

# COVID-19 Critical Indicators

March 1, 2024



## TN COVID-19 At a Glance

21,384

New COVID-19 Cases in  
Last 30 Days

37

New COVID-19  
Hospitalizations in Last  
30 Days

114

New COVID-19 Deaths  
in Last 30 Days

7.7

Average COVID-19  
Positive Tests per 100,000  
in Last 30 Days

## Key Definitions

The Critical Indicator Report is published **monthly** by the Tennessee Department of Health (TDH) to highlight critical COVID-19 data trends in Tennessee. Community transmission and disease burden metrics published in this report are subject to change and will be reevaluated periodically.

Below are key definitions. In addition to these definitions, each visualization in this report is explained in further detail in the technical notes (see pages 10-11):

- **Case:** A person infected with COVID-19 based on test results or information from a public health investigation. The case definition for COVID-19 changed throughout the pandemic as new information became available. The most up-to-date definition is available online: <https://ndc.services.cdc.gov/case-definitions/coronavirus-disease-2019-2021/>
- **Hospitalization:** A person who is hospitalized due to COVID-19 based on interview information or hospital discharge data from the Tennessee Hospital Association.
- **Intensive Care Unit (ICU):** A functioning operational environment in a hospital that provides critical care and life support for acutely ill and injured patients.
- **Death:** A person who died due to COVID-19 based on death certificate information from a public health investigation. The definition for COVID-19 deaths changed throughout the pandemic as new information became available. The most up-to-date definition is available online: <https://www.tn.gov/content/dam/tn/health/documents/cedep/novel-coronavirus/COVID-Case-Definition.pdf>
- **Positive Tests Per 100,000:** These rates are calculated by the taking the number of new positive tests divided by the population. This is then multiplied by 100,000 to have the number of positive tests per 100,000 persons.
- **Public Health Region (PHR):** Tennessee has its 95 counties grouped into 13 regions. The table below has abbreviations and names for each region. For details on how the public health regions are grouped, visit: <https://www.tn.gov/health/health-program-areas/localdepartments.html>

CHR	Chattanooga Hamilton County Health Department
ETR	East Tennessee Regional Health Department
JMR	Jackson Madison County Health Department
KKR	Knoxville Knox County Health Department
MCR	Mid Cumberland Regional Health Department
MSR	Memphis Shelby County Health Department
NDR	Nashville Davidson County Health Department
NER	Northeast Regional Health Department
SCR	South Central Regional Health Department
SER	Southeast Regional Health Department
SUL	Sullivan County Health Department
UCR	Upper Cumberland Regional Health Department
WTR	West Tennessee Regional Health Department

This report was produced by the Tennessee Department of Health on March 1, 2024

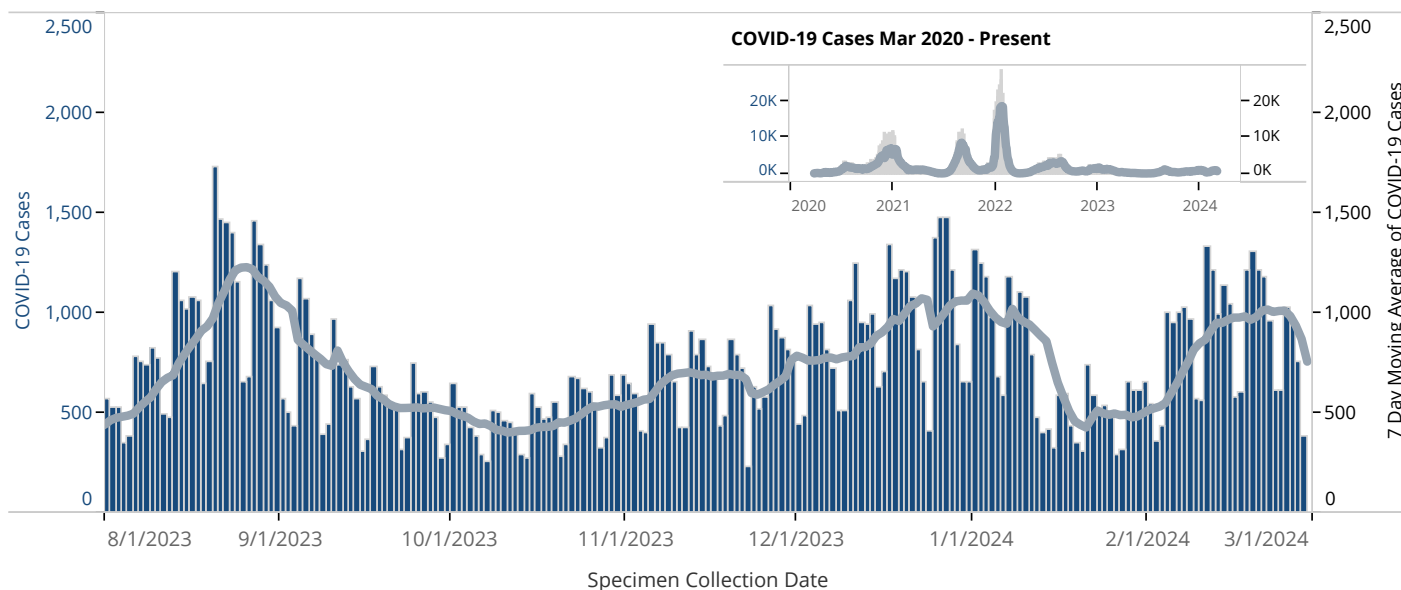
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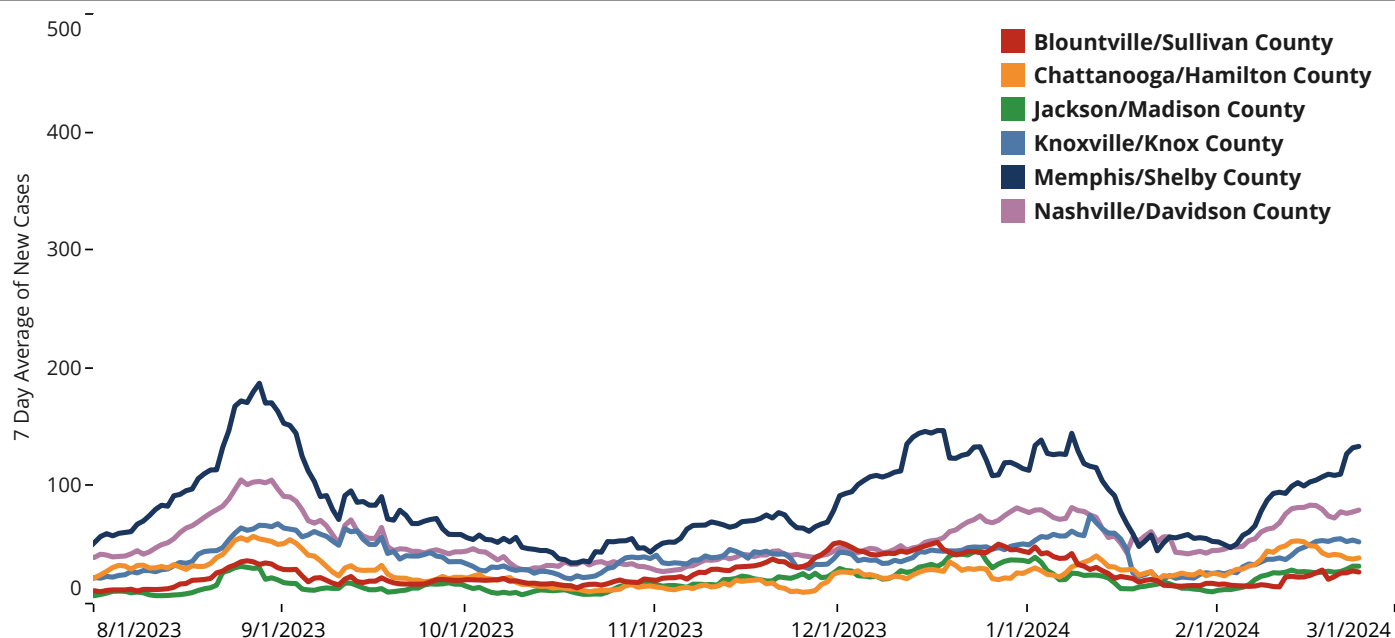


