

Local Wastewater Monitoring in Action

A Reflection on the 2025 NACCHO Wastewater Monitoring Mentorship Program



Introduction

Wastewater monitoring (WWM) is a population-level public health tool that analyzes wastewater to monitor community health and detect emerging threats. **Eighty percent of households in the United States are connected to municipal wastewater collection systems, but the actual number of individuals contributing to these systems is likely much higher due to those using public buildings, schools, and other facilities.** As a result, monitoring sewage serves as a comprehensive pooled sample to provide information on community- and subcommunity-level infections and trends.

Best used in conjunction with other forms of disease monitoring, WWM is inclusive, non-invasive, and inexpensive and can provide a better picture of community-level infections. WWM can also serve as an early-warning system to detect disease trends and emerging health threats before clinical case data and hospital admission data are available. As an early-warning tool, public health officials and healthcare providers can use WWM to make public health decisions and take action to limit the spread of disease in their community.

Though WWM existed on a small scale prior to the COVID-19 pandemic, it was the pandemic that led to the widespread development and expansion of WWM across the United States. In 2020, the Centers for Disease Control and Prevention (CDC) established the [National Wastewater Surveillance System](#) (NWSS) to coordinate and develop national capacity to monitor infectious disease through wastewater monitoring. **Today, local health departments (LHDs), state health departments, academic institutions, and private organizations use WWM to monitor pathogens including SARS-CoV-2, influenza A and B, Respiratory syncytial virus (RSV), and more.**



Wastewater monitoring can be inclusive, non-invasive, inexpensive, and serve as an early warning system of community-level infections. Public health officials and healthcare providers can use this method to make informed decisions and take action to limit the spread of disease in their community.

To support local health departments in their WWM efforts, the National Association of County and City Health Officials (NACCHO), with support from CDC, launched the Wastewater Monitoring Mentorship Program in 2022. LHDs with demonstrated experience in using WWM are matched with LHDs in the early stages of developing a WWM program and who are looking for guidance and tools to facilitate this development. **During the mentorship program, NACCHO funds and supports mentors and mentees to meet their individual project goals and participate in the following activities:**

- ① Monthly technical assistance calls
- ☎ Individual mentor-mentee calls
- ➔ Site visits to mentors' and mentees' jurisdictions
- 📖 Sharing of tools, resources, and lessons learned
- 🗣 Peer-to-peer networking opportunities
- ① Connecting with subject-matter experts

Supporting Rural Jurisdictions

This year, the mentorship program emphasized the inclusion of rural health departments, recognizing the barriers that rural communities may face in implementing WWM programs. These barriers may include: inadequate funding and supplies; physical distance between laboratories, wastewater treatment plants, and other components of WWM; lack of LHD staff capacity to maintain a WWM program; lack of wastewater treatment plant staff capacity, materials, or expertise to carry out sampling; and large percentage of population utilizing septic tanks.

The [2025 cohort](#) was the 4th cohort of the program and featured five (5) mentors and eleven (11) mentees, with each mentor supporting two to three mentees. **Twelve (12) of the LHDs are rural or serve rural populations.**

- **Mentor:** Andrews County Health Department (TX)*
 - » Mentee: Dent County Health Center (MO)*
 - » Mentee: Lewis County Health Department (WV)*
- **Mentor:** Boston Public Health Commission (MA)
 - » Mentee: City of Laredo Public Health (TX)
 - » Mentee: Harris County Public Health (TX)*
- **Mentor:** Lincoln-Lancaster County Health Department (NE)
 - » Mentee: Cerro Gordo County Department of Public Health (IA)*
 - » Mentee: Union County Health Department (OH)*
- **Mentor:** Northeast Texas Public Health District (TX)*
 - » Mentee: Anchorage Health Department (AK)*
 - » Mentee: Hidalgo County Health and Human Services (TX)*
- **Mentor:** San Mateo County Health (CA)*
 - » Mentee: County of San Diego Public Health Laboratory (CA)*
 - » Mentee: Nevada County Public Health Department (CA)*
 - » Mentee: Riverside County Public Health Laboratory (CA)

**LHD is rural or serves rural populations.*



In 2025, NACCHO's mentorship program emphasized the inclusion of rural health departments, recognizing the unique barriers that rural communities may face in implementing wastewater monitoring programs.

