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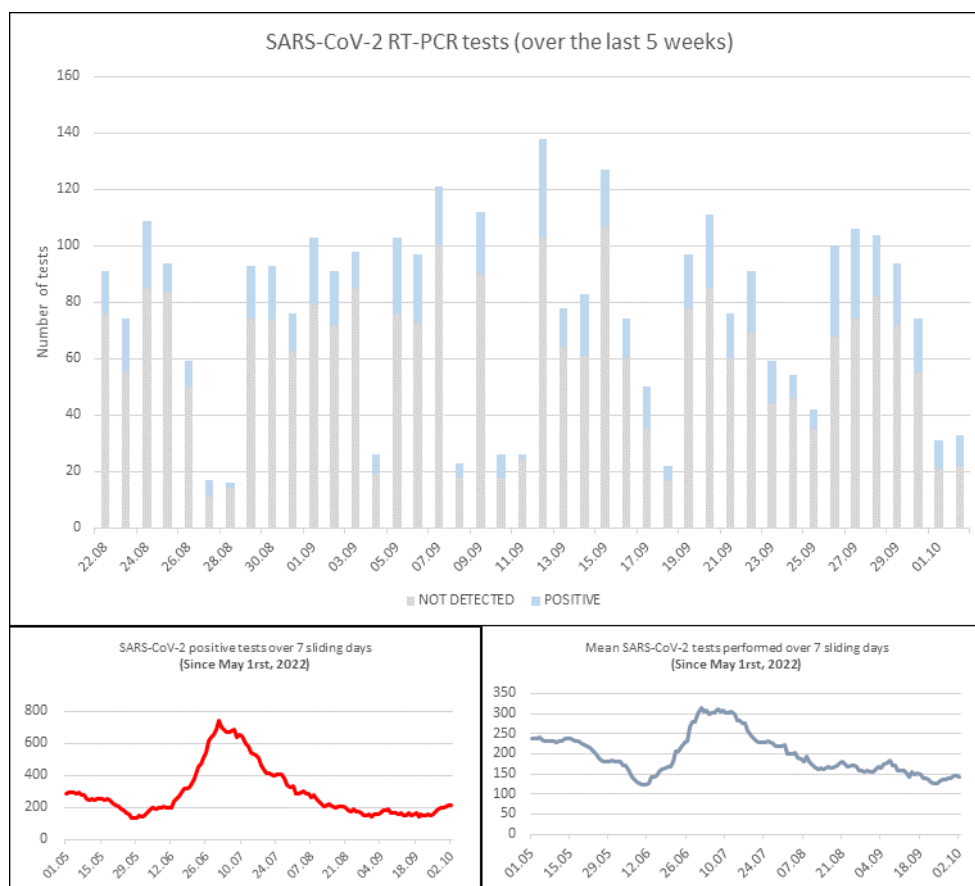
Diagnostic Department