## TN COVID-19 Trends: Cases

### COVID-19 Cases by Specimen Collection Date<sup>1</sup> (Last 6 Months)



### Running Average of New Cases in Metropolitan Public Health Regions<sup>7</sup> (Last 6 Months)



The plot above illustrates the 7 day running average of new COVID-19 cases (based on the date of public report) for the six metropolitan public health regions.

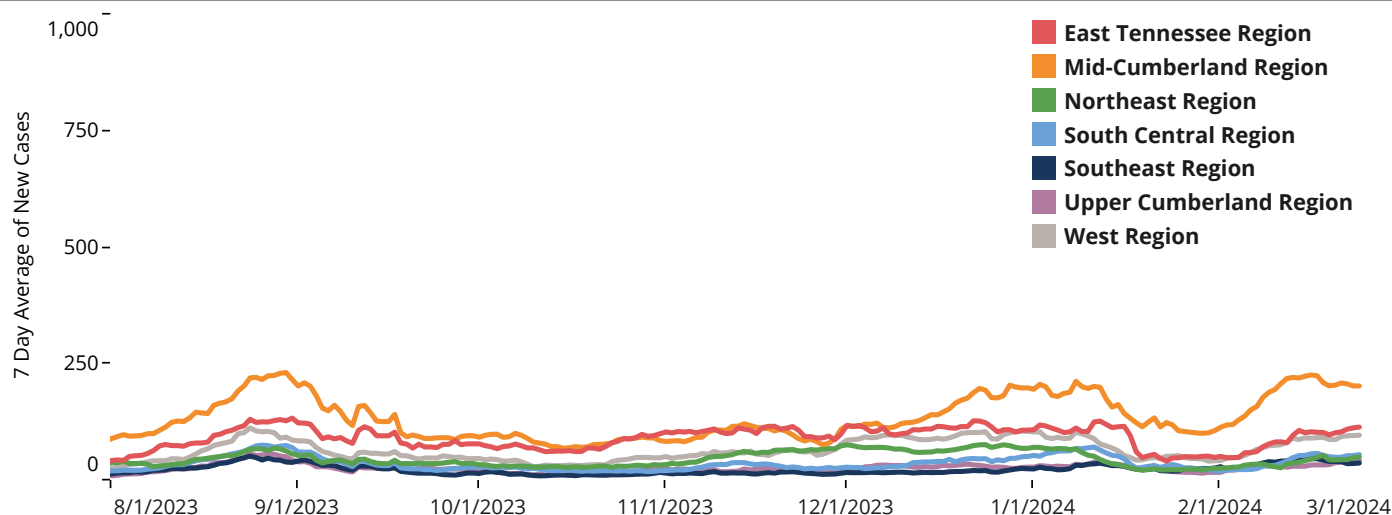
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## TN COVID-19 Trends: Cases

