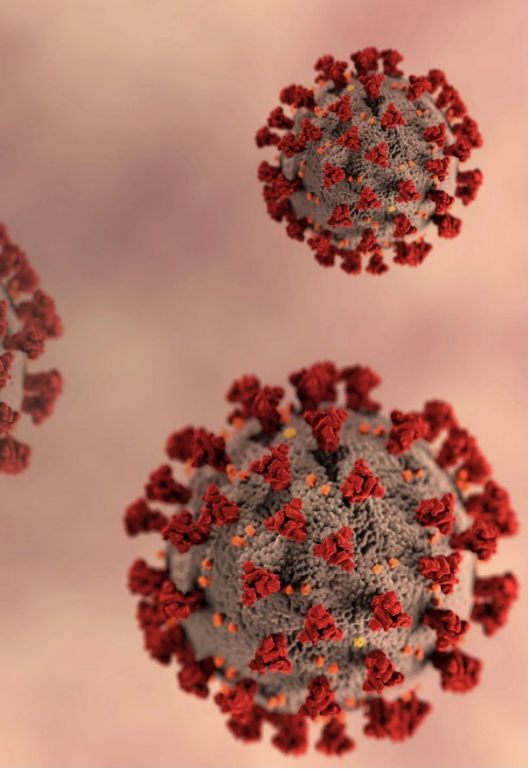
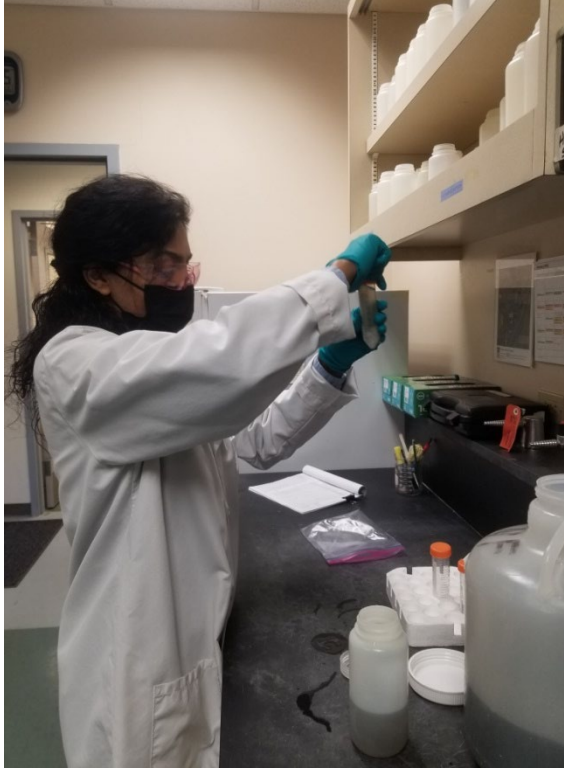




Wastewater COVID-19 Surveillance Partnership Activities

Board of Directors Meeting
February 9, 2022

Delta Diablo

TRANSFORMING WASTEWATER TO RESOURCES

Wastewater in the News


The New York Times

Australia to Detect Coronavirus Spread by Testing Raw Sewage

By Reuters

April 16, 2020, 3:30 a.m. ET

The New York Times

Is It Safe to Come Out of Lockdown? Check the Sewer

Wastewater could provide early, painless and localized data about the rise or fall of coronavirus levels.

The New York Times

Some scientists are using sewage to measure the prevalence of coronavirus in their communities

By Alec Snyder and Susannah Cullinane, CNN

Updated 7:45 PM ET, Sun April 26, 2020

CNN.com

CORONAVIRUS

Poop could help stop the pandemic. Really.

Wastewater offers a promising way to track the virus, a top CDC doctor says.

