

Nassau County Wastewater Surveillance Quarter 1 Report 12/24/24-3/31/25



Legend

Sewershed		
Atlantic Beach	Belgrave	Long Beach
Bay Park	Cedar Creek	Oyster Bay
Glen Cove	Great Neck	Port Washington

This report presents preliminary results, during this time period, intended to establish a baseline and provide context for future analysis and interpretation.

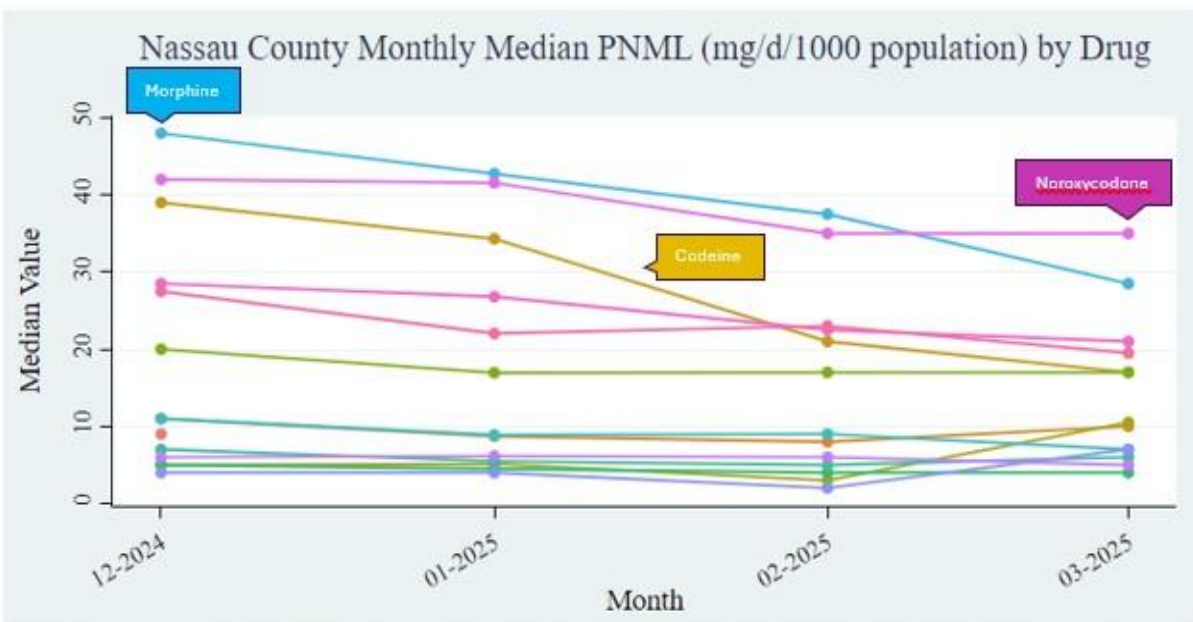
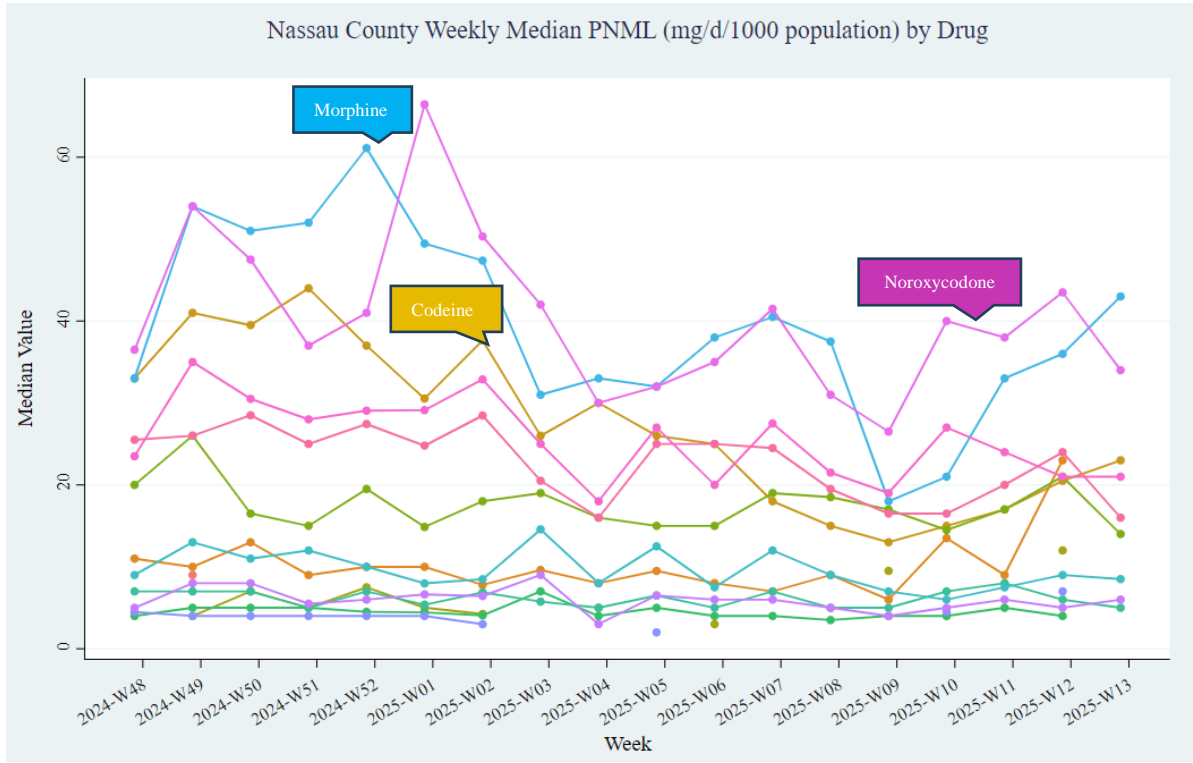
Summary of Activities

