



Blood and Transplant

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

**REPORT FOR
1 MARCH 2020 – 19 AUGUST 2020**

PUBLISHED 21 AUGUST 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 19 August 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.

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 86 performed in the week commencing 10th August.
- 797 of the 56,602 (1.4%) recipients with a functioning graft are reported as testing positive for SARS-CoV-2. Of these, 26% (n=208) are reported as died as at 19 August 2020.
- The infection rate across England ranges from 0.8% in the South West to 2.8% in London in recipients with a functioning graft.
- 230 of the 6136 (3.7%) 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 19 August 2020.
- The infection rate across England ranges from 0.7% in the South west to 8.1% in London for patients on the active waiting list.
- Of the 2161 transplants performed so far in 2020, 75 (3.4%) recipients have tested positive for SARS-CoV-2 with 10 (0.5%) reported as died.

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

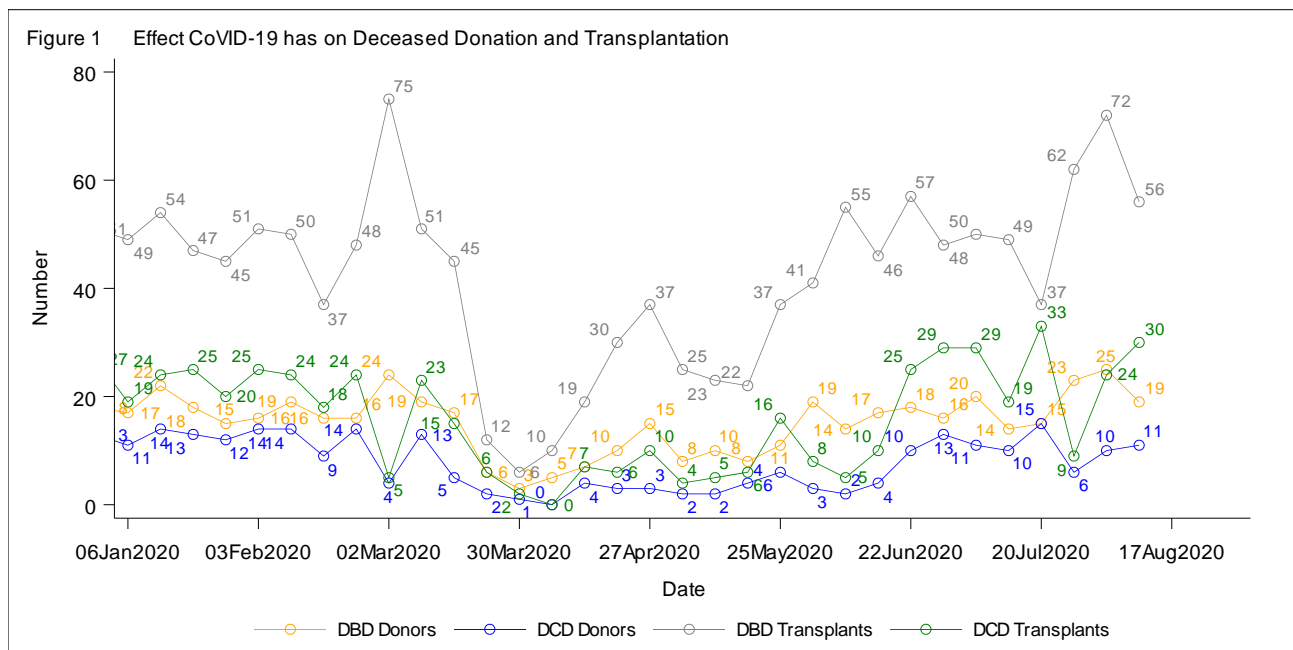


Figure 2 shows the cumulative incidence of SARS-CoV-2 positive patients and the cumulative deaths by week separately for transplanted recipients and active wait listed patients since Monday 3rd February 2020.

