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COVID-19 WASTEWATER SURVEILLANCE

Tracking the prevalence of COVID-19 among metro area residents

Across the globe, researchers are looking for ways to monitor and reduce the spread of COVID-19, as well as variants of the SARS-CoV-2 virus.

They've found that wastewater, or sewage, can help public officials better understand the extent of infections in communities and complement existing surveillance where clinical testing is underutilized or unavailable.

Working with the U of M Genomics Center

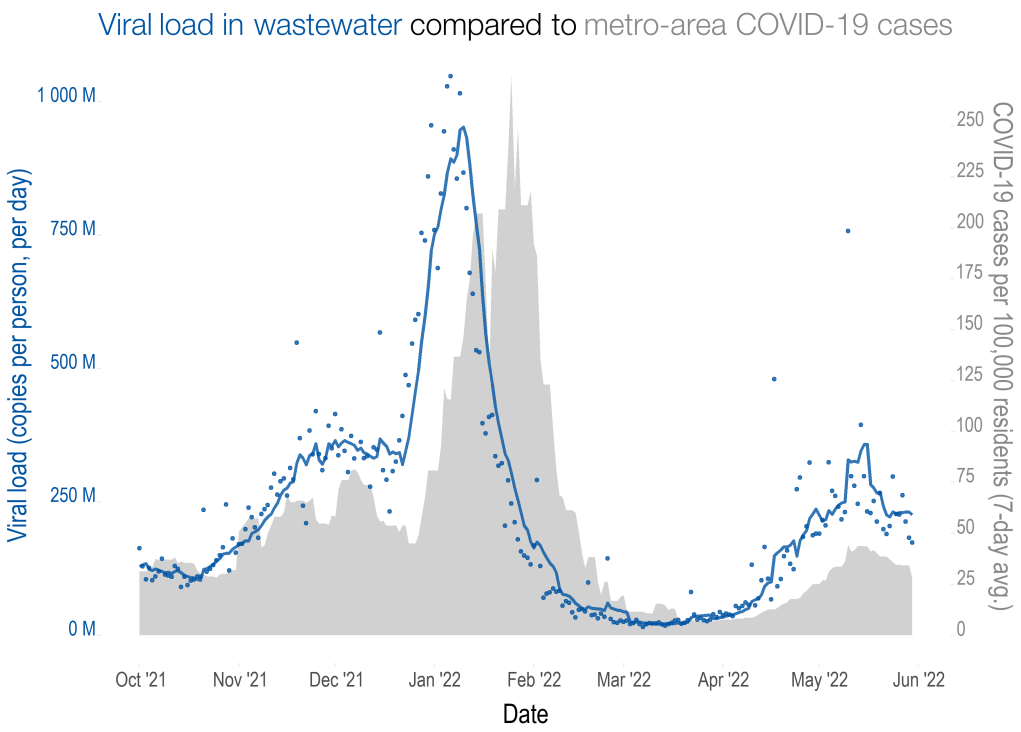
Here in the metro area, scientists in the Met Council's Environmental Services division extract viral genetic material from wastewater samples from the Metro Plant in Saint Paul and send them to research partners at the **University of Minnesota Genomics Center**.

There, scientists measure concentrations of the SARS-CoV-2 viral material in the wastewater to assess COVID-19 prevalence among the population who live in the sewershed, or the large part of the region that the Metro Plant serves.

