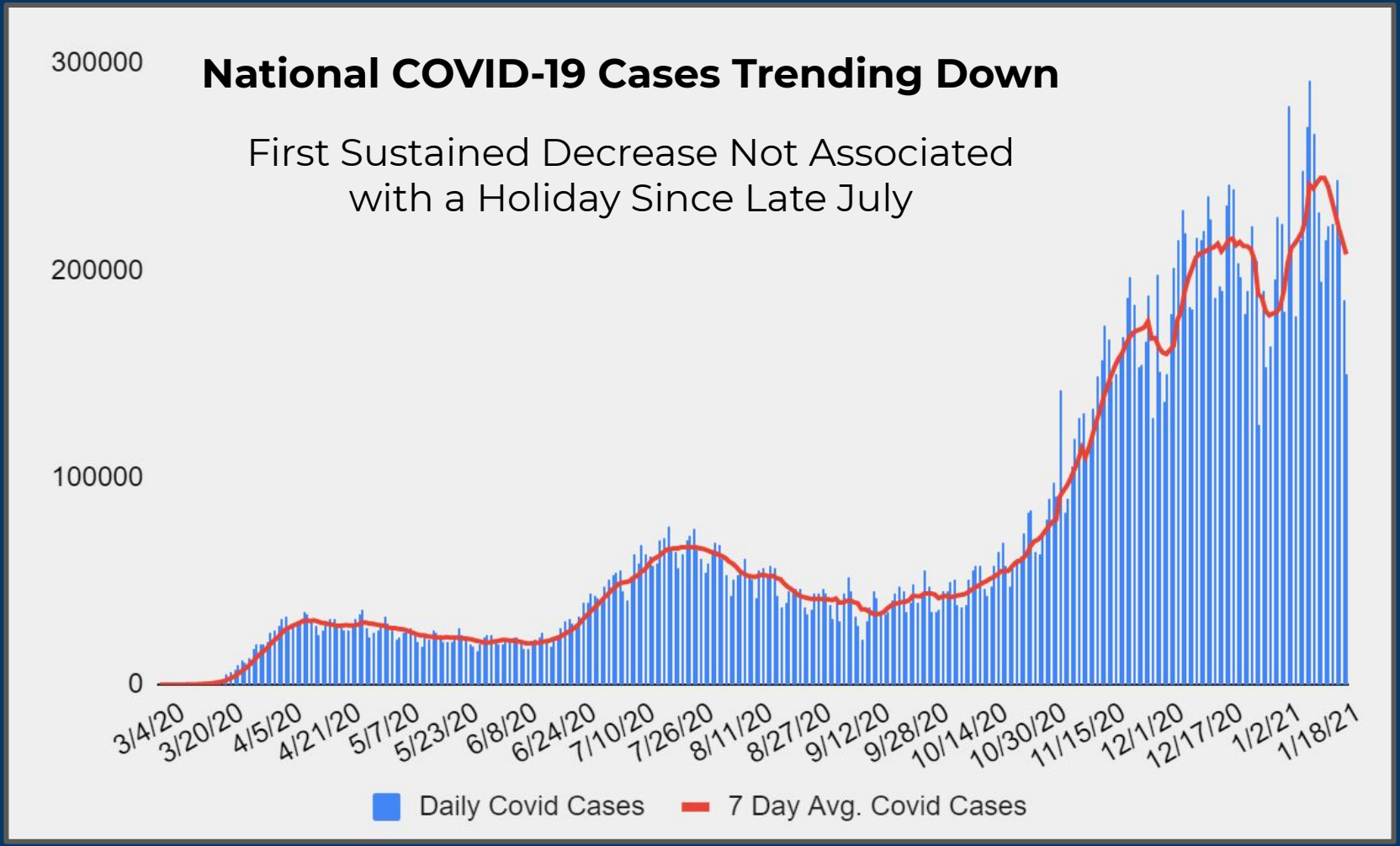
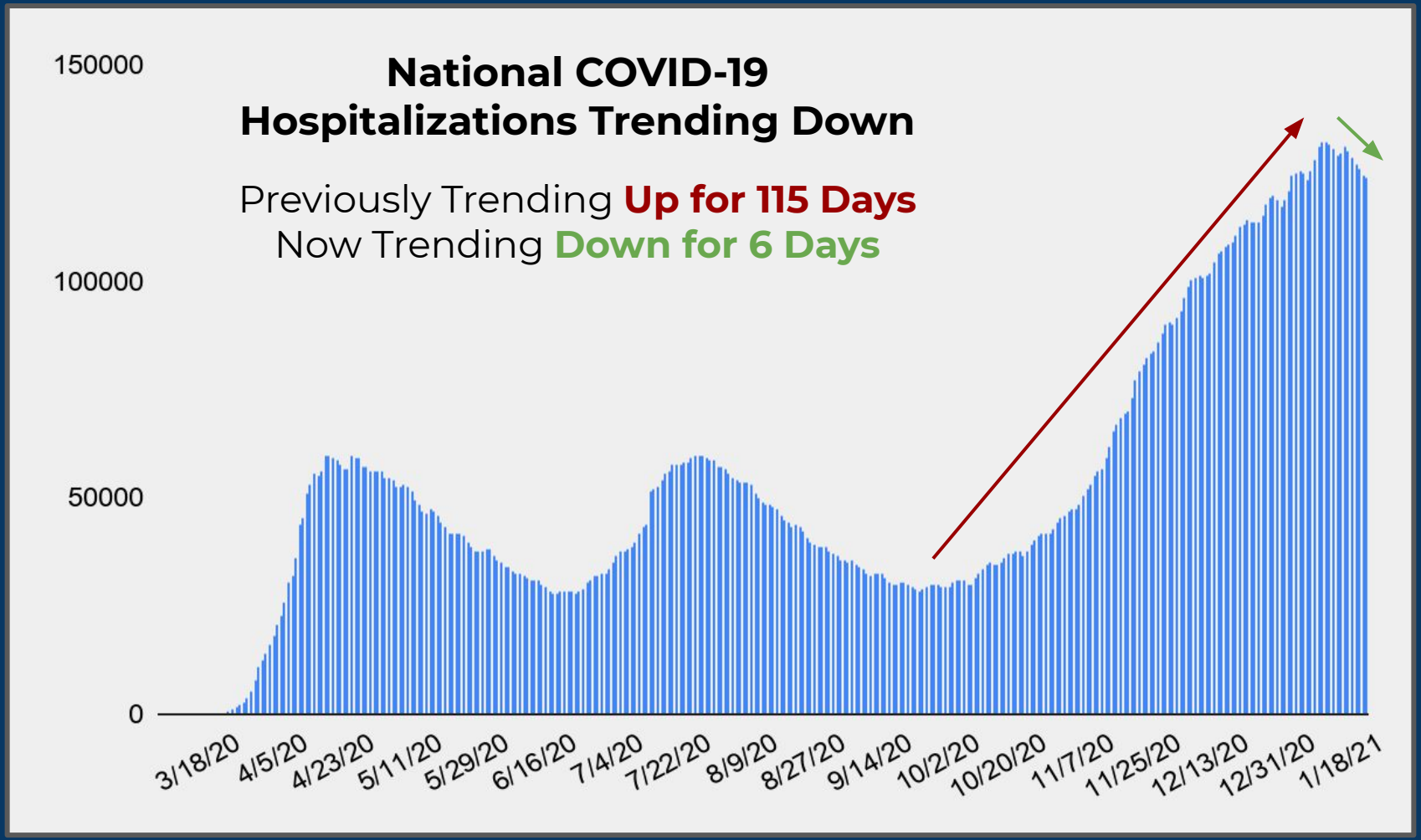
COVID-19 Modeling
January 19, 2021

Presentation available at:
dfr.vermont.gov



Source: Covid Tracking Project — January 18, 2021



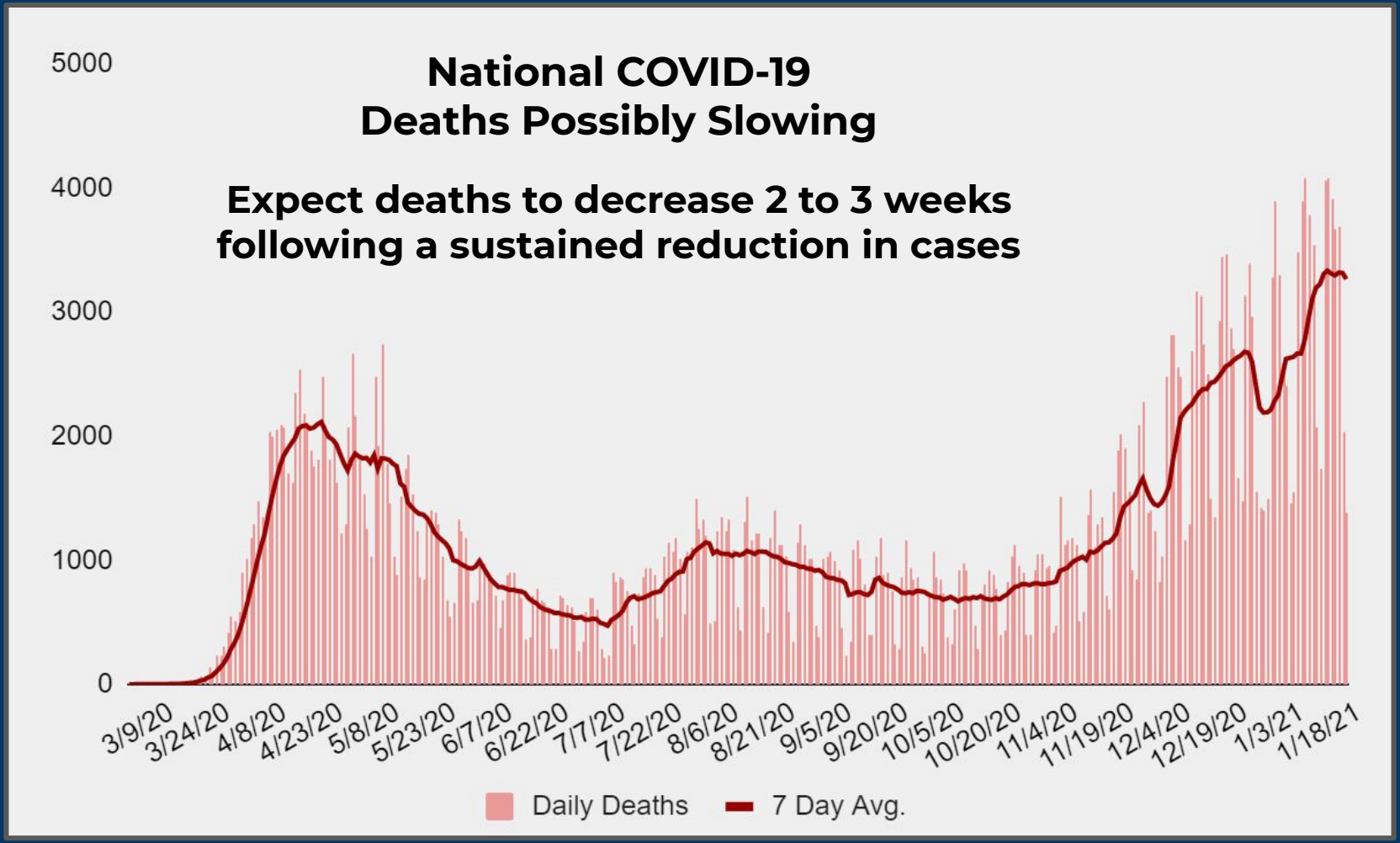
Source: Covid Tracking Project — January 18, 2021

400,000+ Deaths

In the United States

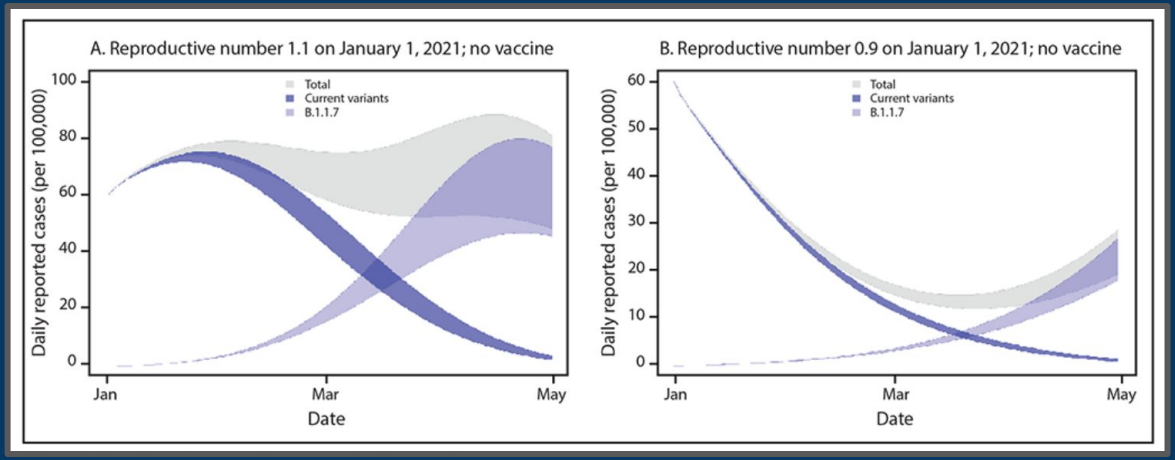
First 50,000 Deaths	*~55 Days*	Fifth 50,000 Deaths	*~61 Days*
Second 50,000 Deaths	*~30 Days*	Sixth 50,000 Deaths	*~23 Days*
Third 50,000 Deaths	*~66 Days*	Seventh 50,000 Deaths	*~21 Days*
Fourth 50,000 Deaths	*~55 Days*	Eighth 50,000 Deaths	*~16 Days*

