

# Genomic surveillance of SARS-CoV-2 in Belgium

Report of the National Reference Laboratory (UZ Leuven & KU Leuven)

**Situation update – 11th of January 2022  
(report 2021\_63)**

## Executive summary

78,404 Belgian sequences of SARS-CoV-2 are now publicly available on GISAID; compared to last week's report, 2,272 sequences have been added.

1,378 sequences of positive SARS-CoV-2 samples collected between 27/12/2021 and 9/1/2022 have at this stage been analyzed in the context of baseline surveillance. For those samples, Omicron represented 84.6% of the strains analyzed.

To provide more updated information on the evolution of the Omicron variant, we follow-up on a daily basis the percentage of diagnostic PCRs harboring the S gene target failure (SGTF). On 10/1/2022, SGTF was present among 83% of the positive samples, analyzed at the 8 federal platforms.

We expect that the current high level of viral circulation will be maintained in the coming weeks. Despite the presumed lower severity of Omicron, this will presumably lead to a considerable number of hospital admissions with and for COVID-19 (not specifically ICU admissions), in particular among unvaccinated and immunocompromised patients.

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With the collaboration of the laboratories of UCL, ULB, UMONS, UNAMUR, ULIÈGE, UGENT, UZA/UAntwerpen, JESSA ZH, AZ DELTA, AZ KLINA, IPG, AZ ST LUCAS GENT, OLVZ AALST, BRIANT NETWORK, ZNA, AZ ST JAN BRUGGE, UZ BRUSSEL, LHUB-ULB, and UZ Leuven/KU Leuven; and Sciensano HealthData.

Previous reports can be downloaded using the following link:

<https://www.uzleuven.be/nl/laboratoriumgeneeskunde/genomic-surveillance-sars-cov-2-belgium>

