COVID-19 Modeling January 5, 2021
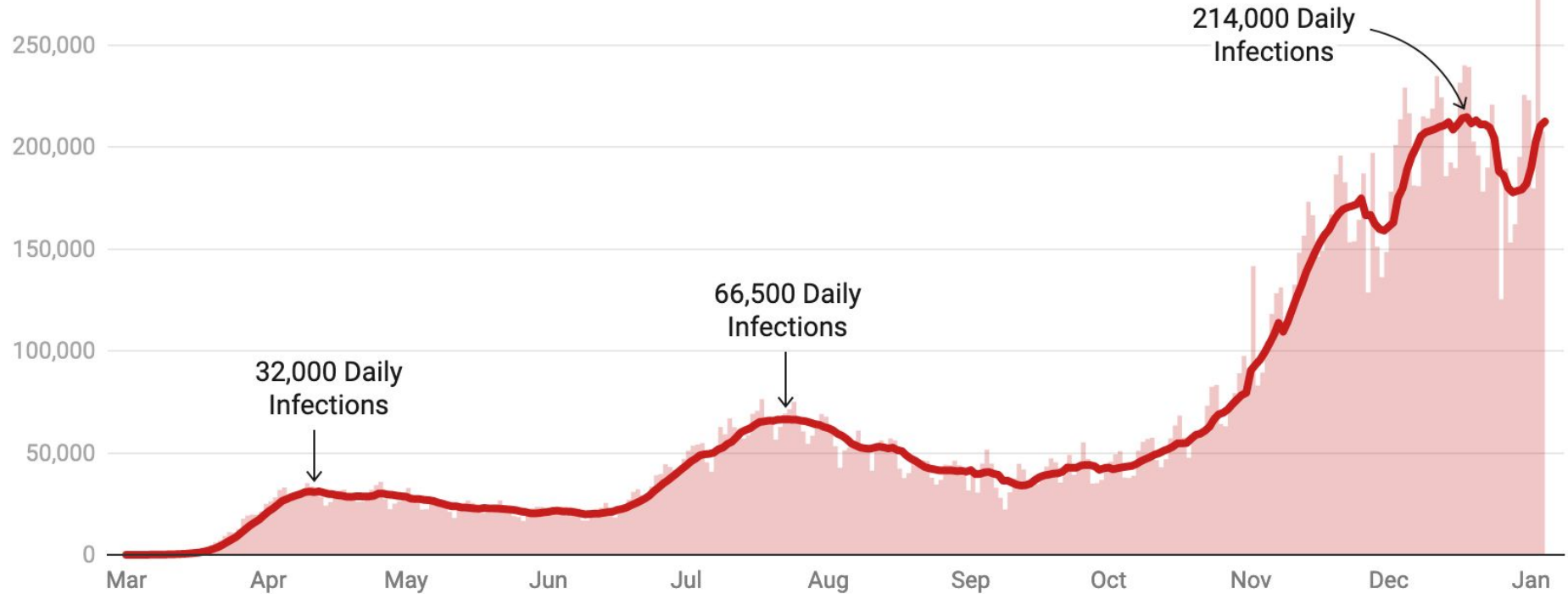
Presentation available at:
dfr.vermont.gov

350,000+ Deaths
In the United States
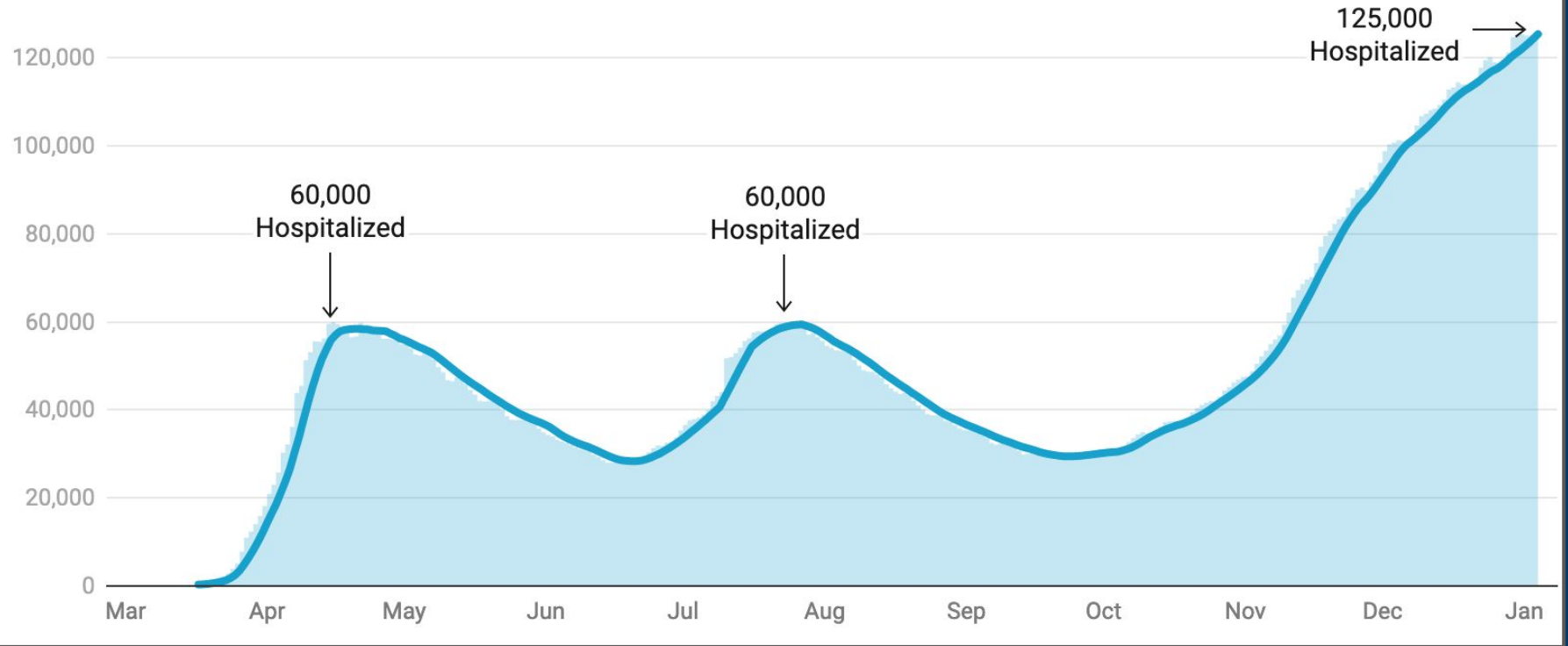
First 50,000 Deaths	*~55 Days*	Fourth 50,000 Deaths	*~55 Days*
Second 50,000 Deaths	*~30 Days*	Fifth 50,000 Deaths	*~61 Days*
Third 50,000 Deaths	*~66 Days*	Sixth 50,000 Deaths	*~23 Days*

Seventh 50,000 Deaths *~21 Days*

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

32,000 Daily Infections

66,500 Daily Infections

214,000 Daily Infections

Source: Covid Tracking Project—January 5, 2021

COVID-19 Hospitalizations in US (7-Day Average)

Daily COVID-19 Deaths in US (7-Day Average)

Source: Covid Tracking Project—January 5, 2021
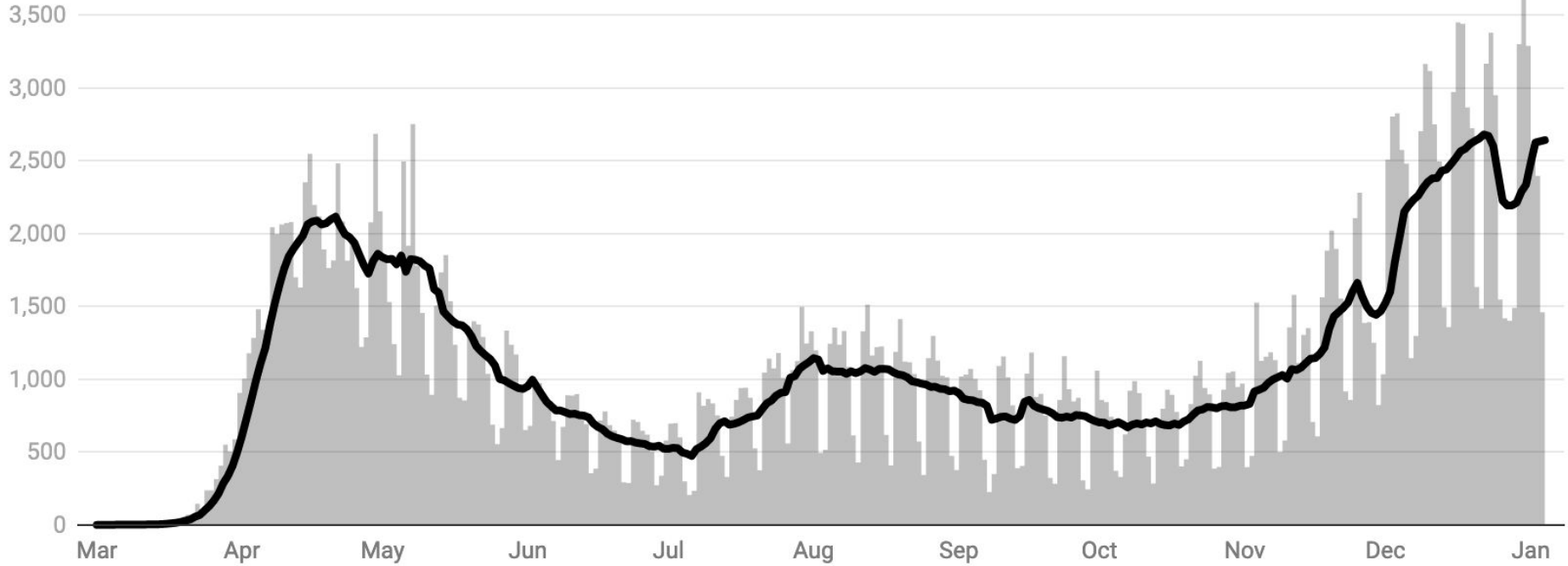
Regional Case Growth

20.02% Increase in New Confirmed Cases

Positive Cases Dec. 22nd to Dec. 28th

146,843

	New Cases Last 7 Days
Vermont	586
Maine	3043
New Hampshire	4705
Rhode Island	5442
Connecticut	13823
Quebec	15827
Massachusetts	27914
New York	75503
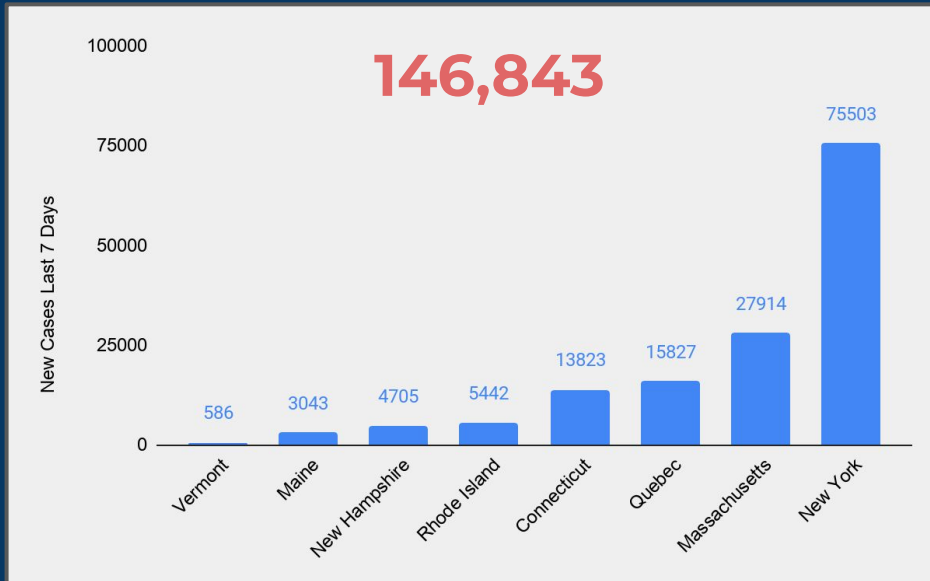
Positive Cases Dec. 29th to Jan. 4th

176,248

	New Cases Last 7 Days
Vermont	746
Maine	3659
New Hampshire	4876
Rhode Island	6944
Connecticut	13591
Quebec	17931
Massachusetts	32691
New York	95810

