

Epidemiology of COVID-19 in Missouri and Boone County

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10.5.2021

COVID-19
Daily Situation Report
October 4, 2021

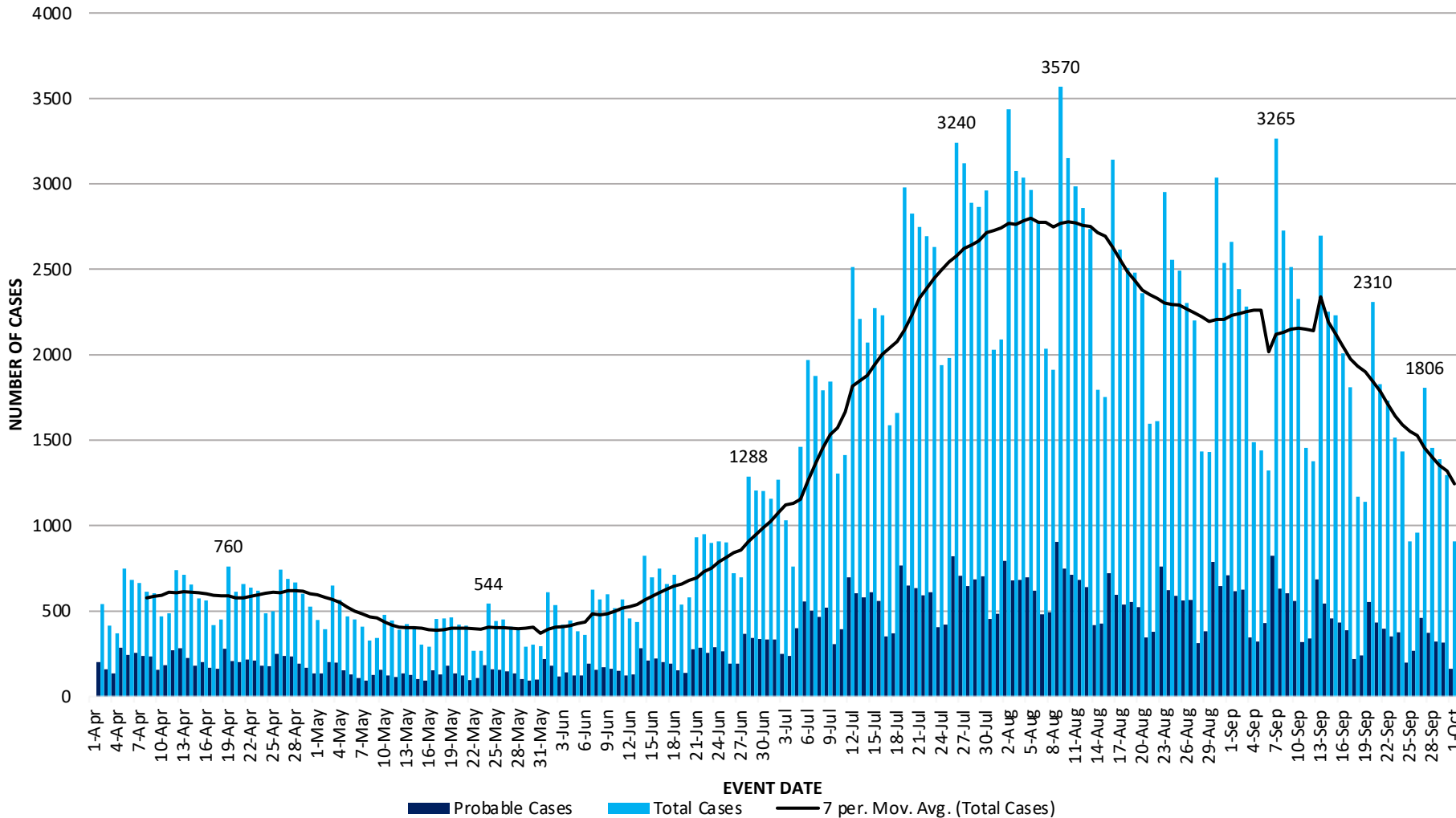
Avg. Total Daily Cases
21.8
Rolling 7 Day Average Per 100,000

Avg. PCR+ Cases
1,008
Rolling 7 Day Average

New Cases Added
762
PCR & Ant.+ Since Last Report

Avg. Antigen+ Cases
326
Rolling 7 Day Average

MO COVID-19 Total Cases (PCR+ & Antigen+) by Report Date through 10/1/2021;
Total Cases = 825,118; PCR+ = 680,974; Antigen+ = 144,144



Deaths (11,524)

77
Median Age

0
Newly Added

Testing (9/28)

