

## Study suggests wastewater at treatment plants can be used as a barometer for COVID-19 infection rates

May 29 2020, by Bob Yirka



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A team of researchers at Yale University (with assistance from the Connecticut Agricultural Experimental Station) has found early signs



that testing wastewater for SARS-CoV-2 virus RNA can be used to gauge early COVID-19 infection rates in a given community. They have written a paper describing their findings and uploaded it to the *medRxiv* preprint server.

Prior research has shown that when people are infected with the SARS-CoV-2 virus, the virus can sometimes show up in their stool samples. Prior research has also shown that SARS-CoV-2 virus RNA can show up in stools. This led the team at Yale to test samples from the local <u>wastewater</u> treatment plant.

In recent weeks, governments around the world have been loosening the rules regarding public behavior during the pandemic. After initially ordering people to remain in their homes, officials have now begun to allow people to venture into <u>public places</u>, though some restrictions still apply—most people must wear a <u>face mask</u>, for example, and people are asked to maintain distance between themselves and others, which includes no amassing into crowds. The loosening of restrictions has had mixed results—some places continue to see declining infection and <u>death rates</u>; others, in so-called hot-spots, have seen a dramatic rise in rates, forcing officials to reinstitute lockdown measures.

In this new effort, the researchers suggest that they may have found a way to help officials detect an impending rise in cases before they see official infection rate statistics begin to rise—testing the municipality's wastewater. The researchers found that they were able to track the arrival of the <u>virus</u> into a community and to watch as it infected more people—it was reflected in the density increase of viral RNA in the wastewater. But importantly, the rise in <u>infection</u> rates preceded the official count tally by up to a week—a time when infected people were not yet showing symptoms but were infecting other people. This finding suggests that testing wastewater might be a way for communities to discover if they are about to become a hotspot a week before it actually



happens, possibly lessening the severity of an outbreak.

**More information:** Jordan Peccia et al. SARS-CoV-2 RNA concentrations in primary municipal sewage sludge as a leading indicator of COVID-19 outbreak dynamics, (2020). <u>DOI:</u> <u>10.1101/2020.05.19.20105999</u>

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