Lineages report for England

This report gives summaries of lineages sampled in England for week 2020-06-05. There are time lags due to batching, curation and analysis, the most recently sampled sequence is 2020-06-02. The analysis (eg time since last sample) is therefore undertaken from this date. 13984 sequences from England have been included in this analysis. 4592 lineages have been recorded, 3446 of which only contain one sequence.

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 4777 and the maximum is 6858

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

4467 are lineages which were sampled less than five times in England, 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 125 that remain: 82 are pending extinction, ie last seen three weeks ago. 30 lineages have gone quiet, ie haven't been seen this week. 4 lineages have reactivated. 9 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	Date range	Number of sequences	Global lineage	Time since last sample (days)	Activity score
UK5	Mar-03, May-31	1096	B.1.1.1, B.1.1	2	0.0339
UK2464	Mar-09, May-25	255	B.1.p11	8	0.0222
UK2916	Feb-03, May-10	253	B.1.p11, B.1	23	0.0132
UK9	Mar-09, May-15	201	B.1.13	18	0.0185
UK4	Feb-28, May-18	169	B	15	0.0287
UK494	Mar-20, May-05	106	B.1.p11	28	0.0152

Lineage name	Date range	Number of sequences	Global lineage	Time since last sample (days)	Activity score
UK2913	Mar-10, May-12	99	B.1.p11	21	0.0231
UK6	Mar-17, May-13	94	B.1	20	0.0306
UK19	Mar-09, May-15	93	B.1	18	0.0199
UK63	Mar-18, May-05	90	B.1.1	28	0.019

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.

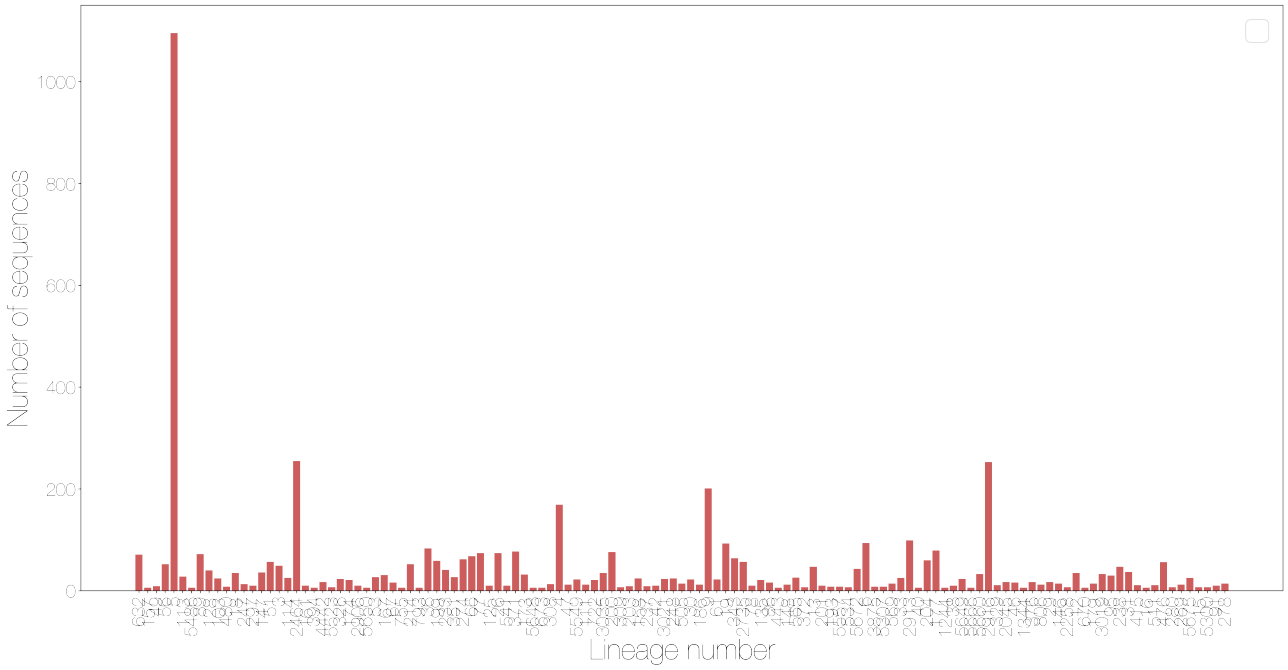

Figure 1: Number of sequences sampled in a lineage by country

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.

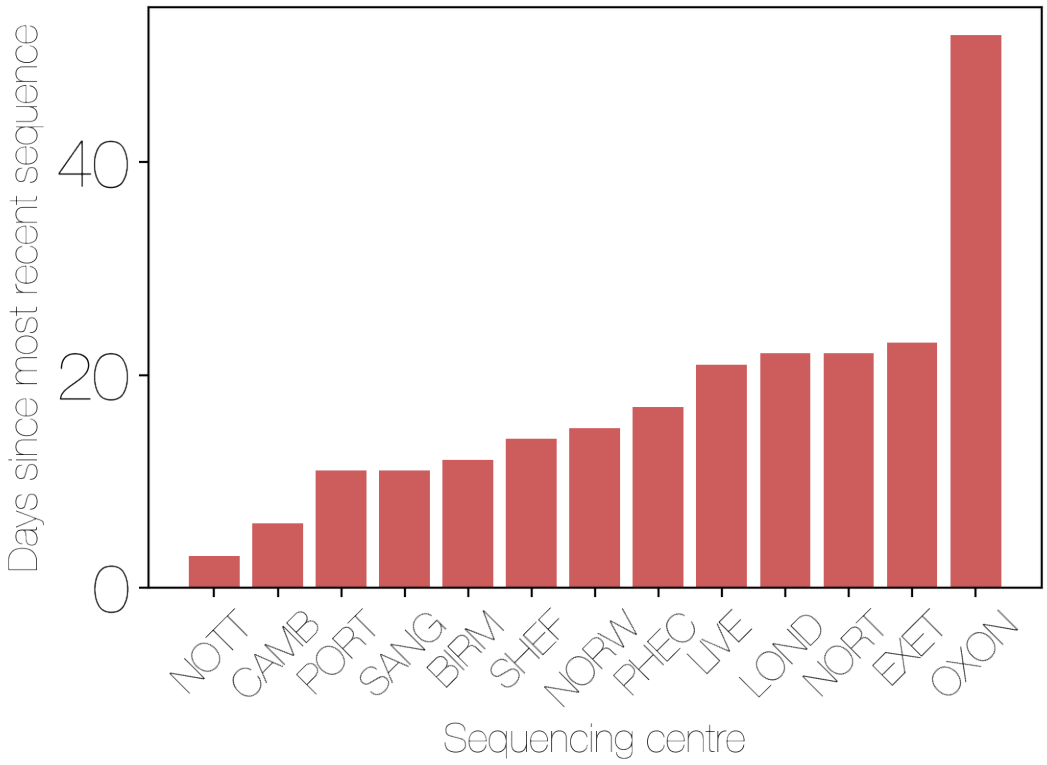

Figure 2: Lag since the most recent sequence from each sequencing centre to most current date

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.