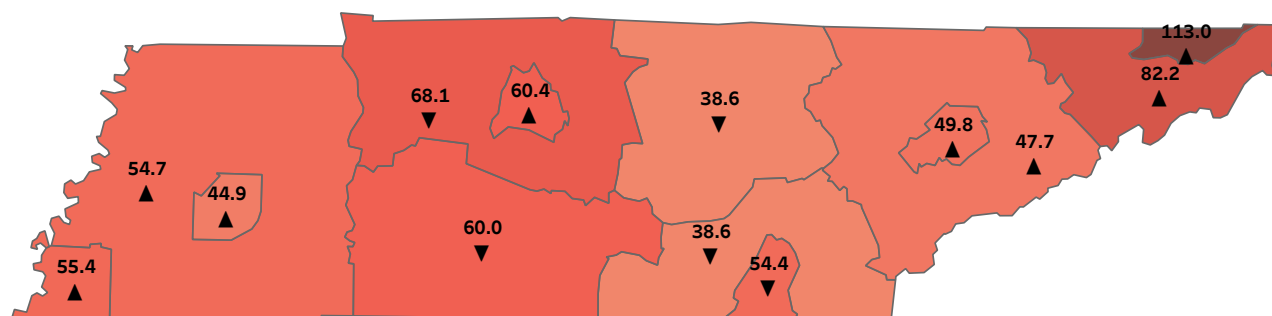
### Running Average of New Cases in Rural Public Health Regions<sup>7</sup> (Last 6 Months)



The plot above illustrates the 7 day running average of new COVID-19 cases (based on the date of public report) for the seven rural public health regions.

### Positive Tests per 100,000 Person by Public Health Region (over last 14 days)<sup>4</sup>

The map below shows the number of new positive tests in the last 14 days per 100,000 persons. The arrow indicators represent the trend (up or down) as compared to the 14 days prior.



© 2024 Mapbox © OpenStreetMap

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## TN COVID-19 Trends: Cases

## TN COVID-19 Variants in Circulation<sub>5</sub>

Below is a table summarizing COVID-19 variant cases reported to the Tennessee Department of Health in the last six months. TDH continues to monitor trends in variants beyond the six most commonly identified variants listed below. Because sequencing is not performed by all laboratories, these data are a convenience sample and not indicative of the true prevalence of variants. To learn more about COVID-19 variants, please see the SARS-CoV-2 Variant Classifications and Definitions published by the CDC:

<https://www.cdc.gov/coronavirus/2019-ncov/variants/variant-classifications.html>

Additional data on variant proportions nationally and by state are available from the CDC at:

<https://covid.cdc.gov/covid-data-tracker/#variant-proportions>

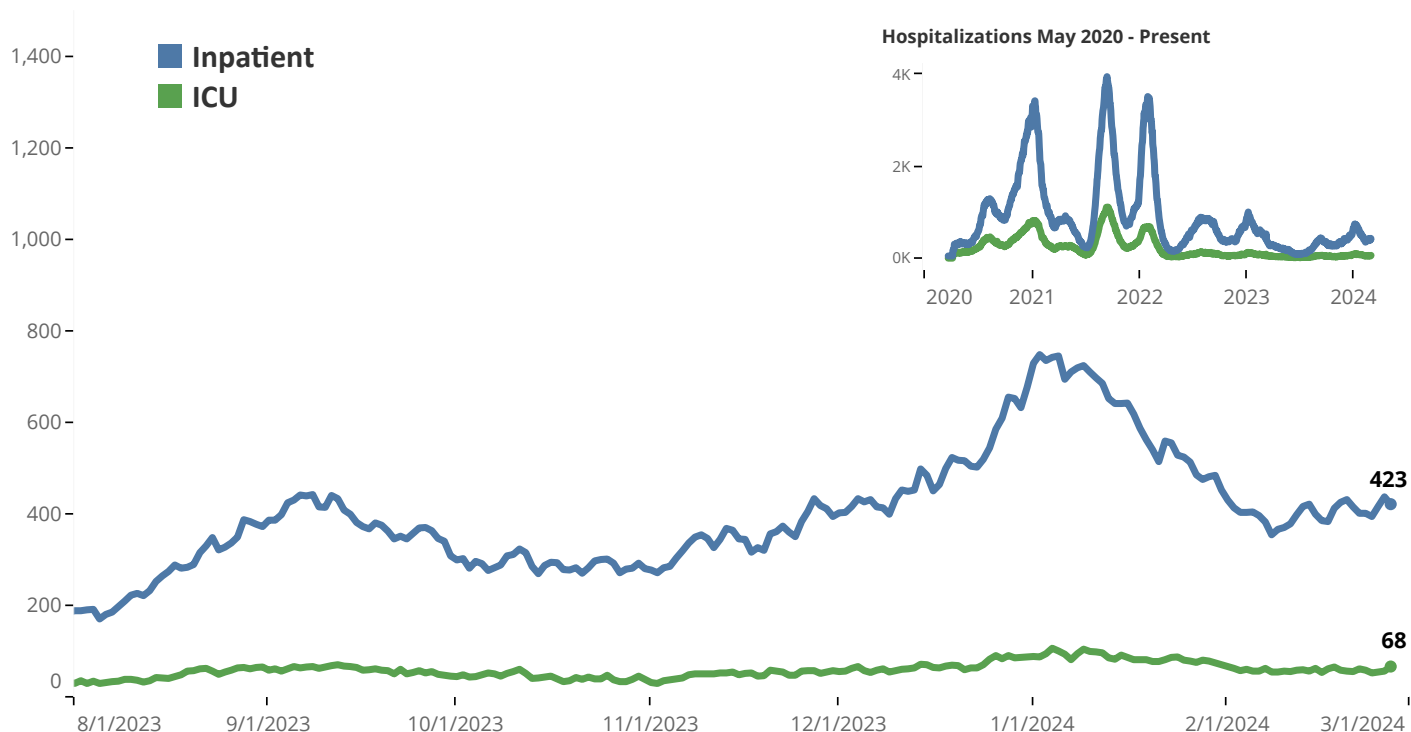
TN Region	EG.5- Omicron	XBB.1.16- Omicron	XBB.1.16.6- Omicron	HV.1- Omicron	XBB.1.5- Omicron	JN.1- Omicron
Blountville-Sullivan Region	2	0	0	2	0	1
Chattanooga-Hamilton Region	0	0	0	0	0	1
East Tennessee Region	0	1	0	0	0	2
Memphis-Shelby Region	10	4	1	1	0	1
Mid-Cumberland Region	24	6	4	6	4	6
Nashville-Davidson Region	18	3	4	1	5	1
Northeast Region	1	0	1	0	1	0
South Central Region	2	4	3	2	0	0
Upper Cumberland Region	0	0	0	0	0	2
West Tennessee Region	3	0	1	0	2	0
Grand Total	60	18	14	12	12	14

