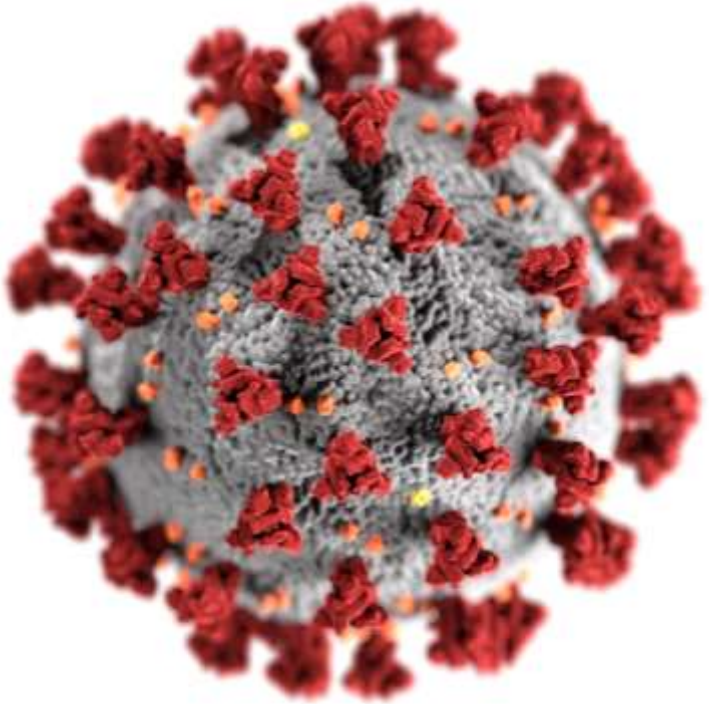
# National Wastewater Surveillance System

## Implementation for COVID-19 Response

MAPC COVID-19 Webinar: Wastewater Testing

December 3rd, 2020



cdc.gov/coronavirus

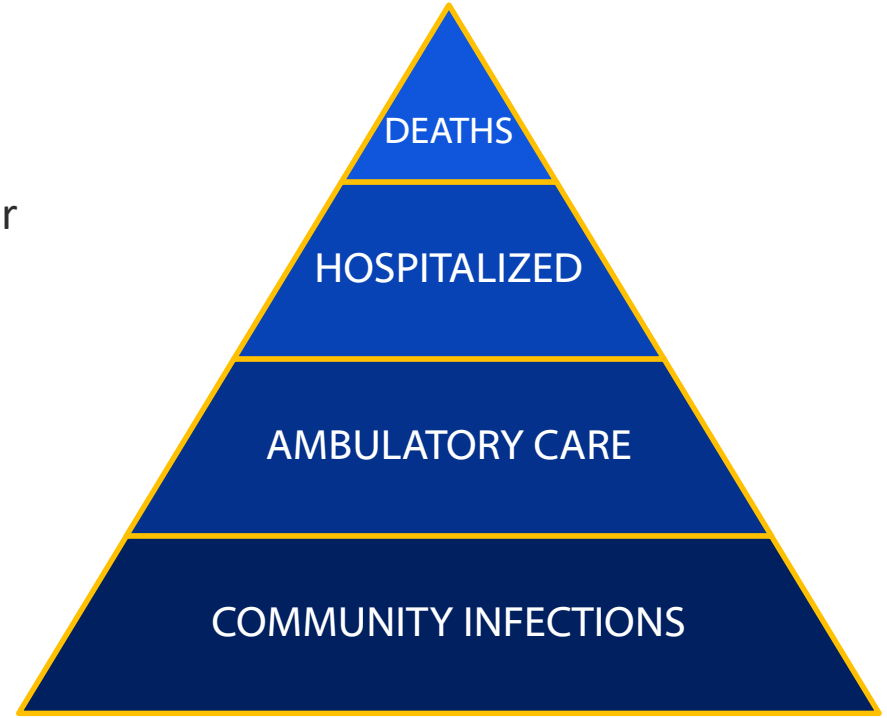
# Wastewater Surveillance | Public Health Toolbox

