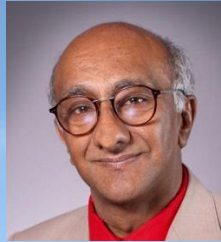


Wastewater Intelligence in Southern Nevada



Cassius Lockett
SNHD



Anil Mangla
SNHD



Kimberly Franich
SNHD



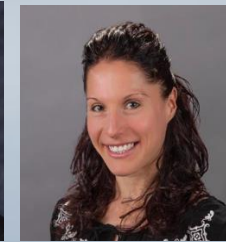
Lei Zhang
SNHD



Horng-Yuan Kan
SNHD



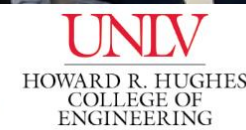
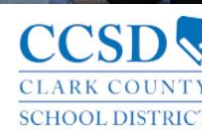
Dan Gerrity
SNWA

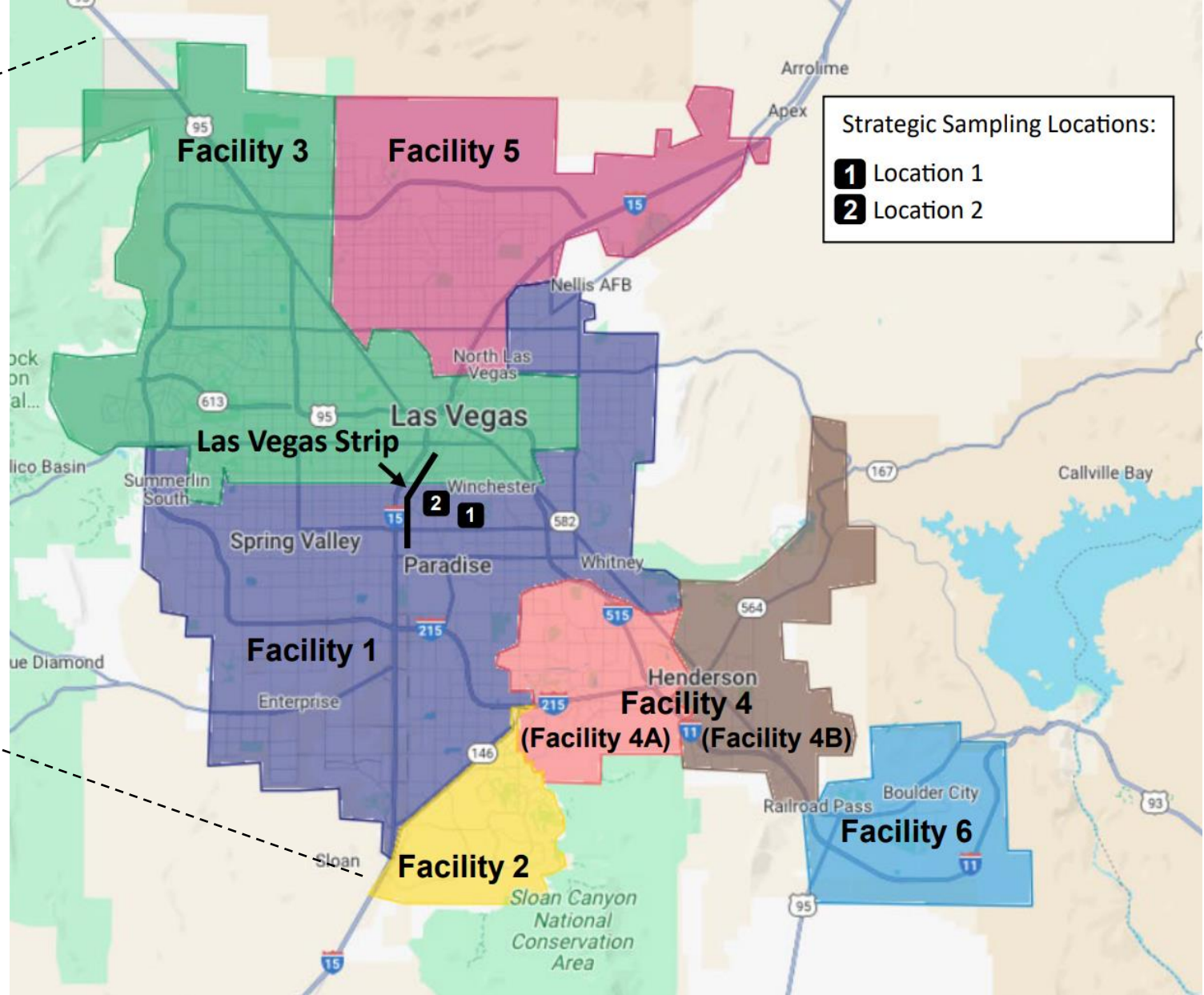
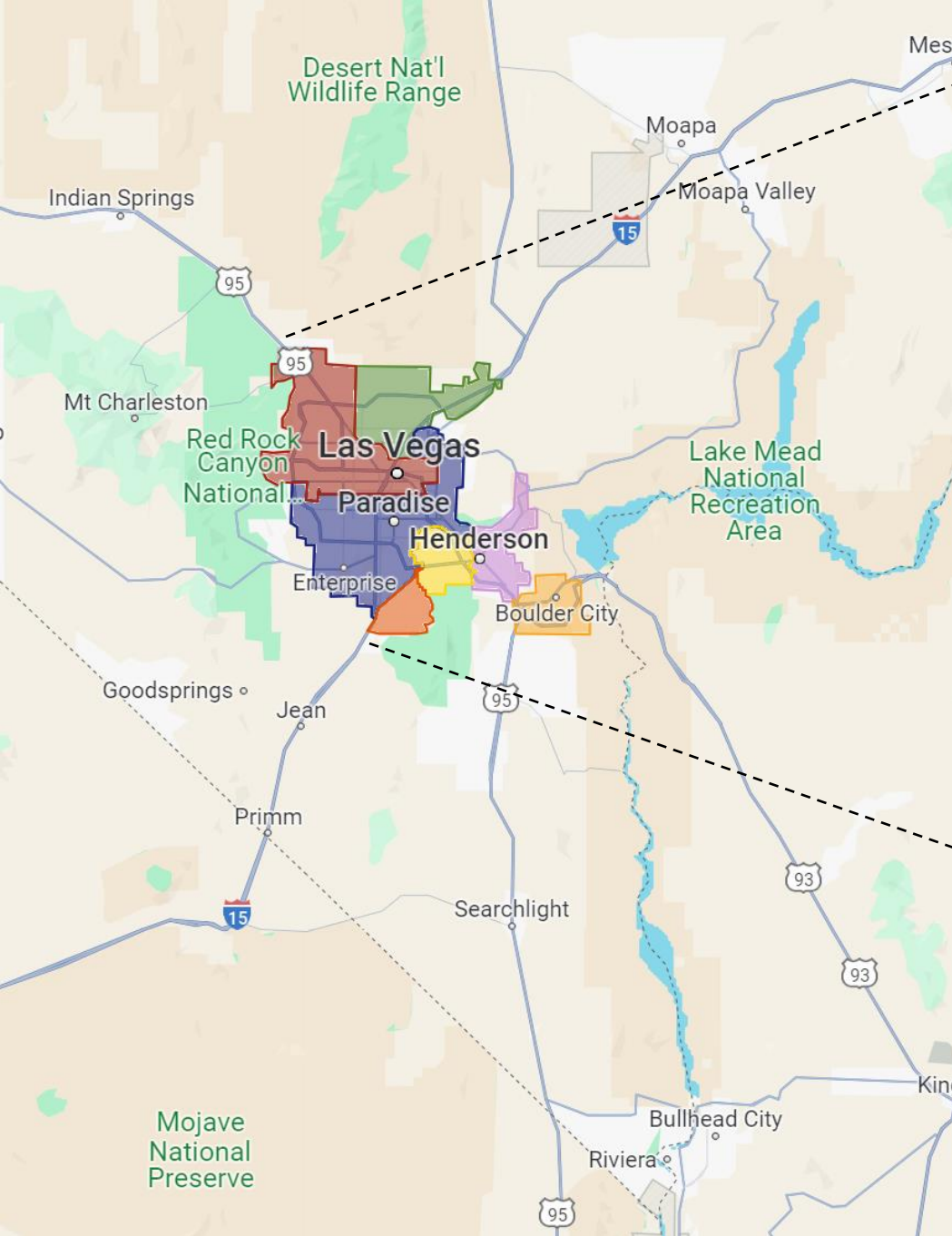


