

COVID-19 Modeling

February 9, 2021

Presentation available at:
dfr.vermont.gov

National COVID-19 Cases Sustained & Significant Decrease

**55% Decrease in Cases
Since January 11, 2021***

300000

200000

100000

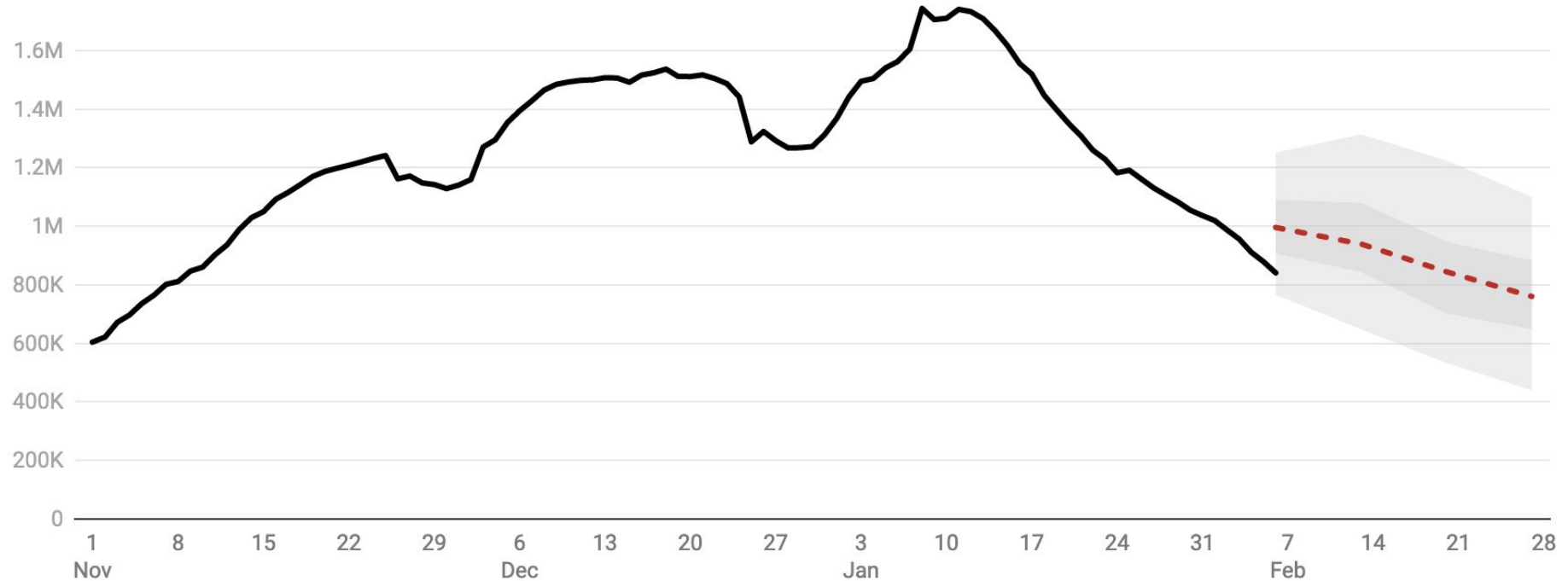
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3/2/20 3/21/20 4/9/20 4/28/20 5/17/20 6/5/20 6/24/20 7/13/20 8/1/20 8/20/20 9/8/20 9/27/20 10/16/20 11/4/20 11/23/20 12/12/20 12/31/20 1/19/21 2/7/21

■ Daily Covid Cases — 7 Day Avg. Daily Covid Cases

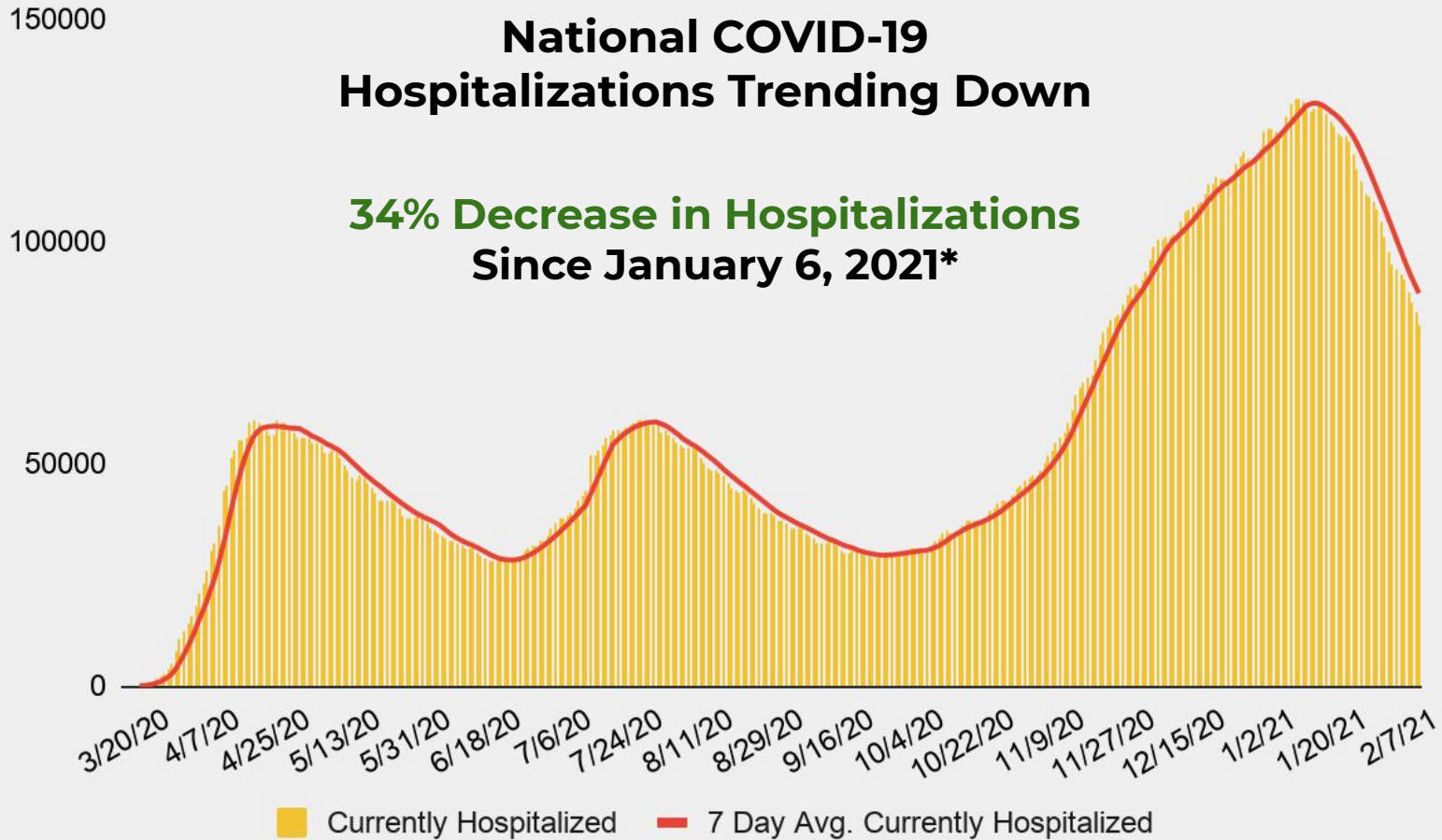
National Weekly COVID-19 Infections Forecast

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.



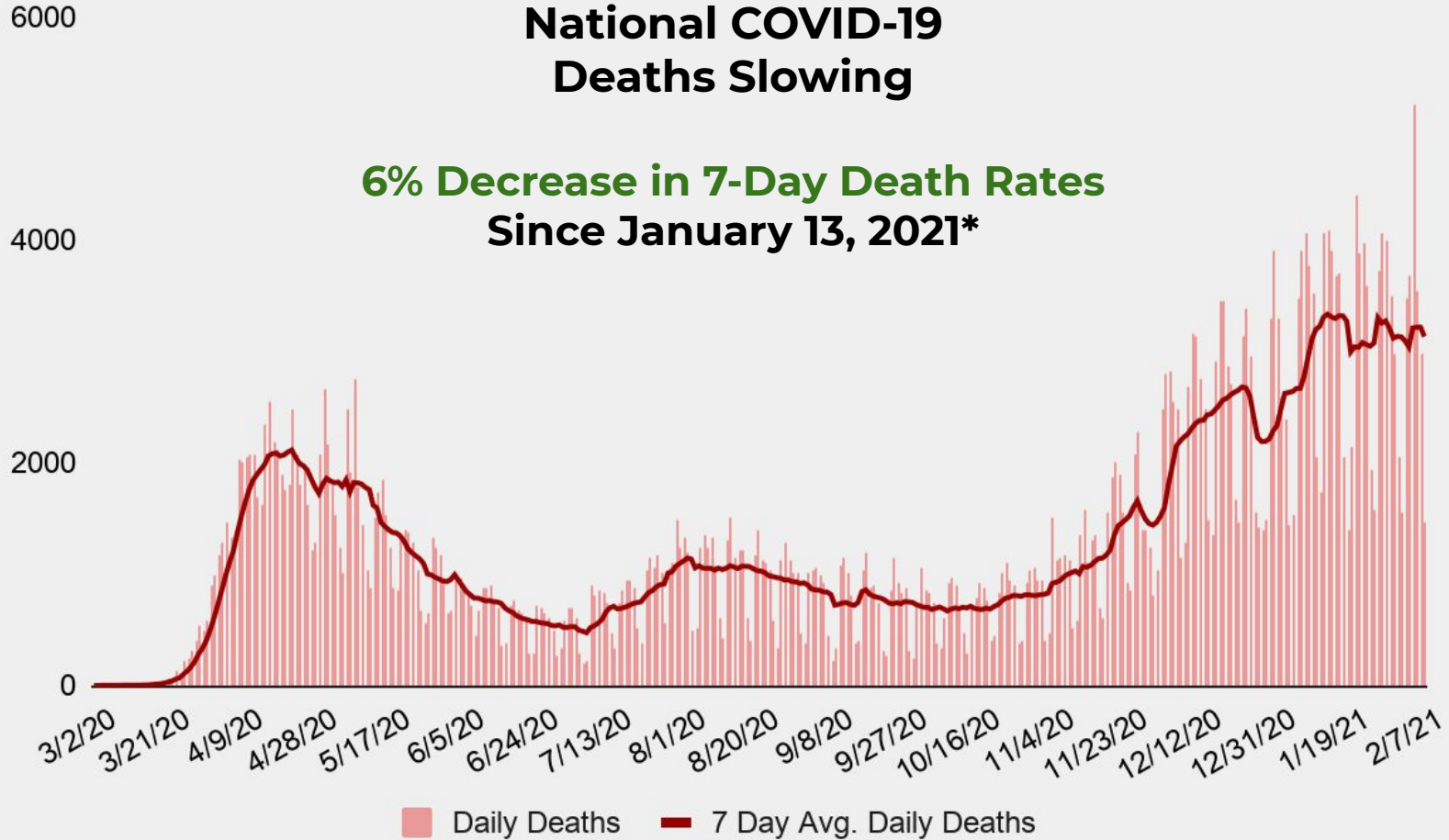
National COVID-19 Hospitalizations Trending Down

34% Decrease in Hospitalizations Since January 6, 2021*



National COVID-19 Deaths Slowing

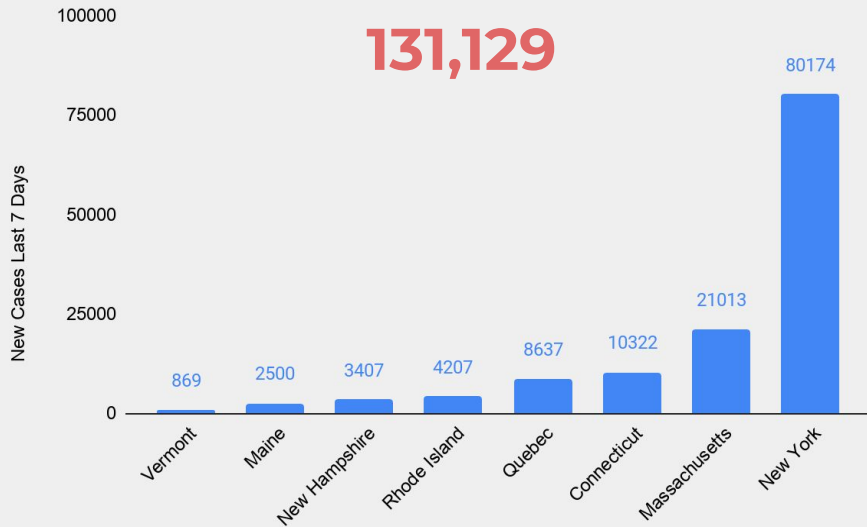
**6% Decrease in 7-Day Death Rates
Since January 13, 2021***