- Wastewater serves as an efficient pooled sample of community (or sub-community) infections
- Captures sub-clinical infections
- Independent of healthcare-seeking behavior and testing access
- Data available within days of viral shedding onset versus up to 2-week lag for other surveillance data

# How Health Departments Can Use Wastewater Data to Make Response Decisions

**Wastewater data will complement case- and symptom-based surveillance by providing:**

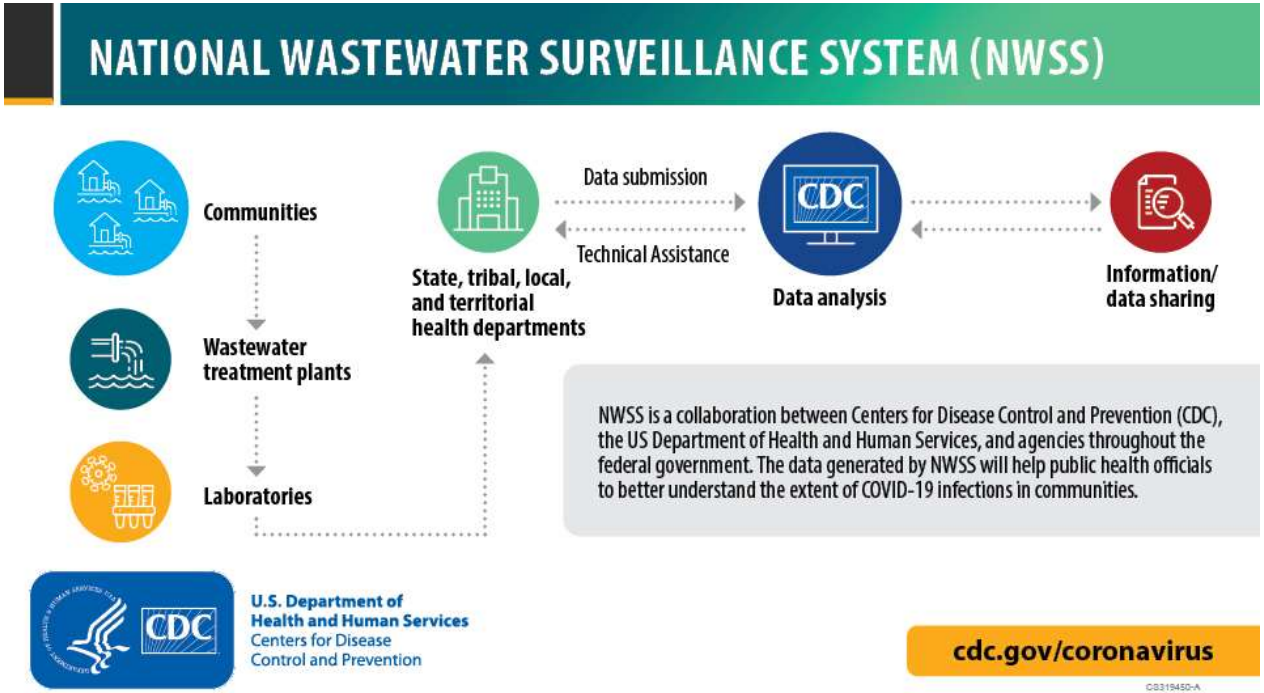
- Resolution to conflicting clinical indicator trends
- Infection data for communities where testing data are not available
- Understanding of sub-county variability
- Infection information during sub-clinical phases



# COVID-19 Wastewater Surveillance| Limitations

- Surveillance limit of detection is unknown
  - How many people need to be infected in a system to be <u>reliably</u> detected in wastewater?
  - → **Cannot** be used to “clear” a community or facility
- ~25% of US households are not connected to sewer
- In many facilities, wastewater may not be accessible for sampling
- May be impacted by pre-treatment of wastewater
- Requires multiple samples per week and fast turnaround to be useful
- Competition for resources (lab capacity, lab supplies, sampling equipment)

# NWSS | Launched In September



# NWSS Implementation Framework

## Onboarding Early Implementers

- Awarded funds in September
- Support for sampling design, testing, use
- Building communities of practice

