasons for non-retrieval and non-use of abdominal organs from organ donors after brain death (DBD) in the UK, 1 April 2013 – 31 March 2014

<table>
<thead>
<tr>
<th></th>
<th>Kidney</th>
<th>Liver</th>
<th>Pancreas</th>
<th>Bowel</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All DBD organ donors</strong></td>
<td>780</td>
<td>780</td>
<td>780</td>
<td>780</td>
</tr>
<tr>
<td>Donors from whom organs not offered for donation</td>
<td>2</td>
<td>12</td>
<td>276</td>
<td>570</td>
</tr>
</tbody>
</table>

**Reasons for organs not being offered**

<table>
<thead>
<tr>
<th>Reason</th>
<th>Kidney</th>
<th>Liver</th>
<th>Pancreas</th>
<th>Bowel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family permission refused</td>
<td>2</td>
<td>7</td>
<td>23</td>
<td>63</td>
</tr>
<tr>
<td>Permission refused by coroner</td>
<td>0</td>
<td>5</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Donor unsuitable – age</td>
<td>0</td>
<td>0</td>
<td>229</td>
<td>4</td>
</tr>
<tr>
<td>Donor unsuitable – past history</td>
<td>0</td>
<td>0</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>Donor age &gt;55 and donor weight &gt;80kg</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>449</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>37</td>
</tr>
</tbody>
</table>

**TOTAL DONORS WITH ORGANS NOT OFFERED** | 2 | 12 | 276 | 570 |

**Organs offered for donation** | 1556 | 768 | 504 | 210 |

**Organs not retrieved (% of organs offered for donation)** | 119 (8%) | 56 (7%) | 150 (30%) | 185 (88%) |

**Reasons for non-retrieval**

<table>
<thead>
<tr>
<th>Reason</th>
<th>Kidney</th>
<th>Liver</th>
<th>Pancreas</th>
<th>Bowel</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Donor</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Donor unsuitable – medical</td>
<td>22</td>
<td>1</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Donor unsuitable – non-medical</td>
<td>2</td>
<td>2</td>
<td>13</td>
<td>100</td>
</tr>
<tr>
<td>Donor age</td>
<td>12</td>
<td>1</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td><strong>Organ</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organ unsuitable – clinical</td>
<td>57</td>
<td>34</td>
<td>96</td>
<td>34</td>
</tr>
<tr>
<td>Poor function</td>
<td>19</td>
<td>3</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>7</td>
<td>15</td>
<td>18</td>
<td>31</td>
</tr>
</tbody>
</table>

**TOTAL ORGANS NOT RETRIEVED** | 119 | 56 | 150 | 185 |

**Organs retrieved (% of organs offered for donation)** | 1437 (92%) | 712 (93%) | 354 (70%) | 25 (12%) |

<table>
<thead>
<tr>
<th>Reason</th>
<th>Kidney</th>
<th>Liver</th>
<th>Pancreas</th>
<th>Bowel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organs transplanted in the UK</td>
<td>1349</td>
<td>668</td>
<td>215</td>
<td>25^3</td>
</tr>
<tr>
<td>Organs transplanted overseas</td>
<td>2</td>
<td>9^2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Organs not transplanted</td>
<td>86</td>
<td>35</td>
<td>139</td>
<td>0</td>
</tr>
</tbody>
</table>

**Reasons for organ not being transplanted**

<table>
<thead>
<tr>
<th>Reason</th>
<th>Kidney</th>
<th>Liver</th>
<th>Pancreas</th>
<th>Bowel</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Donor</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Donor unsuitable – medical</td>
<td>29</td>
<td>5</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>Donor unsuitable – non-medical</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Donor age</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td><strong>Organ</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organ unsuitable – clinical</td>
<td>11</td>
<td>25</td>
<td>94</td>
<td>0</td>
</tr>
<tr>
<td>Poor function</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>46</td>
<td>5</td>
<td>31</td>
<td>0</td>
</tr>
</tbody>
</table>

**TOTAL ORGANS NOT TRANSPLANTED**

(Number used for research)

<table>
<thead>
<tr>
<th>Reason</th>
<th>Kidney</th>
<th>Liver</th>
<th>Pancreas</th>
<th>Bowel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organs retrieved (Number used for research)</td>
<td>86 (56)</td>
<td>35 (24)</td>
<td>139 (81)</td>
<td>0 (0)</td>
</tr>
</tbody>
</table>

1. One kidney not offered for donation due to permission refused by coroner
2. Transplanted into super-urgent patients in the Republic of Ireland
3. Excludes one bowel transplanted from an overseas donor
Table 4.5  Reasons for non-retrieval and non-use of abdominal organs from organ donors after circulatory death (DCD) in the UK, 1 April 2013 – 31 March 2014

<table>
<thead>
<tr>
<th></th>
<th>Kidney</th>
<th>Liver</th>
<th>Pancreas</th>
</tr>
</thead>
<tbody>
<tr>
<td>All DCD organ donors</td>
<td>540</td>
<td>540</td>
<td>540</td>
</tr>
<tr>
<td>Donors from whom organs not offered for donation</td>
<td>2</td>
<td>25</td>
<td>319</td>
</tr>
</tbody>
</table>

**Reasons for organs not being offered**

<table>
<thead>
<tr>
<th>Reason</th>
<th>Kidney</th>
<th>Liver</th>
<th>Pancreas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family permission refused</td>
<td>1</td>
<td>23</td>
<td>15</td>
</tr>
<tr>
<td>Permission refused by coroner</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Donor unsuitable – age</td>
<td>0</td>
<td>0</td>
<td>267</td>
</tr>
<tr>
<td>Donor unsuitable – past history</td>
<td>0</td>
<td>0</td>
<td>24</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0</td>
<td>11</td>
</tr>
</tbody>
</table>

**TOTAL DONORS WITH ORGANS NOT OFFERED**

<table>
<thead>
<tr>
<th></th>
<th>Kidney</th>
<th>Liver</th>
<th>Pancreas</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>25</td>
<td>319</td>
</tr>
</tbody>
</table>

**Organs offered for donation**

<table>
<thead>
<tr>
<th></th>
<th>Kidney</th>
<th>Liver</th>
<th>Pancreas</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1076</td>
<td>515</td>
<td>221</td>
</tr>
</tbody>
</table>

**Organs not retrieved (% of organs offered for donation)**

<table>
<thead>
<tr>
<th></th>
<th>Kidney</th>
<th>Liver</th>
<th>Pancreas</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>44 (4)</td>
<td>295 (57)</td>
<td>130 (59)</td>
</tr>
</tbody>
</table>

**Reasons for non-retrieval**

**Donor**

- Donor unsuitable – medical: 0, 4, 3
- Donor unsuitable – non-medical: 0, 11, 13
- Donor age: 4, 70, 18

**Organ**

- Organ unsuitable – clinical: 18, 98, 60
- Poor function: 10, 21, 12

**Other**

- Other: 12, 91, 24

**TOTAL ORGANS NOT RETRIEVED**

<table>
<thead>
<tr>
<th></th>
<th>Kidney</th>
<th>Liver</th>
<th>Pancreas</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>44</td>
<td>295</td>
<td>130</td>
</tr>
</tbody>
</table>

**Organs retrieved (% of organs offered for donation)**

<table>
<thead>
<tr>
<th></th>
<th>Kidney</th>
<th>Liver</th>
<th>Pancreas</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1032 (96)</td>
<td>220 (43)</td>
<td>91 (41)</td>
</tr>
</tbody>
</table>

**Organs transplanted in the UK**

- 893
- 153
- 43

**Organs transplanted overseas**

- 0
- 0
- 0

**Organs not transplanted**

- 139
- 67
- 48

**Reasons for organ not being transplanted**

**Donor**

- Donor unsuitable – medical: 51, 10, 11
- Donor unsuitable – non-medical: 0, 0, 0
- Donor age: 0, 0, 0

**Organ**

- Organ unsuitable – clinical: 33, 41, 29
- Poor function: 1, 0, 0

**Other**

- Other: 54, 16, 8

**TOTAL ORGANS NOT TRANSPLANTED**

<table>
<thead>
<tr>
<th></th>
<th>Kidney</th>
<th>Liver</th>
<th>Pancreas</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>139 (103)</td>
<td>67 (54)</td>
<td>48 (27)</td>
</tr>
</tbody>
</table>

(Note used for research)
<table>
<thead>
<tr>
<th>Table 4.6</th>
<th>Reasons for non-retrieval and non-use of cardiothoracic organs from organ donors in the UK, 1 April 2013 – 31 March 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Heart (DBD)</td>
</tr>
<tr>
<td>All organ donors</td>
<td>780</td>
</tr>
<tr>
<td>Donors from whom organs not offered for donation</td>
<td>254</td>
</tr>
</tbody>
</table>

**Reasons for organs not being offered**

<table>
<thead>
<tr>
<th></th>
<th>Heart (DBD)</th>
<th>Lung (DBD)</th>
<th>Lung (DCD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family permission refused</td>
<td>61</td>
<td>36</td>
<td>44</td>
</tr>
<tr>
<td>Permission refused by coroner</td>
<td>32</td>
<td>24</td>
<td>10</td>
</tr>
<tr>
<td>Donor age &gt;65 years</td>
<td>158</td>
<td>158</td>
<td>172</td>
</tr>
<tr>
<td>Donor COD of cardiac arrest or MI</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>TOTAL DONORS WITH ORGANS NOT OFFERED</strong></td>
<td>254</td>
<td>218</td>
<td>226</td>
</tr>
</tbody>
</table>

| Organs offered for donation | 526 | 1124 | 628 |

| Organs not retrieved (% of organs offered for donation) | 324 (62) | 763 (68) | 554 (88) |

**Reasons for non-retrieval**

**Donor**

<table>
<thead>
<tr>
<th></th>
<th>Heart (DBD)</th>
<th>Lung (DBD)</th>
<th>Lung (DCD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Donor unsuitable – medical</td>
<td>18</td>
<td>46</td>
<td>31</td>
</tr>
<tr>
<td>Donor unsuitable – non-medical</td>
<td>38</td>
<td>51</td>
<td>42</td>
</tr>
<tr>
<td>Donor age</td>
<td>16</td>
<td>18</td>
<td>40</td>
</tr>
</tbody>
</table>

**Organ**

<table>
<thead>
<tr>
<th></th>
<th>Heart (DBD)</th>
<th>Lung (DBD)</th>
<th>Lung (DCD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organ unsuitable – clinical</td>
<td>84</td>
<td>189</td>
<td>198</td>
</tr>
<tr>
<td>Poor function</td>
<td>132</td>
<td>344</td>
<td>171</td>
</tr>
</tbody>
</table>

**Other**

<table>
<thead>
<tr>
<th></th>
<th>Heart (DBD)</th>
<th>Lung (DBD)</th>
<th>Lung (DCD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other</td>
<td>36</td>
<td>115</td>
<td>72</td>
</tr>
<tr>
<td><strong>TOTAL ORGANS NOT RETRIEVED</strong></td>
<td>324</td>
<td>763</td>
<td>554</td>
</tr>
</tbody>
</table>

| Organs retrieved (% of organs offered for donation) | 202 (38) | 361 (32) | 74 (12) |

<table>
<thead>
<tr>
<th></th>
<th>Heart (DBD)</th>
<th>Lung (DBD)</th>
<th>Lung (DCD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organs transplanted in the UK</td>
<td>193</td>
<td>322</td>
<td>63</td>
</tr>
<tr>
<td>Organs transplanted overseas</td>
<td>2</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>Organs not transplanted</td>
<td>7</td>
<td>27</td>
<td>11</td>
</tr>
</tbody>
</table>

**Reasons for organ not being transplanted**

**Donor**

<table>
<thead>
<tr>
<th></th>
<th>Heart (DBD)</th>
<th>Lung (DBD)</th>
<th>Lung (DCD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Donor unsuitable – medical</td>
<td>0</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Donor unsuitable – non-medical</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Organ**

<table>
<thead>
<tr>
<th></th>
<th>Heart (DBD)</th>
<th>Lung (DBD)</th>
<th>Lung (DCD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organ unsuitable – clinical</td>
<td>1</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Poor function</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

**Other**

<table>
<thead>
<tr>
<th></th>
<th>Heart (DBD)</th>
<th>Lung (DBD)</th>
<th>Lung (DCD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other</td>
<td>5</td>
<td>16</td>
<td>4</td>
</tr>
<tr>
<td><strong>TOTAL ORGANS NOT TRANSPLANTED</strong> (Number used for research)</td>
<td>7 (2)</td>
<td>27 (2)</td>
<td>11 (0)</td>
</tr>
</tbody>
</table>
Kidney Activity

Key messages

- The number of deceased kidney donors increased by 8% to 1,243
- Kidney transplants from living donors increased by 4% to 1,114, while transplants from deceased donors increased by 11% to 2,142
- 72 kidney transplants were made possible by the paired living kidney donation programme
- Non-directed altruistic living kidney donation resulted in 118 living donor kidney transplants
- The number of patients registered on the kidney transplant list this year fell by 7% from 6,344 to 5,881
5.1 Overview

The number of deceased kidney donors increased by 8% in 2013-2014 compared to 2012-2013 and the number of deceased donor kidney transplants increased by 11%. These increases are very welcome for the 5881 patients waiting for a kidney transplant and for the fifth year running the number of patients on the national list for a kidney transplant have declined. This is due to an increasing number of transplants and thus people leaving the transplant list, while the number of people joining the list is relatively stable.

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. Despite the slight drop in the last 5 years, the number of patients registered on the active transplant list at 31 March 2014 for a kidney or kidney and pancreas transplant has risen by 8% since 2005.

Table 5.1 shows the number of deceased and living donor kidney transplants carried out in 2013-2014 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 rose to 1243 in 2013-2014 from 1148 in 2012-2013 and the number of transplants increased from 1930 to 2142. The number of kidney donors after circulatory death increased to 521 from 495 in 2012-2013 and the number of transplants from such donors increased by 10% to 821.
<table>
<thead>
<tr>
<th>Centre/alliance</th>
<th>Deceased kidney donors</th>
<th>Deceased donor transplants</th>
<th>Living donor transplants</th>
<th>Active transplant list</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DBD (10)</td>
<td>DCD (5)</td>
<td>DBD (10)</td>
<td>DCD (5)</td>
</tr>
<tr>
<td>Belfast</td>
<td>30</td>
<td>14</td>
<td>37</td>
<td>3</td>
</tr>
<tr>
<td>Birmingham</td>
<td>54</td>
<td>32</td>
<td>90</td>
<td>17</td>
</tr>
<tr>
<td>Bristol</td>
<td>26</td>
<td>28</td>
<td>67</td>
<td>22</td>
</tr>
<tr>
<td>Cambridge</td>
<td>37</td>
<td>43</td>
<td>59</td>
<td>85</td>
</tr>
<tr>
<td>Cardiff</td>
<td>23</td>
<td>17</td>
<td>38</td>
<td>47</td>
</tr>
<tr>
<td>Coventry</td>
<td>8</td>
<td>9</td>
<td>22</td>
<td>8</td>
</tr>
<tr>
<td>Edinburgh</td>
<td>35</td>
<td>25</td>
<td>53</td>
<td>34</td>
</tr>
<tr>
<td>Glasgow</td>
<td>24</td>
<td>18</td>
<td>64</td>
<td>41</td>
</tr>
<tr>
<td>Great Ormond Street</td>
<td>0</td>
<td>0</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Leeds</td>
<td>30</td>
<td>31</td>
<td>61</td>
<td>98</td>
</tr>
<tr>
<td>Leicester</td>
<td>20</td>
<td>11</td>
<td>62</td>
<td>19</td>
</tr>
<tr>
<td>Liverpool</td>
<td>49</td>
<td>22</td>
<td>39</td>
<td>39</td>
</tr>
<tr>
<td>Manchester</td>
<td>37</td>
<td>24</td>
<td>140</td>
<td>45</td>
</tr>
<tr>
<td>Newcastle</td>
<td>48</td>
<td>39</td>
<td>35</td>
<td>52</td>
</tr>
<tr>
<td>North Thames¹</td>
<td>98</td>
<td>54</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Royal Free</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Royal London</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>West Midlands</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Nottingham</td>
<td>16</td>
<td>22</td>
<td>39</td>
<td>34</td>
</tr>
<tr>
<td>Oxford</td>
<td>27</td>
<td>26</td>
<td>86</td>
<td>52</td>
</tr>
<tr>
<td>Plymouth</td>
<td>28</td>
<td>22</td>
<td>18</td>
<td>27</td>
</tr>
<tr>
<td>Portsmouth</td>
<td>26</td>
<td>21</td>
<td>44</td>
<td>17</td>
</tr>
<tr>
<td>Sheffield</td>
<td>22</td>
<td>12</td>
<td>41</td>
<td>7</td>
</tr>
<tr>
<td>South Thames¹</td>
<td>84</td>
<td>55</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Guy’s</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>St George’s</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>TOTAL</td>
<td>722</td>
<td>521</td>
<td>1321</td>
<td>821</td>
</tr>
</tbody>
</table>

WLRTC = West London Renal and Transplant Centre

¹ Donor figures in this area cannot be linked to individual transplant centres due to shared retrieval areas.
² Includes an additional 6 transplant performed at London, The London Clinic, 4 transplant performed at London, Cromwell Hospital and 5 transplant performed at London, London Bridge Hospital
³ Includes an additional 1 transplant performed at London, The London Clinic and 1 transplant performed at London, London Bridge Hospital
⁴ Includes 2 domino donors
⁵ Includes 3 domino donors

Notes:
- WLRTC = West London Renal and Transplant Centre
- DBD = Deceased Donor Transplant
- DCD = Deceased Donor Transplant
- Active Transplant List
- Total figures include domino transplants performed at London, London Bridge Hospital and 3 domino transplants performed at London, London Bridge Hospital
- Figures include additional 6 transplant performed at London, The London Clinic, 4 transplant performed at London, Cromwell Hospital and 5 transplant performed at London, London Bridge Hospital
- Includes an additional 1 transplant performed at London, The London Clinic and 1 transplant performed at London, London Bridge Hospital
- Includes 2 domino donors
- Includes 3 domino donors
5.2 Transplant list

The number of patients registered on the kidney or kidney and pancreas transplant list decreased by 7% in the year: on 31 March 2014, 5,881 patients were registered as active, compared with 6,344 at the end of March 2013. The number of patients waiting for a kidney transplant represents 92 patients per million population (pmp).

Of the 5,881 patients on the active transplant list at 31 March 2014, 201 required a kidney and pancreas transplant (208 at 31 March 2013). Additionally, 69 patients were registered for a pancreas only transplant (65 at 31 March 2013).

The outcome of patients registered on the UK kidney and kidney/pancreas transplant list at 1 April 2013, or subsequently registered during the financial year, is shown in Table 5.2. A total of 3,436 patients joined the kidney transplant list last year, while a further 236 joined the kidney/pancreas transplant list.

<table>
<thead>
<tr>
<th>Outcome of patient at 31 March 2014</th>
<th>Active and suspended patients at 1 April 2013</th>
<th>New registrations in 2013-2014 ¹</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Kidney transplant list</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remained active/suspended</td>
<td>5816</td>
<td>65</td>
<td>2804</td>
</tr>
<tr>
<td>Transplanted</td>
<td>2322</td>
<td>26</td>
<td>575</td>
</tr>
<tr>
<td>Removed</td>
<td>518</td>
<td>6</td>
<td>33</td>
</tr>
<tr>
<td>Died</td>
<td>239</td>
<td>3</td>
<td>24</td>
</tr>
<tr>
<td>TOTAL</td>
<td>8995</td>
<td>3436</td>
<td>12331</td>
</tr>
<tr>
<td>Kidney/pancreas transplant list</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remained active/suspended</td>
<td>128</td>
<td>39</td>
<td>196</td>
</tr>
<tr>
<td>Transplanted</td>
<td>159</td>
<td>48</td>
<td>34</td>
</tr>
<tr>
<td>Removed</td>
<td>28</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>Died</td>
<td>14</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>TOTAL</td>
<td>329</td>
<td>236</td>
<td>565</td>
</tr>
</tbody>
</table>

¹ Includes re-registrations for second or subsequent transplants
² Includes 8 patients removed from kidney list and made active on kidney/pancreas list
³ Includes 6 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 2014 and 2013 by country/ former Strategic Health Authority of patient’s residence. In 2014, the overall kidney transplant list rate was 92 pmp with rates across the Strategic Health Authorities ranging from 57.3 pmp to 146.5 pmp.
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 19% of patients are transplanted within one year, while five years after listing 64% of patients have received a transplant.

The median (average) waiting time for a kidney only transplant is 1,114 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.
Figure 5.2  
Post-registration outcome for 3002 new adult kidney only registrations made in the UK, 1 April 2008 - 31 March 2009

Table 5.4  
Median waiting time to kidney only transplant in the UK, for patients registered 1 April 2007 - 31 March 2011

<table>
<thead>
<tr>
<th>Blood group</th>
<th>Number of patients registered</th>
<th>Waiting time (days)</th>
<th>Median</th>
<th>95% Confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O</td>
<td>4051</td>
<td>1313</td>
<td>1274</td>
<td>1352</td>
</tr>
<tr>
<td>A</td>
<td>3285</td>
<td>902</td>
<td>873</td>
<td>931</td>
</tr>
<tr>
<td>B</td>
<td>1229</td>
<td>1330</td>
<td>1271</td>
<td>1389</td>
</tr>
<tr>
<td>AB</td>
<td>362</td>
<td>550</td>
<td>468</td>
<td>632</td>
</tr>
<tr>
<td>TOTAL</td>
<td>8927</td>
<td>1114</td>
<td>1091</td>
<td>1137</td>
</tr>
<tr>
<td>Paediatric</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O</td>
<td>155</td>
<td>433</td>
<td>331</td>
<td>535</td>
</tr>
<tr>
<td>A</td>
<td>114</td>
<td>295</td>
<td>192</td>
<td>398</td>
</tr>
<tr>
<td>B</td>
<td>52</td>
<td>241</td>
<td>167</td>
<td>315</td>
</tr>
<tr>
<td>AB</td>
<td>11</td>
<td>238</td>
<td>0</td>
<td>623</td>
</tr>
<tr>
<td>TOTAL</td>
<td>332</td>
<td>354</td>
<td>271</td>
<td>437</td>
</tr>
</tbody>
</table>
### Table 5.5 Median waiting time to kidney only transplant in the UK, for patients registered 1 April 2007 - 31 March 2011

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Number of patients registered</th>
<th>Waiting time (days)</th>
<th>Median</th>
<th>95% Confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adult</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>6685</td>
<td>1047</td>
<td></td>
<td>1021 - 1073</td>
</tr>
<tr>
<td>Asian</td>
<td>1296</td>
<td>1330</td>
<td></td>
<td>1263 - 1397</td>
</tr>
<tr>
<td>Black</td>
<td>701</td>
<td>1363</td>
<td></td>
<td>1278 - 1448</td>
</tr>
<tr>
<td>Other</td>
<td>245</td>
<td>1147</td>
<td></td>
<td>1005 - 1289</td>
</tr>
<tr>
<td>TOTAL</td>
<td>8927</td>
<td>1114</td>
<td></td>
<td>1091 - 1137</td>
</tr>
<tr>
<td><strong>Paediatric</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>227</td>
<td>252</td>
<td></td>
<td>195 - 309</td>
</tr>
<tr>
<td>Asian</td>
<td>75</td>
<td>556</td>
<td></td>
<td>394 - 718</td>
</tr>
<tr>
<td>Black</td>
<td>20</td>
<td>502</td>
<td></td>
<td>356 - 648</td>
</tr>
<tr>
<td>Other</td>
<td>10</td>
<td>639</td>
<td></td>
<td>0 - 1412</td>
</tr>
<tr>
<td>TOTAL</td>
<td>332</td>
<td>354</td>
<td></td>
<td>271 - 437</td>
</tr>
</tbody>
</table>
5.3 Donor and organ supply

Of the 780 organ donors after brain death in the UK in 2013-2014, 722 (93%) were kidney donors. From these donors, 1,437 kidneys were retrieved. There were 521 kidney donors after circulatory death in 2013-2014. From these donors, 1,032 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 11.3 pmp, with rates across the Strategic Health Authorities ranging from 8.8 to 16.9 pmp. The number of kidneys retrieved from donors after brain death in the UK is 22.5 pmp and varies from 17.7 to 33.8 pmp.

The overall rate for kidney donors after circulatory death is 8.1 pmp, with rates across the Strategic Health Authorities ranging from 5.8 to 13.1 pmp. The number of kidneys retrieved from donors after circulatory death is 16.1 pmp and varies from 11.4 to 26.2 pmp.

<table>
<thead>
<tr>
<th>Country/ Strategic Health Authority of residence</th>
<th>Kidney donors (pmp)</th>
<th>Kidneys retrieved (pmp)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DBD (pmp)</td>
<td>DCD (pmp)</td>
</tr>
<tr>
<td>North East</td>
<td>44 (16.9)</td>
<td>34 (13.1)</td>
</tr>
<tr>
<td>North West</td>
<td>73 (10.3)</td>
<td>41 (5.8)</td>
</tr>
<tr>
<td>Yorkshire and The Humber</td>
<td>47 (8.8)</td>
<td>36 (6.8)</td>
</tr>
<tr>
<td>North of England</td>
<td>164 (10.9)</td>
<td>111 (7.4)</td>
</tr>
<tr>
<td>East Midlands</td>
<td>50 (10.9)</td>
<td>47 (10.3)</td>
</tr>
<tr>
<td>West Midlands</td>
<td>56 (9.9)</td>
<td>39 (6.9)</td>
</tr>
<tr>
<td>East of England</td>
<td>62 (10.5)</td>
<td>58 (9.8)</td>
</tr>
<tr>
<td>Midlands and East</td>
<td>168 (10.4)</td>
<td>144 (8.9)</td>
</tr>
<tr>
<td>London</td>
<td>88 (10.6)</td>
<td>56 (6.7)</td>
</tr>
<tr>
<td>South East Coast</td>
<td>64 (14.2)</td>
<td>30 (6.7)</td>
</tr>
<tr>
<td>South Central</td>
<td>50 (11.9)</td>
<td>33 (7.8)</td>
</tr>
<tr>
<td>South West</td>
<td>60 (11.2)</td>
<td>62 (11.6)</td>
</tr>
<tr>
<td>South of England</td>
<td>174 (12.4)</td>
<td>125 (8.9)</td>
</tr>
<tr>
<td>England</td>
<td>594 (11.1)</td>
<td>436 (8.2)</td>
</tr>
<tr>
<td>Isle of Man</td>
<td>3 (37.5)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>Channel Islands</td>
<td>0 (0.0)</td>
<td>3 (18.8)</td>
</tr>
<tr>
<td>Wales</td>
<td>35 (11.4)</td>
<td>21 (6.8)</td>
</tr>
<tr>
<td>Scotland</td>
<td>59 (11.1)</td>
<td>46 (8.7)</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>31 (17.0)</td>
<td>15 (8.2)</td>
</tr>
<tr>
<td>TOTAL(^1)</td>
<td>722 (11.3)</td>
<td>521 (8.1)</td>
</tr>
</tbody>
</table>

\(^1\) Includes 19 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 23.5 to 40.1 pmp across Strategic Health Authorities and overall was 30.4 pmp. The living donor transplant rate ranged from 13.7 to 20.7 pmp across the Strategic Health Authorities and overall was 17.1 pmp.

