



**Blood and Transplant**

**WEEKLY REPORT ON SARS-CoV-2 POSITIVE  
PATIENTS IN TRANSPLANTATION**

**REPORT FOR  
1 MARCH 2020 – 16 SEPTEMBER 2020**

**PUBLISHED 18 SEPTEMBER 2020**



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 16 September 2020.

This report contains information on all patients registered with NHS Blood and Transplant active on the waiting list for an organ transplant or in follow-up after receiving an organ transplant that have tested positive for SARS-CoV-2.

The data collected are deliberately limited so as not to add significantly to the burden of work in transplant centres.

Information on the vital status of a patient has been supplemented from the NHS Digital Tracing Service for patients who reside in England and Wales. Only deaths reported within 28 days of a positive test result are included.

All English patients on the UK Transplant Registry on the waiting list and post-transplant have been linked with Public Health England to obtain whether a patient has tested positive for SARS-CoV-2. This data is updated on a weekly basis.

All Scottish patients on the UK Transplant Registry on the waiting list and post-transplant have been linked with Public Health Scotland to obtain whether a patient has tested positive for SARS-CoV-2. This data is updated on a monthly basis

Detailed breakdown by organ is possible for kidney, SPK, liver, heart and lung transplants only due to small numbers. A breakdown of waiting list characteristics is not possible for heart and lung patients due to small numbers.

Further analysis is planned in future reports to include univariate and multi-variable analysis.

## **Caveats**

Data are only reported for patients that have tested positive for SARS-CoV-2, patients that may have CoVID-19 but were not tested are not available for analysis. During the period in question, SARS-CoV-2 swab testing was in the main restricted to patients presenting to hospital and as such there is a selection bias towards symptomatic, sicker patients. Cause of death information is not available at this time and therefore recent deaths should not be assumed secondary to COVID-19.

Data linkage has only been possible so far for English and Scottish patients, we are working with other UK nations to get a data linkage in place as soon as possible.

Supplemented death data is only reported for English and Welsh patients and includes all causes of death. For other UK nations we are reliant on the return of centre reported follow-up information.

## **Acknowledgements**

NHS Blood and Transplant would like to thank all those responsible for providing data to the NHSBT CoVID-19 Registry, without whom this report would not be possible.

We would also like to thank Richard Little at NHSBT who has largely contributed to obtaining the death information from the NHS Digital Tracing Service.

We would also like to thank Ines Ushiro-Lumb (NHSBT), Rommel Ramanan (Kidney Advisory Group Chair) and James Thomas (PHE) who have largely contributed to obtaining information on positive test results for SARS-CoV-2 from Public Health England.

We would also like to thank Hester Ward (National Services Scotland) and Alison Smith-Palmer (PHS) who have largely contributed to obtaining information on positive test results for SARS-CoV-2 from Public Health Scotland.