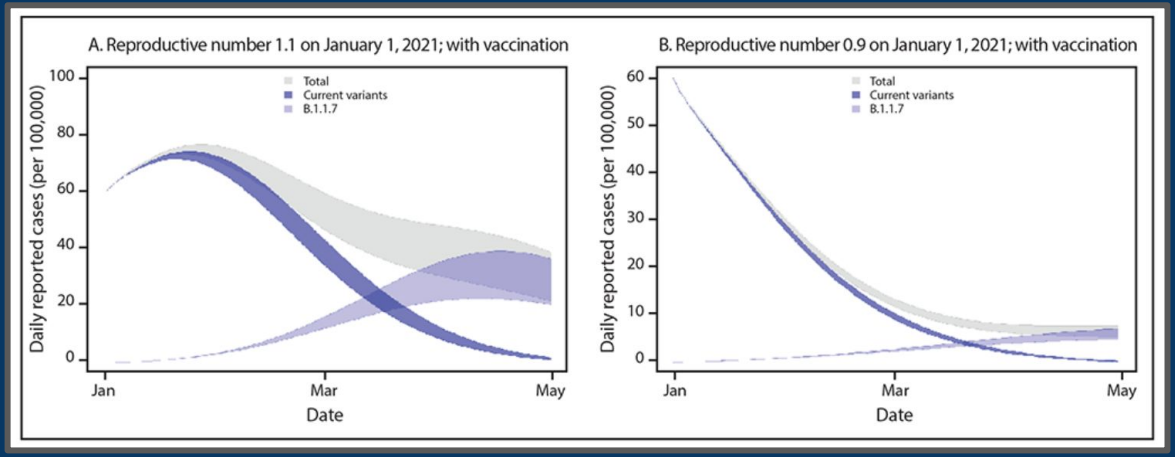
Source: Johns Hopkins University—January 19, 2021