### Table 5.7: Kidney only transplant rates per million population (pmp), in the UK, 1 April 2013 - 31 March 2014, by country and English Strategic Health Authority

<table>
<thead>
<tr>
<th>Country/ Strategic Health Authority of residence</th>
<th>DBD (pmp)</th>
<th>DCD (pmp)</th>
<th>TOTAL (pmp)</th>
<th>Living (pmp)</th>
</tr>
</thead>
<tbody>
<tr>
<td>North East</td>
<td>24 (9.2)</td>
<td>37 (14.2)</td>
<td>61 (23.5)</td>
<td>45 (17.3)</td>
</tr>
<tr>
<td>North West</td>
<td>144 (20.3)</td>
<td>66 (9.3)</td>
<td>210 (29.7)</td>
<td>119 (16.8)</td>
</tr>
<tr>
<td>Yorkshire and The Humber</td>
<td>91 (17.1)</td>
<td>105 (19.7)</td>
<td>196 (36.8)</td>
<td>73 (13.7)</td>
</tr>
<tr>
<td>North of England</td>
<td>259 (17.3)</td>
<td>208 (13.9)</td>
<td>467 (31.1)</td>
<td>237 (15.8)</td>
</tr>
<tr>
<td>East Midlands</td>
<td>104 (22.8)</td>
<td>55 (12.0)</td>
<td>159 (34.8)</td>
<td>65 (14.2)</td>
</tr>
<tr>
<td>West Midlands</td>
<td>109 (19.3)</td>
<td>25 (4.4)</td>
<td>134 (23.8)</td>
<td>104 (18.4)</td>
</tr>
<tr>
<td>East of England</td>
<td>77 (13.0)</td>
<td>91 (15.4)</td>
<td>168 (28.4)</td>
<td>86 (14.6)</td>
</tr>
<tr>
<td>Midlands and East</td>
<td>290 (18.0)</td>
<td>171 (10.6)</td>
<td>461 (28.6)</td>
<td>255 (15.8)</td>
</tr>
<tr>
<td>London</td>
<td>211 (25.4)</td>
<td>122 (14.7)</td>
<td>333 (40.1)</td>
<td>172 (20.7)</td>
</tr>
<tr>
<td>South East Coast</td>
<td>60 (13.3)</td>
<td>52 (11.5)</td>
<td>112 (24.8)</td>
<td>79 (17.5)</td>
</tr>
<tr>
<td>South Central</td>
<td>64 (15.2)</td>
<td>48 (11.4)</td>
<td>112 (26.6)</td>
<td>67 (15.9)</td>
</tr>
<tr>
<td>South West</td>
<td>86 (16.1)</td>
<td>53 (9.9)</td>
<td>139 (26)</td>
<td>85 (15.9)</td>
</tr>
<tr>
<td>South of England</td>
<td>210 (14.9)</td>
<td>153 (10.9)</td>
<td>363 (25.8)</td>
<td>231 (16.4)</td>
</tr>
<tr>
<td>England</td>
<td>970 (18.1)</td>
<td>654 (12.2)</td>
<td>1624 (30.4)</td>
<td>895 (16.7)</td>
</tr>
<tr>
<td>Isle of Man</td>
<td>1 (12.5)</td>
<td>0 (0.0)</td>
<td>1 (12.5)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>Channel Islands</td>
<td>2 (12.5)</td>
<td>3 (18.8)</td>
<td>5 (31.3)</td>
<td>2 (12.5)</td>
</tr>
<tr>
<td>Wales</td>
<td>50 (16.3)</td>
<td>49 (16)</td>
<td>99 (32.2)</td>
<td>49 (16.0)</td>
</tr>
<tr>
<td>Scotland</td>
<td>97 (18.3)</td>
<td>75 (14.1)</td>
<td>172 (32.4)</td>
<td>81 (15.3)</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>37 (20.3)</td>
<td>3 (1.6)</td>
<td>40 (22)</td>
<td>61 (33.5)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1157 (18.1)</td>
<td>784 (12.3)</td>
<td>1941 (30.4)</td>
<td>10911 (17.1)</td>
</tr>
</tbody>
</table>

1 Excludes 23 recipients of a living donor 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 5 en bloc kidneys and 25 double kidney transplants in 2013-2014 (4 and 9 in 2012-2013). Kidney transplants from donors after circulatory death include 4 en bloc and 66 double kidney transplants in 2013-2014 (5 and 43 in 2012-2013). This table excludes multi-organ transplants: 9 kidney and liver, 1 kidney and heart, 188 kidney and pancreas and 1 bowel only.
Table 5.8  Adult kidney only transplants from deceased donors in the UK, 1 April 2013 - 31 March 2014, by transplant centre/region

<table>
<thead>
<tr>
<th>Transplant centre/region</th>
<th>2012-2013</th>
<th>2013-2014</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DBD</td>
<td>DCD</td>
</tr>
<tr>
<td>Belfast</td>
<td>25</td>
<td>0</td>
</tr>
<tr>
<td>Birmingham</td>
<td>62</td>
<td>16</td>
</tr>
<tr>
<td>Bristol</td>
<td>46</td>
<td>26</td>
</tr>
<tr>
<td>Cambridge</td>
<td>31</td>
<td>99</td>
</tr>
<tr>
<td>Cardiff</td>
<td>40</td>
<td>44</td>
</tr>
<tr>
<td>Coventry</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>Edinburgh</td>
<td>21</td>
<td>23</td>
</tr>
<tr>
<td>Glasgow</td>
<td>65</td>
<td>29</td>
</tr>
<tr>
<td>Guys</td>
<td>90</td>
<td>63</td>
</tr>
<tr>
<td>Leeds</td>
<td>74</td>
<td>60</td>
</tr>
<tr>
<td>Leicester</td>
<td>31</td>
<td>5</td>
</tr>
<tr>
<td>Liverpool</td>
<td>37</td>
<td>31</td>
</tr>
<tr>
<td>Manchester</td>
<td>75</td>
<td>32</td>
</tr>
<tr>
<td>Newcastle</td>
<td>21</td>
<td>57</td>
</tr>
<tr>
<td>Royal Free</td>
<td>44</td>
<td>32</td>
</tr>
<tr>
<td>Royal London</td>
<td>35</td>
<td>27</td>
</tr>
<tr>
<td>Nottingham</td>
<td>26</td>
<td>29</td>
</tr>
<tr>
<td>Oxford</td>
<td>46</td>
<td>46</td>
</tr>
<tr>
<td>Plymouth</td>
<td>12</td>
<td>24</td>
</tr>
<tr>
<td>Portsmouth</td>
<td>34</td>
<td>17</td>
</tr>
<tr>
<td>Sheffield</td>
<td>26</td>
<td>13</td>
</tr>
<tr>
<td>St George's</td>
<td>67</td>
<td>21</td>
</tr>
<tr>
<td>WLRTC</td>
<td>64</td>
<td>8</td>
</tr>
</tbody>
</table>

TOTAL 987 710 1102 779

WLRTC - West London Renal and Transplant Centre

Living donor kidney transplants increased by 4% to 1114 in 2013-2014, 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 1% decrease in these transplants. In addition there are now a number of ‘undirected’ living donor transplants (also known as altruistic donor transplants). Last year 118 such donors donated a kidney to a recipient, 117 transplanted into an adult recipient and one transplanted into a paediatric recipient.

In 2013-2014, there were also 72 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. This is known as paired donation and most exchanges are between two pairs (ie 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 2014, the number of living donor adult transplants in the year was 18% and ranged from 11% to 50% at individual transplant centres. The high rate for Coventry is at least partly attributable to their antibody incompatible kidney transplant programme; a number of patients are referred to Coventry for such transplants.

Table 5.9  
Adult living donor kidney transplants in the UK, 1 April 2012 - 31 March 2014, and percentage of active transplant list at 31 March, by transplant centre/region

<table>
<thead>
<tr>
<th>Transplant centre/region</th>
<th>2012-2013</th>
<th>2013-2014</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Directed</td>
<td>Paired/pooled</td>
<td>Non-directed</td>
</tr>
<tr>
<td>Belfast</td>
<td>39</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Birmingham</td>
<td>56</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Bristol</td>
<td>29</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Cambridge</td>
<td>42</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Cardiff</td>
<td>40</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Coventry</td>
<td>21</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Edinburgh</td>
<td>22</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Glasgow</td>
<td>36</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Guy's</td>
<td>73</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Leeds</td>
<td>41</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Leicester</td>
<td>37</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Liverpool</td>
<td>25</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Manchester</td>
<td>81</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>Newcastle</td>
<td>47</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Royal Free</td>
<td>28</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Royal London</td>
<td>47</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>WLRTC</td>
<td>58</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Nottingham</td>
<td>11</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Oxford</td>
<td>45</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Plymouth</td>
<td>16</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Portsmouth</td>
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<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Sheffield</td>
<td>21</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>St George's</td>
<td>34</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>TOTAL</td>
<td>872¹</td>
<td>55</td>
<td>75²</td>
</tr>
</tbody>
</table>

1 Includes 1 transplants performed at The London Clinic and 1 transplant performed at London, London Bridge.
2 Includes 3 domino donor transplants
3 Includes 6 transplants performed at The London Clinic, 4 transplants at London Cromwell Hospital and 4 transplants performed at London, London Bridge.
4 Includes 2 domino donor transplants
Non-directed, altruistic donor kidneys are matched either to a suitable recipient on a national basis or within the paired/pooled scheme 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.

<table>
<thead>
<tr>
<th>Donor centre</th>
<th>2012-2013</th>
<th>2013-2014</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No chain</td>
<td>Chain</td>
</tr>
<tr>
<td>Belfast</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Birmingham</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Bristol</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Cambridge</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Cardiff</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Coventry</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Edinburgh</td>
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<td>0</td>
</tr>
<tr>
<td>Glasgow</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Guy’s</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Leeds</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Leicester</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Liverpool</td>
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<td>1</td>
</tr>
<tr>
<td>Manchester</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Newcastle</td>
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<td>4</td>
</tr>
<tr>
<td>Nottingham</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Oxford</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Plymouth</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Portsmouth</td>
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<tr>
<td>St George’s</td>
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<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>69</strong></td>
<td><strong>7</strong></td>
</tr>
</tbody>
</table>

WLRTC – West London Renal and Transplant Centre
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 64 living donor transplants and 60 deceased donor transplants in paediatric patients in 2013-2014. The paediatric transplant list has decreased by 7% from 75 patients at 31 March 2013 to 70 at the end of March 2014.

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

At 31 March 2014, there were approximately 31,000 recipients with a functioning kidney transplant (including multi-organ transplants) being followed-up as reported to the UK Transplant Registry.

<table>
<thead>
<tr>
<th>Paediatric transplant centre</th>
<th>2012-2013</th>
<th></th>
<th>TOTAL</th>
<th>2013-2014</th>
<th></th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DBD</td>
<td>DCD</td>
<td>Living donor</td>
<td></td>
<td>DBD</td>
<td>DCD</td>
</tr>
<tr>
<td>Belfast</td>
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<td>0</td>
<td>3</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Birmingham</td>
<td>4</td>
<td>3</td>
<td>8</td>
<td>15</td>
<td>6</td>
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</tr>
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<td>4</td>
<td>14</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Glasgow</td>
<td>2</td>
<td>0</td>
<td>4</td>
<td>6</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Great Ormond Street</td>
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<td>13</td>
<td>23</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Guy's</td>
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<td>1</td>
</tr>
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<td>3</td>
<td>1</td>
<td>4</td>
<td>8</td>
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</tr>
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<td>0</td>
<td>12</td>
<td>18</td>
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<td>4</td>
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<td>Nottingham</td>
<td>7</td>
<td>2</td>
<td>1</td>
<td>10</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Adult centres</td>
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<td>1</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>47</td>
<td>6</td>
<td>66¹</td>
<td>119</td>
<td>55</td>
<td>5</td>
</tr>
</tbody>
</table>

¹ Includes 4 non-directed donor transplants  
² Includes 1 non-directed donor transplant

Rates of pre-emptive kidney only transplantation are shown in **Table 5.12**. Of the 3,056 kidney only transplant recipients in 2013-2014, dialysis status at time of transplant was reported for 2,996 (98%). Of these 2,996 transplants, 687 (23%) 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 23% of those in adults. Living donor transplants are more likely to be carried out before the need for dialysis than deceased donor transplants: 36% 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.
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.
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. 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. DCD kidneys are currently 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>
<thead>
<tr>
<th>Table 5.14</th>
<th>HLA mismatch groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level</td>
<td>HLA mismatch summary</td>
</tr>
<tr>
<td>1</td>
<td>000</td>
</tr>
<tr>
<td>2</td>
<td>[0 DR and 0/1 B]</td>
</tr>
<tr>
<td>3</td>
<td>[0 DR and 2 B] or [1 DR and 0/1 B]</td>
</tr>
<tr>
<td>4</td>
<td>[1 DR and 2 B] or [2 DR]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 5.15</th>
<th>HLA matching for kidney only transplants in the UK, 1 April 2013 - 31 March 2014,</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DBD</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Adult</td>
<td></td>
</tr>
<tr>
<td>Level 1</td>
<td>188</td>
</tr>
<tr>
<td>Level 2</td>
<td>397</td>
</tr>
<tr>
<td>Level 3</td>
<td>486</td>
</tr>
<tr>
<td>Level 4</td>
<td>31</td>
</tr>
<tr>
<td>Not reported</td>
<td>6</td>
</tr>
<tr>
<td>Paediatric</td>
<td></td>
</tr>
<tr>
<td>Level 1</td>
<td>4</td>
</tr>
<tr>
<td>Level 2</td>
<td>40</td>
</tr>
<tr>
<td>Level 3</td>
<td>10</td>
</tr>
<tr>
<td>Level 4</td>
<td>1</td>
</tr>
</tbody>
</table>
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 581 HLA incompatible (HLAi) transplants performed; 160 used kidneys from deceased donors and 421 used living donor kidneys whilst the vast majority of ABO incompatible (ABOi) transplants used living donor kidneys (508 of 512). Due to nature of reporting HLA incompatible transplants the numbers presented may be subject to change over time.

**Figure 5.3** Incompatible kidney only transplants in the UK, 1 April 2004 - 31 March 2014
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.

<table>
<thead>
<tr>
<th>Table 5.16 Demographic characteristics of deceased kidney donors and transplant recipients, 1 April 2013 - 31 March 2014, and transplant list patients at 31 March</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>Age group (years)</td>
</tr>
<tr>
<td>0 - 17</td>
</tr>
<tr>
<td>18 - 34</td>
</tr>
<tr>
<td>35 - 49</td>
</tr>
<tr>
<td>50 - 59</td>
</tr>
<tr>
<td>60 - 69</td>
</tr>
<tr>
<td>70+</td>
</tr>
<tr>
<td>mean (SD)</td>
</tr>
<tr>
<td>Sex</td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td>Ethnicity</td>
</tr>
<tr>
<td>White</td>
</tr>
<tr>
<td>Asian</td>
</tr>
<tr>
<td>Black</td>
</tr>
<tr>
<td>Chinese</td>
</tr>
<tr>
<td>Other</td>
</tr>
<tr>
<td>Not reported</td>
</tr>
<tr>
<td>Blood group</td>
</tr>
<tr>
<td>O</td>
</tr>
<tr>
<td>A</td>
</tr>
<tr>
<td>B</td>
</tr>
<tr>
<td>AB</td>
</tr>
<tr>
<td>Graft number</td>
</tr>
<tr>
<td>First graft</td>
</tr>
<tr>
<td>Re-graft</td>
</tr>
<tr>
<td>TOTAL</td>
</tr>
</tbody>
</table>
| Age group (years) | Donors
| N | (%) | Transplant recipients
| N | (%) |
|------------------|------------------|------------------|
| 0 - 17           | 0                | (0)              | 64               | (6) |
| 18 - 34          | 202              | (18)             | 236              | (21) |
| 35 - 49          | 386              | (35)             | 363              | (33) |
| 50 - 59          | 274              | (25)             | 248              | (22) |
| 60 - 69          | 205              | (18)             | 179              | (16) |
| 70+              | 47               | (4)              | 24               | (2)  |
| mean (SD)        | 48               | (13)             | 44               | (16) |
| Sex              |                  |                  |
| Male             | 539              | (48)             | 635              | (57) |
| Female           | 575              | (52)             | 479              | (43) |
| Ethnicity        |                  |                  |
| White            | 947              | (85)             | 881              | (79) |
| Asian            | 83               | (7)              | 116              | (10) |
| Black            | 38               | (3)              | 51               | (5)  |
| Chinese          | 4                | (0)              | 6                | (1)  |
| Other            | 33               | (3)              | 23               | (2)  |
| Not reported     | 9                | (1)              | 37               | (3)  |
| Blood group      |                  |                  |
| O                | 586              | (53)             | 471              | (42) |
| A                | 358              | (32)             | 454              | (41) |
| B                | 132              | (12)             | 153              | (14) |
| AB               | 28               | (3)              | 36               | (3)  |
| Not reported     | 10               | (1)              |                  |      |
| Graft number     |                  |                  |
| First graft      |                  | 945              | (85)             |
| Re-graft         |                  | 169              | (15)             |
| TOTAL            | 1114             | (100)            | 1114             | (100) |
Pancreas Activity

Key messages

- The number of patients waiting on the pancreas transplant list decreased by 1% during the year, to 270 at 31 March 2014

- The number of pancreas donors after brain death increased by 1% to 365, while transplants from donors after brain death increased by 6% to 203

- The number of pancreas donors after circulatory death decreased by 1% to 91, while transplants from donors after circulatory death increased by 5% to 43

- 32 islet transplants were made possible by the pancreas islet transplant programme
6.1 Overview

The number of patients registered on the active transplant list at 31 March for a pancreas only, simultaneous kidney/pancreas (SPK) and islet transplant has increased significantly over the last ten years from 132 patients in 2005 to 270 patients in 2014. The number of pancreas donors and transplants has also increased steadily from 118 donors resulting in 86 transplants in 2004-2005, to 456 donors and 246 transplants in 2013-2014. A summary of activity for deceased donor pancreas transplants and the transplant list for 1 April 2004 - 31 March 2014 is shown in **Figure 6.1**.

A National Pancreas Allocation Scheme was introduced on 1 December 2010. Patients are prioritised according to a points system based on a range of clinical factors. A score is calculated for every potentially suitable patient on the national active transplant list and the pancreas is allocated preferentially to the patient with the most points. This differs from the previous system in which donor organs were allocated so that transplant centres selected suitable recipients rather than individual patients being identified centrally.

Pancreases from donors after brain death and donors after circulatory death are allocated through this scheme. Patients listed for a vascularised pancreas or islet transplant are prioritised through one combined national transplant list. The scheme has reduced the incidence of long waiting patients and is improving equity in access to transplant irrespective of where in the UK each patient resides.

Throughout this chapter, intestinal transplants involving a pancreas are not included in the pancreas transplant activity reported. Any pancreases retrieved and used for such transplants are however included in the pancreas donor activity. In 2013/2014 there were 16 intestinal transplants including a pancreas.

![Figure 6.1](image-url)
6.2 Transplant list

Table 6.1 shows the number of patients on the active transplant lists at 31 March 2014 by centre. The number of patients registered on the pancreas transplant list decreased by 1% in the year: on 31 March 2014, 270 patients were registered active, compared with 273 at the end of March 2013.

Of the 270 patients on the active transplant list at 31 March 2014, 201 required a SPK transplant (208 at 31 March 2013), 36 (13%) patients required a pancreas only transplant (38 at 31 March 2013) and 33 (12%) were registered for a pancreas islet transplant.

The outcome of patients registered on the UK pancreas transplant list at 1 April 2013, or subsequently registered during the financial year, is shown in Table 6.2. 42 patients joined the pancreas transplant list while 236 joined the list for kidney and pancreas.

Patients listed for a routine islet transplant are generally waiting for their first islet graft. The majority of islet transplant recipients are likely to require more than one graft to complete their treatment. To optimise transplant outcome the follow-up graft should be performed within six to twelve months of the first. Patients requiring follow-up grafts are priority listed.

<table>
<thead>
<tr>
<th>Centre</th>
<th>Kidney/pancreas</th>
<th>Pancreas alone</th>
<th>Islet</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Routine</td>
<td>Priority</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bristol</td>
<td>0 (0)</td>
<td>2 (0)</td>
<td>0 (0)</td>
<td>2 (0)</td>
</tr>
<tr>
<td>Cambridge</td>
<td>21 (26)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>23 (29)</td>
</tr>
<tr>
<td>Cardiff</td>
<td>6 (4)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>15 (10)</td>
</tr>
<tr>
<td>Edinburgh</td>
<td>24 (28)</td>
<td>10 (8)</td>
<td>0 (0)</td>
<td>34 (37)</td>
</tr>
<tr>
<td>Guys</td>
<td>26 (29)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>28 (33)</td>
</tr>
<tr>
<td>King’s College</td>
<td>0 (0)</td>
<td>1 (2)</td>
<td>1 (1)</td>
<td>2 (3)</td>
</tr>
<tr>
<td>Manchester</td>
<td>44 (35)</td>
<td>9 (6)</td>
<td>1 (0)</td>
<td>56 (43)</td>
</tr>
<tr>
<td>Newcastle</td>
<td>10 (9)</td>
<td>6 (3)</td>
<td>0 (1)</td>
<td>19 (17)</td>
</tr>
<tr>
<td>Oxford</td>
<td>59 (67)</td>
<td>0 (1)</td>
<td>2 (4)</td>
<td>77 (87)</td>
</tr>
<tr>
<td>Royal Free</td>
<td>0 (0)</td>
<td>1 (0)</td>
<td>0 (1)</td>
<td>1 (1)</td>
</tr>
<tr>
<td>WLRTC</td>
<td>11 (10)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>13 (13)</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>201 (208)</strong></td>
<td><strong>36 (38)</strong></td>
<td><strong>29 (20)</strong></td>
<td><strong>270 (273)</strong></td>
</tr>
</tbody>
</table>

1 Includes one patient waiting for a pancreas and liver transplant
2 Includes two patients waiting for a pancreas and liver transplant
Table 6.2 Pancreas transplant list and new registrations in the UK, 1 April 2013 - 31 March 2014

<table>
<thead>
<tr>
<th>Outcome of patient at 31 March 2014</th>
<th>Active and suspended patients at 1 April 2013</th>
<th>New registrations in 2013-2014</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Pancreas transplant list</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remained active/suspended</td>
<td>95</td>
<td>68</td>
<td>27</td>
</tr>
<tr>
<td>Transplanted</td>
<td>22</td>
<td>16</td>
<td>9</td>
</tr>
<tr>
<td>Removed</td>
<td>21²</td>
<td>15</td>
<td>6³</td>
</tr>
<tr>
<td>Died</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>139</td>
<td></td>
<td>42</td>
</tr>
<tr>
<td>Kidney/pancreas transplant list</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remained active/suspended</td>
<td>128</td>
<td>39</td>
<td>196</td>
</tr>
<tr>
<td>Transplanted</td>
<td>159</td>
<td>48</td>
<td>34</td>
</tr>
<tr>
<td>Removed</td>
<td>28</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>Died</td>
<td>14</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>TOTAL</td>
<td>329</td>
<td></td>
<td>236</td>
</tr>
</tbody>
</table>

1 Includes re-registrations for second or subsequent transplants
2 Includes 2 patients removed from pancreas list but active on kidney/pancreas list
3 Includes 1 patients removed from pancreas list but active on kidney/pancreas list

The active pancreas transplant list rates by country/Strategic Health Authority of patient’s residence are shown in Table 6.3. At 31 March 2014, the overall transplant list rate was 3.7 pmp and across the Strategic Health Authorities ranged from 2.6 to 4.3 pmp.
An indication of longer term outcomes for patients listed for a pancreas or kidney/pancreas transplant are summarised in Figure 6.2. This shows the proportion of patients transplanted or still waiting six months, one year, two years and three 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. 34% of patients are transplanted within one year, while three years after listing 70% of patients have received a transplant. The median (average) waiting time for a pancreas transplant is 392 days and is shown by blood group in Table 6.4 and ethnicity in Table 6.5. 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.
Figure 6.2  Post-registration outcome for 271 new pancreas only and kidney/pancreas registrations made in the UK, 1 April 2010 - 31 March 2011

<table>
<thead>
<tr>
<th>Time since listing</th>
<th>Transplanted</th>
<th>Still waiting</th>
<th>Removed</th>
<th>Dead</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 months</td>
<td>25</td>
<td>69</td>
<td>34</td>
<td>58</td>
</tr>
<tr>
<td>1 year</td>
<td>22</td>
<td>58</td>
<td>34</td>
<td>58</td>
</tr>
<tr>
<td>2 years</td>
<td>70</td>
<td>70</td>
<td>70</td>
<td>70</td>
</tr>
<tr>
<td>3 years</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
</tbody>
</table>

Table 6.4  Median waiting time to pancreas only and kidney/pancreas transplant in the UK, for patients registered 1 April 2008 - 31 March 2012

<table>
<thead>
<tr>
<th>Blood group</th>
<th>Number of patients registered</th>
<th>Median</th>
<th>95% Confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O</td>
<td>536</td>
<td>485</td>
<td>448 - 522</td>
</tr>
<tr>
<td>A</td>
<td>486</td>
<td>328</td>
<td>279 - 377</td>
</tr>
<tr>
<td>B</td>
<td>107</td>
<td>327</td>
<td>236 - 418</td>
</tr>
<tr>
<td>AB</td>
<td>28</td>
<td>66</td>
<td>29 - 103</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1157</td>
<td>392</td>
<td>362 - 422</td>
</tr>
</tbody>
</table>

Table 6.5  Median waiting time to pancreas only and kidney/pancreas transplant in the UK, for patients registered 1 April 2008 - 31 March 2012

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Number of patients registered</th>
<th>Median</th>
<th>95% Confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>1055</td>
<td>402</td>
<td>370 - 434</td>
</tr>
<tr>
<td>Asian</td>
<td>56</td>
<td>387</td>
<td>326 - 448</td>
</tr>
<tr>
<td>Black</td>
<td>28</td>
<td>243</td>
<td>143 - 343</td>
</tr>
<tr>
<td>Other</td>
<td>16</td>
<td>188</td>
<td>144 - 232</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1157</td>
<td>392</td>
<td>362 - 422</td>
</tr>
</tbody>
</table>
6.3 Donor and organ supply

Of the 780 organ donors after brain death in the UK in 2013-2014, 365 (47%) donated a pancreas. There were 91 pancreas donors after circulatory death in 2013-2014. Table 6.6 shows this activity by country/Strategic Health Authority of the donor’s residence. No adjustments have been made for potential demographic differences in populations.

The overall rate for pancreas donors after brain death is 5.7 pmp, with rates ranging from 3.4 to 7.3 pmp across the Strategic Health Authorities and for donors after circulatory death is 1.4 pmp, with rates ranging from 0.7 to 2.7 pmp across the Strategic Health Authorities.

<table>
<thead>
<tr>
<th>Country/ Strategic Health Authority of residence</th>
<th>DBD (pmp)</th>
<th>DCD (pmp)</th>
<th>TOTAL (pmp)</th>
</tr>
</thead>
<tbody>
<tr>
<td>North East</td>
<td>19 (7.3)</td>
<td>7 (2.7)</td>
<td>26 (10.0)</td>
</tr>
<tr>
<td>North West</td>
<td>40 (5.6)</td>
<td>7 (1.0)</td>
<td>47 (6.6)</td>
</tr>
<tr>
<td>Yorkshire and The Humber</td>
<td>23 (4.3)</td>
<td>4 (0.8)</td>
<td>27 (5.1)</td>
</tr>
<tr>
<td>North of England</td>
<td>82 (5.5)</td>
<td>18 (1.2)</td>
<td>100 (6.7)</td>
</tr>
<tr>
<td>East Midlands</td>
<td>20 (4.4)</td>
<td>9 (2.0)</td>
<td>29 (6.3)</td>
</tr>
<tr>
<td>West Midlands</td>
<td>19 (3.4)</td>
<td>6 (1.1)</td>
<td>25 (4.4)</td>
</tr>
<tr>
<td>East of England</td>
<td>33 (5.6)</td>
<td>16 (2.7)</td>
<td>49 (8.3)</td>
</tr>
<tr>
<td>Midlands and East</td>
<td>72 (4.5)</td>
<td>31 (1.9)</td>
<td>103 (6.4)</td>
</tr>
<tr>
<td>London</td>
<td>49 (5.9)</td>
<td>8 (1.0)</td>
<td>57 (6.9)</td>
</tr>
<tr>
<td>South East Coast</td>
<td>29 (6.4)</td>
<td>3 (0.7)</td>
<td>32 (7.1)</td>
</tr>
<tr>
<td>South Central</td>
<td>30 (7.1)</td>
<td>8 (1.9)</td>
<td>38 (9.0)</td>
</tr>
<tr>
<td>South West</td>
<td>38 (7.1)</td>
<td>7 (1.3)</td>
<td>45 (8.4)</td>
</tr>
<tr>
<td>South of England</td>
<td>97 (6.9)</td>
<td>18 (1.3)</td>
<td>115 (8.2)</td>
</tr>
<tr>
<td>England</td>
<td>300 (5.6)</td>
<td>75 (1.4)</td>
<td>375 (7.0)</td>
</tr>
<tr>
<td>Isle of Man</td>
<td>1 (12.5)</td>
<td>0 (0.0)</td>
<td>1 (12.5)</td>
</tr>
<tr>
<td>Channel Islands</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>Wales</td>
<td>16 (5.2)</td>
<td>4 (1.3)</td>
<td>20 (6.5)</td>
</tr>
<tr>
<td>Scotland</td>
<td>30 (5.6)</td>
<td>8 (1.5)</td>
<td>38 (7.2)</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>18 (9.9)</td>
<td>4 (2.2)</td>
<td>22 (12.1)</td>
</tr>
<tr>
<td>TOTAL(^1)</td>
<td>365 (5.7)</td>
<td>91 (1.4)</td>
<td>456 (7.1)</td>
</tr>
</tbody>
</table>

\(^1\) Includes 8 donors where the hospital postcode was used in place of an unknown donor postcode
Transplants

The number of pancreas transplants by recipient country of residence/ Strategic Health Authority is shown in Table 6.7. No adjustments have been made for potential demographic differences in populations. For donors after brain death the transplant rate ranged from 1.7 to 4.6 pmp across Strategic Health Authorities and overall was 3.2 pmp. For donors after circulatory death the overall rate was 0.7 pmp and ranged from 0.4 to 1.2 pmp across Strategic Health Authorities.