Katerina Papp
SNWA



Our Community Partners:





Sampling Locations



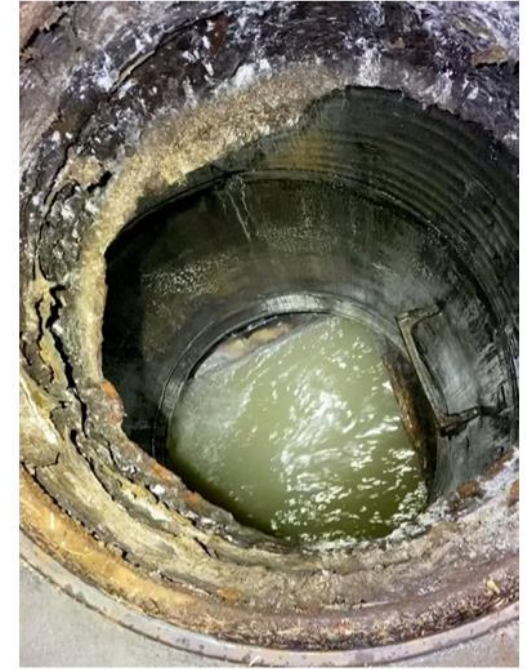
Wastewater Treatment Plant



Hospital



Residential



Las Vegas Strip



Airport



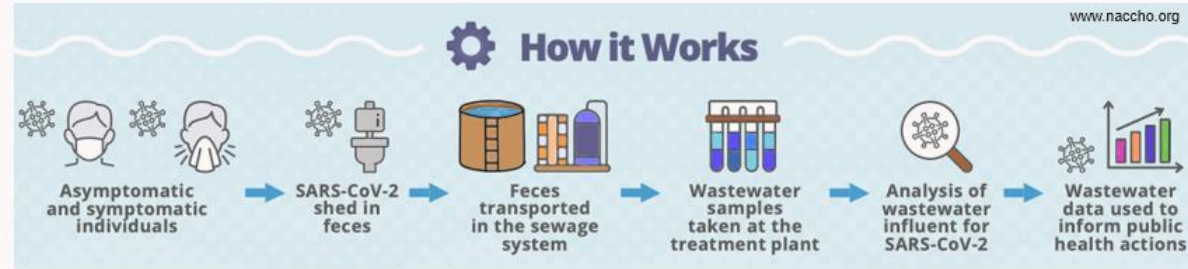
Bars

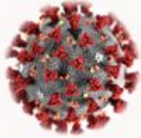

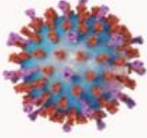


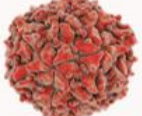








**Flamingo Wash
(Unsheltered Individuals)**



**Tropicana Wash
(Unsheltered Individuals)**



	SARS-CoV-2	Influenza	RSV
Respiratory Viruses			
(Re)Emerging Public Health Threats	Mpox 	Candida auris 	Poliovirus 
Historical Water Industry Targets	Drugs (Fentanyl) 	Legionella 	Norovirus 
Sexually Transmitted Infections	Syphilis 	Gonorrhea 	Chlamydia 

