

# Cardiothoracic Activity

## Key messages

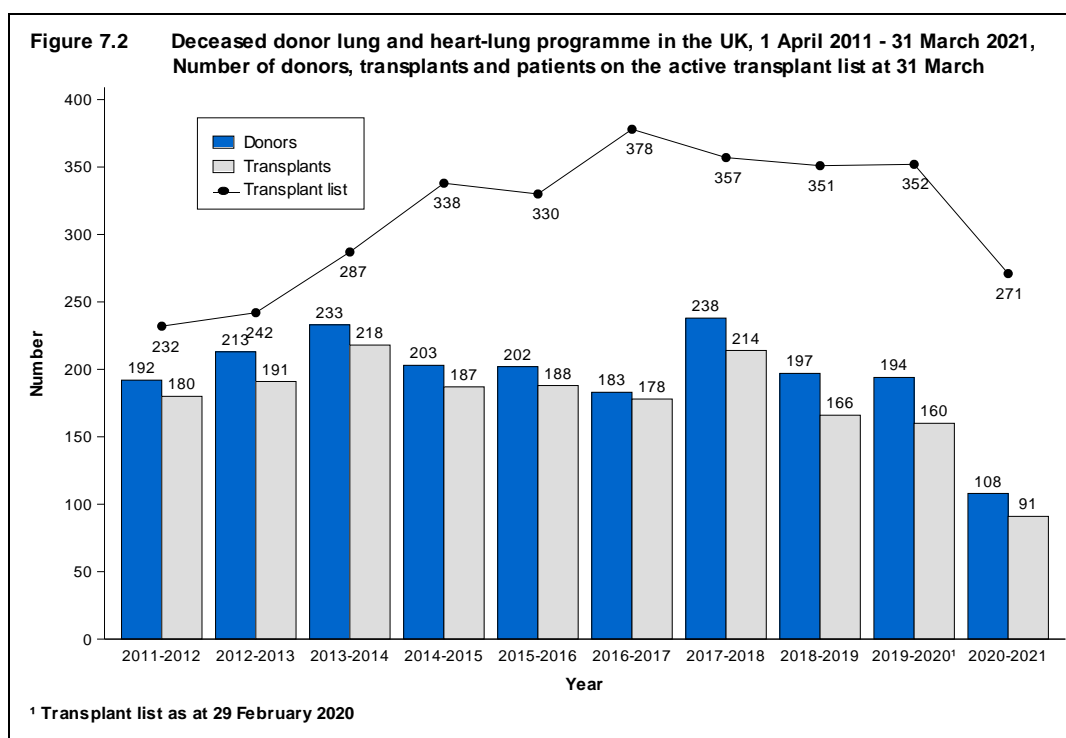
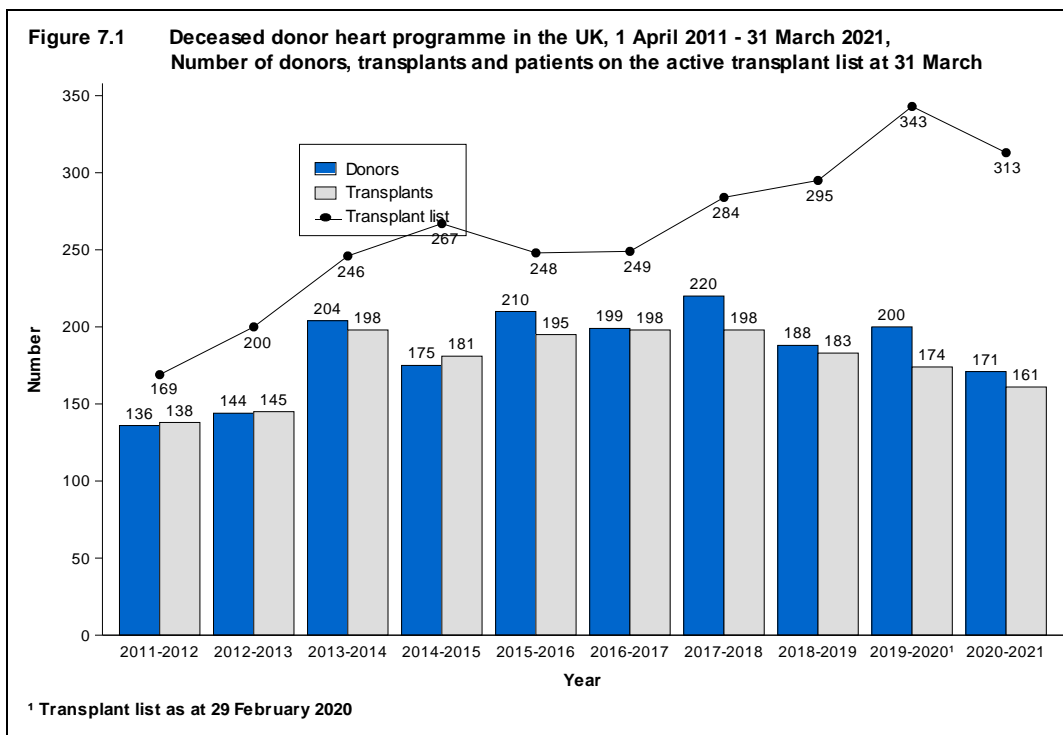
- At 31 March 2021, there were 313 patients on the active heart transplant list, 261 on the lung list and 10 on the heart-lung list
- Of the 766 organ donors after brain death during 2020-2021, 142 (19%) donated their heart and 81 (11%) donated at least one lung
- The number of heart transplants fell by 7% to 161; 60% of these were urgent heart transplants, 18% were super-urgent, and 22% were non-urgent
- The number of lung and heart-lung transplants fell by 44% this year to 90; 22% of these were urgent lung transplants, 1% were super-urgent, and 77% were non-urgent.
- There were 22 DCD heart transplants in 2020-2021, 1 fewer than the previous year

## 7.1 Overview

Note that the COVID-19 pandemic will have affected the number of offered, retrieved and transplanted organs in 2020-2021. This is particularly true for lung transplant activity which was severely impacted by the pandemic.