Politico

News // Bay Area & State

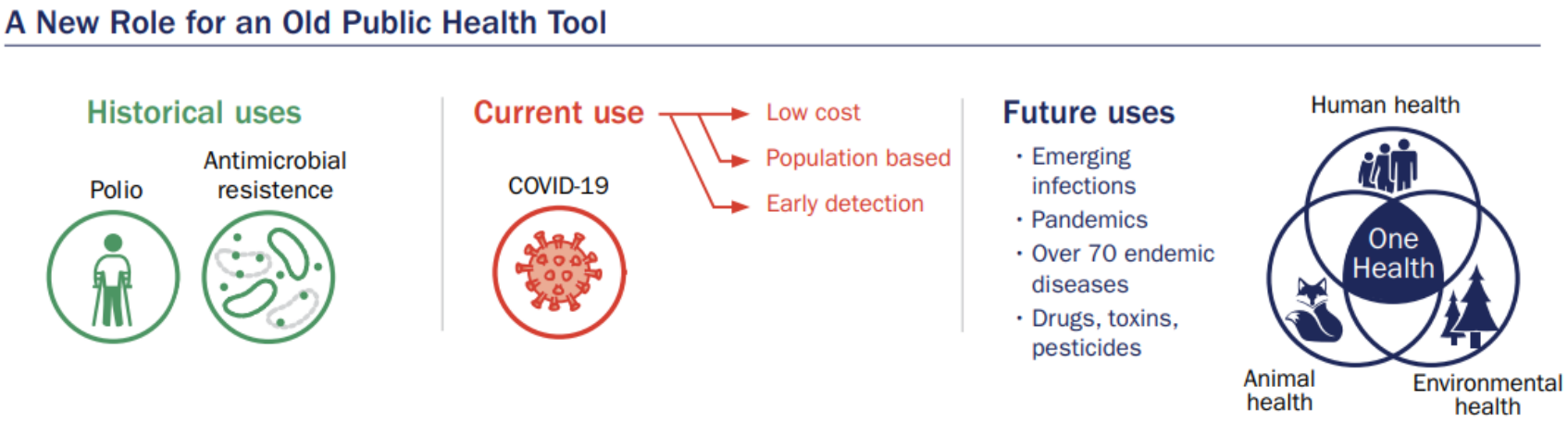
Wastewater data suggests COVID may not have peaked yet in 3 Bay Area spots

