

COVID-19 Modeling

October 19, 2021

Presentation available at:
dfr.vermont.gov

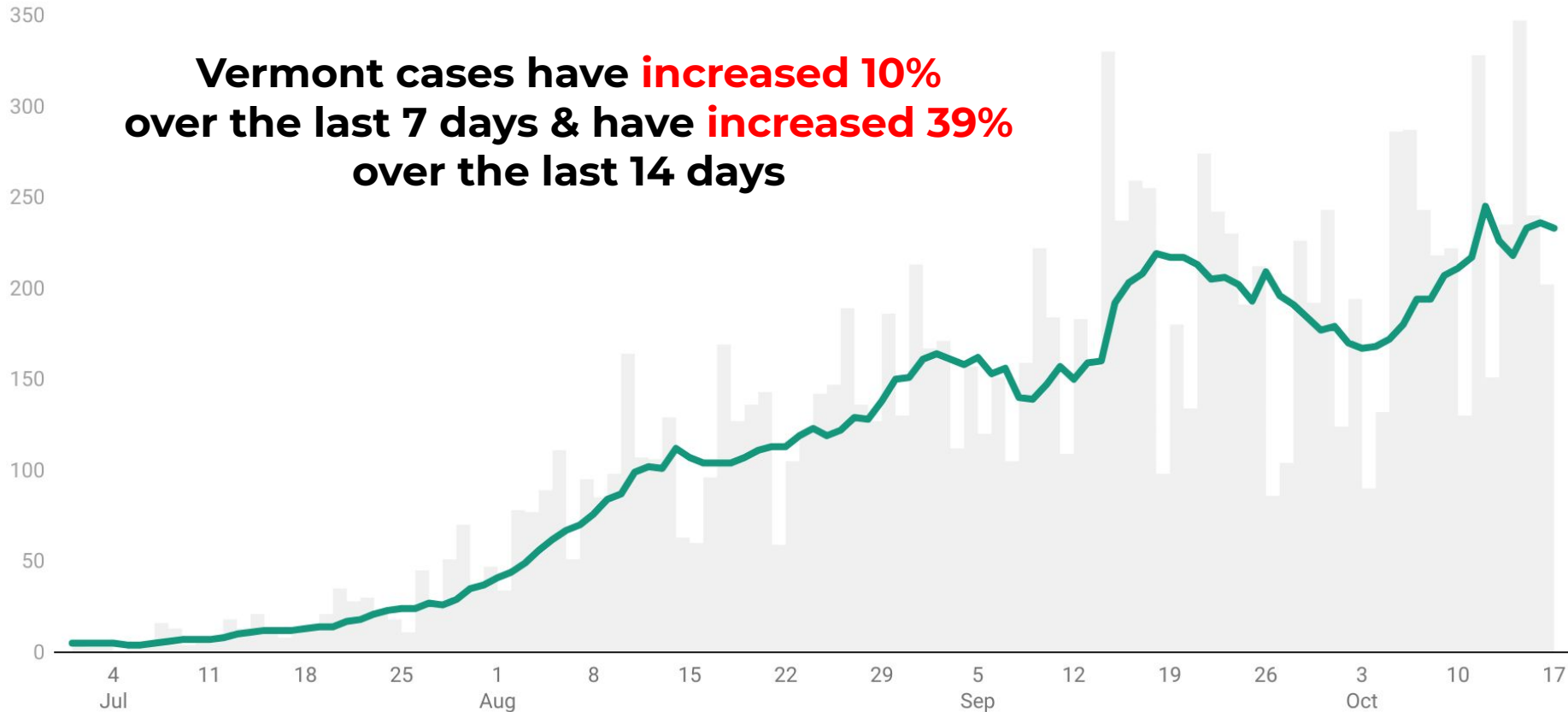
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Vermont Case Data

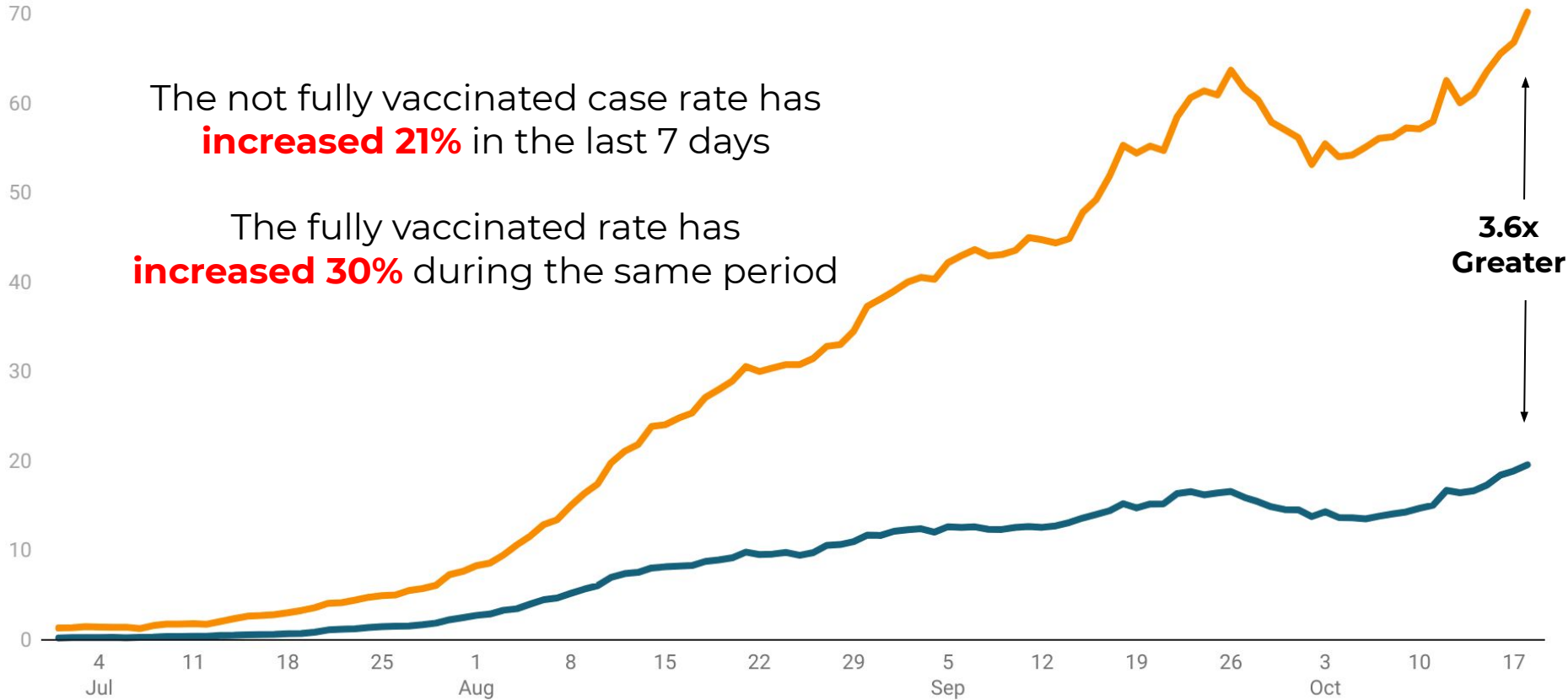
Vermont New COVID-19 Cases

7-Day Average



Vermont COVID-19 New Case Rates Per 100K (14-Day Average)

— Not Fully Vaccinated Case Rate — Fully Vaccinated Case Rate



Vermont COVID-19 Hospitalizations

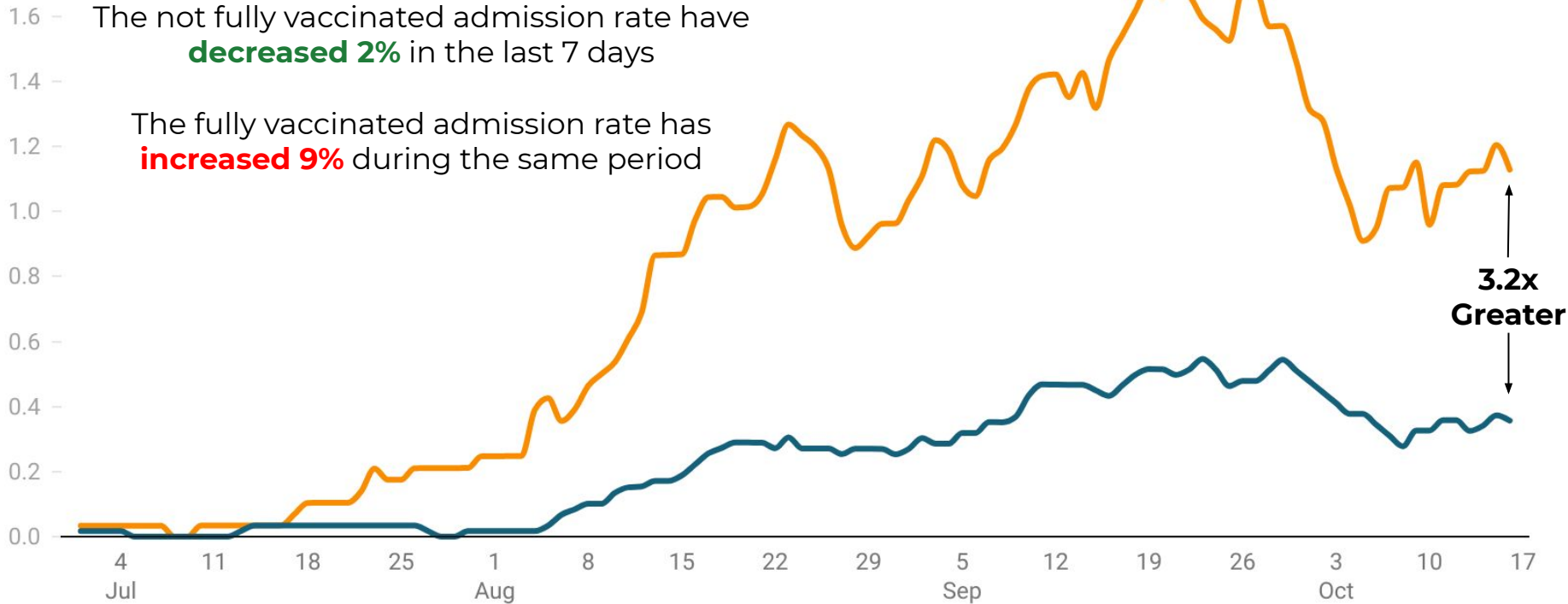
New Daily Hospital Admissions Per 100K (14-Day Average)

