





Federal Office of Public Health FOPH Public Health Directorate Communicable Diseases Division Schwarzenburgstrasse 157 3003 Berne Switzerland

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Geneva Centre for Emerging Viral Diseases

Division of Infectious Diseases

Department of Medicine

Laboratory of virology

Division of Laboratory Medicine

Diagnostic Department

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

Highlights:

- Both the number of positive tests and the positivity rate continue to decrease (Figure 1).
- BA.5 and its sub-lineages are predominant in the Geneva area (Figure 2).
- The BA.2 variant and its sub-lineages have scarcely been detected in the Geneva area in the last sequencing batch, indicating a currently marginal circulation.
- Of note, no BA.2.75 has yet been detected in the canton of Geneva in clinical samples. The variant has been detected in wastewater in the Geneva area at the end of June.

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.

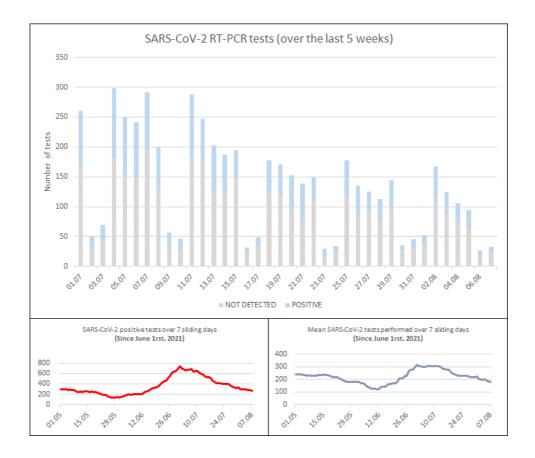
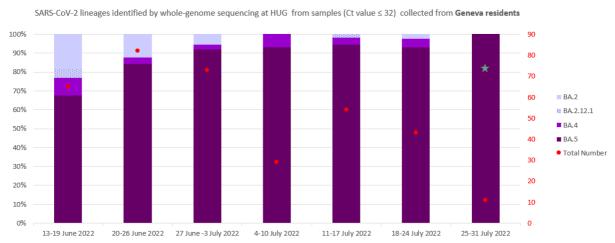


Figure 2: SARS-CoV-2 lineages identified by whole-genome sequencing at HUG from samples (Ct-value \leq 32) collected from Geneva residents (Sentinella specimens excluded). *Sequencing is still ongoing for week 30 (from July 25 to July 31, 2022). A total of 357 sequences are included in this analysis.



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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 28% (1562/5579) and 32% (1267/3932) of the total number of tests performed in the canton of Geneva during weeks 30 and 31 of 2022, respectively. Roughly 20% and 24% of the positive specimens collected in the Geneva area were processed at HUG during weeks 30 and 31 (330/1607 and 262/1085), 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)). During weeks 30 and 31 in the canton of Geneva, the number of RT-PCR tests decreased by one third compared to the two previous weeks. The number of confirmed cases decreased by one half in comparison to the past 2 weeks and the proportion of positive tests continues to remain below 40%.

Methods and collaborations

The laboratory has stopped the systematic screening for the "S Drop out" (Taqpath RT-PCR assay) at the end of week 26 of 2022, after the replacement of BA.2 by BA.4/5.

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 ≤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.