Table 6.7 Pancreas transplant rates per million population (pmp), in the UK, 1 April 2013 - 31 March 2014, by country and English Strategic Health Authority

<table>
<thead>
<tr>
<th>Country/ Strategic Health Authority of residence</th>
<th>DBD (pmp)</th>
<th>DCD (pmp)</th>
<th>TOTAL (pmp)</th>
</tr>
</thead>
<tbody>
<tr>
<td>North East</td>
<td>12 (4.6)</td>
<td>1 (0.4)</td>
<td>13 (5.0)</td>
</tr>
<tr>
<td>North West</td>
<td>16 (2.3)</td>
<td>6 (0.8)</td>
<td>22 (3.1)</td>
</tr>
<tr>
<td>Yorkshire and The Humber</td>
<td>9 (1.7)</td>
<td>2 (0.4)</td>
<td>11 (2.1)</td>
</tr>
<tr>
<td>North of England</td>
<td>37 (2.5)</td>
<td>9 (0.6)</td>
<td>46 (3.1)</td>
</tr>
<tr>
<td>East Midlands</td>
<td>14 (3.1)</td>
<td>3 (0.7)</td>
<td>17 (3.7)</td>
</tr>
<tr>
<td>West Midlands</td>
<td>22 (3.9)</td>
<td>3 (0.5)</td>
<td>25 (4.4)</td>
</tr>
<tr>
<td>East of England</td>
<td>16 (2.7)</td>
<td>7 (1.2)</td>
<td>23 (3.9)</td>
</tr>
<tr>
<td>Midlands and East</td>
<td>52 (3.2)</td>
<td>13 (0.8)</td>
<td>65 (4.0)</td>
</tr>
<tr>
<td>London</td>
<td>26 (3.1)</td>
<td>6 (0.7)</td>
<td>32 (3.9)</td>
</tr>
<tr>
<td>South East Coast</td>
<td>11 (2.4)</td>
<td>4 (0.9)</td>
<td>15 (3.3)</td>
</tr>
<tr>
<td>South Central</td>
<td>19 (4.5)</td>
<td>2 (0.5)</td>
<td>21 (5.0)</td>
</tr>
<tr>
<td>South West</td>
<td>19 (3.6)</td>
<td>3 (0.6)</td>
<td>22 (4.1)</td>
</tr>
<tr>
<td>South of England</td>
<td>49 (3.5)</td>
<td>9 (0.6)</td>
<td>58 (4.1)</td>
</tr>
<tr>
<td>England</td>
<td>164 (3.1)</td>
<td>37 (0.7)</td>
<td>201 (3.8)</td>
</tr>
<tr>
<td>Isle of Man</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>Channel Islands</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>Wales</td>
<td>9 (2.9)</td>
<td>5 (1.6)</td>
<td>14 (4.6)</td>
</tr>
<tr>
<td>Scotland</td>
<td>25 (4.7)</td>
<td>1 (0.2)</td>
<td>26 (4.9)</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>5 (2.7)</td>
<td>0 (0.0)</td>
<td>5 (2.7)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>203 (3.2)</td>
<td>43 (0.7)</td>
<td>246 (3.8)</td>
</tr>
</tbody>
</table>

There were 246 deceased donor pancreas transplants in 2013-2014 representing an increase of 6% on the 233 transplants performed in 2012-2013. Of these 246, 188 (76%) were SPK transplants, 26 (11%) were pancreas only transplants (pancreas alone (PTA) or pancreas after kidney (PAK)) and 32 (13%) were islet transplants. The number of transplants performed at each centre is shown in Table 6.8 by transplant type and Table 6.9 by donor type. Note that King's College and The Royal Free only perform islet transplants.
The length of time that elapses between a pancreas being removed from the donor to its transplantation into the recipient is called the Cold Ischaemia Time (CIT). Generally, the shorter this time, the more likely the pancreas is to work immediately and the better the long-term outcome. The median CIT for a DBD donor whole pancreas transplant is 10.6 hours (Inter-Quartile (IQ) range 9.0 – 12.8) and for a DCD donor transplant is 10.2 hours (IQ range 8.6 – 11.6) and overall is 10.6 hours (IQ range 9.0 – 12.5).

At 31 March 2014, there were approximately 1,800 recipients with a functioning pancreas transplant (including multi-organ transplants) being followed-up, as reported to the UK Transplant Registry.

<table>
<thead>
<tr>
<th>Centre</th>
<th>Transplant type</th>
<th>Routine</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SPK</td>
<td>PTA</td>
<td>PAK</td>
</tr>
<tr>
<td>Bristol</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Cambridge</td>
<td>24</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Cardiff</td>
<td>9</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Edinburgh</td>
<td>20</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Guys</td>
<td>33</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>King's College</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Manchester</td>
<td>30</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Newcastle</td>
<td>6</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Oxford</td>
<td>62</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Royal Free</td>
<td>-</td>
<td>-</td>
<td>0</td>
</tr>
<tr>
<td>WLRTC</td>
<td>4</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>188</td>
<td>13</td>
<td>13</td>
</tr>
</tbody>
</table>

WLRTC - West London Renal and Transplant Centre
¹ Islet transplants reported since 1 July 2009

Table 6.9 Pancreas transplants, 1 April 2013 - 31 March 2014 by centre

<table>
<thead>
<tr>
<th>Centre</th>
<th>SPK</th>
<th>DCD</th>
<th>Transplant and donor type</th>
<th>Islet</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DBD</td>
<td>DCD</td>
<td>PTA</td>
<td>DCD</td>
<td>Islet</td>
</tr>
<tr>
<td>Cambridge</td>
<td>17</td>
<td>7</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Cardiff</td>
<td>6</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Edinburgh</td>
<td>20</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>Guys</td>
<td>26</td>
<td>7</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>King's College</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td>Manchester</td>
<td>23</td>
<td>7</td>
<td>1</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Newcastle</td>
<td>5</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Oxford</td>
<td>52</td>
<td>10</td>
<td>1</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Royal Free</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0</td>
</tr>
<tr>
<td>WLRTC</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>153</td>
<td>35</td>
<td>22</td>
<td>4</td>
<td>28</td>
</tr>
</tbody>
</table>

WLRTC - West London Renal and Transplant Centre
6.5 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 6.10.

<table>
<thead>
<tr>
<th>Table 6.10</th>
<th>Demographic characteristics of deceased pancreas donors and transplant recipients, 1 April 2013 - 31 March 2014, and transplant list patients at 31 March</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Donors</td>
</tr>
<tr>
<td></td>
<td>N (% )</td>
</tr>
<tr>
<td>Age group (years)</td>
<td></td>
</tr>
<tr>
<td>0 - 17</td>
<td>40 (9)</td>
</tr>
<tr>
<td>18 - 34</td>
<td>137 (30)</td>
</tr>
<tr>
<td>35 - 49</td>
<td>161 (35)</td>
</tr>
<tr>
<td>50 - 59</td>
<td>104 (23)</td>
</tr>
<tr>
<td>60 - 69</td>
<td>14 (3)</td>
</tr>
<tr>
<td>70+</td>
<td>0 (0)</td>
</tr>
<tr>
<td>mean (SD)</td>
<td>38 (14)</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>252 (55)</td>
</tr>
<tr>
<td>Female</td>
<td>204 (45)</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>428 (94)</td>
</tr>
<tr>
<td>Asian</td>
<td>13 (3)</td>
</tr>
<tr>
<td>Black</td>
<td>5 (1)</td>
</tr>
<tr>
<td>Chinese</td>
<td>2 (0)</td>
</tr>
<tr>
<td>Other</td>
<td>8 (2)</td>
</tr>
<tr>
<td>Not reported</td>
<td>2 (1)</td>
</tr>
<tr>
<td>Blood group</td>
<td></td>
</tr>
<tr>
<td>O</td>
<td>222 (49)</td>
</tr>
<tr>
<td>A</td>
<td>177 (39)</td>
</tr>
<tr>
<td>B</td>
<td>47 (10)</td>
</tr>
<tr>
<td>AB</td>
<td>10 (2)</td>
</tr>
<tr>
<td>Graft number</td>
<td></td>
</tr>
<tr>
<td>First graft</td>
<td>220 (89)</td>
</tr>
<tr>
<td>Re-graft</td>
<td>26 (11)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>456 (100)</td>
</tr>
</tbody>
</table>
Cardiothoracic Activity

Key messages

- At 31 March 2014, there were 246 patients on the active heart transplant list, 272 on the lung list and 15 on the heart/lung list

- Of the 780 organ donors after brain death, 303 (39%) were cardiothoracic organ donors

- The number of heart transplants from deceased donors increased by 37% to 198 this year; three quarters of these were urgent heart transplants

- The number of lung or heart/lung transplants from deceased donors increased by 14% to 218
7.1 Overview

Last year the number of heart transplants rose by 37% to 198 and the number of lung or heart/lung transplants increased by 14% to 218. There were increases in both the heart and the lung transplant lists since March 2013. The number of patients registered on the active heart transplant list at year end has increased by 132% since 2005, while the number of patients registered for a lung or heart/lung transplant has decreased by 7% since 2005.

A summary of the deceased donor cardiothoracic activity from 1 April 2004 to 31 March 2014 is shown in Figure 7.1 for heart activity and Figure 7.2 for lung activity. Donors who donate both heart and lung(s) are included in both figures, but heart/lung block transplants and patients active on the transplant list for a heart/lung block are only included in Figure 7.2.
7.2 Transplant list

Table 7.1 shows the number of patients on the active transplant lists at 31 March 2014 by centre. The lung transplant list accounts for 51% of the patients waiting for a cardiothoracic transplant. Overall, Newcastle and Harefield have the largest cardiothoracic lists.

During 2013-2014, 334 patients joined the heart transplant list while 12 joined the heart/lung list and 321 joined the lung transplant list. Outcomes for patients on the list at 1 April 2013 and those joining the list during the year are shown in Table 7.2.

Table 7.3 shows the transplant list rate per million population by country/Strategic Health Authority of patient's residence. The overall heart transplant list rate at 31 March 2014 was 4.1 pmp and ranged from 2.2 to 9.2 across the Strategic Health Authorities. The overall lung transplant list rate was 4.5 pmp and ranged from 2.5 to 6.2 across the Strategic Health Authorities.

An indication of longer term outcomes for adult patients listed for a cardiothoracic organ transplant is summarised in Figure 7.3 and Figure 7.4. This shows the proportion of patients transplanted or still waiting six months, one year, two years and three years after joining the non-urgent heart list or the lung list, respectively. It also shows the proportion removed from the transplant list and those dying while on the transplant list. Within six months of listing, 31% of non-urgent heart patients are transplanted while 5% have died while waiting. For patients listed for a lung transplant, 39% are transplanted within six months, rising to 68% after three years. The patients removed from these lists may also subsequently have died.

<table>
<thead>
<tr>
<th>Centre</th>
<th>Adult Patients</th>
<th>Paediatric Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Active transplant lists</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Heart Non-urgent</td>
<td>Heart Urgent</td>
</tr>
<tr>
<td>Birmingham</td>
<td>18 (17)</td>
<td>1 (0)</td>
</tr>
<tr>
<td>Glasgow</td>
<td>12 (6)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Great Ormond Street</td>
<td>1 (2)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Harefield</td>
<td>65 (51)</td>
<td>4 (2)</td>
</tr>
<tr>
<td>Manchester</td>
<td>15 (13)</td>
<td>1 (2)</td>
</tr>
<tr>
<td>Newcastle</td>
<td>47 (37)</td>
<td>4 (4)</td>
</tr>
<tr>
<td>Papworth</td>
<td>45 (44)</td>
<td>3 (4)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>203 (170)</td>
<td>13 (16)</td>
</tr>
</tbody>
</table>

- 58 -
Table 7.2  Cardiothoracic transplant lists and new registrations in the UK, 1 April 2013 - 31 March 2014

<table>
<thead>
<tr>
<th>Outcome of patient at 31 March 2014</th>
<th>Active and suspended patients at 1 April 2013</th>
<th>New registrations in 2013-2014</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Heart transplant list</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remained active/suspended</td>
<td>113</td>
<td>55</td>
<td>142</td>
</tr>
<tr>
<td>Transplanted</td>
<td>56</td>
<td>27</td>
<td>139</td>
</tr>
<tr>
<td>Removed</td>
<td>26</td>
<td>13</td>
<td>30</td>
</tr>
<tr>
<td>Died</td>
<td>12</td>
<td>6</td>
<td>23</td>
</tr>
<tr>
<td>TOTAL</td>
<td>207</td>
<td></td>
<td>334</td>
</tr>
</tbody>
</table>

| Heart/lung transplant list          |       |      |       |      |       |      |
| Remained active/suspended           | 7     | 47   | 8     | 67   | 15    | 56   |
| Transplanted                        | 5     | 33   | 3     | 25   | 8     | 30   |
| Removed                             | 0     |      | 0     |      | 0     |      |
| Died                                | 3     | 20   | 1     | 8    | 4     | 15   |
| TOTAL                               | 15    |      | 12    |      | 27    |      |

| Lung transplant list                |       |      |       |      |       |      |
| Remained active/suspended           | 85    | 38   | 175   | 55   | 260   | 48   |
| Transplanted                        | 88    | 39   | 115   | 36   | 203   | 37   |
| Removed                             | 21    | 9    | 4     | 1    | 25    | 5    |
| Died                                | 29    | 13   | 27    | 8    | 56    | 10   |
| TOTAL                               | 223   |      | 321   |      | 544   |      |

1 Includes reregistrations for second or subsequent transplants
2 Heart, lung or heart/lung
<table>
<thead>
<tr>
<th>Country/ Strategic Health Authority of residence</th>
<th>Heart transplant list (pmp) 2014</th>
<th>Heart transplant list (pmp) 2013</th>
<th>Lung transplant list (pmp) 2014</th>
<th>Lung transplant list (pmp) 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>North East</td>
<td>24 (9.2)</td>
<td>19 (7.3)</td>
<td>13 (5.0)</td>
<td>5 (1.9)</td>
</tr>
<tr>
<td>North West</td>
<td>23 (3.2)</td>
<td>19 (2.7)</td>
<td>41 (5.8)</td>
<td>36 (5.1)</td>
</tr>
<tr>
<td>Yorkshire and The Humber</td>
<td>17 (3.2)</td>
<td>17 (3.2)</td>
<td>33 (6.2)</td>
<td>19 (3.6)</td>
</tr>
<tr>
<td>North of England</td>
<td>64 (4.3)</td>
<td>55 (3.7)</td>
<td>87 (5.8)</td>
<td>60 (4.0)</td>
</tr>
<tr>
<td>East Midlands</td>
<td>10 (2.2)</td>
<td>15 (3.3)</td>
<td>17 (3.7)</td>
<td>17 (3.7)</td>
</tr>
<tr>
<td>West Midlands</td>
<td>21 (3.7)</td>
<td>19 (3.4)</td>
<td>26 (4.6)</td>
<td>22 (3.9)</td>
</tr>
<tr>
<td>East of England</td>
<td>28 (4.7)</td>
<td>27 (4.6)</td>
<td>29 (4.9)</td>
<td>24 (4.1)</td>
</tr>
<tr>
<td>Midlands and East</td>
<td>59 (3.7)</td>
<td>61 (3.8)</td>
<td>72 (4.5)</td>
<td>63 (3.9)</td>
</tr>
<tr>
<td>London</td>
<td>35 (4.2)</td>
<td>28 (3.4)</td>
<td>21 (2.5)</td>
<td>20 (2.4)</td>
</tr>
<tr>
<td>South East Coast</td>
<td>26 (5.8)</td>
<td>17 (3.8)</td>
<td>18 (4.0)</td>
<td>13 (2.9)</td>
</tr>
<tr>
<td>South Central</td>
<td>20 (4.8)</td>
<td>12 (2.9)</td>
<td>15 (3.6)</td>
<td>20 (4.8)</td>
</tr>
<tr>
<td>South West</td>
<td>19 (3.6)</td>
<td>20 (3.7)</td>
<td>26 (4.9)</td>
<td>16 (3.0)</td>
</tr>
<tr>
<td>South of England</td>
<td>65 (4.6)</td>
<td>49 (3.5)</td>
<td>59 (4.2)</td>
<td>49 (3.5)</td>
</tr>
<tr>
<td>England</td>
<td>223 (4.2)</td>
<td>193 (3.6)</td>
<td>239 (4.5)</td>
<td>192 (3.6)</td>
</tr>
<tr>
<td>Isle of Man</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>Channel Islands</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>2 (12.5)</td>
</tr>
<tr>
<td>Wales</td>
<td>7 (2.3)</td>
<td>6 (2.0)</td>
<td>16 (5.2)</td>
<td>15 (4.9)</td>
</tr>
<tr>
<td>Scotland</td>
<td>19 (3.6)</td>
<td>9 (1.7)</td>
<td>19 (3.6)</td>
<td>17 (3.2)</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>8 (4.4)</td>
<td>4 (2.2)</td>
<td>9 (4.9)</td>
<td>3 (1.6)</td>
</tr>
<tr>
<td>TOTAL(^1)(^2)</td>
<td>261 (4.1)</td>
<td>216 (3.4)</td>
<td>287 (4.5)</td>
<td>242 (3.8)</td>
</tr>
</tbody>
</table>

\(^1\) Includes heart patients in 2014 (2013) resident in: Republic of Ireland 4(3); Overseas 0(1)

\(^2\) Includes lung patients in 2014 (2013) resident in: Republic of Ireland 4(13)
Figure 7.3  Post-registration outcome for 87 new non-urgent heart only registrations made in the UK, 1 April 2010 - 31 March 2011

Figure 7.4  Post-registration outcome for 222 new lung only registrations made in the UK, 1 April 2010 - 31 March 2011

Table 7.4 and Table 7.5 show the median waiting time to cardiothoracic transplant by blood group and ethnicity, respectively, for patients registered between April 2009 and March 2012. Median waiting time for adult non-urgent heart patients is 441 days overall, compared with 265 days for adult lung patients. The median waiting time for paediatric non-urgent heart patients is 214 days; this is not broken down by blood group or ethnicity due to low numbers. Paediatric recipients are aged less than 16 years at time of listing. 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 7.4  Median waiting time to cardiothoracic transplant in the UK, for patients registered 1 April 2009 - 31 March 2012

<table>
<thead>
<tr>
<th>Blood group</th>
<th>Number of patients registered</th>
<th>Waiting time (days)</th>
<th>95% Confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adult non-urgent heart</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O¹</td>
<td>106</td>
<td>1187</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>107</td>
<td>179</td>
<td>73 - 285</td>
</tr>
<tr>
<td>B</td>
<td>29</td>
<td>293</td>
<td>125 - 461</td>
</tr>
<tr>
<td>AB</td>
<td>16</td>
<td>193</td>
<td>0 - 393</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>258</strong></td>
<td><strong>441</strong></td>
<td><strong>268 - 614</strong></td>
</tr>
<tr>
<td><strong>Paediatric non-urgent heart</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>37</td>
<td>214</td>
<td>0 - 494</td>
</tr>
<tr>
<td><strong>Adult lung</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O</td>
<td>332</td>
<td>425</td>
<td>343 - 507</td>
</tr>
<tr>
<td>A</td>
<td>272</td>
<td>155</td>
<td>116 - 194</td>
</tr>
<tr>
<td>B</td>
<td>64</td>
<td>264</td>
<td>97 - 431</td>
</tr>
<tr>
<td>AB</td>
<td>22</td>
<td>112</td>
<td>24 - 200</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>690</strong></td>
<td><strong>265</strong></td>
<td><strong>232 - 298</strong></td>
</tr>
</tbody>
</table>

¹ Unable to estimate 95% confidence interval

### Table 7.5  Median waiting time to cardiothoracic transplant in the UK, for patients registered 1 April 2009 - 31 March 2012

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Number of patients registered</th>
<th>Waiting time (days)</th>
<th>95% Confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adult non-urgent heart</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>226</td>
<td>395</td>
<td>265 - 525</td>
</tr>
<tr>
<td>Asian¹</td>
<td>14</td>
<td>512</td>
<td>-</td>
</tr>
<tr>
<td>Black¹</td>
<td>11</td>
<td>119</td>
<td>-</td>
</tr>
<tr>
<td>Other²</td>
<td>7</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>258</strong></td>
<td><strong>441</strong></td>
<td><strong>268 - 614</strong></td>
</tr>
<tr>
<td><strong>Paediatric non-urgent heart</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>37</td>
<td>214</td>
<td>0 - 494</td>
</tr>
<tr>
<td><strong>Adult lung</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>655</td>
<td>258</td>
<td>227 - 289</td>
</tr>
<tr>
<td>Asian</td>
<td>18</td>
<td>299</td>
<td>115 - 483</td>
</tr>
<tr>
<td>Black²</td>
<td>9</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Other²</td>
<td>8</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>690</strong></td>
<td><strong>265</strong></td>
<td><strong>232 - 298</strong></td>
</tr>
</tbody>
</table>

¹ Unable to estimate 95% confidence interval

² Median waiting time not reported for fewer than 10 patients
Table 7.6  Cardiothoracic organ donors in the UK, 1 April 2013 - 31 March 2014 (2012-2013), by age group and allocation zone

<table>
<thead>
<tr>
<th>Allocation zone</th>
<th>Heart only</th>
<th>Heart &amp; lung</th>
<th>Lung(s) only</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DBD</td>
<td>Lung(s) only</td>
<td>DCD</td>
<td></td>
</tr>
<tr>
<td><strong>Adult</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Birmingham</td>
<td>13 (17)</td>
<td>10 (8)</td>
<td>16 (15)</td>
<td>6 (7)</td>
</tr>
<tr>
<td>Glasgow</td>
<td>8 (9)</td>
<td>8 (2)</td>
<td>14 (13)</td>
<td>4 (4)</td>
</tr>
<tr>
<td>Harefield</td>
<td>22 (10)</td>
<td>23 (11)</td>
<td>23 (21)</td>
<td>10 (5)</td>
</tr>
<tr>
<td>Manchester</td>
<td>14 (9)</td>
<td>9 (4)</td>
<td>14 (16)</td>
<td>2 (5)</td>
</tr>
<tr>
<td>Newcastle</td>
<td>16 (12)</td>
<td>17 (11)</td>
<td>15 (29)</td>
<td>10 (8)</td>
</tr>
<tr>
<td>Papworth</td>
<td>26 (20)</td>
<td>23 (18)</td>
<td>18 (23)</td>
<td>5 (8)</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>99 (77)</strong></td>
<td><strong>90 (54)</strong></td>
<td><strong>100 (117)</strong></td>
<td><strong>37 (37)</strong></td>
</tr>
<tr>
<td><strong>Paediatric</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Birmingham</td>
<td>1 (4)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>0 (1)</td>
</tr>
<tr>
<td>Glasgow</td>
<td>0 (0)</td>
<td>0 (1)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Harefield</td>
<td>0 (3)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>1 (0)</td>
</tr>
<tr>
<td>Manchester</td>
<td>1 (1)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Newcastle</td>
<td>1 (0)</td>
<td>4 (3)</td>
<td>0 (0)</td>
<td>1 (0)</td>
</tr>
<tr>
<td>Papworth</td>
<td>8 (1)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>11</strong></td>
<td><strong>4 (4)</strong></td>
<td><strong>0 (0)</strong></td>
<td><strong>2 (1)</strong></td>
</tr>
</tbody>
</table>

1 Includes one donor after circulatory death
Paediatric donors are aged 15 years or under
7.3 Donor and organ supply

The number of cardiothoracic organ donors classified by allocation zone of the donor hospital is summarised in Table 7.6. The numbers reflect the number of organs retrieved from within each zone (by any retrieval team) rather than the number of retrievals made by that centre. 37 of the 137 adult lung only donors were donors after circulatory death and there were no living donors. There were no domino heart donors. Of the 289 adult cardiothoracic donors after brain death, 34% donated only the heart, 31% heart and lung and 35% lung only. Of the 14 paediatric cardiothoracic donors after brain death, 71% donated only the heart and 29% donated heart and lung.

Table 7.7 shows the number of organ donors after brain death identified in each allocation zone, the number that donated cardiothoracic organs and the number of organs retrieved.

Of the 780 organ donors after brain death, 39% donated cardiothoracic organs. Overall, 94% of the 577 organs retrieved were transplanted: 97% of hearts and 93% of lungs.

<table>
<thead>
<tr>
<th>Allocation zone</th>
<th>Number of donors</th>
<th>Number of organs retrieved (used)</th>
<th>TOTAL retrieved (used)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DBD solid organ</td>
<td>Cardiothoracic</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hearts</td>
<td>Lungs</td>
</tr>
<tr>
<td>Birmingham</td>
<td>114</td>
<td>40</td>
<td>24 (23)</td>
</tr>
<tr>
<td>Glasgow</td>
<td>62</td>
<td>30</td>
<td>16 (16)</td>
</tr>
<tr>
<td>Harefield</td>
<td>171</td>
<td>68</td>
<td>45 (43)</td>
</tr>
<tr>
<td>Manchester</td>
<td>107</td>
<td>38</td>
<td>24 (23)</td>
</tr>
<tr>
<td>Newcastle¹</td>
<td>118</td>
<td>53</td>
<td>38 (37)</td>
</tr>
<tr>
<td>Papworth</td>
<td>208</td>
<td>74</td>
<td>56 (54)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>780</td>
<td>303</td>
<td>203 (196)</td>
</tr>
</tbody>
</table>

¹ Newcastle transplant adult and paediatric patients
The rates per million population for cardiothoracic donors are shown in Table 7.8 by donor country/Strategic Health Authority of residence. No adjustments have been made for potential demographic differences in populations. The overall cardiothoracic donor rate was 5.4 pmp in 2013-2014 and varied across the Strategic Health Authorities from 3.9 pmp to 9.6 pmp, while the rate in Northern Ireland was 12.1 pmp.

