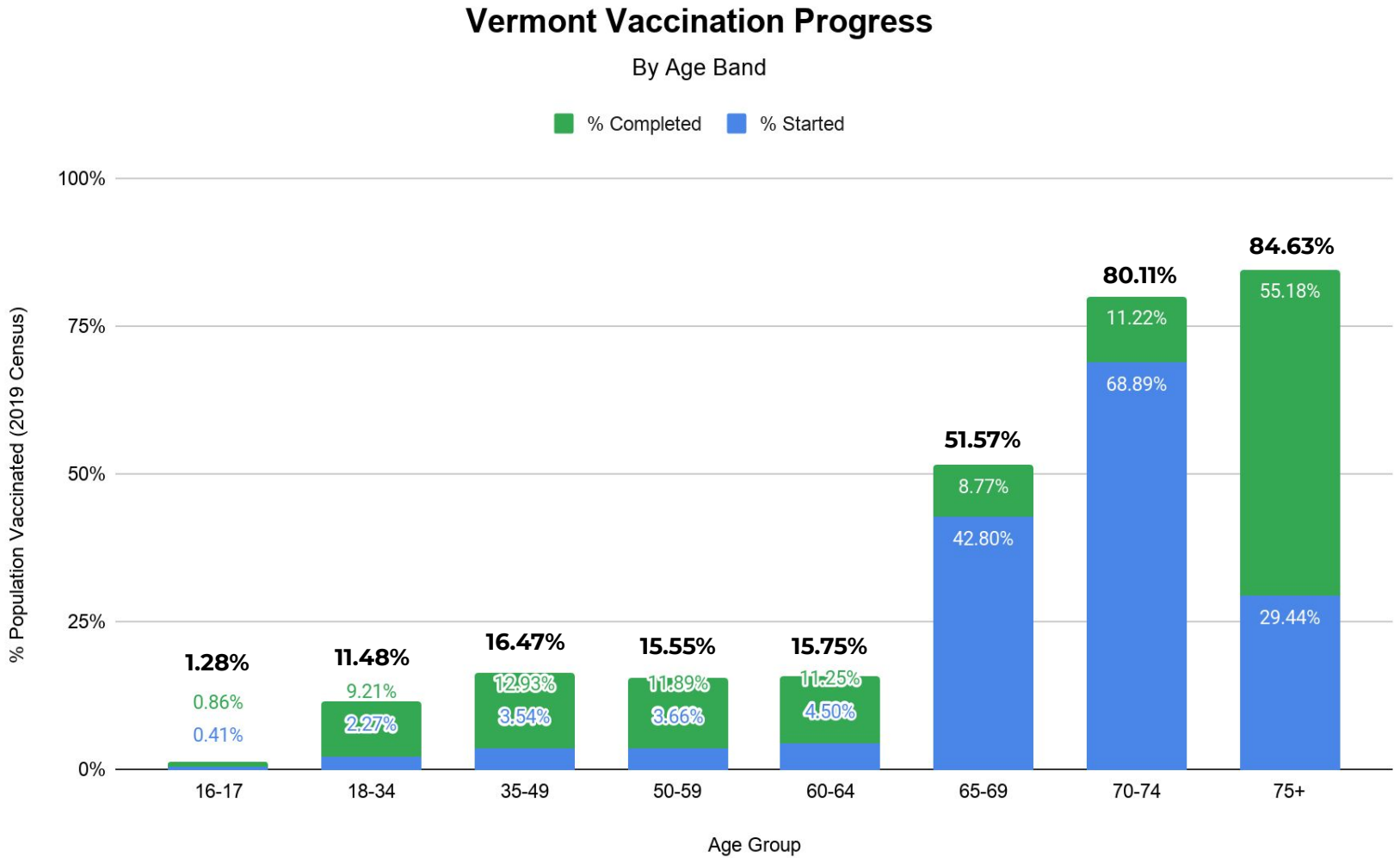
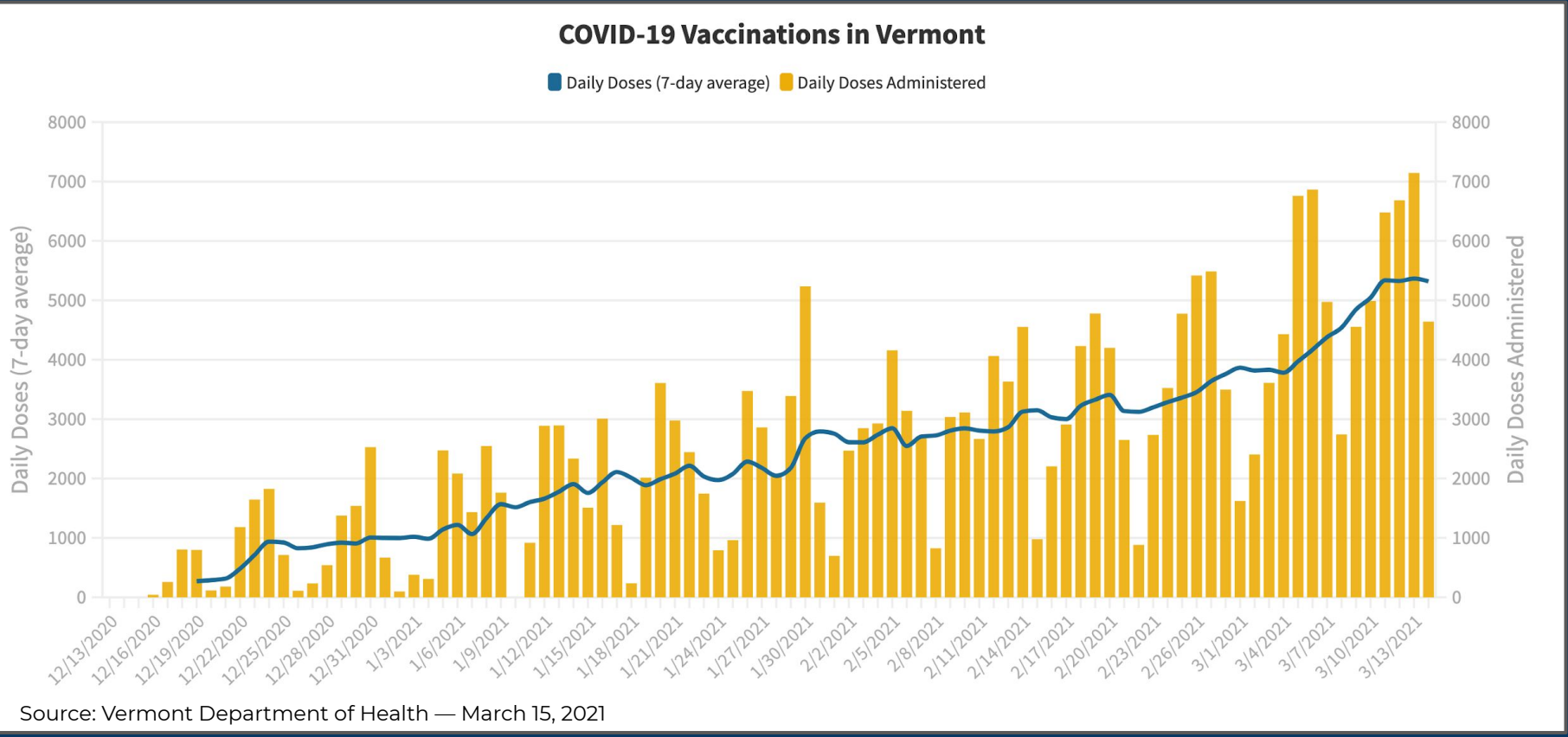
COVID-19 Modeling
March 16, 2021

Presentation available at:
dfr.vermont.gov



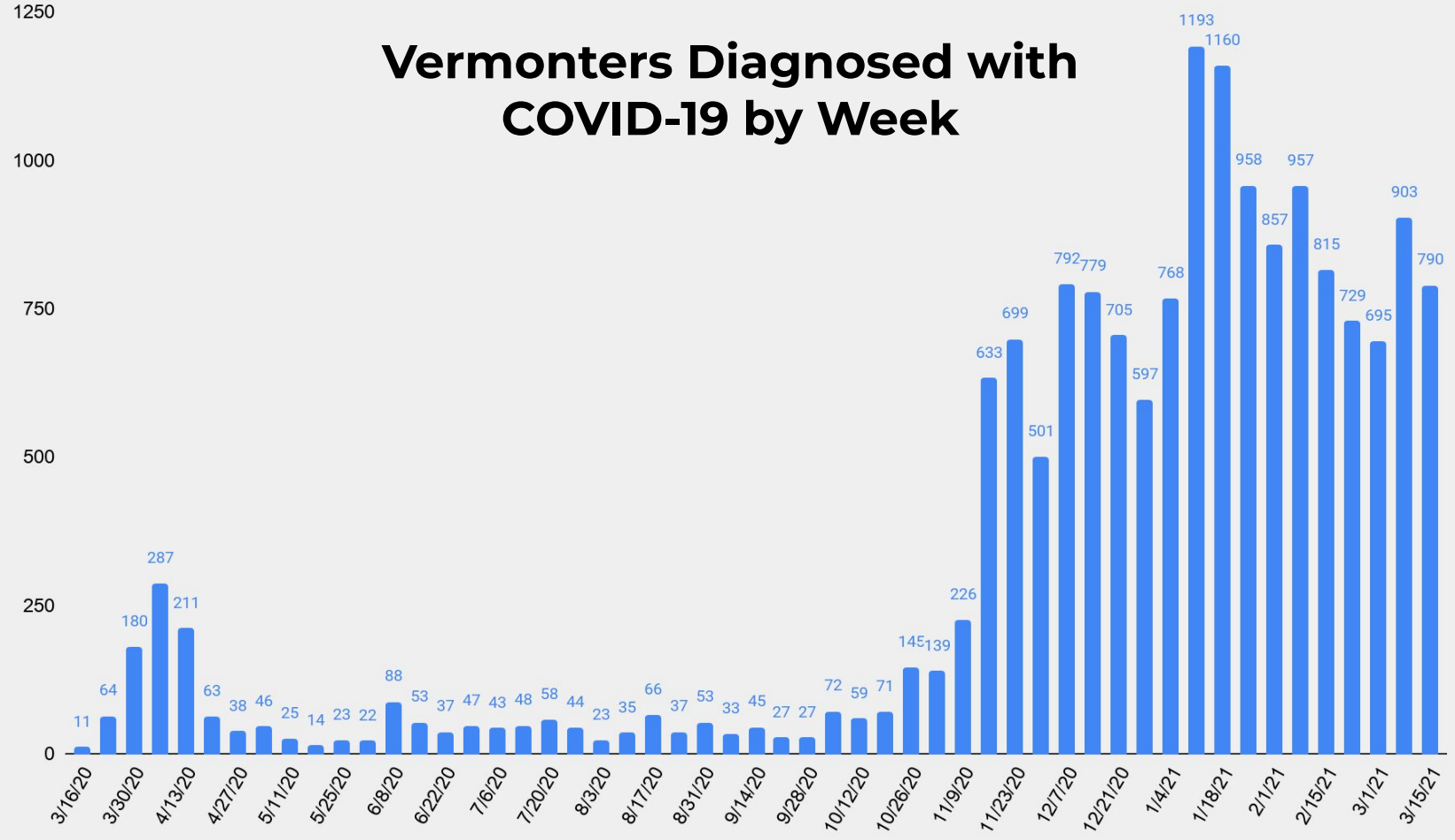
Source: Vermont Dept. of Health—March 16, 2021

New Daily Doses Administered

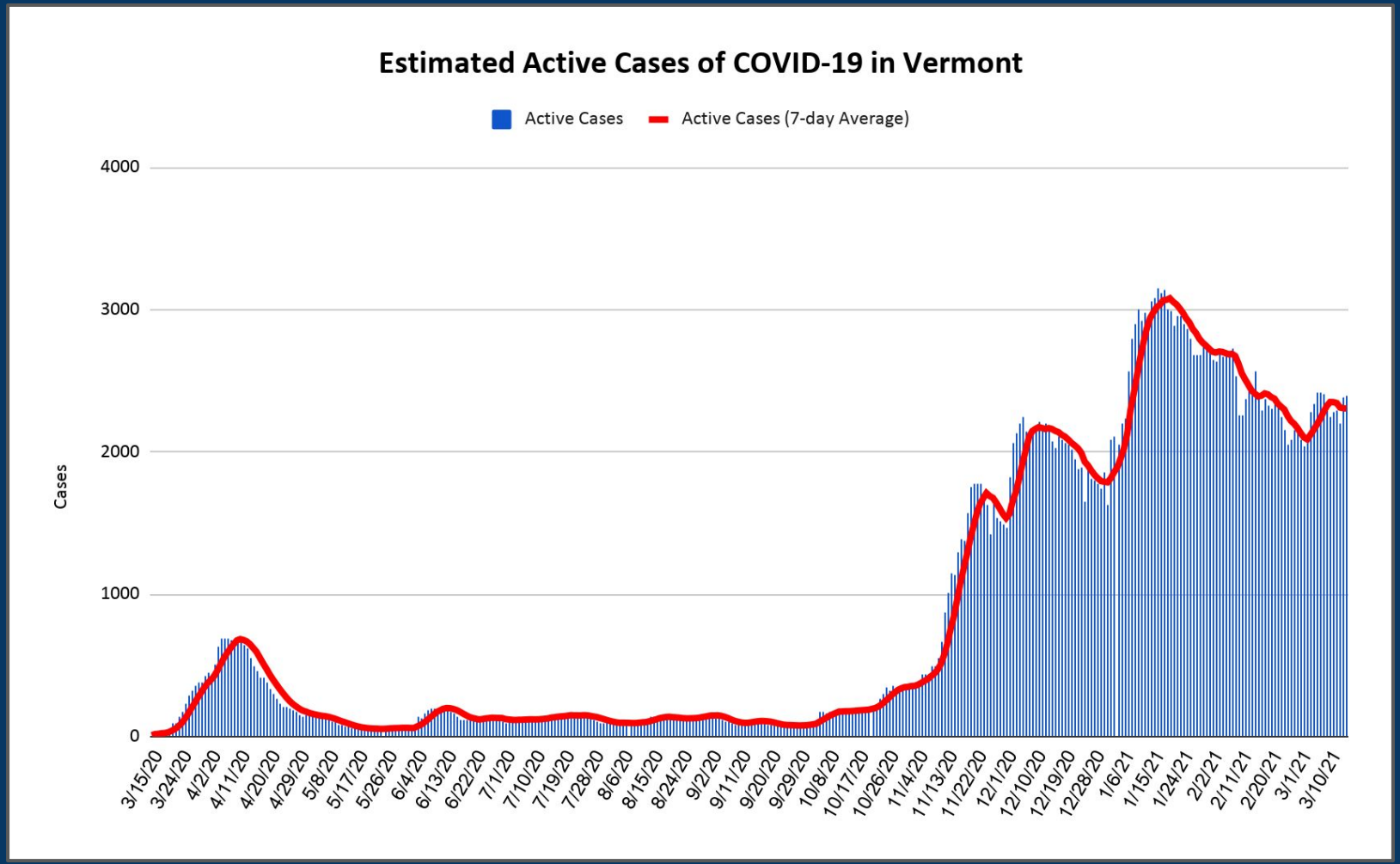


Source: Vermont Department of Health — March 15, 2021

Vermonters Diagnosed with COVID-19 by Week

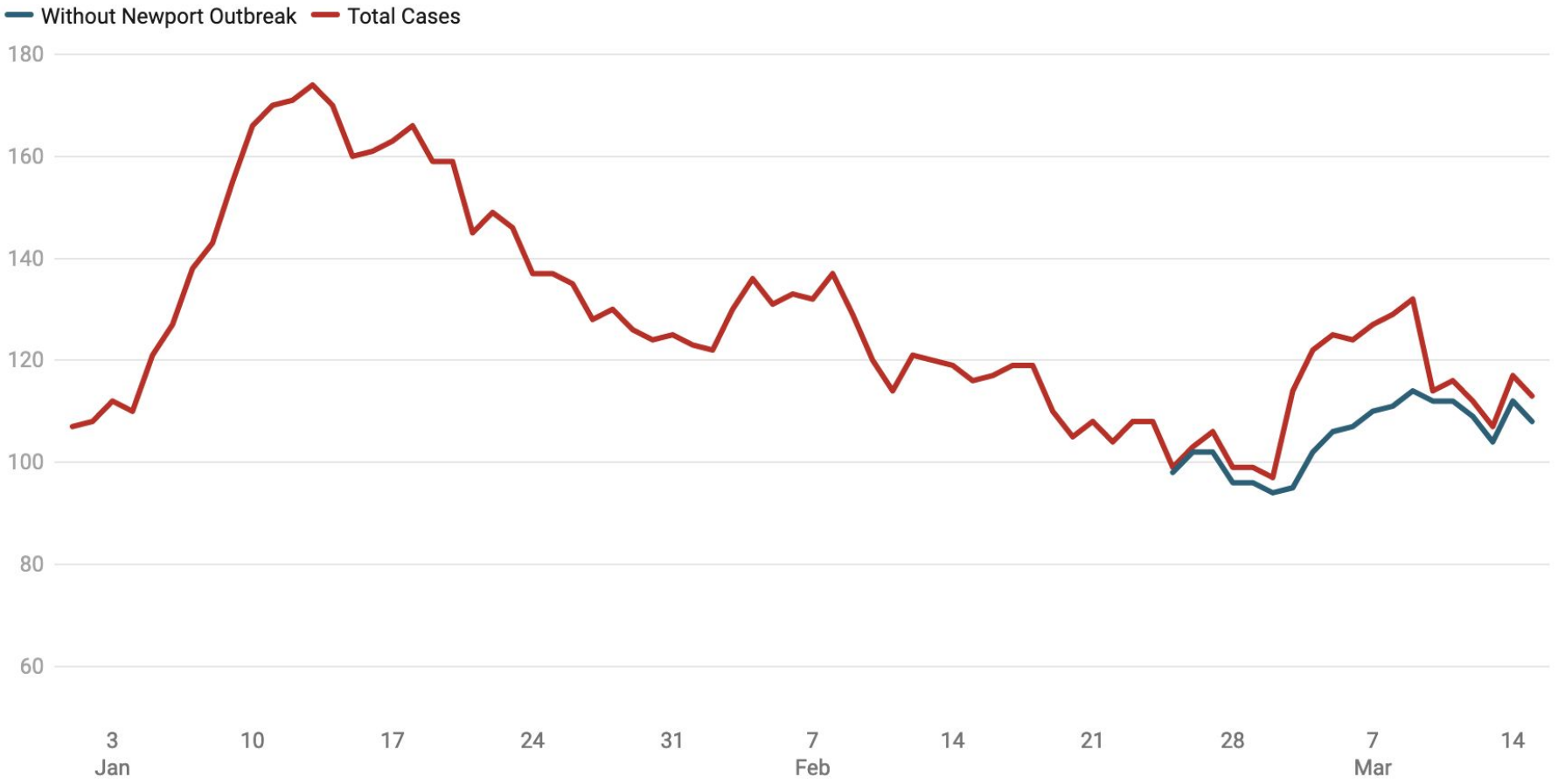


Source: Vermont Department of Health (week calculated as Tuesday to Monday)