Source: Covid Tracking Project — January 18, 2021

CDC Modeling of B.1.1.7 Variant

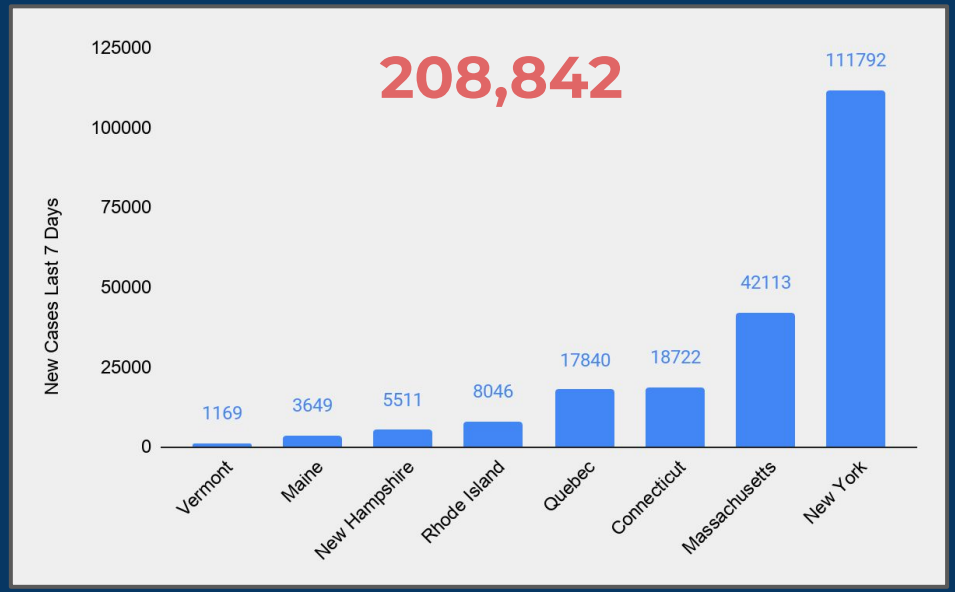




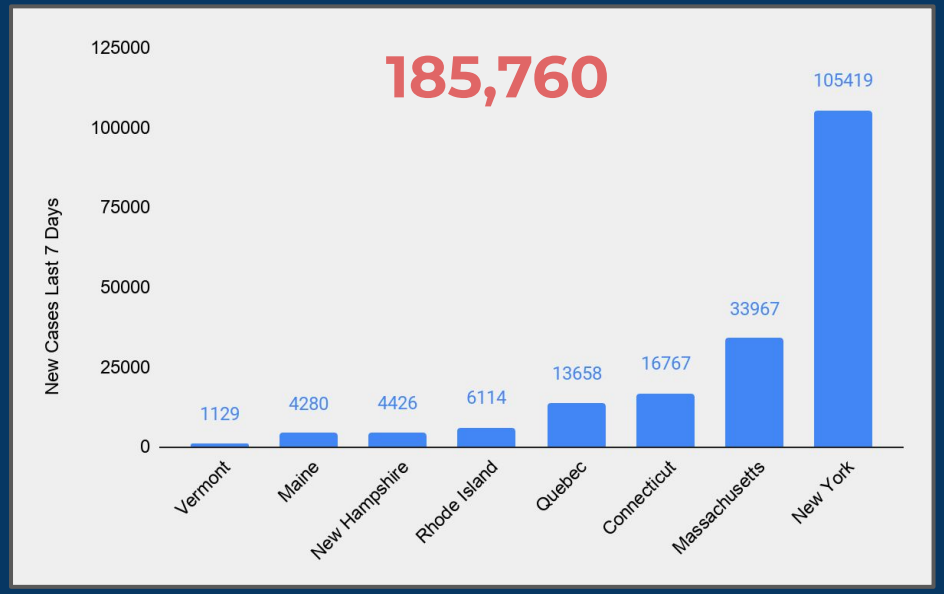
Regional Case Growth

12.43% Decrease in New Cases

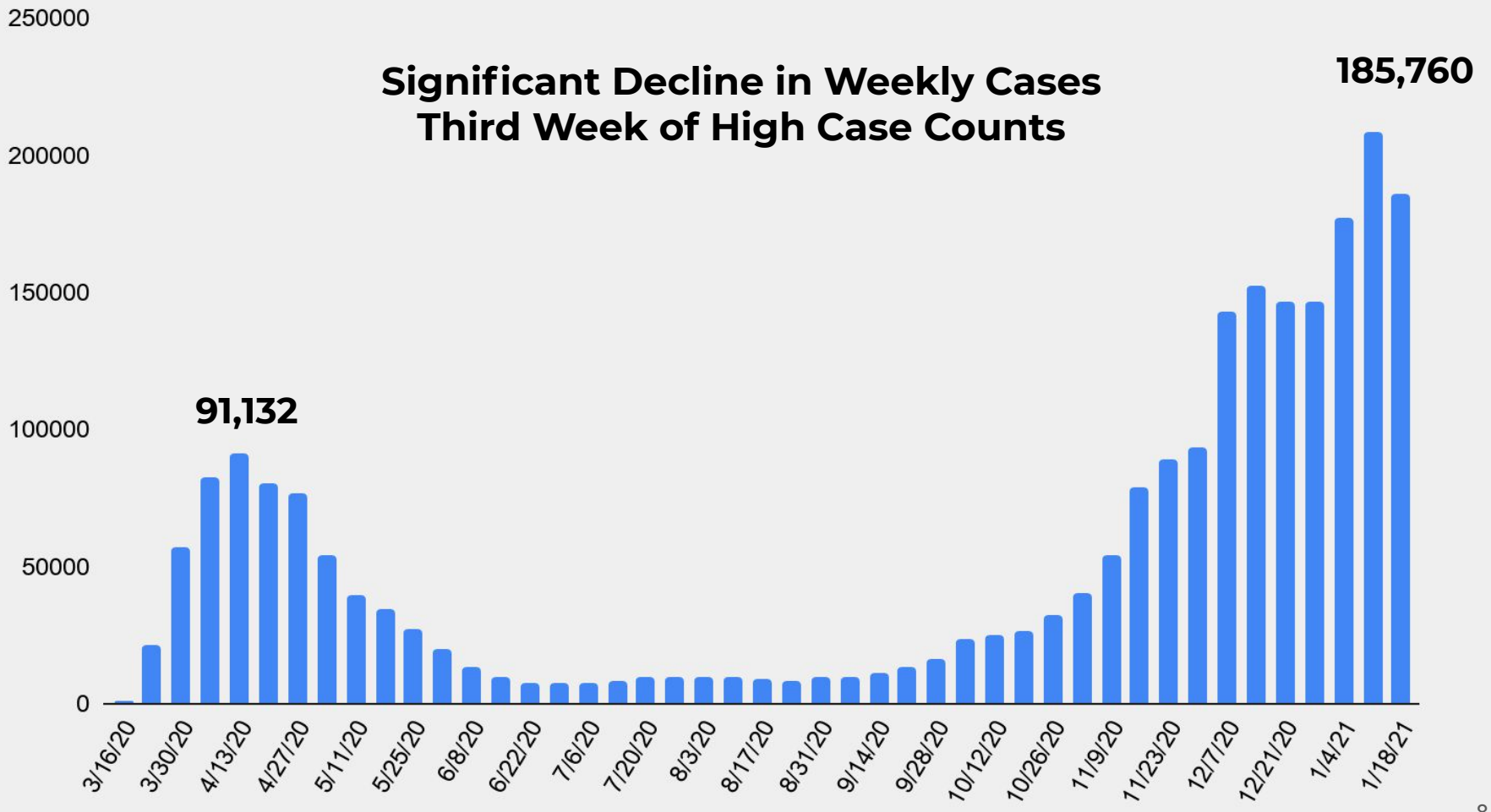
New Cases Jan 5th to Jan. 11th



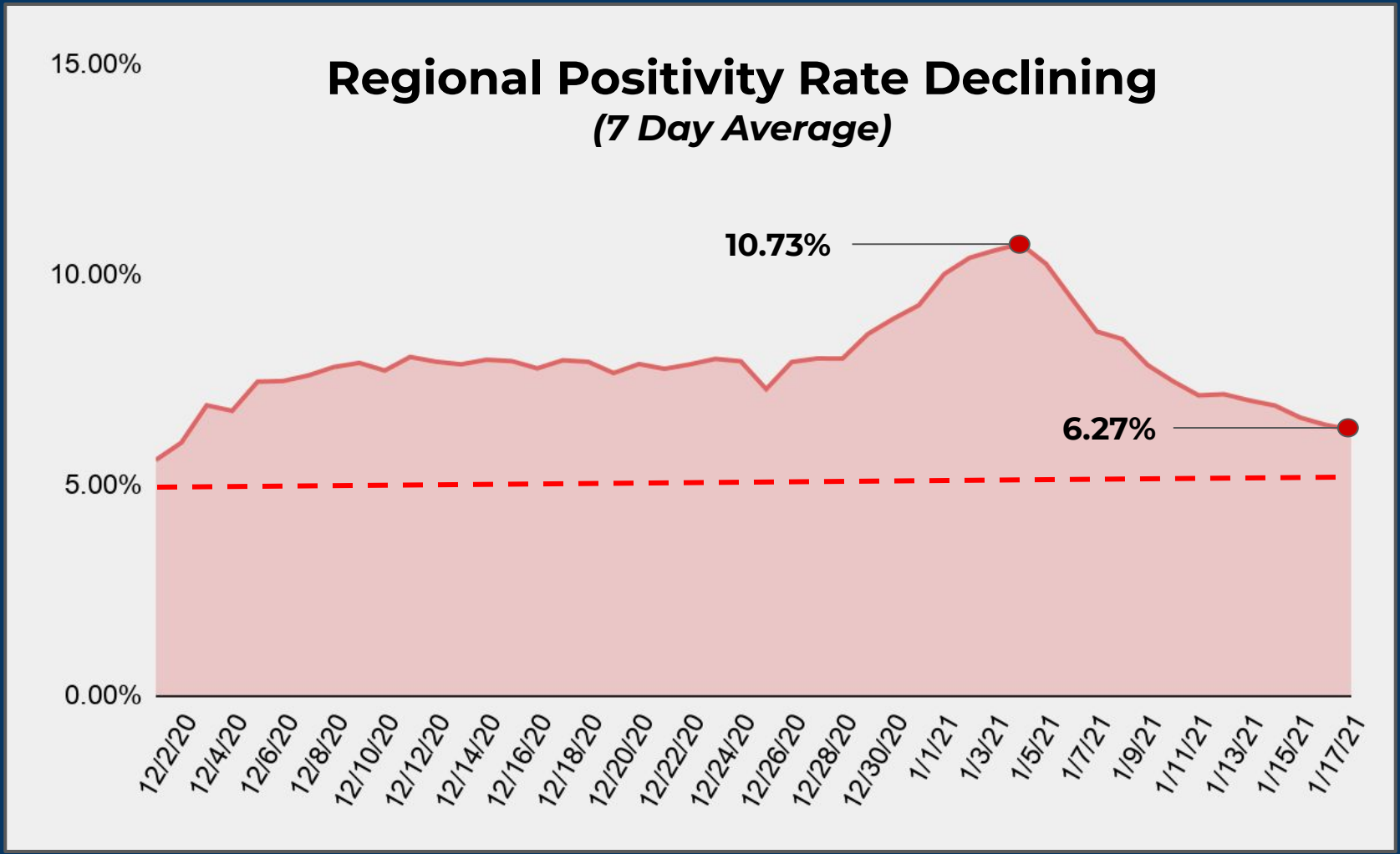
New Cases Jan 12th to Jan. 18th



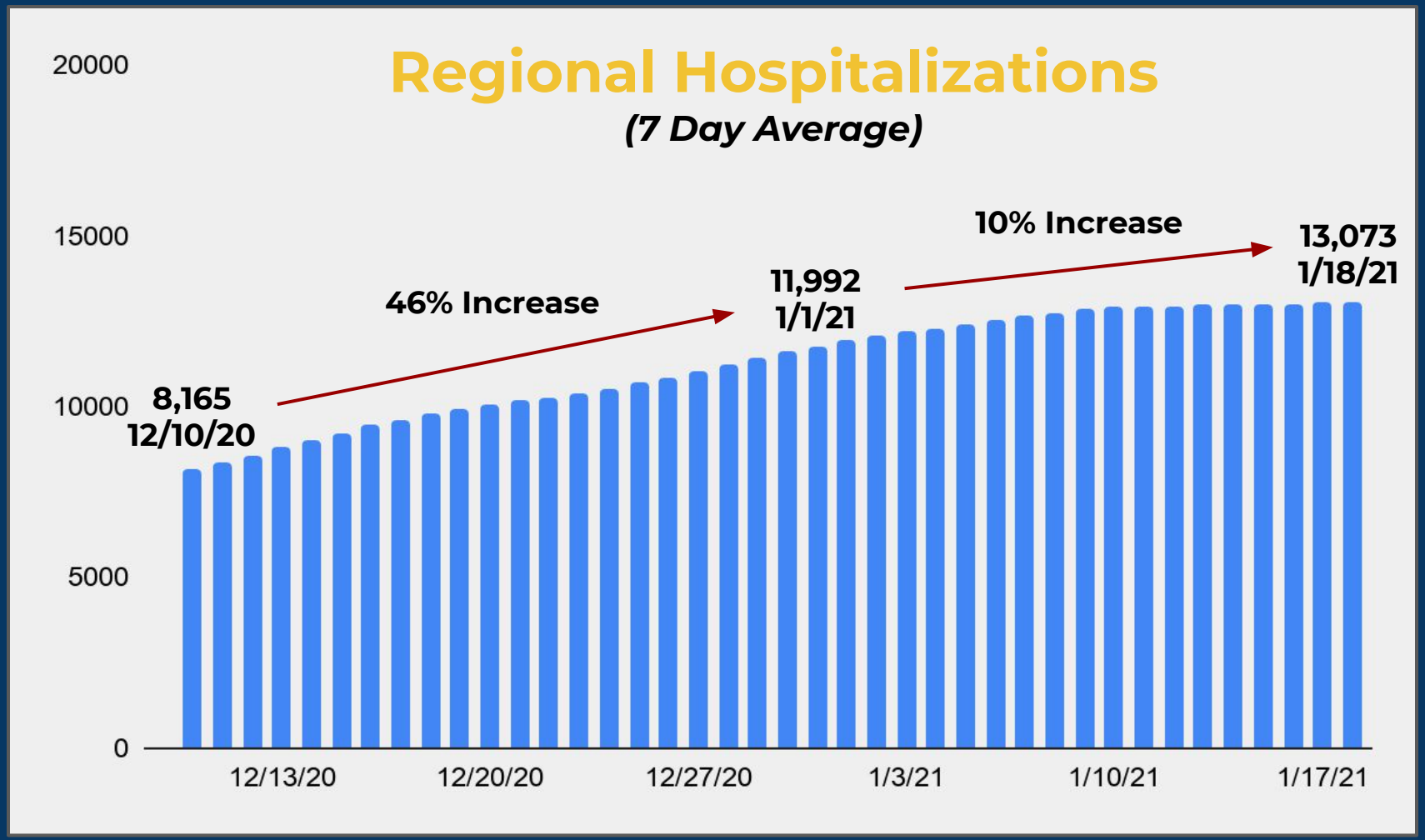
Sources: State Health Departments & CTV National News (Quebec)



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



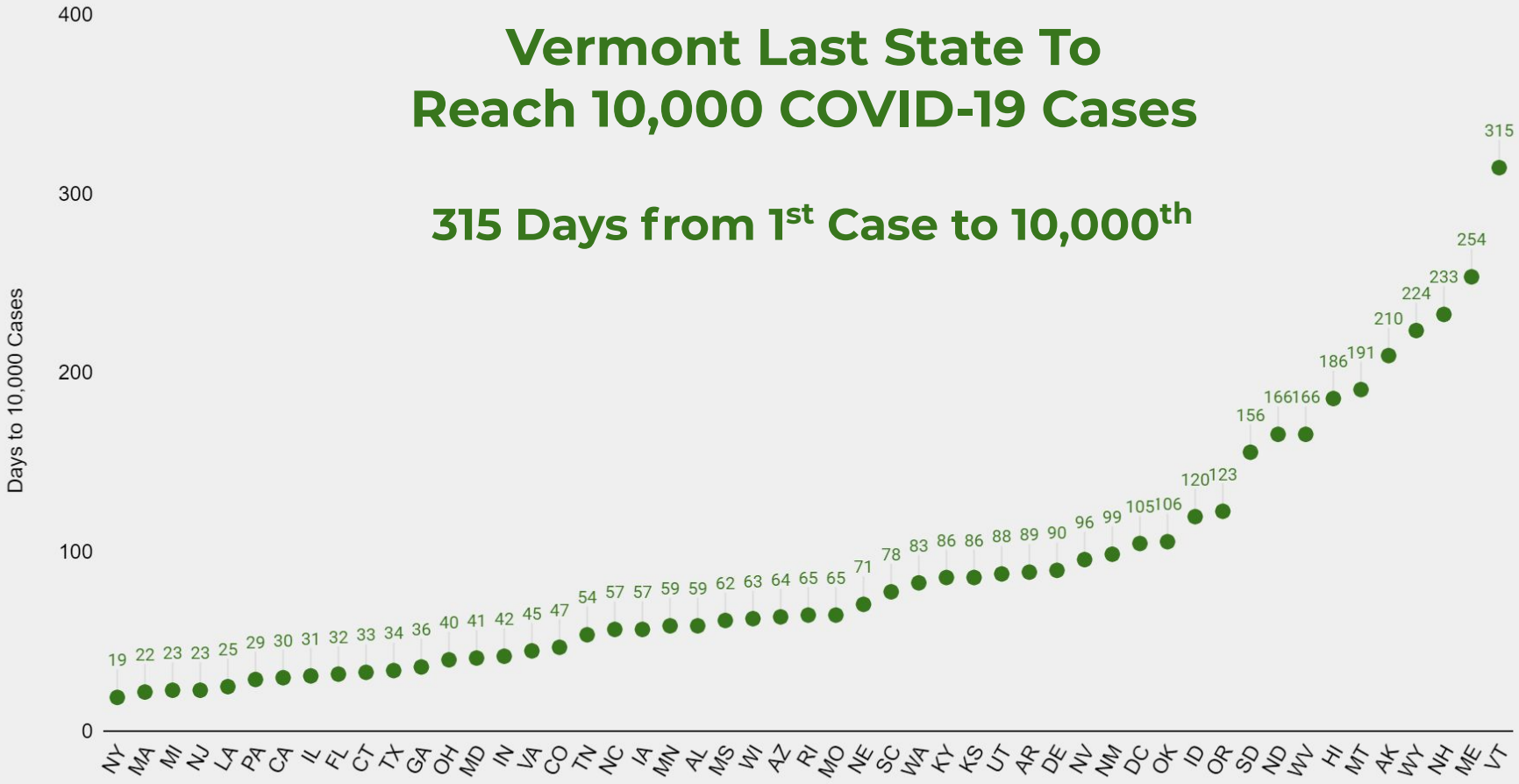
Source: Covid Tracking Project (7 Day Average in CT, ME, MA, NH, NY, RI & VT)—January 10, 2021

