



Blood and Transplant

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

**REPORT FOR
1 MARCH 2020 – 24 JUNE 2020**

PUBLISHED 26 JUNE 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 24 June 2020.

This report contains information on all patients registered with NHS Blood and Transplant either active/suspended 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.

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 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

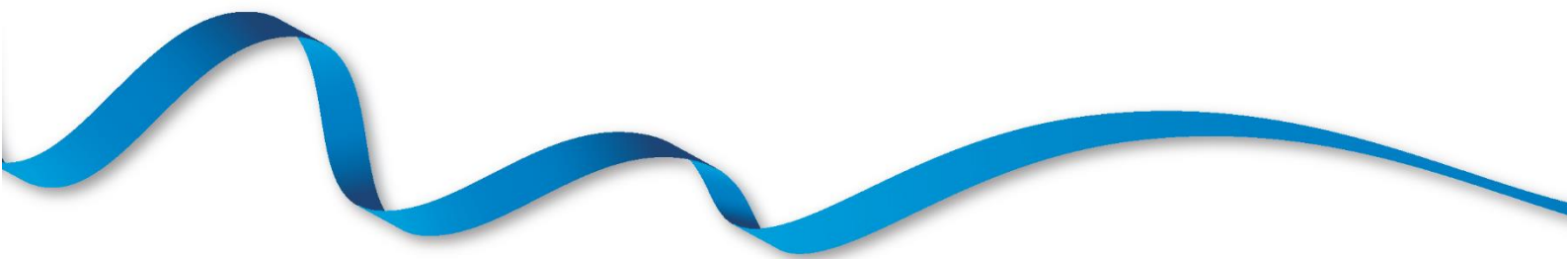
NHS Blood and Transplant would like to thank all those responsible for providing data to the NHSBT CoVID-19 Registry, without whom this report would not be possible.

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.

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 56 performed in the week commencing 15th June
- 726 of the 56,228 (1.3%) recipients with a functioning graft are reported as testing positive for SARS-CoV-2. Of these, 27% (n=195) are reported as died as at 24th June 2020.
- The infection rate across England ranges from 0.7% in the South West to 2.7% in London in recipients with a functioning graft.
- 230 of the 6134 (3.7%) patients on the active waiting list at 1 February 2020 are reported as testing positive for SARS-CoV-2. Of these, 10% (n=24) are reported as died as at 24th June 2020.
- The infection rate across England ranges from 1.0% in the South west to 8.1% in London for patients on the active waiting list.
- Of the 1496 transplants performed so far in 2020, 54 (3.6%) recipients have tested positive for SARS-CoV-2 with 10 (0.7%) reported as died.

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

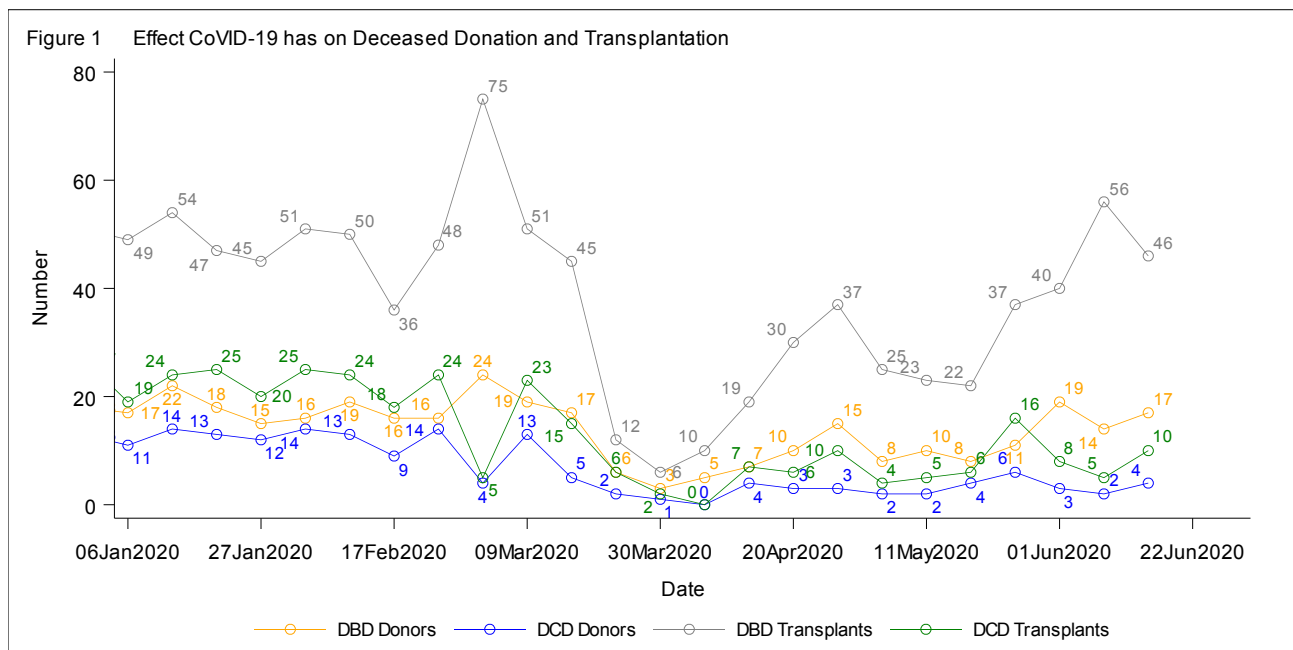


Figure 2 shows the cumulative incidence of SARS-CoV-2 positive patients and the cumulative deaths by week separately for transplanted recipients and active wait listed patients since Monday 3rd February 2020.