## **Publications**

<https://onlinelibrary.wiley.com/doi/abs/10.1111/ajt.16247?af=R>

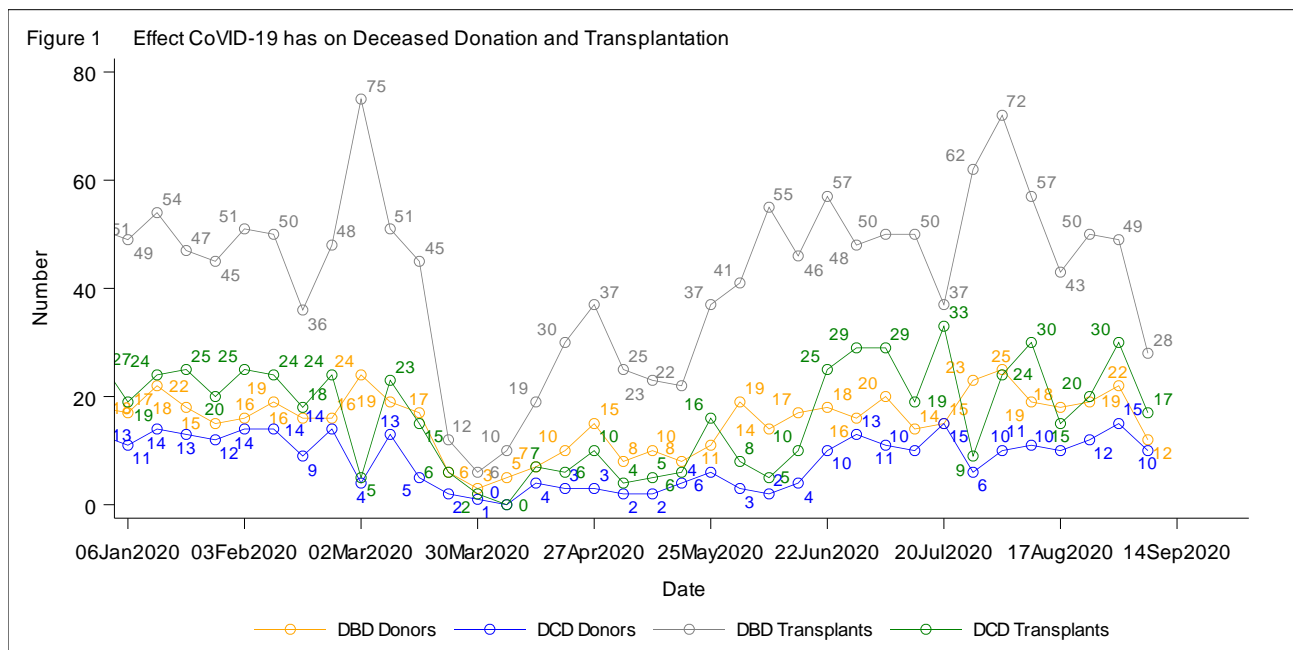
# **Executive Summary**



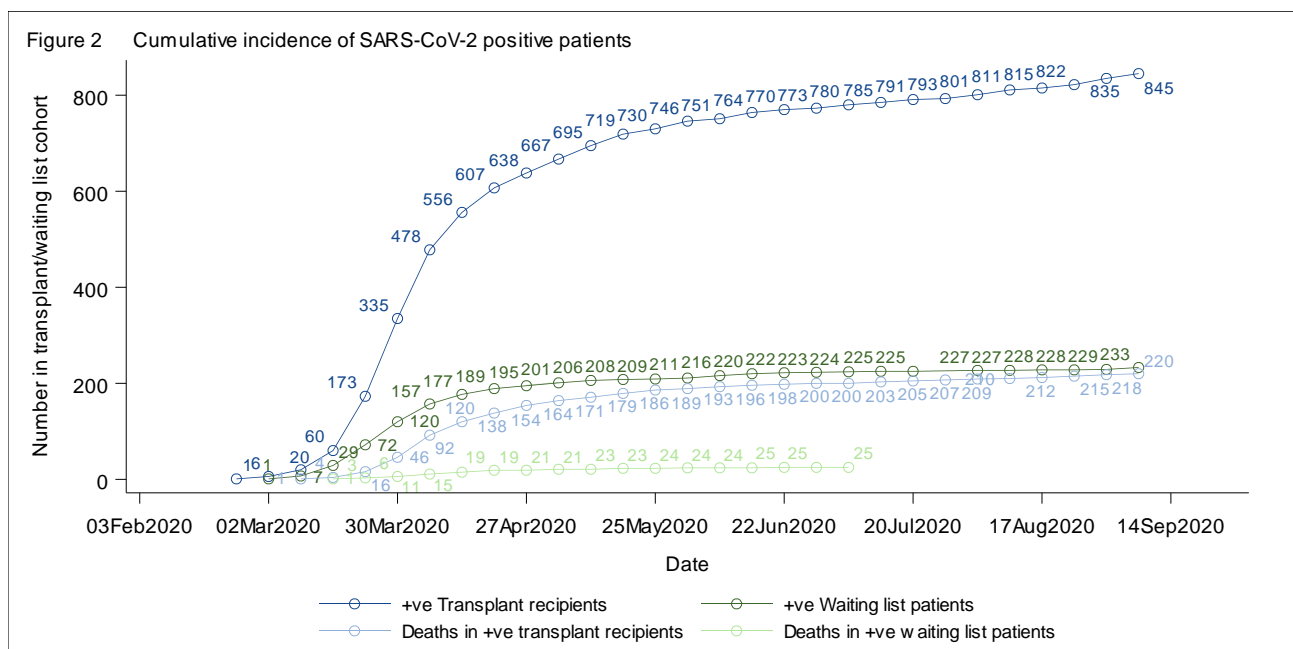
## Key Findings

- The number of deceased donor transplants fell from 80 transplants performed in one week at the beginning of March to just 8 at the end of March. Deceased donor transplants have since been steadily increased with 79 performed in the week commencing 31 August 2020.
- 845 of the 56,821 (1.5%) recipients with a functioning graft are reported as testing positive for SARS-CoV-2. Of these, 26% (n=220) are reported as died as at 16 September 2020.
- The infection rate across England ranges from 0.8% in the South West to 2.9% in London in recipients with a functioning graft.
- 233 of the 6136 (3.8%) patients on the active waiting list at 1 February 2020 are reported as testing positive for SARS-CoV-2. Of these, 11% (n=25) are reported as died as at 16 September 2020.
- The infection rate across England ranges from 0.7% in the South west to 8.3% in London for patients on the active waiting list.
- Of the 2468 transplants performed so far in 2020, 81 (3.3%) recipients have tested positive for SARS-CoV-2 with 10 (0.4%) reported as died.

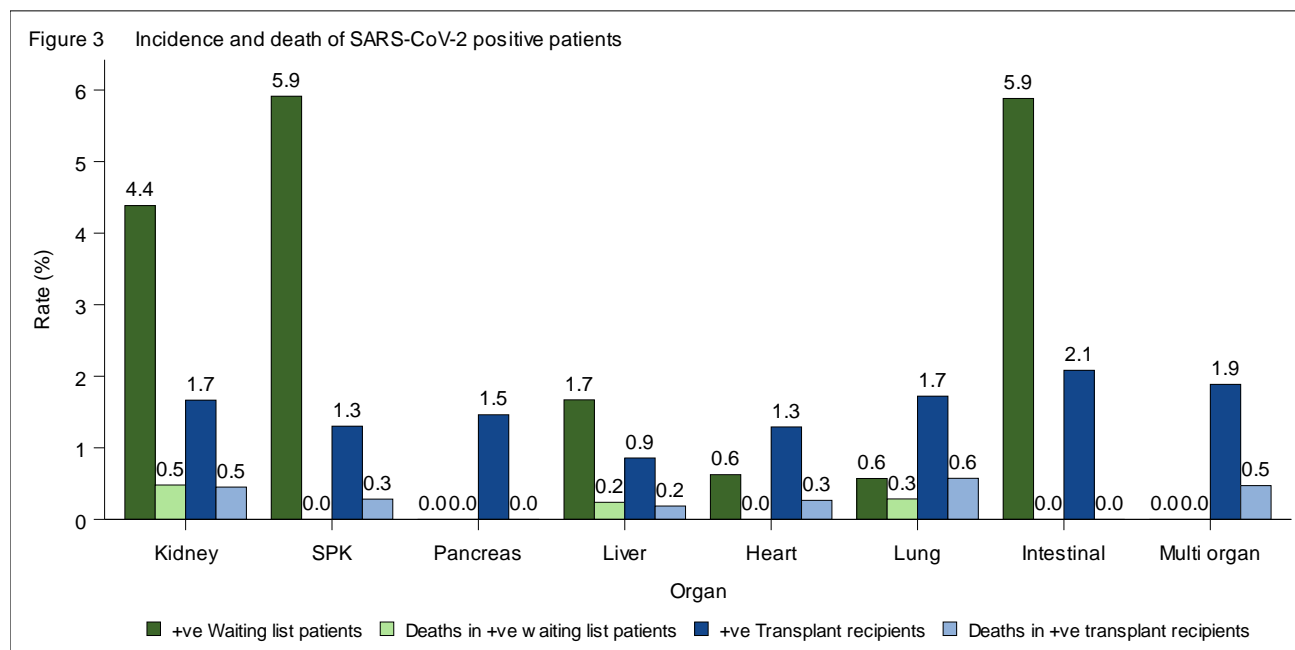
**Figure 1** shows the number of donors and transplants by week and donor type since Monday 6<sup>th</sup> January 2020.



**Figure 2** shows the cumulative incidence of SARS-CoV-2 positive patients and the cumulative deaths by week separately for transplanted recipients and active wait listed patients since Monday 3<sup>rd</sup> February 2020.



**Figure 3** shows the incidence and deaths of SARS-CoV-2 positive patients by organ for transplanted recipients and active wait listed patients.



**Table 1** shows the number of NHSBT CoVID-19 initial presentation forms returned and the number of NHSBT CoVID-19 follow-up forms returned for transplant recipients and wait listed patients by organ. Total cases include the number of positive SARS-CoV-2 patients in England that have been collected through the PHE data link. Please note that for patients residing in England and Wales the vital status of a patient is checked using the NHS Digital Tracing Service.