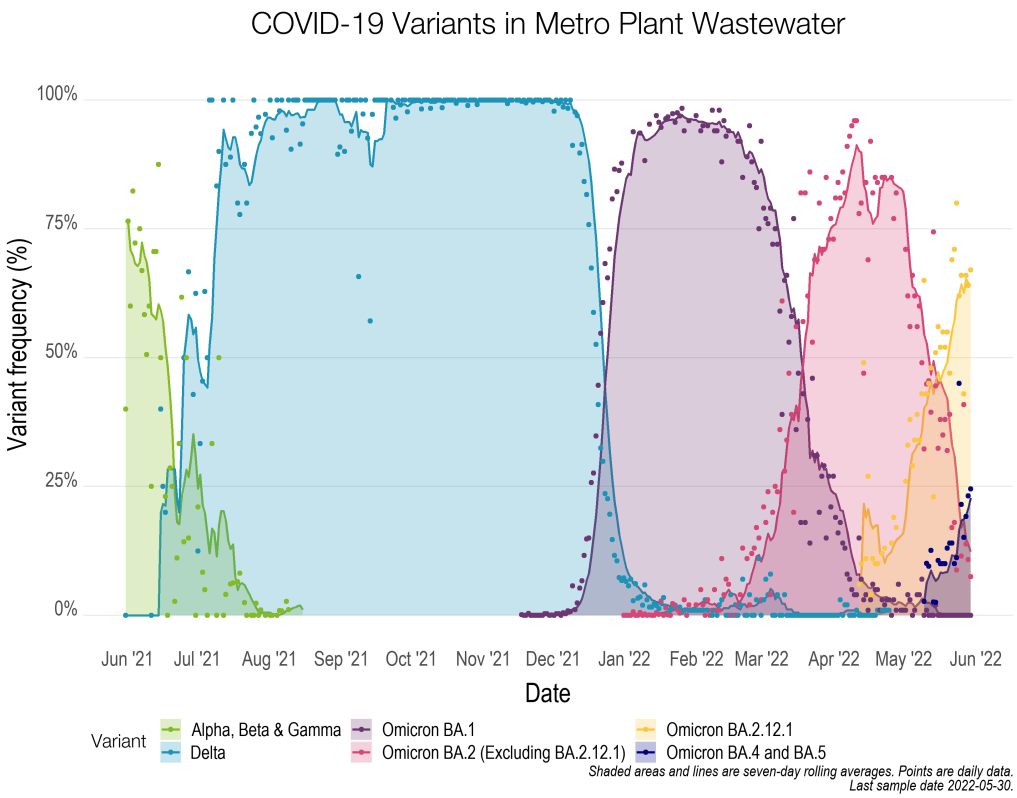
Monitoring wastewater gives scientists another resource to help inform public health decision making and lays the groundwork for wastewater surveillance of other infectious diseases.

Tracking COVID-19

See an interactive version of this information.



Case data (gray area) are reported case data for the 7-county area provided by MDH and downloaded from USAFacts. Case data are a running average of the preceding 7 days. Viral load data are from Metropolitan Council and the University of Minnesota Genomics Center; points are daily values while the line is an average of the preceding 7 days. Last sample date 2022-05-30.



As the Delta variant of the SARS-CoV-2 virus declined, the Omicron variant quickly took its place as the dominant variant in wastewater samples at the Metro treatment plant in Saint Paul. The plant serves a large portion of the seven-county metro area.

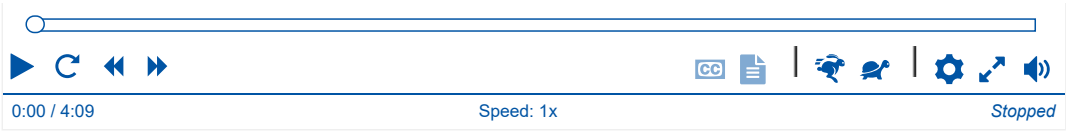
Alpha, Beta and Gamma frequencies are inferred from the presence of the N501Y mutation; Delta from the L452R mutation; and Omicron from the K417N mutation. Presence of K417N mutation before November 18 were inferred to be the Beta variant and are omitted from this image.

Wastewater surveillance supplements COVID-19 testing

In a small and unpretentious lab at the giant Metro Plant, research scientist Steve Balogh extracts tiny droplets of viral genetic material from wastewater samples. He stores them in tiny vials, frozen at 112F below zero, and delivers them weekly to research partners at the UMGC for identification and analysis.

Viruses like SARS-COV-2 continue to change and mutate as they circulate. Working with the university, Balogh shares data with the health department to compare findings from wastewater sampling with COVID-19 testing and infection rates.

Wastewater sampling does not confirm individual cases or provide detailed information about how and where outbreaks occur. But it is an unbiased measure of disease prevalence in the service area, supplementing diagnostic testing.



For more information on wastewater surveillance for SARS-CoV-2, visit the **CDC website**.