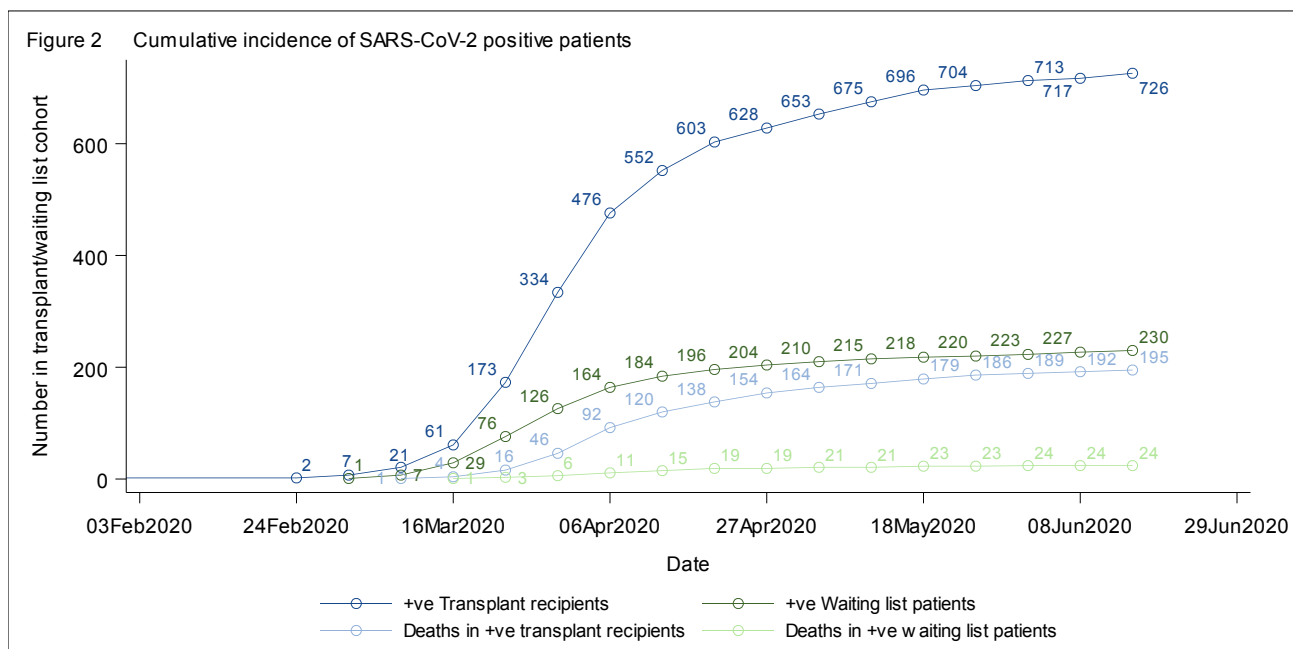


Figure 3 shows the incidence and deaths of SARS-CoV-2 positive patients by organ for transplanted recipients and active wait listed patients.

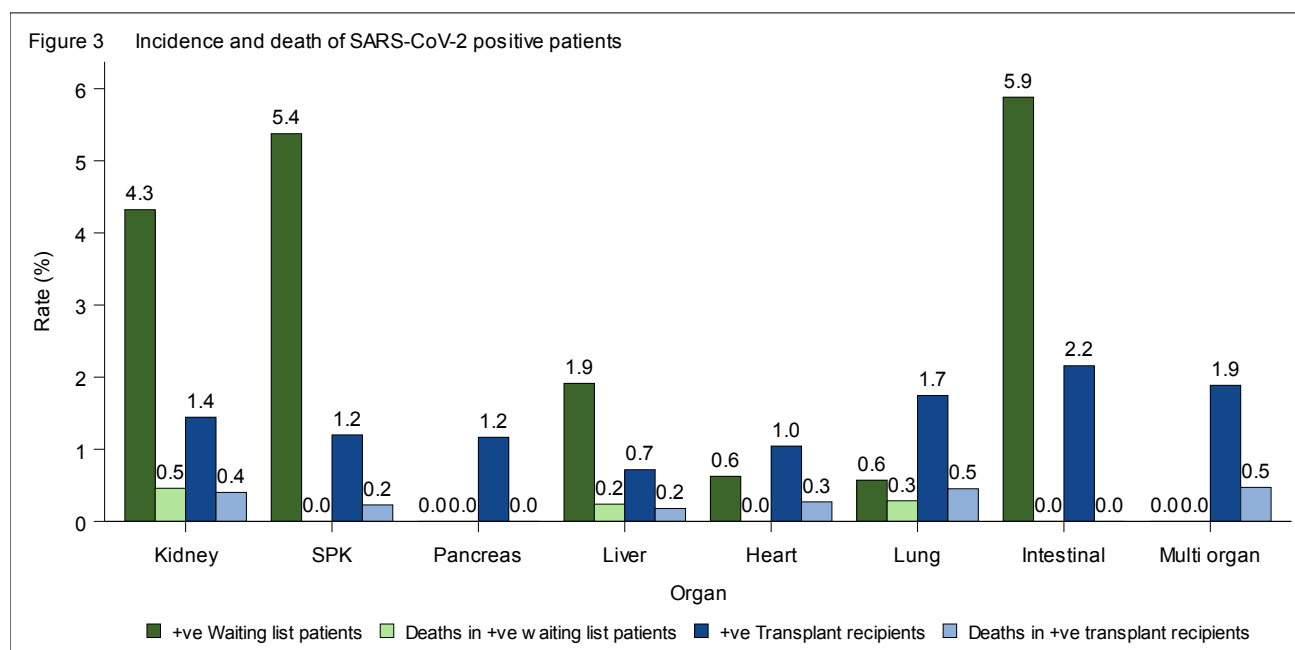


Table 1 shows the number of NHSBT CoVID-19 initial presentation forms returned and the number of NHSBT CoVID-19 follow-up forms returned for transplant recipients and wait listed patients by organ. Total cases include the number of positive SARS-CoV-2 patients in England that have been collected through 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.