Sources: State Health Departments & CTV National News (Quebec)
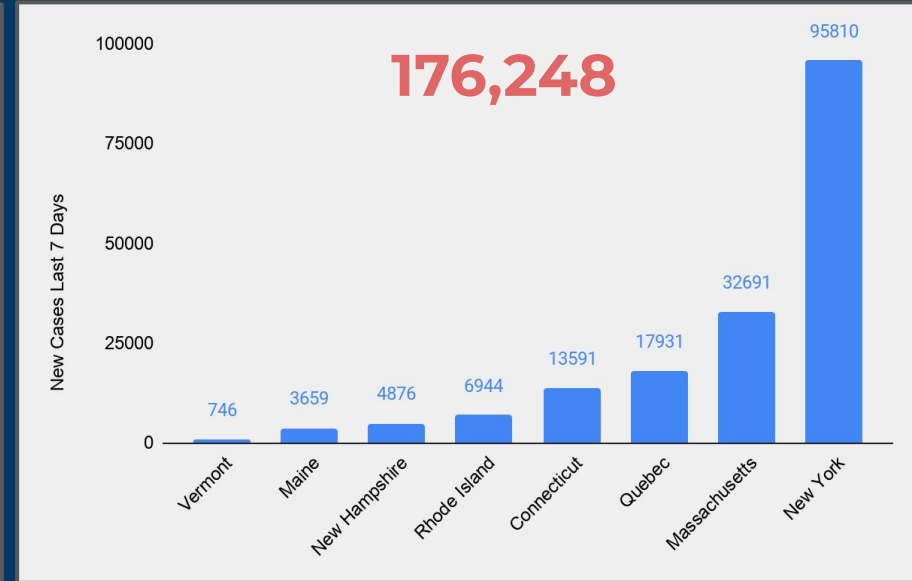
Northeast Case Growth By Week
Since March 16, 2020

**Large Weekly Percentage Increase
Most Regional Cases by Week**

91,132

176,248

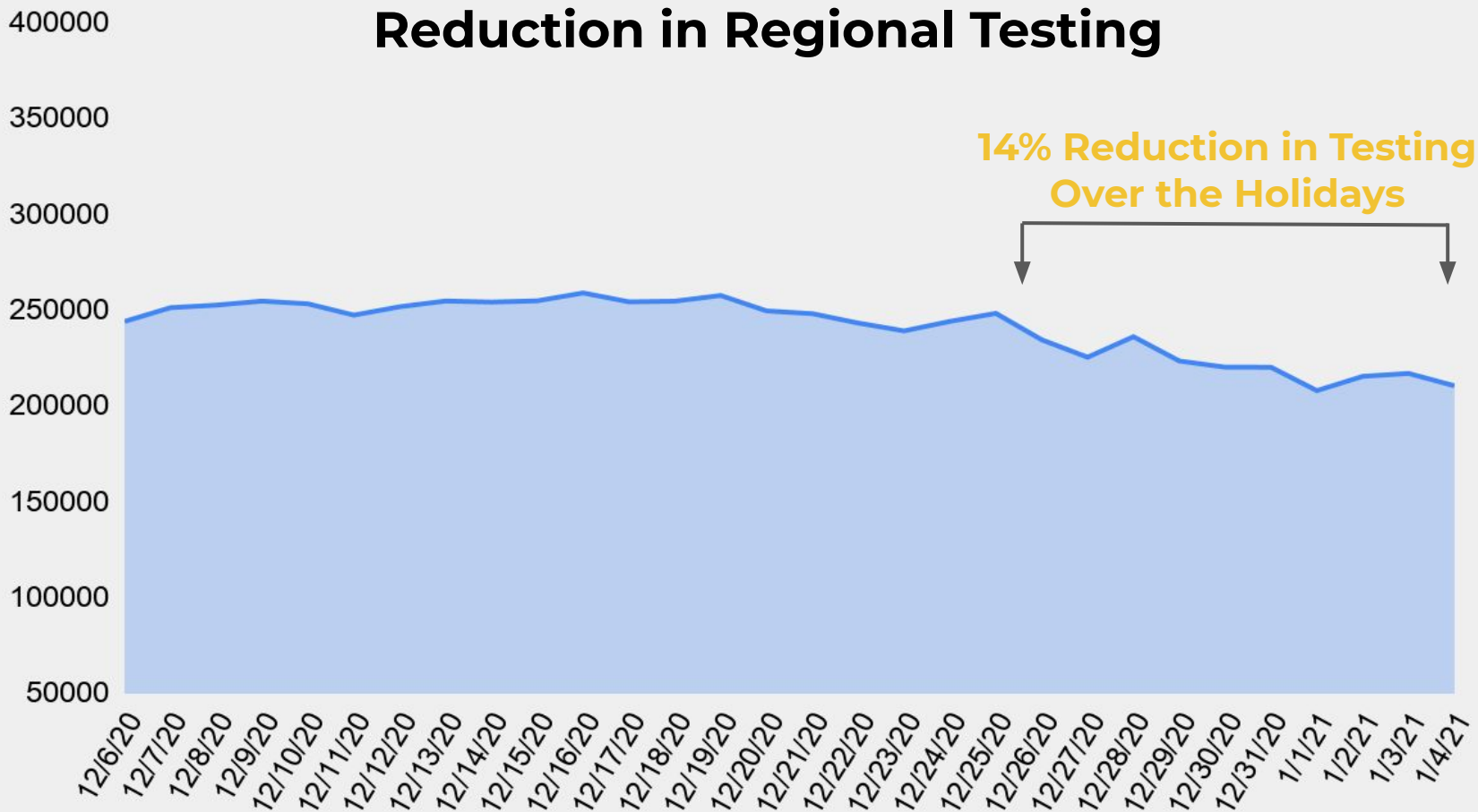Sources: State Health Departments & CTV National News (Quebec)

Reduction in Regional Testing

14% Reduction in Testing Over the Holidays

Source: Covid Tracking Project (7 Day Average of PCR Testing in CT, ME, MA, NH, NY, RI & VT)—January 4, 2021

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Regional Positivity Rate Trending Up

Source: Covid Tracking Project (7 Day Average in CT, ME, MA, NH, NY, RI & VT)—January 4, 2021

Source: Covid Tracking Project (CT, ME, MA, NH, NY, RI & VT)—January 4, 2021
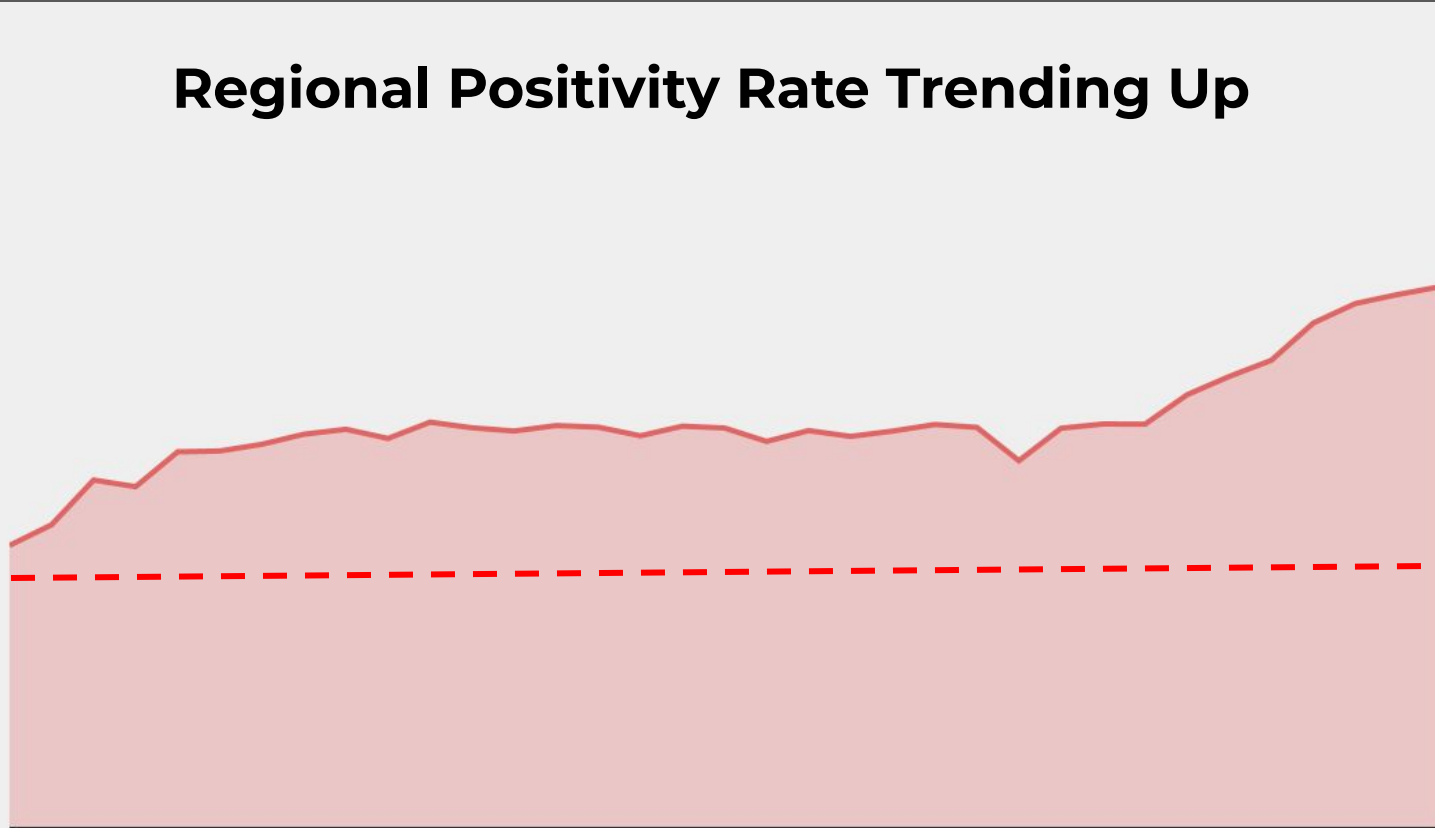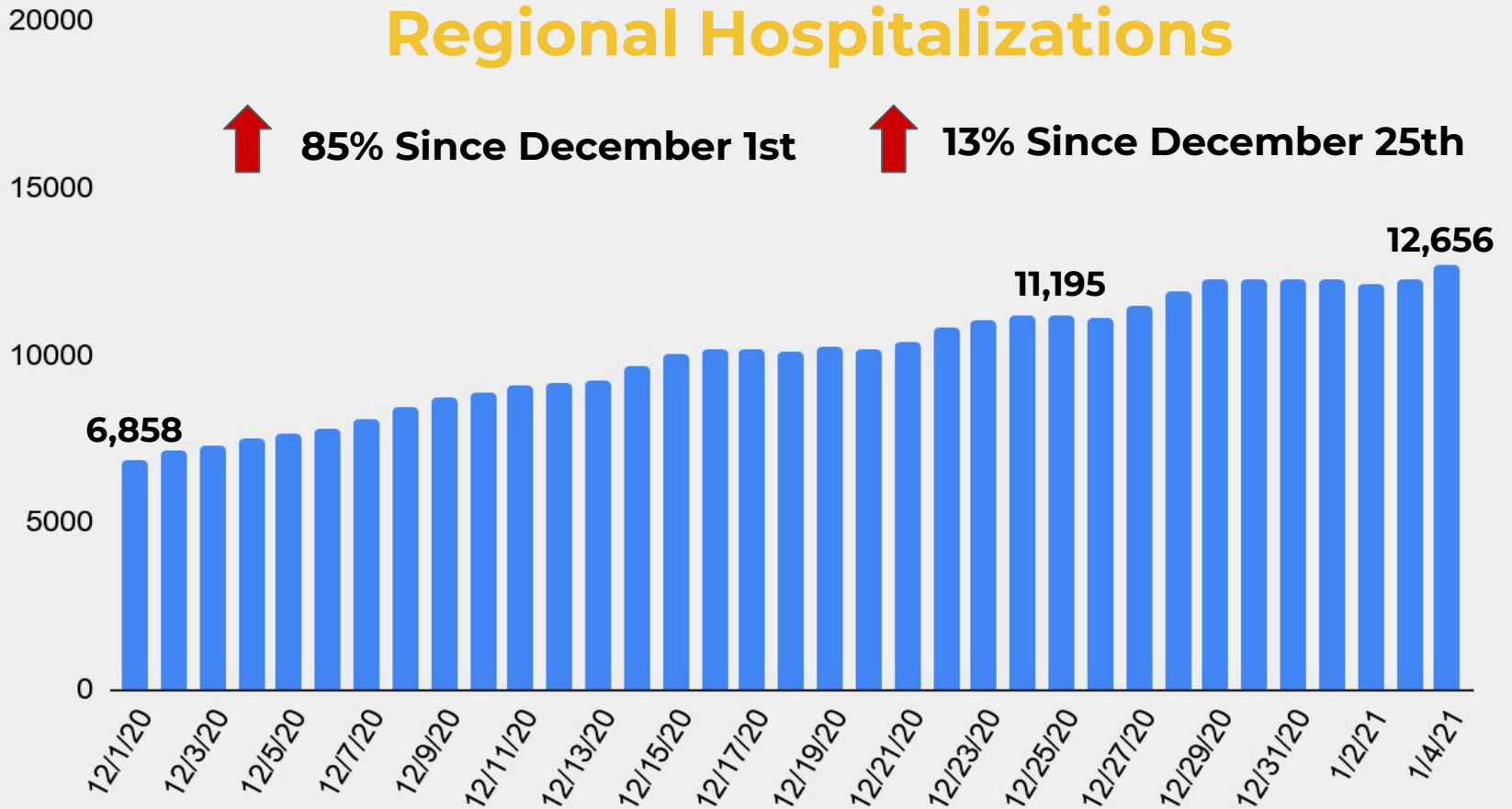
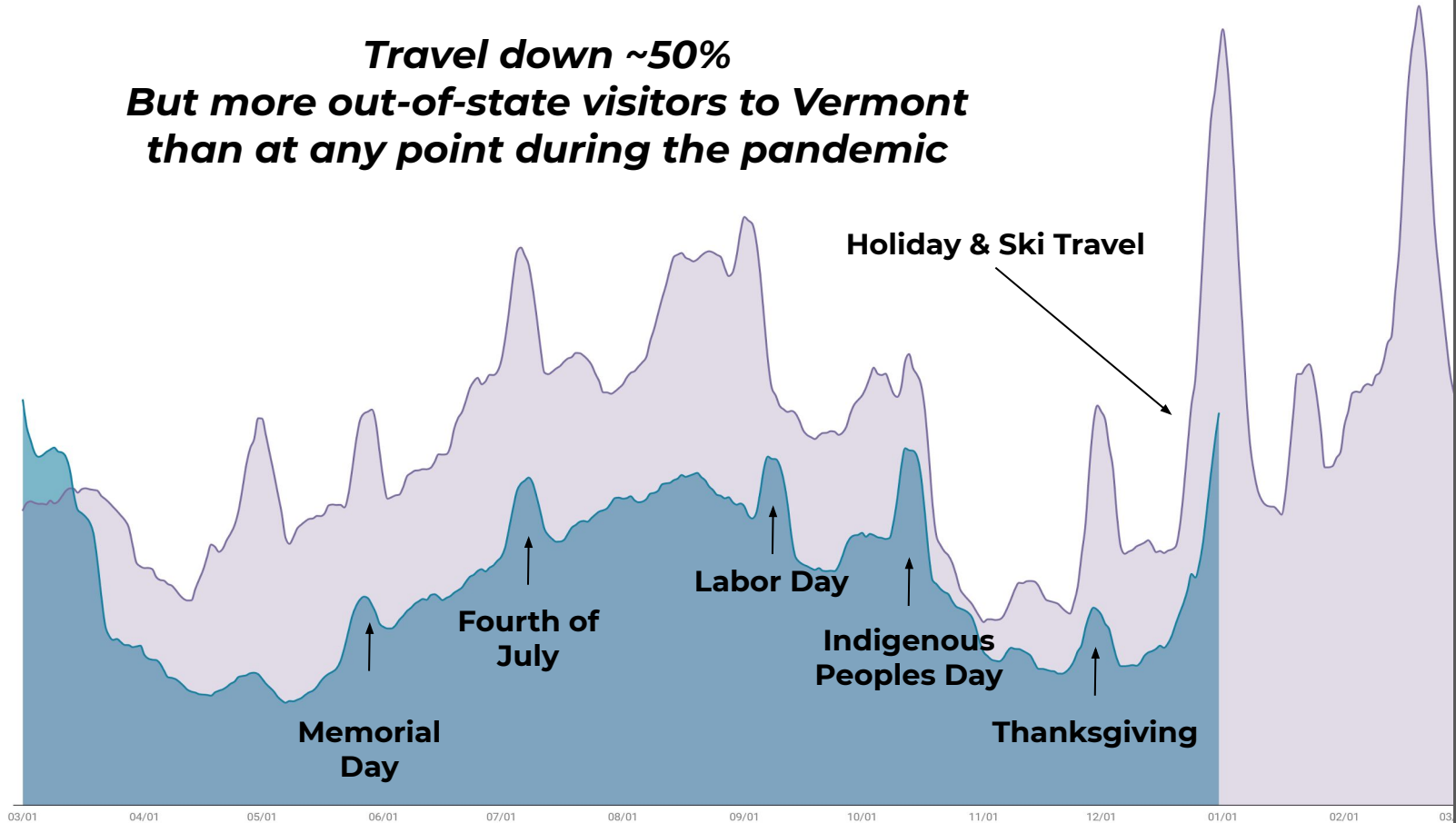**Out-of-State Visitors to Vermont**