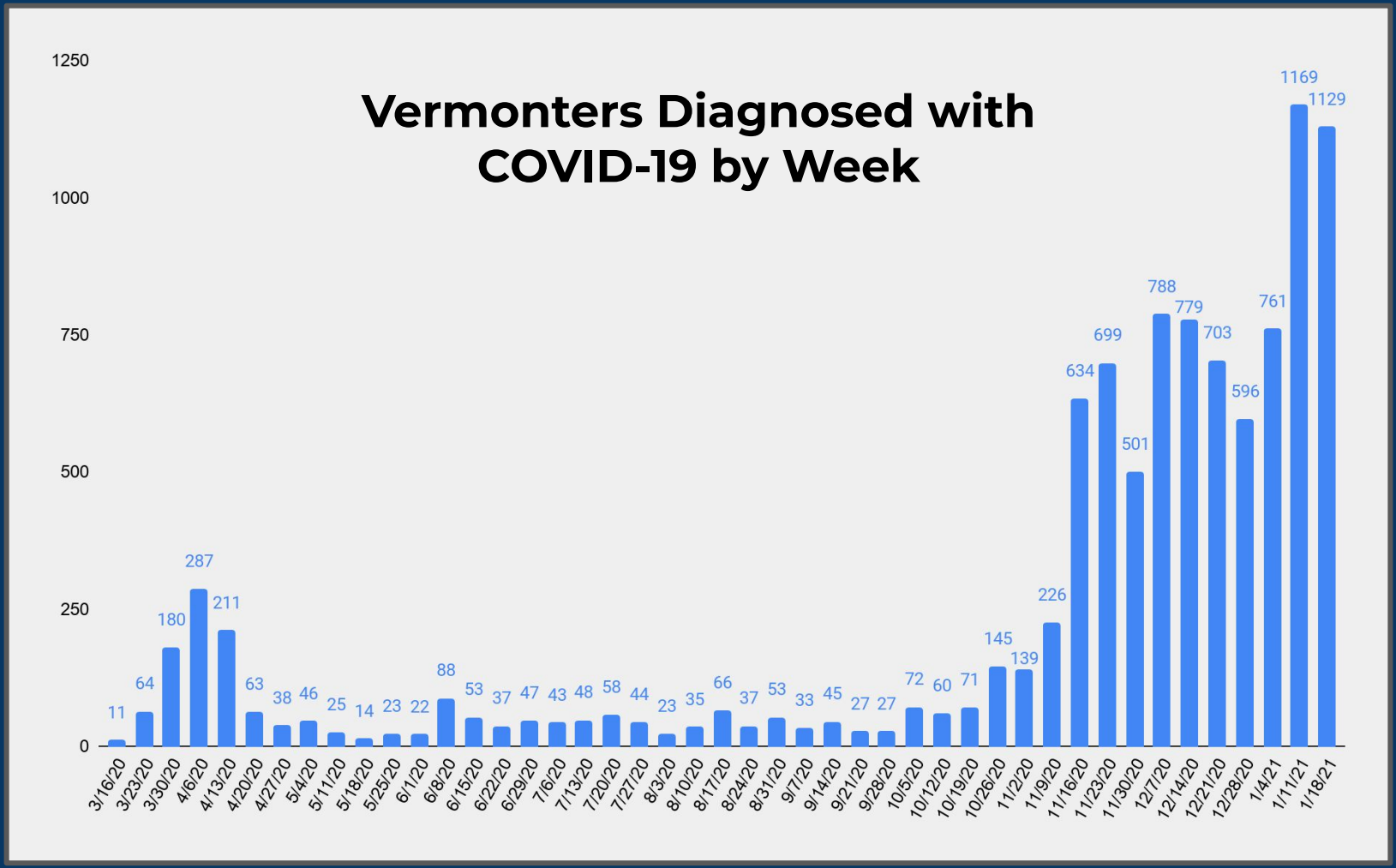


Source: Covid Tracking Project (CT, ME, MA, NH, NY, RI & VT)—January 18, 2021

Vermont Last State To Reach 10,000 COVID-19 Cases

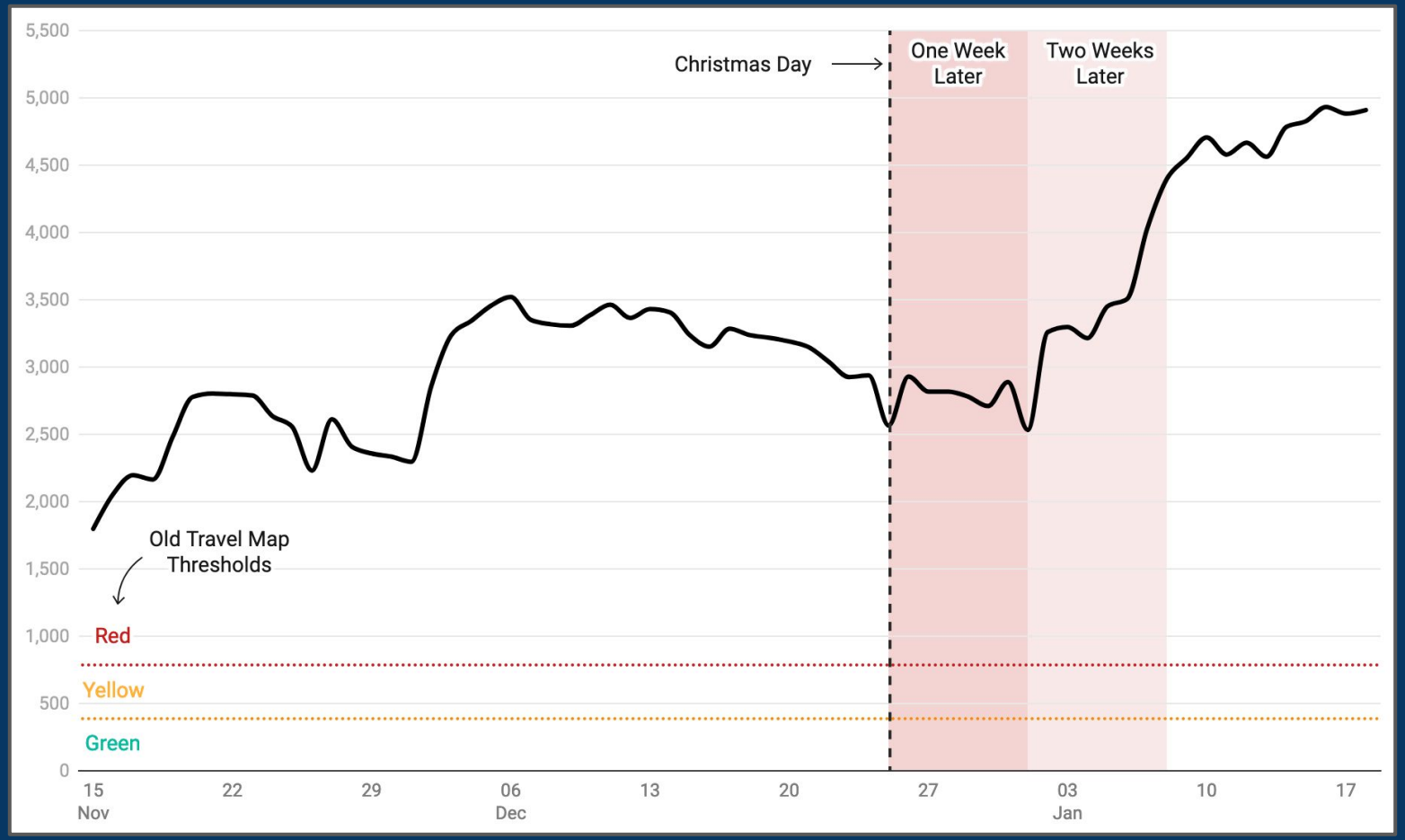
315 Days from 1st Case to 10,000th





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

Active Cases per Million in Vermont

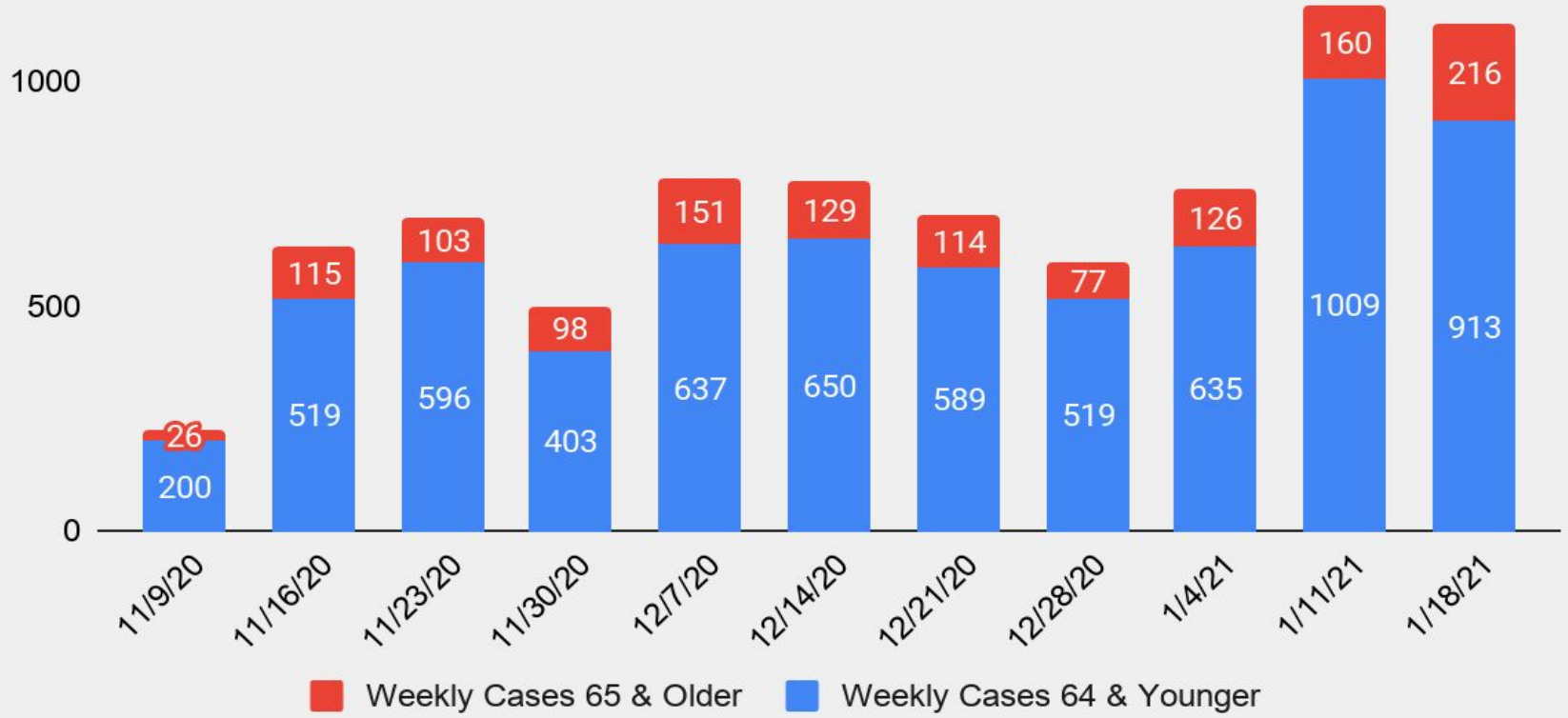


Source: VDH

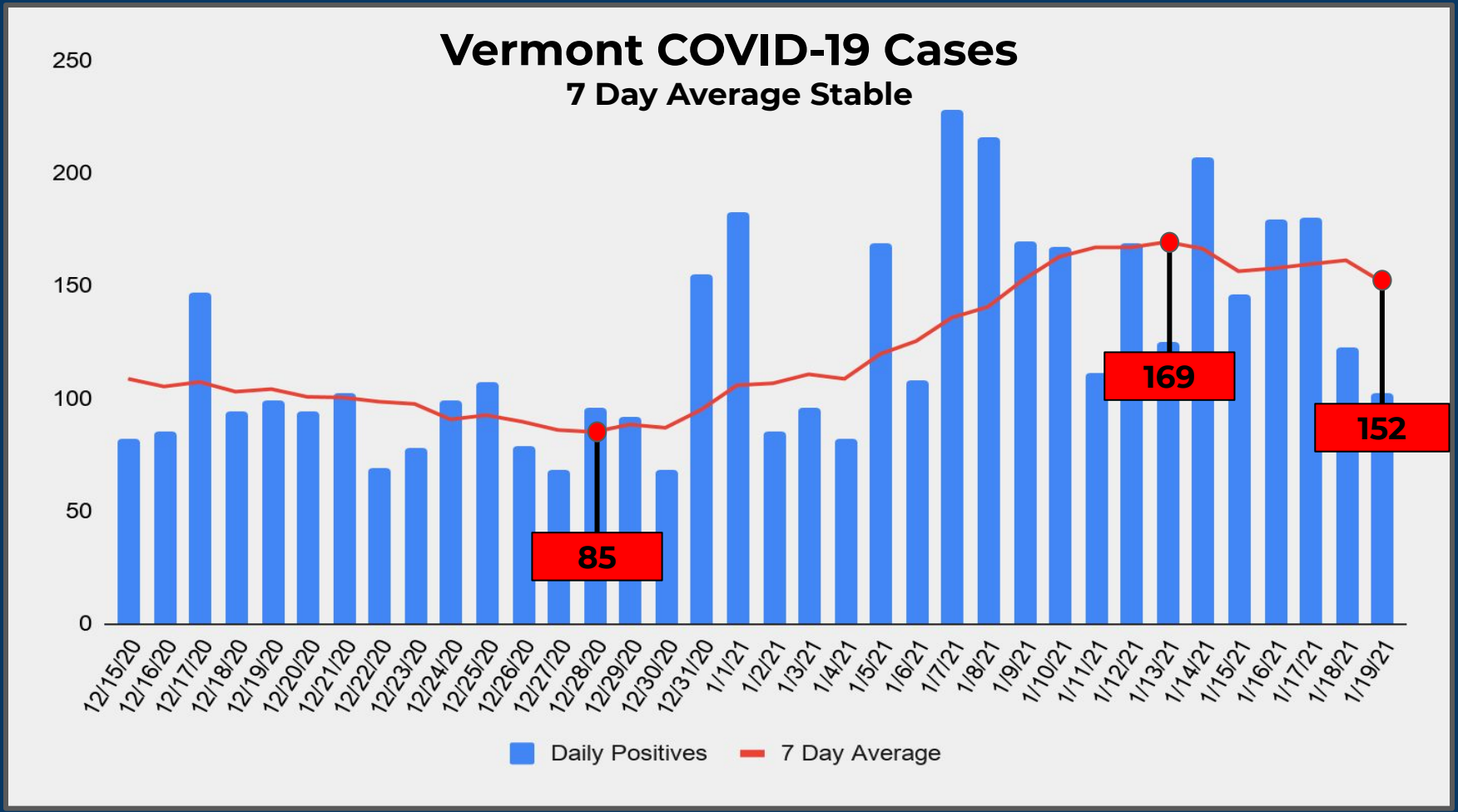
Vermonters Diagnosed by Week by Age

VT COVID-19 Deaths: 92% are 65 years & older

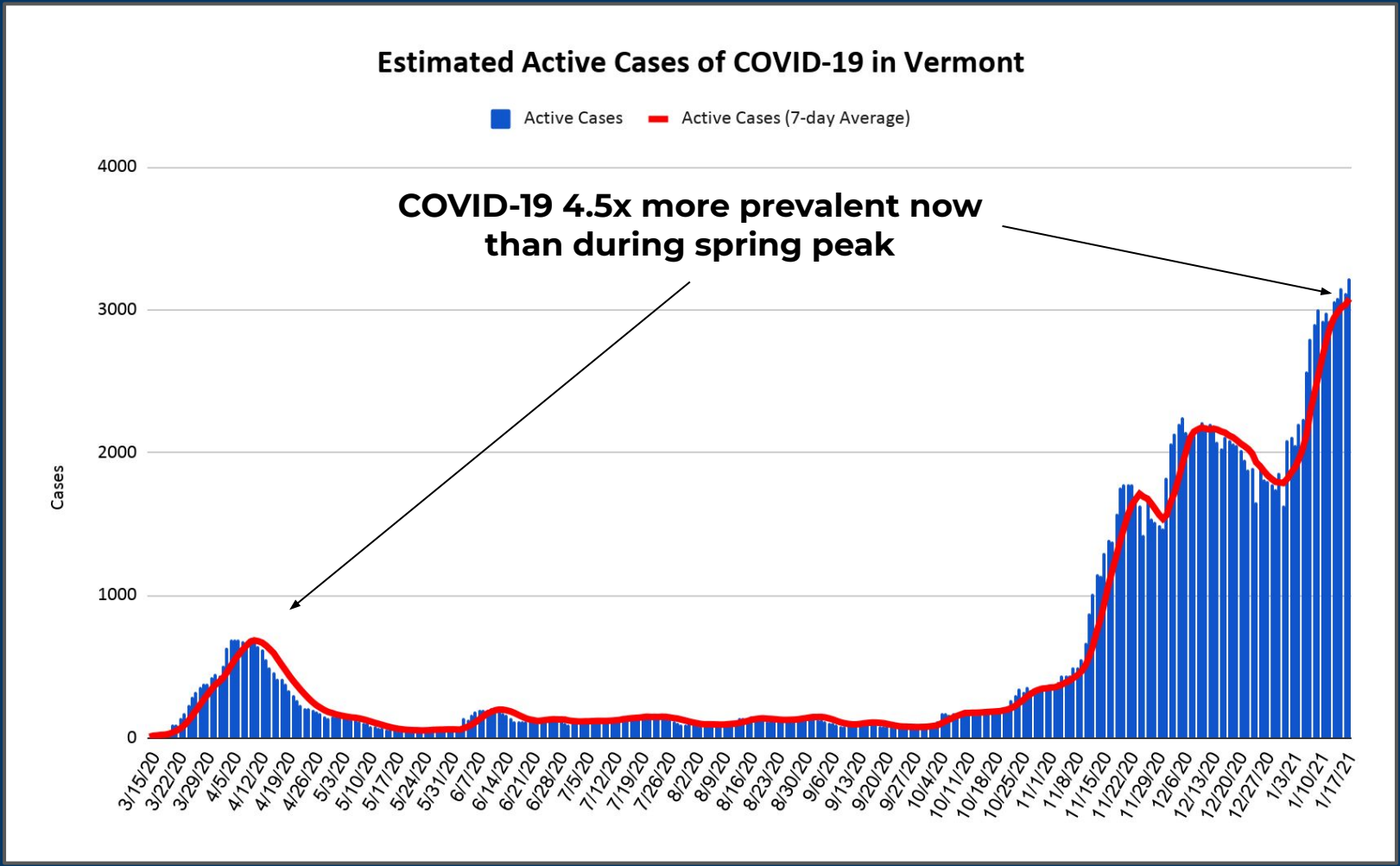
VT COVID-19 Hospitalizations: 62% are 65 years & older