Last year the number of heart transplants fell by 7% to 161 compared with 2019-2020, and the number of lung or heart-lung transplants fell by 43% to 91. There were decreases in both the heart and the lung transplant lists since 29 February 2020; this is because fewer patients joined the list during 2020-2021 due to the pandemic than in an average year, rather than more patients dying on the list or being removed. The number of patients active on the heart transplant list at year end has increased by 85% since 2012, while the number of patients active on the lung or heart-lung transplant list has increased by 17% since 2012.

A summary of the deceased donor cardiothoracic activity from 1 April 2011 to 31 March 2021 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 2021 by centre. There were four patients waiting on the super-urgent heart transplant list. There were no patients waiting on the super-urgent lung transplant list, and eight patients waiting on the urgent lung transplant list. The lung transplant list accounts for 45% of the patients waiting for a cardiothoracic organ transplant. Overall, Newcastle and Harefield had the largest cardiothoracic transplant waiting lists on 31 March 2021.

<b>Table 7.1 Patients on the cardiothoracic transplant lists at 31 March 2021 (2020)<sup>1</sup> in the UK, by centre</b>														
<b>Centre</b>							<b>Active transplant lists</b>							
	Non-urgent		Heart Urgent		Super-urgent		Heart-lung		Non-urgent		Lung Urgent		Super-urgent	
<b>Adult</b>														
Birmingham	35	(39)	7	(9)	1	(0)	2	(1)	41	(48)	0	(1)	0	(0)
Glasgow	13	(18)	0	(3)	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
Great Ormond Street	3	(1)	0	(0)	0	(0)	1	(0)	1	(1)	0	(0)	0	(0)
Harefield	54	(56)	3	(7)	1	(0)	0	(0)	66	(96)	0	(1)	0	(0)
Manchester	33	(33)	1	(1)	1	(0)	1	(1)	48	(53)	0	(0)	0	(0)
Newcastle	77	(82)	5	(11)	0	(0)	1	(1)	60	(101)	4	(1)	0	(0)
Papworth	33	(43)	1	(2)	1	(2)	2	(2)	32	(41)	1	(2)	0	(0)
<b>TOTAL</b>	<b>248</b>	<b>(272)</b>	<b>17</b>	<b>(33)</b>	<b>4</b>	<b>(2)</b>	<b>7</b>	<b>(5)</b>	<b>248</b>	<b>(340)</b>	<b>5</b>	<b>(5)</b>	<b>0</b>	<b>(0)</b>
<b>Paediatric</b>														
Great Ormond Street	14	(11)	8	(14)	0	(0)	2	(0)	4	(0)	2	(1)	0	(0)
Newcastle	17	(8)	5	(3)	0	(0)	1	(0)	1	(1)	1	(0)	0	(0)
<b>TOTAL</b>	<b>31</b>	<b>(19)</b>	<b>13</b>	<b>(17)</b>	<b>0</b>	<b>(0)</b>	<b>3</b>	<b>(0)</b>	<b>5</b>	<b>(1)</b>	<b>3</b>	<b>(1)</b>	<b>0</b>	<b>(0)</b>

<sup>1</sup> Waiting list figures are as at 31 March 2021 and 29 February 2020

During 2020-2021, there were 273 registrations onto the heart transplant list, 10 registrations onto the heart-lung transplant list and 133 onto the lung transplant list. This is fewer than the number of registrations in a normal year, leading to the fall in the transplant lists observed in **Figures 7.1** and **7.2**. Registration outcomes as at 31 March 2021 for patients on the list at 1 April 2020 and those joining the list during the year are shown in **Table 7.2**.

<b>Table 7.2 Cardiothoracic organ transplant lists and new registrations in the UK, 1 April 2020 - 31 March 2021</b>						
<b>Outcome of patient at 31 March 2021</b>	Active and suspended patients at 1 April 2020		New registrations in 2020-2021 <sup>1</sup>		<b>TOTAL</b>	
	N	%	N	%	N	%
<b>Heart transplant list</b>						
Remained active/suspended	243	67	126	46	369	58
Transplanted	66	18	92	34	158	25
Removed	41	11	40	15	81	13
Died	11	3	15	5	26	4
<b>TOTAL</b>	<b>361</b>		<b>273</b>		<b>634</b>	
<b>Heart-lung transplant list</b>						
Remained active/suspended	2	33	8	80	10	63
Transplanted <sup>2</sup>	1	17	0	0	1	6
Removed	2	33	2	20	4	25
Died	1	17	0	0	1	6
<b>TOTAL</b>	<b>6</b>		<b>10</b>		<b>16</b>	
<b>Lung transplant list</b>						
Remained active/suspended	198	58	86	65	284	60
Transplanted	56	16	30	23	86	18
Removed	51	15	6	5	57	12
Died	37	11	11	8	48	10
<b>TOTAL</b>	<b>342</b>		<b>133</b>		<b>475</b>	
<sup>1</sup> Includes re-registrations for second or subsequent patients						
<sup>2</sup> Patients may have received heart, lung, or heart-lung						

**Table 7.3** shows the transplant list rates per million population by country/NHS region of patient's residence. The overall UK heart transplant list rate at 31 March 2021 was 4.7 pmp and ranged from 3.2 to 8.0 across NHS regions. The overall UK lung transplant list rate was 4.0 pmp and ranged from 2.7 to 5.1 across NHS regions.