— Not Fully Vaccinated — Fully Vaccinated

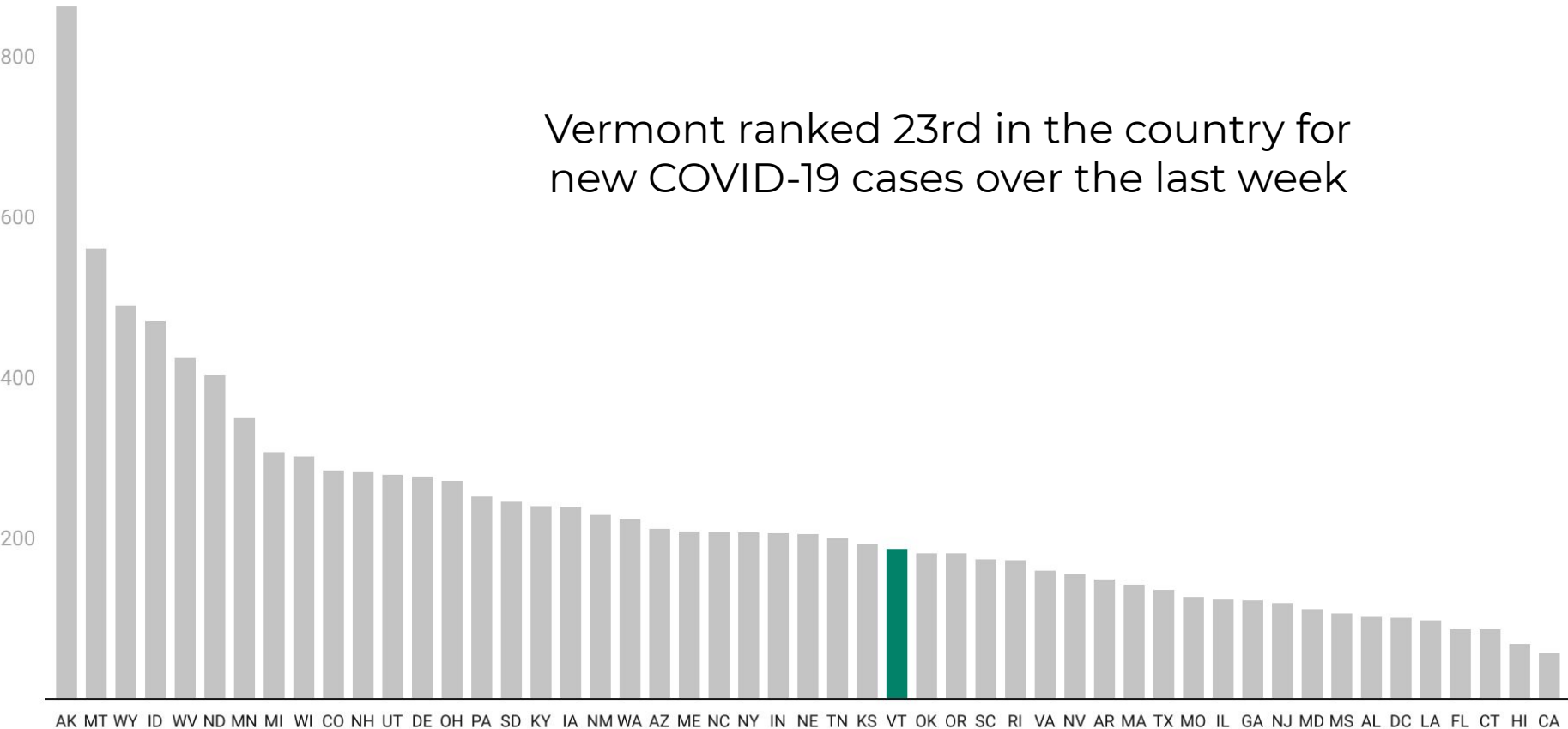
The not fully vaccinated admission rate have **decreased 2%** in the last 7 days