	Transplant Recipients			Waiting list patients		
	Total +ve cases known to NHSBT ¹	Initial forms returned	Follow-up forms returned	Total +ve cases known to NHSBT ¹	Initial forms returned	Follow-up forms returned
Kidney	564	341	181	207	72	26
SPK	21	15	9	10	4	1
Pancreas / Islet	4	2	1	0	0	0
Liver	76	37	16	8	3	4
Heart	27	22	12	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
Total	726	443	225	230	82	32

¹ 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.

Table 2 Number of recipients with a functioning graft by transplant type and NHS Region, as at 1 February 2020										
	Kidney	SPK	Pancreas	Liver	Heart	Lung	Intestinal	Multi organ	Total	
North East and Yorkshire	5144	147	42	1355	425	226	19	25	7383	
North West	3952	134	25	1041	258	154	18	21	5603	
Midlands	5673	309	49	1631	420	246	18	33	8379	
East of England	3604	223	17	1111	280	200	22	27	5484	
London	6151	214	30	1577	283	139	19	41	8454	
South East	4835	300	29	1218	313	226	16	28	6965	
South West	3167	141	62	828	217	125	9	20	4569	
Northern Ireland	1389	23	5	330	67	43	7	2	1866	
Scotland	3304	164	57	1126	212	119	8	12	5002	
Wales	1828	96	27	386	111	69	3	3	2523	
TOTAL	39047	1751	343	10603	2586	1547	139	212	56228	

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, 726 organ transplant recipients have been reported to NHSBT as testing positive for SARS-CoV-2. Of these, 195 (27%) have died.

Table 3 Number of recipients testing positive for SARS-CoV-2 by transplant type and NHS Region, data up to 24 June 2020											
	Kidney	SPK	Pancreas	Liver	Heart	Lung	Intestinal	Multi organ	Total	Died	
North East and Yorkshire	45	1	0	12	6	1	0	0	65	15	
North West	52	2	0	9	3	10	1	1	78	27	
Midlands	79	0	0	7	6	5	0	1	98	26	
East of England	73	2	0	6	1	1	1	0	84	23	
London	187	10	2	22	5	3	0	0	229	60	
South East	58	4	0	13	3	3	0	1	82	17	
South West	24	2	1	3	2	0	0	1	33	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	
TOTAL	564	21	4	76	27	27	3	4	726	195	

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

Table 4 Number of patients on the active waiting list by organ awaited and NHS Region, as at 1 February 2020									
	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	36	26	18	2	3	429
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
TOTAL	4789	186	27	418	320	350	17	28	6135

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, 230 patients have been reported to NHSBT as testing positive for SARS-CoV-2. Of these, 24 (10%) have died.

Table 5 Number of patients testing positive for SARS-CoV-2 by organ awaited and NHS Region, data up to 24 June 2020								
	Kidney	SPK	Liver	Heart	Lung	Intestinal	Total	Died
North East and Yorkshire	14	0	1	0	0	0	15	1
North West	10	0	3	1	0	0	14	3
Midlands	26	2	3	0	1	0	32	4
East of England	24	2	0	0	1	1	28	0
London	100	5	0	0	0	0	105	12
South East	16	0	0	0	0	0	16	3
South West	4	0	0	0	0	0	4	0
Scotland	7	1	1	0	0	0	9	0
Wales	6	0	0	1	0	0	7	1
TOTAL	207	10	8	2	2	1	230	24

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.

Table 6 Demographic characteristics of transplant patients testing positive for SARS-CoV-2, data up to 24 June 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
Sex	Male	34029	60.5	460	63.4	1.4	126	27.4	0.4
	Female	22172	39.4	266	36.6	1.2	69	25.9	0.3
	Unknown	27	0.0	-	-	-	-	-	-
Blood Group	O	24223	43.1	265	36.5	1.1	64	24.2	0.3
	A	22617	40.2	299	41.2	1.3	83	27.8	0.4
	B	6923	12.3	124	17.1	1.8	37	29.8	0.5
	AB	2445	4.3	38	5.2	1.6	11	28.9	0.4
Ethnicity	White	43306	77.0	432	59.5	1.0	112	25.9	0.3
	Asian	5721	10.2	143	19.7	2.5	45	31.5	0.8
	Black	2685	4.8	99	13.6	3.7	26	26.3	1.0
	Other	1375	2.4	21	2.9	1.5	6	28.6	0.4
	Unknown	3141	5.6	31	4.3	1.0	6	19.4	0.2
Age group	0-17	1993	3.5	6	0.8	0.3	-	-	-
	18-29	3459	6.2	28	3.9	0.8	-	-	-
	30-39	5657	10.1	48	6.6	0.8	-	-	-
	40-49	8801	15.7	111	15.3	1.3	18	16.2	0.2
	50-59	14216	25.3	186	25.7	1.3	42	22.6	0.3
	60-69	13632	24.2	222	30.7	1.6	78	35.1	0.6
	>70	8468	15.1	123	17.0	1.5	57	46.3	0.7
Organ	Kidney	39047	69.4	564	77.7	1.4	157	27.8	0.4
	SPK	1751	3.1	21	2.9	1.2	4	19.0	0.2
	Pancreas	343	0.6	4	0.6	1.2	-	-	-
	Liver	10603	18.9	76	10.5	0.7	19	25.0	0.2
	Heart	2586	4.6	27	3.7	1.0	7	25.9	0.3
	Lung	1547	2.8	27	3.7	1.7	7	25.9	0.5
	Intestinal	139	0.2	3	0.4	2.2	-	-	-
	Multi organ	212	0.4	4	0.6	1.9	1	25.0	0.5
NHS Region	North East	7383	13.1	65	9.0	0.9	15	23.1	0.2
	North West	5603	10.0	78	10.7	1.4	27	34.6	0.5
	Midlands	8379	14.9	98	13.5	1.2	26	26.5	0.3
	East of England	5484	9.8	84	11.6	1.5	23	27.4	0.4
	London	8454	15.0	229	31.5	2.7	60	26.2	0.7
	South East	6965	12.4	82	11.3	1.2	17	20.7	0.2
	South West	4569	8.1	33	4.5	0.7	11	33.3	0.2
	Northern Ireland	1866	3.3	8	1.1	0.4	2	25.0	0.1
	Scotland	5002	8.9	36	5.0	0.7	9	25.0	0.2
	Wales	2523	4.5	13	1.8	0.5	5	38.5	0.2