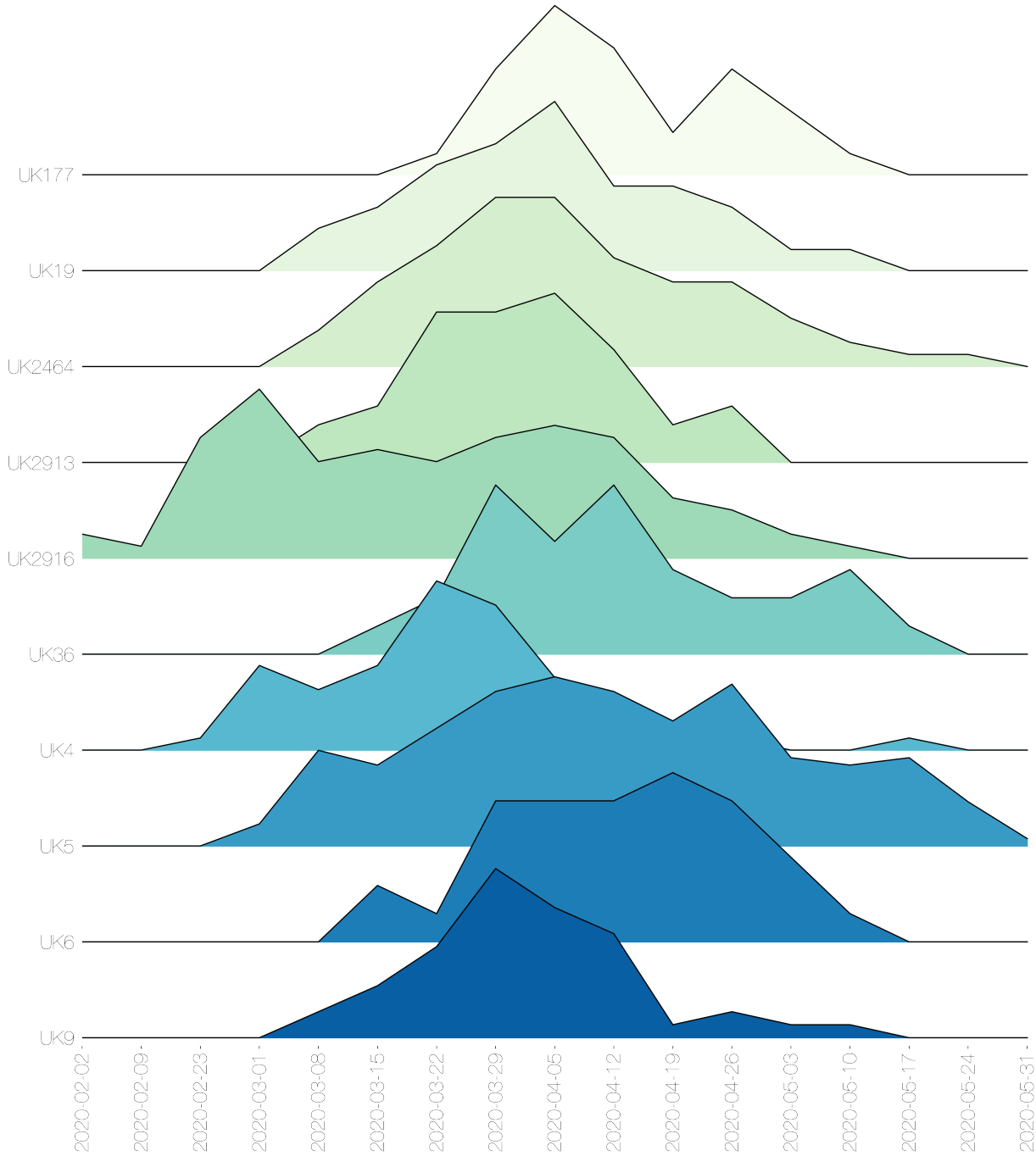

Figure 3: Lineages by number of adm2 regions present by epiweek

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.

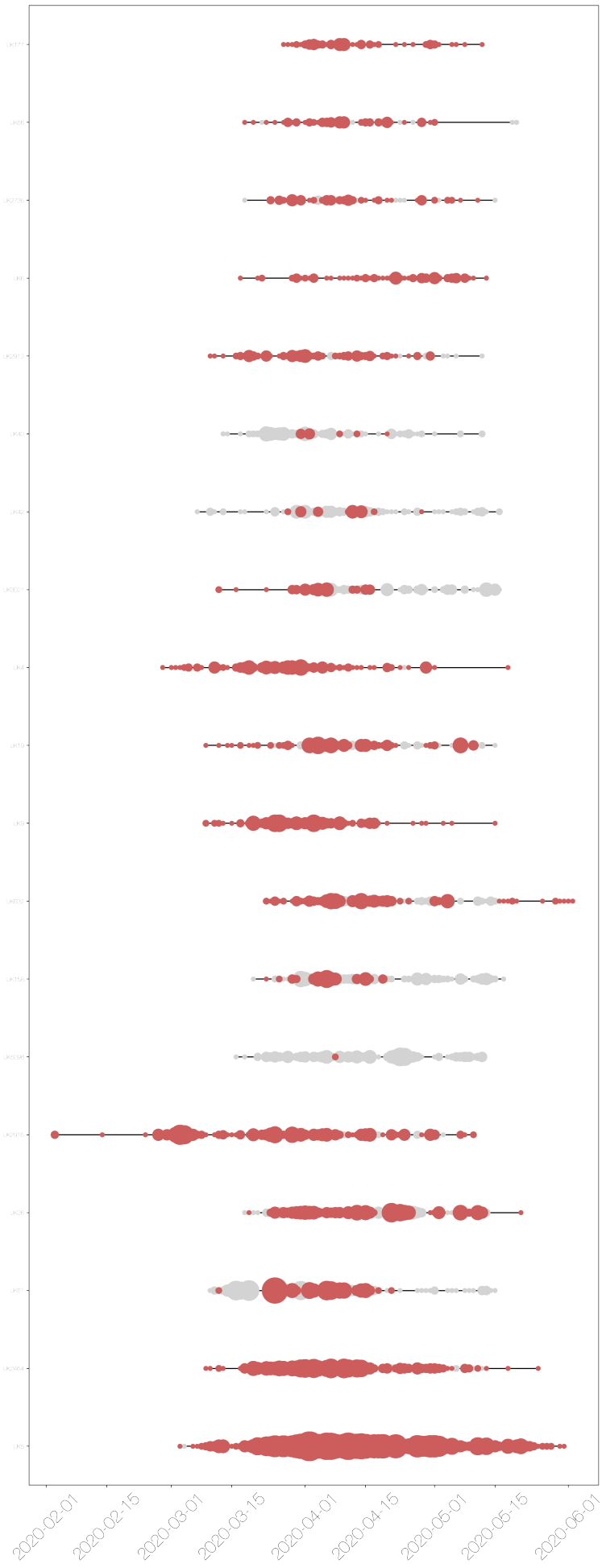

Figure 4: Timeline of lineages, sized by number of sequences from each country.

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

NB the lineage may have started anywhere in the UK, but has been recorded at least once in England