Table 7.8  Cardiothoracic donation and retrieval rates for deceased donors in the UK, 1 April 2013 - 31 March 2014, by country/Strategic Health Authority of residence

<table>
<thead>
<tr>
<th>Country/Strategic Health Authority</th>
<th>Heart (pmp)</th>
<th>Lungs (pmp)</th>
<th>Total (pmp)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DBD</td>
<td>DCD</td>
<td></td>
</tr>
<tr>
<td>North East</td>
<td>15 (5.8)</td>
<td>9 (3.5)</td>
<td>6 (2.3)</td>
</tr>
<tr>
<td>North West</td>
<td>16 (2.3)</td>
<td>17 (2.4)</td>
<td>2 (0.3)</td>
</tr>
<tr>
<td>Yorkshire and The Humber</td>
<td>10 (1.9)</td>
<td>15 (2.8)</td>
<td>5 (0.9)</td>
</tr>
<tr>
<td>North of England</td>
<td>41 (2.7)</td>
<td>41 (2.7)</td>
<td>13 (0.9)</td>
</tr>
<tr>
<td>East Midlands</td>
<td>12 (2.6)</td>
<td>11 (2.4)</td>
<td>2 (0.4)</td>
</tr>
<tr>
<td>West Midlands</td>
<td>15 (2.7)</td>
<td>16 (2.8)</td>
<td>3 (0.5)</td>
</tr>
<tr>
<td>East of England</td>
<td>18 (3.0)</td>
<td>13 (2.2)</td>
<td>4 (0.7)</td>
</tr>
<tr>
<td>Midlands and East</td>
<td>45 (2.8)</td>
<td>40 (2.5)</td>
<td>9 (0.6)</td>
</tr>
<tr>
<td>London</td>
<td>29 (3.5)</td>
<td>16 (1.9)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>South East Coast</td>
<td>16 (3.5)</td>
<td>17 (3.8)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>South Central</td>
<td>15 (3.6)</td>
<td>19 (4.5)</td>
<td>7 (1.7)</td>
</tr>
<tr>
<td>South West</td>
<td>20 (3.7)</td>
<td>15 (2.8)</td>
<td>2 (0.4)</td>
</tr>
<tr>
<td>South of England</td>
<td>51 (3.6)</td>
<td>51 (3.6)</td>
<td>9 (0.6)</td>
</tr>
<tr>
<td>England</td>
<td>166 (3.1)</td>
<td>148 (2.8)</td>
<td>31 (0.6)</td>
</tr>
<tr>
<td>Isle of Man</td>
<td>2 (25.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>Channel Islands</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>Wales</td>
<td>4 (1.3)</td>
<td>8 (2.6)</td>
<td>3 (1.0)</td>
</tr>
<tr>
<td>Scotland</td>
<td>18 (3.4)</td>
<td>23 (4.3)</td>
<td>4 (0.8)</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>14 (7.7)</td>
<td>15 (8.2)</td>
<td>1 (0.5)</td>
</tr>
<tr>
<td>TOTAL(^1)</td>
<td>204(^2)</td>
<td>194 (3.0)</td>
<td>39 (0.6)</td>
</tr>
</tbody>
</table>

\(^1\) Includes 8 donors where the hospital postcode was used in place of an unknown donor postcode
\(^2\) Includes 1 donor after circulatory death
7.4 Transplants

The number of cardiothoracic transplants by recipient country/Strategic Health Authority of residence is shown in Table 7.9. No adjustments have been made for potential demographic differences in populations. The transplant rate ranged from 5.0 to 8.3 pmp across Strategic Health Authorities and overall was 6.4 pmp. Lung transplants include the small number of heart/lung transplants performed.

<table>
<thead>
<tr>
<th>Country/Strategic Health Authority</th>
<th>Heart (pmp)</th>
<th>Lungs (pmp)</th>
<th>Total (pmp)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DBD</td>
<td>DCD</td>
<td></td>
</tr>
<tr>
<td>North East</td>
<td>10 (3.8)</td>
<td>6 (2.3)</td>
<td>1 (0.4)</td>
</tr>
<tr>
<td>North West</td>
<td>33 (4.7)</td>
<td>23 (3.2)</td>
<td>3 (0.4)</td>
</tr>
<tr>
<td>Yorkshire and The Humber</td>
<td>14 (2.6)</td>
<td>12 (2.3)</td>
<td>5 (0.9)</td>
</tr>
<tr>
<td>North of England</td>
<td>57 (3.8)</td>
<td>41 (2.7)</td>
<td>9 (0.6)</td>
</tr>
<tr>
<td>East Midlands</td>
<td>15 (3.3)</td>
<td>17 (3.7)</td>
<td>2 (0.4)</td>
</tr>
<tr>
<td>West Midlands</td>
<td>15 (2.7)</td>
<td>20 (3.5)</td>
<td>3 (0.5)</td>
</tr>
<tr>
<td>East of England</td>
<td>14 (2.4)</td>
<td>22 (3.7)</td>
<td>4 (0.7)</td>
</tr>
<tr>
<td>Midlands and East</td>
<td>44 (2.7)</td>
<td>59 (3.7)</td>
<td>9 (0.6)</td>
</tr>
<tr>
<td>London</td>
<td>30 (3.6)</td>
<td>12 (1.4)</td>
<td>3 (0.4)</td>
</tr>
<tr>
<td>South East Coast</td>
<td>8 (1.8)</td>
<td>14 (3.1)</td>
<td>2 (0.4)</td>
</tr>
<tr>
<td>South Central</td>
<td>7 (1.7)</td>
<td>10 (2.4)</td>
<td>4 (1.0)</td>
</tr>
<tr>
<td>South West</td>
<td>17 (3.2)</td>
<td>14 (2.6)</td>
<td>2 (0.4)</td>
</tr>
<tr>
<td>South of England</td>
<td>32 (2.3)</td>
<td>38 (2.7)</td>
<td>8 (0.6)</td>
</tr>
<tr>
<td>England</td>
<td>163 (3.0)</td>
<td>150 (2.8)</td>
<td>29 (0.5)</td>
</tr>
<tr>
<td>Isle of Man</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>Channel Islands</td>
<td>0 (0.0)</td>
<td>1 (6.3)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>Wales</td>
<td>4 (1.3)</td>
<td>12 (3.9)</td>
<td>2 (0.7)</td>
</tr>
<tr>
<td>Scotland</td>
<td>21 (4.0)</td>
<td>16 (3.0)</td>
<td>4 (0.8)</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>5 (2.7)</td>
<td>3 (1.6)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>TOTAL(^1,2)</td>
<td>193(^3)</td>
<td>182 (2.8)</td>
<td>35 (0.5)</td>
</tr>
</tbody>
</table>

1 Excludes 5 recipients who reside in the Republic of Ireland
2 Excludes 1 recipient whose postcode was unknown
3 Includes 1 transplant from a donor after circulatory death.
Table 7.10 shows cardiothoracic transplant activity for each centre. In 2013-2014, a total of 416 transplants were carried out, an increase of 24% on 2012-2013. Of these, 48% were deceased donor heart transplants. The 204 adult lung transplants include 33 (16%) from donors after circulatory death: 12 were performed by Harefield, 11 by Newcastle, 4 by Papworth, 3 by Manchester and 3 by Birmingham.

Table 7.10  
Cardiothoracic transplants, 1 April 2013 - 31 March 2014 (2012-2013), by age group and centre

<table>
<thead>
<tr>
<th>Transplant centre</th>
<th>Transplant type</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Heart</td>
<td>Heart/</td>
</tr>
<tr>
<td></td>
<td>Non-urgent</td>
<td>Urgent</td>
</tr>
<tr>
<td>Adult</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Birmingham</td>
<td>3</td>
<td>17</td>
</tr>
<tr>
<td>Glasgow</td>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td>Great Ormond Street</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Harefield</td>
<td>3</td>
<td>23</td>
</tr>
<tr>
<td>Manchester</td>
<td>5</td>
<td>26</td>
</tr>
<tr>
<td>Newcastle</td>
<td>8</td>
<td>20</td>
</tr>
<tr>
<td>Papworth</td>
<td>17</td>
<td>27</td>
</tr>
<tr>
<td>TOTAL</td>
<td>42</td>
<td>129</td>
</tr>
</tbody>
</table>

| Paediatric        |       |       |     |     |     |     |
| Glasgow           | 0     | 0     | 0   | 0   | 0   | 0    |
| Great Ormond Street | 2   | 13    | 0   | 3   | 1   | 20   |
| Newcastle         | 2     | 10    | 1   | 1   | 0   | 14   |
| TOTAL             | 4     | 23    | 1   | 4   | 2   | 34   |

1 Includes one transplant from a donor after circulatory death

Paediatric recipients are aged under 16 years at time of transplant

There were 152 adult urgent heart transplants in 2013-2014, representing 77% of all adult heart transplants (71% in 2012-2013). There were 23 paediatric urgent heart transplants in 2013-2014, representing 85% of all paediatric heart transplants (92% in 2012-2013). A small number of hearts and lungs were imported from outside the UK for transplantation in the UK: 7 hearts from the Republic of Ireland (ROI) and 4 from elsewhere (1 into a non-UK resident recipient), 1 lung from ROI and 1 from elsewhere. Further information is provided in the Appendix.

The length of time that elapses between cardiothoracic organs being removed from the donor to its transplantation into the recipient is called the Cold Ischaemia Time (CIT). Generally, the shorter this time, the more likely the organ is to work immediately and the better the long-term outcome. In 2013/2014 the median CIT for a heart transplant was 3.2 hours (Inter-Quartile (IQ) range 2.6-3.9). The median CIT for DBD donor lung transplant was 5.0 hours (IQ range 4.2-6.3) and for a DCD donor lung transplant was 5.4 hours (IQ range 4.6-7.0) and overall was 5.1 hours (IQ range 4.2-6.3).

At 31 March 2014 there were approximately 3,600 recipients with a functioning cardiothoracic organ transplant being followed-up as reported to the UK Transplant Registry.
7.5 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 7.11.

<table>
<thead>
<tr>
<th>Age group (years)</th>
<th>Donors</th>
<th>Transplant recipients</th>
<th>Active transplant list patients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>(%)</td>
<td>N</td>
</tr>
<tr>
<td>Age group (years)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 - 17</td>
<td>25</td>
<td>(7)</td>
<td>43 (10)</td>
</tr>
<tr>
<td>18 - 34</td>
<td>92</td>
<td>(27)</td>
<td>83 (20)</td>
</tr>
<tr>
<td>35 - 49</td>
<td>116</td>
<td>(34)</td>
<td>99 (24)</td>
</tr>
<tr>
<td>50 - 59</td>
<td>83</td>
<td>(24)</td>
<td>113 (27)</td>
</tr>
<tr>
<td>60 - 69</td>
<td>26</td>
<td>(8)</td>
<td>78 (19)</td>
</tr>
<tr>
<td>70+</td>
<td>1</td>
<td>(0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>mean (SD)</td>
<td>41</td>
<td>(15)</td>
<td>43 (18)</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>182</td>
<td>(53)</td>
<td>265 (64)</td>
</tr>
<tr>
<td>Female</td>
<td>161</td>
<td>(47)</td>
<td>151 (36)</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>320</td>
<td>(93)</td>
<td>377 (91)</td>
</tr>
<tr>
<td>Asian</td>
<td>8</td>
<td>(2)</td>
<td>19 (5)</td>
</tr>
<tr>
<td>Black</td>
<td>6</td>
<td>(2)</td>
<td>7 (2)</td>
</tr>
<tr>
<td>Chinese</td>
<td>2</td>
<td>(1)</td>
<td>1 (0)</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
<td>(2)</td>
<td>5 (1)</td>
</tr>
<tr>
<td>Not reported</td>
<td>1</td>
<td>(0)</td>
<td>7 (2)</td>
</tr>
<tr>
<td>Blood group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O</td>
<td>154</td>
<td>(45)</td>
<td>147 (35)</td>
</tr>
<tr>
<td>A</td>
<td>151</td>
<td>(44)</td>
<td>206 (50)</td>
</tr>
<tr>
<td>B</td>
<td>36</td>
<td>(10)</td>
<td>47 (11)</td>
</tr>
<tr>
<td>AB</td>
<td>2</td>
<td>(1)</td>
<td>16 (4)</td>
</tr>
<tr>
<td>Graft number</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First graft</td>
<td>409</td>
<td>(98)</td>
<td>525 (98)</td>
</tr>
<tr>
<td>Re-graft</td>
<td>7</td>
<td>(2)</td>
<td>8 (2)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>343</td>
<td>(100)</td>
<td>416 (100)</td>
</tr>
</tbody>
</table>
Liver Activity

Key messages

- The number of patients on the active liver transplant list at 31 March 2014 was 549, an increase of 12% from 2013.
- The number of liver donors after brain death increased by 11% to 712, while transplants from donors after brain death increased by 12% to 727.
- The number of liver donors after circulatory death increased by 19% to 220, while transplants from donors after circulatory death increased by 13% to 153.
8.1 Overview

The number of deceased liver donors and transplants in the UK in the last ten years is shown in Figure 8.1. Over this period, there has been a steady increase in the number of patients registered on the active transplant list at 31 March and a recent increase in the numbers of donors and transplants.

Intestinal transplants that used a liver are not included in the liver activity reported. However, any livers retrieved and used for such transplants are included in the liver donor activity. Liver only transplants in intestinal failure patients are included in the liver transplant activity. Intestinal transplant activity is reported in the Chapter 9.

The number of deceased donors, deceased and living donor transplants, and patients on the active transplant list, by centre, is shown in Table 8.1. The numbers of liver donors reflect the number of organs retrieved from within each zone (by any retrieval team) rather than the number of retrievals made by that centre. In 2013-2014, 932 organ donors donated their liver for transplant: 712 donors after brain death and 220 donors after circulatory death. There were 549 patients on the active transplant list at 31 March 2014, an increase of 12% from 2013.

Overall, the number of liver transplants (either whole liver or liver lobe transplants) from donors after brain death increased by 12% to 727, and from donors after circulatory death increased by 13% to 153, compared with the previous financial year. Additionally, there were 28 living liver lobe donor transplants in NHS Group 1 (24) and Group 2 (4) paediatric and adult recipients and 4 domino donor transplants in NHS Group 1 adult recipients. One of the living donors was an altruistic non-directed donor.

Patients are prioritised as super-urgent if they require a new liver as soon as possible due to rapid failure of the native organ. Other patients are referred to as elective. There were 105 deceased donor adult super-urgent transplants in 2013-2014, representing 13% of all adult transplants. There were 16 deceased donor paediatric super-urgent transplants in 2013-2014, representing 16% of all paediatric transplants.
Table 8.1  Deceased and living liver donors and transplants, 1 April 2013 - 31 March 2014 (2012-2013) and transplant list patients at 31 March 2014 (2013) in the UK, by age group and centre

<table>
<thead>
<tr>
<th>Allocation zone/ transplant centre</th>
<th>Deceased donors¹</th>
<th>Deceased donor transplants</th>
<th>Living donor transplants</th>
<th>Active transplant list</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DBD</td>
<td>DCD</td>
<td>TOTAL</td>
<td>DBD</td>
</tr>
<tr>
<td>Adult</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Birmingham</td>
<td>153 (139)</td>
<td>50 (53)</td>
<td>203 (202)</td>
<td>138 (124)</td>
</tr>
<tr>
<td>Cambridge</td>
<td>64 (87)</td>
<td>26 (24)</td>
<td>90 (111)</td>
<td>58 (72)</td>
</tr>
<tr>
<td>Edinburgh</td>
<td>92 (79)</td>
<td>18 (15)</td>
<td>110 (94)</td>
<td>84 (79)</td>
</tr>
<tr>
<td>King's College</td>
<td>152 (150)</td>
<td>55 (44)</td>
<td>207 (194)</td>
<td>138 (124)</td>
</tr>
<tr>
<td>Leeds</td>
<td>112 (79)</td>
<td>29 (27)</td>
<td>141 (106)</td>
<td>100 (73)</td>
</tr>
<tr>
<td>Newcastle</td>
<td>41 (45)</td>
<td>17 (5)</td>
<td>58 (50)</td>
<td>42 (40)</td>
</tr>
<tr>
<td>Royal Free</td>
<td>78 (45)</td>
<td>17 (13)</td>
<td>95 (58)</td>
<td>80 (61)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>692 (624)</td>
<td>212 (181)</td>
<td>904 (805)</td>
<td>640 (573)</td>
</tr>
<tr>
<td>Paediatric</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Birmingham</td>
<td>4 (6)</td>
<td>1 (2)</td>
<td>5 (8)</td>
<td>29 (28)</td>
</tr>
<tr>
<td>Cambridge</td>
<td>2 (2)</td>
<td>0 (0)</td>
<td>2 (2)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Edinburgh</td>
<td>1 (2)</td>
<td>0 (0)</td>
<td>1 (2)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>King's College</td>
<td>3 (3)</td>
<td>3 (1)</td>
<td>6 (4)</td>
<td>44 (35)</td>
</tr>
<tr>
<td>Leeds</td>
<td>7 (1)</td>
<td>1 (1)</td>
<td>8 (2)</td>
<td>12 (12)</td>
</tr>
<tr>
<td>Newcastle</td>
<td>0 (1)</td>
<td>2 (0)</td>
<td>2 (1)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Royal Free</td>
<td>3 (1)</td>
<td>1 (0)</td>
<td>4 (1)</td>
<td>2 (0)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>20 (16)</td>
<td>8 (4)</td>
<td>28 (20)</td>
<td>87 (75)</td>
</tr>
</tbody>
</table>

¹ Includes donors whose livers were retrieved by other teams
² Includes 10 and 4 living liver lobe transplants, and 4 and 0 domino transplants in NHS Group 1 and Group 2 recipients, respectively
³ Includes 4 and 5 living liver lobe transplants, and 2 and 0 domino transplants in NHS Group 1 and Group 2 recipients, respectively
⁴ Includes 13 and 0 living liver lobe transplants, 1 and 0 altruistic donor transplants in NHS Group 1 and Group 2 recipients, respectively
⁵ Includes 12 and 9 living liver lobe transplants, 1 and 0 altruistic donor transplants in NHS Group 1 and Group 2 recipients, respectively
8.2 Transplant list

During 2013-2014, 1,186 patients joined the liver transplant list. Outcomes for patients on the list at 1 April 2013 and those joining the list during the year are shown in Table 8.2. Of the 1,186 new registrations, 152 (13%) were super-urgent.

<table>
<thead>
<tr>
<th>Outcome of patient at 31 March 2014</th>
<th>Active and suspended patients at 1 April 2013</th>
<th>New registrations in 2013-2014¹</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Remained active/suspended</td>
<td>149</td>
<td>30</td>
<td>403</td>
</tr>
<tr>
<td>Transplanted</td>
<td>243</td>
<td>49</td>
<td>669</td>
</tr>
<tr>
<td>Removed</td>
<td>79</td>
<td>16</td>
<td>55</td>
</tr>
<tr>
<td>Died</td>
<td>22</td>
<td>4</td>
<td>59</td>
</tr>
<tr>
<td>TOTAL</td>
<td>493</td>
<td></td>
<td>1186</td>
</tr>
</tbody>
</table>

¹ Includes re-registrations for second or subsequent transplants

Table 8.3 shows the transplant list rate per million population in the UK, by country/Strategic Health Authority of patient's residence. At 31 March 2014, the overall rate was 8.6 pmp and ranged from 4.8 to 9.2 pmp across the Strategic Health Authorities.
### Table 8.3  
Active liver transplant list at 31 March, by country/ Strategic Health Authority of patient residence

<table>
<thead>
<tr>
<th>Country/ Strategic Health Authority of residence</th>
<th>Liver transplant list (pmp)</th>
<th>2014</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>North East</td>
<td>16 (6.2)</td>
<td>17 (6.5)</td>
<td></td>
</tr>
<tr>
<td>North West</td>
<td>59 (8.3)</td>
<td>63 (8.9)</td>
<td></td>
</tr>
<tr>
<td>Yorkshire and The Humber</td>
<td>41 (7.7)</td>
<td>44 (8.3)</td>
<td></td>
</tr>
<tr>
<td><strong>North of England</strong></td>
<td><strong>116 (7.7)</strong></td>
<td><strong>124 (8.3)</strong></td>
<td></td>
</tr>
<tr>
<td>East Midlands</td>
<td>32 (7.0)</td>
<td>24 (5.3)</td>
<td></td>
</tr>
<tr>
<td>West Midlands</td>
<td>52 (9.2)</td>
<td>29 (5.1)</td>
<td></td>
</tr>
<tr>
<td>East of England</td>
<td>48 (8.1)</td>
<td>44 (7.4)</td>
<td></td>
</tr>
<tr>
<td><strong>Midlands and East</strong></td>
<td><strong>132 (8.2)</strong></td>
<td><strong>97 (6.0)</strong></td>
<td></td>
</tr>
<tr>
<td>London</td>
<td>76 (9.1)</td>
<td>68 (8.2)</td>
<td></td>
</tr>
<tr>
<td>South East Coast</td>
<td>41 (9.1)</td>
<td>35 (7.8)</td>
<td></td>
</tr>
<tr>
<td>South Central</td>
<td>20 (4.8)</td>
<td>28 (6.7)</td>
<td></td>
</tr>
<tr>
<td>South West</td>
<td>48 (9.0)</td>
<td>38 (7.1)</td>
<td></td>
</tr>
<tr>
<td><strong>South of England</strong></td>
<td><strong>109 (7.8)</strong></td>
<td><strong>101 (7.2)</strong></td>
<td></td>
</tr>
<tr>
<td>England</td>
<td>433 (8.1)</td>
<td>390 (7.3)</td>
<td></td>
</tr>
<tr>
<td>Isle of Man</td>
<td>1 (12.5)</td>
<td>0 (0.0)</td>
<td></td>
</tr>
<tr>
<td>Channel Islands</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td></td>
</tr>
<tr>
<td>Wales</td>
<td>16 (5.2)</td>
<td>11 (3.6)</td>
<td></td>
</tr>
<tr>
<td>Scotland</td>
<td>56 (10.5)</td>
<td>48 (9.0)</td>
<td></td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>21 (11.5)</td>
<td>21 (11.5)</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL¹</strong></td>
<td><strong>549 (8.6)</strong></td>
<td><strong>492 (7.7)</strong></td>
<td></td>
</tr>
</tbody>
</table>

¹Includes patients in 2014 (2013) resident in: Republic of Ireland - 5 (2); Overseas - 17 (20)

An indication of longer term outcomes for patients listed for a liver transplant is summarised in **Figure 8.2**. This shows the proportion of patients transplanted or still waiting six months, one year and two years after joining the transplant list. It also shows the proportion removed from the transplant list and those dying while on the transplant list (which includes those patients removed due to condition deteriorated). At one year post-registration, 65% of patients had received a liver transplant while 12% of patients had died whilst waiting or had been removed due to their condition deteriorating. 6% had been removed for other reasons such as the patient's condition improving, as a result of non-compliance or at the request of the patient or family.
Table 8.4 and Table 8.5 show the median waiting time to liver transplant for adult and paediatric elective registrations, separately, including a breakdown by blood group and ethnicity for adult elective registrations only. On average, adult patients wait 145 days for a transplant while paediatric patients wait an average of 72 days. 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>
<thead>
<tr>
<th>Blood group</th>
<th>Number of patients registered</th>
<th>Waiting time (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Median</td>
</tr>
<tr>
<td>Adult</td>
<td></td>
<td></td>
</tr>
<tr>
<td>O</td>
<td>1093</td>
<td>228</td>
</tr>
<tr>
<td>A</td>
<td>901</td>
<td>86</td>
</tr>
<tr>
<td>B</td>
<td>296</td>
<td>226</td>
</tr>
<tr>
<td>AB</td>
<td>101</td>
<td>60</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2391</td>
<td>145</td>
</tr>
<tr>
<td>Paediatric</td>
<td>208</td>
<td>72</td>
</tr>
</tbody>
</table>
Table 8.5  Median waiting time to liver transplant in the UK, for patients registered 1 April 2009 - 31 March 2012

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Number of patients registered</th>
<th>Median waiting time (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>2084</td>
<td>143</td>
</tr>
<tr>
<td>Asian</td>
<td>182</td>
<td>157</td>
</tr>
<tr>
<td>Black</td>
<td>56</td>
<td>214</td>
</tr>
<tr>
<td>Other</td>
<td>67</td>
<td>185</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2391</td>
<td>145</td>
</tr>
<tr>
<td>Paediatric</td>
<td>208</td>
<td>72</td>
</tr>
</tbody>
</table>

8.3 Donor and organ supply

Of the 1,320 organ donors, 932 (71%) donated their liver and 830 (89%) of these donated livers were used; see Table 8.6. Of livers retrieved from donors after brain death and donors after circulatory death, 95% and 70% were used, respectively. One liver can be used in more than one transplant, see Table 8.9.

Table 8.6  Deceased liver donation and retrieval in the UK, 1 April 2013 - 31 March 2014, by allocation zone

<table>
<thead>
<tr>
<th>Allocation zone</th>
<th>Solid organ</th>
<th>Liver</th>
<th>Number of livers retrieved (used)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DBD</td>
<td>DCD</td>
<td>TOTAL</td>
</tr>
<tr>
<td>Birmingham</td>
<td>170</td>
<td>125</td>
<td>295</td>
</tr>
<tr>
<td>Cambridge</td>
<td>69</td>
<td>65</td>
<td>134</td>
</tr>
<tr>
<td>Edinburgh</td>
<td>104</td>
<td>60</td>
<td>164</td>
</tr>
<tr>
<td>King's College</td>
<td>166</td>
<td>117</td>
<td>283</td>
</tr>
<tr>
<td>Leeds</td>
<td>128</td>
<td>92</td>
<td>220</td>
</tr>
<tr>
<td>Newcastle</td>
<td>47</td>
<td>39</td>
<td>86</td>
</tr>
<tr>
<td>Royal Free</td>
<td>96</td>
<td>42</td>
<td>138</td>
</tr>
<tr>
<td>TOTAL</td>
<td>780</td>
<td>540</td>
<td>1320</td>
</tr>
</tbody>
</table>
The rates per million population (pmp) for liver donors are shown in Table 8.7 by donor country/Strategic Health Authority of residence. No adjustments have been made for potential demographic differences in populations. The overall deceased liver donor rate was 14.6 pmp in 2013-2014 and varied across the Strategic Health Authorities from 10.5 pmp to 23.1 pmp.

Table 8.7 Liver donor rates in the UK, 1 April 2013 - 31 March 2014, by country/Strategic Health Authority of residence

<table>
<thead>
<tr>
<th>Country/Strategic Health Authority</th>
<th>DBD</th>
<th>DCD</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>North East</td>
<td>42</td>
<td>18</td>
<td>60</td>
</tr>
<tr>
<td>North West</td>
<td>72</td>
<td>15</td>
<td>87</td>
</tr>
<tr>
<td>Yorkshire and The Humber</td>
<td>46</td>
<td>10</td>
<td>56</td>
</tr>
<tr>
<td><strong>North of England</strong></td>
<td>160</td>
<td>43</td>
<td>203</td>
</tr>
<tr>
<td>East Midlands</td>
<td>49</td>
<td>23</td>
<td>72</td>
</tr>
<tr>
<td>West Midlands</td>
<td>55</td>
<td>17</td>
<td>72</td>
</tr>
<tr>
<td>East of England</td>
<td>61</td>
<td>23</td>
<td>84</td>
</tr>
<tr>
<td><strong>Midlands and East</strong></td>
<td>165</td>
<td>63</td>
<td>228</td>
</tr>
<tr>
<td>London</td>
<td>89</td>
<td>24</td>
<td>113</td>
</tr>
<tr>
<td>South East Coast</td>
<td>61</td>
<td>18</td>
<td>79</td>
</tr>
<tr>
<td>South Central</td>
<td>55</td>
<td>19</td>
<td>74</td>
</tr>
<tr>
<td>South West</td>
<td>60</td>
<td>25</td>
<td>85</td>
</tr>
<tr>
<td><strong>South of England</strong></td>
<td>176</td>
<td>62</td>
<td>238</td>
</tr>
<tr>
<td>England</td>
<td>590</td>
<td>192</td>
<td>782</td>
</tr>
<tr>
<td>Isle of Man</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Channel Islands</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Wales</td>
<td>35</td>
<td>8</td>
<td>43</td>
</tr>
<tr>
<td>Scotland</td>
<td>57</td>
<td>13</td>
<td>70</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>27</td>
<td>5</td>
<td>32</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>712</td>
<td>220</td>
<td>932</td>
</tr>
</tbody>
</table>

1 Includes 17 donors where the hospital postcode was used in place of an unknown donor postcode
8.4 Transplants

The number of liver transplants by recipient country/Strategic Health Authority of residence are shown in Table 8.8. No adjustments have been made for potential demographic differences in populations. The deceased donor transplant rate ranged from 9.0 to 15.5 pmp across the Strategic Health Authorities and overall was 13.4 pmp.