Table 6 Demographic characteristics of transplant patients testing positive for SARS-CoV-2, data up to 24 June 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	37377	66.5	423	58.3	1.1	121	28.6	0.3
	2016	3888	6.9	55	7.6	1.4	18	32.7	0.5
	2017	4215	7.5	48	6.6	1.1	10	20.8	0.2
	2018	4580	8.1	52	7.2	1.1	17	32.7	0.4
	2019	4672	8.3	94	12.9	2.0	19	20.2	0.4
	2020	1496	2.7	54	7.4	3.6	10	18.5	0.7
Time from transplant	0-3 months	-	-	43	6.0	-	9	20.9	-
	3-6 months	-	-	33	4.6	-	10	30.3	-
	6-12 month	-	-	41	5.7	-	5	12.2	-
	12+ months	-	-	601	83.7	-	171	28.5	-

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.

Table 7 Demographic characteristics of active patients on the waiting list testing positive for SARS-CoV-2, data up to 24 June 2020									
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	3626	59.1	144	62.6	4.0	19	13.2	0.5
	Female	2500	40.7	86	37.4	3.4	5	5.8	0.2
	Unknown	9	0.1	-	-	-	-	-	-
Blood Group	O	3354	54.7	118	51.3	3.5	11	9.3	0.3
	A	1546	25.2	55	23.9	3.6	9	16.4	0.6
	B	1097	17.9	51	22.2	4.6	4	7.8	0.4
	AB	138	2.2	6	2.6	4.3	-	-	-
Ethnicity	White	4084	66.6	92	40.0	2.3	9	9.8	0.2
	Asian	1074	17.5	64	27.8	6.0	8	12.5	0.7
	Black	625	10.2	51	22.2	8.2	3	5.9	0.5
	Other	254	4.1	17	7.4	6.7	2	11.8	0.8
	Unknown	98	1.6	6	2.6	6.1	2	33.3	2.0
Age group	0-17	190	3.1	4	1.7	2.1	-	-	-
	18-29	396	6.5	11	4.8	2.8	1	9.1	0.3
	30-39	766	12.5	26	11.3	3.4	1	3.8	0.1
	40-49	1136	18.5	47	20.4	4.1	2	4.3	0.2
	50-59	1806	29.4	72	31.3	4.0	6	8.3	0.3
	60-69	1413	23.0	56	24.3	4.0	12	21.4	0.8
	>70	428	7.0	14	6.1	3.3	2	14.3	0.5
Organ	Kidney	4789	78.1	207	90.0	4.3	22	10.6	0.5
	SPK	186	3.0	10	4.3	5.4	-	-	-
	Pancreas	27	0.4	-	-	-	-	-	-
	Liver	418	6.8	8	3.5	1.9	1	12.5	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	15	6.5	1.9	1	6.7	0.1
	North West	676	11.0	14	6.1	2.1	3	21.4	0.4
	Midlands	1007	16.4	32	13.9	3.2	4	12.5	0.4
	East of England	429	7.0	28	12.2	6.5	-	-	-
	London	1292	21.1	105	45.7	8.1	12	11.4	0.9
	South East	573	9.3	16	7.0	2.8	3	18.8	0.5
	South West	419	6.8	4	1.7	1.0	-	-	-
	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.