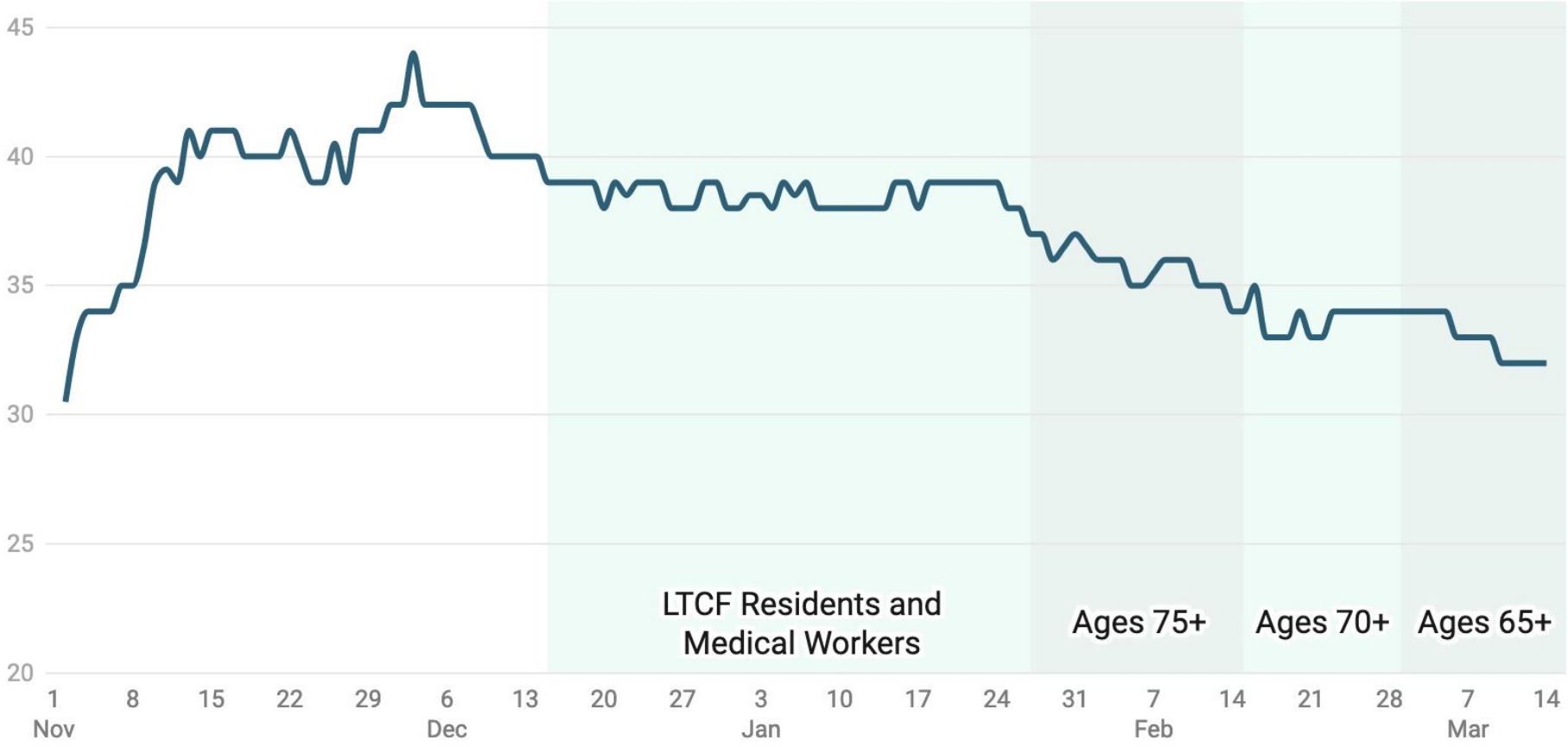
Source: Johns Hopkins University Data & Oliver Wyman Model—March 15, 2021

Daily Covid Infections in Vermont (7-Day Average)



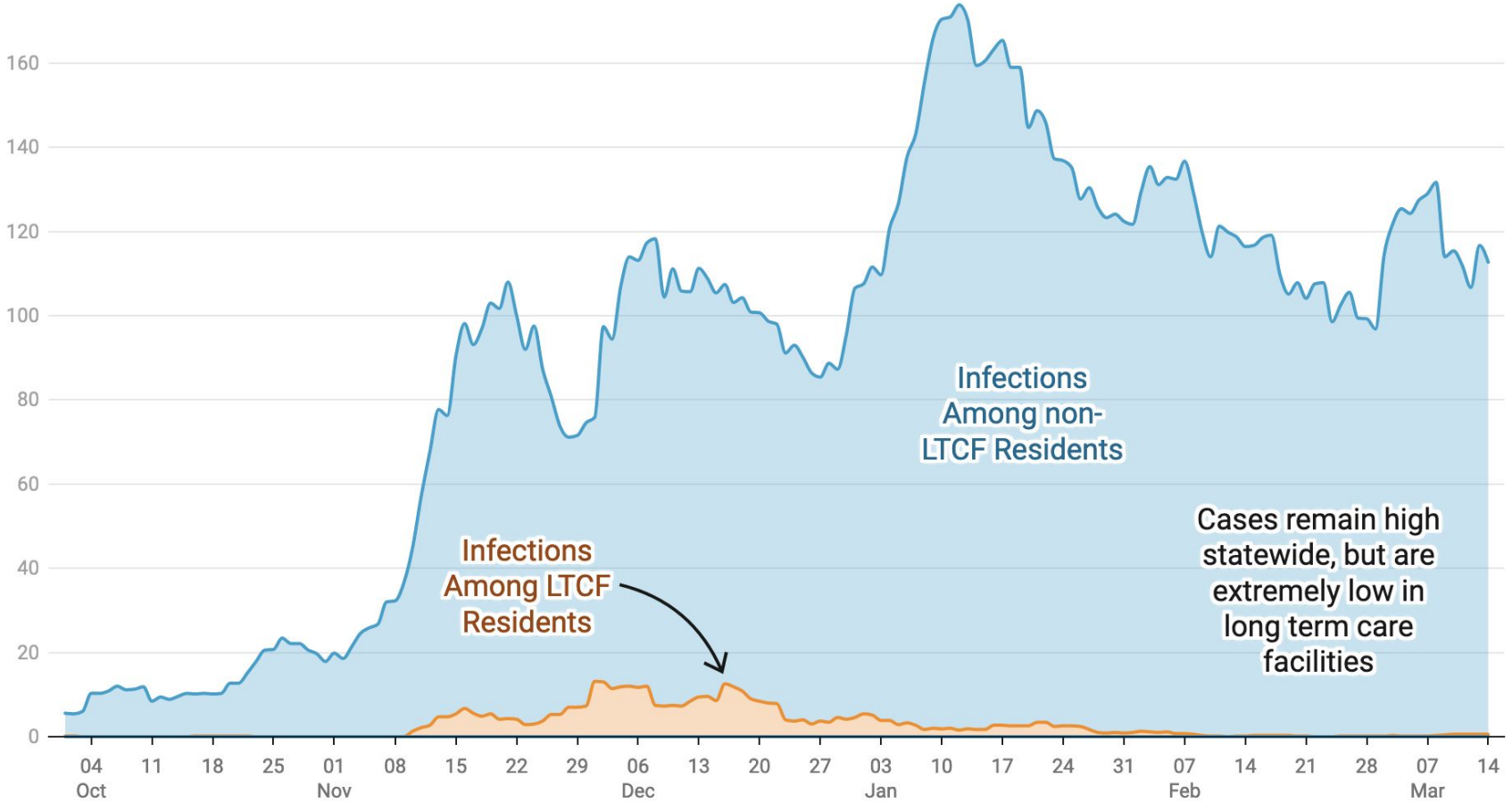
Age of Infection Decreases

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



Falling Infections in Vermont's Long Term Care Facilities

Daily COVID infections in VT (7-Day Average)

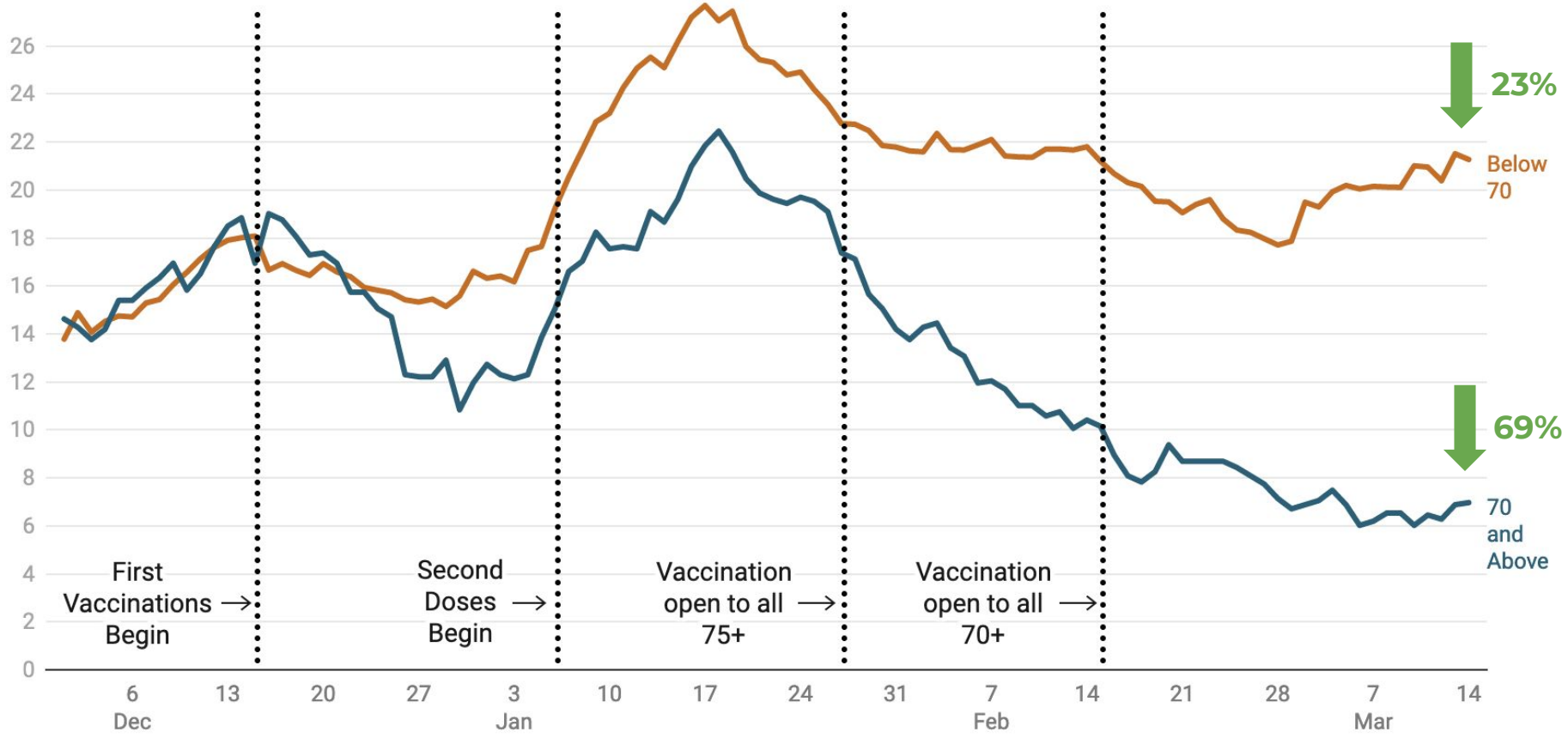


Active Outbreaks in Long Term Care Facilities

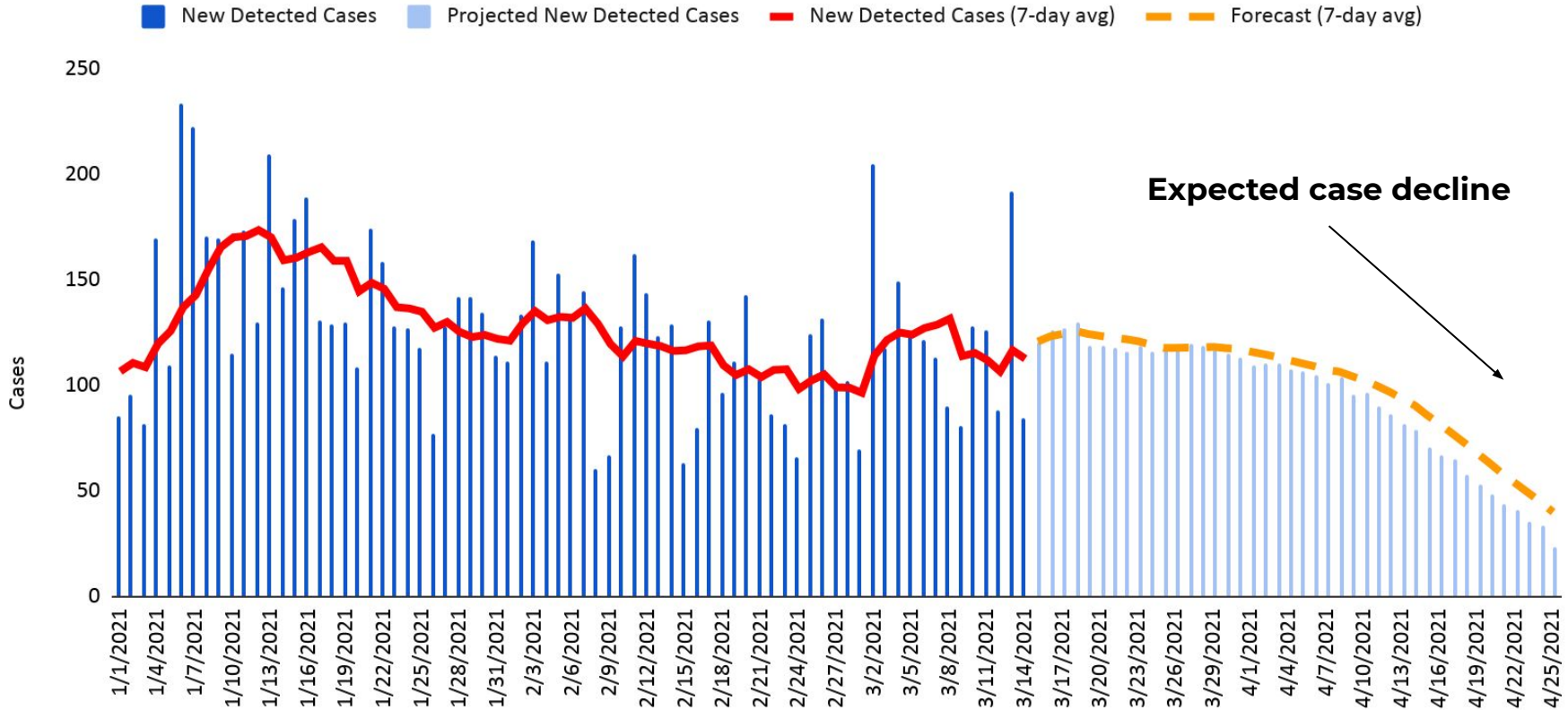
Facility Name	Total COVID-19 Cases
Vermont Veterans Home (2), *Bennington*	8
Pines Rehab and Health Center, *Lyndonville*	Not Shown

