



Wastewater Modelling Report: Forecasting the State of the Pandemic using Wastewater Data

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Public Health Agency of Canada has developed a [mathematical model](#) for conducting wastewater based forecasting that describes infections of COVID-19 in the community and also considers how infected people shed the COVID-19 virus into the sewer systems and how that shed virus signal is detected and reported. The clinical case and wastewater surveillance data are used to generate forecasts and help understand what is happening in the community.

The next figures show clinical case and wastewater surveillance data for each city during the Omicron wave. In each figure, the top panel shows the traditional reported human clinical case data (solid black line), model forecasts using only clinical data (pink shaded area), and model forecasts using only wastewater data (blue shaded area). The bottom panel shows the SARS-CoV-2 signal in wastewater (brown line).

The model uses clinical surveillance and wastewater data with the following last observation dates for each site:

City	clinical	wastewater
Winnipeg	2022-07-09	2022-07-14

Winnipeg

Both the clinical (top panel, black curve) and wastewater (bottom panel, brown curve) signals suggest that after the first Omicron wave in January 2022, SARS-CoV-2 has circulated at a low level in Winnipeg. More recently, however, wastewater data has trended higher while clinical data has remained low, suggesting an under-reporting of cases in the community. Wastewater-based projections suggest an increase in infections in the next few weeks.