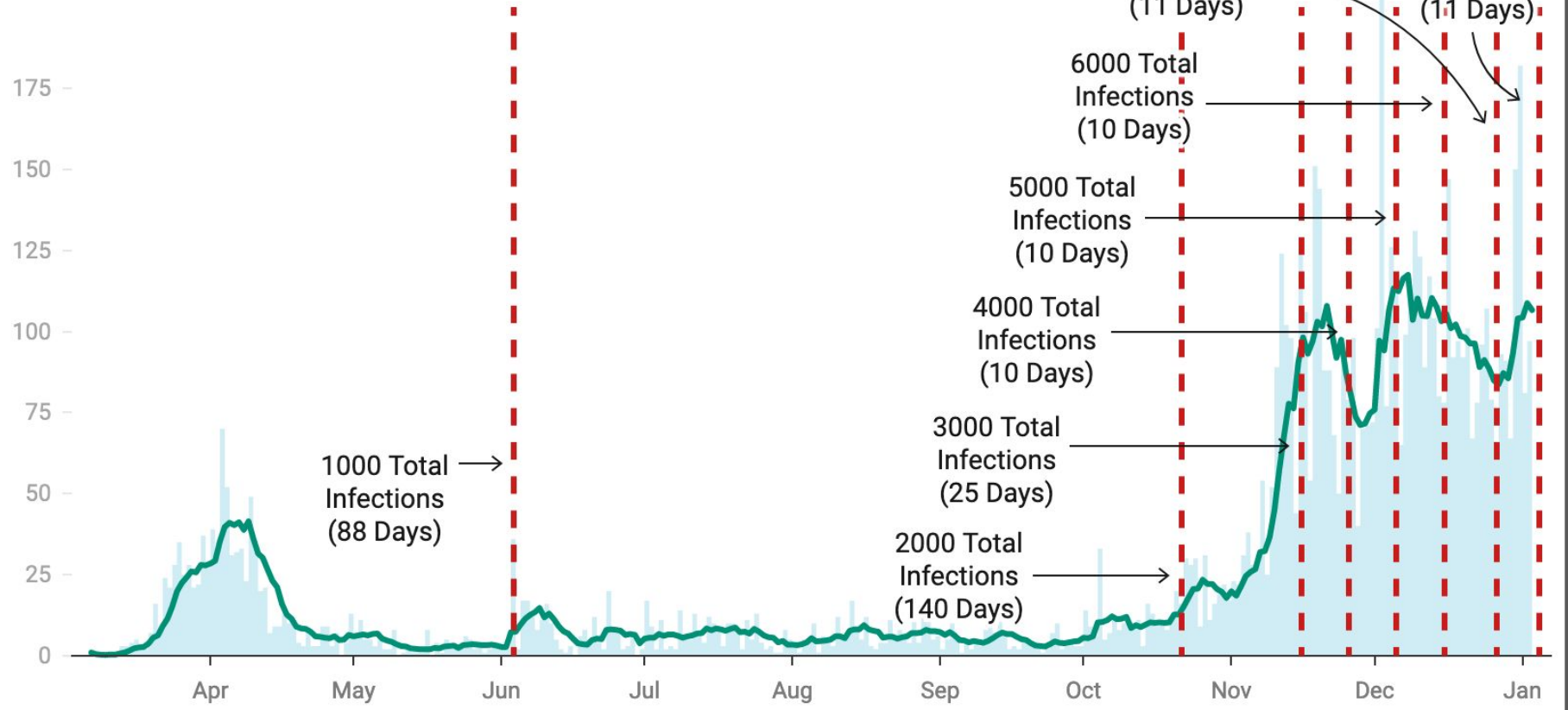Estimate of visitors uses 7-day average # mobile devices from out of state (3/1/2019 - 12/31/2020)

Travel down ~50%
But more out-of-state visitors to Vermont
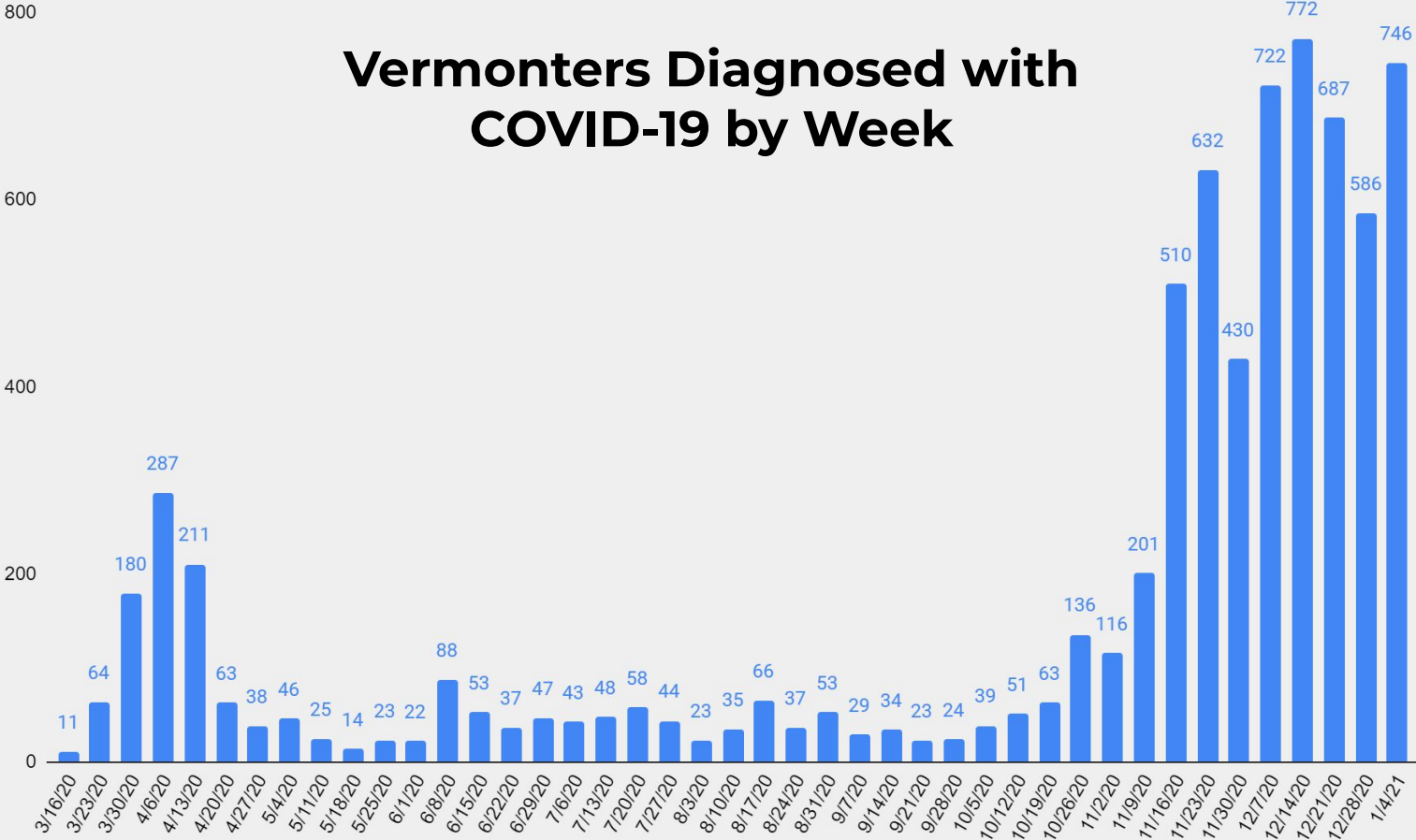*than at any point during the pandemic*

