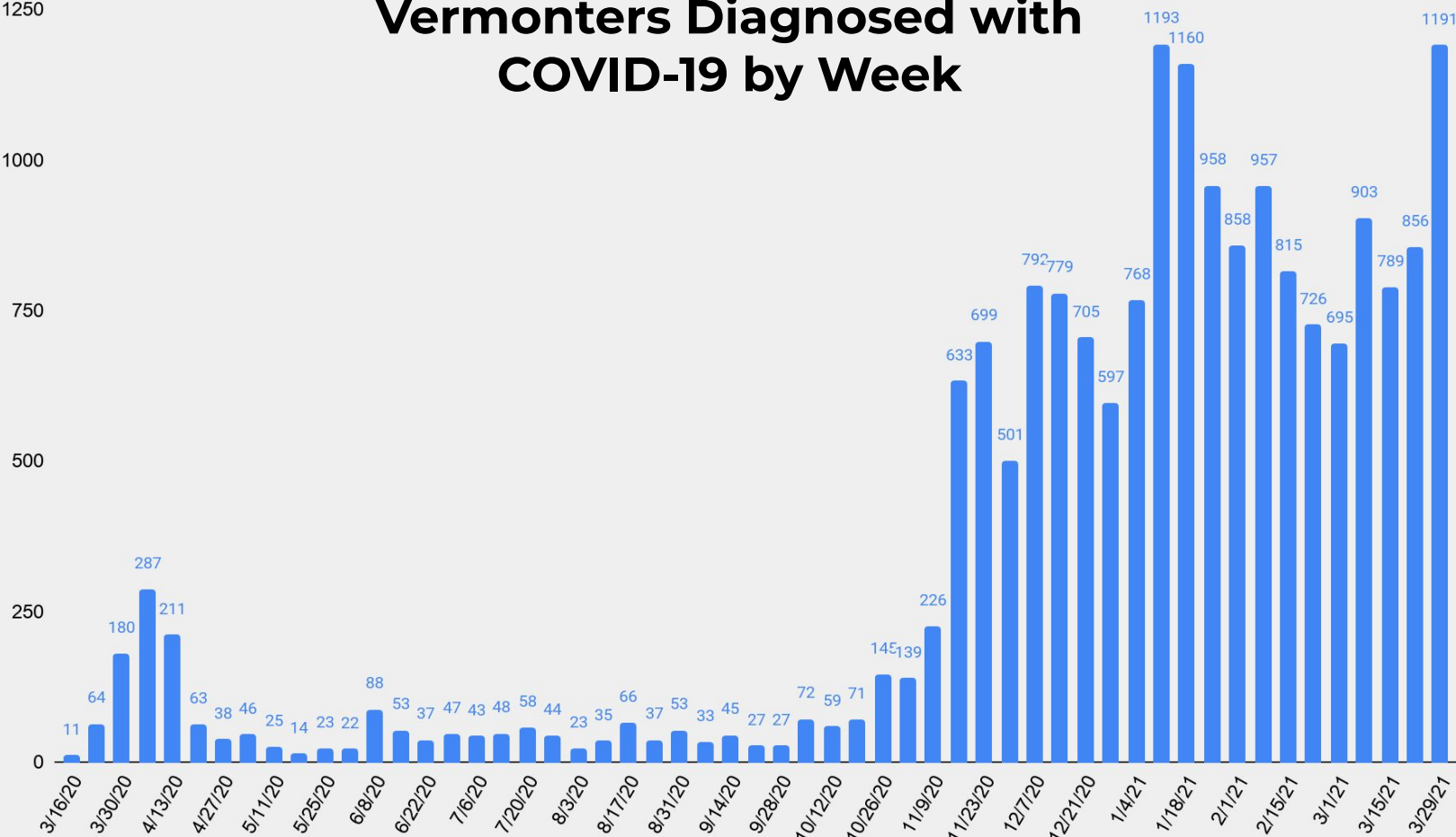


COVID-19 Modeling

March 30, 2021

Presentation available at:
dfr.vermont.gov

Vermonters Diagnosed with COVID-19 by Week



Source: Vermont Department of Health (week calculated as Tuesday to Monday)

Similar Weeks — Different Risk Profiles

Age Group	Week Ending 1/5/21	Week Ending 3/29/21
90+	9	2
80 to 89	30	5
70 to 79	77	25
60 to 69	130	81
50 to 59	165	135
40 to 49	150	155
30 to 39	148	166
20 to 29	240	309
10 to 19	158	226
0 to 9	86	87
Total	1193	1191



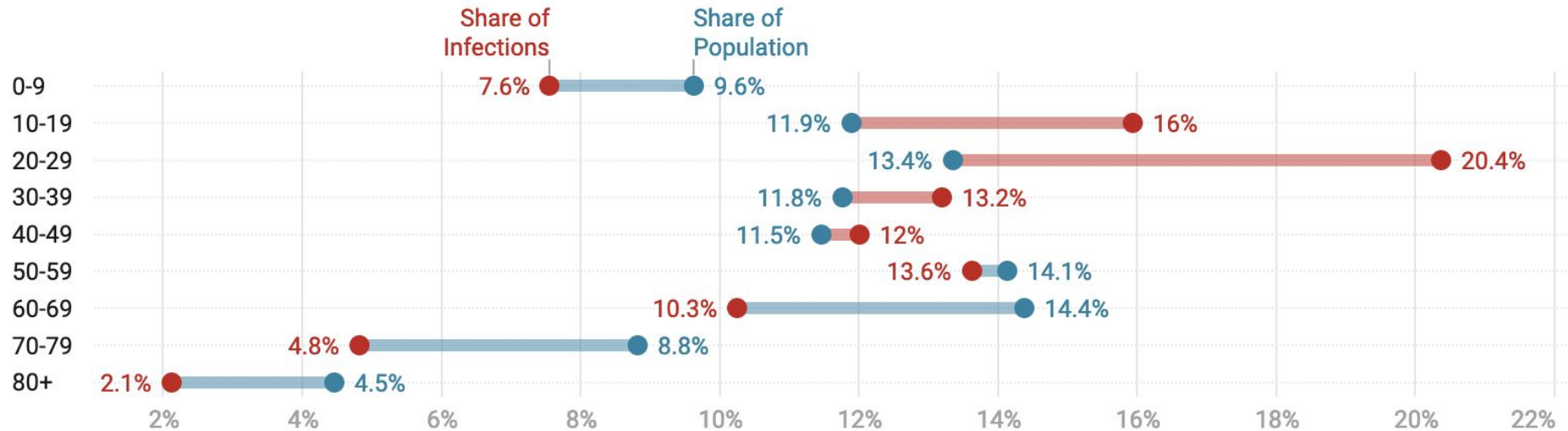
**54%
Decrease**



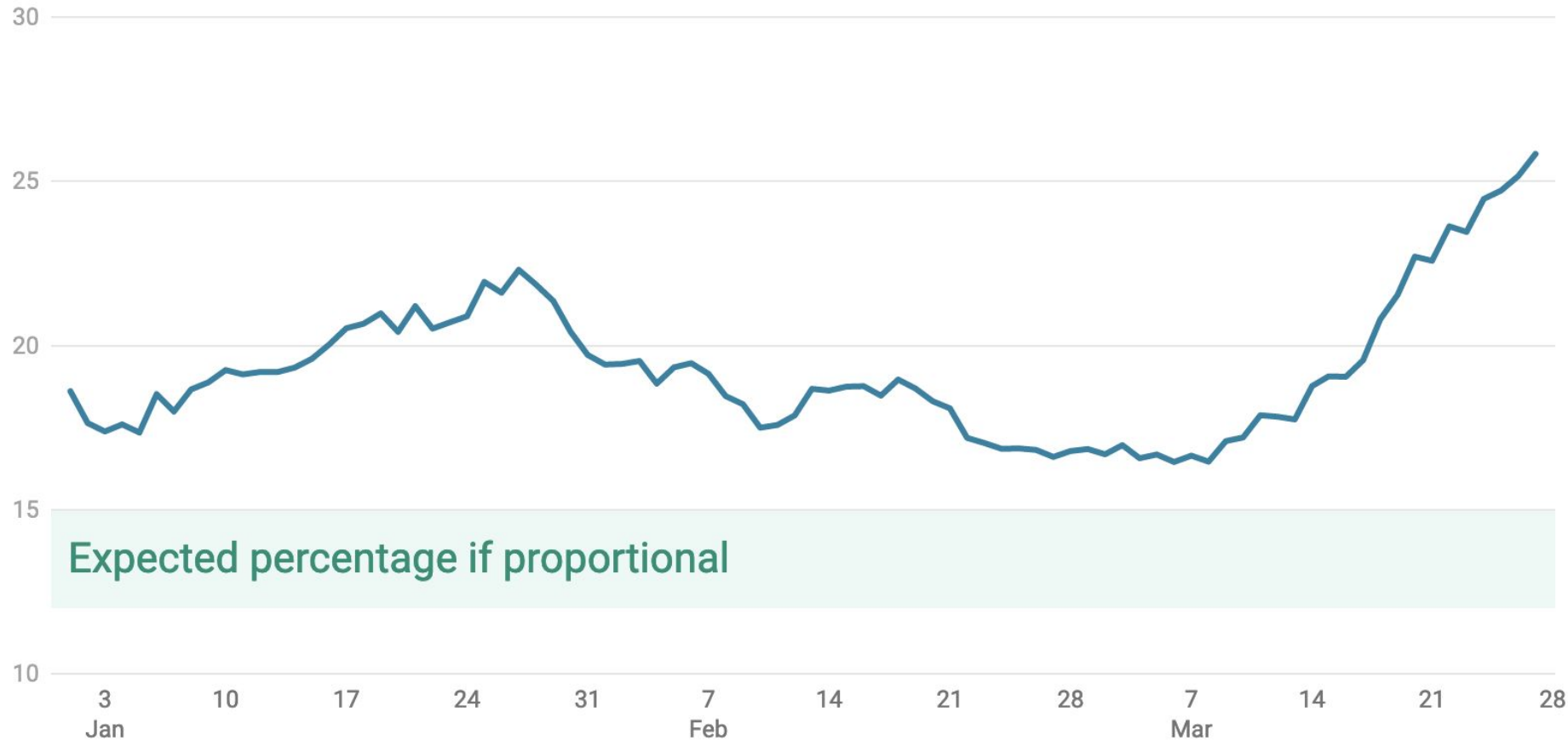
**28%
Increase**

Young Vermonters Account for an Outsized Proportion of Infections in 2021

Percent share of population is shown in blue for each age band, while percent share of infections is shown in red. Blue bars correspond to groups underrepresented in infections. Red bars indicate overrepresentation.

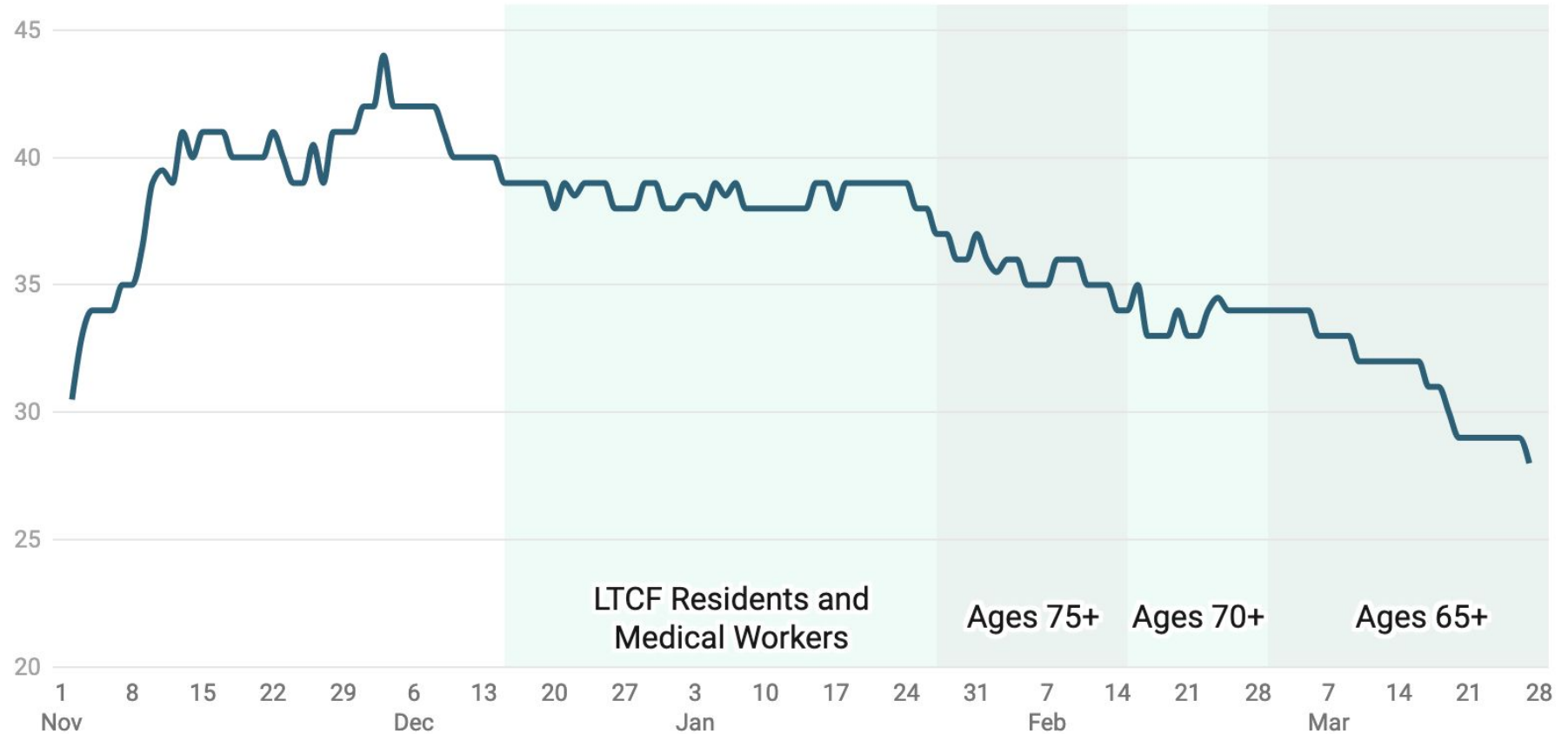


% of Vermont's COVID Infections Aged 20-29 (14-Day Average)