Amy Graff, SFGATE

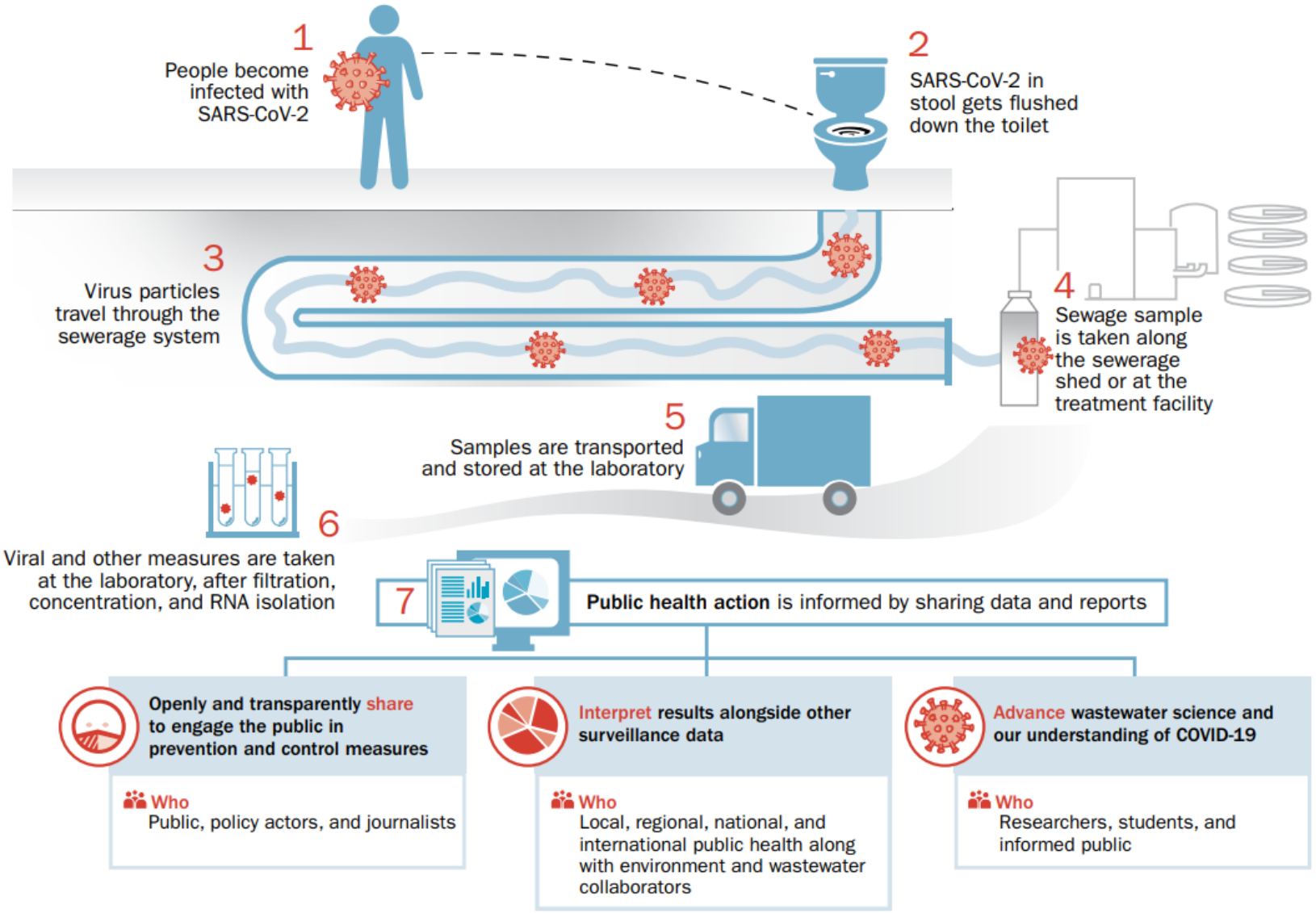
Jan. 26, 2022

What is Wastewater Surveillance?

- "Wastewater Surveillance" is also known as Wastewater Based Epidemiology (WBE)
  - Analysis of wastewater for chemicals or biomarkers for purposes of public health monitoring
  - Infected individuals shed virus that causes COVID-19 (SARS-CoV-2) in feces at detectable levels



