

# Production pipeline for wastewater surveillance: a new tool for Wyoming public health

Daniel J.R. Hintz<sup>1</sup>, Robert A. Petit III<sup>1,2</sup>, Taylor Fearing<sup>2</sup>, Chayse Rowley<sup>2</sup>, Jim Mildenerberger<sup>2</sup>, Rob Christensen<sup>2</sup>, Timothy J. Robinson<sup>1</sup>, Joseph M. Reed<sup>2</sup>

<sup>1</sup>[Department of Mathematics and Statistics](#), University of Wyoming, Laramie, Wyoming, USA

<sup>2</sup>[Wyoming Public Health Laboratory](#), Wyoming Department of Health, Cheyenne, Wyoming, USA

 [robert.petit@wyo.gov](mailto:robert.petit@wyo.gov)

 [jim.mildenerberger@wyo.gov](mailto:jim.mildenerberger@wyo.gov)



College of Engineering  
and Physical Sciences  
Department of  
Mathematics and Statistics



Wyoming Public Health  
LABORATORY

## What is wastewater surveillance?

Wastewater surveillance is the process of monitoring wastewater to detect the presence of pathogens, antibiotic resistances, and chemical substances in order to make informed public health decisions.



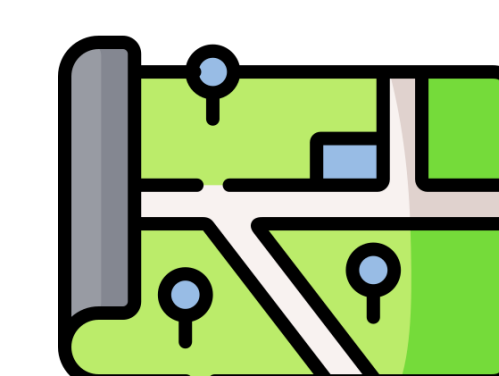
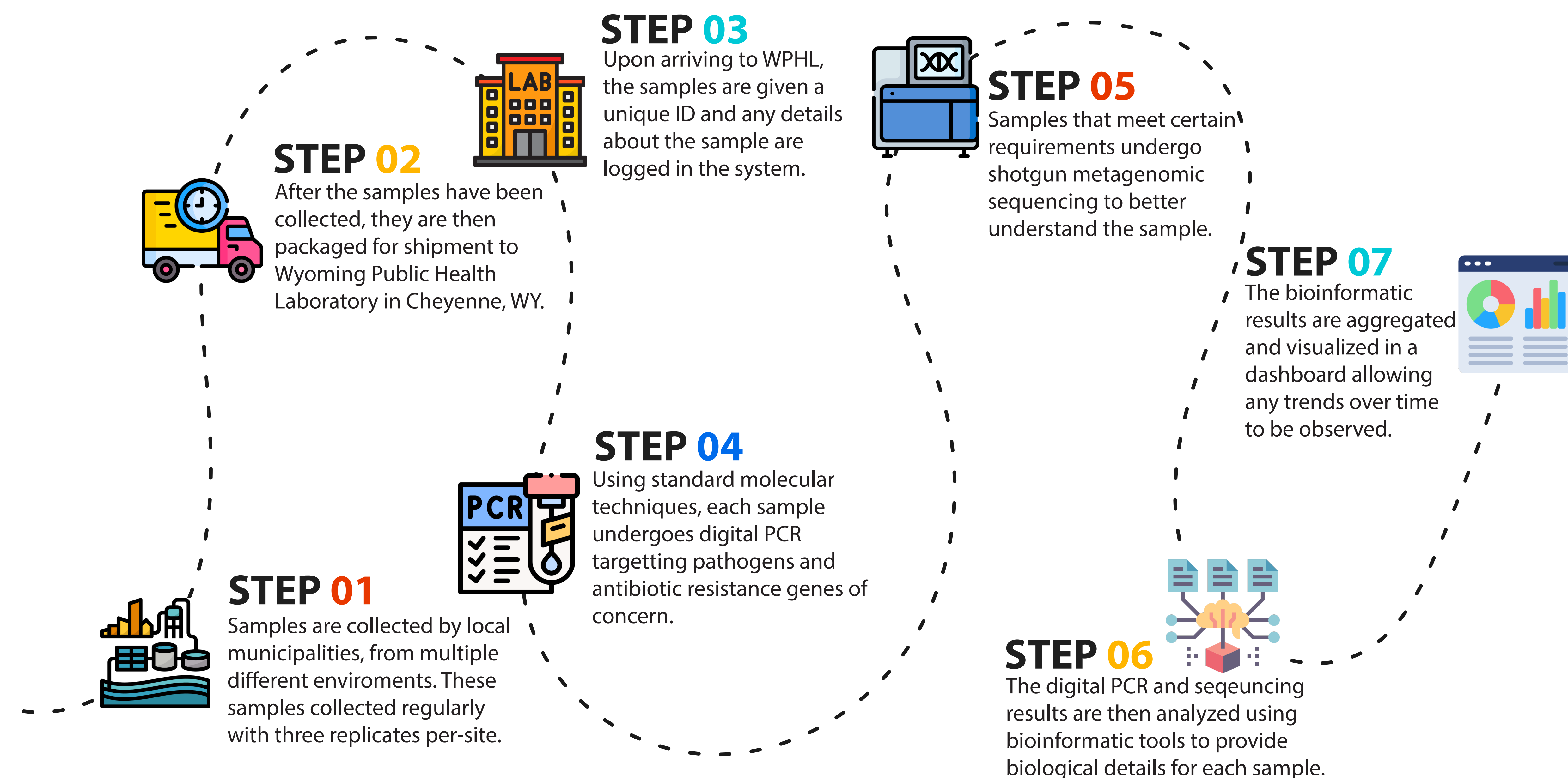
### Community Benefits

