

California Department of Public Health

Wastewater Surveillance

Beyond COVID-19: Influenza, RSV, Mpox, etc.



Monitoring of wastewater for the presence of infectious pathogens as a type of environmental surveillance method has a long history of use in public health. With this method, rather than testing individual people for a specific disease, it is possible to test an environmental sample, in this case, wastewater or sewage, which can provide information about whether a disease is present in a community.

During the COVID-19 pandemic, wastewater surveillance has been used for the detection and quantification of SARS-CoV-2, the virus that causes COVID-19, that has been shed into wastewater via feces from infected people. Testing for pathogens in wastewater can help public health know if a specific pathogen is present within a community and can shed light on whether it is spreading within the community.

Wastewater surveillance has recently been shown to be able to detect and monitor for other infectious diseases of public health importance beyond SARS-CoV-2, including but not limited to mpox¹, influenza (flu)², respiratory syncytial virus (RSV)³, norovirus⁴, and *Candida auris* (C. auris)⁵.

Use of wastewater to monitor for a pathogen depends on many factors, including

- Technical considerations:
 - Whether a pathogen can be accurately detected in wastewater
- Public health need:
 - Whether monitoring for such a pathogen in wastewater is important for public health and provides data that cannot otherwise be obtained
- Ethical considerations:
 - Whether such monitoring raises privacy or other concerns
- Implications of monitoring to stakeholders:
 - Downstream consequences of monitoring
- Local input:
 - Concerns raised by the community under surveillance

References:

- 1) <https://doi.org/10.1056/NEJMc2213882>
- 2) <https://doi.org/10.1021/acs.estlett.2c00350>
- 3) <https://doi.org/10.1021/acs.estlett.1c00963>
- 4) [https://doi.org/10.1016/S2666-5247\(22\)00386-X](https://doi.org/10.1016/S2666-5247(22)00386-X)
- 5) <https://doi.org/10.1021/acs.est.2c07763>