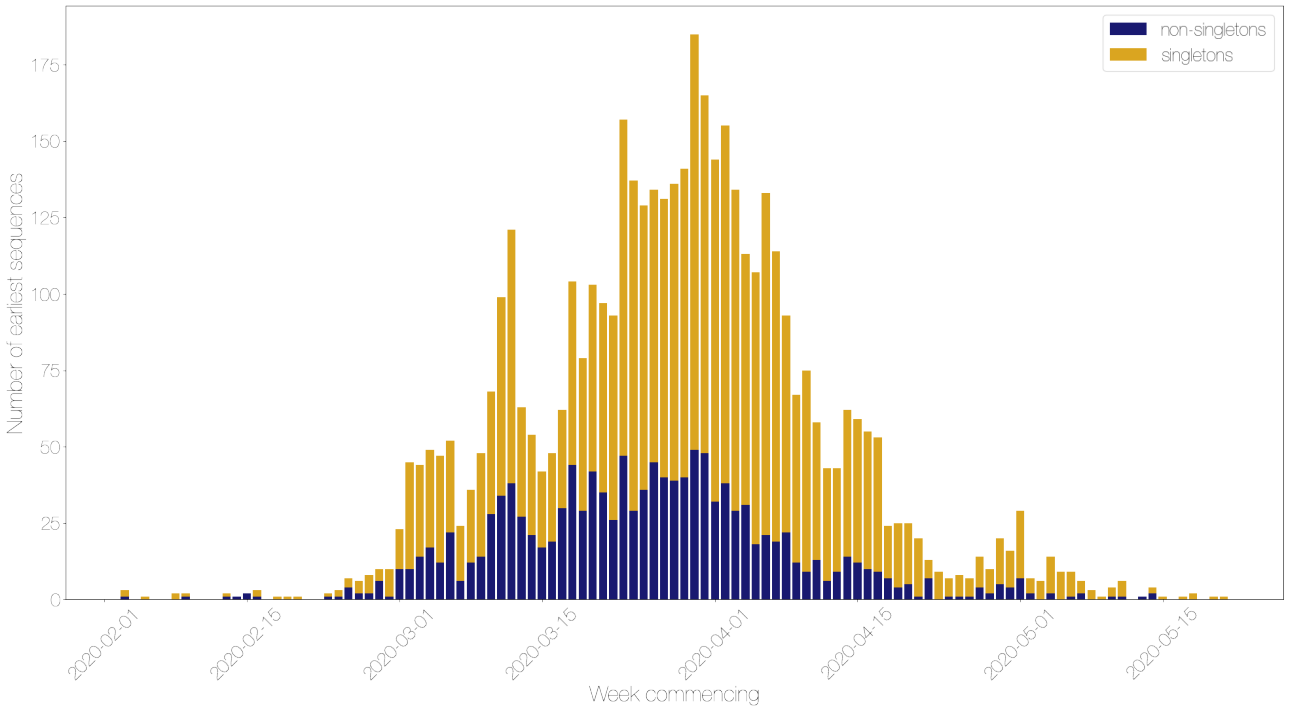

Figure 5: Lineage starts per week, split by singletons and non-singletons

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.

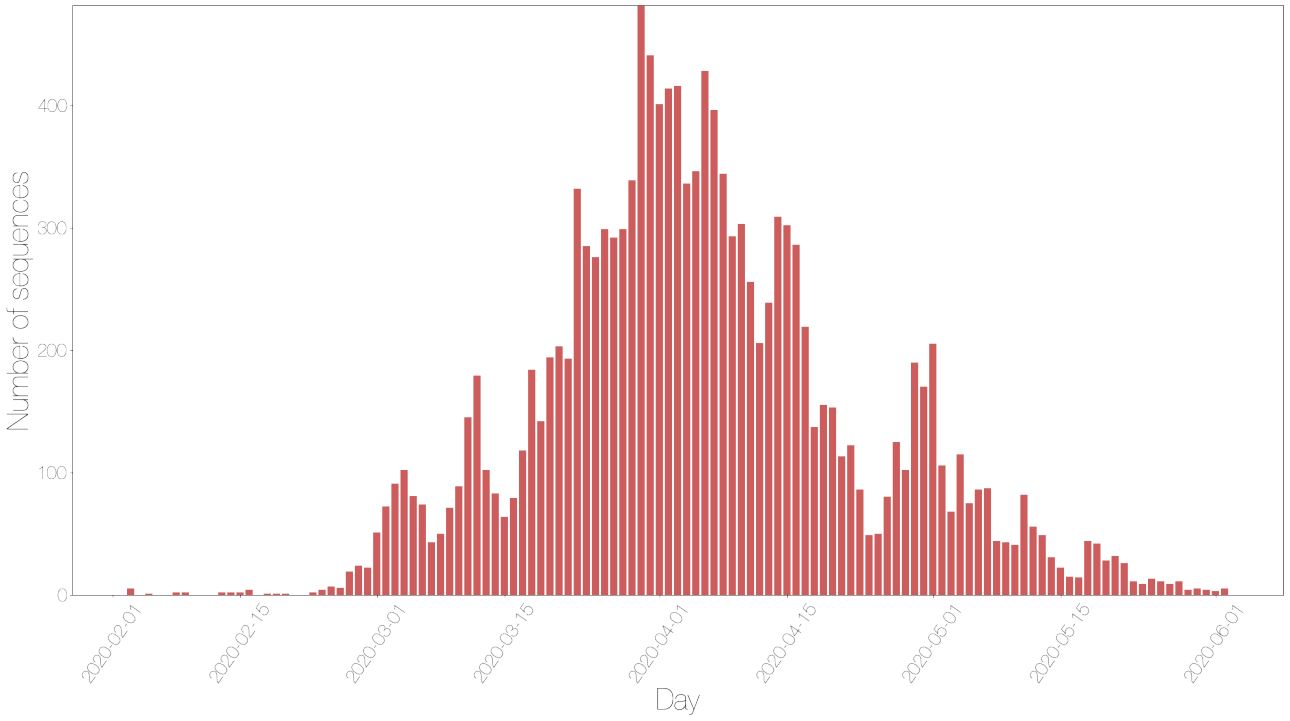

Figure 6: Sequences taken on each day by country

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.