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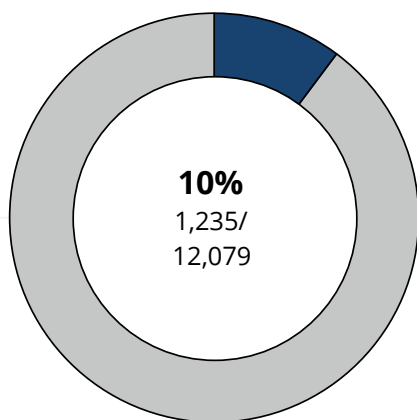


## TN COVID-19 Trends: Hospitalizations (Last 6 Months)

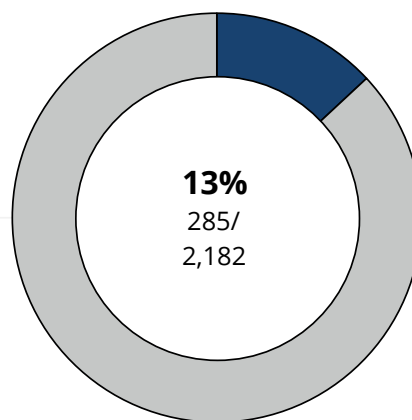


## Hospital Bed Availability<sup>13</sup>

Below is a brief snapshot of the currently available floor beds and ICU beds across TN.



**Available Floor Beds**



**Available ICU Beds**

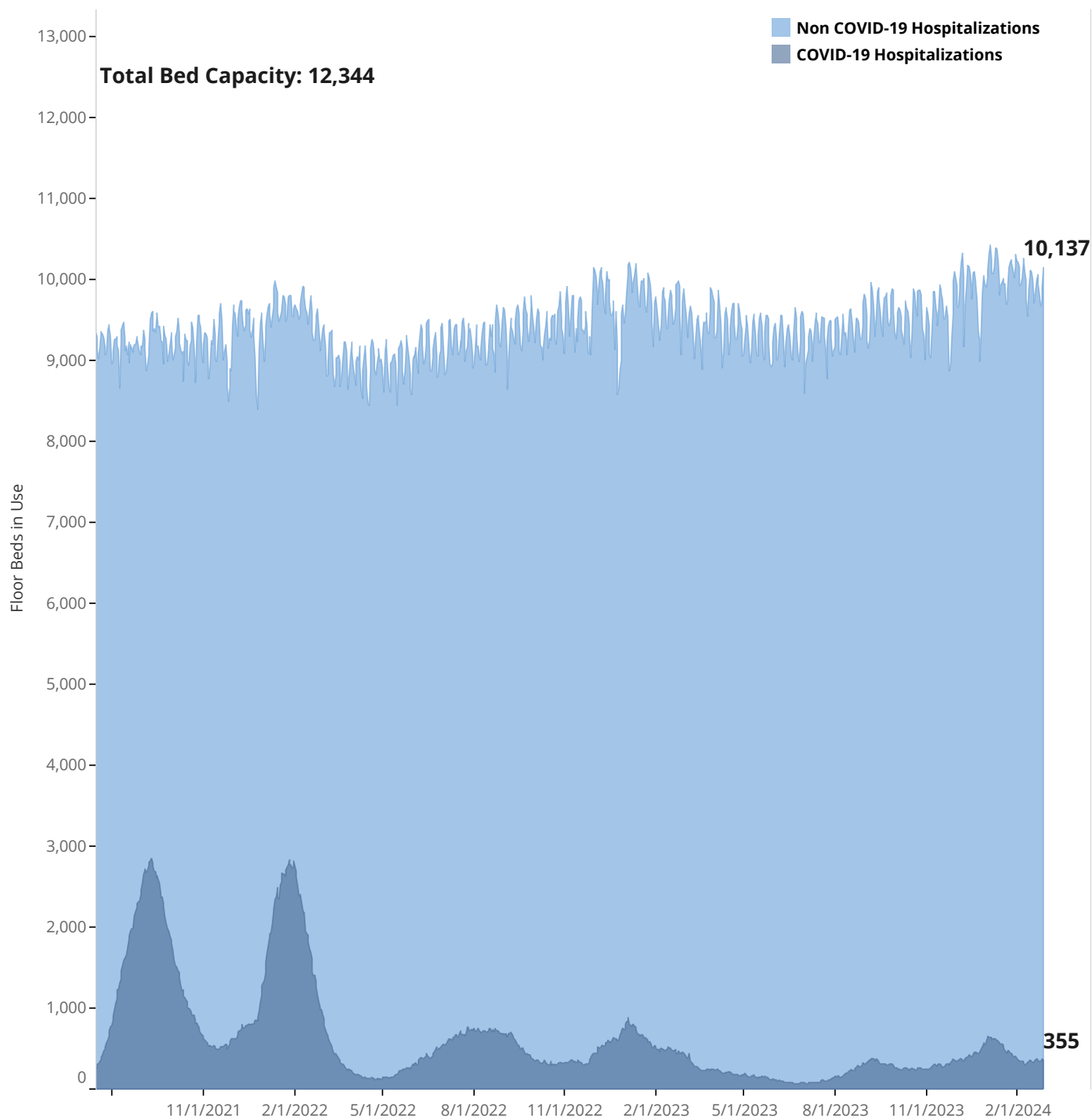
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## TN COVID-19 Trends: Hospitalizations