<b>Table 7.3 Active cardiothoracic transplant list at 31 March, by country/NHS region of patient residence</b>								
<b>Country/ NHS region of residence</b>	<b>Heart transplant list (pmp)</b>				<b>Lung transplant list (pmp)</b>			
	2021		2020 <sup>1</sup>		2021		2020 <sup>1</sup>	
North East and Yorkshire	69	(8.0)	69	(8.0)	44	(5.1)	53	(6.2)
North West	31	(4.4)	31	(4.4)	36	(5.1)	43	(6.1)
Midlands	44	(4.2)	51	(4.8)	49	(4.6)	61	(5.8)
East of England	21	(3.2)	24	(3.7)	19	(2.9)	19	(2.9)
London	42	(4.7)	43	(4.8)	24	(2.7)	45	(5.0)
South East	34	(3.8)	40	(4.5)	26	(2.9)	36	(4.0)
South West	21	(3.7)	23	(4.1)	19	(3.4)	25	(4.4)
<b>England</b>	<b>262</b>	<b>(4.7)</b>	<b>281</b>	<b>(5.0)</b>	<b>217</b>	<b>(3.9)</b>	<b>282</b>	<b>(5.0)</b>
<b>Isle of Man</b>	<b>1</b>	<b>(12.5)</b>	<b>1</b>	<b>(12.5)</b>	<b>1</b>	<b>(12.5)</b>	<b>0</b>	<b>(0.0)</b>
<b>Channel Islands</b>	<b>0</b>	<b>(0.0)</b>	<b>0</b>	<b>(0.0)</b>	<b>3</b>	<b>(17.6)</b>	<b>2</b>	<b>(11.8)</b>
<b>Wales</b>	<b>12</b>	<b>(3.8)</b>	<b>12</b>	<b>(3.8)</b>	<b>17</b>	<b>(5.4)</b>	<b>14</b>	<b>(4.4)</b>
<b>Scotland</b>	<b>19</b>	<b>(3.5)</b>	<b>28</b>	<b>(5.1)</b>	<b>22</b>	<b>(4.0)</b>	<b>32</b>	<b>(5.9)</b>
<b>Northern Ireland</b>	<b>16</b>	<b>(8.5)</b>	<b>14</b>	<b>(7.4)</b>	<b>10</b>	<b>(5.3)</b>	<b>21</b>	<b>(11.1)</b>
<b>TOTAL<sup>2,3</sup></b>	<b>313</b>	<b>(4.7)</b>	<b>343</b>	<b>(5.1)</b>	<b>271</b>	<b>(4.0)</b>	<b>352</b>	<b>(5.3)</b>

<sup>1</sup> As at 29 February 2020

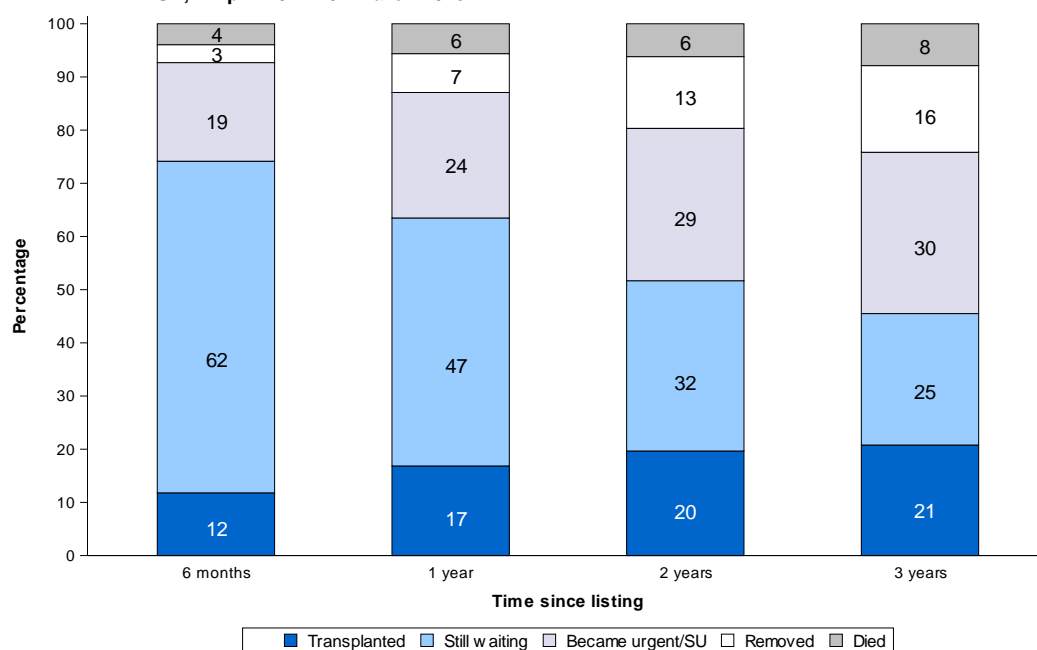
<sup>2</sup> Includes heart patients in 2021 (2020) resident in: UK unknown 1 (3); Republic of Ireland 1 (2); Overseas 1 (2)

<sup>3</sup> Includes lung patients in 2021 (2020) resident in: UK unknown 1 (1)