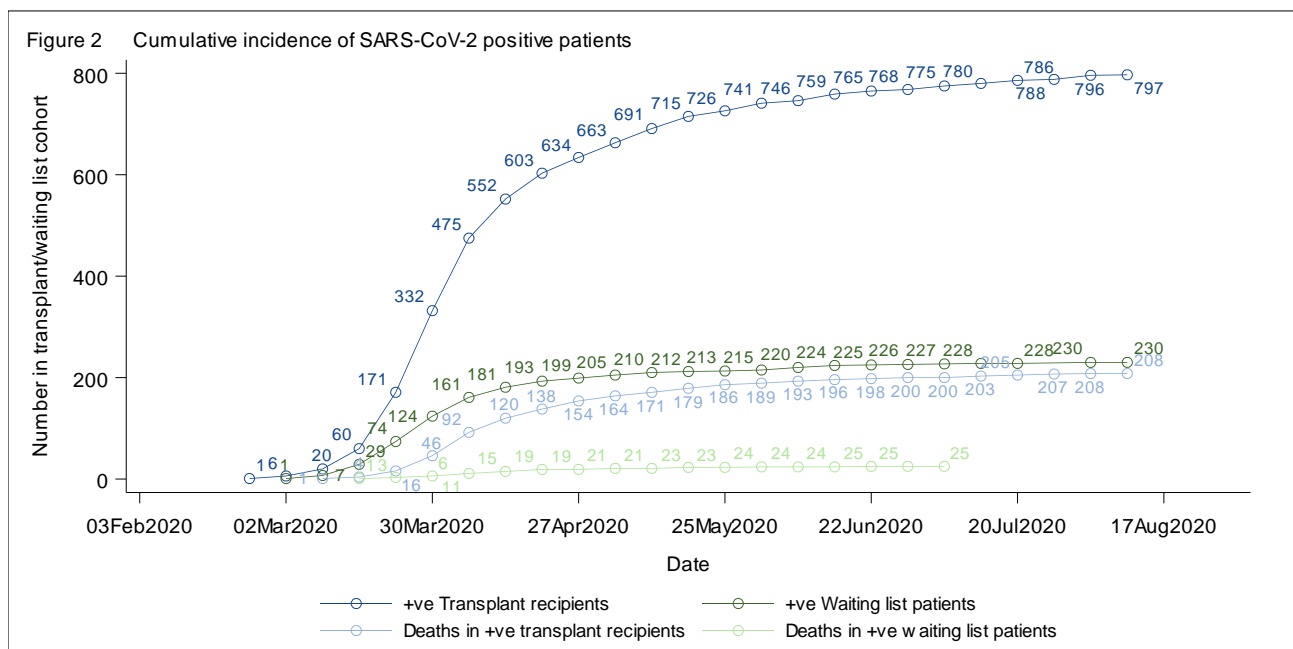


Figure 3 shows the incidence and deaths of SARS-CoV-2 positive patients by organ for transplanted recipients and active wait listed patients.