	Form return rates for Initial and Follow-up as at 2 September 2020					
	Transplant Recipients			Waiting list patients		
	Total +ve cases known to NHSBT <sup>1</sup>	Initial forms returned	Follow-up forms returned	Total +ve cases known to NHSBT <sup>1</sup>	Initial forms returned	Follow-up forms returned
Kidney	657	351	183	210	73	28
SPK	23	15	9	11	4	1
Pancreas / Islet	5	2	1	0	0	0
Liver	92	37	21	7	3	4
Heart	34	23	13	2	1	0
Lung	27	24	6	2	2	1
Intestinal	3	1	0	1	0	0
Multi-organ	4	1	0	0	0	0
<b>Total</b>	<b>845</b>	<b>454</b>	<b>233</b>	<b>233</b>	<b>83</b>	<b>34</b>

<sup>1</sup> Total positive cases include those reported by Public Health England

**Table 2** shows the number of organ transplant recipients that were alive with a functioning graft at 1 February 2020 by type of organ transplant and NHS Region.

<b>Table 2 Number of recipients with a functioning graft by transplant type and NHS Region, as at 1 February 2020</b>										
	Kidney	SPK	Pancreas	Liver	Heart	Lung	Intestinal	Multi organ	Total	
North East and Yorkshire	5179	146	42	1376	429	230	19	25	7446	
North West	3985	134	25	1055	263	155	17	21	5655	
Midlands	5721	313	51	1656	427	247	22	33	8470	
East of England	3636	228	16	1120	288	201	23	26	5538	
London	6195	211	29	1593	289	144	19	42	8522	
South East	4867	299	28	1237	315	230	16	28	7020	
South West	3217	142	62	842	219	126	9	20	4637	
Northern Ireland	1424	23	5	335	67	43	8	2	1907	
Scotland	3361	169	57	1116	222	123	8	12	5068	
Wales	1847	101	27	395	113	69	3	3	2558	
<b>Total</b>	<b>39432</b>	<b>1766</b>	<b>342</b>	<b>10725</b>	<b>2632</b>	<b>1568</b>	<b>144</b>	<b>212</b>	<b>56821</b>	

**Table 3** shows the number of organ transplant recipients that have tested positive for SARS-CoV-2 by type of organ transplant and NHS Region. In total, 845 organ transplant recipients have been reported to NHSBT as testing positive for SARS-CoV-2. Of these, 220 (26%) have died.

<b>Table 3 Number of recipients testing positive for SARS-CoV-2 by transplant type and NHS Region, data up to 16 September 2020</b>											
	Kidney	SPK	Pancreas	Liver	Heart	Lung	Intestinal	Multi organ	Total	Died	
North East and Yorkshire	60	1	0	16	8	2	0	0	87	21	
North West	73	2	1	12	5	10	1	1	105	38	
Midlands	98	2	0	9	7	4	0	1	121	27	
East of England	79	2	0	6	1	1	1	0	90	25	
London	205	9	2	24	6	3	0	0	249	61	
South East	66	5	0	18	4	3	0	1	97	21	
South West	30	2	1	3	2	0	0	1	39	11	
Northern Ireland	8	0	0	0	0	0	0	0	8	2	
Scotland	29	0	1	3	0	2	1	0	36	9	
Wales	9	0	0	1	1	2	0	0	13	5	
<b>Total</b>	<b>657</b>	<b>23</b>	<b>5</b>	<b>92</b>	<b>34</b>	<b>27</b>	<b>3</b>	<b>4</b>	<b>845</b>	<b>220</b>	



**Table 4** shows the number of recipients on the active waiting list at 1 February 2020 by type of organ transplant and NHS Region.

<b>Table 4 Number of patients on the active waiting list by organ awaited and NHS Region, as at 1 February 2020</b>									
	Kidney	SPK	Pancreas	Liver	Heart	Lung	Intestinal	Multi organ	Total
North East and Yorkshire	592	19	7	47	64	53	3	4	789
North West	527	20	2	49	29	44	2	3	676
Midlands	788	29	5	68	49	61	3	4	1007
East of England	334	9	1	37	26	18	2	3	430
London	1128	28	1	43	41	42	3	6	1292
South East	415	27	4	40	38	40	3	6	573
South West	312	13	1	43	23	25	1	1	419
Northern Ireland	88	1	0	17	14	22	0	0	142
Scotland	423	25	6	51	25	31	0	1	562
Wales	182	15	0	24	11	14	0	0	246
<b>TOTAL</b>	<b>4789</b>	<b>186</b>	<b>27</b>	<b>419</b>	<b>320</b>	<b>350</b>	<b>17</b>	<b>28</b>	<b>6136</b>

**Table 5** shows the number of active wait listed patients that have tested positive for SARS-CoV-2 by type or organ awaited and NHS Region. In total, 233 patients have been reported to NHSBT as testing positive for SARS-CoV-2. Of these, 25 (11%) have died.

<b>Table 5 Number of patients testing positive for SARS-CoV-2 by organ awaited and NHS Region, data up to 2 September 2020</b>								
	Kidney	SPK	Liver	Heart	Lung	Intestinal	Total	Died
North East and Yorkshire	13	0	1	0	0	0	14	1
North West	14	1	2	1	0	0	18	3
Midlands	25	2	3	0	1	0	31	4
East of England	24	2	0	0	1	1	28	1
London	102	5	0	0	0	0	107	12
South East	16	0	0	0	0	0	16	3
South West	3	0	0	0	0	0	3	0
Scotland	7	1	1	0	0	0	9	0
Wales	6	0	0	1	0	0	7	1
<b>TOTAL</b>	<b>210</b>	<b>11</b>	<b>7</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>233</b>	<b>25</b>

**Table 6** shows the demographic characteristics of organ transplant recipients. The information reported are those with a functioning transplant at 1 February 2020, those testing positive for SARS-CoV-2 and of those testing positive, the number that have died.

