Lineages report for SANG

This report gives summaries of UK specific lineages sequenced by SANG for week 2020-07-03. There are time lags due to batching, curation and analysis, the most recently sampled sequence is 2020-06-09. The analysis (eg time since last sample) is therefore undertaken from this date. 7881 sequences in the UK from the sequencing centre SANG have been included in this analysis.

A few notes: the size of a lineage may be due to a low amount of transmission of this lineage, but it is likely also that it just hasn't been sampled as frequently, especially for newer lineages. It's also important to realise that these lineages are *estimates* of how we think the virus is spreading in the UK after being introduced from abroad, as the low evolutionary rate of the virus makes it difficult to separate lineages with certainty.

The minimum number of introductions is 439 and the maximum is 3652

Sequences which were replicates or too error-prone were removed from this analysis.

409 are lineages which only contained five sequences or fewer, and so have been left out of visualisation in the interests of clarity

Furthermore, those sequences which haven't been sampled in the last month are not shown.

Of the 21 that remain: 13 are pending extinction, ie last seen three weeks ago. 2 lineages have gone quiet, ie haven't been seen this week. 4 lineages have reactivated. 2 lineages have been continuously circulating.

The following table contains information about the ten largest lineages lineages and the number of sequences the dataset. Information about other lineages is found in the appendix, along with the raw data for all of the other figures.

Each entry is the count of sequences from each lineage in each country, with the percentage of the total sequences from that lineage that this count represents.

"Activity score" is calculated by taking the average gap between sampling for each lineage, and dividing it by the number of days since the lineage was last sampled. Therefore the higher the number, the more active the lineage is. If the score is above 1, then it has been sampled *more* recently than expected given its average gap size. We might interpret this as an increase in activity. If the score is below 1, it has been sampled *less* recently than expect given its average gap size, so we might interpret this as a decrease in activity.

The global lineages are correct as of the data release on 2020-05-19

It is written to "summary_files" as "lineage_summary.tsv" for further use, and the full list of lineages is available in the same directory as "all_lineages.csv"

Lineage name	England	Northern Ireland	Scotland	Date range	Total sequences	Global lineage	Time since last sample (days)	Activity score
UK5	2395 (86.15%)	312 (11.22%)	73 (2.63%)	Mar-03, Jun-07	2780	B.1.1.4, B.1.1.13, B.1.1.1, B.1.1.5, B.1.1.10, B.1.1, B.1.1.3, B.1.1.2	2	0.0173
UK107	412 (96.26%)	10 (2.34%)	6 (1.4%)	Mar-08, May-01	428	B.2.1, B	39	0.0032
UK42	343 (89.79%)	1 (0.26%)	38 (9.95%)	Mar-03, May-17	382	B.1.5, B.1.35, B.1.p73, B.1.p11, B.1, B.1.72	23	0.0086
UK5676	131 (76.16%)	0 (0%)	41 (23.84%)	Mar-09, Apr-20	172	B.2	50	0.0049
UK2464	108 (65.45%)	0 (0%)	57 (34.55%)	Mar-12, Apr-27	165	B.1.p11, B.1	43	0.0065

Lineage name	England	Northern Ireland	Scotland	Date range	Total sequences	Global lineage	Time since last sample (days)	Activity score
UK167	120 (76.43%)	23 (14.65%)	14 (8.92%)	Mar-11, Jun-04	157	B.1	5	0.109
UK2913	117 (80.69%)	17 (11.72%)	11 (7.59%)	Mar-11, Jun-01	145	B.1.p11, B.1	8	0.0712
UK199	80 (71.43%)	2 (1.79%)	30 (26.79%)	Mar-14, May-13	112	B.1.5.5, B.1, B.1.5	27	0.02
UK9	111 (100.0%)	0 (0%)	0 (0%)	Mar-19, May-04	111	B.1.13	36	0.0116
UK72	106 (95.5%)	2 (1.8%)	3 (2.7%)	Mar-10, Apr-26	111	B	44	0.0097

These data is represented in the figure one. Note that the number of sequences is likely to be due more to differing sampling efforts in different regions, rather than genuine differences in numbers of cases.

The raw data for this bar chart are in the table above.

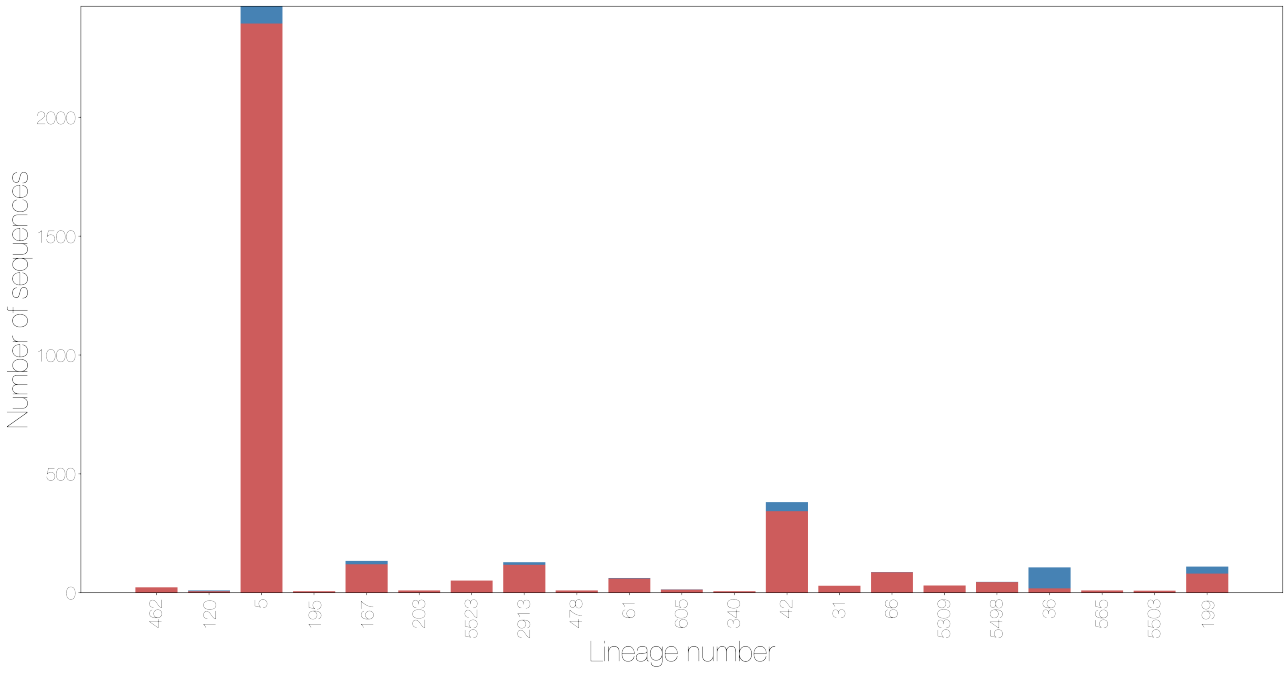

Figure 1: Number of sequences sampled in a lineage by country

Different sequencing centres have different delays in turn around from receipt of samples to submission of sequence data. This will affect all of the figures shown after this if lineages have geographical variation, as some regions have less up to date data.