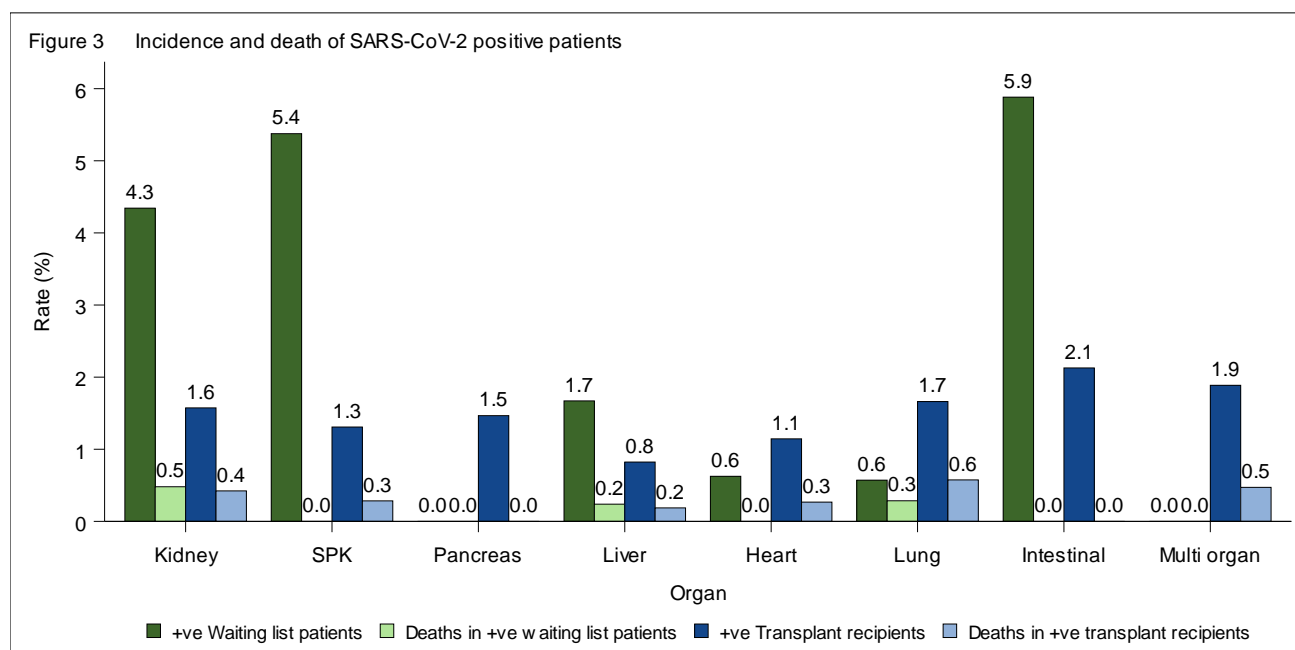


Table 1 shows the number of NHSBT CoVID-19 initial presentation forms returned and the number of NHSBT CoVID-19 follow-up forms returned for transplant recipients and wait listed patients by organ. Total cases include the number of positive SARS-CoV-2 patients in England that have been collected through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

	Form return rates for Initial and Follow-up as at 19 August 2020					
	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	618	349	183	208	73	28
SPK	23	15	9	10	4	1
Pancreas / Islet	5	2	1	0	0	0
Liver	88	37	21	7	3	4
Heart	30	23	13	2	1	0
Lung	26	24	6	2	2	1
Intestinal	3	1	0	1	0	0
Multi-organ	4	1	0	0	0	0
Total	797	451	232	230	83	34

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	5165	146	42	1368	428	230	19	25	7423	
North West	3972	134	25	1050	261	155	18	21	5636	
Midlands	5688	310	50	1652	424	247	19	33	8423	
East of England	3619	227	16	1120	285	200	22	26	5515	
London	6163	211	29	1591	287	143	19	42	8485	
South East	4852	299	28	1231	316	230	16	28	7000	
South West	3203	141	62	838	219	126	9	20	4618	
Northern Ireland	1420	23	5	333	67	43	8	2	1901	
Scotland	3343	166	57	1126	221	122	8	12	5055	
Wales	1841	101	27	389	113	69	3	3	2546	
TOTAL	39266	1758	341	10698	2621	1565	141	212	56602	

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, 797 organ transplant recipients have been reported to NHSBT as testing positive for SARS-CoV-2. Of these, 208 (26%) have died.

Table 3 Number of recipients testing positive for SARS-CoV-2 by transplant type and NHS Region, data up to 19 August 2020											
	Kidney	SPK	Pancreas	Liver	Heart	Lung	Intestinal	Multi organ	Total	Died	
North East and Yorkshire	56	1	0	16	6	1	0	0	80	18	
North West	64	2	1	10	5	10	1	1	94	30	
Midlands	89	2	0	7	6	4	0	1	109	27	
East of England	77	2	0	6	1	1	1	0	88	25	
London	194	9	2	24	5	3	0	0	237	61	
South East	63	5	0	18	4	3	0	1	94	20	
South West	29	2	1	3	2	0	0	1	38	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	618	23	5	88	30	26	3	4	797	208	

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	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
TOTAL	4789	186	27	419	320	350	17	28	6136

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, 25 (11%) have died.

Table 5 Number of patients testing positive for SARS-CoV-2 by organ awaited and NHS Region, data up to 8 July 2020								
	Kidney	SPK	Liver	Heart	Lung	Intestinal	Total	Died
North East and Yorkshire	13	0	1	0	0	0	14	1
North West	12	1	2	1	0	0	16	3
Midlands	27	1	3	0	1	0	32	4
East of England	24	2	0	0	1	1	28	1
London	100	5	0	0	0	0	105	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
TOTAL	208	10	7	2	2	1	230	25