The fully vaccinated admission rate has **increased 9%** during the same period

New Hospitalizations per 100K

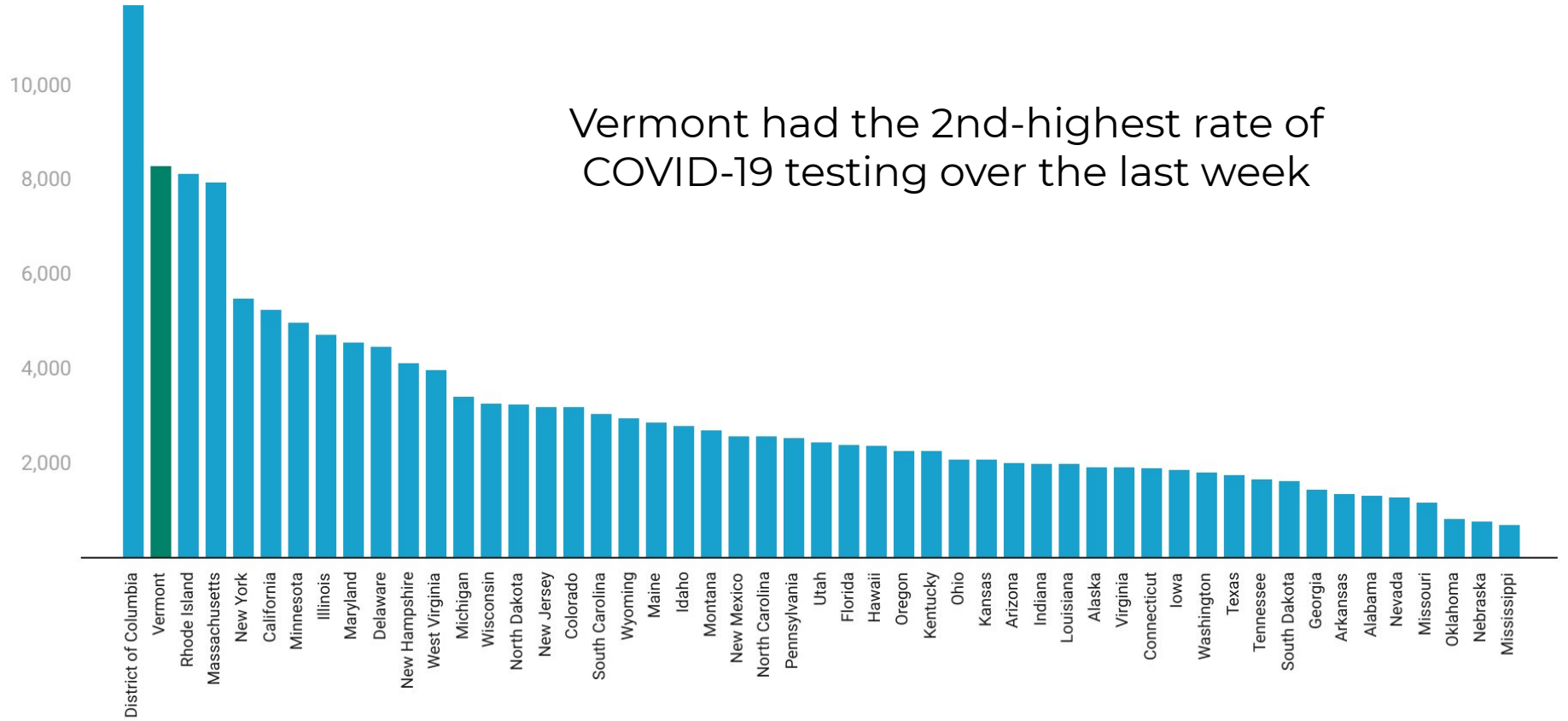


National COVID-19 Case Rates Per 100K Last 7 Days



Source: CDC—October 18, 2021; Created with Datawrapper

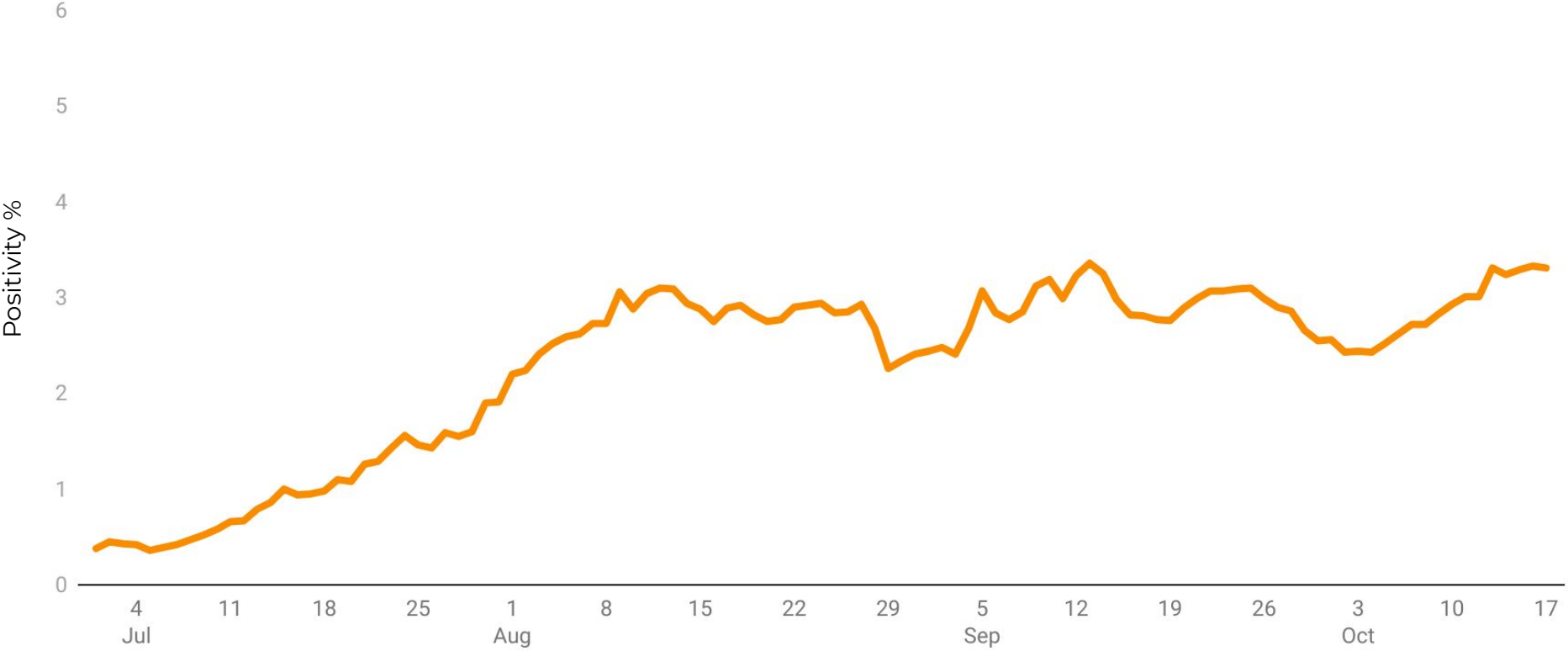
COVID-19 Testing Per 100K Last 7 Days



Source: CDC—October 18, 2021; Created with Datawrapper (Note: California, Connecticut and Missouri did not report testing to the CDC)

Vermont Test Positivity: Delta Wave

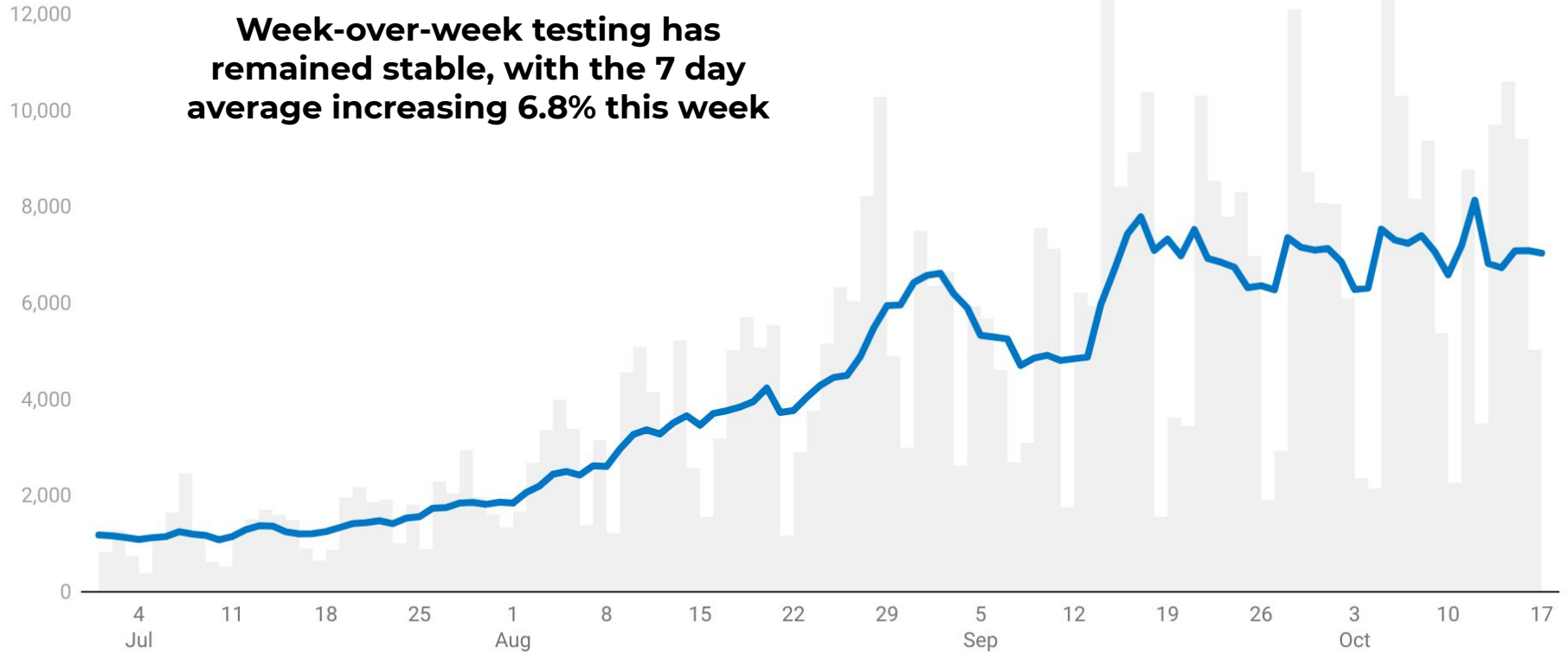
7-Day Positivity Rate



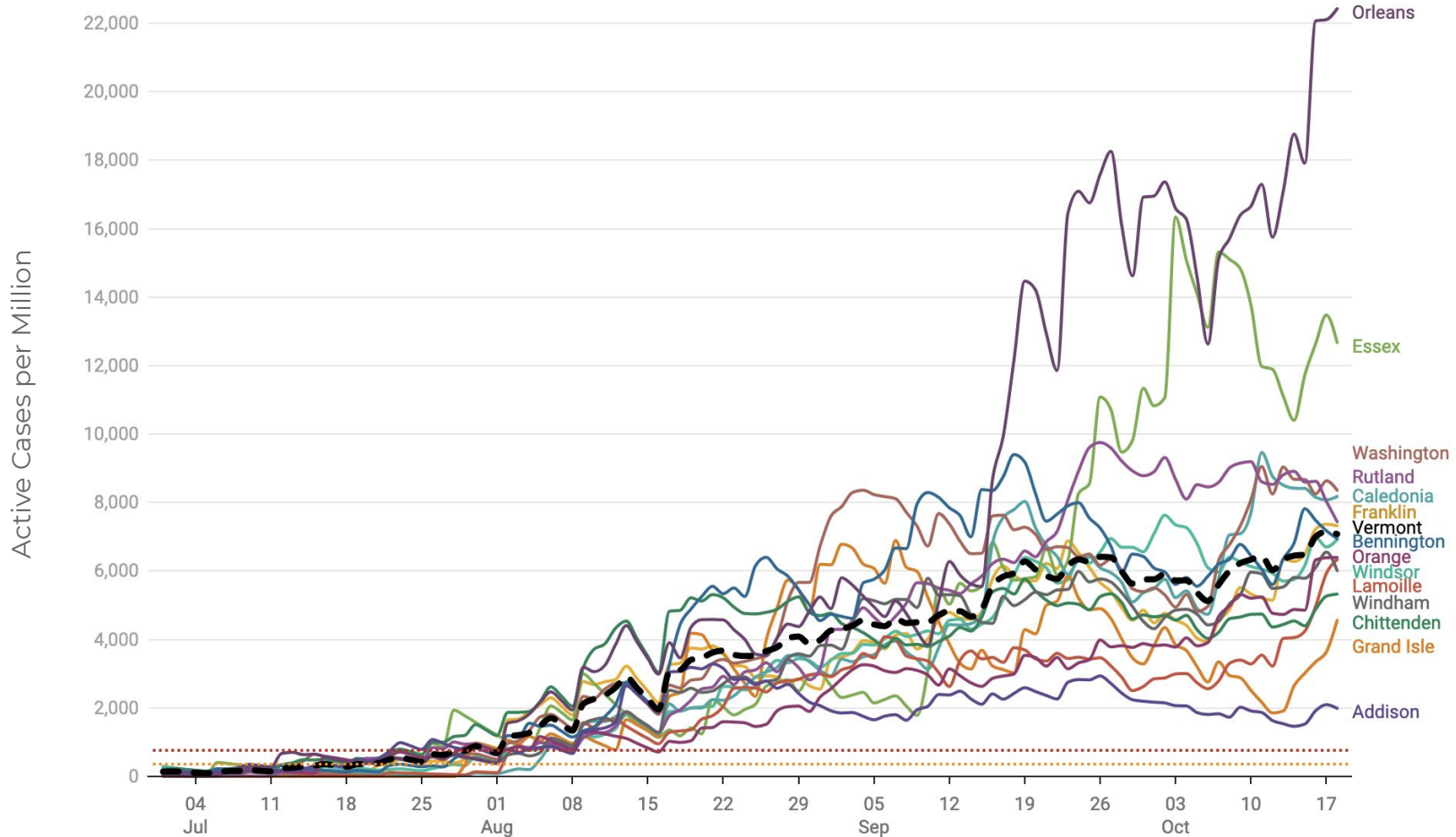
Source: VDH—October 18, 2021; created with Datawrapper