Wastewater surveillance is a non-invasive method to monitor the health of a community as a whole that does not rely on individual testing. Trends over time can be monitored, allowing for effective and targeted public health responses.



### Surveillance in Wyoming

Working with local municipalities, the Wyoming Public Health Laboratory has set up collection sites across the state. Using this network WPHL can help state epidemiologists identify public health concerns faster than conventional surveillance methods.



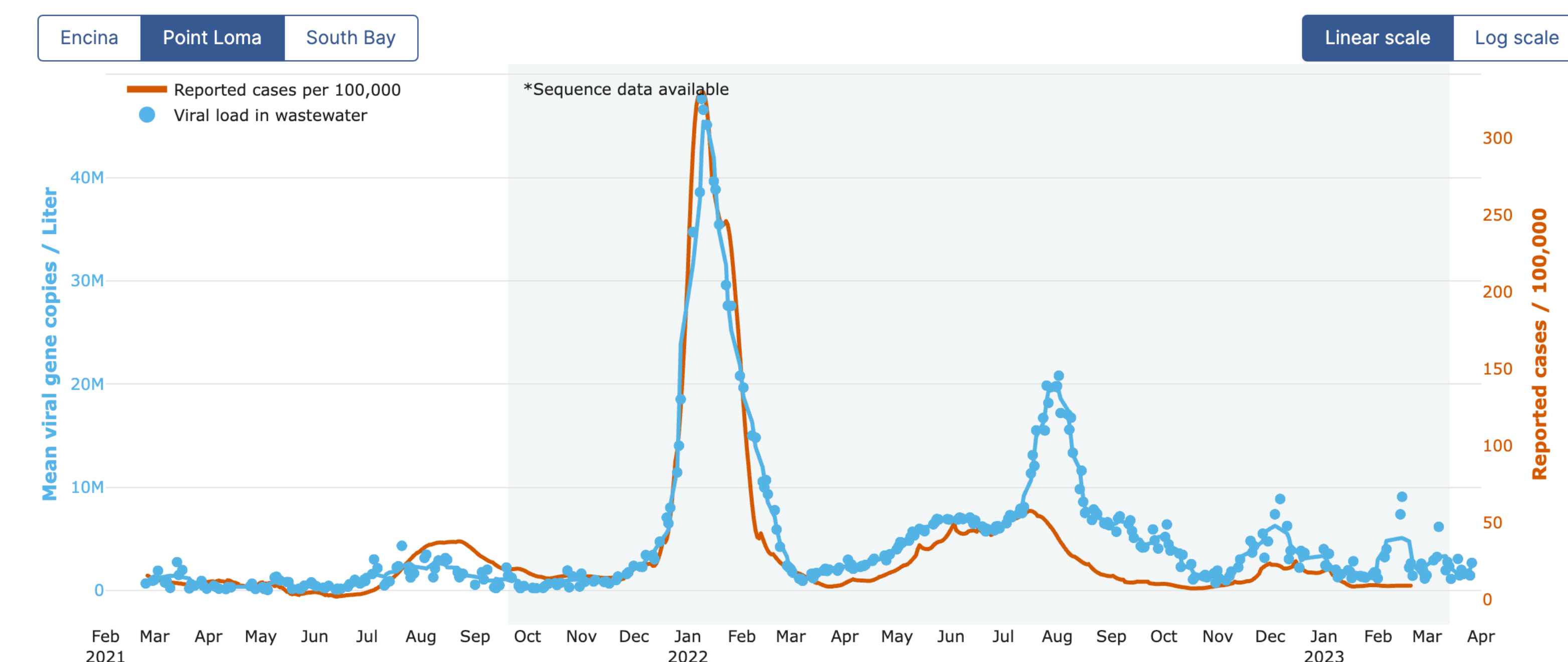
