# Wastewater Sequencing Trend Report: Detection of SARS-CoV-2 Variants of Concern by Metagenomic Sequencing

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**Longitudinal wastewater sequencing data ending 2023-04-26.**

The plots show the percentage of Omicron and its sublineages (BA.1, BA.2 and BA.4/BA.5) SARS-CoV-2 variants of concern (Omicron sublineages) detected in wastewater samples collected from different sites using metagenomic sequencing. SARS-CoV-2 viral fragments present in the wastewater are isolated and sequenced to obtain a genomic "blueprint" of the virus. Each sublineage carries small differences in their genomic blueprint called mutations that can be queried using specialized software to identify their presence and abundance (BA.1, BA.2 and BA.4 or BA.5) present in the wastewater sample. The shaded areas in the plot show BA.1 in dark purple, BA.2 in light purple, BA.4 or BA.5 in red.

To correct for the shared ancestry of BA.2 and BA.4/BA.5 SARS-CoV-2 lineages, the average frequency of VOC-defining mutations for BA.4/BA.5 has been subtracted from BA.2. It should also be noted that as of December 2022, the XBB lineages (including XBB.1.5) is represented in the BA.2 signal.

## St. John's

BA.1     BA.2     BA.4/BA.5



St. John's
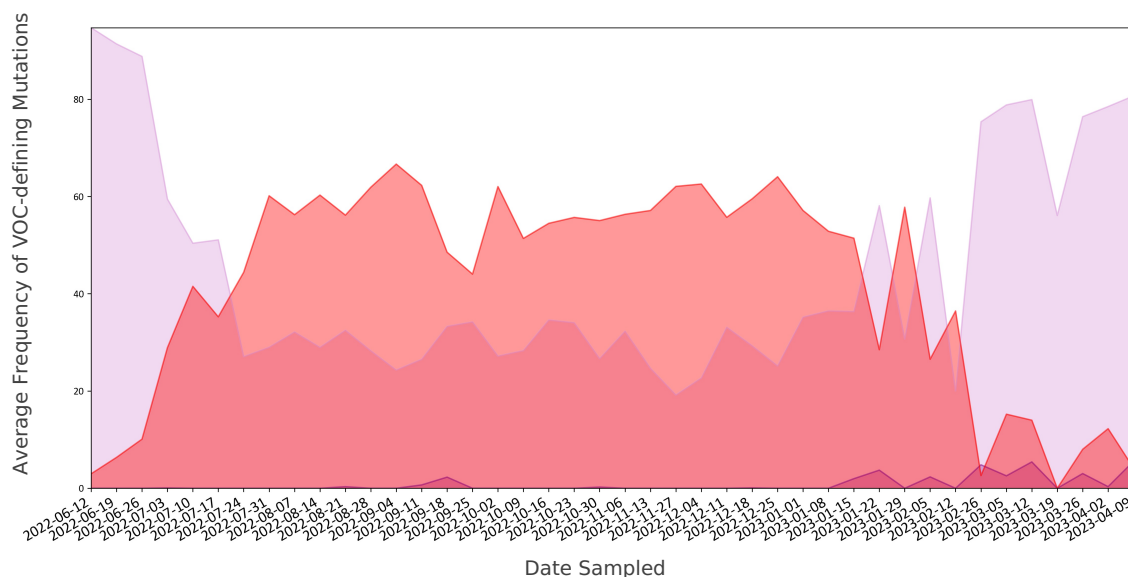
BA.2 levels increased rapidly at the beginning of 2022 but decreased over time as BA.4/BA.5 surpassed it in mid July 2022. Trace to low levels of BA.4/BA.5 were first detected at the beginning of May 2022 and high signals are detected in samples collected up to January 29, 2023. The BA.2 signal began to increase at the end of January 2023 due to emergence of the XBB variant; a recombinant cross between BA.2.10.1 and BA.2.75.