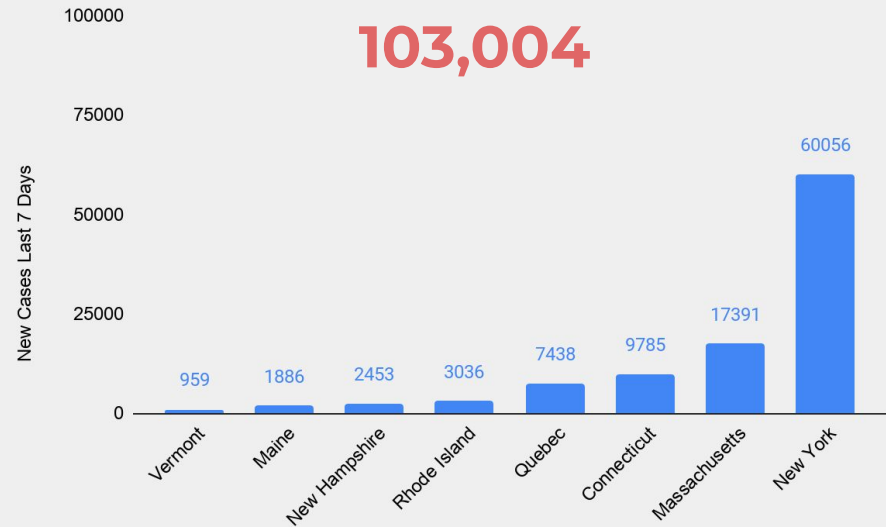
Regional Case Growth

27% Decrease in New Cases

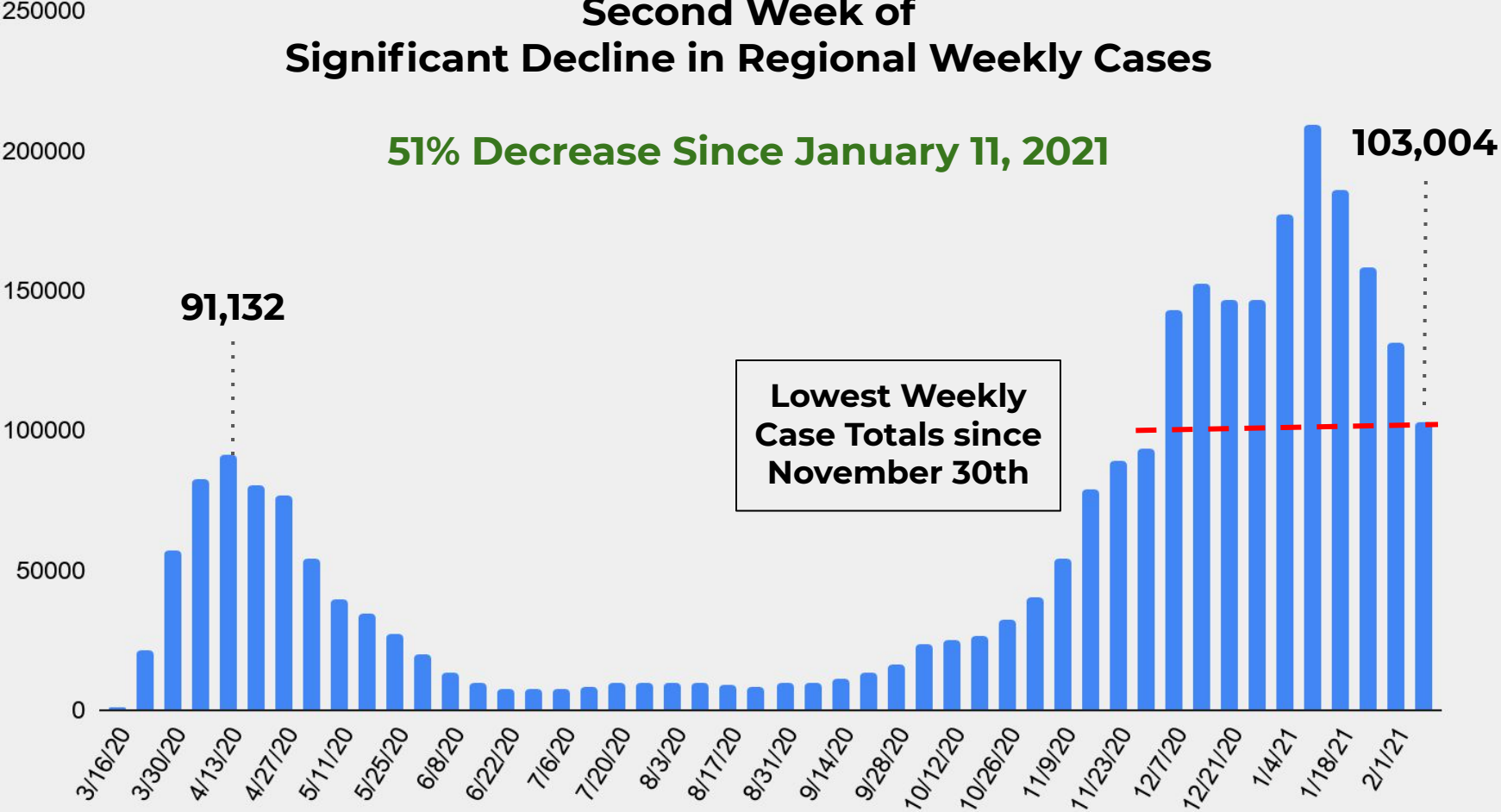
New Cases Jan 26th to Feb. 1st



New Cases Feb. 2nd to Feb 8th

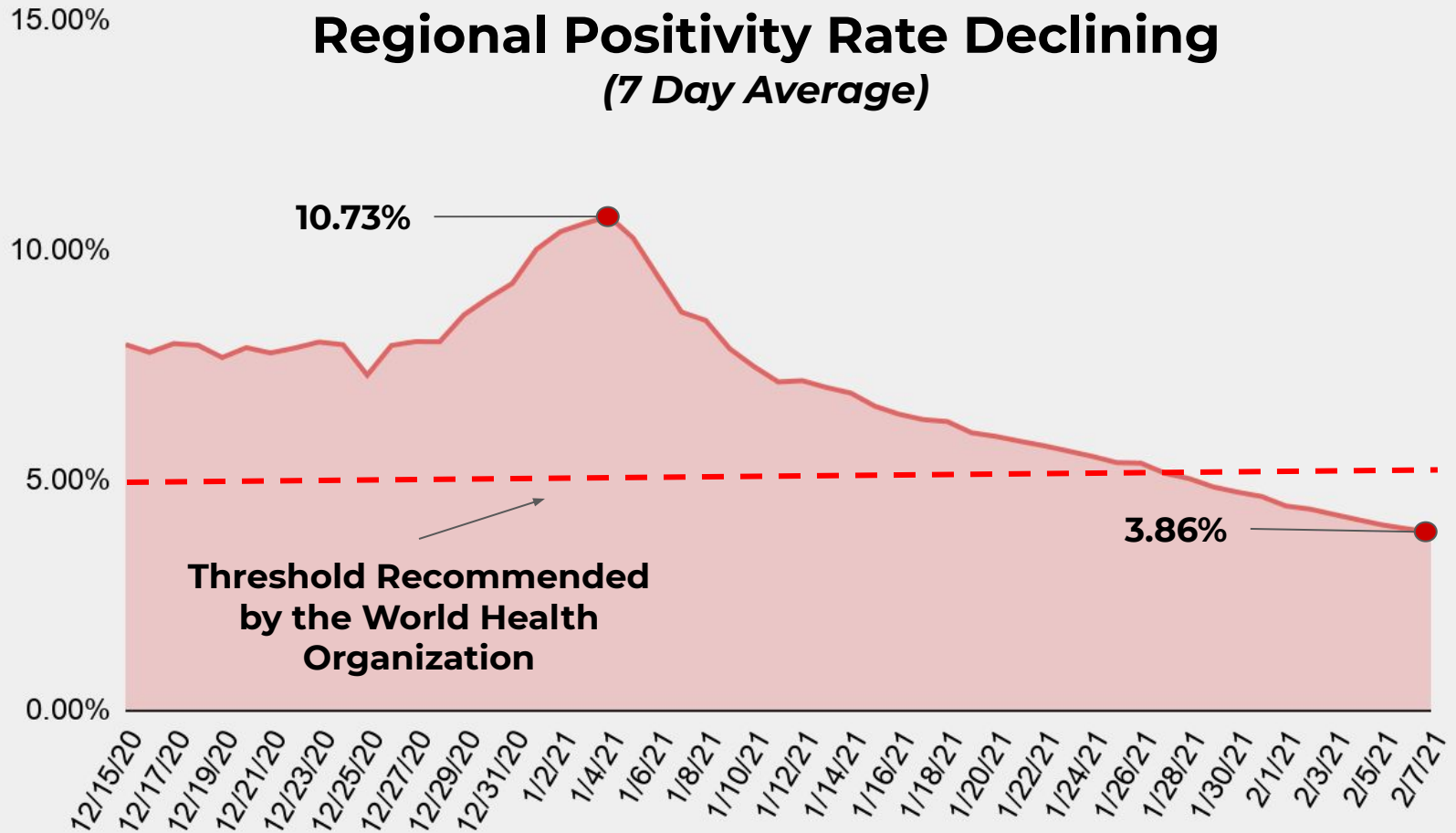


Second Week of Significant Decline in Regional Weekly Cases



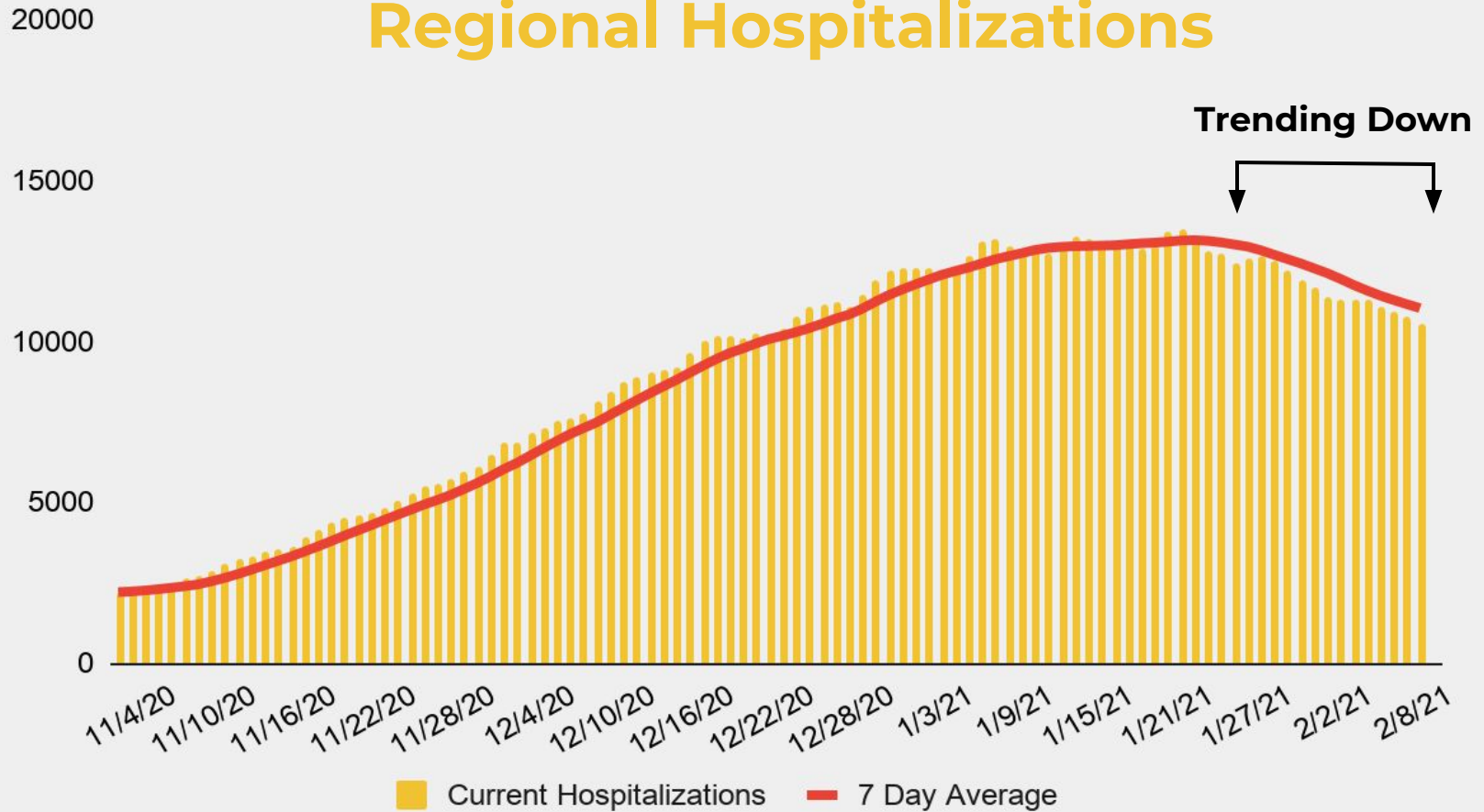
Sources: State Health Departments & CTV National News (Quebec) (includes: CT, ME, MA, NH, NY, QC, RI & VT)

Regional Positivity Rate Declining (7 Day Average)



