

# **COVID-19 Modeling**

## **February 8, 2022**

Presentation available at:  
[dfr.vermont.gov](https://dfr.vermont.gov)

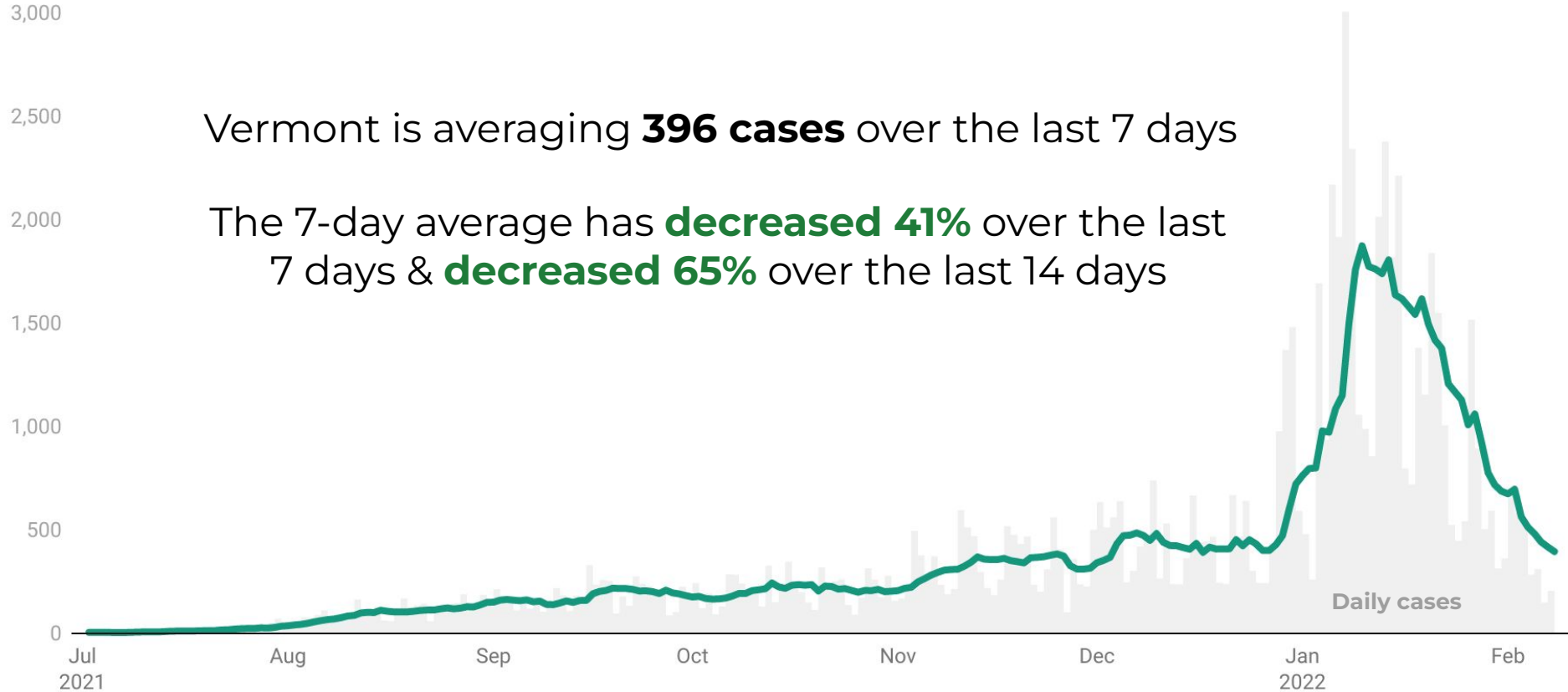
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# Vermont Case Data

# Vermont New COVID-19 Cases

7-Day Average



# Vermont New Weekly COVID-19

14,000

12,000

10,000

8,000

6,000

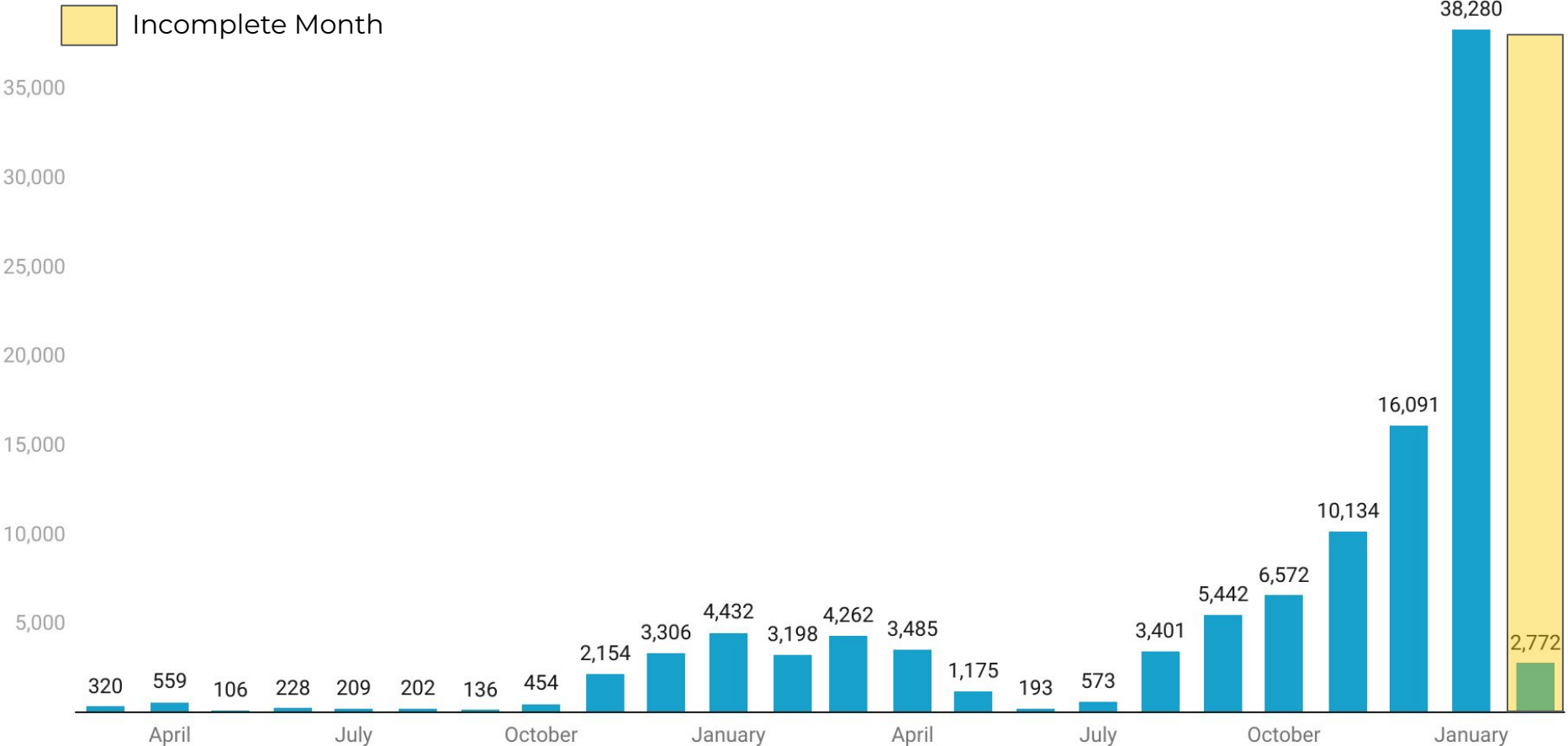
4,000

2,000

Vermont reported 2,928 new COVID-19 cases this week,  
**1,885 fewer cases** compared to last week



# Vermont COVID-19 Cases By Month



Source: VDH—February 8, 2022; created with Datawrapper

# Vermont COVID-19 PCR Testing

7-Day Average

20,000

18,000

16,000

14,000

12,000

10,000

8,000

6,000

4,000

2,000

0

Week-over-week testing fell, with the  
7-day average **decreasing 30%**

Daily tests

Jul  
2021

Aug

Sep

Oct

Nov

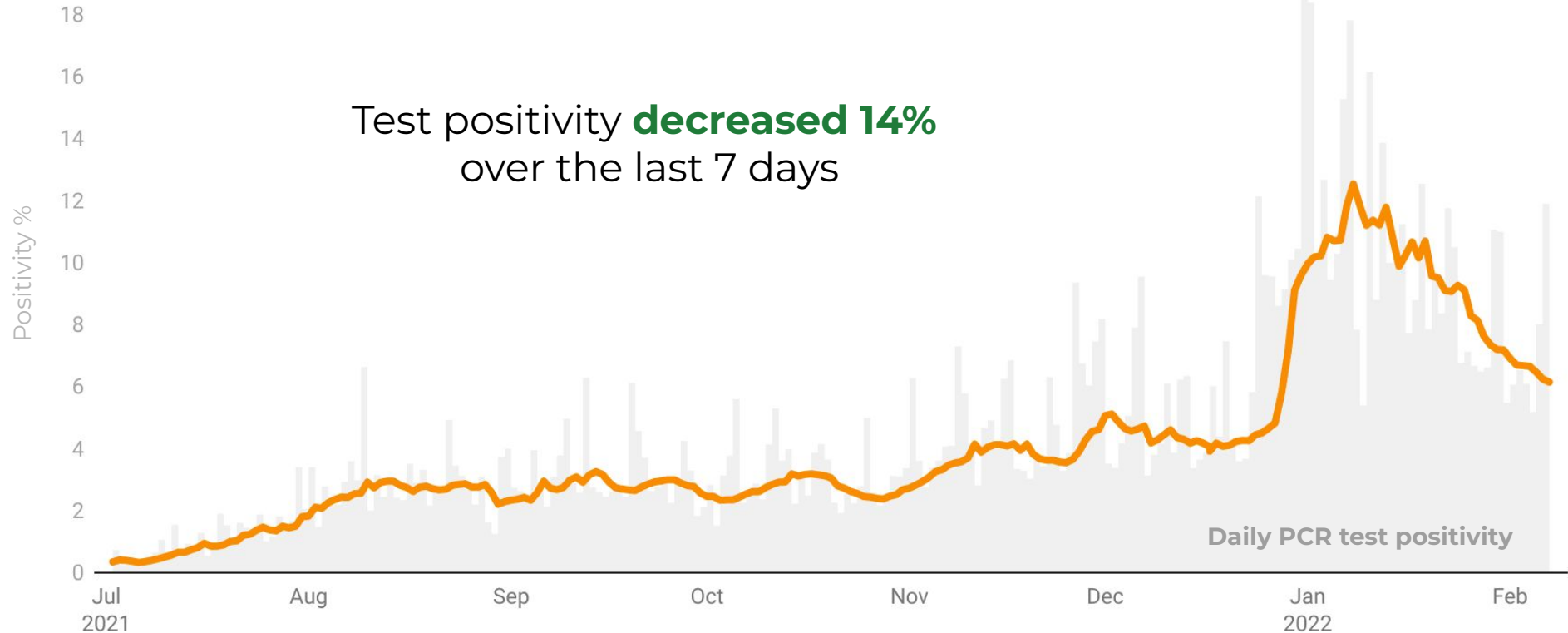
Dec

Jan  
2022

Feb

# Vermont PCR Test Positivity

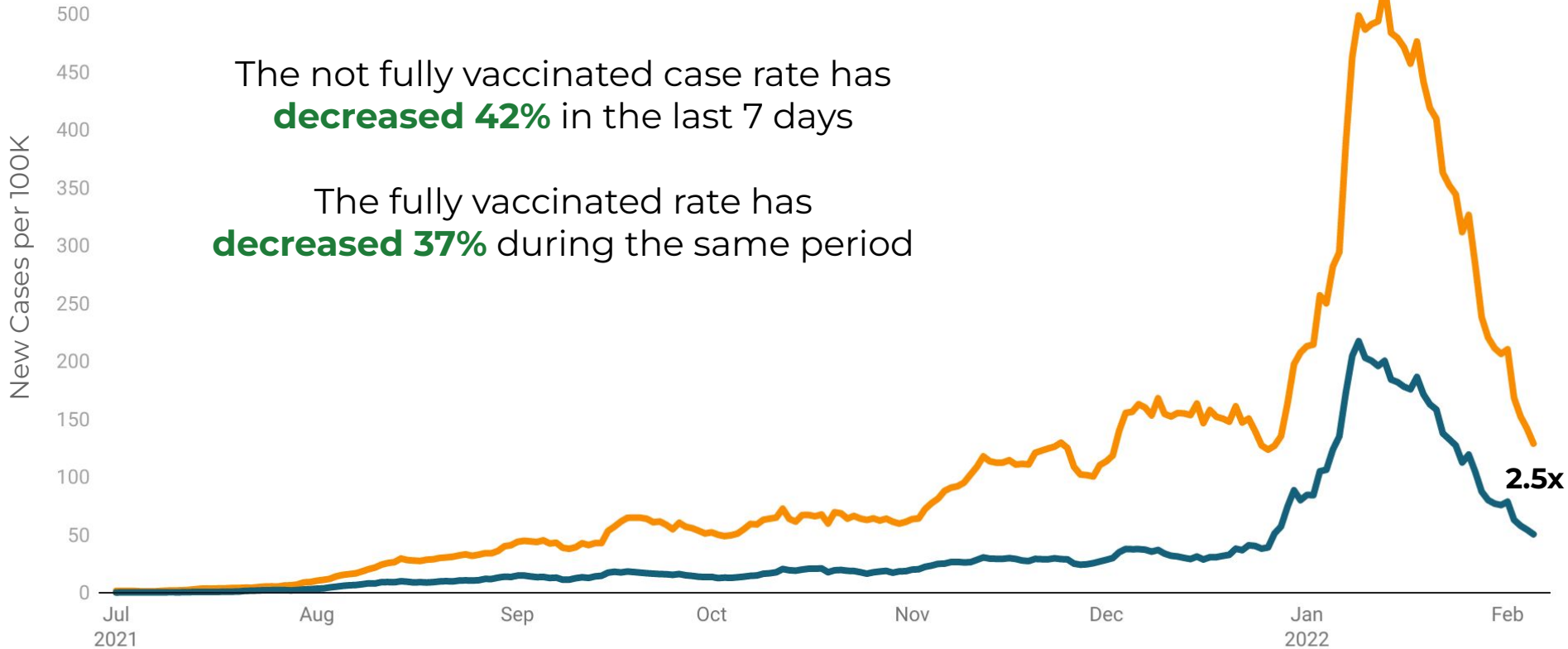
7-Day Positivity Rate





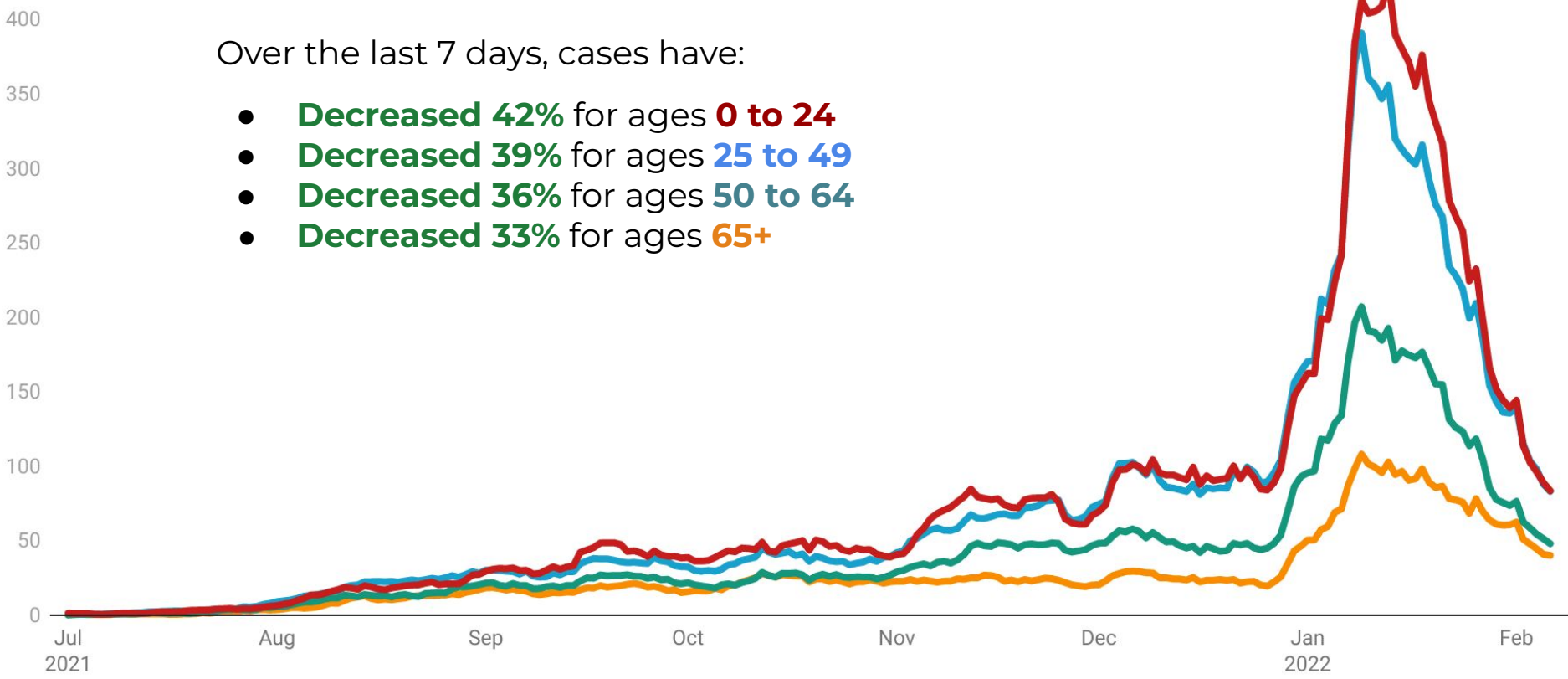
# Vermont COVID-19 New Case Rates Per 100K (7-Day Average)

Not Fully Vaccinated Case Rate Fully Vaccinated Case Rate



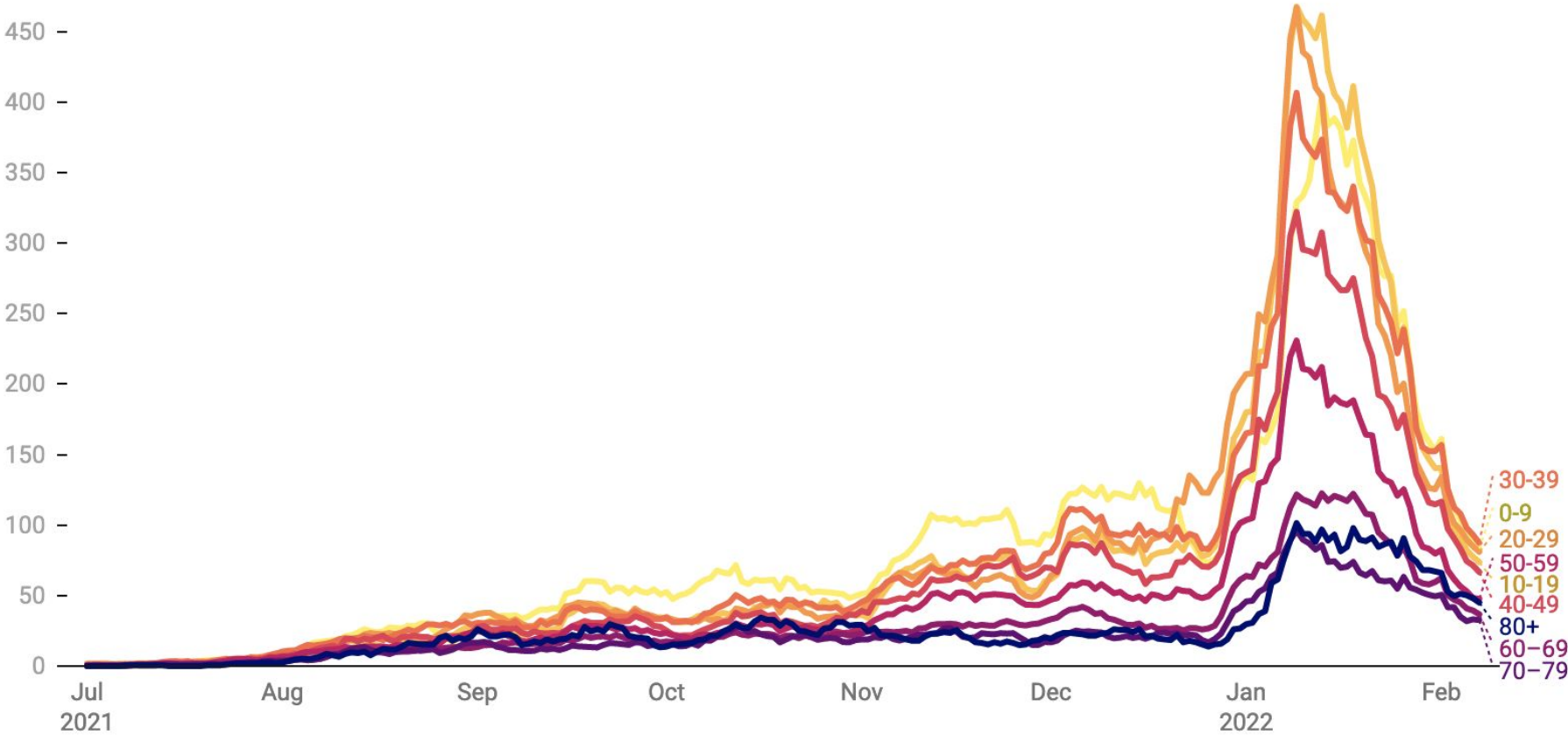
# Vermont Case Rates Per 100K By Age (7-Day Average)