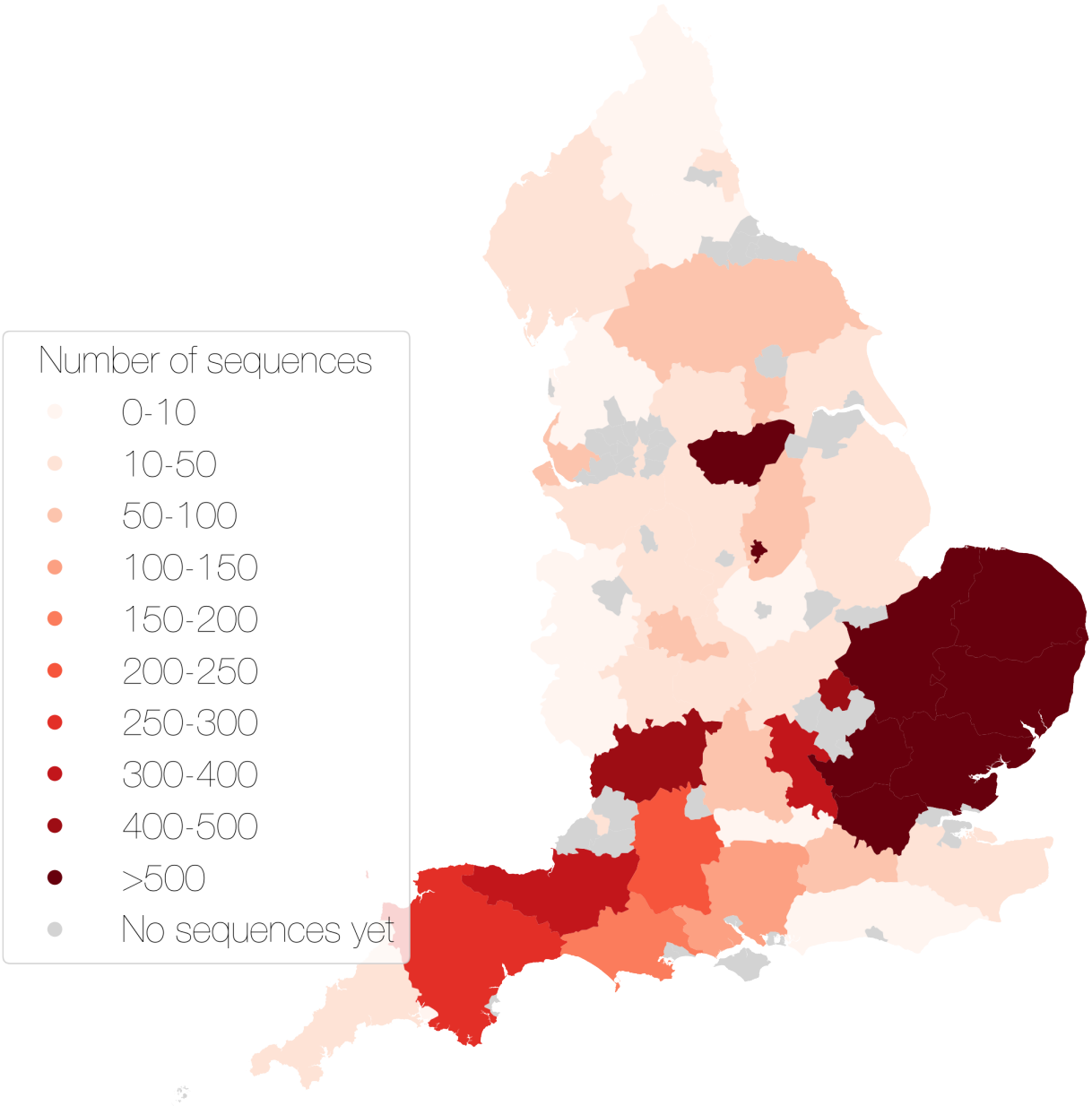

Figure 7: Map showing the number of sequences sampled by adm2 region

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	Date range	Number of sequences	Global lineage	Time since last sample (days)	Activity score
UK5	Mar-03, May-31	1096	B.1.1.1, B.1.1	2	0.0339
UK2464	Mar-09, May-25	255	B.1.p11	8	0.0222
UK2916	Feb-03, May-10	253	B.1.p11, B.1	23	0.0132
UK9	Mar-09, May-15	201	B.1.13	18	0.0185
UK4	Feb-28, May-18	169	B	15	0.0287
UK494	Mar-20, May-05	106	B.1.p11	28	0.0152
UK2913	Mar-10, May-12	99	B.1.p11	21	0.0231
UK6	Mar-17, May-13	94	B.1	20	0.0306
UK19	Mar-09, May-15	93	B.1	18	0.0199
UK63	Mar-18, May-05	90	B.1.1	28	0.019
UK36	Mar-19, May-21	83	B.1	12	0.0161
UK177	Mar-27, May-12	79	B.1.1	21	0.0281
UK371	Mar-12, May-19	77	B.1.1	14	0.0631
UK200	Apr-08, May-18	76	B.1.p11	15	0.0356
UK77	Mar-11, May-20	74	B.2, B.2.4	13	0.069
UK26	Mar-18, May-20	74	B.1.1.3	13	0.0664
UK89	Mar-11, May-28	72	B.1.1.9	5	0.2108
UK632	Mar-23, Jun-02	71	B.1.1	0	active today
UK107	Mar-15, Apr-21	68	B.2.5, B.2, B.2.1	42	0.0131
UK66	Mar-18, May-20	68	B.1.1.8	13	0.0577
UK194	Mar-19, Apr-24	64	B.1.1	39	0.0147

Lineage name	Date range	Number of sequences	Global lineage	Time since last sample (days)	Activity score
UK343	Mar-28, May-15	64	B.1	18	0.0423
UK274	Mar-06, May-21	62	B.3, B	12	0.099
UK37	Mar-17, May-04	60	B.1.30, B.1	29	0.0271
UK204	Apr-07, May-12	60	B.1.1	21	0.0282
UK199	Apr-08, May-21	59	B.1.5.5	12	0.0618
UK339	Feb-23, Apr-16	59	B.3	47	0.015
UK115	Mar-15, Apr-20	58	B.2.1	43	0.0144
UK51	Mar-25, May-26	57	B.1.36	7	0.1497
UK2735	Mar-24, May-15	57	B.1.1	18	0.0358
UK476	Mar-31, May-06	56	B.1.1	27	0.0242
UK112	Mar-15, May-04	56	B.1.1.p11, B.1.1	29	0.0313
UK56	Mar-20, Jun-02	52	B.1.1	0	active today
UK214	Mar-06, May-21	52	B.1.1	12	0.1195
UK3	Feb-24, May-25	49	B.1	8	0.237
UK13	Mar-13, May-13	47	B.1.1	20	0.0663
UK94	Mar-12, Apr-19	47	B.2, B.2.1	44	0.0188
UK238	Mar-19, May-07	47	B.1.1	26	0.041
UK28	Mar-13, May-01	45	B.1.1.10	32	0.0348
UK513	Mar-12, Apr-29	43	B.1.p11	34	0.0336
UK5672	Mar-19, May-13	43	B.2	20	0.064
UK233	Apr-08, May-21	41	B.1.1	12	0.0896
UK128	Apr-03, May-27	40	B.1.1	6	0.2308
UK8	Mar-03, May-01	38	B	32	0.045
UK62	Mar-12, Apr-23	38	B.3	40	0.0262

Lineage name	Date range	Number of sequences	Global lineage	Time since last sample (days)	Activity score
UK31	Mar-21, May-06	37	B.1	27	0.0473
UK23	Mar-12, May-02	37	B, B.9	31	0.0445
UK346	Mar-16, Apr-19	36	B.1.72, B.1	44	0.0221
UK276	Mar-18, May-01	36	B.1.1	32	0.0393
UK190	Mar-01, Apr-19	36	B.1	44	0.0318
UK147	Apr-04, May-26	36	B.1.1	7	0.2122
UK283	Mar-25, May-04	35	B.1.1	29	0.0406
UK18	Mar-11, May-27	35	B.1.1.7	6	0.3775
UK12	Mar-12, May-07	35	B.1.p11	26	0.0615
UK3035	Mar-24, May-18	35	B.1	15	0.1078
UK131	Mar-11, Apr-14	34	B.15	49	0.0183
UK138	Mar-23, Apr-26	33	B.2.1	37	0.0287
UK3019	Mar-06, May-07	33	B.1	26	0.0662
UK5660	Apr-11, May-10	33	B.1.1	23	0.0764
UK173	Mar-16, May-19	32	B	14	0.1475
UK167	Mar-29, May-21	31	B.1.66, B.1	12	0.1472
UK79	Mar-24, May-05	30	B.1	28	0.0517
UK95	Mar-10, May-07	30	B.2.1	26	0.0744
UK113	Mar-22, May-30	28	B.1.1	3	0.8519
UK241	Mar-22, Apr-16	28	B.1.5.3	47	0.0197
UK116	Feb-25, Apr-01	28	B.2.1	62	0.0215
UK300	Mar-28, May-04	27	B.1.1	29	0.0491
UK5741	Mar-01, Apr-19	27	B.2, B.1	44	0.0398
UK351	Apr-13, May-21	27	B.1.1.10, B.1.1	12	0.1218

Lineage name	Date range	Number of sequences	Global lineage	Time since last sample (days)	Activity score
UK53	Mar-26, May-22	27	B.1.1.4	11	0.096
UK144	Mar-05, Apr-07	26	B.2.1	56	0.0236
UK565	Mar-31, May-13	26	B.1.1	20	0.086
UK183	Mar-29, Apr-23	26	B.1.1	40	0.025
UK33	Mar-30, May-12	25	B.1.1	21	0.0853
UK114	Mar-16, May-25	25	B.1.1	8	0.3646
UK64	Mar-12, May-05	25	B.1	28	0.0536
UK57	Apr-05, Apr-28	25	B.1.1	35	0.0274
UK5675	Mar-03, May-06	25	B.2	27	0.0847
UK235	Mar-21, May-04	25	B.1.1	29	0.0632
UK81	Mar-19, Apr-27	24	B.1.1	36	0.0451
UK119	Mar-11, Apr-16	24	B.2.5	47	0.0247
UK103	Mar-20, May-27	24	B.1.1	6	0.4928
UK248	Apr-08, May-16	24	B.1.1	17	0.086
UK158	Mar-23, May-17	24	B.1.1.2, B.1.1	16	0.0168
UK101	Mar-21, Apr-27	23	B.1.5	36	0.0447
UK92	Mar-23, Apr-30	23	B.1.1	33	0.0501
UK326	Mar-22, May-22	23	B.1.1.10	11	0.2521
UK109	Mar-21, May-01	23	B.1.5	32	0.0512
UK3021	Mar-12, May-16	23	B.1	17	0.0237
UK5649	Mar-15, May-11	23	B.2.6, B.1.1	22	0.1036
UK24	Mar-18, May-04	22	B.1.1.10, B.1.1	29	0.0772
UK30	Mar-15, May-15	22	B.1.1	18	0.1614
UK2200	Feb-28, May-05	22	B.1.5, B.1.5.6	28	0.0263