**Threshold Recommended
by the World Health
Organization**

Regional Hospitalizations



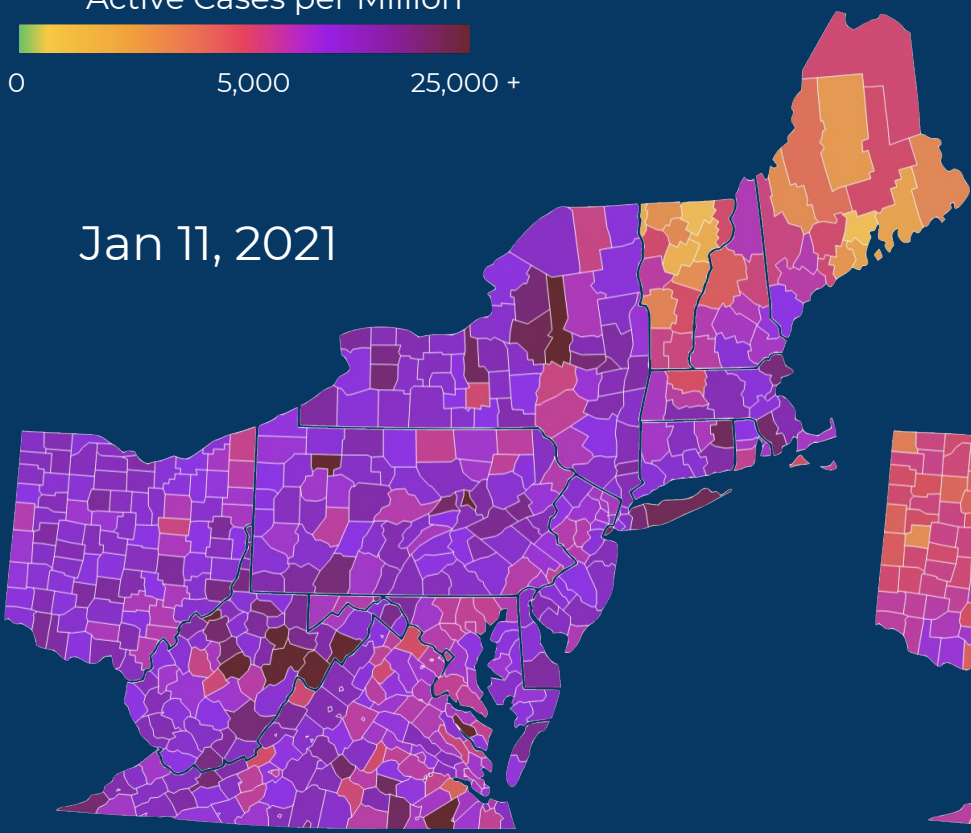
Regional Heat Map

Active Cases per Million

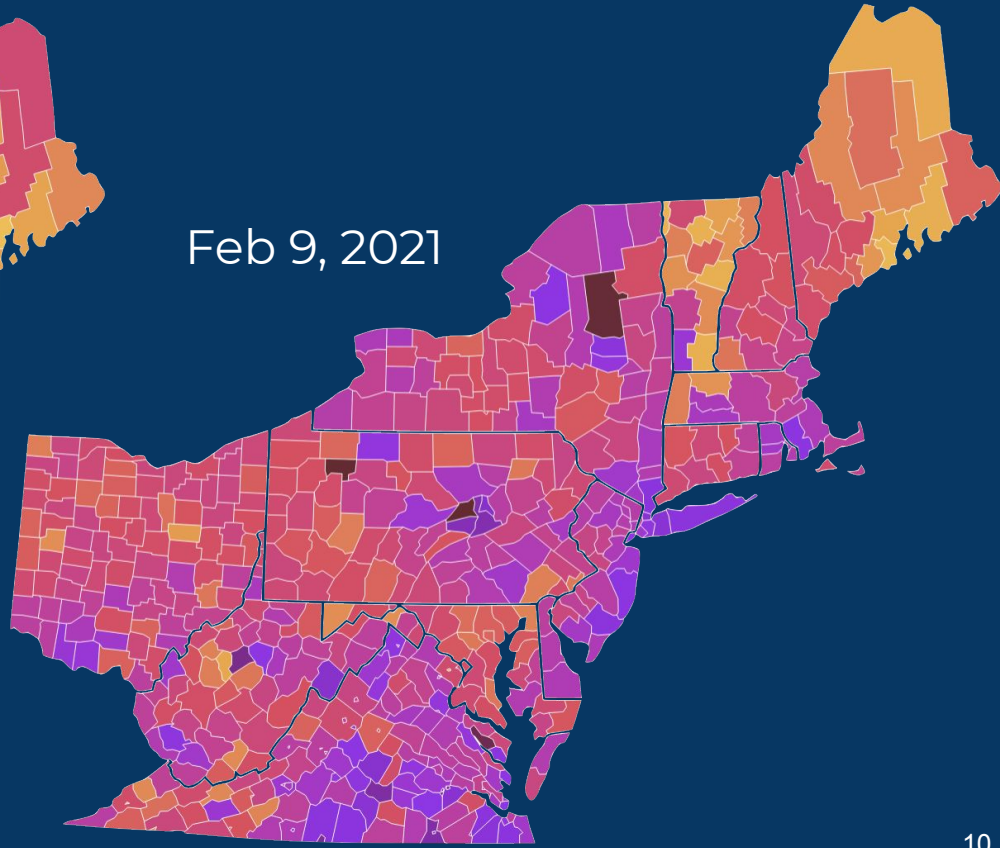


0 5,000 25,000 +

Jan 11, 2021

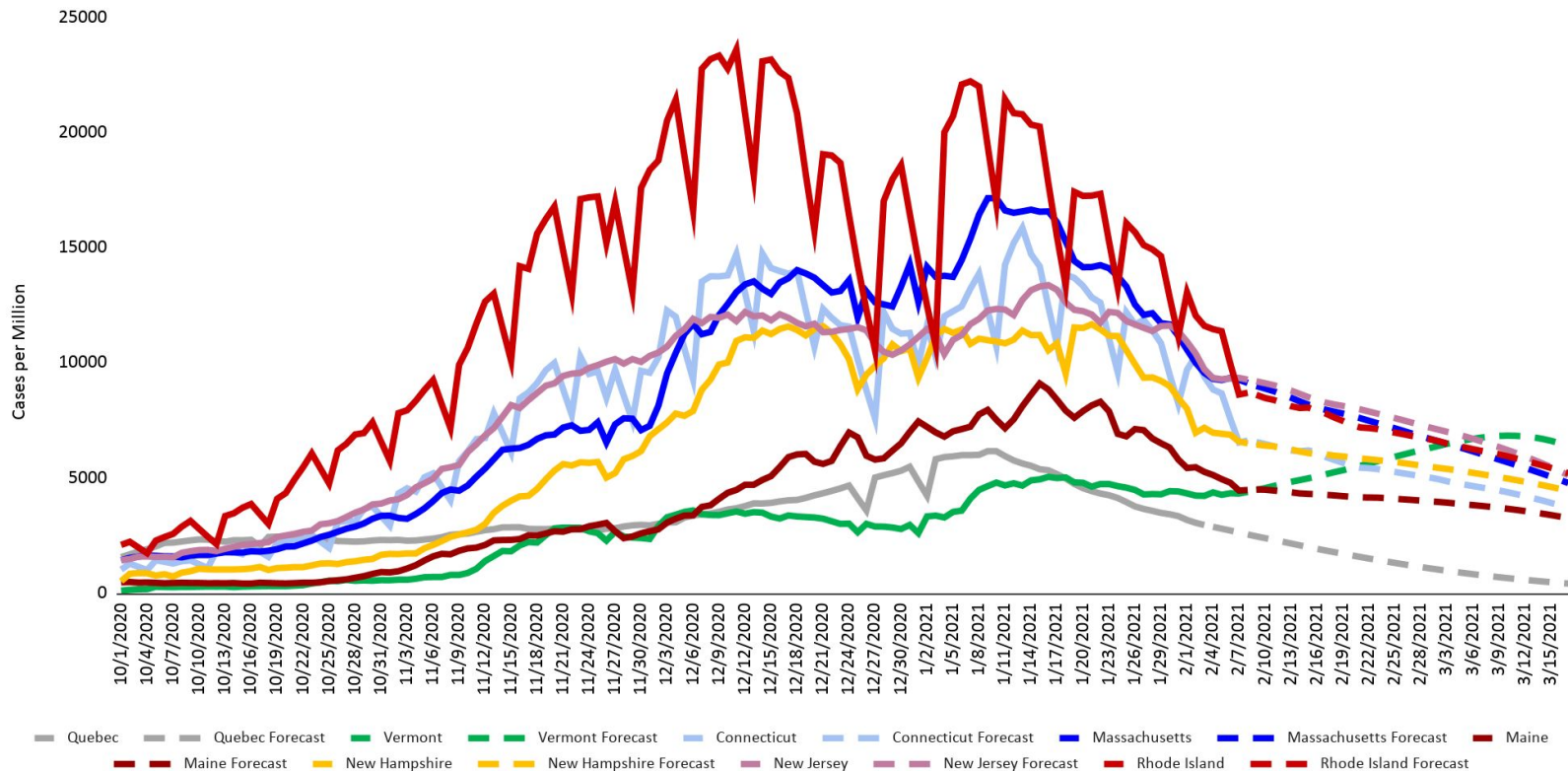


Feb 9, 2021



Regional Active Case Forecast

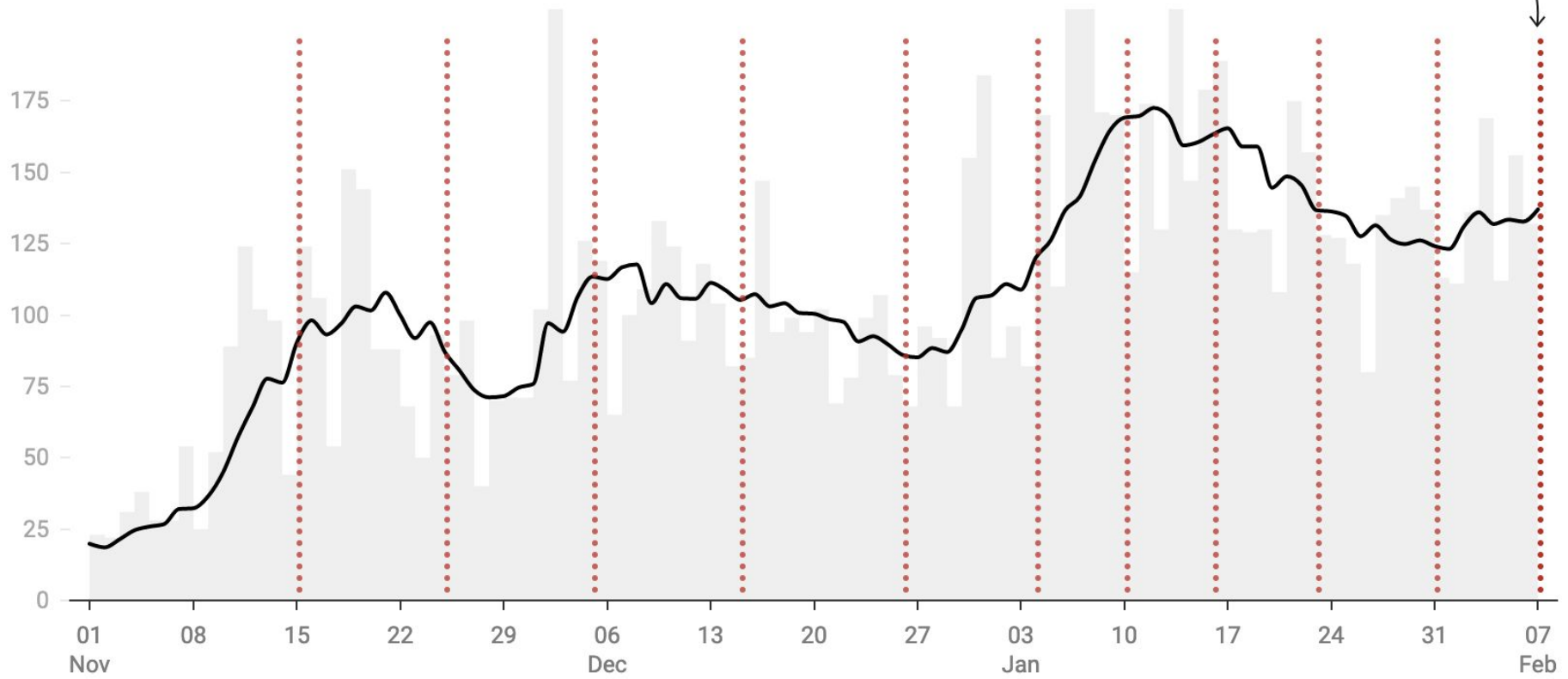
Active Cases per Million (DFR Algorithm)



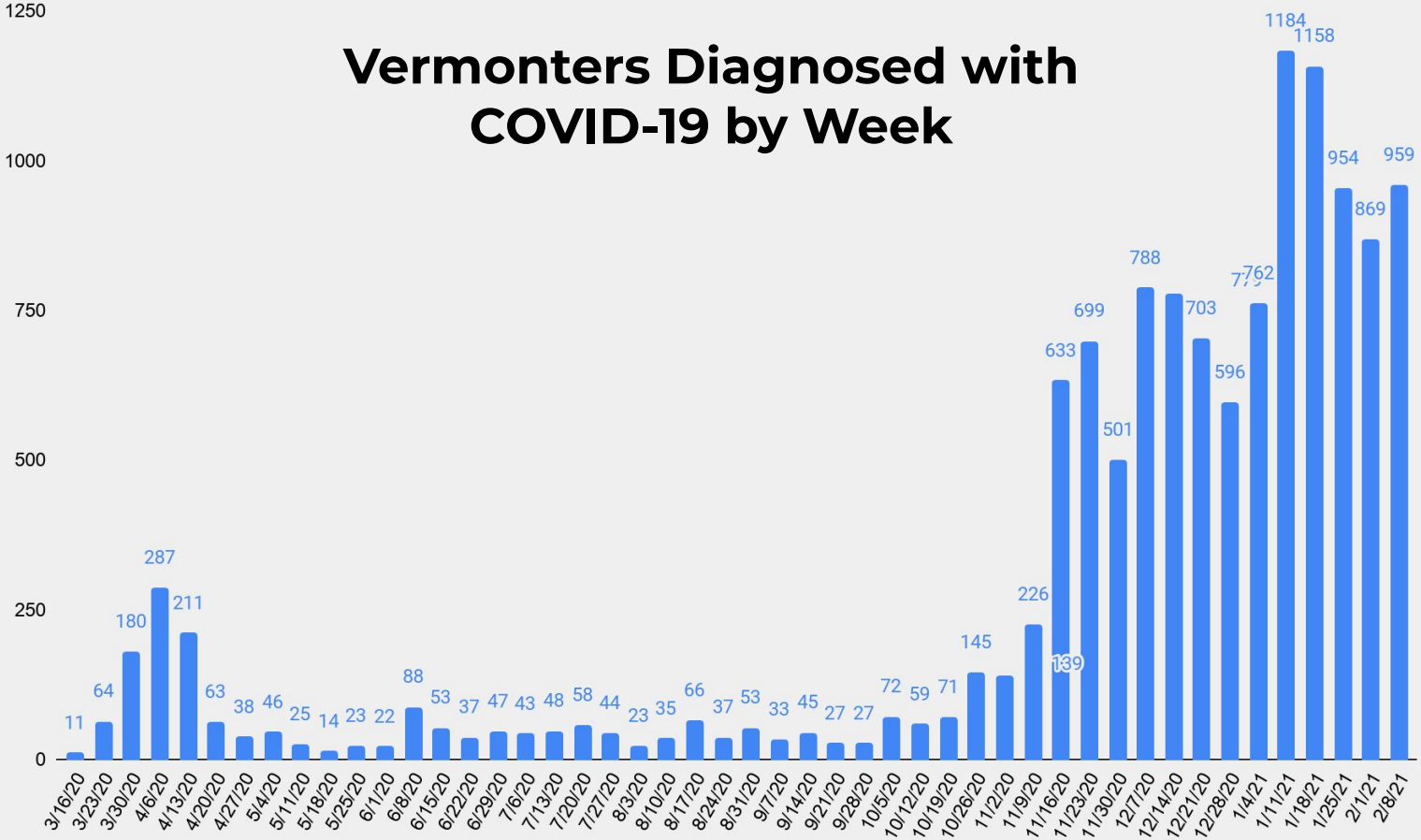
Daily COVID-19 Infections in Vermont (7 Day Average)

1000 Infection thresholds denoted with red dashed line.

7 days for most recent
1000 infections
(12,000 to 13,000 total)



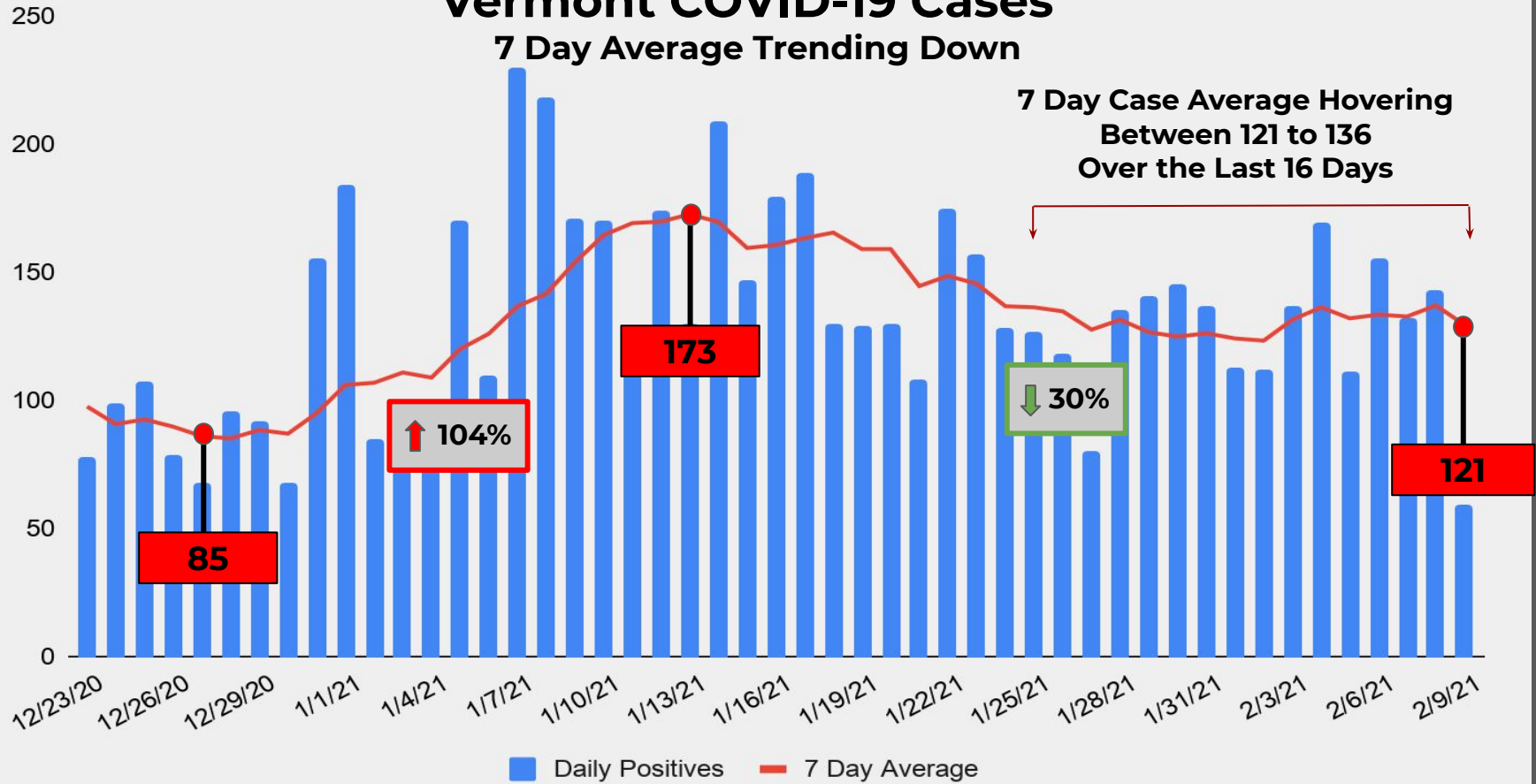
Vermonters Diagnosed with COVID-19 by Week