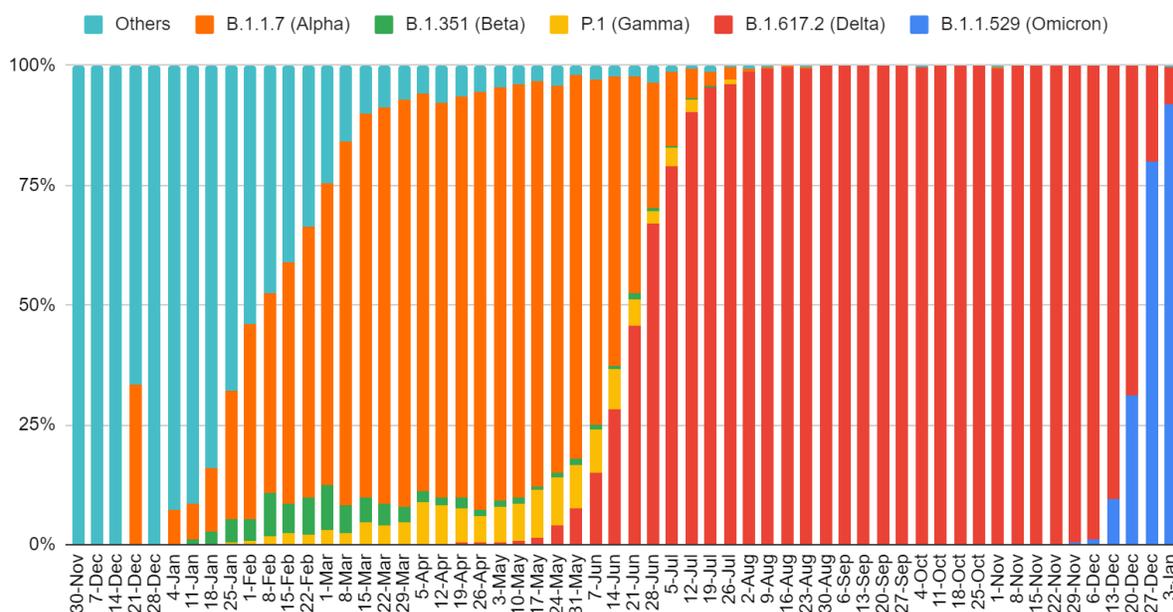
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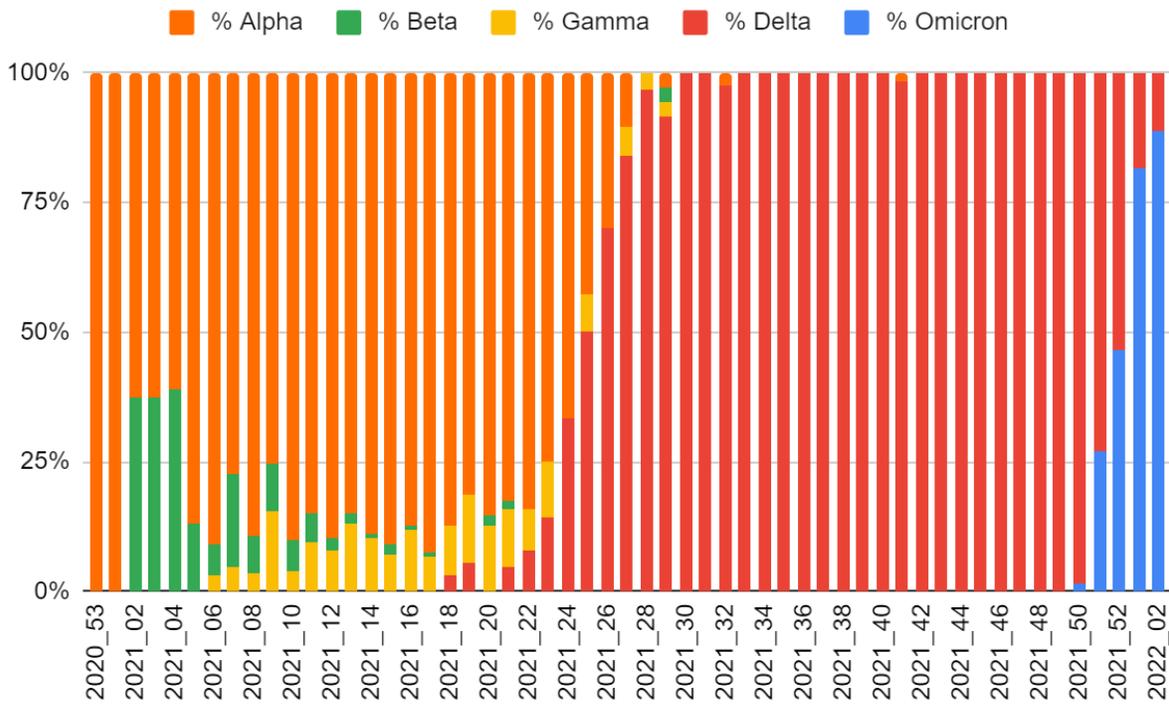
## 1. Monitoring of VOCs in Belgium

While first identified on the 24th of November 2021 in Belgium, the B.1.1.529 Variant of Concern (Omicron) has become the dominant lineage in Belgium one month after the first case was detected. This viral population replacement has happened at a very rapid pace (Figure 1). This replacement has also been observed among people hospitalized with COVID-19, as Omicron is now responsible for the vast majority of infections among hospitalized patients (Figure 2).