`The lag for this sequencing centre is 24 days`

The relative growth and decline of the ten most sampled lineages in terms of number of counties they are present in is shown in figure three.

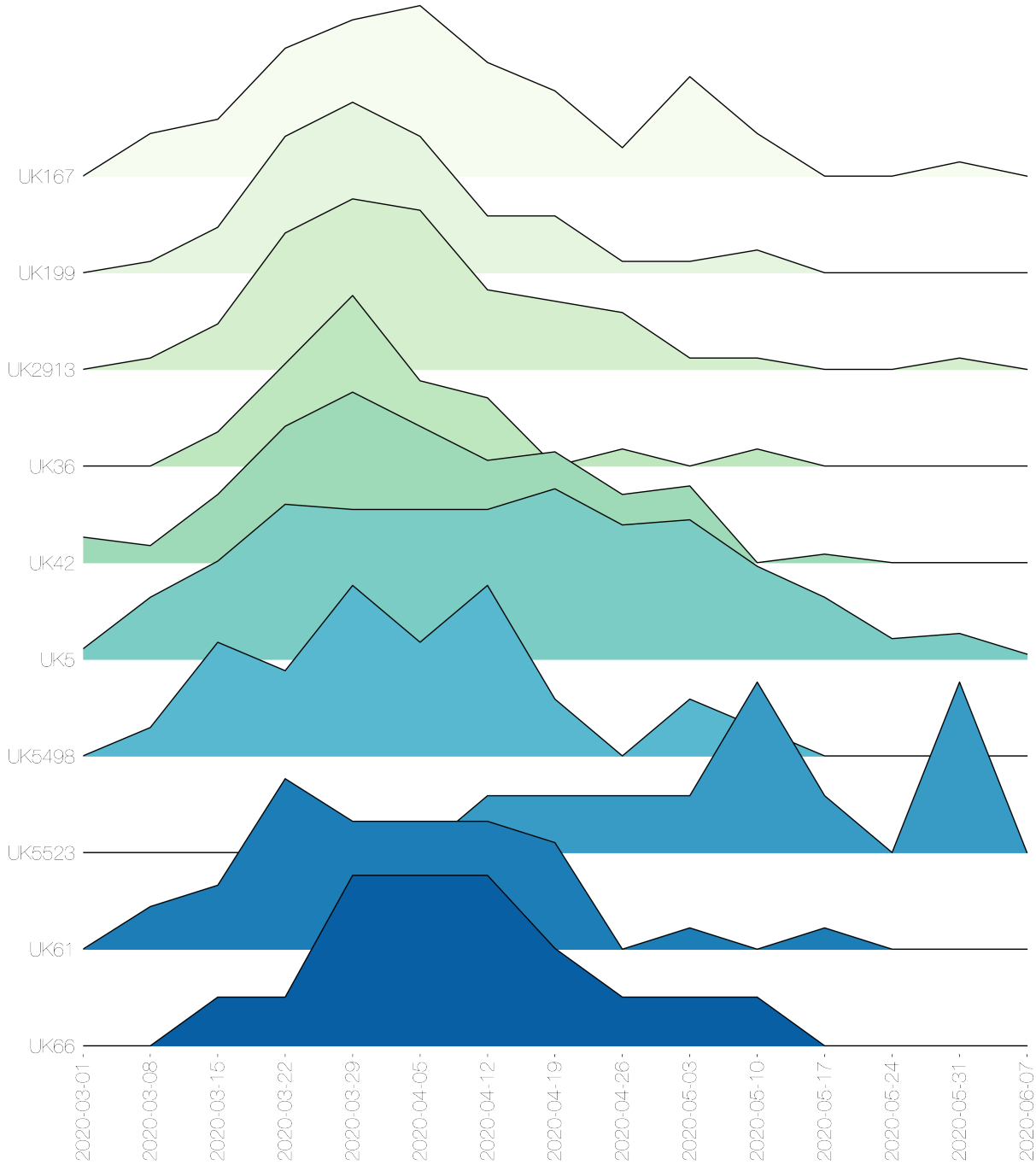

Figure 2: Lineages by number of adm2 regions present by epiweek

These lineages are shown on the timeline. Each line represents the length of the cluster, from oldest to most recent sampling date. The dots are sized by the number of sequences taken on that date, and again are colour coded by country. The raw data has been written to a summary file.

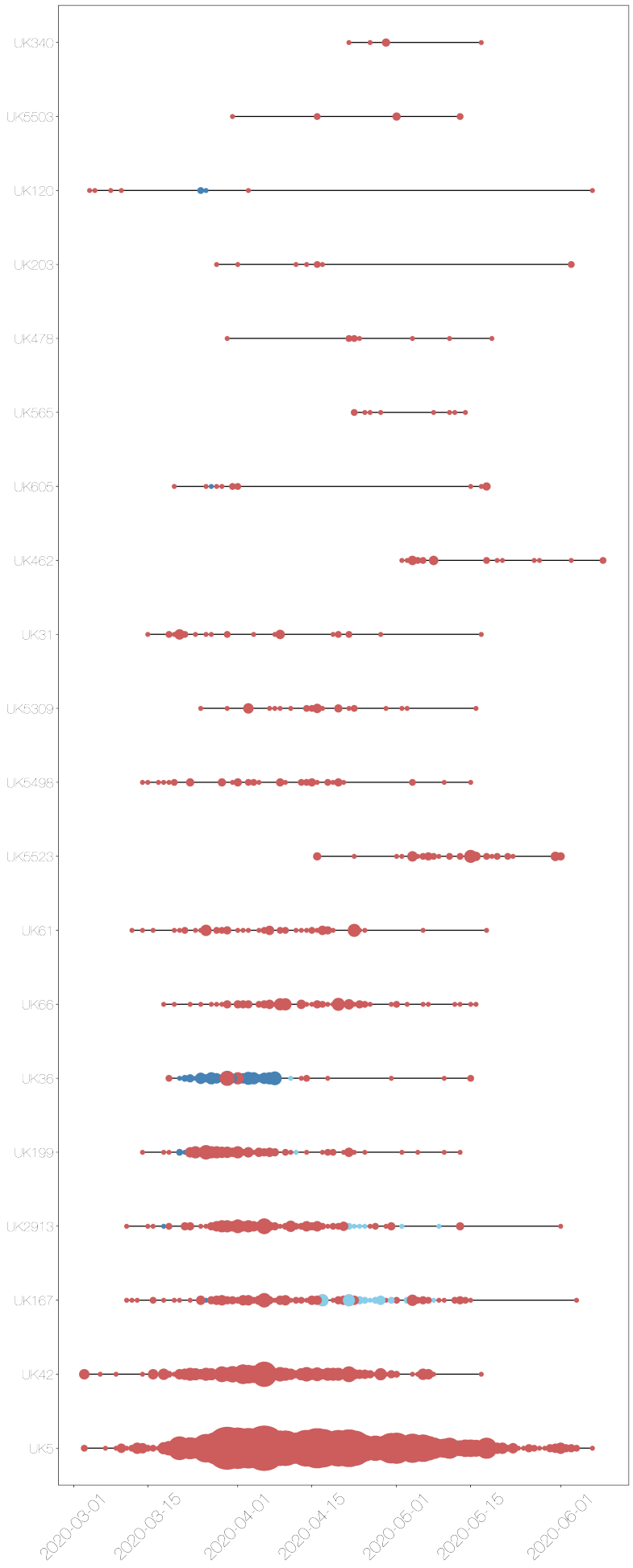

Figure 3: Timeline of lineages, sized by number of sequences from each country.