1. The Research Foundation and Nassau County Department of Health entered into an agreement for Stony Brook University's Center for Clean Water Technology to perform wastewater analysis of Nassau County's nine sewer districts. Nassau County Department of Health received wastewater opioid data from the Center for Clean Water Technology from December 2024 through March 2025.
2. Stony Brook University Center for Clean Water Technology is testing wastewater samples from Nassau County's sewer districts for the following:
 - a) Opioids: Heroin, Buprenorphine, Codeine, Fentanyl, Hydrocodone, Morphine, Methadone, Oxycodone, Dihydrocodeine, Meperidine, Oxymorphone, Naloxone (antagonist), and Naltrexone (antagonist)
 - b) Stimulants: Amphetamine, Methamphetamine, MDMA, Cocaine, Cocaethylene, Caffeine (reference standard)
 - c) Pathogens: Mycobacterium tuberculosis, Vibrio cholerae, Measles
3. On March 13th Nassau County Department of Health hosted a meeting with representatives from Nassau County's sewer districts and Stony Brook University's Center for Clean Water Technology.
 - a) A new initiative is underway between Nassau County Department of Health and Stony Brook University to monitor the wastewater for opioids, stimulants, and pathogens (TB, cholera, and measles). This information may be paired with epidemiologic trends such as hospital visits and EMS data to inform and prepare the community for disease and event surges.
 - b) Early results from December 2024 were presented.
 - c) Wastewater sample collection details were discussed throughout the meeting. Topics included:
 - Temperature – Samples to be kept refrigerated and stored at 4 degrees Celsius
 - Sample collection dates – Preferably to be collected on Mondays and Thursdays
 - Sample Collection Time - 24-hour composite samples to be collected mornings to mornings at a minimum of 1-hour intervals.
 - Provide COB, BOD, or ammonium at whatever interval is convenient, along with the date.
 - Where available, hydraulic pressure information is to be sent to the lab
 - d) Pathogen testing began this March.
 - e) The following resources were shared:
 - [Reducing Health Risks to Workers Handling Human Waste or Sewage | Global Water, Sanitation, and Hygiene \(WASH\) | CDC](#)
 - [Water Sanitation and Health](#)
4. Following the meeting, Nassau County Department of Health created and sent a survey to the sewer districts to gather information discussed at the meeting. Answers were shared with Stony Brook University's Center for Clean Water Technology. NCDOH followed up with sewer districts to address their questions and concerns.