0 to 24 24 to 49 50 to 64 65+



Source: VDH—February 7, 2022; created with Datawrapper

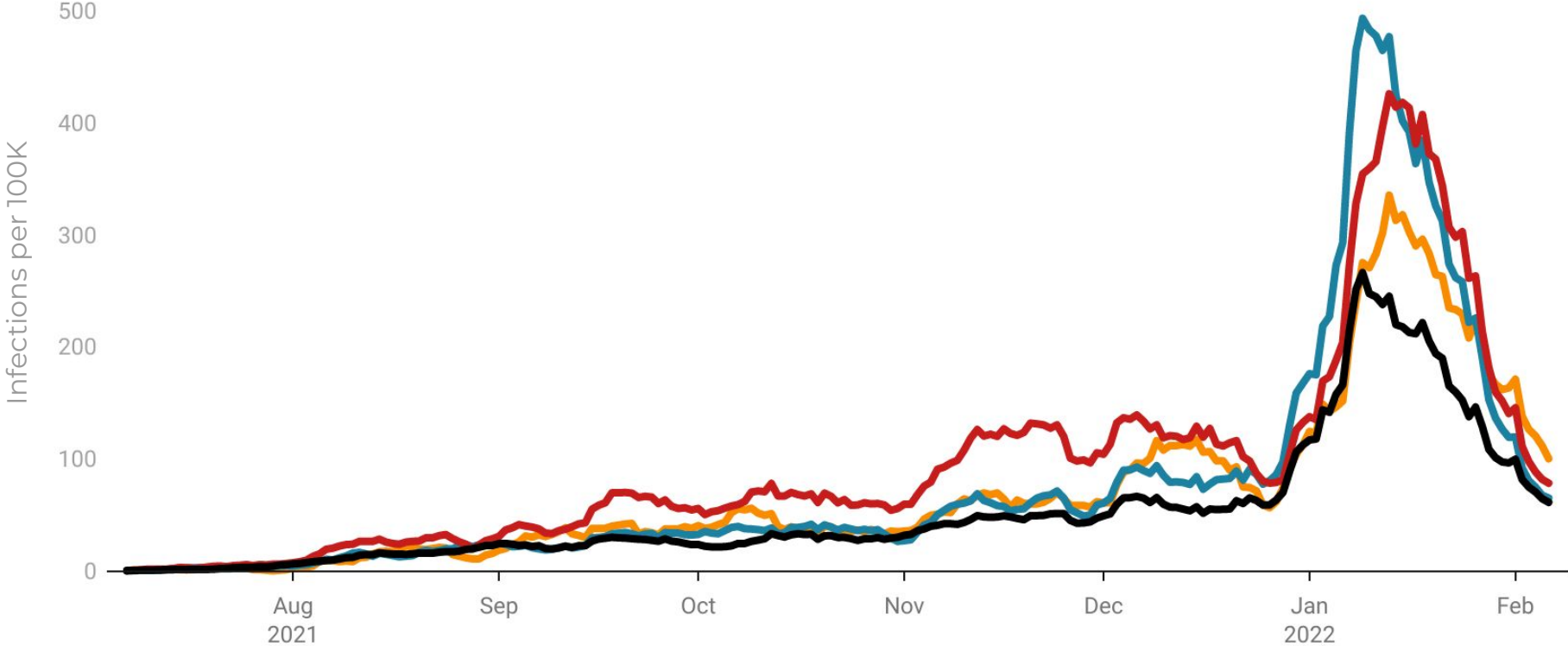
# VT COVID-19 Infections per 100K by Age Group



Source: VDH—February 8, 2022; created with Datawrapper

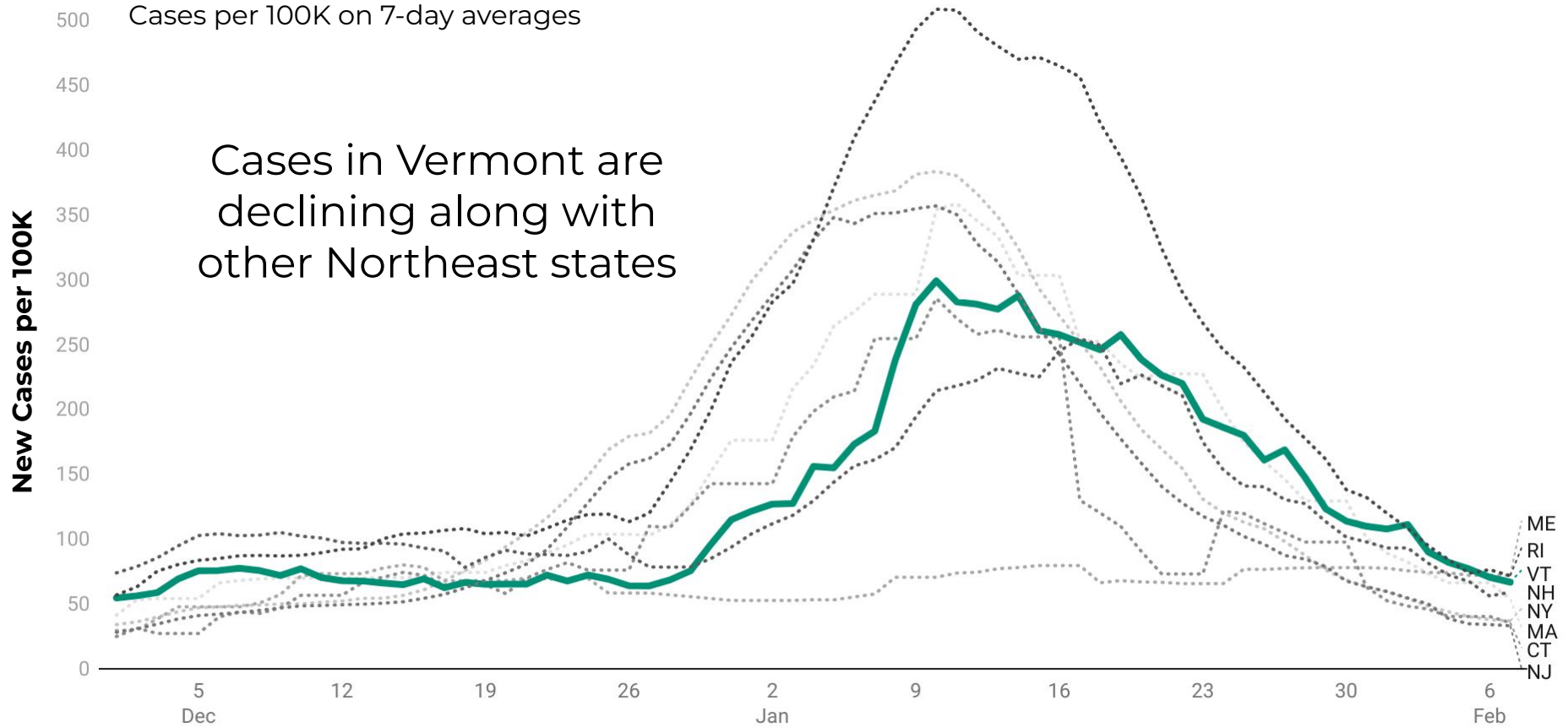
# Vermont Covid-19 Case Rates by Age (7-Day Average)

0-4 5-11 12-18 19+



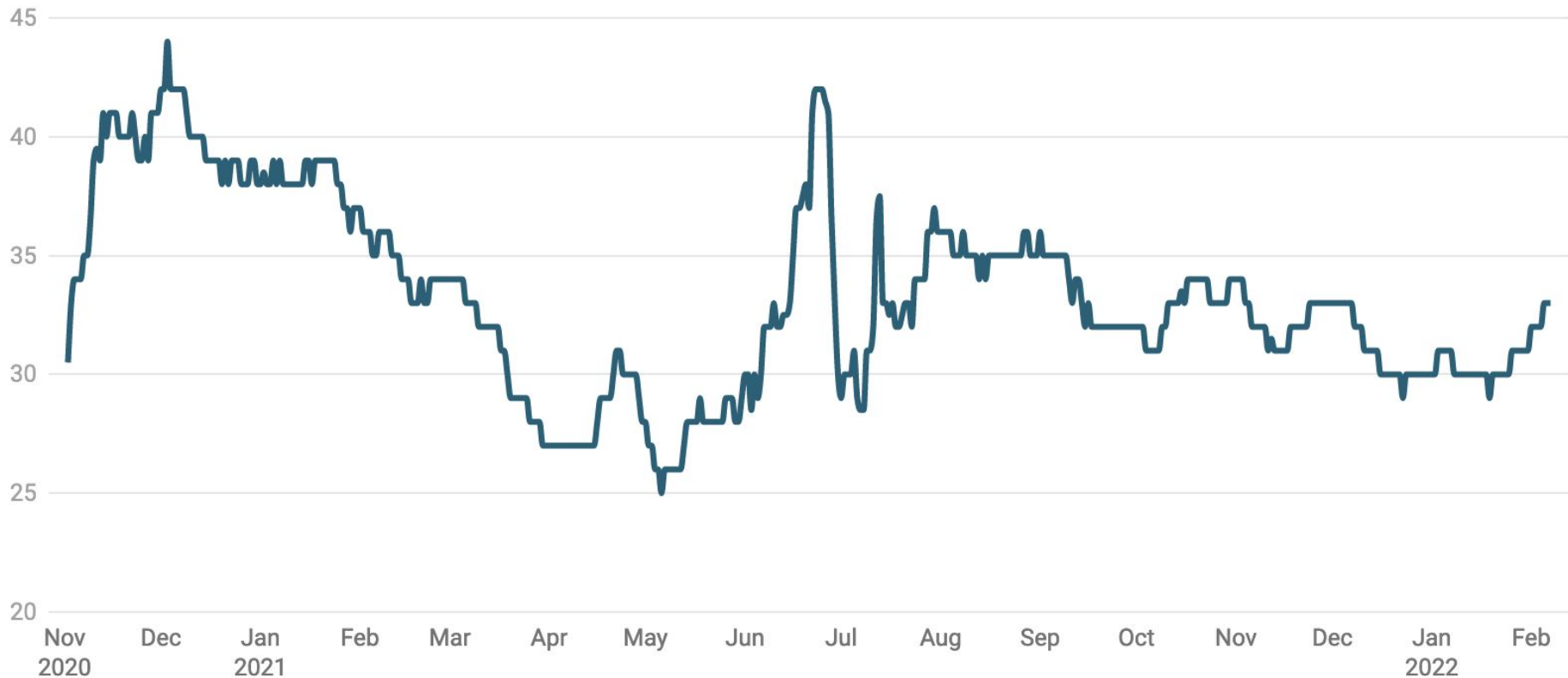
Source: VDH—February 8, 2022; created with Datawrapper

# Vermont COVID-19 Cases Compared to Northeast

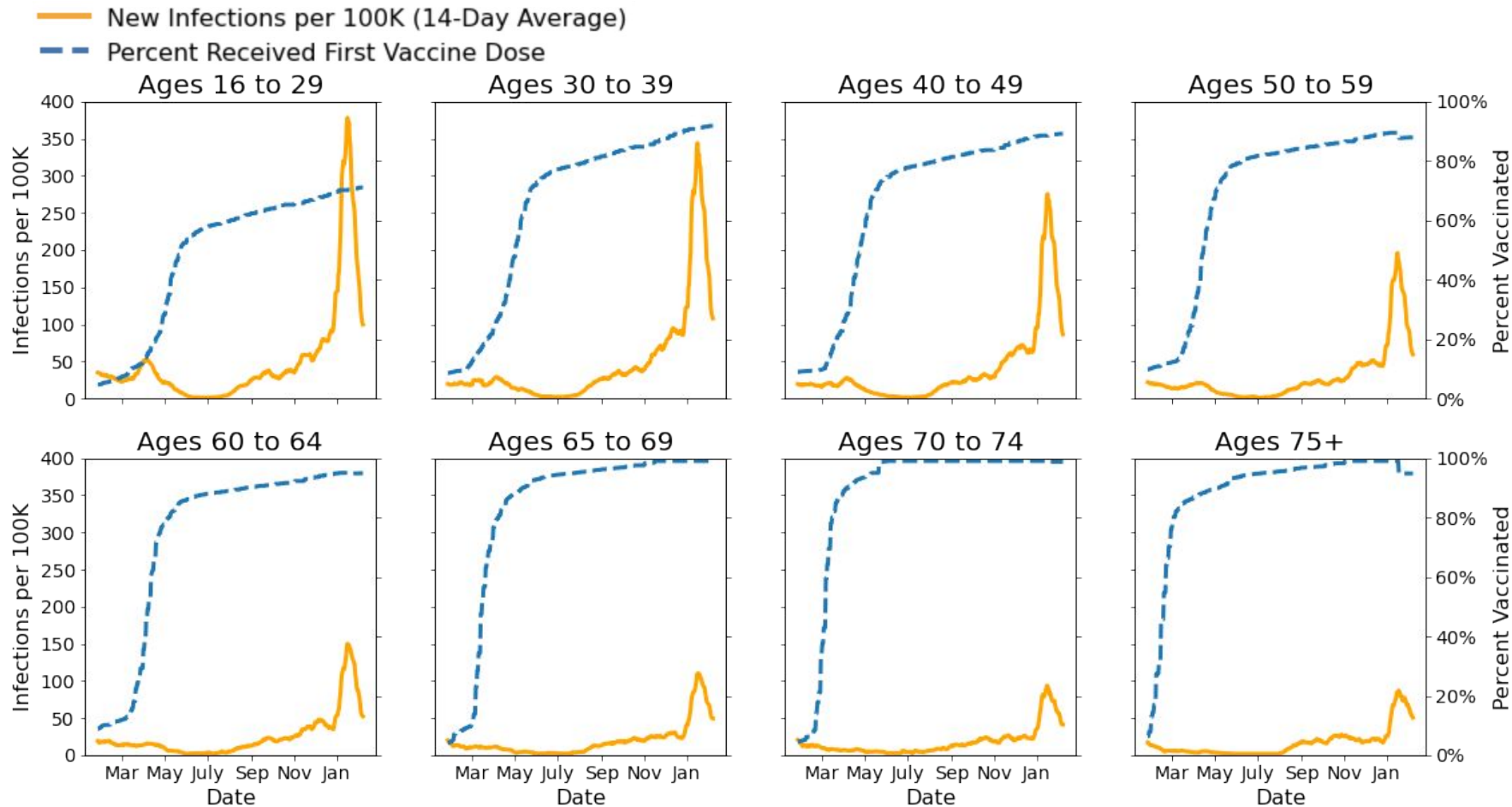


# Age of Infected Vermonters

Median age of COVID positive individuals in VT over the last 14 days.

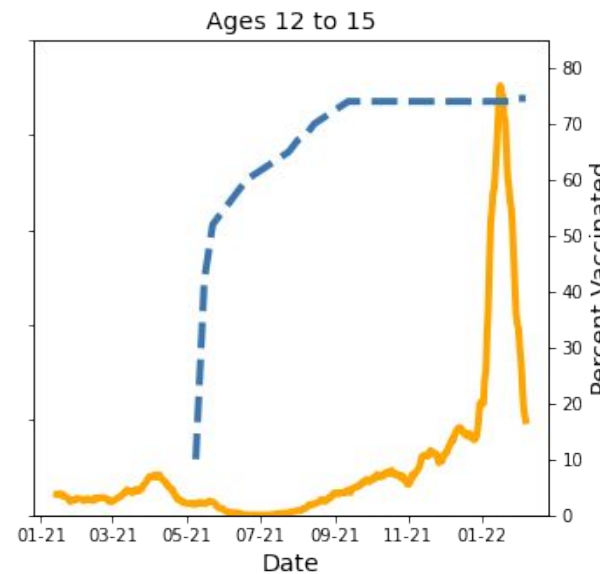
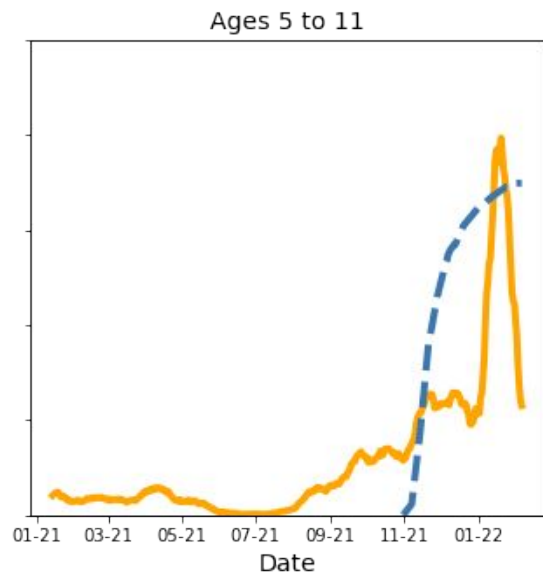
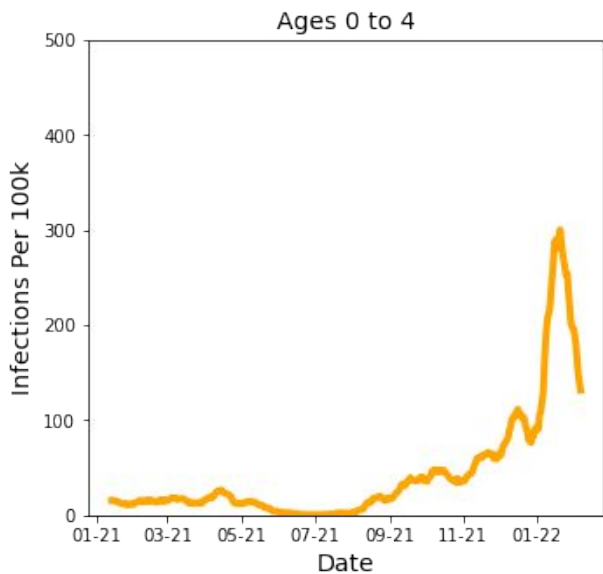


# Vermont Case Rate & Vaccination by Age Band



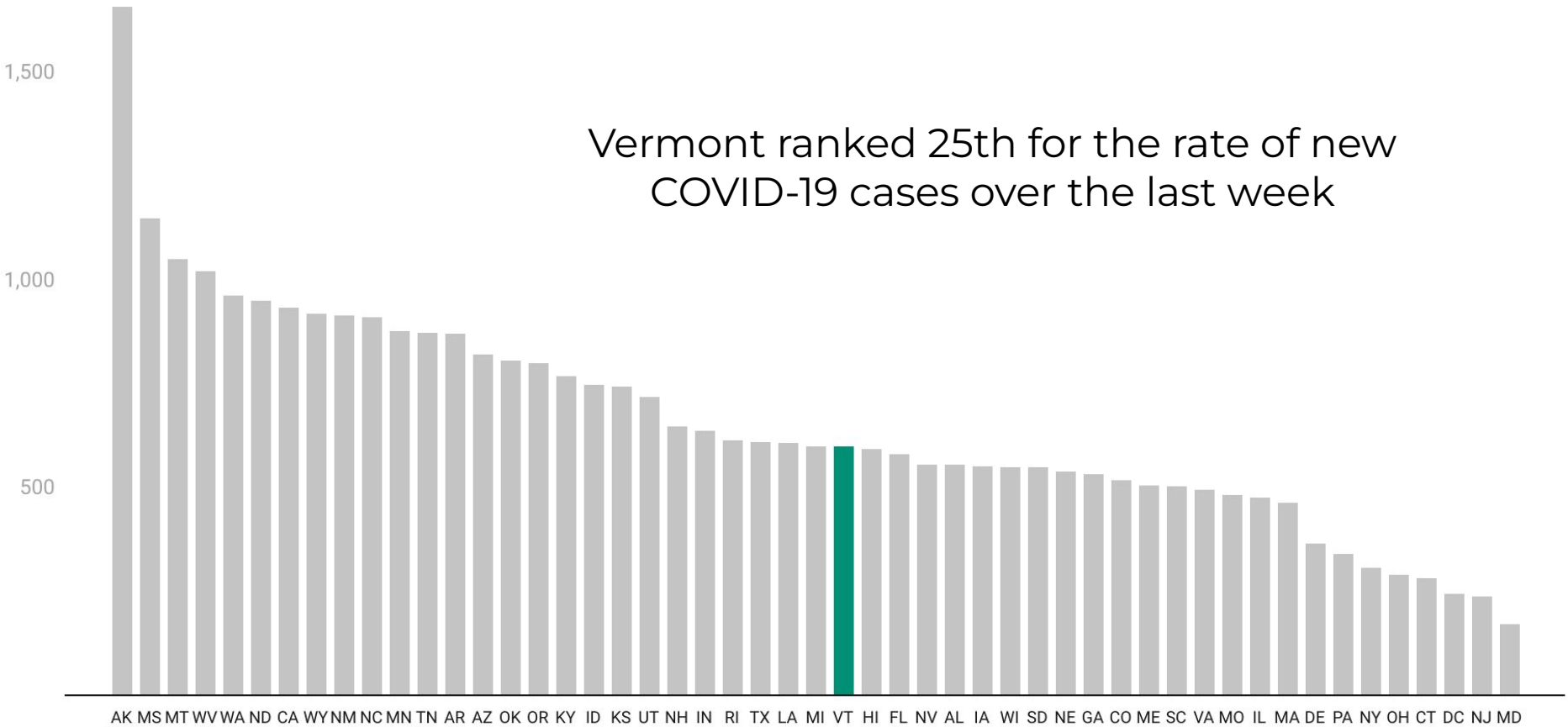
# Vermont Case Rate & Vaccination by Age Band