The date of first sequence in the cluster is shown in figure five for every cluster with date information.

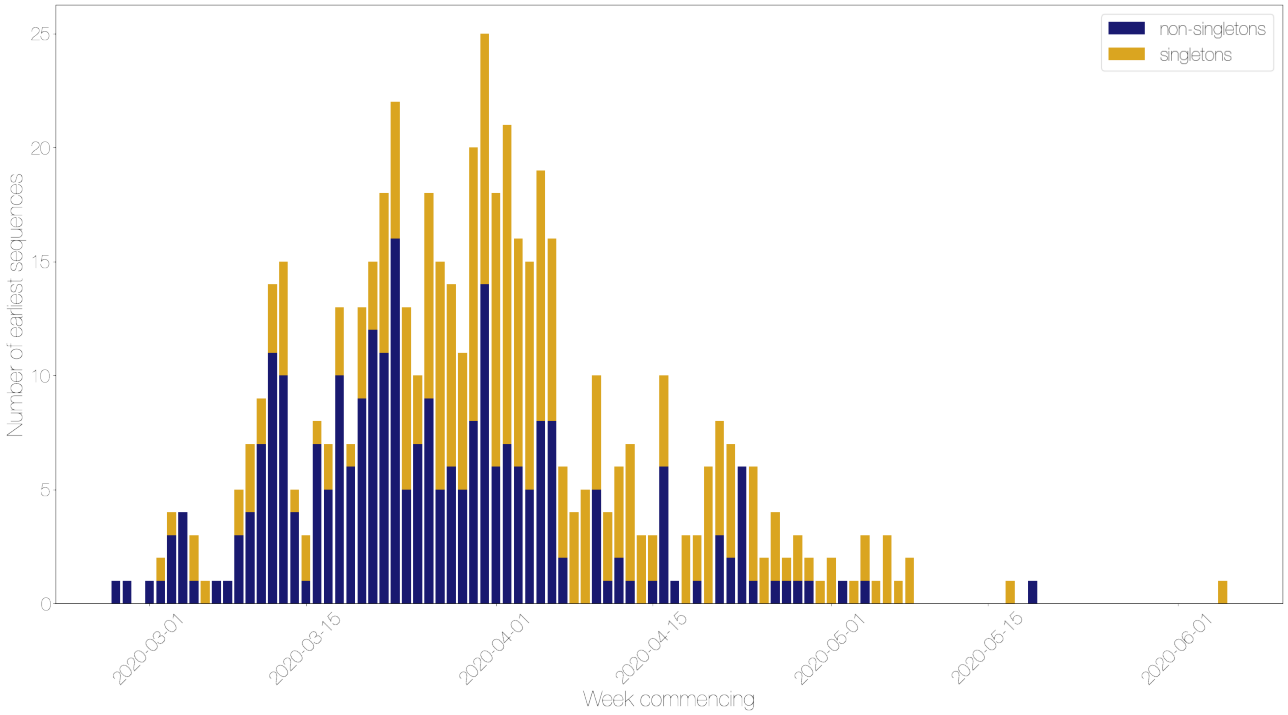

Figure 4: Lineage starts per week, split by singletons and non-singletons

For comparison, here is a plot of the day that every sequence was taken, coloured by country. Note that sequences without dates were not included.

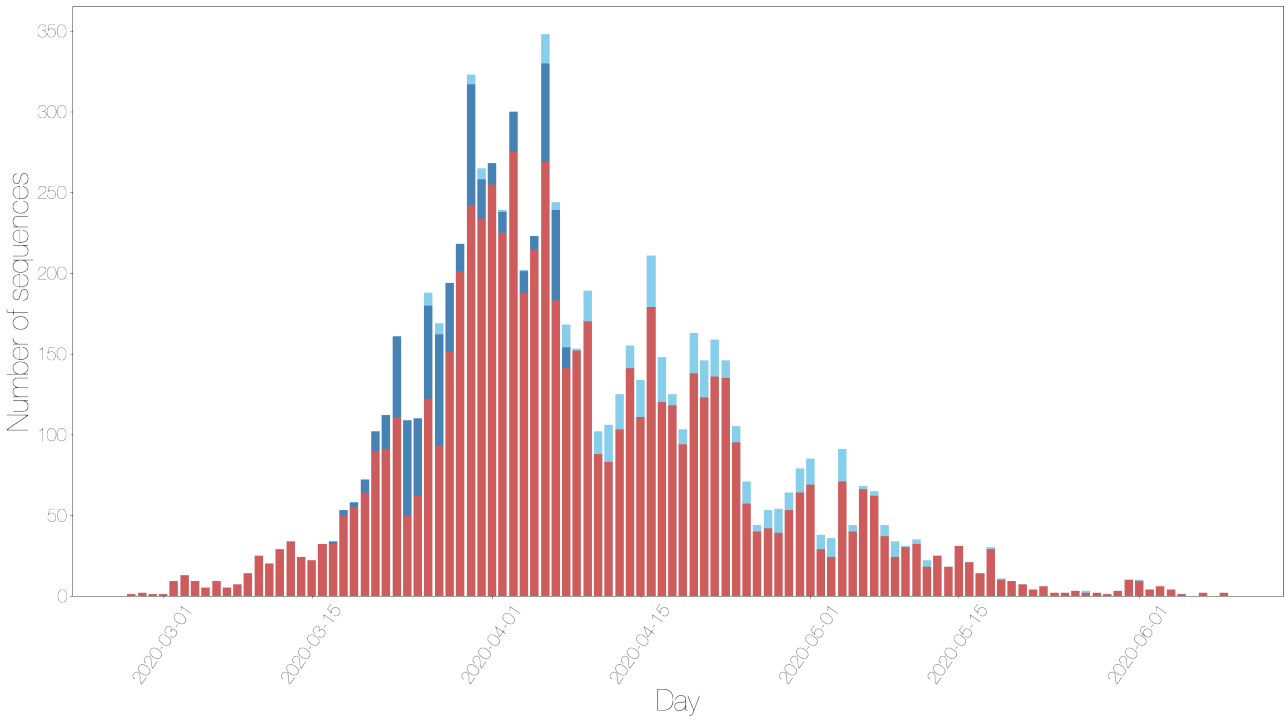

Figure 5: Sequences taken on each day by country

The map shows the number of sequences sampled in each admin2 region in the UK. The colour scale is the same for all four countries, but with different underlying base colours.

