

Wastewater Surveillance

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Department of
Health

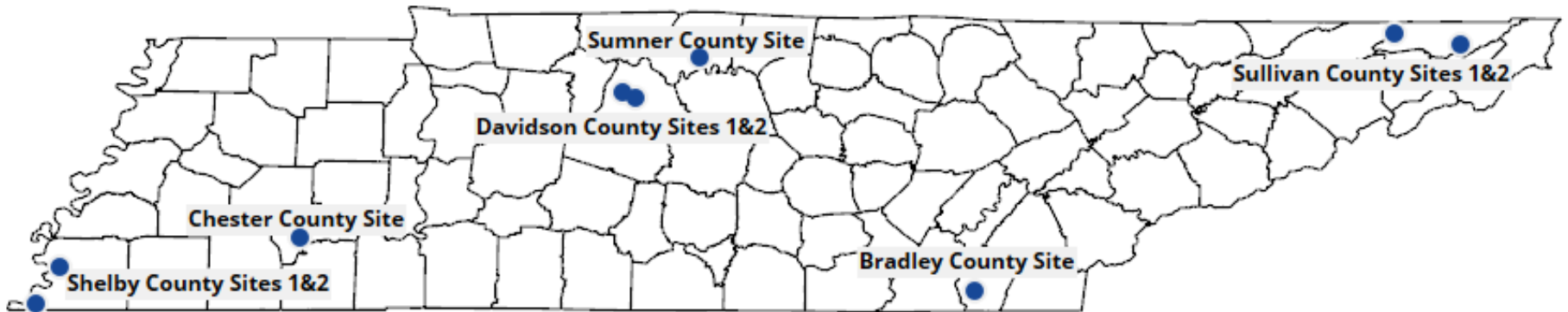
Wastewater Surveillance – How does it work?



https://www.cdc.gov/nwss/how-wws-works.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fhealthywater%2Fsurveillance%2Fwastewater-surveillance%2Fresources%2Fhow-wws-works.html

Wastewater Surveillance – TN’s program

- **Current Status:** We currently have 9 wastewater treatment plants (WWTP) sampling 2x weekly.
 - All samples are being tested through CDC’s contracted lab Biobot.
 - We are only testing for SARS-CoV-2.
- **Future direction:** We are transitioning from this contract to our own State Public Health Lab (SPHL).
 - We plan to expand to more facilities when the SPHL is ready.
 - We will have data on our website after transition.
- **Resources:** Please visit the sites below for more information or contact me directly.
 - <https://www.cdc.gov/nwss/wastewater-surveillance.html>
 - <https://www.tn.gov/health/cedep/ncov/wastewater-surveillance.html>
- **Contact:** Russell Owens, 615-254-1494, Russell.Owens@tn.gov



Wastewater Surveillance – What does it say?

- **Current Concentration:** Compares recent data with the past **six months** to spot trends in wastewater quality.
- **Percent Change:** Analyzes the entire dataset to understand **long-term trends** and overall changes in wastewater characteristics by looking in 5-sample increments.
- **Significant Increase:** Reviews the last **30 days** of data, and if both the "Current Concentration" and "Percent Change" show high levels, it raises a flag for potential issues or trends.
- **Sequencing:** We do sequence one sample a week per facility and results can be shared if requested.

Wastewater Treatment Plant	Wastewater Analysis			
	Sample Collection Date	Current Concentration	Percent Change	Significant Increase?
Bradley County WWTP	9/10/2023	Very High	Moderate Increase	No alert
Chester County WWTP	9/11/2023	Very High	Large Increase	No alert
Davidson County WWTP 1	9/11/2023	Very High	Moderate Decrease	No alert
Davidson County WWTP 2	9/11/2023	High	Moderate Increase	No alert
Shelby County WWTP 1	9/11/2023	Very High	Moderate Decrease	No alert
Shelby County WWTP 2	9/11/2023	High	Moderate Decrease	No alert
Sullivan County WWTP 1	9/10/2023	Very High	Moderate Increase	Yes
Sullivan County WWTP 2	9/5/2023	Very High	Moderate Decrease	No alert
Sumner County WWTP	9/4/2023	High	Large Decrease	No alert