Table 8.8 Liver transplant rates per million population (pmp) in the UK, 1 April 2013 - 31 March 2014, by country/Strategic Health Authority

<table>
<thead>
<tr>
<th>Country/Strategic Health Authority</th>
<th>Deceased transplants (pmp)</th>
<th>Living transplants (pmp)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DBD</td>
<td>DCD</td>
</tr>
<tr>
<td>North East</td>
<td>30</td>
<td>5</td>
</tr>
<tr>
<td>North West</td>
<td>94</td>
<td>16</td>
</tr>
<tr>
<td>Yorkshire and The Humber</td>
<td>56</td>
<td>9</td>
</tr>
<tr>
<td>North of England</td>
<td>180</td>
<td>30</td>
</tr>
<tr>
<td>East Midlands</td>
<td>30</td>
<td>11</td>
</tr>
<tr>
<td>West Midlands</td>
<td>60</td>
<td>20</td>
</tr>
<tr>
<td>East of England</td>
<td>62</td>
<td>13</td>
</tr>
<tr>
<td>Midlands and East</td>
<td>152</td>
<td>44</td>
</tr>
<tr>
<td>London</td>
<td>103</td>
<td>20</td>
</tr>
<tr>
<td>South East Coast</td>
<td>39</td>
<td>14</td>
</tr>
<tr>
<td>South Central</td>
<td>42</td>
<td>8</td>
</tr>
<tr>
<td>South West</td>
<td>57</td>
<td>14</td>
</tr>
<tr>
<td>South of England</td>
<td>138</td>
<td>36</td>
</tr>
<tr>
<td>England</td>
<td>573</td>
<td>130</td>
</tr>
<tr>
<td>Isle of Man</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Channel Islands</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Wales</td>
<td>23</td>
<td>5</td>
</tr>
<tr>
<td>Scotland</td>
<td>89</td>
<td>11</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>18</td>
<td>1</td>
</tr>
<tr>
<td>TOTAL</td>
<td>706</td>
<td>149</td>
</tr>
</tbody>
</table>

1 Excludes 31 recipients who reside outside the UK (21 DBD, 4 DCD, 6 Living).

The number of whole, reduced and split liver transplants by urgency status of the transplant (elective, super-urgent) in 2013-2014 is shown in Table 8.9. The term 'reduced' is used when only one lobe of the liver is transplanted and the term 'split' applies when both lobes of the liver are transplanted into two different recipients.

Overall, the number of deceased donor liver transplants increased by 12% in 2013-2014. There were 880 deceased donor liver transplants performed in 2013-2014: 742 whole liver, including 9 liver and kidney; and 138 deceased liver lobe, including 3 liver and kidney. Split liver transplants accounted for 93% of liver lobe transplant activity.
The length of time that elapses between a liver being removed from the donor to its transplantation into the recipient is called the Cold Ischaemia Time (CIT). Generally, the shorter this time, the more likely the liver is to work immediately and the better the long-term outcome. In 2013/2014, the median CIT for a DBD donor whole liver only transplant was 8.6 hours (Inter-Quartile (IQ) range 7.1 – 11.0) and for a DCD donor whole liver only transplant was 7.5 hours (IQ range 6.5 – 8.8) and overall was 8.3 hours (IQ range 7.0 – 10.5).

At 31 March 2014 there were approximately 8,300 recipients with a functioning liver transplant (or multi-organ including the liver) being followed-up as reported to the UK Transplant Registry.
8.5 Demographic characteristics

The age group, sex, ethnicity and blood group of liver donors, transplant recipients and transplant list patients is shown in Table 8.10.

<table>
<thead>
<tr>
<th>Donors</th>
<th>Transplant recipients</th>
<th>Active transplant list patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>(%)</td>
<td>N</td>
</tr>
<tr>
<td>Age group(years)</td>
<td></td>
<td>N</td>
</tr>
<tr>
<td>0 - 17</td>
<td>47 (5)</td>
<td>91 (10)</td>
</tr>
<tr>
<td>18 - 34</td>
<td>166 (18)</td>
<td>99 (11)</td>
</tr>
<tr>
<td>35 - 49</td>
<td>230 (25)</td>
<td>211 (24)</td>
</tr>
<tr>
<td>50 - 59</td>
<td>197 (21)</td>
<td>256 (29)</td>
</tr>
<tr>
<td>60 - 69</td>
<td>180 (19)</td>
<td>211 (24)</td>
</tr>
<tr>
<td>70+</td>
<td>112 (12)</td>
<td>12 (1)</td>
</tr>
<tr>
<td>mean (SD)</td>
<td>49 (18)</td>
<td>46 (19)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sex</th>
<th>Donors</th>
<th>N</th>
<th>(%)</th>
<th>Transplant recipients</th>
<th>N</th>
<th>(%)</th>
<th>Active transplant list patients</th>
<th>N</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>500</td>
<td>(54)</td>
<td>541</td>
<td>(61)</td>
<td>325</td>
<td>(59)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>432</td>
<td>(46)</td>
<td>339</td>
<td>(39)</td>
<td>224</td>
<td>(41)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Donors</th>
<th>N</th>
<th>(%)</th>
<th>Transplant recipients</th>
<th>N</th>
<th>(%)</th>
<th>Active transplant list patients</th>
<th>N</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>876</td>
<td>(94)</td>
<td>748</td>
<td>(85)</td>
<td>466</td>
<td>(85)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>27</td>
<td>(3)</td>
<td>72</td>
<td>(8)</td>
<td>55</td>
<td>(10)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>13</td>
<td>(1)</td>
<td>34</td>
<td>(4)</td>
<td>19</td>
<td>(3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chinese</td>
<td>2</td>
<td>(&lt;1)</td>
<td>10</td>
<td>(1)</td>
<td>3</td>
<td>(1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>13</td>
<td>(1)</td>
<td>15</td>
<td>(2)</td>
<td>6</td>
<td>(1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not reported</td>
<td>1</td>
<td>(&lt;1)</td>
<td>1</td>
<td>(&lt;1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Blood group</th>
<th>Donors</th>
<th>N</th>
<th>(%)</th>
<th>Transplant recipients</th>
<th>N</th>
<th>(%)</th>
<th>Active transplant list patients</th>
<th>N</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>431</td>
<td>(46)</td>
<td>359</td>
<td>(41)</td>
<td>357</td>
<td>(65)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>373</td>
<td>(40)</td>
<td>364</td>
<td>(41)</td>
<td>127</td>
<td>(23)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>106</td>
<td>(11)</td>
<td>127</td>
<td>(14)</td>
<td>57</td>
<td>(10)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AB</td>
<td>22</td>
<td>(2)</td>
<td>30</td>
<td>(3)</td>
<td>8</td>
<td>(1)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Graft number</th>
<th>Donors</th>
<th>N</th>
<th>(%)</th>
<th>Transplant recipients</th>
<th>N</th>
<th>(%)</th>
<th>Active transplant list patients</th>
<th>N</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>First graft</td>
<td>782</td>
<td>(89)</td>
<td>496</td>
<td>(90)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Re-graft</td>
<td>98</td>
<td>(11)</td>
<td>53</td>
<td>(10)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>932</td>
<td>(100)</td>
<td>880</td>
<td>(100)</td>
<td>549</td>
<td>(100)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Intestinal Activity

Key messages

- A new Intestinal Allocation Scheme was introduced in July 2013
- 31 patients were registered for an intestinal transplant during 2013-2014 (20 adults, 11 paediatric patients)
- The number of patients on the active intestinal transplant list at 31 March 2014 was 13
- 26 intestinal transplants were carried out in 2013-2014 (15 in the previous year)
- On average, patients wait around 6 months for a transplant
9.1 Overview

A new Intestinal Allocation Scheme was introduced in July 2013. Patients are prioritised according to a points system based on a range of clinical factors including donor-recipient age matching, loss of intravenous line access, liver failure, diagnosis of malignancy, in-hospital status, additional organs required, sensitisation and waiting time. A score is calculated for every potentially suitable patient on the national active transplant list and the intestine is allocated preferentially to the patient with the most points. This differs from the previous system in which donor intestines were allocated to patients purely on waiting time.

Over the last two years (between 1 April 2012 and 31 March 2014), the number of intestinal transplants has increased with 26 transplants carried out in 2013-2014 compared to 15 in 2012-2013.

During 2013-2014, there were 31 registrations for an intestinal transplant. As at 31 March 2014, 10 (32%) registrations remained active/suspended, 18 (58%) resulted in a transplant and 3 (10%) were removed from the transplant list, respectively.

9.2 Transplant list

In 2013-2014, there were 31 registrations for an intestinal transplant. The outcome of these registrations for paediatric (aged <18 years) and adult patients, as at 31 March 2014, broken down by transplant centre can be found in Table 9.1.

<table>
<thead>
<tr>
<th>Transplant centre</th>
<th>Transplanted N</th>
<th>Died N</th>
<th>Removed N</th>
<th>Active/Susp N</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cambridge</td>
<td>12</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>Oxford</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>16</strong></td>
<td><strong>0</strong></td>
<td><strong>3</strong></td>
<td><strong>1</strong></td>
<td><strong>20</strong></td>
</tr>
<tr>
<td>Paediatric</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Birmingham</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>King's College</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>2</strong></td>
<td><strong>0</strong></td>
<td><strong>0</strong></td>
<td><strong>9</strong></td>
<td><strong>11</strong></td>
</tr>
</tbody>
</table>

Table 9.2 shows the intestinal transplant list rate in the UK by country/Strategic Health Authority of patient's residence. At 31 March 2014, the overall transplant list rate was 0.2 pmp and ranged from 0.1 to 0.7 pmp across the Strategic Health Authorities, although numbers are very small so these are not meaningful differences.
Table 9.2  Active intestinal transplant list at 31 March, by country/Strategic Health Authority of patient residence

<table>
<thead>
<tr>
<th>Country/Strategic Health Authority of residence</th>
<th>Intestinal transplant list (pmp)</th>
<th>2014</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>North East</td>
<td>1 (0.4)</td>
<td>2</td>
<td>(0.8)</td>
</tr>
<tr>
<td>North West</td>
<td>2 (0.3)</td>
<td>2</td>
<td>(0.3)</td>
</tr>
<tr>
<td>Yorkshire and The Humber</td>
<td>0 (0.0)</td>
<td>0</td>
<td>(0.0)</td>
</tr>
<tr>
<td>North of England</td>
<td>3 (0.2)</td>
<td>4</td>
<td>(0.3)</td>
</tr>
<tr>
<td>East Midlands</td>
<td>1 (0.2)</td>
<td>3</td>
<td>(0.7)</td>
</tr>
<tr>
<td>West Midlands</td>
<td>1 (0.2)</td>
<td>0</td>
<td>(0.0)</td>
</tr>
<tr>
<td>East of England</td>
<td>1 (0.2)</td>
<td>2</td>
<td>(0.3)</td>
</tr>
<tr>
<td>Midlands and East</td>
<td>3 (0.2)</td>
<td>5</td>
<td>(0.3)</td>
</tr>
<tr>
<td>London</td>
<td>1 (0.1)</td>
<td>2</td>
<td>(0.2)</td>
</tr>
<tr>
<td>South East Coast</td>
<td>1 (0.2)</td>
<td>1</td>
<td>(0.2)</td>
</tr>
<tr>
<td>South Central</td>
<td>3 (0.7)</td>
<td>2</td>
<td>(0.5)</td>
</tr>
<tr>
<td>South West</td>
<td>0 (0.0)</td>
<td>0</td>
<td>(0.0)</td>
</tr>
<tr>
<td>South of England</td>
<td>4 (0.3)</td>
<td>3</td>
<td>(0.2)</td>
</tr>
<tr>
<td>England</td>
<td>11 (0.2)</td>
<td>14</td>
<td>(0.3)</td>
</tr>
<tr>
<td>Isle of Man</td>
<td>0 (0.0)</td>
<td>0</td>
<td>(0.0)</td>
</tr>
<tr>
<td>Channel Islands</td>
<td>0 (0.0)</td>
<td>0</td>
<td>(0.0)</td>
</tr>
<tr>
<td>Wales</td>
<td>1 (0.3)</td>
<td>0</td>
<td>(0.0)</td>
</tr>
<tr>
<td>Scotland</td>
<td>0 (0.0)</td>
<td>0</td>
<td>(0.0)</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>0 (0.0)</td>
<td>0</td>
<td>(0.0)</td>
</tr>
<tr>
<td>TOTAL¹</td>
<td>13 (0.2)</td>
<td>14</td>
<td>(0.2)</td>
</tr>
</tbody>
</table>

¹Includes patients in 2014 (2013) resident Overseas 1 (0)

Table 9.3 shows median waiting time to elective intestinal transplant by registration type. On average, patients wait 188 days for a transplant.

Table 9.3  Median waiting time to elective intestinal transplant in the UK, for patients registered 1 April 2010 - 31 March 2013

<table>
<thead>
<tr>
<th>Registration type</th>
<th>Number of patients registered</th>
<th>Waiting time (days)</th>
<th>95% Confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Median</td>
<td></td>
</tr>
<tr>
<td>Bowel only¹</td>
<td>22</td>
<td>125</td>
<td>22 – 228</td>
</tr>
<tr>
<td>Liver, bowel and pancreas¹</td>
<td>33</td>
<td>272</td>
<td>214 – 330</td>
</tr>
<tr>
<td>Bowel and pancreas¹</td>
<td>15</td>
<td>215</td>
<td>4 – 426</td>
</tr>
<tr>
<td>TOTAL</td>
<td>70</td>
<td>188</td>
<td>127 – 249</td>
</tr>
</tbody>
</table>

¹May also include any of; stomach, spleen, abdominal wall, kidney, colon
9.3 Donor and Organ Supply

The rates per million population (pmp) for intestinal donors are shown in Table 9.4 by donor country/Strategic Health Authority of residence. The overall DBD intestinal donor rate was 0.4 pmp and ranged from 0.2 to 0.9 pmp across the Strategic Health Authorities. Of the 780 DBD solid organ donors, 25 (3%) donated their small bowel.

Table 9.4 Intestinal donation rates for deceased donors after brain death in the UK, 1 April 2013 - 31 March 2014, by country/Strategic Health Authority of residence

<table>
<thead>
<tr>
<th>Country/ Strategic Health Authority of residence</th>
<th>Solid organ donors (pmp)</th>
<th>Intestinal donors (pmp)</th>
<th>% of solid organ donors</th>
<th>Intestine used</th>
</tr>
</thead>
<tbody>
<tr>
<td>North East</td>
<td>48 (18.5)</td>
<td>2 (0.8)</td>
<td>4.2</td>
<td>2</td>
</tr>
<tr>
<td>North West</td>
<td>81 (11.4)</td>
<td>1 (0.1)</td>
<td>1.2</td>
<td>1</td>
</tr>
<tr>
<td>Yorkshire and The Humber</td>
<td>48 (9.0)</td>
<td>1 (0.2)</td>
<td>2.1</td>
<td>1</td>
</tr>
<tr>
<td>North of England</td>
<td>177 (11.8)</td>
<td>4 (0.3)</td>
<td>2.3</td>
<td>4</td>
</tr>
<tr>
<td>East Midlands</td>
<td>51 (11.2)</td>
<td>1 (0.2)</td>
<td>2.0</td>
<td>1</td>
</tr>
<tr>
<td>West Midlands</td>
<td>61 (10.8)</td>
<td>0 (0.0)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>East of England</td>
<td>66 (11.2)</td>
<td>3 (0.5)</td>
<td>4.5</td>
<td>3</td>
</tr>
<tr>
<td>Midlands and East</td>
<td>178 (11.0)</td>
<td>4 (0.2)</td>
<td>2.2</td>
<td>4</td>
</tr>
<tr>
<td>London</td>
<td>99 (11.9)</td>
<td>3 (0.4)</td>
<td>3.0</td>
<td>3</td>
</tr>
<tr>
<td>South East Coast</td>
<td>66 (14.6)</td>
<td>4 (0.9)</td>
<td>6.1</td>
<td>4</td>
</tr>
<tr>
<td>South Central</td>
<td>59 (14.0)</td>
<td>0 (0.0)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>South West</td>
<td>65 (12.2)</td>
<td>7 (1.3)</td>
<td>10.8</td>
<td>7</td>
</tr>
<tr>
<td>South of England</td>
<td>190 (13.5)</td>
<td>11 (0.8)</td>
<td>5.8</td>
<td>11</td>
</tr>
<tr>
<td>England</td>
<td>644 (12.0)</td>
<td>22 (0.4)</td>
<td>3.4</td>
<td>22</td>
</tr>
<tr>
<td>Isle of Man</td>
<td>4 (50.0)</td>
<td>1 (12.5)</td>
<td>25.0</td>
<td>1</td>
</tr>
<tr>
<td>Channel Islands</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Wales</td>
<td>37 (12.1)</td>
<td>0 (0.0)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Scotland</td>
<td>62 (11.7)</td>
<td>1 (0.2)</td>
<td>1.6</td>
<td>1</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>33 (18.1)</td>
<td>1 (0.5)</td>
<td>3.0</td>
<td>1</td>
</tr>
<tr>
<td>TOTAL(^1)</td>
<td>780 (12.2)</td>
<td>25 (0.4)</td>
<td>3.2</td>
<td>25</td>
</tr>
</tbody>
</table>

\(^1\) Includes 14 donors where the hospital postcode was used in place of an unknown donor postcode
9.4 Transplants

Table 9.5 shows intestinal transplant activity by transplant centre and transplant type for financial years 2012-2013 and 2013-2014. In 2013-2014, there were a total of 26 transplants, 23 adult and 3 paediatric transplants.

At 31 March 2014 there were approximately 100 recipients with a functioning intestinal transplant (or multi-organ including the intestine) being followed-up as reported to the UK Transplant Registry.

<table>
<thead>
<tr>
<th>Transplant centre</th>
<th>BO</th>
<th>LBP</th>
<th>MV</th>
<th>MMV</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adult</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cambridge</td>
<td>5</td>
<td>(0)</td>
<td>1</td>
<td>(1)</td>
<td>9</td>
</tr>
<tr>
<td>Oxford</td>
<td>5</td>
<td>(5)</td>
<td>0</td>
<td>(0)</td>
<td>0</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>10</td>
<td>(5)</td>
<td>1</td>
<td>(1)</td>
<td>9</td>
</tr>
<tr>
<td><strong>Paediatric</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Birmingham</td>
<td>1</td>
<td>(1)</td>
<td>1</td>
<td>(1)</td>
<td>1</td>
</tr>
<tr>
<td>King's College</td>
<td>0</td>
<td>(1)</td>
<td>0</td>
<td>(1)</td>
<td>0</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>1</td>
<td>(2)</td>
<td>1</td>
<td>(2)</td>
<td>1</td>
</tr>
</tbody>
</table>

BO = Bowel only (may also include stomach/spleen/abdominal wall/kidney/colon)
LBP = Liver, bowel and pancreas
MV = Multivisceral – liver, bowel and pancreas plus stomach/spleen/abdominal wall/kidney/colon
MMV = Modified multivisceral – bowel and pancreas plus stomach/spleen/abdominal wall/kidney/colon
9.5 Demographic Characteristics

The age group, sex, ethnicity and blood group of intestinal donors, transplant recipients and transplant list patients is shown in Table 9.6.

<table>
<thead>
<tr>
<th>Table 9.6 Demographic characteristics of deceased intestinal donors and transplant recipients 1 April 2013 - 31 March 2014, and transplant list patients at 31 March in the UK</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age group (years)</strong></td>
</tr>
<tr>
<td>N</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>0 - 17</td>
</tr>
<tr>
<td>18 - 34</td>
</tr>
<tr>
<td>35 - 49</td>
</tr>
<tr>
<td>50 - 59</td>
</tr>
<tr>
<td>60 - 69</td>
</tr>
<tr>
<td>70+</td>
</tr>
<tr>
<td>mean (SD)</td>
</tr>
<tr>
<td><strong>Sex</strong></td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
</tr>
<tr>
<td>White</td>
</tr>
<tr>
<td>Asian</td>
</tr>
<tr>
<td>Black</td>
</tr>
<tr>
<td>Other</td>
</tr>
<tr>
<td><strong>Blood group</strong></td>
</tr>
<tr>
<td>O</td>
</tr>
<tr>
<td>A</td>
</tr>
<tr>
<td>B</td>
</tr>
<tr>
<td>AB</td>
</tr>
<tr>
<td><strong>Graft number</strong></td>
</tr>
<tr>
<td>First graft</td>
</tr>
<tr>
<td>Re-graft</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
</tr>
</tbody>
</table>

1 Includes 1 overseas donor
Cornea Activity

Key messages

- 5,440 corneas were supplied to the Corneal Transplant Service (CTS) eye banks
- The number of transplants remained stable at 3,313
- Corneas were retrieved from 31% of solid organ donors after brain death and 40% of solid organ donors after circulatory death
- 12% of cornea only donors were 80 years of age or over
10.1 Overview

The number of corneas donated in 2013-2014 was 6,255, representing a decrease of 2% on last year, as shown in Figure 10.1. Additionally, 213 sclera were issued and used. This increase is mainly due to the new Eye Retrieval Scheme (ERS) but also due to the fact that more corneas are being donated from organ donors. The ERS consists of 10 teams embedded in the selected NHS Trusts/Boards across the UK, that are funded by NHSBT for the purpose of promoting, procuring and retrieving ocular tissue for clinical use. It should be noted that not all cornea donors and transplants in the UK are reported to the UK Transplant Registry and thus the data reported are not the full national data.
In 2013-2014 there were 3,146 tissue donors, of whom 2,685 donated corneas only and 460 donated corneas and solid organs: see Table 10.1. Compared to 2012-2013, the number of cornea only donors decreased by 5%, and the number of cornea and solid organ donors increased by 22%. In 2013-2014, corneas were retrieved from 31% of organ donors after brain death, the same percentage as in 2012-2013. Of the 540 organ donors after cardiac death in 2013-2014, 216 (40%) also donated corneas, higher than the rate in 2012-2013 (32%).

Table 10.1 also shows the number and rate per million population (pmp) of donors in 2013-2014 by country and English Strategic Health Authority (SHA), with figures for 2012-2013 in parentheses. No adjustments have been made for potential demographic differences in populations. England had the highest cornea donor rate of the countries in the UK in 2013-2014 (52.5 pmp). In 2013-2014, the cornea donor rate increased in Northern Ireland but fell in the other countries. Across the SHAs the cornea donor rate ranged from 19.7 pmp to 106.4 pmp, reflecting locations of the Eye Retrieval Scheme Trusts.

<table>
<thead>
<tr>
<th>Country/Strategic Health Authority of residence</th>
<th>Cornea only</th>
<th>Solid organ and cornea</th>
<th>TOTAL</th>
<th>TOTAL pmp</th>
</tr>
</thead>
<tbody>
<tr>
<td>North East</td>
<td>178 (224)</td>
<td>30 (19)</td>
<td>208 (243)</td>
<td>80 (93.5)</td>
</tr>
<tr>
<td>North West</td>
<td>716 (799)</td>
<td>37 (31)</td>
<td>753 (830)</td>
<td>106.4 (117.2)</td>
</tr>
<tr>
<td>Yorkshire and The Humber</td>
<td>79 (91)</td>
<td>26 (24)</td>
<td>105 (115)</td>
<td>19.7 (21.6)</td>
</tr>
<tr>
<td>North of England</td>
<td>973 (1114)</td>
<td>93 (74)</td>
<td>1066 (1188)</td>
<td>71.1 (79.2)</td>
</tr>
<tr>
<td>East Midlands</td>
<td>219 (213)</td>
<td>23 (18)</td>
<td>242 (231)</td>
<td>53 (50.5)</td>
</tr>
<tr>
<td>West Midlands</td>
<td>78 (72)</td>
<td>25 (35)</td>
<td>103 (107)</td>
<td>18.3 (19.0)</td>
</tr>
<tr>
<td>East of England</td>
<td>192 (178)</td>
<td>50 (46)</td>
<td>242 (224)</td>
<td>40.9 (37.9)</td>
</tr>
<tr>
<td>Midlands and East</td>
<td>489 (463)</td>
<td>98 (99)</td>
<td>587 (562)</td>
<td>36.4 (34.9)</td>
</tr>
<tr>
<td>London</td>
<td>120 (125)</td>
<td>77 (56)</td>
<td>197 (181)</td>
<td>23.7 (21.8)</td>
</tr>
<tr>
<td>South East Coast</td>
<td>169 (55)</td>
<td>24 (19)</td>
<td>193 (74)</td>
<td>42.8 (16.4)</td>
</tr>
<tr>
<td>South Central</td>
<td>244 (281)</td>
<td>33 (30)</td>
<td>277 (311)</td>
<td>65.8 (73.9)</td>
</tr>
<tr>
<td>South West</td>
<td>430 (502)</td>
<td>56 (46)</td>
<td>486 (548)</td>
<td>91.2 (102.6)</td>
</tr>
<tr>
<td>South of England</td>
<td>843 (838)</td>
<td>113 (95)</td>
<td>956 (933)</td>
<td>68 (66.4)</td>
</tr>
<tr>
<td>England</td>
<td>2425 (2540)</td>
<td>381 (324)</td>
<td>2806 (2864)</td>
<td>52.5 (53.5)</td>
</tr>
<tr>
<td>Isle of Man</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Channel Islands</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Wales</td>
<td>75 (93)</td>
<td>24 (21)</td>
<td>99 (114)</td>
<td>32.2 (37.1)</td>
</tr>
<tr>
<td>Scotland</td>
<td>140 (160)</td>
<td>42 (23)</td>
<td>182 (183)</td>
<td>34.3 (34.5)</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>40 (43)</td>
<td>13 (9)</td>
<td>53 (52)</td>
<td>29.1 (28.6)</td>
</tr>
<tr>
<td>TOTAL ¹</td>
<td>2685 (2840)</td>
<td>461 (378)</td>
<td>3146 (3218)</td>
<td>49.2 (50.3)</td>
</tr>
</tbody>
</table>

¹ Includes UK recipients where the postcode was unspecified and non-UK recipients
10.2 Donor and tissue supply

In 2013-2014, 87.0% (93.5% in 2012-2013) of retrieved corneas reported to the UK Transplant Registry were supplied to the Corneal Transplant Service (CTS) Eye Banks in Bristol and Manchester. Table 10.2 shows the number of corneas supplied to, and taken from, the CTS Eye Banks for those centres that supplied more than 25 corneas in 2013-2014. The difference between the number supplied and number taken is also shown, together with the number of corneas that were deemed suitable for a penetrating keratoplasty (PK). Corneas that are not suitable for PK may be suitable for other types of corneal transplant. Centres with a negative balance have taken more corneas than they supplied to the CTS Eye Banks.