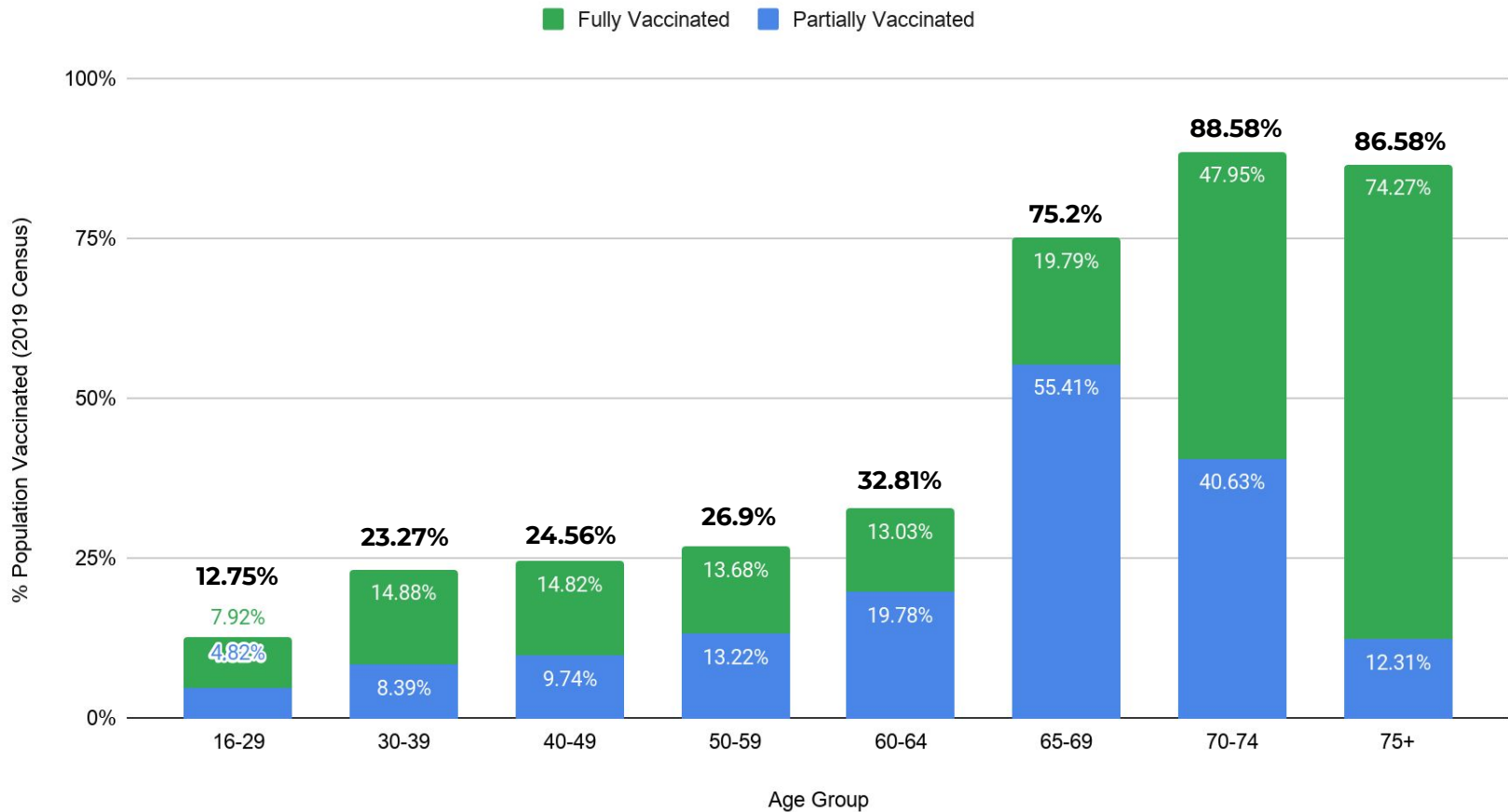
Age of Infected Vermonters Decreasing

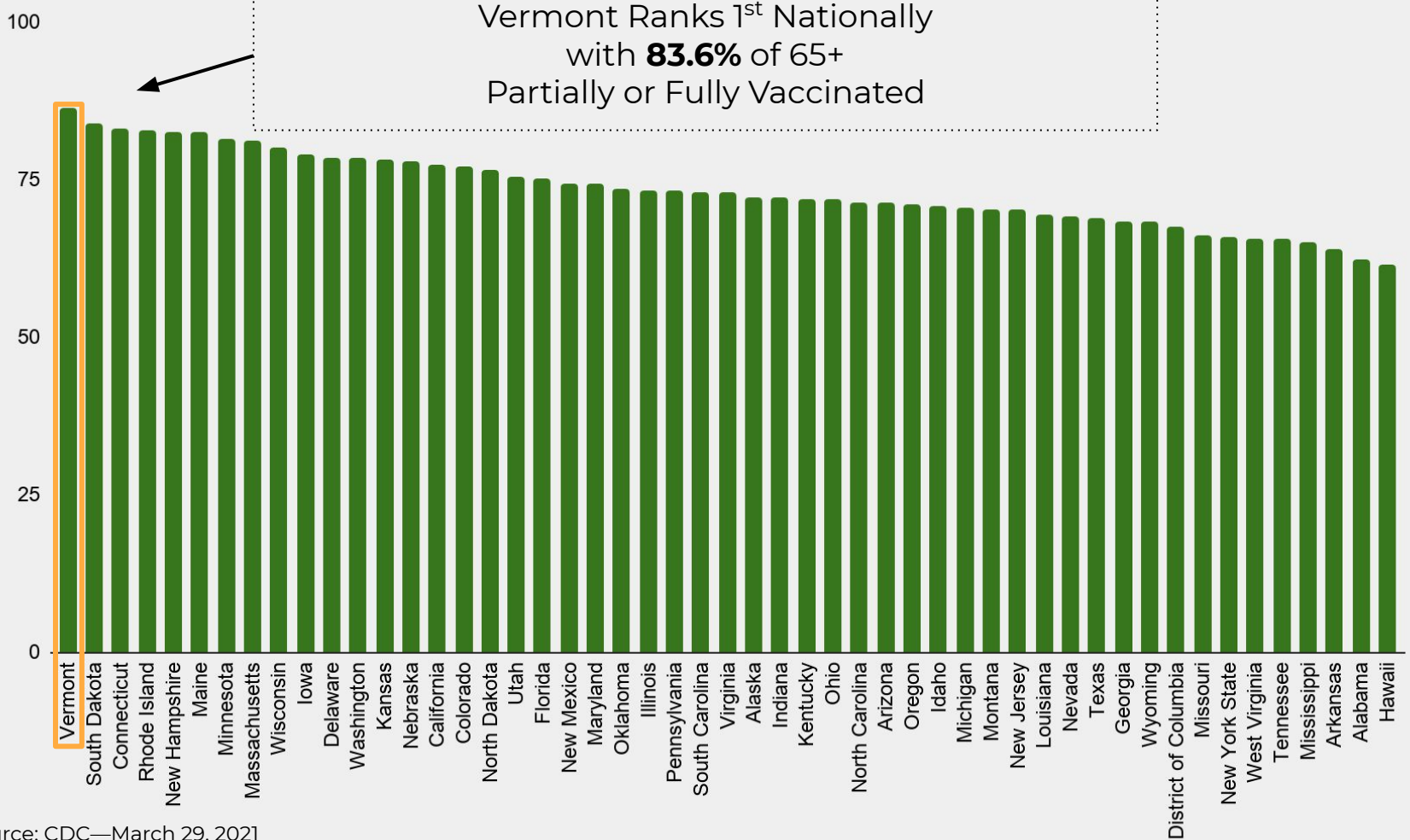
Median age of COVID positive individuals in VT over the last 14 days. Green bars represent expanded vaccine eligibility.



Vermont Vaccination Progress

By Age Band



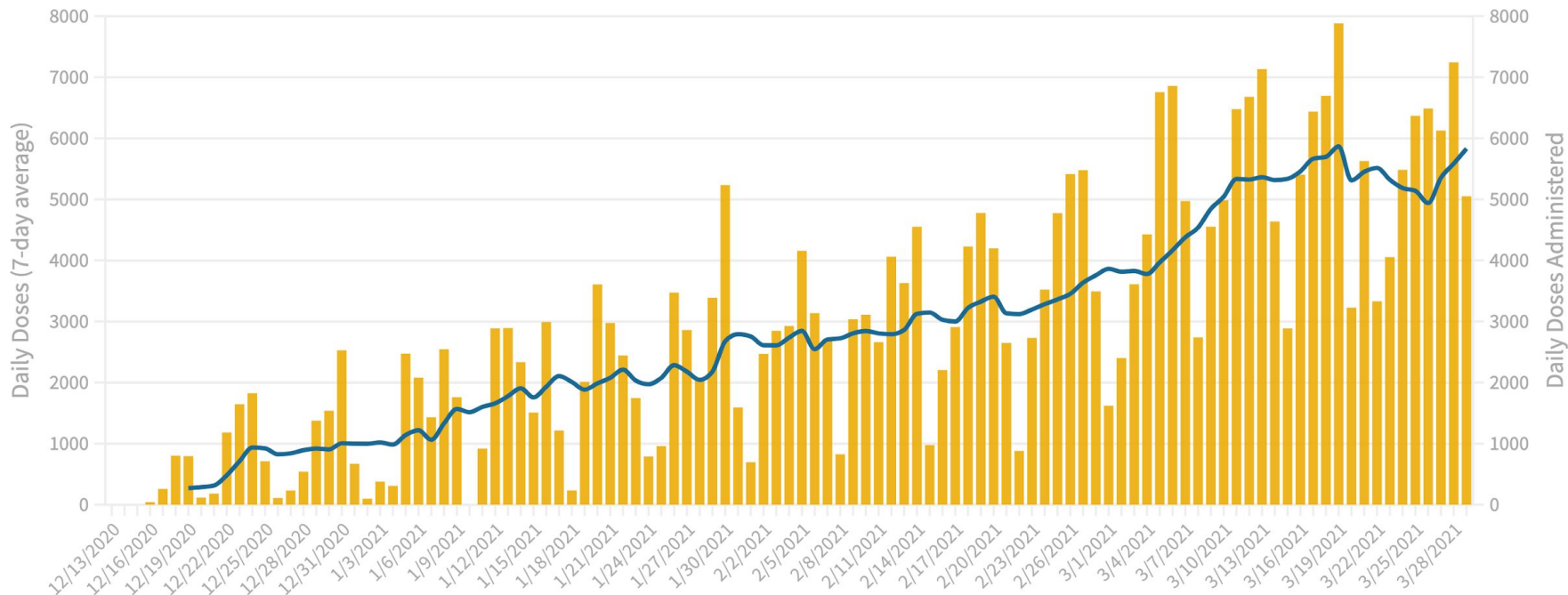


Source: CDC—March 29, 2021

New Daily Doses Administered

COVID-19 Vaccinations in Vermont

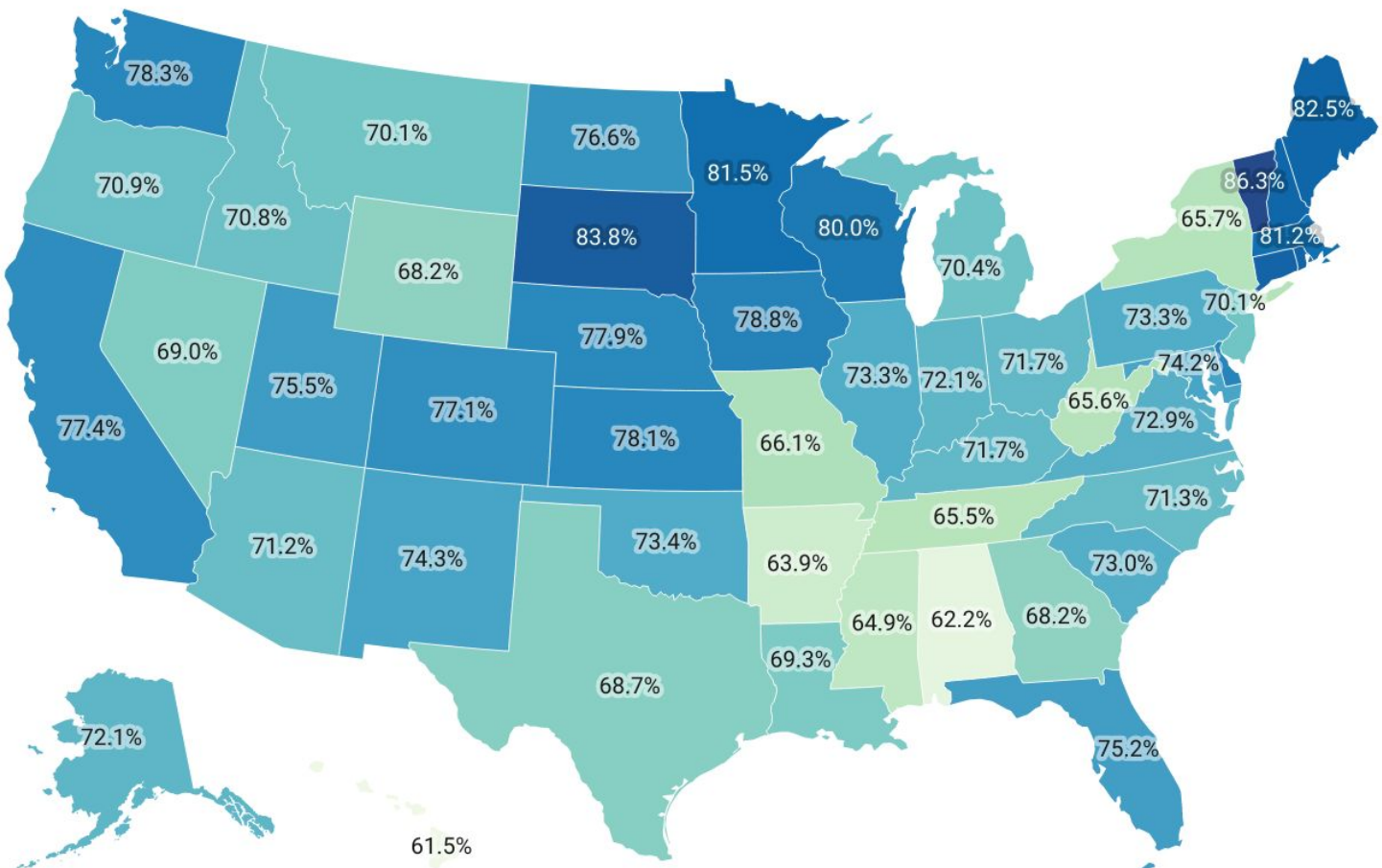
■ Daily Doses (7-day average) ■ Daily Doses Administered



