Wisconsin implements influenza and respiratory syncytial virus surveillance and routine wastewater surveillance

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CATEGORY: **Epidemiology and Laboratory Capacity (ELC)**

CATEGORY: **Partnership and Innovation**

Through a new partnership Wisconsin Department of Health Services (WDHS) expanded wastewater surveillance to include influenza and respiratory syncytial virus (RSV) and created a dashboard to share these data with the public.

The "What"

Wisconsin Department of Health Services (WDHS) has built out a robust SARS-CoV-2 surveillance system over the past three years. Using Epidemiology and Laboratory Capacity for the Prevention and Control of Emerging Infectious Diseases (ELC) funding they have been working to expand to additional targets, to bolster the utility and facility of the surveillance system. Through the fall and winter of 2022-2023, the Wisconsin State Laboratory of Hygiene and the University of Wisconsin-Milwaukee School of Freshwater Sciences have successfully incorporated

regular testing for influenza (flu) A and B and respiratory syncytial virus (RSV) into their wastewater surveillance program and provided regular updates to flu epidemiologists and coordinators within the Division of Public Health. They have validated wastewater levels against other established surveillance systems and found wastewater to be an accurate and timely indicator of increasing levels of these diseases spreading in the community.

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The "So What"

WDHS has limited visibility on the prevalence of flu, RSV, and other non-reportable infectious conditions from a state level, which makes planning and response work difficult. Wastewater surveillance adds a new tool to that repertoire, providing insight into community-level disease activity. WDHS hopes to use these tools to eventually create a public dashboard and other reports aimed at providing state and local health departments with access to this critical data to prepare and respond to seasonal increases in respiratory viruses.

The "Now What"

WDHS aims to create a public wastewater dashboard that shows levels for RSV, influenza, and SARS-CoV-2 together across the state of Wisconsin. This will be an invaluable tool for the public, healthcare systems, and public health to identify and prepare for seasonal increases in respiratory diseases that cause hospitalizations and deaths every year and often come with little advanced warning. Additionally, beyond flu and RSV, they are in the process of validating additional genomic targets to incorporate into the suite of surveillance, including adenovirus, norovirus, and several antibiotic resistance genes. As wastewater-based epidemiology continues to be implemented across the country, maintaining funding to support these validated methods and understanding the results will be a valuable tool to increase the timeliness of detection and response to protect the community's health.

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