Holiday & Ski Travel

Labor Day

Fourth of July

Indigenous Peoples Day

Memorial Day

Thanksgiving

1/3/2021
Chart: State of Vermont • Source: Safegraph • Created with Datawrapper

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

1000 Total Infections (88 Days)

2000 Total Infections (140 Days)

3000 Total Infections (25 Days)

4000 Total Infections (10 Days)

5000 Total Infections (10 Days)

6000 Total Infections (10 Days)

7000 Total Infections (11 Days)

8000 Total Infections (11 Days)

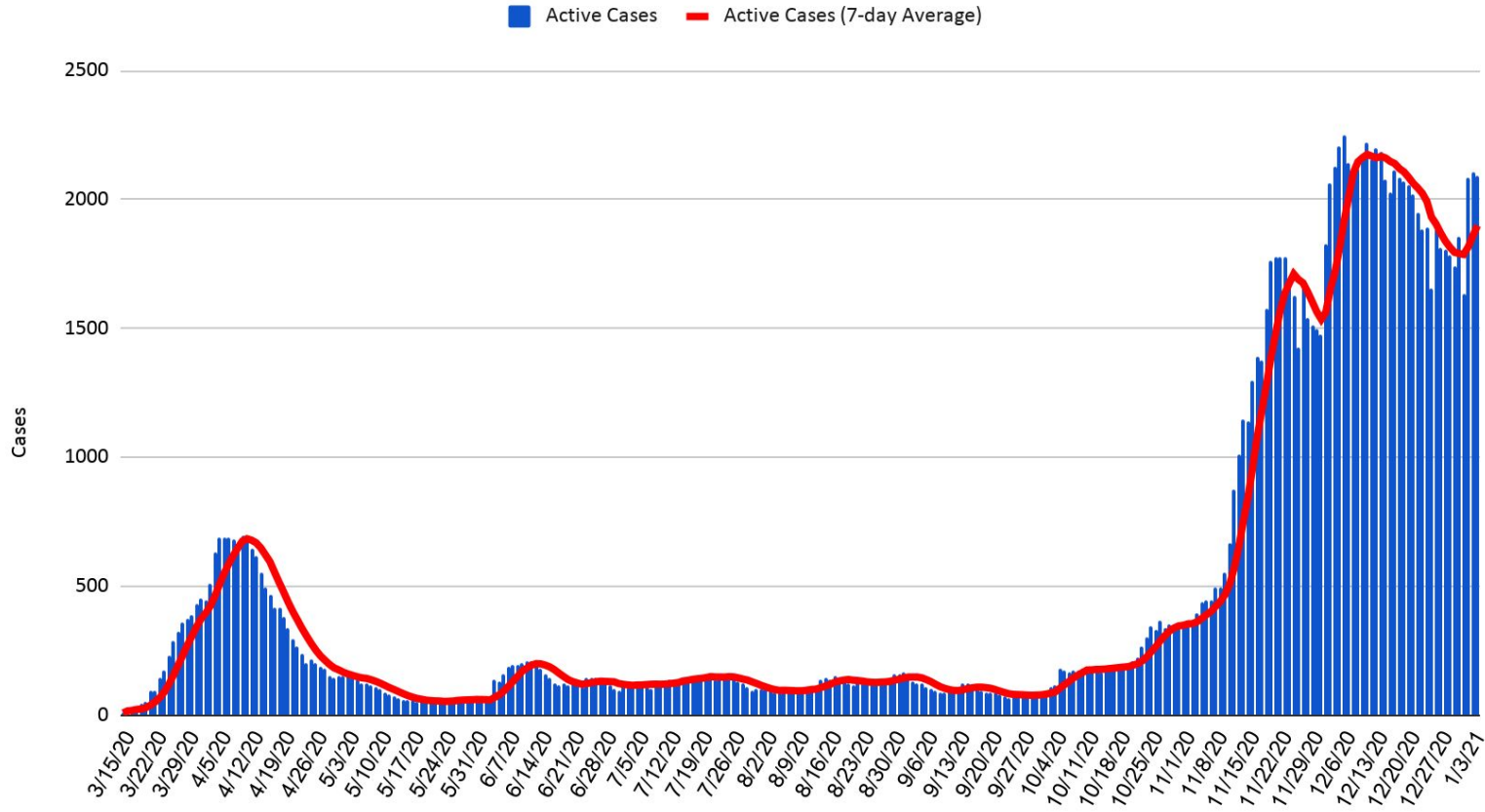Source: Vermont Department of Health—January 5, 2021

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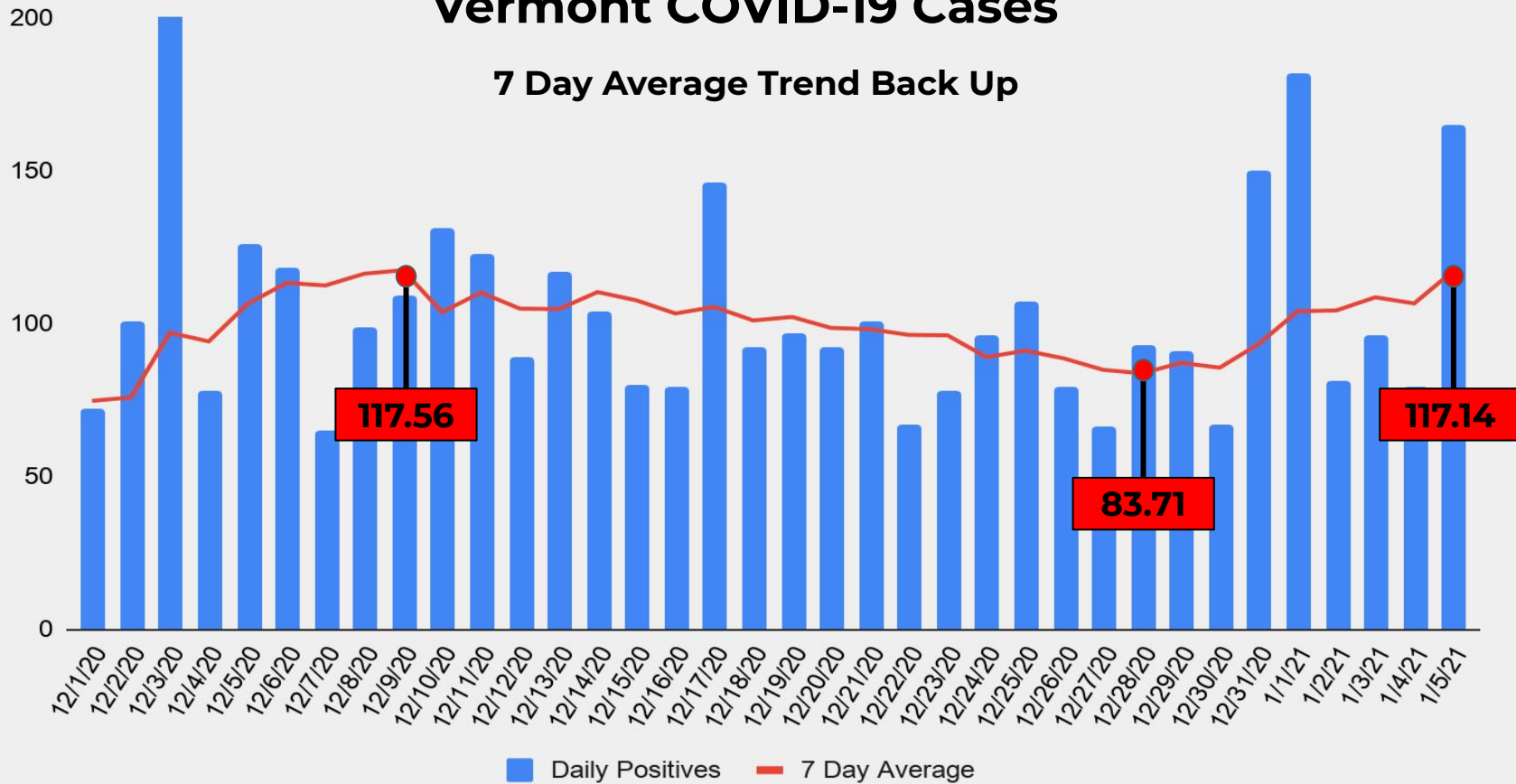**Vermonters Diagnosed with COVID-19 by Week**

