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

Agence de la santé

Statistics Statistique Agency of Canada publique du Canada Canada Canada Longitudinal wastewater sequencing data ending 2022-06-05

The plots show the percentage of three SARS-CoV-2 variants of concern (Alpha, Delta and Omicron)

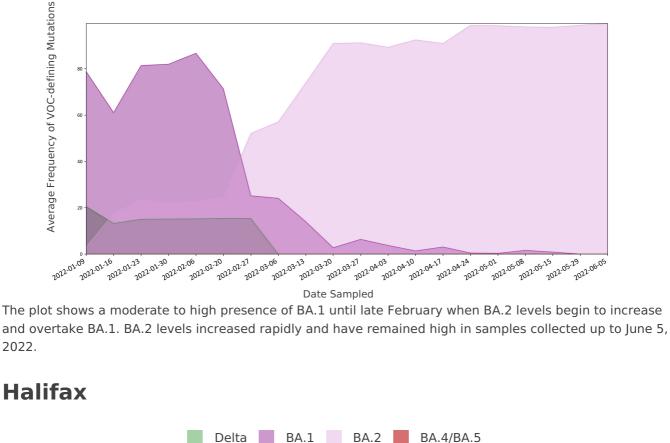
detected in wastewater samples collected from different sites using metagenomic sequencing. SARS-CoV-2 viral fragments present in the wastewater are isolated and sequenced to obtain a genomic "blueprint" of the virus. Each variant of concern carries small differences in their genomic blueprint called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

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

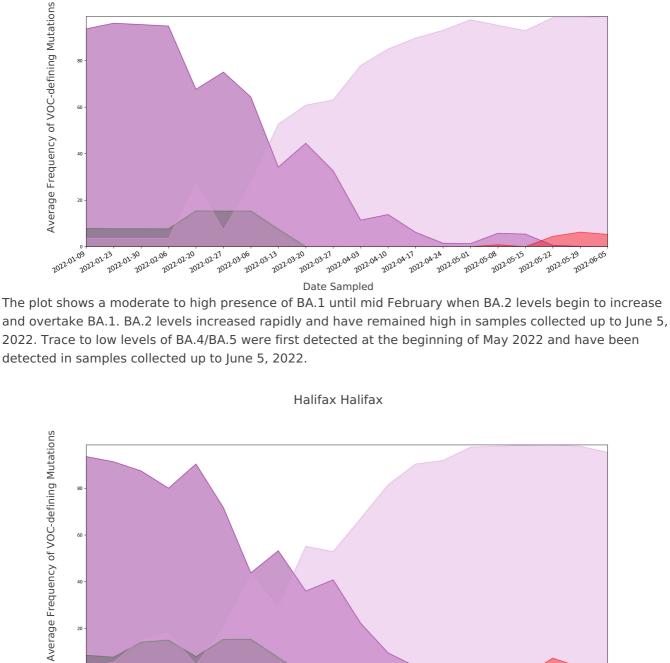
Edmonton Goldbar

Edmonton

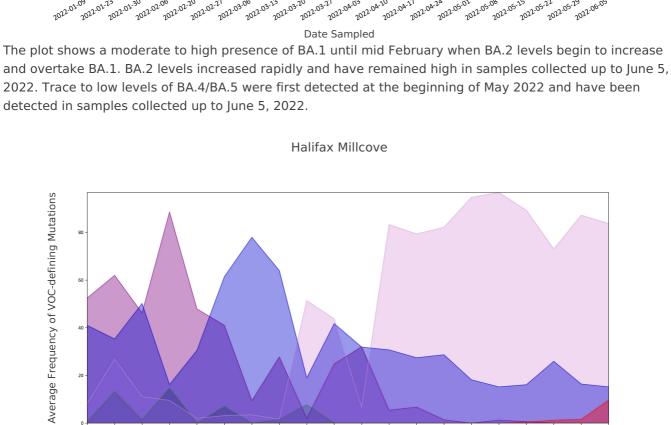
Public Health



Halifax Dartmouth



2022-04-20 2022-03-27



2022-03-06

2022-02-27

2022-03-13

2022-03-27

Date Sampled The plot shows a moderate to high presence of BA.1 until mid-February and decreasing presence of BA.1 until the second week of April. BA.2 emerged at the start of March and rapidly increased to sustained high levels observed since the beginning of April. Variable levels of Alpha were observed between January and March at which point levels began to drop off to a low level of presence. Trace to low levels of BA.4/BA.5 were first detected at the beginning of May 2022 and have been detected in samples collected up to June 5,