<b>Table 6 Demographic characteristics of transplant patients testing positive for SARS-CoV-2, data up to 16 September 2020</b>									
Factor	Level	Functioning graft		SARS-CoV-2 +ve cases			SARS-CoV-2 +ve deaths		
		N	%	N	%	% of functioning graft	N	% of cases	% of functioning graft
Sex	Male	34405	60.5	532	63.0	1.5	139	26.1	0.4
	Female	22389	39.4	313	37.0	1.4	81	25.9	0.4
	Unknown	27	0.0	-	-	-	-	-	-
Blood Group	O	24507	43.1	301	35.6	1.2	72	23.9	0.3
	A	22852	40.2	353	41.8	1.5	95	26.9	0.4
	B	6969	12.3	146	17.3	2.1	40	27.4	0.6
	AB	2473	4.4	45	5.3	1.8	13	28.9	0.5
Ethnicity	White	43772	77.0	491	58.1	1.1	127	25.9	0.3
	Asian	5793	10.2	187	22.1	3.2	53	28.3	0.9
	Black	2729	4.8	106	12.5	3.9	26	24.5	1.0
	Other	1399	2.5	27	3.2	1.9	7	25.9	0.5
	Unknown	3128	5.5	34	4.0	1.1	7	20.6	0.2
Age group	0-17	2054	3.6	8	0.9	0.4	-	-	-
	18-29	3534	6.2	38	4.5	1.1	-	-	-
	30-39	5744	10.1	70	8.3	1.2	-	-	-
	40-49	8921	15.7	124	14.7	1.4	21	16.9	0.2
	50-59	14418	25.4	217	25.7	1.5	45	20.7	0.3
	60-69	13743	24.2	243	28.8	1.8	84	34.6	0.6
	>70	8405	14.8	143	17.0	1.7	70	49.0	0.8
Organ	Kidney	39432	69.4	657	77.8	1.7	178	27.1	0.5
	SPK	1766	3.1	23	2.7	1.3	5	21.7	0.3
	Pancreas	342	0.6	5	0.6	1.5	-	-	-
	Liver	10725	18.9	92	10.9	0.9	20	21.7	0.2
	Heart	2632	4.6	34	4.0	1.3	7	20.6	0.3
	Lung	1568	2.8	27	3.2	1.7	9	33.3	0.6
	Intestinal	144	0.3	3	0.4	2.1	-	-	-
	Multi organ	212	0.4	4	0.5	1.9	1	25.0	0.5
NHS Region	North East	7446	13.1	87	10.3	1.2	21	24.1	0.3
	North West	5655	10.0	105	12.4	1.9	38	36.2	0.7
	Midlands	8470	14.9	121	14.3	1.4	27	22.3	0.3
	East of England	5538	9.7	90	10.7	1.6	25	27.8	0.5
	London	8522	15.0	249	29.5	2.9	61	24.5	0.7
	South East	7020	12.4	97	11.5	1.4	21	21.6	0.3
	South West	4637	8.2	39	4.6	0.8	11	28.2	0.2
	Northern Ireland	1907	3.4	8	0.9	0.4	2	25.0	0.1
	Scotland	5068	8.9	36	4.3	0.7	9	25.0	0.2
	Wales	2558	4.5	13	1.5	0.5	5	38.5	0.2

**Table 6 Demographic characteristics of transplant patients testing positive for SARS-CoV-2, data up to 16 September 2020**

Factor	Level	Functioning graft		SARS-CoV-2 +ve cases			SARS-CoV-2 +ve deaths		
		N	%	N	%	% of functioning graft	N	% of cases	% of functioning graft
Year of transplant	<=2015	37077	65.3	483	57.2	1.3	141	29.2	0.4
	2016	3866	6.8	63	7.5	1.6	19	30.2	0.5
	2017	4195	7.4	55	6.5	1.3	11	20.0	0.3
	2018	4553	8.0	59	7.0	1.3	18	30.5	0.4
	2019	4662	8.2	104	12.3	2.2	21	20.2	0.5
	2020	2468	4.3	81	9.6	3.3	10	12.3	0.4
Time from transplant	0-3 months	-	-	46	5.6	-	9	19.6	-
	3-6 months	-	-	37	4.5	-	11	29.7	-
	6-12 month	-	-	45	5.5	-	6	13.3	-
	12+ months	-	-	689	84.3	-	194	28.2	-

**Table 7** shows the demographic characteristics of patients waiting for an organ transplant. The information reported are those active on the waiting list at 1 February 2020, those testing positive for SARS-CoV-2 and of those testing positive, the number that have died.

<b>Table 7 Demographic characteristics of active patients on the waiting list testing positive for SARS-CoV-2, data up to 16 September 2020</b>									
Factor	Level	Active on waiting list		SARS-CoV-2 +ve cases			SARS-CoV-2 +ve deaths		
		N	%	N	%	% of waiting list	N	% of cases	% of waiting list
Sex	Male	3627	59.1	145	62.2	4.0	20	13.8	0.6
	Female	2500	40.7	88	37.8	3.5	5	5.7	0.2
	Unknown	9	0.1	-	-	-	-	-	-
Blood Group	O	3354	54.7	117	50.2	3.5	11	9.4	0.3
	A	1547	25.2	55	23.6	3.6	10	18.2	0.6
	B	1097	17.9	55	23.6	5.0	4	7.3	0.4
	AB	138	2.2	6	2.6	4.3	-	-	-
Ethnicity	White	4085	66.6	91	39.1	2.2	9	9.9	0.2
	Asian	1074	17.5	69	29.6	6.4	9	13.0	0.8
	Black	625	10.2	50	21.5	8.0	3	6.0	0.5
	Other	254	4.1	16	6.9	6.3	2	12.5	0.8
	Unknown	98	1.6	7	3.0	7.1	2	28.6	2.0
Age group	0-17	190	3.1	4	1.7	2.1	-	-	-
	18-29	396	6.5	10	4.3	2.5	1	10.0	0.3
	30-39	766	12.5	25	10.7	3.3	1	4.0	0.1
	40-49	1136	18.5	47	20.2	4.1	2	4.3	0.2
	50-59	1806	29.4	73	31.3	4.0	7	9.6	0.4
	60-69	1414	23.0	58	24.9	4.1	12	20.7	0.8
	>70	428	7.0	16	6.9	3.7	2	12.5	0.5
Organ	Kidney	4789	78.0	210	90.1	4.4	23	11.0	0.5
	SPK	186	3.0	11	4.7	5.9	-	-	-
	Pancreas	27	0.4	-	-	-	-	-	-
	Liver	419	6.8	7	3.0	1.7	1	14.3	0.2
	Heart	320	5.2	2	0.9	0.6	-	-	-
	Lung	350	5.7	2	0.9	0.6	1	50.0	0.3
	Intestinal	17	0.3	1	0.4	5.9	-	-	-
	Multi organ	28	0.5	-	-	-	-	-	-
NHS Region	North East	789	12.9	14	6.0	1.8	1	7.1	0.1
	North West	676	11.0	18	7.7	2.7	3	16.7	0.4
	Midlands	1007	16.4	31	13.3	3.1	4	12.9	0.4
	East of England	430	7.0	28	12.0	6.5	1	3.6	0.2
	London	1292	21.1	107	45.9	8.3	12	11.2	0.9
	South East	573	9.3	16	6.9	2.8	3	18.8	0.5
	South West	419	6.8	3	1.3	0.7	-	-	-
	Northern Ireland	142	2.3	-	-	-	-	-	-
	Scotland	562	9.2	9	3.9	1.6	-	-	-
	Wales	246	4.0	7	3.0	2.8	1	14.3	0.4

# Kidney



**Table 8** shows the demographic characteristics of kidney only transplant recipients. The information reported are those with a functioning transplant at 1 February 2020, those testing positive for SARS-CoV-2 and of those testing positive, the number that have died.