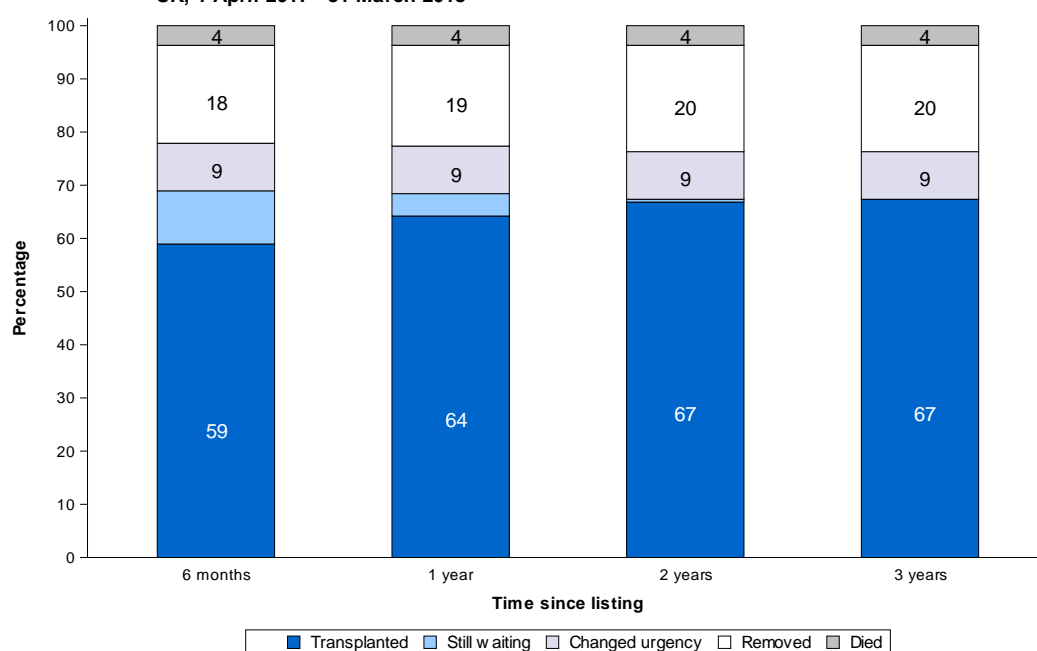
The transplant list outcomes for adult patients listed for a cardiothoracic organ transplant between 1 April 2017 and 31 March 2018 are summarised in **Figure 7.3**, **Figure 7.4** and **Figure 7.5**, for non-urgent heart, urgent heart and non-urgent lung registrations, respectively. These show the proportion of patients transplanted, still waiting, removed and those who died within six months, one year, two years and three years after joining the non-urgent or urgent heart list or the lung list, respectively. Within six months of listing, 12% of non-urgent heart patients were transplanted while 4% had died, compared with 59% transplanted and 4% died for urgent heart patients. Of those listed for a non-urgent lung transplant, 26% were transplanted within six months, rising to 45% after three years, however at three years, 16% had died. The patients removed from these lists may have subsequently died.

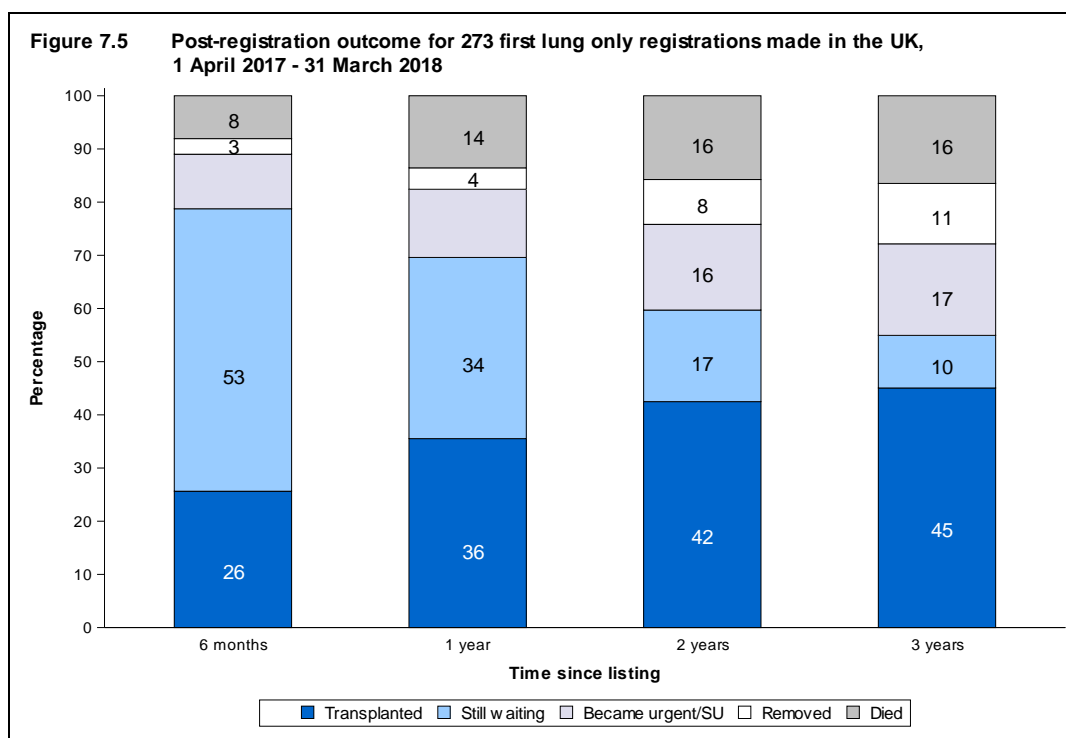
In October 2016 and May 2017, respectively, the super-urgent heart offering scheme and urgent and super-urgent lung offering schemes were introduced, with corresponding new registration types. The outcomes and median waiting times of such registrations are not represented in **Figures 7.3 – 7.5** and in **Tables 7.4** and **7.5**.

