

How poo could be a silver bullet in tracking COVID-19

April 28 2020



Credit: CC0 Public Domain

Since the beginning of the epidemic, researchers across the world have been tracing the spread of the coronavirus through waste water and sewage.

From the first outbreak in China, several scientific studies have picked up the clear presence of COVID-19 in patients' stools.

Testing human sewage could now become a key way of tracking the pandemic's spread—and a precious [early warning system](#) for a feared second wave.

Researchers have found genetic traces of Sars-Cov-2—as the [virus](#) is officially known—in [waste](#) water in toilets, sewers and sewage farms from Brisbane to Paris and Amsterdam.

These discoveries pose "no risk" to [public health](#), insisted Luca Lucentini, water quality director at the Italian Institute Superior of Health (ISS), after several tests came up positive in Rome and Milan.

Experts say drinking water in countries with strict treatment procedures is also safe.

While the presence of the virus in faeces does not mean that it can be transmitted through them, being exposed to effluent "could pose a health risk," warned researchers Willemijn Lodder and Ana Maria de Roda Husman from the Dutch Centre for Infectious Diseases Control in a paper in The Lancet.

The centre reported late last month that it detected [genetic material](#) from the virus in waste water in Amsterdam.

'Precisely followed deaths'

But the pair also insist that waste water could a precious "data source, indicating if the virus is circulating in the [human population](#)".

It could even allow experts to "track the virus", French virologist

Professor Vincent Marechal of the Sorbonne university in Paris told AFP.

In a study of waste water in Paris—which has yet to be validated by other scientists—Marechal and his team found that the rise in levels of genetic material from the virus in water "followed precisely the number of (coronavirus) deaths".

Marechal is now call for a national waste water warning system in France which might help "anticipate a second wave" of the virus.

Given the large number of [coronavirus](#) cases that have little or no symptoms, waste water testing could signal the presence of the virus even before the first cases are clinically confirmed in areas untouched by the epidemic or where it has ebbed.

"That would allow barrier measures to be put place and give us time, a key element with this epidemic," Marechal added.

Such a system has already worked against other viruses.

In a study published in 2018, researchers showed how polio being detected in waste water in Israel in 2013 gave time for a vaccination campaign to be launched, which meant no child was paralysed by the disease.

Call for global test network

For the Sars-Cov-2, waste water studies in several countries are still at an early stage. But some scientists are enthusiastic about their potential.

"It could be used as an early warning tool for pandemic surveillance," Dr. Warish Ahmed, of the Australian public research agency CSIRO,

told AFP.

Having found the virus in waste water in Queensland, he said it could also be a key indicator to show if lockdown and other measures were working.

"Access to this type of data could underpin... a surveillance program to identify areas where there is evidence of COVID-19 outbreaks, without requiring testing of all individuals," Dr. Warish added.

He said although it was a "cost effective way of tracking community-level infection", he warned that it should be used "in combination with other measures, such as the testing of individuals."

Its relative cheapness would also make it useful for countries that "don't have the technical or logistic means to test the carriers" of the virus, Marechal said.

He has called on the World Health Organization to set up a worldwide [waste water](#) virus detection network, which would help combat other killer diseases beyond beyond COVID-19.

"It could be essential in Africa," he said. "To protect a population, you have to safeguard [water](#) quality."

© 2020 AFP

Citation: How poo could be a silver bullet in tracking COVID-19 (2020, April 28) retrieved 9 May 2024 from <https://medicalxpress.com/news/2020-04-poo-silver-bullet-tracking-covid-.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.