Could sewage monitoring help track COVID-19 hotspots?

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Microbiologist Dr Pattanathu Rahman. Credit: University of Portsmouth

Scientists suggest the COVID-19 virus could be tracked through a closer

watch on sewage systems worldwide.

The virus has been detected in the feces of patients with coronavirus in the Netherlands, U.S., France and Australia.

Dr. Pattanathu Rahman, a microbiologist at the University of Portsmouth and Director of TeeGene, and colleagues at Bharathiar University, India argue that monitoring of wastewater for the coronavirus is the next step.

The results could give health authorities advance warning of further outbreaks.

Their research is published in *Current Opinion in Environmental Science & Health*.

Dr. Rahman said: "Despite the advancements being made in medicine and research, it is proving difficult to contain this virus.

"It's highly likely that the virus, SARS-CoV-2, survives in wastewater, so we looked at using nanofiber filters as a wastewater pre-treatment routine and the upgrade of existing wastewater evaluation and treatment systems to serve as a surveillance tool.

"It's nearly impossible to test every individual in a pandemic, so it's critical we locate the hotspots of the disease and begin isolation and treatment from there."

Environmental monitoring has previously been used to track and help eliminate viruses including poliovirus and aichivirus.

Being able to monitor effectively depends on a wide range of factors, including sanitary and climatic conditions, sampling methods, rainfall

and filters. Assuming a wastewater treatment station anywhere in the world could be regularly monitored, the major shortcoming of such testing is individuals couldn't be identified and a positive result would merely indicate that the virus was active in a particular population.

Dr. Rahman said: "Water treatment systems play a significant role in public health protection.

"Treated wastewater has a wide range of uses from drinking water, to being used for irrigation and food production. There is significant risk the virus can be transmitted through sewage and it's possible slimy bacteria that forms a thin coat over sewage pipelines could help spread of the virus."

More information: Anila Venugopal et al. Novel Wastewater Surveillance Strategy for Early Detection of COVID – 19 Hotspots, *Current Opinion in Environmental Science & Health* (2020). DOI: 10.1016/j.coesh.2020.05.003

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