- New Infections per 100K (14-Day Average)
- - Percent Received First Vaccine Dose



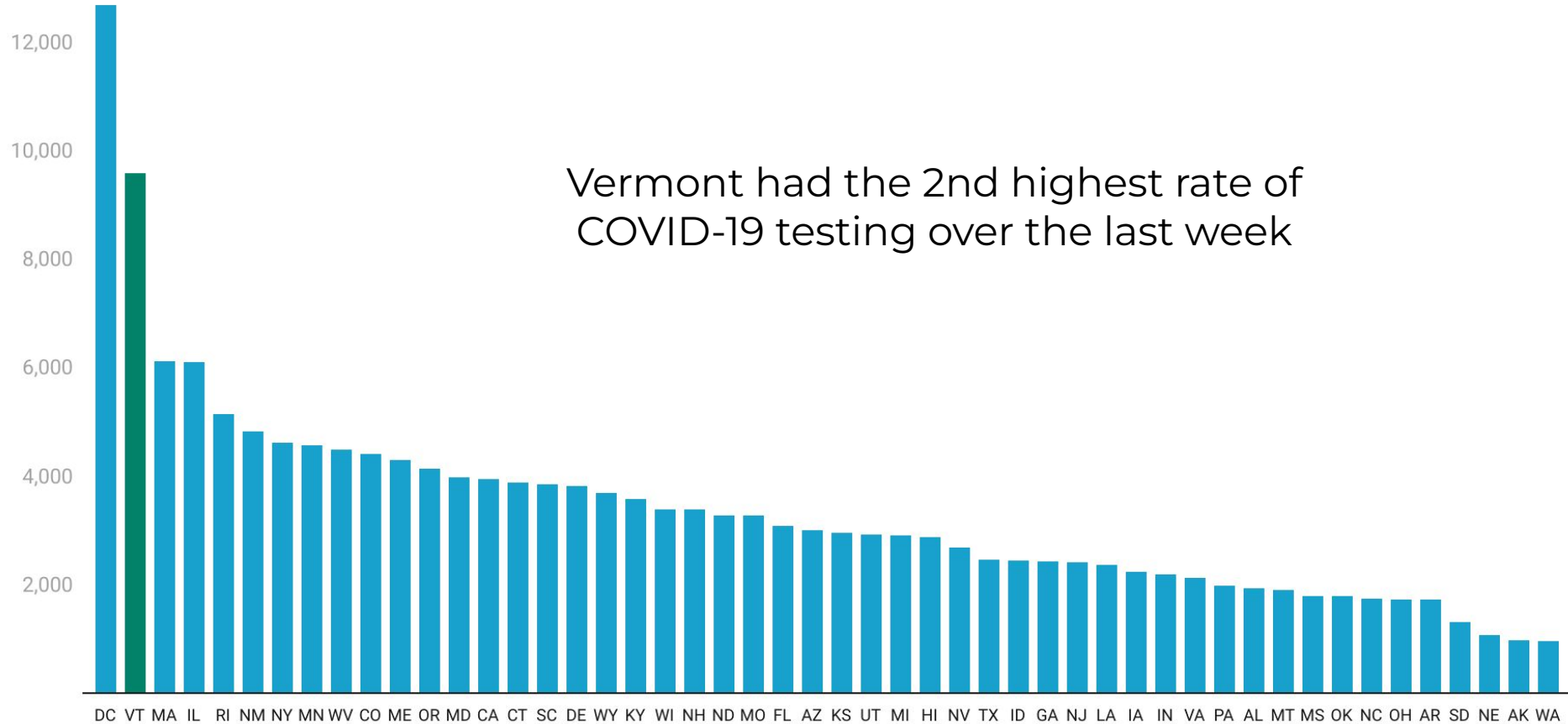


# National COVID-19 Case Rates Per 100K Last 7 Days



Source: VDH—February 7, 2022; Created with Datawrapper

# COVID-19 Testing Per 100K Last 7 Days

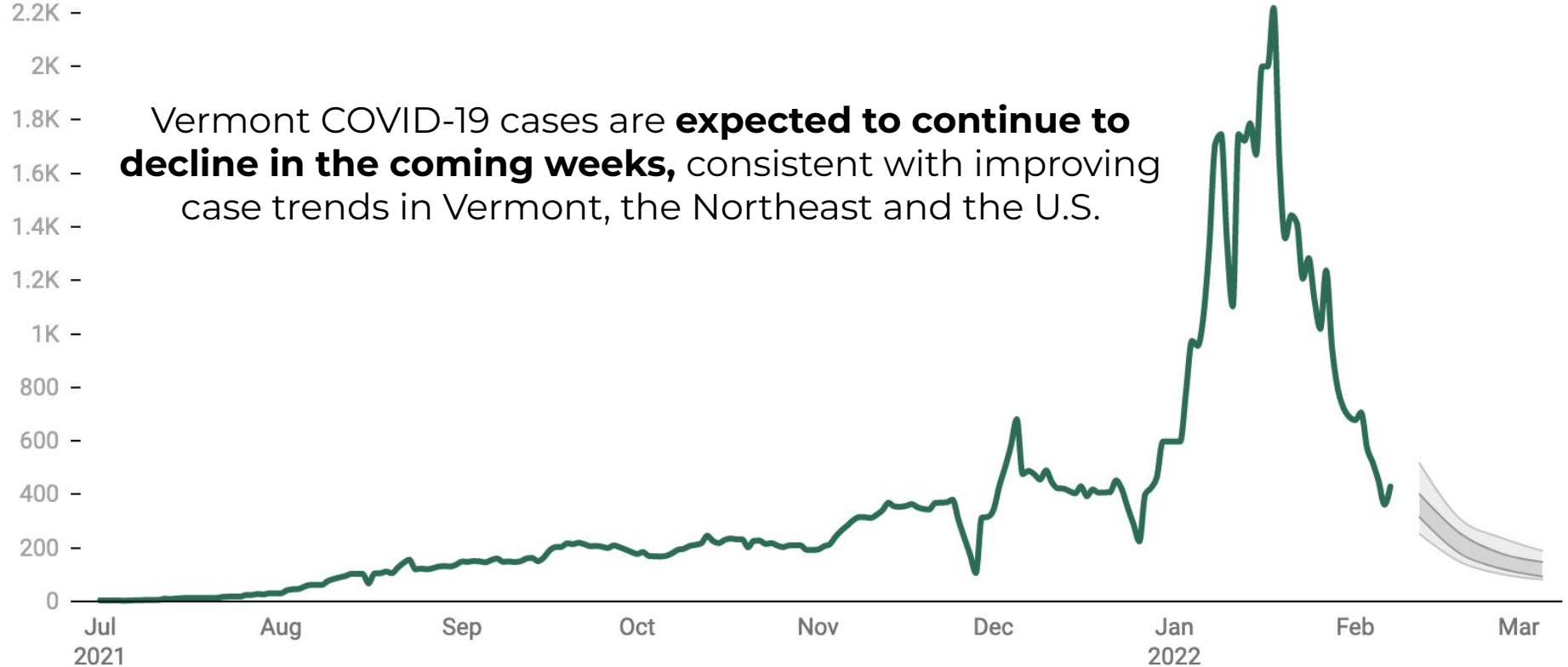


Vermont had the 2nd highest rate of COVID-19 testing over the last week

Source: VDH—February 7, 2022; Created with Datawrapper (Note: California and New Mexico did not report testing data)

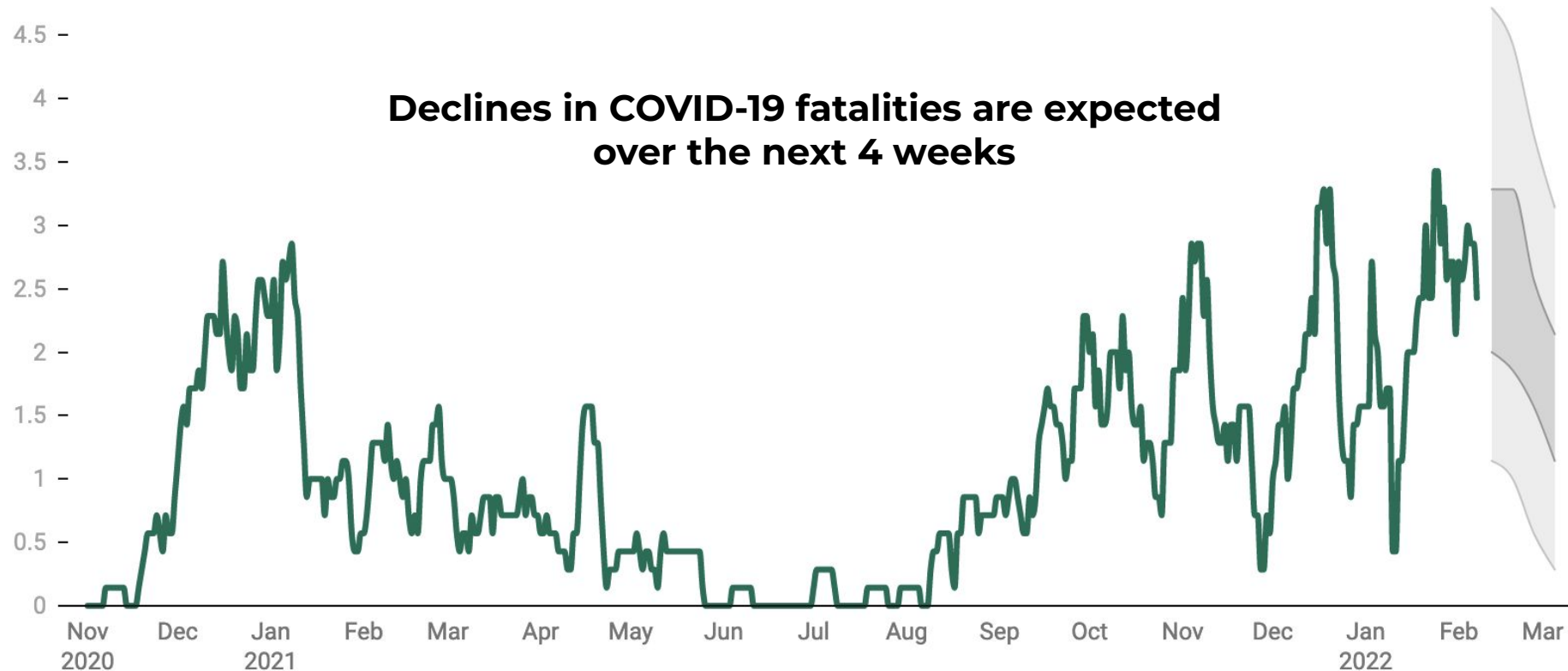
# VT COVID-19 Infection Confidence Intervals

Calculated as a 7-day mean. Inner and outer bands represent 50% and 95% confidence intervals, respectively.



# VT COVID-19 Death Confidence Intervals

Calculated as a 7-day mean. Inner and outer bands represent 50% and 95% confidence intervals, respectively.



# Active Outbreaks in Long Term Care Facilities

Facility Name	Total COVID-19 Cases
Bennington Health & Rehab	63
Elderwood at Burlington	50
Pines Rehab & Health Center	46
Vermont Veterans Home	46
Crescent Manor Nursing and Rehabilitation Center	41
Woodridge Rehabilitation and Nursing	34
Pine Heights at Brattleboro	29
The Pines at Rutland Center for Nursing & Rehab	25
Barre Gardens	23
St. Albans Healthcare & Rehab	19
Wake Robin	19
Berlin Health & Rehab	19
Green Mountain Nursing and Rehab	14
Our Lady of the Meadows	13
The Arbors at Shelburne	12
Brookdale Fillmore Pond	11
Sterling House at Rockingham	8
Franklin County Rehabilitation Center	8
Kirby House	6
LTCF A	Not Shown
Union House Nursing Home	Not Shown
<b>Total (shown)</b>	<b>486</b>

Source: Vermont Department of Health—February 7, 2022 (reporting Monday through previous Sunday); 'Active' defined as less than 28 days since most recent case's specimen collection date or illness start date (whichever is later); \*privacy suppressions include facility w/ <25 staff and residents and/or >75% of facility infected

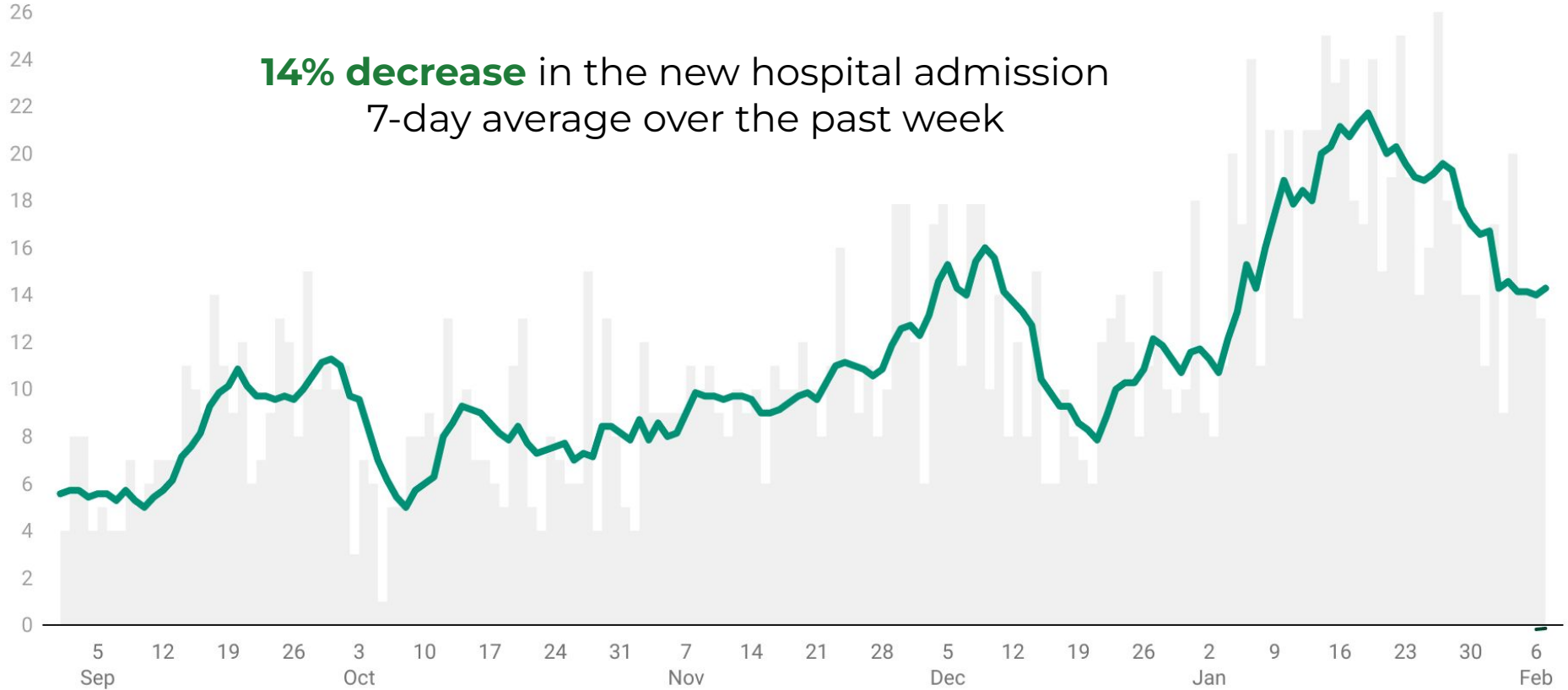
# Spring 2022 Higher Education

<b>Metric</b>	<b>Week 1</b>	<b>Week 2</b>	<b>Week 3</b>	<b>Week 4</b>	<b>Week 5</b>
<i>Tests</i>	4,953	10,612	13,043	13,547	4,676
<i>COVID-19 Positives</i>	313	382	303	282	125
<i>Percent Positive</i>	6.3%	3.6%	2.3%	2.1%	2.7%