Source: Vermont Department of Health—March 8, 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.*

Infections per 100K in VT Age Groups (14-Day Average)

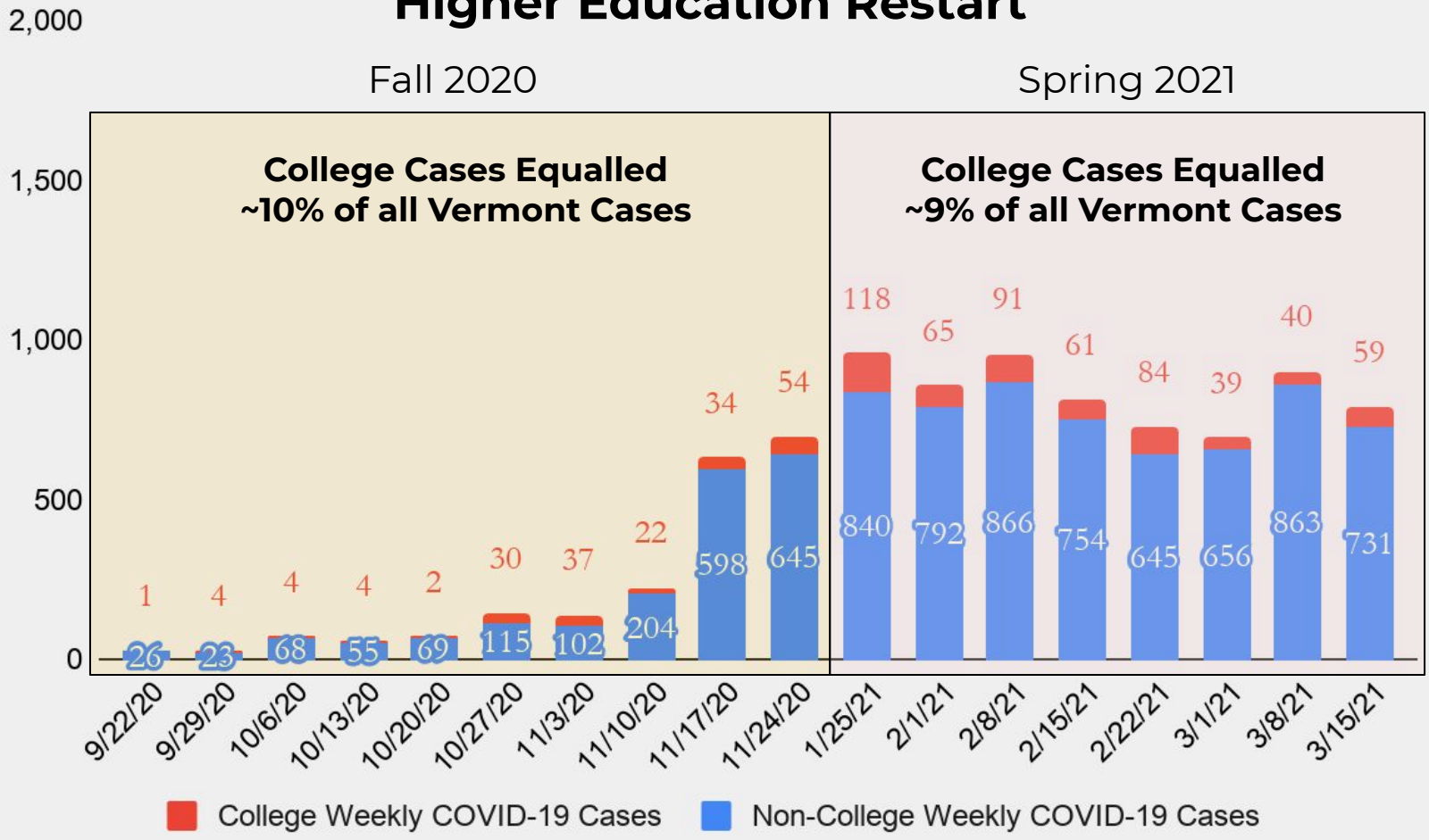


Vermont Forecast



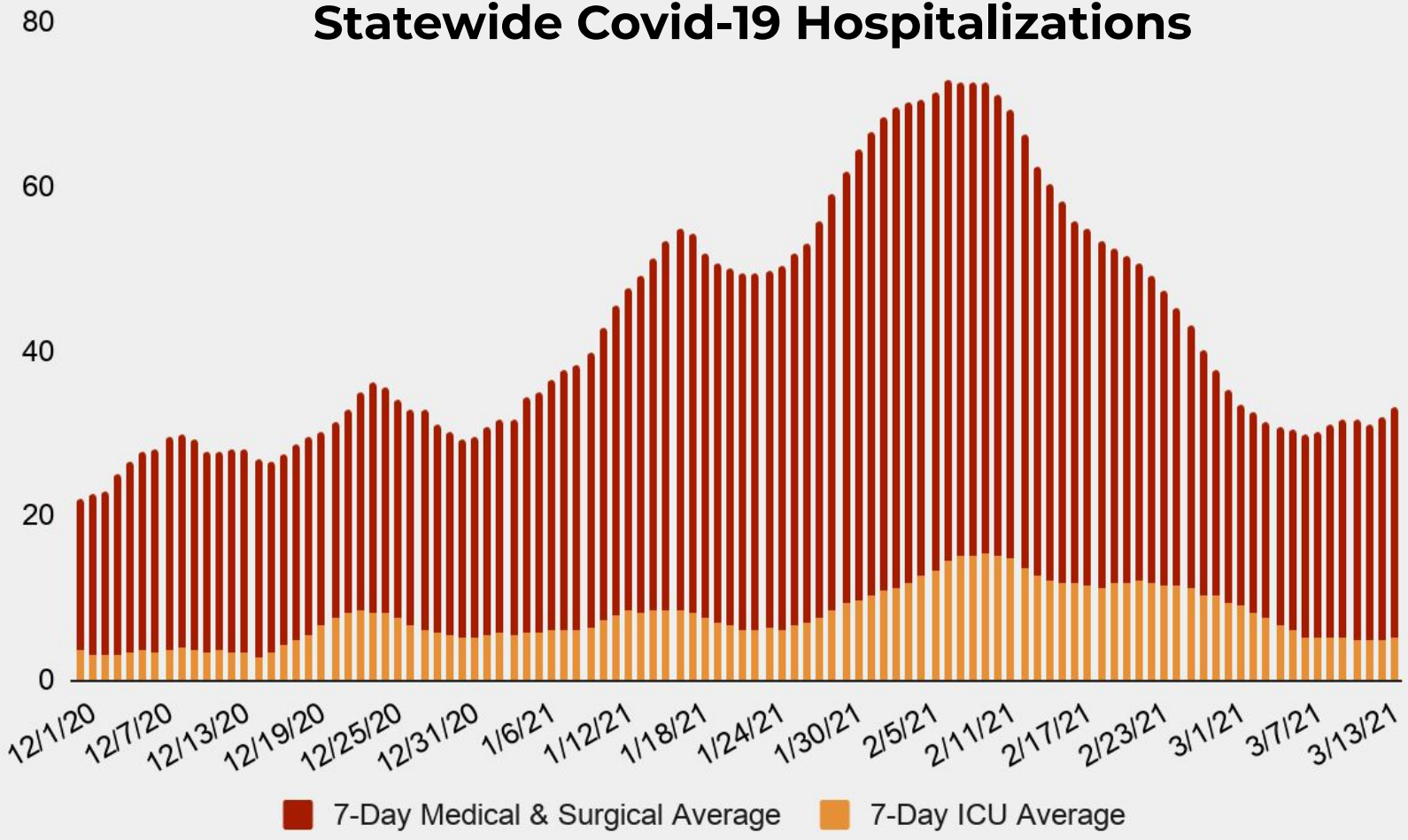
Source: Johns Hopkins University Data & Oliver Wyman Forecast Model—March 15, 2021; Note: assumes current vaccine supply and no variant-specific impact

Higher Education Restart



Source: Vermont Higher Education Institution Reporting—March 15, 2021

Statewide Covid-19 Hospitalizations



Source: Vermont Department of Health— March 15, 2021

March Fatality Rates Expected to Decline

Likelihood of COVID-19 Deaths Largely Dependent on:

Active Cases & Outbreaks in LTCFs

1/13: **71** LTCF Cases (prior 3 weeks) & **12** Outbreaks
3/15: **6** LTCF Cases (prior 3 weeks) & **2** Outbreaks

Active Cases Among Most Vulnerable by Age

1/13: **305** Cases Among 70+ (prior 3 weeks)
3/15: **118** Cases Among 70+ (prior 3 weeks)

Individuals in ICU

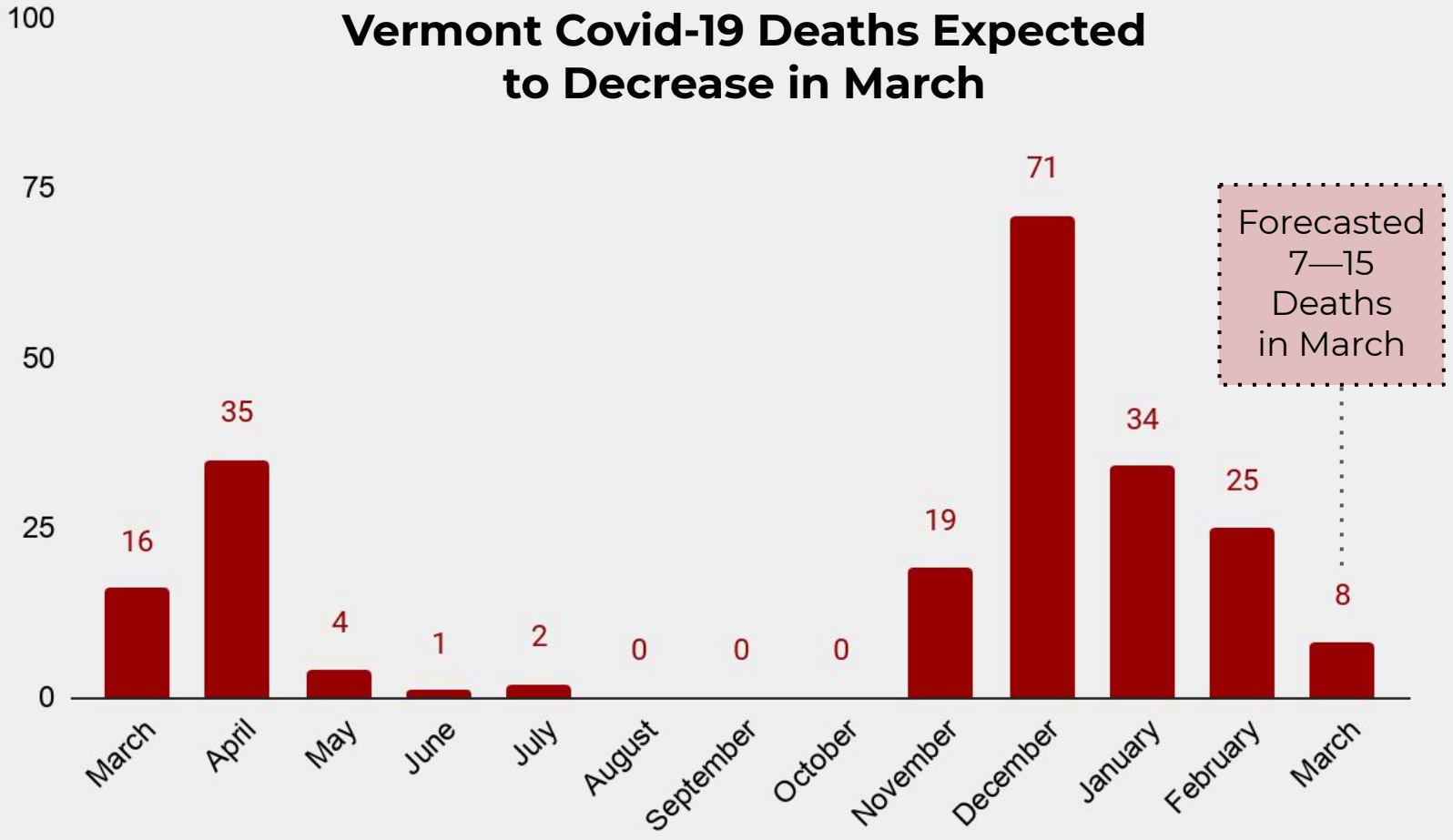
1/13: 7-Day Average: **8.4** (Trending Up)

3/15: 7-Day Average: **4.6** (Trending Down)

Individuals Requiring Ventilation

1/13: 7-Day Average: **1** (Trending Up)
3/15: 7-Day Average: **.86** (Trending Down)

Vermont Covid-19 Deaths Expected to Decrease in March

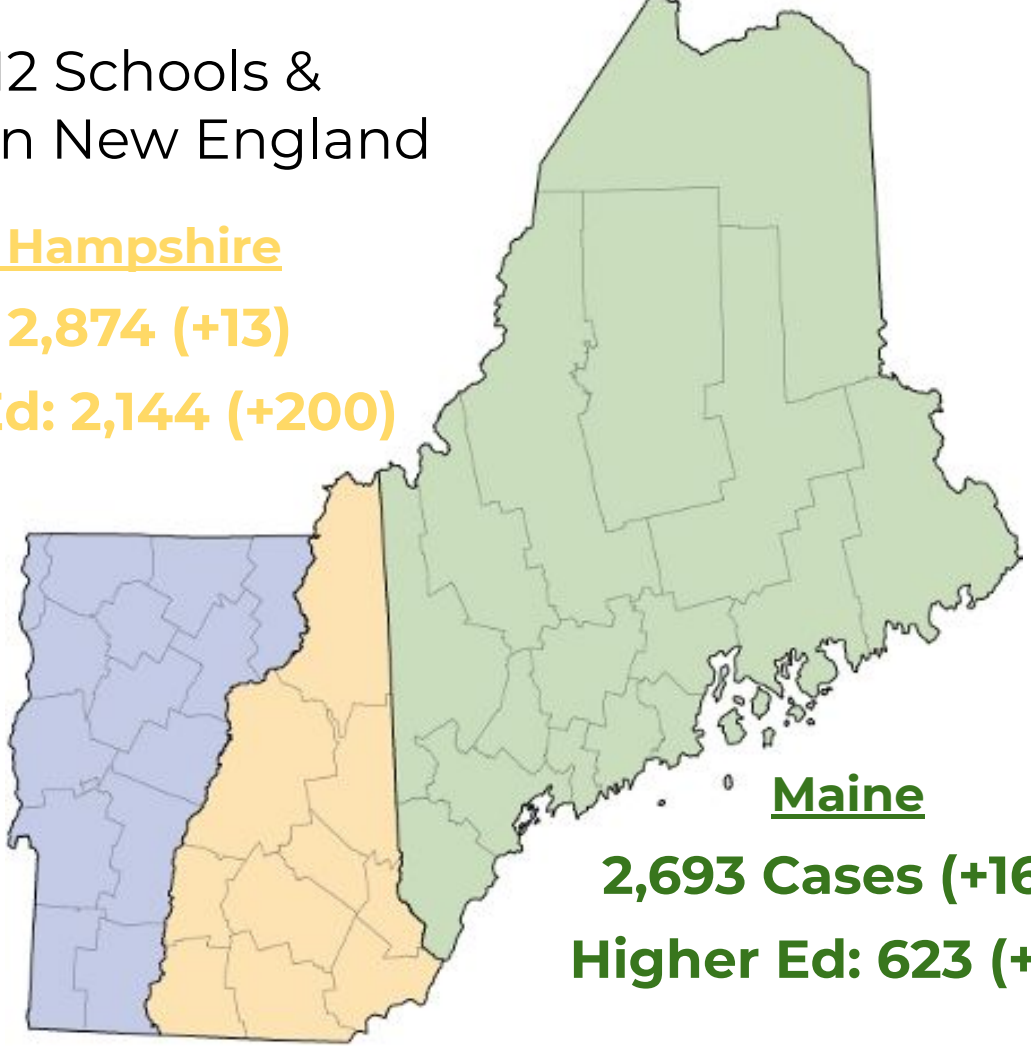


Covid-19 Cases in K-12 Schools & Colleges Across Northern New England

New Hampshire

K-12: 2,874 (+13)