14,859
Total Tests

8.6%
Percent Positive

Ant. – 7 Days

59,169
Total Tests
9/22 – 9/28

4.9%
Percent Positive

PCR – 7 Days

99,572
Total Tests
9/22 – 9/28

8.7%
Percent Positive

Ant. – 30 Days

309,560
Total Tests

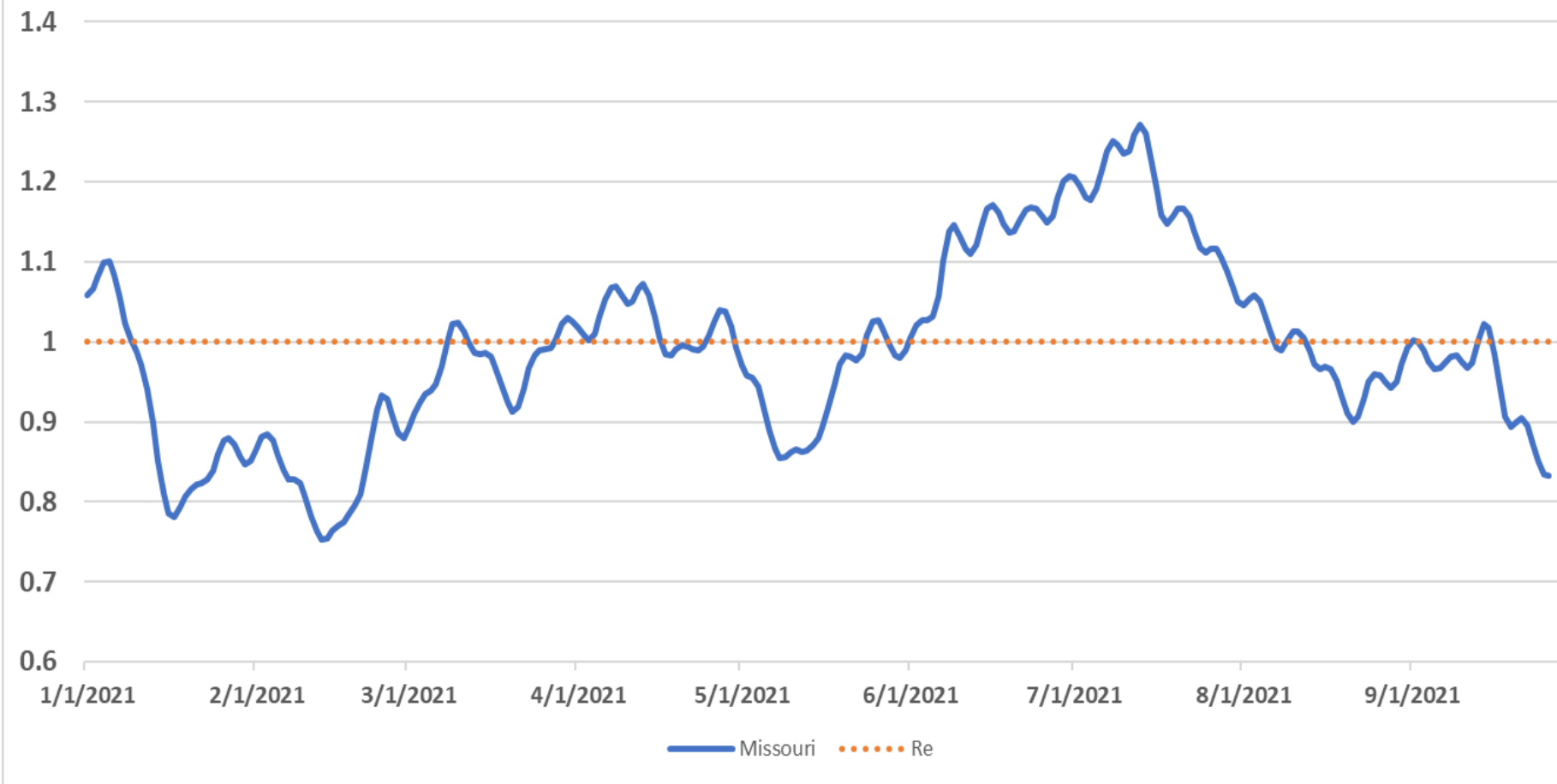
5.3%
Percent Positive

PCR – 30 Days

488,288
Total Tests

10.0%
Percent Positive

Re Estimates, Missouri, 9.28.2021



Missouri **0.83** (0.9)

Eastern **0.86** (0.94)

Southeast **0.72** (0.81)

Central **0.79** (0.86)

Southwest **0.86** (0.94)

Northwest **0.84** (0.92)

COVID-19, Missouri, 10.4.2021

The Status of COVID-19 in Missouri vs. Other States- Confirmatory Metrics

Based on White House Coronavirus Task Force thresholds. Based off confirmatory metrics only.

Severity: Past 7 Days

How large is the problem now?

New Cases	7,053 (115 per 100k)	#28 (#12)
New Deaths	22 (0.4 per 100k)	#28 (#25)
7-Day Positivity R..	8.7% (CDC method)	

Trajectory: Past 7 vs. Prior 7

In what direction is the problem moving?

% Change in Cases	-20.9%
% Change in Deaths	-64.5%
%p Change in Positivity Rate	-0.4%p

Response

What is being done now?

New Tests (Past 7 Days)	91,881 (1,497 per 100k)
% Change in Tests (Past 7 vs. Prior 7)	-17.4%
Testing Turnaround (Past 7 Days)	1.3 days

COVID-19, Boone County, 10.4.2021

The Status of COVID-19 in BOONE - Confirmatory Metrics

Based on White House Coronavirus Task Force thresholds. Based off confirmatory metrics only.

Severity: Past 7 Days

How large is the problem now?

New Cases	161 (89 per 100k)	#10 (#65)
New Deaths	1 (0.6 per 100k)	
7-Day Positivity Rate	6.4% (CDC method)	#86

Trajectory: Past 7 vs. Prior 7

In what direction is the problem moving?