Wastewater Surveillance for Policy Changes

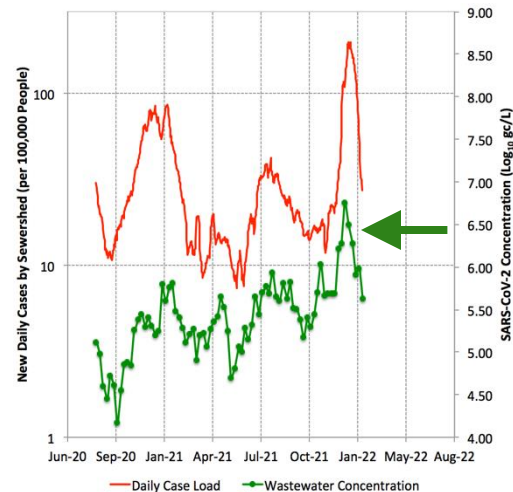
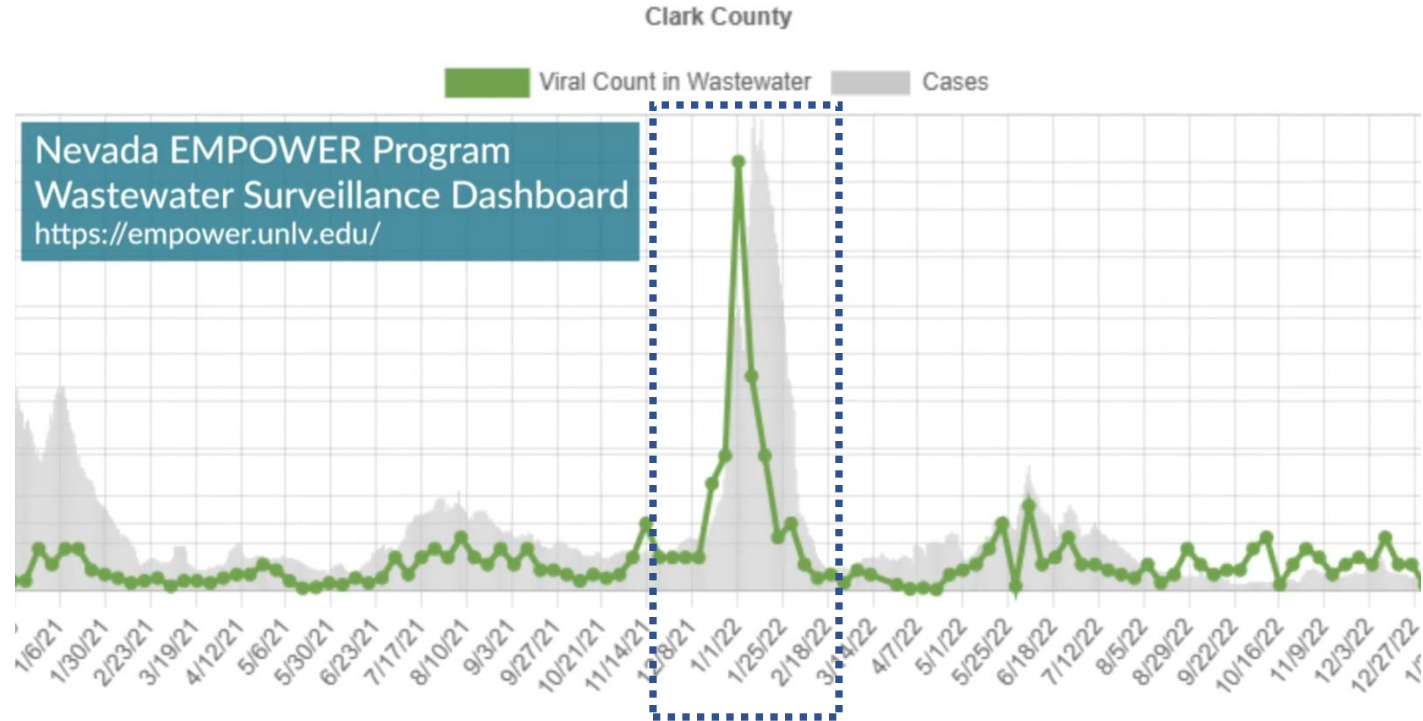
Historical Data from April 17, 2020 to August 24, 2023

Nevada governor announces an immediate end to mask mandate



STEVE MARCUS

Nevada Gov. Steve Sisolak responds to question from a reporter during a visit to the Horizon Ridge Wellness Clinic on East Flamingo Road Thursday, Dec. 23, 2021. The visit was part of Protect Nevadas Future week of action, a statewide effort to vaccinate children ages 5 to 11 years against COVID-19 from Dec. 18 to 23.



In making his announcement, Sisolak cited a decline in overall cases, hospitalizations and the amount of virus detected during wastewater testing. At the height of the omicron variant surge on Jan. 10, Nevada recorded 7,865 new cases; that number has declined to about 1,280 in recent days.

CDC's National Wastewater Surveillance System (NWSS) program collects and displays wastewater data from communities across the United States.