Source: Vermont Department of Health — March 29, 2021

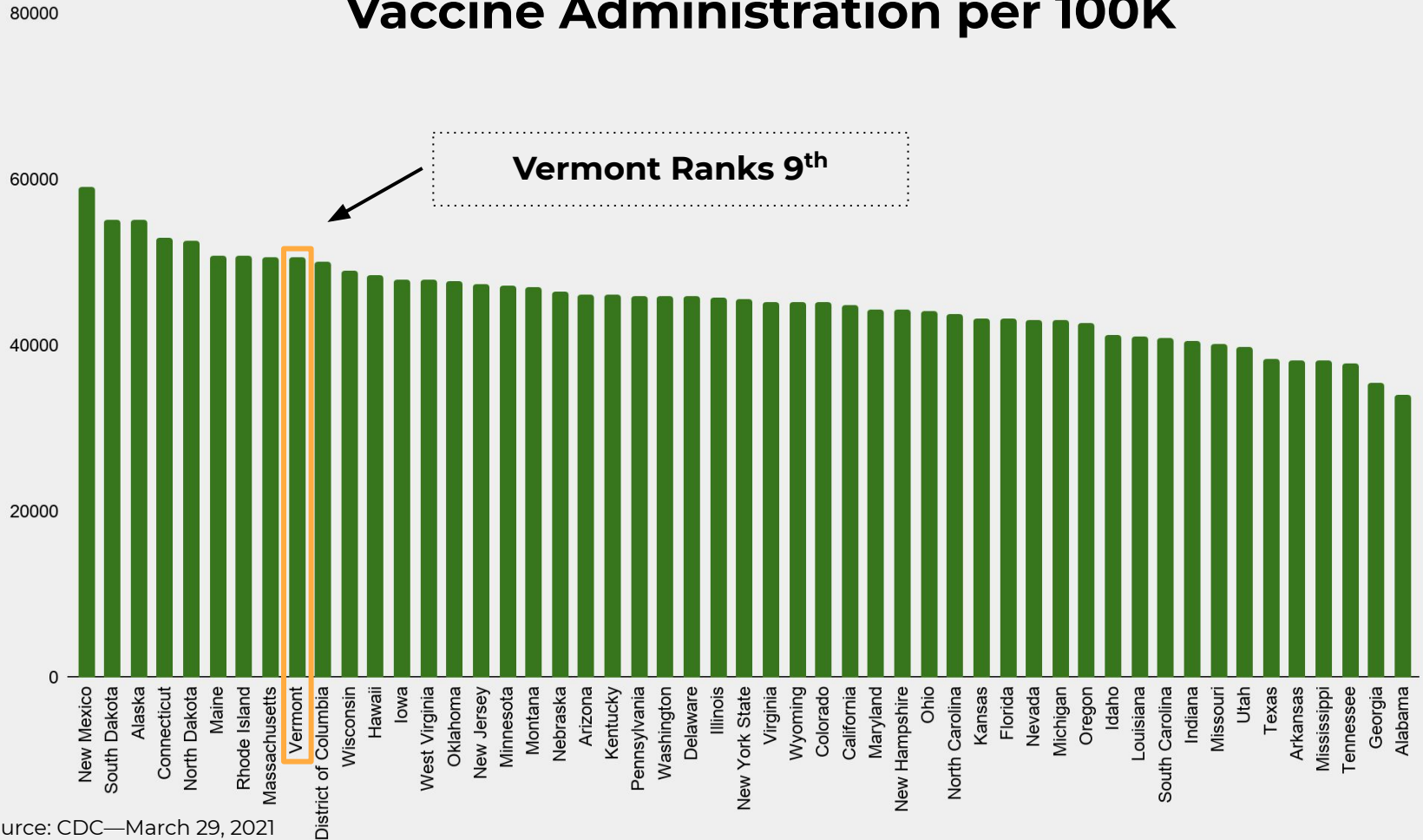


Percent 65+ with 1 or more doses



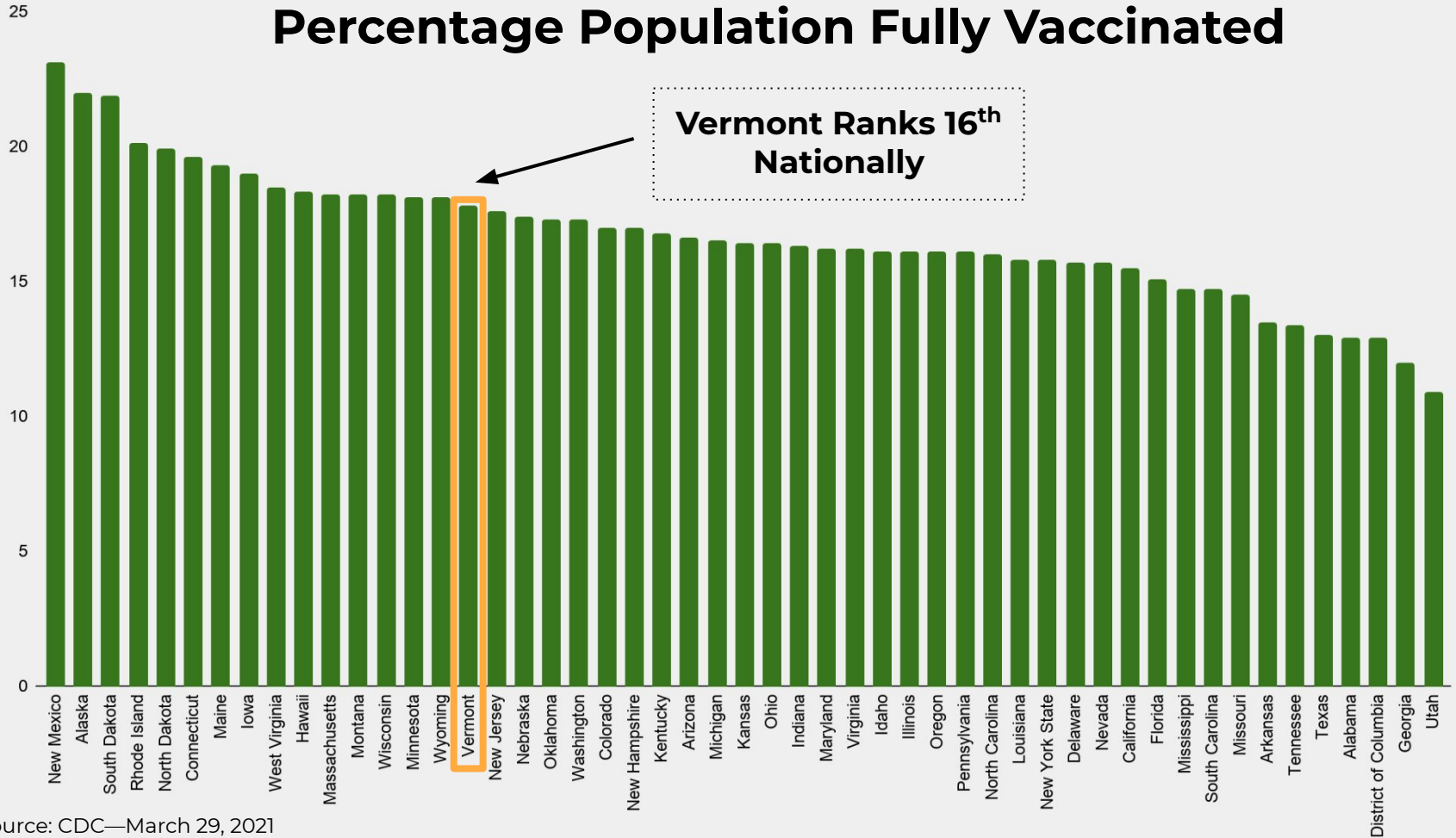
Source: CDC — March 29, 2021

Vaccine Administration per 100K



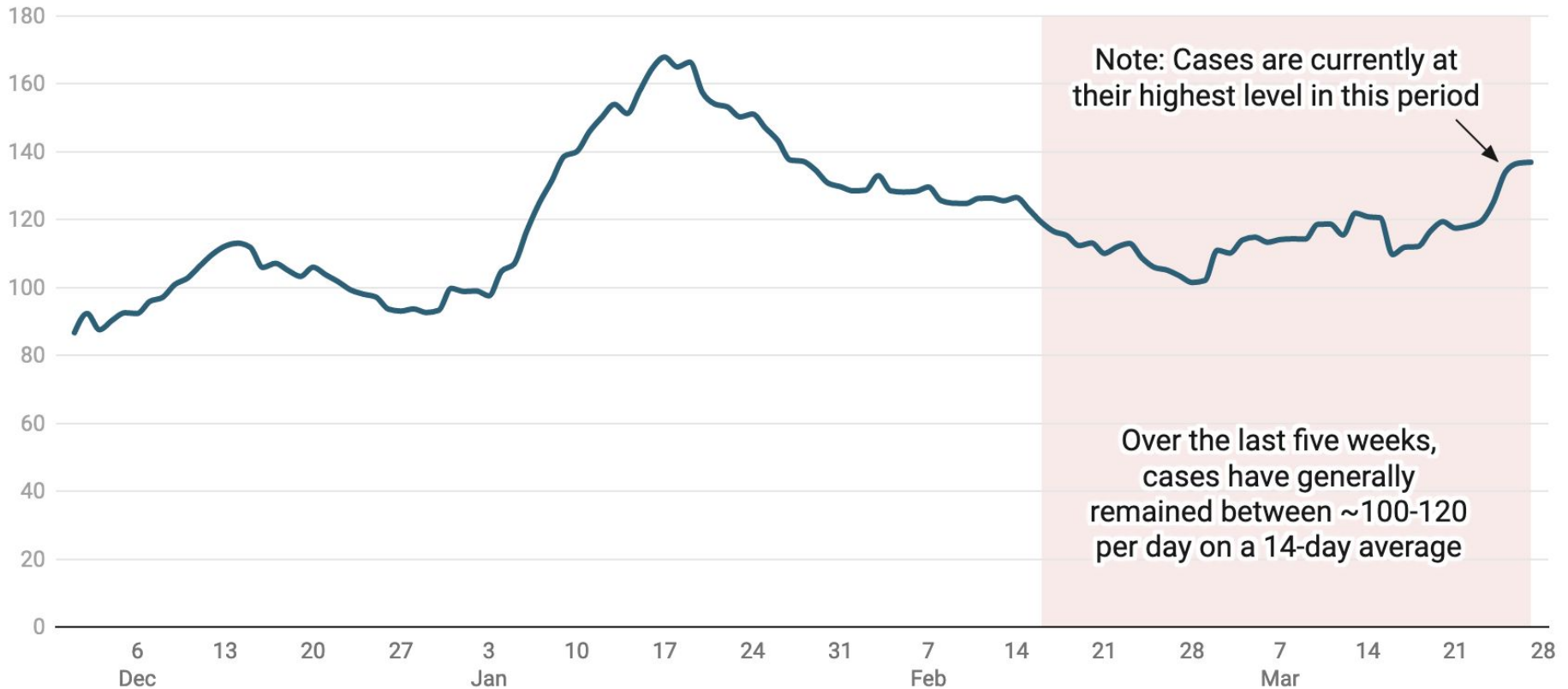
Source: CDC—March 29, 2021

Percentage Population Fully Vaccinated

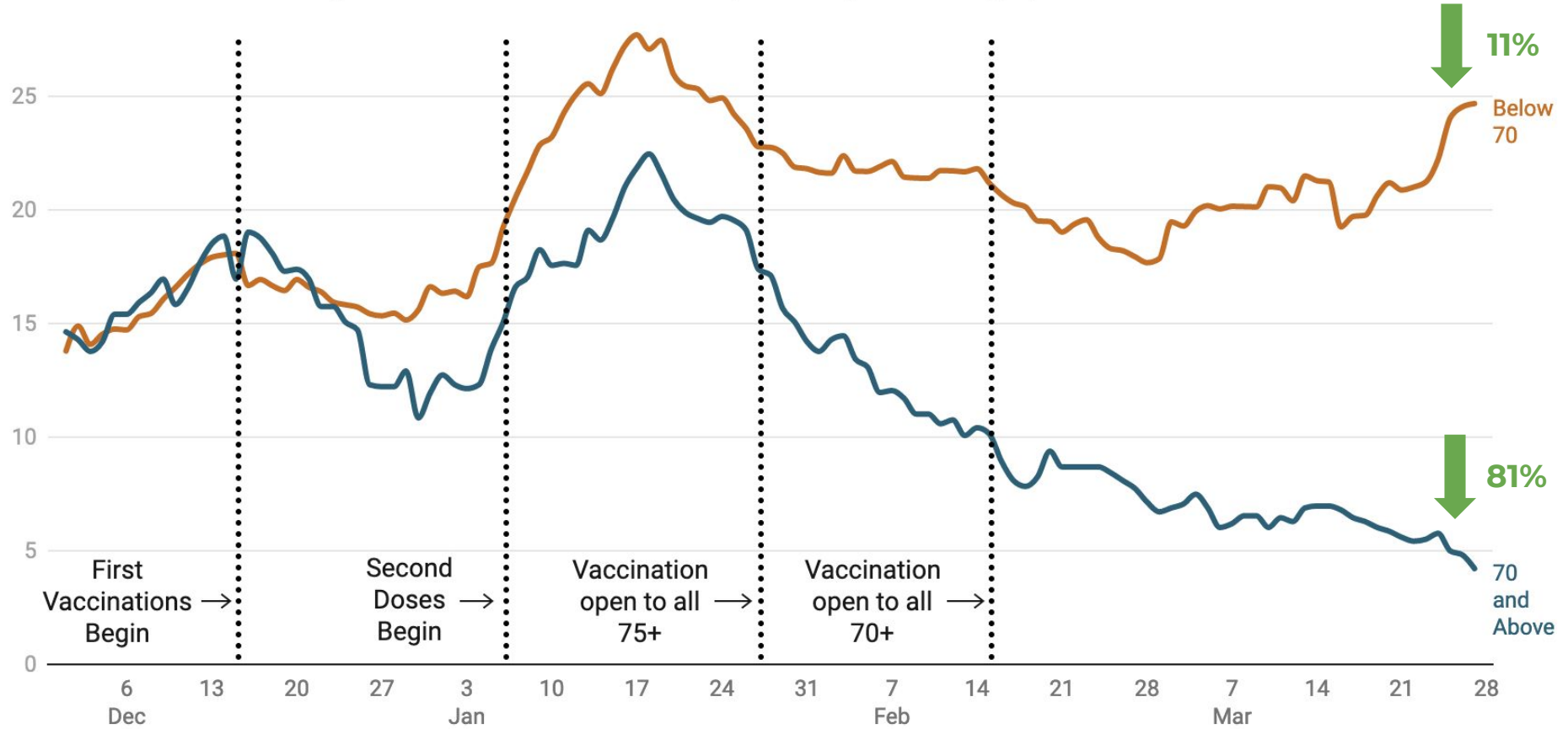


Source: CDC—March 29, 2021

COVID Infections per 100K in Vermont (14-Day Average)

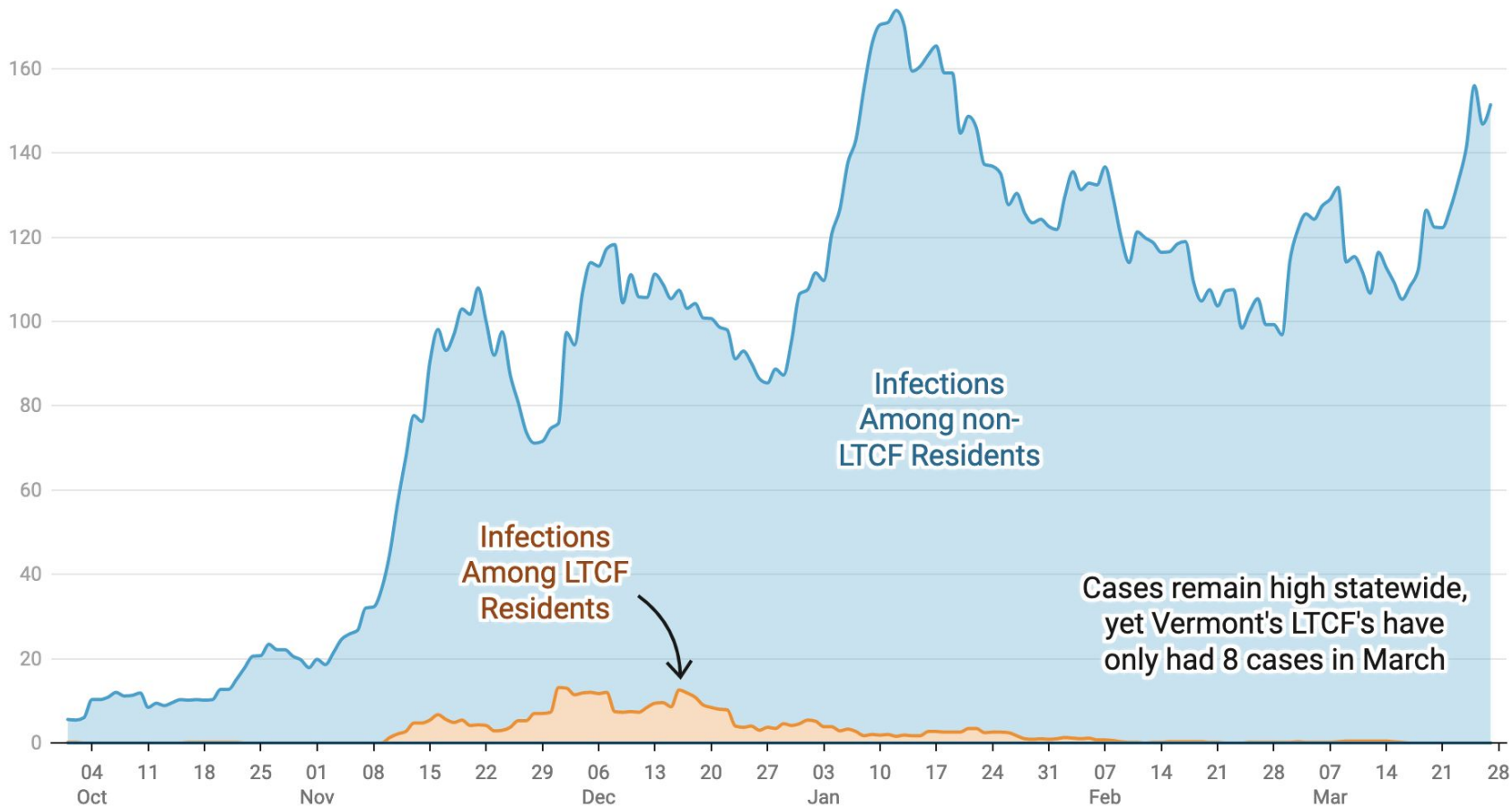


COVID Infections per 100K in Vermont (14-Day Average)



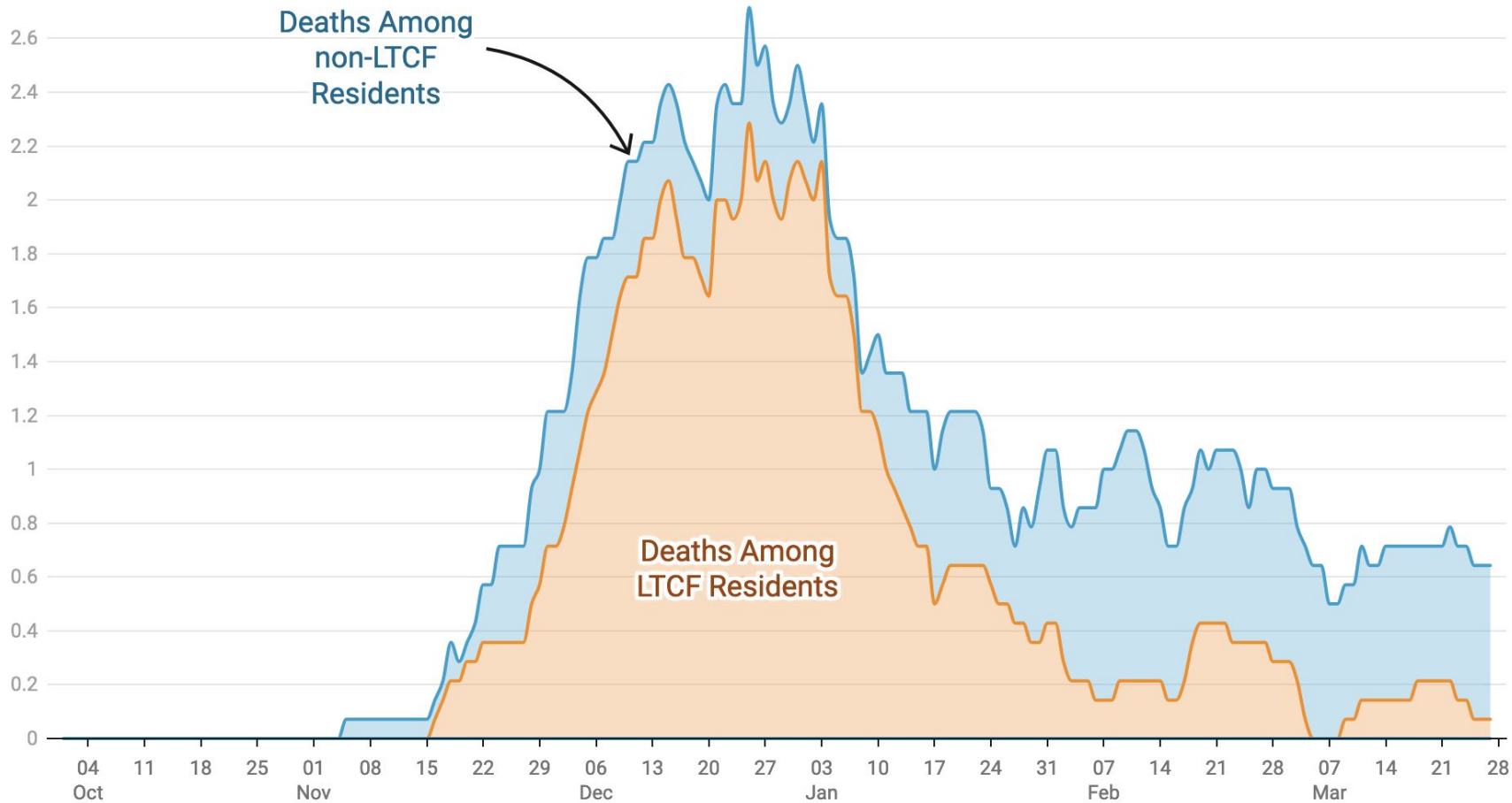
Falling Infections in Vermont's Long Term Care Facilities

Daily COVID infections in VT (7-Day Average)



Falling Deaths in Vermont's Long Term Care Facilities

Daily COVID deaths in VT (7-Day Average)