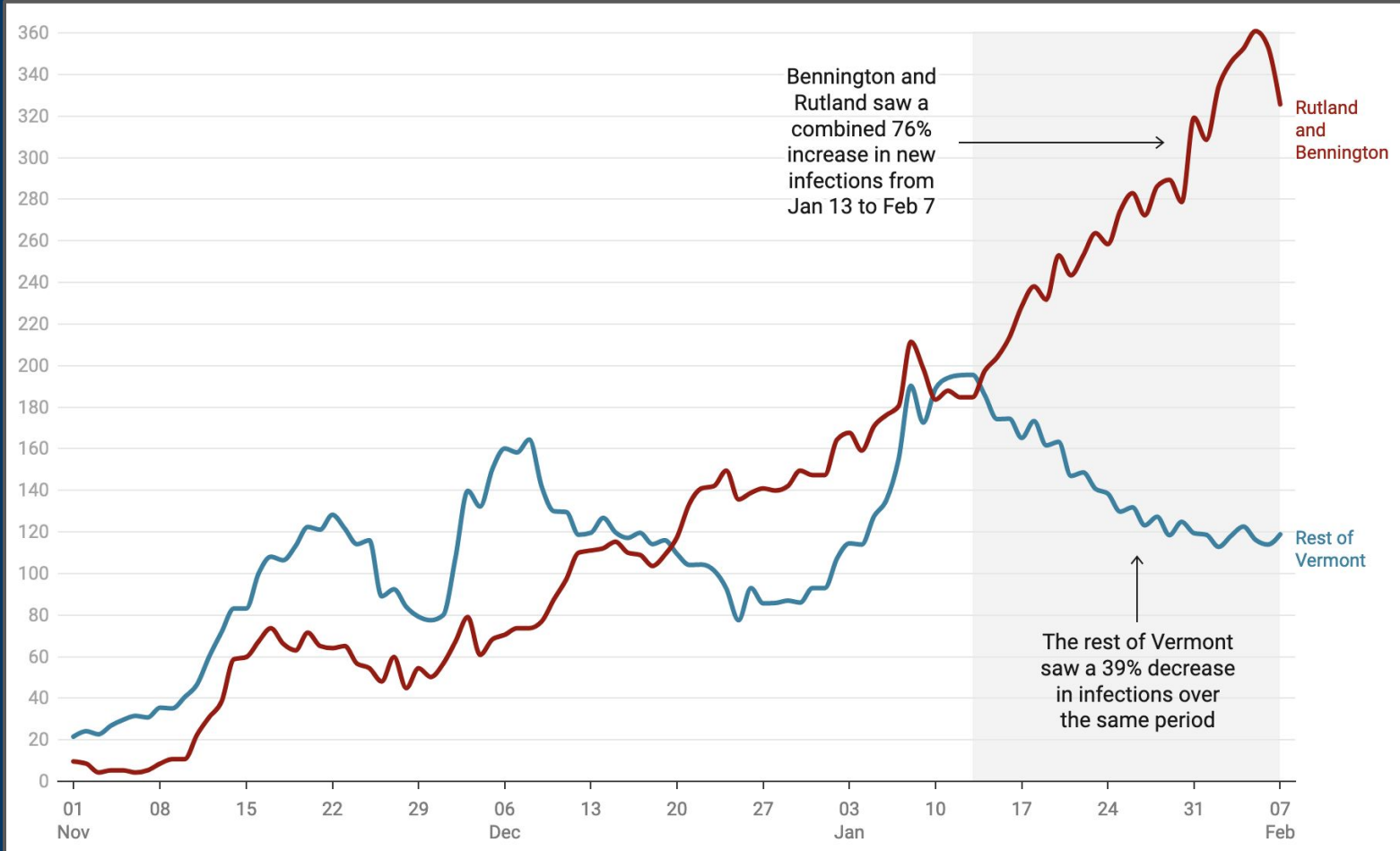
Source: Vermont Department of Health (week calculated as Tuesday to Monday)

Vermont COVID-19 Cases

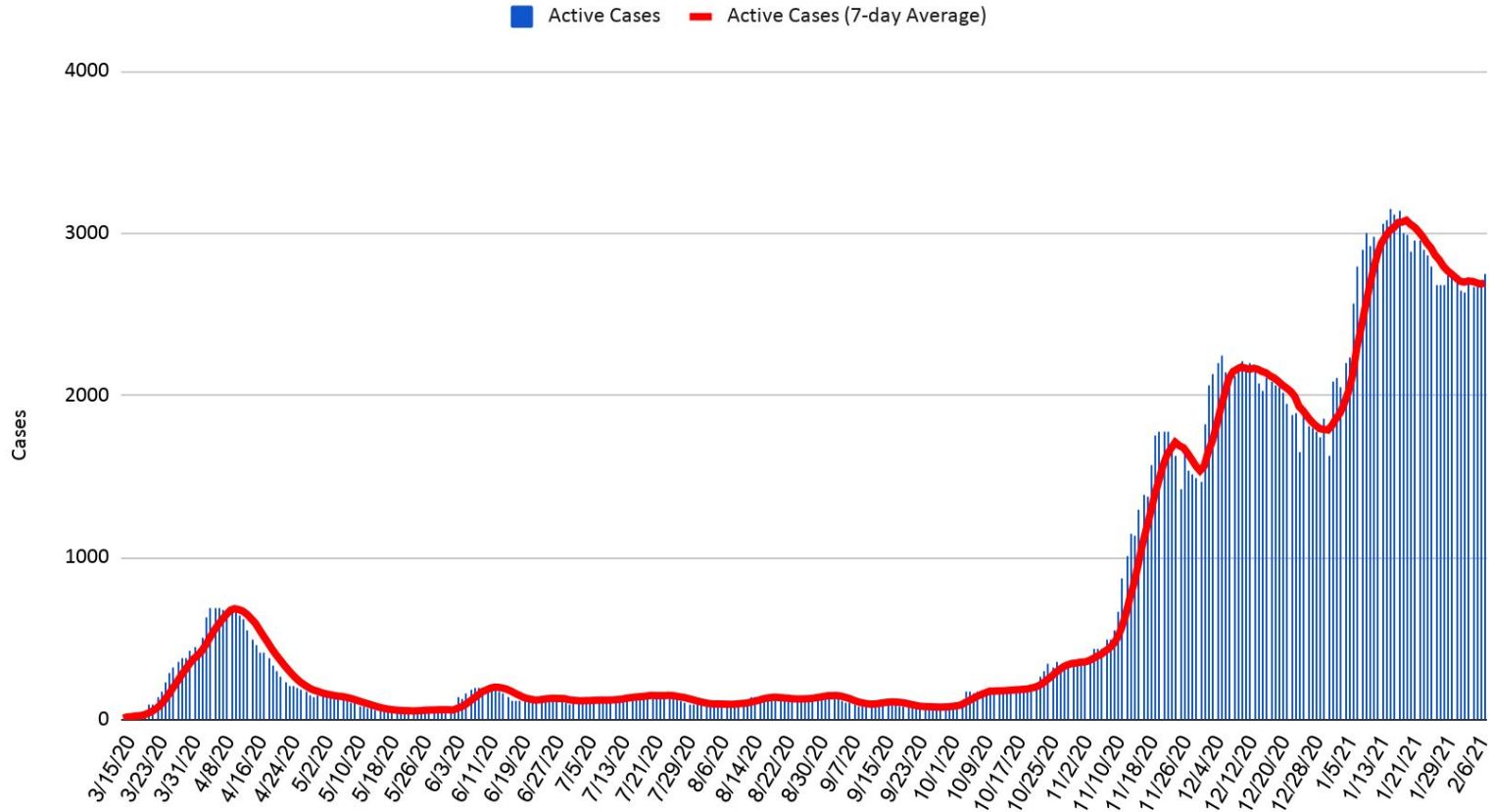
7 Day Average Trending Down



Weekly COVID Infections in Vermont (7-Day Sum)



Estimated Active Cases of COVID-19 in Vermont



High Risk Cases

On Average 15.6% of Cases Over 65

1500

1000

500

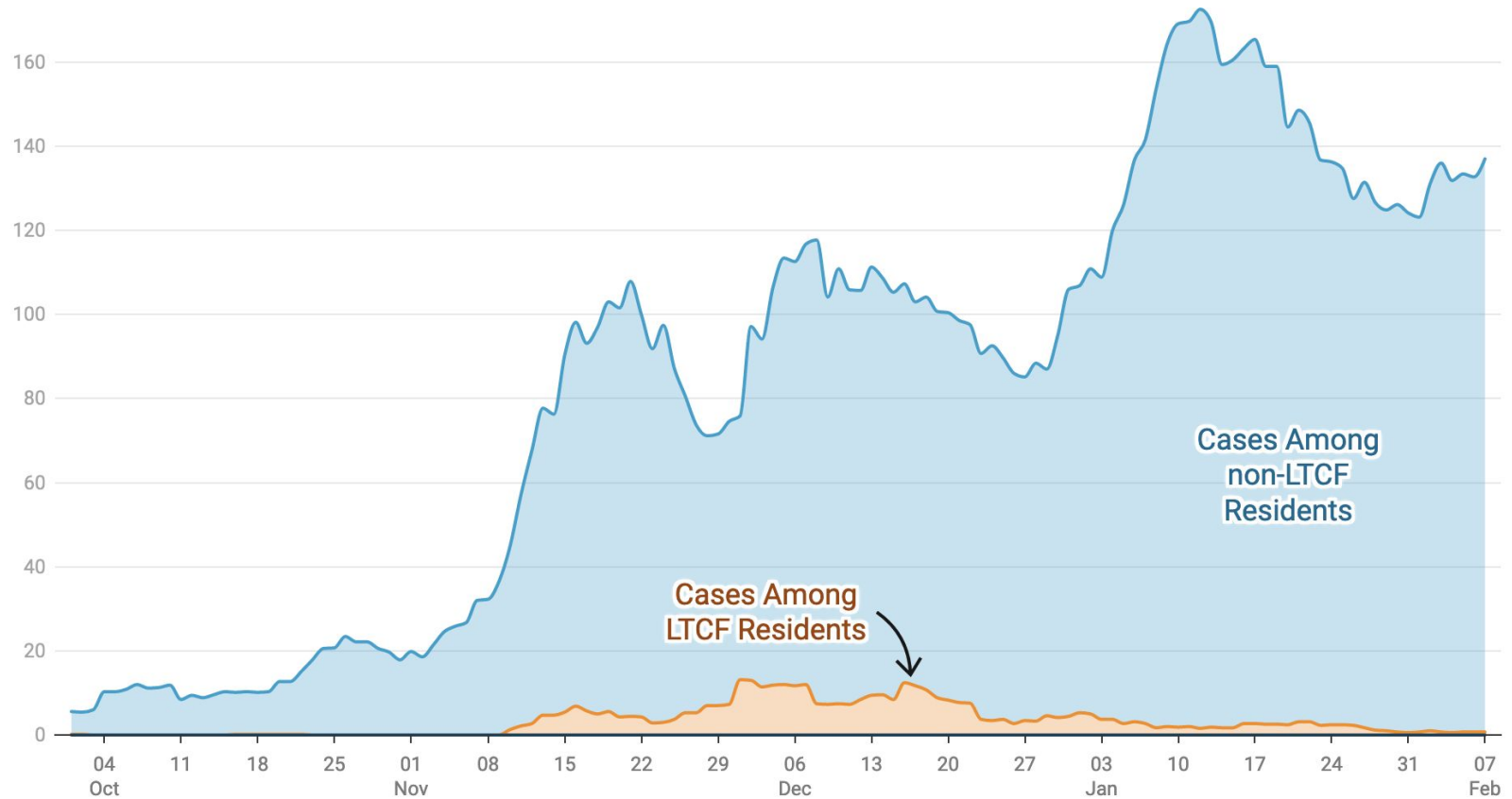
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Weekly Cases 65 & Older Weekly Cases 64 & Younger

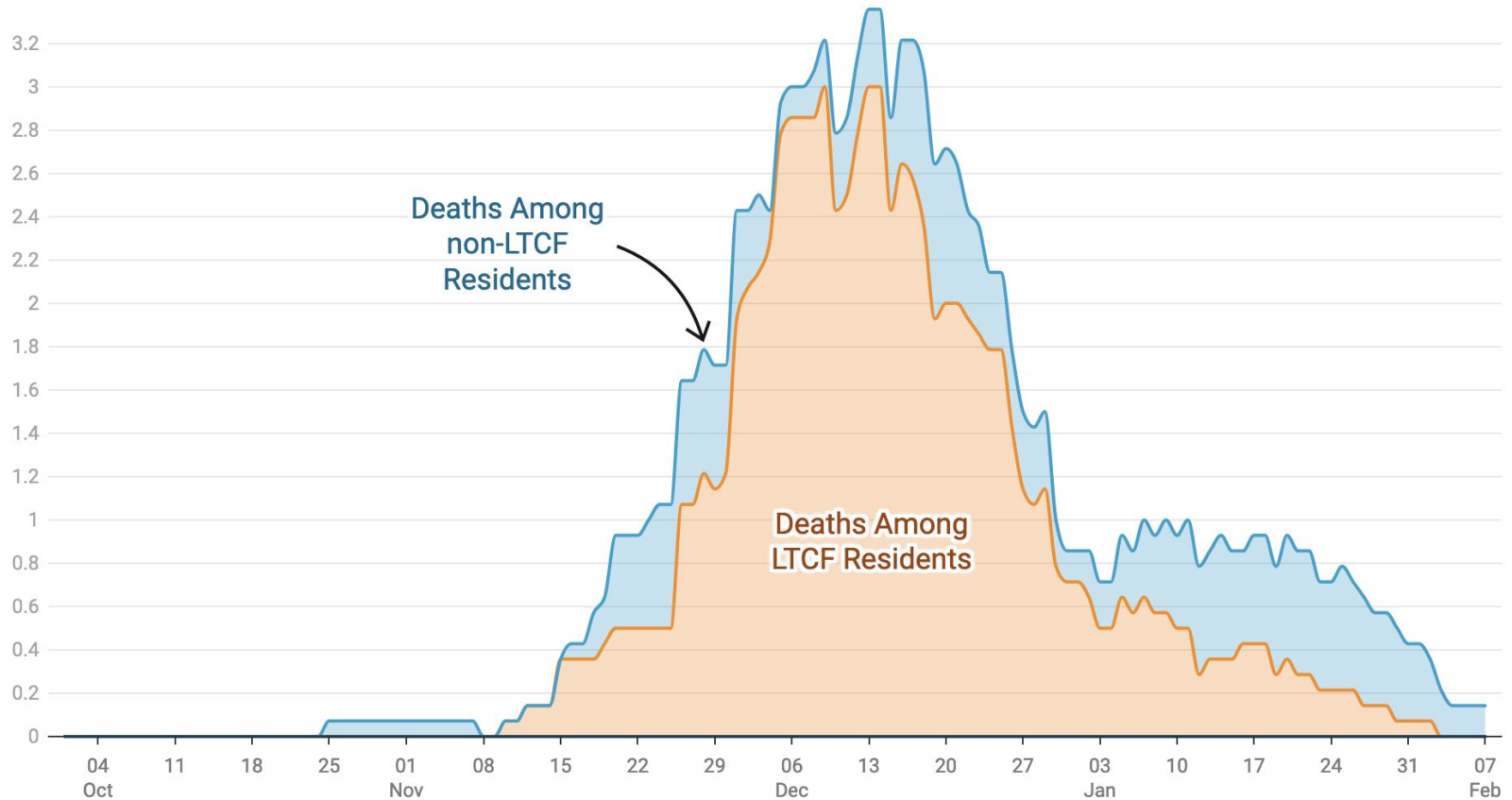
Few Infections in Vermont's Long Term Care Facilities