This report summarizes the successes of the mentors and mentees throughout this program, as well as recommendations for other LHDs looking to start or expand a wastewater monitoring program in their jurisdiction.

Mentorship Program Impact

The 2025 cohort of mentors and mentees worked together from February through July of 2025. **The 16 mentors and mentees represented a broad group of LHDs, spanning nine states and six U.S. Department of Health and Human Services (HHS) regions.** Keep reading to learn more about the mentorship program's impact in numbers, as well as select success stories from mentees.

Out of 16 of NACCHO's Wastewater Monitoring Mentorship Program Cohort 4 Participants Shown on This Map, 12 are Designated Rural or Serves Rural Populations

■ Mentee ■ Mentor



Source: National Association of County and City Health Officials • Created with Datawrapper

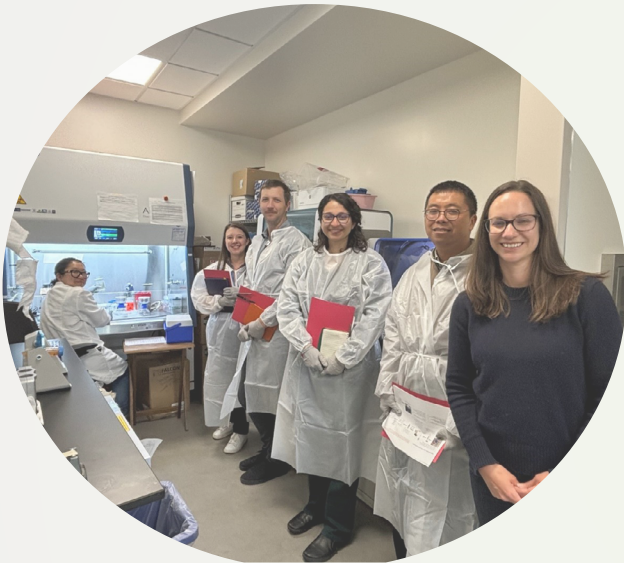
Programmatic Impact In Numbers

- ✓ **10 mentors and mentees attended** the California Department of Health and Water Environment Federation's [Wastewater Disease Surveillance Summit](#) on June 3 and 4, 2025 in Los Angeles, CA.
- ✓ **Nine mentors and mentees attended** NACCHO's [From Sewers to Solutions: Wastewater Monitoring for Public Health Action](#) workshop on July 14, 2025, in Anaheim, CA.
- ✓ **An average of 39.5 hours of technical assistance** were received by each mentee including monthly calls with NACCHO, calls with mentors, site visits, conferences, and other meetings.
- ✓ **10 presentations were provided by mentors** during monthly meetings on WWM topics (e.g., data analysis, data utilization, partnerships, data visualization & public communication, and more).



Mentee Achievements

- ✓ Several mentees developed strategies for **recruiting new wastewater treatment plants to their programs** and visited and toured a number of plants in their jurisdictions.
- ✓ One mentee transitioned to a new statistical software and **learned how to automate and streamline their reporting workflow using statistical software**, as well as build a dashboard, through the guidance of their mentor.
- ✓ One mentee **developed an expansion and sustainability plan for their WWM program** and connected with new federal and academic partners to further expand their WWM efforts.
- ✓ One mentee **learned how to effectively analyze, use, and communicate the WWM data** they were receiving.
- ✓ One mentee received training on how to implement wastewater testing at their own public health laboratory and is **preparing to move testing in-house in their jurisdiction** in the near future.