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

Estimated Active Cases of COVID-19 in Vermont

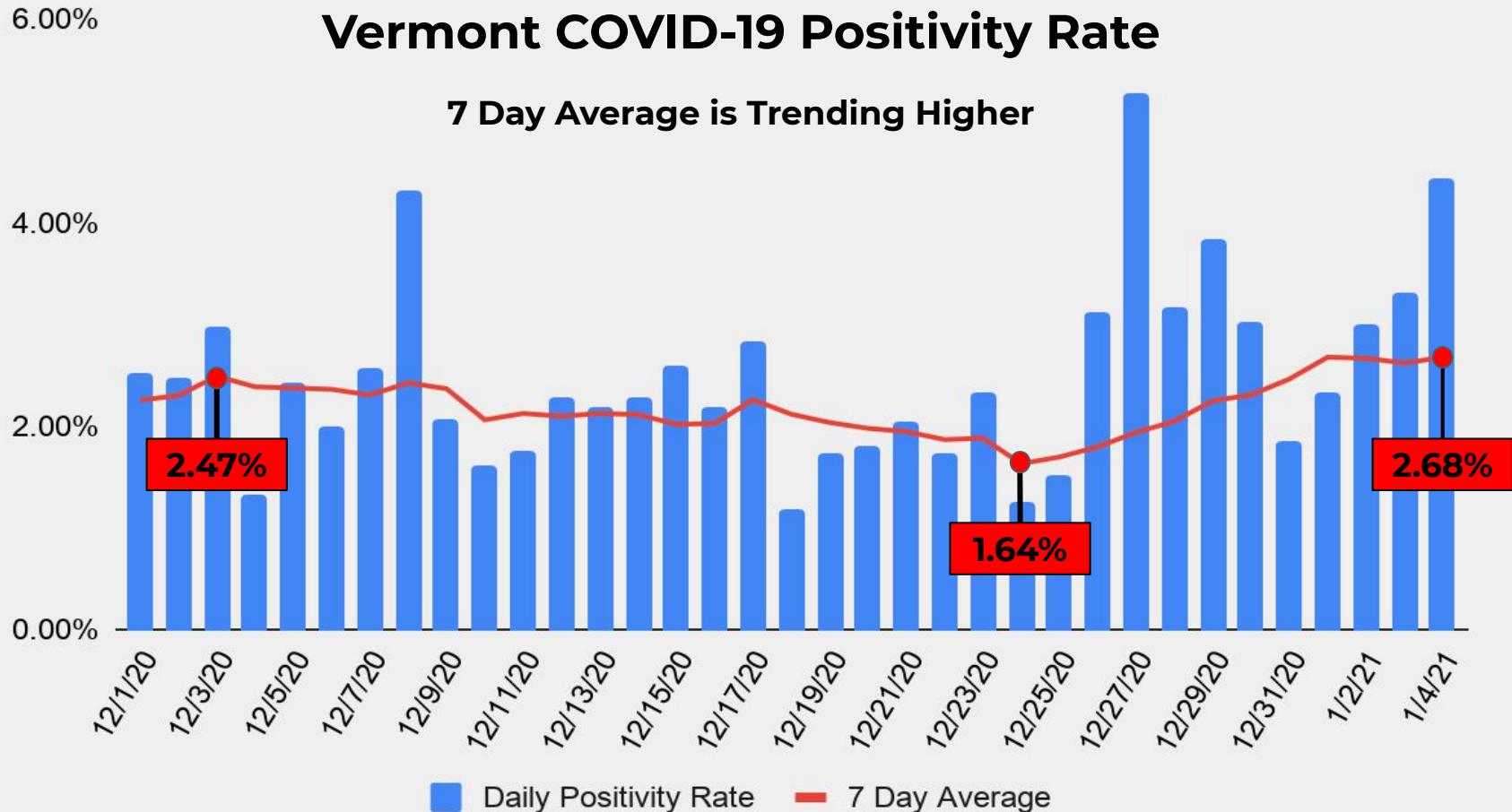**Vermont COVID-19 Cases**

7 Day Average Trend Back Up

117.56

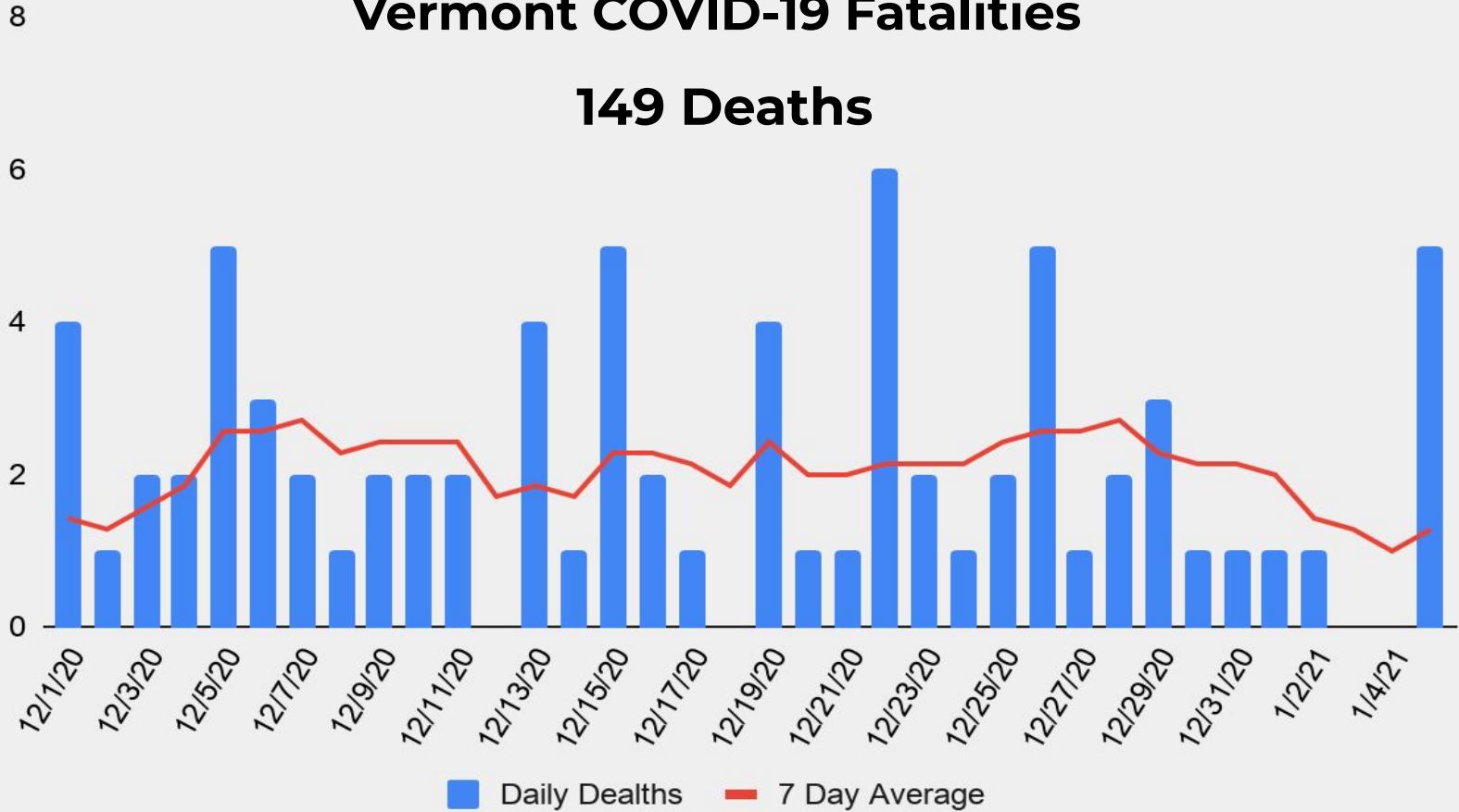83.71

117.14

■ Daily Positives ━ 7 Day Average

Vermont COVID-19 Positivity Rate

7 Day Average is Trending Higher

Vermont COVID-19 Fatalities
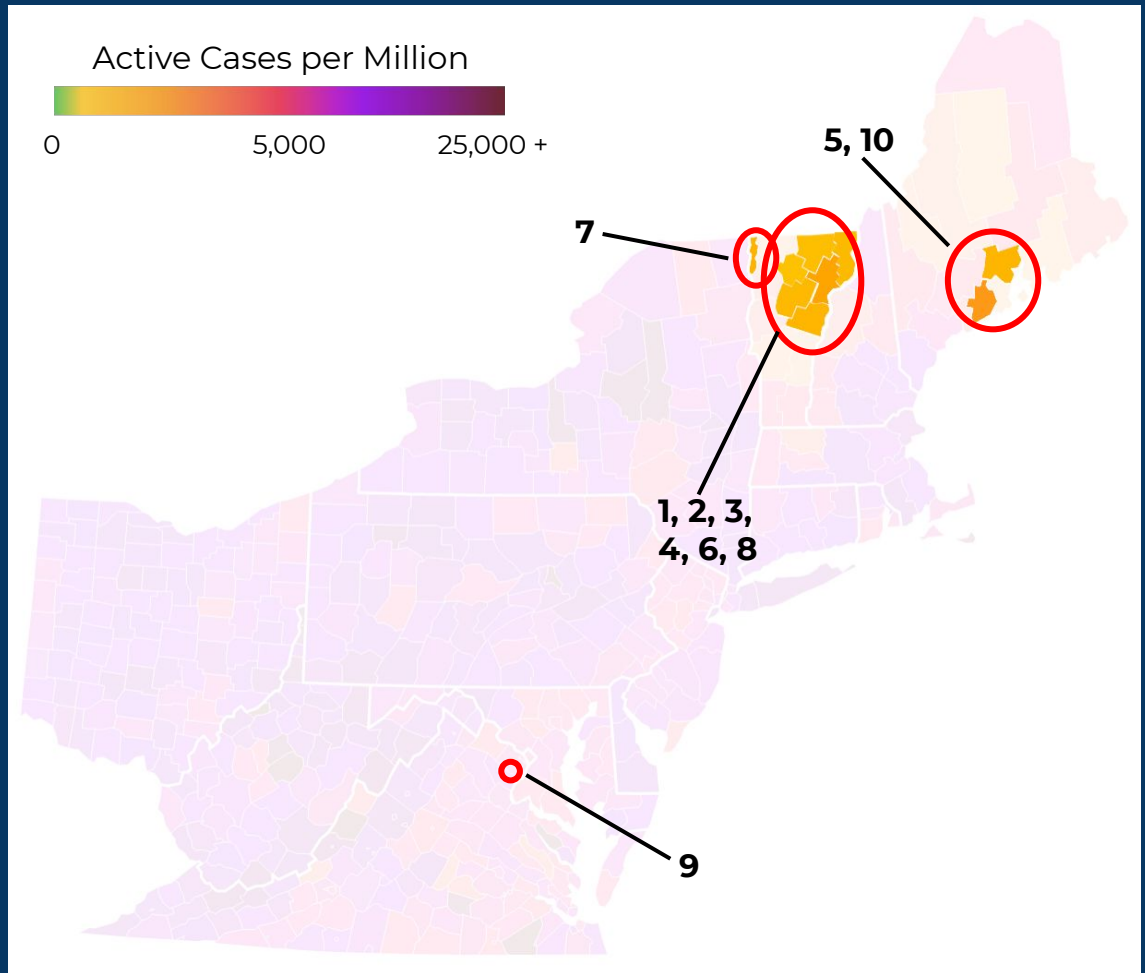149 Deaths

Source: Vermont Department of Health

Regional Heat Map

Active Cases per Million

0   5,000   25,000 +
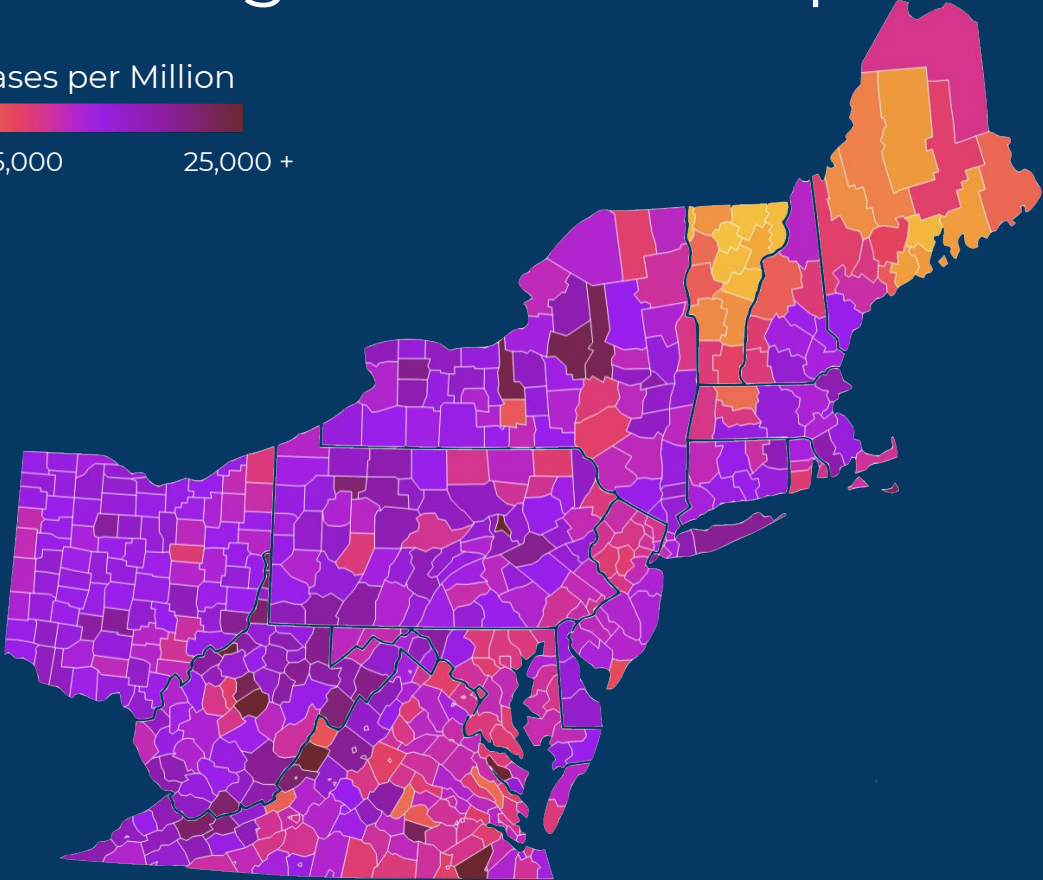
Regional Map as of January 5th

10 **Lowest** Counties in Region by Active Cases Per Million

1) **Lamoille (VT): 990**
2) **Orleans (VT): 1,069**
3) **Essex (VT): 1,087**
4) **Washington (VT): 1,178**
5) **Waldo (ME): 1,186**
6) **Orange (VT): 1,567**
7) **Grand Isle (VT): 1,732**
8) **Caledonia (VT): 1,877**
9) **Fairfax (VA): 1,968**
10) **Lincoln (ME): 1,978**

Active Cases per Million

0   5,000   25,000 +

5, 10

7

1, 2, 3, 4, 6, 8

9

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 December 22 to 28

1   400
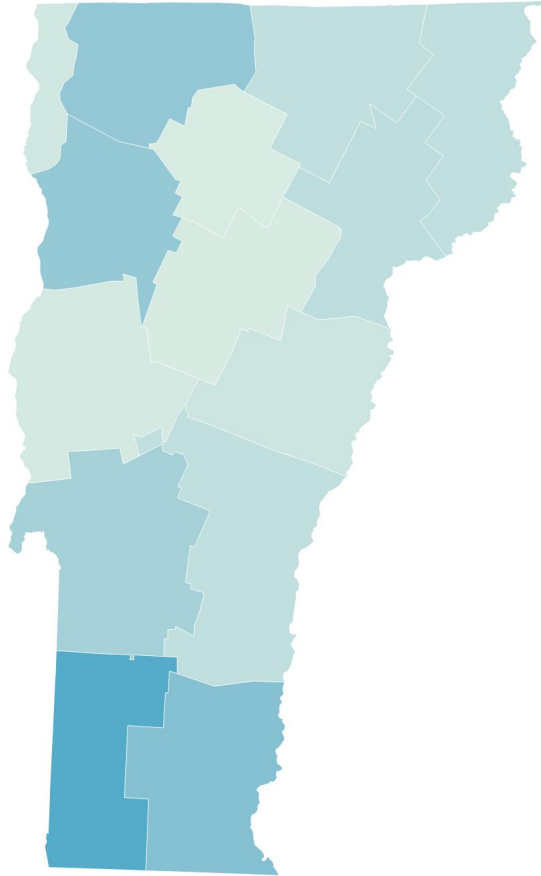
Vermont Weekly Cases by County (per 100,000)