Of the 5,440 corneas supplied to the CTS Eye Banks, 3,580 (66%) were suitable for a PK. This was an increase compared with 2012-2013, when 60% of corneas supplied to the CTS Eye Banks were suitable for a PK.
<table>
<thead>
<tr>
<th>Centre</th>
<th>Corneas supplied</th>
<th>Suitable for PK (%)</th>
<th>Corneas taken</th>
<th>Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERS Preston</td>
<td>419</td>
<td>266 (63)</td>
<td>7</td>
<td>412</td>
</tr>
<tr>
<td>ERS Nottingham</td>
<td>402</td>
<td>256 (64)</td>
<td>115</td>
<td>287</td>
</tr>
<tr>
<td>ERS Merseyside</td>
<td>396</td>
<td>250 (63)</td>
<td>151</td>
<td>245</td>
</tr>
<tr>
<td>ERS Royal Devon</td>
<td>378</td>
<td>221 (58)</td>
<td>14</td>
<td>364</td>
</tr>
<tr>
<td>ERS Southampton</td>
<td>338</td>
<td>201 (59)</td>
<td>63</td>
<td>275</td>
</tr>
<tr>
<td>ERS Newcastle</td>
<td>328</td>
<td>234 (71)</td>
<td>55</td>
<td>273</td>
</tr>
<tr>
<td>ERS Norfolk</td>
<td>324</td>
<td>224 (69)</td>
<td>20</td>
<td>304</td>
</tr>
<tr>
<td>ERS Bristol</td>
<td>278</td>
<td>200 (72)</td>
<td>103</td>
<td>175</td>
</tr>
<tr>
<td>ERS Bolton</td>
<td>232</td>
<td>126 (54)</td>
<td>21</td>
<td>211</td>
</tr>
<tr>
<td>ERS Glasgow</td>
<td>220</td>
<td>173 (79)</td>
<td>154</td>
<td>66</td>
</tr>
<tr>
<td>Manchester, Royal Eye Hospital</td>
<td>170</td>
<td>110 (65)</td>
<td>158</td>
<td>12</td>
</tr>
<tr>
<td>Belfast, Royal Victoria Hospital</td>
<td>88</td>
<td>67 (76)</td>
<td>39</td>
<td>49</td>
</tr>
<tr>
<td>Middlesbrough, James Cook University Hospital</td>
<td>80</td>
<td>46 (58)</td>
<td>10</td>
<td>70</td>
</tr>
<tr>
<td>Oxford, John Radcliffe Hospital</td>
<td>66</td>
<td>49 (74)</td>
<td>31</td>
<td>35</td>
</tr>
<tr>
<td>Cardiff, University of Wales Hospital</td>
<td>62</td>
<td>44 (71)</td>
<td>11</td>
<td>51</td>
</tr>
<tr>
<td>Lancaster, Royal Lancaster Hospital</td>
<td>60</td>
<td>40 (67)</td>
<td>0</td>
<td>60</td>
</tr>
<tr>
<td>Cambridge, Addenbrookes Hospital</td>
<td>58</td>
<td>41 (71)</td>
<td>58</td>
<td>0</td>
</tr>
<tr>
<td>Barnstaple, North Devon District Hospital</td>
<td>58</td>
<td>35 (60)</td>
<td>1</td>
<td>57</td>
</tr>
<tr>
<td>Blackburn, Royal Infirmary</td>
<td>54</td>
<td>35 (65)</td>
<td>0</td>
<td>54</td>
</tr>
<tr>
<td>Edinburgh, Royal Infirmary</td>
<td>52</td>
<td>38 (73)</td>
<td>0</td>
<td>52</td>
</tr>
<tr>
<td>Coventry &amp; Warwickshire Hospital</td>
<td>50</td>
<td>26 (52)</td>
<td>41</td>
<td>9</td>
</tr>
<tr>
<td>Plymouth, Royal Eye Infirmary</td>
<td>46</td>
<td>26 (57)</td>
<td>45</td>
<td>1</td>
</tr>
<tr>
<td>Stoke, North Staffordshire Royal Infirmary</td>
<td>46</td>
<td>25 (54)</td>
<td>12</td>
<td>34</td>
</tr>
<tr>
<td>Birmingham, Birmingham &amp; Midland Eye Centre</td>
<td>44</td>
<td>28 (64)</td>
<td>76</td>
<td>-32</td>
</tr>
<tr>
<td>Portsmouth, Queen Alexandra Hospital</td>
<td>40</td>
<td>27 (68)</td>
<td>28</td>
<td>12</td>
</tr>
<tr>
<td>Yeovil District Hospital</td>
<td>36</td>
<td>18 (50)</td>
<td>0</td>
<td>36</td>
</tr>
<tr>
<td>Taunton, Taunton &amp; Somerset Hospital</td>
<td>32</td>
<td>25 (78)</td>
<td>3</td>
<td>29</td>
</tr>
<tr>
<td>Leicester, Royal Infirmary</td>
<td>30</td>
<td>21 (70)</td>
<td>84</td>
<td>-54</td>
</tr>
<tr>
<td>Swindon, Great Western Hospital</td>
<td>30</td>
<td>21 (70)</td>
<td>13</td>
<td>17</td>
</tr>
<tr>
<td>Leeds, General Infirmary</td>
<td>28</td>
<td>21 (75)</td>
<td>0</td>
<td>28</td>
</tr>
<tr>
<td>Aberdeen, Royal Infirmary</td>
<td>26</td>
<td>15 (58)</td>
<td>40</td>
<td>-14</td>
</tr>
<tr>
<td>Dundee, Ninewells Hospital</td>
<td>26</td>
<td>23 (88)</td>
<td>21</td>
<td>5</td>
</tr>
<tr>
<td>Swansea, Morriston Hospital</td>
<td>26</td>
<td>20 (77)</td>
<td>0</td>
<td>26</td>
</tr>
<tr>
<td>Ipswich Hospital</td>
<td>25</td>
<td>19 (76)</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td><strong>Eye retrieval scheme centres</strong></td>
<td><strong>3315</strong></td>
<td><strong>2151 (65)</strong></td>
<td><strong>703</strong></td>
<td><strong>2612</strong></td>
</tr>
<tr>
<td><strong>Centres supplying more than 25 corneas</strong></td>
<td><strong>1233</strong></td>
<td><strong>820 (67)</strong></td>
<td><strong>681</strong></td>
<td><strong>552</strong></td>
</tr>
<tr>
<td><strong>All other centres</strong></td>
<td><strong>892</strong></td>
<td><strong>609 (68)</strong></td>
<td><strong>1938</strong></td>
<td><strong>-1046</strong></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>5440</strong></td>
<td><strong>3580 (66)</strong></td>
<td><strong>3322</strong></td>
<td><strong>2118</strong></td>
</tr>
</tbody>
</table>

PK - Penetrating keratoplasty
10.3 CTS Eye Bank activity

The activity levels for the Bristol and Manchester Eye Banks are shown in Table 10.3. The numbers of corneas received by the CTS Eye Banks decreased in 2013-2014 by 9%, and the number of corneas issued decreased by 2%. In 2013-2014, 5,440 corneas were received into the CTS Eye Banks, of which 3,594 (66%) were subsequently issued for grafting. The remaining corneas were unsuitable for transplantation.

<table>
<thead>
<tr>
<th></th>
<th>Total received</th>
<th>Number issued</th>
<th>% issued</th>
<th>Difference between number received and issued</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>5440</td>
<td>3594</td>
<td>66%</td>
<td>1846</td>
</tr>
<tr>
<td>Bristol</td>
<td>2325</td>
<td>1504</td>
<td>65%</td>
<td>821</td>
</tr>
<tr>
<td>Manchester</td>
<td>3115</td>
<td>2090</td>
<td>67%</td>
<td>1025</td>
</tr>
</tbody>
</table>

Table 10.3 Corneas received into the Bristol and Manchester Eye Banks, 1 April 2013 - 31 March 2014 (2012-2013), by year

1 Number issued of those received in each year

The outcome of corneas received into the CTS Eye Banks is given in Table 10.4. Of the corneas supplied to the Eye Banks in 2013-2014, 61% were issued and used and 5% were issued but not used. Of the corneas supplied to the Eye Banks, 11% were unsuitable because of medication contraindications, 14% were unsuitable due to tissue quality and 4% were discarded because of bacterial or fungal contamination. 5% of corneas became outdated, that is, they exceeded 28 days storage. Corneas that were unsuitable for transplantation were, where possible, used for research when permission had been given by the relatives.
10.4 Transplants

Corneal transplant activity by country of residence and Strategic Health Authority in England for the years 2012-2013 and 2013-2014 is detailed in Table 10.5 for corneas supplied through the CTS Eye Banks and others that have been reported to the UK Transplant Registry by Moorfields and East Grinstead Eye Banks. No adjustments have been made for potential demographic differences in populations. The overall transplant rate was 58.5 pmp in 2012-2013; this decreased slightly to 58.3 pmp in 2013-2014. The transplant rates increased in Scotland and Northern Ireland, but remained constant in England and Wales. England had the second highest transplant rate in the UK: 60.2 pmp, this ranged from 50.1 pmp to 75.3 pmp across the SHAs.

<table>
<thead>
<tr>
<th>Outcome of cornea</th>
<th>Bristol</th>
<th>%</th>
<th>Manchester</th>
<th>%</th>
<th>TOTAL</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total used</td>
<td>1381</td>
<td>(1329)</td>
<td>1932</td>
<td>(2035)</td>
<td>3313</td>
<td>(3364)</td>
</tr>
<tr>
<td>Not used</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Issued, not used</td>
<td>123</td>
<td>(130)</td>
<td>158</td>
<td>(158)</td>
<td>281</td>
<td>(288)</td>
</tr>
<tr>
<td>Unsuitable - tissue quality</td>
<td>418</td>
<td>(554)</td>
<td>367</td>
<td>(496)</td>
<td>785</td>
<td>(1050)</td>
</tr>
<tr>
<td>Medical reason - virology</td>
<td>75</td>
<td>(86)</td>
<td>90</td>
<td>(117)</td>
<td>165</td>
<td>(203)</td>
</tr>
<tr>
<td>Medical reason - other</td>
<td>191</td>
<td>(208)</td>
<td>219</td>
<td>(270)</td>
<td>410</td>
<td>(478)</td>
</tr>
<tr>
<td>Contaminated</td>
<td>62</td>
<td>(97)</td>
<td>133</td>
<td>(167)</td>
<td>195</td>
<td>(264)</td>
</tr>
<tr>
<td>Outdated</td>
<td>65</td>
<td>(57)</td>
<td>203</td>
<td>(216)</td>
<td>268</td>
<td>(273)</td>
</tr>
<tr>
<td>Other/not reported</td>
<td>10</td>
<td>(11)</td>
<td>13</td>
<td>(47)</td>
<td>23</td>
<td>(58)</td>
</tr>
<tr>
<td>Total not used</td>
<td>944</td>
<td>(1143)</td>
<td>1183</td>
<td>(1471)</td>
<td>2127</td>
<td>(2614)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2325</td>
<td>(2472)</td>
<td>3115</td>
<td>(3506)</td>
<td>5440</td>
<td>(5978)</td>
</tr>
</tbody>
</table>
Table 10.5  Cornea transplants\(^1\) performed per million population (pmp) in the UK, 1 April 2012 - 31 March 2014, by country/ Strategic Health Authority of residence

<table>
<thead>
<tr>
<th>Country/Strategic Health Authority of residence</th>
<th>2012-2013</th>
<th>2013-2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>North East</td>
<td>109 (41.9)</td>
<td>141 (54.2)</td>
</tr>
<tr>
<td>North West</td>
<td>521 (73.6)</td>
<td>533 (75.3)</td>
</tr>
<tr>
<td>Yorkshire and The Humber</td>
<td>395 (74.2)</td>
<td>334 (62.8)</td>
</tr>
<tr>
<td>North of England</td>
<td>1025 (68.3)</td>
<td>1008 (67.2)</td>
</tr>
<tr>
<td>East Midlands</td>
<td>308 (67.4)</td>
<td>242 (53.0)</td>
</tr>
<tr>
<td>West Midlands</td>
<td>274 (48.6)</td>
<td>324 (57.4)</td>
</tr>
<tr>
<td>East of England</td>
<td>343 (58.0)</td>
<td>325 (55.0)</td>
</tr>
<tr>
<td>Midlands and East</td>
<td>925 (57.4)</td>
<td>891 (55.3)</td>
</tr>
<tr>
<td>London</td>
<td>553 (66.5)</td>
<td>519 (62.5)</td>
</tr>
<tr>
<td>South East Coast</td>
<td>329 (72.9)</td>
<td>310 (68.7)</td>
</tr>
<tr>
<td>South Central</td>
<td>176 (41.8)</td>
<td>211 (50.1)</td>
</tr>
<tr>
<td>South West</td>
<td>235 (44.0)</td>
<td>279 (52.2)</td>
</tr>
<tr>
<td>South of England</td>
<td>740 (52.6)</td>
<td>800 (56.9)</td>
</tr>
<tr>
<td>England</td>
<td>3243 (60.6)</td>
<td>3218 (60.2)</td>
</tr>
<tr>
<td>Isle of Man</td>
<td>2 (25.0)</td>
<td>7 (87.5)</td>
</tr>
<tr>
<td>Channel Islands</td>
<td>4 (25.0)</td>
<td>2 (12.5)</td>
</tr>
<tr>
<td>Wales</td>
<td>139 (45.3)</td>
<td>135 (44.0)</td>
</tr>
<tr>
<td>Scotland</td>
<td>244 (46.0)</td>
<td>265 (49.9)</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>68 (37.4)</td>
<td>72 (39.6)</td>
</tr>
<tr>
<td><strong>TOTAL(^2)</strong></td>
<td>3739 (58.5)</td>
<td>3724 (58.3)</td>
</tr>
</tbody>
</table>

\(^1\) Corneas supplied through the CTS Eye Banks
\(^2\) Includes UK recipients where the postcode was unspecified and non-UK recipients
10.5 Demographic characteristics

The age group, sex and ethnicity of cornea donors and transplant recipients are shown in Table 10.6.

<table>
<thead>
<tr>
<th>Table 10.6</th>
<th>Demographic characteristics of deceased cornea donors and transplant recipients 1 April 2013 - 31 March 2014, in the UK</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cornea only donors</td>
</tr>
<tr>
<td></td>
<td>Solid organ and cornea donors</td>
</tr>
<tr>
<td></td>
<td>Transplant recipients</td>
</tr>
<tr>
<td>Age group (years)</td>
<td>N (%)</td>
</tr>
<tr>
<td>0 - 17</td>
<td>11</td>
</tr>
<tr>
<td>18 - 34</td>
<td>50</td>
</tr>
<tr>
<td>35 - 49</td>
<td>184</td>
</tr>
<tr>
<td>50 - 59</td>
<td>368</td>
</tr>
<tr>
<td>60 - 69</td>
<td>749</td>
</tr>
<tr>
<td>70-79</td>
<td>1001</td>
</tr>
<tr>
<td>80+</td>
<td>321</td>
</tr>
<tr>
<td>Not reported</td>
<td>1</td>
</tr>
<tr>
<td>mean (SD)</td>
<td>67</td>
</tr>
<tr>
<td>Sex</td>
<td>N (%)</td>
</tr>
<tr>
<td>Male</td>
<td>1644</td>
</tr>
<tr>
<td>Female</td>
<td>1037</td>
</tr>
<tr>
<td>Not reported</td>
<td>4</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>N (%)</td>
</tr>
<tr>
<td>White</td>
<td>1438</td>
</tr>
<tr>
<td>Asian</td>
<td>5</td>
</tr>
<tr>
<td>Black</td>
<td>0</td>
</tr>
<tr>
<td>Chinese</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
</tr>
<tr>
<td>Not reported</td>
<td>1242</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2685</td>
</tr>
</tbody>
</table>
Survival Rates Following Transplantation
This chapter shows graft survival rates over time for kidney, pancreas and cornea transplants, and patient survival estimates for kidney, pancreas, cardiothoracic, liver and intestinal transplants, performed in the UK. Separate estimates are presented for adult and paediatric patients (using organ specific age definitions) and for transplants from donors after brain death and donors after circulatory death.

In all cases, the Kaplan-Meier estimate of the survivor function was used to provide the survival rate and groups (years) were compared using the log-rank test. The analyses do not take account of risk factors which may change over time. Graft survival is defined as time from transplant to graft failure, censoring for death with a functioning graft and grafts still functioning at time of analysis. Patient survival is defined as time from transplant to patient death, censoring for patients still alive at time of analysis. Both analyses consider only first transplants.
11.1 Kidney graft and patient survival

11.1.1 Adult kidney recipients - donor after brain death (DBD)

Figure 11.1 shows long-term graft survival in adult (≥18 years) recipients for first kidney only transplant from donors after brain death. Table 11.1 shows the graft survival estimates and confidence intervals for one, two, five and ten years post-transplant. There have been significant improvements in one and two year survival over the time periods shown, p<0.02 in each case. Table 11.2 shows the patient survival estimates and confidence intervals for one, two, five and ten years post-transplant. There have been significant improvements in one, two and five year survival over the time periods shown, p<0.04 in each case.

Table 11.1 Graft survival after first adult kidney only transplant from a DBD

<table>
<thead>
<tr>
<th>Year of transplant</th>
<th>No. at risk on day 0</th>
<th>% Graft survival (95% confidence interval)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>One year</td>
</tr>
<tr>
<td>2000-2002</td>
<td>2857</td>
<td>91</td>
</tr>
<tr>
<td>2003-2005</td>
<td>2586</td>
<td>92</td>
</tr>
<tr>
<td>2006-2008</td>
<td>2148</td>
<td>93</td>
</tr>
<tr>
<td>2009-2012</td>
<td>2912</td>
<td>94</td>
</tr>
</tbody>
</table>

Table 11.2 Patient survival after first adult kidney only transplant from a DBD

<table>
<thead>
<tr>
<th>Year of transplant</th>
<th>No. at risk on day 0</th>
<th>% Patient survival (95% confidence interval)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>One year</td>
</tr>
<tr>
<td>2000-2002</td>
<td>2859</td>
<td>95</td>
</tr>
<tr>
<td>2003-2005</td>
<td>2588</td>
<td>96</td>
</tr>
<tr>
<td>2006-2008</td>
<td>2149</td>
<td>96</td>
</tr>
<tr>
<td>2009-2012</td>
<td>2912</td>
<td>96</td>
</tr>
</tbody>
</table>
11.1.2 Adult kidney recipients - donor after circulatory death (DCD)

Long-term graft survival in adult recipients for kidney transplants from donors after circulatory death is shown in Figure 11.2. Table 11.3 shows the graft survival estimates and confidence intervals for one, two, five and ten years post-transplant. There has been a significant improvement in one, two and five year survival over the time periods shown, p<0.01. One year graft and patient survival are comparable for DBD and DCD donor transplants in the most recent time periods. Table 11.4 shows the patient survival estimates and confidence intervals for each time period analysed. There was a significant improvement in patient survival at two and five years following transplant (p<0.04).

Table 11.3  Graft survival after first adult kidney only transplant from a DCD

<table>
<thead>
<tr>
<th>Year of transplant</th>
<th>No. at risk on day 0</th>
<th>One year (% Graft survival, 95% confidence interval)</th>
<th>Two year</th>
<th>Five year</th>
<th>Ten year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-2002</td>
<td>170</td>
<td>85 (79-90)</td>
<td>93 (77-88)</td>
<td>75 (68-81)</td>
<td>64 (56-71)</td>
</tr>
<tr>
<td>2003-2005</td>
<td>410</td>
<td>93 (90-95)</td>
<td>92 (89-95)</td>
<td>87 (83-90)</td>
<td></td>
</tr>
<tr>
<td>2006-2008</td>
<td>887</td>
<td>93 (91-94)</td>
<td>91 (89-93)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009-2012</td>
<td>2175</td>
<td>92 (91-93)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 11.4  Patient survival after first adult kidney only transplant from a DCD

<table>
<thead>
<tr>
<th>Year of transplant</th>
<th>No. at risk on day 0</th>
<th>One year (% Patient survival, 95% confidence interval)</th>
<th>Two year</th>
<th>Five year</th>
<th>Ten year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-2002</td>
<td>170</td>
<td>92 (87-95)</td>
<td>90 (84-93)</td>
<td>81 (74-87)</td>
<td></td>
</tr>
<tr>
<td>2003-2005</td>
<td>411</td>
<td>97 (94-98)</td>
<td>95 (92-97)</td>
<td>89 (85-91)</td>
<td></td>
</tr>
<tr>
<td>2006-2008</td>
<td>888</td>
<td>96 (95-97)</td>
<td>95 (93-96)</td>
<td>88 (86-90)</td>
<td></td>
</tr>
<tr>
<td>2009-2012</td>
<td>2174</td>
<td>95 (94-96)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
11.1.3 Adult kidney recipients - living donor

Long-term graft survival in adult recipients for living donor kidney transplants in the UK is shown in Figure 11.3. Table 11.5 shows graft survival estimates and confidence intervals for each time period analysed. There has been a significant improvement in one, two and five year survival over the time periods shown, p<0.02. Table 11.6 shows the patient survival estimates and confidence intervals for one, two, five and ten years post transplant. There were no statistically significant change in patient survival over time (p>0.2).

Table 11.5  Graft survival after first adult living donor kidney transplant

<table>
<thead>
<tr>
<th>Year of transplant</th>
<th>No. at risk on day 0</th>
<th>% Graft survival (95% confidence interval)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>One year</td>
</tr>
<tr>
<td>2000-2002</td>
<td>831</td>
<td>94</td>
</tr>
<tr>
<td>2003-2005</td>
<td>1141</td>
<td>96</td>
</tr>
<tr>
<td>2006-2008</td>
<td>1879</td>
<td>96</td>
</tr>
<tr>
<td>2009-2012</td>
<td>2998</td>
<td>97</td>
</tr>
</tbody>
</table>

Table 11.6  Patient survival after first adult living donor kidney transplant

<table>
<thead>
<tr>
<th>Year of transplant</th>
<th>No. at risk on day 0</th>
<th>% Patient survival (95% confidence interval)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>One year</td>
</tr>
<tr>
<td>2000-2002</td>
<td>831</td>
<td>98</td>
</tr>
<tr>
<td>2003-2005</td>
<td>1140</td>
<td>99</td>
</tr>
<tr>
<td>2006-2008</td>
<td>1879</td>
<td>99</td>
</tr>
<tr>
<td>2009-2012</td>
<td>2997</td>
<td>99</td>
</tr>
</tbody>
</table>
11.1.4 Paediatric kidney recipients - donor after brain death (DBD)

Figure 11.4 shows long-term graft survival in paediatric (<18 years) recipients for first kidney only transplants from donors after brain death. Graft survival estimates and confidence intervals are shown for each time period analysed in Table 11.7. There have been improvements in one and five year survival over the period analysed (p<0.03). Table 11.8 shows the patient survival estimates and confidence intervals for one, two, five and ten years post-transplant. There were no statistically significant changes in patient survival over time (p>0.6).

![Figure 11.4 Long-term graft survival after first paediatric kidney only transplant from donors after brain death, 1 January 2000 – 31 December 2012](image)

<table>
<thead>
<tr>
<th>Year of transplant</th>
<th>No. at risk on day 0</th>
<th>% Graft survival (95% confidence interval)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>One year</td>
</tr>
<tr>
<td>2000-2002</td>
<td>229</td>
<td>89 (84-92)</td>
</tr>
<tr>
<td>2003-2005</td>
<td>205</td>
<td>92 (87-95)</td>
</tr>
<tr>
<td>2006-2008</td>
<td>187</td>
<td>95 (91-97)</td>
</tr>
<tr>
<td>2009-2012</td>
<td>223</td>
<td>96 (92-98)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year of transplant</th>
<th>No. at risk on day 0</th>
<th>% Patient survival (95% confidence interval)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>One year</td>
</tr>
<tr>
<td>2000-2002</td>
<td>230</td>
<td>100 (97-100)</td>
</tr>
<tr>
<td>2003-2005</td>
<td>205</td>
<td>100 (97-100)</td>
</tr>
<tr>
<td>2006-2008</td>
<td>188</td>
<td>100 (97-100)</td>
</tr>
<tr>
<td>2009-2012</td>
<td>223</td>
<td>99 (96-100)</td>
</tr>
</tbody>
</table>
11.1.5 Paediatric kidney recipients - living donor

Long-term graft survival in paediatric recipients for living donor kidney transplants in the UK is shown in Figure 11.5. Table 11.9 shows graft survival estimates and confidence intervals for each time period analysed. There has been a significant improvement in five year survival over the time period, p<0.03. Table 11.10 shows the patient survival estimates and confidence intervals for one, two, five and ten years post-transplant. There were no statistically significant differences in patient survival over time (p>0.3). There were insufficient paediatric recipients of first kidney only transplants from donors after circulatory death to permit reliable analysis.

![Figure 11.5: Long-term graft survival after first paediatric living donor kidney only transplant in the UK, 1 January 2000 – 31 December 2012]

<table>
<thead>
<tr>
<th>Year of transplant</th>
<th>No. at risk on day 0</th>
<th>One year</th>
<th>Two year</th>
<th>Five year</th>
<th>Ten year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-2002</td>
<td>100</td>
<td>94</td>
<td>(87-97)</td>
<td>91</td>
<td>(83-95)</td>
</tr>
<tr>
<td>2003-2005</td>
<td>121</td>
<td>97</td>
<td>(91-99)</td>
<td>97</td>
<td>(91-99)</td>
</tr>
<tr>
<td>2006-2008</td>
<td>157</td>
<td>97</td>
<td>(93-99)</td>
<td>97</td>
<td>(93-99)</td>
</tr>
<tr>
<td>2009-2012</td>
<td>244</td>
<td>95</td>
<td>(91-97)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year of transplant</th>
<th>No. at risk on day 0</th>
<th>One year</th>
<th>Two year</th>
<th>Five year</th>
<th>Ten year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-2002</td>
<td>101</td>
<td>97</td>
<td>(91-99)</td>
<td>97</td>
<td>(91-99)</td>
</tr>
<tr>
<td>2003-2005</td>
<td>121</td>
<td>98</td>
<td>(93-100)</td>
<td>98</td>
<td>(93-100)</td>
</tr>
<tr>
<td>2006-2008</td>
<td>157</td>
<td>99</td>
<td>(96-100)</td>
<td>99</td>
<td>(96-100)</td>
</tr>
<tr>
<td>2009-2012</td>
<td>244</td>
<td>99</td>
<td>(97-100)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
11.2 Pancreas graft and patient survival

11.2.1 Simultaneous kidney/pancreas transplants - donor after brain death (DBD)

National pancreas follow-up data are only available for transplants performed since 1 January 2001. There are insufficient data available to analyse long-term survival. Figure 11.6 shows pancreas graft survival in recipients receiving their first simultaneous kidney/pancreas (SPK) transplant performed from donors after brain death, 2003 – 2005, 2006 - 2008 and 2009 - 2012. Graft and patient survival estimates and confidence intervals are shown at one year, two years and five years in Table 11.11 and Table 11.12 respectively. Results relate to adults only as there are no paediatric pancreas transplant recipients.

![Figure 11.6: Pancreas graft survival after first SPK transplant from donors after brain death, 1 January 2003 – 31 December 2012](image)

**Table 11.11** Graft survival after first SPK transplant from a DBD

<table>
<thead>
<tr>
<th>Year of transplant</th>
<th>No. at risk on day 0</th>
<th>% Graft survival (95% confidence interval)</th>
<th>One year</th>
<th>Two year</th>
<th>Five year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-2005</td>
<td>203</td>
<td>82 (75-86)</td>
<td>77</td>
<td>(71-83)</td>
<td>71 (64-77)</td>
</tr>
<tr>
<td>2006-2008</td>
<td>429</td>
<td>88 (84-90)</td>
<td>85</td>
<td>(81-88)</td>
<td>76 (72-80)</td>
</tr>
<tr>
<td>2009-2012</td>
<td>496</td>
<td>84 (80-87)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 11.12** Patient survival after first SPK transplant from a DBD

<table>
<thead>
<tr>
<th>Year of transplant</th>
<th>No. at risk on day 0</th>
<th>% Patient survival (95% confidence interval)</th>
<th>One year</th>
<th>Two year</th>
<th>Five year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-2005</td>
<td>204</td>
<td>94 (89-96)</td>
<td>92</td>
<td>(87-95)</td>
<td>86 (80-90)</td>
</tr>
<tr>
<td>2006-2008</td>
<td>430</td>
<td>96 (93-97)</td>
<td>94</td>
<td>(91-96)</td>
<td>90 (87-93)</td>
</tr>
<tr>
<td>2009-2012</td>
<td>497</td>
<td>96 (94-98)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
11.2.2 Simultaneous kidney/pancreas transplants - donor after circulatory death (DCD)

The majority of simultaneous kidney/pancreas (SPK) transplants from a DCD have been performed since 1 January 2007, so there are insufficient data available to analyse long-term survival. **Figure 11.7** shows pancreas graft survival in recipients receiving their first SPK transplant performed from donors after circulatory death, 2009 - 2012. Graft and patient survival estimates and confidence intervals are shown at one year in **Table 11.13** and **Table 11.14** respectively. Results are for adult patients only.

**Table 11.13** Graft survival after first SPK transplant from a DCD

<table>
<thead>
<tr>
<th>Year of transplant</th>
<th>No. at risk on day 0</th>
<th>% Patient survival (95% confidence interval) One year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009-2012</td>
<td>107</td>
<td>91 (83-95)</td>
</tr>
</tbody>
</table>

**Table 11.14** Patient survival after first SPK transplant from a DCD

<table>
<thead>
<tr>
<th>Year of transplant</th>
<th>No. at risk on day 0</th>
<th>% Patient survival (95% confidence interval) One year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009-2012</td>
<td>107</td>
<td>98 (93-100)</td>
</tr>
</tbody>
</table>
### 11.2.3 Pancreas only transplants - donor after brain death (DBD)

Figure 11.8 shows pancreas graft survival in recipients receiving their first pancreas only transplant performed from donors after brain death, 2003 - 2005, 2006 - 2008 and 2009 - 2012. Graft and patient survival estimates and confidence intervals are shown at one year, two years and five years in Table 11.15 and Table 11.16 respectively. Results are for adult patients only.