COVID-19

Influenza A

RSV

MPOX

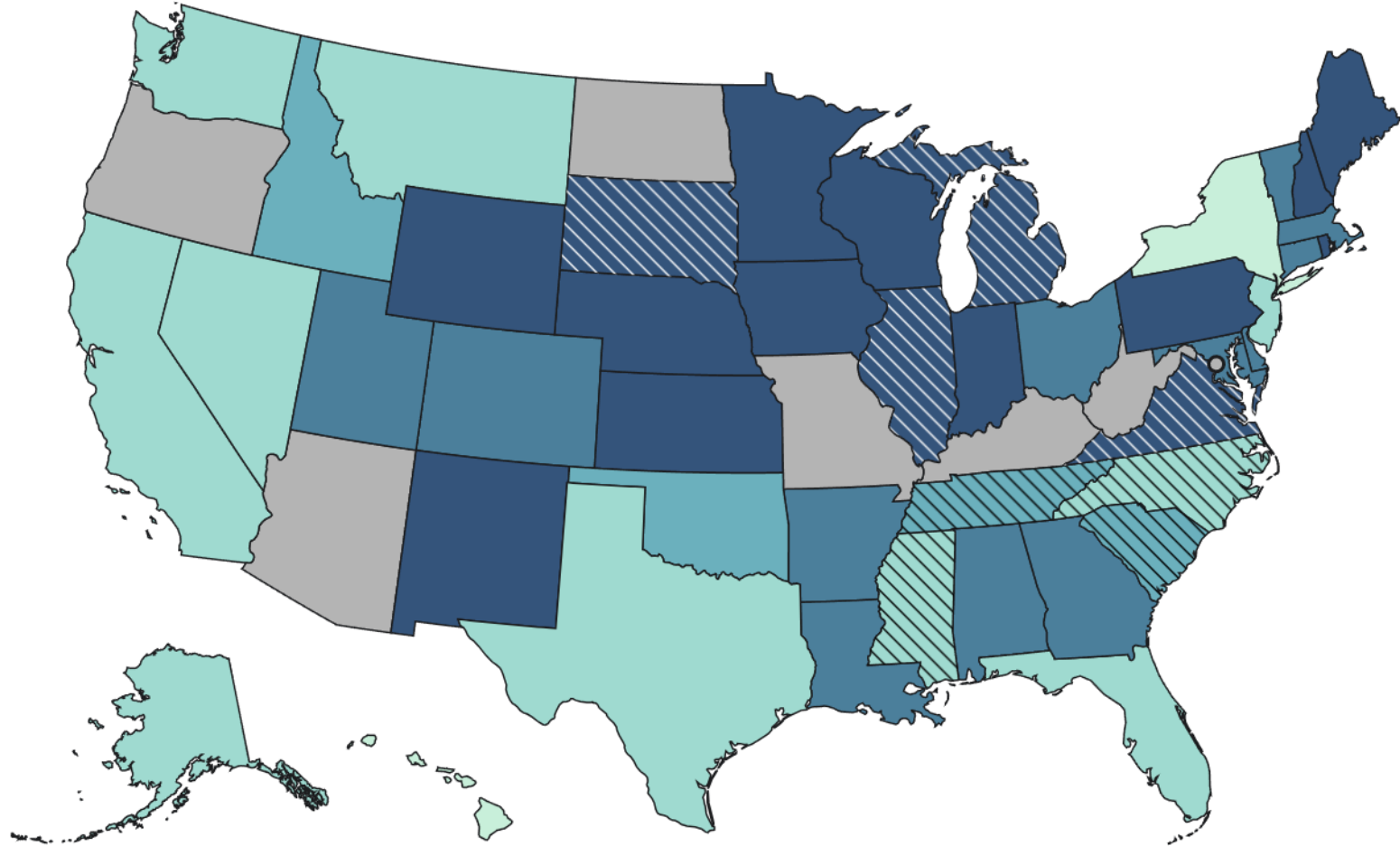


Nationally, the wastewater viral activity level for COVID-19 is currently **high**.

Time Period: December 22 - December 28, 2024

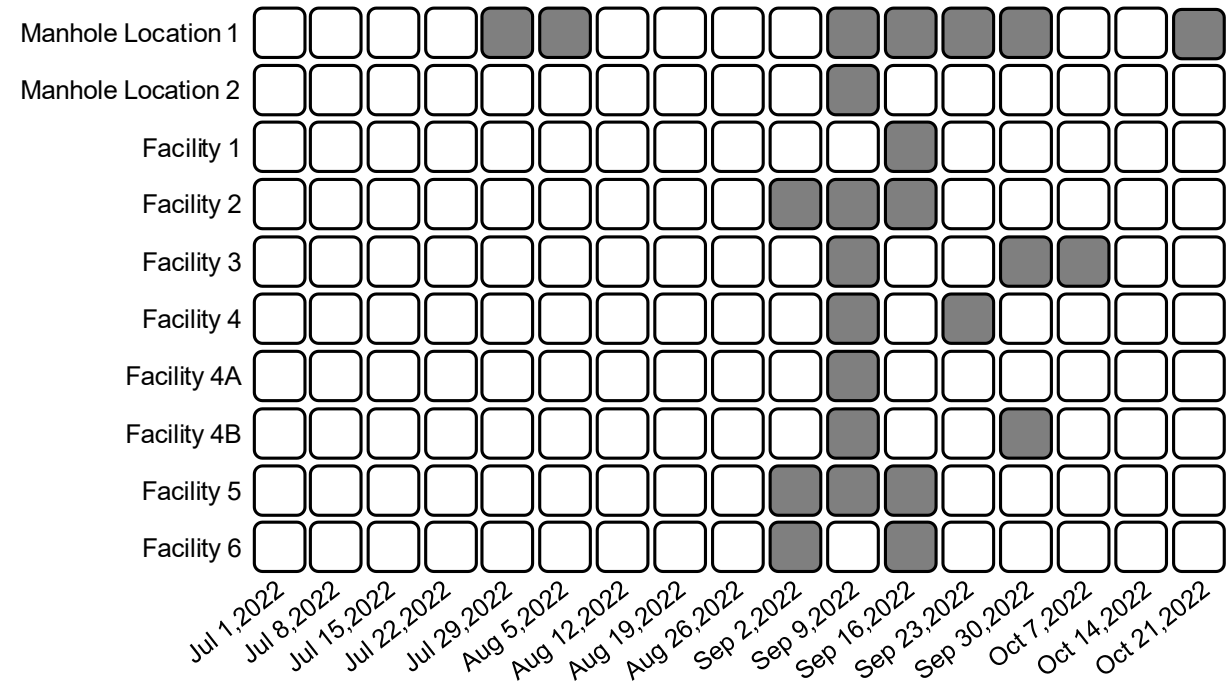
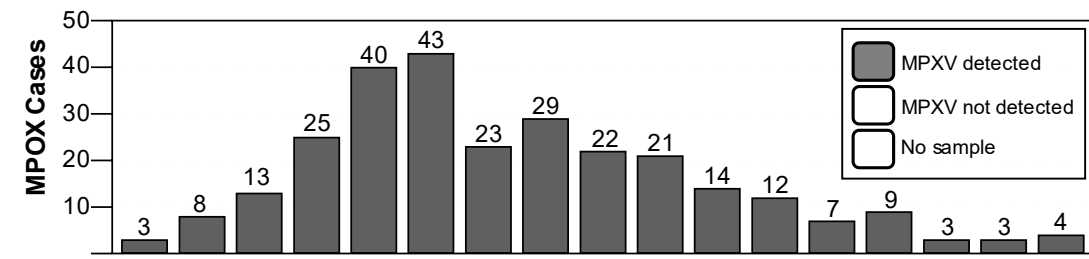