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

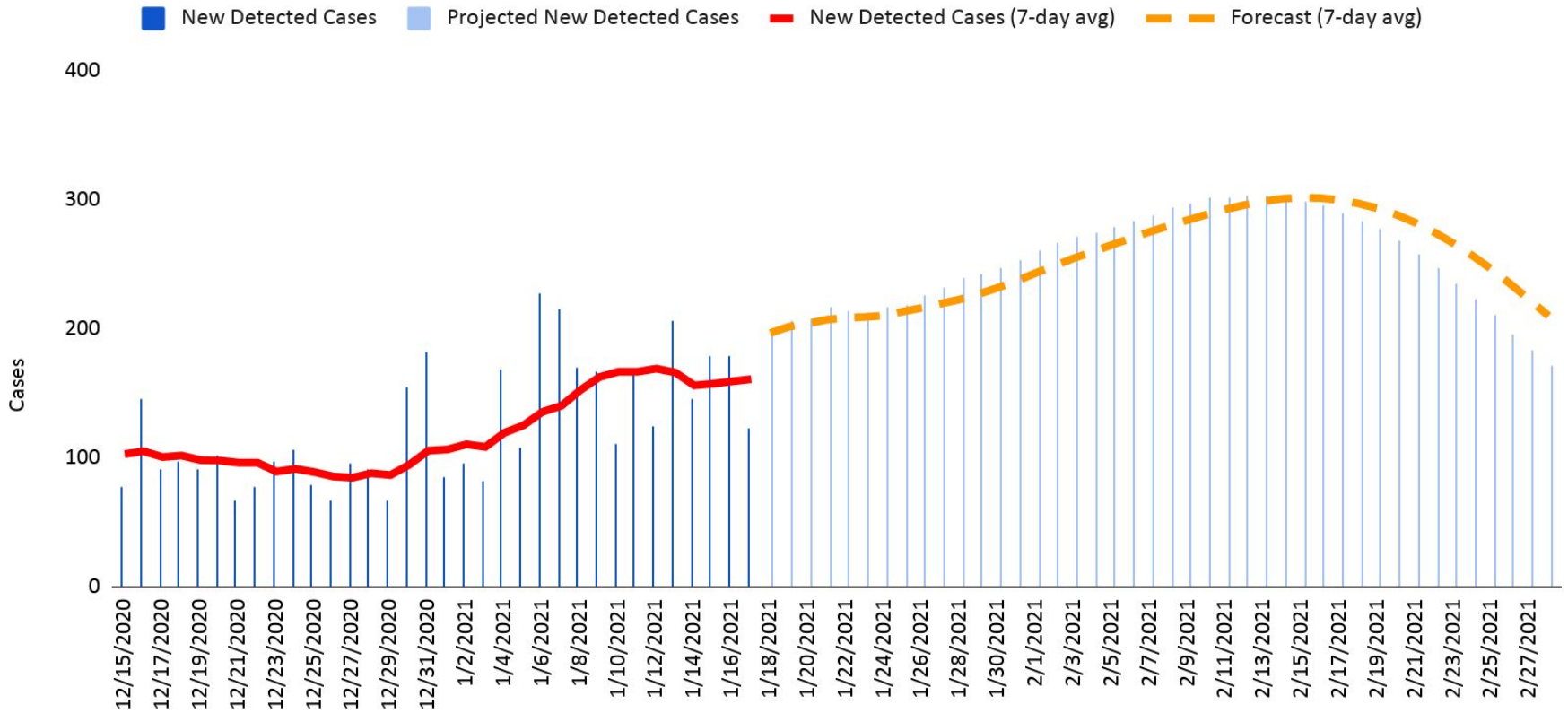


Source: Vermont Department of Health



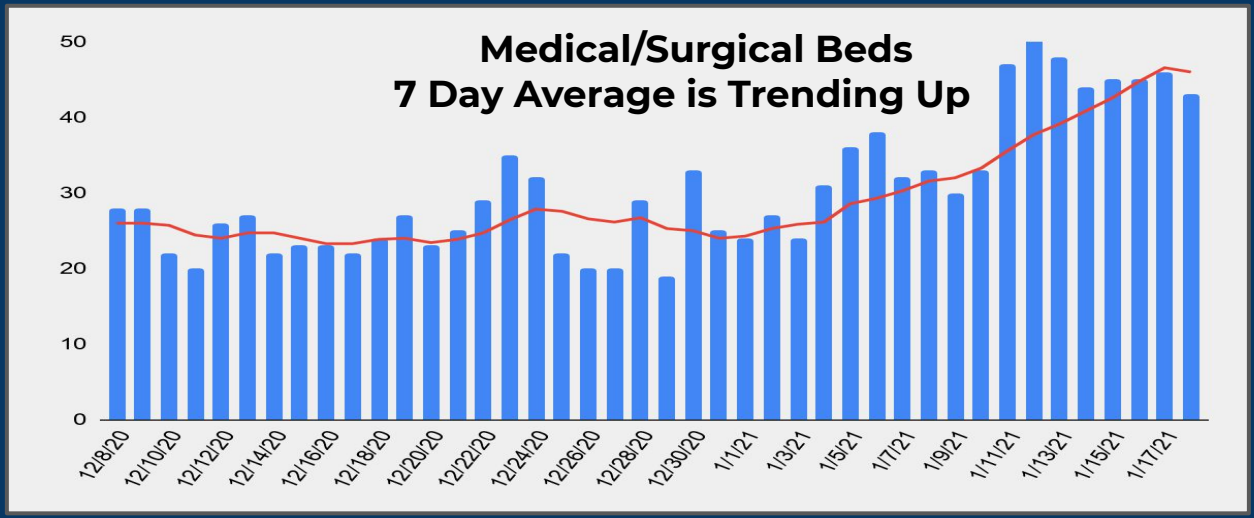
Source: Johns Hopkins University Data & Oliver Wyman Forecast Model—January 18, 2020

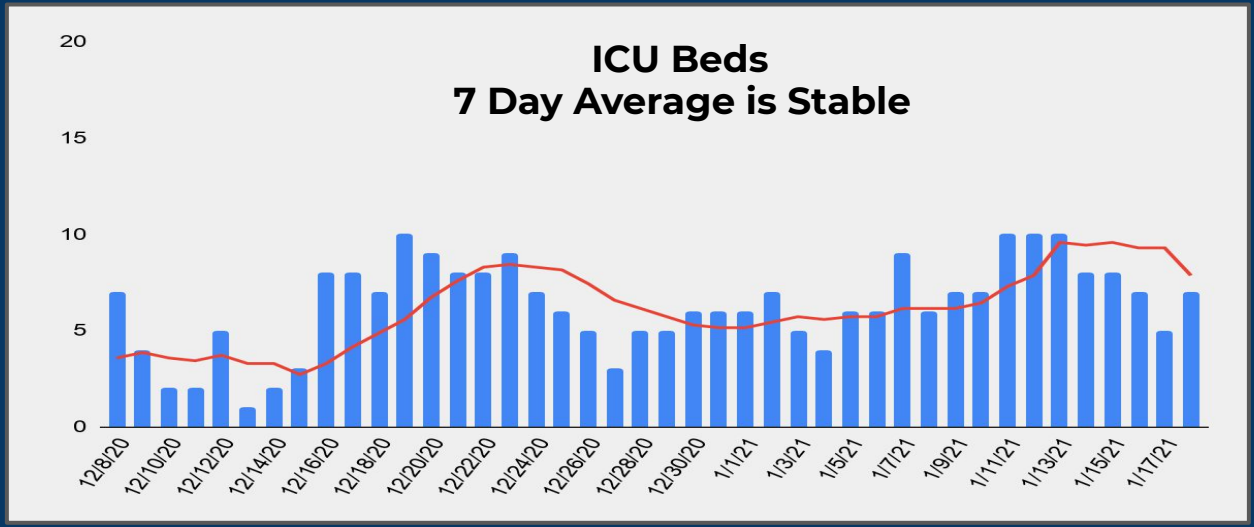
Vermont Forecast



Source: Johns Hopkins University Data & Oliver Wyman Forecast Model—January 18, 2020