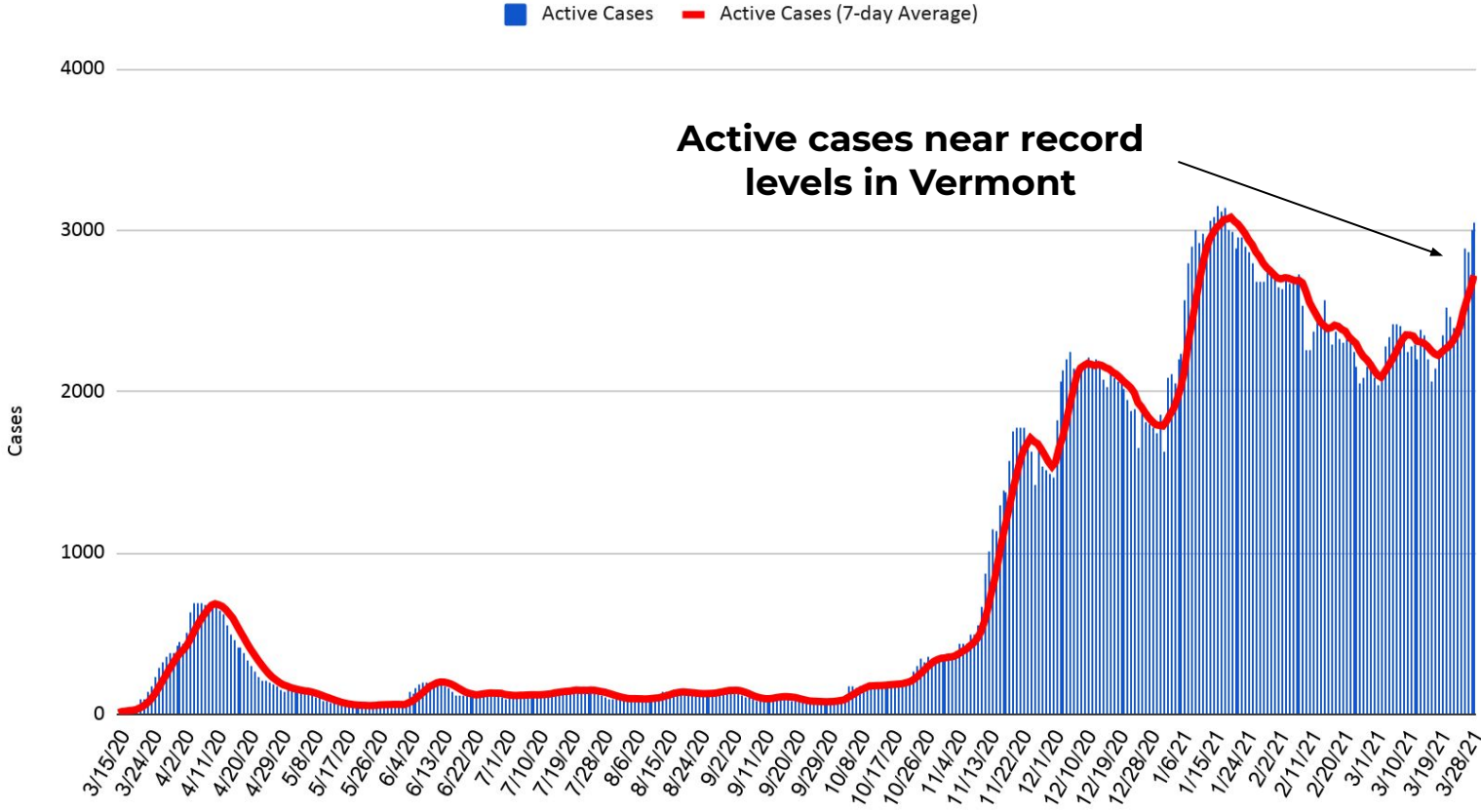
Active Outbreaks in Long Term Care Facilities

January, 4 2021: Avg LTCF Outbreak 38.4 Cases
March, 29 2021: Avg LTCF Outbreak 5.0 Cases

Facility Name	Total COVID-19 Cases
Pines Rehab and Health Center, <i>Lyndonville</i>	10
Vermont Veterans Home (2), <i>Bennington</i>	10
Union House Nursing Home, <i>Glover</i>	Not Shown
St. Johnsbury Health & Rehab, <i>St. Johnsbury</i>	Not Shown
Franklin County Rehab Center, <i>St. Albans City</i>	Not Shown
The Pines at Rutland Center For Nursing & Rehab, <i>Rutland</i>	Not Shown

Source: Vermont Department of Health—March 29, 2021 (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 or fewer than 5 active cases.

Estimated Active Cases of COVID-19 in Vermont



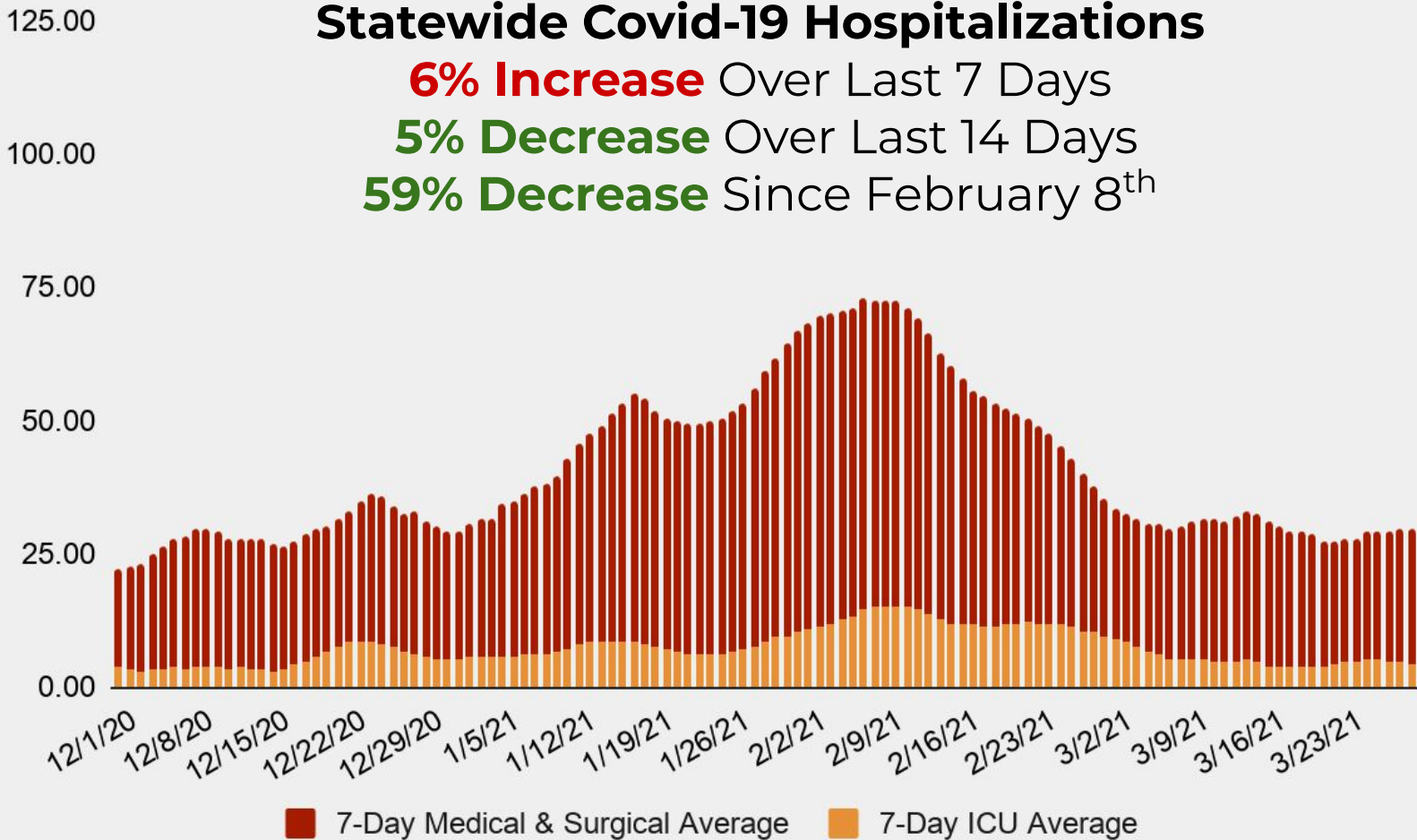
Source: Johns Hopkins University Data & Oliver Wyman Model—March 29, 2021