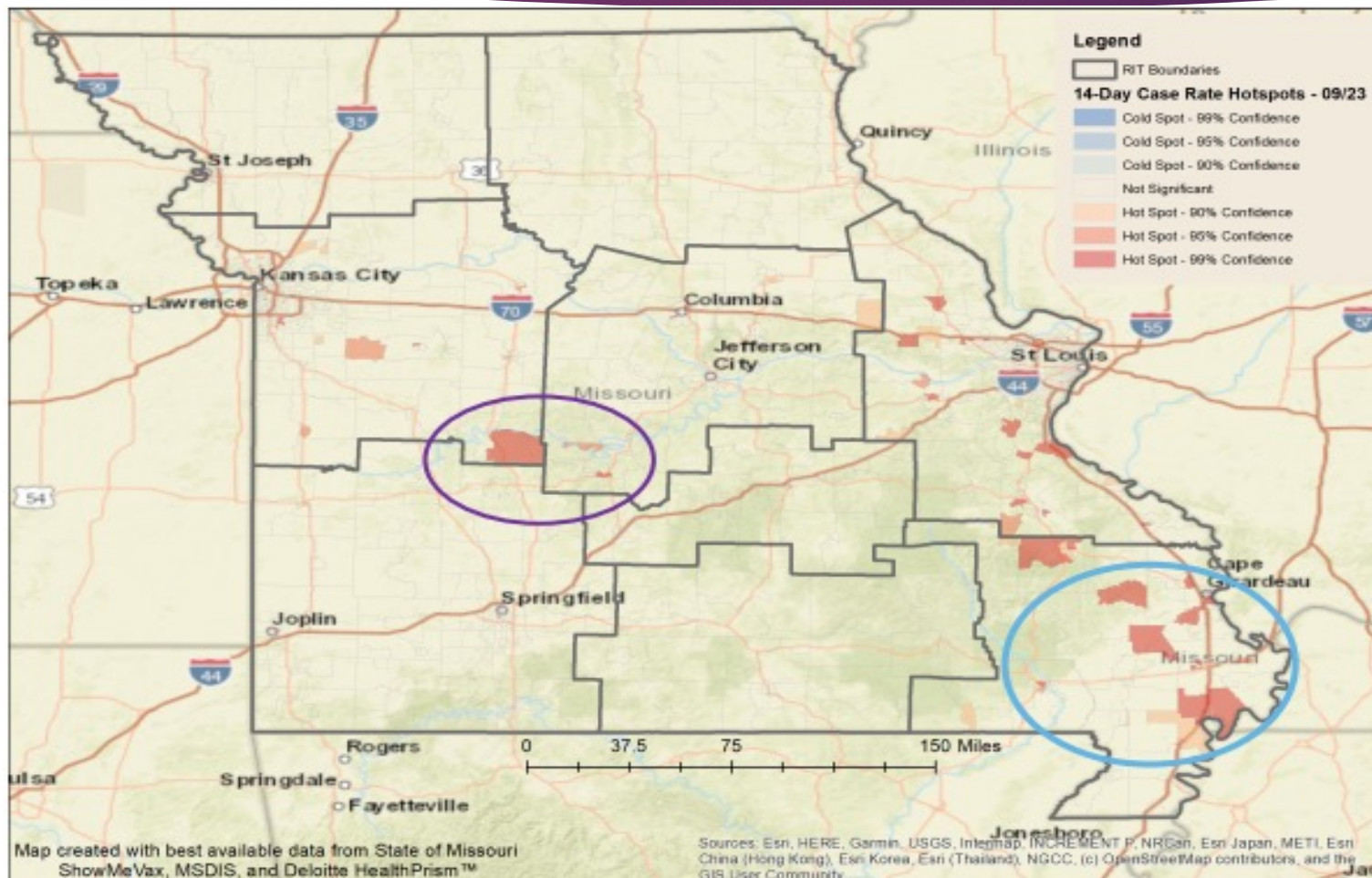
% Change in Cases	-23.7%	#55
% Change in Deaths	0.0%	