**Figure 7.3** Post-registration outcome for 178 first non-urgent heart only registrations made in the UK, 1 April 2017 - 31 March 2018



**Figure 7.4** Post-registration outcome for 190 first urgent heart only registrations made in the UK, 1 April 2017 - 31 March 2018





**Table 7.4** and **Table 7.5** show the median waiting time to cardiothoracic organ transplant by blood group and ethnicity of patient, respectively, for patients registered between 1 April 2013 and 31 March 2018. The overall median waiting time to non-urgent heart transplantation for adult patients who were never on the urgent or super-urgent list was over 6 years. For patients who had been on the urgent list ('ever urgent'), the overall median time on the urgent list before transplant was 35 days.

The overall median waiting time to non-urgent lung transplantation for adult patients who were never on the urgent or super-urgent list, was 365 days, but for blood group O patients alone was longer, at 530 days.

For paediatric heart patients, the median waiting time was 414 days for non-urgent registrations and 88 days for urgent registrations (this is not broken down by blood group or ethnicity due to low numbers). Median waiting time is not calculated for paediatric lung patients due to the small number of registrations. 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 2013 - 31 March 2018, by blood group**

Blood group	Number of patients registered	Waiting time (days)	
		Median	95% Confidence interval
<b>Adult non-urgent heart<sup>1</sup></b>			
O	190	-	-
A	206	1305	561 - 2049
B	49	612	0 - 1328
AB	13	693	0 - 1512
<b>TOTAL</b>	<b>458</b>	<b>2279</b>	<b>-</b>
<b>Adult urgent heart<sup>2</sup> (urgent waiting time only)</b>			
O	320	52	45 - 59
A	346	21	18 - 24
B	109	41	28 - 54
AB	33	25	17 - 33
<b>TOTAL</b>	<b>808</b>	<b>35</b>	<b>31 - 39</b>
<b>Paediatric non-urgent heart<sup>1</sup></b>	<b>40</b>	<b>414</b>	<b>196 - 632</b>
<b>Paediatric urgent heart<sup>2</sup> (urgent waiting time only)</b>	<b>217</b>	<b>88</b>	<b>72 - 104</b>
<b>Adult non-urgent lung<sup>1</sup></b>			
O	668	530	452 - 608
A	605	240	191 - 289
B	146	404	147 - 661
AB	46	171	125 - 217
<b>TOTAL</b>	<b>1465</b>	<b>365</b>	<b>319 - 411</b>

- Median and/or 95% confidence interval cannot be estimated due to insufficient numbers of patients transplanted

<sup>1</sup> Excludes patients that were moved to the urgent/super-urgent lists

<sup>2</sup> Excludes patients that were moved to the super-urgent list

**Table 7.5 Median waiting time to cardiothoracic transplant in the UK, for patients registered 1 April 2013 - 31 March 2018, by ethnicity**

Ethnicity	Number of patients registered	Waiting time (days)	
		Median	95% Confidence interval
<b>Adult never urgent heart</b>			
White	406	2279	-
Asian	31	1473	-
Black	16	742	177 - 1307
Other <sup>1</sup>	4	479	0 - 1171
<b>TOTAL<sup>2</sup></b>	<b>458</b>	<b>2279</b>	<b>-</b>
<b>Adult ever urgent heart<sup>3</sup> (urgent waiting time only)</b>			
White	676	35	30 - 40
Asian	73	37	14 - 60
Black	39	40	0 - 92
Other	13	34	21 - 47
<b>TOTAL<sup>2</sup></b>	<b>808</b>	<b>35</b>	<b>31 - 39</b>
<b>Paediatric never urgent heart</b>	<b>40</b>	<b>414</b>	<b>196 - 632</b>
<b>Paediatric ever urgent heart (urgent waiting time only)</b>	<b>217</b>	<b>88</b>	<b>72 - 104</b>
<b>Adult lung</b>			
White	1378	351	308 - 394
Asian	58	1191	355 - 2027
Black	18	735	-
Other <sup>1</sup>	5	-	-
<b>TOTAL<sup>2</sup></b>	<b>1465</b>	<b>365</b>	<b>319 - 411</b>

<sup>1</sup> Median waiting time not calculated for fewer than 10 patients

<sup>2</sup> Totals do not add up where we do not have ethnicity reported for all patients

<sup>3</sup> Includes registrations and waiting time on super-urgent list where applicable

- Median and/or 95% confidence interval cannot be estimated

### 7.3 Donor and organ supply

**Table 7.6** shows the number of deceased organ donors identified in each heart allocation zone, and the number of donors where the heart was retrieved and transplanted, by donor type. It also shows the number in each zone who donated their lung(s) as well as their heart. Of the 766 DBD donors, 142 (19%) donated their heart, resulting in 139 transplants. Of the 414 DCD donors, 29 (7%) donated their heart, resulting in 22 transplants.

**Table 7.7** shows the number of deceased organ donors identified in each lung allocation zone, and the number of donors where at least one lung was retrieved and transplanted, by donor type. It also shows the number in each zone who donated their heart as well as their lung(s). Of the 766 DBD donors, 81 (11%) donated at least one lung, with 72 proceeding to transplantation. Of the 414 DCD donors, 27 (7%) donated at least one lung, with 19 proceeding to transplantation.