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

Montreal North

2022-04-10

2022-04-17

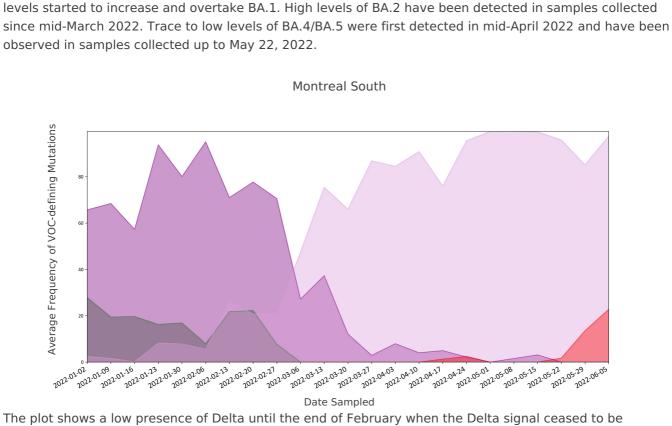
2022-04-24

Average Frequency of VOC-defining Mutations

Date Sampled The plot shows a low to moderate presence of Delta until the end of February when the Delta signal ceased to be detected in the wastewater samples. High levels of BA.1 were observed until mid-March when BA.2

2022.

Montreal



Delta BA.1 BA.2 BA.4/BA.5 Toronto Ashbridges Bay Average Freguency of VOC-defining Mutations

Date Sampled The plot shows a moderate to high presence of BA.1 until mid February when BA.2 levels begin to increase and overtake BA.1. BA.2 levels increased rapidly and have remained high in samples collected up to June 5, 2022. Trace to low levels of BA.4/BA.5 were first detected at the beginning of May 2022 and have been

Toronto Highland Creek

2022.04-10

2022-04-17 2022-04-24 2022-05-01

detected in the wastewater samples. High levels of BA.1 were observed until early March when BA.2 levels started to increase and overtake BA.1. High levels of BA.2 have been detected in samples collected since mid-March 2022. Trace to low levels of BA.4/BA.5 were first detected in mid-April 2022 and have been

observed in samples collected up to May 22, 2022.

2022-02-20

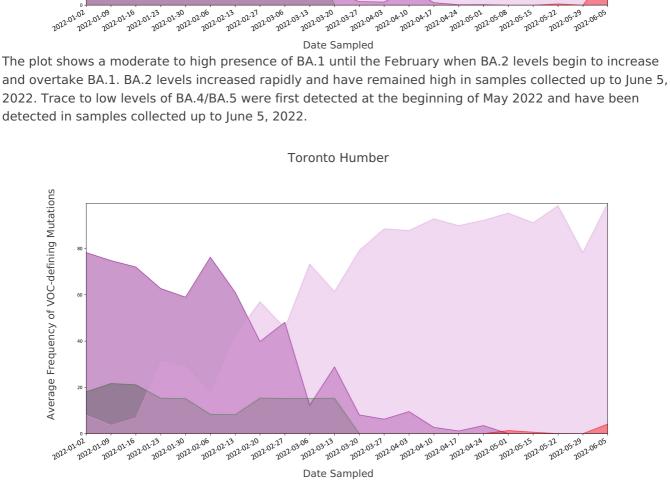
2022-02-27 2022.03.06 2022-03-13 2022-03-20 2022-03-27 2022-04-03

2022-01-30 2022-02-06 2022.02-13

detected in samples collected up to June 5, 2022.

Average Frequency of VOC-defining Mutations

Toronto



The plot shows a moderate to high presence of BA.1 until the beginning of March when BA.2 levels begin to increase and overtake BA.1. BA.2 levels rapidly increased and have remained high in samples collected up to June 5, 2022. A trace presence of BA.4/BA.5 was first detected at the beginning of May 2022 and has

Toronto North Toronto

been observed in samples collected up to June 5, 2022.

presence in samples collected up to June 5, 2022.