%p Change in Positivity Rate	0.0%p	#56

Response

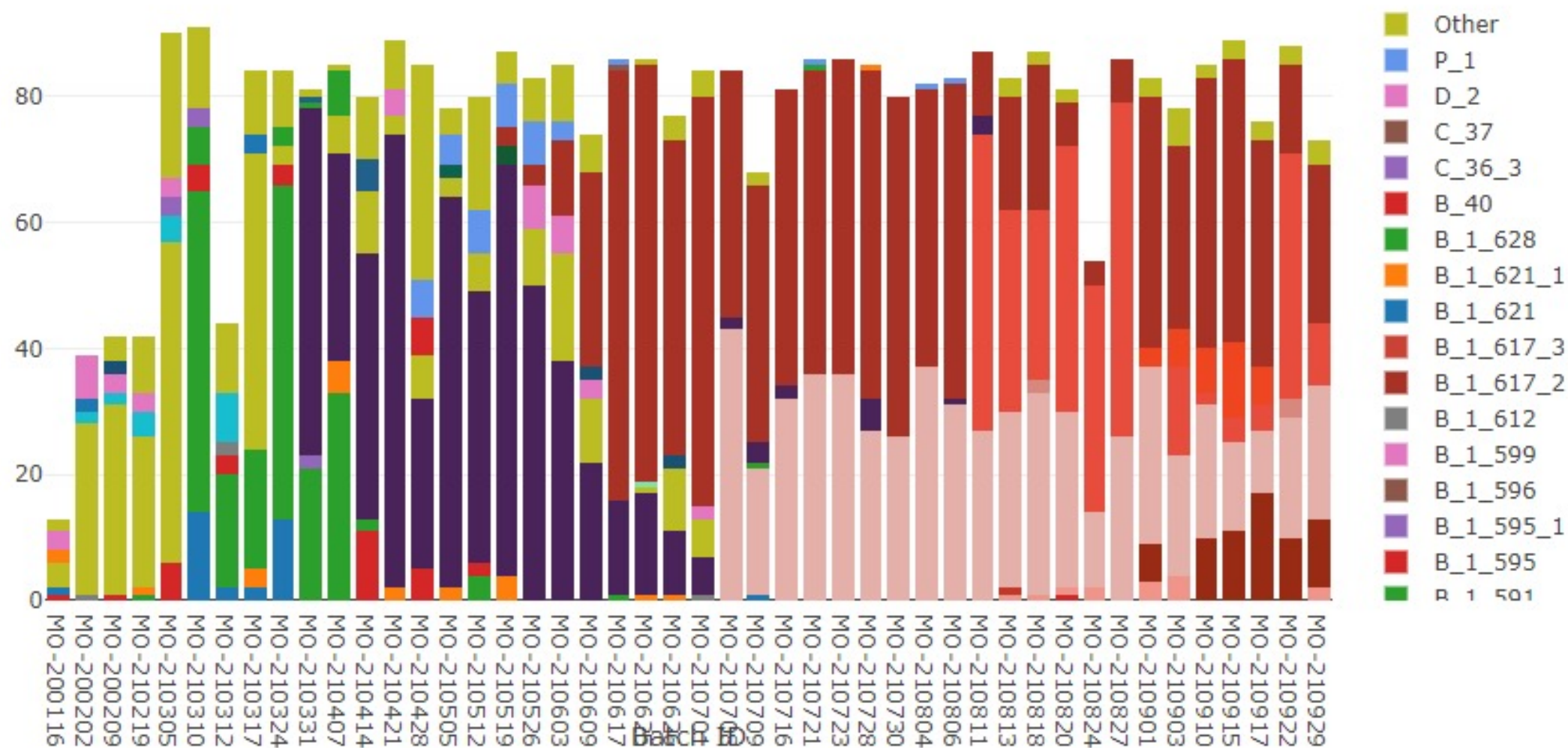
What is being done now?