### Hospital Utilization and COVID-19 Hospitalizations in TN<sup>13</sup>



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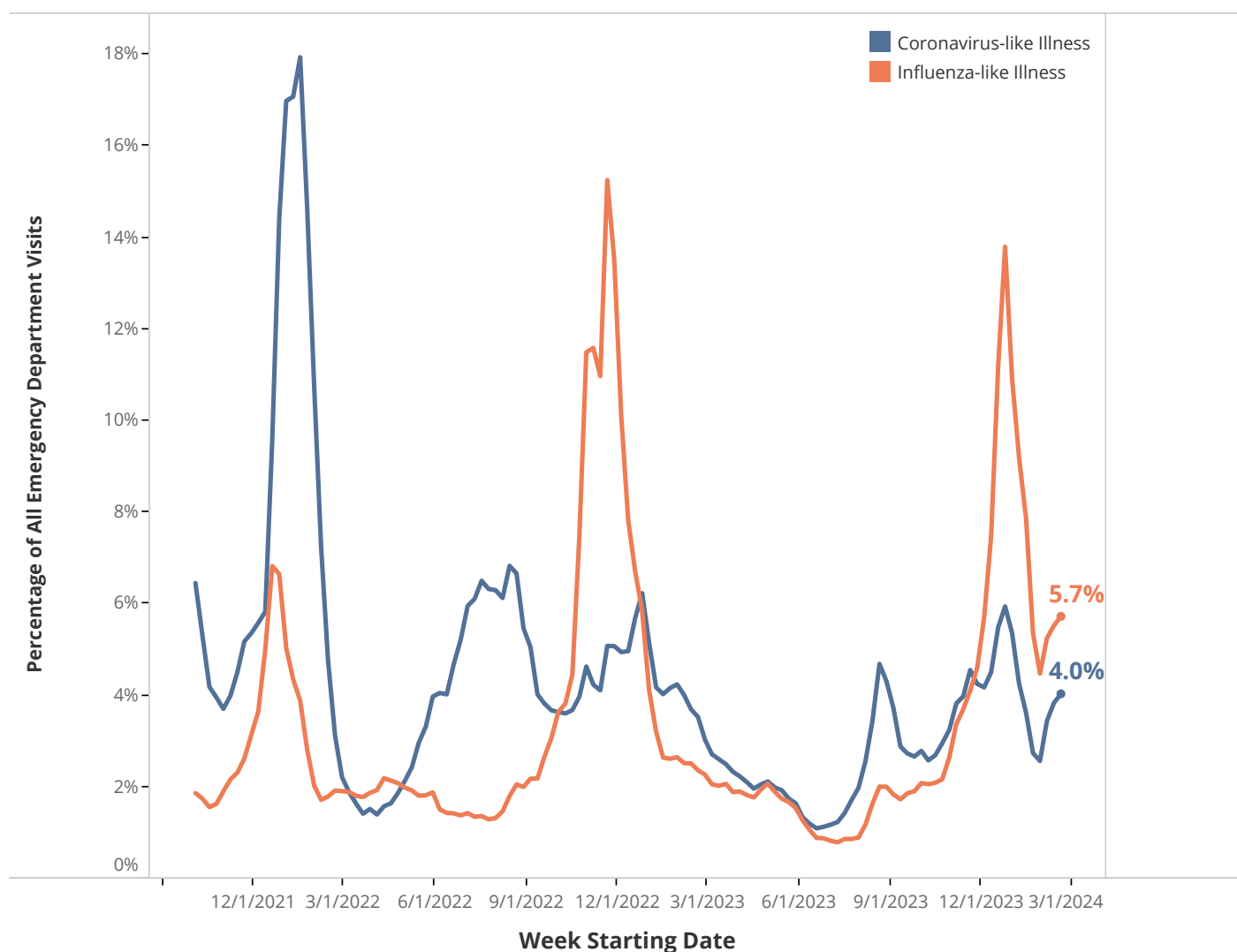
## TN COVID-19 Trends: Hospitalizations

### Syndromic Surveillance (Emergency Room) Data<sup>11</sup>

Below is a visualization of the trends in COVID-19 symptoms based on data collected through the syndromic surveillance system, ESSENCE. ESSENCE tracks patient chief complaints and discharge diagnoses from 95 emergency departments across Tennessee. These data are used to get pre-diagnostic estimates of health conditions (like COVID-19) being reported from emergency departments.