Results Reported December 29 to January 4
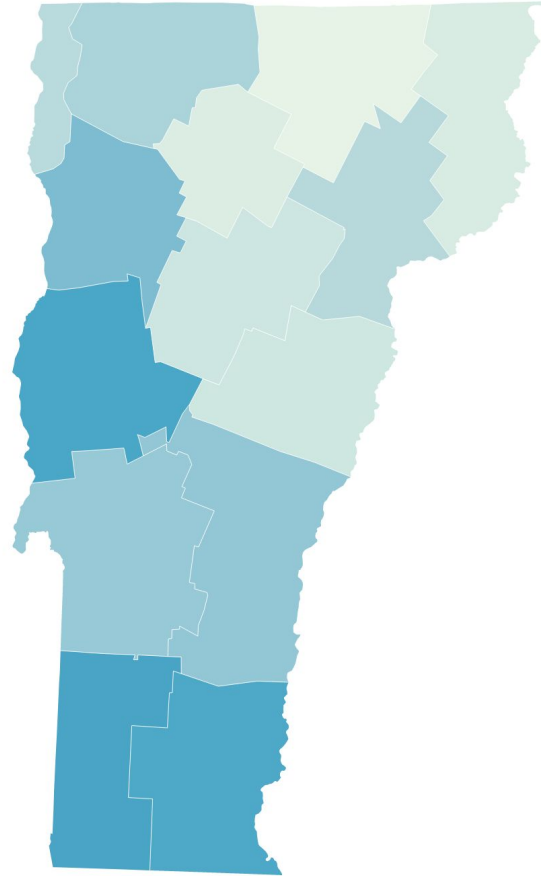
1   400

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

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

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Vermont Forecast

Legend: New Detected Cases | Projected New Detected Cases | New Detected Cases (7-day avg) | Forecast w/o Holiday Increase | Forecast w/ Holiday Increase

Today: 11 days since Christmas
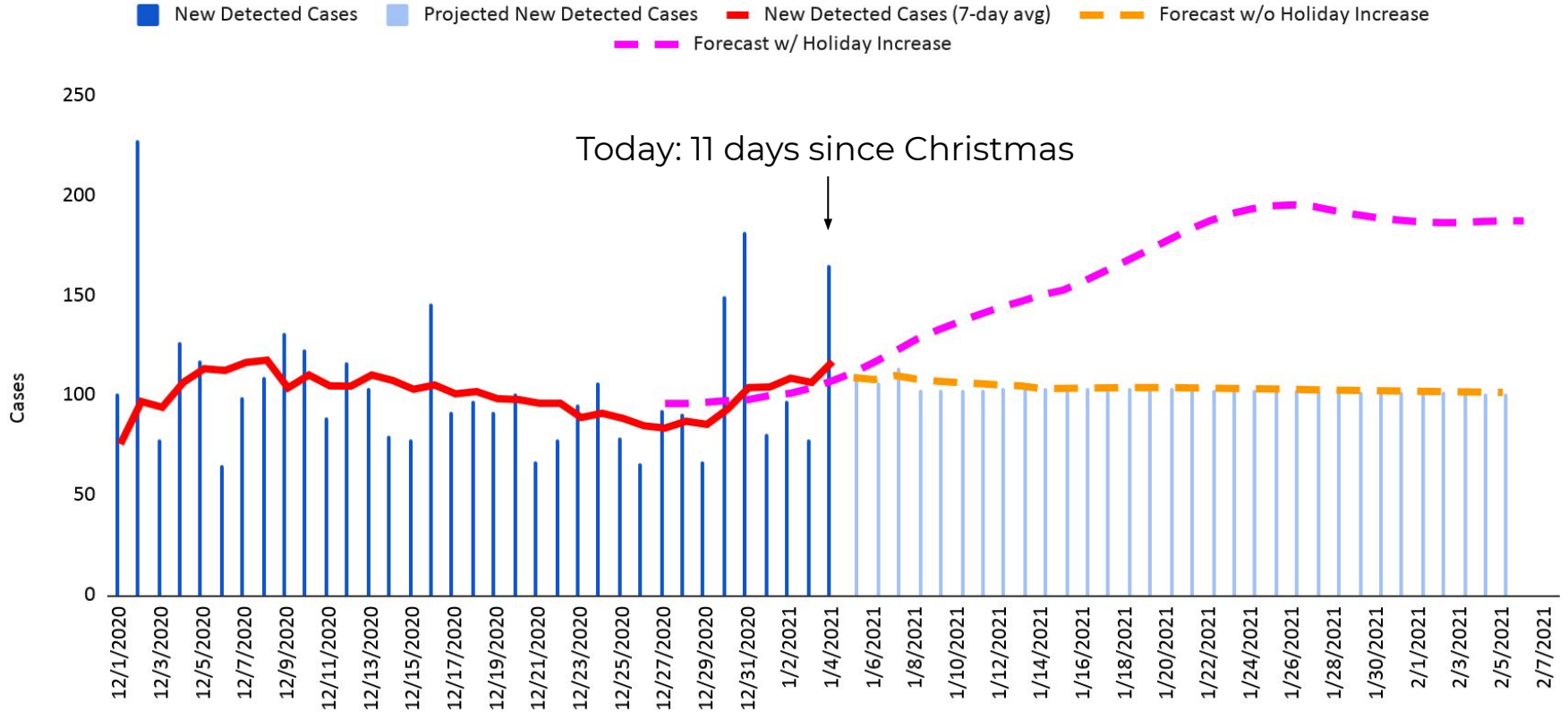
Vermont COVID-19 Hospitalizations

Medical/Surgical Beds
7 Day Average is Stable

ICU Beds
7 Day Average is Stable

Source: Vermont Department of Health
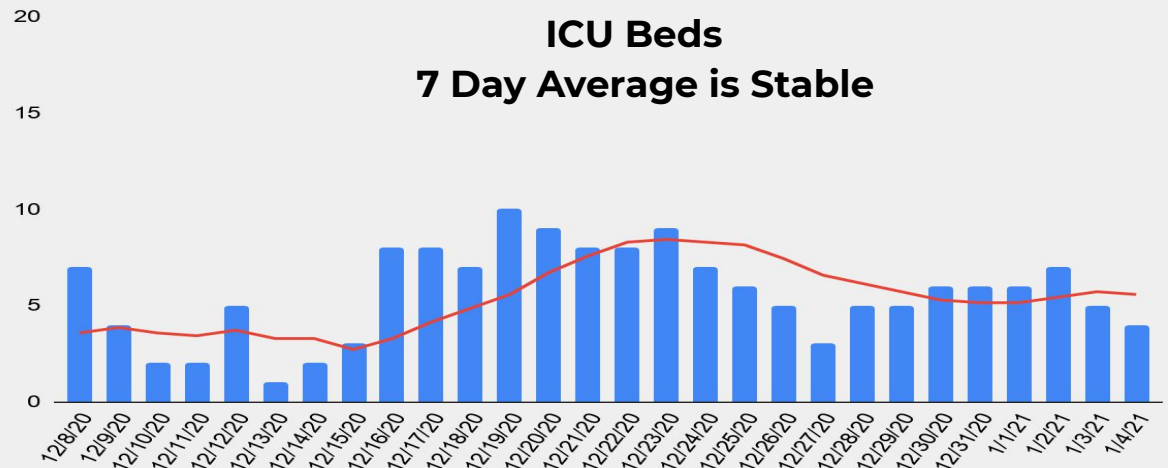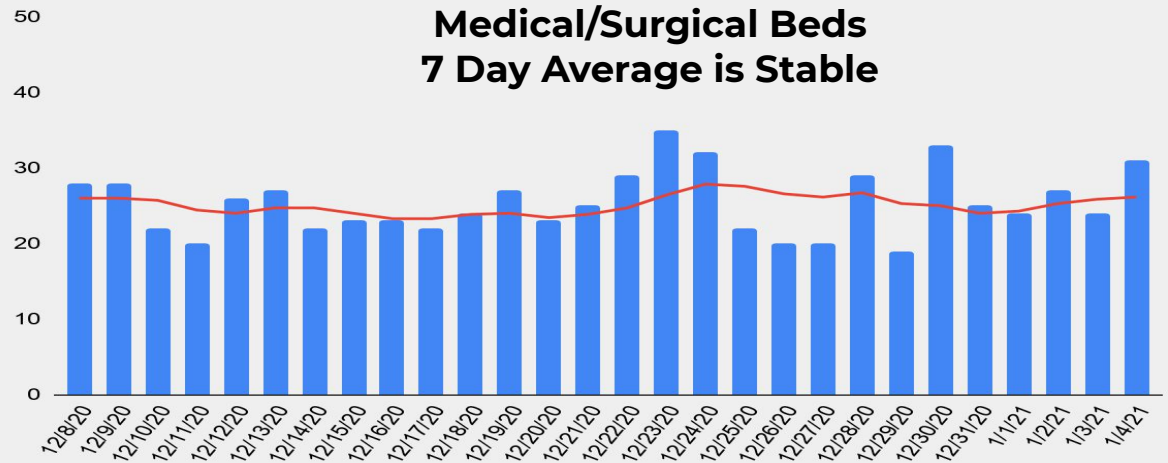
Hospital & ICU Capacity Forecasts

Vermont Hospital Forecast
Medical-Surgical Beds

Vermont ICU Forecast

Source: Oliver Wyman Forecast Model—January 4, 2020; assumes conservative but plausible flu scenario; GNYHA Hospital Surge framework
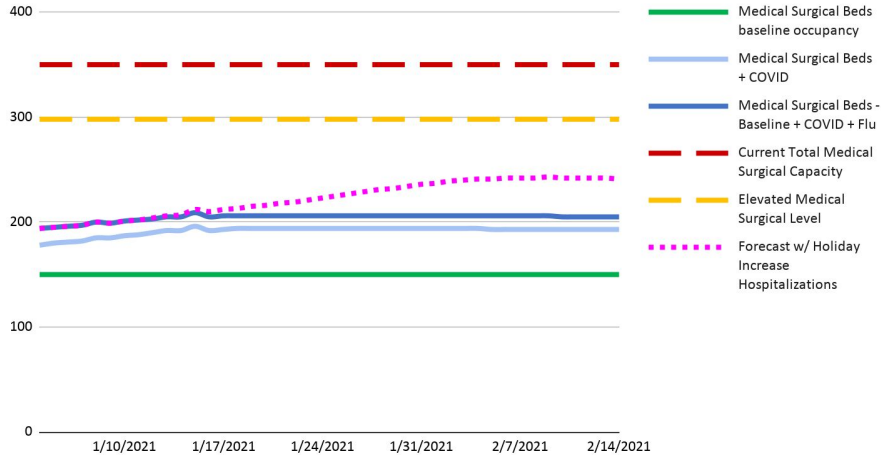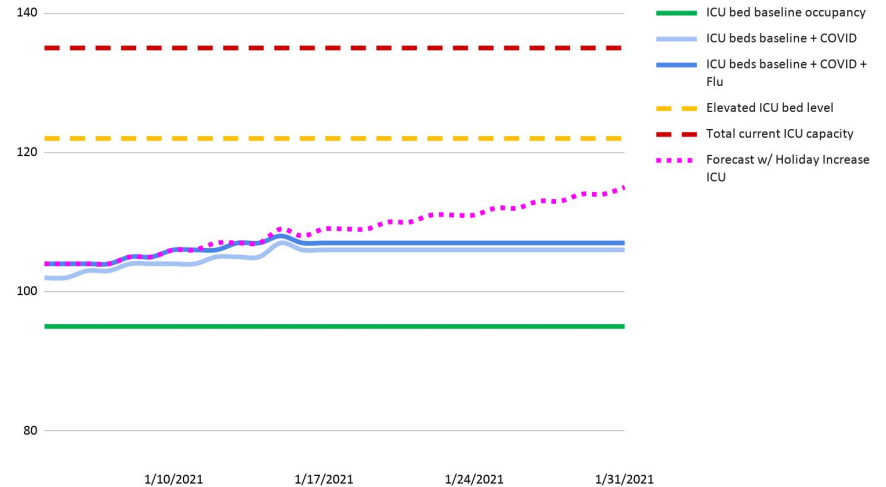
Measuring Vermont's Pandemic Response