<table>
<thead>
<tr>
<th>Year of transplant</th>
<th>No. at risk on day 0</th>
<th>% Graft survival (95% confidence interval)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>One year</td>
</tr>
<tr>
<td>2003-2005</td>
<td>30</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(50-83)</td>
</tr>
<tr>
<td>2006-2008</td>
<td>71</td>
<td>69</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(56-78)</td>
</tr>
<tr>
<td>2009-2012</td>
<td>83</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(55-75)</td>
</tr>
</tbody>
</table>

Table 11.15 Graft survival after first pancreas only transplant from a DBD

<table>
<thead>
<tr>
<th>Year of transplant</th>
<th>No. at risk on day 0</th>
<th>% Patient survival (95% confidence interval)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>One year</td>
</tr>
<tr>
<td>2003-2005</td>
<td>31</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(-)</td>
</tr>
<tr>
<td>2006-2008</td>
<td>71</td>
<td>94</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(85-98)</td>
</tr>
<tr>
<td>2009-2012</td>
<td>84</td>
<td>97</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(88-99)</td>
</tr>
</tbody>
</table>
11.2.4 Pancreas only transplants - donor after circulatory death (DCD)

Figure 11.9 shows pancreas graft survival in recipients receiving their first pancreas only transplant performed from donors after brain death, 2009 - 2012. Graft and patient survival estimates and confidence intervals are shown at one year in Table 11.17 and Table 11.18 respectively. Results are for adult patients only.

<table>
<thead>
<tr>
<th>Year of transplant</th>
<th>No. at risk on day 0</th>
<th>% Patient survival (95% confidence interval) One year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009-2012</td>
<td>31</td>
<td>68</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year of transplant</th>
<th>No. at risk on day 0</th>
<th>% Patient survival (95% confidence interval) One year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009-2012</td>
<td>31</td>
<td>97</td>
</tr>
</tbody>
</table>

Table 11.17  Graft survival after first pancreas only transplant from a DCD

Table 11.18  Patient survival after first pancreas only transplant from a DCD
11.3 Cardiothoracic patient survival

11.3.1 Adult heart recipients

Long-term patient survival for adult (>=16 years) recipients after first heart only transplants is shown in Figure 11.10. Domino and deceased donor (DBD only) transplants are included as well as urgent patients. Table 11.19 shows the patient survival estimates and confidence intervals for one, two, five and ten years post-transplant. There has been a significant improvement in five year survival rates over the time period (p<0.02).

![Figure 11.10 Long-term patient survival after first adult heart only transplant in the UK, 1 January 2000 – 31 December 2012]

![Table 11.19 Patient survival after first adult heart only transplant]

<table>
<thead>
<tr>
<th>Year of transplant</th>
<th>No. at risk on day 0</th>
<th>% Patient survival (95% confidence interval)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>One year</td>
</tr>
<tr>
<td>2000-2002</td>
<td>434</td>
<td>82</td>
</tr>
<tr>
<td>2003-2005</td>
<td>375</td>
<td>78</td>
</tr>
<tr>
<td>2006-2008</td>
<td>311</td>
<td>84</td>
</tr>
<tr>
<td>2009-2012</td>
<td>393</td>
<td>81</td>
</tr>
</tbody>
</table>
11.3.2 Adult heart/lung block recipients

Patient survival for adult recipients after first heart/lung block transplants is shown in Figure 11.11. Patient survival estimates and confidence intervals for each time period analysed are shown in Table 11.20. There were no statistically significant differences in patient survival over time (p>0.09).

![Figure 11.11 Long-term patient survival after first adult heart/lung block transplant in the UK, 1 January 2000 – 31 December 2012](image)

![Table 11.20 Patient survival after first adult heart/lung block transplant](table)
11.3.3 Adult lung recipients - donors after brain death (DBD)

Patient survival for adult recipients after first lung only transplant from donors after brain death is shown in Figure 11.12, with survival estimates and confidence intervals shown in Table 11.21. There is significant evidence of improvement in one year patient survival over the period analysed, p=0.008. There were no statistically significant differences in two or five year patient survival over time (p>0.3).

![Figure 11.12](image)

**Table 11.21** Patient survival after first adult lung only transplant from a DBD

<table>
<thead>
<tr>
<th>Year of transplant</th>
<th>No. at risk on day 0</th>
<th>% Patient survival (95% confidence interval)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>One year</td>
</tr>
<tr>
<td>2000-2002</td>
<td>283</td>
<td>81</td>
</tr>
<tr>
<td>2003-2005</td>
<td>363</td>
<td>73</td>
</tr>
<tr>
<td>2006-2008</td>
<td>334</td>
<td>81</td>
</tr>
<tr>
<td>2009-2012</td>
<td>550</td>
<td>82</td>
</tr>
</tbody>
</table>
### 11.3.4 Adult lung recipients - donors after circulatory death (DCD)

The majority of lung transplants from a DCD have been performed since 1 January 2007, so there is insufficient data available to analyse long-term patient survival. Patient survival for adult recipients after first lung only transplant from donors after circulatory death is shown in Figure 11.13, with survival estimates and confidence intervals shown in Table 11.22.

![Figure 11.13 Patient survival after first adult lung only transplant from donors after circulatory death, 1 January 2009 – 31 December 2012](image)

<table>
<thead>
<tr>
<th>Year of transplant</th>
<th>No. at risk on day 0</th>
<th>% Patient survival (95% confidence interval) One year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009-2012</td>
<td>84</td>
<td>81 (70-88)</td>
</tr>
</tbody>
</table>

Table 11.22 Patient survival after first adult lung only transplant from a DCD
11.3.5 Paediatric heart recipients

Long-term patient survival for paediatric recipients after first heart only transplant is shown in Figure 11.14. Domino and deceased donor transplants (DBD donors only) are included as well as transplants for urgent patients. Table 11.23 shows the patient survival estimates and confidence intervals for one, two, five and ten years post-transplant. There is no evidence of an improvement in one, two or five year survival over the time period analysed, $p>0.06$. The number of paediatric lung and heart/lung transplant recipients was too small for analysis.
11.4 Liver patient survival

11.4.1 Adult recipients - donor after brain death (DBD)

Long-term patient survival for adult (>=17 years) recipients after first elective liver only transplants from donors after brain death is shown in Figure 11.15. Table 11.24 shows patient survival estimates at one, two, five and ten years post-transplant. There have been significant improvements in one and five year patient survival over the time periods analysed, p<0.001 and p<0.006, respectively.
11.4.2 Adult recipients - donor after circulatory death (DCD)

Patient survival for adult (>=17 years) recipients after first elective liver only transplants from donors after circulatory death is shown in Figure 11.16. Between 1 January 2002 and 31 December 2005 there were only 34 of these liver transplants, so it is not possible to estimate long term patient survival. Table 11.25 shows patient survival estimates at one, two and three years post transplant.

![Figure 11.16](image)

**Table 11.25** Patient survival after first elective adult liver only transplant from donors after circulatory death, 1 January 2006 – 31 December 2012

<table>
<thead>
<tr>
<th>Year of transplant</th>
<th>No. at risk on day 0</th>
<th>% Patient survival (95% confidence interval)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>One year</td>
</tr>
<tr>
<td>2006-2008</td>
<td>149</td>
<td>91</td>
</tr>
<tr>
<td>2009-2012</td>
<td>428</td>
<td>88</td>
</tr>
</tbody>
</table>

% Patient survival

<table>
<thead>
<tr>
<th>Year of transplant (Number at risk on day 0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006-2008 (149)</td>
</tr>
<tr>
<td>2009-2012 (428)</td>
</tr>
</tbody>
</table>
11.4.3 Paediatric recipients - donor after brain death (DBD)

Figure 11.17 and Table 11.26 show long-term patient survival estimates for first elective liver only transplants from donors after brain death in paediatric (<17 years) recipients. There have been no statistically significant improvements in one, two or five year patient survival over the time period analysed (p>0.5). The number of paediatric transplants from donors after circulatory death was too small to estimate meaningful patient survival.

Figure 11.17  Long-term patient survival after first elective paediatric liver only transplant from donors after brain death, 1 January 2000 – 31 December 2012

Table 11.26  Patient survival after first elective paediatric liver only transplant from a DBD

<table>
<thead>
<tr>
<th>Year of transplant</th>
<th>No. at risk on day 0</th>
<th>One year</th>
<th>Two year</th>
<th>Five year</th>
<th>Ten year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-2002</td>
<td>150</td>
<td>95 (90-97)</td>
<td>94 (89-97)</td>
<td>92 (86-95)</td>
<td>89 (83-93)</td>
</tr>
<tr>
<td>2003-2005</td>
<td>143</td>
<td>96 (91-98)</td>
<td>94 (88-97)</td>
<td>91 (85-95)</td>
<td></td>
</tr>
<tr>
<td>2006-2008</td>
<td>148</td>
<td>93 (88-96)</td>
<td>91 (85-95)</td>
<td>88 (82-93)</td>
<td></td>
</tr>
<tr>
<td>2009-2012</td>
<td>192</td>
<td>95 (91-98)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
11.5 Intestinal patient survival

The majority of intestinal transplants have been performed since 1 January 2006, so there are insufficient data available to analyse long-term patient survival. Figure 11.18 and Table 11.27 show one-year patient survival estimates for recipients receiving their first intestinal transplant, 2008 – 2012, by recipient age group (adults aged ≥ 18 years).

![Figure 11.18 Patient survival after first intestinal graft in the UK, 1 January 2008 – 31 December 2012](image)

<table>
<thead>
<tr>
<th>Recipient age group</th>
<th>No. at risk on day 0</th>
<th>% Patient survival (95% confidence interval) One year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult</td>
<td>40</td>
<td>80 (64-89)</td>
</tr>
<tr>
<td>Paediatric</td>
<td>25</td>
<td>75 (53-88)</td>
</tr>
</tbody>
</table>
11.6 Cornea graft survival

Good quality cornea follow-up data were only available for transplants performed since 1 April 1999. There are insufficient data available to analyse long-term survival effects. Figure 11.19 shows graft survival estimates for first penetrating keratoplasty (PK) for grafts 2003 - 2005, 2006 - 2008 and 2009 - 2012. Graft survival estimates and confidence intervals are shown by transplant year at one, two and five years in Table 11.28.

![Figure 11.19 Cornea graft survival after first PK graft in the UK, 1 January 2003 – 31 December 2012](image)

**Table 11.28 Cornea graft survival after first PK in the UK**

<table>
<thead>
<tr>
<th>Year of transplant</th>
<th>No. at risk on day 0</th>
<th>% Graft survival (95% confidence interval)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>One year</td>
</tr>
<tr>
<td>2003-2005</td>
<td>3789</td>
<td>94</td>
</tr>
<tr>
<td>2006-2008</td>
<td>2874</td>
<td>93</td>
</tr>
<tr>
<td>2009-2012</td>
<td>2853</td>
<td>91</td>
</tr>
</tbody>
</table>
NHS Organ Donor Register

Key messages

- 20.2 million people on the ODR at March 2014 (32% of the population)
- 41% of the 1,320 deceased organ donors last year were on the ODR
- 53% of 1,050,116 registrations last year were through the Driver and Vehicle Licensing Agency (DVLA)
By the end of March 2014 the NHS Organ Donor Register (ODR) held just over 20.2 million registrations. A summary of the number of registrations at the end of each financial year from 31 March 2005 to 31 March 2014 is shown Figure 12.1. During the year data on the register were continually reviewed and validated with people known to have died, withdrawn from the list and duplicate registrations resolved.

Of the 1,320 deceased organ donors in 2013-2014, 41% were registered on the ODR compared with 38% of organ donors in 2012-2013. Similarly, 43% of cornea-only donors in 2013-2014 were registered on the ODR compared with 39% in 2012-2013.

![Figure 12.1 Number on the NHS Organ Donor Register at 31 March](image)

Those registered on the ODR come from all parts of the UK. Table 12.1 shows the percentage of the population registered in each country/former Strategic Health Authority at 31 March 2014, and the number of registrants. This information is also illustrated in Figure 12.2. No adjustment has been made for any differences in demographics of the populations.
<table>
<thead>
<tr>
<th>Country/Strategic Health Authority</th>
<th>Registrants</th>
<th>Registrants pmp</th>
<th>Proportion registered</th>
</tr>
</thead>
<tbody>
<tr>
<td>North East</td>
<td>786,075</td>
<td>302,337</td>
<td>30%</td>
</tr>
<tr>
<td>North West</td>
<td>2,062,154</td>
<td>291,265</td>
<td>29%</td>
</tr>
<tr>
<td>Yorkshire and The Humber</td>
<td>1,595,287</td>
<td>299,866</td>
<td>30%</td>
</tr>
<tr>
<td><strong>North of England</strong></td>
<td><strong>4,443,516</strong></td>
<td><strong>296,234</strong></td>
<td><strong>30%</strong></td>
</tr>
<tr>
<td>East Midlands</td>
<td>1,368,360</td>
<td>299,422</td>
<td>30%</td>
</tr>
<tr>
<td>West Midlands</td>
<td>1,470,130</td>
<td>260,661</td>
<td>26%</td>
</tr>
<tr>
<td>East of England</td>
<td>1,955,161</td>
<td>330,823</td>
<td>33%</td>
</tr>
<tr>
<td><strong>Midlands and East</strong></td>
<td><strong>4,793,651</strong></td>
<td><strong>297,373</strong></td>
<td><strong>30%</strong></td>
</tr>
<tr>
<td>London</td>
<td>2,132,220</td>
<td>256,585</td>
<td>26%</td>
</tr>
<tr>
<td>South East Coast</td>
<td>1,568,298</td>
<td>347,738</td>
<td>35%</td>
</tr>
<tr>
<td>South Central</td>
<td>1,476,410</td>
<td>350,691</td>
<td>35%</td>
</tr>
<tr>
<td>South West</td>
<td>2,035,708</td>
<td>381,219</td>
<td>38%</td>
</tr>
<tr>
<td><strong>South of England</strong></td>
<td><strong>5,080,416</strong></td>
<td><strong>361,338</strong></td>
<td><strong>36%</strong></td>
</tr>
<tr>
<td>England</td>
<td>16,449,803</td>
<td>307,530</td>
<td>31%</td>
</tr>
<tr>
<td>Isle of Man</td>
<td>11,629</td>
<td>145,363</td>
<td>15%</td>
</tr>
<tr>
<td>Channel Islands</td>
<td>15,923</td>
<td>99,519</td>
<td>10%</td>
</tr>
<tr>
<td>Wales</td>
<td>1,004,593</td>
<td>327,229</td>
<td>33%</td>
</tr>
<tr>
<td>Scotland</td>
<td>2,110,395</td>
<td>397,438</td>
<td>40%</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>582,554</td>
<td>320,085</td>
<td>32%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>20,239,715</strong></td>
<td><strong>316,592</strong></td>
<td><strong>32%</strong></td>
</tr>
</tbody>
</table>

\(^1\) Includes 64,818 registrants where the postcode was unknown
There are a number of registration routes: Health Department registration leaflets readily available in the community; campaigns in both national and regional newspapers and by community groups; the European Health Insurance Card; when registering as a patient with a General Practitioner (via the Family Health Services Authorities); with driving licence applications and reminders (via the Driver and Vehicle Licensing Agency (DVLA)); from the Passport Agency when applying for a new passport; when applying for a Boots Advantage Card; online registrations via the Organ Donation and Transplantation (ODT) website (www.organdonation.nhs.uk) and by telephone.

The source of applications for registration on the ODR is illustrated in Figure 12.3. This figure shows that 21% of registrations in 2013-2014 arrived by means of registering through a GP, 53% from driving licence applications and reminders through the DVLA and 18% online through the ODT website.
At the end of March 2014, 88% of registrants, where the information was available, indicated a willingness to donate all organs and tissue (kidneys, pancreas, heart, lungs, liver and corneas). However, of those who were not willing to donate all organs, the majority (88%) did not wish to donate their corneas. Of the restricted registrations, only 7% (less than 1% of the total register) did not wish to donate their kidneys. Willingness to donate, by organ type, is shown in Table 12.2.

**Table 12.2** Preparedness of those registered on the NHS Organ Donor Register at 31 March 2014 to donate different organs

<table>
<thead>
<tr>
<th>Registrants prepared to donate all organs</th>
<th>88%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Of those not prepared to donate all organs ('restricted donors'):</td>
<td></td>
</tr>
<tr>
<td>Not prepared to donate:</td>
<td>% of 'Restricted donors'</td>
</tr>
<tr>
<td>Kidney</td>
<td>7</td>
</tr>
<tr>
<td>Pancreas</td>
<td>23</td>
</tr>
<tr>
<td>Heart</td>
<td>23</td>
</tr>
<tr>
<td>Lungs</td>
<td>21</td>
</tr>
<tr>
<td>Liver</td>
<td>13</td>
</tr>
<tr>
<td>Corneas</td>
<td>88</td>
</tr>
</tbody>
</table>

1 This information was not available for approximately 5% of the total register
People of all ages are eligible for organ donor registration: the distribution of age by sex at time of registration is shown in Figure 12.4. The highest proportion of registrations (21.6% of males and 23.6% of females) are in the 21-30 years age group. The lowest proportions are in the under 11 and 11-15 age groups. Of all people registered on the NHS Organ Donor Register, 46% are male and 54% are female.

![Figure 12.4](image)

Additionally, the distribution of age of people registering on the ODR during the latest financial year, 2013-2014, is shown in Figure 12.5. The highest proportion of registrations in this year were in the 16-20 years age group. Of the registrants in 2013/2014, 49% were male and 51% were female.
The breakdown of registrants on the ODR during 2013-2014 by socio-economic group (using the ACORN\textsuperscript{1} classification, based on postcode) is shown in Figure 12.6, where it is compared with the general UK population. Though having basically similar distributions, there were proportionately more 'affluent achievers' and less 'urban adversity' on the ODR than in the general population.

\textsuperscript{1} ACORN data supplied by CACI Ltd.
National Potential Donor Audit

Key messages

- There were 35,454 audited deaths reported through the Potential Donor Audit in the financial year to 31 March 2014, including 1,310 (99%) of the 1,320 deceased organ donors

- The neurological death testing rate has increased since last year from 78% to 80% and improvements have been observed in the overall referral rate of potential donors (from 68% to 76%) and the proportion of approaches involving a Specialist Nurse – Organ Donation (from 71% to 76%). The rate of approach to DCD donor families has decreased (from 58% to 48%)

- An increase in the overall consent/authorisation rate has been observed since last year (from 57% to 59%). A significant difference in the consent/authorisation rates for white patients and patients from ethnic minority groups is still apparent (63% and 36%, respectively)

- The consent/authorisation rate is 89% when a patient’s wish is known at the time of potential donation, but 119 families overruled their loved one’s known wish to be an organ donor
13.1 Introduction

In this chapter, summary data from the national Potential Donor Audit (PDA) are shown for 1 April 2013 to 31 March 2014 and data from the previous three financial years are also provided for comparison purposes. The data comprise all audited patient deaths in UK Intensive Care Units (ICUs) and emergency departments, excluding wards and patients over 80 years of age, in the time period. The data are based on information received by 12 May 2014. The number of solid organ donors reported in this chapter will differ from that shown in the rest of the report, due to the national PDA excluding specific patients.

13.2 Definitions

All data shown in this chapter use the following definitions.

Eligible donors after brain death (DBD) are defined as patients for whom death was confirmed following neurological tests and who had no absolute medical contraindications to solid organ donation.

Eligible donors after circulatory death (DCD) are defined as patients who had treatment withdrawn and death was anticipated within four hours, with no absolute medical contraindications to solid organ donation.

Absolute medical contraindications to organ donation are listed here: http://www.odt.nhs.uk/pdf/contraindications_to_organ_donation.pdf

Imminent death anticipated patients who are not confirmed dead using neurological criteria, receiving assisted ventilation, a clinical decision to withdraw treatment has been made and death is anticipated within four hours.

The referral rate is the percentage of patients for whom neurological death was suspected, or imminent death was anticipated, that were discussed with the Specialist Nurse - Organ Donation (SN-OD).

The approach rate is the percentage of eligible donor families approached for consent to/authorisation for donation.

The proportion of approaches involving a SN-OD is the percentage of eligible donor families approached where a SN-OD was involved.

The consent/authorisation rate is the percentage of eligible donor families approached about donation that consented to/authorised donation.

13.3 Breakdown of audited deaths in ICUs and emergency departments

In the 12-month period there were a total of 35,454 audited patient deaths in the UK. Figures 13.1 and 13.2 show a detailed breakdown from the number of audited patient deaths to the number of solid organ donors for potential DBD and DCD donors, respectively. In total, 5,690 patients meeting the PDA criteria died in circumstances that would enable donation.

Table 13.1 shows the key percentages calculated from the flow chart information. Consent/authorisation rates have also been provided for cases where the SN-OD was/was not involved in the approach to the family and/or whether the patient’s wish to be a donor was known at the time of potential donation. Figure 13.3 uses the flow chart information to illustrate the stages where opportunities were lost pre-donation.
Figure 13.1 Donation after brain death

Audited Deaths 35,454

Was the patient ever on mechanical ventilation?
- No 16,500
- Yes 18,954

Were all criteria for neurological testing met?
- No 17,167
- Yes 1,787

Were neurological tests to confirm death performed?
- No 365
- Yes 1,422

Was death confirmed using neurological criteria?
- No 29
- Yes 1,393

Were there any absolute medical contraindications to solid organ donation?
- No 1,351
- Yes 42

Were the family formally approached for consent/authorisation for solid organ donation?
- No 93
- Yes 1,258

Was consent/authorisation for solid organ donation given by the family?
- No 401
- Yes 857

Did solid organ donation occur?
- No 69
- Yes 788

What type of donation happened?
- DBD 773
- DCD 15

Figure 13.2 Donation after circulatory death

Audited Deaths 35,454

Was the patient ever on mechanical ventilation?
- No 16,500
- Yes 18,954

Was death confirmed using neurological criteria?
- No 17,561
- Yes 1,393

Was imminent death anticipated?
- No 10,385
- Yes 7,176

Was treatment withdrawn?
- No 544
- Yes 6,632

Were there any absolute medical contraindications to solid organ donation?
- No 4,139
- Yes 2,493

Were the family formally approached for consent/authorisation for solid organ donation?
- No 2,150
- Yes 1,989

Was consent/authorisation for solid organ donation given by the family?
- No 918
- Yes 1,071

Did solid organ donation occur?
- No 549
- Yes 522

What type of donation happened?
- DCD 522
Table 13.1 Summary of key percentages, 1 April 2013 to 31 March 2014

<table>
<thead>
<tr>
<th></th>
<th>DBD</th>
<th>DCD</th>
<th>ALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neurological death testing rate</td>
<td>79.6%</td>
<td>70.9%</td>
<td>75.6%</td>
</tr>
<tr>
<td>Referral rate</td>
<td>94.5%</td>
<td>70.9%</td>
<td>75.6%</td>
</tr>
<tr>
<td>Approach rate</td>
<td>93.1%</td>
<td>48.1%</td>
<td>59.1%</td>
</tr>
<tr>
<td>Proportion of approaches involving a SN-OD</td>
<td>84.4%</td>
<td>71.4%</td>
<td>76.4%</td>
</tr>
<tr>
<td>Consent/authorisation rate</td>
<td>68.1%</td>
<td>53.8%</td>
<td>59.4%</td>
</tr>
<tr>
<td>- when SN-OD not involved in approach</td>
<td>58.2%</td>
<td>25.5%</td>
<td>33.9%</td>
</tr>
<tr>
<td>- when SN-OD involved in approach</td>
<td>70.0%</td>
<td>65.2%</td>
<td>67.2%</td>
</tr>
<tr>
<td>- when patient had not expressed a wish to donate or the patient's ODR status was not known at the time of potential donation</td>
<td>54.6%</td>
<td>39.0%</td>
<td>44.9%</td>
</tr>
<tr>
<td>- when patient on ODR and status known at time of potential donation</td>
<td>93.1%</td>
<td>85.9%</td>
<td>88.9%</td>
</tr>
<tr>
<td>- when patient's wish (by any method) is known at time of potential donation*</td>
<td>93.4%</td>
<td>85.7%</td>
<td>88.9%</td>
</tr>
<tr>
<td>- when SN-OD involved in approach and patient known to be on ODR at time of potential donation</td>
<td>93.6%</td>
<td>89.8%</td>
<td>91.4%</td>
</tr>
</tbody>
</table>

* 119 families overruled their loved one's known wish to be an organ donor (29 DBD and 90 DCD)

Figure 13.3 Stages at which potential organ donors lost the opportunity to become actual donors, 1 April 2013 to 31 March 2014

Potential donors¹ DBD, 788 donated (44% of potential donors) DCD, 522 donated (8% of potential donors, 13% of those not contraindicated)

¹ Potential DBD donor - A patient who meets all criteria for neurological death testing
² Potential DCD donor - A patient who had treatment withdrawn and death was anticipated within four hours
13.4 Eligible donors

The number of eligible donors (as defined earlier) and rates per million population (pmp) are shown in Table 13.2, by country and former English Strategic Health Authority (SHA). The number of actual donors pmp can be found in Table 3.2 of Chapter 3. Eligible DBD ranged from 14.4 pmp in the South East Coast SHA to 37.5 pmp in the London SHA. Eligible DCD ranged from 50.8 pmp in the South East Coast SHA to 104.2 pmp in the North East SHA. Across the countries, there was a range of 61.8 eligible donors pmp in Scotland to 119.2 eligible donors pmp in Wales. Overall, there were 1,351 eligible DBD (21.1 pmp) and 4,139 eligible DCD (64.7 pmp) in the UK, resulting in a total of 85.9 eligible donors per million population. Tables 13.3 and 13.4 show more detailed information by country and former English SHA for DBD and DCD data, respectively.

<table>
<thead>
<tr>
<th>Country/Strategic Health Authority of donation</th>
<th>Eligible DBD (pmp)</th>
<th>Eligible DCD (pmp)</th>
<th>TOTAL (pmp)</th>
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<td>346 (133.1)</td>
</tr>
<tr>
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<td>577 (81.5)</td>
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Table 13.3  DBD key metrics from the Potential Donor Audit, 1 April 2013 to 31 March 2014, by country and former English Strategic Health Authority

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<th>Country/Strategic Health Authority of donation</th>
<th>Number of patients where neurological death was suspected</th>
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<th>DBD referral rate (%)</th>
<th>Number of eligible DBD donors</th>
<th>Number of eligible DBD donors whose family were approached</th>
<th>DBD approach rate (%)</th>
<th>Percentage of DBD approaches that involved a SN-OD (%)</th>
<th>DBD consent/authorisation rate (%)</th>
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Table 13.4  DCD key metrics from the Potential Donor Audit, 1 April 2013 to 31 March 2014, by country and former English Strategic Health Authority

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<th>Country/Strategic Health Authority of donation</th>
<th>Number of patients for whom imminent death was anticipated</th>
<th>DCD referral rate (%)</th>
<th>Number of eligible DCD donors</th>
<th>Number of eligible DCD donors whose family were approached</th>
<th>DCD approach rate (%)</th>
<th>Percentage of DCD approaches that involved a SN-OD (%)</th>
<th>DCD consent/authorisation rate (%)</th>
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</table>
Tables 13.5 and 13.6 show more detailed information on the key metrics by Organ Donation Services Team (ODST) for DBD and DCD data, respectively. Specialist Nurses for Organ Donation (SN-ODs) work within an ODST, which covers an area of the UK. As seen in Table 13.5, the neurological death testing rate was highest for the Scotland team, the DBD referral rate was highest for the Northern team, the DBD approach rate was highest for the Eastern team and the proportion of DBD approaches involving a SN-OD was highest for the London team. Table 13.6 indicates that for DCD patients, the highest referral rate was for the Northern team, the highest approach rate was for the South West team and the proportion of DCD approaches involving a SN-OD was highest for the London team. No account has been taken of the demographics of the populations within the teams which may impact on the rates presented.