Lineage name	Date range	Number of sequences	Global lineage	Time since last sample (days)	Activity score
UK61	Mar-12, May-15	22	B.3	18	0.0093
UK5549	Mar-04, May-18	22	B.2.2	15	0.2
UK279	Mar-26, Apr-25	22	B.1.1	38	0.0376
UK174	Mar-19, May-22	21	B.1.5	11	0.2909
UK722	Mar-23, May-18	21	B.1.1	15	0.1867
UK384	Mar-14, Apr-02	21	B.2.1	61	0.0156
UK135	Apr-01, May-14	21	B.1.p11	19	0.1132
UK72	Mar-13, May-04	20	B.10	29	0.023
UK307	Mar-28, May-04	20	B.1.1	29	0.0672
UK75	Mar-17, Apr-26	20	B.1.34, B.1	37	0.0569
UK293	Mar-24, Apr-28	20	B.1	35	0.0526
UK419	Mar-30, May-02	19	B.1.1	31	0.0591
UK219	Mar-26, May-02	19	B.1.1	31	0.0628
UK514	Mar-30, Apr-13	19	B.1.1	50	0.0156
UK291	Mar-13, Apr-05	19	B.2.1	58	0.0209
UK2013	Mar-15, Apr-26	19	B.1	37	0.0597
UK126	Mar-29, May-03	18	B.1.1	30	0.0686
UK1764	Mar-14, Apr-19	18	B.3	44	0.0481
UK117	Feb-28, Apr-04	18	B.2.1	59	0.0359
UK376	Apr-04, May-08	17	B.1.1	25	0.085
UK2045	Mar-17, May-09	17	B, B.1	24	0.138
UK4442	May-10, May-24	17	B.1.1	9	0.0972
UK888	Apr-05, May-04	17	B.1.1	29	0.0588
UK5309	Mar-20, Apr-29	17	B.1.1.10, B.1.1	34	0.0619

Lineage name	Date range	Number of sequences	Global lineage	Time since last sample (days)	Activity score
UK143	Mar-14, Apr-16	17	B.2.1	47	0.0439
UK29	Mar-09, May-08	17	B.1.1	25	0.15
UK403	Mar-23, Apr-15	17	B.1.1	48	0.0299
UK41	Mar-01, Apr-24	17	B.1	39	0.0729
UK195	Mar-29, May-03	16	B.1.1	30	0.0778
UK67	Mar-25, May-21	16	B.1.1	12	0.3167
UK5084	Mar-29, Apr-18	16	B.1	45	0.0261
UK86	Mar-05, May-14	16	B.1	19	0.0722
UK397	Mar-28, Apr-18	16	B.1.1.13, B.1.1	45	0.0311
UK46	Mar-02, May-08	16	B.2.1	25	0.1675
UK374	Apr-01, Apr-20	15	B.1.1	43	0.0316
UK5715	Feb-13, Apr-22	15	B.2, B.1.1	41	0.1122
UK134	Mar-04, Apr-07	15	B.1	56	0.0337
UK1849	Apr-07, Apr-20	15	B.1.1	43	0.0216
UK5713	Mar-26, Apr-14	14	B.2, B.1.1	49	0.0298
UK5180	Apr-04, Apr-24	14	B.1.1.7	39	0.0394
UK253	Apr-03, May-03	14	B.1.1	30	0.0769
UK354	Mar-18, Apr-11	14	B.1.1	52	0.033
UK501	Apr-03, Apr-29	14	B, B.1	34	0.0588
UK569	Mar-23, May-12	14	B.1.1	21	0.1832
UK146	Mar-24, May-07	14	B.1.1	26	0.1209
UK254	Mar-20, Apr-14	14	B.1.1	49	0.0392
UK726	Mar-30, May-04	14	B.1	29	0.0928
UK505	Mar-21, May-15	14	B.1.1.p11, B.1.1	18	0.235

Lineage name	Date range	Number of sequences	Global lineage	Time since last sample (days)	Activity score
UK153	Mar-13, Apr-14	14	B.2	49	0.0502
UK278	Apr-10, May-06	14	B.1.1	27	0.0741
UK249	Apr-01, Apr-25	14	B.1.1	38	0.0439
UK236	Mar-27, Apr-22	14	B.1.1	41	0.0453
UK179	Mar-26, May-07	14	B.1.1.p11	26	0.053
UK5214	Mar-20, May-04	14	B.1.1	29	0.1194
UK5260	Mar-29, May-02	13	B.1.1	31	0.0914
UK378	Feb-15, Mar-05	13	B.1.1	89	0.0178
UK308	Apr-09, May-18	13	B.1.1	15	0.2167
UK5663	Apr-11, May-02	13	B.2, B.1.1	31	0.0565
UK34	Feb-15, Apr-02	13	B.4	61	0.0642
UK637	Mar-28, May-01	13	B.1.1	32	0.0885
UK5498	Apr-01, Apr-20	13	B.2	43	0.0368
UK247	Apr-04, May-27	13	B.1.1	6	0.7361
UK45	Mar-02, Apr-16	13	B.1.1	47	0.0563
UK148	Apr-02, May-13	12	B.1.1	20	0.1864
UK806	Apr-04, May-08	12	B.1.1.10	25	0.1236
UK694	Mar-06, Mar-14	12	B	80	0.0091
UK186	Apr-08, May-15	12	B	18	0.2269
UK347	Mar-13, Apr-02	12	B.1	61	0.0298
UK111	Mar-25, May-18	12	B.1.1	15	0.3273
UK604	Mar-09, Mar-17	12	B.1.1	77	0.0089
UK71	Mar-08, Apr-30	12	B	33	0.1338
UK269	Apr-04, May-06	12	B.1.1	27	0.0784

Lineage name	Date range	Number of sequences	Global lineage	Time since last sample (days)	Activity score
UK266	Apr-06, Apr-30	12	B.1	33	0.0661
UK5505	Mar-29, May-01	12	B.1	32	0.0938
UK689	Mar-05, Apr-07	12	B.2, B.2.1	56	0.0491
UK47	Mar-17, May-18	12	B.1.1	15	0.2431
UK180	Mar-30, May-01	11	B.1.1	32	0.0909
UK5703	Mar-06, Apr-15	11	B.2, B.1.1	48	0.0758
UK5409	Mar-27, Apr-19	11	B.1.1	44	0.0523
UK759	Mar-28, Apr-27	11	B.1.1	36	0.0694
UK329	Apr-11, May-09	11	B.1.1	24	0.1736
UK54	Mar-18, Apr-30	11	B.1.1.10	33	0.1303
UK368	Mar-18, May-01	11	B.1	32	0.1375
UK415	Apr-19, May-06	11	B.1	27	0.063
UK441	Apr-04, May-01	11	B.1.1	32	0.0649
UK428	Mar-20, Apr-06	11	B.2, B.2.1	57	0.0298
UK240	Mar-16, Apr-11	11	B.2	52	0.05
UK511	Apr-05, May-06	11	B.1.1	27	0.1148
UK5339	Apr-15, Apr-29	11	B.1.1	34	0.0412
UK1018	Apr-20, Apr-21	11	B.1.1	42	0.0024
UK251	Mar-17, May-02	11	B.1.1	31	0.1349
UK141	Mar-22, Apr-24	11	B.1.1	39	0.0846
UK163	Mar-27, May-03	11	B.1.1	30	0.0949
UK132	Mar-27, Apr-30	10	B.1	33	0.0859
UK22	Mar-02, Apr-21	10	B	42	0.1323
UK297	Apr-09, May-26	10	B.1.p11	7	0.746