Higher Ed: 2,144 (+200)



Vermont

K-12: 760 Cases (+59)

Higher Ed: 557 (+59)

Maine

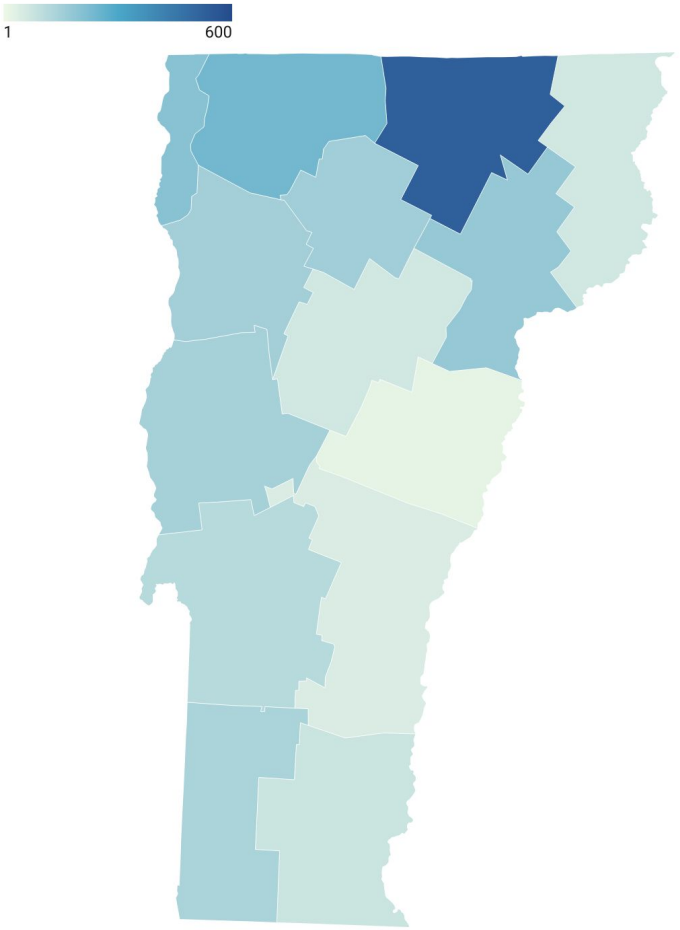
2,693 Cases (+162)

Higher Ed: 623 (+69)

Source: ME, NH & VT K-12 Dashboards, ME media reports

Vermont Weekly Cases by County (per 100,000)

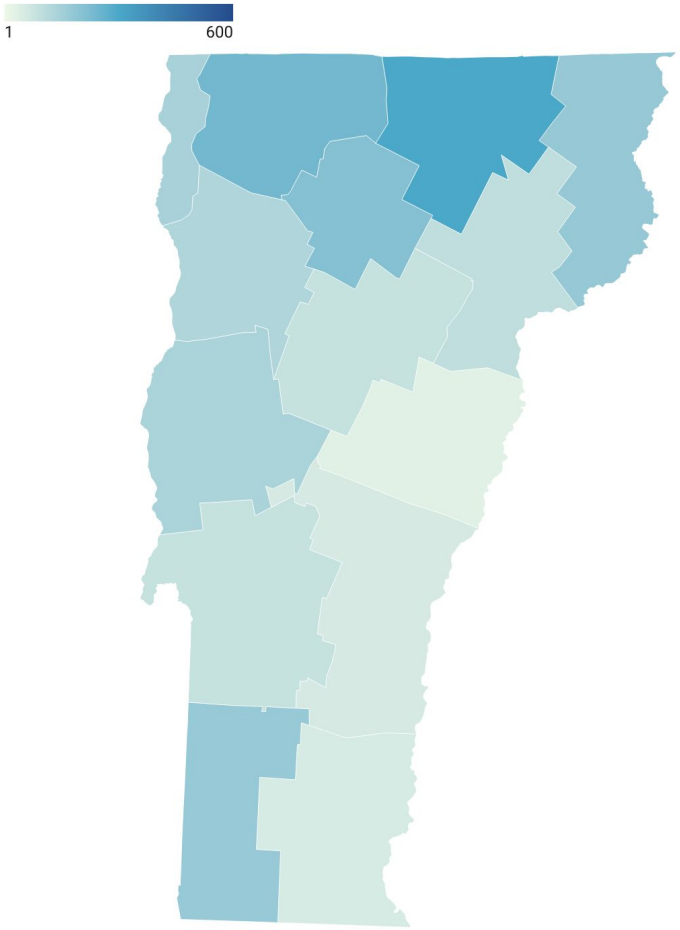
Results Reported February March 2 to 8



Map: Vermont DFR COVID Modeling Team • Source: Vermont Dept. of Health • Created with Datawrapper

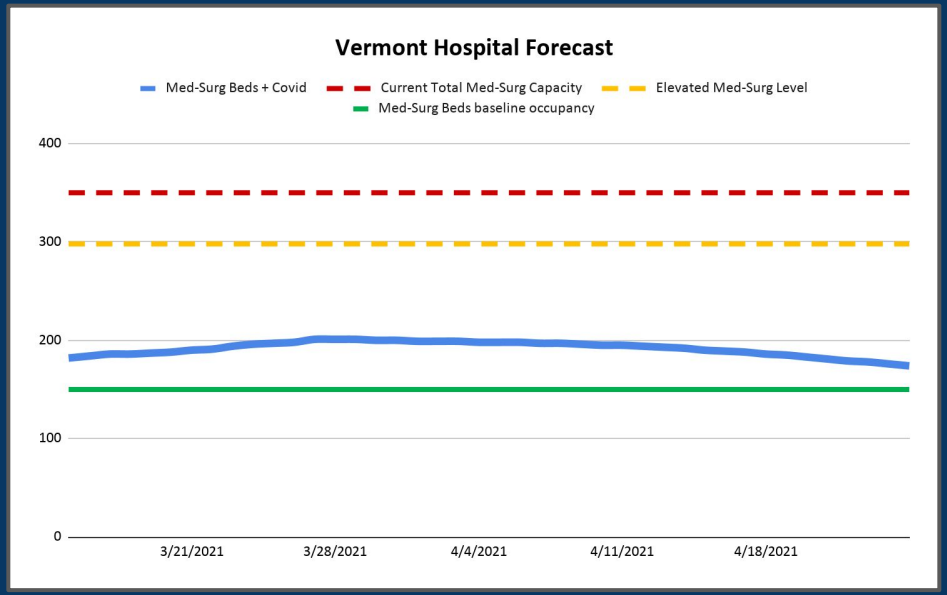
Vermont Weekly Cases by County (per 100,000)

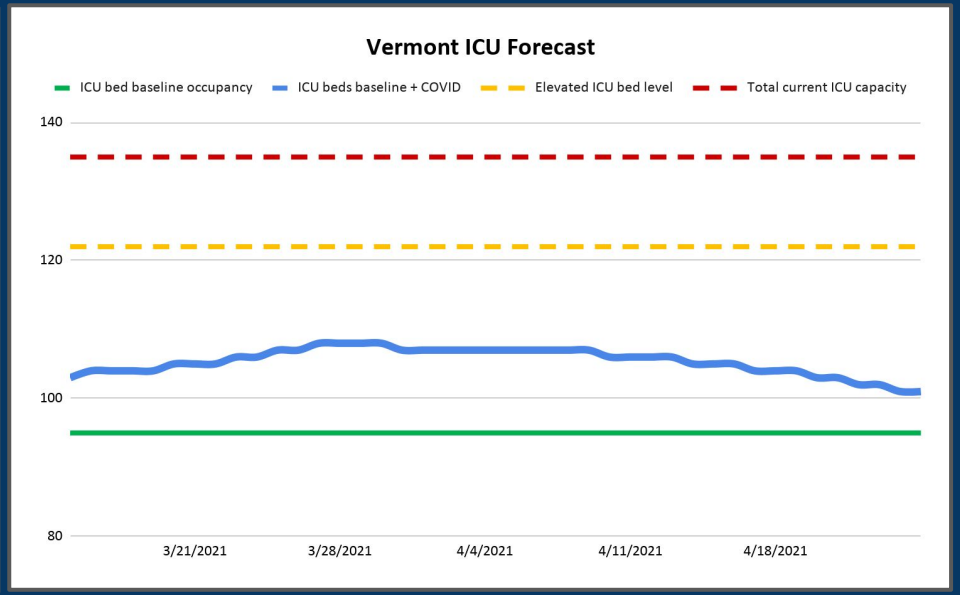
Results Reported March 9 to 15



Map: Vermont DFR COVID Modeling Team • Source: Vermont Dept. of Health • Created with Datawrapper

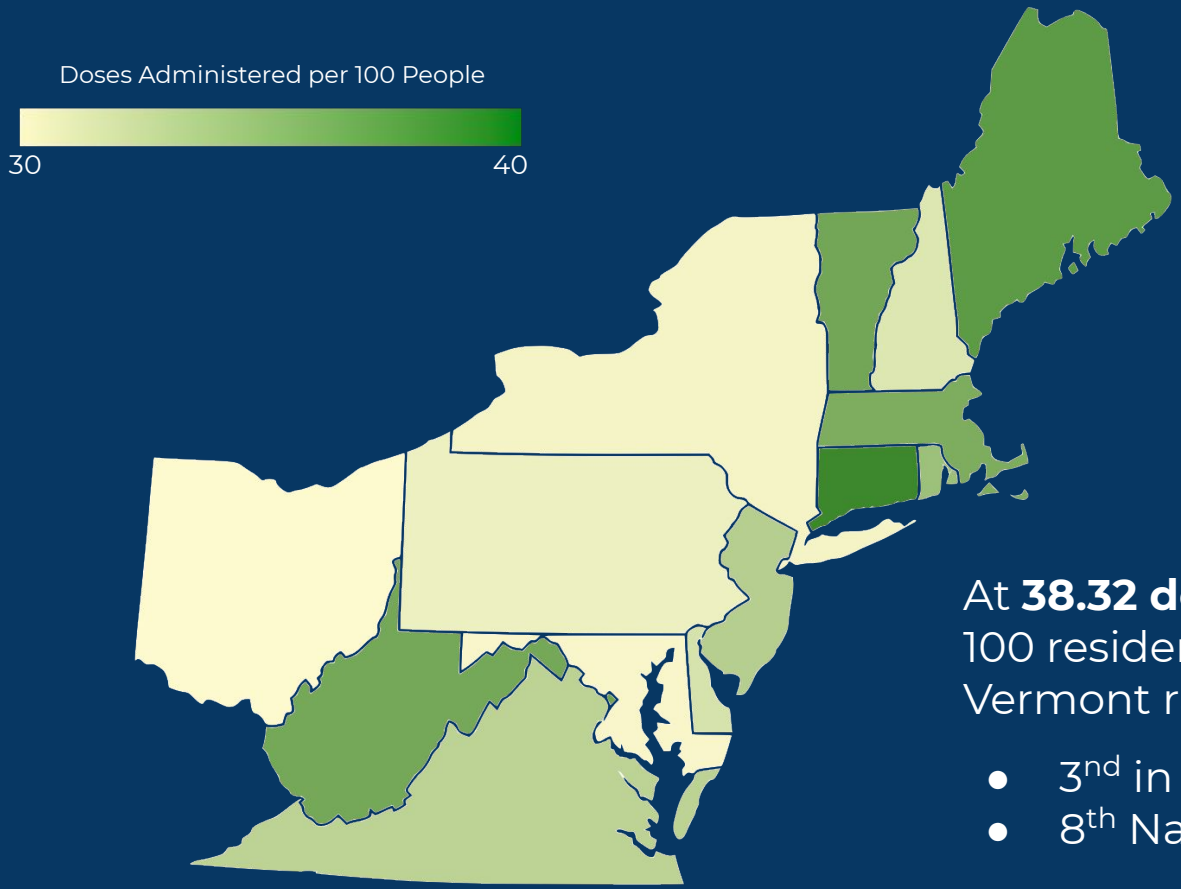
Hospital & ICU Capacity Forecasts





Source: Oliver Wyman Forecast Model—March 15, 2021; GNYHA Hospital Surge framework

Regional Vaccination Map

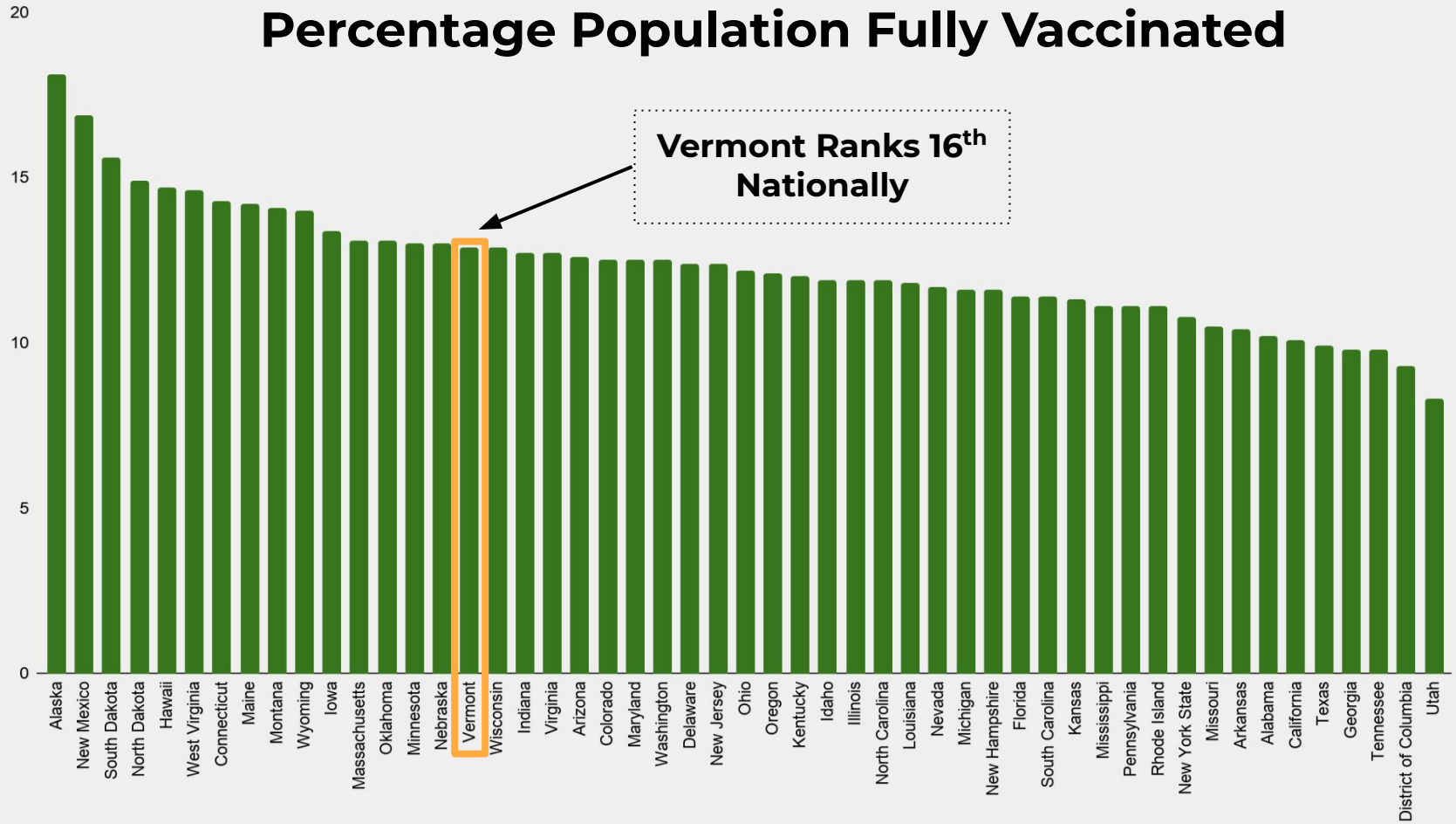


At **38.32 doses** administered per 100 residents (1st and 2nd doses), Vermont ranks:

- 3nd in Northeast
- 8th Nationally

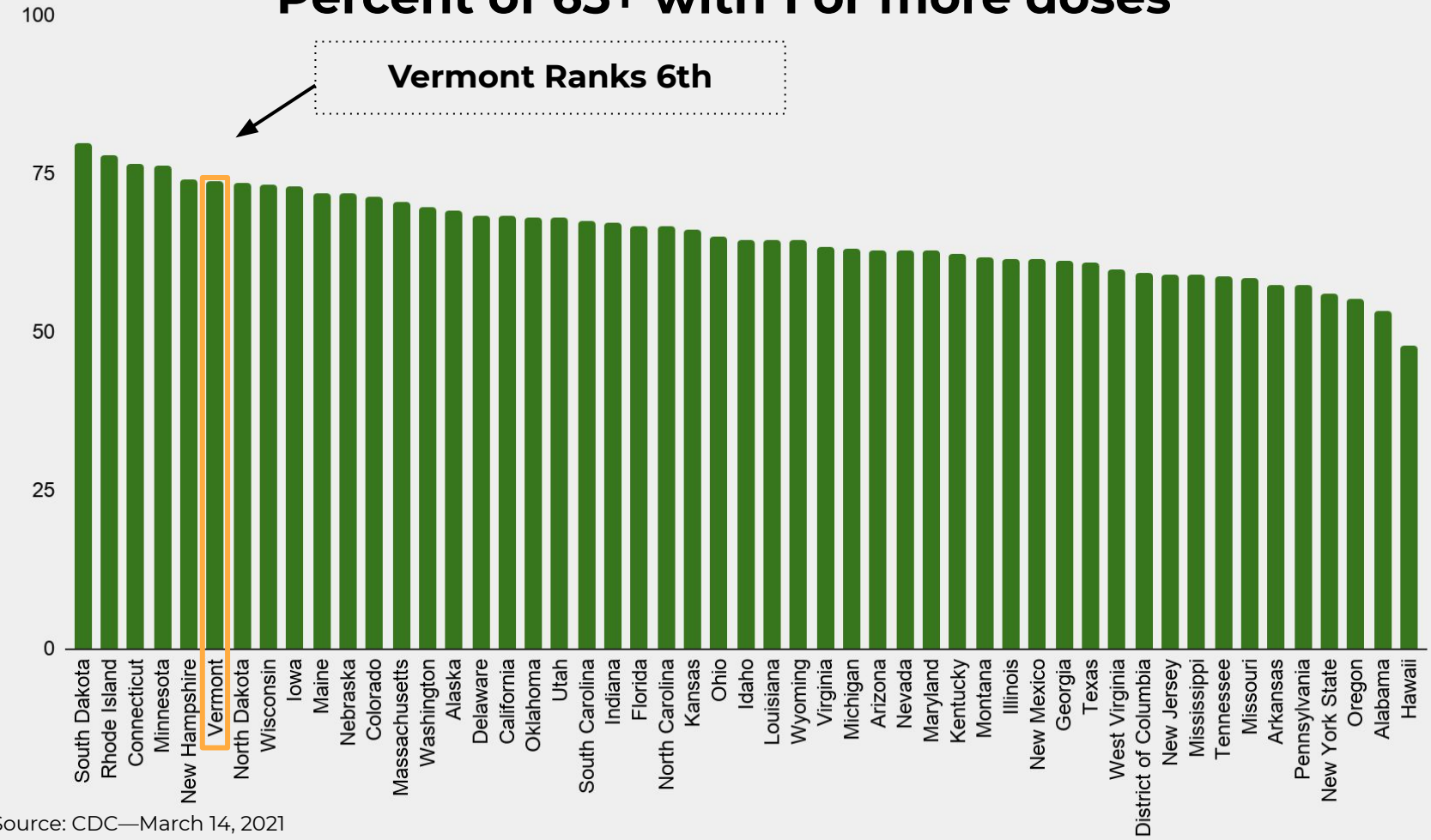
Source: CDC—March 16, 2021

Percentage Population Fully Vaccinated



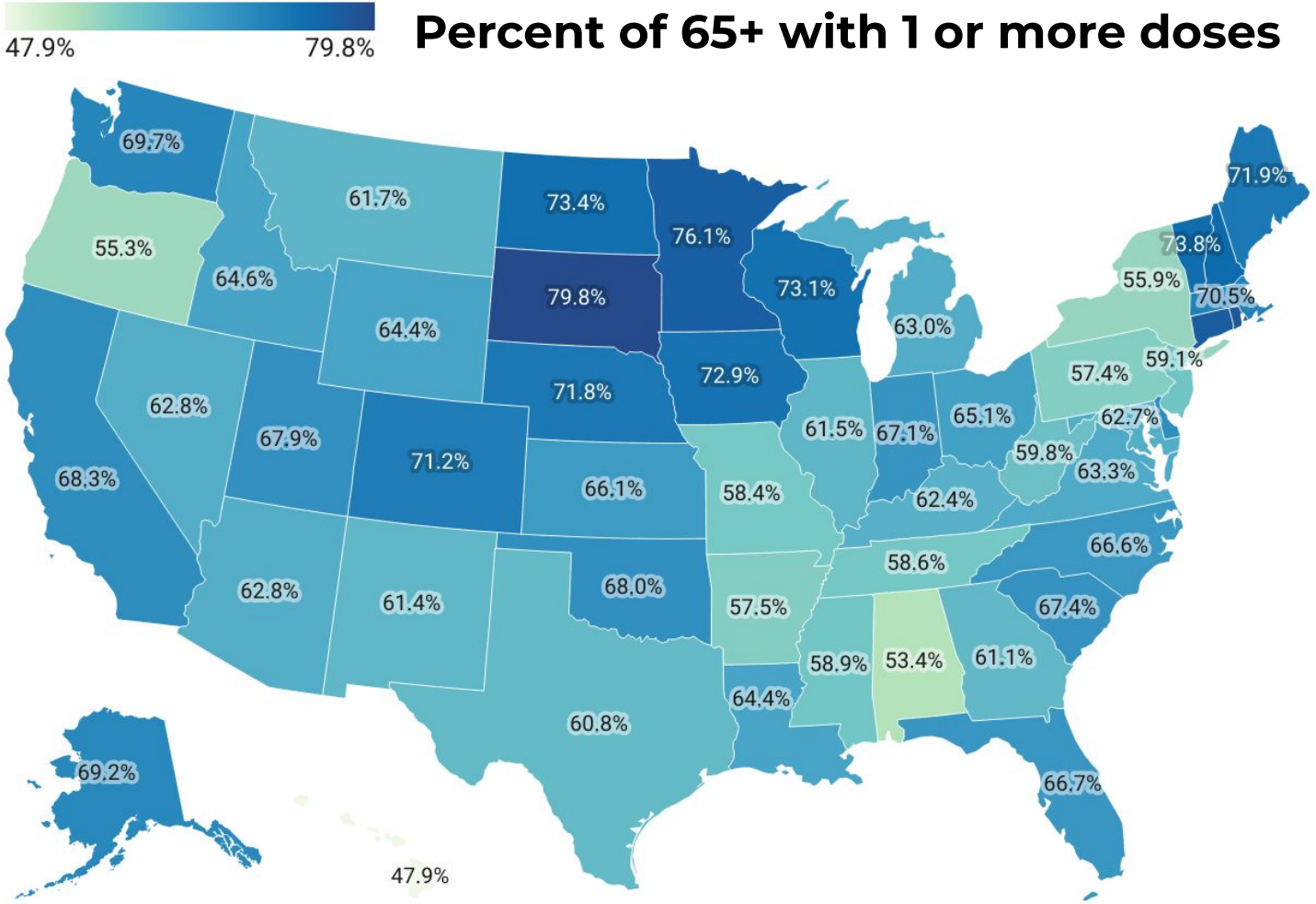
Source: CDC—March 14, 2021

Percent of 65+ with 1 or more doses



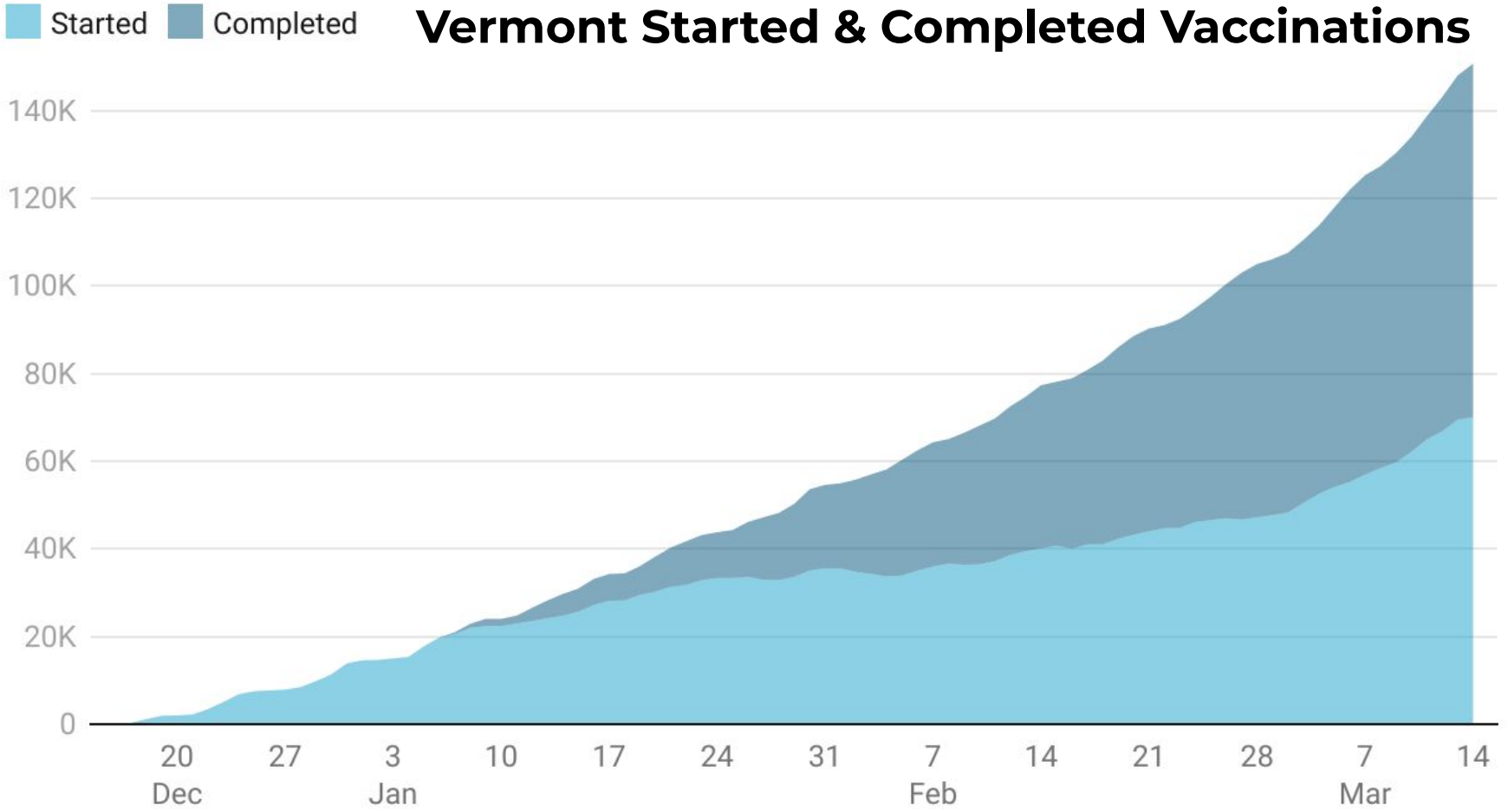
Source: CDC—March 14, 2021

Percent of 65+ with 1 or more doses



Source: CDC — March 14, 2021

Vermont Started & Completed Vaccinations

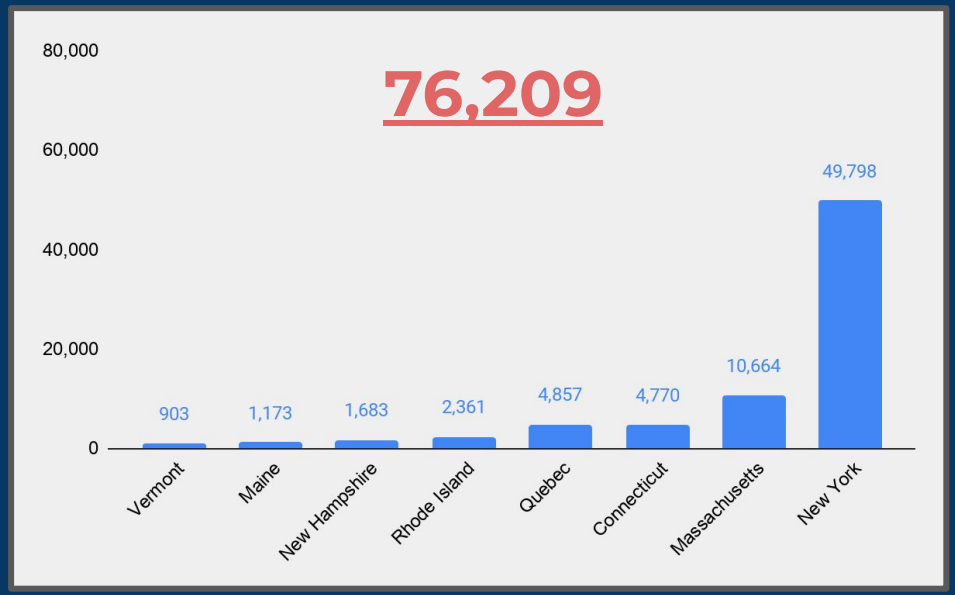


Source: Vermont Department of Health — March 14, 2021

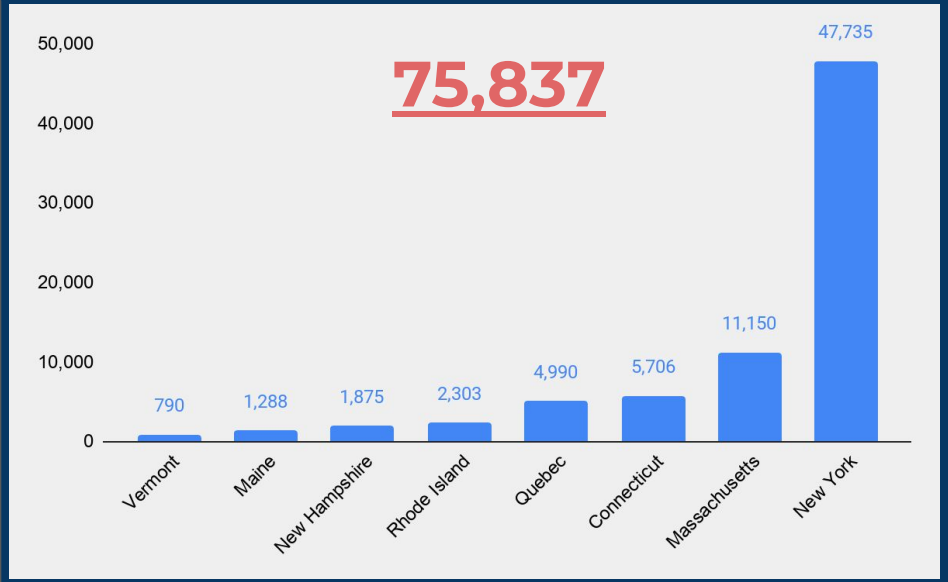
Regional Cases

0.49% Decrease in New Cases

New Cases March 2nd to March 8th

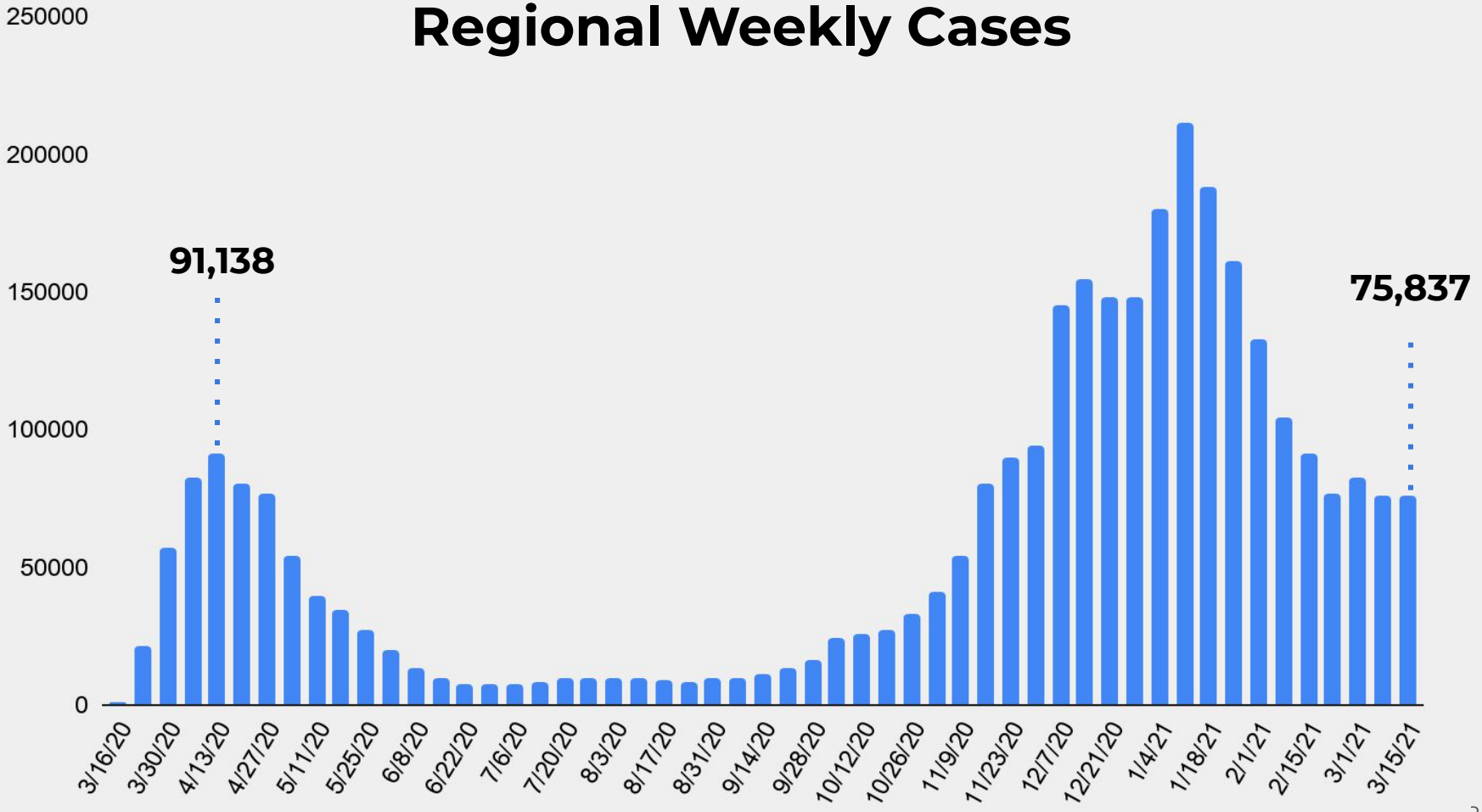


New Cases March 9th to March 15th