Table 8 Demographic characteristics of kidney transplant patients testing positive for SARS-CoV-2, data up to 24 June 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
Sex	Male	23917	61.3	352	62.4	1.5	101	28.7	0.4
	Female	15106	38.7	212	37.6	1.4	56	26.4	0.4
	Unknown	24	0.1	-	-	-	-	-	-
Blood Group	O	16920	43.4	204	36.2	1.2	48	23.5	0.3
	A	15430	39.5	227	40.2	1.5	67	29.5	0.4
	B	4952	12.7	103	18.3	2.1	34	33.0	0.7
	AB	1728	4.4	30	5.3	1.7	8	26.7	0.5
Ethnicity	White	28759	73.7	307	54.4	1.1	84	27.4	0.3
	Asian	4428	11.3	120	21.3	2.7	38	31.7	0.9
	Black	2205	5.6	89	15.8	4.0	25	28.1	1.1
	Other	1041	2.7	17	3.0	1.6	4	23.5	0.4
	Unknown	2614	6.7	31	5.5	1.2	6	19.4	0.2
Age group	0-17	818	2.1	2	0.4	0.2	-	-	-
	18-29	2191	5.6	19	3.4	0.9	-	-	-
	30-39	4048	10.4	37	6.6	0.9	-	-	-
	40-49	6479	16.6	93	16.5	1.4	14	15.1	0.2
	50-59	10302	26.4	151	26.8	1.5	35	23.2	0.3
	60-69	9100	23.3	161	28.6	1.8	61	37.9	0.7
	>70	6109	15.6	100	17.8	1.6	47	47.0	0.8
Organ	Kidney	39047	100.0	564	100.0	1.4	157	27.8	0.4
NHS Region	North East	5144	13.2	45	8.0	0.9	10	22.2	0.2
	North West	3952	10.1	52	9.2	1.3	19	36.5	0.5
	Midlands	5673	14.5	79	14.0	1.4	19	24.1	0.3
	East of England	3604	9.2	73	12.9	2.0	19	26.0	0.5
	London	6151	15.8	187	33.2	3.0	53	28.3	0.9
	South East	4835	12.4	58	10.3	1.2	13	22.4	0.3
	South West	3167	8.1	24	4.3	0.8	10	41.7	0.3
	Northern Ireland	1389	3.6	8	1.4	0.6	2	25.0	0.1
	Scotland	3304	8.5	29	5.1	0.9	8	27.6	0.2
	Wales	1828	4.7	9	1.6	0.5	4	44.4	0.2
Year of transplant	<=2015	25915	66.4	330	58.5	1.3	94	28.5	0.4
	2016	2704	6.9	40	7.1	1.5	13	32.5	0.5
	2017	2942	7.5	37	6.6	1.3	8	21.6	0.3
	2018	3182	8.1	41	7.3	1.3	15	36.6	0.5
	2019	3316	8.5	73	12.9	2.2	17	23.3	0.5
	2020	988	2.5	43	7.6	4.4	10	23.3	1.0

Table 8 Demographic characteristics of kidney transplant patients testing positive for SARS-CoV-2, data up to 24 June 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	-	-	35	6.3	-	9	25.7	-
	3-6 months	-	-	26	4.7	-	9	34.6	-
	6-12 month	-	-	30	5.4	-	4	13.3	-
	12+ months	-	-	468	83.7	-	135	28.8	-
Dialysis status prior to transplant	On dialysis	27595	70.7	437	77.5	1.6	119	27.2	0.4
	Not on dialysis	7635	19.6	72	12.8	0.9	21	29.2	0.3
	Unknown	3817	9.8	55	9.8	1.4	17	30.9	0.4

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.

Table 9 Demographic characteristics of active kidney patients on the waiting list testing positive for SARS-CoV-2, data up to 24 June 2020									
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	62.8	4.6	17	13.1	0.6
	Female	1932	40.3	77	37.2	4.0	5	6.5	0.3
	Unknown	8	0.2	-	-	-	-	-	-
Blood Group	O	2646	55.3	105	50.7	4.0	11	10.5	0.4
	A	1099	22.9	50	24.2	4.5	8	16.0	0.7
	B	930	19.4	46	22.2	4.9	3	6.5	0.3
	AB	114	2.4	6	2.9	5.3	-	-	-
Ethnicity	White	2954	61.7	78	37.7	2.6	7	9.0	0.2
	Asian	956	20.0	60	29.0	6.3	8	13.3	0.8
	Black	575	12.0	49	23.7	8.5	3	6.1	0.5
	Other	232	4.8	15	7.2	6.5	2	13.3	0.9
	Unknown	72	1.5	5	2.4	6.9	2	40.0	2.8
Age group	0-17	110	2.3	2	1.0	1.8	-	-	-
	18-29	277	5.8	8	3.9	2.9	1	12.5	0.4
	30-39	553	11.5	21	10.1	3.8	1	4.8	0.2
	40-49	885	18.5	39	18.8	4.4	1	2.6	0.1
	50-59	1396	29.2	68	32.9	4.9	6	8.8	0.4
	60-69	1158	24.2	55	26.6	4.7	11	20.0	0.9
	>70	410	8.6	14	6.8	3.4	2	14.3	0.5
Organ	Kidney	4789	100.0	207	100.0	4.3	22	10.6	0.5
NHS Region	North East	592	12.4	14	6.8	2.4	1	7.1	0.2
	North West	527	11.0	10	4.8	1.9	3	30.0	0.6
	Midlands	788	16.5	26	12.6	3.3	2	7.7	0.3
	East of England	334	7.0	24	11.6	7.2	-	-	-
	London	1128	23.6	100	48.3	8.9	12	12.0	1.1
	South East	415	8.7	16	7.7	3.9	3	18.8	0.7
	South West	312	6.5	4	1.9	1.3	-	-	-
	Northern Ireland	88	1.8	-	-	-	-	-	-
	Scotland	423	8.8	7	3.4	1.7	-	-	-
	Wales	182	3.8	6	2.9	3.3	1	16.7	0.5
Dialysis status at listing	Not on dialysis	2108	44.0	66	31.9	3.1	6	9.1	0.3
	Haemodialysis	1998	41.7	123	59.4	6.2	13	10.6	0.7
	Peritoneal dialysis	656	13.7	16	7.7	2.4	3	18.8	0.5
	Unknown	27	0.6	2	1.0	7.4	-	-	-

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.