Statewide Covid-19 Hospitalizations

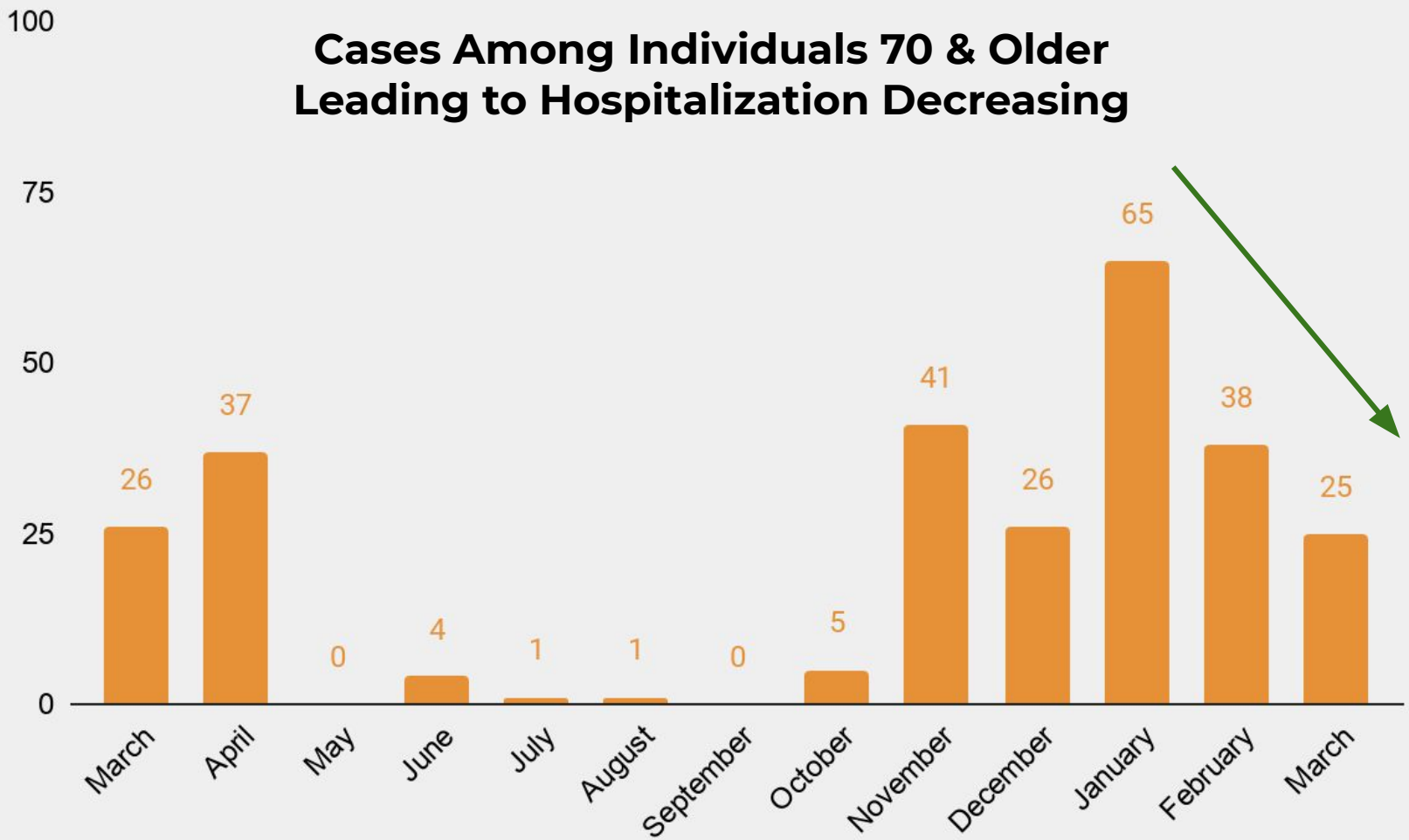
6% Increase Over Last 7 Days

5% Decrease Over Last 14 Days

59% Decrease Since February 8th



Cases Among Individuals 70 & Older Leading to Hospitalization Decreasing



Vermont Covid-19 Deaths by Week

30

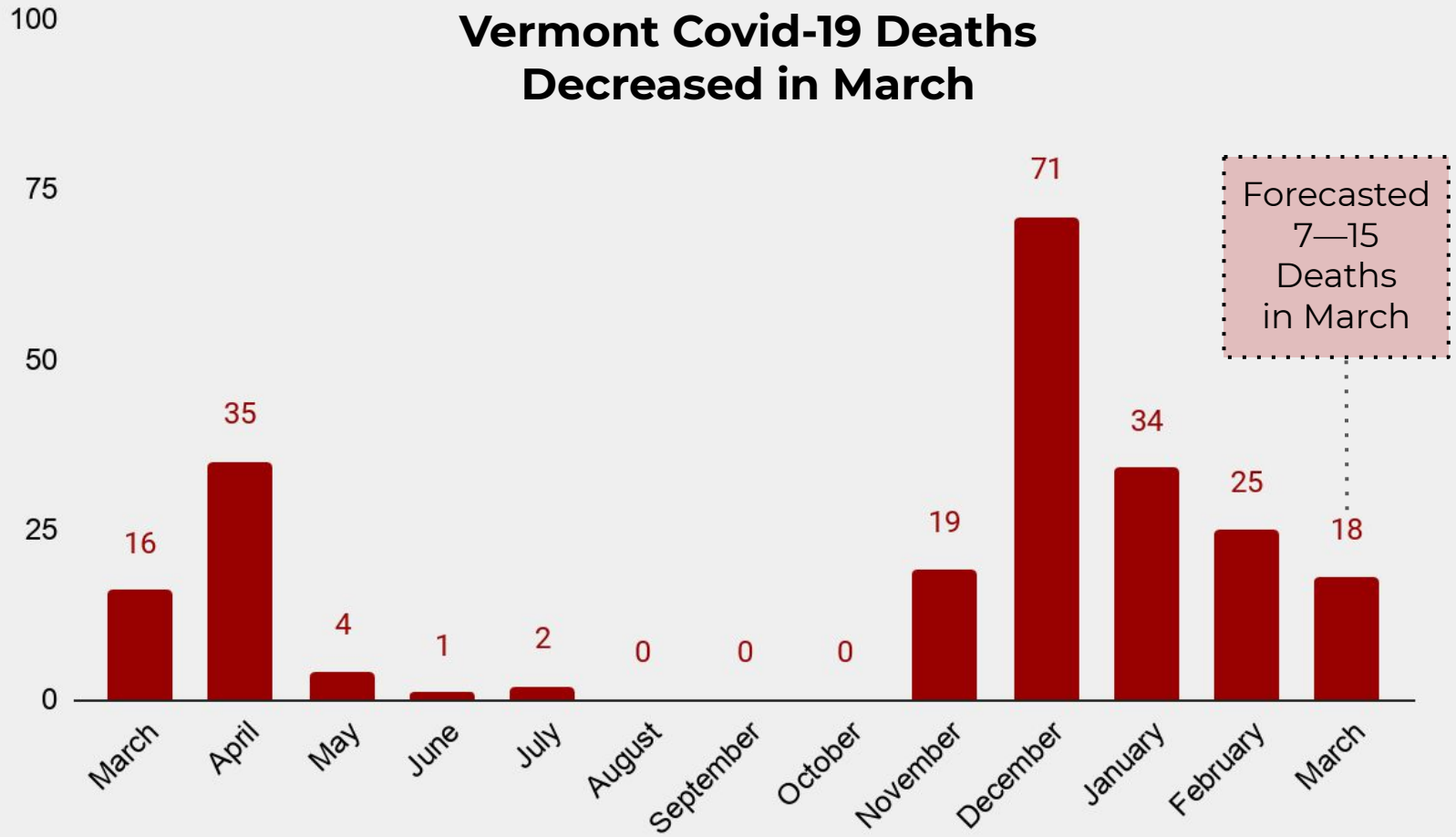
20

10

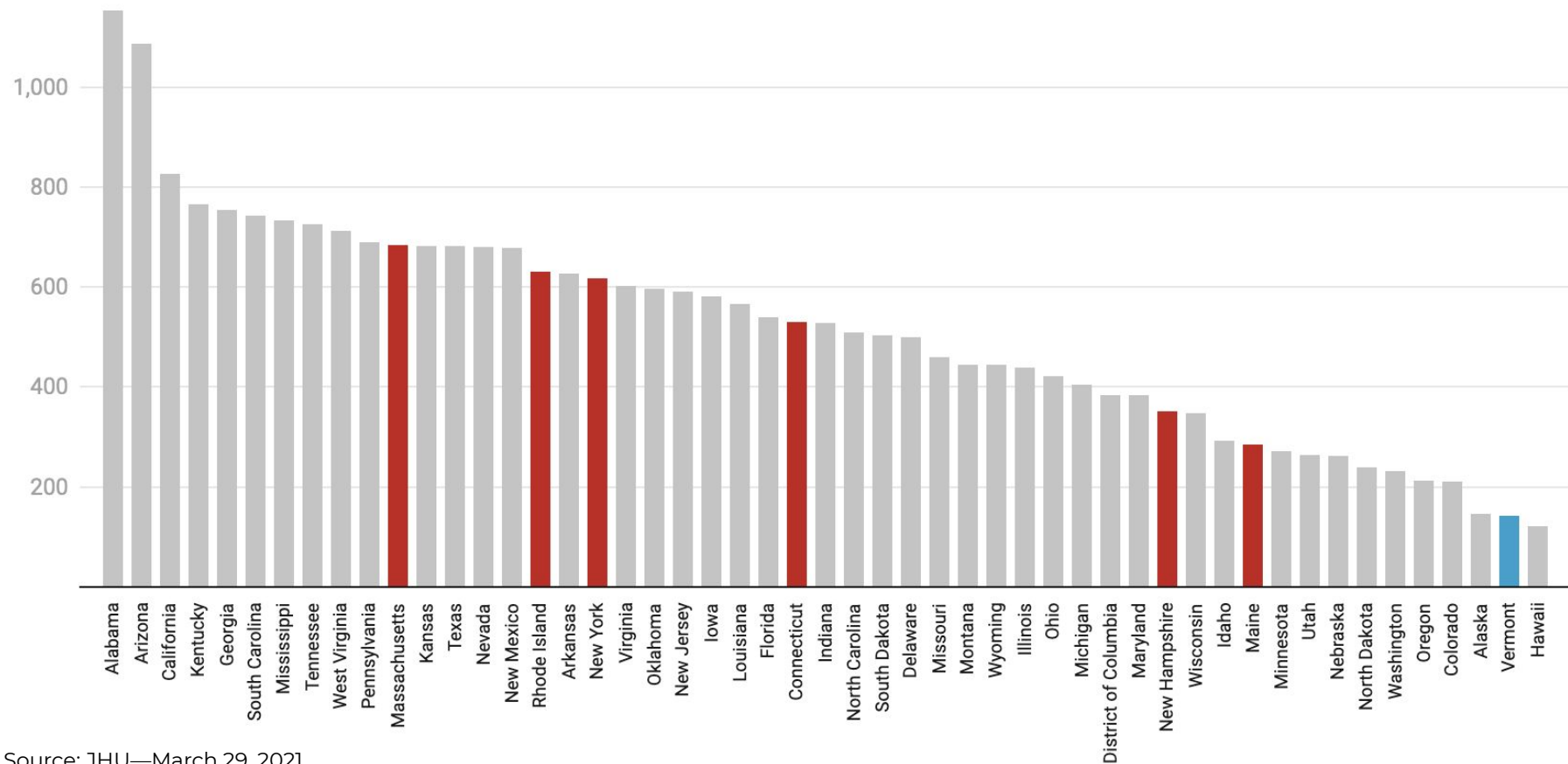
0



Vermont Covid-19 Deaths Decreased in March



COVID-19 Deaths per Million in 2021



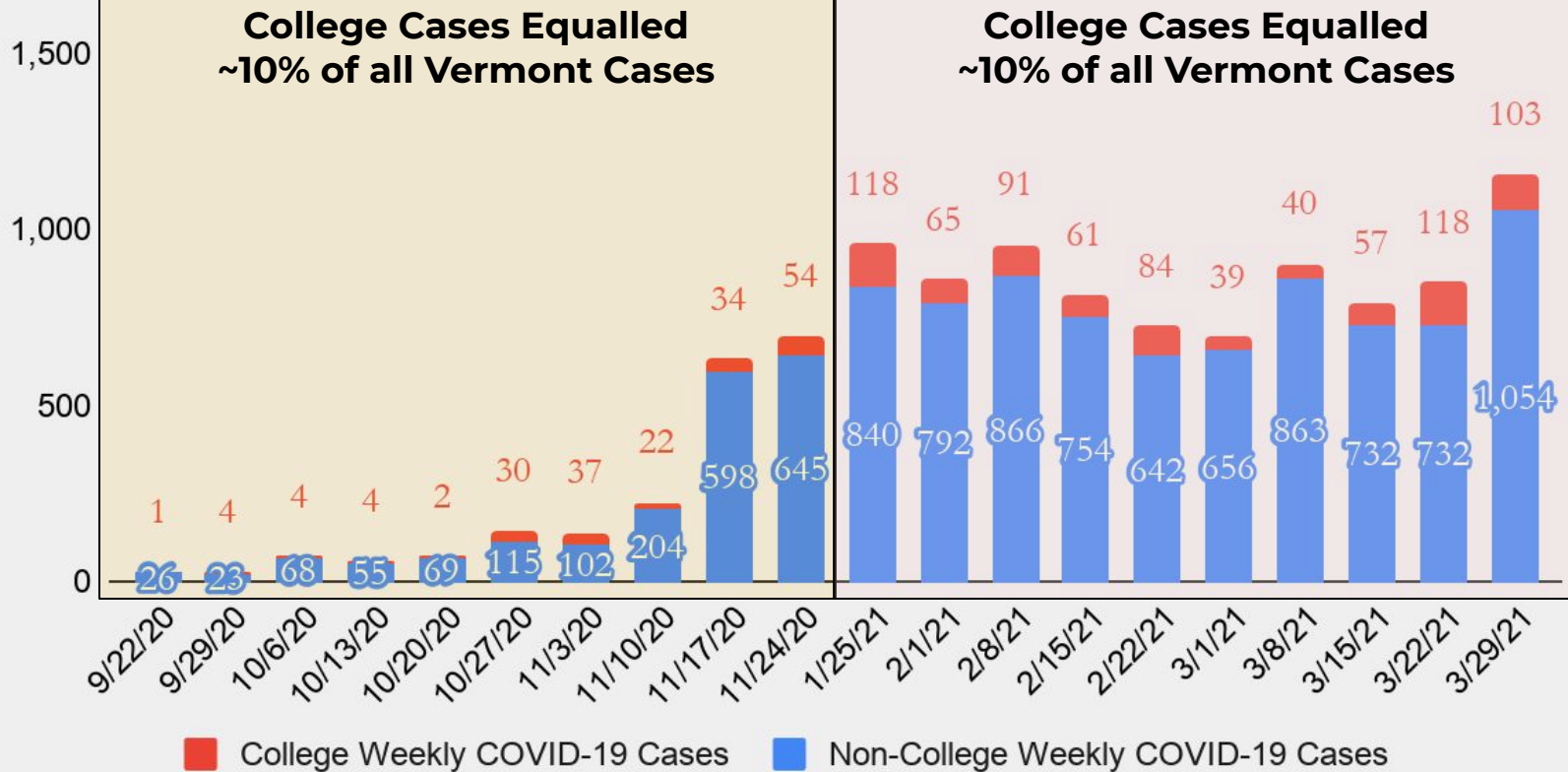
Source: JHU—March 29, 2021

Higher Education Restart

2,000

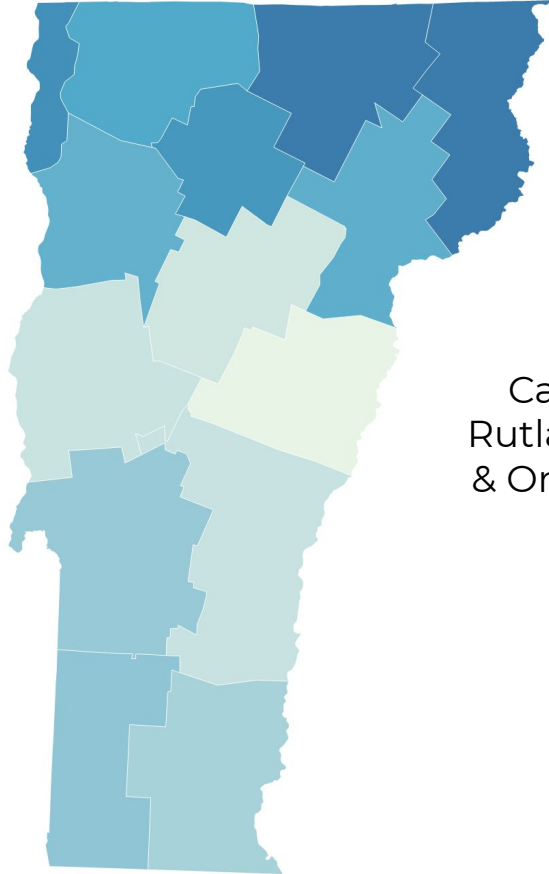
Fall 2020

Spring 2021



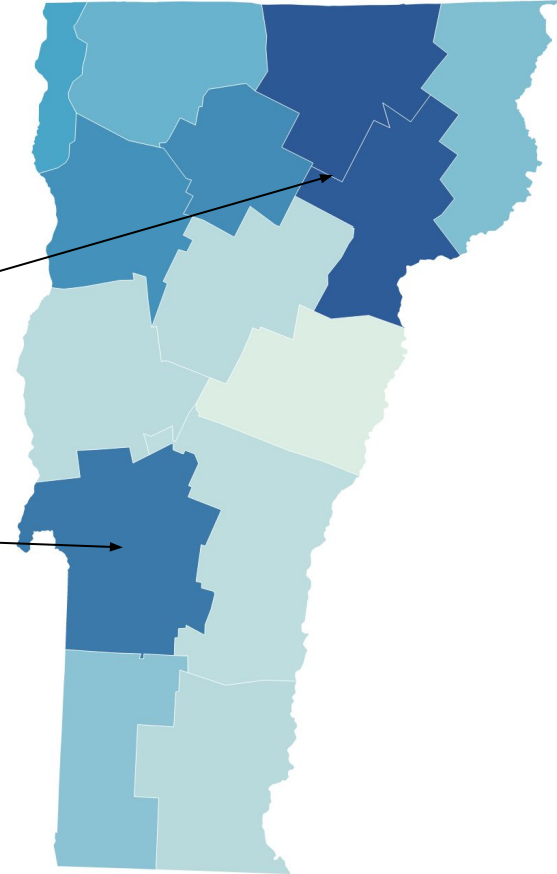
Vermont Weekly Cases by County (per 100,000)

Results Reported March 16 to 22



Vermont Weekly Cases by County (per 100,000)

Results Reported March 23 to 29



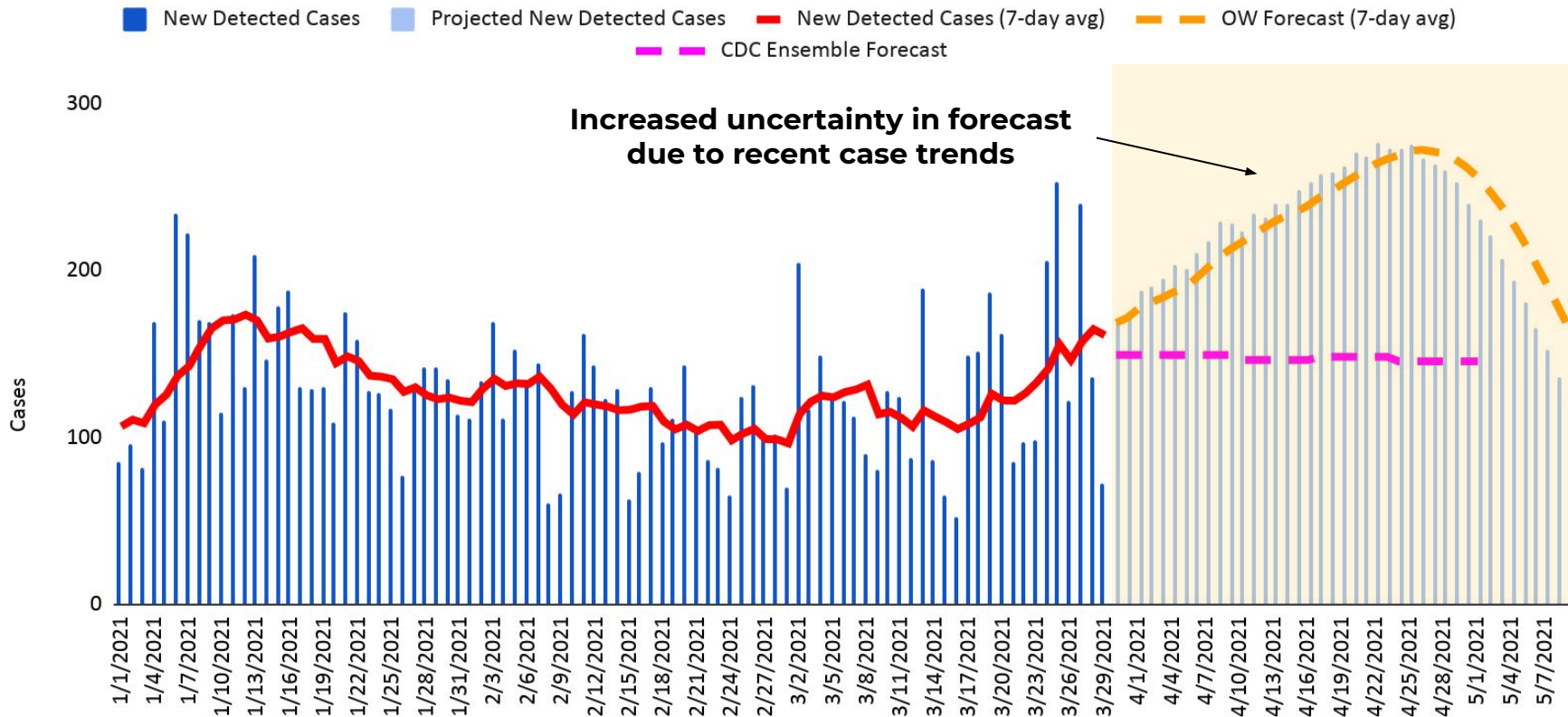
Case growth in
Rutland, Caledonia,
& Orleans Counties

Vermont Weekly COVID-19 Infections Forecast

Calculated as the 7-day sum of new infections. Gray bands represent 50% and 95% confidence intervals. Since projections are only released once a week, the actual number may appear to over or undershoot the forecast.