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 19 August 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	34275	60.6	506	63.5	1.5	131	25.9	0.4
	Female	22300	39.4	291	36.5	1.3	77	26.5	0.3
	Unknown	27	0.0	-	-	-	-	-	-
Blood Group	O	24407	43.1	283	35.5	1.2	68	24.0	0.3
	A	22753	40.2	334	41.9	1.5	90	26.9	0.4
	B	6957	12.3	140	17.6	2.0	38	27.1	0.5
	AB	2465	4.4	40	5.0	1.6	12	30.0	0.5
Ethnicity	White	43605	77.0	472	59.2	1.1	121	25.6	0.3
	Asian	5762	10.2	168	21.1	2.9	47	28.0	0.8
	Black	2712	4.8	98	12.3	3.6	26	26.5	1.0
	Other	1390	2.5	25	3.1	1.8	7	28.0	0.5
	Unknown	3133	5.5	34	4.3	1.1	7	20.6	0.2
Age group	0-17	2032	3.6	7	0.9	0.3	-	-	-
	18-29	3503	6.2	34	4.3	1.0	-	-	-
	30-39	5723	10.1	64	8.1	1.1	-	-	-
	40-49	8883	15.7	121	15.2	1.4	19	15.7	0.2
	50-59	14350	25.4	204	25.7	1.4	44	21.6	0.3
	60-69	13687	24.2	231	29.1	1.7	79	34.2	0.6
	>70	8422	14.9	134	16.9	1.6	66	49.3	0.8
Organ	Kidney	39266	69.4	618	77.5	1.6	166	26.9	0.4
	SPK	1758	3.1	23	2.9	1.3	5	21.7	0.3
	Pancreas	341	0.6	5	0.6	1.5	-	-	-
	Liver	10698	18.9	88	11.0	0.8	20	22.7	0.2
	Heart	2621	4.6	30	3.8	1.1	7	23.3	0.3
	Lung	1565	2.8	26	3.3	1.7	9	34.6	0.6
	Intestinal	141	0.2	3	0.4	2.1	-	-	-
	Multi organ	212	0.4	4	0.5	1.9	1	25.0	0.5
NHS Region	North East	7423	13.1	80	10.0	1.1	18	22.5	0.2
	North West	5636	10.0	94	11.8	1.7	30	31.9	0.5
	Midlands	8423	14.9	109	13.7	1.3	27	24.8	0.3
	East of England	5515	9.7	88	11.0	1.6	25	28.4	0.5
	London	8485	15.0	237	29.7	2.8	61	25.7	0.7
	South East	7000	12.4	94	11.8	1.3	20	21.3	0.3
	South West	4618	8.2	38	4.8	0.8	11	28.9	0.2
	Northern Ireland	1901	3.4	8	1.0	0.4	2	25.0	0.1
	Scotland	5055	8.9	36	4.5	0.7	9	25.0	0.2
	Wales	2546	4.5	13	1.6	0.5	5	38.5	0.2

Table 6 Demographic characteristics of transplant patients testing positive for SARS-CoV-2, data up to 19 August 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	37149	65.6	456	57.2	1.2	132	28.9	0.4
	2016	3874	6.8	59	7.4	1.5	18	30.5	0.5
	2017	4199	7.4	53	6.6	1.3	10	18.9	0.2
	2018	4559	8.1	54	6.8	1.2	18	33.3	0.4
	2019	4660	8.2	100	12.5	2.1	20	20.0	0.4
	2020	2161	3.8	75	9.4	3.5	10	13.3	0.5
Time from transplant	0-3 months	-	-	45	5.8	-	9	20.0	-
	3-6 months	-	-	37	4.8	-	10	27.0	-
	6-12 month	-	-	43	5.6	-	6	14.0	-
	12+ months	-	-	649	83.9	-	183	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.

Table 7 Demographic characteristics of active patients on the waiting list testing positive for SARS-CoV-2, data up to 19 August 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	3627	59.1	144	62.6	4.0	20	13.9	0.6
	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	1547	25.2	53	23.0	3.4	10	18.9	0.6
	B	1097	17.9	53	23.0	4.8	4	7.5	0.4
	AB	138	2.2	6	2.6	4.3	-	-	-
Ethnicity	White	4085	66.6	91	39.6	2.2	9	9.9	0.2
	Asian	1074	17.5	65	28.3	6.1	9	13.8	0.8
	Black	625	10.2	51	22.2	8.2	3	5.9	0.5
	Other	254	4.1	16	7.0	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	23	10.0	3.0	1	4.3	0.1
	40-49	1136	18.5	47	20.4	4.1	2	4.3	0.2
	50-59	1806	29.4	74	32.2	4.1	7	9.5	0.4
	60-69	1414	23.0	56	24.3	4.0	12	21.4	0.8
	>70	428	7.0	16	7.0	3.7	2	12.5	0.5
Organ	Kidney	4789	78.0	208	90.4	4.3	23	11.1	0.5
	SPK	186	3.0	10	4.3	5.4	-	-	-
	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	6.1	1.8	1	7.1	0.1
	North West	676	11.0	16	7.0	2.4	3	18.8	0.4
	Midlands	1007	16.4	32	13.9	3.2	4	12.5	0.4
	East of England	430	7.0	28	12.2	6.5	1	3.6	0.2
	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	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.