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)

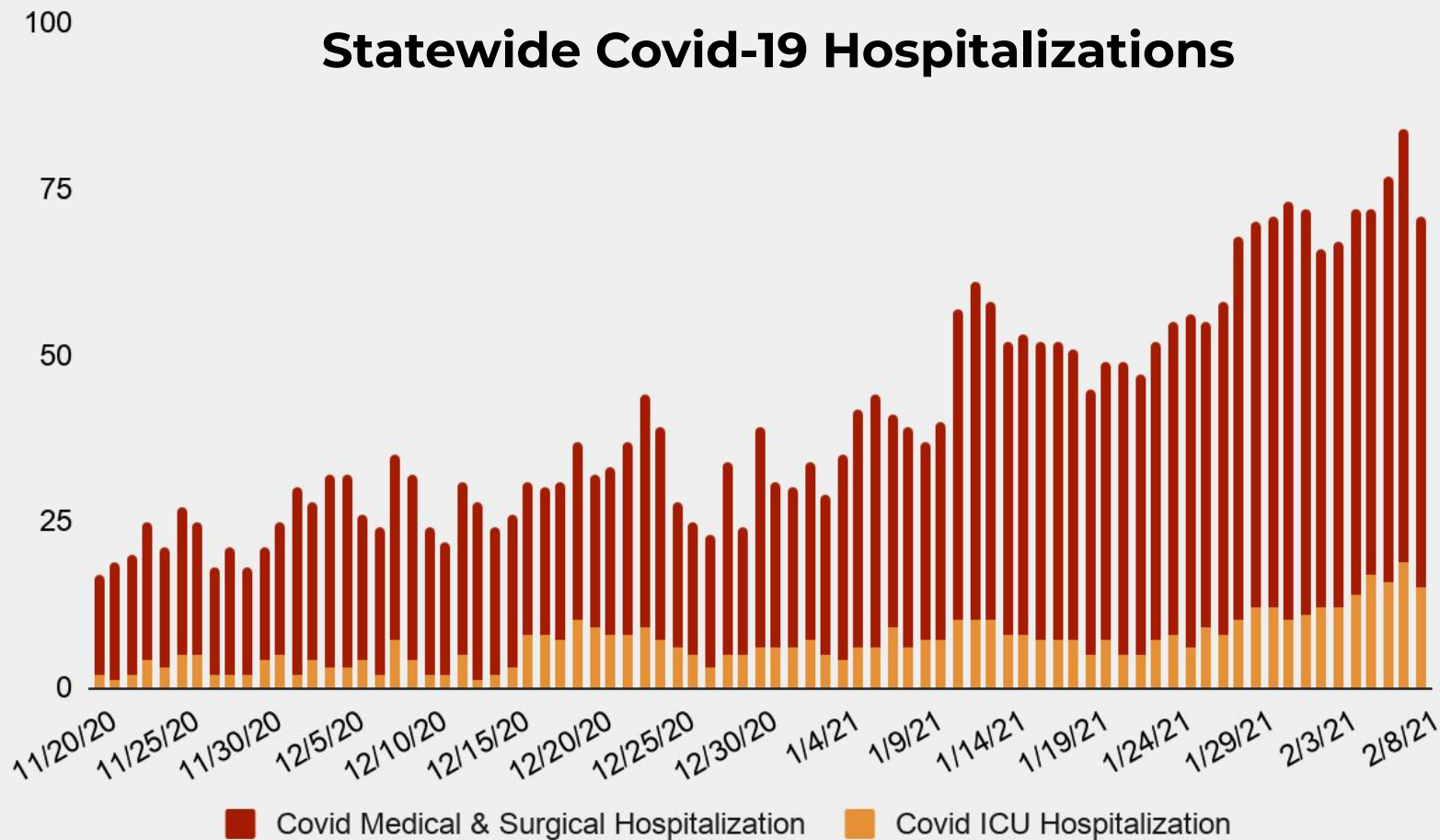


Active Outbreaks in Long Term Care Facilities

Facility Name	Total COVID-19 Cases
Village at Cedar Hill, <i>Windsor</i>	22
Harbor Village, <i>South Burlington</i>	9
Long Term Care Facility D	9
Mountain View Center, <i>Rutland</i>	8
Brookdale at Fillmore Pond, <i>Bennington</i>	Not Shown

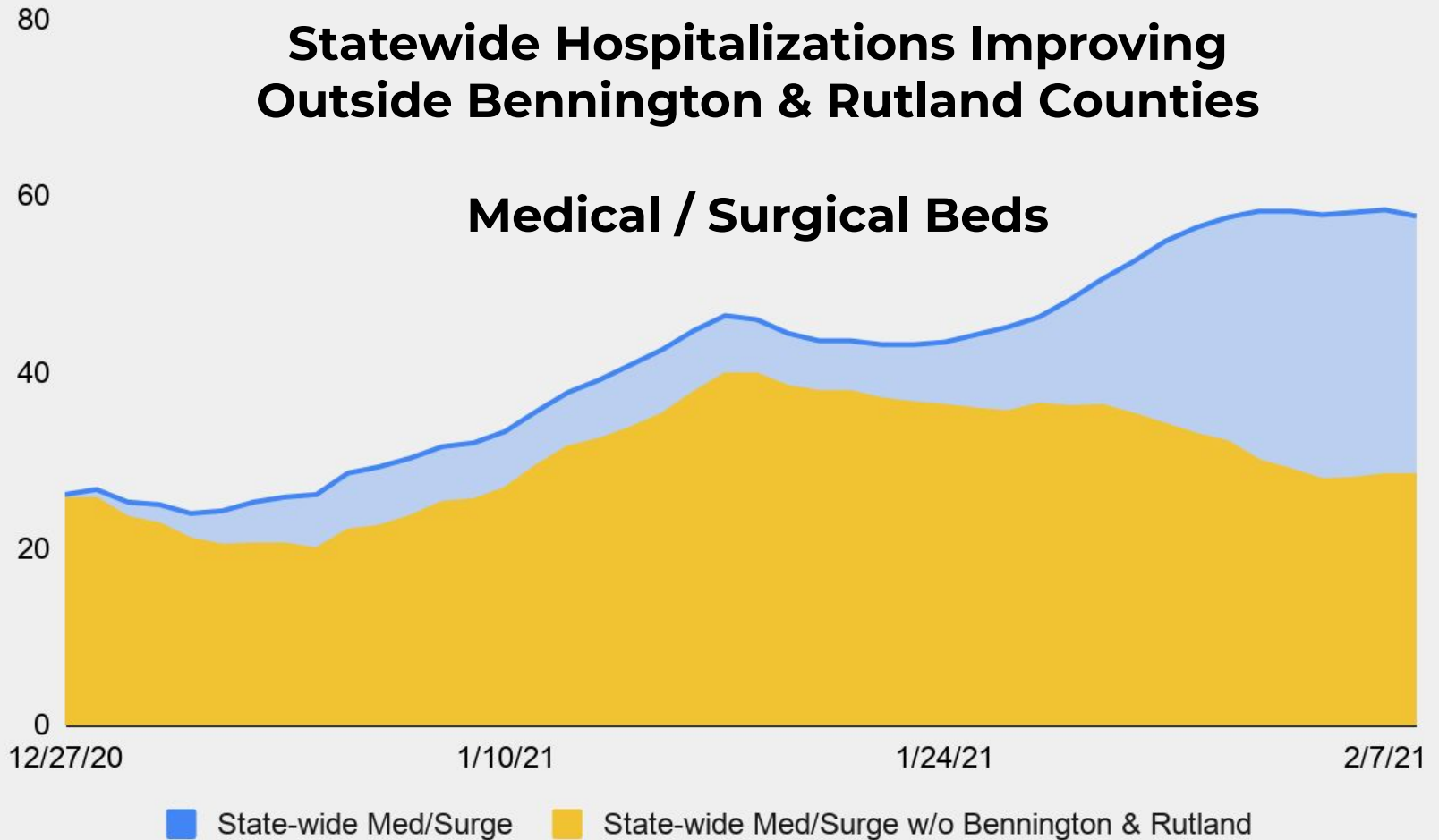
Source: Vermont Department of Health—February 7, 2021 (reporting Monday through previous Sunday); ‘Active’ defined as less than 28 days since most recent case’s specimen collection date or illness start date (whichever is later); privacy suppressions include facility w/ <25 staff and residents and/or >75% of facility infected or fewer than 5 active cases.

Statewide Covid-19 Hospitalizations



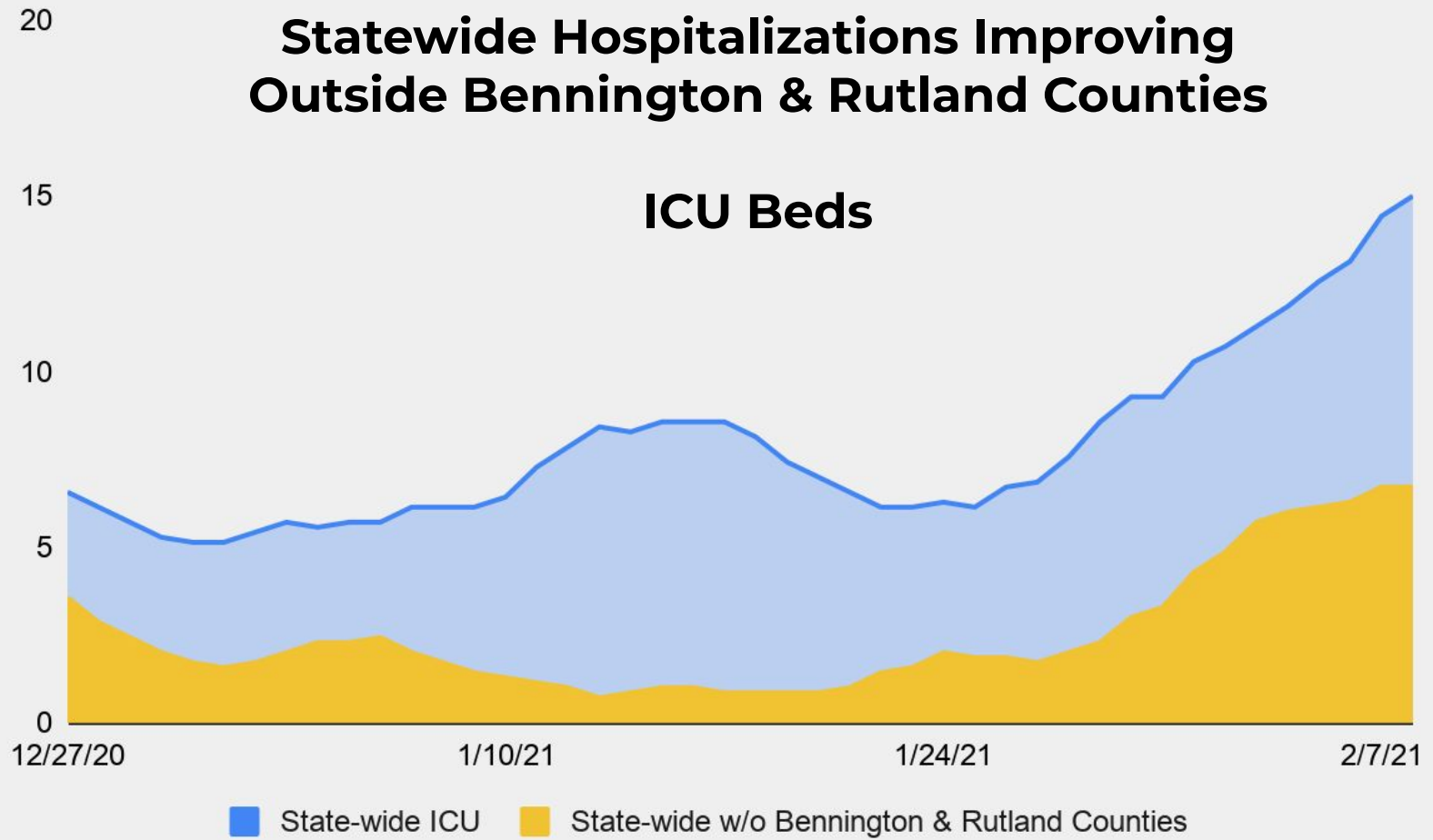
Statewide Hospitalizations Improving Outside Bennington & Rutland Counties

Medical / Surgical Beds



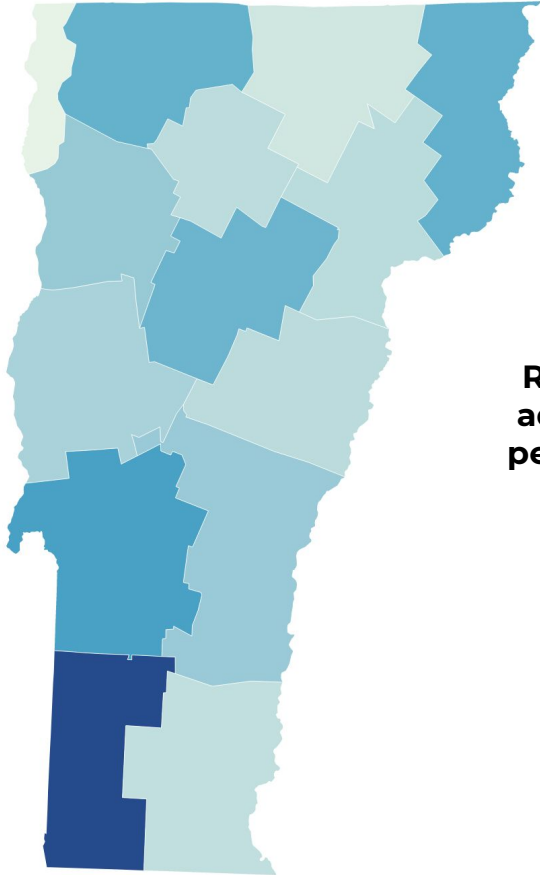
Statewide Hospitalizations Improving Outside Bennington & Rutland Counties