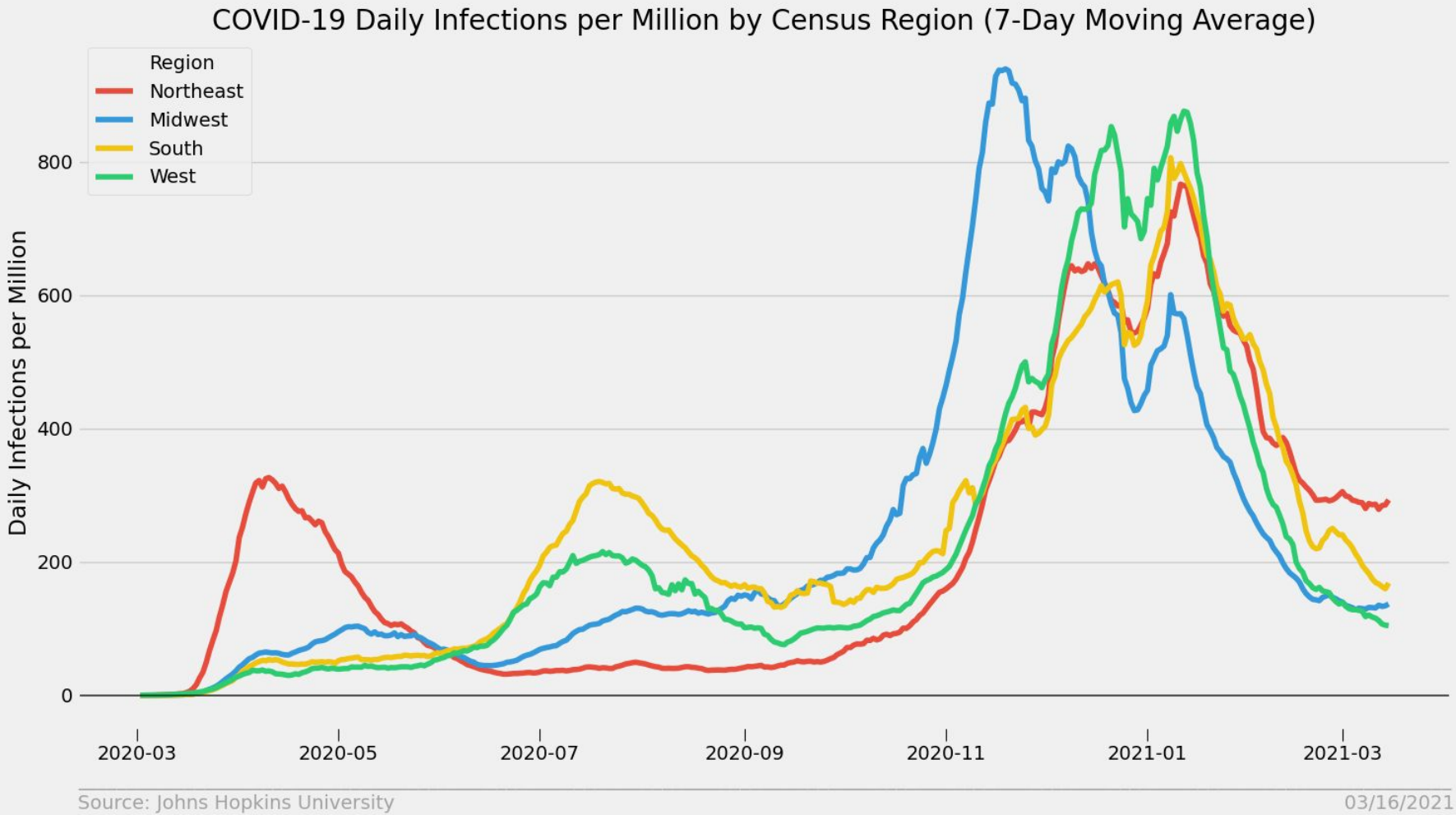


Sources: State Health Departments & CTV National News (Quebec)

Regional Weekly Cases

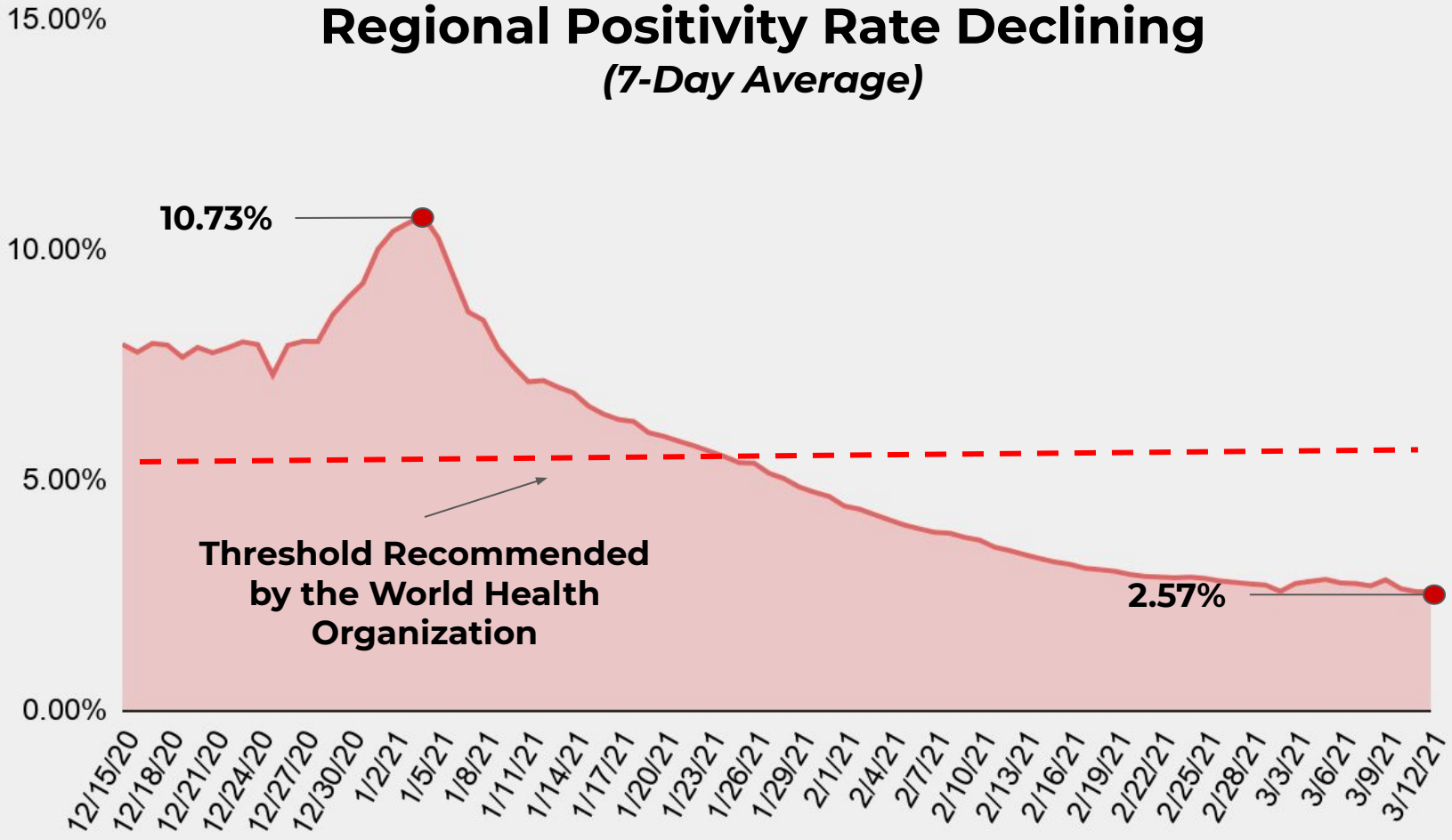


Sources: State Health Departments & CTV National News (Quebec) (includes: CT, ME, MA, NH, NY, QC, RI & VT)


COVID-19 Daily Infections per Million by Census Region (7-Day Moving Average)
Region
Northeast
Midwest
South
West
Daily Infections per Million
800
600
400
200
0
2020-03
2020-05
2020-07
2020-09
2020-11
2021-01
2021-03
Source: Johns Hopkins University
03/16/2021

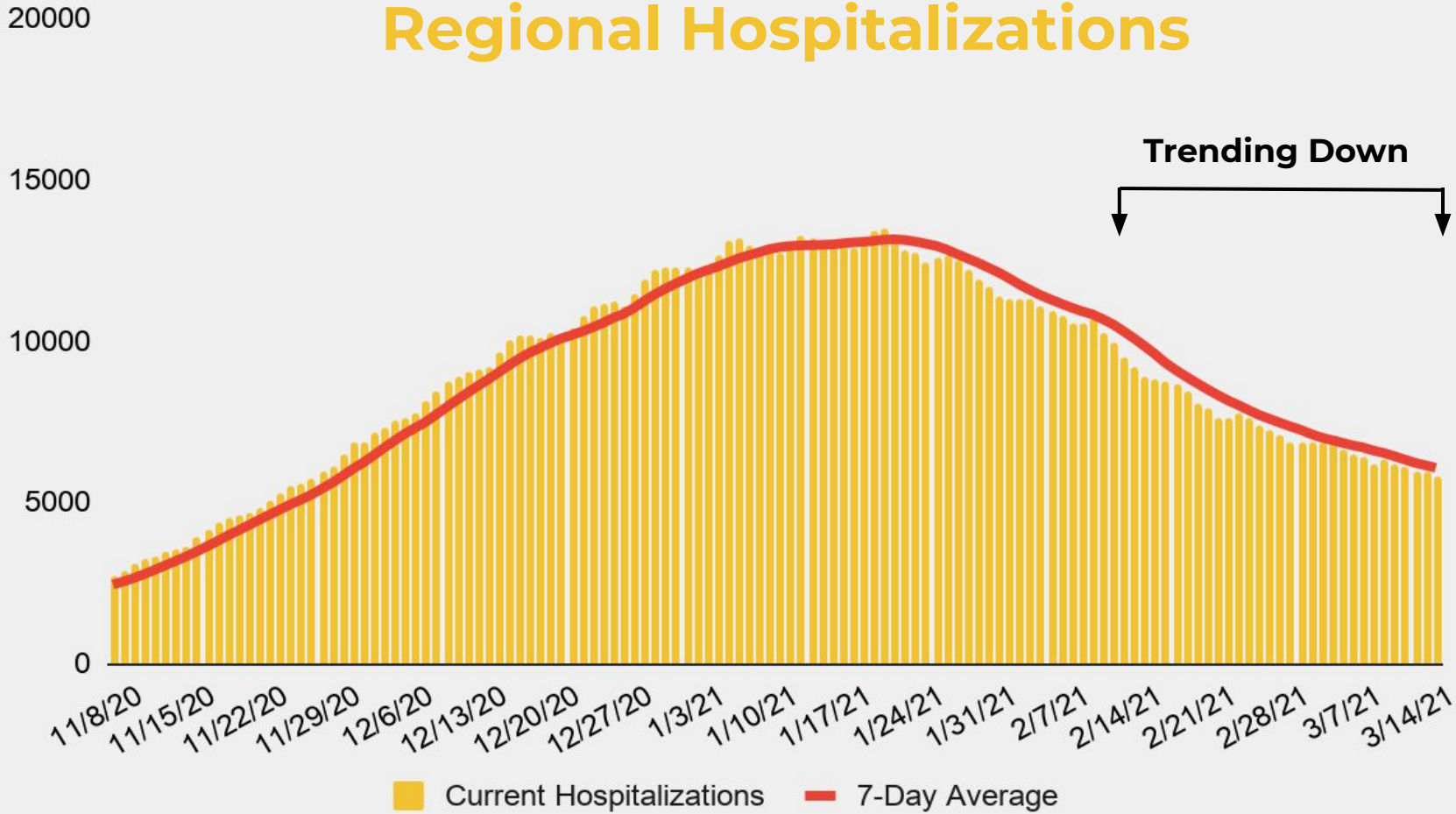
Regional Positivity Rate Declining

(7-Day Average)



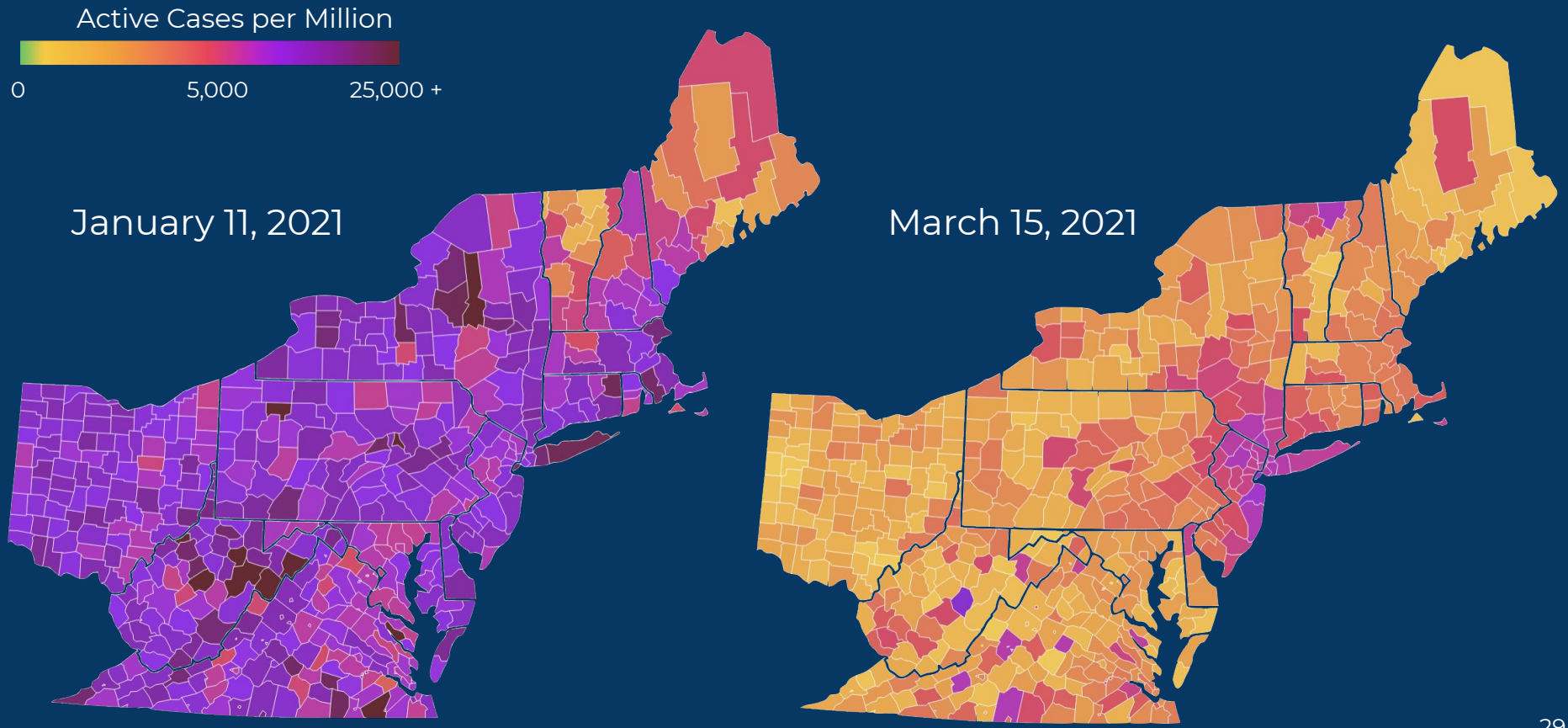
Source: Covid Tracking Project (7-Day Average in CT, ME, MA, NH, NY, RI & VT)—March 15, 2021