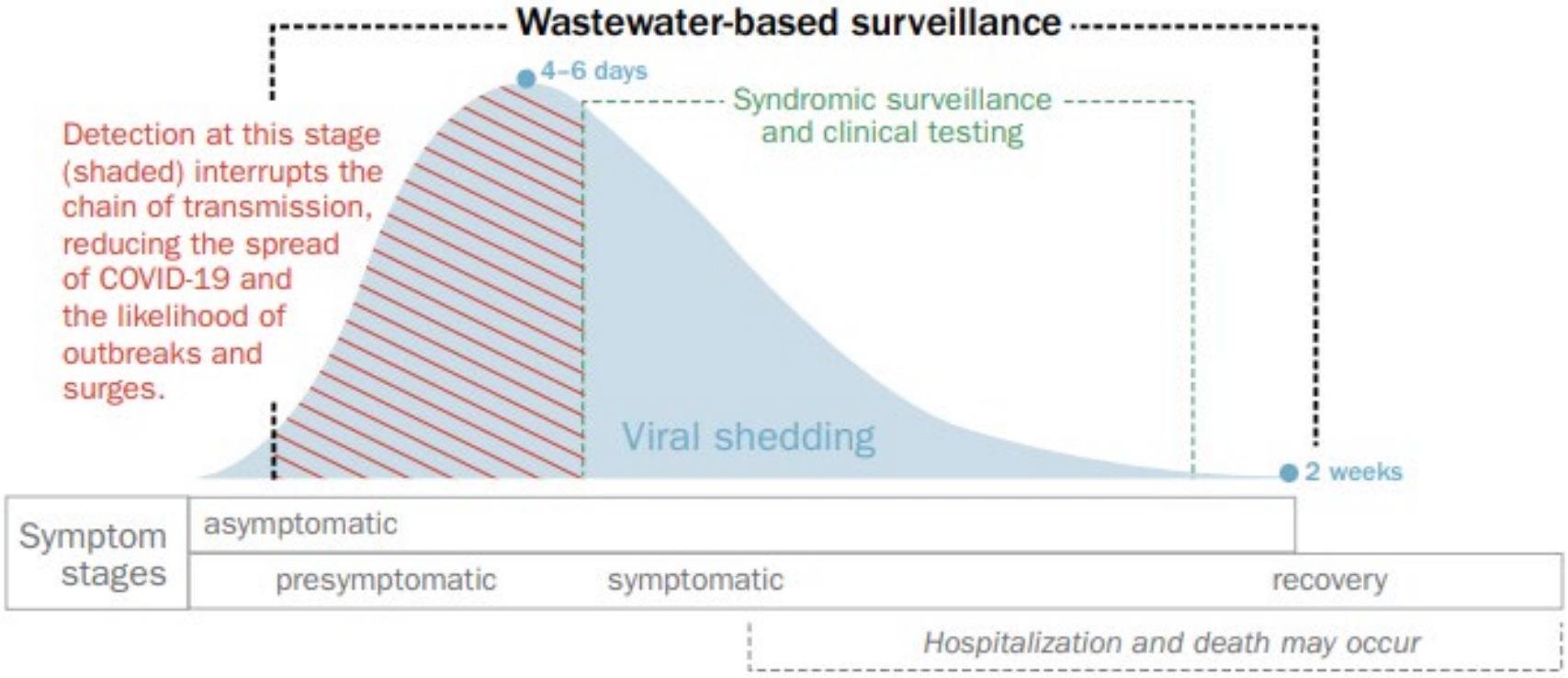
How WBE Works



Why is WBE Useful?

- WBE is important tool in public health toolbox that complements clinical testing:
  - **Efficient** – One sample can monitor thousands of people
  - **Independent of Symptoms** – Can capture data about symptomatic and asymptomatic people
  - **Independent of Human Behavior** – Does not rely on people to get tested
  - **Fast** – Produces data within 5 to 7 days of flushing and can support public health decision making

WBE Can Help Prevent Spreading



Manuel, Doug; Amadei, Carlo Alberto; Campbell, Jonathon R.; Brault, Jean-Martin; Veillard, Jeremy. 2022. Strengthening Public Health Surveillance Through Wastewater Testing: An Essential Investment for the COVID-19 Pandemic and Future Health Threats. World Bank, Washington, DC. © World Bank. https://openknowledge.worldbank.org/handle/10986/36852 License: CC BY 3.0 IGO.