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There are 587 sequences without enough geographical information to map
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from this centre.

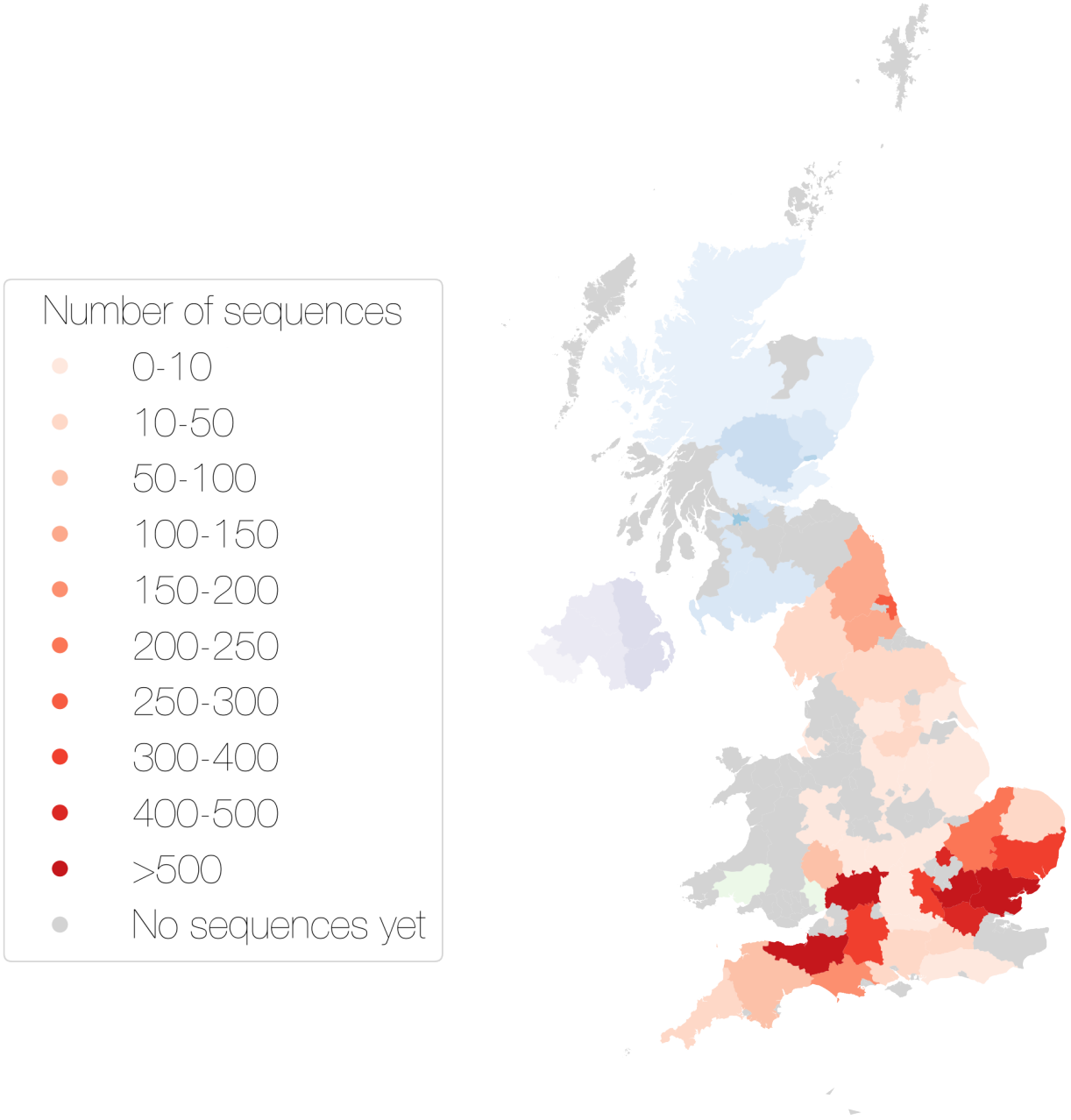

Figure 6: Map showing the number of sequences sampled by adm2 region

There are some sequences with locations that are not matched to real Admin2 regions, some manual curation required.

Other results modules for UK lineage analysis can be added in here if required.

Appendix

Below are the raw data tables for each of the figures in the report.

Table S1 Description of all lineages that have been circulating in the last month, and have more than 5 sequences.

Lineage name	England	Northern Ireland	Scotland	Date range	Total sequences	Global lineage	Time since last sample (days)	Activity score
UK5	2395 (86.15%)	312 (11.22%)	73 (2.63%)	Mar-03, Jun-07	2780	B.1.1.4, B.1.1.13, B.1.1.1, B.1.1.5, B.1.1.10, B.1.1, B.1.1.3, B.1.1.2	2	0.0173
UK107	412 (96.26%)	10 (2.34%)	6 (1.4%)	Mar-08, May-01	428	B.2.1, B	39	0.0032
UK42	343 (89.79%)	1 (0.26%)	38 (9.95%)	Mar-03, May-17	382	B.1.5, B.1.35, B.1.p73, B.1.p11, B.1, B.1.72	23	0.0086
UK5676	131 (76.16%)	0 (0%)	41 (23.84%)	Mar-09, Apr-20	172	B.2	50	0.0049
UK2464	108 (65.45%)	0 (0%)	57 (34.55%)	Mar-12, Apr-27	165	B.1.p11, B.1	43	0.0065
UK167	120 (76.43%)	23 (14.65%)	14 (8.92%)	Mar-11, Jun-04	157	B.1	5	0.109
UK2913	117 (80.69%)	17 (11.72%)	11 (7.59%)	Mar-11, Jun-01	145	B.1.p11, B.1	8	0.0712
UK199	80 (71.43%)	2 (1.79%)	30 (26.79%)	Mar-14, May-13	112	B.1.5.5, B.1, B.1.5	27	0.02
UK9	111 (100.0%)	0 (0%)	0 (0%)	Mar-19, May-04	111	B.1.13	36	0.0116
UK72	106 (95.5%)	2 (1.8%)	3 (2.7%)	Mar-10, Apr-26	111	B	44	0.0097
UK36	18 (16.82%)	1 (0.93%)	88 (82.24%)	Mar-19, May-15	107	B.1	25	0.0215
UK66	86 (98.85%)	0 (0%)	1 (1.15%)	Mar-18, May-16	87	B.1.1.8	24	0.0286