Note that from May 2017, hearts and lungs have had separate allocation zones and so the number of donors in zones does not match between heart and lung allocation zones. Prior to this, there were joint cardiothoracic allocation zones.

<b>Table 7.6 Heart organ donation and retrieval rates in the UK, 1 April 2020 - 31 March 2021, by heart allocation zone and donor type</b>								
Heart Allocation Zone	Number of donors	DBD			Number of donors	DCD		
		Number of heart donors (utilised)		Number donated heart and lungs		Number of heart donors (utilised)		Number donated heart and lungs
Birmingham	122	24	(24)	5	55	3	(2)	2
Glasgow	75	15	(15)	3	32	2	(1)	0
Harefield	179	27	(25)	8	82	5	(4)	1
Manchester	99	15	(15)	2	54	2	(2)	0
Newcastle	167	36	(36)	7	113	9	(6)	4
Papworth	124	25	(24)	6	78	8	(7)	0
<b>TOTAL</b>	<b>766</b>	<b>142</b>	<b>(139)</b>	<b>31</b>	<b>414</b>	<b>29</b>	<b>(22)</b>	<b>7</b>

<b>Table 7.7 Lung organ donation and retrieval rates in the UK, 1 April 2020 - 31 March 2021, by lung allocation zone and donor type</b>								
Lung Allocation Zone	Number of donors	DBD			Number of donors	DCD		
		Number of lung donors (utilised)		Number donated heart and lungs		Number of lung donors (utilised)		Number donated heart and lungs
Birmingham	122	6	(5)	2	53	5	(4)	2
Harefield	229	23	(19)	10	104	8	(7)	0
Manchester	109	9	(9)	3	59	0	(0)	0
Newcastle	179	22	(21)	7	102	5	(4)	2
Papworth	127	19	(18)	7	96	7	(4)	1
<b>TOTAL</b>	<b>766</b>	<b>79</b>	<b>(72)</b>	<b>29</b>	<b>414</b>	<b>25</b>	<b>(19)</b>	<b>5</b>

The rates per million population for cardiothoracic organ donors are shown in **Table 7.8** by country/NHS region of residence. No adjustments have been made for potential demographic differences in populations. The overall heart donor rate was 2.6 pmp in 2020-2021 and varied across NHS regions from 1.4 pmp to 3.4 pmp. For lungs, the overall donor rate was 1.6 pmp in 2020-2021 and varied across NHS regions from 0.9 pmp to 2.4 pmp.

<b>Table 7.8 Cardiothoracic donation and retrieval rates for deceased donors in the UK, 1 April 2020 - 31 March 2021, by country/NHS region</b>										
<b>Country/ NHS region</b>	<b>Heart (pmp)</b>			<b>Total</b>	<b>Lungs (pmp)</b>			<b>Total</b>		
	<b>DBD</b>		<b>DCD</b>		<b>DBD</b>		<b>DCD</b>			
North East and Yorkshire	24	(2.8)	3	(0.3)	27	(3.1)	11	(1.3)	4	(0.5)
North West	8	(1.1)	2	(0.3)	10	(1.4)	8	(1.1)	0	(0.0)
Midlands	18	(1.7)	4	(0.4)	22	(2.1)	10	(0.9)	4	(0.4)
East of England	9	(1.4)	4	(0.6)	13	(2.0)	11	(1.7)	4	(0.6)
London	15	(1.7)	4	(0.4)	19	(2.1)	5	(0.6)	3	(0.3)
South East	19	(2.1)	5	(0.6)	24	(2.7)	16	(1.8)	5	(0.6)
South West	18	(3.2)	1	(0.2)	19	(3.4)	5	(0.9)	2	(0.4)
<b>England</b>	<b>111</b>	<b>(2.0)</b>	<b>23</b>	<b>(0.4)</b>	<b>134</b>	<b>(2.4)</b>	<b>66</b>	<b>(1.2)</b>	<b>22</b>	<b>(0.4)</b>
<b>Isle of Man</b>	<b>0</b>	<b>(0.0)</b>	<b>0</b>	<b>(0.0)</b>	<b>0</b>	<b>(0.0)</b>	<b>0</b>	<b>(0.0)</b>	<b>0</b>	<b>(0.0)</b>
<b>Channel Islands</b>	<b>0</b>	<b>(0.0)</b>	<b>0</b>	<b>(0.0)</b>	<b>0</b>	<b>(0.0)</b>	<b>0</b>	<b>(0.0)</b>	<b>0</b>	<b>(0.0)</b>
<b>Wales</b>	<b>8</b>	<b>(2.5)</b>	<b>2</b>	<b>(0.6)</b>	<b>10</b>	<b>(3.2)</b>	<b>3</b>	<b>(1.0)</b>	<b>2</b>	<b>(0.6)</b>
<b>Scotland</b>	<b>12</b>	<b>(2.2)</b>	<b>2</b>	<b>(0.4)</b>	<b>14</b>	<b>(2.6)</b>	<b>8</b>	<b>(1.5)</b>	<b>1</b>	<b>(0.2)</b>
<b>Northern Ireland</b>	<b>8</b>	<b>(4.2)</b>	<b>2</b>	<b>(1.1)</b>	<b>10</b>	<b>(5.3)</b>	<b>3</b>	<b>(1.6)</b>	<b>2</b>	<b>(1.1)</b>
<b>TOTAL<sup>1,2</sup></b>	<b>142</b>	<b>(2.1)</b>	<b>29</b>	<b>(0.4)</b>	<b>171</b>	<b>(2.6)</b>	<b>81</b>	<b>(1.2)</b>	<b>27</b>	<b>(0.4)</b>
<sup>1</sup> Heart numbers include 3 donors with unknown UK postcode <sup>2</sup> Lung numbers include 1 donors with unknown UK postcode										