Vermont COVID-19 Testing

7-Day Average

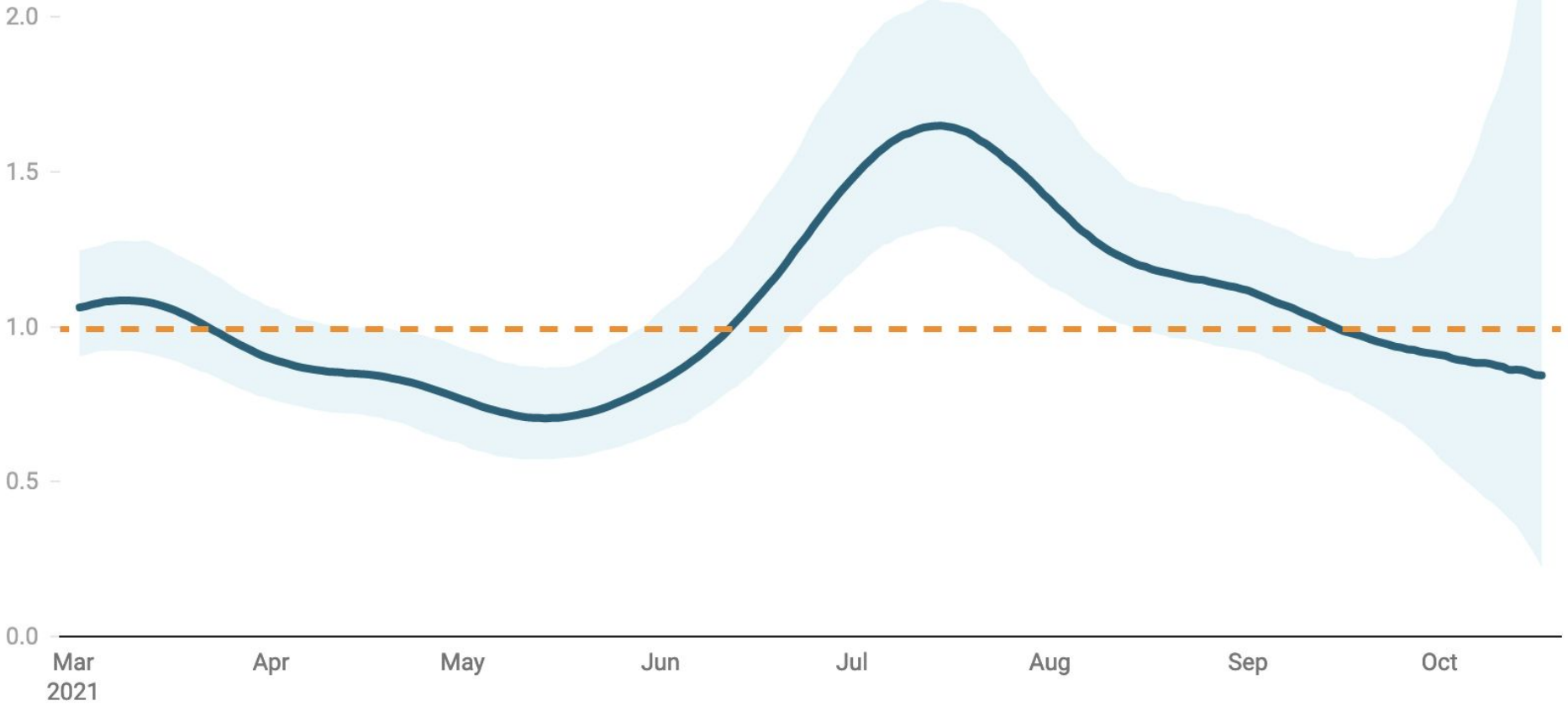


Active Cases in Vermont Counties



Source: Vermont Dept. of Health—October 19, 2021; DFR Active Case Algorithm (per million)

COVID-19 R_t in Vermont

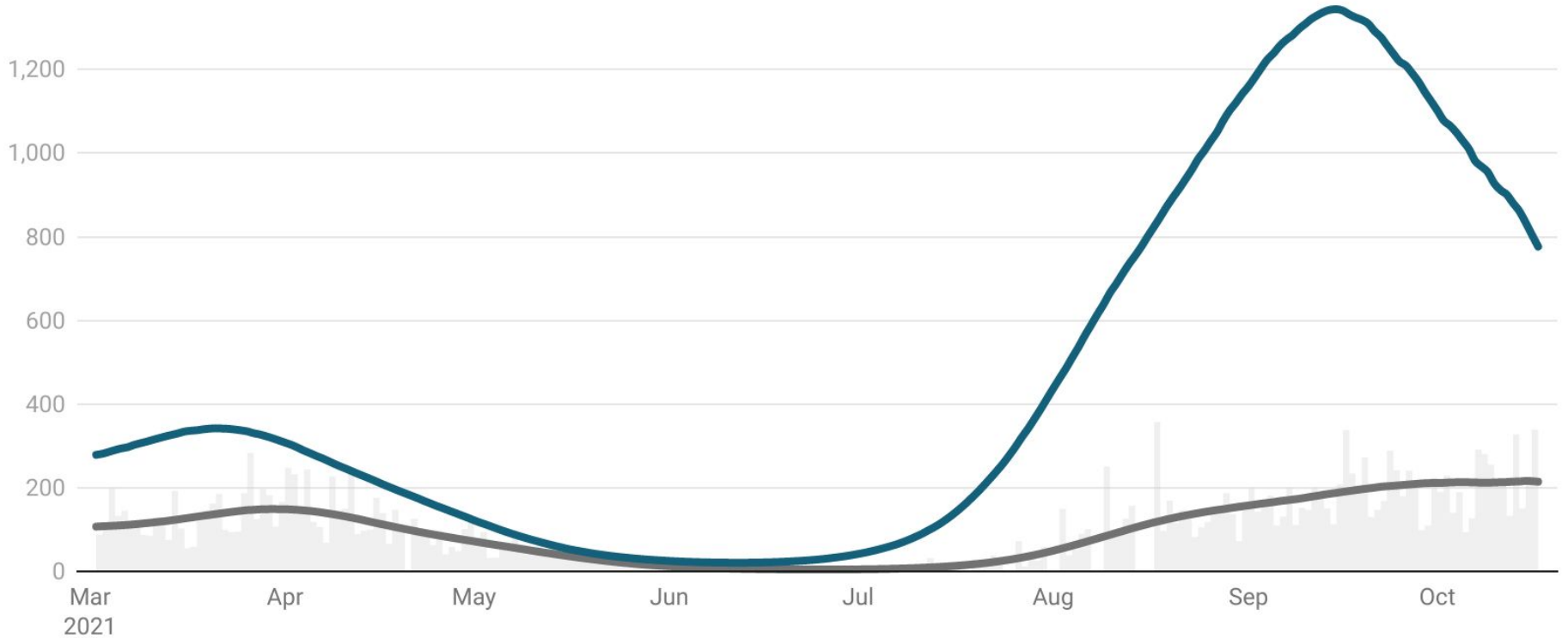


Source: Covidestim—Covid-19 Nowcasting—October 19, 2021

Estimated vs Detected COVID-19 Cases in Vermont

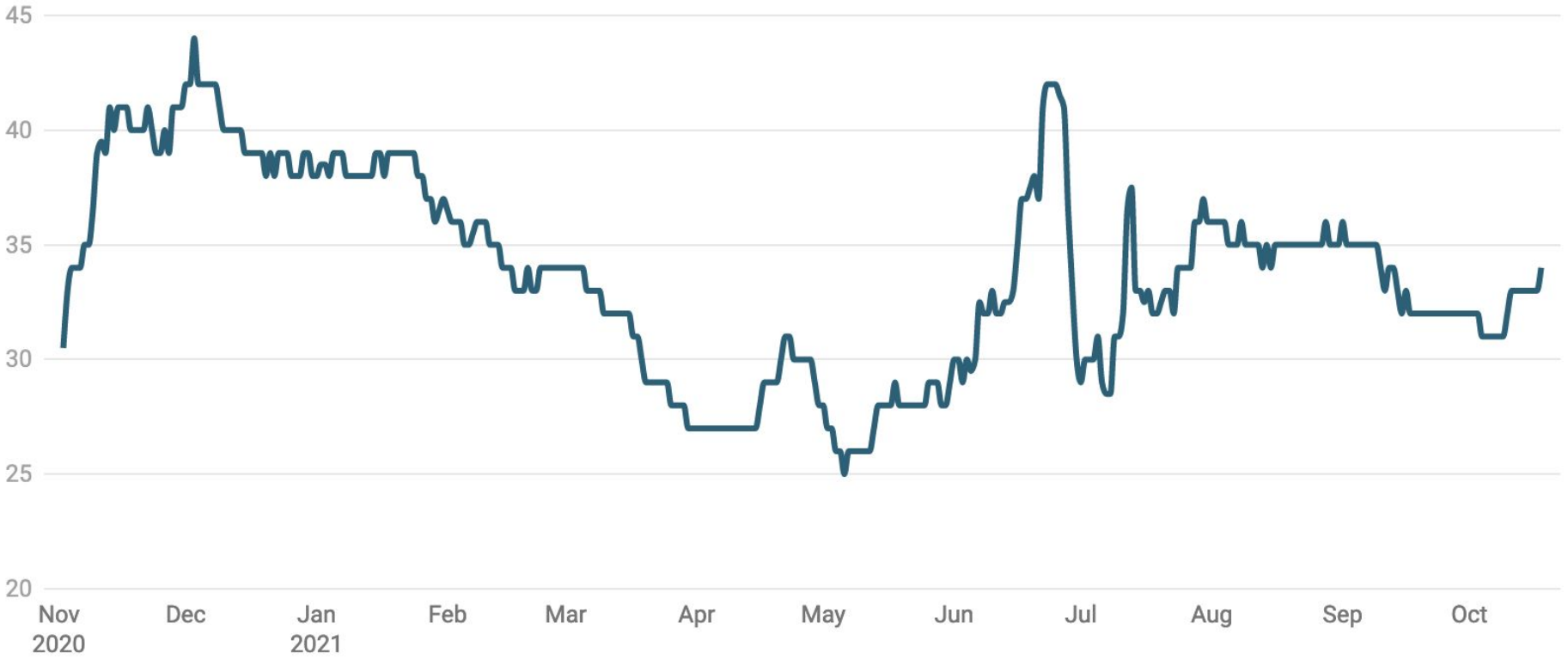
This figure shows both the number of detected cases (gray) and an estimate of the true number of infections.