Wastewater Analysis Visualizations: December 2024-March 2025 (see note below).

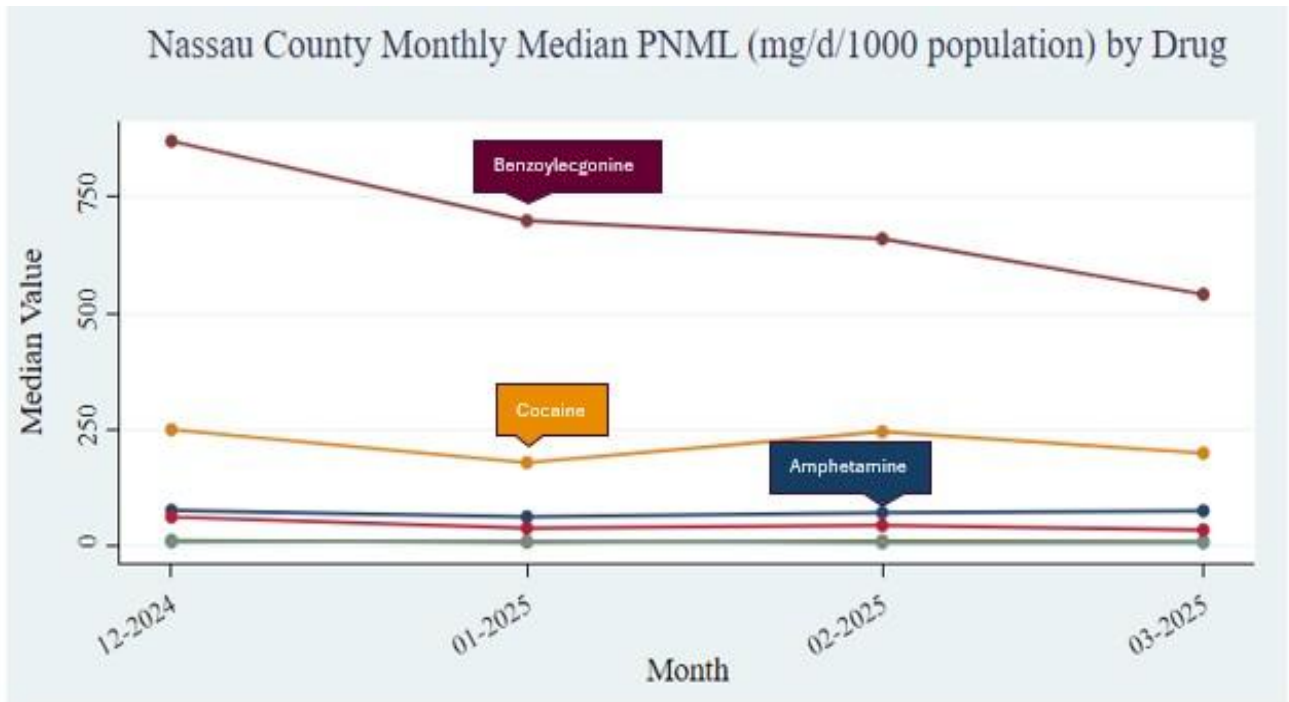
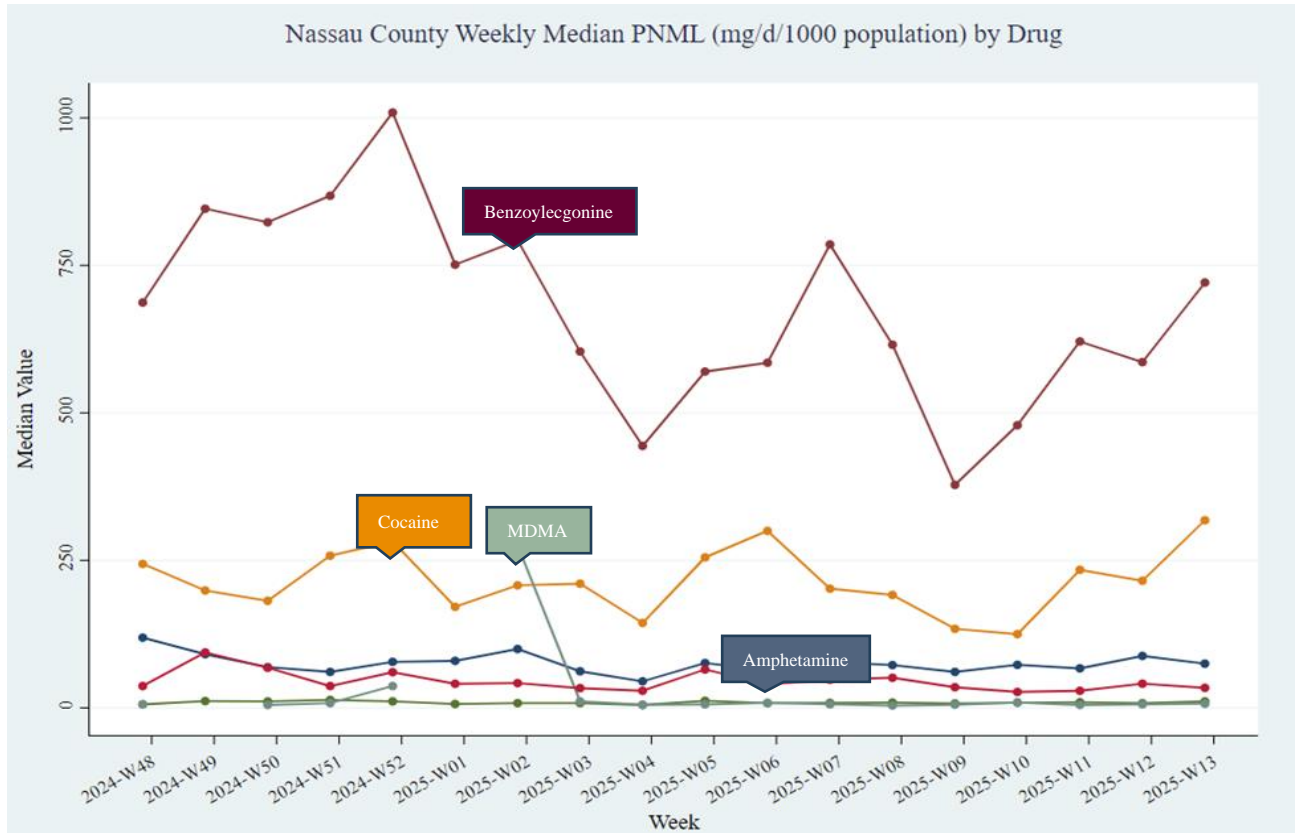
Opioids