<b>Table 8 Demographic characteristics of kidney transplant patients testing positive for SARS-CoV-2, data up to 16 September 2020</b>									
Factor	Level	Functioning graft		SARS-CoV-2 +ve cases			SARS-CoV-2 +ve deaths		
		N	%	N	%	% of functioning graft	N	% of cases	% of functioning graft
Sex	Male	24171	61.3	411	62.6	1.7	111	27.0	0.5
	Female	15237	38.6	246	37.4	1.6	67	27.2	0.4
	Unknown	24	0.1	-	-	-	-	-	-
Blood Group	O	17114	43.4	236	35.9	1.4	55	23.3	0.3
	A	15575	39.5	265	40.3	1.7	76	28.7	0.5
	B	4988	12.7	120	18.3	2.4	37	30.8	0.7
	AB	1738	4.4	36	5.5	2.1	10	27.8	0.6
Ethnicity	White	29053	73.7	351	53.4	1.2	96	27.4	0.3
	Asian	4480	11.4	157	23.9	3.5	46	29.3	1.0
	Black	2242	5.7	93	14.2	4.1	25	26.9	1.1
	Other	1061	2.7	22	3.3	2.1	4	18.2	0.4
	Unknown	2596	6.6	34	5.2	1.3	7	20.6	0.3
Age group	0-17	849	2.2	2	0.3	0.2	-	-	-
	18-29	2238	5.7	27	4.1	1.2	-	-	-
	30-39	4116	10.4	55	8.4	1.3	-	-	-
	40-49	6553	16.6	102	15.5	1.6	17	16.7	0.3
	50-59	10439	26.5	175	26.7	1.7	36	20.6	0.3
	60-69	9151	23.2	179	27.3	2.0	67	37.4	0.7
	>70	6086	15.4	116	17.7	1.9	58	50.0	1.0
Organ	Kidney	39432	100.0	657	100.0	1.7	178	27.1	0.5
NHS Region	North East	5179	13.1	60	9.1	1.2	15	25.0	0.3
	North West	3985	10.1	73	11.1	1.8	28	38.4	0.7
	Midlands	5721	14.5	98	14.9	1.7	20	20.4	0.3
	East of England	3636	9.2	79	12.0	2.2	21	26.6	0.6
	London	6195	15.7	205	31.2	3.3	54	26.3	0.9
	South East	4867	12.3	66	10.0	1.4	16	24.2	0.3
	South West	3217	8.2	30	4.6	0.9	10	33.3	0.3
	Northern Ireland	1424	3.6	8	1.2	0.6	2	25.0	0.1
	Scotland	3361	8.5	29	4.4	0.9	8	27.6	0.2
	Wales	1847	4.7	9	1.4	0.5	4	44.4	0.2
Year of transplant	<=2015	25713	65.2	380	57.8	1.5	112	29.5	0.4
	2016	2690	6.8	47	7.2	1.7	14	29.8	0.5
	2017	2928	7.4	43	6.5	1.5	9	20.9	0.3
	2018	3162	8.0	47	7.2	1.5	15	31.9	0.5
	2019	3315	8.4	80	12.2	2.4	18	22.5	0.5
	2020	1624	4.1	60	9.1	3.7	10	16.7	0.6

**Table 8 Demographic characteristics of kidney transplant patients testing positive for SARS-CoV-2, data up to 16 September 2020**

Factor	Level	Functioning graft		SARS-CoV-2 +ve cases			SARS-CoV-2 +ve deaths		
		N	%	N	%	% of functioning graft	N	% of cases	% of functioning graft
Time from transplant	0-3 months	-	-	37	5.8	-	9	24.3	-
	3-6 months	-	-	29	4.5	-	10	34.5	-
	6-12 month	-	-	33	5.2	-	4	12.1	-
	12+ months	-	-	541	84.5	-	155	28.7	-

**Table 9** shows the demographic characteristics of patients waiting for a kidney transplant. The information reported are those active on the waiting list at 1 February 2020, those testing positive for SARS-CoV-2 and of those testing positive, the number that have died.

<b>Table 9 Demographic characteristics of active kidney patients on the waiting list testing positive for SARS-CoV-2, data up to 16 September 2020</b>									
Factor	Level	Active on waiting list		SARS-CoV-2 +ve cases			SARS-CoV-2 +ve deaths		
		N	%	N	%	% of waiting list	N	% of cases	% of waiting list
Sex	Male	2849	59.5	130	61.9	4.6	18	13.8	0.6
	Female	1932	40.3	80	38.1	4.1	5	6.3	0.3
	Unknown	8	0.2	-	-	-	-	-	-
Blood Group	O	2646	55.3	103	49.0	3.9	11	10.7	0.4
	A	1099	22.9	50	23.8	4.5	9	18.0	0.8
	B	930	19.4	51	24.3	5.5	3	5.9	0.3
	AB	114	2.4	6	2.9	5.3	-	-	-
Ethnicity	White	2954	61.7	77	36.7	2.6	7	9.1	0.2
	Asian	956	20.0	64	30.5	6.7	9	14.1	0.9
	Black	575	12.0	48	22.9	8.3	3	6.3	0.5
	Other	232	4.8	15	7.1	6.5	2	13.3	0.9
	Unknown	72	1.5	6	2.9	8.3	2	33.3	2.8
Age group	0-17	110	2.3	2	1.0	1.8	-	-	-
	18-29	277	5.8	7	3.3	2.5	1	14.3	0.4
	30-39	553	11.5	19	9.0	3.4	1	5.3	0.2
	40-49	885	18.5	40	19.0	4.5	1	2.5	0.1
	50-59	1396	29.2	69	32.9	4.9	7	10.1	0.5
	60-69	1158	24.2	57	27.1	4.9	11	19.3	0.9
	>70	410	8.6	16	7.6	3.9	2	12.5	0.5
Organ	Kidney	4789	100.0	210	100.0	4.4	23	11.0	0.5
NHS Region	North East	592	12.4	13	6.2	2.2	1	7.7	0.2
	North West	527	11.0	14	6.7	2.7	3	21.4	0.6
	Midlands	788	16.5	25	11.9	3.2	2	8.0	0.3
	East of England	334	7.0	24	11.4	7.2	1	4.2	0.3
	London	1128	23.6	102	48.6	9.0	12	11.8	1.1
	South East	415	8.7	16	7.6	3.9	3	18.8	0.7
	South West	312	6.5	3	1.4	1.0	-	-	-
	Northern Ireland	88	1.8	-	-	-	-	-	-
	Scotland	423	8.8	7	3.3	1.7	-	-	-
	Wales	182	3.8	6	2.9	3.3	1	16.7	0.5



**SPK**



**Table 10** shows the demographic characteristics of SPK transplant recipients. The information reported are those with a functioning transplant at 1 February 2020, those testing positive for SARS-CoV-2 and of those testing positive, the number that have died.