New Tests (Past 7 Days)	2,884 1,598 per 100k	#8 (#23)
% Change in Tests (Past 7 vs. Prior 7)	-23.4%	
Testing Turnaround (Past 7 Days)	1.2 days	

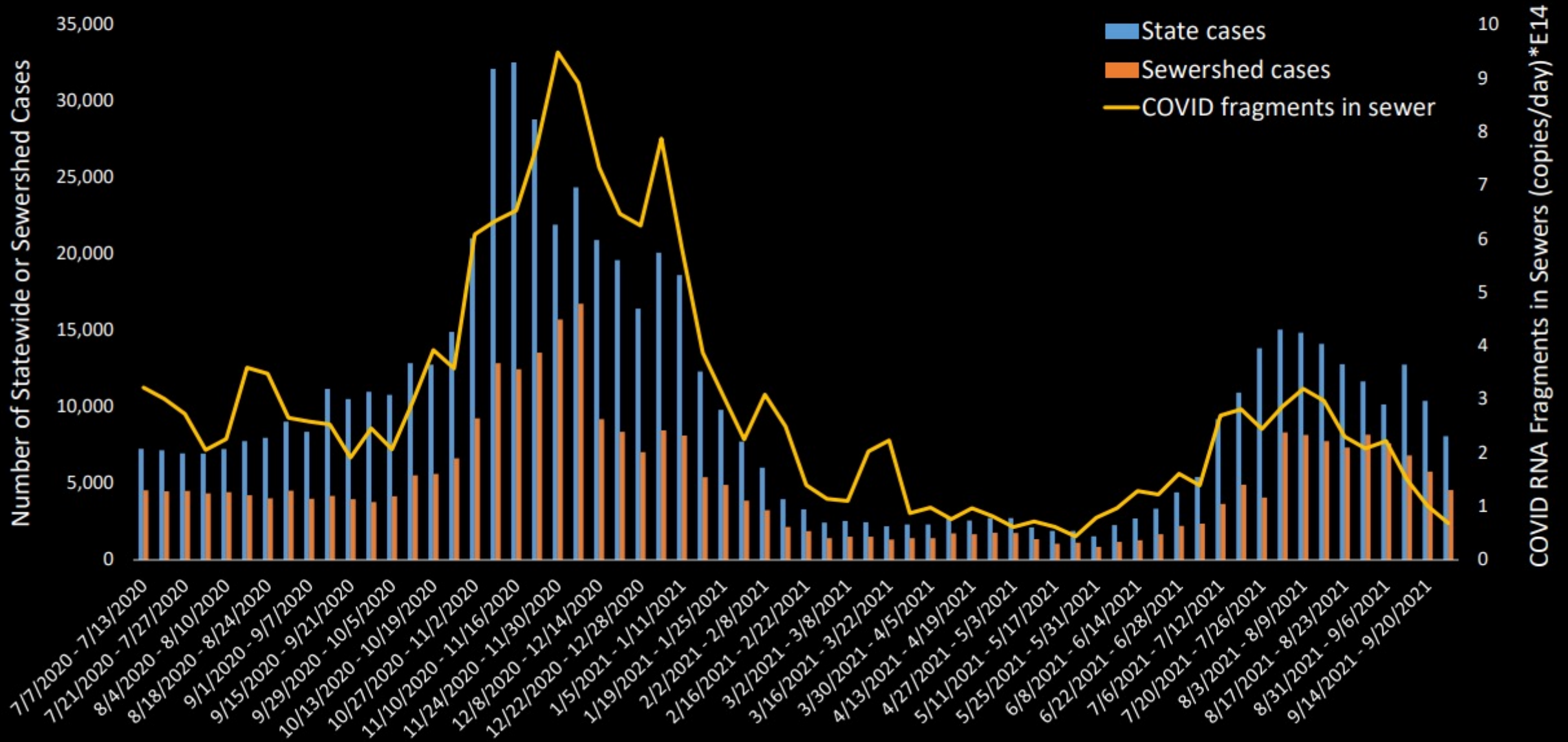
COVID-19 Hot Spots, 9.23.2021



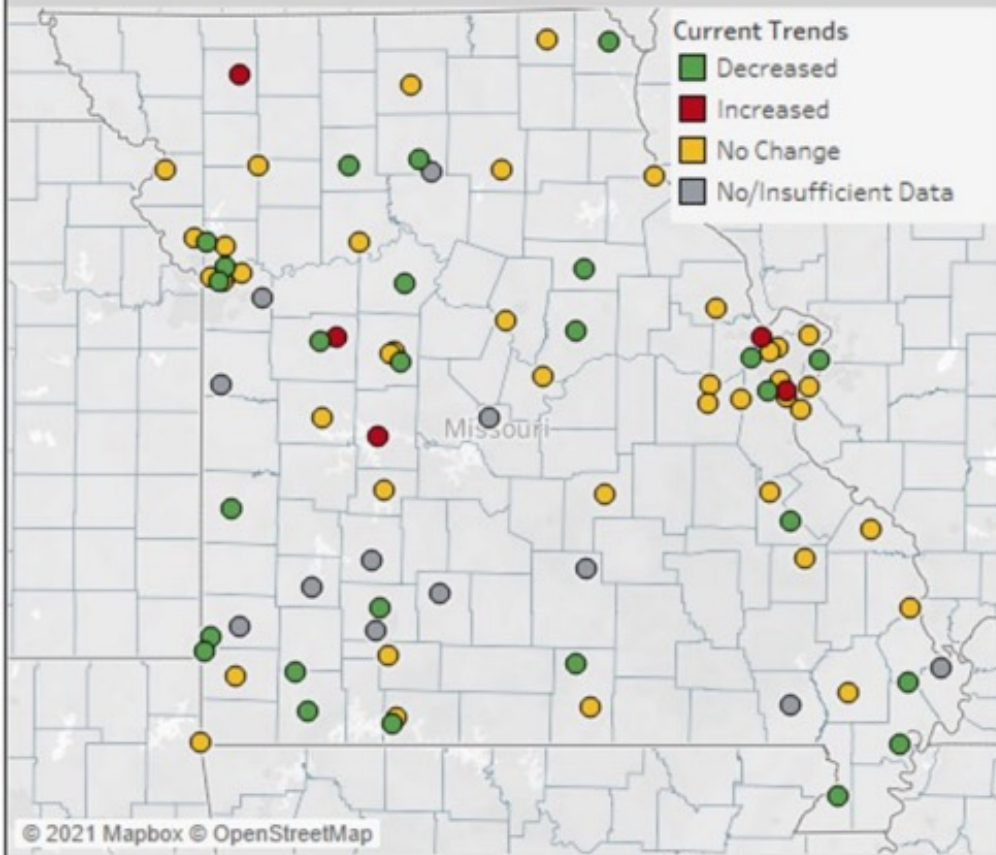
Proportion of Top 5 Variant



MO State vs Sewershed COVID Cases and Fragments in Sewers through September 27, 2021