COVID-19 Surveillance Update

Tennessee Department of Health

Magdalena Dorvil-Joanem, MD, MPH


COVID-19 Surveillance

TN Dept of Health

COVID-19 Trends in TN & US

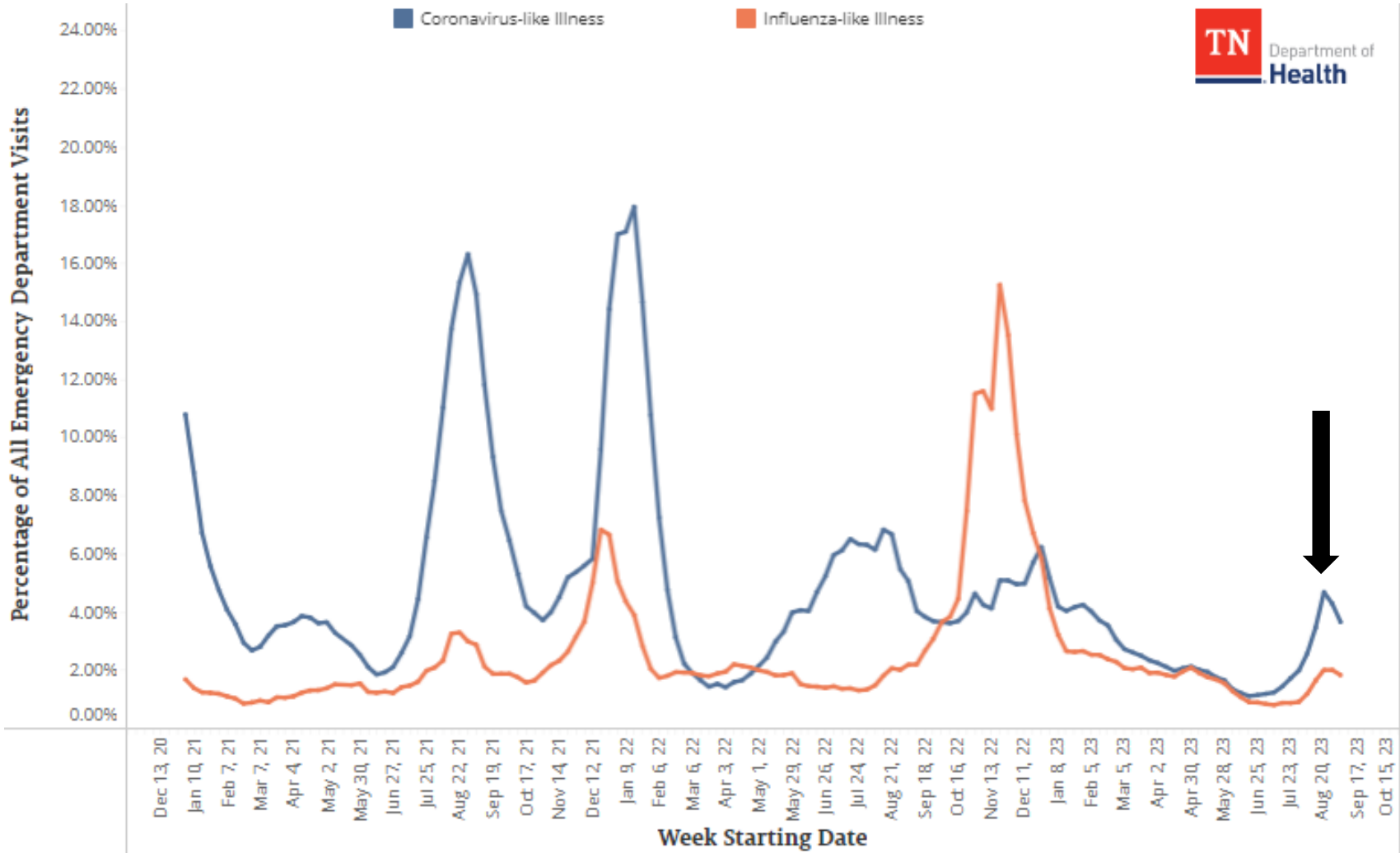
- Tennessee
 - New cases decreasing (total ~4800/week)
 - Hospitalizations increasing (399 hospitalized currently)
- U.S.A.
 - New hospitalizations increasing
 - Deaths increasing