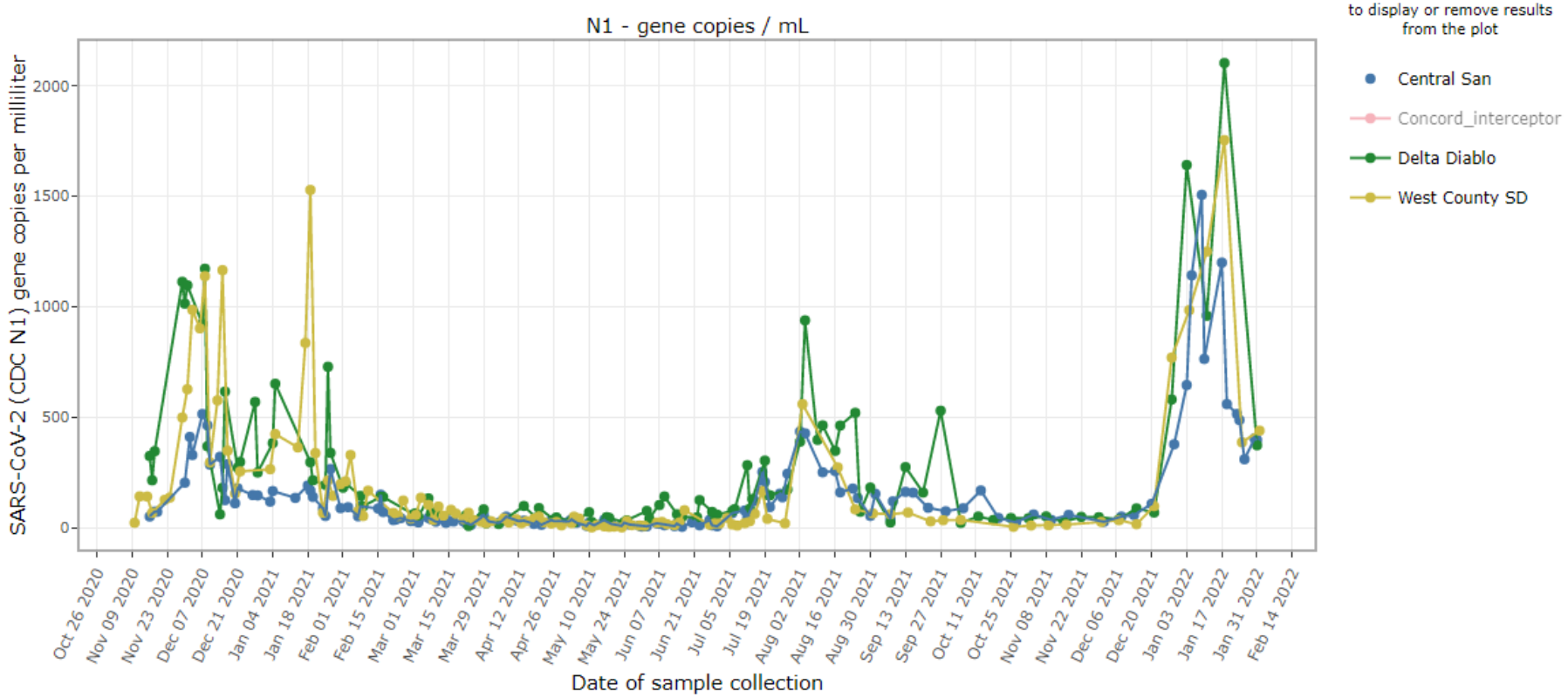
Collaborative District Partnership Activities

- **Covid-WEB (W**astewater **E**pidemiology for the **B**ay Area)
  - Led by University of California, Berkeley
  - One to two samples/week from November 2020 through June 2022
  - Analytical results available at https://data.covid-web.org/

- **National COVID-19 Wastewater Surveillance Project**
  - Led by U.S. Department of Health & Human Services (HHS) and Centers for Disease Control and Prevention (CDC)
  - Jointly developed the **N**ational **W**astewater **S**urveillance **S**ystem (NWSS) in September 2020
  - Participated in Phase 2 of the program and sent two samples per week from June 2021 and August 2021