— Detected Cases — Estimated True Cases



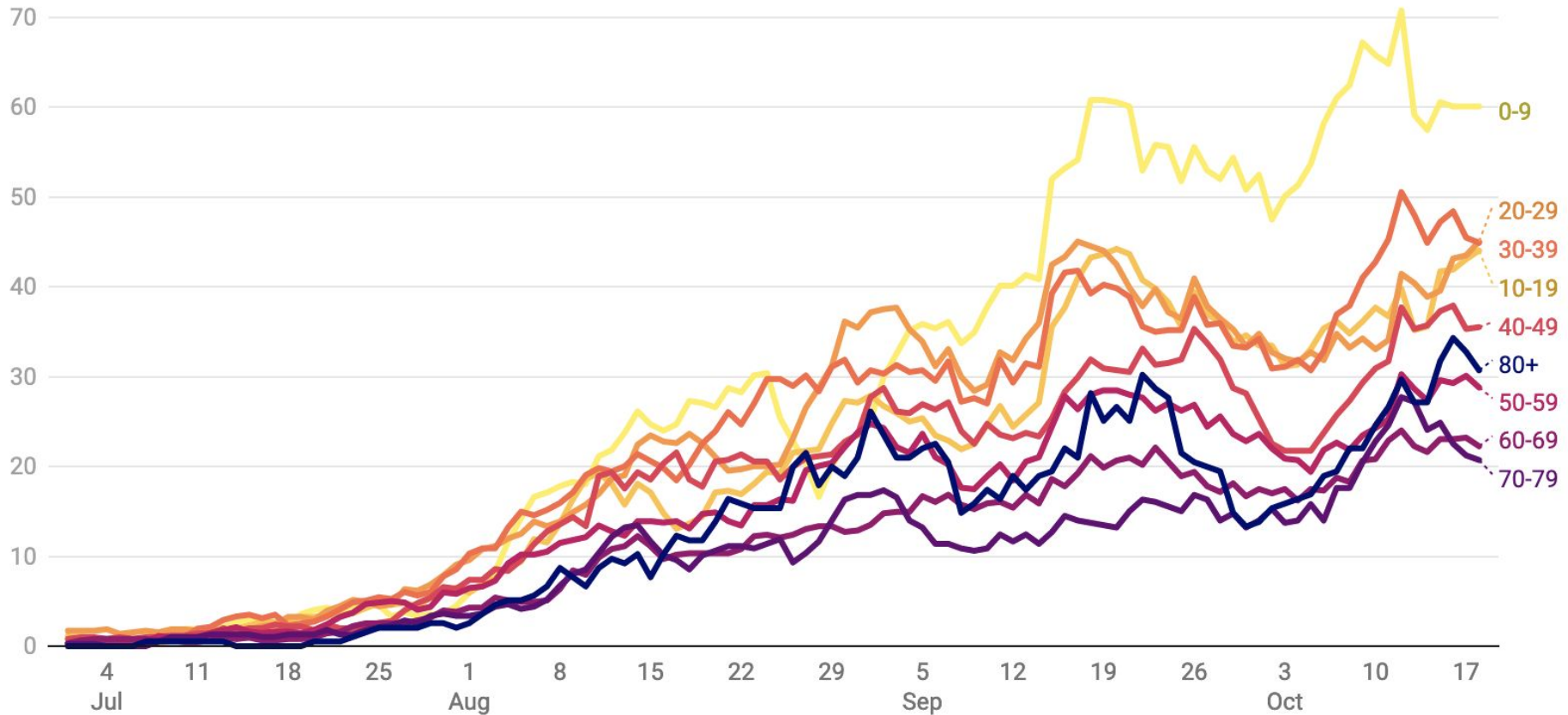
Age of Infected Vermonters

Median age of COVID positive individuals in VT over the last 14 days.



Source: VDH—October 19, 2021

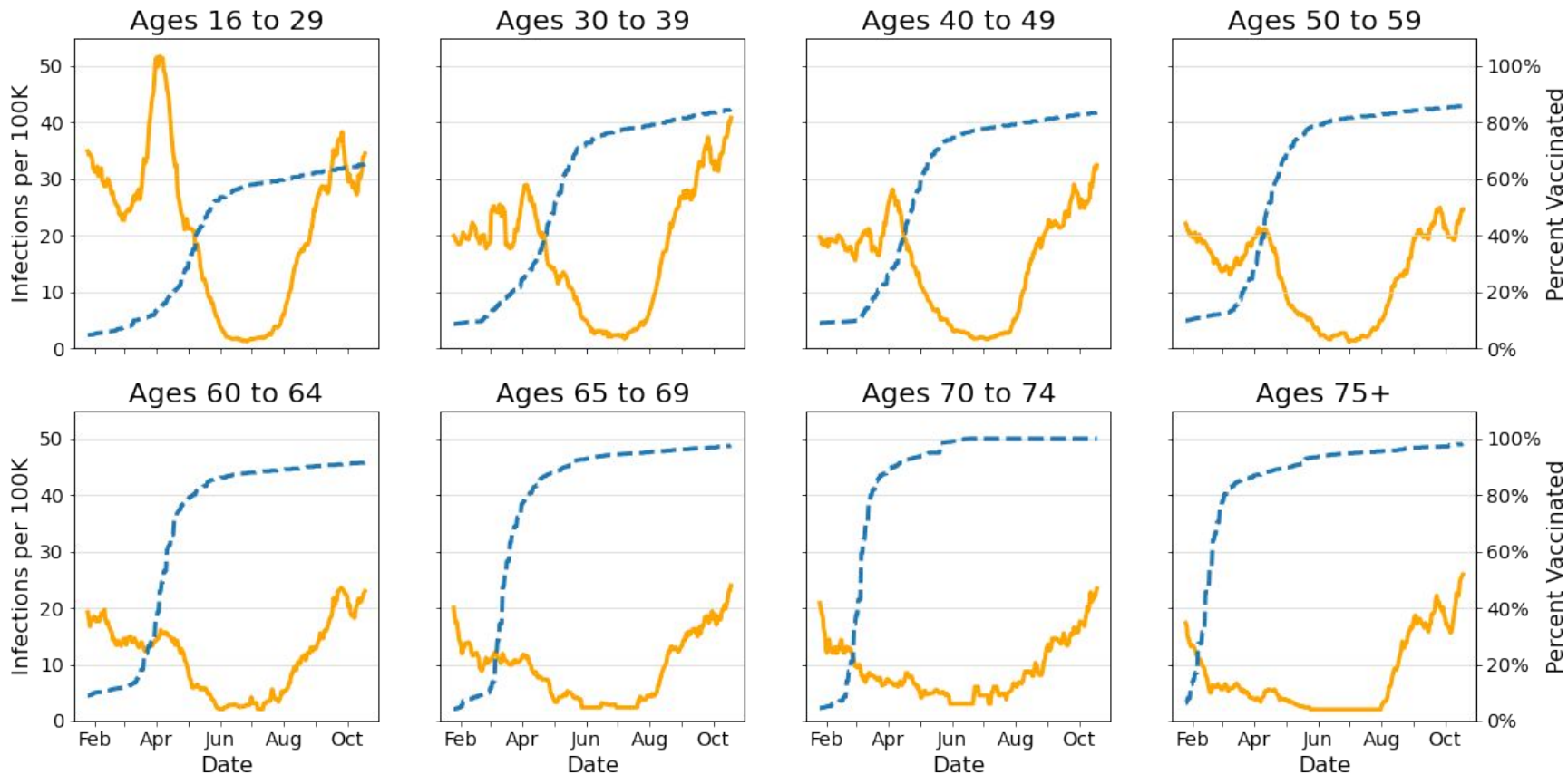
VT COVID-19 Infections per 100K by Age Group



Vermont Case Rate & Vaccination by Age Band

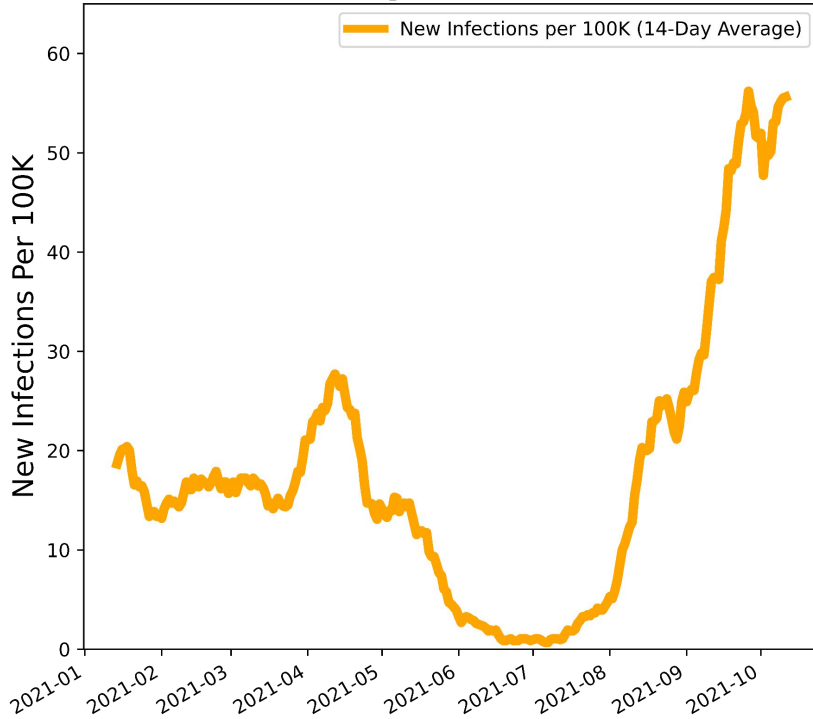
— New Infections per 100K (14-Day Average)