Table 10 Demographic characteristics of SPK transplant patients testing positive for SARS-CoV-2, data up to 24 June 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
Sex	Male	1022	58.4	14	66.7	1.4	3	21.4	0.3
	Female	729	41.6	7	33.3	1.0	1	14.3	0.1
Blood Group	O	763	43.6	10	47.6	1.3	1	10.0	0.1
	A	723	41.3	5	23.8	0.7	-	-	-
	B	187	10.7	4	19.0	2.1	1	25.0	0.5
	AB	78	4.5	2	9.5	2.6	2	100.0	2.6
Ethnicity	White	1537	87.8	12	57.1	0.8	2	16.7	0.1
	Asian	101	5.8	3	14.3	3.0	2	66.7	2.0
	Black	75	4.3	6	28.6	8.0	-	-	-
	Other	20	1.1	-	-	-	-	-	-
	Unknown	18	1.0	-	-	-	-	-	-
Age group	0-17	-	-	-	-	-	-	-	-
	18-29	27	1.5	-	-	-	-	-	-
	30-39	280	16.0	4	19.0	1.4	-	-	-
	40-49	586	33.5	4	19.0	0.7	2	50.0	0.3
	50-59	631	36.0	7	33.3	1.1	1	14.3	0.2
	60-69	212	12.1	4	19.0	1.9	-	-	-
	>70	15	0.9	2	9.5	13.3	1	50.0	6.7
Organ	SPK	1751	100.0	21	100.0	1.2	4	19.0	0.2
NHS Region	North East	147	8.4	1	4.8	0.7	-	-	-
	North West	134	7.7	2	9.5	1.5	1	50.0	0.7
	Midlands	309	17.6	-	-	-	-	-	-
	East of England	223	12.7	2	9.5	0.9	1	50.0	0.4
	London	214	12.2	10	47.6	4.7	2	20.0	0.9
	South East	300	17.1	4	19.0	1.3	-	-	-
	South West	141	8.1	2	9.5	1.4	-	-	-
	Northern Ireland	23	1.3	-	-	-	-	-	-
	Scotland	164	9.4	-	-	-	-	-	-
	Wales	96	5.5	-	-	-	-	-	-
Year of transplant	<=2015	1129	64.5	12	57.1	1.1	2	16.7	0.2
	2016	122	7.0	2	9.5	1.6	1	50.0	0.8
	2017	150	8.6	4	19.0	2.7	-	-	-
	2018	160	9.1	1	4.8	0.6	1	100.0	0.6
	2019	151	8.6	2	9.5	1.3	-	-	-
	2020	39	2.2	-	-	-	-	-	-
Time from transplant	3-6 months	-	-	1	4.8	-	-	-	-
	6-12 month	-	-	1	4.8	-	-	-	-
	12+ months	-	-	19	90.5	-	4	21.1	-

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.

Table 11 Demographic characteristics of active SPK patients on the waiting list testing positive for SARS-CoV-2, data up to 24 June 2020									
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	6	60.0	5.7	-	-	-
	Female	80	43.0	4	40.0	5.0	-	-	-
Blood Group	O	91	48.9	5	50.0	5.5	-	-	-
	A	55	29.6	2	20.0	3.6	-	-	-
	B	35	18.8	3	30.0	8.6	-	-	-
	AB	5	2.7	-	-	-	-	-	-
Ethnicity	White	151	81.2	4	40.0	2.6	-	-	-
	Asian	20	10.8	2	20.0	10.0	-	-	-
	Black	8	4.3	2	20.0	25.0	-	-	-
	Other	6	3.2	1	10.0	16.7	-	-	-
	Unknown	1	0.5	1	10.0	100.0	-	-	-
Age group	0-17	1	0.5	1	10.0	100.0	-	-	-
	18-29	14	7.5	1	10.0	7.1	-	-	-
	30-39	64	34.4	4	40.0	6.3	-	-	-
	40-49	62	33.3	2	20.0	3.2	-	-	-
	50-59	43	23.1	2	20.0	4.7	-	-	-
	60-69	2	1.1	-	-	-	-	-	-
	>70	-	-	-	-	-	-	-	-
Organ	SPK	186	100.0	10	100.0	5.4	-	-	-
NHS Region	North East	19	10.2	-	-	-	-	-	-
	North West	20	10.8	-	-	-	-	-	-
	Midlands	29	15.6	2	20.0	6.9	-	-	-
	East of England	9	4.8	2	20.0	22.2	-	-	-
	London	28	15.1	5	50.0	17.9	-	-	-
	South East	27	14.5	-	-	-	-	-	-
	South West	13	7.0	-	-	-	-	-	-
	Northern Ireland	1	0.5	-	-	-	-	-	-
	Scotland	25	13.4	1	10.0	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.