# Vermont Hospitalization Data

# Vermont New COVID-19 Hospital Admissions

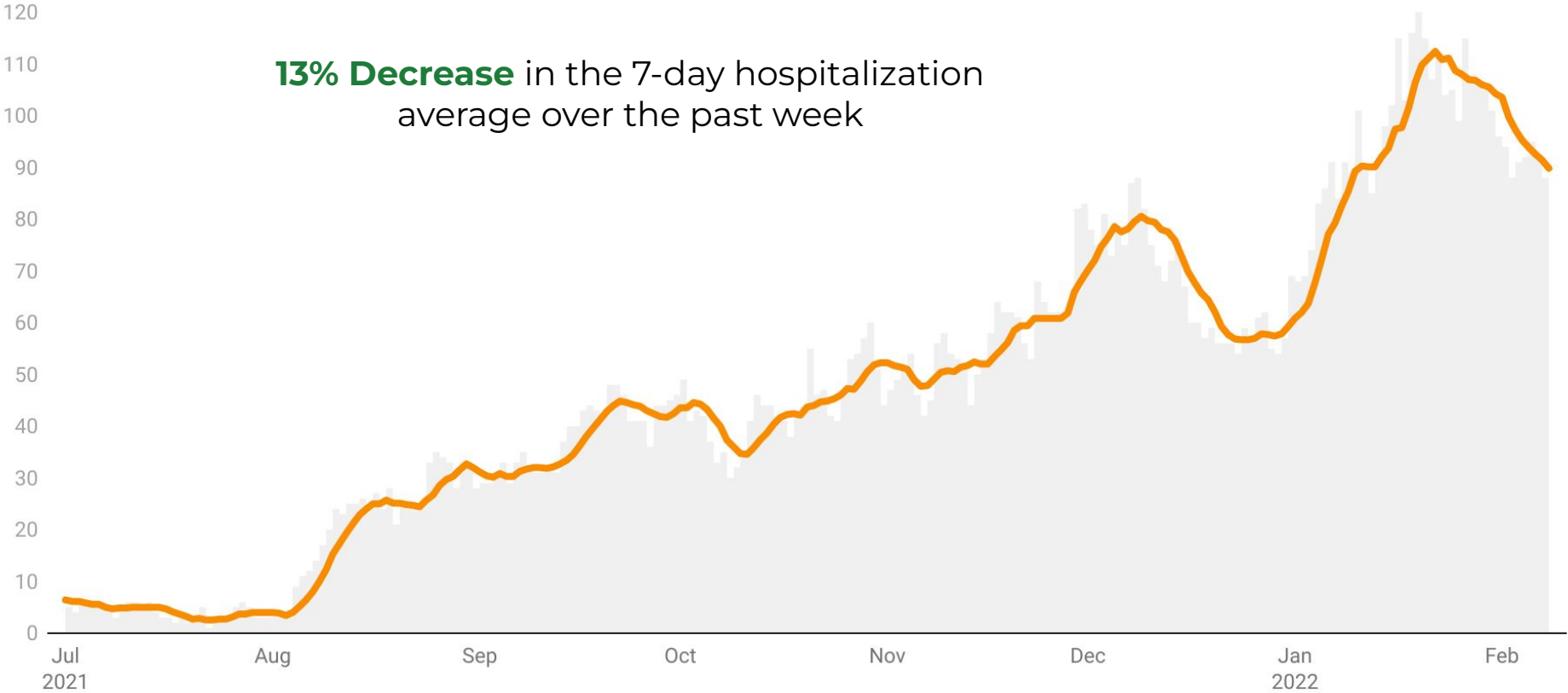
7-Day Average





# Vermont COVID-19 Currently Hospitalized

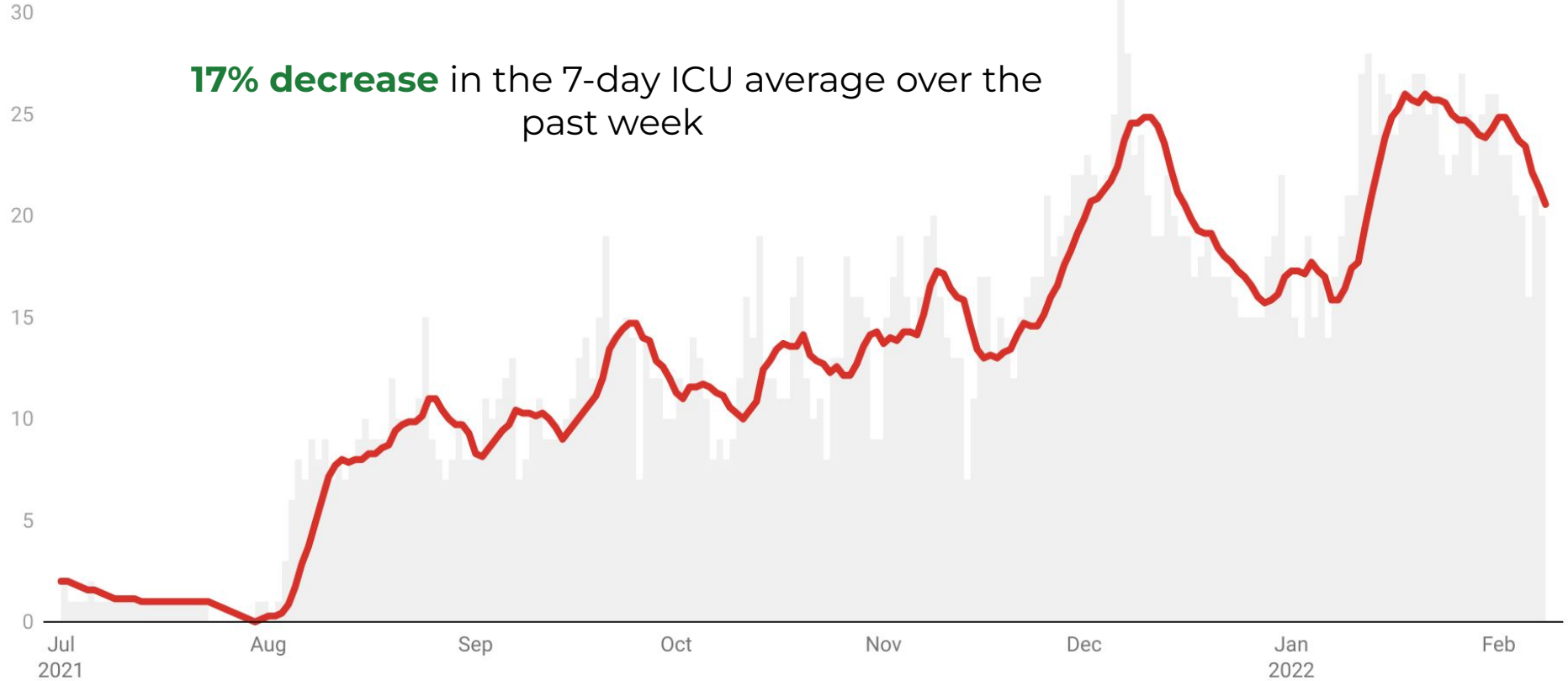
7 Day Average



Source: VDH—February 8, 2022

# Vermont COVID-19 Patients Currently in the ICU

7-Day



**17% decrease** in the 7-day ICU average over the past week

# Vermonters Hospitalized for Influenza

— 7-Day Hospitalized for Influenza

6

## Reported influenza hospitalizations in Vermont remain low

4

2

0

21 Nov

28

5 Dec

12

19

26

2 Jan

9

16

23

30

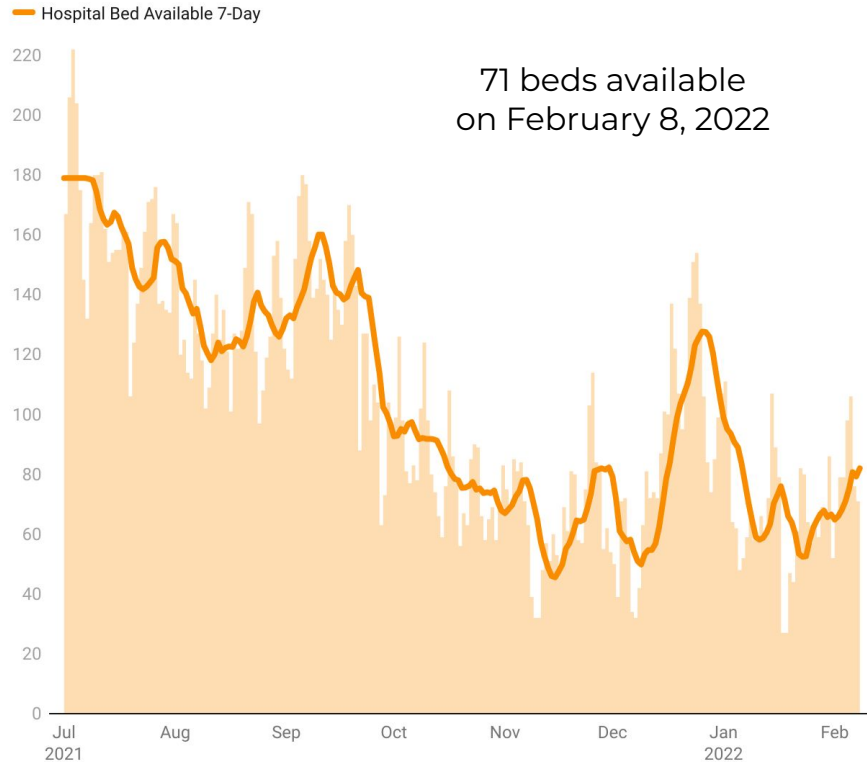
6 Feb

Source: HHS—February 7, 2022; Created with Datawrapper

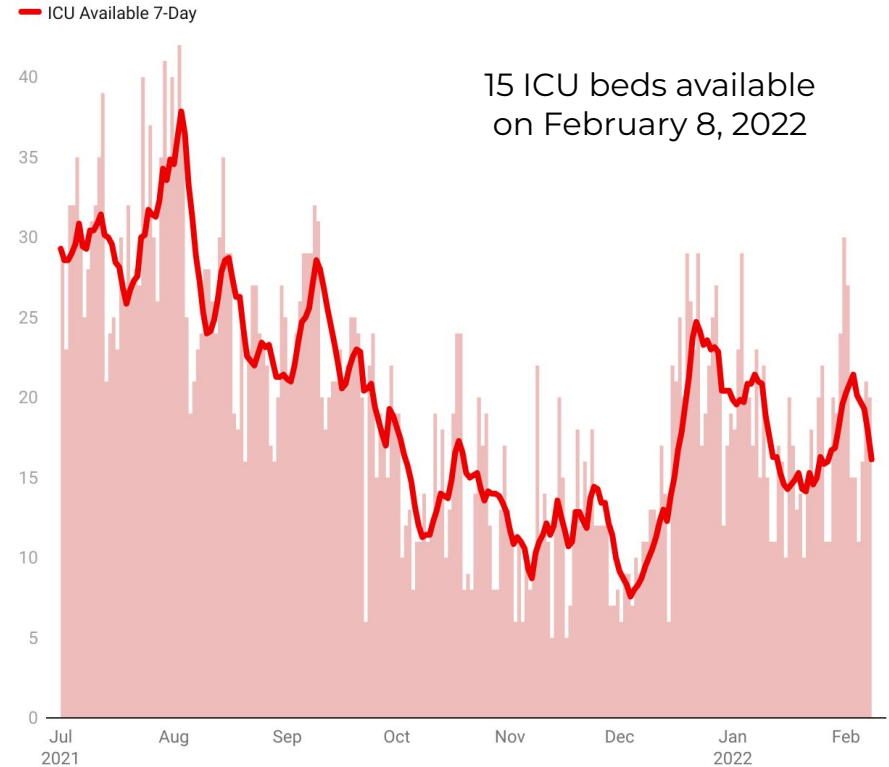
# Vermont Hospital Metrics

## (7-Day Averages)

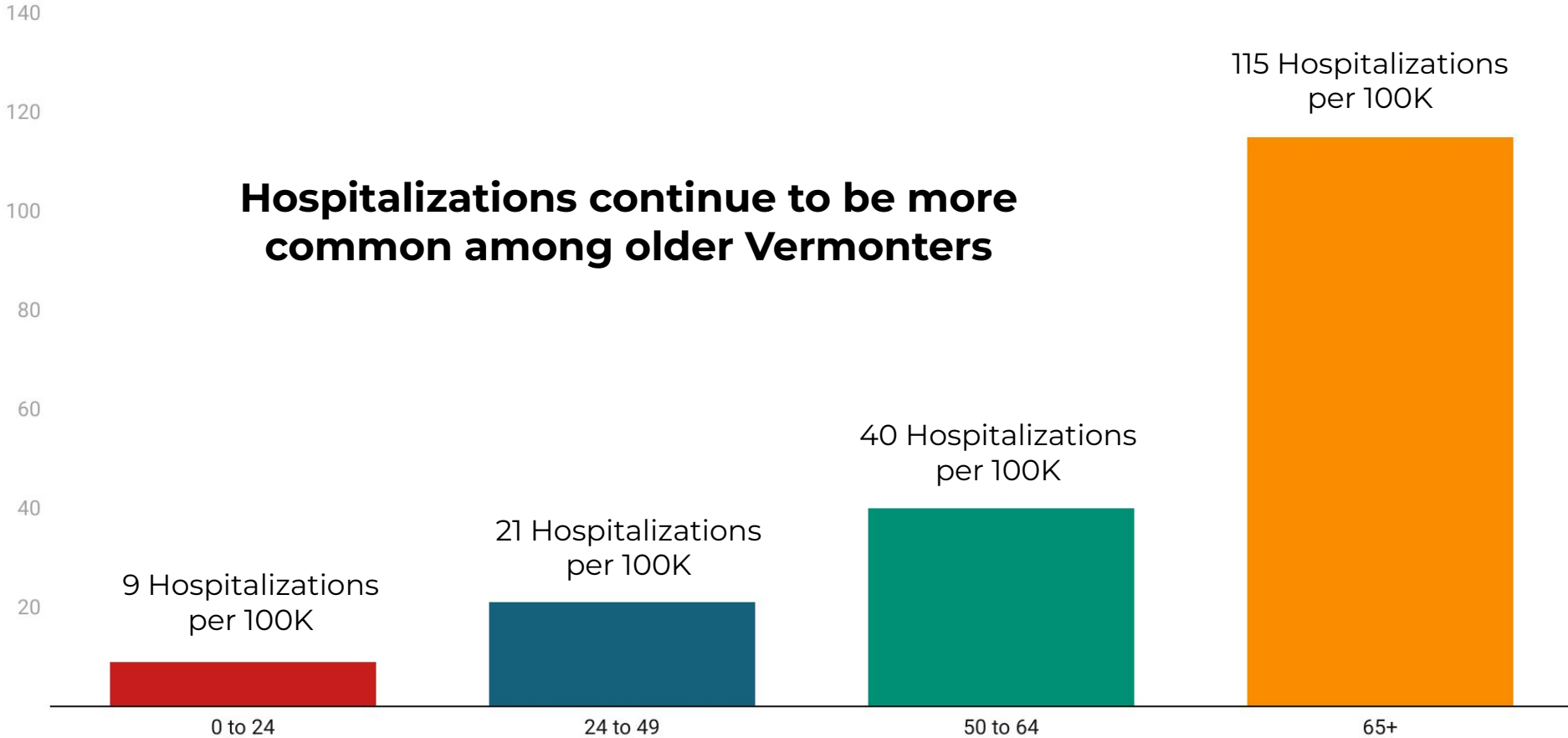
### Vermont Hospital Beds Available Since July 1, 2021



### Vermont ICU Beds Available Since July 1, 2021



# COVID-19 Hospitalization Rate Per 100K By Age Over The Last 6 Weeks



**Hospitalizations continue to be more common among older Vermonters**

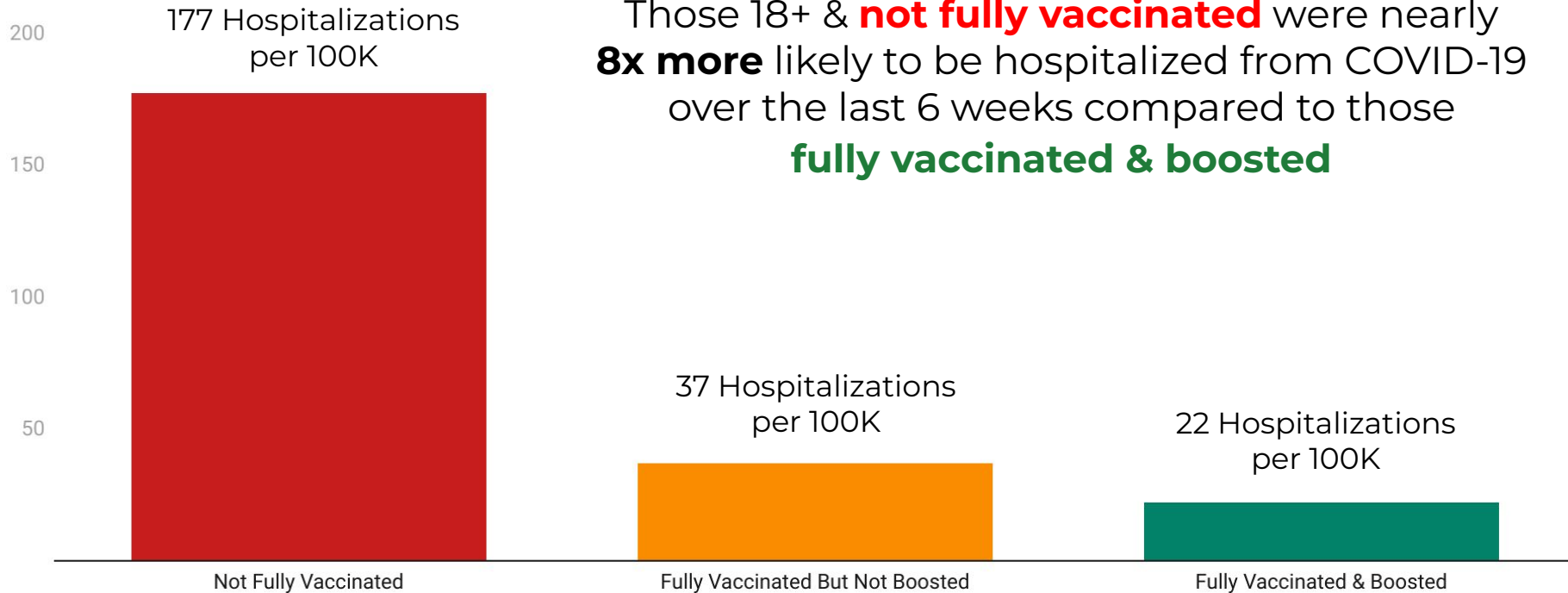
Source: VDH—February 5, 2022; created with Datawrapper

# COVID-19 Hospitalizations By Vaccination Status Per 100K

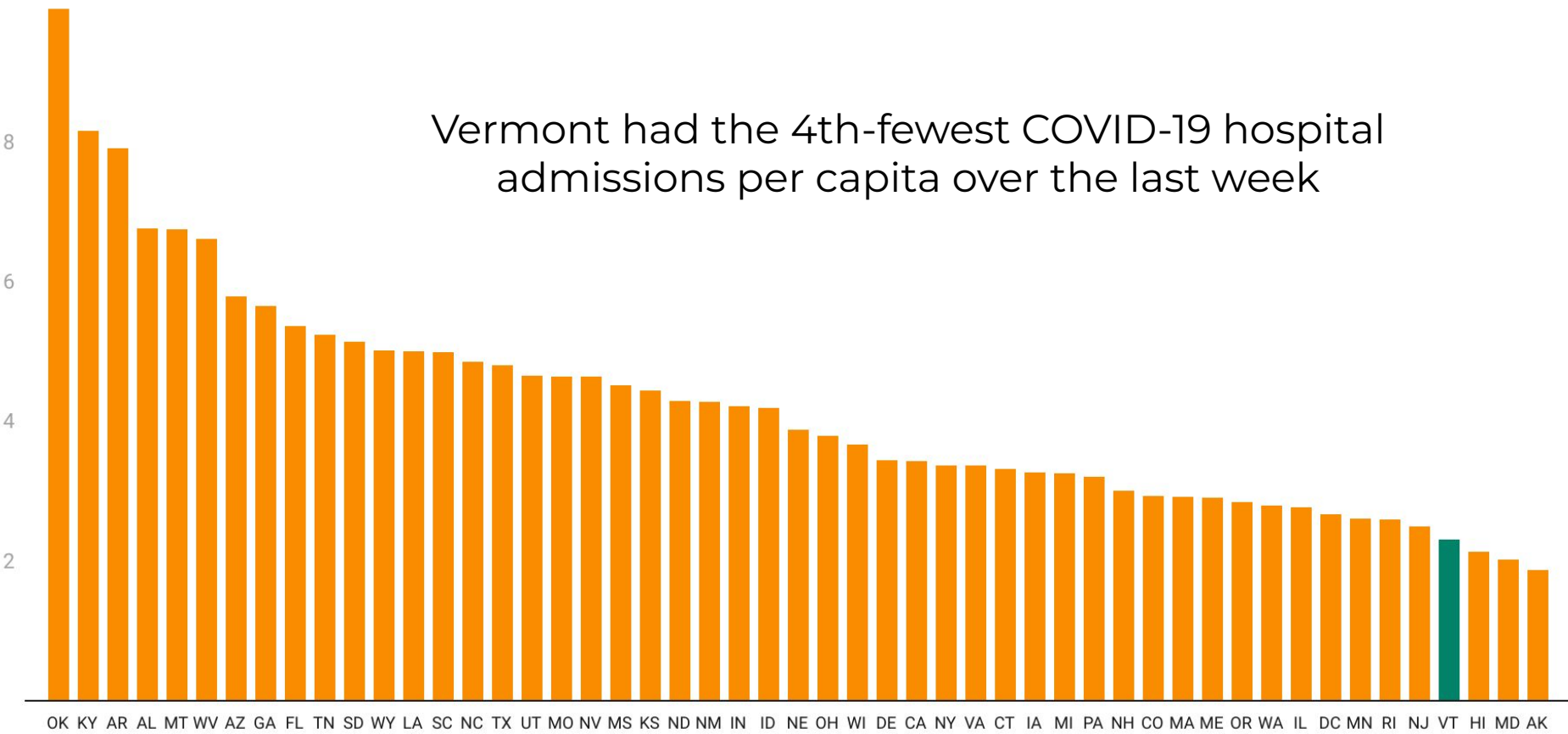
Measured Among Vermont's 18 & Over Population Over the Last 6 Weeks