## Guidance Documents

- NWSS webpage
- Technical guidance
- Interpretation guidance

## Laboratory Support

- Federal surge testing capacity
- Supporting PHL capacity

## Data Portal

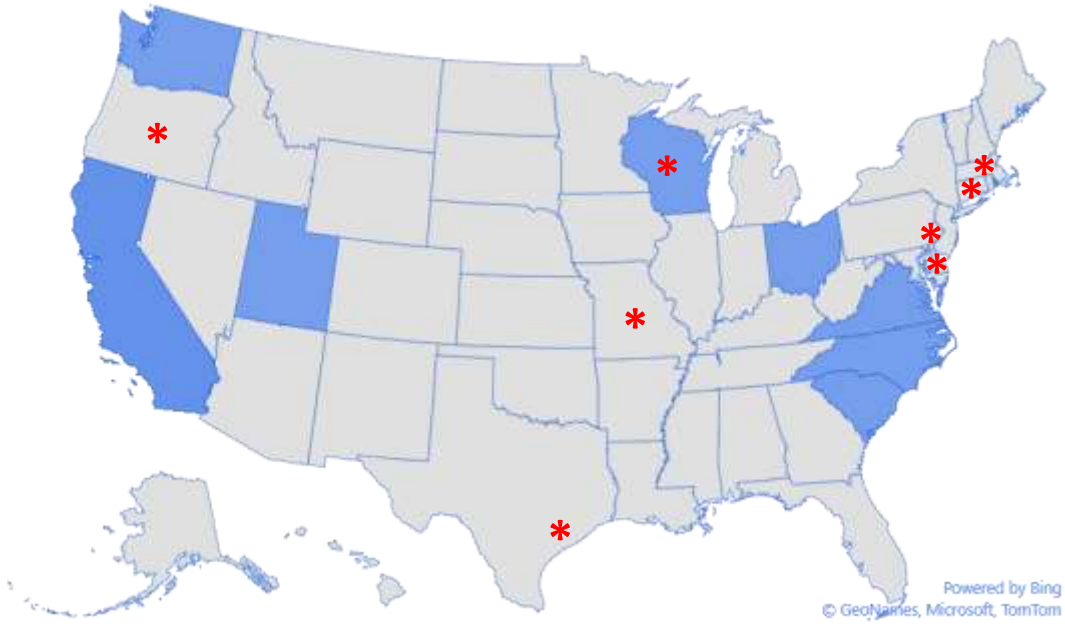
- Build wastewater data portal
- Guidance, training for users
- Provide bulk upload tool

## Targeted Use Cases

- Hosting webinars and forums
- Securing evaluation partners/sites
- Support for activities across US

# NWSS | Early Implementer Onboarding

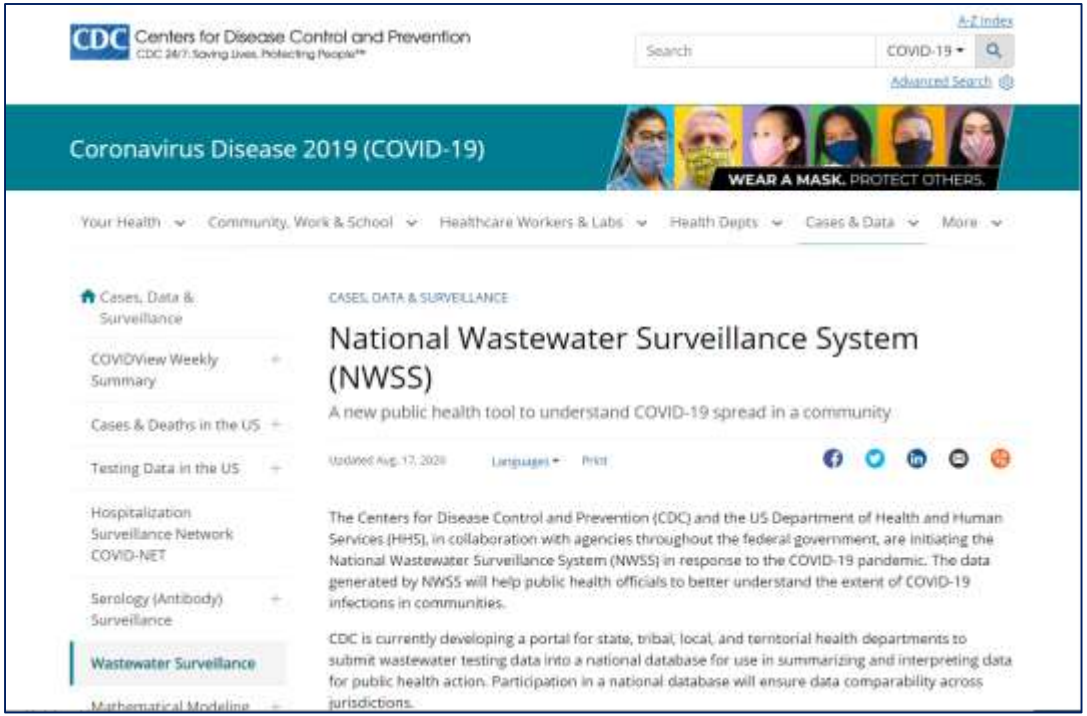
- Workplans under review
- Establishing DCIPHER access
- Staggered data submission start
- Routine submission next month
- Building communities of practice