Lineage name	Date range	Number of sequences	Global lineage	Time since last sample (days)	Activity score
UK171	Mar-13, Apr-13	10	B.2, B.2.1	50	0.0689
UK687	Feb-28, Mar-08	10	B.2, B.2.1	86	0.0116
UK255	Mar-26, Apr-20	10	B.1.1	43	0.0581
UK125	Apr-22, May-20	10	B.1.1	13	0.2393
UK42	Mar-28, May-16	10	B.1.35, B.1	17	0.028
UK123	Mar-23, May-01	10	B.1	32	0.1354
UK38	Mar-04, May-11	10	B.2.1	22	0.1627
UK78	Mar-29, May-14	10	B.1.5	19	0.269
UK91	Mar-28, May-06	10	B.1.1	27	0.1605
UK201	Mar-29, May-13	10	B.1	20	0.25
UK2906	Apr-08, May-22	10	B.1	11	0.4545
UK541	Apr-01, May-20	10	B.1.1	13	0.4188
UK242	Mar-26, Apr-20	10	B.1.5	43	0.0646
UK5543	Mar-10, Apr-29	10	B.2.1	34	0.1634
UK161	Mar-10, May-25	10	B.1.1	8	0.6786
UK5707	Mar-18, Apr-16	9	B.2, B.1.1	47	0.0617
UK645	Mar-29, Apr-08	9	B.2.1	55	0.0227
UK178	Mar-14, Apr-13	9	B.1.1	50	0.075
UK312	Mar-01, Mar-23	9	B.1.1	71	0.0387
UK49	Mar-19, Jun-02	9	B.2.1	0	active today
UK168	Mar-16, Apr-16	9	B.2.1	47	0.0824
UK311	Mar-20, Apr-11	9	B.1.1	52	0.0529
UK802	Mar-21, Apr-22	9	B.1	41	0.0976
UK564	Apr-03, May-02	9	B.1.1	31	0.1169

Lineage name	Date range	Number of sequences	Global lineage	Time since last sample (days)	Activity score
UK203	Apr-01, May-17	9	B.1.1	16	0.2448
UK913	Apr-03, May-04	9	B.1	29	0.1336
UK5423	Apr-23, May-04	9	B.1.1	29	0.1073
UK432	Mar-24, Apr-09	9	B.3	54	0.037
UK237	Mar-31, May-16	9	B.1.1	17	0.3382
UK5338	Apr-29, May-02	9	B.1.1	31	0.0121
UK5685	Mar-17, May-03	9	B.2	30	0.1306
UK5308	Apr-29, May-01	9	B.1.1	32	0.0078
UK3875	Apr-08, May-12	8	B.1.1	21	0.2313
UK733	Mar-10, Apr-22	8	B.2.1	41	0.1498
UK244	Mar-12, Apr-30	8	B.1.1	33	0.1856
UK318	Mar-20, Apr-10	8	B	53	0.0566
UK1013	Apr-15, Apr-16	8	B.1.1	47	0.003
UK5178	Mar-21, Apr-17	8	B.1.1.7	46	0.0839
UK306	Mar-26, Apr-10	8	B.1.1	53	0.0354
UK252	Apr-04, Apr-29	8	B.1.1	34	0.105
UK5307	Mar-10, May-12	8	B.1.1	21	0.3869
UK335	Mar-25, Apr-15	8	B.2.1	48	0.0625
UK70	Mar-06, Apr-16	8	B.2	47	0.0872
UK2918	Mar-02, Apr-27	8	B.1	36	0.1111
UK83	Feb-29, Apr-08	8	B.1.1	55	0.0709
UK341	Mar-23, Apr-12	8	B.1	51	0.056
UK193	Apr-08, May-13	8	B.1.1	20	0.0913
UK756	Feb-27, Mar-05	8	B.1.1	89	0.0112

Lineage name	Date range	Number of sequences	Global lineage	Time since last sample (days)	Activity score
UK739	Mar-01, Mar-08	8	B.4	86	0.0116
UK5563	Apr-11, Apr-22	8	B.2.2	41	0.0383
UK142	Mar-15, Apr-01	8	B.2.1	62	0.0392
UK220	Mar-27, Apr-11	8	B.1.1	52	0.0412
UK788	Feb-28, Mar-05	8	B.4	89	0.0096
UK5557	Mar-11, May-13	8	B.2.2	20	0.35
UK532	Apr-04, Apr-17	8	B.1.1	46	0.0404
UK574	Mar-30, Apr-29	8	B.1.1	34	0.1261
UK287	Mar-28, Apr-18	8	B.1	45	0.0511
UK480	Apr-02, May-27	8	B.1.1	6	1.3095
UK223	Mar-10, Apr-06	8	B.2.1	57	0.0677
UK232	Mar-04, Mar-30	7	B.1.1	64	0.0677
UK510	Apr-02, Apr-16	7	B.1.1	47	0.0496
UK634	Mar-30, Apr-18	7	B.1.1	45	0.0704
UK372	Apr-16, May-13	7	B.1.1	20	0.225
UK65	Mar-07, Apr-17	7	B.1.1	46	0.1273
UK280	Mar-31, May-06	7	B.1.1	27	0.2222
UK540	Apr-09, Apr-22	7	B.1.1.p15, B.1.1	41	0.0528
UK15	Mar-06, May-06	7	B.1.1	27	0.2259
UK3323	Mar-26, Apr-28	7	B.1.1	35	0.1571
UK534	Apr-13, May-13	7	B.1.1	20	0.2143
UK5523	May-01, May-23	7	B.1	10	0.3667
UK487	Mar-24, Apr-08	7	B.1.1	55	0.039
UK629	Mar-23, Apr-13	7	B.1	50	0.07

Lineage name	Date range	Number of sequences	Global lineage	Time since last sample (days)	Activity score
UK5300	Apr-17, May-06	7	B.1.1	27	0.1173
UK129	Mar-23, Apr-29	7	B.1.1	34	0.1555
UK5261	Mar-29, May-01	7	B.1.1	32	0.1473
UK692	Mar-04, Apr-03	7	B, B.2, B.2.1	60	0.0833
UK206	Mar-22, Apr-19	7	B.2.1	44	0.1061
UK268	Mar-23, Apr-16	7	B.1.1	47	0.0511
UK317	Mar-26, Apr-16	7	B.3	47	0.0745
UK390	Mar-27, May-01	7	B.1.5	32	0.1823
UK352	Apr-11, May-03	7	B.1.1	30	0.1222
UK2258	Mar-23, May-07	7	B.1	26	0.2885
UK5708	Mar-30, May-01	7	B.1.1	32	0.1429
UK69	Mar-04, Apr-14	7	B.2.1	49	0.1195
UK5177	Mar-27, Apr-11	7	B.1.1.7	52	0.0481
UK289	Mar-25, Apr-16	7	B.2.1	47	0.078
UK5174	Mar-26, Apr-07	7	B.1.1.7	56	0.0306
UK309	Apr-01, May-17	7	B.1.1	16	0.4792
UK182	Apr-03, May-02	7	B.1.1	31	0.1559
UK1006	Apr-04, Apr-29	7	B.1.1	34	0.1225
UK213	Mar-18, Apr-17	7	B.1.1	46	0.1087
UK654	Feb-27, Mar-08	6	B.2.5	86	0.0233
UK542	Apr-01, Apr-14	6	B.1	49	0.0531
UK5581	Mar-11, Apr-08	6	B.2.2	55	0.1018
UK196	Mar-18, Apr-17	6	B.2.1	46	0.1304
UK647	Mar-21, Mar-27	6	B.2, B.2.1	67	0.0249