<b>Table 10 Demographic characteristics of SPK transplant patients testing positive for SARS-CoV-2, data up to 16 September 2020</b>									
Factor	Level	Functioning graft		SARS-CoV-2 +ve cases			SARS-CoV-2 +ve deaths		
		N	%	N	%	% of functioning graft	N	% of cases	% of functioning graft
Sex	Male	1029	58.3	15	65.2	1.5	4	26.7	0.4
	Female	737	41.7	8	34.8	1.1	1	12.5	0.1
Blood Group	O	771	43.7	11	47.8	1.4	2	18.2	0.3
	A	729	41.3	5	21.7	0.7	-	-	-
	B	189	10.7	5	21.7	2.6	1	20.0	0.5
	AB	77	4.4	2	8.7	2.6	2	100.0	2.6
Ethnicity	White	1551	87.8	13	56.5	0.8	3	23.1	0.2
	Asian	101	5.7	4	17.4	4.0	2	50.0	2.0
	Black	75	4.2	5	21.7	6.7	-	-	-
	Other	21	1.2	1	4.3	4.8	-	-	-
	Unknown	18	1.0	-	-	-	-	-	-
Age group	0-17	-	-	-	-	-	-	-	-
	18-29	31	1.8	-	-	-	-	-	-
	30-39	286	16.2	5	21.7	1.7	-	-	-
	40-49	595	33.7	6	26.1	1.0	2	33.3	0.3
	50-59	628	35.6	6	26.1	1.0	1	16.7	0.2
	60-69	211	11.9	4	17.4	1.9	-	-	-
	>70	15	0.8	2	8.7	13.3	2	100.0	13.3
Organ	SPK	1766	100.0	23	100.0	1.3	5	21.7	0.3
NHS Region	North East	146	8.3	1	4.3	0.7	-	-	-
	North West	134	7.6	2	8.7	1.5	1	50.0	0.7
	Midlands	313	17.7	2	8.7	0.6	-	-	-
	East of England	228	12.9	2	8.7	0.9	1	50.0	0.4
	London	211	11.9	9	39.1	4.3	2	22.2	0.9
	South East	299	16.9	5	21.7	1.7	1	20.0	0.3
	South West	142	8.0	2	8.7	1.4	-	-	-
	Northern Ireland	23	1.3	-	-	-	-	-	-
	Scotland	169	9.6	-	-	-	-	-	-
	Wales	101	5.7	-	-	-	-	-	-
Year of transplant	<=2015	1118	63.3	12	52.2	1.1	3	25.0	0.3
	2016	122	6.9	2	8.7	1.6	1	50.0	0.8
	2017	149	8.4	3	13.0	2.0	-	-	-
	2018	160	9.1	2	8.7	1.3	1	50.0	0.6
	2019	151	8.6	3	13.0	2.0	-	-	-
	2020	66	3.7	1	4.3	1.5	-	-	-
Time from transplant	3-6 months	-	-	1	4.5	-	-	-	-
	6-12 month	-	-	2	9.1	-	-	-	-
	12+ months	-	-	19	86.4	-	5	26.3	-

**Table 11** shows the demographic characteristics of patients waiting for an SPK transplant. The information reported are those active on the waiting list at 1 February 2020, those testing positive for SARS-CoV-2 and of those testing positive, the number that have died.

<b>Table 11 Demographic characteristics of active SPK patients on the waiting list testing positive for SARS-CoV-2, data up to 16 September 2020</b>									
Factor	Level	Active on waiting list		SARS-CoV-2 +ve cases			SARS-CoV-2 +ve deaths		
		N	%	N	%	% of waiting list	N	% of cases	% of waiting list
Sex	Male	106	57.0	7	63.6	6.6	-	-	-
	Female	80	43.0	4	36.4	5.0	-	-	-
Blood Group	O	91	48.9	7	63.6	7.7	-	-	-
	A	55	29.6	2	18.2	3.6	-	-	-
	B	35	18.8	2	18.2	5.7	-	-	-
	AB	5	2.7	-	-	-	-	-	-
Ethnicity	White	151	81.2	5	45.5	3.3	-	-	-
	Asian	20	10.8	3	27.3	15.0	-	-	-
	Black	8	4.3	2	18.2	25.0	-	-	-
	Other	6	3.2	-	-	-	-	-	-
	Unknown	1	0.5	1	9.1	100.0	-	-	-
Age group	0-17	1	0.5	1	9.1	100.0	-	-	-
	18-29	14	7.5	1	9.1	7.1	-	-	-
	30-39	64	34.4	5	45.5	7.8	-	-	-
	40-49	62	33.3	2	18.2	3.2	-	-	-
	50-59	43	23.1	2	18.2	4.7	-	-	-
	60-69	2	1.1	-	-	-	-	-	-
	>70	-	-	-	-	-	-	-	-
Organ	SPK	186	100.0	11	100.0	5.9	-	-	-
NHS Region	North East	19	10.2	-	-	-	-	-	-
	North West	20	10.8	1	9.1	5.0	-	-	-
	Midlands	29	15.6	2	18.2	6.9	-	-	-
	East of England	9	4.8	2	18.2	22.2	-	-	-
	London	28	15.1	5	45.5	17.9	-	-	-
	South East	27	14.5	-	-	-	-	-	-
	South West	13	7.0	-	-	-	-	-	-
	Northern Ireland	1	0.5	-	-	-	-	-	-
	Scotland	25	13.4	1	9.1	4.0	-	-	-
	Wales	15	8.1	-	-	-	-	-	-

# Liver



**Table 12** shows the demographic characteristics of liver transplant recipients. The information reported are those with a functioning transplant at 1 February 2020, those testing positive for SARS-CoV-2 and of those testing positive, the number that have died.