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

Source: Covid Tracking Project—January 5, 2021

Regional Vaccination Map

Population Receiving Initial Dose per 100K

1,000   3,000
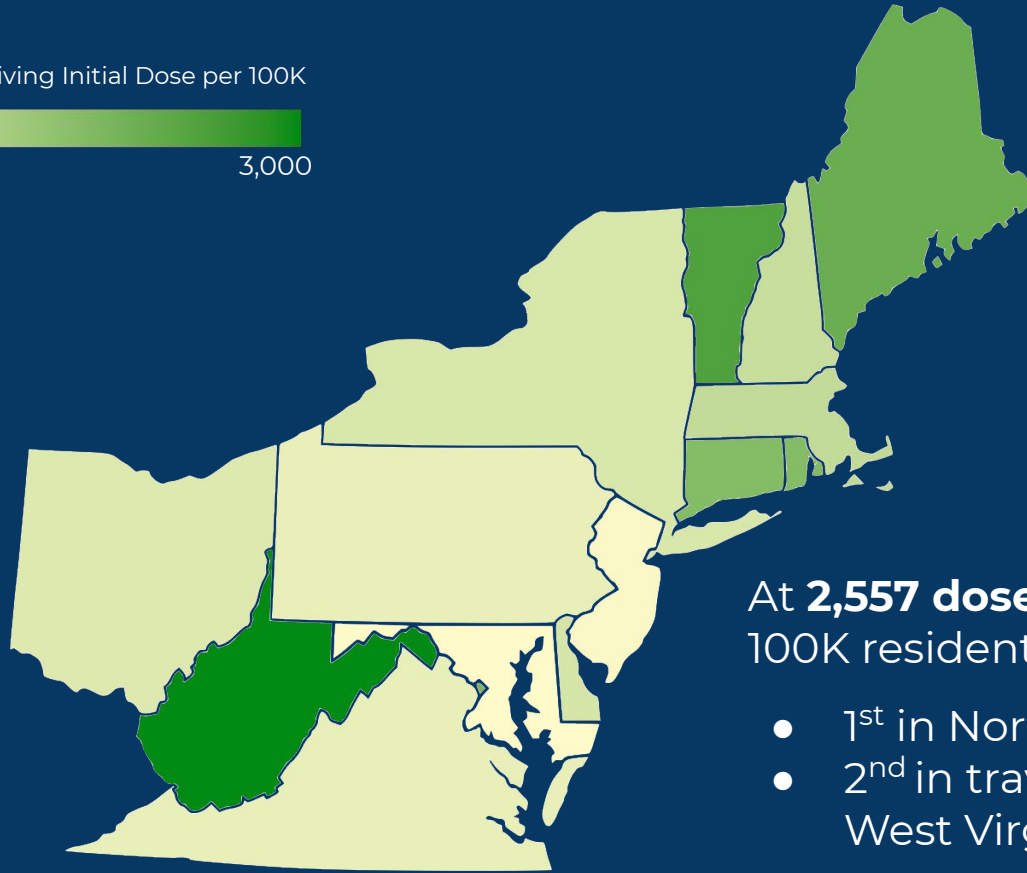
At **2,557 doses** administered per 100K residents, Vermont ranks:

- 1st in Northeast
- 2nd in travel region behind West Virginia
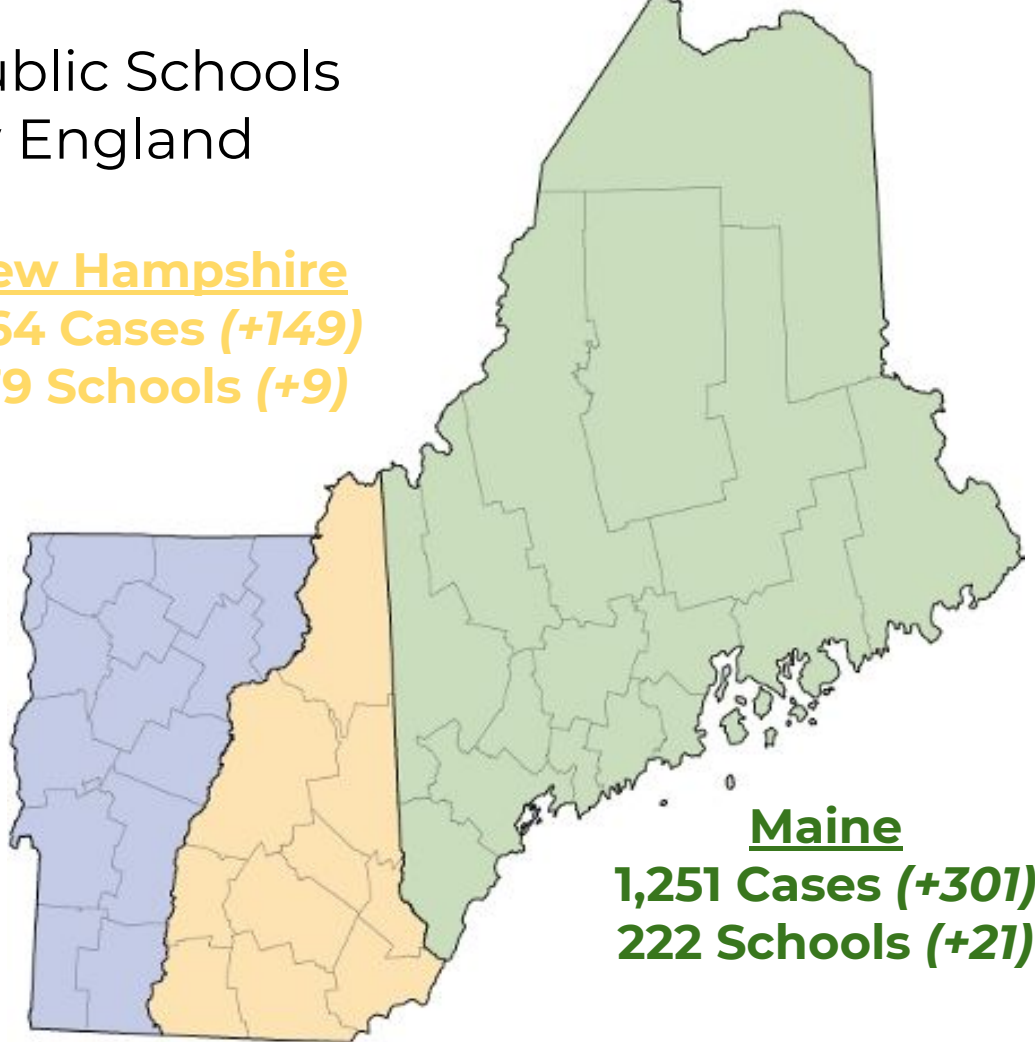
Active Outbreaks in Long Term Care Facilities

Facility Name	Total COVID-19 Cases	Change from Prior Week
Elderwood at Burlington, *Burlington*	125	0
Saint Albans Healthcare & Rehab Center, *Saint Albans*	87	0
Our Lady of Providence, *Winooski*	49	+2
Berlin Health & Rehab, *Berlin*	34	0
Craftsbury Community Care Center, *Craftsbury*	29	+1
The Residence at Shelburne Bay, *Shelburne*	25	+16
Converse Home Assisted Living, *Burlington*	17	+2
Holiday House, *Saint Albans*	16	+16 (new)
Residence at Quarry Hill, *South Burlington*	12	0
Holton Home, *Brattleboro*	11	+3
Cathedral Square, *Burlington*	7	0
Vermont Veterans Home, *Bennington*	6	+6 (new)
Total	**451***	**+46***

Source: Vermont Department of Health—January 4, 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 -- count included in total cases*

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

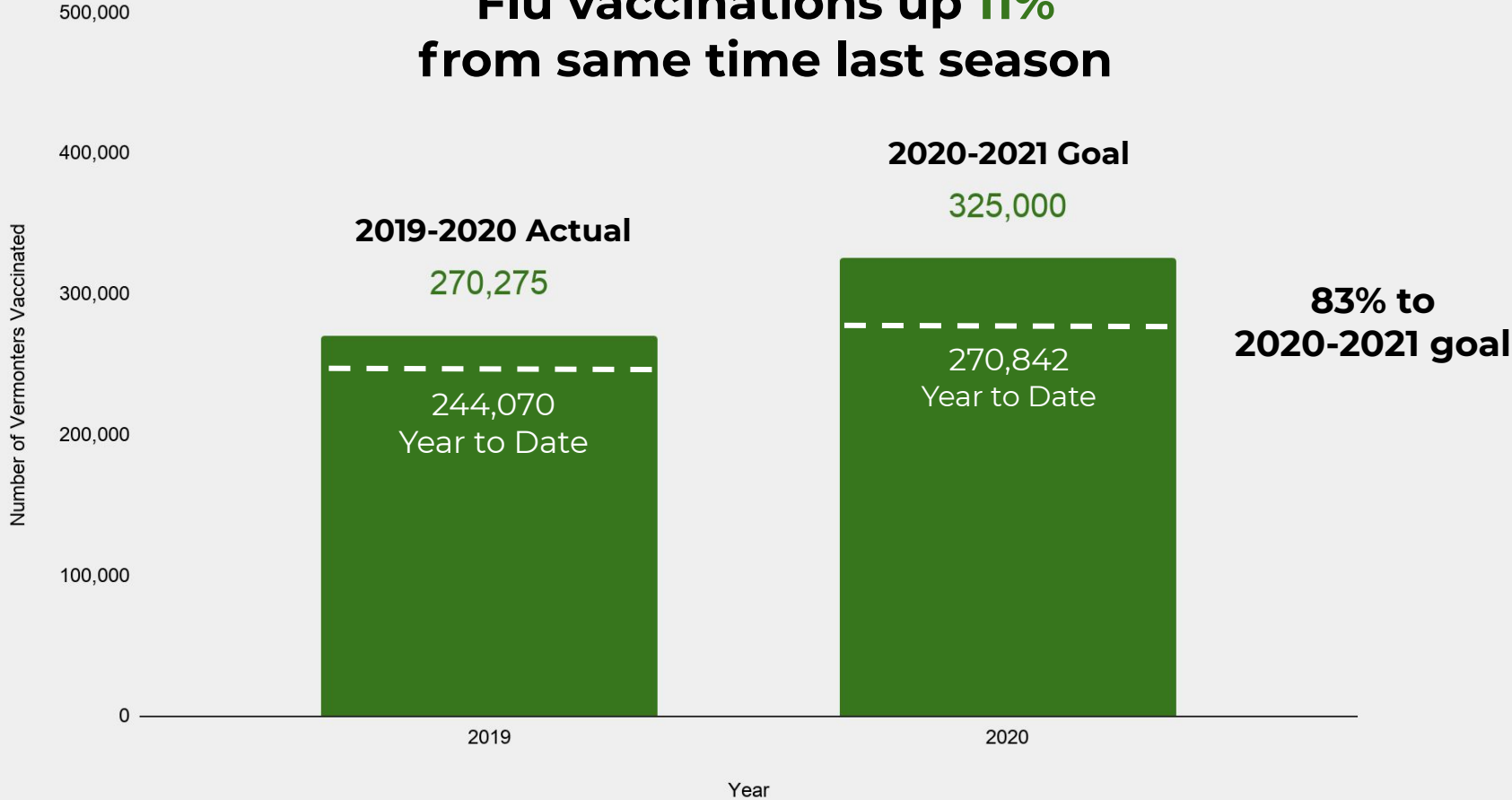**New Hampshire**
1464 Cases *(+149)*
379 Schools *(+9)*