**Coronavirus like illness (CLI)** is defined as symptom terms, free text, or discharge diagnoses specified by CDC that are likely to be related to illness caused by the 2019 novel Coronavirus. These results should be considered preliminary in nature and are not all confirmed diagnoses of disease.

**Influenza like illness (ILI)** is defined by terms, free text, or discharge diagnoses that are likely to be related to illness caused by seasonal influenza. These results should be considered preliminary in nature and are not all confirmed diagnoses of disease.



# COVID-19 Critical Indicators

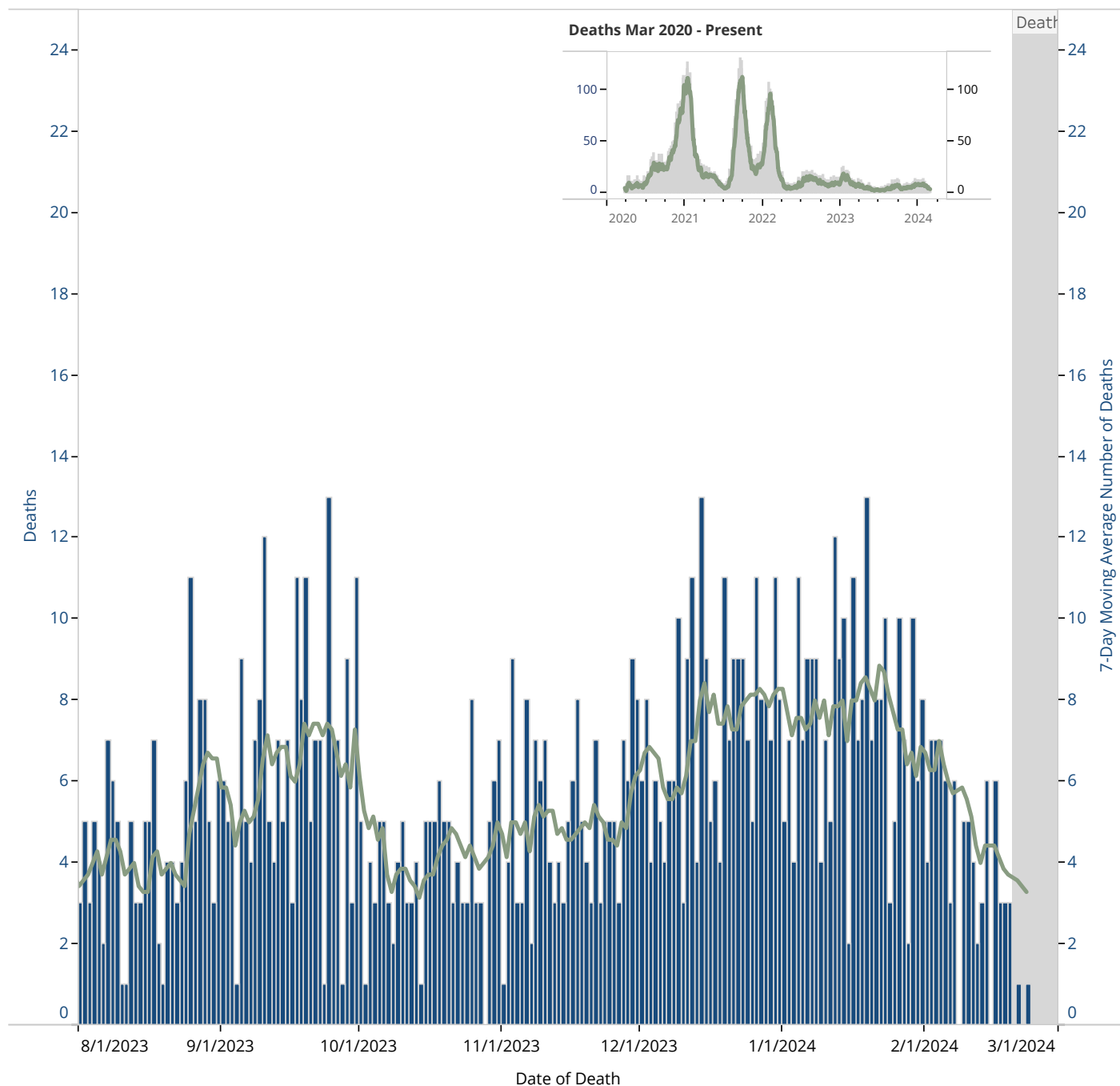
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## TN COVID-19 Trends: Deaths

### Number of Deaths per Day (by date of death)<sub>8</sub> (Last 6 Months)

Below are the number of COVID-19 deaths by the date of death. The green line represents the 7 day running average number of deaths.