- - - Percent Received First Vaccine Dose

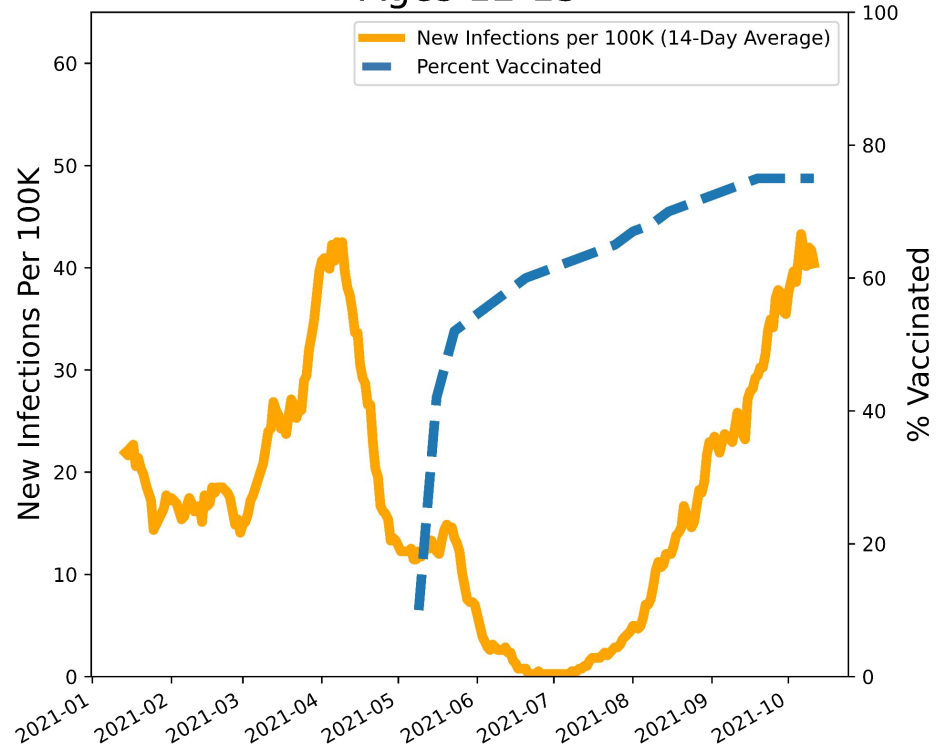


Vermont Case Rate & Vaccination by Age Band

Ages 0-11



Ages 12-15

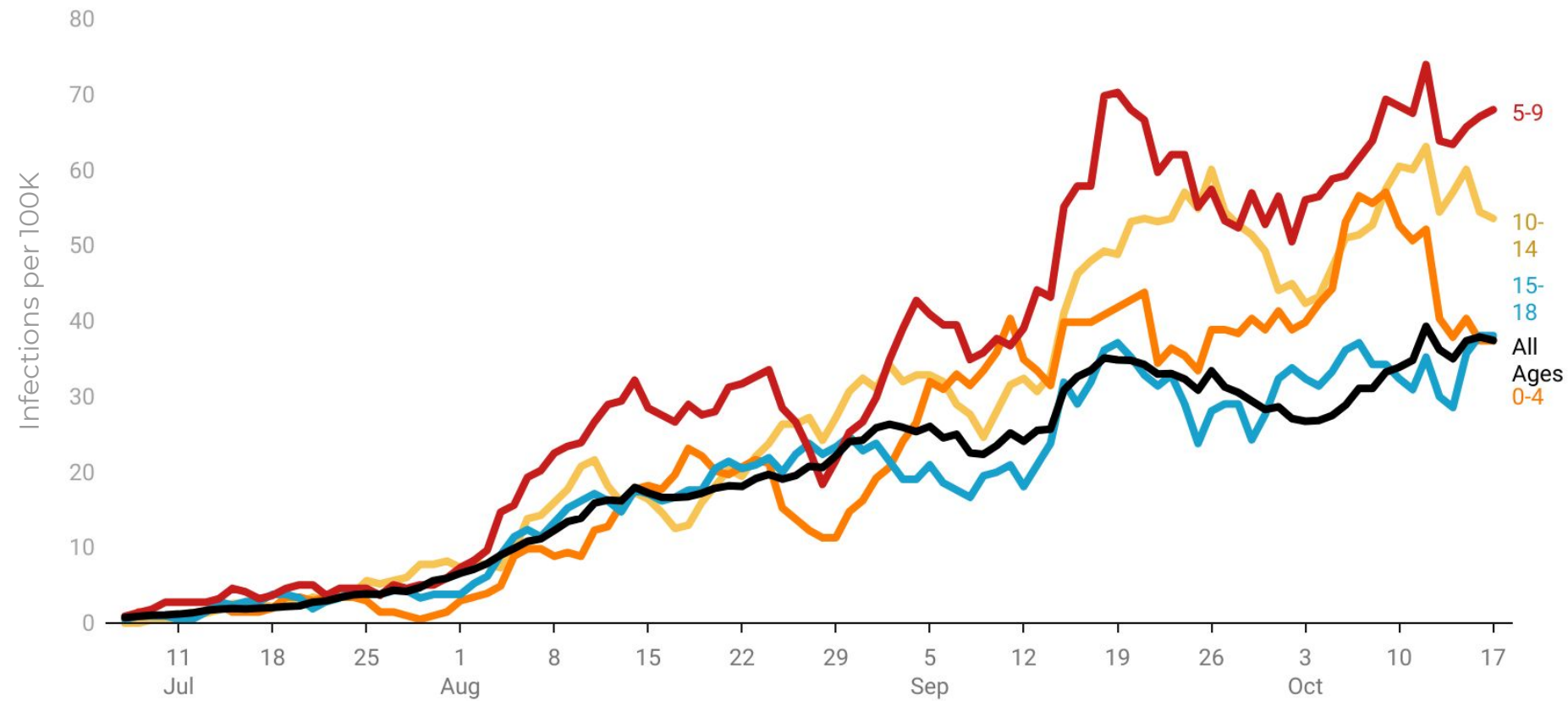


Vermont Case Rate By Age (7-Day Average)

Cases Among Those 0 to 11 Cases Among Those 12 and Older

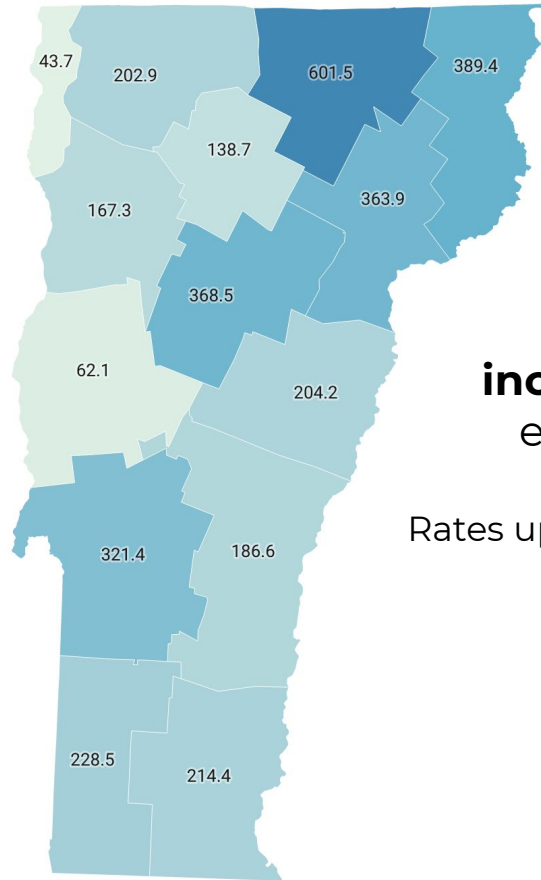


Vermont Covid-19 Case Rates by Age (7-Day Average)



Vermont Weekly Cases by County (per 100,000)