Total Hospitalizations 6,308,630
+8.7% in most recent week
Trend in Hospital Admissions 

Total Deaths 1,141,782
+4.5% in most recent week
Trend in % COVID-19 Deaths 

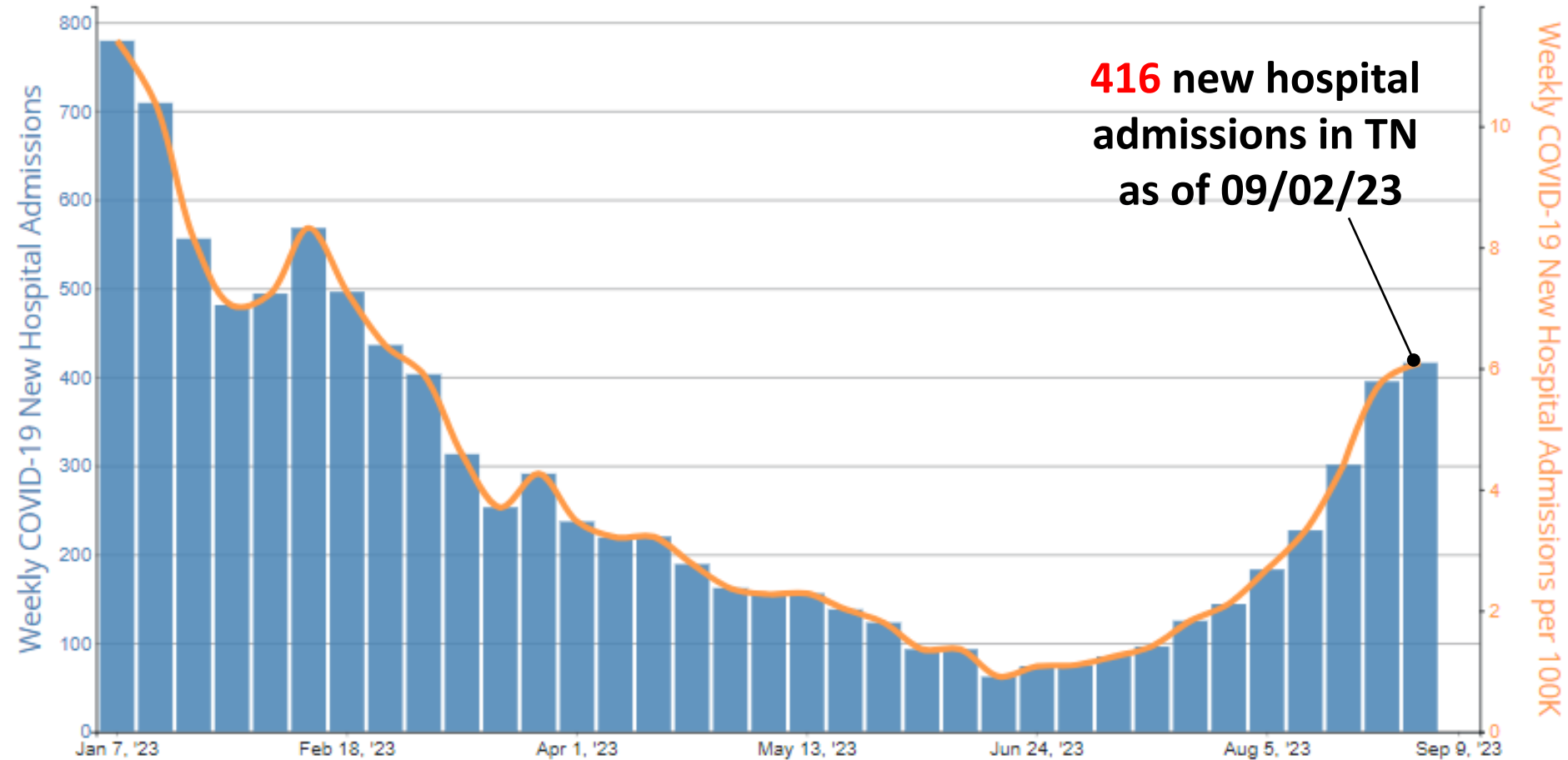
Syndromic Surveillance

Emergency Department Data of chief complaint and discharge diagnosis



New Hospital Admissions

COVID-19 New Hospital Admissions and New COVID-19 Hospital Admissions per 100,000 Population, by Week, in Tennessee, Reported to CDC