See the data



Emerging Diseases

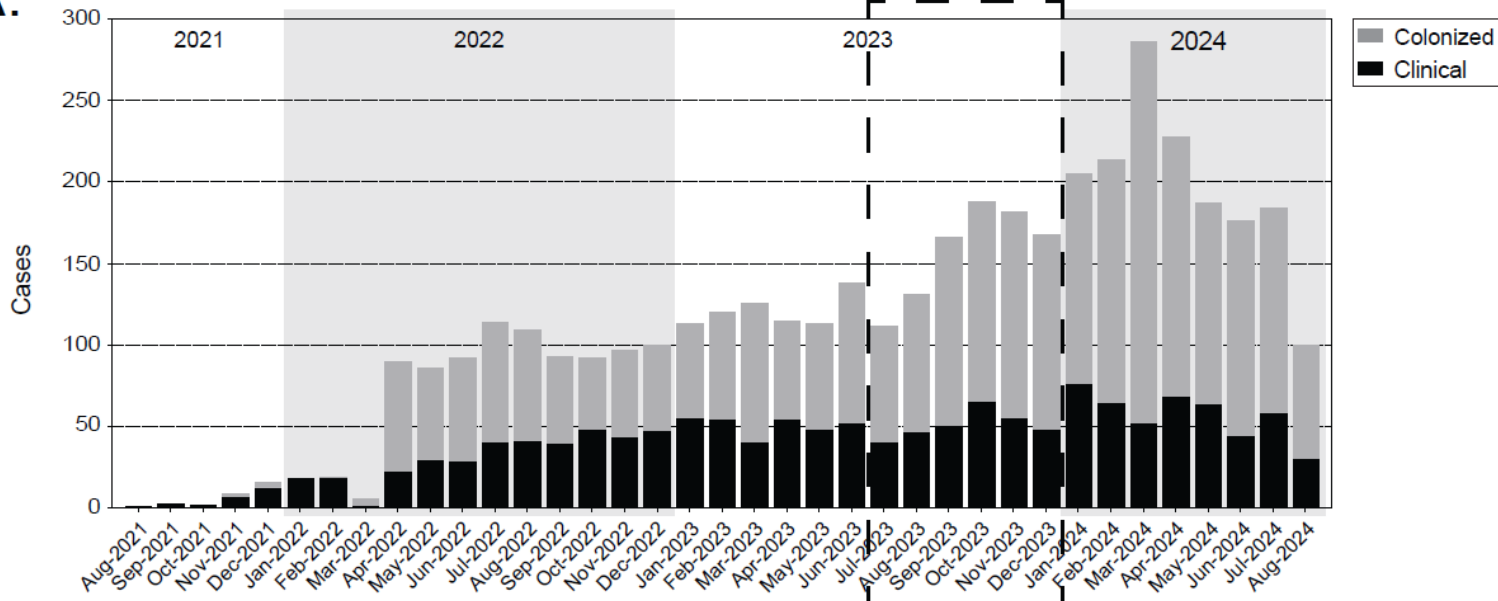
Courtyard Homeless Resource Center - mpox



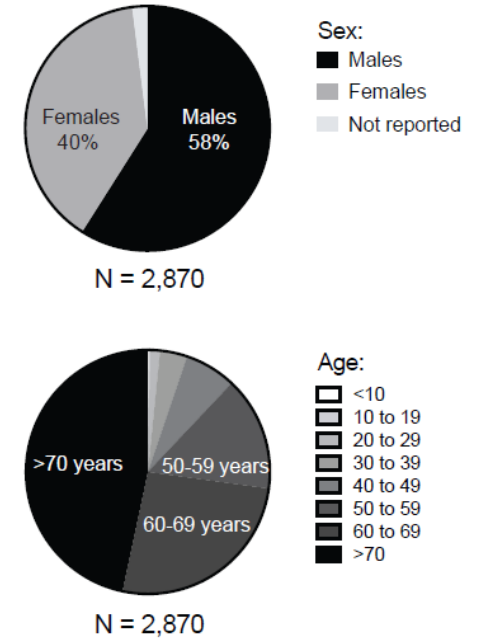
	Number of sites that vaccinations were offered	Total Doses	Percentage of Total Doses
Traditional SNHD Vaccination Locations	45	131	53%
Mobile Strike Teams	8	114	47%