## 7.4 Transplants

The number of cardiothoracic organ transplants by recipient country/NHS region of residence is shown in **Table 7.9**. No adjustments have been made for potential demographic differences in populations. The heart transplant rate ranged from 0.9 to 3.2 pmp across NHS regions and overall was 2.4 pmp. The lung transplant rate ranged from 0.9 to 1.9 pmp across NHS regions and overall was 1.3 pmp. Lung transplant rates include the small number of heart-lung transplants.

**Table 7.9 Cardiothoracic transplant rates per million population (pmp) in the UK, 1 April 2020 – 31 March 2021, by country/NHS region**

Country/ NHS region	Heart (pmp)			Lungs (pmp)		
	DBD	DCD	Total	DBD	DCD	Total
North East and Yorkshire	19 (2.2)	2 (0.2)	21 (2.4)	10 (1.2)	2 (0.2)	12 (1.4)
North West	13 (1.8)	2 (0.3)	15 (2.1)	7 (1.0)	1 (0.1)	8 (1.1)
Midlands	32 (3.0)	2 (0.2)	34 (3.2)	8 (0.8)	2 (0.2)	10 (0.9)
East of England	14 (2.1)	4 (0.6)	18 (2.8)	6 (0.9)	3 (0.5)	9 (1.4)
London	12 (1.3)	1 (0.1)	13 (1.5)	11 (1.2)	6 (0.7)	17 (1.9)
South East	12 (1.3)	9 (1.0)	21 (2.4)	9 (1.0)	2 (0.2)	11 (1.2)
South West	4 (0.7)	1 (0.2)	5 (0.9)	8 (1.4)	1 (0.2)	9 (1.6)
<b>England</b>	<b>106 (1.9)</b>	<b>21 (0.4)</b>	<b>127 (2.3)</b>	<b>59 (1.0)</b>	<b>17 (0.3)</b>	<b>76 (1.4)</b>
<b>Isle of Man</b>	<b>0 (0.0)</b>	<b>0 (0.0)</b>	<b>0 (0.0)</b>	<b>0 (0.0)</b>	<b>0 (0.0)</b>	<b>0 (0.0)</b>
<b>Channel Islands</b>	<b>0 (0.0)</b>	<b>0 (0.0)</b>	<b>0 (0.0)</b>	<b>0 (0.0)</b>	<b>0 (0.0)</b>	<b>0 (0.0)</b>
<b>Wales</b>	<b>6 (1.9)</b>	<b>0 (0.0)</b>	<b>6 (1.9)</b>	<b>4 (1.3)</b>	<b>0 (0.0)</b>	<b>4 (1.3)</b>
<b>Scotland</b>	<b>20 (3.7)</b>	<b>1 (0.2)</b>	<b>21 (3.8)</b>	<b>6 (1.1)</b>	<b>1 (0.2)</b>	<b>7 (1.3)</b>
<b>Northern Ireland</b>	<b>3 (1.6)</b>	<b>0 (0.0)</b>	<b>3 (1.6)</b>	<b>2 (1.1)</b>	<b>1 (0.5)</b>	<b>3 (1.6)</b>
<b>TOTAL<sup>1</sup></b>	<b>136 (2.0)</b>	<b>22 (0.3)</b>	<b>158 (2.4)</b>	<b>71 (1.1)</b>	<b>19 (0.3)</b>	<b>91 (1.3)</b>

<sup>1</sup>Excludes 2 recipients who reside in the Republic of Ireland, 1 recipient who resides overseas, and includes 2 recipients whose postcode was unknown

**Table 7.10** and **Table 7.11** show cardiothoracic organ transplant activity for each centre by urgency status and donor type, respectively. In 2020-2021, a total of 252 transplants were carried out; a fall of 25% on 2019-2020. Of these, 161 were heart transplants, of which 126 (78%) were urgent or super-urgent and additionally, 22 (14%) were achieved from donors after circulatory death. There was a total of 91 lung transplants, of which 20 (22%) were urgent or super-urgent. There were fewer heart-lung transplants compared with 2019-2020.

**Table 7.10 Cardiothoracic transplants from deceased donors, 1 April 2020 – 31 March 2021 (2019-2020), by age group, centre, transplant type and urgency**

Transplant centre							Transplant type								TOTAL	
							Heart				Heart- lung		Lung(s)			
Non-urgent		Urgent		Super-urgent				Non-urgent		Urgent		Super-urgent				
Adult																
Birmingham	4	(2)	12	(20)	10	(8)	1	(2)	4	(13)	2	(2)	0	(0)	33	(47)
Glasgow	6	(2)	12	(8)	2	(1)	0	(0)	0	(0)	0	(0)	0	(0)	20	(11)
Great Ormond Street	1	(0)	0	(0)	0	(0)	0	(0)	1	(0)	0	(0)	0	(0)	2	(0)
Harefield	0	(1)	12	(17)	1	(5)	0	(0)	23	(32)	4	(3)	1	(5)	41	(63)
Manchester	2	(0)	11	(18)	2	(4)	1	(1)	11	(24)	1	(4)	0	(0)	28	(51)
Newcastle	4	(3)	16	(19)	3	(4)	0	(0)	16	(19)	5	(10)	0	(1)	44	(56)
Papworth	14	(16)	15	(16)	8	(7)	0	(2)	13	(34)	6	(5)	0	(0)	56	(80)
TOTAL	31	(24)	78	(98)	26	(29)	2	(5)	68	(122)	18	(24)	1	(6)	224	(308)
Paediatric <sup>1</sup>																
Great Ormond Street	2	(1)	14	(9)	3	(0)	0	(0)	1	(2)	1	(0)	0	(0)	21	(12)
Newcastle	2	(0)	5	(13)	0	(0)	0	(0)	0	(1)	0	(0)	0	(0)	7	(14)
TOTAL	4	(1)	19	(22)	3	(0)	0	(0)	1	(3)	1	(0)	0	(0)	28	(26)