Table 8 Demographic characteristics of kidney transplant patients testing positive for SARS-CoV-2, data up to 19 August 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	24074	61.3	388	62.8	1.6	103	26.5	0.4
	Female	15168	38.6	230	37.2	1.5	63	27.4	0.4
	Unknown	24	0.1	-	-	-	-	-	-
Blood Group	O	17037	43.4	219	35.4	1.3	51	23.3	0.3
	A	15501	39.5	253	40.9	1.6	71	28.1	0.5
	B	4978	12.7	115	18.6	2.3	35	30.4	0.7
	AB	1733	4.4	31	5.0	1.8	9	29.0	0.5
Ethnicity	White	28931	73.7	337	54.5	1.2	90	26.7	0.3
	Asian	4456	11.3	139	22.5	3.1	40	28.8	0.9
	Black	2226	5.7	88	14.2	4.0	25	28.4	1.1
	Other	1052	2.7	20	3.2	1.9	4	20.0	0.4
	Unknown	2601	6.6	34	5.5	1.3	7	20.6	0.3
Age group	0-17	835	2.1	2	0.3	0.2	-	-	-
	18-29	2212	5.6	24	3.9	1.1	-	-	-
	30-39	4100	10.4	50	8.1	1.2	-	-	-
	40-49	6528	16.6	100	16.2	1.5	15	15.0	0.2
	50-59	10388	26.5	166	26.9	1.6	35	21.1	0.3
	60-69	9116	23.2	167	27.1	1.8	62	37.1	0.7
	>70	6087	15.5	108	17.5	1.8	54	50.0	0.9
Organ	Kidney	39266	100.0	618	100.0	1.6	166	26.9	0.4
NHS Region	North East	5165	13.2	56	9.1	1.1	12	21.4	0.2
	North West	3972	10.1	64	10.4	1.6	20	31.3	0.5
	Midlands	5688	14.5	89	14.4	1.6	20	22.5	0.4
	East of England	3619	9.2	77	12.5	2.1	21	27.3	0.6
	London	6163	15.7	194	31.4	3.1	54	27.8	0.9
	South East	4852	12.4	63	10.2	1.3	15	23.8	0.3
	South West	3203	8.2	29	4.7	0.9	10	34.5	0.3
	Northern Ireland	1420	3.6	8	1.3	0.6	2	25.0	0.1
	Scotland	3343	8.5	29	4.7	0.9	8	27.6	0.2
	Wales	1841	4.7	9	1.5	0.5	4	44.4	0.2
Year of transplant	<=2015	25753	65.6	358	57.9	1.4	103	28.8	0.4
	2016	2694	6.9	44	7.1	1.6	13	29.5	0.5
	2017	2930	7.5	41	6.6	1.4	8	19.5	0.3
	2018	3165	8.1	42	6.8	1.3	15	35.7	0.5
	2019	3311	8.4	78	12.6	2.4	17	21.8	0.5
	2020	1413	3.6	55	8.9	3.9	10	18.2	0.7

Table 8 Demographic characteristics of kidney transplant patients testing positive for SARS-CoV-2, data up to 19 August 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	-	-	36	6.0	-	9	25.0	-
	3-6 months	-	-	29	4.8	-	9	31.0	-
	6-12 month	-	-	31	5.1	-	4	12.9	-
	12+ months	-	-	509	84.1	-	144	28.3	-

