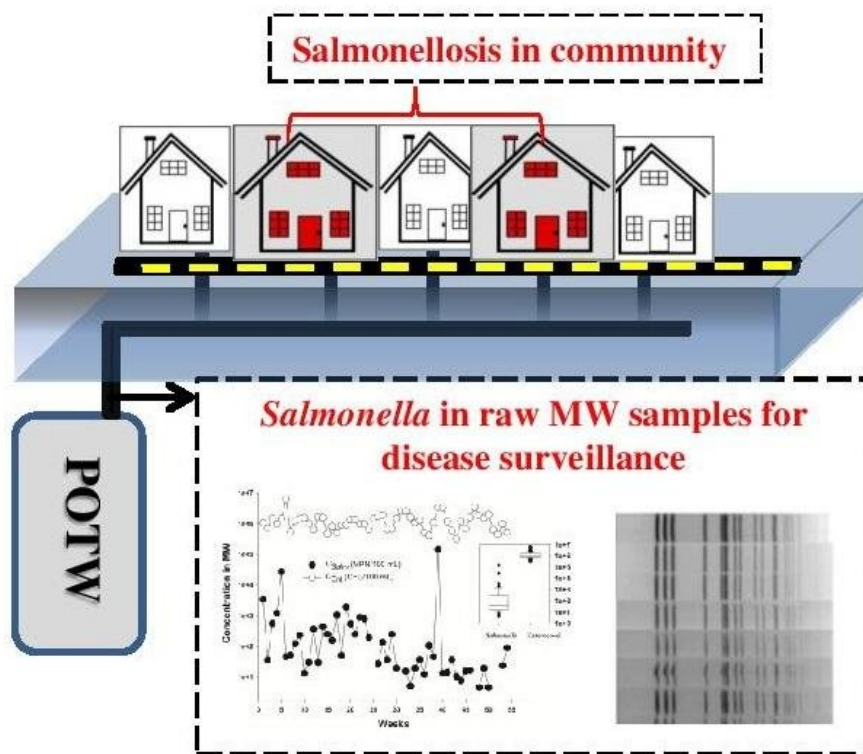


Municipal wastewater can be used to track diseases in UH study

May 25 2018



Wastewater collection systems for infectious disease monitoring. Credit: University of Hawaii at Manoa

A new study led by Tao Yan, professor of civil and environmental engineering at the University of Hawai'i at Mānoa surveyed Honolulu's municipal wastewater system and determined that bacterial pathogen information collected matched those collected through the state's health laboratories. Yan's research was published in *Environmental Science & Technology* and selected by *Nature Sustainability* as its research highlight of the month.

The concentration and makeup of one group of [bacterial pathogen](#) *Salmonella* was monitored over a 54-week period in Honolulu wastewater and showed a significant correlation to salmonellosis cases reported in Hawai'i health clinics during the same period. Between wastewater and health clinics, 21 strains were shared, including nine of the 12 most commonly detected clinical strains, as well as one outbreak-associated strain called Paratyphi B.

The results proved that [municipal wastewater](#) can be used as a microbial surveillance platform for [infectious diseases](#) in a community, paving the way for rapid and comprehensive disease tracking, including gastrointestinal infectious diseases. Efforts are also underway to expand the research to cover other types of pathogens (including viruses and protozoa) and antibiotic resistance.

"Although a lot of research and development work is still needed, this shows that wastewater-based infectious [disease](#) surveillance is feasible and can provide a new set of tools to protect human health," said Yan.

"Ultimately, I would like to see a global network of wastewater infrastructures that work in sync to detect and track the occurrence and transmission of infectious diseases."

More information: T. Yan et al. Municipal Wastewater as a Microbial Surveillance Platform for Enteric Diseases: A Case Study for *Salmonella* and Salmonellosis, *Environmental Science & Technology* (2018). [DOI:](#)

[10.1021/acs.est.8b00163](https://doi.org/10.1021/acs.est.8b00163)

Provided by University of Hawaii at Manoa

Citation: Municipal wastewater can be used to track diseases in UH study (2018, May 25)
retrieved 9 May 2024 from

<https://phys.org/news/2018-05-municipal-wastewater-track-diseases-uh.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.