Lineage name	England	Northern Ireland	Scotland	Date range	Total sequences	Global lineage	Time since last sample (days)	Activity score
UK5741	82 (98.8%)	0 (0%)	1 (1.2%)	Mar-11, May-10	83	B.1	30	0.0244
UK494	83 (100.0%)	0 (0%)	0 (0%)	Mar-21, May-01	83	B.1.p11, B.1	39	0.0128
UK240	70 (88.61%)	0 (0%)	9 (11.39%)	Mar-12, May-01	79	B.2.5, B.2	39	0.0164
UK28	79 (100.0%)	0 (0%)	0 (0%)	Mar-22, May-08	79	B.1.1.10	32	0.0188
UK2735	56 (73.68%)	13 (17.11%)	7 (9.21%)	Mar-24, May-07	76	B.1.1	33	0.0178
UK2916	71 (95.95%)	1 (1.35%)	2 (2.7%)	Feb-27, May-11	74	B.1	29	0.035
UK5561	63 (94.03%)	0 (0%)	4 (5.97%)	Mar-05, May-07	67	B.2.2, B.2	33	0.0289
UK61	60 (96.77%)	0 (0%)	2 (3.23%)	Mar-12, May-18	62	B.3	22	0.0499
UK109	53 (86.89%)	8 (13.11%)	0 (0%)	Mar-14, May-11	61	B.1.5	29	0.0333
UK40	0 (0%)	0 (0%)	61 (100.0%)	Mar-19, Apr-07	61	B.16	63	0.005
UK5523	51 (100.0%)	0 (0%)	0 (0%)	Apr-16, Jun-01	51	B.1	8	0.115
UK13	46 (100.0%)	0 (0%)	0 (0%)	Mar-13, May-12	46	B.1.1	28	0.0476
UK5498	44 (97.78%)	0 (0%)	1 (2.22%)	Mar-14, May-15	45	B.2	25	0.0564
UK370	33 (75.0%)	6 (13.64%)	5 (11.36%)	Mar-12, May-12	44	B.1.1.10	28	0.0507

Lineage name	England	Northern Ireland	Scotland	Date range	Total sequences	Global lineage	Time since last sample (days)	Activity score
UK63	42 (100.0%)	0 (0%)	0 (0%)	Mar-26, Apr-30	42	B.1.1	40	0.0213
UK5180	38 (92.68%)	3 (7.32%)	0 (0%)	Mar-13, Apr-25	41	B.1.1.7	45	0.0239
UK668	21 (52.5%)	0 (0%)	19 (47.5%)	Mar-21, May-07	40	B.1	33	0.0365
UK4	37 (94.87%)	1 (2.56%)	1 (2.56%)	Mar-11, Apr-25	39	B	45	0.0263
UK5098	1 (2.56%)	0 (0%)	38 (97.44%)	Mar-19, Apr-16	39	B.1.p73, B.1	54	0.0136
UK15	34 (87.18%)	1 (2.56%)	4 (10.26%)	Mar-01, Apr-21	39	B.1.1	49	0.0274
UK39	0 (0%)	0 (0%)	36 (100.0%)	Mar-20, Apr-07	36	A.2	63	0.0082
UK335	33 (100.0%)	0 (0%)	0 (0%)	Mar-17, May-12	33	B.1.1	28	0.0625
UK37	33 (100.0%)	0 (0%)	0 (0%)	Mar-17, May-04	33	B.1.30	36	0.0417
UK51	31 (96.88%)	0 (0%)	1 (3.12%)	Mar-26, May-08	32	B.1.36	32	0.0433
UK5309	30 (100.0%)	0 (0%)	0 (0%)	Mar-25, May-16	30	B.1.1, B.1.1.10	24	0.0747
UK79	30 (100.0%)	0 (0%)	0 (0%)	Mar-24, May-04	30	B.1	36	0.0393
UK636	29 (100.0%)	0 (0%)	0 (0%)	Mar-16, Apr-13	29	B.1.1	57	0.0175
UK31	29 (100.0%)	0 (0%)	0 (0%)	Mar-15, May-17	29	B.3	23	0.0978

Lineage name	England	Northern Ireland	Scotland	Date range	Total sequences	Global lineage	Time since last sample (days)	Activity score
UK482	1 (3.57%)	27 (96.43%)	0 (0%)	Apr-04, May-05	28	B.1.1	35	0.0328
UK601	5 (18.52%)	21 (77.78%)	1 (3.7%)	Mar-13, May-11	27	B.10	29	0.0782
UK158	26 (100.0%)	0 (0%)	0 (0%)	Mar-23, Apr-24	26	B.1.1	46	0.0278
UK462	23 (100.0%)	0 (0%)	0 (0%)	May-02, Jun-09	23	B.1	0	active today
UK501	20 (95.24%)	0 (0%)	1 (4.76%)	Mar-25, Apr-19	21	B.1	51	0.0245
UK829	21 (100.0%)	0 (0%)	0 (0%)	Mar-13, Apr-23	21	B.2.5	47	0.0436
UK497	20 (100.0%)	0 (0%)	0 (0%)	Mar-13, Apr-27	20	A.2	43	0.0551
UK1207	19 (100.0%)	0 (0%)	0 (0%)	Mar-24, May-12	19	B.1.1	28	0.0972
UK101	19 (100.0%)	0 (0%)	0 (0%)	Mar-21, Apr-21	19	B.1.5	49	0.0351
UK371	19 (100.0%)	0 (0%)	0 (0%)	Mar-21, May-06	19	B.1.1	34	0.0752
UK517	19 (100.0%)	0 (0%)	0 (0%)	Mar-02, Apr-23	19	B.1.1	47	0.0615
UK77	19 (100.0%)	0 (0%)	0 (0%)	Mar-23, Apr-26	19	B.2	44	0.0429
UK27	19 (100.0%)	0 (0%)	0 (0%)	Mar-12, May-11	19	B.1.1	29	0.1149
UK1721	18 (100.0%)	0 (0%)	0 (0%)	Mar-23, May-08	18	B.1	32	0.0846