ICU Beds



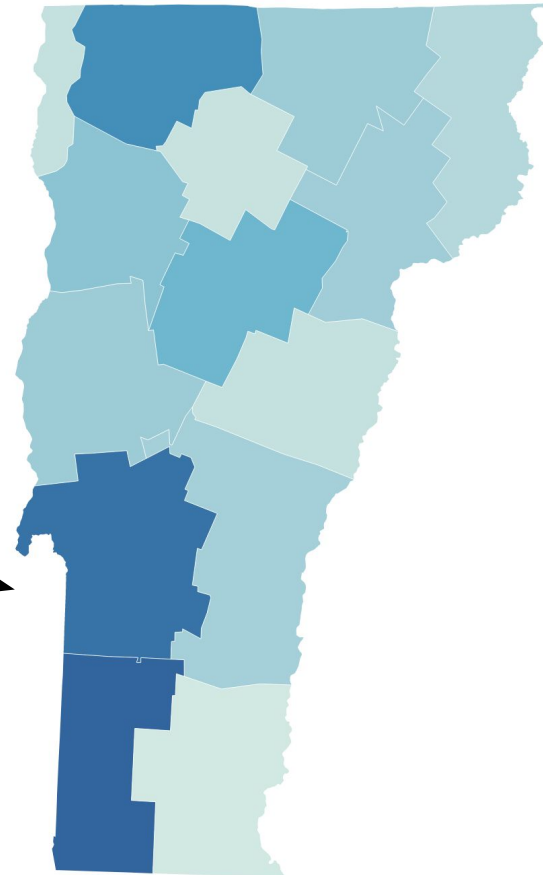
Vermont Weekly Cases by County (per 100,000)

Results Reported January 26 to February 1

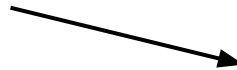


Vermont Weekly Cases by County (per 100,000)

Results Reported February 2 to 8



**Rutland County
added 100 cases
per 100K over the
last week**



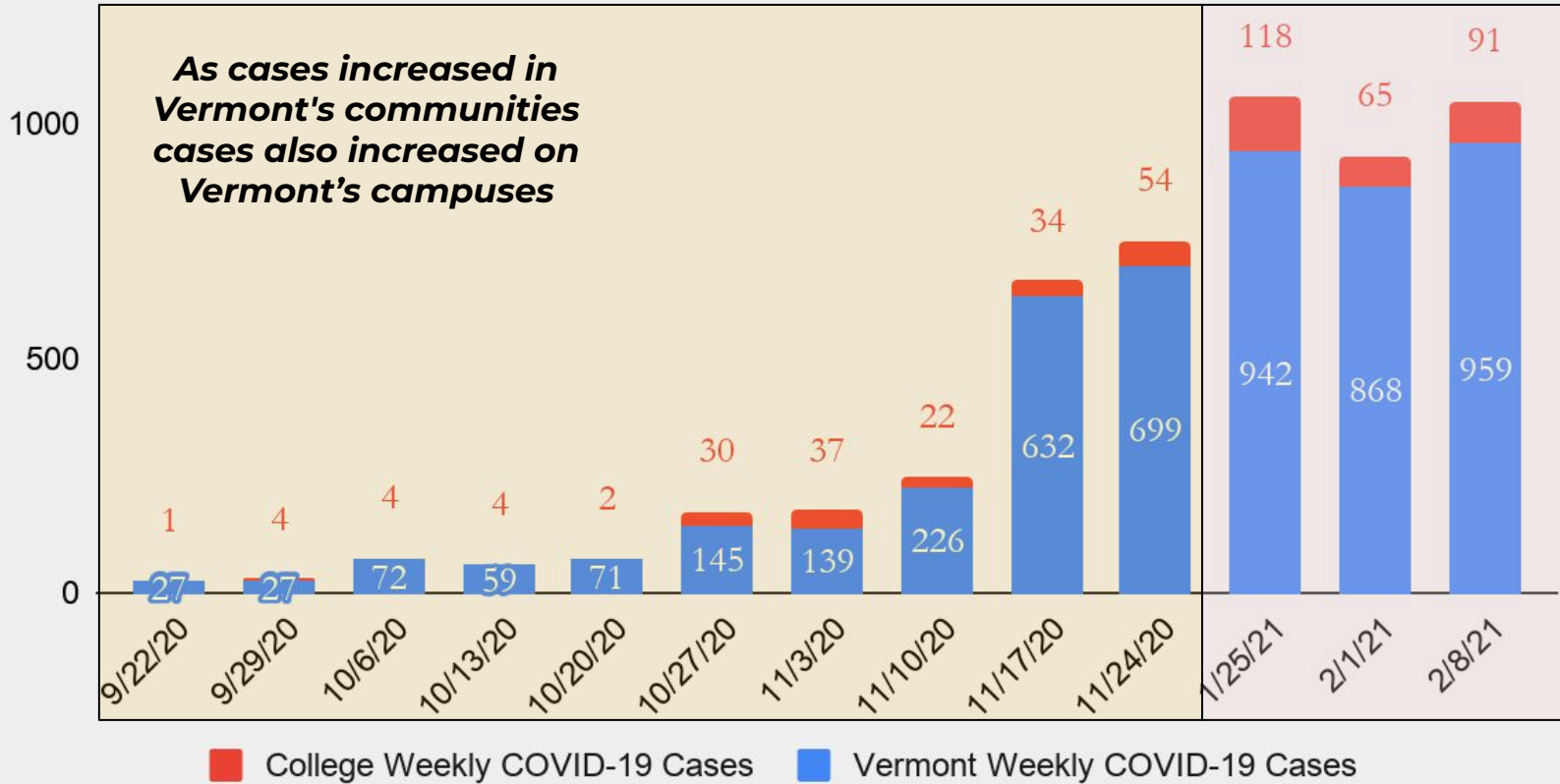
Higher Education Restart

1500

Fall 2020

Spring 2021

As cases increased in Vermont's communities cases also increased on Vermont's campuses



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

New Hampshire

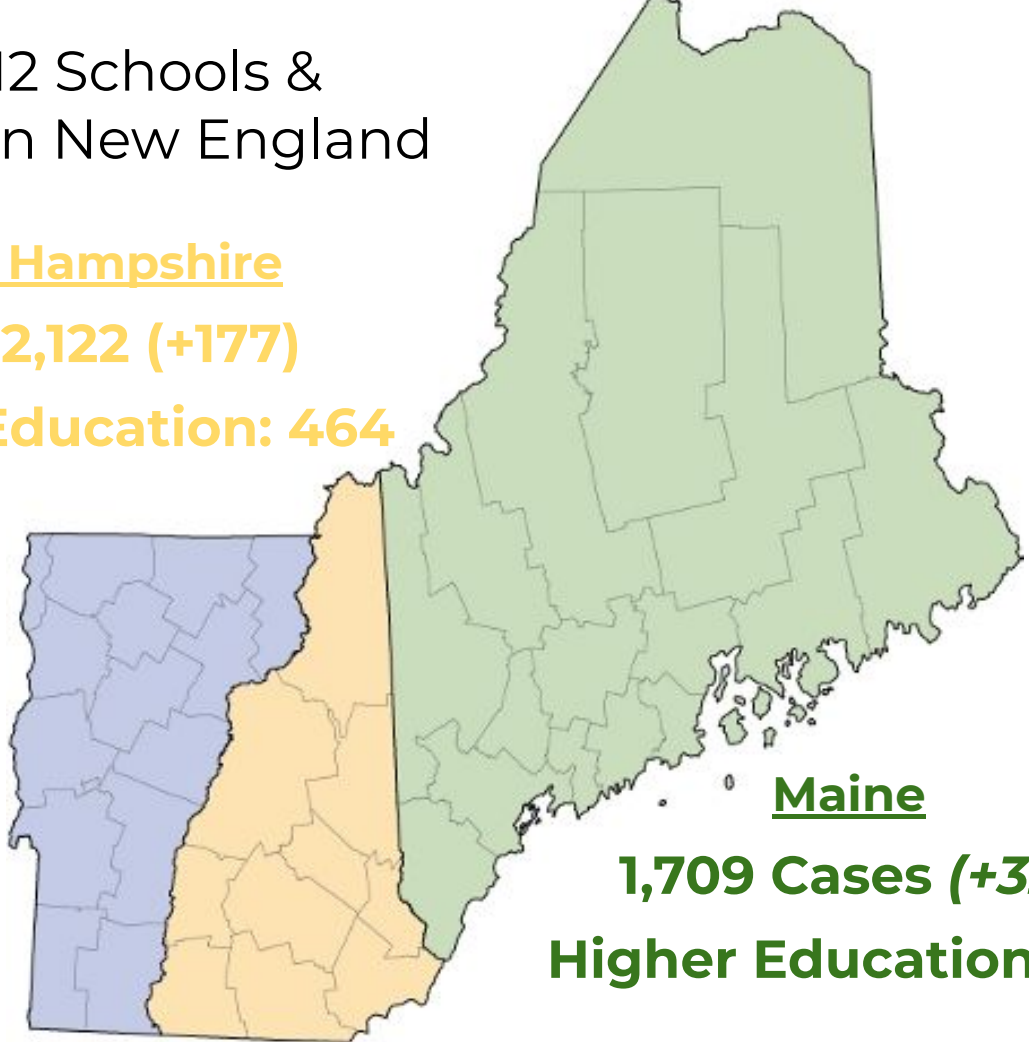
K-12: 2,122 (+177)

Higher Education: 464

Vermont

K-12: 523 Cases (+63)

Higher Education: 274

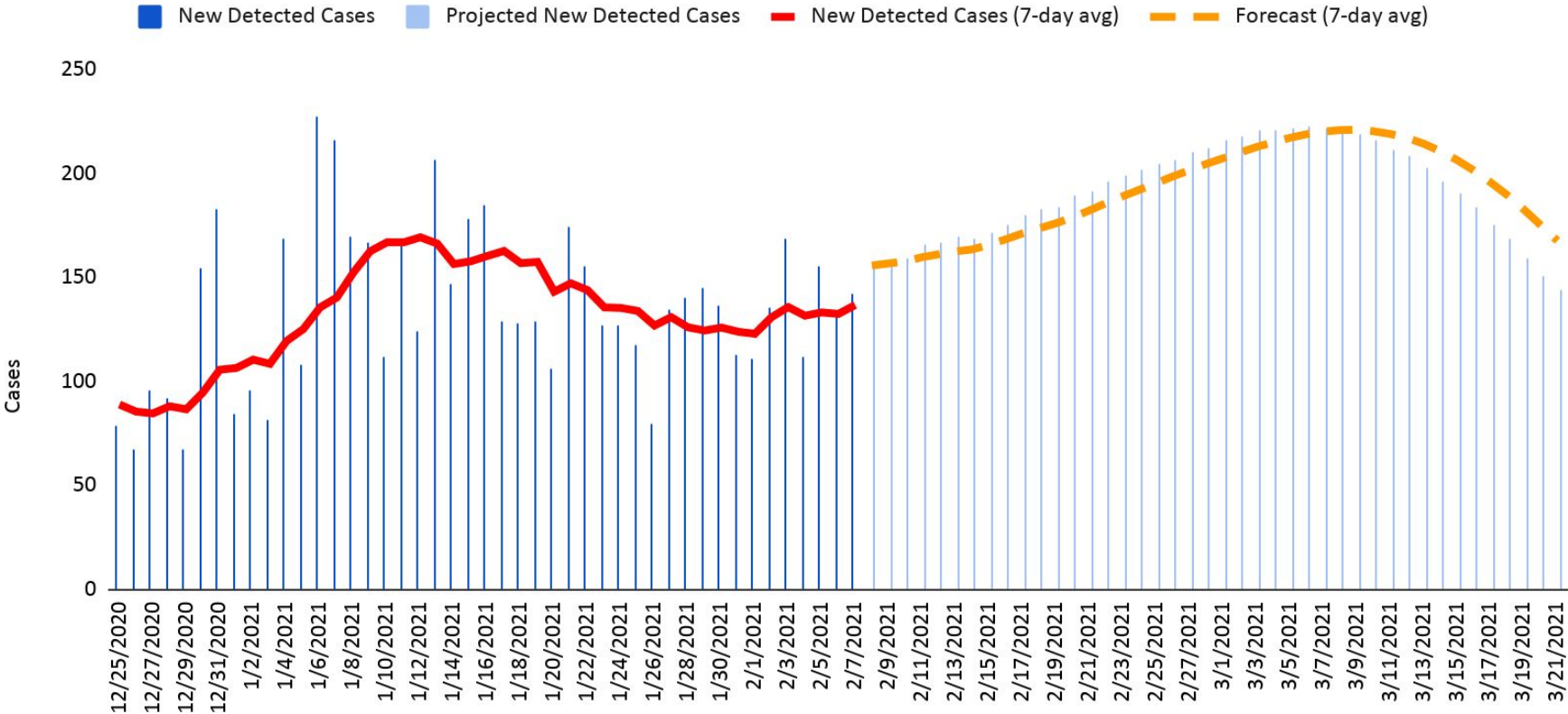


Maine

1,709 Cases (+32)

Higher Education: 217

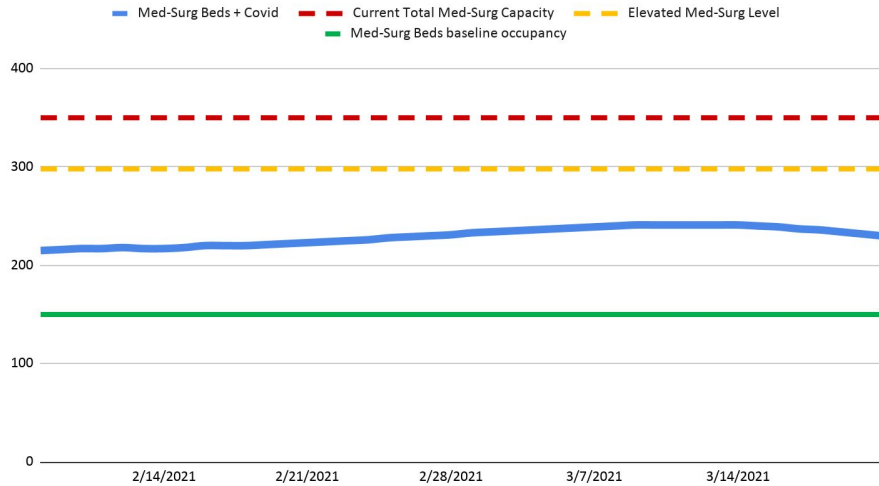
Vermont Forecast



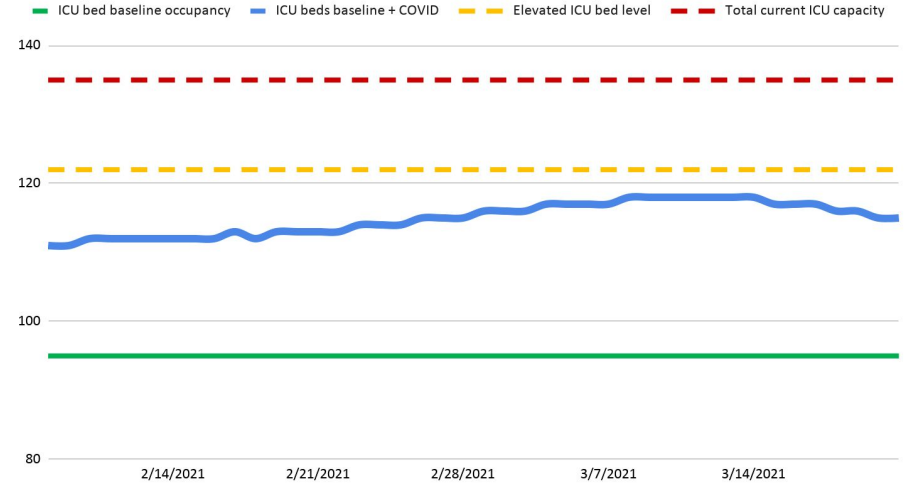
Source: Johns Hopkins University Data & Oliver Wyman Forecast Model—February 8, 2020