Site Visits

During the mentorship program, mentors hosted each of their assigned mentees for an in-person or virtual site visit. The purpose of these site visits was to demonstrate WWM processes in action, allowing mentees to observe and learn from their mentors. The agenda and activities of these site visits were developed based on the specific needs of each mentee. A total of 16 site visits were conducted during the mentorship program. Example site visit activities include:

- ✓ Presentations from subject-matter experts
- ✓ Tour of wastewater treatment plants
- ✓ Demonstration of laboratory testing processes
- ✓ Demonstration of data analysis process
- ✓ In-person discussions and work sessions

Mentees reported that the site visits were extremely valuable to their mentorship experience. They were able to see successful WWM programs in action, whether it was through touring their mentor's wastewater treatment plant or seeing a demonstration of their mentor's laboratory workflow. They were also able to spend dedicated, uninterrupted time with their mentor, working through their questions and exchanging information and resources.

Program Successes

After participating in the mentorship program, mentees reported:

- ✓ **Increased partnerships with WWM partners.** Partnerships increased with:
 - » Other local government agencies
 - » Federal agencies
 - » State health departments
 - » Wastewater utilities
- ✓ **Increased capacity across key wastewater monitoring objectives, including data utilization for decision-making, laboratory testing and analysis, wastewater sampling, and mapping/GIS.** More resources and guidance are needed to increase capacity in communicating findings with the public and in genomic sequencing.
- ✓ **Increased experience to monitor for multiple pathogens,** including Mpox, RSV, influenza A and B, and SARS-CoV-2.
- ✓ **Enhanced local capacity to implement and/or strengthen wastewater monitoring.** Participants reported plans to apply lessons learned in their future work.
- ✓ **Hands-on learning through site visits to their mentor's jurisdiction.** Seeing WWM activities in person was critical to bringing back lessons to their own jurisdictions.





“For jurisdictions in underserved or rural areas, wastewater monitoring may seem overwhelming at first. But with the right support, mentorship, and mindset, it’s entirely achievable. The journey we took from knowing very little to becoming confident, capable leaders in this space is one we hope inspires others. The mentorship program didn’t just equip us with tools and information, **it gave us the vision, confidence, and partnerships to build something lasting.**” - **Mentee (2025 Cohort)**

“This program increased our confidence in our ability as a small wastewater surveillance program and the importance of sharing expertise and experience with others. We took back a lot of ideas from other mentor sites during this program, and it expanded my thinking of how to apply wastewater surveillance in our community as well as the future of what wastewater surveillance can potentially do.” - **Mentor (2025 Cohort)**



“Participating in the NACCHO mentorship program has **strengthened our wastewater monitoring program in measurable ways from refining our analysis tools to deepening our understanding of national best practices.** The flexibility of the program allowed us to tailor our goals and apply what we learned in a meaningful way.”
- **Mentee (2025 Cohort)**



Getting Started with Wastewater Monitoring: A Checklist

Is your health department new to wastewater monitoring or looking to expand your program? Check out [NACCHO's checklist](#) for a practical list of questions and considerations to consider when determining your next steps. This checklist was developed based on lived experiences and recommendations from health departments participating in the NACCHO mentorship program.

NACCHO is committed to supporting LHDs in the development and expansion of their WWM efforts. Visit naccho.org/wash to explore a variety of wastewater sources, including a resource library, Community of Practice, and reports from past cohorts of the mentorship program.

Acknowledgments

This publication was made possible through support from the Centers for Disease Control and Prevention awards 6 NU38PW00037-01-01 and 6 NU50CK000587-04-02. The contents do not necessarily represent the official views of the sponsor. NACCHO is grateful for this support. NACCHO thanks Deise Galan, Rebecca Rainey, Chelsea Gridley-Smith, Lisseth Guerra, and Aaron Alford for their work on this report.



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The mission of the National Association of County and City Health Officials (NACCHO) is to improve the health of communities by strengthening and advocating for local health departments.

1201 Eye Street, NW 4th Floor Washington, DC 20005

P 202.783.5550 F 202.783.1583

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