- drug
- (6-Acetylmorphine,1)
 - (Buprenorphine,1)
 - (Codeine,1)
 - (Dihydrocodeine,1)
 - (EDDP,1)
 - (Heroin,1)
 - (Hydrocodone,1)
 - (Hydromorphone,1)
 - (Methadone,1)
 - (Morphine,1)
 - (Norbuprenorphine,1)
 - (Norcodeine,1)
 - (Norfentanyl,1)
 - (Noroxycodone,1)
 - (Oxycodone,1)
 - (Oxymorphone,1)



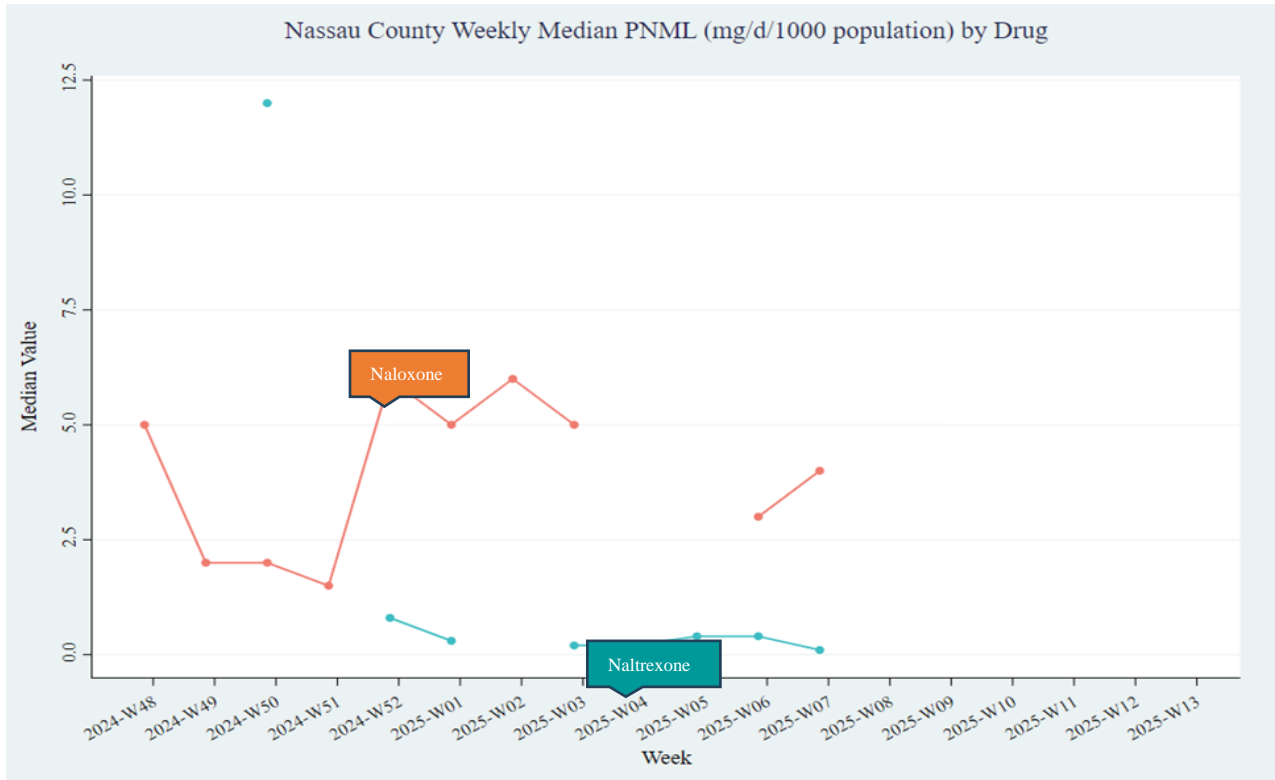
Stimulants



drug — Amphetamine — Benzoylcegonine — Cocaethylene — Cocaine — MDMA — Methamphetamine



Opioid Antagonists



drug — (Naloxone,1) — (Naltrexone,1)

Naloxone and Naltrexone have been detected in some locations in Nassau County in March, but below current detection limit.



Note for Visualizations:

- **PNML (Population-Normalized Mass Load):** The mass of a drug or metabolite detected in wastewater, normalized per 1,000 people per day (e.g., mg/day/1,000 people), allowing visualization of weekly and monthly trends *by drug* in Nassau County. The graphs are meant to establish a baseline overtime, for each drug.

Pathogens Quarter 1, 2025

- In March a low level of *Vibrio cholerae* (672 copies/L) was detected in one sample from Long Beach WWTP.
 - Isolated and sporadic detection does not require additional action at this time.
- 2024 ICC World Cup monitoring results (event occurred in June of 2024 and the analysis was done in Q1)
 - Prior to the tournament, COVID-19 levels were moderate and relatively stable. A temporary spike in COVID-19 concentrations was observed in wastewater at the start of the 2024 ICC World Cup, followed by a gradual decline over the remainder of the tournament. No detections of measles virus, TB-causing bacteria, and *Vibrio cholerae* were observed before, during, or after the event. Post-tournament monitoring indicated that COVID-19 signals returned to baseline levels and no other pathogens were detected.

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