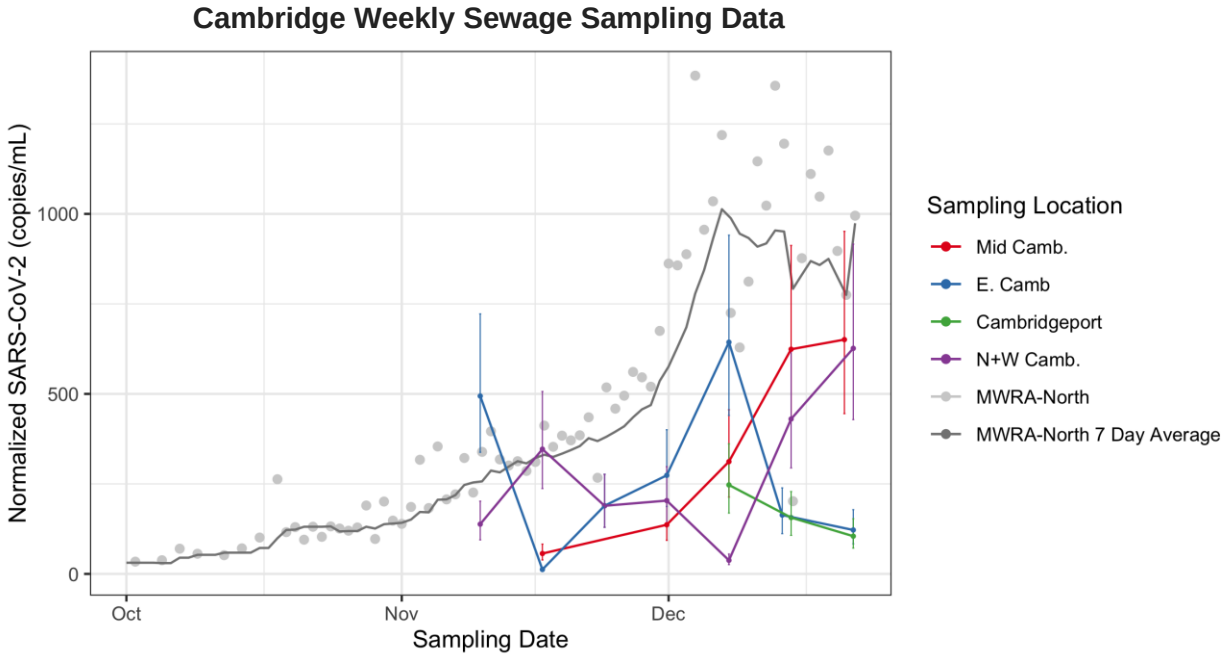
Background

In November 2020, the City of Cambridge began collecting and analyzing COVID-19 data from municipal wastewater which can serve as an early indicator of increased COVID-19 infections in the city. The Cambridge Public Health Department and Cambridge Department of Public Works are using technology developed by Biobot, a Cambridge based company, and partnering with the Massachusetts Water Resources Authority (MWRA). This Cambridge wastewater surveillance initiative is being funded through a $175,000 appropriation from the Cambridge City Council.

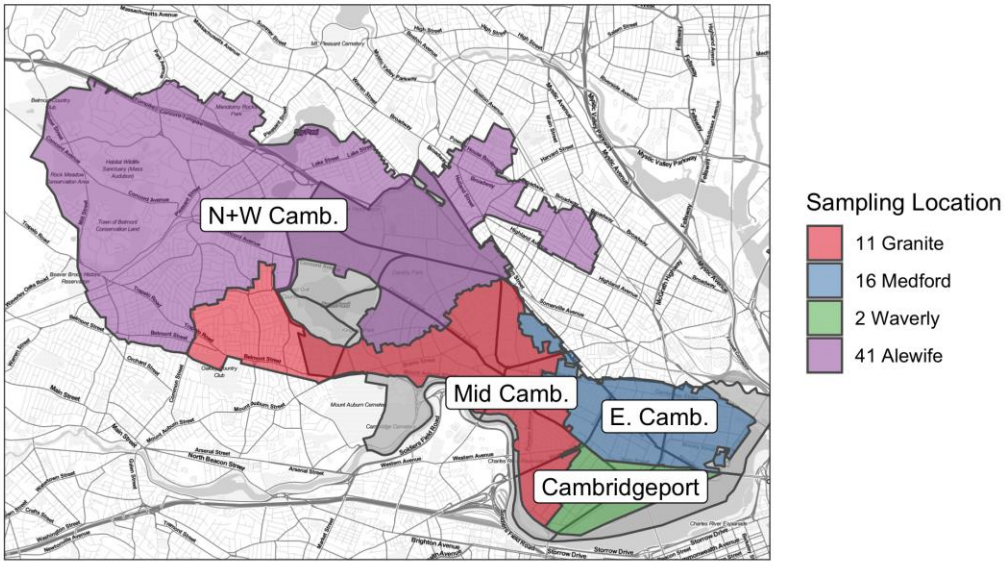
About this chart and map

The chart below ("Cambridge Weekly Sewage Sampling Data") indicates the presence of the COVID-19 virus (measured as viral RNA particles from the novel coronavirus per ml) in municipal wastewater. The data shown here were collected as a 24-hour composite sample (taken weekly) from November 11 - December 23, 2020.



All areas within the City of Cambridge are captured across four separate catchment areas (or sewersheds) as indicated on the map below ("Map of Wastewater Sampling Sites in Cambridge"). The N and W Cambridge sample (shown in purple) also includes nearly all of Belmont and very small areas of Arlington and Somerville (light purple). The remaining collection sites are entirely -- or almost entirely -- drawn from Cambridge households and workplaces.

Map of Wastewater Sampling Sites in Cambridge



Data are corrected for wastewater flow rate, which adjusts for population in general. Data shown are expected to reflect the burden of COVID-19 infections within each of the four sewersheds. A lag of approximately 4-7 days will occur before new transmissions captured in wastewater data would result in a positive PCR test for COVID-19, the most common testing method used.

While this wastewater surveillance tool can provide an early indication of major changes in transmission within the community, it remains an emerging technology that should only be considered along with confirmed cases and other clinical metrics to assess community transmission.

Notes on these data:
Each location is selected because it reflects input from a distinct catchment area (or sewershed) as identified on the color-coded map.

Viral data collected from small catchment areas like these four Cambridge sites are “noisier” than data collected from central collection points (like the MWRA facility on Deer Island) where wastewater from dozens of communities are joined and mixed.

Data from each catchment area will be impacted by daily activity among individuals living in that area (e.g. working from home vs. traveling to work) and by daytime activities that are not from residences (businesses, schools, etc.)

For additional information, the Regional MWRA data provides a more stable measure of regional viral counts.