Results Reported October 5 to 11

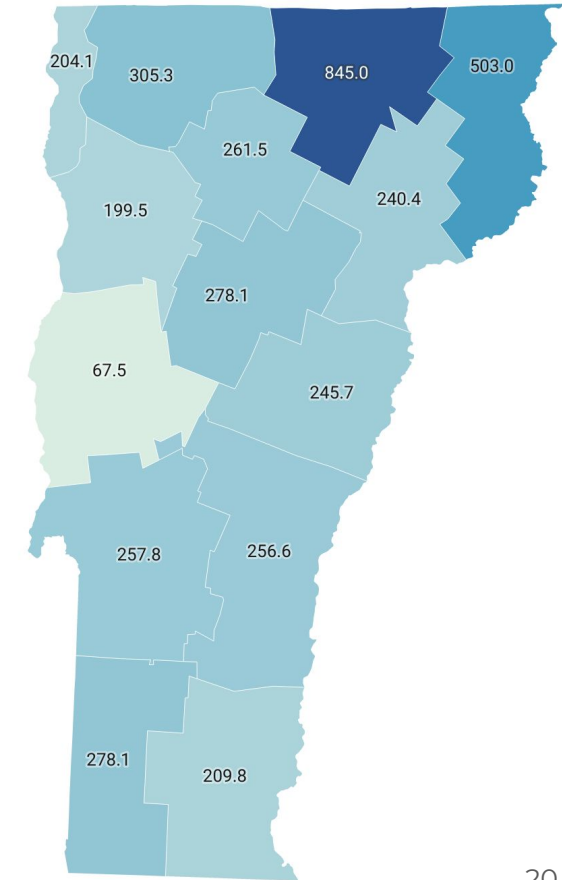


Covid-19 case rates **increased** last week, remain elevated in the Kingdom

Rates up from last week in 10 of 14 counties

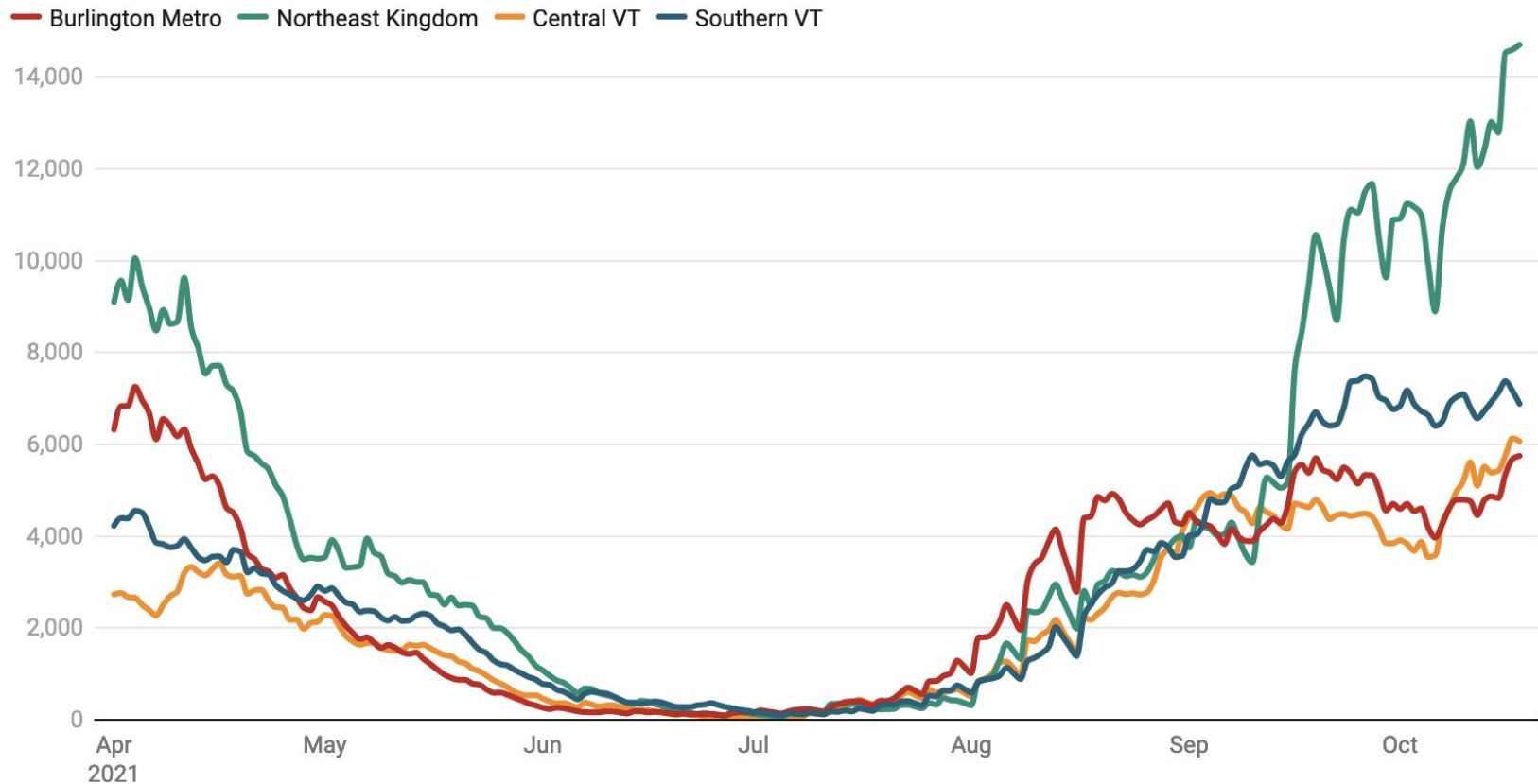
Vermont Weekly Cases by County (per 100,000)

Results Reported October 12 to 18



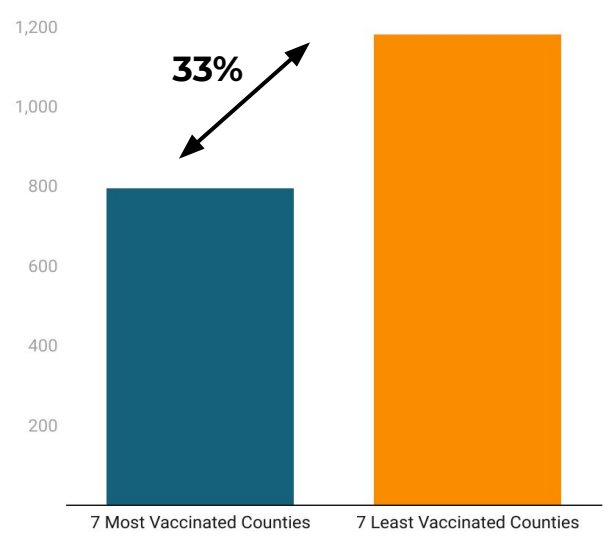
Active COVID Cases per Million in Vermont Regions

For the purpose of this analysis, Vermont has been split into four regions: **Burlington Metro** (Chittenden, Franklin, Grand Isle), **Northeast Kingdom** (Caledonia, Orleans, Essex), **Central** (Lamoille, Washington, Addison, Orange), and **Southern** (Rutland, Windsor, Bennington, Windham).