Lineage name	Date range	Number of sequences	Global lineage	Time since last sample (days)	Activity score
UK110	Mar-24, Apr-29	6	B.1	34	0.2118
UK1244	May-01, May-11	6	B.1.1	22	0.0909
UK544	Mar-24, Apr-06	6	B.2.1	57	0.0456
UK5780	Mar-14, Mar-29	6	B.2, B.2.1	65	0.0462
UK5666	Mar-13, May-10	6	B.2	23	0.4203
UK520	Mar-14, Mar-28	6	B.2, B.2.1	66	0.0424
UK58	Mar-17, Apr-24	6	B.1	39	0.0689
UK793	Apr-08, May-21	6	B.1, B.1.5	12	0.7167
UK799	Mar-01, Mar-07	6	B.1	87	0.0138
UK5297	Mar-30, Apr-04	6	B.1.1	59	0.0169
UK5743	Mar-21, Apr-06	6	B.2, B.1	57	0.0561
UK5903	Mar-25, Apr-18	6	B.2	45	0.1067
UK5486	May-01, May-28	6	B.2	5	1.08
UK673	Mar-28, May-18	6	B.1.1	15	0.68
UK435	Apr-03, Apr-23	6	B.1.5	40	0.1
UK413	Mar-06, Apr-03	6	B	60	0.0933
UK746	Mar-31, Apr-14	6	B.1.5	49	0.0571
UK331	Mar-31, May-01	6	B.1.1	32	0.1938
UK40	Mar-31, May-12	6	B.16	21	0.0201
UK394	Mar-20, May-24	6	B.1.1	9	0.2698
UK330	Mar-23, Apr-13	6	B.1.1	50	0.084
UK488	Mar-31, Apr-15	6	B.1	48	0.0625
UK1344	Apr-20, May-08	6	B	25	0.144
UK517	Mar-29, Apr-12	6	B.1.1	51	0.0549

Lineage name	Date range	Number of sequences	Global lineage	Time since last sample (days)	Activity score
UK1023	Apr-07, Apr-16	6	B.1.1	47	0.0383
UK5648	Mar-08, May-19	6	B.2, B.1.1	14	1.0286
UK570	Apr-05, Apr-17	6	B.1.1	46	0.0522
UK566	Apr-03, Apr-15	6	B.1.1.10	48	0.05
UK481	Mar-30, Apr-14	6	B.1.1	49	0.0612
UK157	Apr-11, Jun-02	6	B.1	0	active today
UK313	Mar-23, Apr-14	6	B.1.1	49	0.0898
UK102	Mar-10, Apr-16	6	B.1	47	0.1574
UK68	Mar-20, Apr-30	6	B.1.1	33	0.2485
UK755	Mar-06, May-21	6	B.1.1	12	1.2667
UK5650	Mar-08, May-22	6	B.2.6, B.1.1	11	1.3636
UK443	Mar-31, May-14	6	B.1.1	19	0.4632
UK512	Mar-30, Apr-13	6	B.1.1	50	0.056
UK284	Apr-02, Apr-25	6	B.1.1	38	0.1211
UK447	Apr-05, Apr-21	6	B.1.1	42	0.0762
UK27	Mar-08, Apr-26	6	B.1.1	37	0.2649
UK4237	Apr-15, Apr-15	6	B.1.1	48	0.0
UK659	Mar-21, Mar-30	6	B	64	0.0281
UK489	Mar-23, Apr-07	6	B.2.1	56	0.0536
UK4399	Mar-08, Apr-16	6	B.1.1	47	0.1383
UK670	Mar-28, May-07	6	B.1.1	26	0.2564
UK3126	Apr-06, May-04	6	B.1.1	29	0.1931
UK202	Mar-10, May-05	6	B.1.1	28	0.1538
UK263	Mar-20, Apr-13	6	B.1.p11	50	0.096

Lineage name	Date range	Number of sequences	Global lineage	Time since last sample (days)	Activity score
UK16	Apr-16, May-06	6	B.1.1	27	0.1481
UK188	Mar-07, Apr-08	6	B.1	55	0.0727
UK682	Mar-21, Mar-31	6	B.2, B.2.1	63	0.0265
UK440	Mar-28, Apr-13	6	B.1.1.10	50	0.064
UK680	Apr-05, Apr-14	6	B.1	49	0.0367
UK857	Mar-24, Mar-29	6	B.2.1	65	0.0154

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	NOTT	3
1	CAMB	6
2	PORT	11
3	SANG	11
4	BIRM	12
5	SHEF	14
6	NORW	15
7	PHEC	17
8	LIVE	21
9	LOND	22
10	NORT	22
11	EXET	23
12	OXON	52

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

Week commencing	UK5	UK2464	UK2916	UK9	UK4	UK2913	UK6	UK19	UK36	UK177
2020-02-02	0	0	2	0	0	0	0	0	0	0
2020-02-09	0	0	1	0	0	0	0	0	0	0
2020-02-23	0	0	10	0	1	0	0	0	0	0
2020-03-01	3	0	14	0	7	0	0	0	0	0
2020-03-08	13	3	8	2	5	2	0	2	0	0
2020-03-15	11	7	9	4	7	3	2	3	1	0
2020-03-22	16	10	8	7	14	8	1	5	2	1
2020-03-29	21	14	10	13	12	8	5	6	6	5
2020-04-05	23	14	11	10	6	9	5	8	4	8
2020-04-12	21	9	10	8	3	6	5	4	6	6
2020-04-19	17	7	5	1	2	2	6	4	3	2
2020-04-26	22	7	4	2	1	3	5	3	2	5
2020-05-03	12	4	2	1	0	0	3	1	2	3
2020-05-10	11	2	1	1	0	0	1	1	3	1
2020-05-17	12	1	0	0	1	0	0	0	1	0
2020-05-24	6	1	0	0	0	0	0	0	0	0
2020-05-31	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
2020-02-03	2	1	3
2020-02-05	1	0	1
2020-02-08	2	0	2
2020-02-09	1	1	2
2020-02-13	1	1	2
2020-02-14	0	1	1
2020-02-15	0	2	2
2020-02-16	2	1	3
2020-02-18	1	0	1
2020-02-19	1	0	1
2020-02-20	1	0	1
2020-02-23	1	1	2
2020-02-24	2	1	3
2020-02-25	3	4	7
2020-02-26	4	2	6
2020-02-27	6	2	8
2020-02-28	4	6	10
2020-02-29	9	1	10
2020-03-01	13	10	23
2020-03-02	35	10	45
2020-03-03	30	14	44
2020-03-04	32	17	49
2020-03-05	35	12	47
2020-03-06	30	22	52
2020-03-07	18	6	24
2020-03-08	24	12	36
2020-03-09	34	14	48
2020-03-10	40	28	68
2020-03-11	65	34	99
2020-03-12	83	38	121
2020-03-13	36	27	63
2020-03-14	33	21	54
2020-03-15	25	17	42
2020-03-16	29	19	48
2020-03-17	32	30	62
2020-03-18	60	44	104
2020-03-19	50	29	79
2020-03-20	61	42	103
2020-03-21	62	35	97
2020-03-22	67	26	93
2020-03-23	110	47	157
2020-03-24	108	29	137
2020-03-25	93	36	129
2020-03-26	89	45	134
2020-03-27	91	40	131
2020-03-28	97	39	136