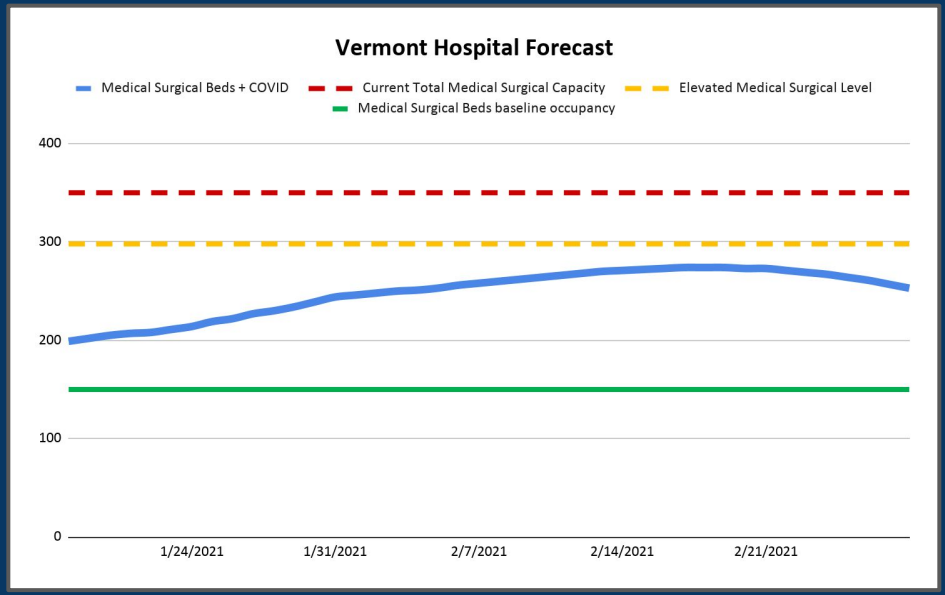
Vermont COVID-19 Hospitalizations

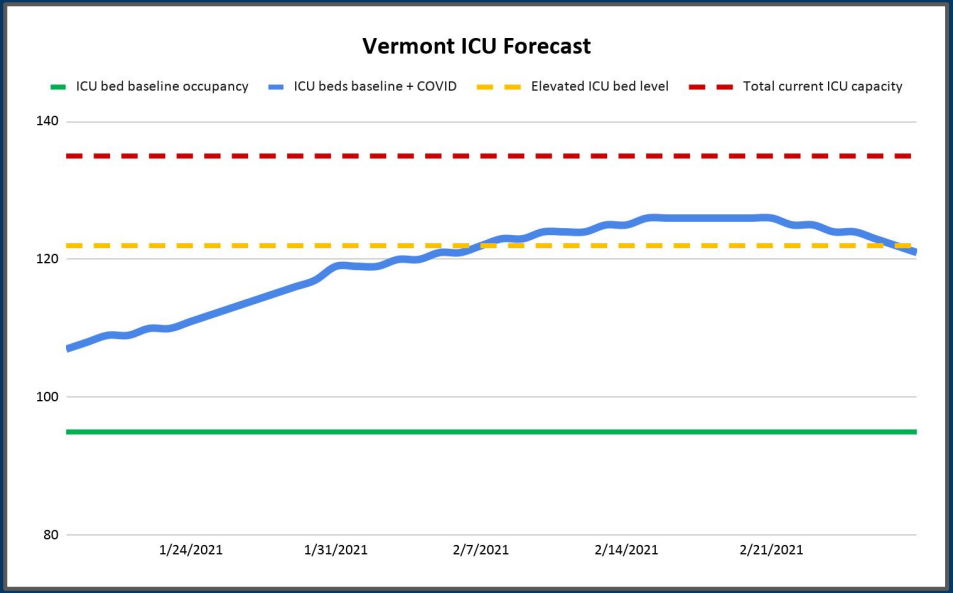




Source: Vermont Department of Health

Hospital & ICU Capacity Forecasts





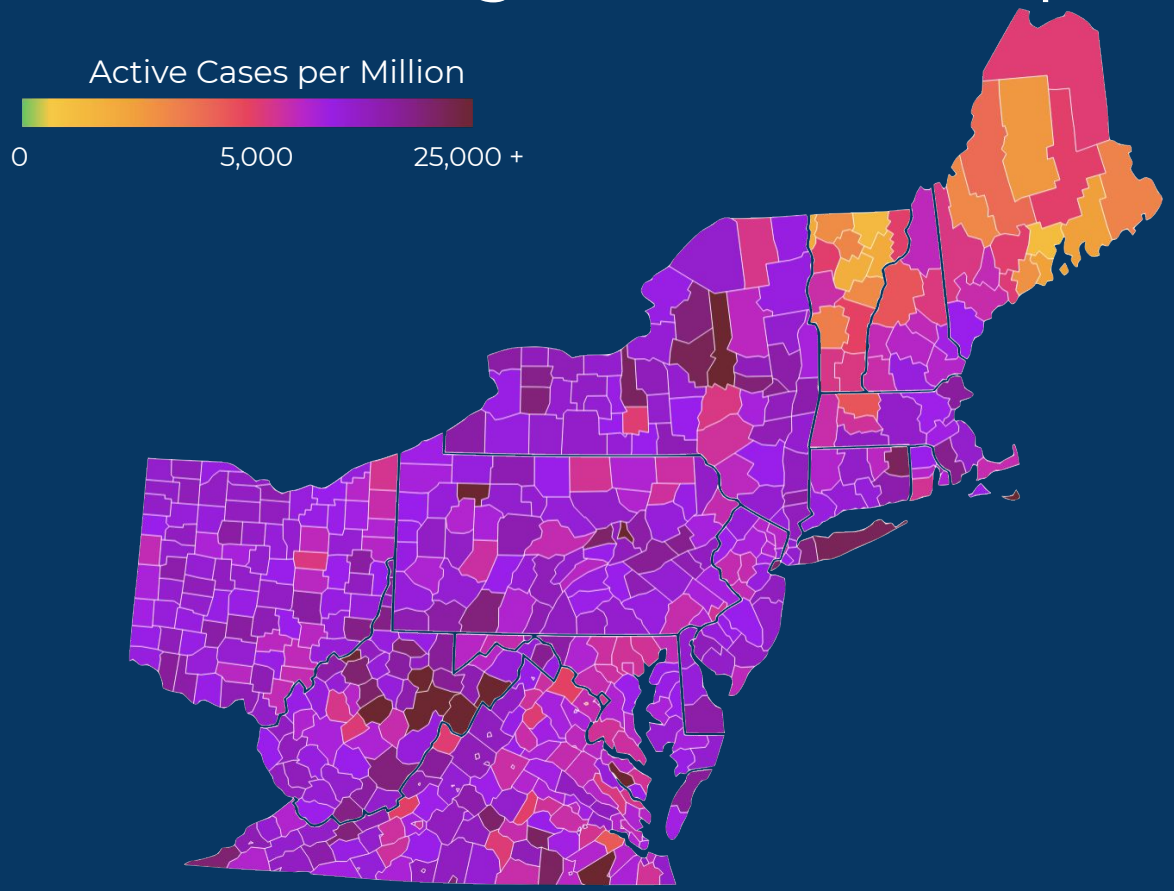
Source: Oliver Wyman Forecast Model—January 18, 2020; GNYHA Hospital Surge framework

Measuring Vermont's Pandemic Response

Rank *(Lowest)*	***Positivity*** *(7 Day Avg.)*	***Cases*** *(7 Day Moving Avg.)*	***Hospitalizations*** *(7 Day Moving Avg.)*	***Fatalities*** *(7 Day Moving Avg.)*
1	**Vermont**	Hawaii	**Vermont**	Alaska
2	Hawaii	North Dakota	Alaska	Hawaii
3	Alaska	**Vermont**	New Hampshire	**Vermont**
4	District of Columbia	Minnesota	Idaho	Washington
5	North Dakota	Oregon	Maine	Colorado
6	Minnesota	Michigan	North Dakota	Utah
7	Rhode Island	Washington	New Mexico	Montana
8	Colorado	Alaska	Hawaii	Minnesota

Source: Covid Tracking Project; Johns Hopkins University & New York Times—January 18, 2021

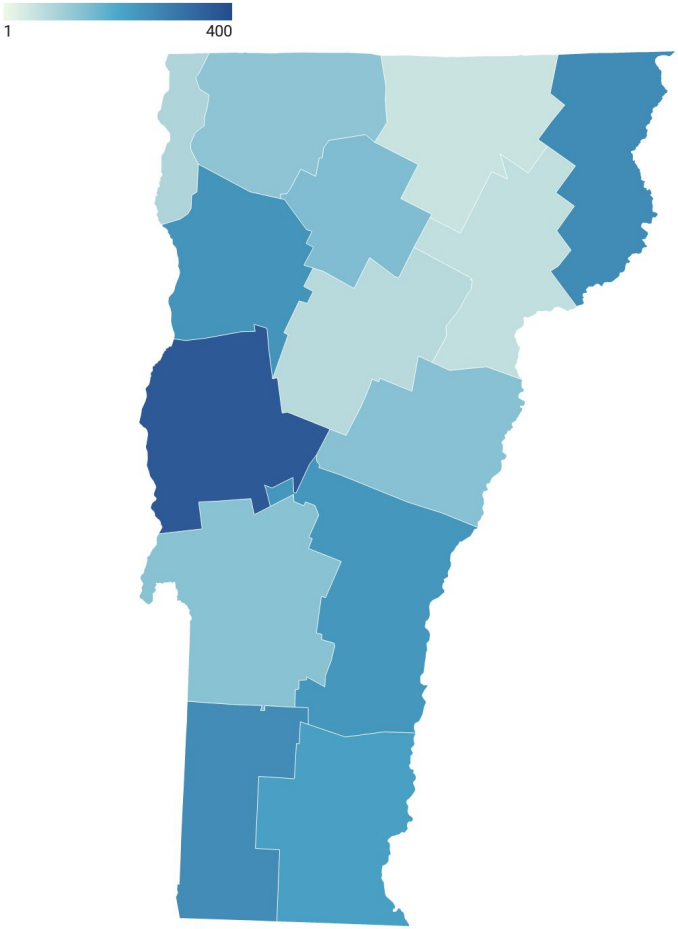
Regional Heat Map



See daily map updates at https://dfr.vermont.gov/about-us/covid-19/modeling/covid-19-modeling-graphics

Vermont Weekly Cases by County (per 100,000)

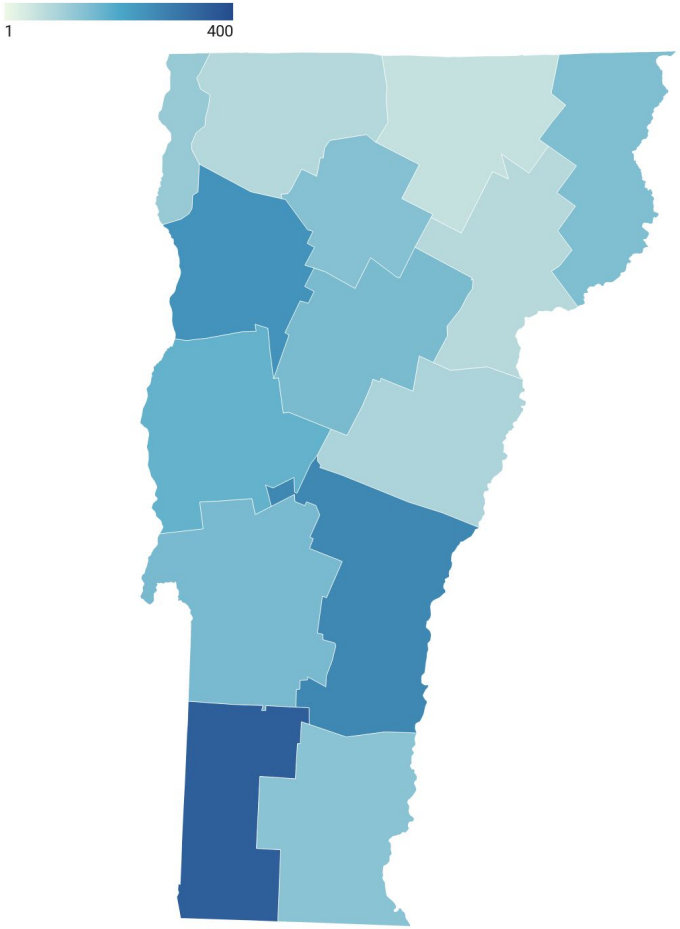
Results Reported January 5 - 11



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

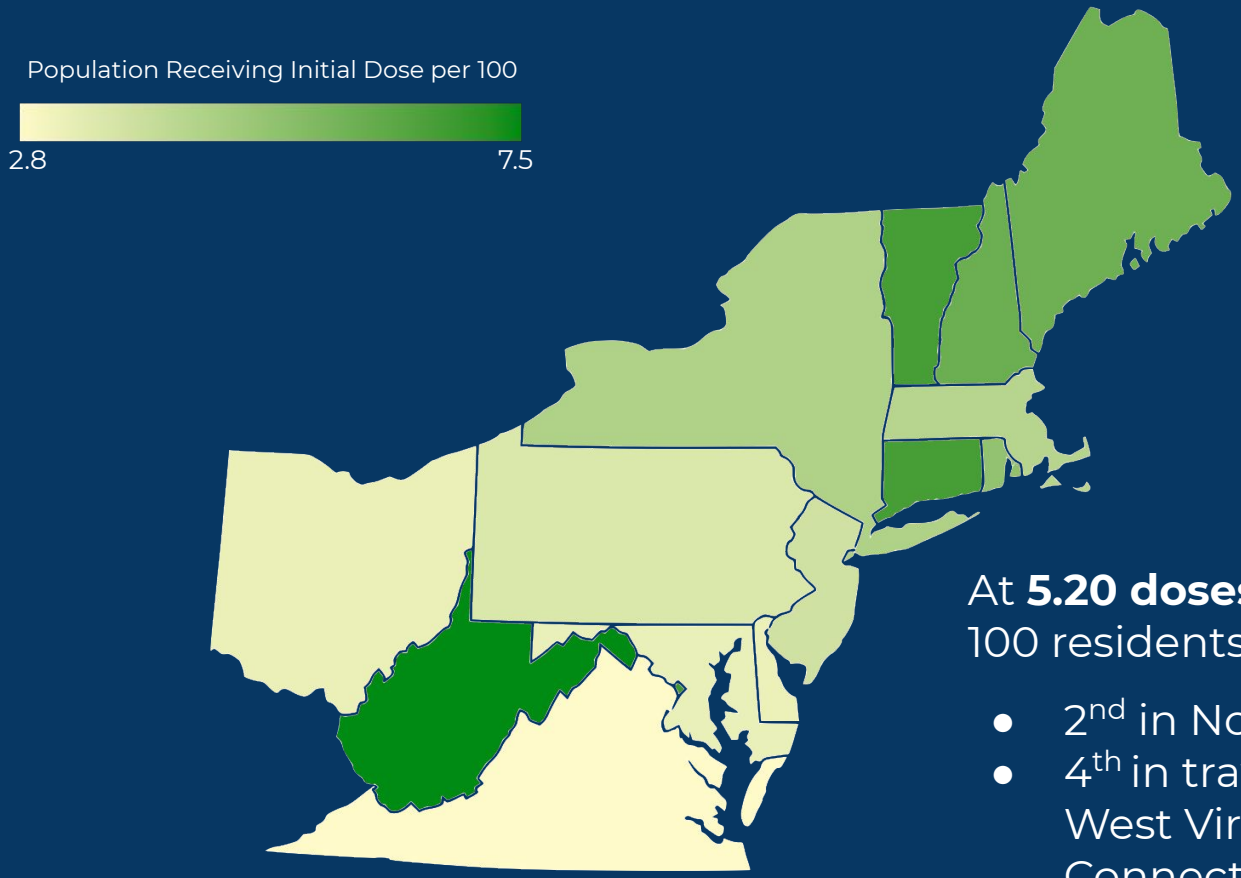
Vermont Weekly Cases by County (per 100,000)

Results Reported January 12 to 18



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

Regional Vaccination Map



At **5.20 doses** administered per 100 residents, Vermont ranks:

- 2nd in Northeast
- 4th in travel region behind West Virginia, D.C. & Connecticut