<sup>1</sup> Paediatric recipients are aged under 16 years at time of transplant

**Table 7.11 Cardiothoracic transplants from deceased donors, 1 April 2020 – 31 March 2021 (2019-2020), by age group, centre, transplant type and donor type**

Transplant centre					Transplant type								TOTAL	
	Heart				Heart-lung				Lung(s)					
	DBD		DCD		DBD		DCD		DBD		DCD			
Adult														
Birmingham	26	(30)	0	(0)	1	(2)	0	(0)	6	(15)	0	(0)	33	(47)
Glasgow	20	(10)	0	(1)	0	(0)	0	(0)	0	(0)	0	(0)	20	(11)
Great Ormond Street	0	(0)	1	(0)	0	(0)	0	(0)	1	(0)	0	(0)	2	(0)
Harefield	11	(20)	2	(3)	0	(0)	0	(0)	21	(33)	7	(7)	41	(63)
Manchester	15	(20)	0	(2)	1	(1)	0	(0)	11	(23)	1	(5)	28	(51)
Newcastle	20	(26)	3	(0)	0	(0)	0	(0)	16	(21)	5	(9)	44	(56)
Papworth	26	(24)	11	(15)	0	(1)	0	(1)	13	(28)	6	(11)	56	(80)
TOTAL	118	(130)	17	(21)	2	(4)	0	(1)	68	(120)	19	(32)	224	(308)
Paediatric <sup>1</sup>														
Great Ormond Street	15	(8)	4	(2)	0	(0)	0	(0)	2	(2)	0	(0)	20	(12)
Newcastle	6	(13)	1	(0)	0	(0)	0	(0)	0	(1)	0	(0)	7	(14)
TOTAL	21	(21)	5	(2)	0	(0)	0	(0)	2	(3)	0	(0)	28	(26)

<sup>1</sup> Paediatric recipients are aged under 16 years at time of transplant

At 31 March 2021 there were approximately 4,000 recipients with a functioning cardiothoracic organ transplant being followed-up as reported to the UK Transplant Registry.

The length of time that elapses between cardiothoracic organs being removed from the donor and their transplantation into the recipient is called the total ischaemia time (IT). Generally, the shorter this time, the more likely the organ is to work immediately and the better the long-term outcome. Please note some of these data include the use of donor organ maintenance systems, in which cases the IT reported will be an overestimate of the true ischaemia time.

In 2020-2021, the median IT for a DBD heart transplant was 3.4 hours (Inter-Quartile (IQ) range 2.6 – 3.8) and for a DCD heart transplant was 5.8 hours (IQ range 4.7 – 6.5) and overall was 3.5 hours (IQ range 2.9 – 4.2).

The median IT for a DBD donor lung transplant was 6.5 hours (IQ range 5.7 – 8.0) and for a DCD donor lung transplant was 8.5 hours (IQ range 6.9 – 10.5) and overall was 7.0 hours (IQ range 5.7 – 8.3).

## 7.5 Demographic characteristics

The age group, sex, ethnicity and blood group of deceased donors, transplant recipients and patients on the transplant list are shown in **Table 7.12**.

<b>Table 7.12 Demographic characteristics of deceased cardiothoracic donors and transplant recipients 1 April 2020 - 31 March 2021, and transplant list patients at 31 March in the UK</b>						
<b>Age group (years)</b>	<b>Donors</b>		<b>Transplant recipients</b>		<b>Active transplant list patients</b>	
	N	(%)	N	(%)	N	(%)
0 - 17	22	(9)	33	(13)	62	(11)
18 - 34	84	(35)	39	(16)	64	(11)
35 - 49	78	(32)	59	(24)	133	(23)
50 - 59	45	(19)	71	(28)	172	(29)
60 - 69	12	(5)	50	(20)	148	(25)
70+	0	(0)	0	(0)	5	(1)
mean (SD)	37	(15)	43	(18)	46	(18)
Male	134	(56)	158	(63)	365	(63)
Female	107	(44)	94	(37)	219	(38)
White	205	(87)	212	(84)	504	(87)
Asian	7	(3)	20	(8)	48	(8)
Black	8	(3)	15	(6)	22	(4)
Chinese	1	(0)	0	(0)	1	(0)
Other	14	(6)	4	(2)	6	(1)
Not reported	6	-	1	-	3	-
O	133	(55)	101	(40)	323	(55)
A	84	(35)	108	(43)	196	(34)
B	23	(10)	26	(10)	58	(10)
AB	1	(0)	17	(7)	7	(1)
First graft			245	(97)	569	(97)
Re-graft			7	(3)	15	(3)
<b>TOTAL</b>	<b>241</b>	<b>(100)</b>	<b>252</b>	<b>(100)</b>	<b>584</b>	<b>(100)</b>