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 19 August 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	129	62.0	4.5	18	14.0	0.6
	Female	1932	40.3	79	38.0	4.1	5	6.3	0.3
	Unknown	8	0.2	-	-	-	-	-	-
Blood Group	O	2646	55.3	105	50.5	4.0	11	10.5	0.4
	A	1099	22.9	48	23.1	4.4	9	18.8	0.8
	B	930	19.4	49	23.6	5.3	3	6.1	0.3
	AB	114	2.4	6	2.9	5.3	-	-	-
Ethnicity	White	2954	61.7	77	37.0	2.6	7	9.1	0.2
	Asian	956	20.0	61	29.3	6.4	9	14.8	0.9
	Black	575	12.0	49	23.6	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	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	3.4	2.5	1	14.3	0.4
	30-39	553	11.5	18	8.7	3.3	1	5.6	0.2
	40-49	885	18.5	40	19.2	4.5	1	2.5	0.1
	50-59	1396	29.2	70	33.7	5.0	7	10.0	0.5
	60-69	1158	24.2	55	26.4	4.7	11	20.0	0.9
	>70	410	8.6	16	7.7	3.9	2	12.5	0.5
Organ	Kidney	4789	100.0	208	100.0	4.3	23	11.1	0.5
NHS Region	North East	592	12.4	13	6.3	2.2	1	7.7	0.2
	North West	527	11.0	12	5.8	2.3	3	25.0	0.6
	Midlands	788	16.5	27	13.0	3.4	2	7.4	0.3
	East of England	334	7.0	24	11.5	7.2	1	4.2	0.3
	London	1128	23.6	100	48.1	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	3	1.4	1.0	-	-	-
	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

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 19 August 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	1025	58.3	15	65.2	1.5	4	26.7	0.4
	Female	733	41.7	8	34.8	1.1	1	12.5	0.1
Blood Group	O	767	43.6	11	47.8	1.4	2	18.2	0.3
	A	725	41.2	5	21.7	0.7	-	-	-
	B	189	10.8	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	1544	87.8	13	56.5	0.8	3	23.1	0.2
	Asian	100	5.7	4	17.4	4.0	2	50.0	2.0
	Black	75	4.3	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	283	16.1	5	21.7	1.8	-	-	-
	40-49	593	33.7	6	26.1	1.0	2	33.3	0.3
	50-59	625	35.6	6	26.1	1.0	1	16.7	0.2
	60-69	211	12.0	4	17.4	1.9	-	-	-
	>70	15	0.9	2	8.7	13.3	2	100.0	13.3
Organ	SPK	1758	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	310	17.6	2	8.7	0.6	-	-	-
	East of England	227	12.9	2	8.7	0.9	1	50.0	0.4
	London	211	12.0	9	39.1	4.3	2	22.2	0.9
	South East	299	17.0	5	21.7	1.7	1	20.0	0.3
	South West	141	8.0	2	8.7	1.4	-	-	-
	Northern Ireland	23	1.3	-	-	-	-	-	-
	Scotland	166	9.4	-	-	-	-	-	-
	Wales	101	5.7	-	-	-	-	-	-
Year of transplant	<=2015	1120	63.7	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	8.5	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	56	3.2	1	4.3	1.8	-	-	-
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.