Lineage name	England	Northern Ireland	Scotland	Date range	Total sequences	Global lineage	Time since last sample (days)	Activity score
UK3126	17 (100.0%)	0 (0%)	0 (0%)	May-04, May-09	17	B.1.1	31	0.0101
UK617	17 (100.0%)	0 (0%)	0 (0%)	Mar-29, Apr-20	17	B.1.1	50	0.0275
UK339	17 (100.0%)	0 (0%)	0 (0%)	Mar-16, Apr-11	17	B.3	59	0.0275
UK276	16 (94.12%)	0 (0%)	1 (5.88%)	Mar-18, Apr-13	17	B.1.1	57	0.0285
UK274	16 (100.0%)	0 (0%)	0 (0%)	Mar-21, Apr-22	16	B.3	48	0.0444
UK6	16 (100.0%)	0 (0%)	0 (0%)	Mar-12, Apr-14	16	B.1	56	0.0393
UK275	16 (100.0%)	0 (0%)	0 (0%)	Mar-13, Apr-24	16	B.1.13	46	0.0609
UK2200	8 (50.0%)	3 (18.75%)	5 (31.25%)	Mar-17, Apr-29	16	B.1.5.6, B.1.5	41	0.0699
UK179	16 (100.0%)	0 (0%)	0 (0%)	Mar-26, Apr-23	16	B.1.1.p11	47	0.0397
UK5649	15 (100.0%)	0 (0%)	0 (0%)	Apr-04, May-04	15	B.2.6	36	0.0595
UK706	1 (7.14%)	13 (92.86%)	0 (0%)	Apr-01, Apr-29	14	B.1.1	41	0.0525
UK5549	12 (85.71%)	0 (0%)	2 (14.29%)	Mar-12, Apr-06	14	B.2.2	64	0.03
UK605	13 (92.86%)	0 (0%)	1 (7.14%)	Mar-20, May-18	14	B.1.1	22	0.2063
UK1703	13 (100.0%)	0 (0%)	0 (0%)	Mar-16, May-01	13	B.1	39	0.0983

Lineage name	England	Northern Ireland	Scotland	Date range	Total sequences	Global lineage	Time since last sample (days)	Activity score
UK146	13 (100.0%)	0 (0%)	0 (0%)	Apr-01, May-07	13	B.1.1	33	0.0909
UK173	13 (100.0%)	0 (0%)	0 (0%)	Mar-16, Apr-13	13	B	57	0.0409
UK569	13 (100.0%)	0 (0%)	0 (0%)	Mar-23, Apr-18	13	B.1.1	52	0.0417
UK44	3 (25.0%)	1 (8.33%)	8 (66.67%)	Mar-23, Apr-16	12	B	54	0.0404
UK3021	12 (100.0%)	0 (0%)	0 (0%)	Mar-16, Apr-16	12	B.1	54	0.0522
UK241	12 (100.0%)	0 (0%)	0 (0%)	Mar-22, Apr-16	12	B.1.5.3	54	0.0421
UK448	12 (100.0%)	0 (0%)	0 (0%)	Apr-04, May-02	12	B.1.1	38	0.067
UK70	10 (90.91%)	1 (9.09%)	0 (0%)	Mar-12, Apr-22	11	B.2	48	0.0854
UK134	11 (100.0%)	0 (0%)	0 (0%)	Mar-09, Apr-07	11	B.1	63	0.046
UK23	11 (100.0%)	0 (0%)	0 (0%)	Mar-18, May-09	11	B.9	31	0.1677
UK132	10 (90.91%)	0 (0%)	1 (9.09%)	Mar-27, Apr-28	11	B.1	42	0.0762
UK566	11 (100.0%)	0 (0%)	0 (0%)	Apr-02, Apr-21	11	B.1.1, B.1.1.10	49	0.0388
UK174	11 (100.0%)	0 (0%)	0 (0%)	Mar-19, May-02	11	B.1.5	38	0.1158
UK32	10 (100.0%)	0 (0%)	0 (0%)	Mar-29, Apr-14	10	B.1.1	56	0.0317

Lineage name	England	Northern Ireland	Scotland	Date range	Total sequences	Global lineage	Time since last sample (days)	Activity score
UK384	9 (90.0%)	0 (0%)	1 (10.0%)	Feb-28, Apr-03	10	B.2.1	67	0.058
UK18	10 (100.0%)	0 (0%)	0 (0%)	Mar-12, Apr-14	10	B.1.1.7	56	0.0655
UK12	9 (90.0%)	1 (10.0%)	0 (0%)	Mar-22, Apr-23	10	B.1.p11	47	0.0757
UK615	10 (100.0%)	0 (0%)	0 (0%)	Mar-28, Apr-18	10	B.1.1	52	0.0449
UK47	10 (100.0%)	0 (0%)	0 (0%)	Mar-21, Apr-20	10	B.1.1	50	0.0667
UK2045	10 (100.0%)	0 (0%)	0 (0%)	Mar-17, Apr-29	10	B.1	41	0.1165
UK58	6 (60.0%)	0 (0%)	4 (40.0%)	Mar-13, Apr-09	10	B.1	61	0.0492
UK119	10 (100.0%)	0 (0%)	0 (0%)	Mar-23, Apr-24	10	B.2.5	46	0.0773
UK565	9 (100.0%)	0 (0%)	0 (0%)	Apr-23, May-14	9	B.1.1	26	0.101
UK3692	9 (100.0%)	0 (0%)	0 (0%)	Apr-02, Apr-29	9	B.1.1	41	0.0823
UK581	0 (0%)	9 (100.0%)	0 (0%)	Apr-06, May-01	9	B.1.1	39	0.0801
UK203	9 (100.0%)	0 (0%)	0 (0%)	Mar-28, Jun-03	9	B.1.1	6	1.3958
UK71	9 (100.0%)	0 (0%)	0 (0%)	Mar-26, May-06	9	B	34	0.1507
UK120	6 (66.67%)	0 (0%)	3 (33.33%)	Mar-04, Jun-07	9	B	2	5.9375

Lineage name	England	Northern Ireland	Scotland	Date range	Total sequences	Global lineage	Time since last sample (days)	Activity score
UK478	9 (100.0%)	0 (0%)	0 (0%)	Mar-30, May-19	9	B.1.1	21	0.2976
UK287	8 (100.0%)	0 (0%)	0 (0%)	Mar-31, Apr-18	8	B.1	52	0.0495
UK46	7 (87.5%)	0 (0%)	1 (12.5%)	Mar-14, Apr-15	8	B.2.1	55	0.0831
UK698	8 (100.0%)	0 (0%)	0 (0%)	Mar-23, Mar-30	8	B.1	71	0.0141
UK5503	8 (100.0%)	0 (0%)	0 (0%)	Mar-31, May-13	8	B.1	27	0.2275
UK632	8 (100.0%)	0 (0%)	0 (0%)	Mar-25, Apr-08	8	B.1.1	62	0.0323
UK759	8 (100.0%)	0 (0%)	0 (0%)	Mar-28, Apr-04	8	B.1.1	66	0.0152
UK14	2 (25.0%)	0 (0%)	6 (75.0%)	Mar-12, Mar-30	8	B	71	0.0362
UK64	8 (100.0%)	0 (0%)	0 (0%)	Apr-01, Apr-15	8	B.1	55	0.0364
UK187	0 (0%)	6 (75.0%)	2 (25.0%)	Mar-21, Apr-24	8	B.1	46	0.1056
UK598	7 (100.0%)	0 (0%)	0 (0%)	Mar-22, Apr-09	7	B.1.1	61	0.0492
UK5322	1 (14.29%)	0 (0%)	6 (85.71%)	Mar-22, Mar-29	7	B.1.1	72	0.0162
UK3509	7 (100.0%)	0 (0%)	0 (0%)	Mar-30, Apr-11	7	B.1.1.10	59	0.0339
UK284	7 (100.0%)	0 (0%)	0 (0%)	Apr-02, Apr-22	7	B.1.1	48	0.0694