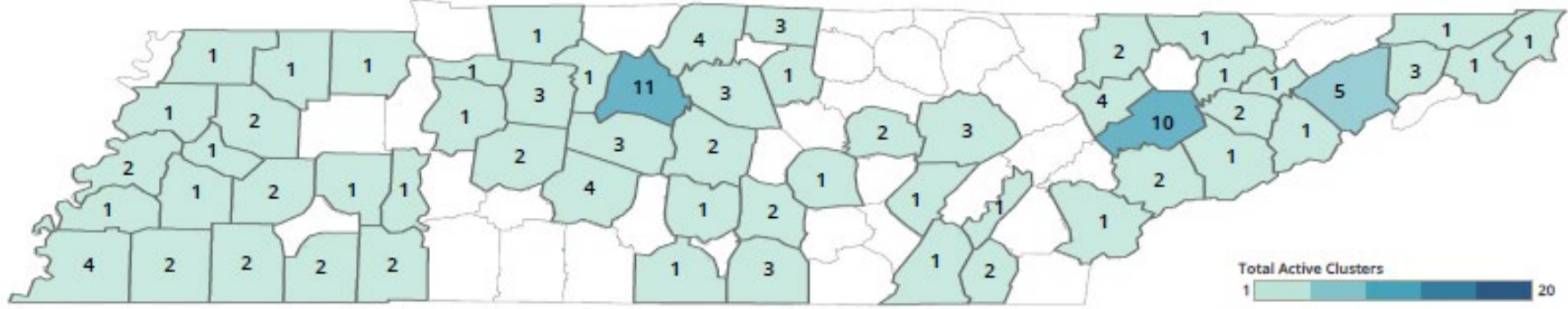


COVID Cluster in High-Risk Settings

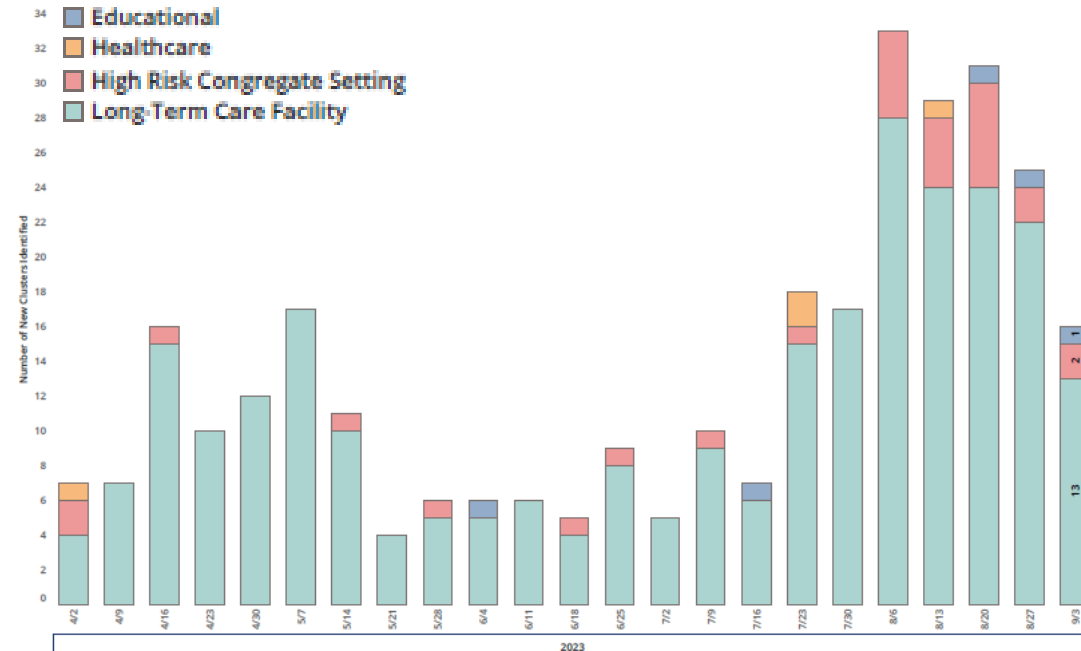
122
Total Active Clusters

High-risk settings include long-term care facilities, correctional facilities, shelters, and other congregate settings