Table 11 Demographic characteristics of active SPK patients on the waiting list testing positive for SARS-CoV-2, data up to 19 August 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	7	70.0	6.6	-	-	-
	Female	80	43.0	3	30.0	3.8	-	-	-
Blood Group	O	91	48.9	6	60.0	6.6	-	-	-
	A	55	29.6	2	20.0	3.6	-	-	-
	B	35	18.8	2	20.0	5.7	-	-	-
	AB	5	2.7	-	-	-	-	-	-
Ethnicity	White	151	81.2	5	50.0	3.3	-	-	-
	Asian	20	10.8	2	20.0	10.0	-	-	-
	Black	8	4.3	2	20.0	25.0	-	-	-
	Other	6	3.2	-	-	-	-	-	-
	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	1	10.0	5.0	-	-	-
	Midlands	29	15.6	1	10.0	3.4	-	-	-
	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 19 August 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	6166	57.6	56	63.6	0.9	10	17.9	0.2
	Female	4531	42.4	32	36.4	0.7	10	31.3	0.2
	Unknown	1	0.0	-	-	-	-	-	-
Blood Group	O	4626	43.2	36	40.9	0.8	9	25.0	0.2
	A	4337	40.5	35	39.8	0.8	10	28.6	0.2
	B	1280	12.0	13	14.8	1.0	1	7.7	0.1
	AB	455	4.3	4	4.5	0.9	-	-	-
Ethnicity	White	8924	83.4	63	71.6	0.7	14	22.2	0.2
	Asian	922	8.6	21	23.9	2.3	5	23.8	0.5
	Black	319	3.0	3	3.4	0.9	1	33.3	0.3
	Other	250	2.3	1	1.1	0.4	-	-	-
	Unknown	283	2.6	-	-	-	-	-	-
Age group	0-17	838	7.8	5	5.7	0.6	-	-	-
	18-29	799	7.5	6	6.9	0.8	-	-	-
	30-39	756	7.1	-	-	-	-	-	-
	40-49	1064	9.9	7	8.0	0.7	2	28.6	0.2
	50-59	2269	21.2	20	23.0	0.9	3	15.0	0.1
	60-69	3203	29.9	34	39.1	1.1	8	23.5	0.2
	>70	1767	16.5	15	17.2	0.8	7	46.7	0.4
Organ	Liver	10698	100.0	88	100.0	0.8	20	22.7	0.2
NHS Region	North East	1368	12.8	16	18.2	1.2	5	31.3	0.4
	North West	1050	9.8	10	11.4	1.0	3	30.0	0.3
	Midlands	1652	15.4	7	8.0	0.4	2	28.6	0.1
	East of England	1120	10.5	6	6.8	0.5	1	16.7	0.1
	London	1591	14.9	24	27.3	1.5	3	12.5	0.2
	South East	1231	11.5	18	20.5	1.5	4	22.2	0.3
	South West	838	7.8	3	3.4	0.4	-	-	-
	Northern Ireland	333	3.1	-	-	-	-	-	-
	Scotland	1126	10.5	3	3.4	0.3	1	33.3	0.1
	Wales	389	3.6	1	1.1	0.3	1	100.0	0.3
Year of transplant	<=2015	6953	65.0	52	59.1	0.7	15	28.8	0.2
	2016	741	6.9	6	6.8	0.8	2	33.3	0.3
	2017	796	7.4	5	5.7	0.6	1	20.0	0.1
	2018	879	8.2	4	4.5	0.5	-	-	-
	2019	839	7.8	8	9.1	1.0	2	25.0	0.2
	2020	490	4.6	13	14.8	2.7	-	-	-

Table 12 Demographic characteristics of liver transplant patients testing positive for SARS-CoV-2, data up to 19 August 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	7.4	-	-	-	-
	3-6 months	-	-	3	3.7	-	1	33.3	-
	6-12 month	-	-	3	3.7	-	1	33.3	-
	12+ months	-	-	69	85.2	-	18	26.1	-

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 19 August 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	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.

Table 14 Demographic characteristics of heart transplant patients testing positive for SARS-CoV-2, data up to 19 August 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	1823	69.6	24	80.0	1.3	6	25.0	0.3
	Female	797	30.4	6	20.0	0.8	1	16.7	0.1
	Unknown	1	0.0	-	-	-	-	-	-
Blood Group	O	1016	38.8	8	26.7	0.8	2	25.0	0.2
	A	1173	44.8	17	56.7	1.4	4	23.5	0.3
	B	319	12.2	3	10.0	0.9	1	33.3	0.3
	AB	111	4.2	2	6.7	1.8	-	-	-
Ethnicity	White	2112	80.6	25	83.3	1.2	6	24.0	0.3
	Asian	197	7.5	2	6.7	1.0	-	-	-
	Black	74	2.8	2	6.7	2.7	-	-	-
	Other	50	1.9	1	3.3	2.0	1	100.0	2.0
	Unknown	188	7.2	-	-	-	-	-	-
Age group	0-17	263	10.0	-	-	-	-	-	-
	18-29	292	11.1	-	-	-	-	-	-
	30-39	302	11.5	7	23.3	2.3	-	-	-
	40-49	326	12.4	5	16.7	1.5	-	-	-
	50-59	475	18.1	4	13.3	0.8	1	25.0	0.2
	60-69	547	20.9	6	20.0	1.1	3	50.0	0.5
	>70	416	15.9	8	26.7	1.9	3	37.5	0.7
Organ	Heart	2621	100.0	30	100.0	1.1	7	23.3	0.3
NHS Region	North East	428	16.3	6	20.0	1.4	-	-	-
	North West	261	10.0	5	16.7	1.9	2	40.0	0.8
	Midlands	424	16.2	6	20.0	1.4	2	33.3	0.5
	East of England	285	10.9	1	3.3	0.4	1	100.0	0.4
	London	287	11.0	5	16.7	1.7	1	20.0	0.3
	South East	316	12.1	4	13.3	1.3	-	-	-
	South West	219	8.4	2	6.7	0.9	1	50.0	0.5
	Northern Ireland	67	2.6	-	-	-	-	-	-
	Scotland	221	8.4	-	-	-	-	-	-
	Wales	113	4.3	1	3.3	0.9	-	-	-
Year of transplant	<=2015	1901	72.5	16	53.3	0.8	6	37.5	0.3
	2016	162	6.2	2	6.7	1.2	-	-	-
	2017	144	5.5	1	3.3	0.7	1	100.0	0.7
	2018	146	5.6	1	3.3	0.7	-	-	-
	2019	155	5.9	7	23.3	4.5	-	-	-
	2020	113	4.3	3	10.0	2.7	-	-	-