250

COVID-19 Hospitalizations per 100K



# COVID-19 Hospital Admissions Last 7 Days Per 100K



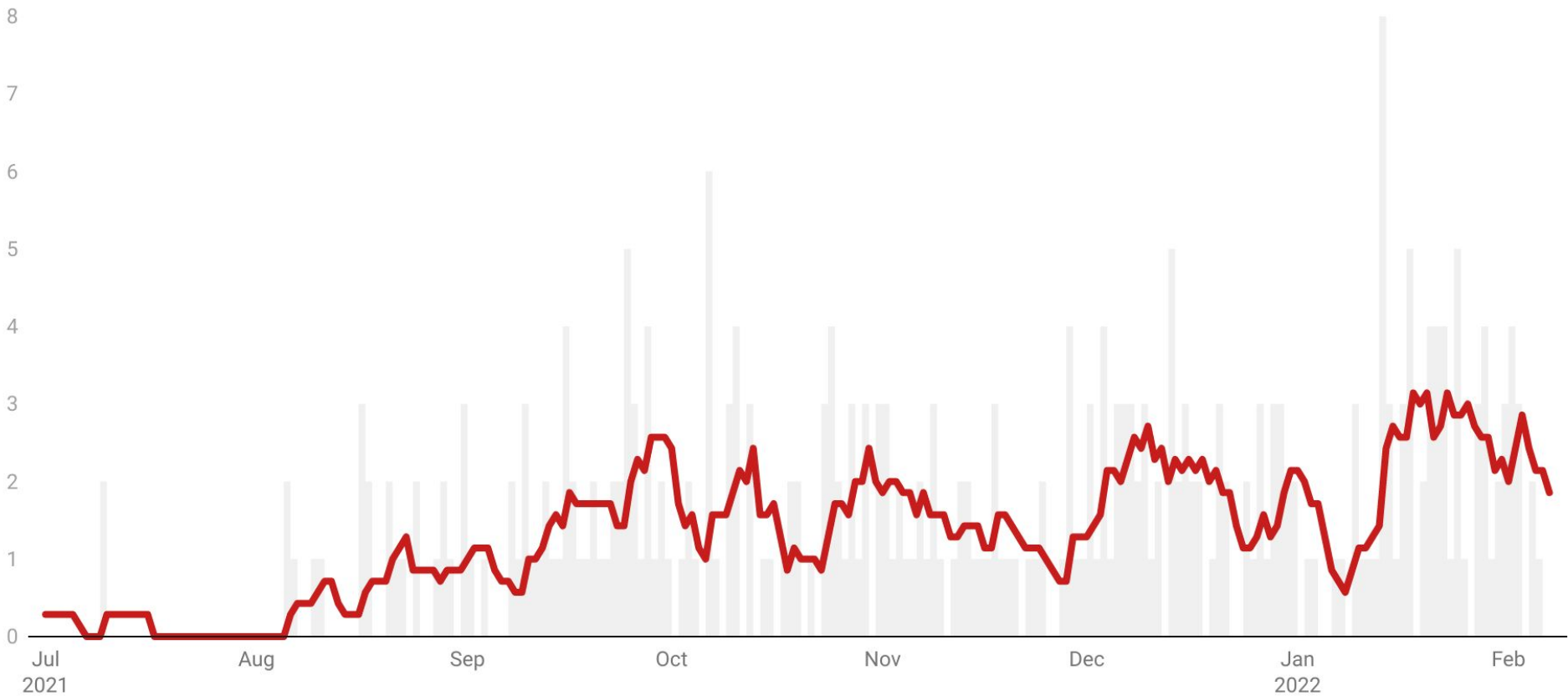
Source: HHS—February 7, 2022; Created with Datawrapper

# Vermont Fatality Data



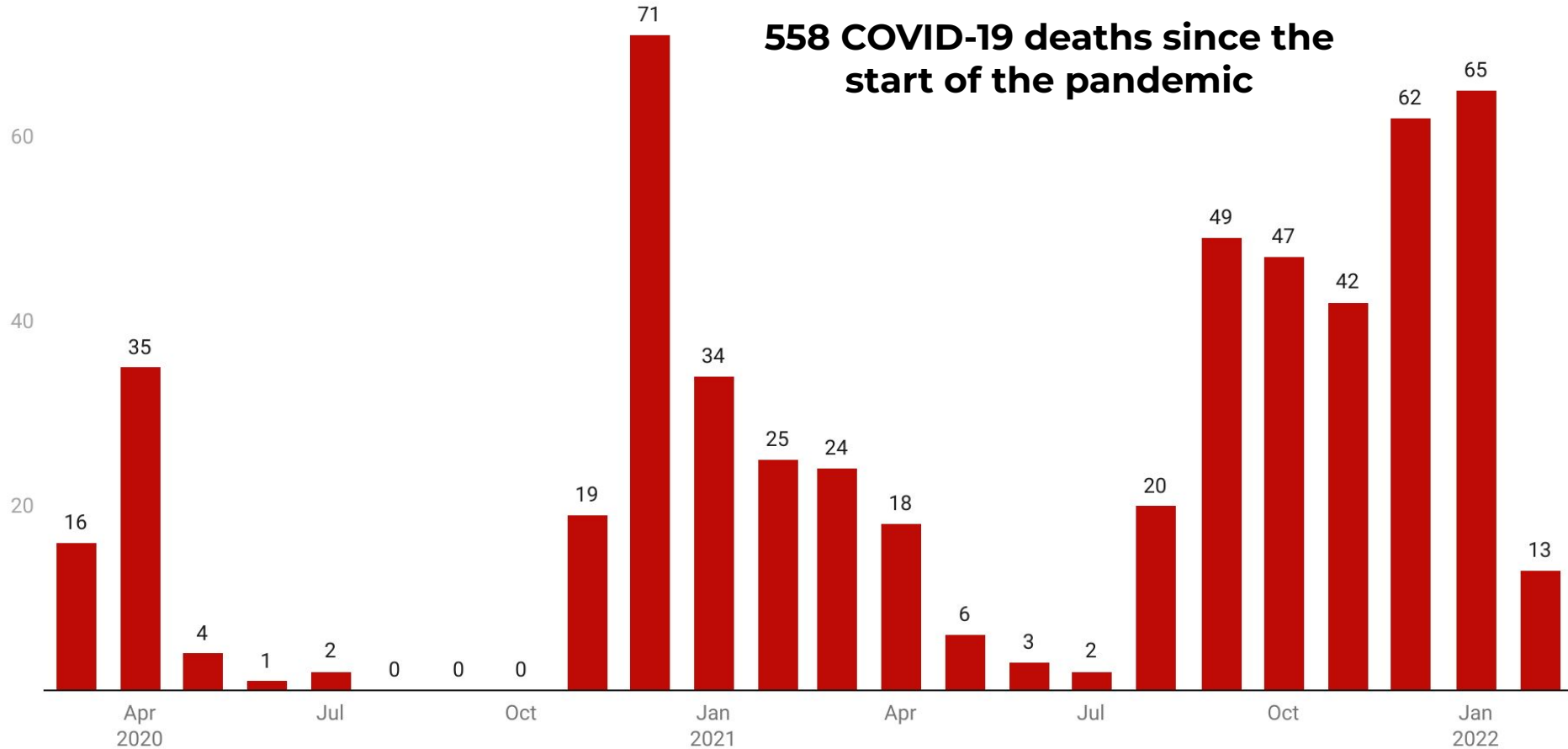
# Vermont COVID-19 Fatalities

7-Day Average



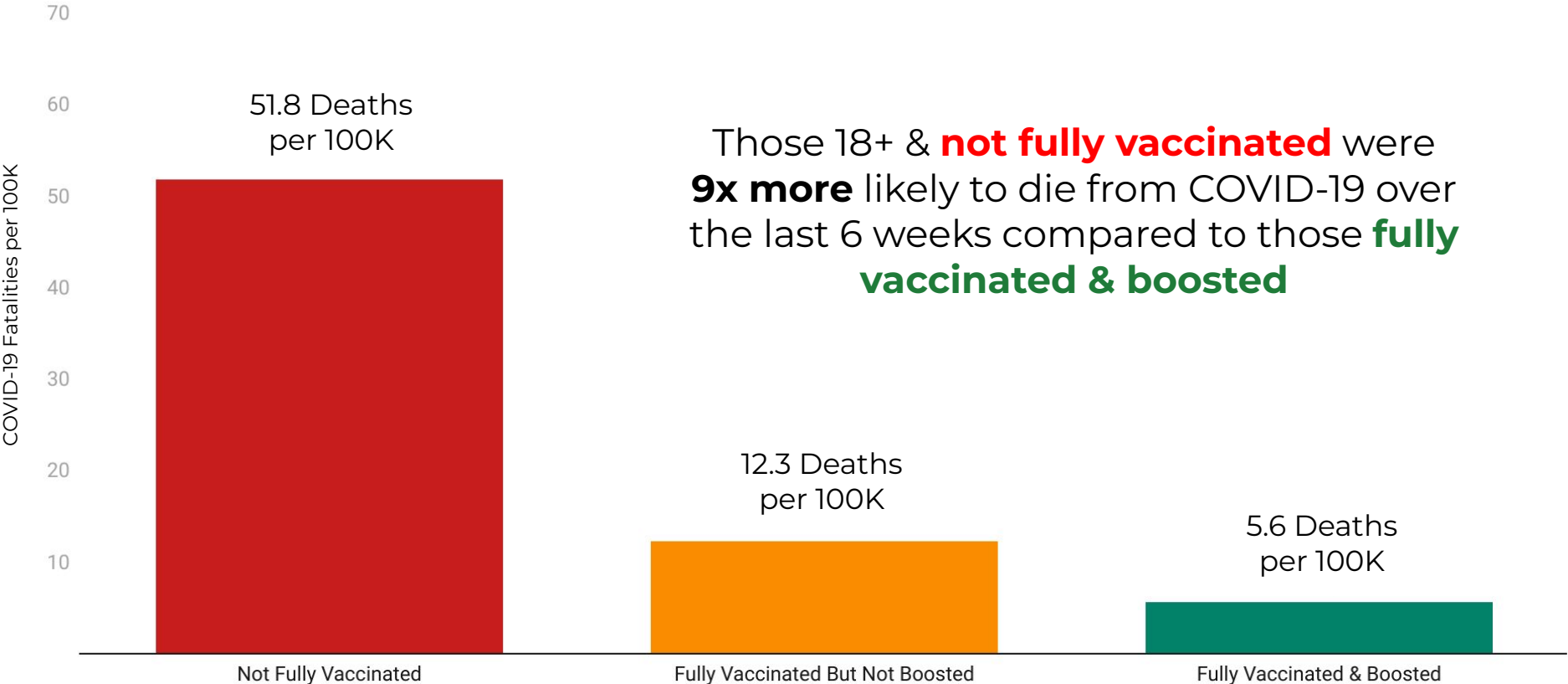
Source: VDH—February 8, 2022; created with Datawrapper

# Monthly Covid-19 Deaths In Vermont

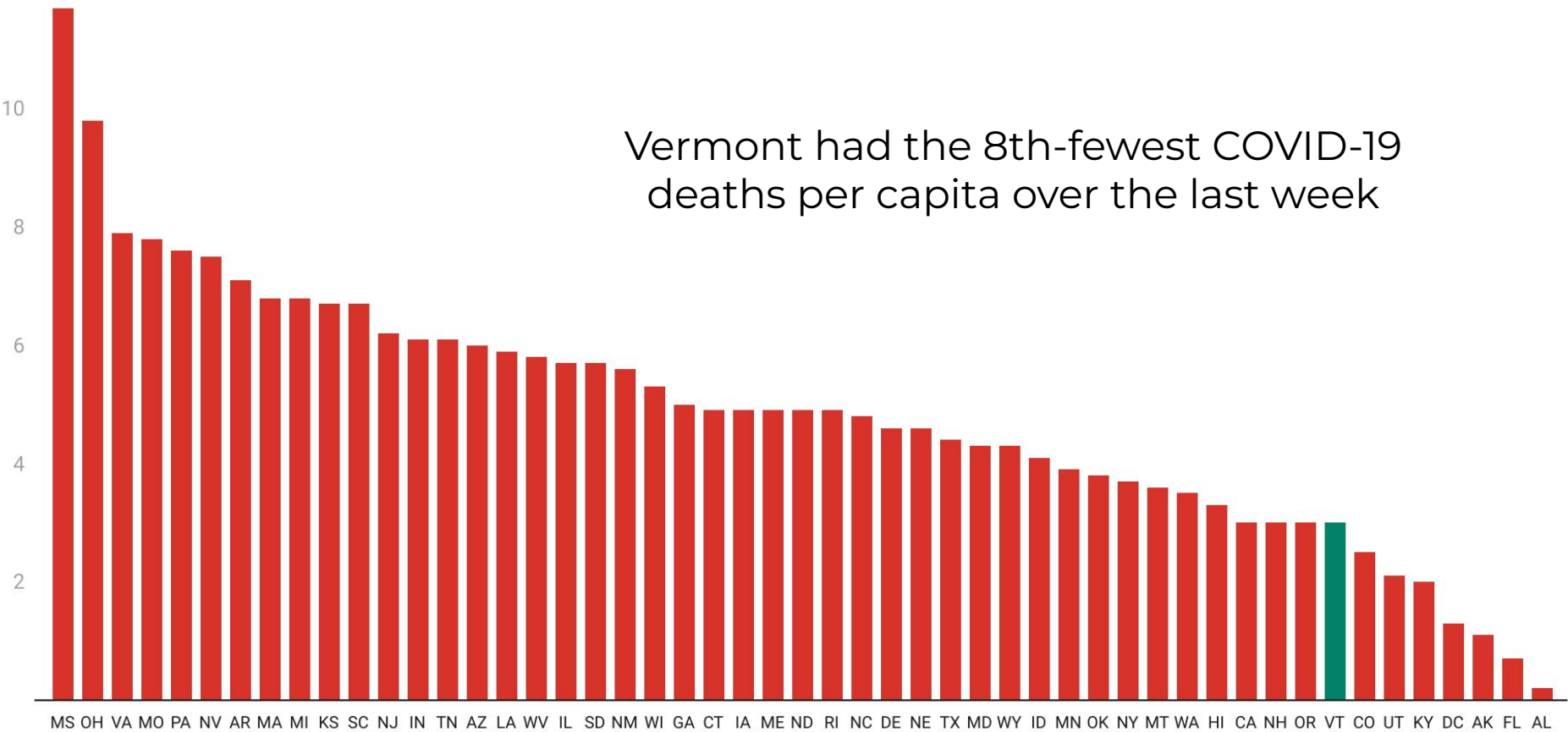


# COVID-19 Deaths By Vaccination Status Per 100K

Measured Among Vermont's 18 & Over Population Over the Last 6 Weeks



# COVID-19 Deaths Per 100K Last 7 Days



Source: CDC—February 7, 2022; Created with Datawrapper

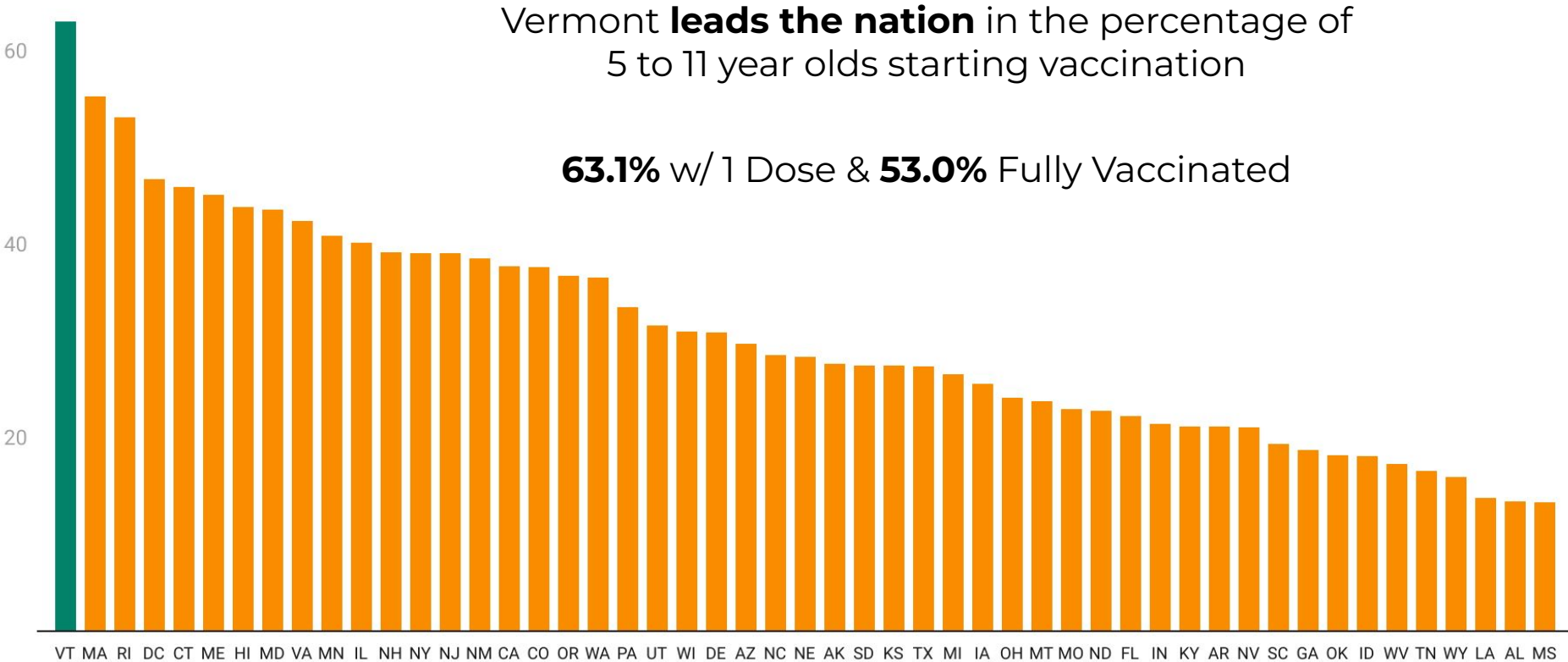
# Vermont Vaccination Data

# Vermont CDC Vaccine Scorecard

Vaccine Metric	Ranking
<b>Doses Administered per 100K</b>	<b>1</b>
<b>% At Least 1 Dose (5+ Population)</b>	<b>1 (tied)</b>
<b>% Fully Vaccinated (5+ Population)</b>	<b>1 (tied)</b>
<b>% At Least 1 Dose (Full Population)</b>	<b>6</b>
<b>% Fully Vaccinated (Full Population)</b>	<b>1</b>
<b>% Fully Vaccinated (65 &amp; Over)</b>	<b>1 (tied)</b>

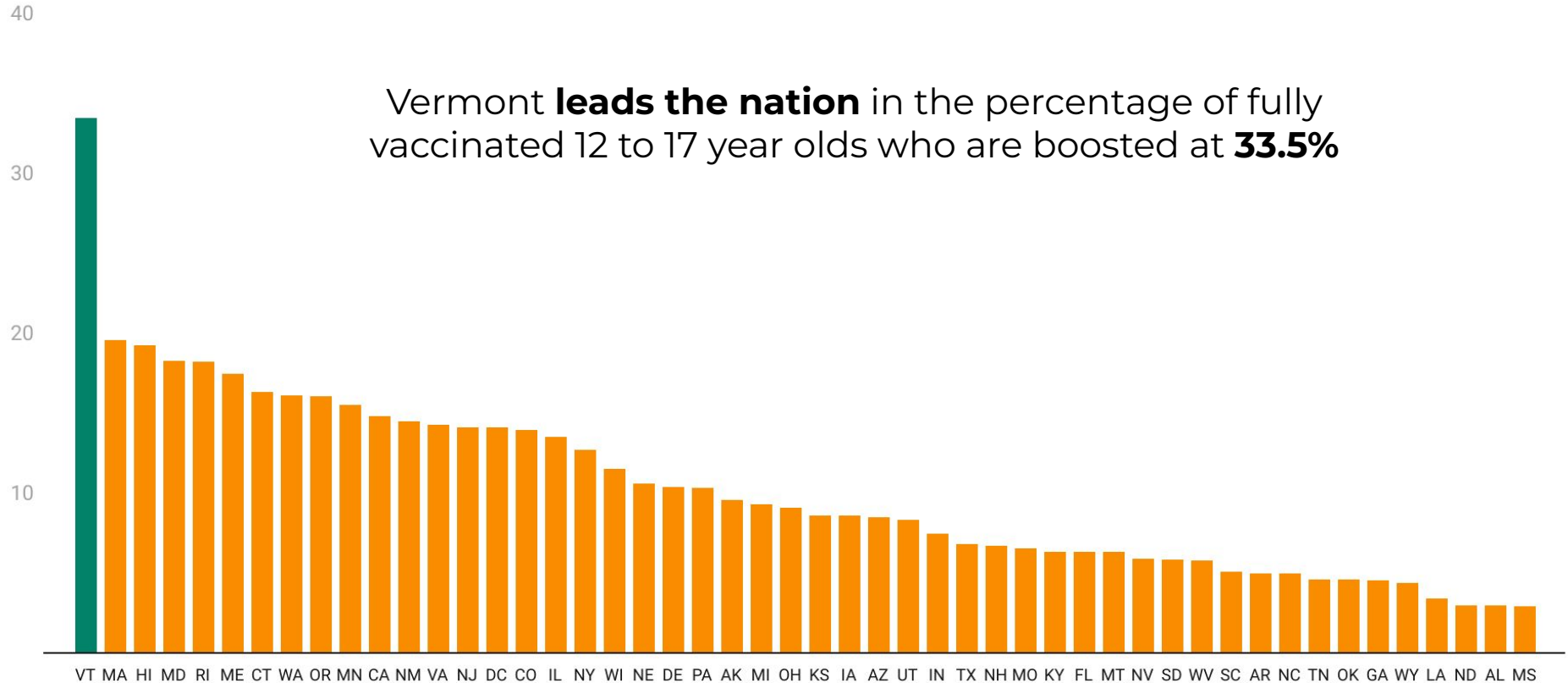
Booster Metric	Ranking
<b>% of Fully Vaccinated w/ booster dose</b>	<b>1</b>
<b>% of Fully vaccinated 12+ w/ booster doses</b>	<b>1</b>
<b>% of Fully vaccinated 18+ w/ booster doses</b>	<b>1</b>
<b>% of Fully vaccinated 65+ w/ booster doses</b>	<b>3</b>