Source: CDC—January 18, 2021

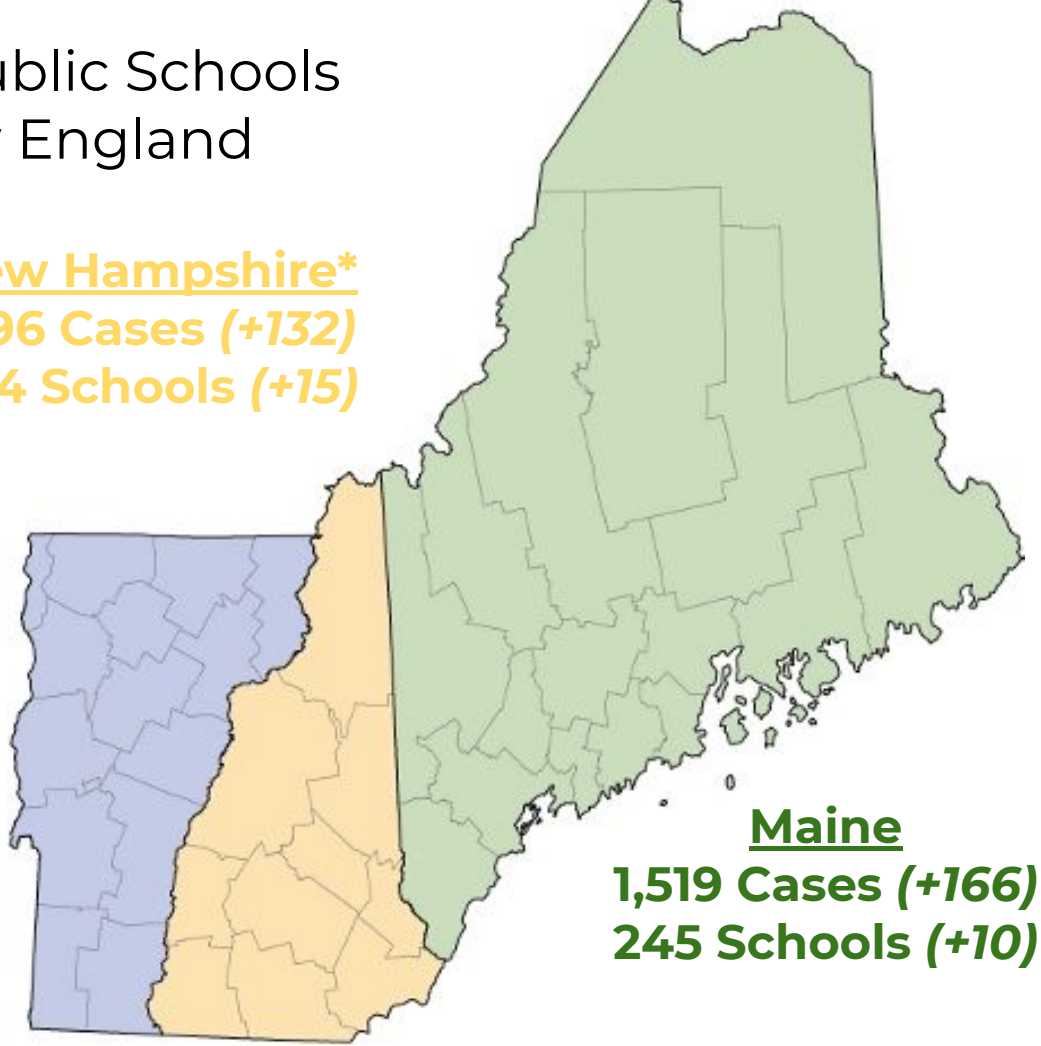
Active Outbreaks in Long Term Care Facilities

Facility Name	Total COVID-19 Cases
Elderwood at Burlington, *Burlington*	127
Saint Albans Healthcare & Rehab Center, *Saint Albans*	89
Our Lady of Providence, *Winooski*	49
The Residence at Shelburne Bay, *Shelburne*	41
Craftsbury Community Care Center, *Craftsbury*	29
Holiday House, *Saint Albans*	22
Converse Home Assisted Living, *Burlington*	17
Village at Cedar Hill, *Windsor*	12
Holton Home, *Brattleboro*	12
Vermont Veterans Home, *Bennington*	8
Davis Home, *Windsor*	6
Valley Terrace, *Hartford*	6
Second Spring North, *Williamstown*	Not Shown
Meadowview Recovery Residence, *Brattleboro*	Not Shown
Long Term Care Facility D	Not Shown
Harbor Village, *South Burlington*	Not Shown

Source: Vermont Department of Health—January 18, 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 -- there are three active outbreaks that are not included as a result.*

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

New Hampshire*
1596 Cases *(+132)*
394 Schools *(+15)*

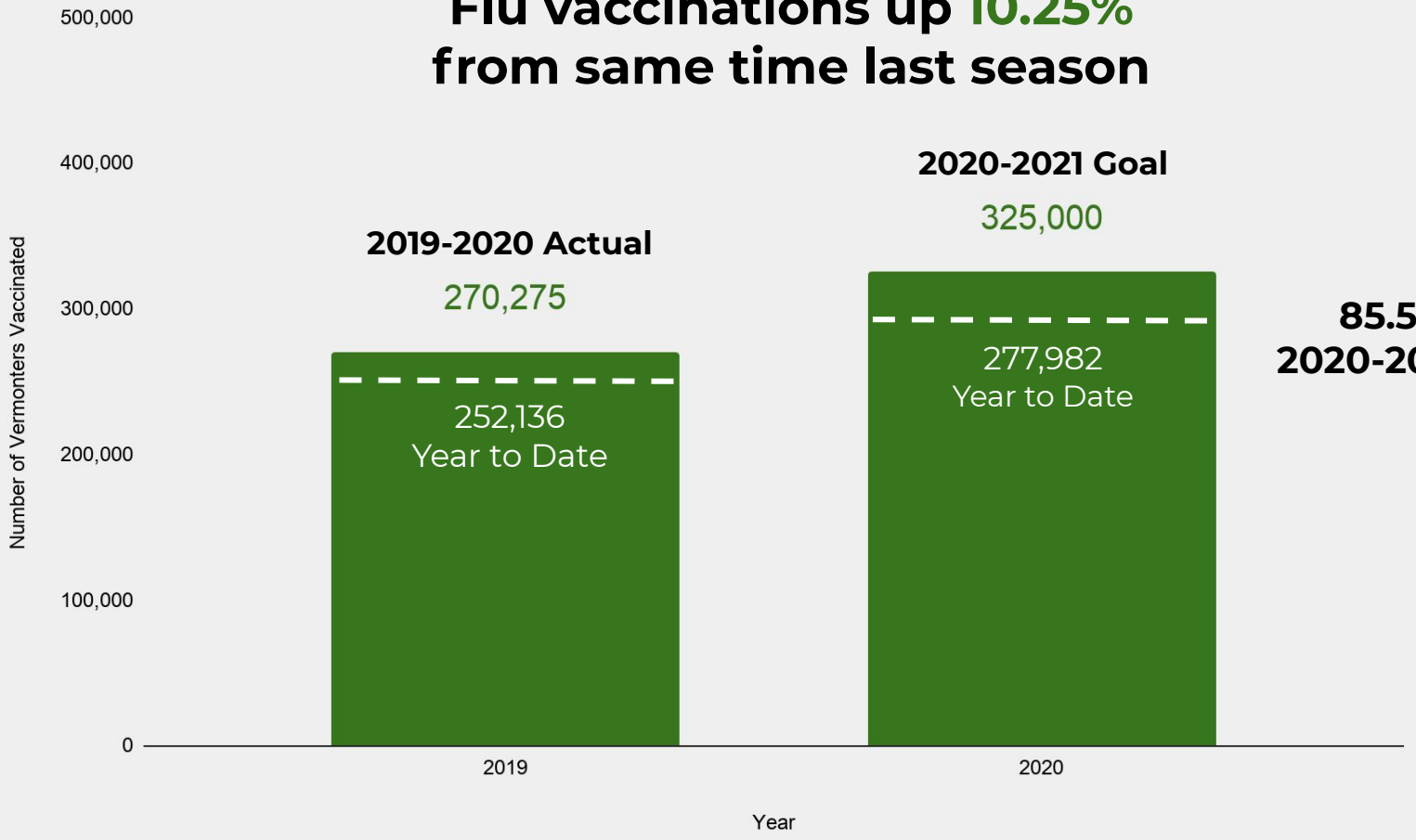


Vermont
304 Cases *(+52)*
163 Schools *(+14)*

Maine
1,519 Cases *(+166)*
245 Schools *(+10)*

Source: ME, NH & VT K-12 Dashboards, ME media reports; Note: NH School Dashboard is offline, data as of January 11, 2021.

Flu vaccinations up 10.25% from same time last season



85.5% to 2020-2021 goal

Data from UVMHN may be incomplete or delayed

Source: Vermont Department of Health & ADS; Immunization Registry; Measured from July 1 to January 10, 2019-2020 & 2020-2021

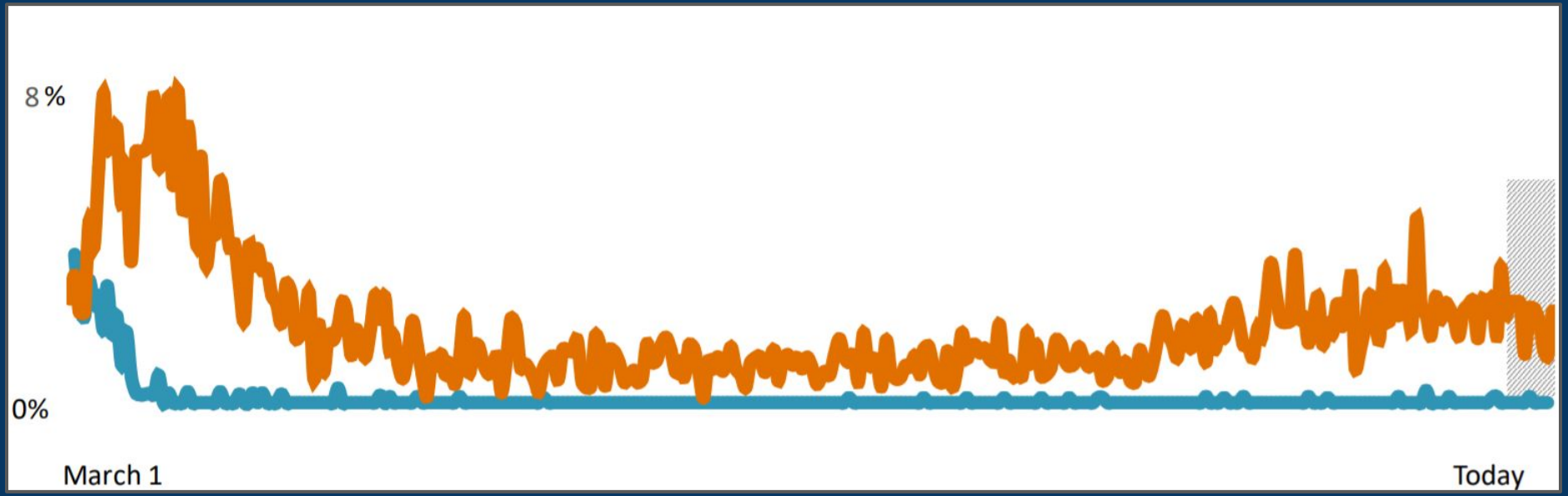
RESTART VERMONT

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

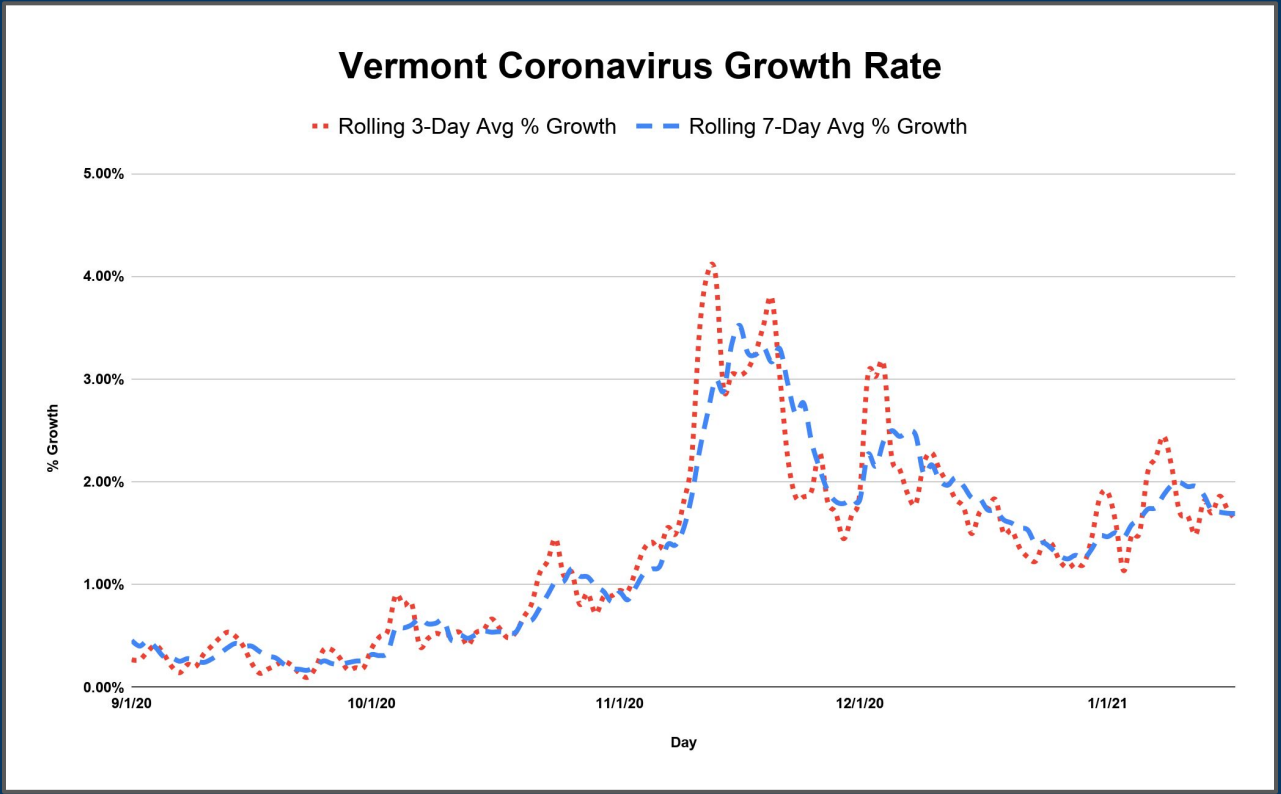
- **Summary:** Percentage of visits with COVID-19 like illness and Influenza diagnosis
- **Warning Flag:** Percentage of visits exceeding 4% for multiple consecutive days



