

Summary report: COG-UK geographic coverage of SARS-CoV-2 sample sequencing

Report on the week commencing on 4 October 2021 (week 40)

This report was generated on 28 October 2021 using data downloaded on 27 October 2021

Please note: 1) **Not all Operation Eagle sequences are included in this report - meaning UK coverage is underestimated.** These will be included as soon as possible. 2) **This report is based on sequences matched with metadata.** We are working to explore the possibility of including data from non-matched sequences. 3) As of Wednesday 26 May 2021, all English Pillar 1 samples have been requested to be sent to PHE Laboratories for sequencing.

COG-UK captures SARS-CoV-2 samples from COVID-19 infections across the UK, and this summary includes information on sequencing coverage across the UK. Coverage is defined as the number of sequences available in COG-UK out of the number of people with a COVID-19 infection.

In the week commencing on 4 October 2021 (week 40), 1,205,556 sequences out of 8,223,049 infected people (14.7%) passed basic quality checks and were available in Medical Research Council Cloud Infrastructure for Microbial Bioinformatics (MRC CLIMB-COVID, the central computational infrastructure for COG-UK).

This is an operational report – please interpret the results with caution due to the following limitations:

- Geographic information is currently lacking for ~10% of sequences which may result in apparent low coverage in some areas
- Numerator counts are based on SARS-CoV-2 samples that have been successfully sequenced and linked to participant metadata in MRC CLIMB. The introduction of Operation Eagle has led to a decrease in our total sequencing capacity in recent weeks
- For a minority of numerator sequences, there may be more than one sequence per individual (i.e. no deduplication); this can lead to mismatches because the denominator includes the total number of infected people, not the number of samples
- Coverage proportion by Pillar is currently not available for all countries but will be included in the report as soon as available. Frequency of sequences by Pillar is shown in the table below

Table 1: Coverage, overall and by Pillar in the week commencing on 4 October 2021 (week 40)

	Overall coverage		Pillar 1 frequency		Pillar 2 frequency	
	Cumulative	Week	Cumulative	Week	Cumulative	Week
UK	1,205,556 (14.7%)	42,703 (16.4%)	258,333	9,269	947,223	33,434
Wales	94,618 (24.6%)	5,199 (30.4%)	41,602	1,286	53,016	3,913
Scotland	114,587 (19.3%)	3,304 (19.1%)	20,946	482	93,641	2,822
England	960,723 (13.7%)	34,092 (15.7%)	189,357	7,489	771,366	26,603
Northern Ireland	35,628 (14.2%)	108 (1.2%)	6,428	12	29,200	96

Cumulative coverage is the total number of sequences out of all COVID-19 infections. Week coverage is the number of sequences collected in the week of interest out of all infections reported in the same week. Pillar 1 includes NHS diagnostic labs. Pillar 2 includes lighthouse labs network and other large-scale diagnostic testing capacity.

Figure 1: Map of cumulative coverage up to the week commencing on 4 October 2021 (week 40) (left) and week coverage in the same week (right)