Candida auris Wastewater Intelligence

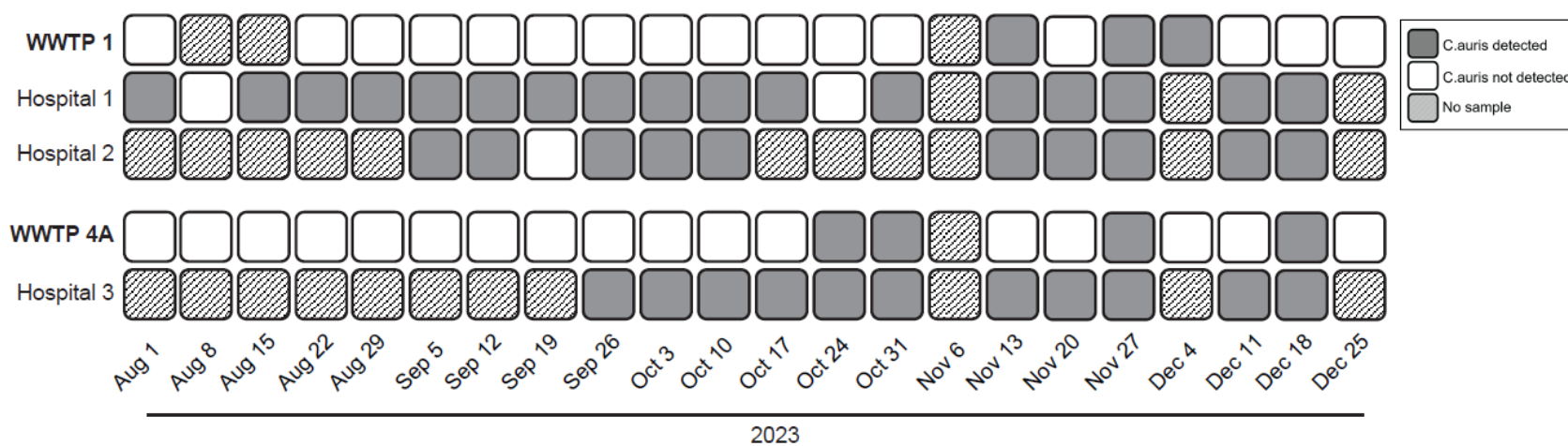
A.



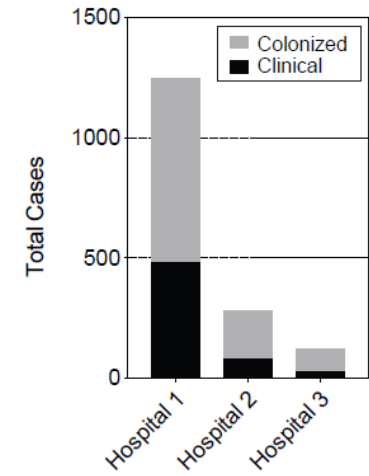
B.



C.



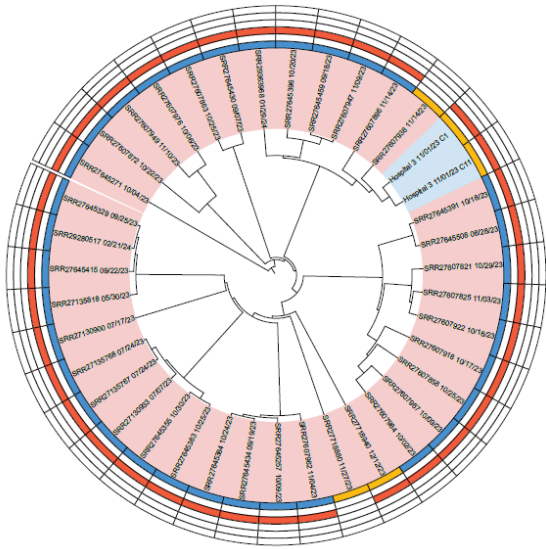
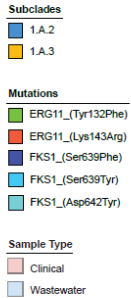
D.



Candida auris Wastewater Intelligence – Whole Genome Sequencing

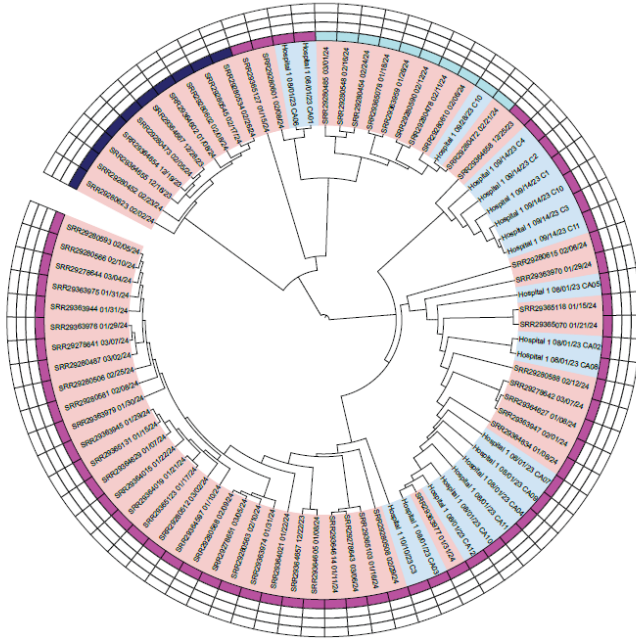
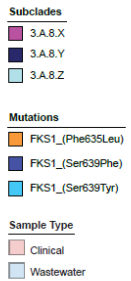
A.

Clade I



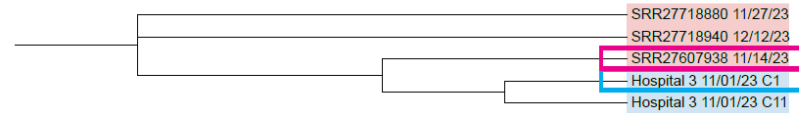
B.