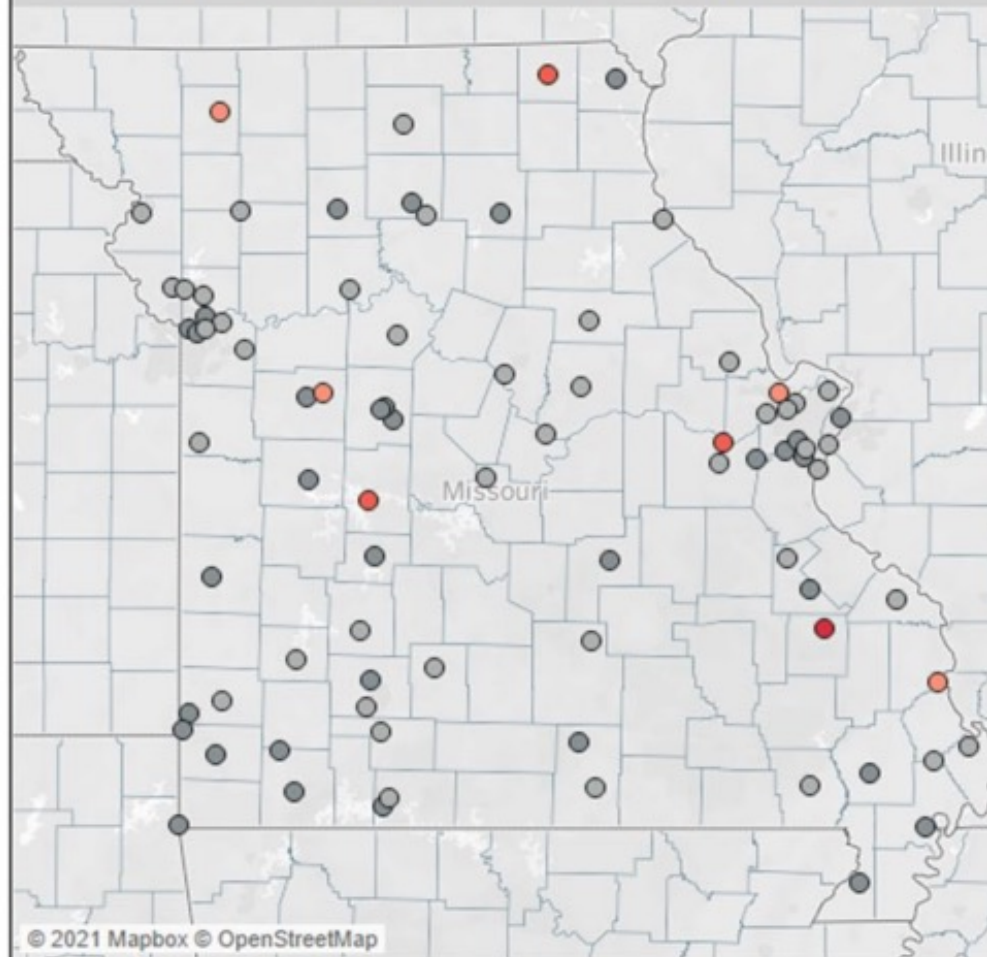


Current COVID-19 Wasterwater Trends



Data represents the change in viral gene copies per day in samples collected on 9/27/2021 from the previous week. "Increased" indicates that viral gene copies either increased by >40% from last week or by >25% over each of the previous two weeks. "Decreased" indicates that viral gene copies have decreased by >25% over each of the previous three weeks or >30% in 2 of the previous 3 weeks. "No Change" indicates that viral gene copies did not meet the criteria for the "Increased" or "Decreased" designations. "No/Insufficient Data" indicates that either no sample was collected or the measured value fell below accurate reporting limits.

Elevated COVID-19 Viral Load in Wastewater



Red circles indicate sewersheds where viral load is significantly higher than previous measures at that location, with darker reds indicating the highest viral load per person. Gray circles indicate sewersheds areas where viral load is not significantly higher than previous measures at that location. The data is based on samples collected on 9/27/2021.

Facilities with increased viral load in wastewater (9/20-9/27):

Albany WWTF
MSD Fenton WWTP
St. Peters Spencer Creek WWTP
Warrensburg East WWTP
Warsaw WWTF

Facilities with elevated viral load in wastewater (9/27):

Albany WWTF
Cape Girardeau Municipal WWTF
Fredericktown WWTP
Memphis Municipal WWTP
St. Peters Spencer Creek WWTP
Warrensburg East WWTP
Warsaw WWTF
Washington WWTP

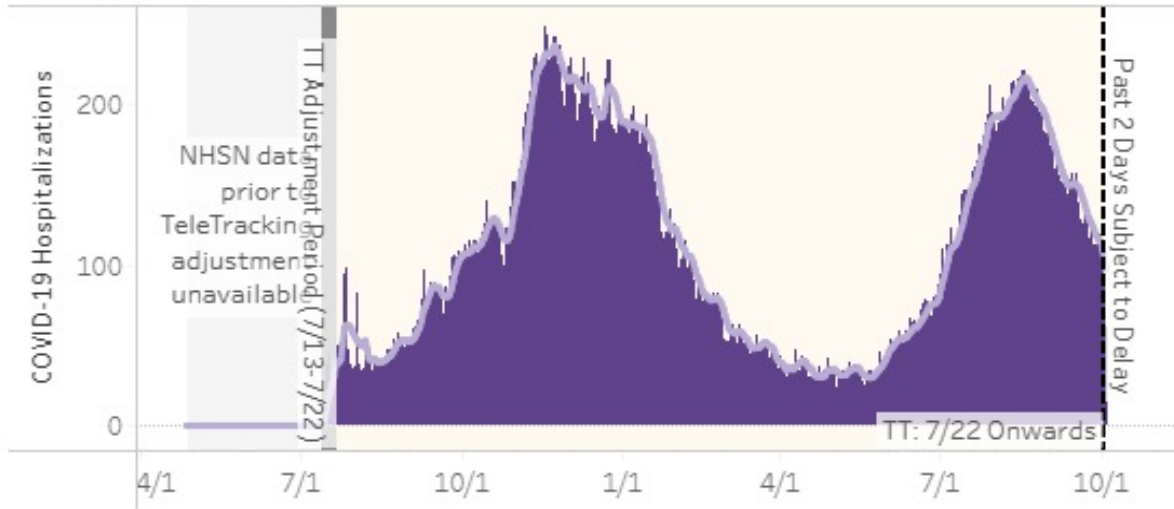
COVID Hospitalizations, Central Region

(10.4.2021)