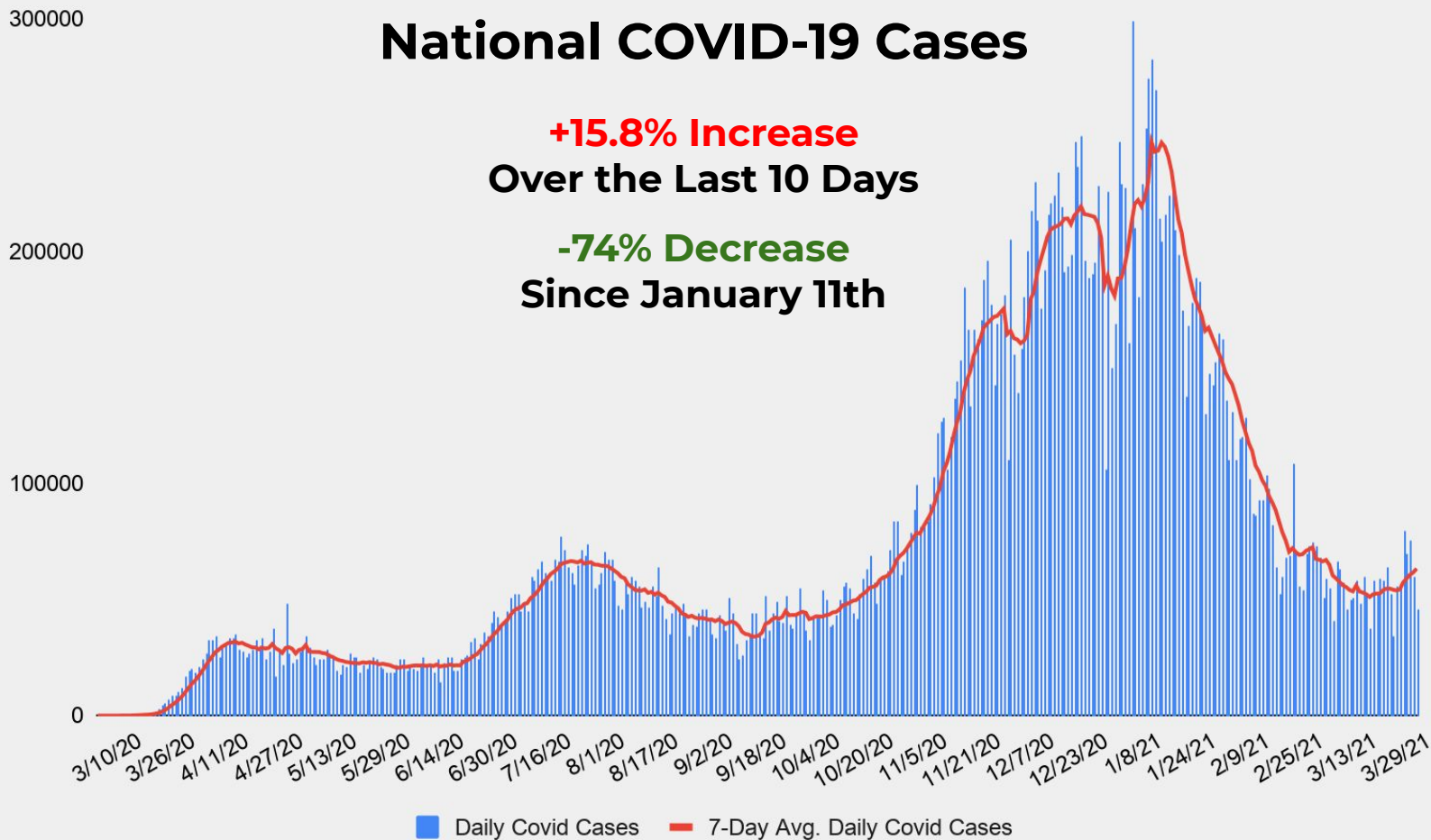
Vermont Forecast



National COVID-19 Cases

+15.8% Increase
Over the Last 10 Days

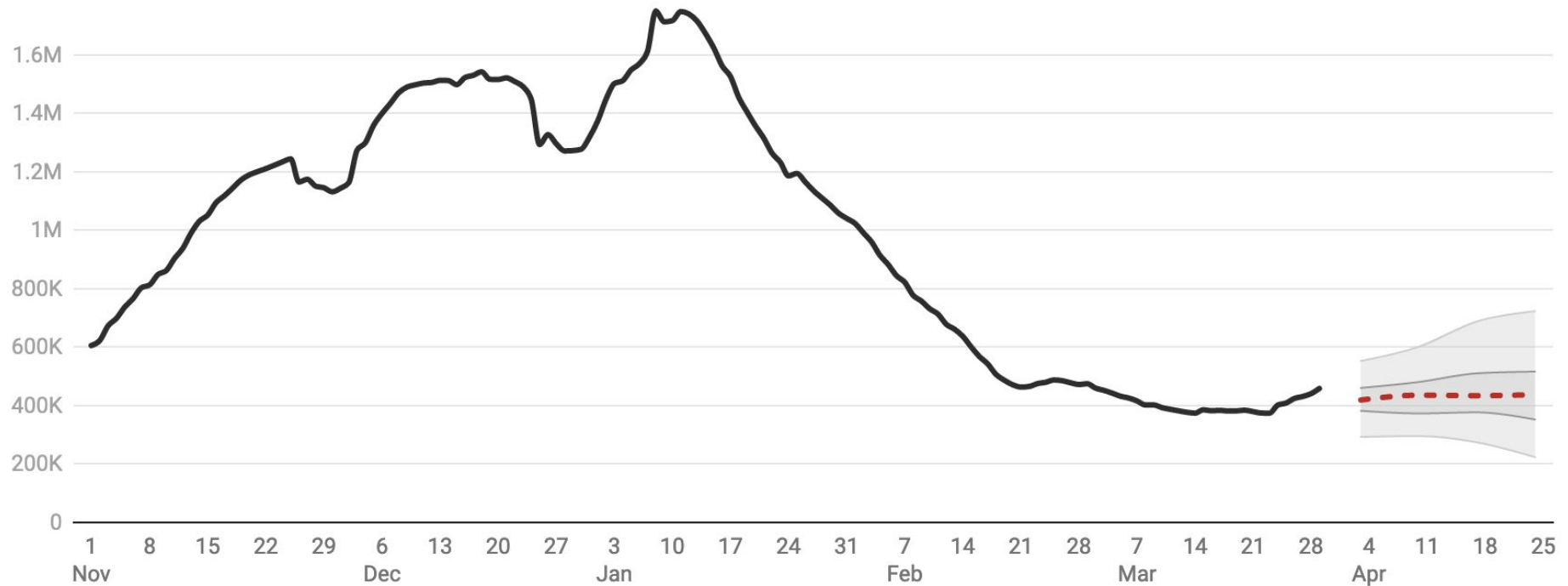
-74% Decrease
Since January 11th



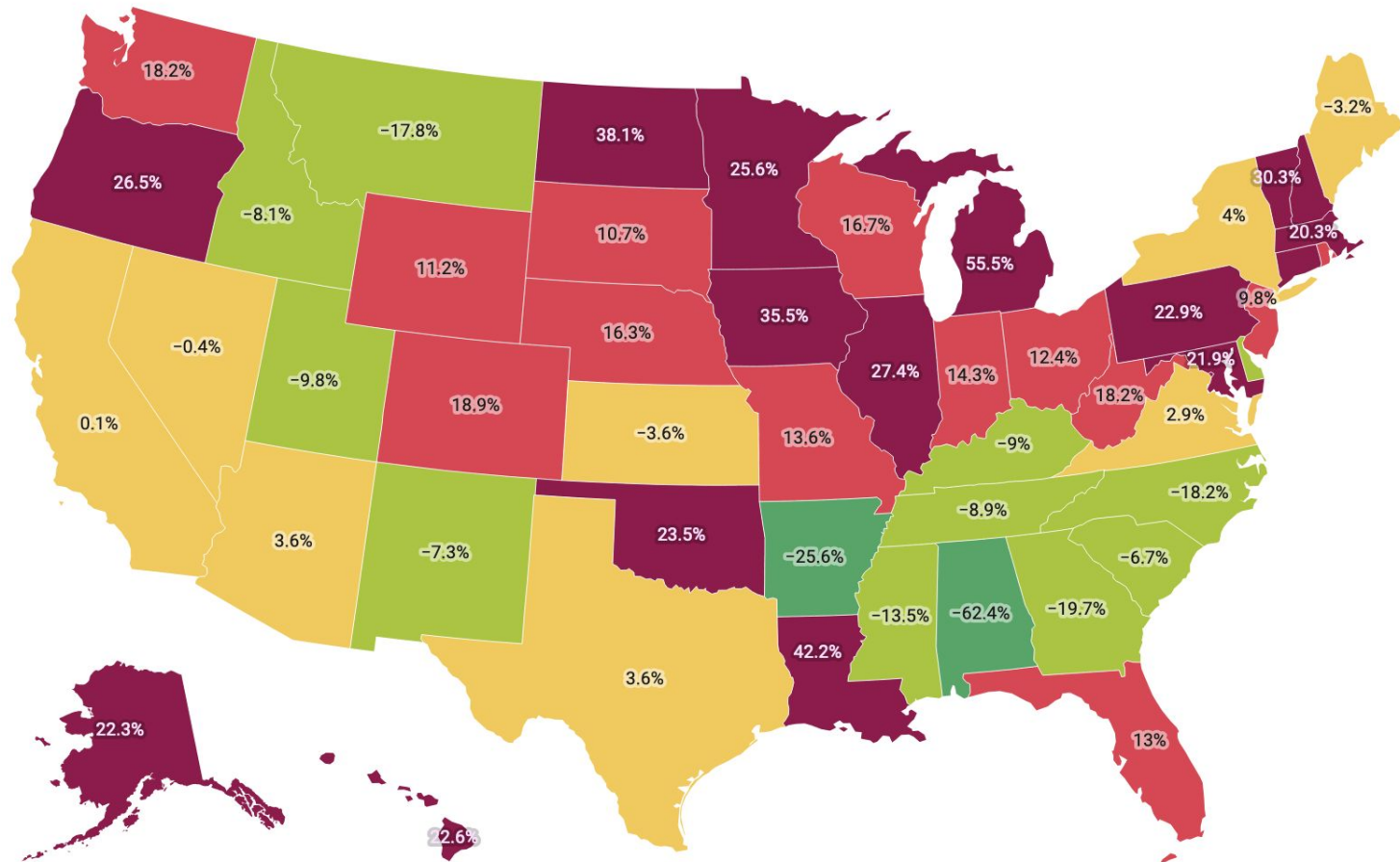
Source: Covid Tracking Project; NYT & CDC—March 29, 2021

National Weekly COVID-19 Infections Forecast

Calculated as the 7-day sum of new infections. Gray bands represent 50% and 95% confidence intervals. Since projections are only released once a week, the actual number may appear to over or undershoot the forecast.



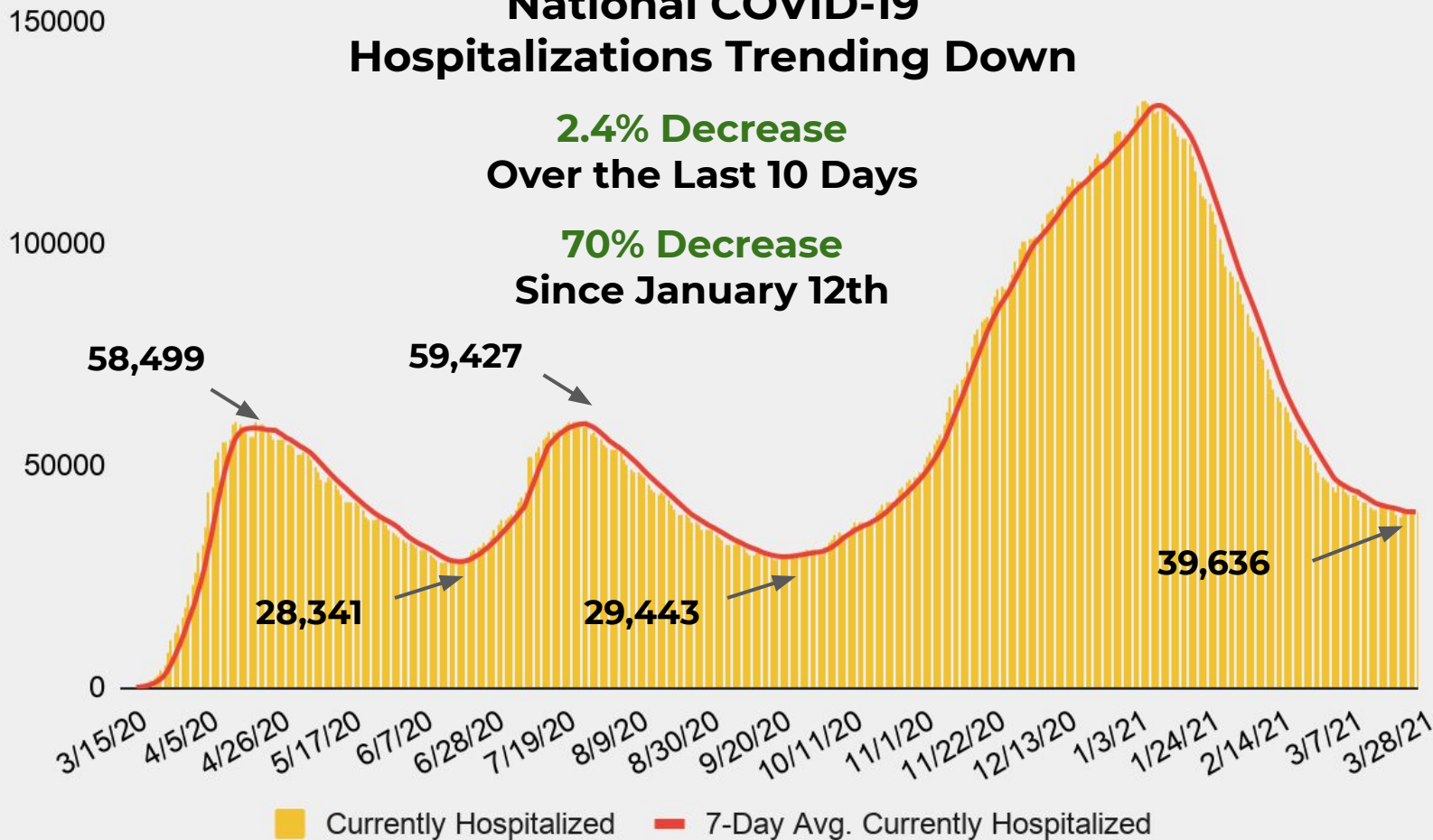
Percent Change in Weekly COVID-19 Infections