Clade III



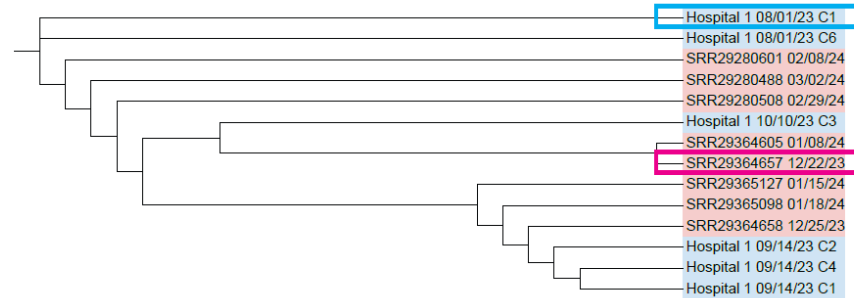
C.

Subclade 1.A.3 - Early Warning



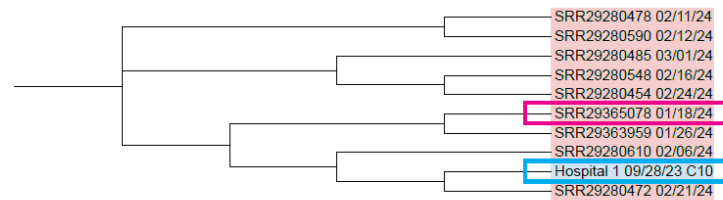
D.

Subclade 3.A.8.X - Early Warning



E.