# Percent of 5 to 11 Population Starting Vaccination



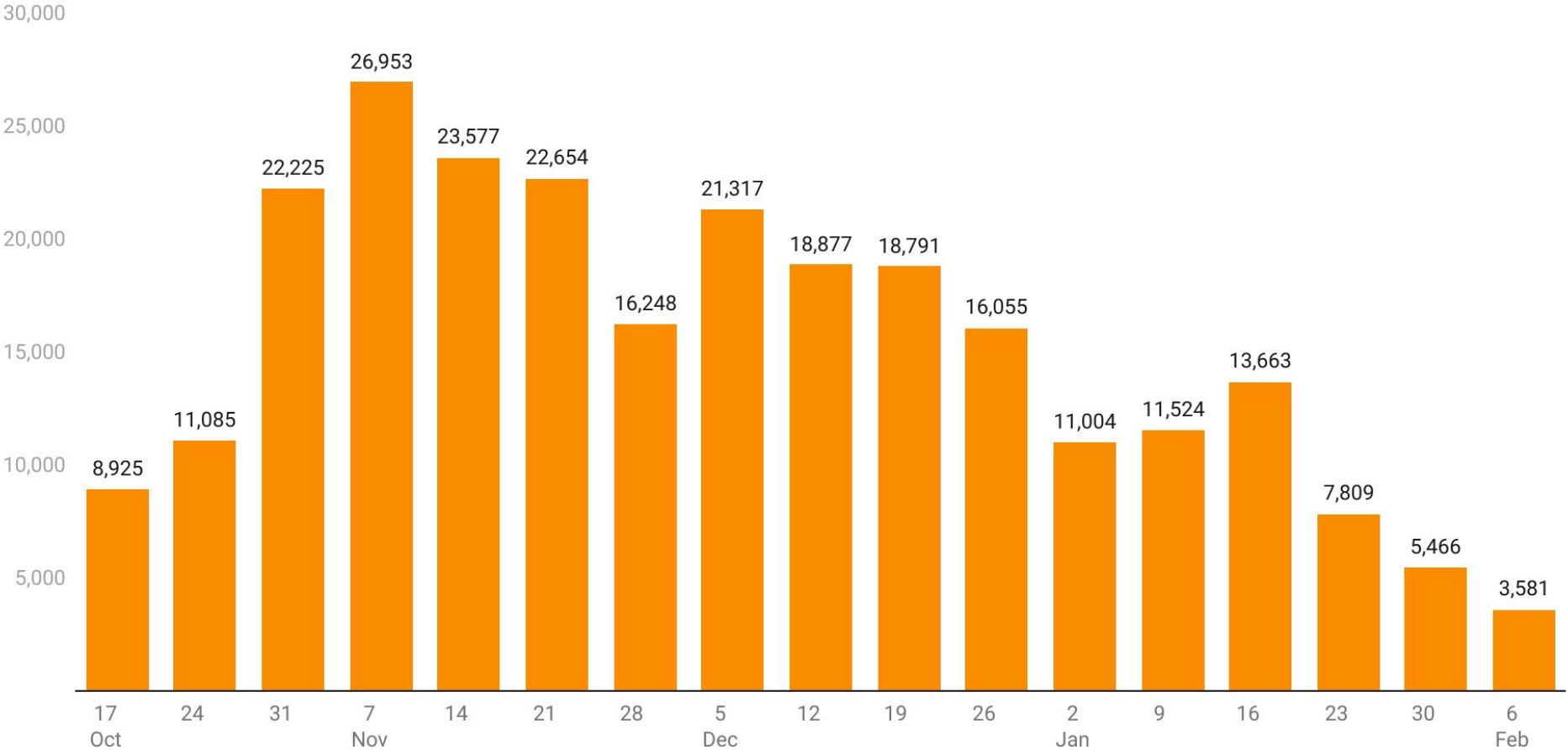
Source: CDC—February 7, 2022; Created with Datawrapper

# Percent of 12 to 17 Population With Booster Dose





# Vermont: Booster Shots Administered By Week

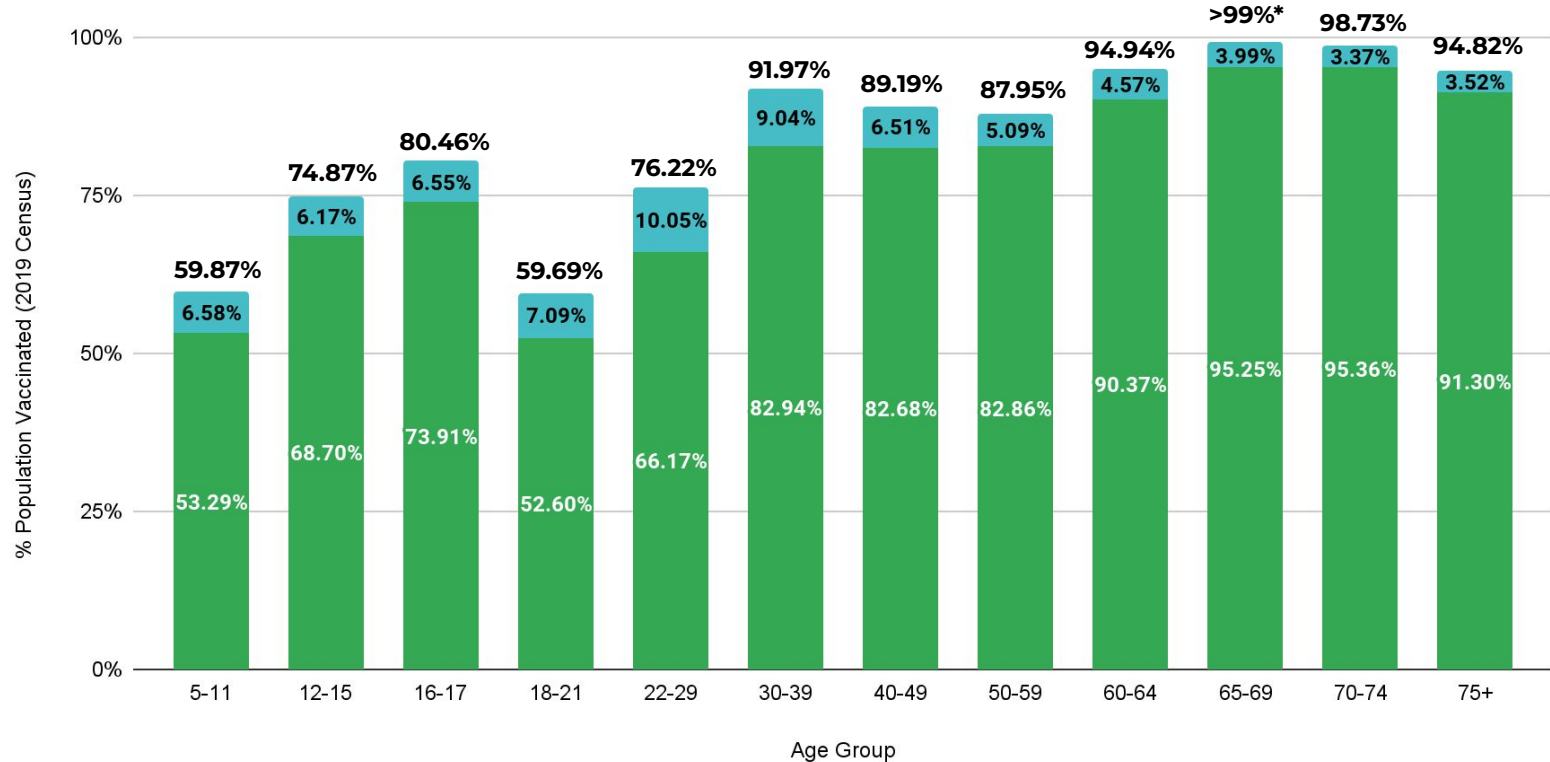


Source: CDC—February 7, 2022; created with Datawrapper

# Vermont Vaccination Progress

By Age Band

Partially Vaccinated Fully Vaccinated



# Summary of Recent Booster Studies

Boosters were **90% effective against Omicron** hospitalizations and 82% effective against ED/urgent care visits

Case rates among unvaccinated adults were **5x higher** compared to those with a booster (case rates in vaccinated but not yet boosted adults were nearly 2x as high compared to those adults who were boosted)

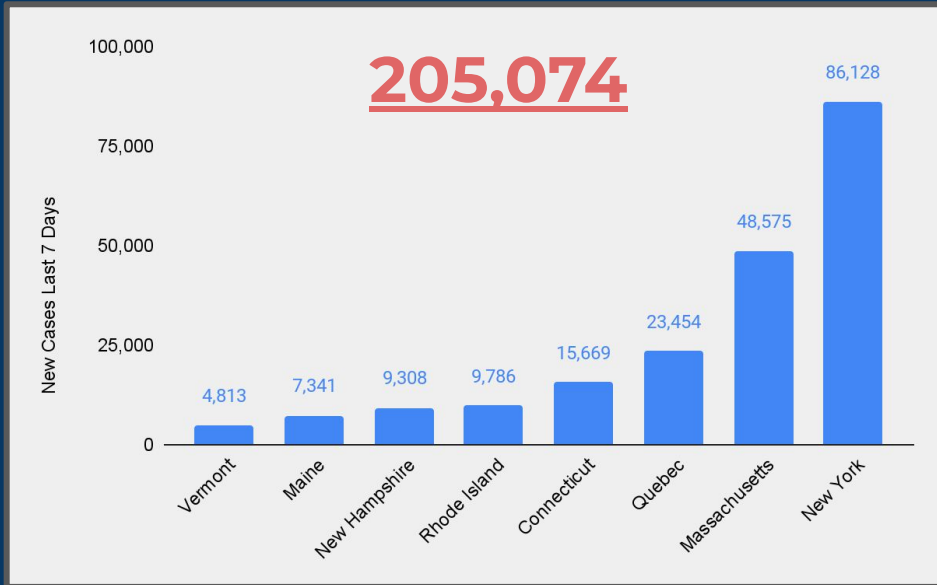
Having a booster **reduces your risk of symptomatic infection by 67% compared to those who are unvaccinated** and 66% compared to those who are fully vaccinated

# Regional Data

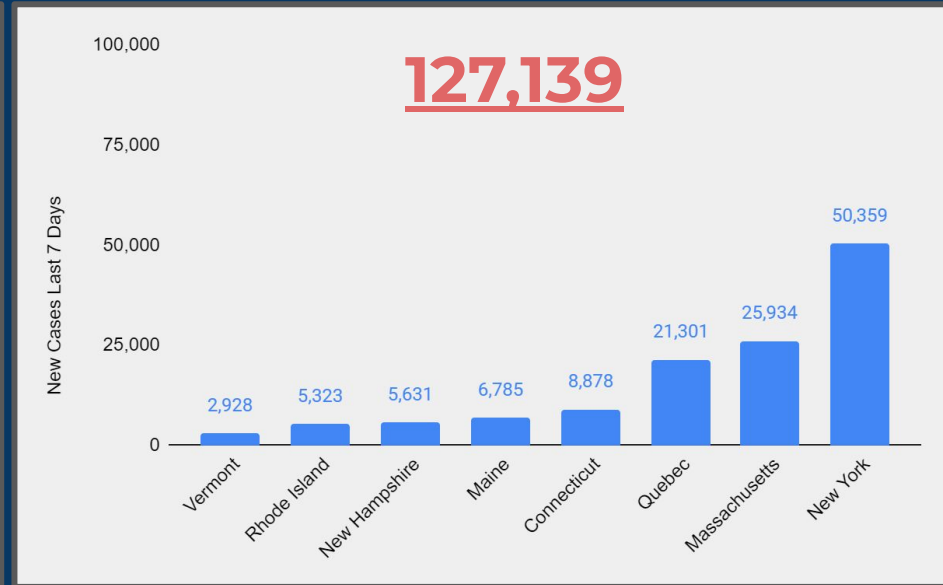
# Northeast Regional Cases

## 38% Decrease in New Cases

New Cases January 25th to January 31st



New Cases February 1st to February 7th



# Weekly Northeast Regional Cases

1000000

750000

500000

250000

0

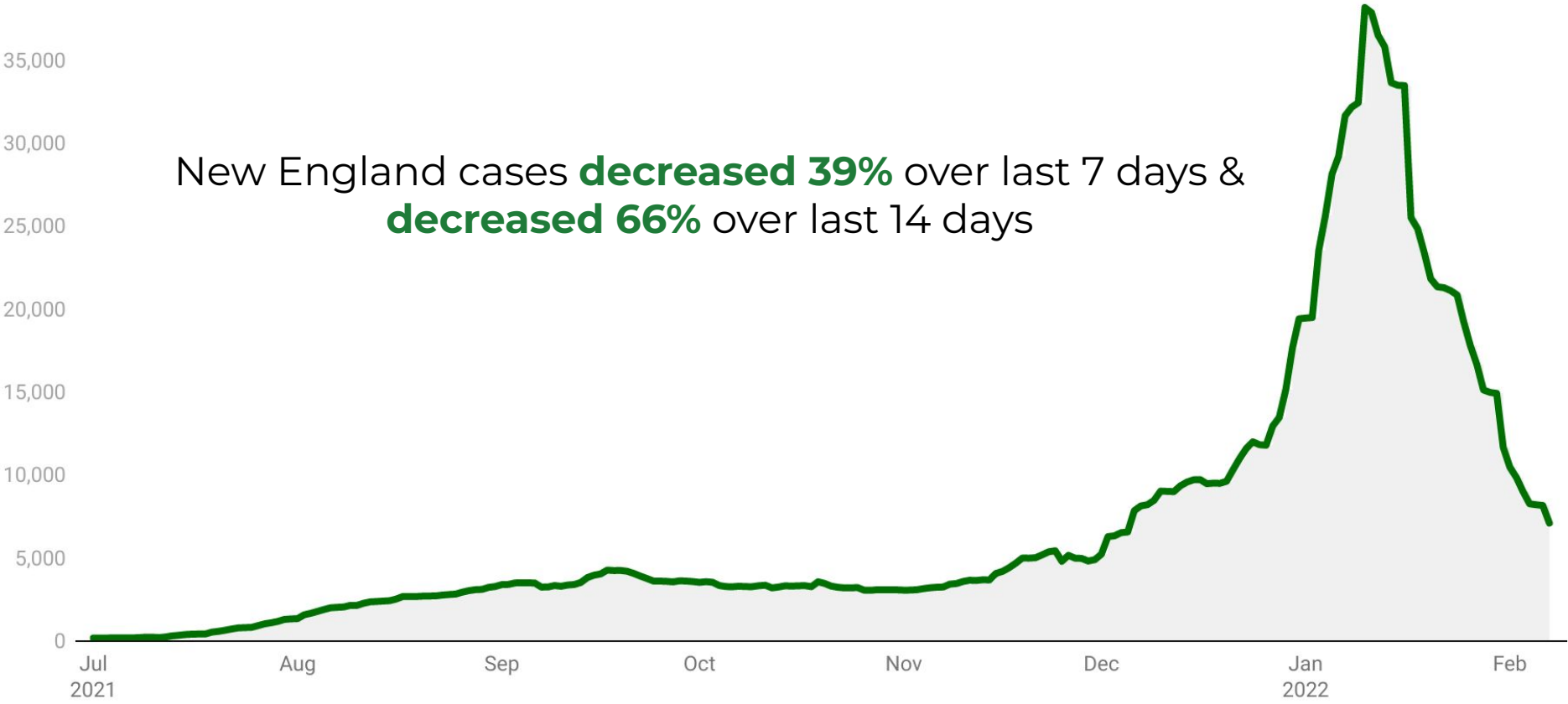
**77,935 fewer cases this week compared to last**

3/16/20 4/20/20 5/25/20 6/29/20 8/3/20 9/7/20 10/12/20 11/16/20 12/21/20 1/25/21 3/1/21 4/5/21 5/10/21 6/14/21 7/19/21 8/23/21 9/27/21 11/1/21 12/6/21 1/10/22

Sources: State Health Depts.—February 7, 2022 (includes: CT, ME, MA, NH, NY, QC, RI & VT)

# New England COVID-19 Cases

— New England 7-Day Case Average

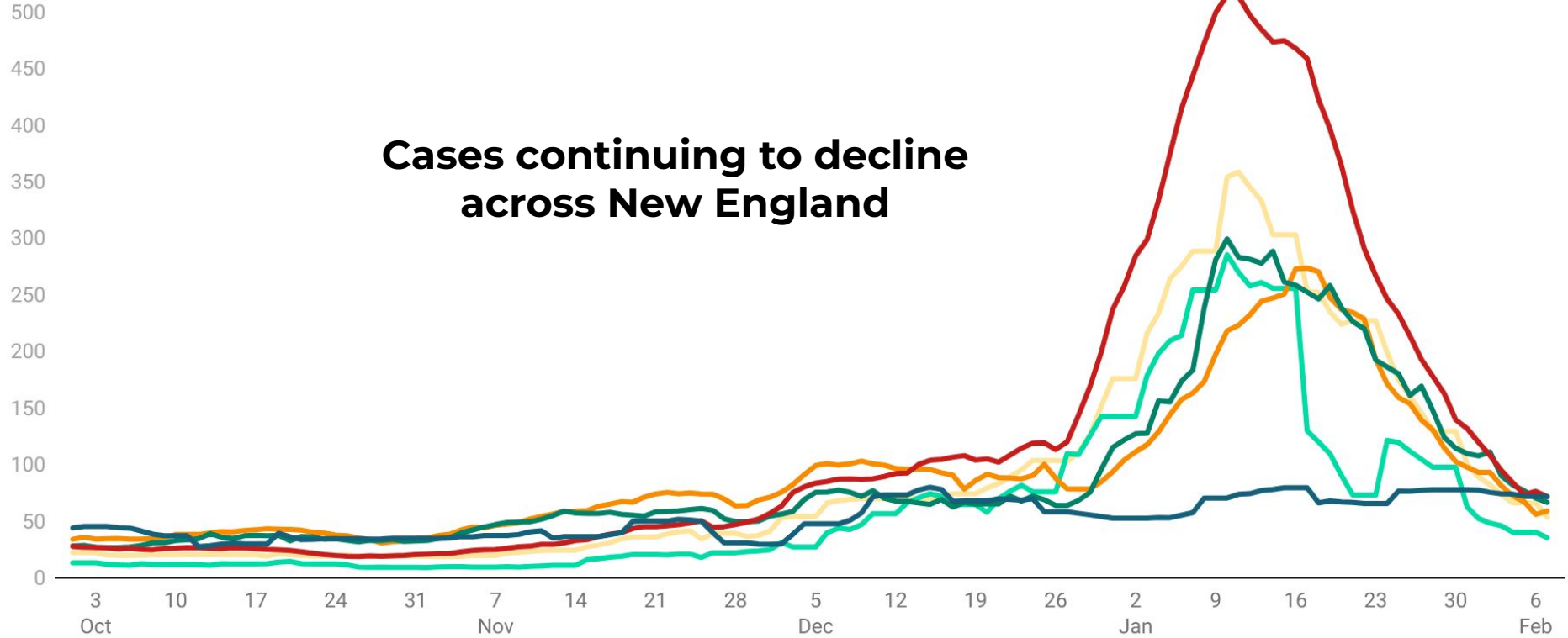


Sources: State Health Depts.—February 7, 2022 (includes: CT, ME, MA, NH, RI & VT)