National COVID-19 Hospitalizations Trending Down

**2.4% Decrease
Over the Last 10 Days**

**70% Decrease
Since January 12th**

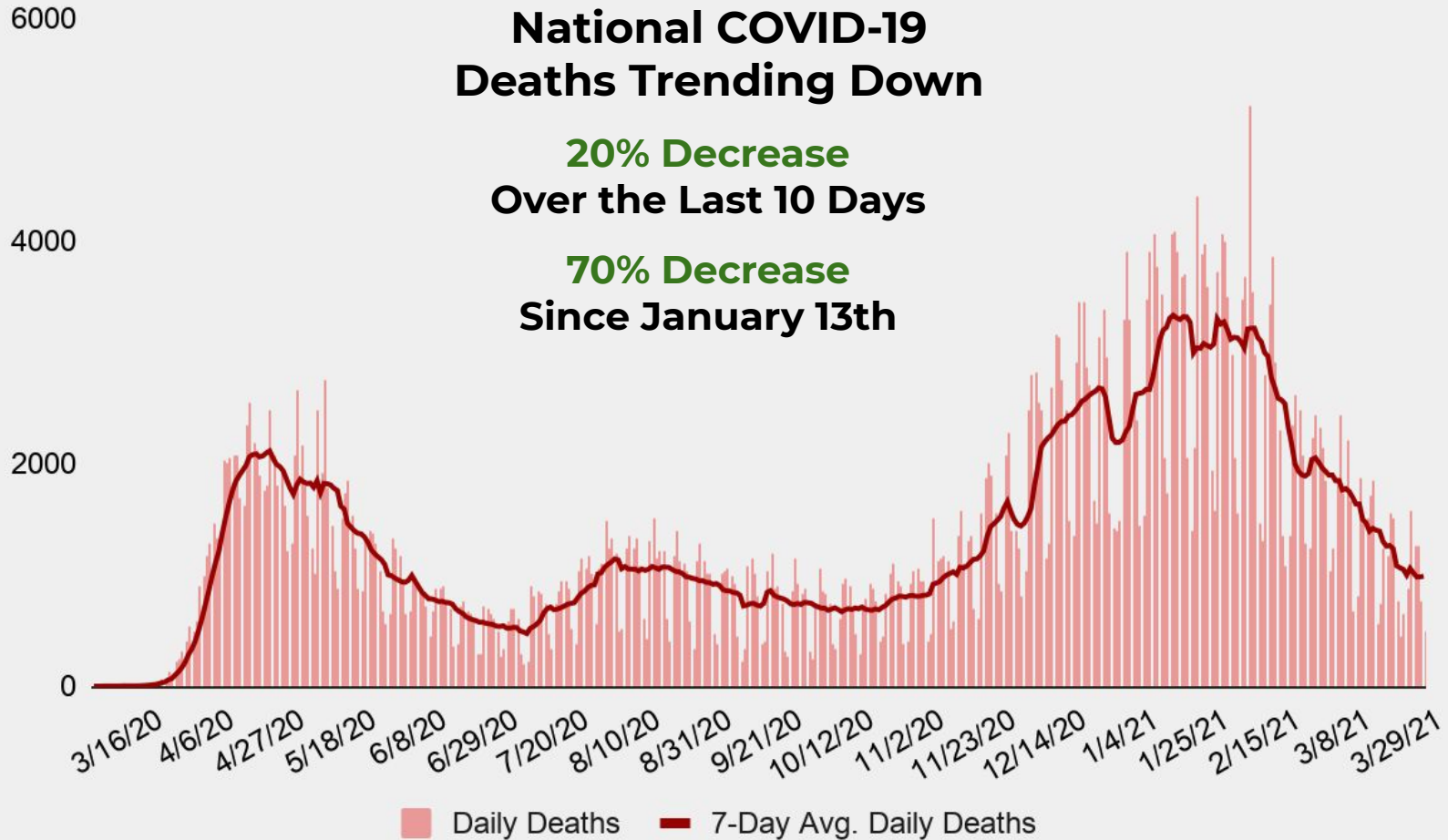


Source: Covid Tracking Project; NYT & CDC—March 29, 2021

National COVID-19 Deaths Trending Down

**20% Decrease
Over the Last 10 Days**

**70% Decrease
Since January 13th**

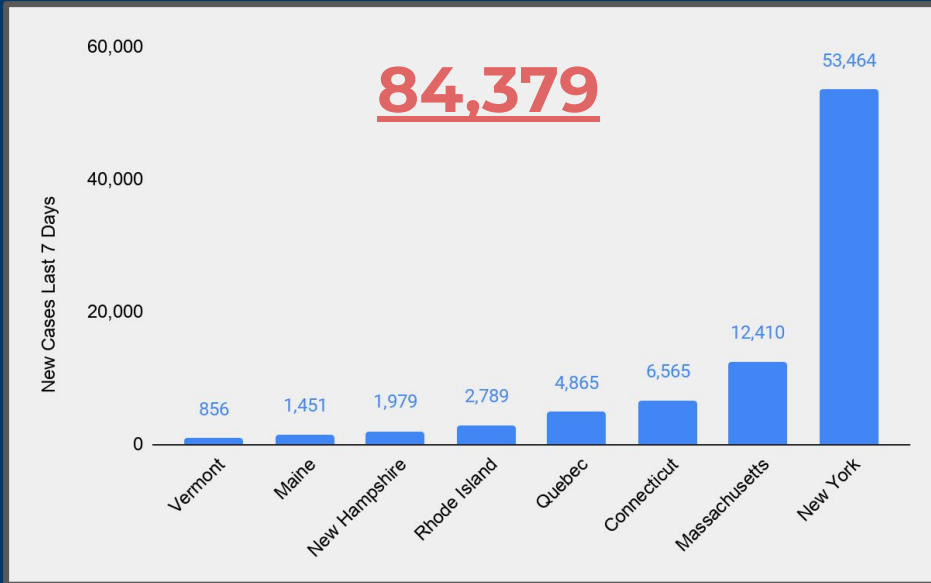


Source: Covid Tracking Project; NYT & CDC—March 29, 2021

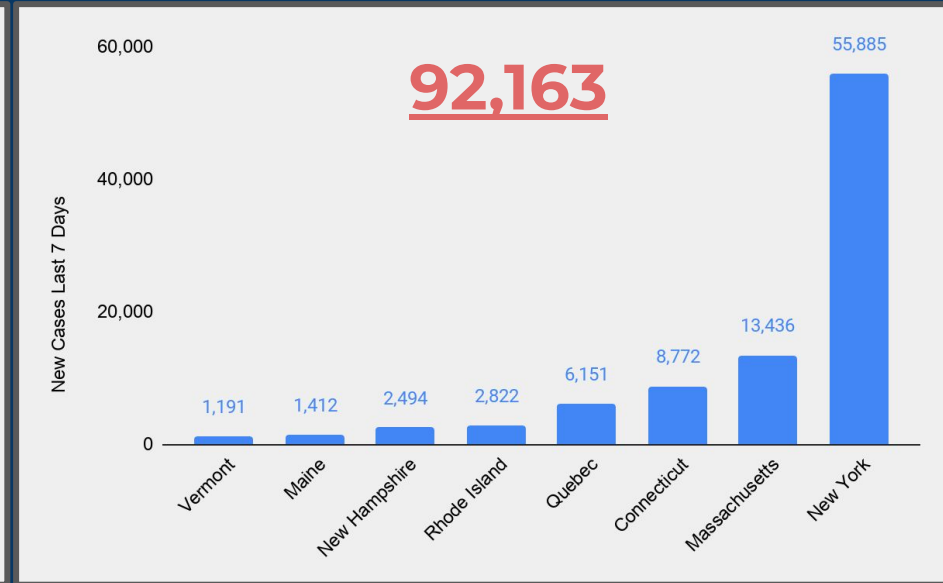
Regional Cases

9.23% Increase in New Cases

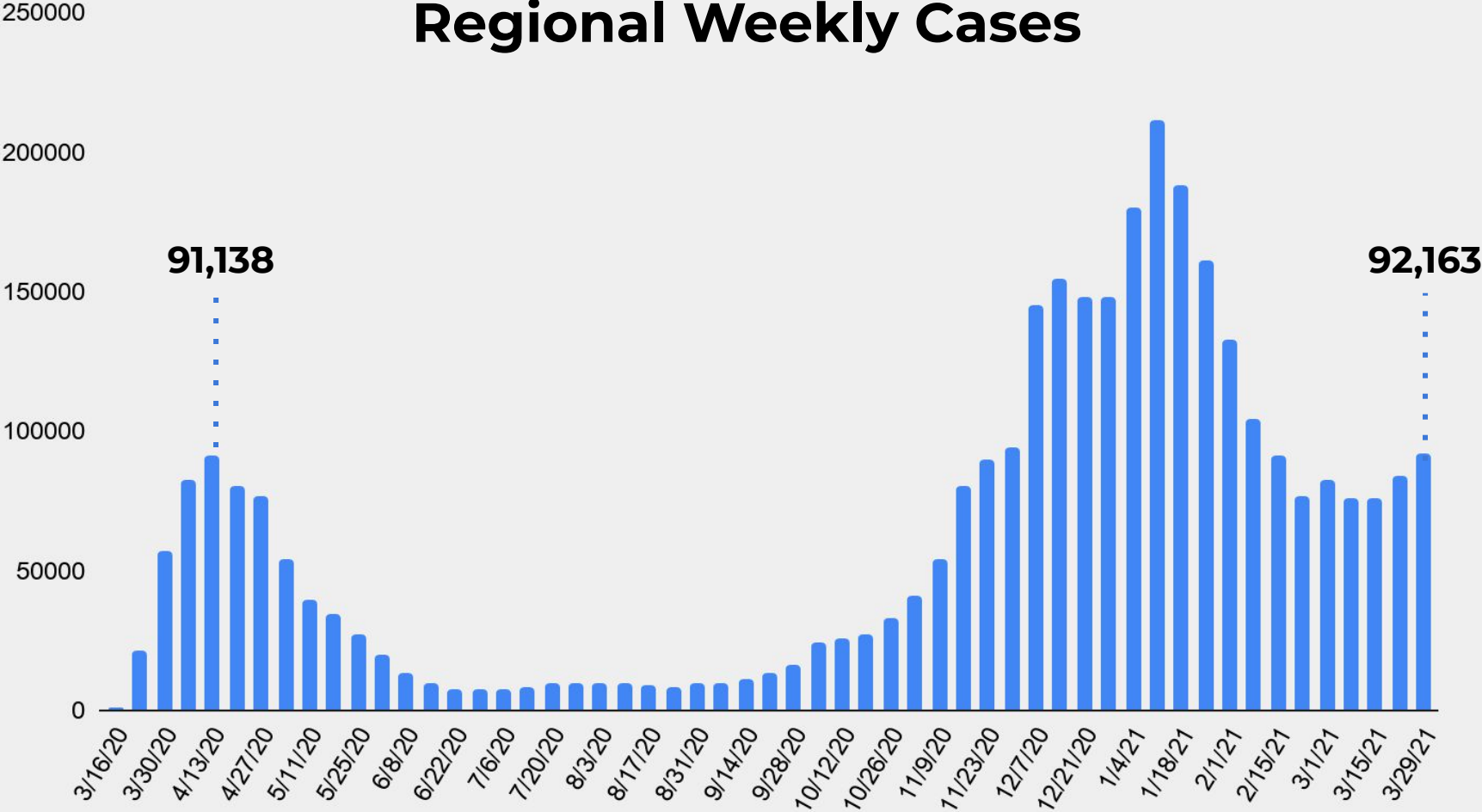
New Cases March 16th to March 22nd



New Cases March 23rd to March 29th



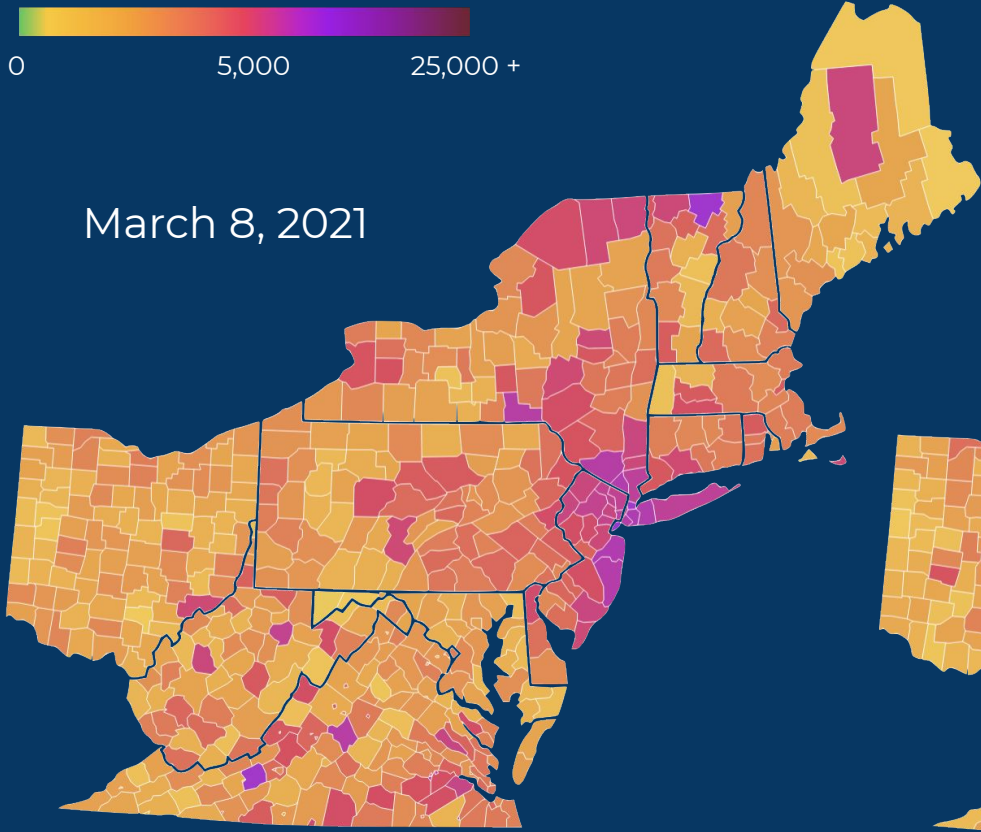
Regional Weekly Cases



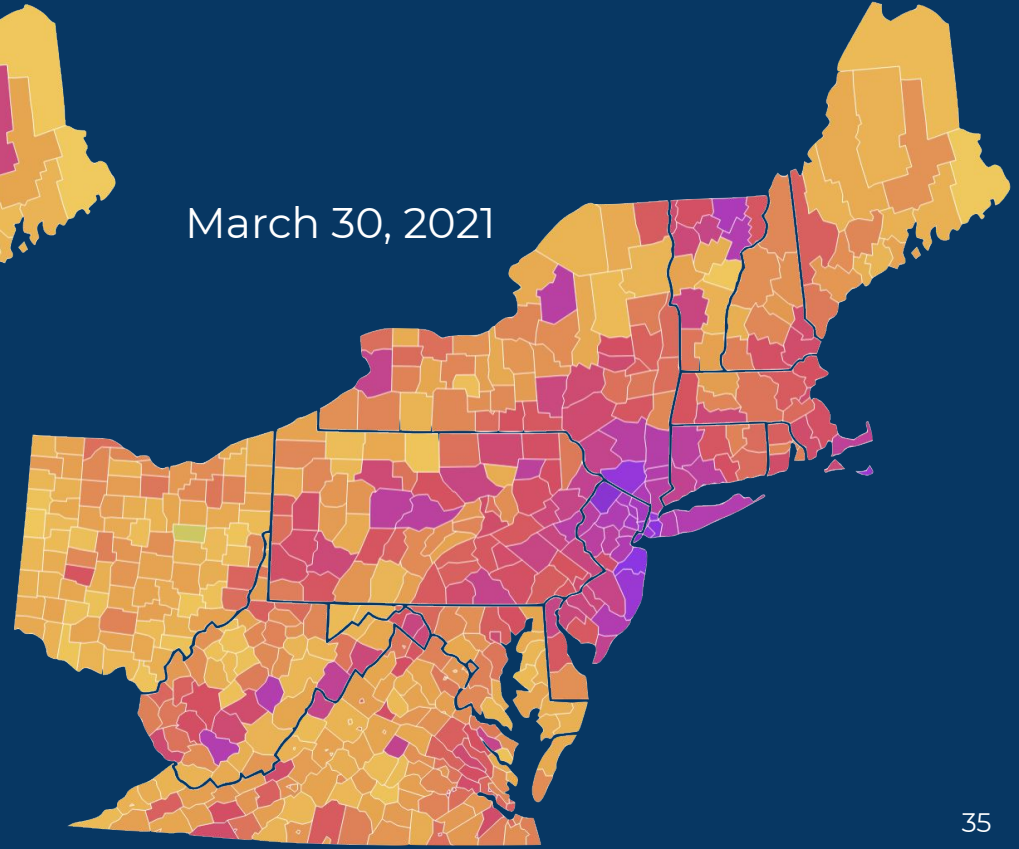
Sources: State Health Departments & CTV National News (Quebec) (includes: CT, ME, MA, NH, NY, QC, RI & VT)

Regional Heat Map

Active Cases per Million



March 8, 2021



March 30, 2021

Covid-19 Cases in K-12 Schools & Colleges Across Northern New England

New Hampshire

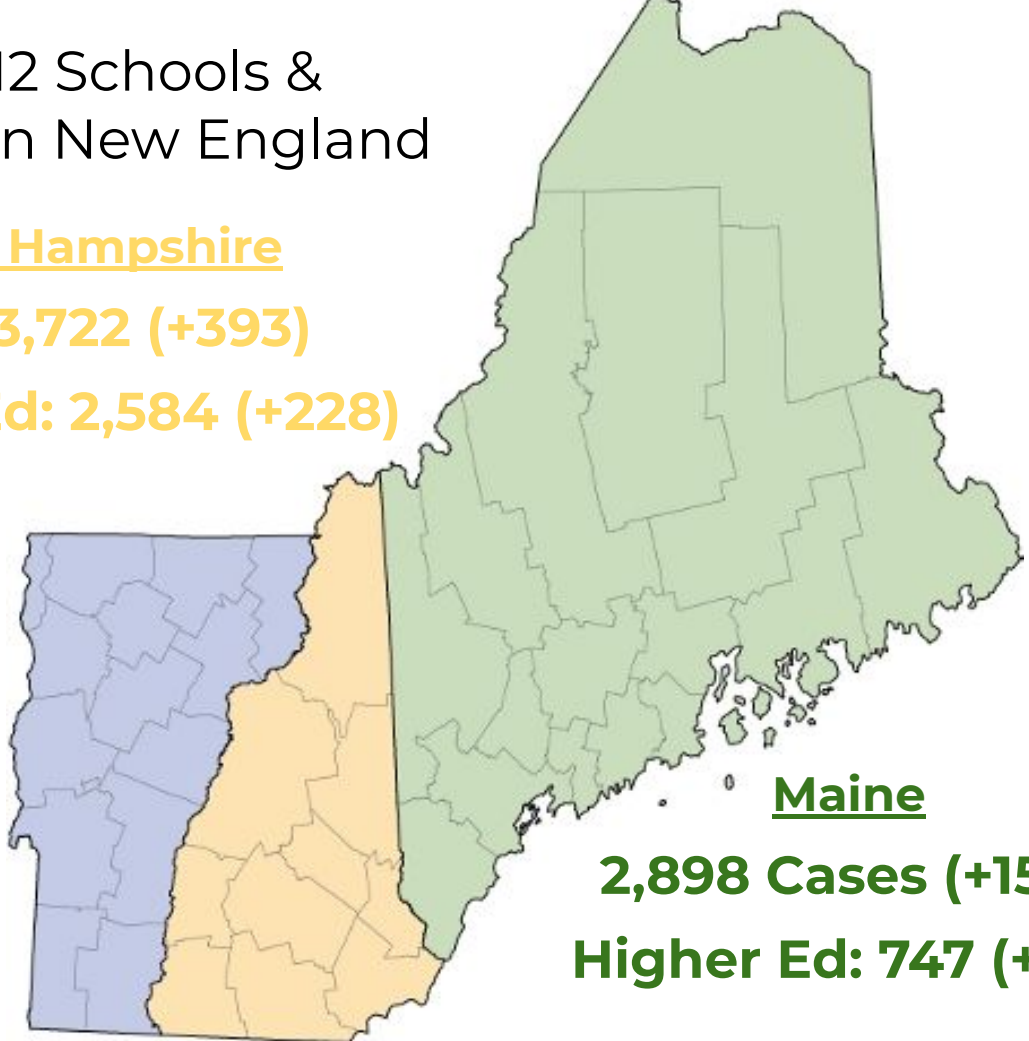
K-12: 3,722 (+393)

Higher Ed: 2,584 (+228)

Vermont

K-12: 959 Cases (+113)

Higher Ed: 776 (+103)



Maine

2,898 Cases (+159)

Higher Ed: 747 (+58)

Regional Positivity Rate (7-Day Average)

15.00%

10.00%

5.00%

0.00%

10.73%

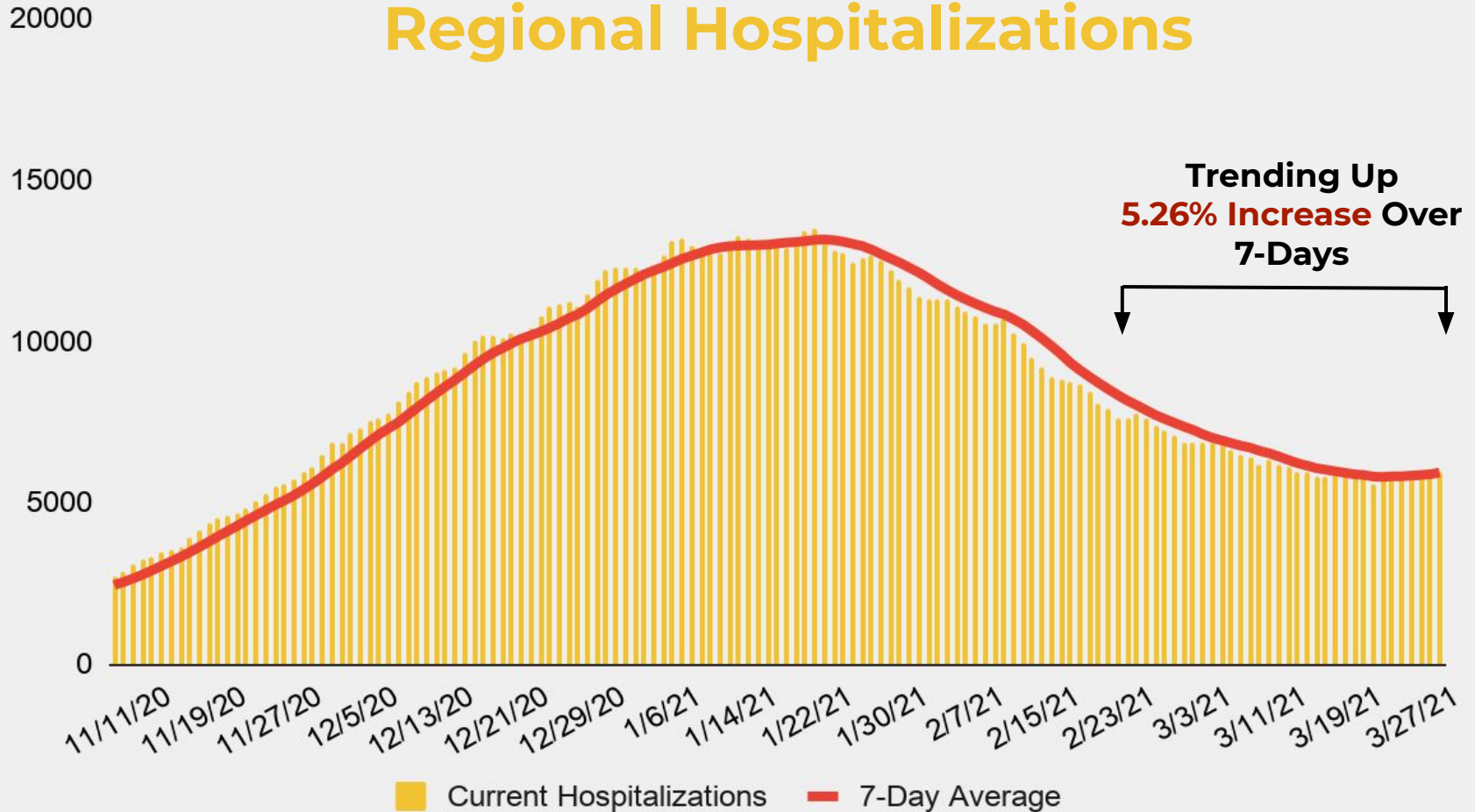
Threshold Recommended
by the World Health
Organization

3.41%

12/16/20 12/20/20 12/24/20 12/28/20 1/1/21 1/5/21 1/9/21 1/13/21 1/17/21 1/21/21 1/25/21 1/29/21 2/2/21 2/6/21 2/10/21 2/14/21 2/18/21 2/22/21 2/26/21 3/2/21 3/6/21 3/10/21 3/14/21 3/18/21