Table 14 Demographic characteristics of heart transplant patients testing positive for SARS-CoV-2, data up to 19 August 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	10.7	-	-	-	-
	6-12 month	-	-	4	14.3	-	-	-	-
	12+ months	-	-	21	75.0	-	7	33.3	-

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 19 August 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	852	54.4	15	57.7	1.8	8	53.3	0.9
	Female	712	45.5	11	42.3	1.5	1	9.1	0.1
	Unknown	1	0.1	-	-	-	-	-	-
Blood Group	O	670	42.8	6	23.1	0.9	3	50.0	0.4
	A	712	45.5	18	69.2	2.5	5	27.8	0.7
	B	121	7.7	1	3.8	0.8	-	-	-
	AB	62	4.0	1	3.8	1.6	1	100.0	1.6
Ethnicity	White	1473	94.1	24	92.3	1.6	7	29.2	0.5
	Asian	41	2.6	-	-	-	-	-	-
	Black	7	0.4	-	-	-	-	-	-
	Other	10	0.6	2	7.7	20.0	2	100.0	20.0
	Unknown	34	2.2	-	-	-	-	-	-
Age group	0-17	30	1.9	-	-	-	-	-	-
	18-29	126	8.1	4	15.4	3.2	-	-	-
	30-39	217	13.9	2	7.7	0.9	-	-	-
	40-49	241	15.4	2	7.7	0.8	-	-	-
	50-59	381	24.3	7	26.9	1.8	4	57.1	1.0
	60-69	463	29.6	11	42.3	2.4	5	45.5	1.1
	>70	107	6.8	-	-	-	-	-	-
Organ	Lung	1565	100.0	26	100.0	1.7	9	34.6	0.6
NHS Region	North East	230	14.7	1	3.8	0.4	1	100.0	0.4
	North West	155	9.9	10	38.5	6.5	4	40.0	2.6
	Midlands	247	15.8	4	15.4	1.6	2	50.0	0.8
	East of England	200	12.8	1	3.8	0.5	1	100.0	0.5
	London	143	9.1	3	11.5	2.1	1	33.3	0.7
	South East	230	14.7	3	11.5	1.3	-	-	-
	South West	126	8.1	-	-	-	-	-	-
	Northern Ireland	43	2.7	-	-	-	-	-	-
	Scotland	122	7.8	2	7.7	1.6	-	-	-
	Wales	69	4.4	2	7.7	2.9	-	-	-
Year of transplant	<=2015	973	62.2	11	42.3	1.1	5	45.5	0.5
	2016	101	6.5	5	19.2	5.0	2	40.0	2.0
	2017	137	8.8	2	7.7	1.5	-	-	-
	2018	147	9.4	3	11.5	2.0	1	33.3	0.7
	2019	140	8.9	2	7.7	1.4	1	50.0	0.7
	2020	67	4.3	3	11.5	4.5	-	-	-

Table 15 Demographic characteristics of lung transplant patients testing positive for SARS-CoV-2, data up to 19 August 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	11.5	-	-	-	-
	6-12 month	-	-	2	7.7	-	1	50.0	-
	12+ months	-	-	21	80.8	-	8	38.1	-

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