Regional Hospitalizations

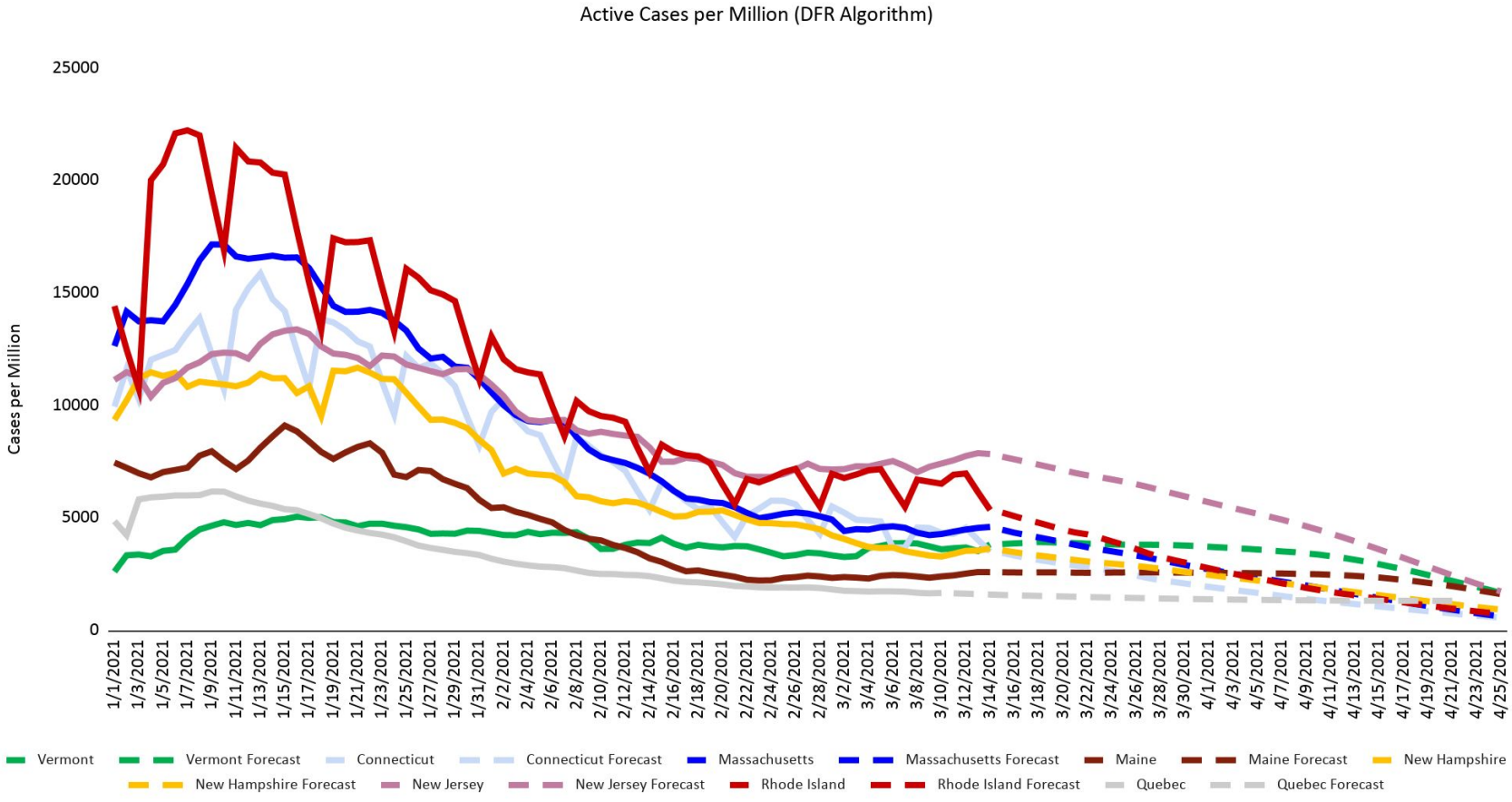


Source: Covid Tracking Project (7-Day Average in CT, ME, MA, NH, NY, RI & VT)—March 15, 2021

Regional Heat Map



Regional Active Per Capita Case Forecast

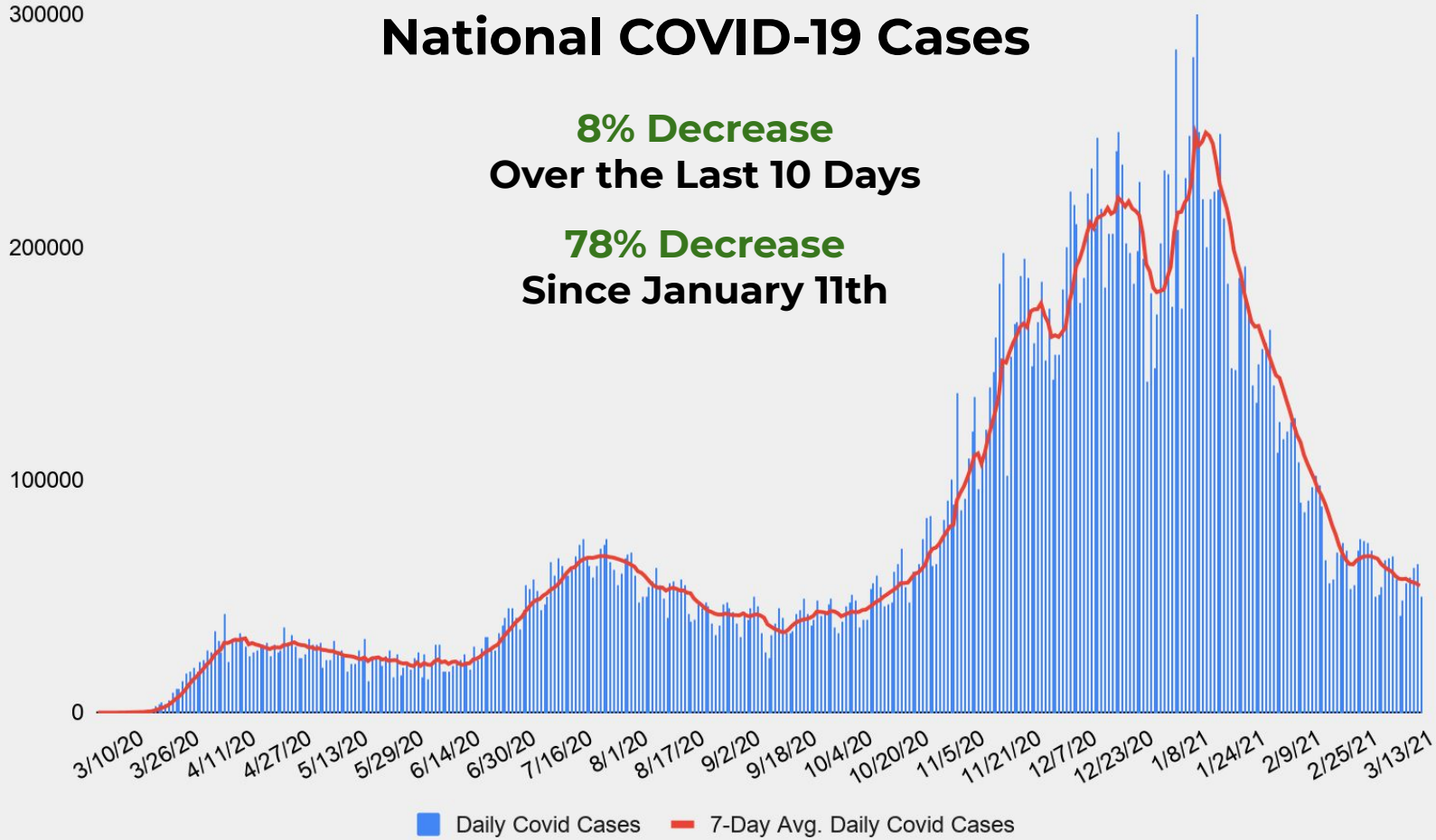


Source: Johns Hopkins University Data & Oliver Wyman Forecast Model—March 15, 2021; assumes current vaccine supply and no variant-specific impact