### Collection Sites

Currently there are 10 local municipalities, spread across the state of Wyoming, providing collections from wastewater treatment plants.

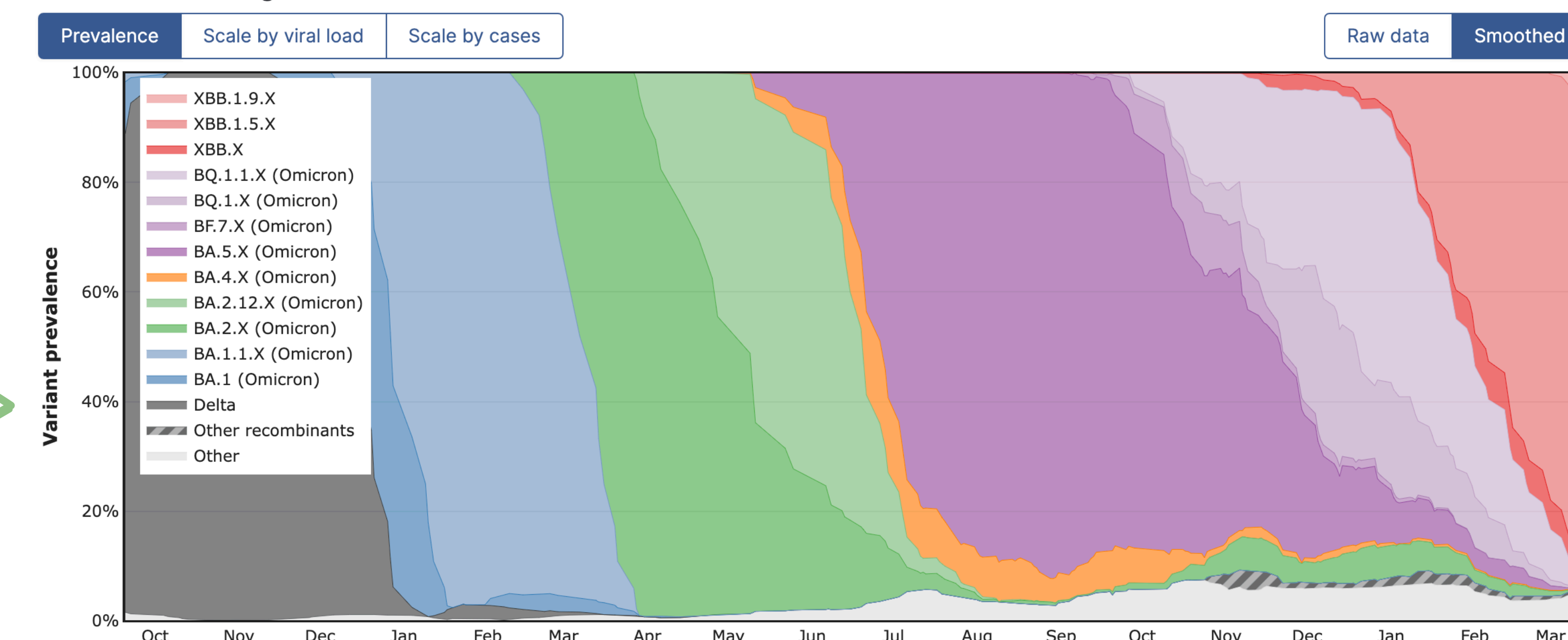


### Monitoring

Using the surveillance data, we can build public dashboards to monitor community health over time, and use the data to make informed public health decisions.



### Wastewater lineages



Above is an example dashboard used to monitor SARS-CoV-2 prevalence in San Diego County, CA. These types of dashboards help make complex data more accessible and actionable by public health officials.