COVID-WEB Results

SARs-CoV2 Monitoring in Wastewater | Home | FAQ | View Data | View Map



NWSS Phase 2 Results

Delta Diablo INF-001

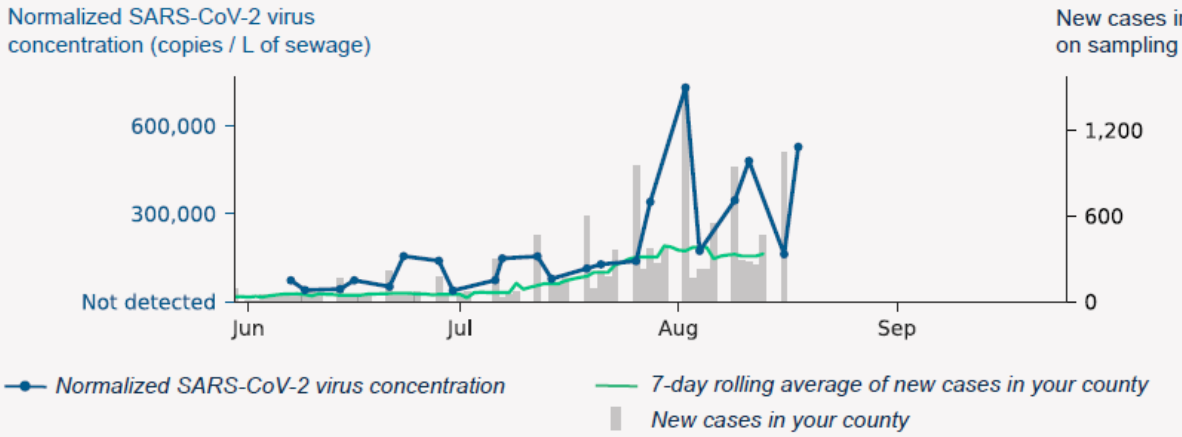
Sample collection date: **August 18, 2021**

SARS-CoV-2 virus in wastewater

DETECTED	Virus concentration (copies per liter of sewage) 478,521	Normalized* virus concentration (copies per liter of sewage) 527,628

**Normalized virus concentration value is derived by adjusting the raw virus concentration to the PMMoV fecal marker in order to account for dilution*

Normalized virus concentration over time



Contra Costa Health on Wastewater Support

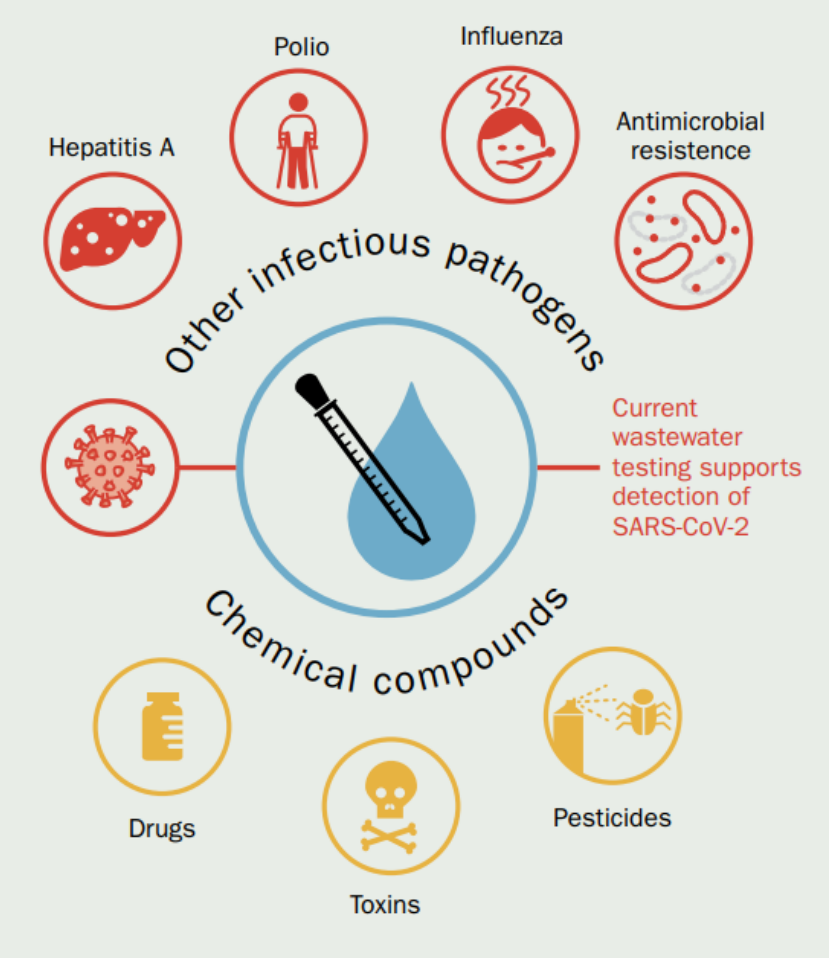
"*I think the contribution has been immense - it gives a good idea of community transmission about a week before case numbers go up, and is particularly important now with testing resources being so limited. It helps us know when we are peaking and when we are dropping, and goes into direct staff planning for the testing branch as well as all of our hospital partners*."