Hospital & ICU Capacity Forecasts

Vermont Hospital Forecast

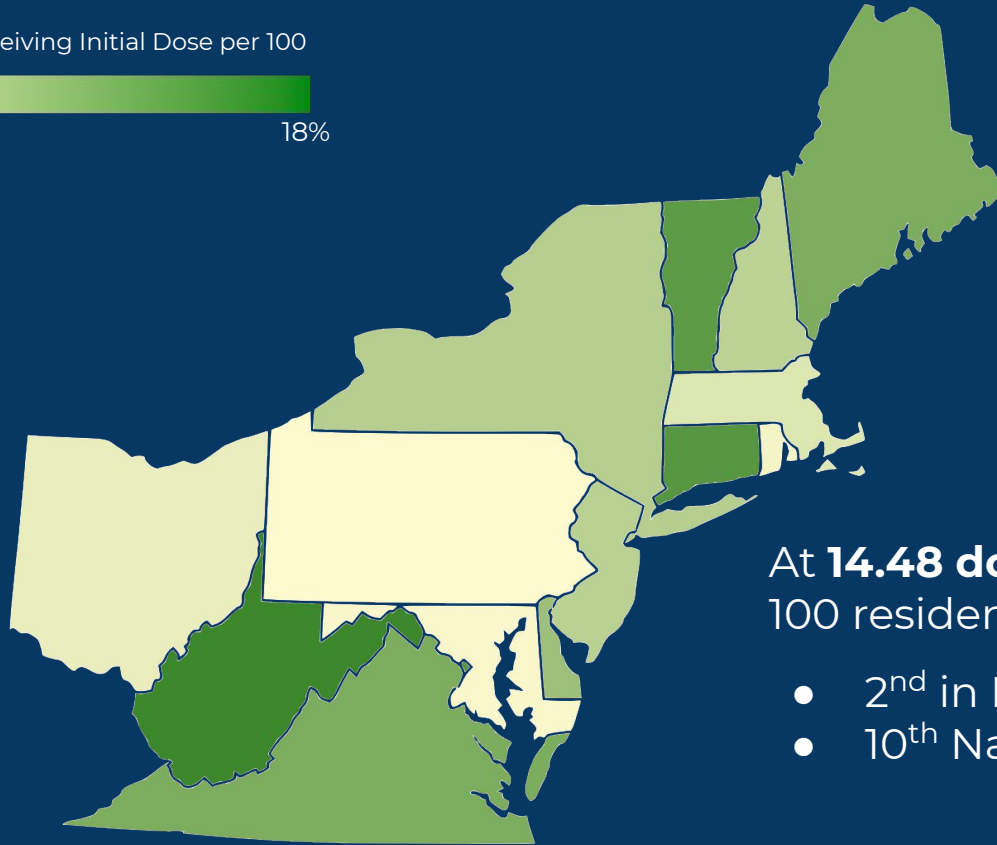


Vermont ICU Forecast



Regional Vaccination Map

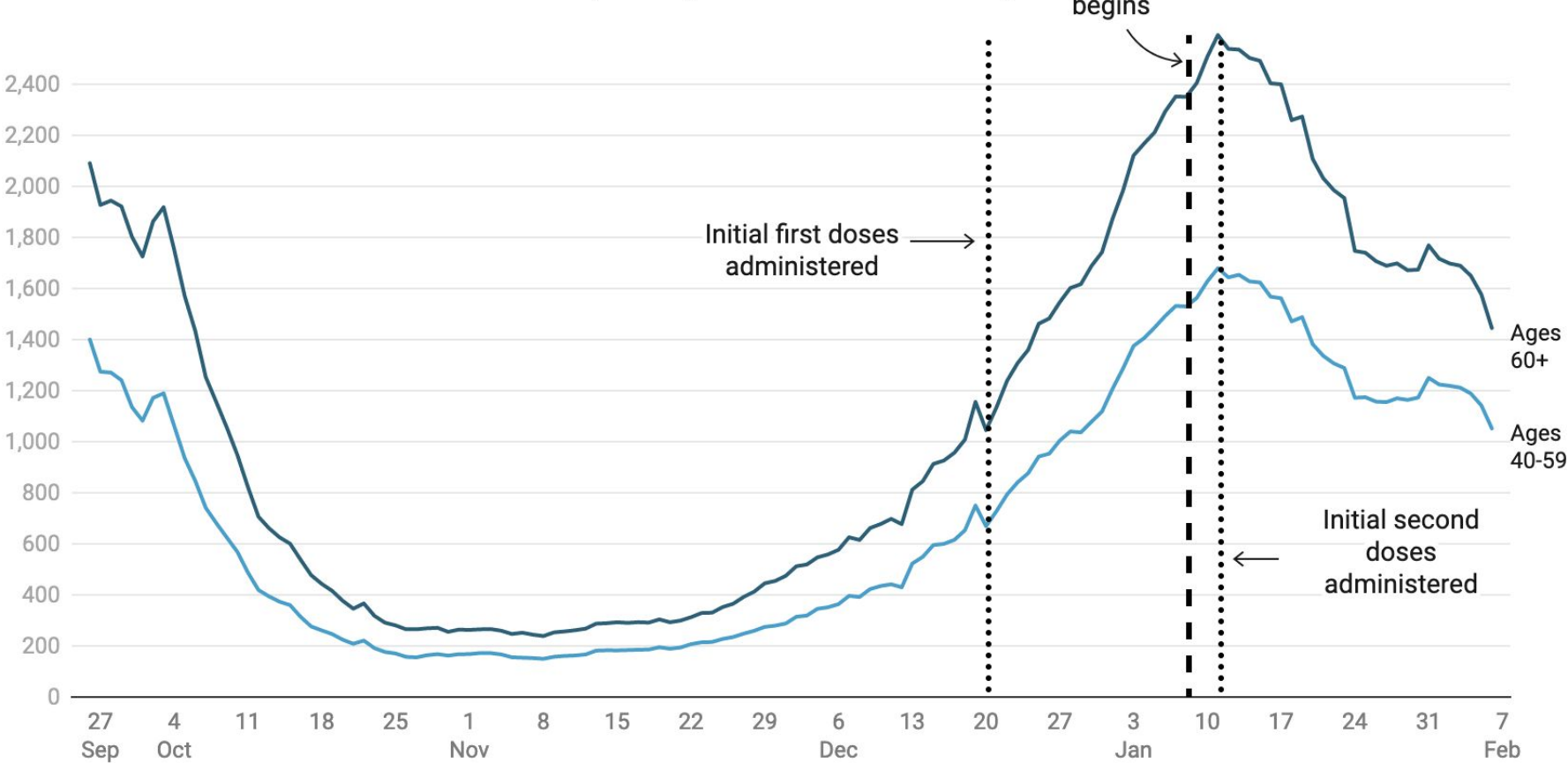
Population Receiving Initial Dose per 100



At **14.48 doses** administered per 100 residents, Vermont ranks:

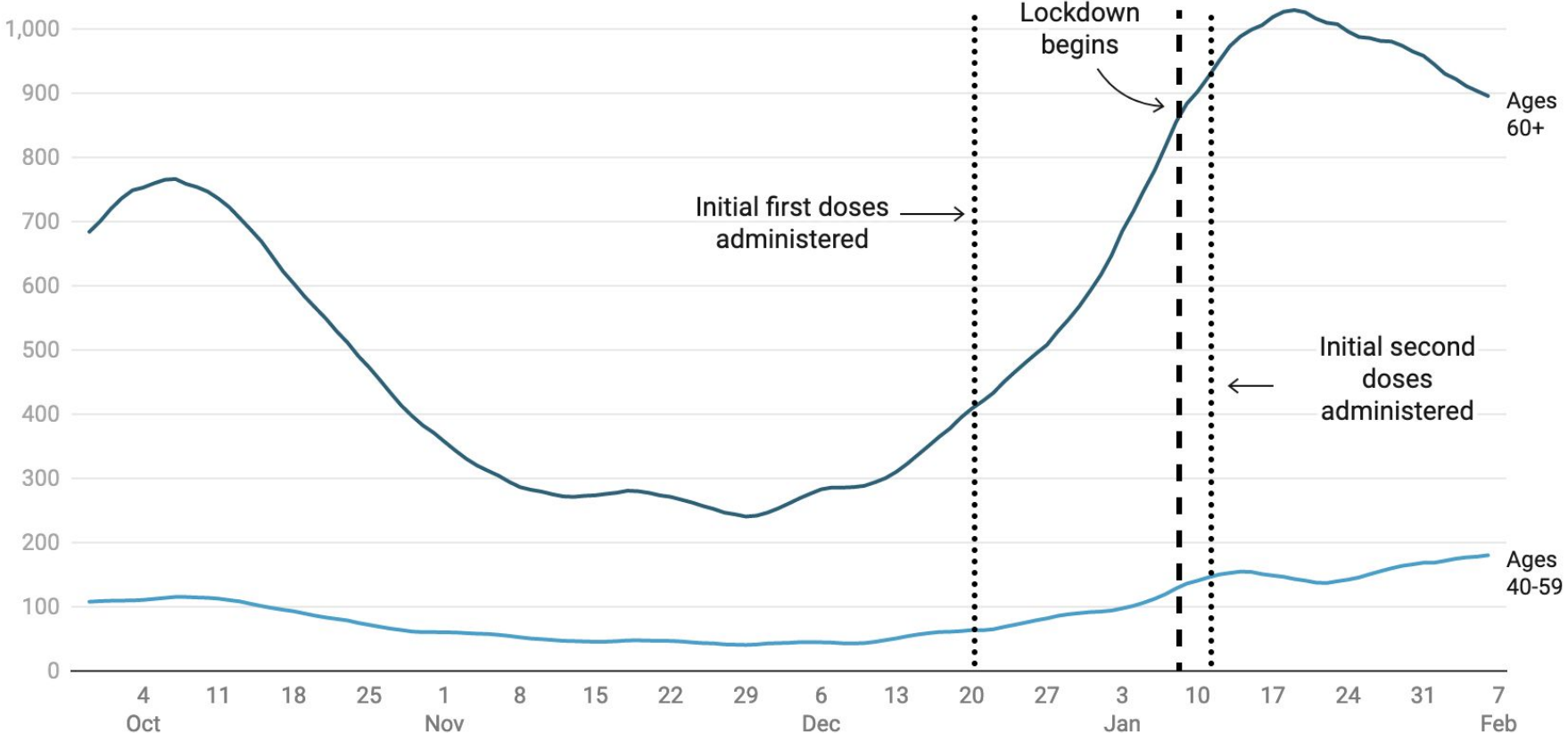
- 2nd in New England
- 10th Nationally

New COVID Infections in Israel (7-Day Centered Mean)



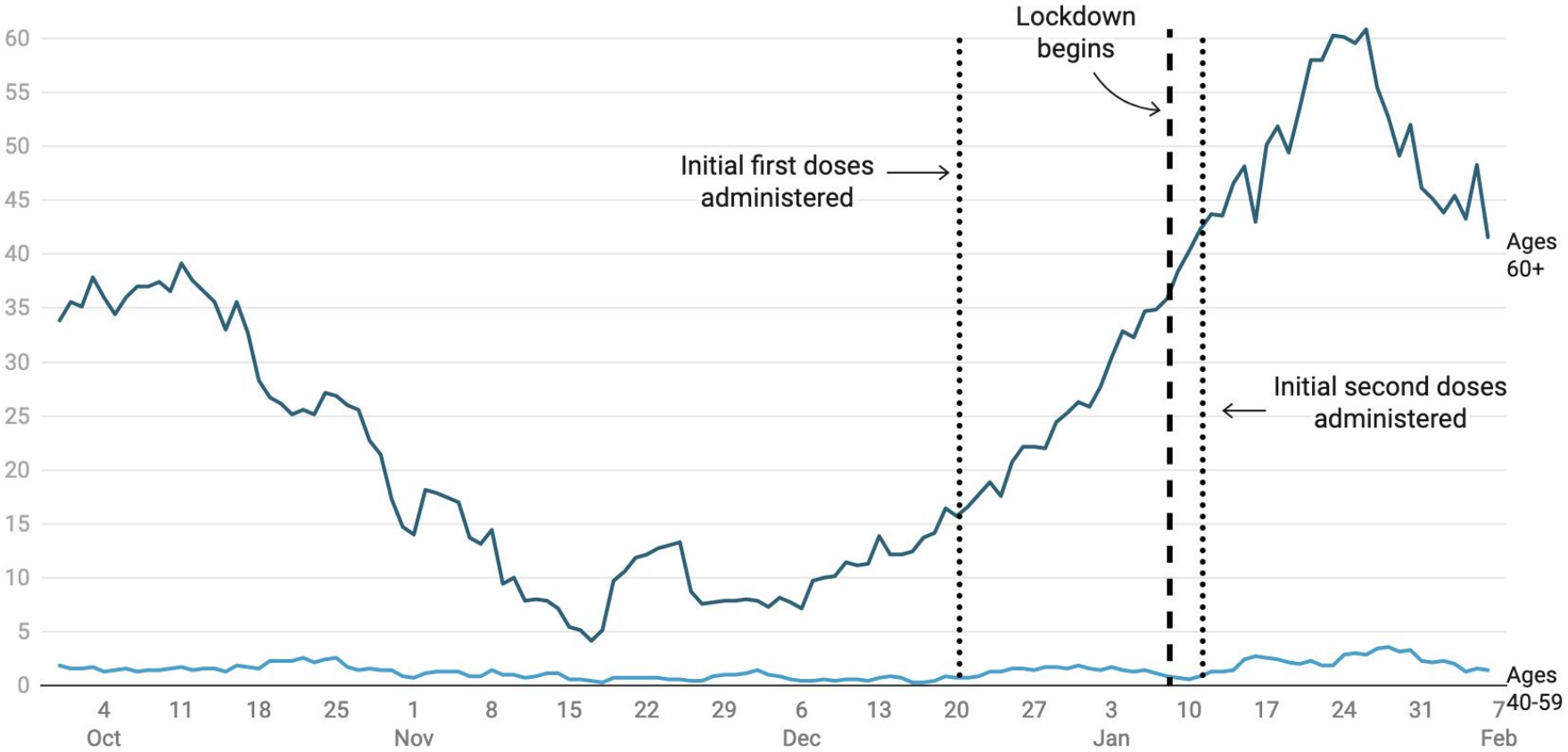
Source: — Israel MOH, February 9, 2021;

Severe COVID Infections in Israel (7-Day Centered Mean)