COVID-19 Hospitalizations

COVID-19 Total Patients in the Hospital by Day

Central Region(s) Selected

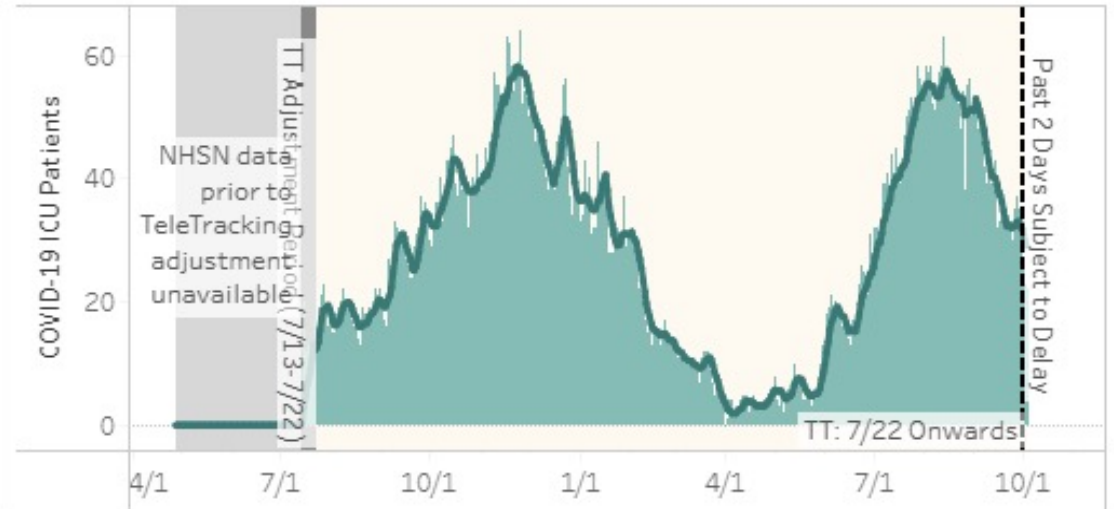


Legend: COVID-19 Hospitalizations by Day

- Total COVID-19 Hospitalizations
- 7-Day Average

COVID-19 Patients in ICU by Day

Central Region(s) Selected



Legend: COVID-19 ICU Hospitalizations by Day

- COVID-19 Patients in ICU
- 7-Day Average

COVID Hospitalizations, Central Region

(10.4.2021)

Current Hospitalization Status in Central Region(s)

Metrics reflect status on 8/31/2021 because the most recent 2 days are subject to reporting delays, especially on weekends. See charts below to see metrics for the most recent 2 days.

Hospitalizations			
Total COVID-19 Hospitalized Patients	Remaining Total Hospital Bed Capacity (Inpatient and Outpatient)	Remaining Inpatient Bed Capacity	
175	38%	33%	
ICU		Ventilators	
COVID-19 Patients in Intensive Care (ICU)	Remaining ICU Bed Capacity	COVID-19 Patients on Ventilators	Remaining Ventilator Capacity
51	33%	28	59%

Current Hospitalization Status in Central Region(s)

Metrics reflect status on 10/1/2021 because the most recent 2 days are subject to reporting delays, especially on weekends. See charts below to see metrics for the most recent 2 days.

Hospitalizations			
Total COVID-19 Hospitalized Patients	Remaining Total Hospital Bed Capacity (Inpatient and Outpatient)	Remaining Inpatient Bed Capacity	
92	36%	31%	
ICU		Ventilators	
COVID-19 Patients in Intensive Care (ICU)	Remaining ICU Bed Capacity	COVID-19 Patients on Ventilators	Remaining Ventilator Capacity
27	23%	22	62%

From June through August 2021, preventable COVID-19 hospitalizations among unvaccinated adults cost over \$5 Billion

Estimated cost of preventable COVID-19 hospitalizations among unvaccinated adults in the U.S., June-August 2021



Note: See brief for stepwise calculations.

Source: KFF analysis of CDC, CMS, and HHS Protect data • [Get the data](#) • [PNG](#)

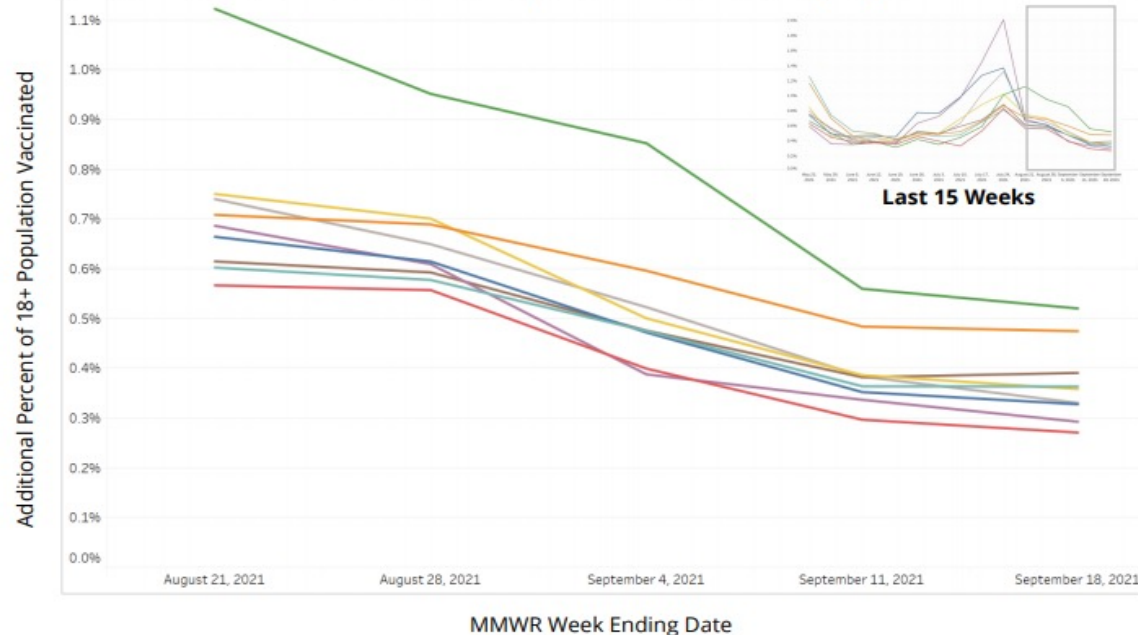
Vaccinations

Regional Vaccination Rates Over Time | Last 5 Weeks

HealthPrism™

The visualization and table below display weekly and cumulative vaccination rates at the regional level. Week 37 (9/12 – 9/18) is the most recent complete week

5-Week Additional Percent of 18+ Population Vaccinated by Region



Regional Vaccination Summary*

	18+ Cumulative % Vax	18+ % Vax Previous Week (MMWR 35 to 36)	12-17 Cumulative % Vax	12-17 % Vax Previous Week (MMWR 35 to 36)
A	53.9%	0.5%	44.9%	0.7%
B	44.4%	0.3%	17.6%	0.2%
C	59.5%	0.4%	51.0%	0.7%
D	50.3%	0.3%	31.3%	0.4%
E	48.3%	0.5%	21.6%	0.7%
F	59.7%	0.4%	38.5%	0.7%
G	43.2%	0.3%	16.4%	0.2%
H	51.5%	0.4%	26.4%	0.5%
I	41.5%	0.3%	23.7%	0.6%
State Average	54.8%	0.4%	40.6%	0.6%