Day	Number of singleton starts	Number of non-singleton starts	Total
2020-03-29	101	40	141
2020-03-30	136	49	185
2020-03-31	117	48	165
2020-04-01	112	32	144
2020-04-02	117	38	155
2020-04-03	105	29	134
2020-04-04	82	31	113
2020-04-05	89	18	107
2020-04-06	112	21	133
2020-04-07	95	19	114
2020-04-08	71	22	93
2020-04-09	55	12	67
2020-04-10	66	9	75
2020-04-11	45	13	58
2020-04-12	37	6	43
2020-04-13	34	9	43
2020-04-14	48	14	62
2020-04-15	47	12	59
2020-04-16	45	10	55
2020-04-17	44	9	53
2020-04-18	17	7	24
2020-04-19	21	4	25
2020-04-20	20	5	25
2020-04-21	19	1	20
2020-04-22	6	7	13
2020-04-23	9	0	9
2020-04-24	6	1	7
2020-04-25	7	1	8
2020-04-26	6	1	7
2020-04-27	10	4	14
2020-04-28	8	2	10
2020-04-29	15	5	20
2020-04-30	12	4	16
2020-05-01	22	7	29
2020-05-02	5	2	7
2020-05-03	6	0	6
2020-05-04	12	2	14
2020-05-05	9	0	9
2020-05-06	8	1	9
2020-05-07	4	2	6
2020-05-08	3	0	3
2020-05-09	1	0	1
2020-05-10	3	1	4
2020-05-11	5	1	6
2020-05-13	0	1	1
2020-05-14	2	2	4
2020-05-15	1	0	1
2020-05-17	1	0	1
2020-05-18	2	0	2

Day	Number of singleton starts	Number of non-singleton starts	Total
2020-05-20	1	0	1
2020-05-21	1	0	1

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

Day	England
2020-02-03	5
2020-02-05	1
2020-02-08	2
2020-02-09	2
2020-02-13	2
2020-02-14	2
2020-02-15	2
2020-02-16	4
2020-02-18	1
2020-02-19	1
2020-02-20	1
2020-02-23	2
2020-02-24	4
2020-02-25	7
2020-02-26	6
2020-02-27	19
2020-02-28	24
2020-02-29	22
2020-03-01	51
2020-03-02	72
2020-03-03	91
2020-03-04	102
2020-03-05	81
2020-03-06	74
2020-03-07	43
2020-03-08	50
2020-03-09	71
2020-03-10	89
2020-03-11	145
2020-03-12	179
2020-03-13	102
2020-03-14	83
2020-03-15	64
2020-03-16	79
2020-03-17	118
2020-03-18	184
2020-03-19	142
2020-03-20	194
2020-03-21	203
2020-03-22	193
2020-03-23	332
2020-03-24	285
2020-03-25	276
2020-03-26	299
2020-03-27	292
2020-03-28	299
2020-03-29	339

Day	England
2020-03-30	482
2020-03-31	441
2020-04-01	401
2020-04-02	414
2020-04-03	416
2020-04-04	336
2020-04-05	346
2020-04-06	428
2020-04-07	396
2020-04-08	344
2020-04-09	293
2020-04-10	303
2020-04-11	256
2020-04-12	206
2020-04-13	239
2020-04-14	309
2020-04-15	302
2020-04-16	286
2020-04-17	219
2020-04-18	137
2020-04-19	155
2020-04-20	153
2020-04-21	113
2020-04-22	122
2020-04-23	86
2020-04-24	49
2020-04-25	50
2020-04-26	80
2020-04-27	125
2020-04-28	102
2020-04-29	190
2020-04-30	170
2020-05-01	205
2020-05-02	106
2020-05-03	68
2020-05-04	115
2020-05-05	75
2020-05-06	86
2020-05-07	87
2020-05-08	44
2020-05-09	43
2020-05-10	41
2020-05-11	82
2020-05-12	56
2020-05-13	49
2020-05-14	31
2020-05-15	22
2020-05-16	15
2020-05-17	14

Day	England
2020-05-18	44
2020-05-19	42
2020-05-20	28
2020-05-21	32
2020-05-22	26
2020-05-23	11
2020-05-24	9
2020-05-25	13
2020-05-26	11
2020-05-27	9
2020-05-28	11
2020-05-29	4
2020-05-30	5
2020-05-31	4
2020-06-01	3
2020-06-02	5

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
BATH AND NORTH EAST SOMERSET	England	0	0
BEDFORDSHIRE	England	418	400-500
BERKSHIRE	England	8	1-10
BLACKBURN WITH DARWEN	England	0	0
BLACKPOOL	England	0	0
BOLTON	England	0	0
BOURNEMOUTH	England	0	0
BRIGHTON AND HOVE	England	0	0
BRISTOL	England	18	10-50
BUCKINGHAMSHIRE	England	349	300-400
BURY	England	0	0
CAMBRIDGESHIRE	England	668	>500
CENTRAL BEDFORDSHIRE	England	0	0
CHESHIRE	England	12	10-50
CORNWALL	England	20	10-50
CUMBRIA	England	32	10-50
DARLINGTON	England	0	0
DERBY	England	0	0
DERBYSHIRE	England	25	10-50
DEVON	England	283	250-300
DORSET	England	159	150-200
DURHAM	England	6	1-10
EAST RIDING OF YORKSHIRE	England	33	10-50
ESSEX	England	1209	>500
GATESHEAD	England	0	0
GLOUCESTERSHIRE	England	456	400-500
GREATER LONDON	England	2312	>500
HALTON	England	0	0
HAMPSHIRE	England	122	100-150
HARTLEPOOL	England	0	0
HEREFORDSHIRE	England	4	1-10
HERTFORDSHIRE	England	933	>500
ISLE OF WIGHT	England	0	0
ISLES OF SCILLY	England	0	0
KENT	England	29	10-50
KINGSTON UPON HULL	England	0	0
LANCASHIRE	England	8	1-10
LEICESTER	England	0	0
LEICESTERSHIRE	England	5	1-10
LINCOLNSHIRE	England	16	10-50
LUTON	England	0	0
MANCHESTER	England	30	10-50
MEDWAY	England	0	0
MERSEYSIDE	England	59	50-100
MIDDLESBROUGH	England	0	0
MILTON KEYNES	England	0	0
NORFOLK	England	559	>500

Admin2	Country	Number of sequences	Sequence group
NORTH LINCOLNSHIRE	England	0	0
NORTH SOMERSET	England	0	0
NORTH YORKSHIRE	England	63	50-100
NORTHAMPTONSHIRE	England	22	10-50
NORTHUMBERLAND	England	4	1-10
NOTTINGHAM	England	634	>500
NOTTINGHAMSHIRE	England	58	50-100
OLDHAM	England	0	0
OXFORDSHIRE	England	97	50-100
PETERBOROUGH	England	0	0
PLYMOUTH	England	1	1-10
POOLE	England	0	0
PORTSMOUTH	England	0	0
REDCAR AND CLEVELAND	England	0	0
ROCHDALE	England	0	0
RUTLAND	England	0	0
SALFORD	England	0	0
SHROPSHIRE	England	1	1-10
SOMERSET	England	356	300-400
SOUTH GLOUCESTERSHIRE	England	0	0
SOUTH YORKSHIRE	England	1250	>500
SOUTHAMPTON	England	0	0
SOUTHEND-ON-SEA	England	0	0
STAFFORDSHIRE	England	49	10-50
STOCKPORT	England	0	0
STOCKTON-ON-TEES	England	0	0
STOKE-ON-TRENT	England	0	0
SUFFOLK	England	503	>500
SURREY	England	64	50-100
SUSSEX	England	1	1-10
SWINDON	England	0	0
TAMESIDE	England	0	0
TELFORD AND WREKIN	England	0	0
THURROCK	England	0	0
TORBAY	England	0	0
TRAFFORD	England	0	0
TYNE AND WEAR	England	38	10-50
WARRINGTON	England	0	0
WARWICKSHIRE	England	10	10-50
WEST MIDLANDS	England	95	50-100
WEST YORKSHIRE	England	20	10-50
WIGAN	England	0	0
WILTSHIRE	England	245	200-250
WORCESTERSHIRE	England	12	10-50
YORK	England	0	0