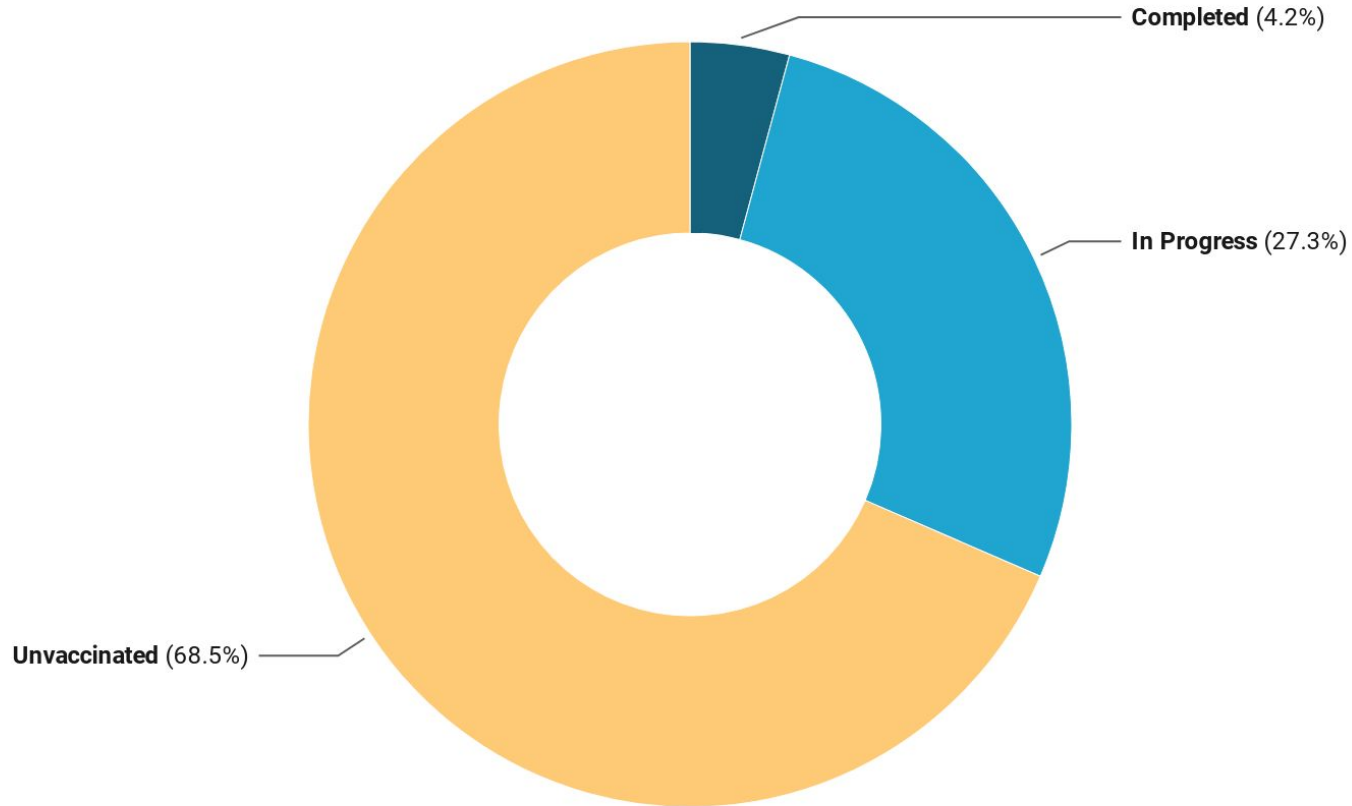
Source: — Israel MOH, February 9, 2021;

COVID Deaths in Israel (7-Day Centered Mean)



Source: — Israel MOH, February 9, 2021;

75+ Vermont Vaccine Progress



Includes LTCF vaccinations; Unvaccinated category includes those scheduled and waiting for initial dose

Chart: DFR Modeling 2/9/21 • Source: Vermont Dept of Health • Created with Datawrapper

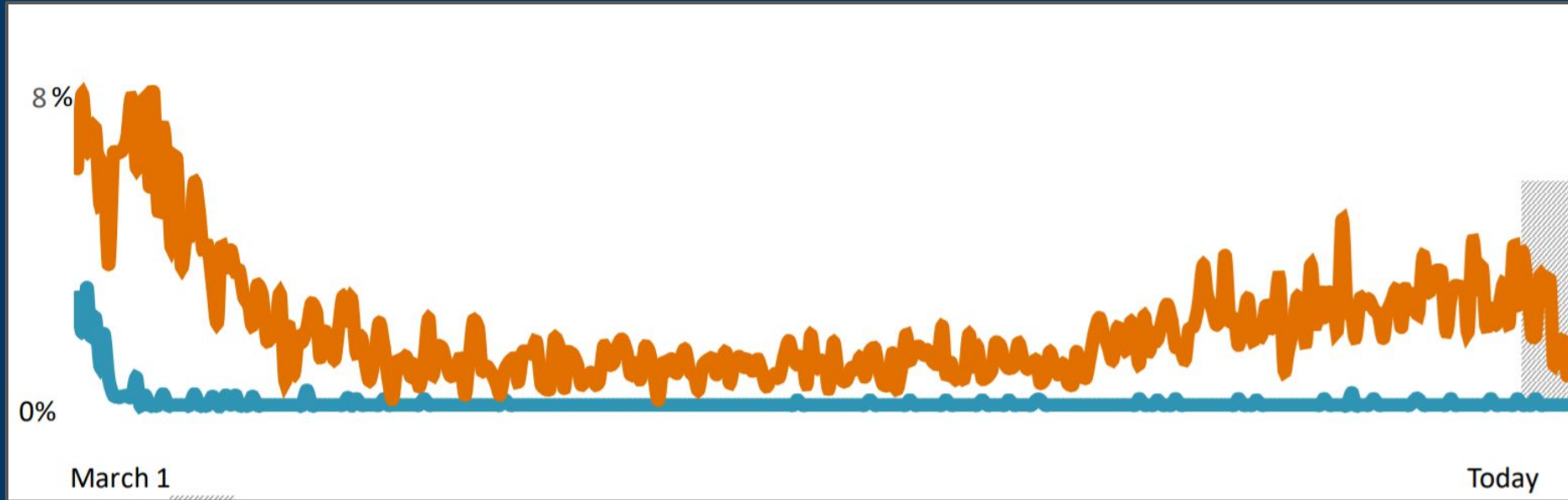
RESTART VERMONT

Reopening Metrics

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

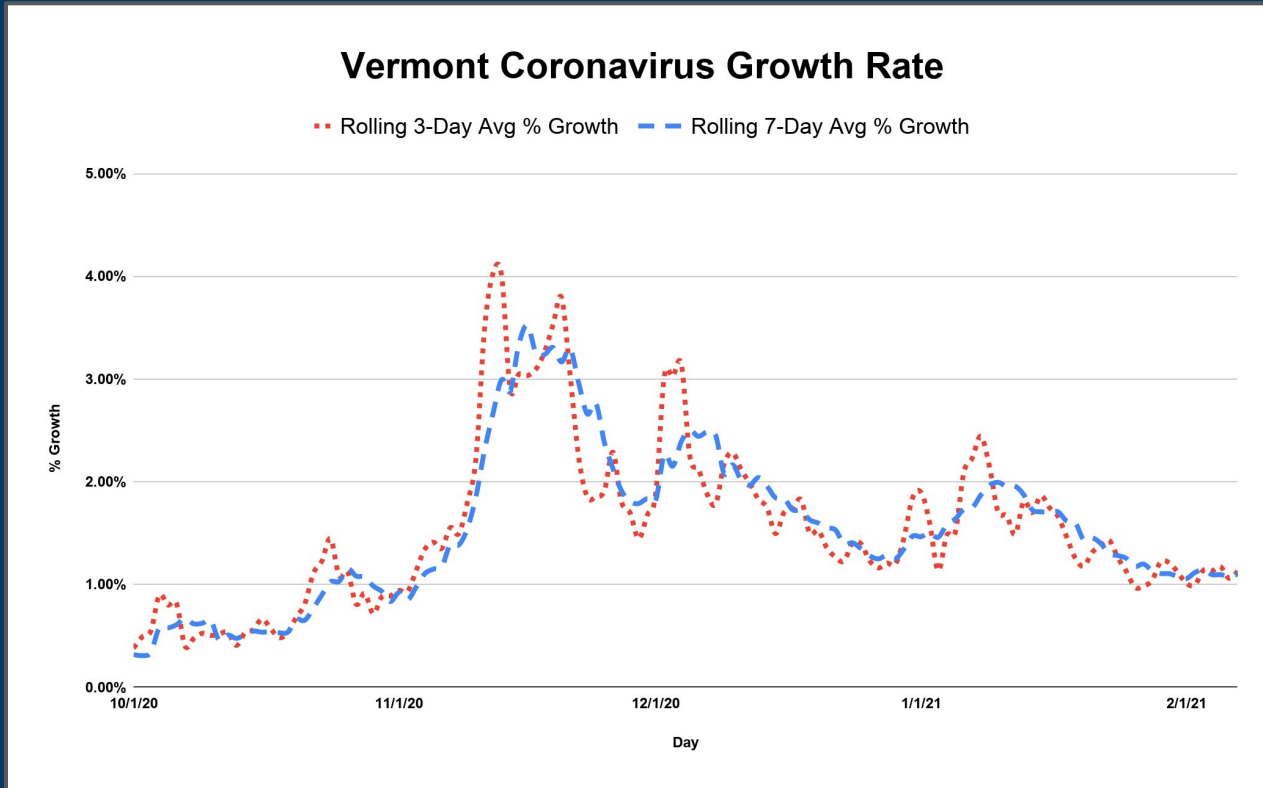
Data Point 1: Syndromic Surveillance

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



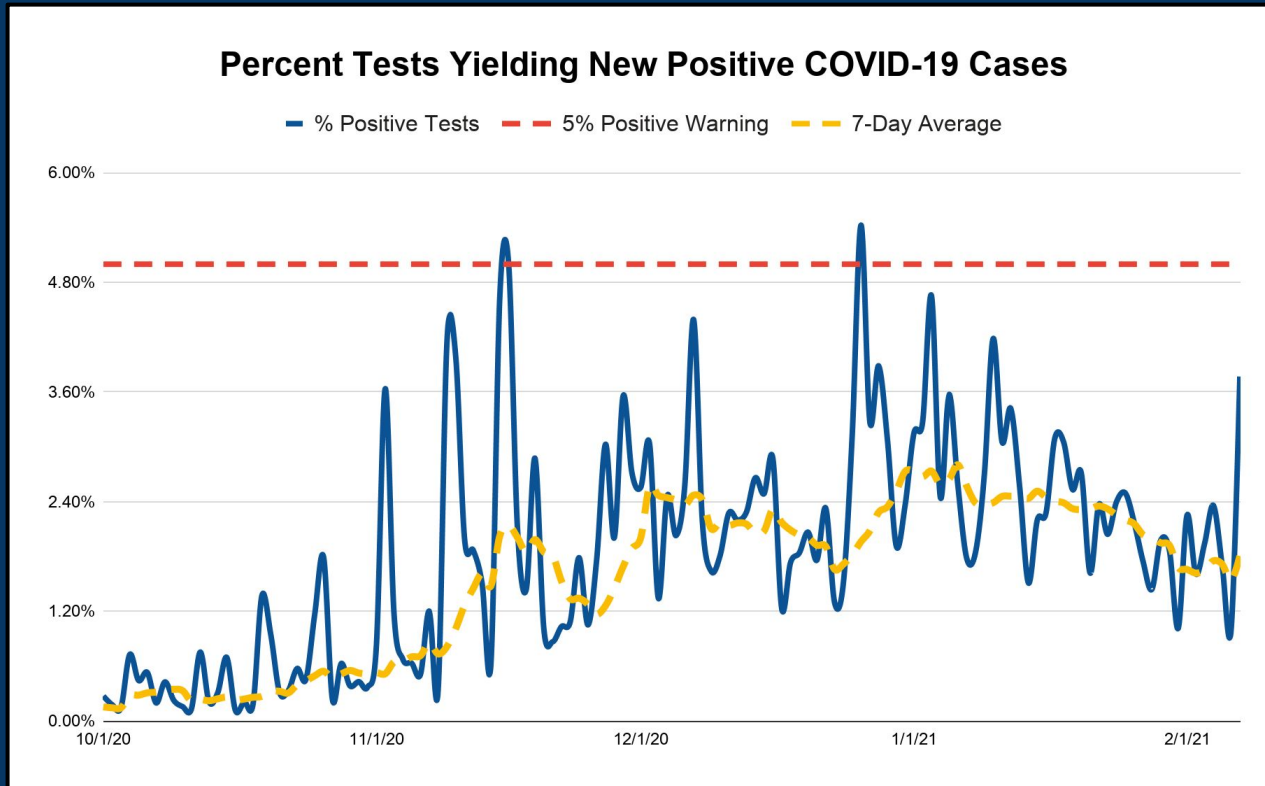
Data Point 2: Viral Growth and Reproductive Rates

- **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



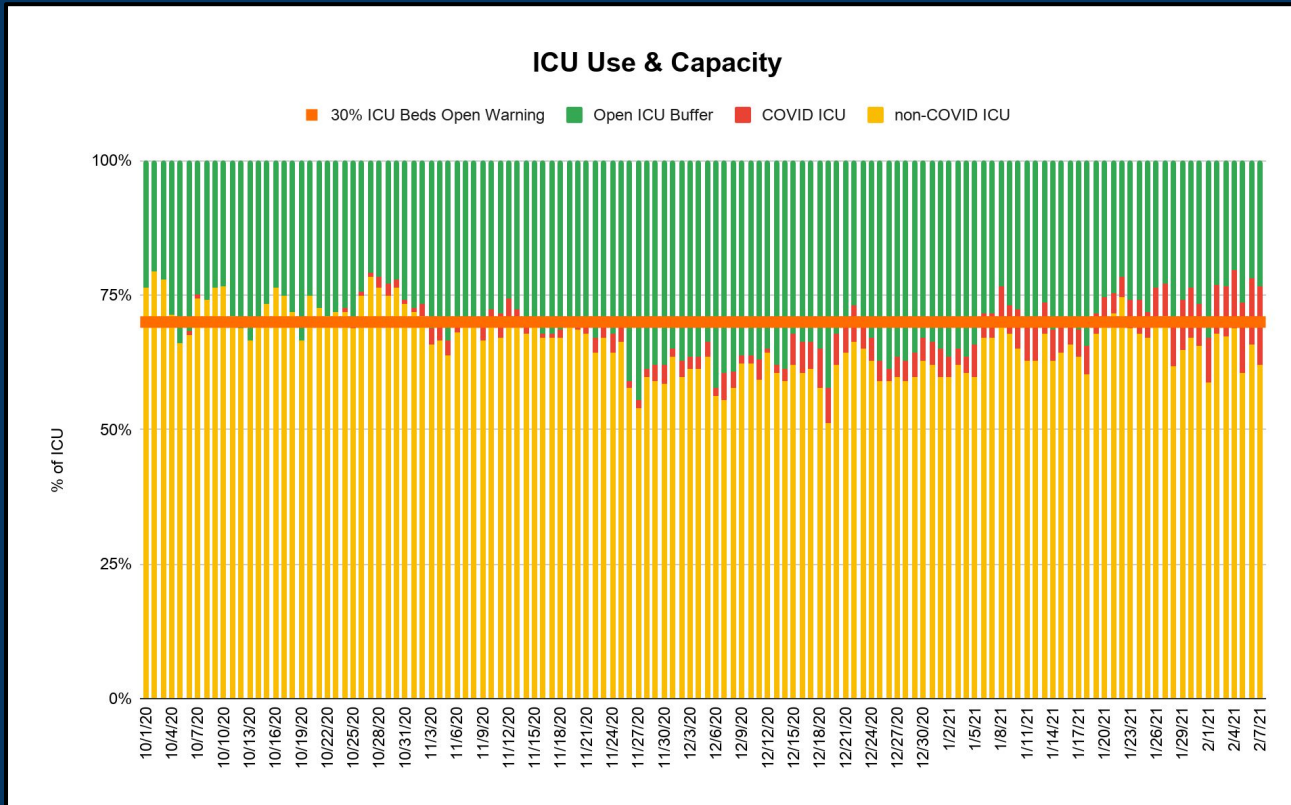
Data Point 3: Percentage of New Positive Tests

- **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