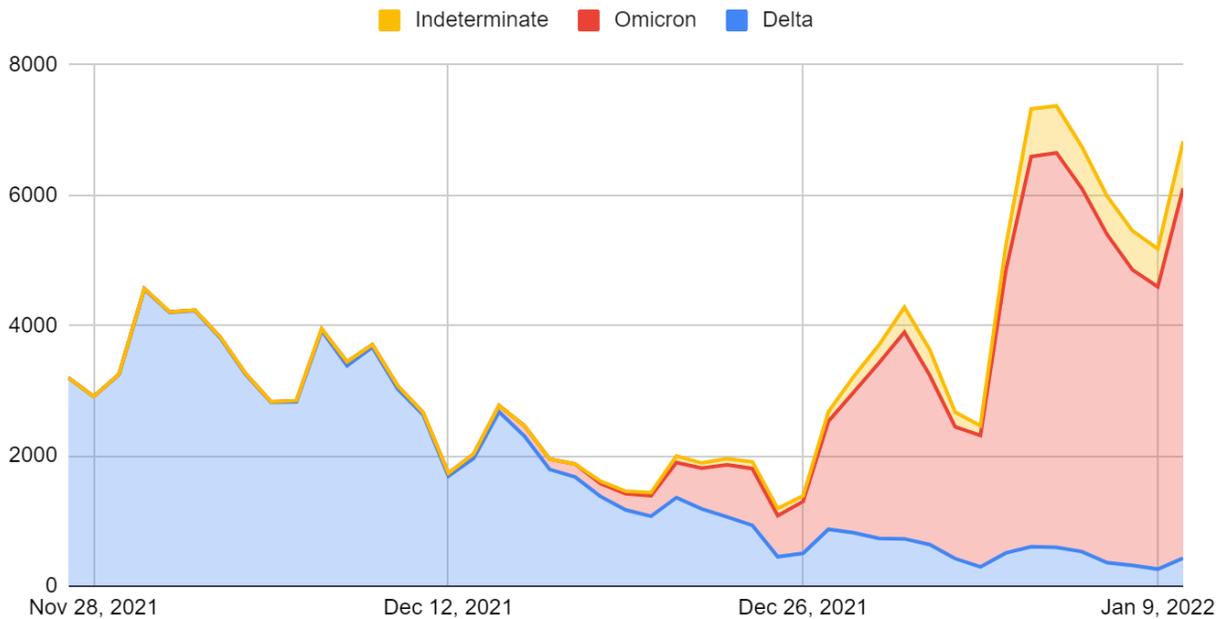
The current surge infections due to Omicron has now outpaced the winter Delta wave which peaked on November 30, 2021 (Figure 3) and the Alpha winter wave of last year (data not shown). The positivity rate among patients tested continues to increase, and sign an insufficient testing intensity to pretend to control the current surge using testing & tracing (figure 4).



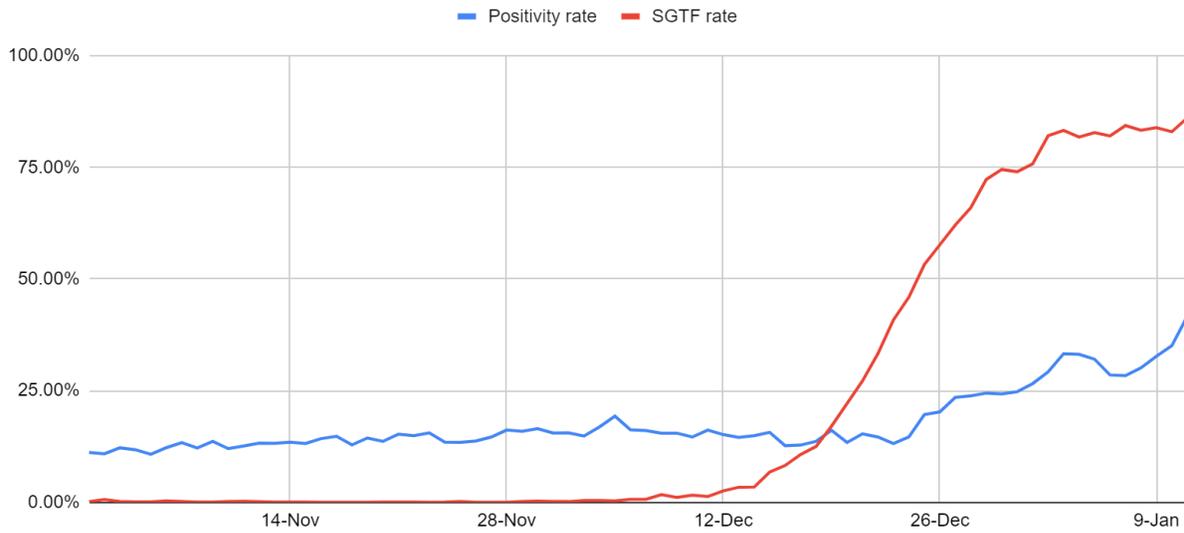
**Figure 1:** Weekly evolution of the frequency of variants of concern reported by the **baseline surveillance network** using a whole genome sequencing (WGS) approach.



**Figure 2:** Weekly evolution of the frequency of variants of concern reported among **hospitalized** patients using a whole genome sequencing (WGS) approach (data source: Sciensano).



**Figure 3:** Evolution of the number of positive PCR results and positive samples harboring SGTF in the federal platform laboratories.



