June 1, 2020

Community Wastewater Surveillance as an Alternative Metric for Shelter-in-Place Policies

The issue of determining when to relax or reimpose shelter-in-place policies during the Novel Coronavirus (SARS-CoV-2) pandemic has become a lightning rod across the globe as we enter the summer months. Individual testing, while increasing in parts of the United States, is still lacking in both availability and confidence. Municipal wastewater treatment provides essential public services across the nation and can offer a complementary metric for assessing those policies. This will become increasingly important in anticipation of a possible second wave in the fall.

What is Wastewater Based Epidemiology?

Individuals infected with COVID-19, both asymptomatic and symptomatic, shed strands of virus RNA in bodily excretions that find their way to the sewerage system. Testing the raw (influent) wastewater can detect the RNA of SARS-CoV-2 whether it is infectious or not. Such testing is known as Wastewater Based Epidemiology (WBE) and has been used for decades around the globe. WBE allows communities to track whether the scale of outbreak is declining, increasing, or staying level and is also more practical and cost-effective than testing every individual multiple times. Should an increase in the presence of the virus be discovered, existing protocols used commonly in the wastewater pretreatment program can be employed to identify the general location of the source so that individual testing can then be used for mitigation purposes. While influent testing does not determine infectivity, further testing can be done should that information be necessary to identify sources in the community.

Where is Wastewater Based Epidemiology Being Used?

The wastewater sector in California, across the U.S., and the globe is already utilizing WBE on a limited basis, with multiple universities and private labs offering such analyses. Laboratories and the wastewater sector are currently working with the federal government to establish baseline methodologies. However, there is a critical need for funding and federal coordination in order to effectively implement WBE. A coordinated effort is vital to provide a data repository and to ensure comparable results, standard methods guidelines, timely notifications, and data interpretation between labs.

Why am I receiving this Information?

We offer WBE as a viable additional metric to inform community, state, and federal policies to mitigate impacts from SARS-CoV-2. This letter serves to raise awareness of this option and to seek directed funding to establish national coordination, standard methods guidelines and increase lab capacity.

Please contact Greg Kester, with the California Association of Sanitation Agencies (CASA), at gkester@casaweb.org or at 916-844-5262 for further information.