Vermont
275 Cases *(+10)*
149 Schools *(+2)*

Maine
1,251 Cases *(+301)*
222 Schools *(+21)*

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

**Flu vaccinations up 11%
from same time last season**

2019-2020 Actual
270,275

244,070
Year to Date

2020-2021 Goal
325,000

270,842
Year to Date

**83% to
2020-2021 goal**

500,000

400,000

300,000

200,000

100,000

0

Number of Vermonters Vaccinated

2019

2020

Year

Data from UVMHN may be incomplete or delayed

Source: Vermont Department of Health & ADS; Immunization Registry; Measured from July 1 to December 27, 2019 & 2020
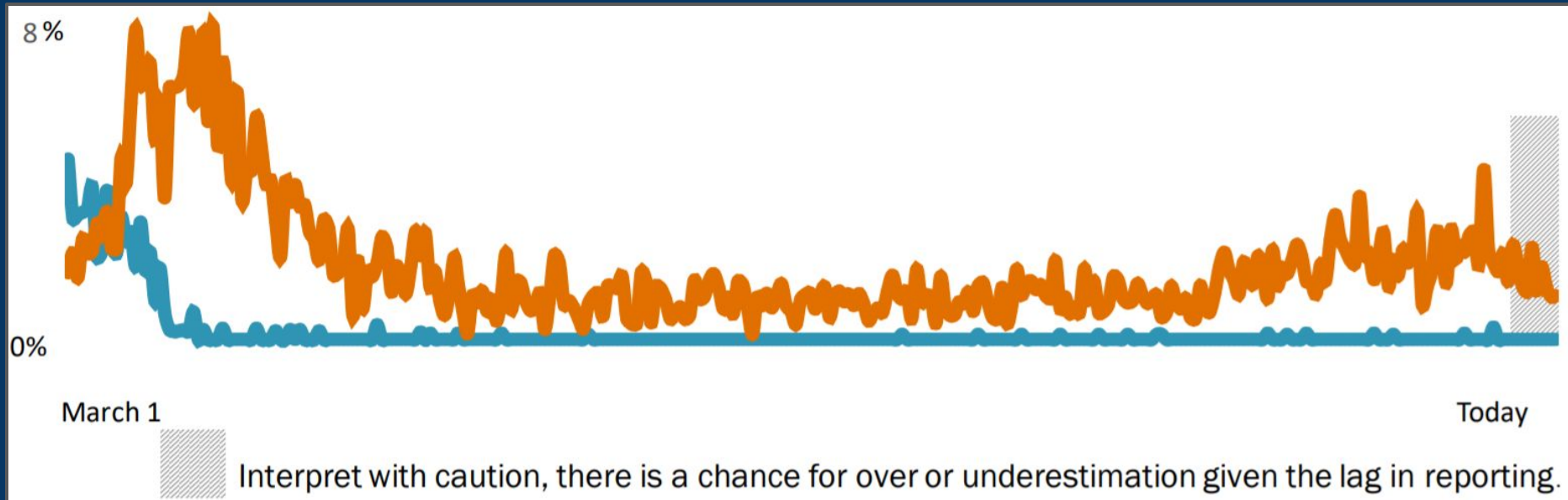
RESTART VERMONT

Reopening Metrics

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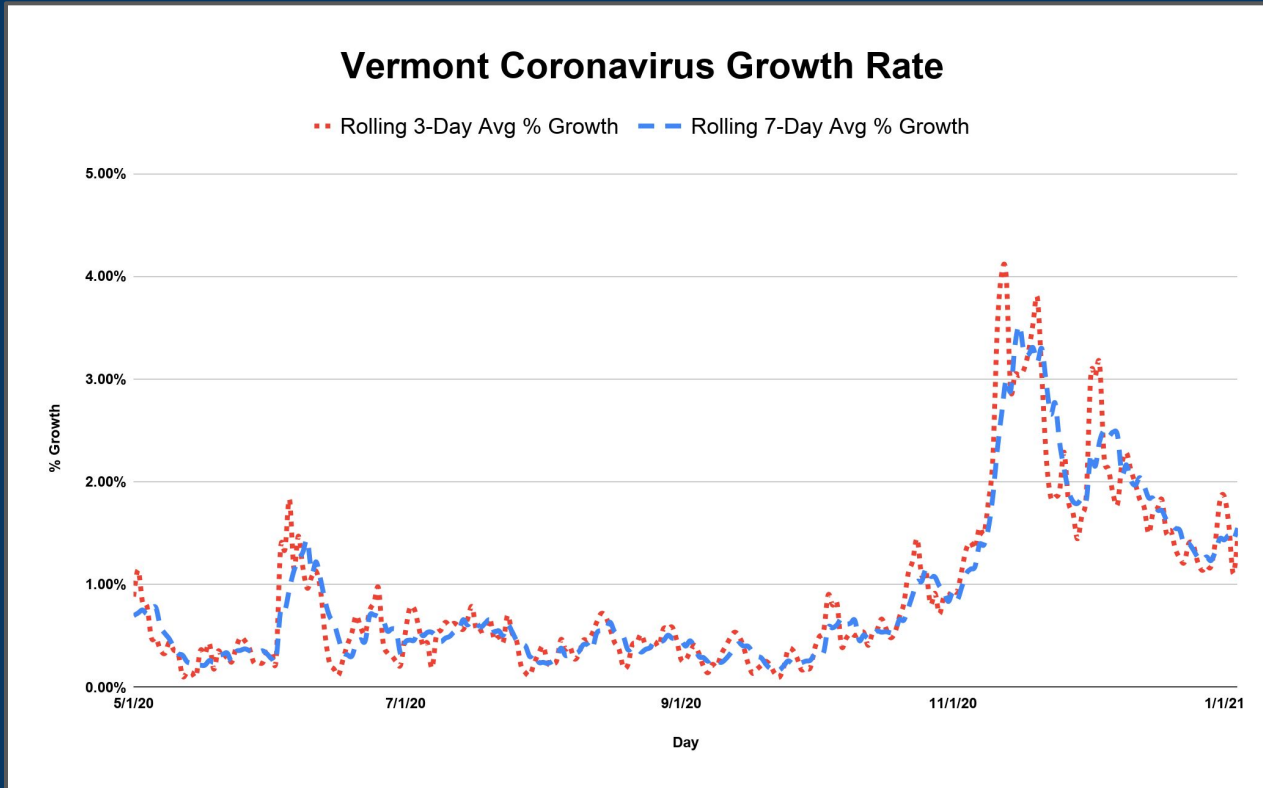4. Hospital & Critical Care Bed Capacity

Data Point 1: Syndromic Surveillance

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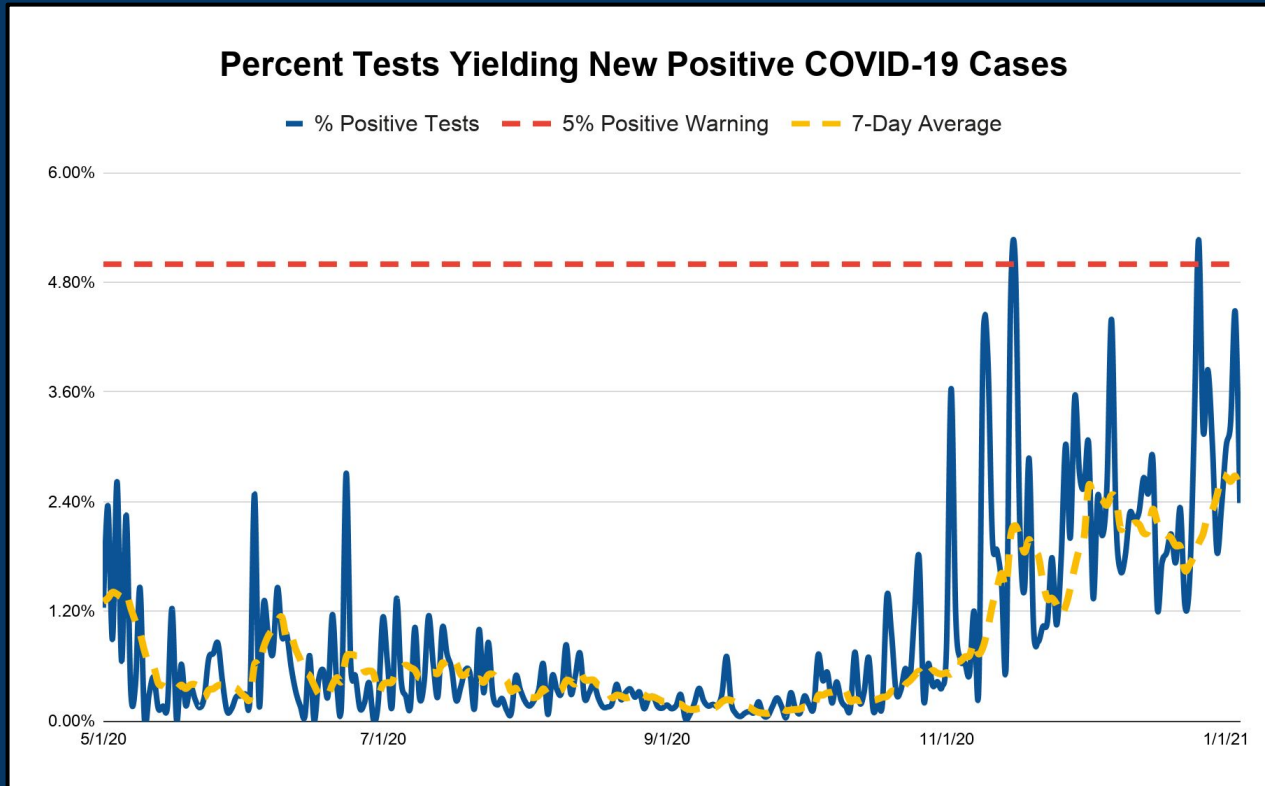- **<u>Warning Flag</u>:** Percentage of visits exceeding 4% for multiple consecutive days

Interpret with caution, there is a chance for over or underestimation given the lag in reporting.

Data Point 2: Viral Growth and Reproductive Rates

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

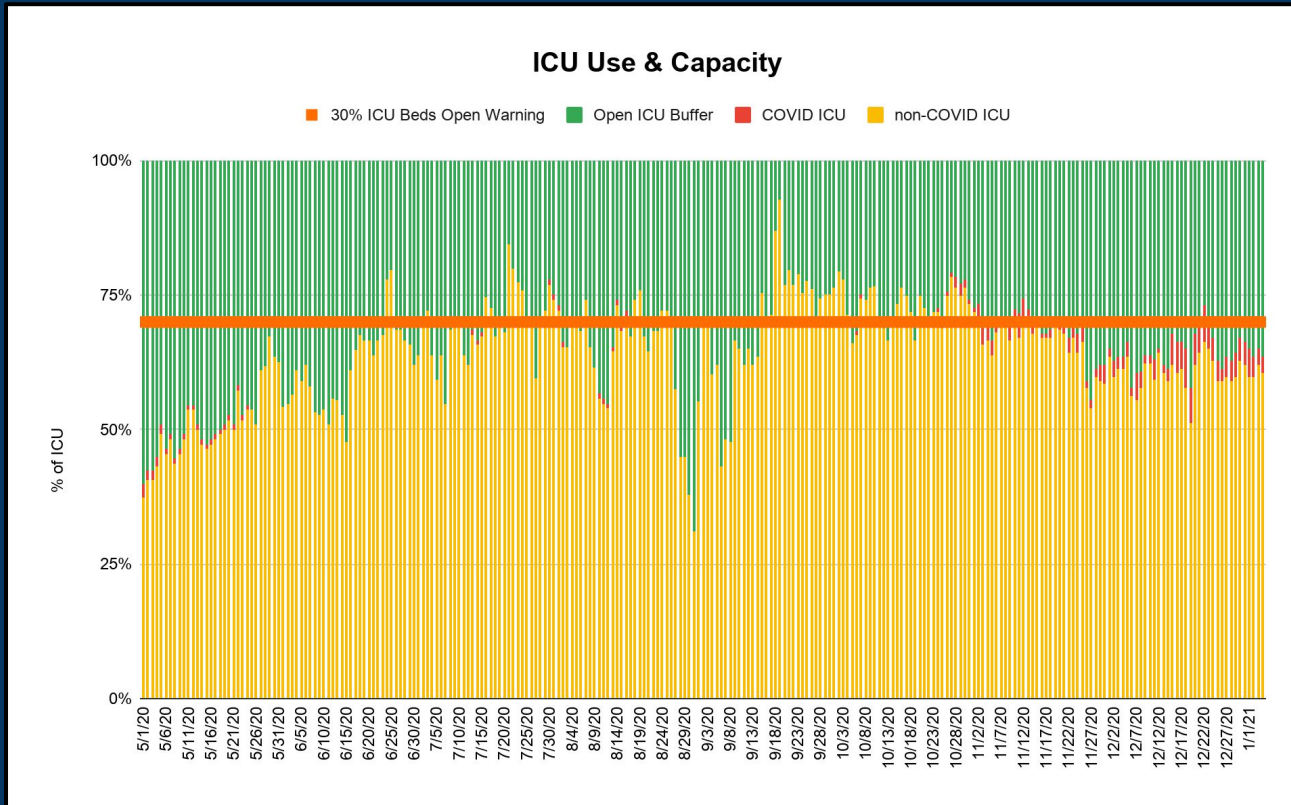Source: Vermont Department of Health—January 5, 2021

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

Percent Tests Yielding New Positive COVID-19 Cases

— **% Positive Tests**   ‐ ‐ ‐ **5% Positive Warning**   ‐ ‐ ‐ **7-Day Average**

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%

ICU Use & Capacity

Vermont Testing

7-Day Rolling Test Average

Drop following Thanksgiving & campus closures