Early implementer NWSS partner states

* States using CDC funds for wastewater surveillance

# NWSS | Guidance For Implementers




https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/wastewater-surveillance.html

- What is wastewater surveillance for COVID-19?
- What are the advantages of wastewater infectious disease surveillance?
- Is wastewater surveillance right for my community?
- How can I implement wastewater-based disease surveillance?
- How do I become engaged in NWSS?

# NWSS Communities of Practice

**Health Departments**

Host: CDC

- Sampling strategy
- Data coordination
- Data submission
- Data interpretation
- Public health action

**Laboratories**

Host: APHL

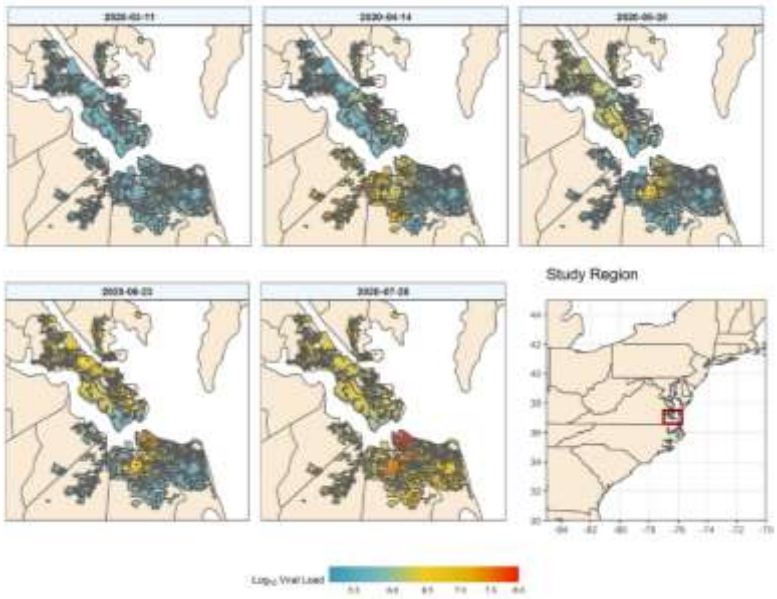
- Testing methods
- Data comparability
- QA/QC
- Biosafety
- Industry sharing