2022-02-20 2022-02-13

2022-02-21

Average Frequency of VOC-defining Mutations

Vancouver

Vancouver Annacis Island Average Frequency of VOC-defining Mutations

levels of BA.4/BA.5 were first detected at the beginning of May 2022 and have been present in samples

Vancouver Iona Island

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

2022-04-10

2022-05-01

2022.04.03

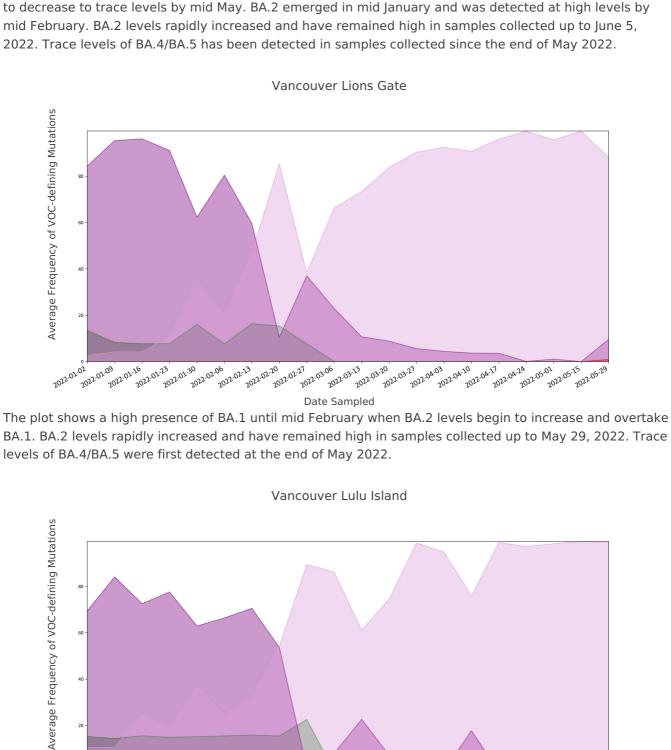
2022-03-20 2022-03-27

Date Sampled The plot shows a high presence of BA.1 until mid February when BA.2 levels begin to increase and overtake BA.1. BA.2 levels rapidly increased and have remained high in samples collected up to June 5, 2022. Trace levels of BA.4/BA.5 were first detected at the beginning of May 2022 and have increased to a moderate

2022-03-13 2022-02-13 2022-02-20 2022-02-27 2022-03-06 13 2022-03-20 2022-03-21 Date Sampled The plot shows a high presence of BA.1 until mid February when BA.2 levels begin to increase and overtake BA.1. BA.2 levels rapidly increased and have remained high in samples collected up to May 29, 2022. Trace

collected up to May 29, 2022.

Average Frequency of VOC-defining Mutations



2022-03-06

2022-02-20 2022-02-27

2022-03-20 2022-03-27

Date Sampled The plot shows a variable moderate to high presence of BA.1 until the first week of March when levels began

2022-04-03

2022-03-13

Average Frequency of VOC-defining Mutations

2022-01-30

2022.02.06

2022-02-13

2022-02-20

2022-02-20

2022-02-13

high level.

2022-02-27

2022-03-06

2022-03-13

Date Sampled The plot shows an alternating moderate to high presence of Delta until mid-December, followed by a rapid decrease in presence. This decrease in Delta coincided with an emerging presence of Omicron. Omicron was first detected in wastewater samples collected from this site on December 5 and has since remained at a

2022-03-20

2022-03-27

2022-02-27

29, 2022. Trace levels of BA.4/BA.5 were first detected in samples collected May 29, 2022.

2022-03-06

2022-03-13

Date Sampled The plot shows a high presence of BA.1 until the end of February when BA.2 levels begin to increase and overtake BA.1. BA.2 levels rapidly increased and have remained very high in samples collected up to May

Vancouver Northwest Langley

2022-03-20

2022-03-27

2022-04-03

2022-04-17

2022-05-08

2022-04-10