# New England COVID-19 Case Trends

7-Day Average Cases Per 100K

Massachusetts Connecticut Rhode Island Maine New Hampshire Vermont



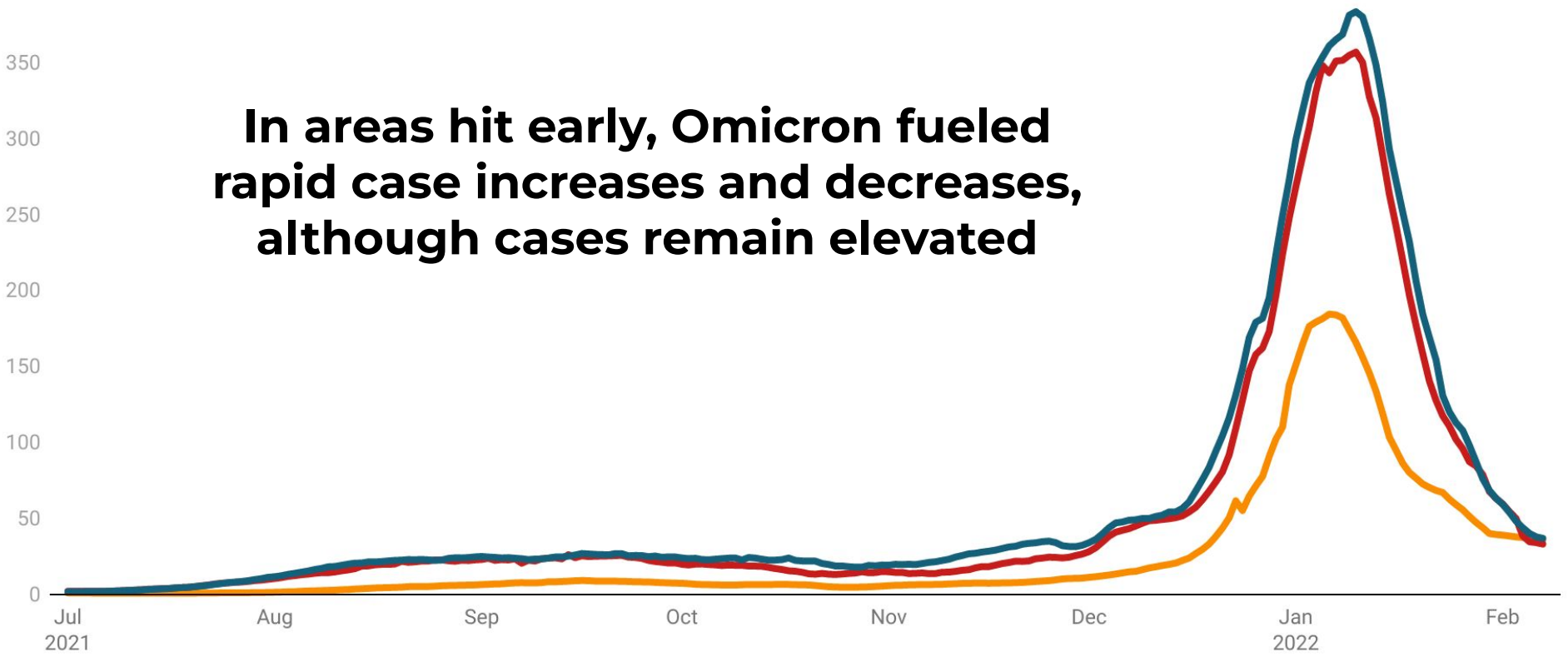
Sources: State Health Depts.—February 7, 2022 (includes: CT, ME, MA, NH, RI & VT)



# COVID-19 Case Trends in Northeast

7-day Average, Cases Per 100K

Quebec New York New Jersey

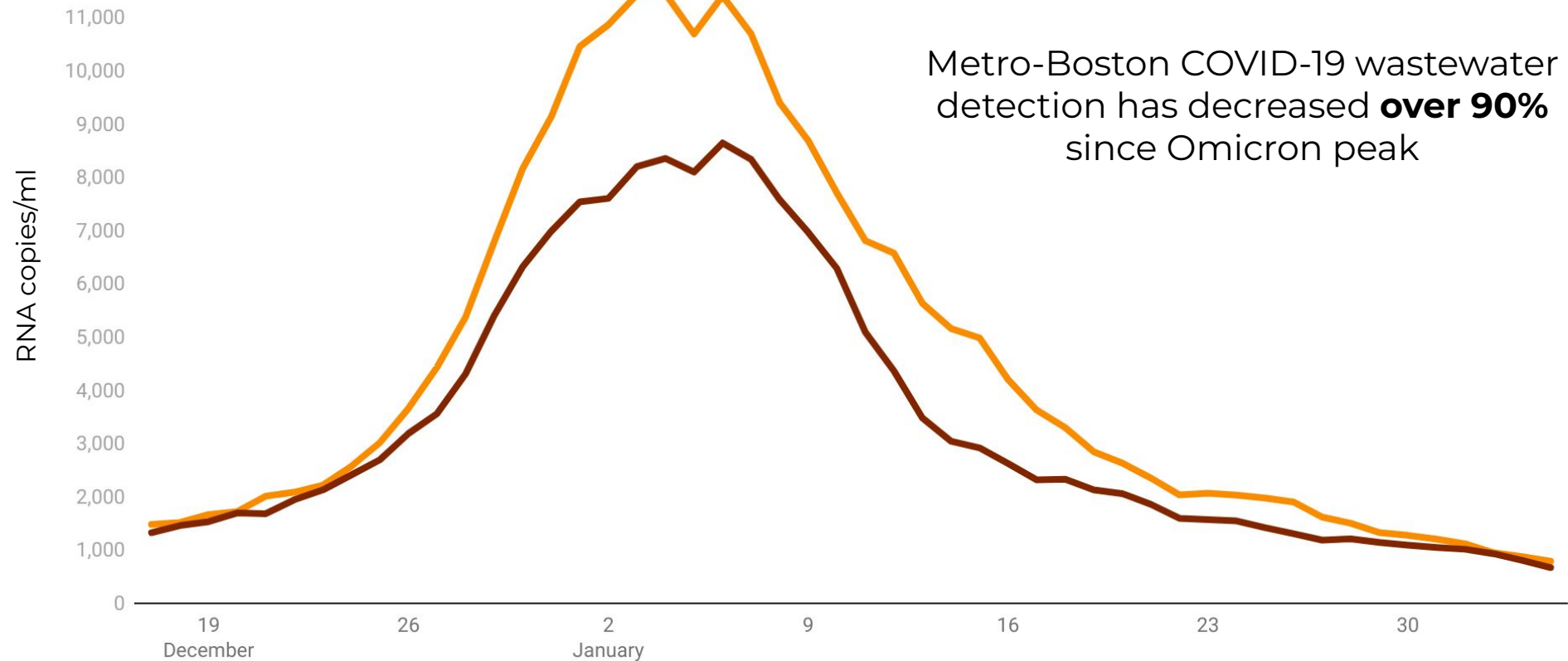


**In areas hit early, Omicron fueled rapid case increases and decreases, although cases remain elevated**

Sources: State/Provincial Health Depts.—February 7, 2022

# Boston Wastewater COVID-19 Detection

Southern Collection Area (7-Day Average) Northern Collection Area (7-Day Average)



# New England COVID-19 Hospitalizations

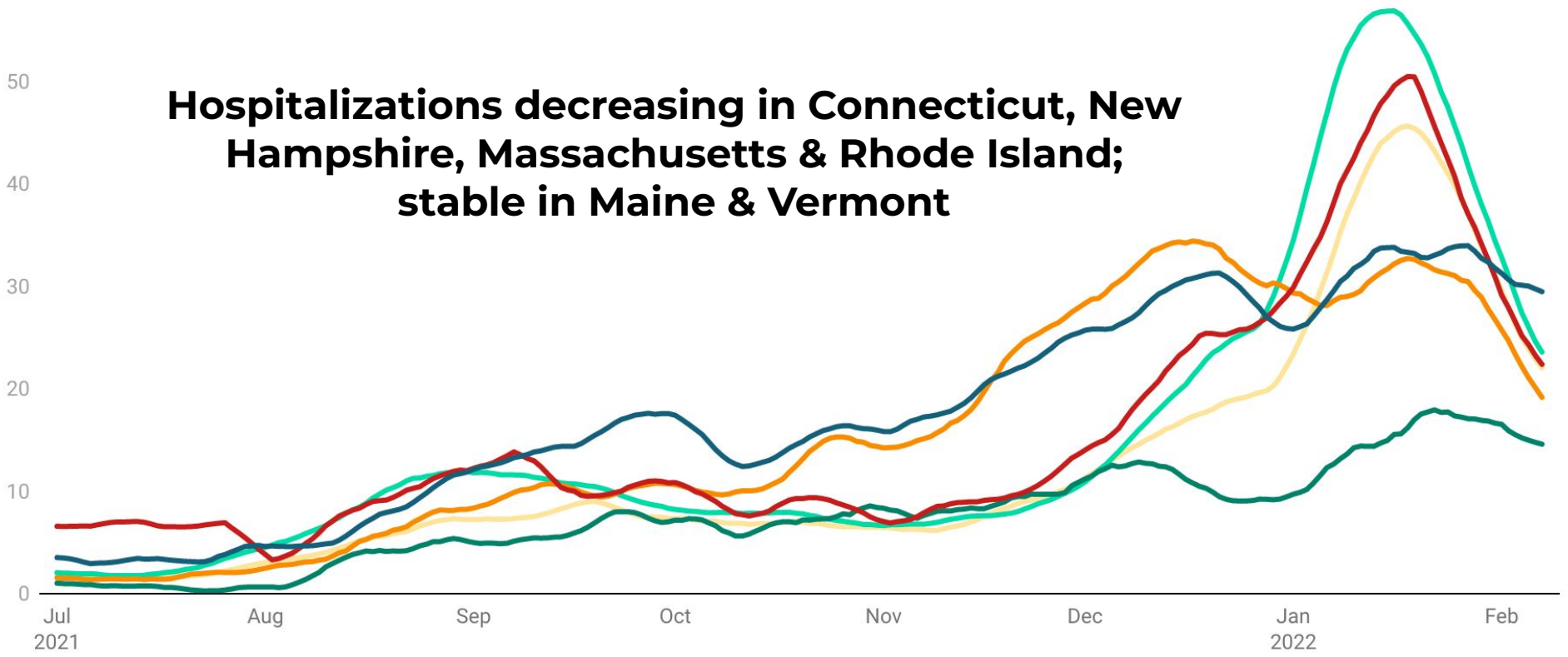
7-Day Average



# New England COVID-19 Hospitalizations Trends

7-Day Average Hospitalizations Per 100K

Massachusetts Connecticut Rhode Island Maine New Hampshire Vermont

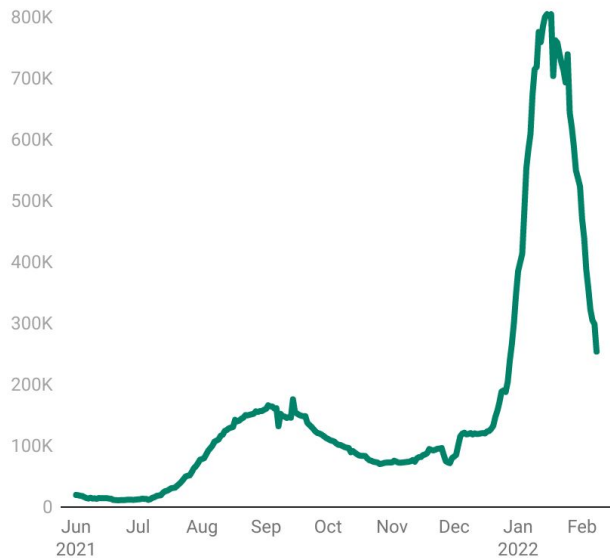


Sources: HHS—February 7, 2022 (includes: CT, ME, MA, NH, RI & VT)

# National Data

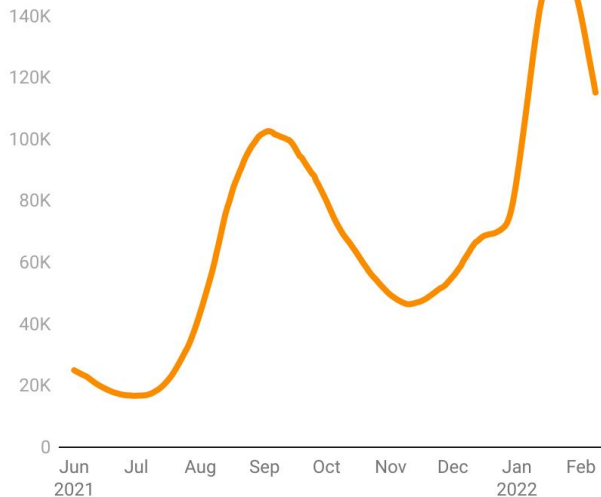
# U.S. Infections, Hospitalizations, & Deaths

**46% Decrease**  
Over last 7 days



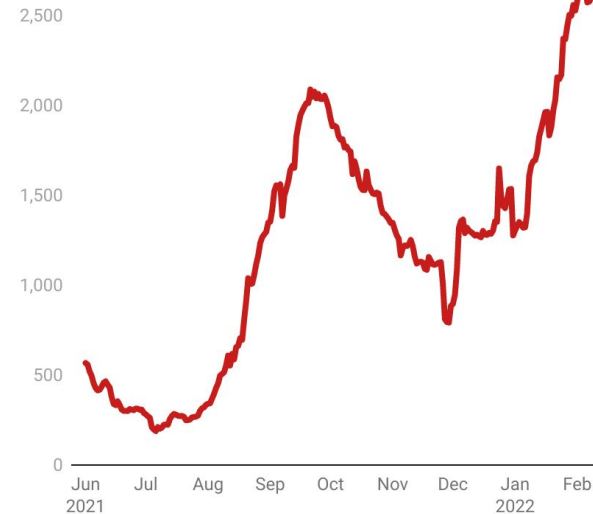
**Infections**  
*(7-Day Average)*

**18% Decrease**  
Over last 7 days



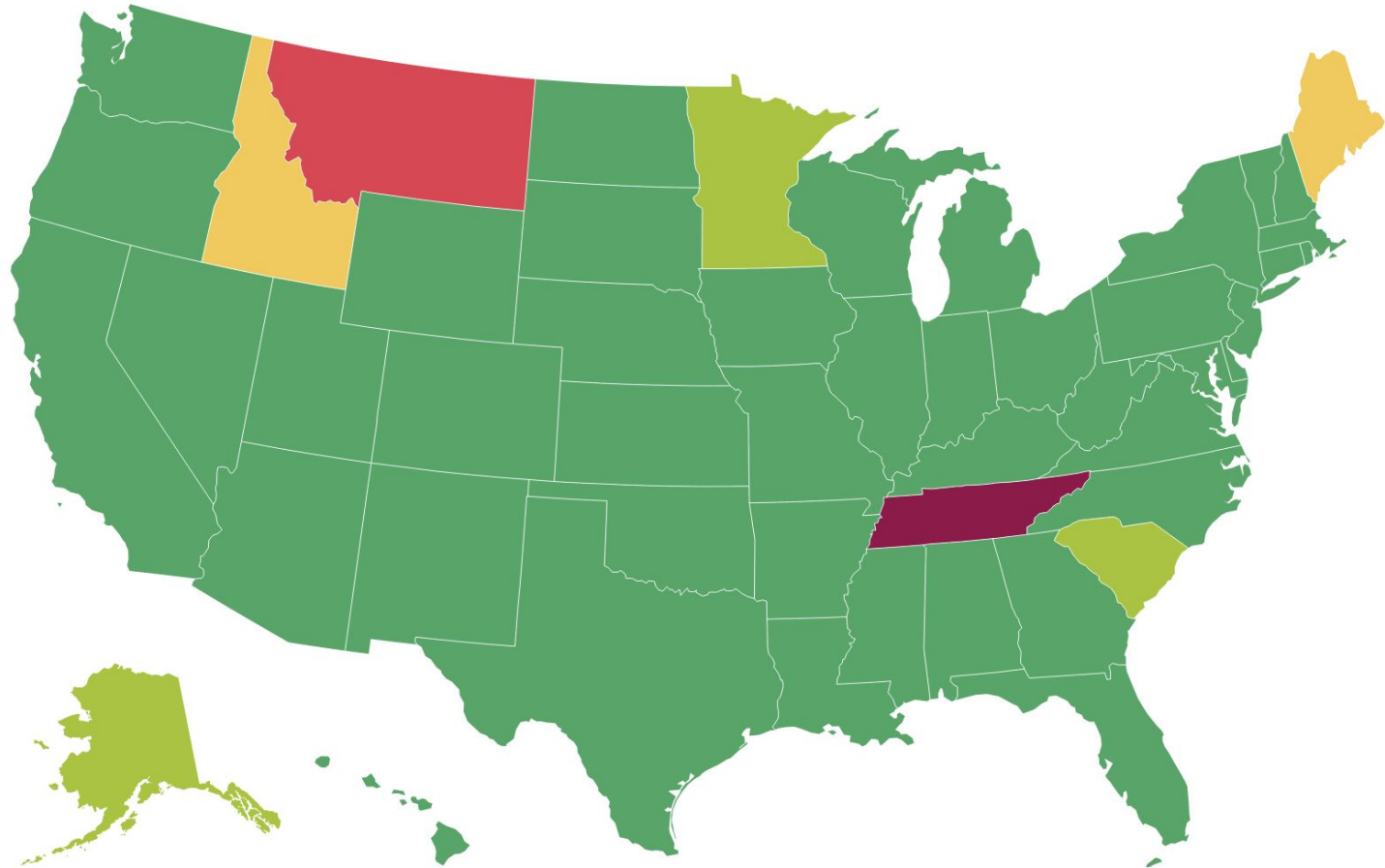
**Hospitalizations**  
*(7-Day Average)*

**0.7% Increase**  
Over last 7 days



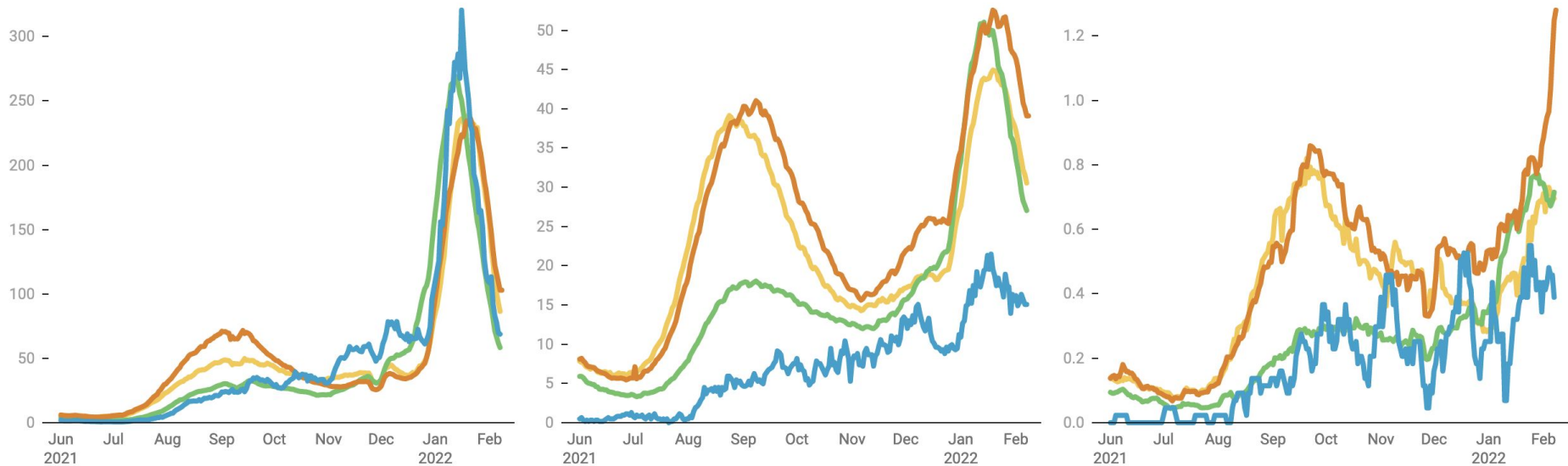
**Deaths**  
*(7-Day Average)*

# Week Over Week Percent Change in COVID-19 Infections



# Infections, Hospitalizations, & Deaths by Percentage of State Population Vaccinated

■ Bottom Third Vaccinated States    
 ■ Middle Third Vaccinated States    
 ■ Top Third Vaccinated States    
 ■ Vermont



Infections per 100K

Hospitalizations per 100K  
(Current)

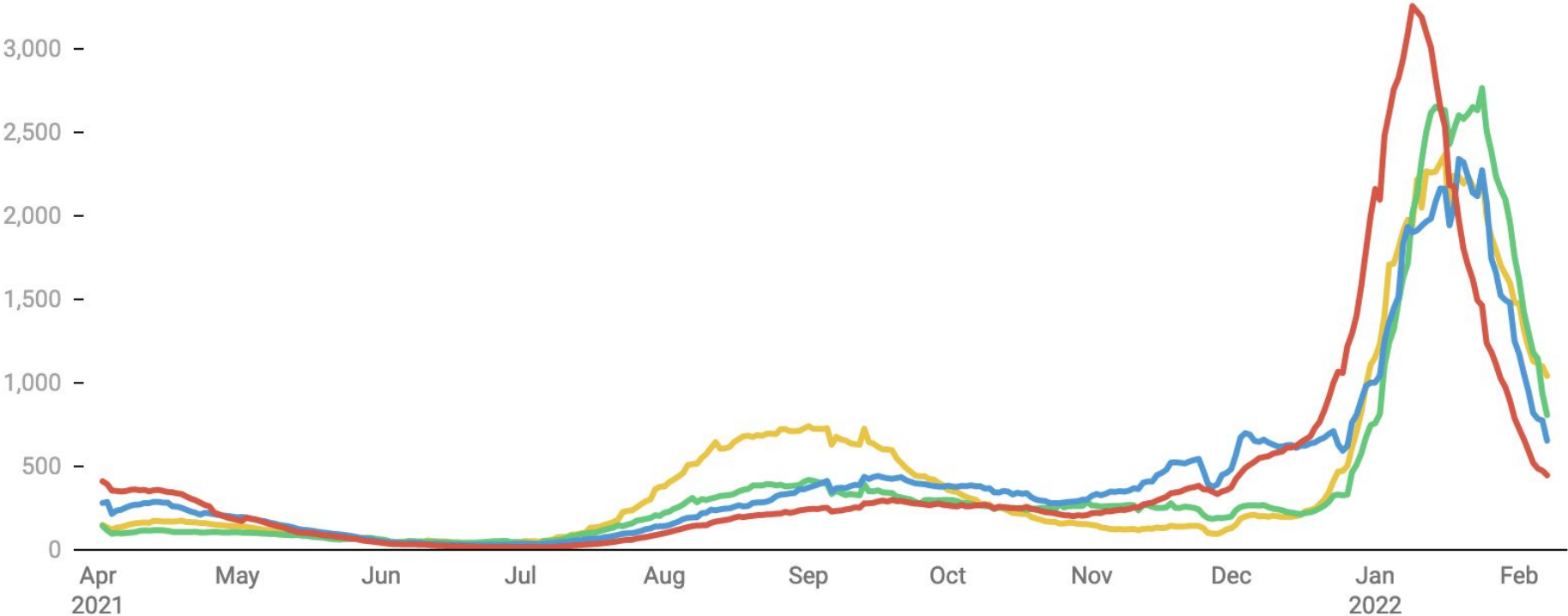
Deaths per 100K



# Daily COVID-19 Cases per Million in US Regions

Calculated as a 7-day moving average. Definitions of North, Midwest, South, and West taken from the U.S. Census bureau.