**Utilities**

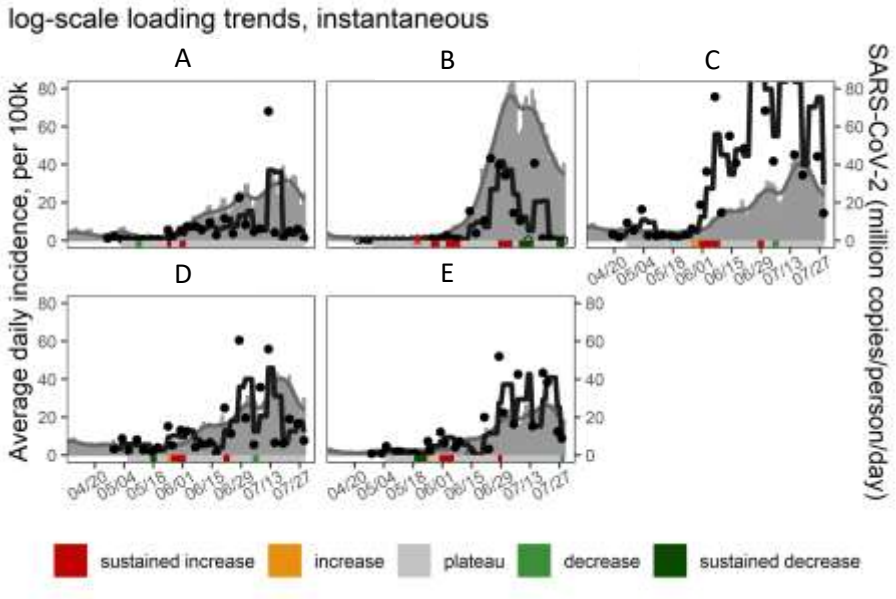
Host: Water Environment Federation

- Sampling methods
- Operational factors
- Worker safety
- Data sharing

# NWSS | Rapid DCIPHER Dashboard for Public Health




Spatial

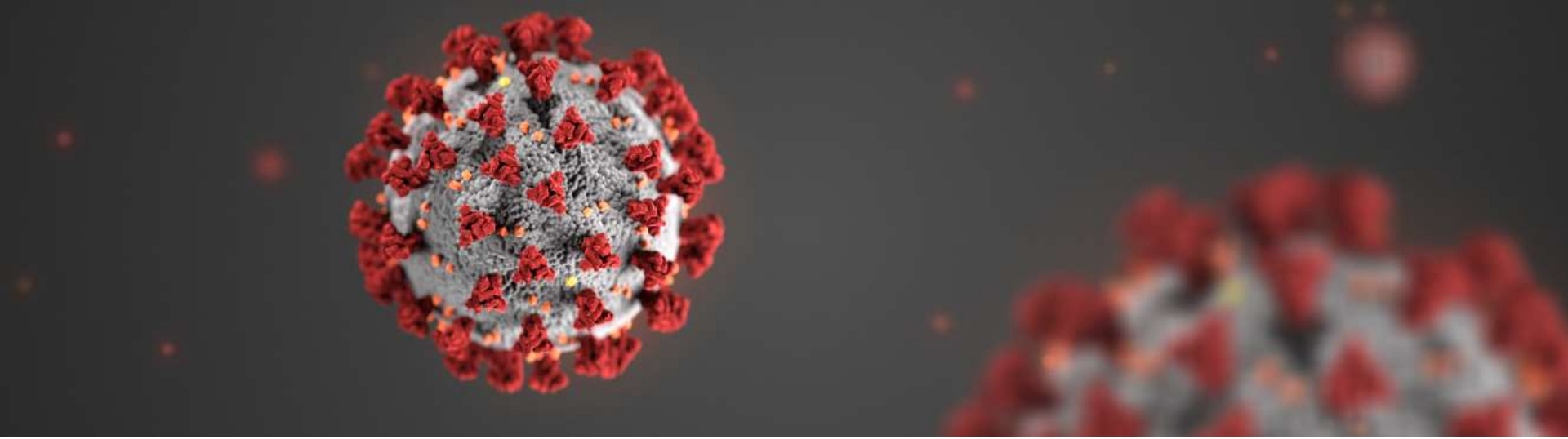



Timeseries

Gonzalez et al., 2020 Water Research

# NWSS | A New Tool for Disease Surveillance

- Built to be flexible to incorporate additional health targets and nimble enough to respond to changing public health needs
- Can incorporate genetic data to track pathogen origin and evolution
- Potential additional targets
  - Antibiotic resistance genes
  - Enteric bacteria and viruses
  - Influenza
  - Hospital-associated pathogens



For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov

NWSS Email: eocevent456@cdc.gov

https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/wastewater-surveillance.html

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.