Lineage name	England	Northern Ireland	Scotland	Date range	Total sequences	Global lineage	Time since last sample (days)	Activity score
UK563	7 (100.0%)	0 (0%)	0 (0%)	Apr-10, May-01	7	B.1.1	39	0.0897
UK291	7 (100.0%)	0 (0%)	0 (0%)	Mar-29, May-02	7	B.1.5	38	0.1491
UK404	7 (100.0%)	0 (0%)	0 (0%)	Mar-18, Apr-06	7	B.1	64	0.0495
UK433	4 (57.14%)	0 (0%)	3 (42.86%)	Mar-22, Apr-07	7	B	63	0.0423
UK100	0 (0%)	0 (0%)	6 (100.0%)	Mar-22, Apr-07	6	B.1, B.1.5	63	0.0508
UK38	6 (100.0%)	0 (0%)	0 (0%)	Mar-04, Apr-08	6	B.2.1	62	0.1129
UK2906	6 (100.0%)	0 (0%)	0 (0%)	Mar-28, Apr-20	6	B.1	50	0.092
UK4658	6 (100.0%)	0 (0%)	0 (0%)	Mar-13, Apr-10	6	B.2.1	60	0.0933
UK153	6 (100.0%)	0 (0%)	0 (0%)	Mar-20, Apr-03	6	B.2, B.3	67	0.0418
UK60	6 (100.0%)	0 (0%)	0 (0%)	Mar-21, Mar-30	6	B	71	0.0254
UK195	6 (100.0%)	0 (0%)	0 (0%)	May-19, Jun-04	6	B.1	5	0.64
UK340	6 (100.0%)	0 (0%)	0 (0%)	Apr-22, May-17	6	B.1.1	23	0.2174
UK456	6 (100.0%)	0 (0%)	0 (0%)	Apr-03, Apr-23	6	B.1.1	47	0.0851
UK767	6 (100.0%)	0 (0%)	0 (0%)	Apr-05, Apr-19	6	B.1	51	0.0549

Lineage name	England	Northern Ireland	Scotland	Date range	Total sequences	Global lineage	Time since last sample (days)	Activity score
UK4237	6 (100.0%)	0 (0%)	0 (0%)	Apr-02, Apr-16	6	B.1.1	54	0.0519
UK317	4 (66.67%)	0 (0%)	2 (33.33%)	Mar-21, Apr-02	6	B.3	68	0.0353
UK1810	6 (100.0%)	0 (0%)	0 (0%)	Mar-27, Apr-02	6	B.1, B.1.5	68	0.0176
UK121	6 (100.0%)	0 (0%)	0 (0%)	Apr-23, May-03	6	B.1.1.7	37	0.0541
UK521	6 (100.0%)	0 (0%)	0 (0%)	Mar-31, May-01	6	B.1.1	39	0.159
UK49	4 (66.67%)	1 (16.67%)	1 (16.67%)	Mar-18, Apr-12	6	B.9	58	0.0862
UK43	0 (0%)	0 (0%)	6 (100.0%)	Mar-18, Mar-31	6	A.5	70	0.0371

Table S2 Raw data for figure two showing lags between the most recent sequence and current date for each sequencing centre

	Centre	Lag in days
0	SANG	24

Table S3 Raw data for figure three showing the number of admin2 regions a lineage is present in over time

Week commencing	UK5	UK42	UK167	UK2913	UK199	UK36	UK66	UK61	UK5523	UK5498
2020-03-01	2	3	0	0	0	0	0	0	0	0
2020-03-08	12	2	3	1	1	0	0	2	0	1
2020-03-15	19	8	4	4	4	2	2	3	0	4
2020-03-22	30	16	9	12	12	6	2	8	0	3
2020-03-29	29	20	11	15	15	10	7	6	0	6
2020-04-05	29	16	12	14	12	5	7	6	0	4
2020-04-12	29	12	8	7	5	4	7	6	1	6
2020-04-19	33	13	6	6	5	0	4	5	1	2
2020-04-26	26	8	2	5	1	1	2	0	1	0
2020-05-03	27	9	7	1	1	0	2	1	1	2
2020-05-10	18	0	3	1	2	1	2	0	3	1
2020-05-17	12	1	0	0	0	0	0	1	1	0
2020-05-24	4	0	0	0	0	0	0	0	0	0
2020-05-31	5	0	1	1	0	0	0	0	3	0
2020-06-07	1	0	0	0	0	0	0	0	0	0

Table S4 is not appropriate for this report and so has been omitted.

Table S5 Raw data for figure five showing when lineages started per day, divided by singletons and non-singletons

Day	Number of singleton starts	Number of non-singleton starts	Total
2020-02-27	0	1	1
2020-02-28	0	1	1
2020-03-01	0	1	1
2020-03-02	1	1	2
2020-03-03	1	3	4
2020-03-04	0	4	4
2020-03-05	2	1	3
2020-03-06	1	0	1
2020-03-07	0	1	1
2020-03-08	0	1	1
2020-03-09	2	3	5
2020-03-10	3	4	7
2020-03-11	2	7	9
2020-03-12	3	11	14
2020-03-13	5	10	15
2020-03-14	1	4	5
2020-03-15	2	1	3
2020-03-16	1	7	8
2020-03-17	2	5	7
2020-03-18	3	10	13
2020-03-19	1	6	7
2020-03-20	4	9	13
2020-03-21	3	12	15
2020-03-22	7	11	18
2020-03-23	6	16	22
2020-03-24	8	5	13
2020-03-25	3	7	10
2020-03-26	9	9	18
2020-03-27	10	5	15
2020-03-28	8	6	14
2020-03-29	6	5	11
2020-03-30	12	8	20
2020-03-31	11	14	25
2020-04-01	12	6	18
2020-04-02	14	7	21
2020-04-03	10	6	16
2020-04-04	10	5	15
2020-04-05	11	8	19
2020-04-06	8	8	16
2020-04-07	4	2	6
2020-04-08	4	0	4
2020-04-09	5	0	5
2020-04-10	5	5	10
2020-04-11	3	1	4
2020-04-12	4	2	6
2020-04-13	6	1	7
2020-04-14	3	0	3
2020-04-15	2	1	3
2020-04-16	4	6	10
2020-04-17	0	1	1
2020-04-18	3	0	3
2020-04-19	2	1	3
2020-04-20	6	0	6
2020-04-21	5	3	8
2020-04-22	5	2	7
2020-04-23	0	6	6
2020-04-24	5	1	6

Day	Number of singleton starts	Number of non-singleton starts	Total
2020-04-25	2	0	2
2020-04-26	3	1	4
2020-04-27	1	1	2
2020-04-28	2	1	3
2020-04-29	1	1	2
2020-04-30	1	0	1
2020-05-01	2	0	2
2020-05-02	0	1	1
2020-05-03	1	0	1
2020-05-04	2	1	3
2020-05-05	1	0	1
2020-05-06	3	0	3
2020-05-07	1	0	1
2020-05-08	2	0	2
2020-05-17	1	0	1
2020-05-19	0	1	1
2020-06-05	1	0	1

Table S6 Raw data for figure six showing the number of sequences taken over time.