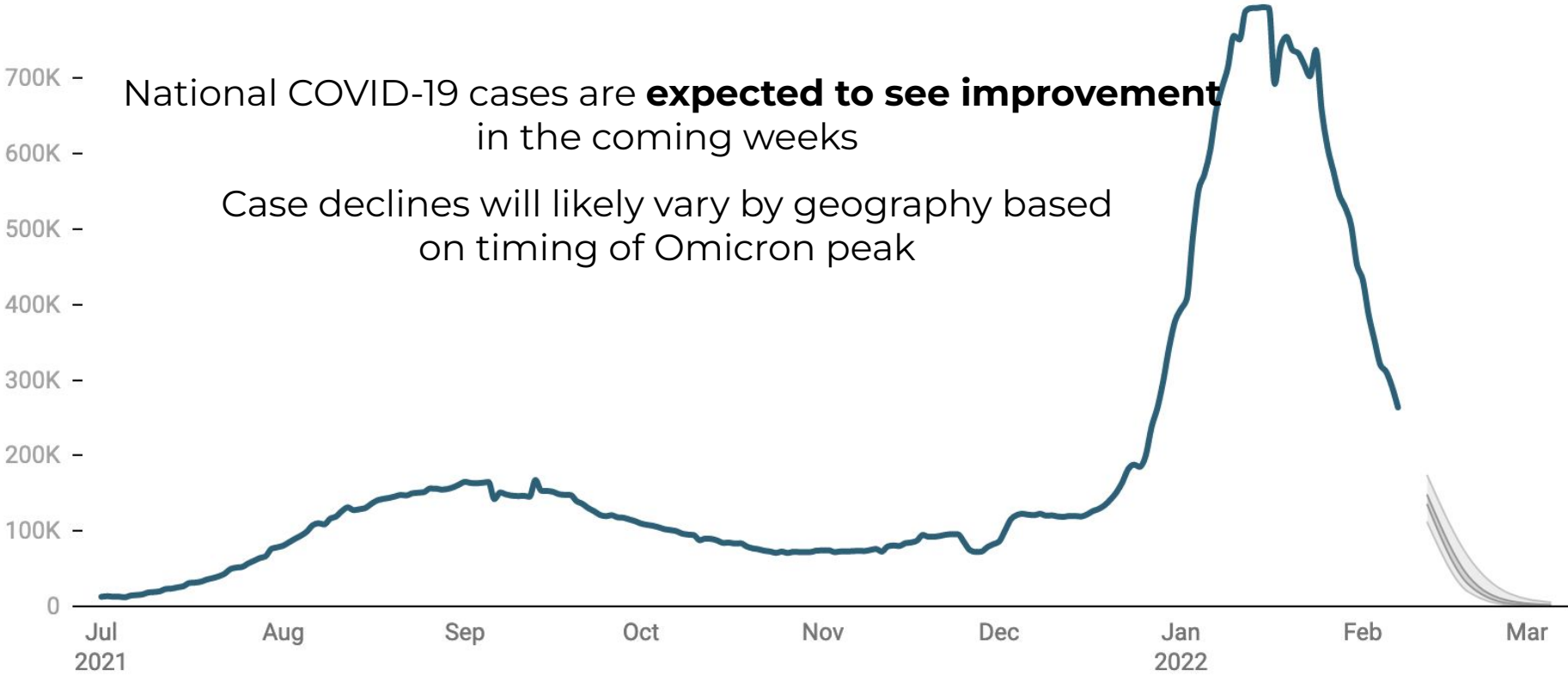
— Northeast — Midwest — South — West



Source: JHU—February 8, 2022; 7-day averages; created with Datawrapper

# US COVID-19 Infection Confidence Intervals

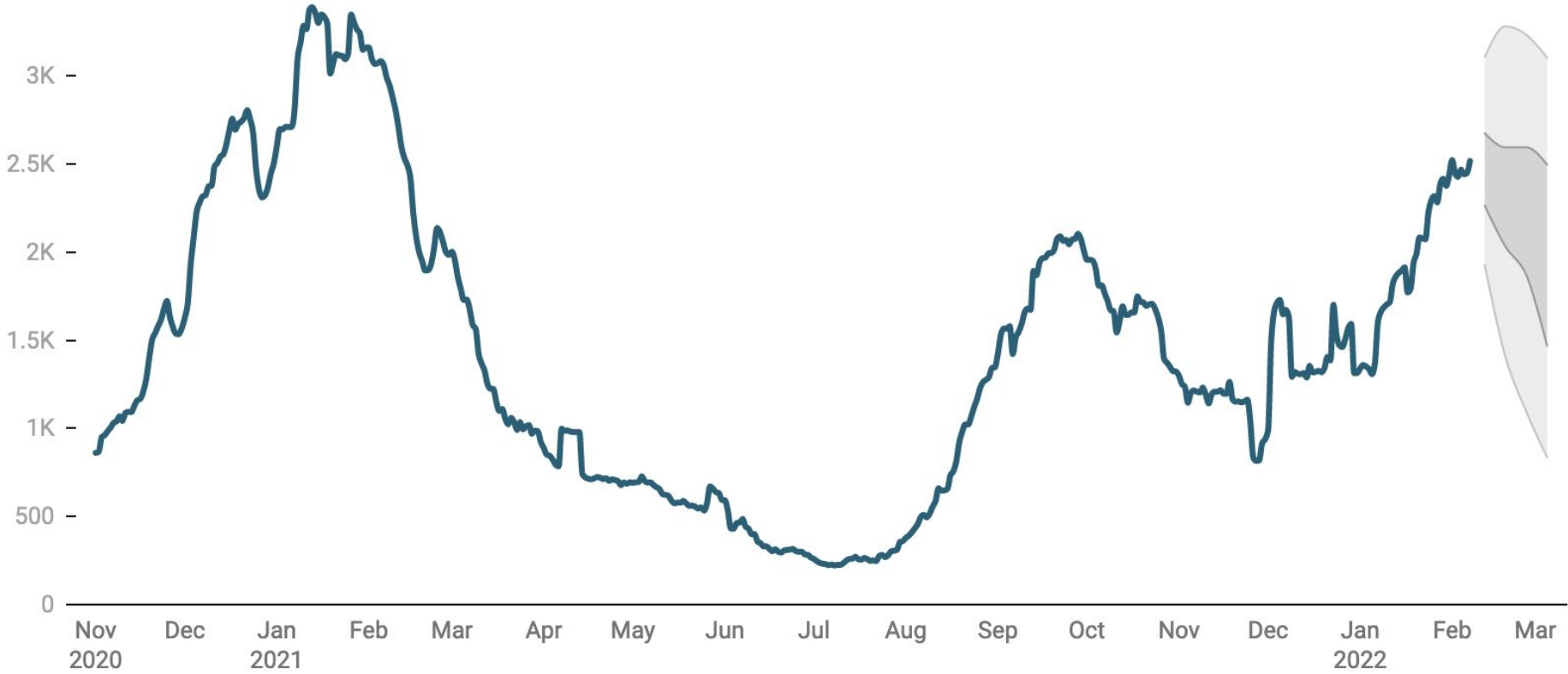
Calculated as a 7-day mean. Inner and outer bands represent 50% and 95% confidence intervals, respectively.



Source: CDC—February 8, 2022; created with Datawrapper

# US COVID-19 Death Confidence Intervals

Calculated as a 7-day mean. Inner and outer bands represent 50% and 95% confidence intervals, respectively.



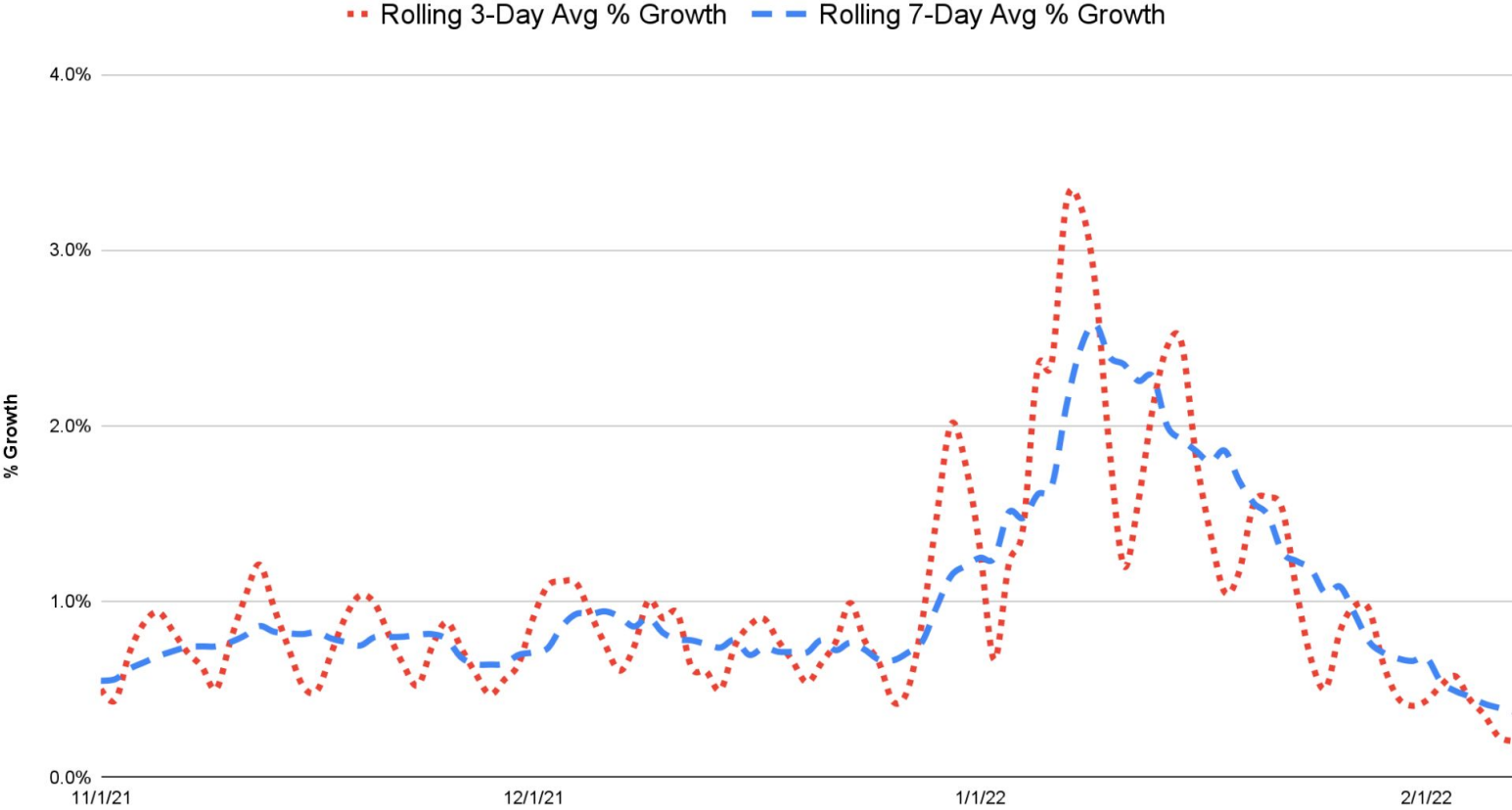
Source: CDC—February 8, 2022; created with Datawrapper

# RESTART VERMONT

## Reopening Metrics

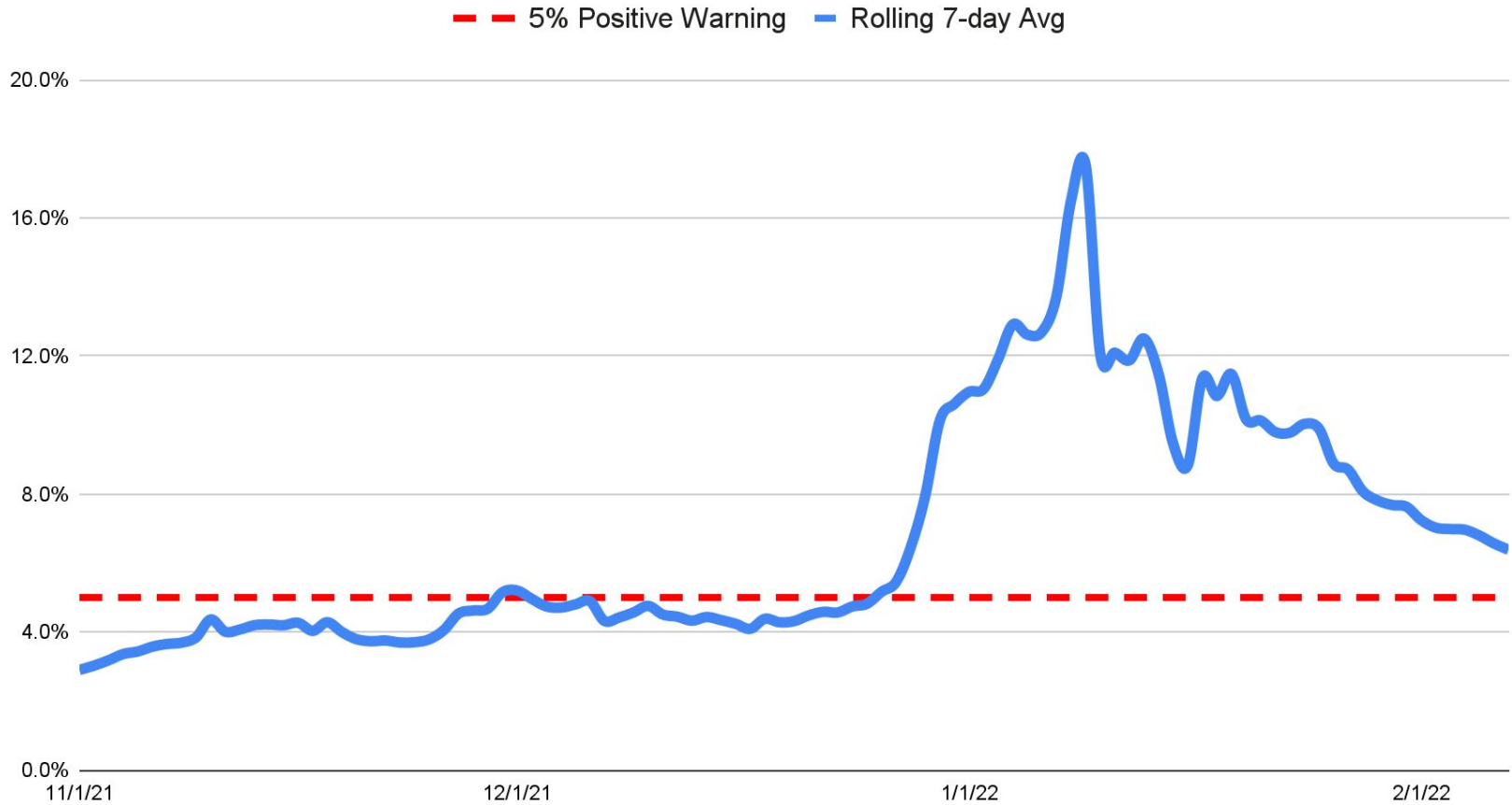
1. Syndromic Surveillance (*retired*)
2. Viral Growth & Reproductive Rates
3. Percentage of New Positive Tests
4. Hospital & Critical Care Bed Capacity
5. Testing Volume

# Viral Growth & Reproductive Rates



Source: Vermont Department of Health

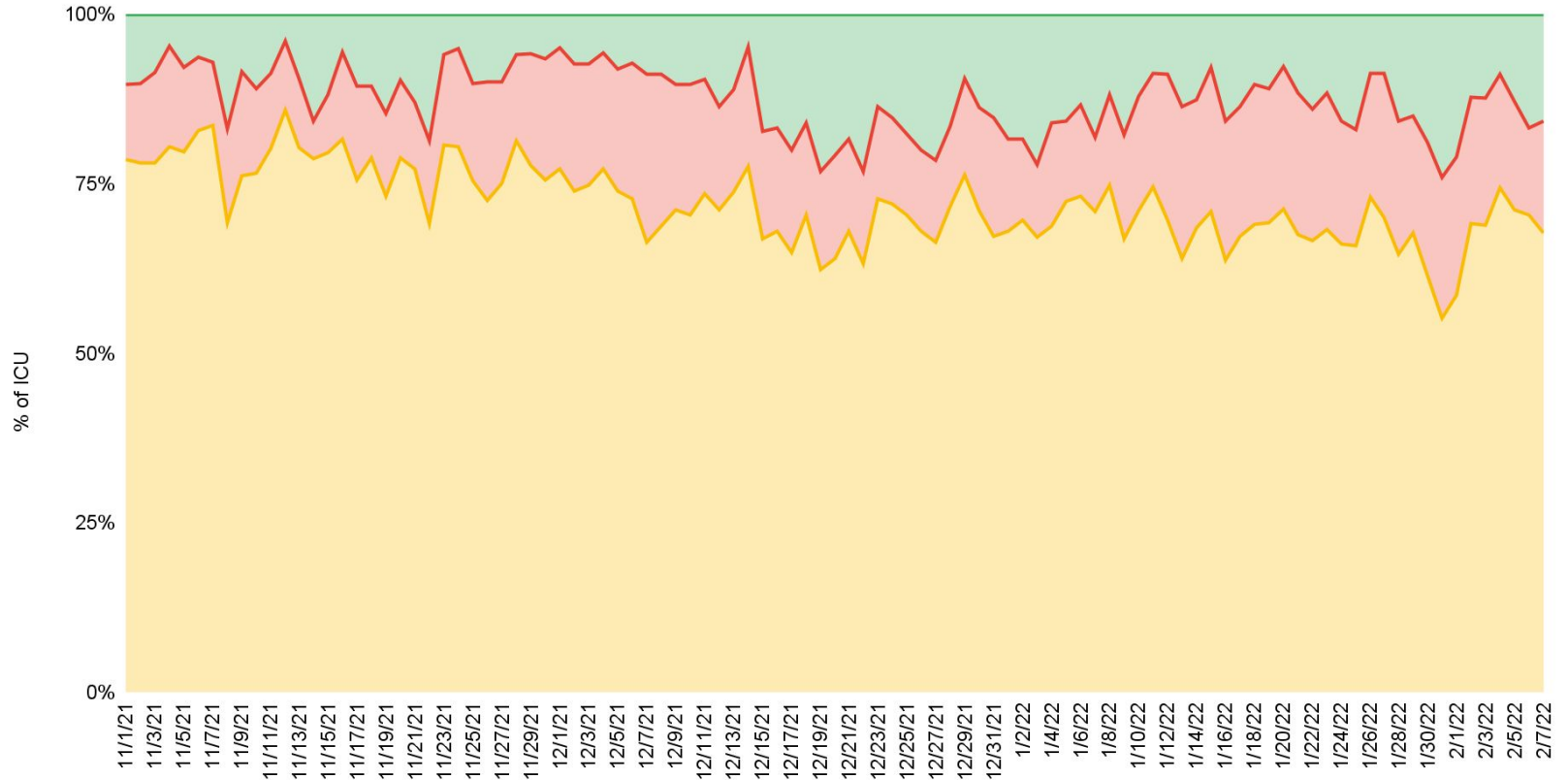
# Test Positivity



Source: Vermont Department of Health; 7-day positivity calculated as positive tests last seven days/tests last seven days

# Critical Care Beds

Open ICU COVID ICU non-COVID ICU



# Vermont Testing