Table 12 Demographic characteristics of liver transplant patients testing positive for SARS-CoV-2, data up to 24 June 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
Sex	Male	6112	57.6	50	65.8	0.8	10	20.0	0.2
	Female	4490	42.3	26	34.2	0.6	9	34.6	0.2
	Unknown	1	0.0	-	-	-	-	-	-
Blood Group	O	4587	43.3	33	43.4	0.7	9	27.3	0.2
	A	4297	40.5	29	38.2	0.7	9	31.0	0.2
	B	1275	12.0	11	14.5	0.9	1	9.1	0.1
	AB	444	4.2	3	3.9	0.7	-	-	-
Ethnicity	White	8849	83.5	55	72.4	0.6	13	23.6	0.1
	Asian	915	8.6	17	22.4	1.9	5	29.4	0.5
	Black	315	3.0	3	3.9	1.0	1	33.3	0.3
	Other	248	2.3	1	1.3	0.4	-	-	-
	Unknown	276	2.6	-	-	-	-	-	-
Age group	0-17	824	7.8	4	5.3	0.5	-	-	-
	18-29	792	7.5	4	5.3	0.5	-	-	-
	30-39	751	7.1	-	-	-	-	-	-
	40-49	1049	9.9	6	8.0	0.6	2	33.3	0.2
	50-59	2230	21.0	16	21.3	0.7	3	18.8	0.1
	60-69	3167	29.9	31	41.3	1.0	8	25.8	0.3
	>70	1788	16.9	14	18.7	0.8	6	42.9	0.3
Organ	Liver	10603	100.0	76	100.0	0.7	19	25.0	0.2
NHS Region	North East	1355	12.8	12	15.8	0.9	4	33.3	0.3
	North West	1041	9.8	9	11.8	0.9	3	33.3	0.3
	Midlands	1631	15.4	7	9.2	0.4	2	28.6	0.1
	East of England	1111	10.5	6	7.9	0.5	1	16.7	0.1
	London	1577	14.9	22	28.9	1.4	3	13.6	0.2
	South East	1218	11.5	13	17.1	1.1	4	30.8	0.3
	South West	828	7.8	3	3.9	0.4	-	-	-
	Northern Ireland	330	3.1	-	-	-	-	-	-
	Scotland	1126	10.6	3	3.9	0.3	1	33.3	0.1
	Wales	386	3.6	1	1.3	0.3	1	100.0	0.3
Year of transplant	<=2015	6998	66.0	48	63.2	0.7	14	29.2	0.2
	2016	744	7.0	6	7.9	0.8	2	33.3	0.3
	2017	798	7.5	3	3.9	0.4	1	33.3	0.1
	2018	883	8.3	4	5.3	0.5	-	-	-
	2019	842	7.9	8	10.5	1.0	2	25.0	0.2
	2020	338	3.2	7	9.2	2.1	-	-	-

Table 12 Demographic characteristics of liver transplant patients testing positive for SARS-CoV-2, data up to 24 June 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	-	-	5	6.8	-	-	-	-
	3-6 months	-	-	3	4.1	-	1	33.3	-
	6-12 month	-	-	3	4.1	-	1	33.3	-
	12+ months	-	-	63	85.1	-	17	27.0	-

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.

Table 13 Demographic characteristics of active liver patients on the waiting list testing positive for SARS-CoV-2, data up to 24 June 2020									
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	231	55.3	4	50.0	1.7	1	25.0	0.4
	Female	187	44.7	4	50.0	2.1	-	-	-
	Unknown	-	-	-	-	-	-	-	-
Blood Group	O	225	53.8	4	50.0	1.8	-	-	-
	A	130	31.1	2	25.0	1.5	-	-	-
	B	56	13.4	2	25.0	3.6	1	50.0	1.8
	AB	7	1.7	-	-	-	-	-	-
Ethnicity	White	346	82.8	6	75.0	1.7	1	16.7	0.3
	Asian	38	9.1	2	25.0	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	12.5	2.0	-	-	-
	40-49	86	20.6	6	75.0	7.0	1	16.7	1.2
	50-59	113	27.0	1	12.5	0.9	-	-	-
	60-69	84	20.1	-	-	-	-	-	-
	>70	10	2.4	-	-	-	-	-	-
Organ	Liver	418	100.0	8	100.0	1.9	1	12.5	0.2
NHS Region	North East	47	11.2	1	12.5	2.1	-	-	-
	North West	49	11.7	3	37.5	6.1	-	-	-
	Midlands	68	16.3	3	37.5	4.4	1	33.3	1.5
	East of England	36	8.6	-	-	-	-	-	-
	London	43	10.3	-	-	-	-	-	-
	South East	40	9.6	-	-	-	-	-	-
	South West	43	10.3	-	-	-	-	-	-
	Northern Ireland	17	4.1	-	-	-	-	-	-
	Scotland	51	12.2	1	12.5	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.

Table 14 Demographic characteristics of heart transplant patients testing positive for SARS-CoV-2, data up to 24 June 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
Sex	Male	1803	69.7	22	81.5	1.2	6	27.3	0.3
	Female	782	30.2	5	18.5	0.6	1	20.0	0.1
	Unknown	1	0.0	-	-	-	-	-	-
Blood Group	O	998	38.6	8	29.6	0.8	2	25.0	0.2
	A	1162	45.0	15	55.6	1.3	4	26.7	0.3
	B	317	12.3	2	7.4	0.6	1	50.0	0.3
	AB	107	4.1	2	7.4	1.9	-	-	-
Ethnicity	White	2084	80.6	24	88.9	1.2	6	25.0	0.3
	Asian	192	7.4	1	3.7	0.5	-	-	-
	Black	71	2.7	1	3.7	1.4	-	-	-
	Other	49	1.9	1	3.7	2.0	1	100.0	2.0
	Unknown	190	7.3	-	-	-	-	-	-
Age group	0-17	255	9.9	-	-	-	-	-	-
	18-29	285	11.0	-	-	-	-	-	-
	30-39	297	11.5	5	18.5	1.7	-	-	-
	40-49	321	12.4	5	18.5	1.6	-	-	-
	50-59	466	18.0	4	14.8	0.9	1	25.0	0.2
	60-69	545	21.1	6	22.2	1.1	3	50.0	0.6
	>70	417	16.1	7	25.9	1.7	3	42.9	0.7
Organ	Heart	2586	100.0	27	100.0	1.0	7	25.9	0.3
NHS Region	North East	425	16.4	6	22.2	1.4	-	-	-
	North West	258	10.0	3	11.1	1.2	2	66.7	0.8
	Midlands	420	16.2	6	22.2	1.4	2	33.3	0.5
	East of England	280	10.8	1	3.7	0.4	1	100.0	0.4
	London	283	10.9	5	18.5	1.8	1	20.0	0.4
	South East	313	12.1	3	11.1	1.0	-	-	-
	South West	217	8.4	2	7.4	0.9	1	50.0	0.5
	Northern Ireland	67	2.6	-	-	-	-	-	-
	Scotland	212	8.2	-	-	-	-	-	-
	Wales	111	4.3	1	3.7	0.9	-	-	-
Year of transplant	<=2015	1905	73.7	15	55.6	0.8	6	40.0	0.3
	2016	163	6.3	2	7.4	1.2	-	-	-
	2017	144	5.6	1	3.7	0.7	1	100.0	0.7
	2018	146	5.6	1	3.7	0.7	-	-	-
	2019	156	6.0	7	25.9	4.5	-	-	-
	2020	72	2.8	1	3.7	1.4	-	-	-