### **SARS-CoV-2 genomic surveillance in Geneva: bi-weekly update**

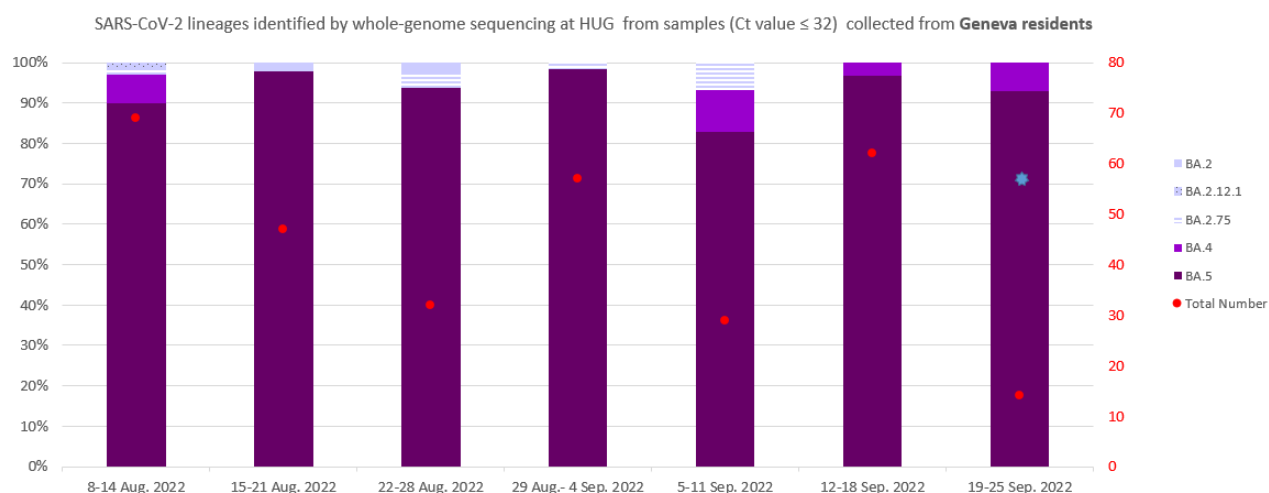
#### **Highlights:**

- The total number of positive tests and the overall positivity rate continue to be globally stable during September, 2022, although we observe a trend towards an increase of these parameters over the last week (Figure 1).
- BA.5 and its sub-lineages are still predominant in the Geneva area (Figure 2). BA.4 accounts for a small fraction (less than 10%).
- S-Drop out screening (week 38-39): none out of 93 and 69 specimens tested during weeks 38 and 39, respectively, did not display the S-gene target failure, indicating the absence of the BA.2.75 variant. Of note, these specimens represent all the samples tested during this period with a Ct value  $\leq 32$ .

**Figure 1:** Number of SARS-CoV-2 tests performed at the HUG laboratory of virology (per day). Positive tests are displayed in light blue (top). Bottom left: SARS-CoV-2 positive tests over 7 sliding days. Bottom right: mean SARS-CoV-2 tests performed over 7 sliding days.



**Figure 2:** SARS-CoV-2 lineages identified by whole-genome sequencing at HUG from samples (Ct-value  $\leq 32$ ) collected from Geneva residents (Sentinella specimens excluded). \*Sequencing is still ongoing for week 38 (from September 19 to September 25, 2022). A total of 310 sequences were included in this analysis.



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Emma Hodcroft for the Geneva Center for Emerging Viral Diseases.

Pauline Brindel for the Geneva Cantonal Physician team.

### **The laboratory of virology of the Geneva University Hospitals as a sentinel site for the Geneva area**

The number of tests (PCR and antigen tests) performed at the Geneva University Hospitals represented around 32% (933/2932) and 31% (993/3196) of the total number of tests performed in the canton of Geneva during weeks 38 and 39 of 2022, respectively. Roughly 25% and 24% of the positive specimens collected in the Geneva area were processed at HUG during weeks 38 and 39 (158/627 and 212/882), respectively. Samples collected from symptomatic individuals at our outpatient testing center are tested by RT-PCR. Specimens analyzed in our laboratory originate from ambulatory and hospitalized patients as well as symptomatic and/or asymptomatic health care workers.

The number of positive tests in the canton and the total number of tests done during the surveilled weeks are available on the website from Federal Office of Public Health ([COVID- 19 Suisse | Coronavirus | Dashboard \(admin.ch\)](https://www.bfs.admin.ch/bfs/fr/topics/santite/infec/coronavirus/covid-19/suisse/covid-19-suisse-dashboards)). During weeks 38 and 39 in the canton of Geneva, the number of RT-PCR tests was stable compared to the two previous weeks. As of week 39, the number of confirmed cases and the proportion of positive tests is starting to increase.

### **Methods and collaborations**

The laboratory has reintroduced from week 37 the screening for the “S Drop out” (Taqpath RT-PCR assay) in order to monitor BA.2.75.

WGS is carried out in close collaboration with the Health 2030 Genome Center in Geneva and Philippe Le Mercier from the Swiss Institute of Bioinformatics. The national genomic surveillance program is ongoing in Switzerland since March 1, 2021 and includes specimens collected at HUG with a Ct-value  $\leq 32$ . In some instances, sequencing can be done on specimens sent by other laboratories in Switzerland within the surveillance program or by request of the cantonal physician team. Phylogenetic analysis data are produced by Nextstrain, in collaboration with Richard Neher’s group at the University of Basel and analyzed by Emma Hodcroft, from the Geneva Center of Emerging Viral Diseases and University of Geneva. In addition, partial Sanger sequencing may be done by our laboratory.

Geographic distribution, transmission advantage estimates and detailed numbers of available sequences over time in the canton of Geneva are available on the CoVSpectrum platform, run by Tanja Stadler’s group at ETH Zurich.

These reports are produced in collaboration with the Geneva Cantonal Physician team, which provides information on epidemiological links. For epidemiological data, please refer to the report of the cantonal physician team.