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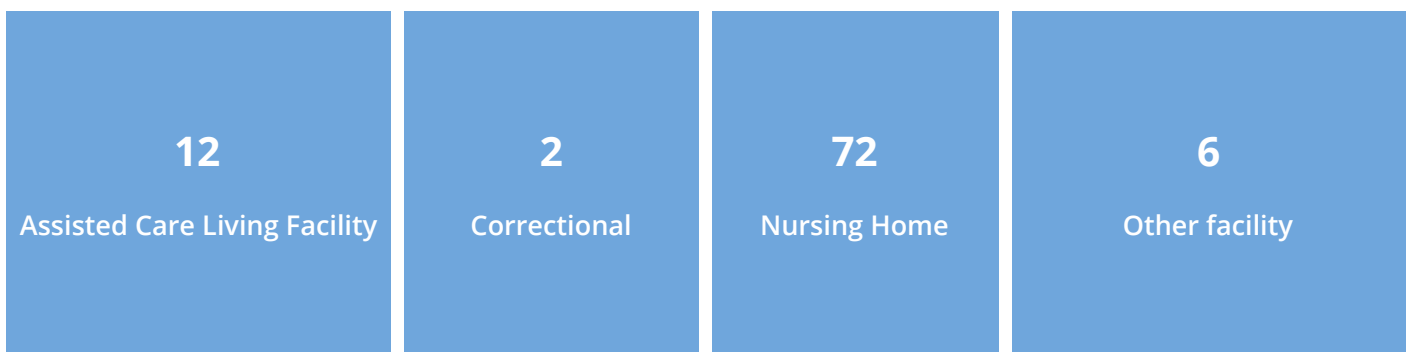
## COVID-19 Active Clusters At a Glance<sup>9</sup> (Last 14 Days)

A **COVID-19 cluster** is two (2) or more cases of COVID-19 that are linked by the same location of exposure (e.g., congregate living facility, long-term care facility, etc.) or exposure event within a 14-day period that is not a household exposure.

An **active** COVID-19 cluster are COVID-19 cluster cases that are currently being monitored by region and cluster type.

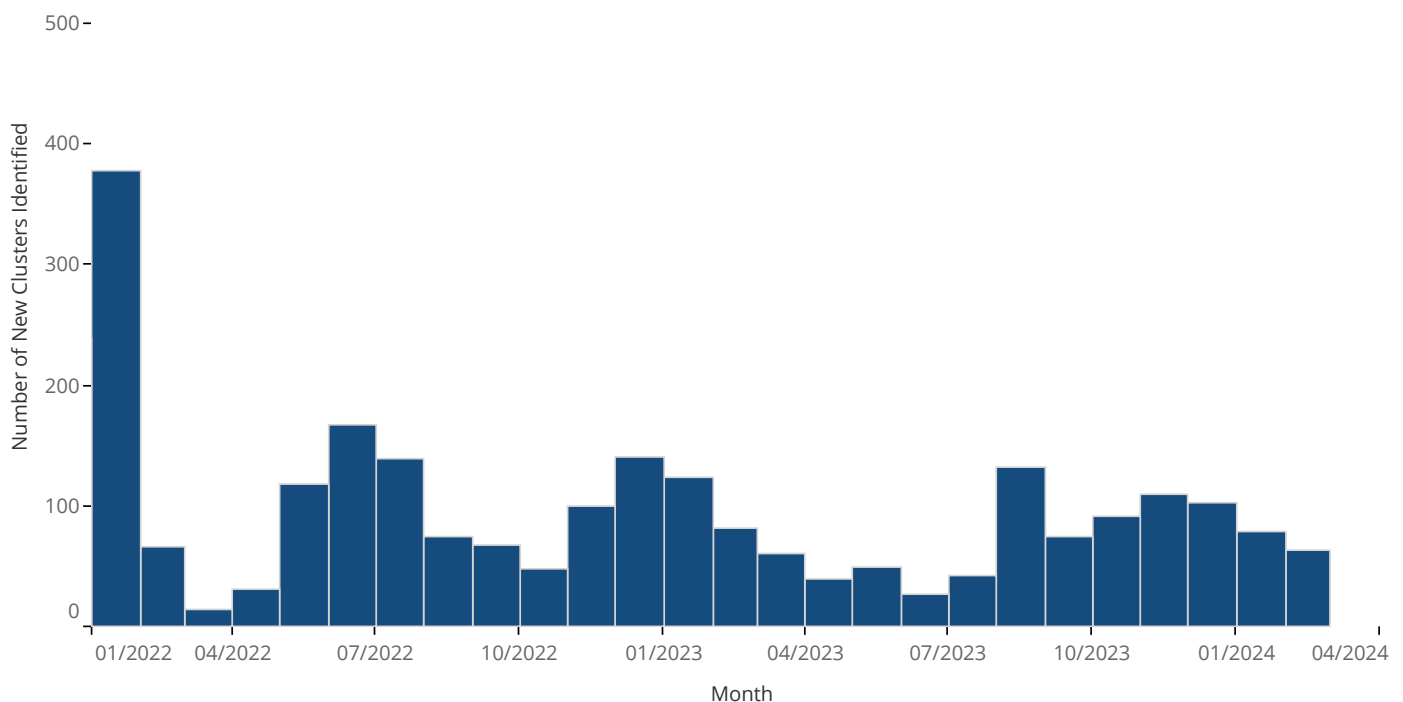
For additional information on COVID-19 cluster definitions, please see:

<https://www.tn.gov/content/dam/tn/health/documents/cedep/novel-coronavirus/COVID19-Cluster-FAQs.pdf>



## COVID-19 Clusters by Month<sup>10</sup>

The visualization below shows the number of new clusters identified in Tennessee each month.



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## Technical Notes

### **1. Epidemic Curve for COVID-19 Cases by Specimen Collection Date (page 2)**

The visualization on page 2 shows the daily new COVID-19 cases (blue bars) and 7-day moving average of new cases (light blue line). A seven day moving average is the average of one data point and the six preceding data points. Looking at the moving average helps to understand trends and account for fluctuations in the data.

#### **Are probable cases included in the Epidemic Curve?**

Probable cases are included in the epidemic curve in this report. For the probable cases where specimen collection date is not available, the date the patient's illness or symptoms began is used.