Day	England	Scotland	Northern Ireland
2020-02-27	1	0	0
2020-02-28	2	0	0
2020-02-29	1	0	0
2020-03-01	1	0	0
2020-03-02	9	0	0
2020-03-03	13	0	0
2020-03-04	9	0	0
2020-03-05	5	0	0
2020-03-06	9	0	0
2020-03-07	5	0	0
2020-03-08	7	0	0
2020-03-09	14	0	0
2020-03-10	25	0	0
2020-03-11	20	0	0
2020-03-12	29	0	0
2020-03-13	34	0	0
2020-03-14	24	0	0
2020-03-15	22	0	0
2020-03-16	32	0	0
2020-03-17	32	2	0
2020-03-18	50	3	0
2020-03-19	55	3	0
2020-03-20	64	8	0
2020-03-21	90	12	0
2020-03-22	91	21	0
2020-03-23	111	50	0
2020-03-24	50	59	0
2020-03-25	62	48	0
2020-03-26	122	58	8
2020-03-27	93	69	7
2020-03-28	151	43	0
2020-03-29	201	17	0
2020-03-30	242	75	6
2020-03-31	234	24	7
2020-04-01	255	13	0
2020-04-02	225	13	1
2020-04-03	275	25	0
2020-04-04	188	13	1
2020-04-05	215	8	0
2020-04-06	269	61	18
2020-04-07	183	56	5
2020-04-08	141	13	14
2020-04-09	152	0	1
2020-04-10	170	0	19
2020-04-11	88	0	14
2020-04-12	83	0	23
2020-04-13	103	0	22
2020-04-14	141	0	14
2020-04-15	111	0	23
2020-04-16	179	0	32
2020-04-17	120	0	28
2020-04-18	118	0	7
2020-04-19	94	0	9
2020-04-20	138	0	25
2020-04-21	123	0	23
2020-04-22	136	0	23
2020-04-23	135	0	11

Day	England	Scotland	Northern Ireland
2020-04-24	95	0	10
2020-04-25	57	0	14
2020-04-26	40	0	4
2020-04-27	42	0	11
2020-04-28	39	0	15
2020-04-29	53	0	11
2020-04-30	64	0	15
2020-05-01	69	0	16
2020-05-02	29	0	9
2020-05-03	24	0	12
2020-05-04	71	0	20
2020-05-05	40	0	4
2020-05-06	66	0	2
2020-05-07	62	0	3
2020-05-08	37	0	7
2020-05-09	24	0	10
2020-05-10	30	0	1
2020-05-11	32	0	3
2020-05-12	18	0	4
2020-05-13	25	0	0
2020-05-14	18	0	0
2020-05-15	31	0	0
2020-05-16	21	0	0
2020-05-17	14	0	0
2020-05-18	29	0	1
2020-05-19	10	0	1
2020-05-20	9	0	0
2020-05-21	7	0	0
2020-05-22	4	0	0
2020-05-23	6	0	0
2020-05-24	2	0	0
2020-05-25	2	0	0
2020-05-26	3	0	0
2020-05-27	2	0	1
2020-05-28	2	0	0
2020-05-29	1	0	0
2020-05-30	3	0	0
2020-05-31	10	0	0
2020-06-01	9	0	1
2020-06-02	4	0	0
2020-06-03	6	0	0
2020-06-04	4	0	0
2020-06-05	1	0	0
2020-06-07	2	0	0
2020-06-09	2	0	0

Table S7 Raw data for the figure seven with the number of sequences assigned to each admin2 region.

Admin2	Country	Number of sequences	Sequence group
ABERDEEN	Scotland	2	1-10
ABERDEENSHIRE	Scotland	6	1-10
ANGUS	Scotland	23	10-50
ANTRIM	Northern Ireland	237	200-250
ARMAGH	Northern Ireland	17	10-50
BEDFORDSHIRE	England	405	400-500
BERKSHIRE	England	4	1-10
BRISTOL	England	2	1-10
BUCKINGHAMSHIRE	England	324	300-400
CAMBRIDGESHIRE	England	207	200-250
CARMARTHENSHIRE	Wales	1	1-10
CLACKMANNANSHIRE	Scotland	1	1-10
CORNWALL	England	23	10-50
CUMBRIA	England	15	10-50
DERBYSHIRE	England	1	1-10
DEVON	England	93	50-100
DORSET	England	175	150-200
DOWN	Northern Ireland	222	200-250
DUMFRIES AND GALLOWAY	Scotland	44	10-50
DUNDEE	Scotland	113	100-150
DURHAM	England	122	100-150
EAST AYRSHIRE	Scotland	34	10-50
EAST RIDING OF YORKSHIRE	England	2	1-10
EDINBURGH	Scotland	2	1-10
ESSEX	England	1075	>500
FALKIRK	Scotland	28	10-50
FERMANAGH	Northern Ireland	2	1-10
FIFE	Scotland	3	1-10
GLASGOW	Scotland	239	200-250
GLOUCESTERSHIRE	England	699	>500
GREATER LONDON	England	450	400-500
HAMPSHIRE	England	36	10-50
HEREFORDSHIRE	England	53	50-100
HERTFORDSHIRE	England	573	>500
HIGHLAND	Scotland	1	1-10
LINCOLNSHIRE	England	1	1-10
LONDONDERRY	Northern Ireland	23	10-50
MERSEYSIDE	England	1	1-10
MONMOUTHSHIRE	Wales	3	1-10
NORFOLK	England	16	10-50
NORTH LANARKSHIRE	Scotland	76	50-100
NORTH YORKSHIRE	England	49	10-50
NORTHAMPTONSHIRE	England	8	1-10
NORTHUMBERLAND	England	127	100-150
NOTTINGHAMSHIRE	England	3	1-10
OXFORDSHIRE	England	6	1-10
PERTHSHIRE AND KINROSS	Scotland	87	50-100
RENFREWSHIRE	Scotland	31	10-50
SHROPSHIRE	England	3	1-10
SOMERSET	England	579	>500
SOUTH YORKSHIRE	England	10	10-50
STIRLING	Scotland	2	1-10
SUFFOLK	England	311	300-400
SURREY	England	23	10-50
SUSSEX	England	1	1-10
TYNE AND WEAR	England	252	250-300
TYRONE	Northern Ireland	14	10-50

Admin2	Country	Number of sequences	Sequence group
WARWICKSHIRE	England	1	1-10
WEST YORKSHIRE	England	1	1-10
WILTSHIRE	England	372	300-400
WORCESTERSHIRE	England	1	1-10