Source: Vermont Department of Health—January 18, 2021

Data Point 2: Viral Growth and Reproductive Rates

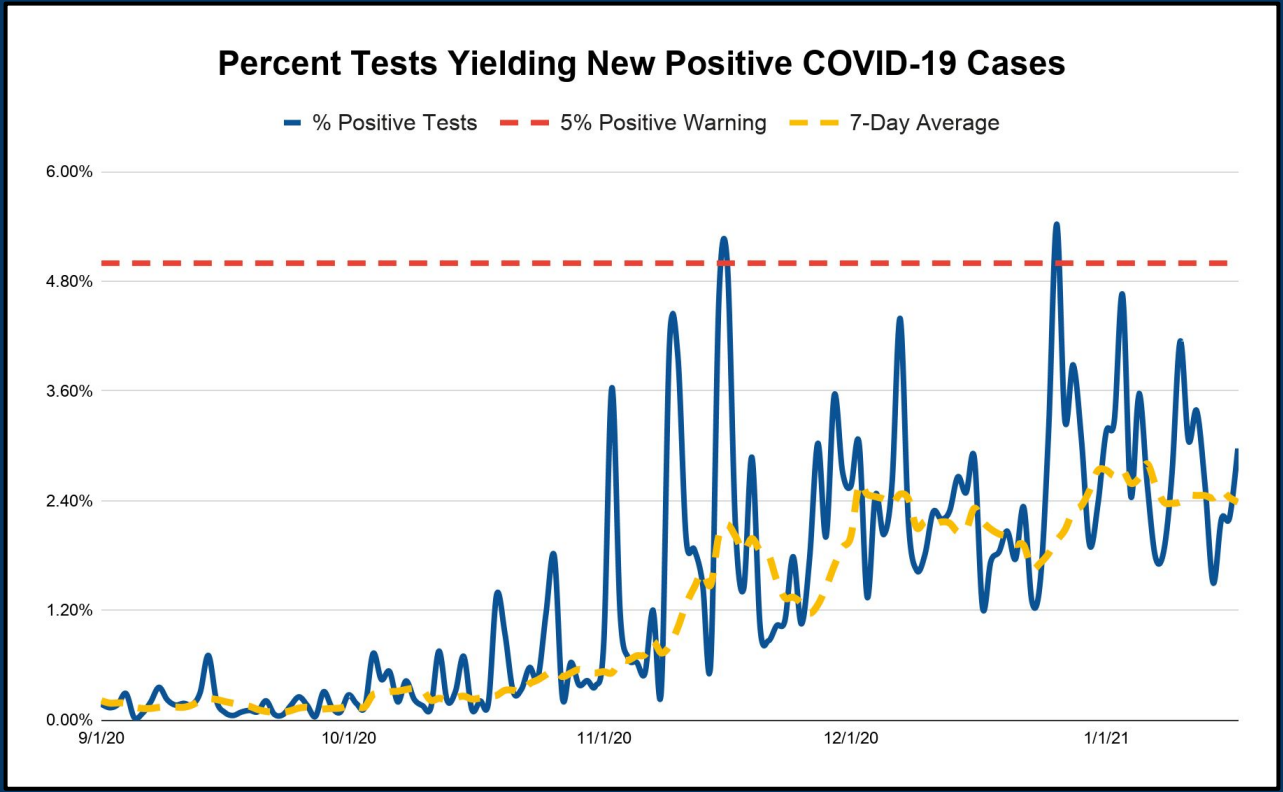
- **Summary:** Case growth measured by daily, 3-day, 7-day, and effective reproductive rate (R_t)
- **Warning Flags:** Sustained viral growth that would lead to <30% open ICU beds



Source: Vermont Department of Health—January 18, 2021

Data Point 3: Percentage of New Positive Tests

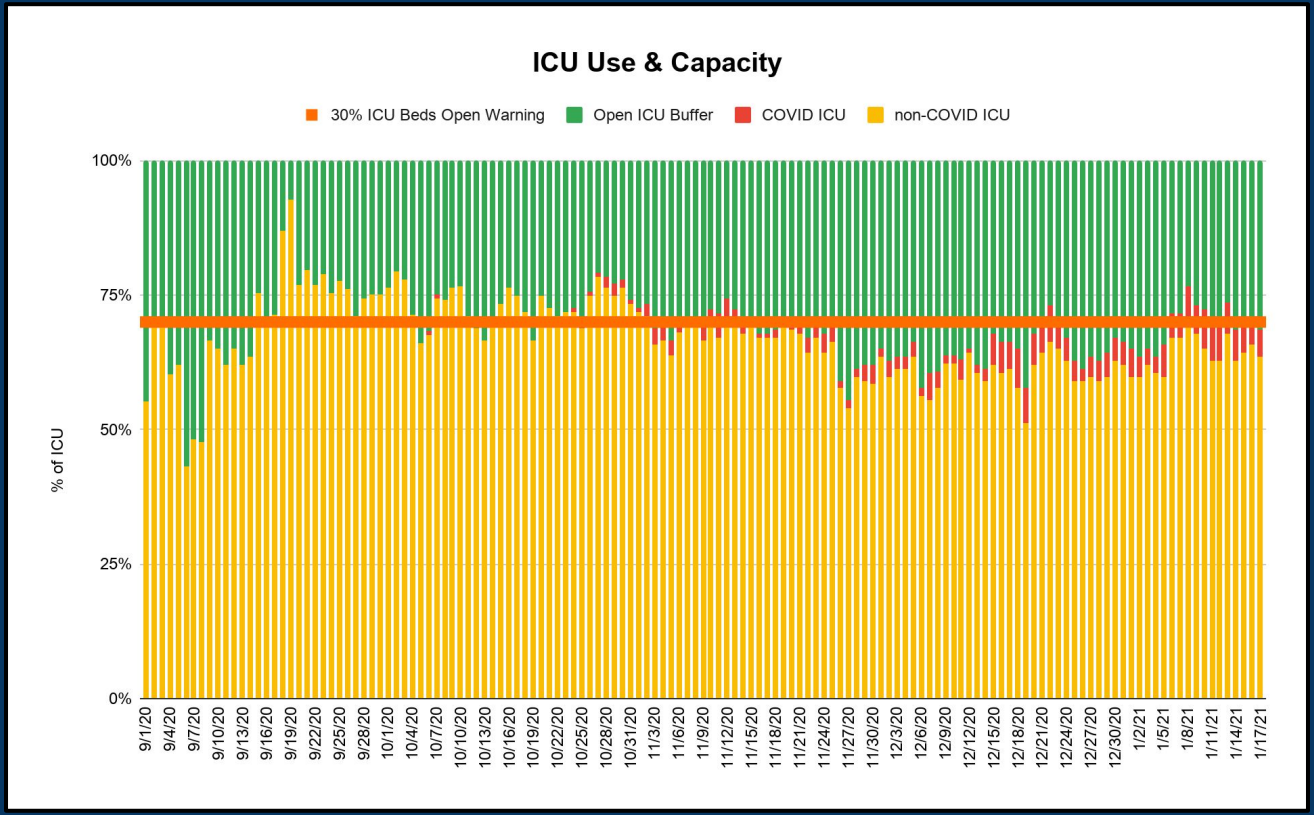
- **Summary:** Percent of tests resulting in a new positive case
- **Warning Flags:** New positives represent >5% of daily results



Source: Vermont Department of Health—January 18, 2021

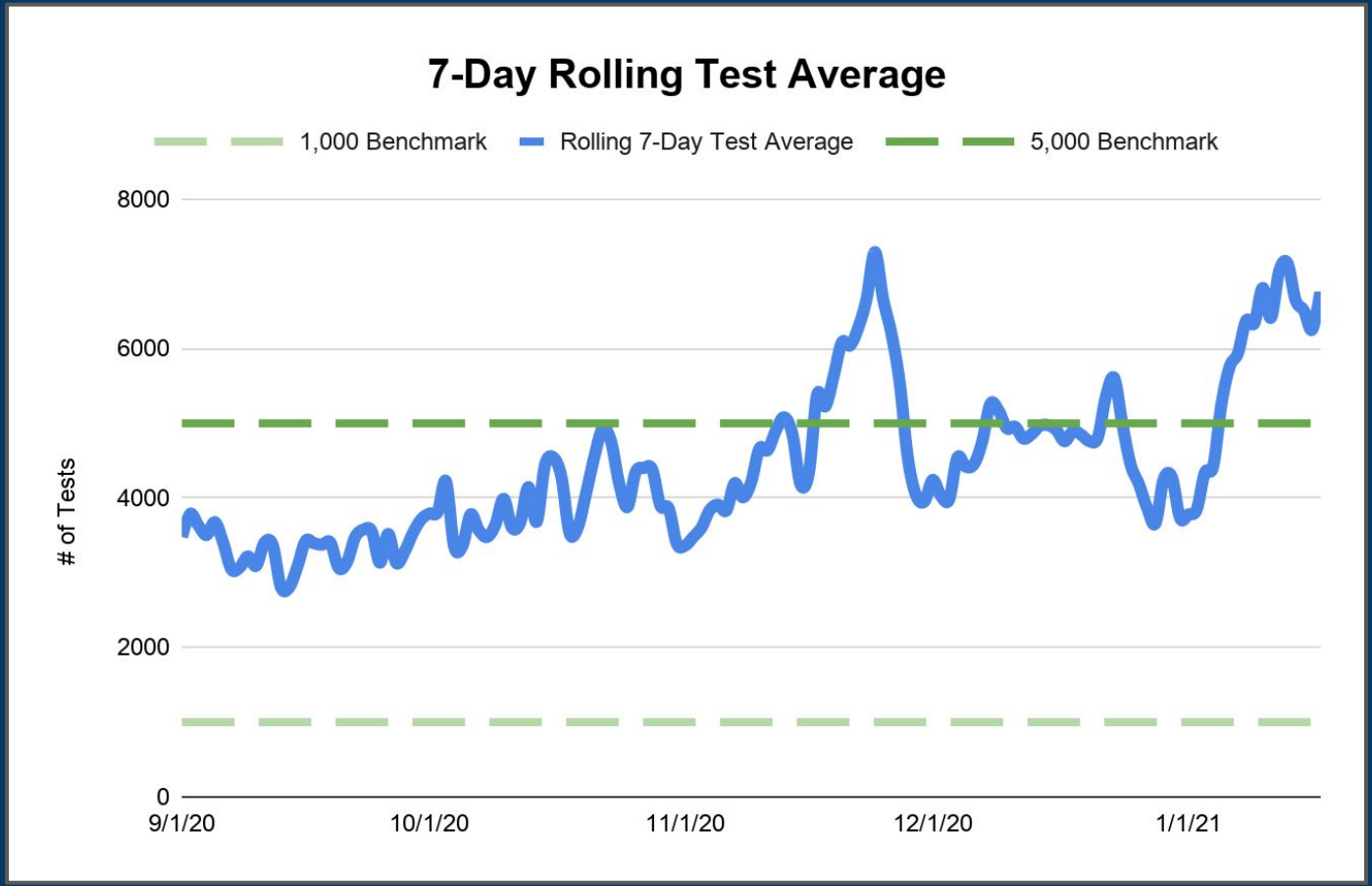
Data Point 4: Hospital & Critical Care Beds

- **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—January 18, 2021

Vermont Testing



Source: Vermont Department of Health—January 18, 2021; results reported to VDH daily