<b>Table 12 Demographic characteristics of liver transplant patients testing positive for SARS-CoV-2, data up to 16 September 2020</b>									
Factor	Level	Functioning graft		SARS-CoV-2 +ve cases			SARS-CoV-2 +ve deaths		
		N	%	N	%	% of functioning graft	N	% of cases	% of functioning graft
Sex	Male	6185	57.7	57	62.0	0.9	10	17.5	0.2
	Female	4539	42.3	35	38.0	0.8	10	28.6	0.2
	Unknown	1	0.0	-	-	-	-	-	-
Blood Group	O	4636	43.2	37	40.2	0.8	9	24.3	0.2
	A	4351	40.6	38	41.3	0.9	10	26.3	0.2
	B	1281	11.9	13	14.1	1.0	1	7.7	0.1
	AB	457	4.3	4	4.3	0.9	-	-	-
Ethnicity	White	8947	83.4	65	70.7	0.7	14	21.5	0.2
	Asian	927	8.6	22	23.9	2.4	5	22.7	0.5
	Black	318	3.0	4	4.3	1.3	1	25.0	0.3
	Other	250	2.3	1	1.1	0.4	-	-	-
	Unknown	283	2.6	-	-	-	-	-	-
Age group	0-17	844	7.9	5	5.5	0.6	-	-	-
	18-29	801	7.5	7	7.7	0.9	-	-	-
	30-39	757	7.1	1	1.1	0.1	-	-	-
	40-49	1073	10.0	7	7.7	0.7	2	28.6	0.2
	50-59	2279	21.3	22	24.2	1.0	3	13.6	0.1
	60-69	3218	30.0	34	37.4	1.1	8	23.5	0.2
	>70	1751	16.3	15	16.5	0.9	7	46.7	0.4
Organ	Liver	10725	100.0	92	100.0	0.9	20	21.7	0.2
NHS Region	North East	1376	12.8	16	17.4	1.2	5	31.3	0.4
	North West	1055	9.8	12	13.0	1.1	3	25.0	0.3
	Midlands	1656	15.4	9	9.8	0.5	2	22.2	0.1
	East of England	1120	10.4	6	6.5	0.5	1	16.7	0.1
	London	1593	14.9	24	26.1	1.5	3	12.5	0.2
	South East	1237	11.5	18	19.6	1.5	4	22.2	0.3
	South West	842	7.9	3	3.3	0.4	-	-	-
	Northern Ireland	335	3.1	-	-	-	-	-	-
	Scotland	1116	10.4	3	3.3	0.3	1	33.3	0.1
	Wales	395	3.7	1	1.1	0.3	1	100.0	0.3
Year of transplant	<=2015	6925	64.6	55	59.8	0.8	15	27.3	0.2
	2016	738	6.9	6	6.5	0.8	2	33.3	0.3
	2017	794	7.4	5	5.4	0.6	1	20.0	0.1
	2018	876	8.2	4	4.3	0.5	-	-	-
	2019	838	7.8	9	9.8	1.1	2	22.2	0.2
	2020	554	5.2	13	14.1	2.3	-	-	-

**Table 12 Demographic characteristics of liver transplant patients testing positive for SARS-CoV-2, data up to 16 September 2020**

Factor	Level	Functioning graft		SARS-CoV-2 +ve cases			SARS-CoV-2 +ve deaths		
		N	%	N	%	% of functioning graft	N	% of cases	% of functioning graft
Time from transplant	0-3 months	-	-	6	7.1	-	-	-	-
	3-6 months	-	-	3	3.5	-	1	33.3	-
	6-12 month	-	-	3	3.5	-	1	33.3	-
	12+ months	-	-	73	85.9	-	18	24.7	-

**Table 13** shows the demographic characteristics of patients waiting for a liver transplant. The information reported are those active on the waiting list at 1 February 2020, those testing positive for SARS-CoV-2 and of those testing positive, the number that have died.

<b>Table 13 Demographic characteristics of active liver patients on the waiting list testing positive for SARS-CoV-2, data up to 16 September 2020</b>									
Factor	Level	Active on waiting list		SARS-CoV-2 +ve cases			SARS-CoV-2 +ve deaths		
		N	%	N	%	% of waiting list	N	% of cases	% of waiting list
Sex	Male	232	55.4	4	57.1	1.7	1	25.0	0.4
	Female	187	44.6	3	42.9	1.6	-	-	-
	Unknown	-	-	-	-	-	-	-	-
Blood Group	O	225	53.7	3	42.9	1.3	-	-	-
	A	131	31.3	2	28.6	1.5	-	-	-
	B	56	13.4	2	28.6	3.6	1	50.0	1.8
	AB	7	1.7	-	-	-	-	-	-
Ethnicity	White	347	82.8	5	71.4	1.4	1	20.0	0.3
	Asian	38	9.1	2	28.6	5.3	-	-	-
	Black	8	1.9	-	-	-	-	-	-
	Other	7	1.7	-	-	-	-	-	-
	Unknown	19	4.5	-	-	-	-	-	-
Age group	0-17	33	7.9	-	-	-	-	-	-
	18-29	41	9.8	-	-	-	-	-	-
	30-39	51	12.2	1	14.3	2.0	-	-	-
	40-49	86	20.5	5	71.4	5.8	1	20.0	1.2
	50-59	113	27.0	1	14.3	0.9	-	-	-
	60-69	85	20.3	-	-	-	-	-	-
	>70	10	2.4	-	-	-	-	-	-
Organ	Liver	419	100.0	7	100.0	1.7	1	14.3	0.2
NHS Region	North East	47	11.2	1	14.3	2.1	-	-	-
	North West	49	11.7	2	28.6	4.1	-	-	-
	Midlands	68	16.2	3	42.9	4.4	1	33.3	1.5
	East of England	37	8.8	-	-	-	-	-	-
	London	43	10.3	-	-	-	-	-	-
	South East	40	9.5	-	-	-	-	-	-
	South West	43	10.3	-	-	-	-	-	-
	Northern Ireland	17	4.1	-	-	-	-	-	-
	Scotland	51	12.2	1	14.3	2.0	-	-	-
	Wales	24	5.7	-	-	-	-	-	-

# Heart





**Table 14** shows the demographic characteristics of heart transplant recipients. The information reported are those with a functioning transplant at 1 February 2020, those testing positive for SARS-CoV-2 and of those testing positive, the number that have died.

