



WASTEWATER AND COVID-19

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What is COVID-19? COVID is a single-stranded RNA (Ribonucleic acid) and is associated with a group of viruses referred to as coronaviruses. Therefore, we hear the pandemic often referred to as “COVID or Corona”.

There have been several discussions about surveillance for COVID in the wastewater. What are we looking for? We will be searching for RNA from SARS-CoV-2, the virus that causes COVID-19.

Is wastewater surveillance in search of COVID right for my community? Remember, wastewater surveillance for RNA from the virus that causes COVID-19 is a developing field and you should carefully analyze your cost, efficacy, and data. The goal is to predict outbreaks prior to symptoms, so communities can prepare.

Are there flaws? Yes. Low levels of infection in a community may not be captured by sewage surveillance. “The lower limits of detection (i.e., the smallest number of people shedding the virus in stool that can still be detected by current testing methods) for sewage surveillance are not yet well understood. More data on fecal shedding by infected individuals over the course of disease are needed to better understand the limits of detection.”¹



What is the goal of testing? Over time sampling can indicate disease progression, allowing better public health decision making. As I mentioned earlier, be cautious of your data. It is not possible to predict the number of individuals infected or symptomatic. Your plant may not be suitable for testing (i.e. if your sewage is pre-treated).

“SARS-CoV-2 can be shed in the feces of individuals with

COVID-19, there is no information to date that anyone has become sick with COVID-19 because of direct exposure to treated or untreated wastewater.”¹ This does not mean you should not use PPE (i.e. gloves, face masks, face shields, lab coats or aprons, etc.).

Currently there are no specified methods for collecting samples for the purposes of monitoring the level of RNA from the SARS-CoV-2 virus in wastewater and may vary from lab to lab. The only recommendation is to use composite sampling as you would for BOD5. Refrigerate samples at 4°C immediately after collection and, if possible, process them within 24 hours to reduce SARS-CoV-2 RNA degradation and increase surveillance utility.

Thus far the primary targets for sampling have been institutions such as college dorms, prisons, hospitals, and other institutions with large concentrations of populations. Again, the data on the effectiveness of targeted wastewater surveillance to inform public health agencies or institutional operations is still in its infancy.

Use of wastewater surveillance data is an evolving science. Hopefully, as we learn more, our public health will be able to better serve communities using these predictors.

Remember stay safe and use your PPE! 💧💧💧

¹ CDC website Wastewater sampling