Finding an Accurate Way to Track the Pandemic

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Background
- COVID-19 is a novel and detrimental human pathogen.
- Methods to accurately track COVID-19 cases are lacking.
- At-home testing is believed to confound the accuracy of public health tracking of COVID-19 cases.
- Researchers and Employees of Olmsted County, Mayo Clinic, UMR, and Rochester Public Works are collaborating to test the following hypothesis:

- Wastewater is hypothesized to provide an advanced and accurate notice in public COVID-19 cases [1].

Methods

Receive 6 samples of 40 mL wastewater that are collected in the span of a week from the WRP in Rochester

Concentrate the wastewater using an InnovaPrep Concentrating Pipette

Extract RNA with Qiagen Viral RNA Purification kit

Detect and quantify Sars CoV2 Samples

Concentrate the wastewater using an InnovaPrep Concentrating Pipette

Calculate the concentration of RNA from the amount of positive droplets

Discussion

- The results indicate that our novel techniques to evaluate wastewater for COVID-19 incidents, accurately depicts population COVID-19 cases.
- The newfound accessibility of at-home antigen test options, such as those made available through Covidtests.gov in February, 2022, are believed to contribute to reduced reported COVID-19 infections.
- However, our testing can depict a more accurate case amount since it is focused more on the actual water people use rather than relying on them to report their results.
- Therefore, we can confidently say our testing accurately estimates future trends in COVID cases.

References
2. Luckstein, A., Navaratnarajah, C., Casper, J., Bjork, M. “Rochester COVID-19 Wastewater Project - A collaboration between the City of Rochester, Olmsted County, Mayo Clinic, and the University of Minnesota, Rochester”