National COVID-19 Cases

8% Decrease
Over the Last 10 Days

78% Decrease
Since January 11th

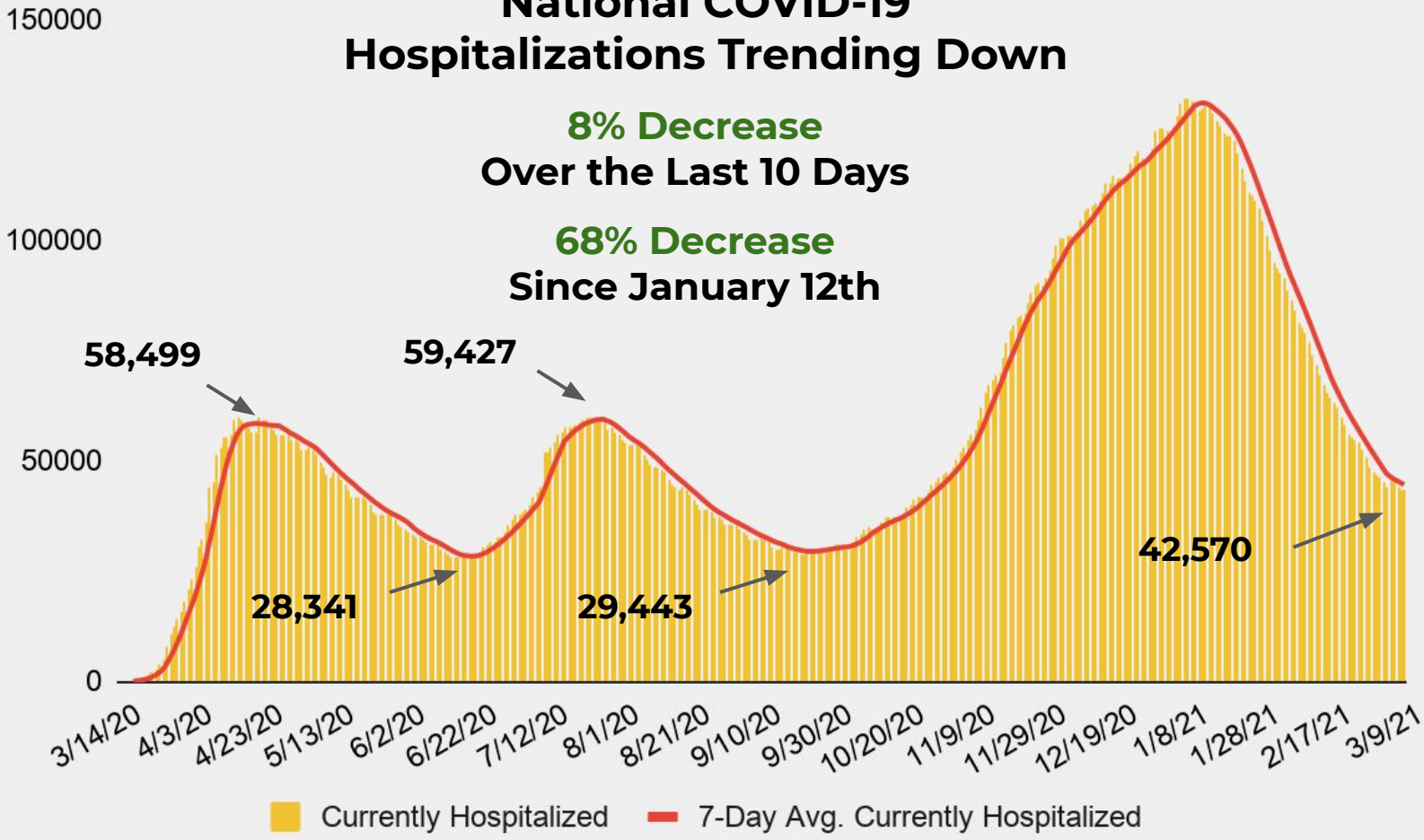


Source: Covid Tracking Project & CDC—March 15, 2021

National COVID-19 Hospitalizations Trending Down

8% Decrease
Over the Last 10 Days

68% Decrease
Since January 12th

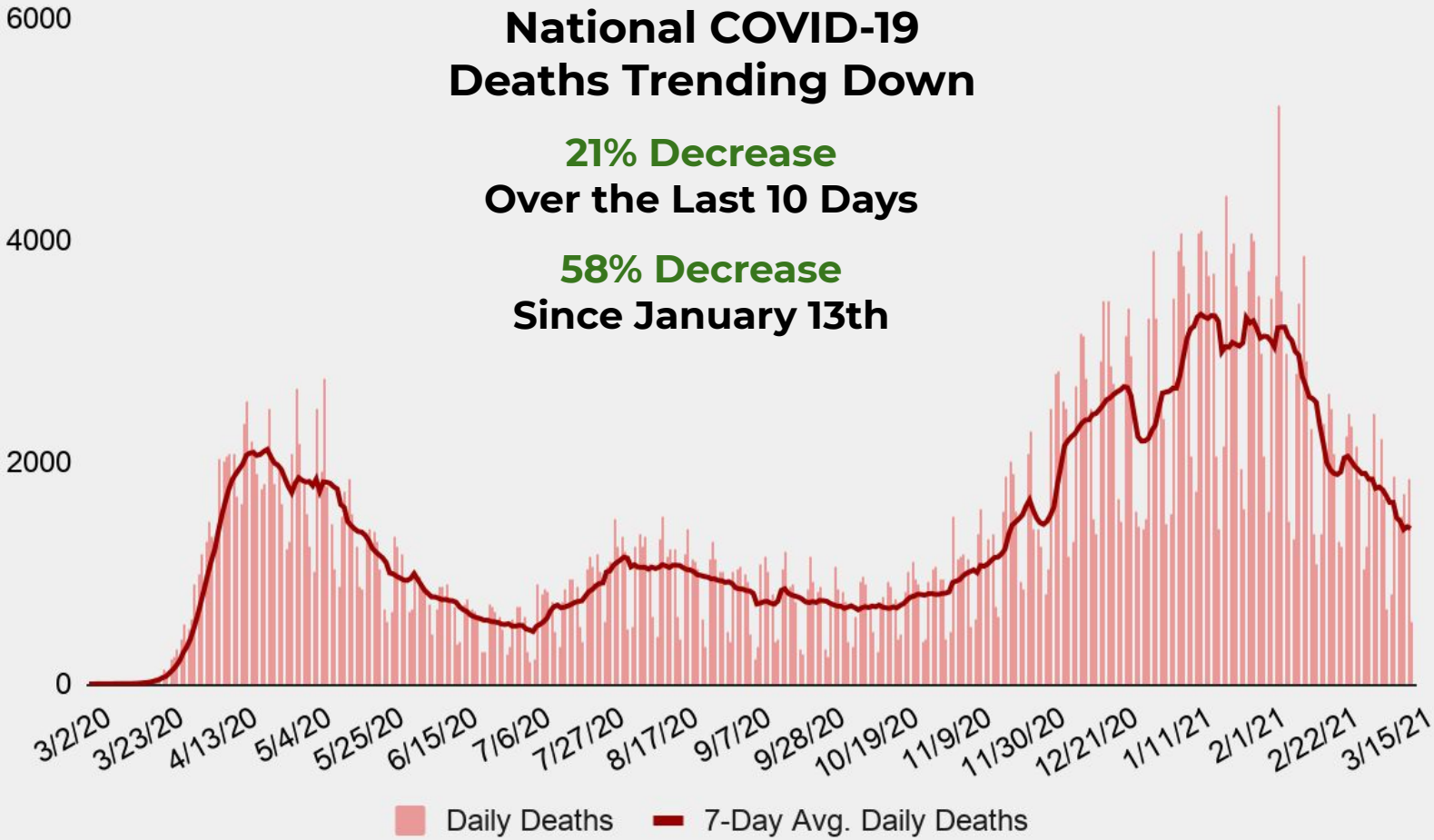


Source: Covid Tracking Project & CDC—March 15, 2021

National COVID-19 Deaths Trending Down

21% Decrease
Over the Last 10 Days

58% Decrease
Since January 13th



Source: Covid Tracking Project; NYT & CDC—March 15, 2021

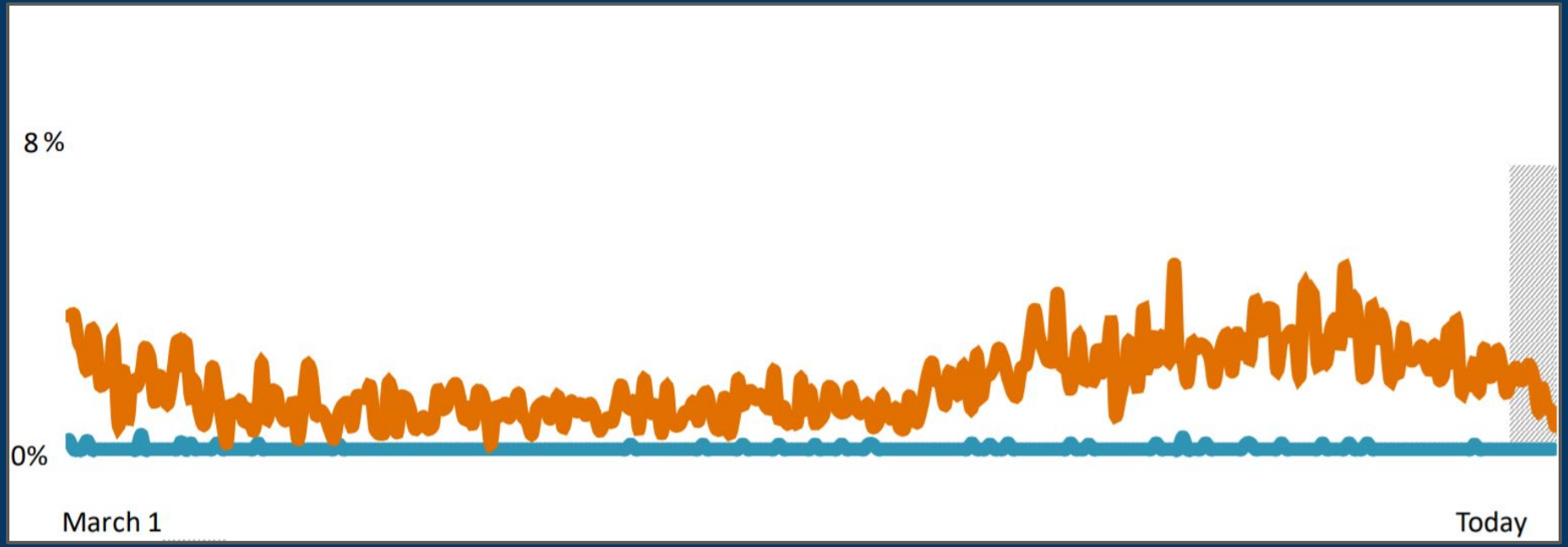
RESTART VERMONT

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

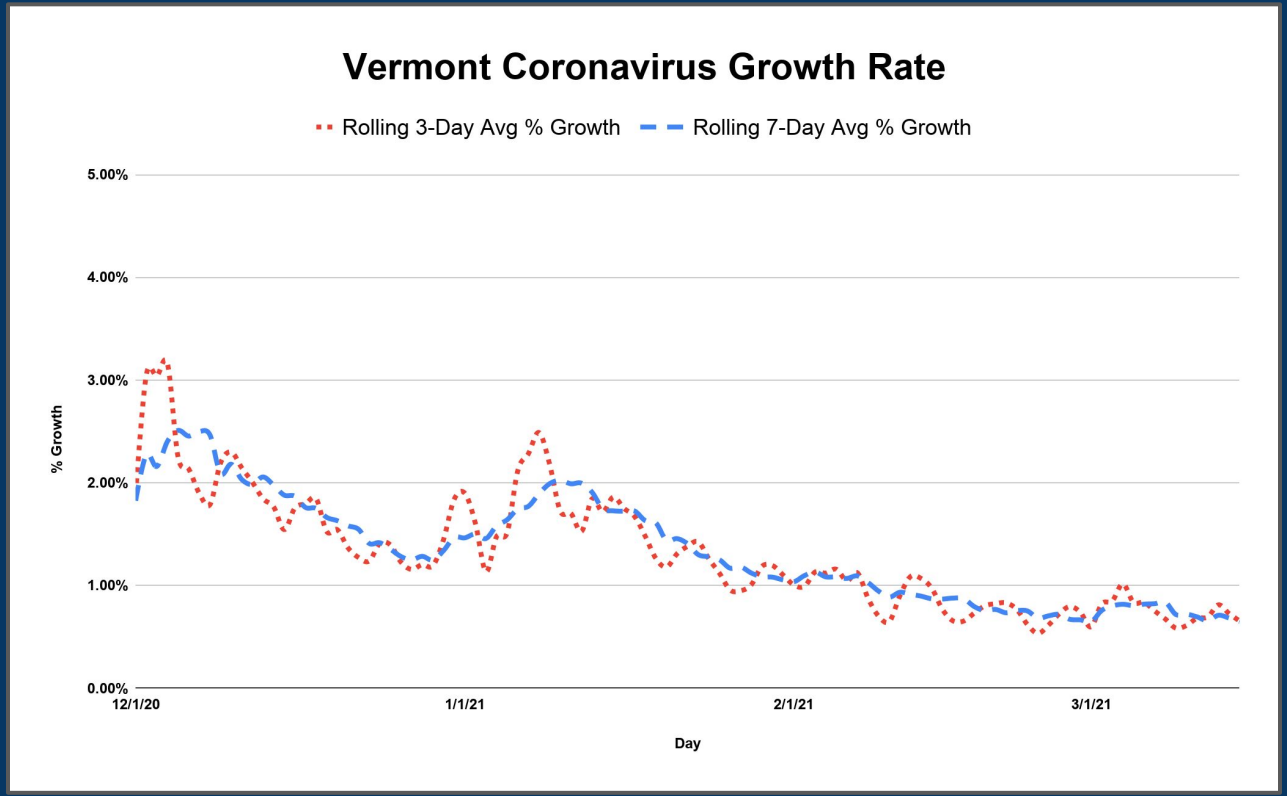
- **Summary:** Percentage of visits with COVID-19 like illness and Influenza diagnosis
- **Warning Flag:** Percentage of visits exceeding 4% for multiple consecutive days



Source: Vermont Department of Health—March 16, 2021

Data Point 2: Viral Growth and Reproductive Rates

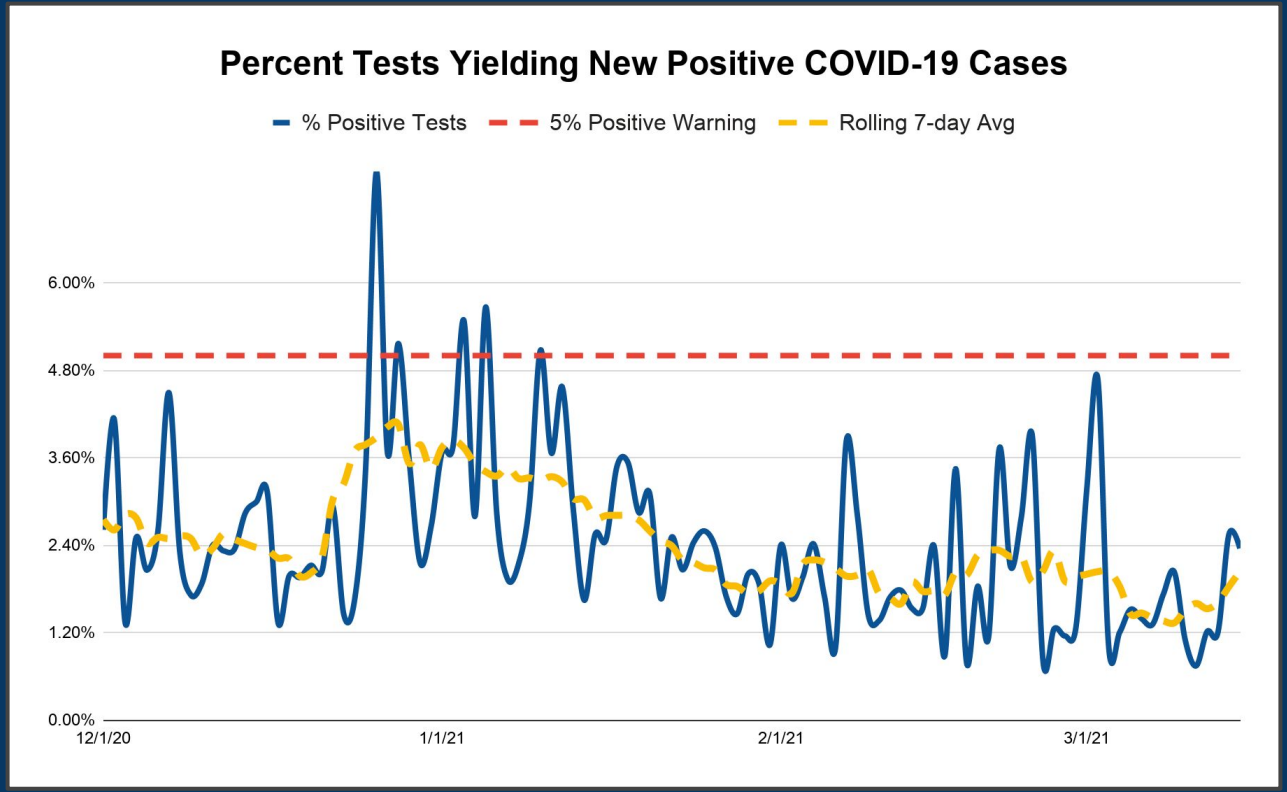
- **Summary:** Case growth measured by daily, 3-day, 7-day, and effective reproductive rate (R_t)
- **Warning Flags:** Sustained viral growth that would lead to <30% open ICU beds



Source: Vermont Department of Health—March 16, 2021

Data Point 3: Percentage of New Positive Tests

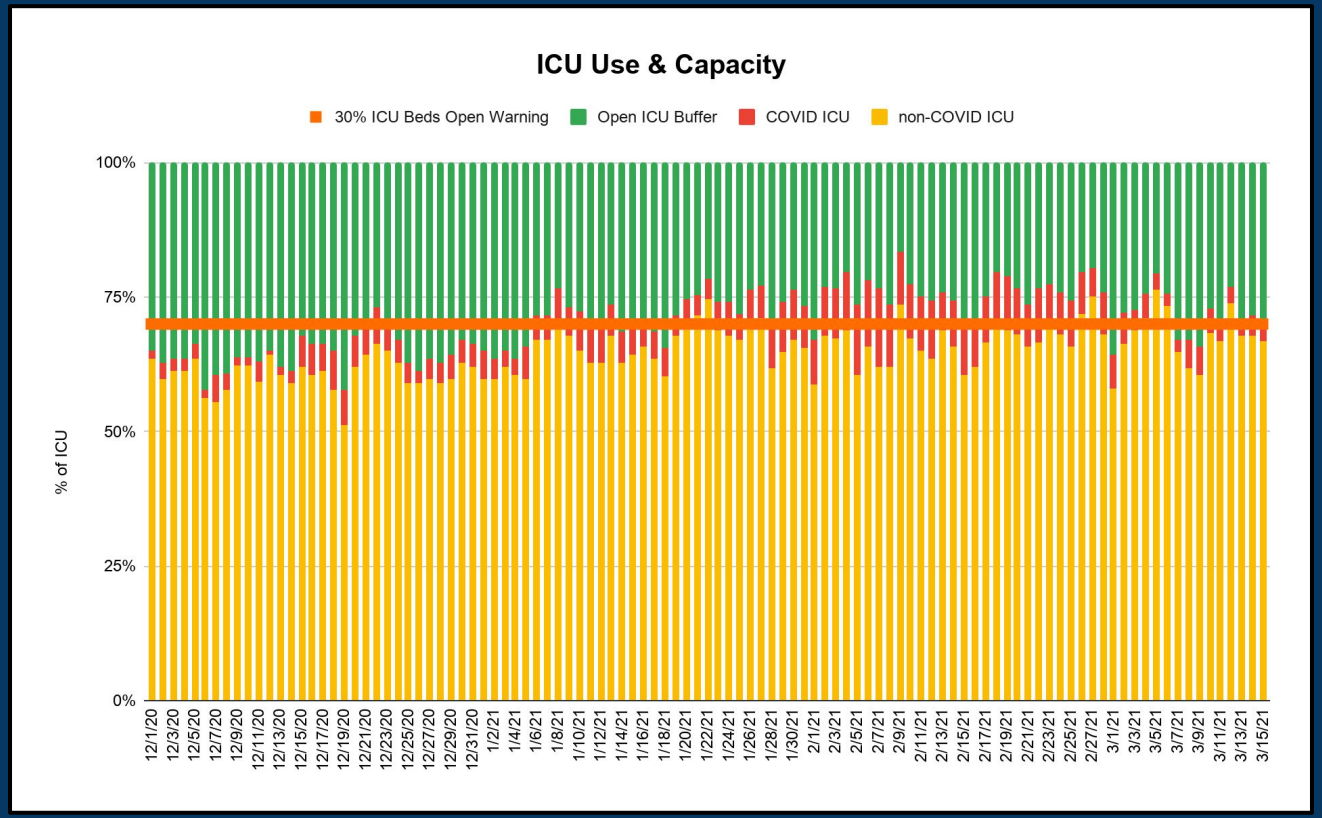
- **Summary:** Percent of tests resulting in a new positive case
- **Warning Flags:** New positives represent >5% of daily results



Source: Vermont Department of Health—March 16, 2021

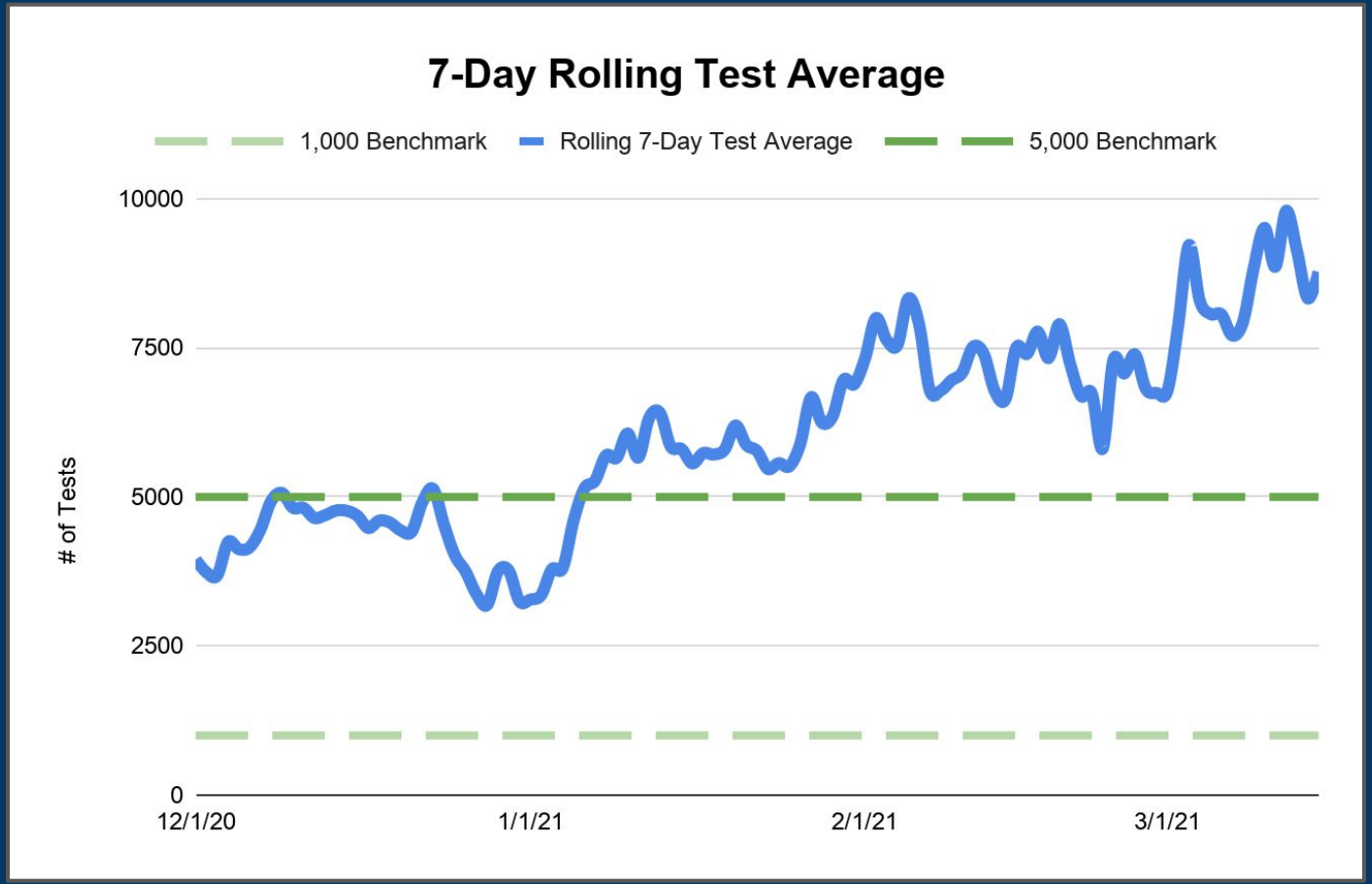
Data Point 4: Hospital & Critical Care Beds

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



Source: Vermont Department of Health—March 16, 2021

Vermont Testing



Source: Vermont Department of Health—March 16, 2021; results reported to VDH daily