Could COVID-19 in wastewater be infectious?

August 24 2020

Credit: CC0 Public Domain

Wastewater containing coronaviruses may be a serious threat, according to a new, global study led by researchers from the Zuckerberg Institute for Water Research at Ben-Gurion University of the Negev (BGU).

The new paper, published in *Nature Sustainability*, by an international collaboration of 35 researchers, evaluates recent studies on coronaviruses in wastewater and previous airborne infectious diseases, including SARS and MERS. The goal is to evaluate potential threats, avenues of research and possible solutions, as well as garner beneficial perspectives for the future.

"There is ample reason to be concerned about how long coronaviruses survive in wastewater and how it impacts natural water sources," says lead author Dr. Edo Bar-Zeev of the BGU Zuckerberg Institute. "Can wastewater contain enough coronaviruses to infect people? The simple truth is that we do not know enough and that needs to be rectified as soon as possible."

Bar-Zeev, and his postdoc student, Anne Bogler, together with other renowned researchers, indicate that sewage leaking into natural watercourses might lead to infection via airborne spray. Similarly, treated wastewater used to fill recreational water facilities, like lakes and rivers, could also become sources of contagion. Lastly, fruits and vegetables irrigated with wastewater that were not properly disinfected could also be an indirect infection route.

The research team recommends immediate, new research to determine the level of potential infection, if any, and how long coronaviruses last in various bodies of water and spray.

"Wastewater treatment plants need to upgrade their treatment protocols and in the near future also advance toward tertiary treatment through micro- and ultra-filtration membranes, which successfully remove viruses," Bar-Zeev and his colleagues say.

At the same time, wastewater can serve as a canary in a coal mine because it can be monitored to track COVID-19 outbreaks.

Coronaviruses start showing up in feces before other symptoms like fevers and coughs show up in otherwise asymptomatic people. Regular monitoring, therefore, can give authorities advance warning of hot spots. BGU researchers recently completed a pilot study in Ashkelon, Israel using new methodology to detect and trace the presence of the virus and calculate its concentration to pinpoint emerging COVID-19 hotspots. Other BGU researchers are working on developing water nanofiltration technologies.

More information: Anne Bogler et al, Rethinking wastewater risks and monitoring in light of the COVID-19 pandemic, *Nature Sustainability* (2020). DOI: 10.1038/s41893-020-00605-2

Provided by American Associates, Ben-Gurion University of the Negev

Citation: Could COVID-19 in wastewater be infectious? (2020, August 24) retrieved 24 April 2024 from https://medicalxpress.com/news/2020-08-covid-wastewater-infectious.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.