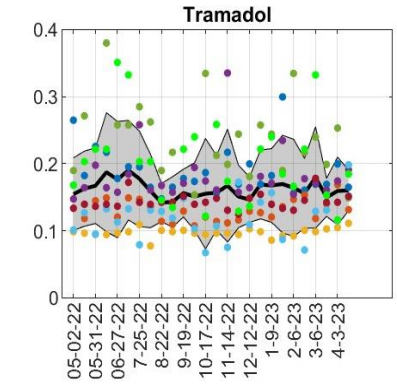
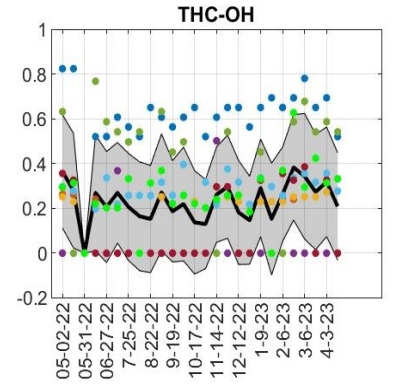
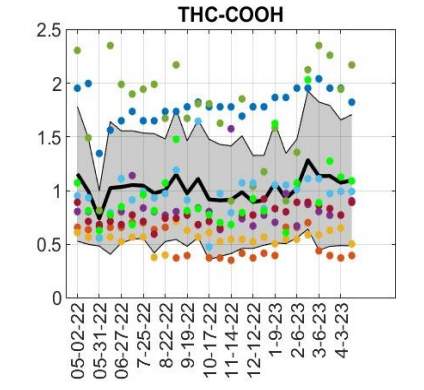
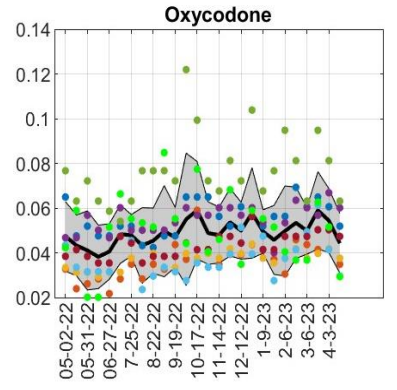
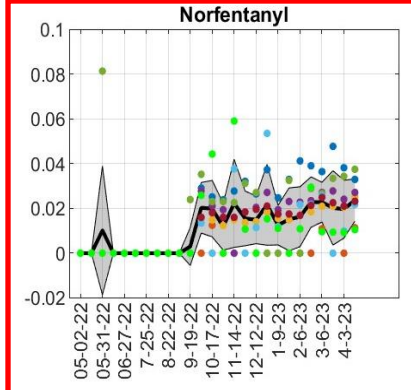
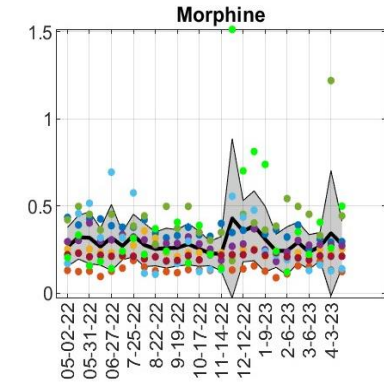
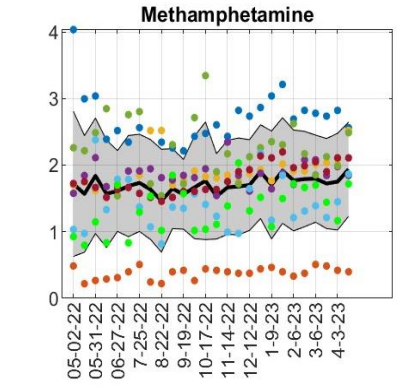
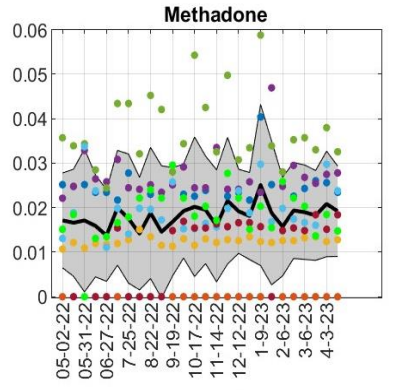
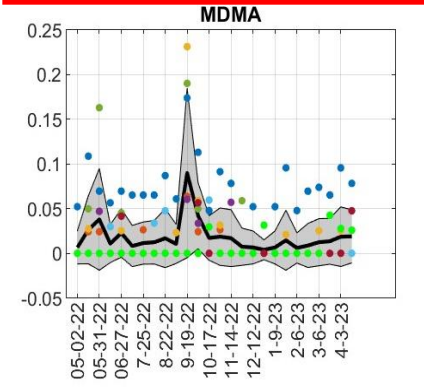
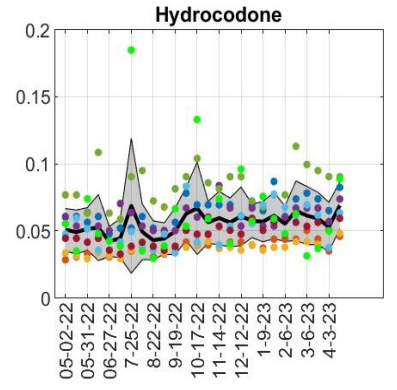
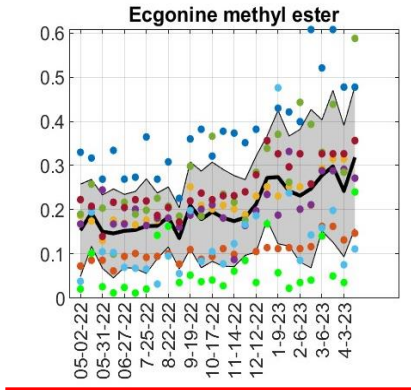
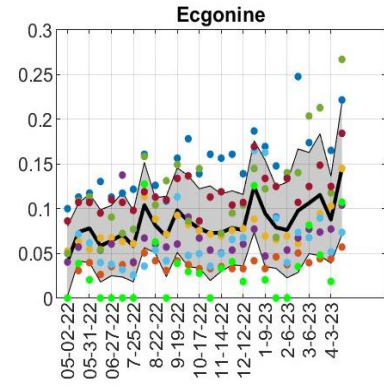
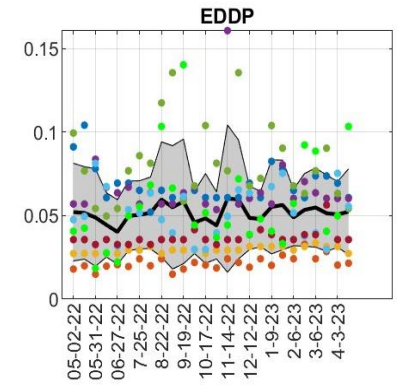
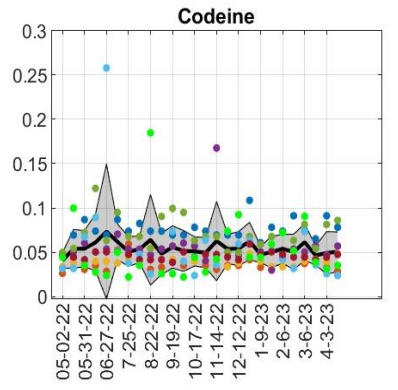
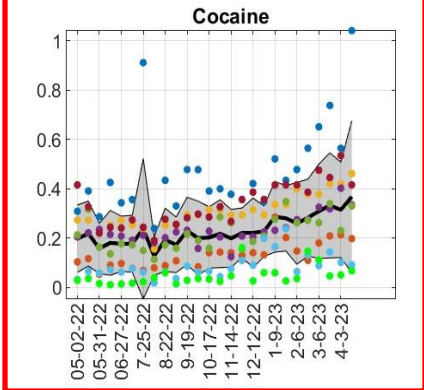
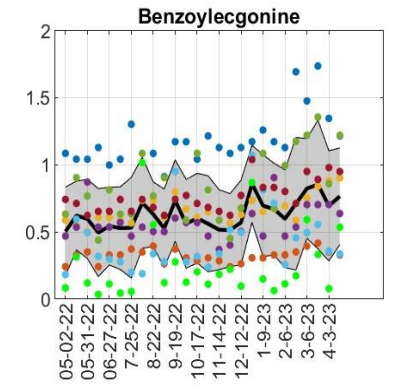
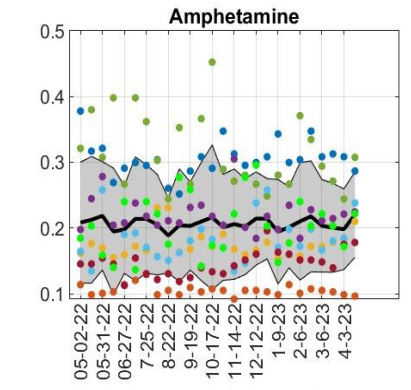
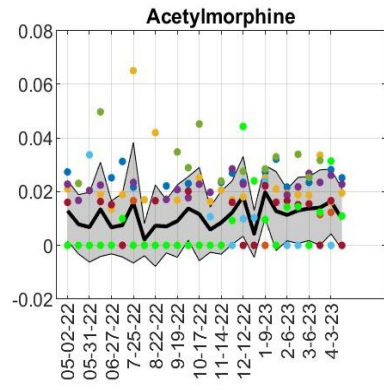
Subclade 3.A.8.Z - Early Warning



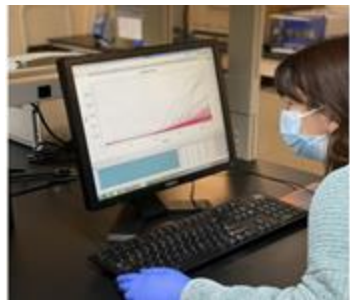
1) ~90% of 105 unique WW isolates within 3 SNPs from the closest clinical isolate (2,977 genomes)

2) WW genomes could predict emergence of clinical genomes

Detection of drug consumption in our communities



Communication plan: Leveraging wastewater data to share a message



How UNLV researchers can use sewage to help inform public health policy