Source: Covid Tracking Project (7-Day Average in CT, ME, MA, NH, NY, RI & VT)—March 29, 2021

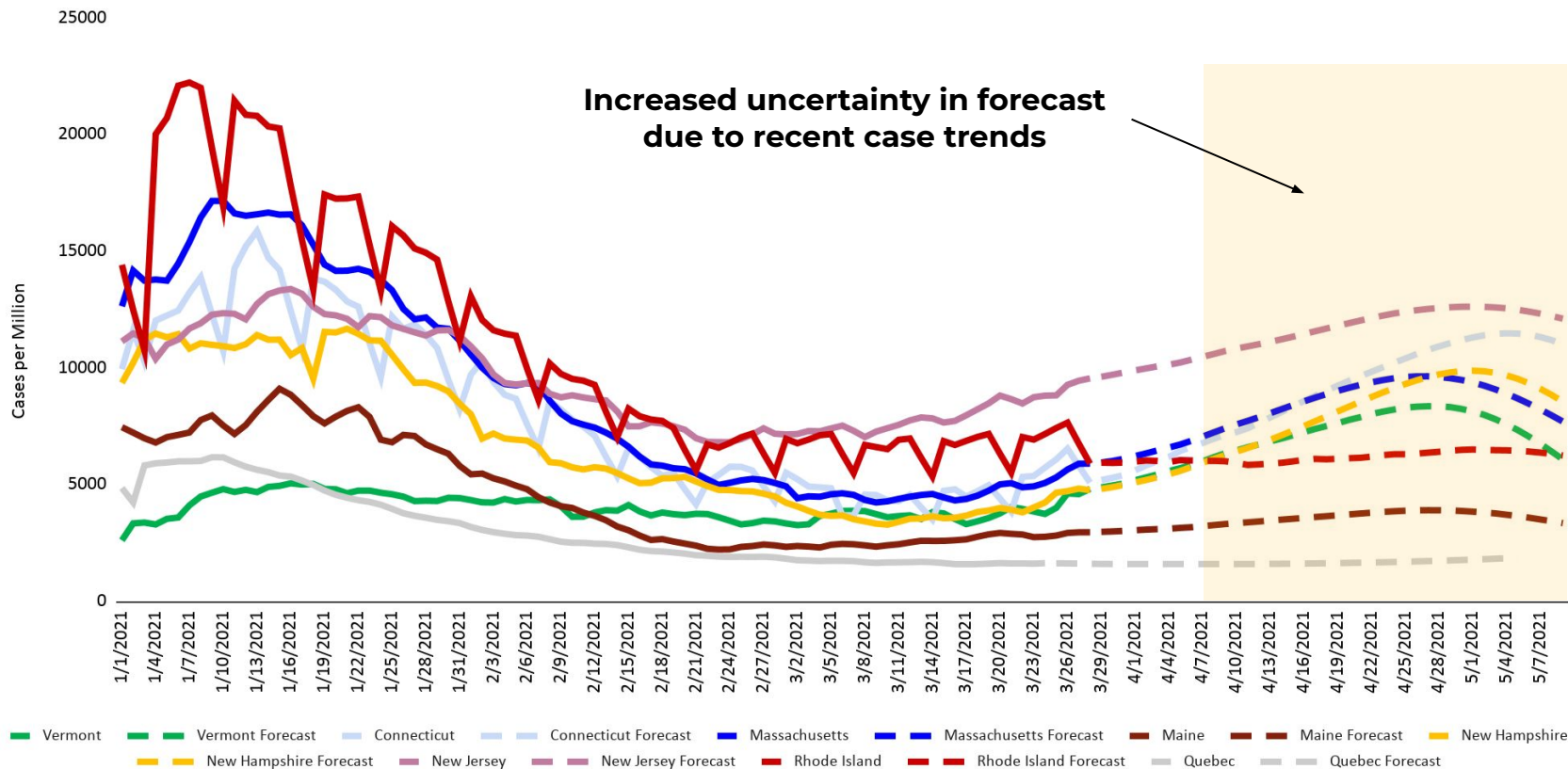
Regional Hospitalizations



Source: Covid Tracking Project (7-Day Average in CT, ME, MA, NH, NY, RI & VT)—March 29, 2021

Regional Active Per Capita Case Forecast

Active Cases per Million (DFR Algorithm)



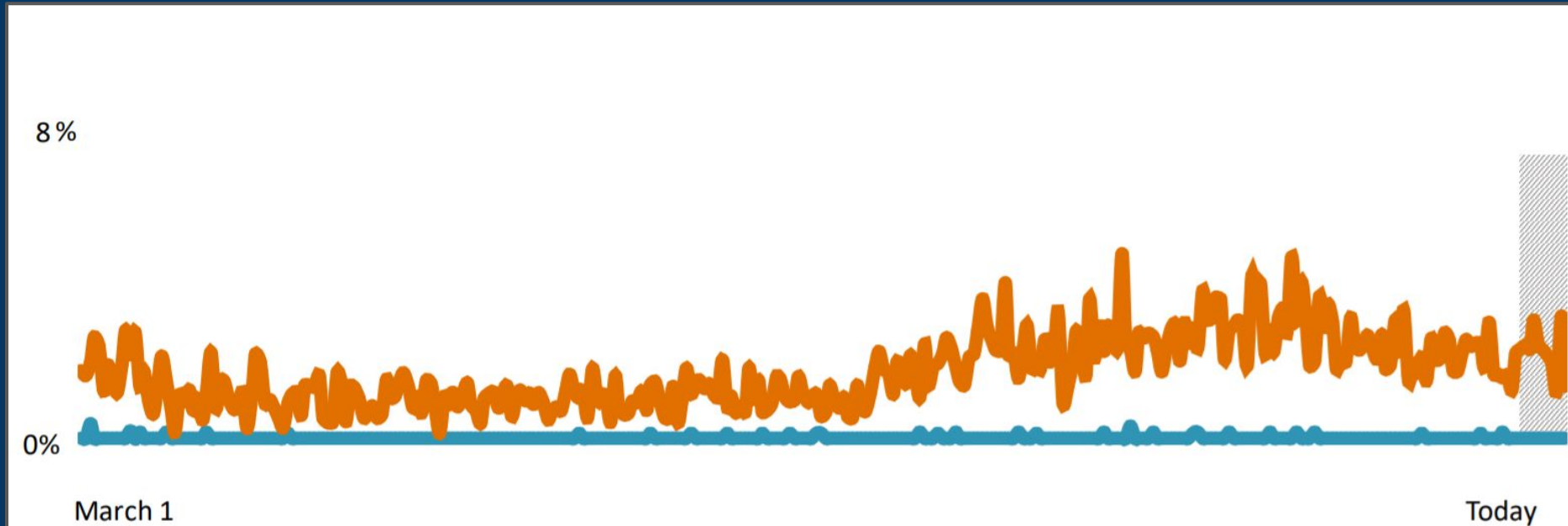
RESTART VERMONT

Reopening Metrics

1. Syndromic Surveillance
2. Viral Growth & Reproductive Rates
3. Percentage of New Positive Tests
4. Hospital & Critical Care Bed Capacity

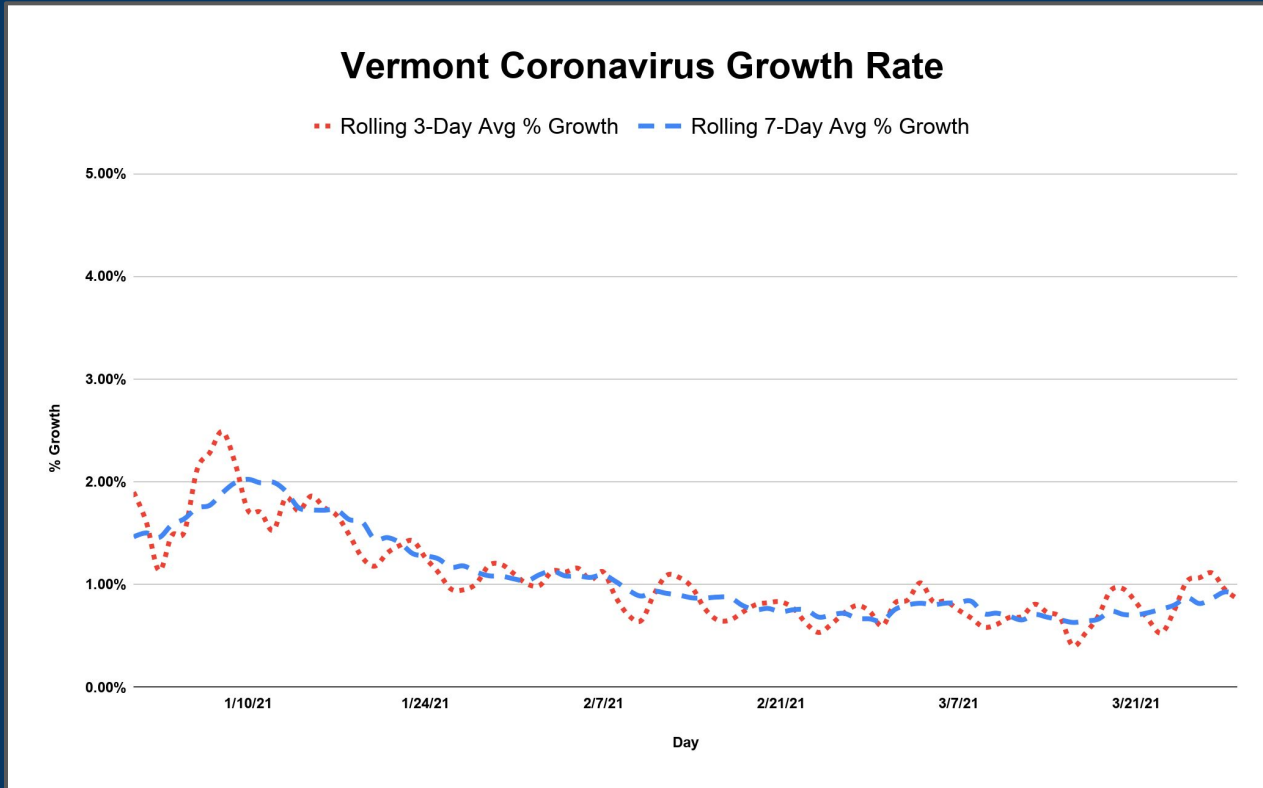
Data Point 1: Syndromic Surveillance

- **Summary:** Percentage of visits with COVID-19 like illness and Influenza diagnosis
- **Warning Flag:** Percentage of visits exceeding 4% for multiple consecutive days



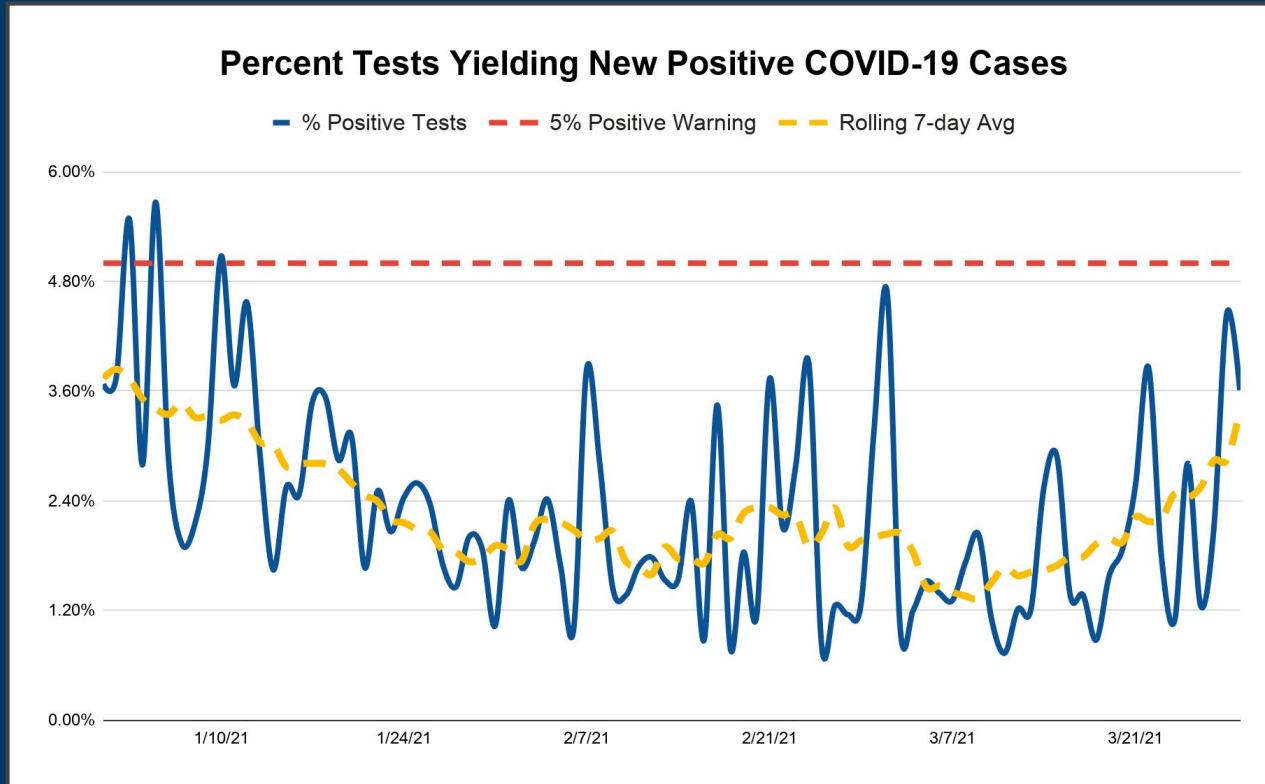
Data Point 2: Viral Growth and Reproductive Rates

- **Summary:** Case growth measured by daily, 3-day, 7-day, and effective reproductive rate (R_t)
- **Warning Flags:** Sustained viral growth that would lead to <30% open ICU beds



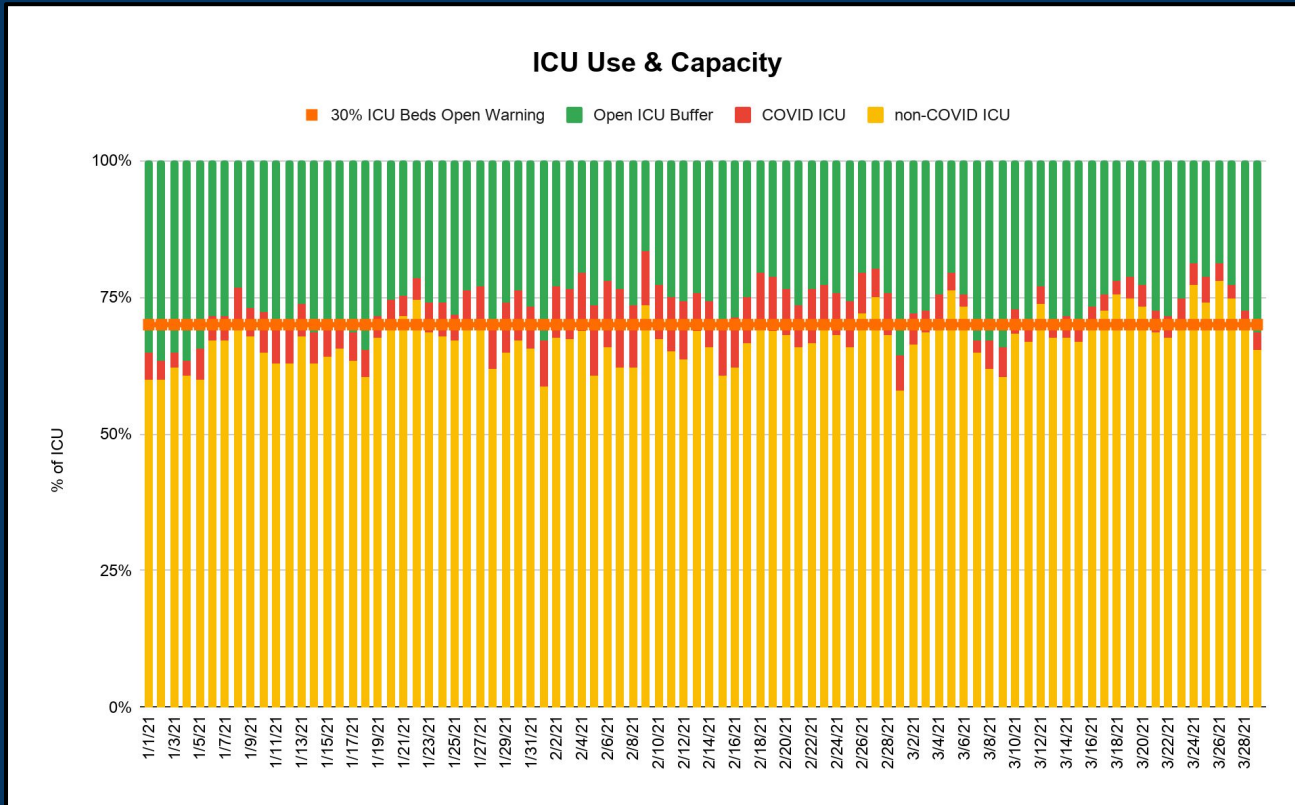
Data Point 3: Percentage of New Positive Tests

- **Summary:** Percent of tests resulting in a new positive case
- **Warning Flags:** New positives represent >5% of daily results



Data Point 4: Hospital & Critical Care Beds

- **Summary:** Number of occupied and unoccupied medical surgical and ICU beds
- **Warning Flags:** Reduction in ICU open beds to less than 30%



Vermont Testing