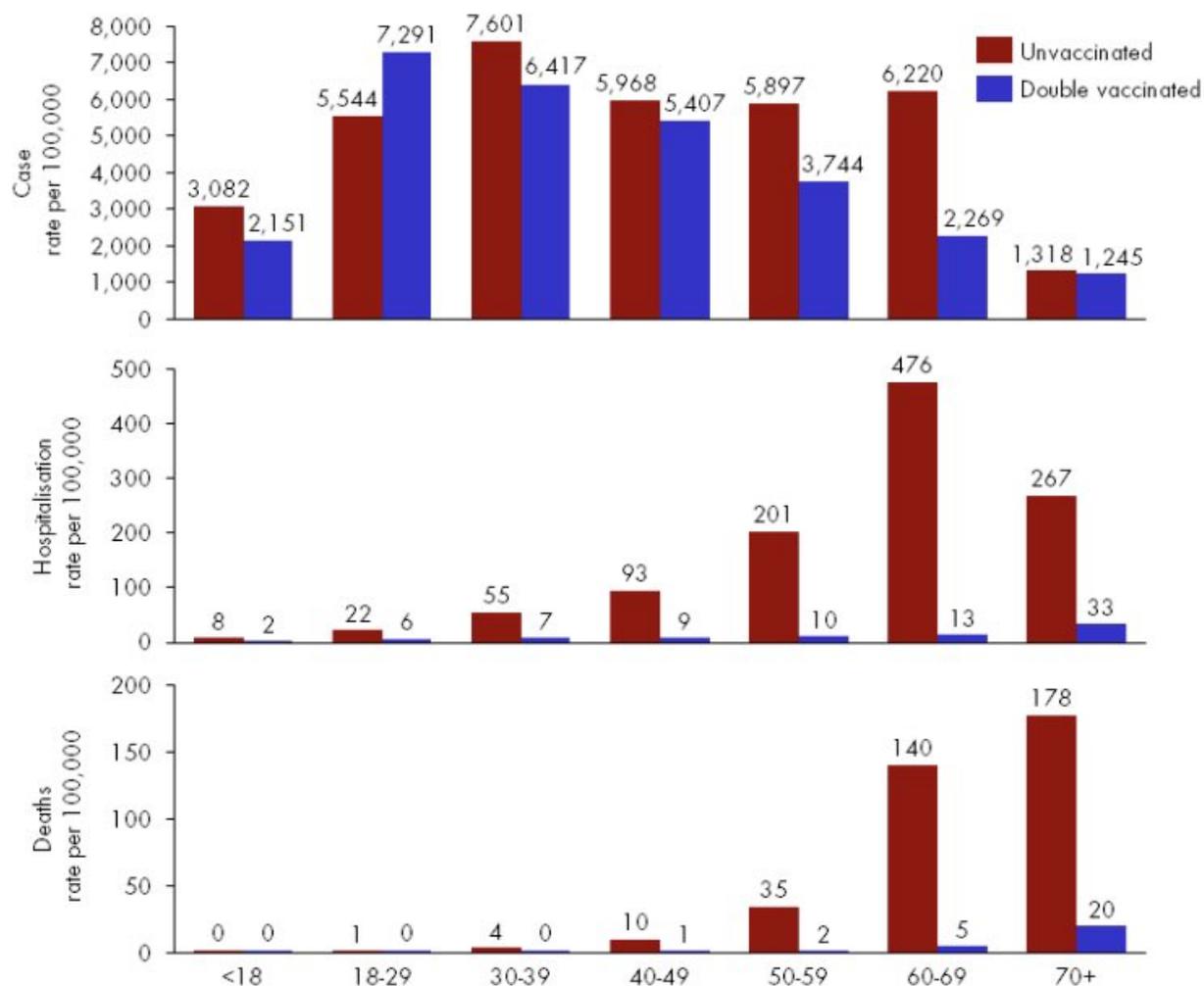
**Figure 4:** Evolution of Omicron variant frequency interfered from S gene target failure data (SGTF) of samples analyzed in the 8 federal platform laboratories. Omicron represents over 80% of the circulating strains since 10 days ago. As illustrated in this figure, the emergence of Omicron has been followed by a significant increase in the positivity rate of analyzed samples. Such an increase in positivity rate has not been observed during the Delta winter wave which peaked on 30-Nov 2021.