Bolded percentages indicate the highest and lowest cumulative % vaccinated

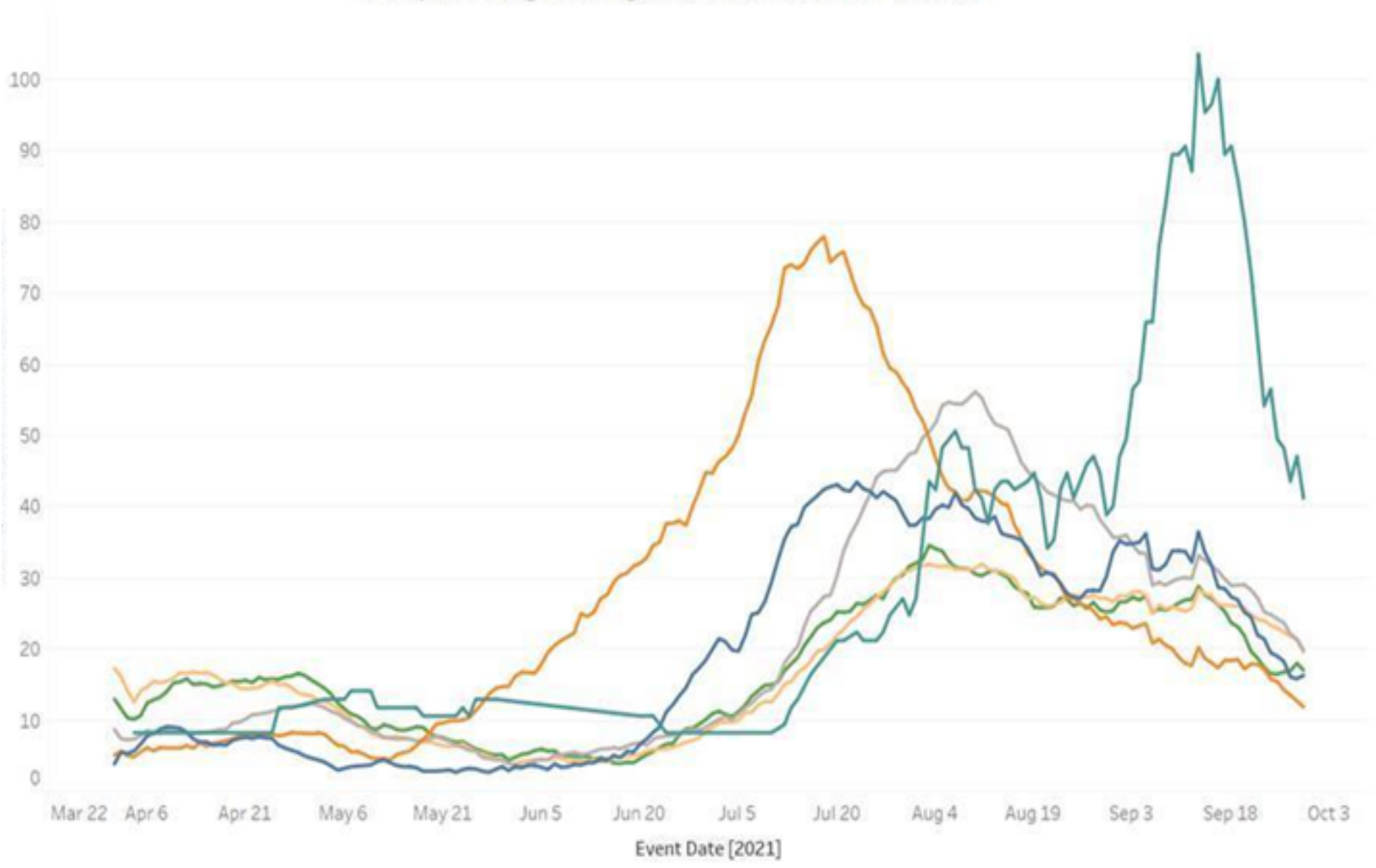
Vaccine initiations **decreased but at a lower rate** week over week in **both the 18+ and 12 to 17 population**

84 counties initiated vaccination for **0.2%-0.5%** of their 18+ population, with **2 counties vaccinating >1%** (Mississippi, New Madrid)

Jurisdictional Case Rate Comparison

7 Day Moving Average April 1, 2021 to Present

- County
- BOLLINGER
 - BOONE
 - GREENE
 - KANSAS CITY
 - ST LOUIS
 - ST LOUIS CITY



Could Future COVID Variants Overcome Immune System?

nature

<https://doi.org/10.1038/s41586-021-04005-0>

Accelerated Article Preview

High genetic barrier to SARS-CoV-2 polyclonal neutralizing antibody escape

- ▶ Study of naturally occurring and laboratory-selected mutations found future SARS-CoV-2 variant will need ≈ 20 of right mutations to become fully resistant to antibodies generated in response to coronavirus infection or vaccination
- ▶ Created polymutant virus showed near complete resistance to antibodies generated from natural infection or any vaccine
- ▶ **Plasma from those who were both infected and vaccinated neutralized polymutant spike.** It also neutralized 6 SARS-CoV-2 variants, as well as the original SARS coronavirus and SARS-like viruses found in bats and pangolins