<table>
<thead>
<tr>
<th>ODST</th>
<th>Number of patients where neurological death was suspected</th>
<th>Neurological death testing rate (%)</th>
<th>DBD referral rate (%)</th>
<th>Number of eligible DBD donors</th>
<th>Number of eligible DBD donors whose family were approached</th>
<th>DBD approach rate (%)</th>
<th>Percentage of DBD approaches that involved a SN-OD (%)</th>
<th>DBD consent/authorisation rate (%)</th>
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Table 13.6  DCD key metrics from the Potential Donor Audit, 1 April 2013 to 31 March 2014, by Organ Donation Services Team (ODST)

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<th>DCD referral rate (%)</th>
<th>Number of eligible DCD donors</th>
<th>Number of eligible DCD donors whose family were approached</th>
<th>DCD approach rate (%)</th>
<th>Percentage of DCD approaches that involved a SN-OD (%)</th>
<th>DCD consent/authorisation rate (%)</th>
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<td>142</td>
<td>48.0</td>
<td>73.2</td>
<td>56.3</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>226</td>
<td>58.8</td>
<td>154</td>
<td>53</td>
<td>34.4</td>
<td>73.6</td>
<td>45.3</td>
</tr>
<tr>
<td>Scotland</td>
<td>318</td>
<td>63.8</td>
<td>228</td>
<td>128</td>
<td>56.1</td>
<td>55.5</td>
<td>52.3</td>
</tr>
<tr>
<td>South Central</td>
<td>584</td>
<td>62.0</td>
<td>348</td>
<td>153</td>
<td>44.0</td>
<td>81.0</td>
<td>55.6</td>
</tr>
<tr>
<td>South East</td>
<td>570</td>
<td>66.7</td>
<td>302</td>
<td>151</td>
<td>50.0</td>
<td>80.8</td>
<td>56.3</td>
</tr>
<tr>
<td>South Wales</td>
<td>381</td>
<td>66.7</td>
<td>271</td>
<td>100</td>
<td>36.9</td>
<td>79.0</td>
<td>50.0</td>
</tr>
<tr>
<td>South West</td>
<td>472</td>
<td>77.8</td>
<td>273</td>
<td>165</td>
<td>60.4</td>
<td>47.3</td>
<td>57.6</td>
</tr>
<tr>
<td>Yorkshire</td>
<td>768</td>
<td>72.3</td>
<td>329</td>
<td>155</td>
<td>47.1</td>
<td>73.5</td>
<td>50.3</td>
</tr>
<tr>
<td>TOTAL</td>
<td>7176</td>
<td>70.9</td>
<td>4139</td>
<td>1989</td>
<td>48.1</td>
<td>71.4</td>
<td>53.8</td>
</tr>
</tbody>
</table>

Table 13.7 shows key metrics separately for patients meeting the PDA criteria who were referred in an ICU or an emergency department (irrespective of where the patient died), for DBD and DCD, respectively. Note that the total number of patients in this table and the associated rates do not match the other tables throughout this chapter as Table 13.7 is based on the subset of patients who were referred to the ODST.

Table 13.8 shows key metrics separately for adult and paediatric patients, for DBD and DCD, respectively. Note that of the 117 paediatric patients for whom neurological death was suspected, tests were not performed on 47 patients, 6 of whom were less than two months post term.
Table 13.7  DBD and DCD key metrics from the Potential Donor Audit, 1 April 2013 to 31 March 2014, by unit where patient referred from, for patients who met the PDA criteria and were referred

<table>
<thead>
<tr>
<th>Eligible donor type</th>
<th>Unit where patient was referred from</th>
<th>Number of patients who were referred</th>
<th>Neurological death testing rate (%)</th>
<th>Number of eligible donors</th>
<th>Number of eligible donors whose family were approached</th>
<th>Approach rate (%)</th>
<th>Percentage of approaches involving a SN-OD (%)</th>
<th>Consent/authorisation rate (%)</th>
<th>Number of actual donors</th>
</tr>
</thead>
<tbody>
<tr>
<td>DBD</td>
<td>Critical care</td>
<td>1491</td>
<td>84.3</td>
<td>1191</td>
<td>1111</td>
<td>93.3</td>
<td>85.7</td>
<td>66.4</td>
<td>676</td>
</tr>
<tr>
<td></td>
<td>Emergency dept.</td>
<td>197</td>
<td>74.6</td>
<td>145</td>
<td>140</td>
<td>96.6</td>
<td>78.6</td>
<td>85.0</td>
<td>112</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>1688</td>
<td>83.2</td>
<td>1336</td>
<td>1251</td>
<td>93.6</td>
<td>84.9</td>
<td>68.5</td>
<td>788</td>
</tr>
<tr>
<td>DCD</td>
<td>Critical care</td>
<td>4714</td>
<td>2852</td>
<td>1686</td>
<td>59.1</td>
<td>74.7</td>
<td>56.1</td>
<td>458</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Emergency dept.</td>
<td>376</td>
<td>297</td>
<td>234</td>
<td>78.8</td>
<td>68.4</td>
<td>53.4</td>
<td>64</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>5090</td>
<td>3149</td>
<td>1920</td>
<td>61.0</td>
<td>74.0</td>
<td>55.8</td>
<td>522</td>
<td></td>
</tr>
</tbody>
</table>

1  DBD referral criteria: patients where neurological death was suspected; DCD referral criteria: patients for whom imminent death was anticipated

Table 13.8  DBD and DCD key metrics from the Potential Donor Audit, 1 April 2013 to 31 March 2014, by age group

<table>
<thead>
<tr>
<th>Eligible donor type</th>
<th>Age group</th>
<th>Number of patients who met referral criteria</th>
<th>Neurological death testing rate (%)</th>
<th>Referral rate (%)</th>
<th>Number of eligible donors</th>
<th>Number of eligible donors whose family were approached</th>
<th>Approach rate (%)</th>
<th>Percentage of approaches involving a SN-OD (%)</th>
<th>Consent/authorisation rate (%)</th>
<th>Number of actual donors</th>
</tr>
</thead>
<tbody>
<tr>
<td>DBD</td>
<td>Adult (&gt;=18)</td>
<td>1670</td>
<td>81.0</td>
<td>94.9</td>
<td>1283</td>
<td>1200</td>
<td>93.5</td>
<td>84.9</td>
<td>67.9</td>
<td>748</td>
</tr>
<tr>
<td></td>
<td>Paediatric (&lt;18)</td>
<td>117</td>
<td>59.8</td>
<td>88.0</td>
<td>68</td>
<td>58</td>
<td>85.3</td>
<td>74.1</td>
<td>72.4</td>
<td>40</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>1787</td>
<td>79.6</td>
<td>94.5</td>
<td>1351</td>
<td>1258</td>
<td>93.1</td>
<td>84.4</td>
<td>68.1</td>
<td>788</td>
</tr>
<tr>
<td>DCD</td>
<td>Adult (&gt;=18)</td>
<td>6946</td>
<td>71.4</td>
<td>3986</td>
<td>1918</td>
<td>48.1</td>
<td>72.0</td>
<td>54.5</td>
<td>506</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Paediatric (&lt;18)</td>
<td>230</td>
<td>56.5</td>
<td>153</td>
<td>71</td>
<td>46.4</td>
<td>54.9</td>
<td>36.6</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>7176</td>
<td>70.9</td>
<td>4139</td>
<td>1989</td>
<td>48.1</td>
<td>71.4</td>
<td>53.8</td>
<td>522</td>
<td></td>
</tr>
</tbody>
</table>

1  DBD referral criteria: patients where neurological death was suspected; DCD referral criteria: patients for whom imminent death was anticipated

2  Actual donors resulting from eligible DBD donors includes 12 DCD donors referred from critical care and 3 DCD donors referred from emergency departments
13.5 Consent/authorisation rates

The overall DBD consent/authorisation rate was 68.1% and the 95% confidence limits for this percentage are 65.5% - 70.7%. For DCD, the overall rate was 53.8% and the 95% confidence limits are 51.6% - 56.0%.

Consent/authorisation rates by former English SHA or country are illustrated in Figure 13.4 and by Organ Donation Services Team in Figure 13.5 for both DBD and DCD. Caution should be applied when interpreting these consent/authorisation rates as no adjustment has been made for the mix of patients in terms of age, sex and ethnicity.

Across the former English SHA and countries, the DBD consent/authorisation rates range from 57.3% in London to 78.6% in the North East. DCD consent/authorisation rates range from 45.3% in Northern Ireland to 59.4% in the North East.

The overall consent/authorisation rates (combining DBD and DCD) for England, Wales, Scotland and Northern Ireland were 59.6%, 53.6%, 61.6% and 57.3%, respectively.

Across the Organ Donation Services Teams, the DBD consent/authorisation rates range from 55.5% in the London team to 79.2% in the Northern team. DCD consent/authorisation rates range from 45.3% in the Northern Ireland team to 61% in the London team.
Table 13.9 shows the consent/authorisation rate separately for white patients and patients from ethnic minority groups. The DBD consent/authorisation rates for white patients and patients from ethnic minority groups were 73.6% and 38.1%, respectively. A smaller, but still significant, difference was observed for DCD consent/authorisation rates: 57.0% and 35.9%, respectively. Note that there were an additional 22 DBD and 89 DCD families approached where the ethnicity was not known or not reported.

The Northern Ireland team approached no families from ethnic minority groups during the time period. The Northern, Scotland, South Wales and South West teams each accounted for only 1-2% of families from ethnic minority groups approached for a decision about organ donation, whereas London accounted for 47%. Most teams had a very small proportion, therefore accounting for some of the variation observed in overall consent/authorisation rates between teams. Note that consent/authorisation rates have not been provided where the number of families approached is less than ten.
<table>
<thead>
<tr>
<th>ODST</th>
<th>Number of eligible DBD donors whose family were approached</th>
<th>White eligible donors</th>
<th>Number of eligible DCD donors whose family were approached</th>
<th>DCD consent/authorisation rate (%)</th>
<th>Overall consent/authorisation rate (%)</th>
<th>Eligible donors from ethnic minority groups</th>
<th>Number of eligible DCD donors whose family were approached</th>
<th>DCD consent/authorisation rate (%)</th>
<th>Overall consent/authorisation rate (%)</th>
<th>All</th>
<th>Overall consent/authorisation rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastern</td>
<td>93</td>
<td>78.5</td>
<td>189</td>
<td>58.7</td>
<td>65.2</td>
<td>7</td>
<td>-</td>
<td>9</td>
<td>-</td>
<td>25.0</td>
<td>61.6</td>
</tr>
<tr>
<td>London</td>
<td>148</td>
<td>66.9</td>
<td>192</td>
<td>68.2</td>
<td>67.6</td>
<td>85</td>
<td>34.1</td>
<td>60</td>
<td>40.0</td>
<td>36.6</td>
<td>58.4</td>
</tr>
<tr>
<td>Midlands</td>
<td>121</td>
<td>70.2</td>
<td>236</td>
<td>51.7</td>
<td>58.0</td>
<td>26</td>
<td>38.5</td>
<td>29</td>
<td>34.5</td>
<td>36.4</td>
<td>53.8</td>
</tr>
<tr>
<td>North West</td>
<td>134</td>
<td>72.4</td>
<td>177</td>
<td>55.4</td>
<td>62.7</td>
<td>13</td>
<td>46.2</td>
<td>8</td>
<td>-</td>
<td>42.9</td>
<td>58.9</td>
</tr>
<tr>
<td>Northern</td>
<td>67</td>
<td>85.1</td>
<td>130</td>
<td>61.5</td>
<td>69.5</td>
<td>3</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>64.0</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>49</td>
<td>71.4</td>
<td>53</td>
<td>45.3</td>
<td>57.8</td>
<td>0</td>
<td>-</td>
<td>0</td>
<td>-</td>
<td>-</td>
<td>57.3</td>
</tr>
<tr>
<td>Scotland</td>
<td>83</td>
<td>78.3</td>
<td>116</td>
<td>54.3</td>
<td>64.3</td>
<td>2</td>
<td>-</td>
<td>4</td>
<td>-</td>
<td>-</td>
<td>61.6</td>
</tr>
<tr>
<td>South Central</td>
<td>84</td>
<td>73.8</td>
<td>142</td>
<td>57.7</td>
<td>63.7</td>
<td>10</td>
<td>50.0</td>
<td>8</td>
<td>-</td>
<td>33.3</td>
<td>61.4</td>
</tr>
<tr>
<td>South East</td>
<td>93</td>
<td>73.1</td>
<td>136</td>
<td>56.6</td>
<td>63.3</td>
<td>13</td>
<td>53.8</td>
<td>11</td>
<td>54.5</td>
<td>54.2</td>
<td>62.4</td>
</tr>
<tr>
<td>South Wales</td>
<td>35</td>
<td>65.7</td>
<td>94</td>
<td>51.1</td>
<td>55.0</td>
<td>3</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>55.0</td>
</tr>
<tr>
<td>South West</td>
<td>76</td>
<td>76.3</td>
<td>152</td>
<td>59.9</td>
<td>65.4</td>
<td>1</td>
<td>-</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td>63.0</td>
</tr>
<tr>
<td>Yorkshire</td>
<td>85</td>
<td>75.3</td>
<td>142</td>
<td>53.5</td>
<td>61.7</td>
<td>5</td>
<td>-</td>
<td>6</td>
<td>-</td>
<td>9.1</td>
<td>57.7</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1068</td>
<td>73.6</td>
<td>1759</td>
<td>57.0</td>
<td>63.3</td>
<td>168</td>
<td>38.1</td>
<td>141</td>
<td>33.3</td>
<td>35.9</td>
<td>59.4</td>
</tr>
</tbody>
</table>

1 Includes 111 families approached where the ethnicity was not known or not reported

13.6 Specialist Nurse - Organ Donation (SN-OD) involvement

Table 13.10 shows the proportion of family approaches that involved a SN-OD, for DBD and DCD separately, and overall. Nationally, 84.4% of DBD and 71.4% of DCD family approaches involved a SN-OD, but there is wide variation between teams. Table 13.11 shows the effect on the consent/authorisation rate when a SN-OD is involved or not involved in the approach to a family for a decision about organ donation. Evidence shows that the family is more likely to consent to/authorise donation when a trained SN-OD is involved in the approach and this is particularly apparent for eligible DCD donors. Again, there is wide variation between teams.
Caution should be applied when interpreting these rates as no account has been taken of approaches initiated by the family, ODR status or ethnicity.

<table>
<thead>
<tr>
<th>ODST</th>
<th>DBD</th>
<th>DCD</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of eligible DBD donors whose family were approached</td>
<td>Number of eligible DBD donors where SN-OD involved in approach</td>
<td>Percentage of DBD approaches that involved a SN-OD (%)</td>
</tr>
<tr>
<td>Eastern</td>
<td>102</td>
<td>92</td>
<td>90.2</td>
</tr>
<tr>
<td>London</td>
<td>236</td>
<td>224</td>
<td>94.9</td>
</tr>
<tr>
<td>Midlands</td>
<td>148</td>
<td>95</td>
<td>64.2</td>
</tr>
<tr>
<td>North West</td>
<td>148</td>
<td>132</td>
<td>89.2</td>
</tr>
<tr>
<td>Northern</td>
<td>72</td>
<td>59</td>
<td>81.9</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>50</td>
<td>42</td>
<td>84.0</td>
</tr>
<tr>
<td>Scotland</td>
<td>88</td>
<td>62</td>
<td>70.5</td>
</tr>
<tr>
<td>South Central</td>
<td>96</td>
<td>87</td>
<td>90.6</td>
</tr>
<tr>
<td>South East</td>
<td>107</td>
<td>97</td>
<td>90.7</td>
</tr>
<tr>
<td>South Wales</td>
<td>40</td>
<td>35</td>
<td>87.5</td>
</tr>
<tr>
<td>South West</td>
<td>78</td>
<td>54</td>
<td>69.2</td>
</tr>
<tr>
<td>Yorkshire</td>
<td>93</td>
<td>83</td>
<td>89.2</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1258</td>
<td>1062</td>
<td>84.4</td>
</tr>
</tbody>
</table>
Table 13.11  DBD and DCD consent/authorisation rates with/without SN-OD involvement from the Potential Donor Audit, 1 April 2013 to 31 March 2014, by Organ Donation Services Team (ODST)

<table>
<thead>
<tr>
<th>ODST</th>
<th>Number of eligible DBD donors whose family were approached</th>
<th>SN-OD involved in approach</th>
<th>Number of eligible DCD donors whose family were approached</th>
<th>SN-OD not involved in approach</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>DBD consent/authorisation rate (%)</td>
<td>Number</td>
<td>DCD consent/authorisation rate (%)</td>
<td>Overall consent/authorisation rate (%)</td>
</tr>
<tr>
<td>Eastern</td>
<td>92</td>
<td>77.2</td>
<td>154</td>
<td>64.3</td>
<td>69.1</td>
</tr>
<tr>
<td>London</td>
<td>224</td>
<td>56.3</td>
<td>221</td>
<td>66.5</td>
<td>61.3</td>
</tr>
<tr>
<td>Midlands</td>
<td>95</td>
<td>62.1</td>
<td>144</td>
<td>68.8</td>
<td>66.1</td>
</tr>
<tr>
<td>North West</td>
<td>132</td>
<td>73.5</td>
<td>170</td>
<td>58.2</td>
<td>64.9</td>
</tr>
<tr>
<td>Northern</td>
<td>59</td>
<td>86.4</td>
<td>104</td>
<td>72.1</td>
<td>77.3</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>42</td>
<td>69.0</td>
<td>39</td>
<td>48.7</td>
<td>59.3</td>
</tr>
<tr>
<td>Scotland</td>
<td>62</td>
<td>80.6</td>
<td>71</td>
<td>74.6</td>
<td>77.4</td>
</tr>
<tr>
<td>South Central</td>
<td>87</td>
<td>72.4</td>
<td>124</td>
<td>66.1</td>
<td>68.7</td>
</tr>
<tr>
<td>South East</td>
<td>97</td>
<td>71.1</td>
<td>122</td>
<td>64.8</td>
<td>67.6</td>
</tr>
<tr>
<td>South Wales</td>
<td>35</td>
<td>74.3</td>
<td>79</td>
<td>59.5</td>
<td>64.0</td>
</tr>
<tr>
<td>South West</td>
<td>54</td>
<td>77.8</td>
<td>78</td>
<td>71.8</td>
<td>74.2</td>
</tr>
<tr>
<td>Yorkshire</td>
<td>83</td>
<td>72.3</td>
<td>114</td>
<td>62.3</td>
<td>66.5</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1062</td>
<td>70.0</td>
<td>1420</td>
<td>65.2</td>
<td>67.2</td>
</tr>
<tr>
<td></td>
<td>Number</td>
<td>DBD consent/authorisation rate (%)</td>
<td>Number</td>
<td>DCD consent/authorisation rate (%)</td>
<td>Overall consent/authorisation rate (%)</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>50.0</td>
<td>51</td>
<td>27.5</td>
<td>31.1</td>
</tr>
<tr>
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<td>12</td>
<td>41.7</td>
<td>33</td>
<td>24.2</td>
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</tr>
<tr>
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<td>53</td>
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<td>38.4</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>37.5</td>
<td>32</td>
<td>12.5</td>
<td>20.8</td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>46.2</td>
<td>38</td>
<td>13.2</td>
<td>21.6</td>
</tr>
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<td>8</td>
<td>75.0</td>
<td>14</td>
<td>35.7</td>
<td>50.0</td>
</tr>
<tr>
<td></td>
<td>26</td>
<td>61.5</td>
<td>57</td>
<td>24.6</td>
<td>36.1</td>
</tr>
<tr>
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<td>20.7</td>
<td>33.3</td>
</tr>
<tr>
<td></td>
<td>5</td>
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</table>

Overall consent/authorisation rate (%)
### 13.7 Comparison with previous years

Table 13.12 and Figure 13.6 show the key metrics from the PDA for the last four financial years. Changes were made to the PDA on 1 April 2013 so caution should be applied when comparing time periods. Although the key metrics differ slightly when the data is subset based on the old PDA inclusion criteria the direction of change (increase/decrease), and therefore the key messages, are the same.

**Table 13.12** DBD and DCD key metrics from the Potential Donor Audit, by financial year

<table>
<thead>
<tr>
<th>Eligible donor type</th>
<th>Financial year</th>
<th>Number of patients who met referral criteria</th>
<th>Neurological death testing rate (%)</th>
<th>Referral rate (%)</th>
<th>Number of eligible donors</th>
<th>Number of eligible donors whose family were approached</th>
<th>Approach rate (%)</th>
<th>Proportion of family approaches involving a SN-OD (%)</th>
<th>Number of families who consented to/authorised donation</th>
<th>Consent/authorisation rate (%)</th>
<th>Number of actual donors</th>
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<td>72.1</td>
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<td>2011-2012</td>
<td>1662</td>
<td>74.2</td>
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<td>1090</td>
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<td>71.1</td>
<td>694</td>
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<td>1633</td>
<td>77.7</td>
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<td>2013-2014</td>
<td>1787</td>
<td>79.6</td>
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<td>1351</td>
<td>1258</td>
<td>93.1</td>
<td>84.4</td>
<td>857</td>
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<td>788</td>
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<td>2011-2012</td>
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<td>794</td>
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<td></td>
<td>2012-2013</td>
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<td>2010-2011</td>
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<td>2419</td>
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</tbody>
</table>

1. DBD referral criteria: patients where neurological death was suspected; DCD referral criteria: patients for whom imminent death was anticipated
3. Changes were made to the PDA on 1 April 2013 so caution should be applied when comparing time periods. The main changes involved the introduction of cardiothoracic ICUs to the audit, increasing the upper age limit from 75 to 80 years, bringing absolute medical contraindications in line with current practice and changing the imminent death definition to be clear that death was anticipated within four hours.
An increase has been observed in the neurological death testing rate, but 20% of patients who met the criteria were not tested in 2013-2014. Details, such as the reasons for not testing, can be found in the accompanying PDA Annual Report available at http://www.odt.nhs.uk/odt/potential-donor-audit/. Increases have been observed in the rates of referral to the SN-ODs, especially for DCD. The DBD approach rate has remained static at 93%, but a decrease has been observed in the DCD approach rate. Increases have also been observed in the proportion of approaches involving a SN-OD for both DBD and DCD.

There has been no real change in the DBD consent/authorisation rate, but the actual number of families consenting to/authorising donation has increased. Sixty-three of the 113 extra consents/authorisations are not due to the change in the PDA inclusion criteria. An increase in the consent/authorisation rate has been observed for DCD, however although there has been an increase in the actual number of families consenting to/authorising donation, this increase is due to changes in the PDA inclusion criteria.

Figure 13.6  DBD and DCD key metrics from the Potential Donor Audit

* Changes were made to the PDA on 1 April 2013 so caution should be applied when comparing time periods. The main changes involved the introduction of cardiothoracic ICUs to the audit, increasing the upper age limit from 75 to 80 years, bringing absolute medical contraindications in line with current practice and changing the imminent death definition to be clear that death was anticipated within four hours.
Appendices
Appendix I provides details of the 1,320 deceased solid organ donors reported in 2013-2014. Details are given for each donating hospital and the hospitals have been grouped by former English Strategic Health Authority and country. This appendix does not reflect regional retrieval rates: for example, in Wales three of the donating hospitals reported are listed under Liverpool for kidney retrievals.

The number of donors by donor country/ former Strategic Health Authority of residence is given for donors after brain death in Appendix IIA and donors after circulatory death in Appendix IIB.

The populations used for country/ former Strategic Health Authority per million population are given in Appendix III these populations are mid-2012 estimates based on ONS 2011 Census figures.

Appendix IV shows the import and export of organs to and from the UK in the last three financial years. Appendix IVA and Appendix IVB show the number and type of transplants resulting from the export from and import to the UK, respectively. Appendix IVC shows the number and type of transplants in the UK into non-UK residents. When organs are donated from deceased donors and cannot be used in that country, the organs are offered for use in other countries. This is usually because there is no suitable recipient because of blood group or size. The current EU Directive ensures that all organs that are imported into the UK are evaluated to the same high standards as in the UK. The UK has special arrangements with the Republic of Ireland so that some patients from Ireland will come to the UK for the transplant procedure where units in the UK have particular expertise. For those with fulminant hepatic failure, the UK and Ireland will also share livers. International sharing of organs represents a very small proportion of the UK transplant activity and is set up to ensure that all donated organs are used whenever appropriate.
## Appendix 1  Deceased solid organ donors and donated organs in the UK, 1 April 2013 - 31 March 2014 (2012-2013), by donating hospital

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<tr>
<th>Donating hospital</th>
<th>DBD</th>
<th>DCD</th>
<th>All donors</th>
<th>Multi-organ donor</th>
<th>Kidney</th>
<th>Heart</th>
<th>Lung</th>
<th>Liver</th>
<th>Pancreas</th>
<th>Bowel</th>
</tr>
</thead>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
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<td><strong>Total</strong></td>
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<td>(4)</td>
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<td>59</td>
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Note: DBD = Donation after brain death, DCD = Donation after cardiac death.
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<th>Donating hospital</th>
<th>DBD</th>
<th>DCD</th>
<th>All donors</th>
<th>Multi-organ donor</th>
<th>Kidney</th>
<th>Heart</th>
<th>Lung</th>
<th>Liver</th>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>1.82</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>63.93</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^1\) Population obtained by proportionally dividing population of South East (8.72 million) based on previous data.
## Appendix IVA
Non-UK solid organ transplants from deceased UK donors\(^1\) to non-UK hospitals, 1 April 2011 to 31 March 2014

<table>
<thead>
<tr>
<th>Year</th>
<th>Transplant type</th>
<th>Residency of recipient</th>
<th>ROI</th>
<th>Other EU</th>
<th>Non-EU</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011/12</td>
<td>Kidney</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Heart</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Liver</td>
<td>10</td>
<td>11</td>
<td>1</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Double lung</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
<td><strong>11</strong></td>
<td><strong>1</strong></td>
<td><strong>29</strong></td>
<td></td>
</tr>
<tr>
<td>2012/13</td>
<td>Heart</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Liver</td>
<td>7</td>
<td>8</td>
<td>4</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Double lung</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Partial lung</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>13</strong></td>
<td><strong>8</strong></td>
<td><strong>4</strong></td>
<td><strong>25</strong></td>
<td></td>
</tr>
<tr>
<td>2013/14</td>
<td>Heart</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Liver</td>
<td>5</td>
<td>15</td>
<td>5</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Double lung</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>9</strong></td>
<td><strong>15</strong></td>
<td><strong>5</strong></td>
<td><strong>29</strong></td>
<td></td>
</tr>
</tbody>
</table>

\(^1\) based on country of donor hospital

## Appendix IVB
UK solid organ transplants from deceased non-UK donors\(^1\) to UK residents, 1 April 2011 to 31 March 2014

<table>
<thead>
<tr>
<th>Year</th>
<th>Transplant type</th>
<th>Country of donation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>ROI</td>
</tr>
<tr>
<td>2011/12</td>
<td>Heart</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Liver</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Lung</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Bowel only</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
</tr>
<tr>
<td>2012/13</td>
<td>Heart</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Liver</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>Liver, bowel &amp; pancreas</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>22</strong></td>
</tr>
<tr>
<td>2013/14</td>
<td>Kidney</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Heart</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Liver</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Double lung</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Bowel only</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>14</strong></td>
</tr>
</tbody>
</table>

\(^1\) based on country of donor hospital
<table>
<thead>
<tr>
<th>Year</th>
<th>Transplant type</th>
<th>Country of transplant</th>
<th>ROI</th>
<th>Other EU</th>
<th>Non-EU</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011/12</td>
<td>Heart</td>
<td></td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Liver</td>
<td></td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Double lung</td>
<td></td>
<td>0</td>
<td>10</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td>5</td>
<td>14</td>
<td>0</td>
<td><strong>19</strong></td>
</tr>
<tr>
<td>2012/13</td>
<td>Heart</td>
<td></td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Liver</td>
<td></td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Double lung</td>
<td></td>
<td>0</td>
<td>9</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td>7</td>
<td>12</td>
<td>0</td>
<td><strong>19</strong></td>
</tr>
<tr>
<td>2013/14</td>
<td>Kidney</td>
<td></td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Heart</td>
<td></td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Liver</td>
<td></td>
<td>7</td>
<td>2</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Double lung</td>
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<td>0</td>
<td>6</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td>7</td>
<td>12</td>
<td>0</td>
<td><strong>19</strong></td>
</tr>
</tbody>
</table>

\(^1\) based on country of donor hospital
NHS Blood and Transplant

NHS Blood and Transplant (NHSBT) saves and improves lives by providing a safe and reliable supply of blood components, organs, stem cells, tissues and related services to the NHS, and other UK health services.

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