## 2. Disease severity associated with Omicron infections

Assessing the severity of Omicron remains a challenge due to the very recent surge of infections, the heterogeneity of the vaccination coverage in the different countries affected and the evolving age-distribution of people affected in each country. Nevertheless, we consider that in most settings in Belgium, a lower surge of ICU admissions is expected compared to the Delta wave of infections, although this may be less obvious in larger cities (due to lower vaccination coverage) or if the total number of infections rises to levels not experienced by other countries.

These estimations are based on the observations made in other countries and the preliminary hospital data of UZ Leuven.

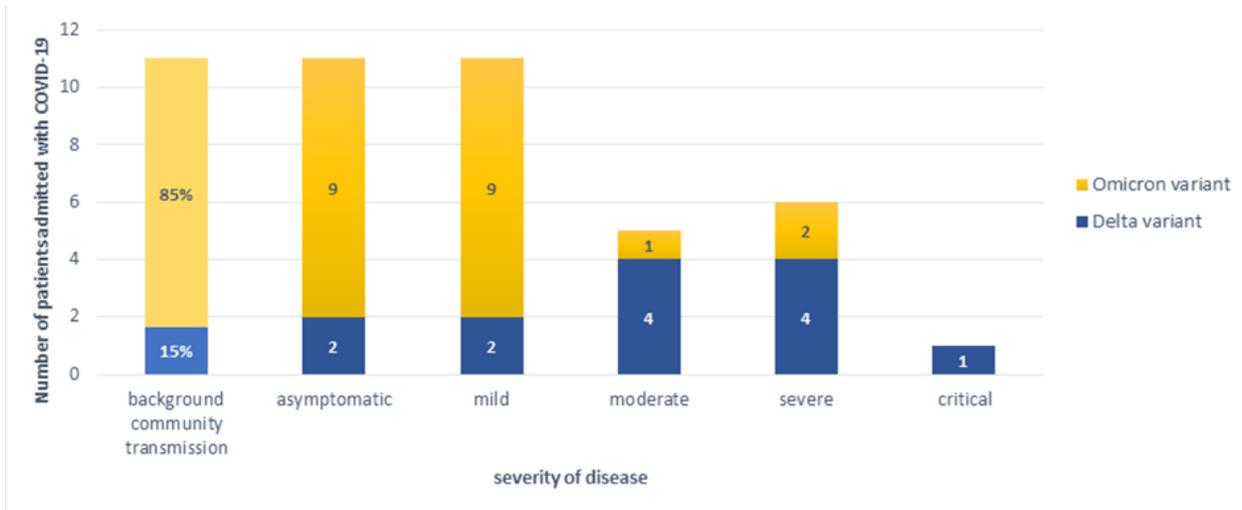
In the United Kingdom, vaccination barely reduced the number of reported infections, but very importantly decreased the number of hospital admissions and deaths in each age group (Figure 6).



Source: UKHSA COVID-19 surveillance report week 1; covering wk 49-52, using ONS mid-2020 denominators; Only double and non-vaccinated shown (i.e., no singles) NB: ONS almost certainly overstates 70+ population - so last red bars on right of each chart likely too low.

**Figure 5:** Rate of cases, hospitalisations and deaths per age group based on vaccination status

We looked at the severity of disease among 34 patients admitted with COVID-19 in UZ Leuven University Hospitals between 1 and 10 of January 2022. While Omicron represents 85% of COVID infections in the community, this proportion is also observed among patients presenting an asymptomatic infection or a mild disease. The situation is different among patients classified with moderate, severe or critical disease severity: among these, Omicron represents only 25% of the hospitalized patients. These preliminary data tend to confirm a milder severity of this new variant compared to Delta (Figure 7). These observations should be confirmed by an analysis involving data coming from a larger set of hospitals, which would require a systematic comparison of hospital and genomic data. Further, these proportions are expected to evolve in the coming days and may differ in regions of the country where vaccination coverage is lower. They should therefore be interpreted with caution at this stage. These indicators will be closely monitored in the coming days and weeks.



**Figure 6:** Severity of disease among 34 patients admitted with COVID-19 to UZ Leuven University Hospitals (1 January to 10 January 2022)