#### **Can I recreate this with TDH publicly available data?**

Not exactly. The public downloadable datasets (**Daily Case Information**) present COVID-19 case counts based on the day they were publicly reported, not specimen collection date. However, using the column `New_Cases` one can create a similar visualization. The primary difference between the visualization using the public dataset method and the one in this report would be that the trends seen in this report should align with trends seen roughly 2-5 days later in the public dataset visualization. Again, this would be because of the 2-5 day lag between specimen collection date and public report date.

### **2. Number of Deaths per Day (by date of death) (page 8)**

The visualizations on page 7 show the number of COVID-19 deaths by date of death (blue bars) and the 7-day moving average of the number of deaths. A seven day moving average is the average of one data point and the six preceding data points. Looking at the moving average helps to understand trends and account for fluctuations in the data.

#### **Is date of the death the same day it is publicly reported?**

No, similarly to specimen collection date, the date of death frequently occurs 2-5 days before the death is reported to the public due to lag time in reporting. Therefore, the most recent day's data may not be complete.

#### **How can I calculate the Case Fatality Rate? What about the 30-Day Case Fatality Rate?**

A case fatality rate is calculated by taking the total number of COVID-19 deaths divided by the total number of COVID-19 cases. A 30-day case fatality rate would only look at the total number of deaths and number of cases for the last 30 days. Both of these rates can be produced using the publicly downloadable datasets (Daily Case Information).

#### **Can I recreate this with TDH publicly available data?**

Not exactly. The public downloadable datasets-Daily Case Information presents COVID-19 deaths based on the day they were publicly reported, not the date of death. However, using the `New_Deaths` column one can create a similar visualization. The primary difference between the visualization using the public dataset method and the one in this report would be the trends seen in this report should align with trends seen roughly 2-5 days later with the public dataset visualization. Again, this would be because of the 2-5 day lag between date of death and public report date.

### **3. Positive Tests per 100,000 Persons by Public Health Region (Over the last 14 Days) (page 3)**

The regional level map shows the number of new positive tests per 100,000 persons by public health region in the last 14 days. The arrows indicate trends (up or down) of the new positive tests rate compared to the 14 days prior.

#### **How is the number of positive tests per 100,000 persons calculated in the map?**

These rates are calculated by taking the number of new positive tests for the region divided by the region's population. This is then multiplied by 100,000 to have the number per 100,000 persons.

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## Technical Notes

### **Are the number of cases the same as the number of positive tests?**

No, not necessarily. The number of positive tests is the total number of PCR-positive laboratory results that have been reported to TDH, while the number of cases are individual people who are either confirmed or probable COVID-19 cases. Individuals are only counted once in this number, no matter how many positive tests they might have had. Therefore, if an individual tested positive multiple times in a given week in the same area they would be counted multiple times in this map (but would only be counted once in the case counts).

### **Can I recreate this with TDH publicly available data?**

Yes. The numbers required to create the calculation explained above are publicly available in the County New dataset but only at the county level. In order to recreate this visualization one will need to group the counties and county populations by their public health region, which can be found at <https://www.tn.gov/content/dam/tn/health/program-areas/oral-health/dental-regional-metro-areas.jpg>

### **4. TN SARS-CoV-2 Variant Case Summary (page 4)**

The table on page 7 summarizes the COVID-19 variant cases identified in TN in the last six months. To learn more about COVID-19 variants, please see the SARS-CoV-2 Variant Classifications and Definitions published by the CDC:

<https://www.cdc.gov/coronavirus/2019-ncov/variants/variant-classifications.html>

### **6. 7 Day Running Average of New Cases in Metropolitan and Rural Public Health Regions (see pages 2-3)**

The visualizations on pages 2-3 show the 7 day running average of new COVID-19 cases for all of the metropolitan and rural public health regions. These new case counts are based on their public report date and not specimen collection date. A 7 day moving average is the average of one data point and the six preceding data points. Looking at the moving average helps to understand trends and account for fluctuations in the data.

### **Can I recreate this with TDH publicly available data?**

Yes, using the downloadable dataset- County New and the column New\_Case, one is able to see the daily counts at the county level. These counts can be added together to create the daily new case counts for each public health region. The 7 day average of new cases can be then calculated by totaling the daily new case counts (by region) for today and the previous 6 days and then dividing by 7.

### **9. Syndromic Surveillance (Emergency Room) Data (page 7)**

The visualizations on page 5 show the percent of all emergency room visits in that are reporting both Coronavirus like Illness (CLI) and Influenza like Illness (ILI) in TN.

### **Can I recreate this with TDH publicly available data?**

Yes and no. While ESSENCE data is not included in the publicly available datasets, the dashboard above does provide the weekly percent of ILI and CLI symptoms in the tool tips. Therefore, one could recreate the visualization if desired.

### **Can I recreate this with TDH publicly available data?**

Yes and no, while lab turnaround time is not publicly reported, the lab testing volume can be determined using the New\_Tests column of the [Daily Case Information](#) public dataset.

### **10. HRTS-Reported Hospitalizations & Bed Capacity (page 6)**

The visualizations on page 4 show TN's hospital capacity through active hospitalizations, current bed utilization, and bed availability.

### **Can I recreate this with TDH publicly available data?**

Yes, the downloadable dataset "Hospitalizations Data" on the Tennessee Department of Health website presents hospital floor and ICU bed availability by bed type, hospital report date, and adult vs. pediatric. The dataset is available at

<https://www.tn.gov/health/cedep/ncov/data/downloadable-datasets.html>.

**To access all the downloadable datasets mentioned in the technical notes, please see:**

<https://www.tn.gov/health/cedep/ncov/data/downloadable-datasets.html>