<b>Table 14 Demographic characteristics of heart transplant patients testing positive for SARS-CoV-2, data up to 16 September 2020</b>									
Factor	Level	Functioning graft		SARS-CoV-2 +ve cases			SARS-CoV-2 +ve deaths		
		N	%	N	%	% of functioning graft	N	% of cases	% of functioning graft
Sex	Male	1831	69.6	26	76.5	1.4	6	23.1	0.3
	Female	800	30.4	8	23.5	1.0	1	12.5	0.1
	Unknown	1	0.0	-	-	-	-	-	-
Blood Group	O	1020	38.8	8	23.5	0.8	2	25.0	0.2
	A	1176	44.7	20	58.8	1.7	4	20.0	0.3
	B	321	12.2	4	11.8	1.2	1	25.0	0.3
	AB	113	4.3	2	5.9	1.8	-	-	-
Ethnicity	White	2120	80.5	27	79.4	1.3	6	22.2	0.3
	Asian	198	7.5	2	5.9	1.0	-	-	-
	Black	76	2.9	4	11.8	5.3	-	-	-
	Other	50	1.9	1	2.9	2.0	1	100.0	2.0
	Unknown	188	7.1	-	-	-	-	-	-
Age group	0-17	263	10.0	1	2.9	0.4	-	-	-
	18-29	294	11.2	-	-	-	-	-	-
	30-39	302	11.5	7	20.6	2.3	-	-	-
	40-49	327	12.4	6	17.6	1.8	-	-	-
	50-59	479	18.2	5	14.7	1.0	1	20.0	0.2
	60-69	551	20.9	6	17.6	1.1	3	50.0	0.5
	>70	416	15.8	9	26.5	2.2	3	33.3	0.7
Organ	Heart	2632	100.0	34	100.0	1.3	7	20.6	0.3
NHS Region	North East	429	16.3	8	23.5	1.9	-	-	-
	North West	263	10.0	5	14.7	1.9	2	40.0	0.8
	Midlands	427	16.2	7	20.6	1.6	2	28.6	0.5
	East of England	288	10.9	1	2.9	0.3	1	100.0	0.3
	London	289	11.0	6	17.6	2.1	1	16.7	0.3
	South East	315	12.0	4	11.8	1.3	-	-	-
	South West	219	8.3	2	5.9	0.9	1	50.0	0.5
	Northern Ireland	67	2.5	-	-	-	-	-	-
	Scotland	222	8.4	-	-	-	-	-	-
	Wales	113	4.3	1	2.9	0.9	-	-	-
Year of transplant	<=2015	1900	72.2	18	52.9	0.9	6	33.3	0.3
	2016	162	6.2	3	8.8	1.9	-	-	-
	2017	144	5.5	1	2.9	0.7	1	100.0	0.7
	2018	146	5.5	1	2.9	0.7	-	-	-
	2019	154	5.9	7	20.6	4.5	-	-	-
	2020	126	4.8	4	11.8	3.2	-	-	-

**Table 14 Demographic characteristics of heart transplant patients testing positive for SARS-CoV-2, data up to 16 September 2020**

Factor	Level	Functioning graft		SARS-CoV-2 +ve cases			SARS-CoV-2 +ve deaths		
		N	%	N	%	% of functioning graft	N	% of cases	% of functioning graft
Time from transplant	3-6 months	-	-	3	9.7	-	-	-	-
	6-12 month	-	-	4	12.9	-	-	-	-
	12+ months	-	-	24	77.4	-	7	29.2	-

# Lung



**Table 15** shows the demographic characteristics of lung transplant recipients. The information reported are those with a functioning transplant at 1 February 2020, those testing positive for SARS-CoV-2 and of those testing positive, the number that have died.

<b>Table 15 Demographic characteristics of lung transplant patients testing positive for SARS-CoV-2, data up to 16 September 2020</b>									
Factor	Level	Functioning graft		SARS-CoV-2 +ve cases			SARS-CoV-2 +ve deaths		
		N	%	N	%	% of functioning graft	N	% of cases	% of functioning graft
Sex	Male	854	54.5	15	55.6	1.8	8	53.3	0.9
	Female	713	45.5	12	44.4	1.7	1	8.3	0.1
	Unknown	1	0.1	-	-	-	-	-	-
Blood Group	O	673	42.9	6	22.2	0.9	3	50.0	0.4
	A	713	45.5	19	70.4	2.7	5	26.3	0.7
	B	120	7.7	1	3.7	0.8	-	-	-
	AB	62	4.0	1	3.7	1.6	1	100.0	1.6
Ethnicity	White	1477	94.2	25	92.6	1.7	7	28.0	0.5
	Asian	40	2.6	-	-	-	-	-	-
	Black	7	0.4	-	-	-	-	-	-
	Other	10	0.6	2	7.4	20.0	2	100.0	20.0
	Unknown	34	2.2	-	-	-	-	-	-
Age group	0-17	30	1.9	-	-	-	-	-	-
	18-29	126	8.0	4	14.8	3.2	-	-	-
	30-39	218	13.9	2	7.4	0.9	-	-	-
	40-49	242	15.4	2	7.4	0.8	-	-	-
	50-59	380	24.2	8	29.6	2.1	4	50.0	1.1
	60-69	465	29.7	11	40.7	2.4	5	45.5	1.1
	>70	107	6.8	-	-	-	-	-	-
Organ	Lung	1568	100.0	27	100.0	1.7	9	33.3	0.6
NHS Region	North East	230	14.7	2	7.4	0.9	1	50.0	0.4
	North West	155	9.9	10	37.0	6.5	4	40.0	2.6
	Midlands	247	15.8	4	14.8	1.6	2	50.0	0.8
	East of England	201	12.8	1	3.7	0.5	1	100.0	0.5
	London	144	9.2	3	11.1	2.1	1	33.3	0.7
	South East	230	14.7	3	11.1	1.3	-	-	-
	South West	126	8.0	-	-	-	-	-	-
	Northern Ireland	43	2.7	-	-	-	-	-	-
	Scotland	123	7.8	2	7.4	1.6	-	-	-
	Wales	69	4.4	2	7.4	2.9	-	-	-
Year of transplant	<=2015	973	62.1	11	40.7	1.1	5	45.5	0.5
	2016	100	6.4	5	18.5	5.0	2	40.0	2.0
	2017	137	8.7	2	7.4	1.5	-	-	-
	2018	147	9.4	3	11.1	2.0	1	33.3	0.7
	2019	140	8.9	3	11.1	2.1	1	33.3	0.7
	2020	71	4.5	3	11.1	4.2	-	-	-

**Table 15 Demographic characteristics of lung transplant patients testing positive for SARS-CoV-2, data up to 16 September 2020**

Factor	Level	Functioning graft		SARS-CoV-2 +ve cases			SARS-CoV-2 +ve deaths		
		N	%	N	%	% of functioning graft	N	% of cases	% of functioning graft
Time from transplant	0-3 months	-	-	3	11.1	-	-	-	-
	6-12 month	-	-	2	7.4	-	1	50.0	-
	12+ months	-	-	22	81.5	-	8	36.4	-

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