Ori Tzvieli, MD

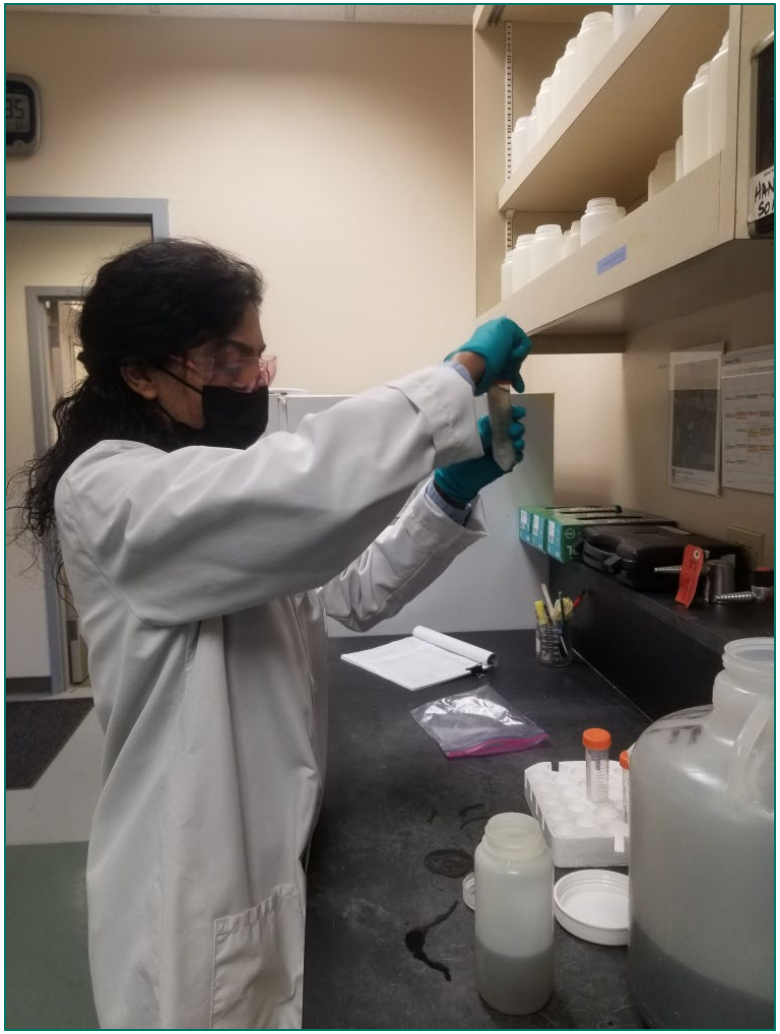
CC Public Health Director

Next Steps

- Continue sending samples to UC Berkeley through June 2022
- Participate in next NWSS study phase – sampling starting next week
- Continue supporting future WBE efforts, as applicable



Thank You Lab Staff!



Acknowledgement

- Most graphics in presentation are courtesy of:
  - Manuel, Doug; Amadei, Carlo Alberto; Campbell, Jonathon R.; Brault, Jean-Martin; Veillard, Jeremy. 2022. *Strengthening Public Health Surveillance Through Wastewater Testing : An Essential Investment for the COVID-19 Pandemic and Future Health Threats*. World Bank, Washington, DC. © World Bank. https://openknowledge.worldbank.org/handle/10986/36852 License: CC BY 3.0 IGO.