Active Clusters by County



Confirmed Clusters by Week and Facility Type



Variant Proportions for HHS Region 4

Nowcast Estimates in HHS Region 4 for 9/3/2023 – 9/16/2023

Region 4 - Alabama, Florida, Georgia, Kentucky,
Mississippi, North Carolina, South Carolina, and
Tennessee

WHO label	Lineage #	%Total	95%PI	
Omicron	EG.5	19.5%	17.0-22.4%	
	XBB.1.16.6	15.0%	12.4-18.0%	
	FL.1.5.1	10.8%	8.5-13.5%	
	HV.1	10.7%	7.9-14.3%	
	XBB.1.16	10.3%	8.4-12.5%	
	XBB.2.3	5.6%	4.7-6.6%	
	XBB.1.16.1	4.3%	3.5-5.2%	
	XBB.1.16.11	3.8%	2.9-5.0%	
	XBB.1.5.70	3.8%	2.4-5.9%	
	XBB	3.5%	3.0-4.1%	
	GE.1	2.8%	1.9-4.0%	
	XBB.1.5	2.4%	2.0-2.9%	
	XBB.1.9.1	1.6%	1.2-2.0%	
	XBB.1.5.72	1.5%	1.0-2.0%	
	EG.6.1	0.9%	0.7-1.4%	
	XBB.1.5.68	0.7%	0.4-1.3%	
	XBB.1.9.2	0.7%	0.5-0.9%	
	XBB.1.5.10	0.6%	0.4-0.9%	
	FD.1.1	0.4%	0.3-0.6%	
	XBB.1.42.2	0.4%	0.2-0.8%	
	CH.1.1	0.3%	0.2-0.4%	
	FE.1.1	0.2%	0.1-0.3%	
	XBB.1.5.59	0.2%	0.1-0.3%	
	XBB.2.3.8	0.1%	0.0-0.3%	
	EU.1.1	0.1%	0.0-0.1%	
	XBB.1.5.1	0.0%	0.0-0.0%	
	BA.2.12.1	0.0%	0.0-0.1%	
BQ.1	0.0%	0.0-0.0%		
FD.2	0.0%	0.0-0.0%		
B.1.1.529	0.0%	0.0-0.0%		
BA.5	0.0%	0.0-0.0%		
Other	Other*	0.1%	0.0-0.1%	

Key Points:

- All SARS-CoV-2 strains currently circulating are all Omicron subvariants
- EG.5 strain represents a greater percentage (19.5%) of Covid case in region 4 than other Omicron subvariants

COVID-19 Surveillance Summary

	Tennessee	United States
Emergency Department Visits	▼	▲
New Cases	▼	n/a
Hospitalizations	▲	▲

Bottom line:

- COVID activity is up in TN
- If you have not received a COVID-19 vaccine in the past 2 months, get an updated COVID-19 vaccine

Additional Information

- **CDC recommends everyone 6 months and older get an updated COVID-19 vaccine**
 - Facilities Updated COVID-19 vaccines from Pfizer-BioNTech and Moderna are now available
- **How to receive vaccine for free**
 - For people with health insurance, most plans will cover the COVID-19 vaccine
 - For people without health insurance or whose health plans do not cover the vaccine, they can get a free vaccine at their local health centers, local health department, or a pharmacy participating in the CDC's Bridge Access Program

Central Office Support

- **Test Kits**

- Facilities (Health Departments, LTCFs, Community Partners, etc.) can request free test kits from covid19.testing@tn.gov

- **Cluster Surveillance & Response**

- The CO team manages the statewide cluster database and offers support for outbreak response for regional and metro health departments.
- Contact COVID19.Cluster@tn.gov for information.