Table 14 Demographic characteristics of heart transplant patients testing positive for SARS-CoV-2, data up to 24 June 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	-	-	2	7.7	-	-	-	-
	6-12 month	-	-	4	15.4	-	-	-	-
	12+ months	-	-	20	76.9	-	7	35.0	-

Lung

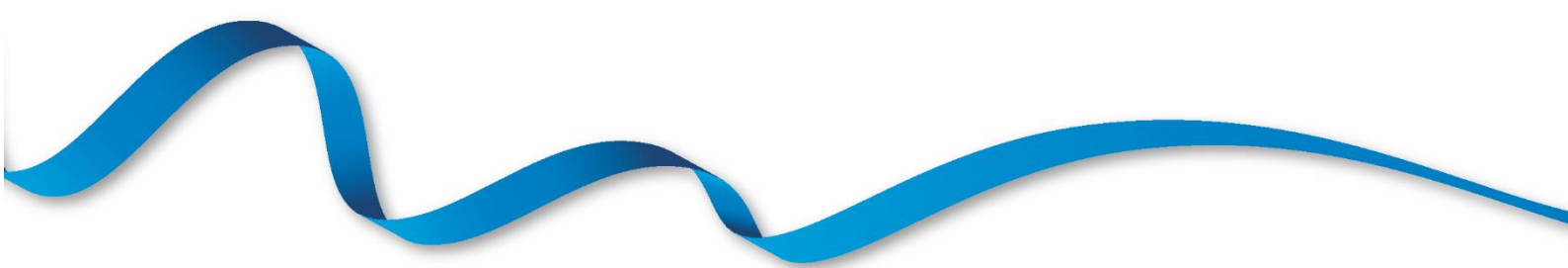


Table 15 shows the demographic characteristics of lung transplant recipients. The information reported are those with a functioning transplant at 1 February 2020, those testing positive for SARS-CoV-2 and of those testing positive, the number that have died.

Table 15 Demographic characteristics of lung transplant patients testing positive for SARS-CoV-2, data up to 24 June 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
Sex	Male	842	54.4	15	55.6	1.8	6	40.0	0.7
	Female	704	45.5	12	44.4	1.7	1	8.3	0.1
	Unknown	1	0.1	-	-	-	-	-	-
Blood Group	O	663	42.9	7	25.9	1.1	3	42.9	0.5
	A	702	45.4	18	66.7	2.6	3	16.7	0.4
	B	121	7.8	1	3.7	0.8	-	-	-
	AB	61	3.9	1	3.7	1.6	1	100.0	1.6
Ethnicity	White	1456	94.1	25	92.6	1.7	6	24.0	0.4
	Asian	40	2.6	-	-	-	-	-	-
	Black	7	0.5	-	-	-	-	-	-
	Other	10	0.6	2	7.4	20.0	1	50.0	10.0
	Unknown	34	2.2	-	-	-	-	-	-
Age group	0-17	30	1.9	-	-	-	-	-	-
	18-29	122	7.9	5	18.5	4.1	-	-	-
	30-39	217	14.0	2	7.4	0.9	-	-	-
	40-49	234	15.1	2	7.4	0.9	-	-	-
	50-59	376	24.3	7	25.9	1.9	2	28.6	0.5
	60-69	459	29.7	11	40.7	2.4	5	45.5	1.1
	>70	109	7.0	-	-	-	-	-	-
Organ	Lung	1547	100.0	27	100.0	1.7	7	25.9	0.5
NHS Region	North East	226	14.6	1	3.7	0.4	1	100.0	0.4
	North West	154	10.0	10	37.0	6.5	2	20.0	1.3
	Midlands	246	15.9	5	18.5	2.0	2	40.0	0.8
	East of England	200	12.9	1	3.7	0.5	1	100.0	0.5
	London	139	9.0	3	11.1	2.2	1	33.3	0.7
	South East	226	14.6	3	11.1	1.3	-	-	-
	South West	125	8.1	-	-	-	-	-	-
	Northern Ireland	43	2.8	-	-	-	-	-	-
	Scotland	119	7.7	2	7.4	1.7	-	-	-
	Wales	69	4.5	2	7.4	2.9	-	-	-
Year of transplant	<=2015	976	63.1	12	44.4	1.2	5	41.7	0.5
	2016	101	6.5	5	18.5	5.0	2	40.0	2.0
	2017	137	8.9	2	7.4	1.5	-	-	-
	2018	147	9.5	3	11.1	2.0	-	-	-
	2019	141	9.1	2	7.4	1.4	-	-	-
	2020	45	2.9	3	11.1	6.7	-	-	-

Table 15 Demographic characteristics of lung transplant patients testing positive for SARS-CoV-2, data up to 24 June 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	-	-	-	-
	12+ months	-	-	22	81.5	-	7	31.8	-

Prepared by:

Statistics and Clinical Studies, NHS Blood and Transplant

Miss Lisa Mumford

In collaboration with:

Rommel Ravanan

Chris Callaghan