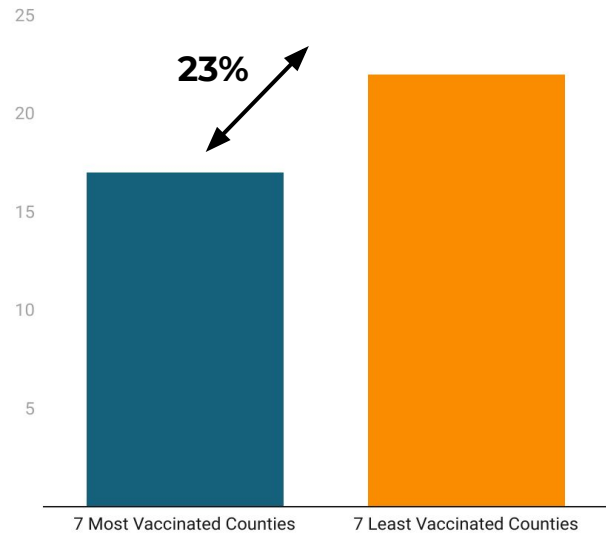


Comparing Vermont 7 Most & 7 Least Vaccinated Counties Over Last 30 Days

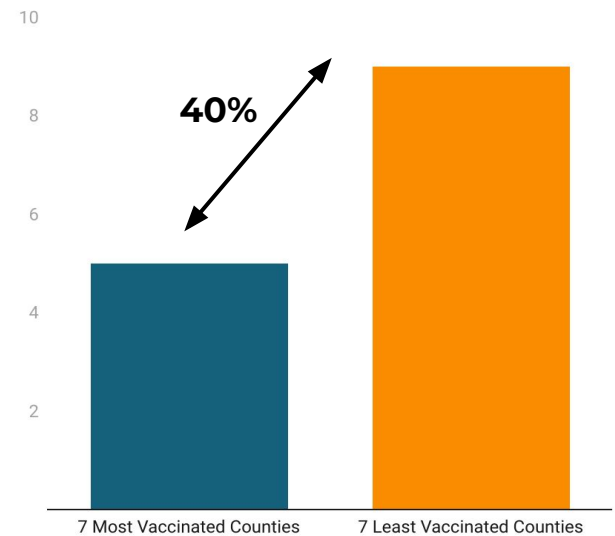
Infections



Hospitalizations



Fatalities

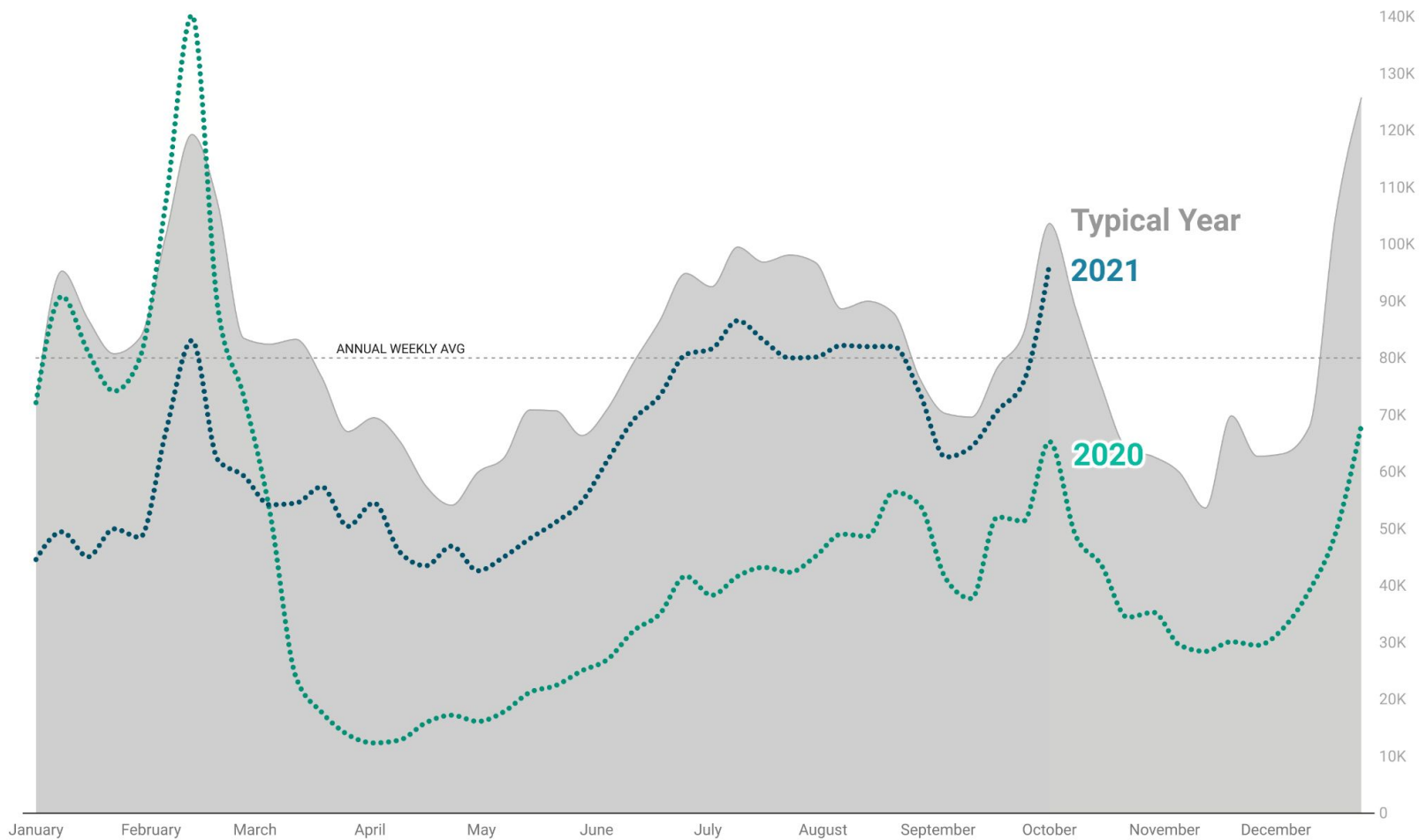


Source: VDH—October 17, 2021 (7 Most Vaccinated Counties: Chittenden; Lamoille; Washington; Addison; Rutland; Bennington; 7 Least Vaccinated Counties: Essex; Orleans; Caledonia; Orange; Franklin; Windham; Windsor); created with Datawrapper

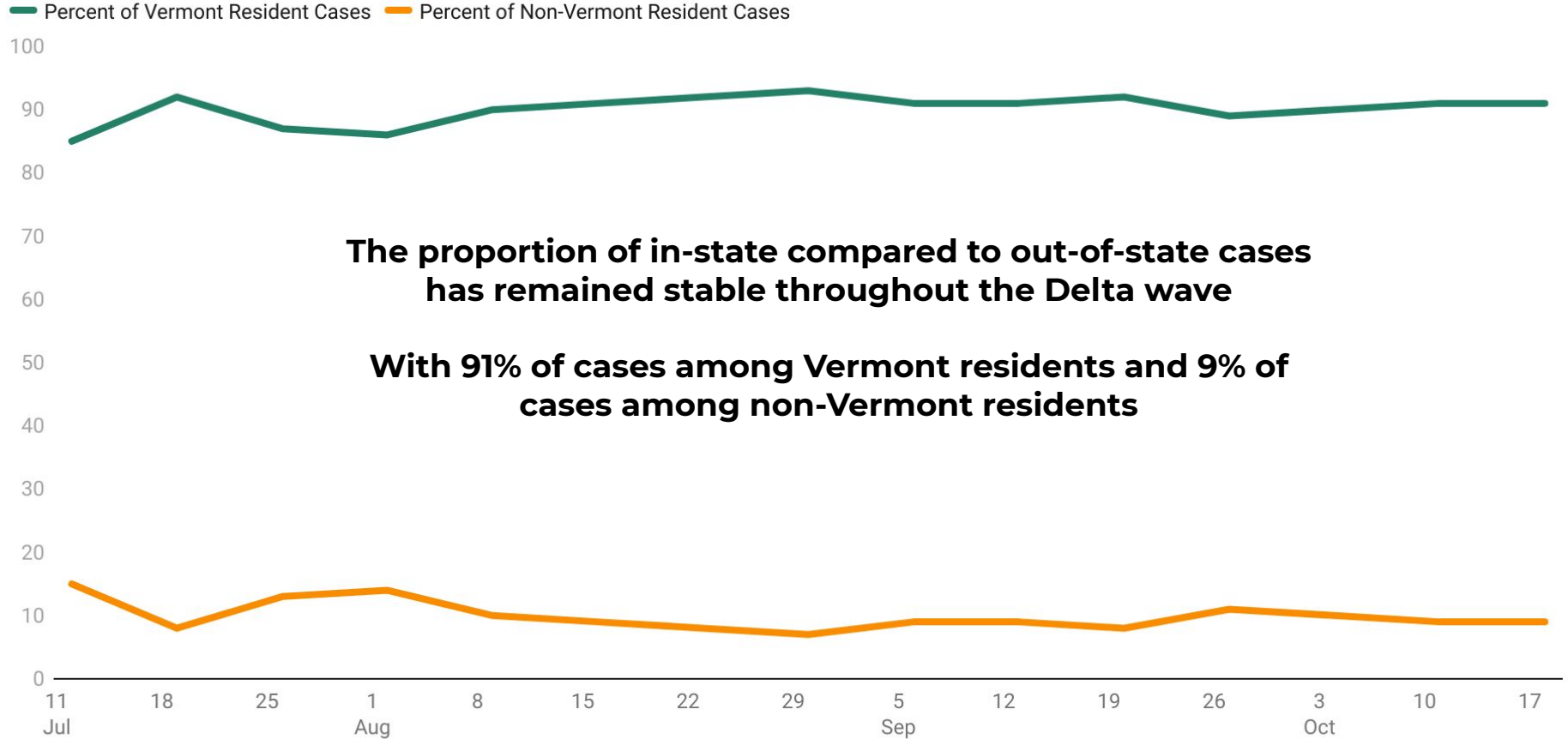
VT Hotel Visitors in 2020 & 2021 Compared to a Typical Year

'Typical Year' calculated using 2018 & 2019 average.
Chart: VCGI • Source: Safegraph • Created with Datawrapper

Through week ending October 9th, 2021.



Delta Wave: Comparing In-State & Out-of-State Cases by Weekly Totals



Fall 2021 Higher Education Restart

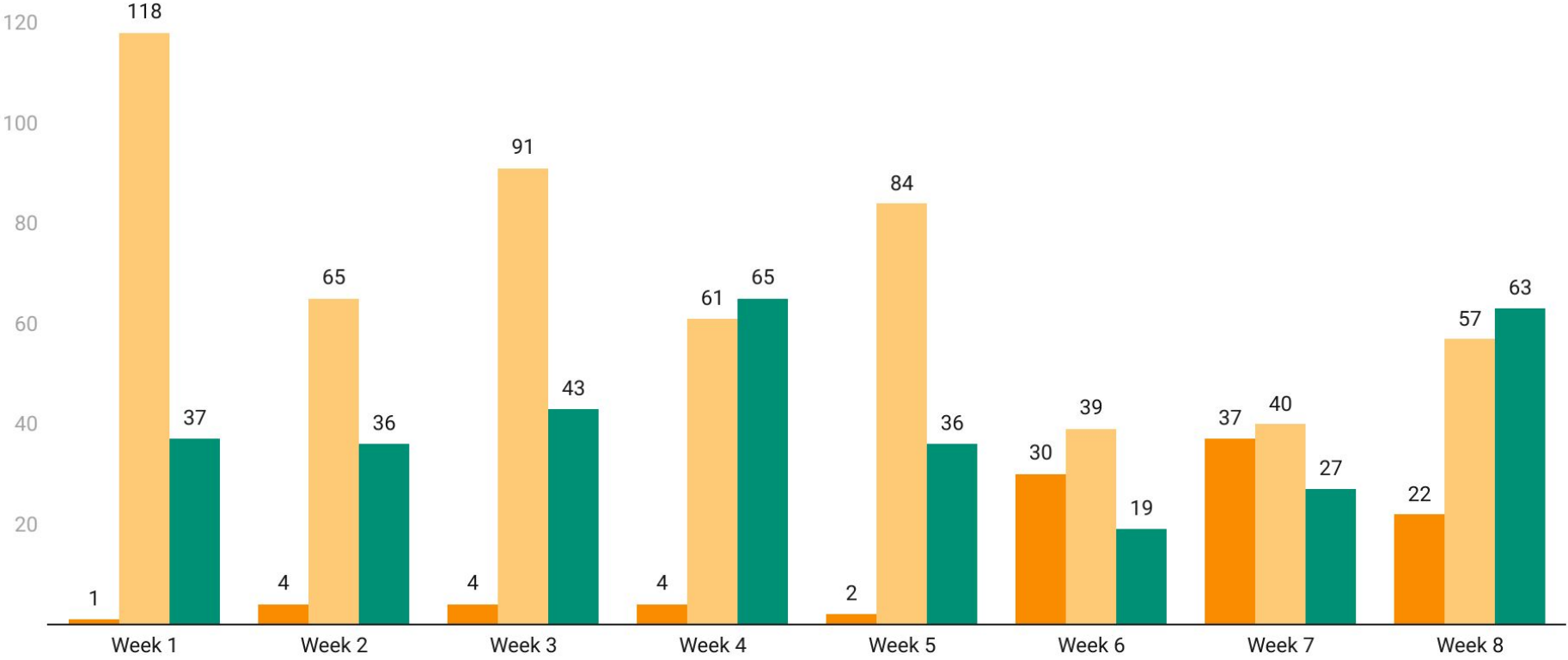
Higher Education Institutions Reporting	Enrollment	Students Fully Vaccinated	Students Not Fully Vaccinated (No Exemption Granted)	Students with Unknown Vaccine Status	Students Granted Vaccine Mandate Exemption
16 of 16	28,582	27,209	236	452	685
		95.1%	0.9%	1.6%	2.4%

Week 1: **37 cases** out of 12,623 tests
Week 2: **36 cases** out of 7,434 tests
Week 3: **43 cases** out of 3,053 tests
Week 4: **65 cases** out of 6,497 tests

Week 5: **36 cases** out of 4,878 tests
Week 6: **19 cases** out of 4,516 tests
Week 7: **27 cases** out of 3,536 tests
Week 8: **63 cases** out of 3,668 tests

Vermont Higher Education Cases By Semester

Fall 2020 Spring 2021 Fall 2021



Source: Vermont Higher Education Institutions—October 19, 2021—Created with Datawrapper

Active Outbreaks in Long Term Care Facilities

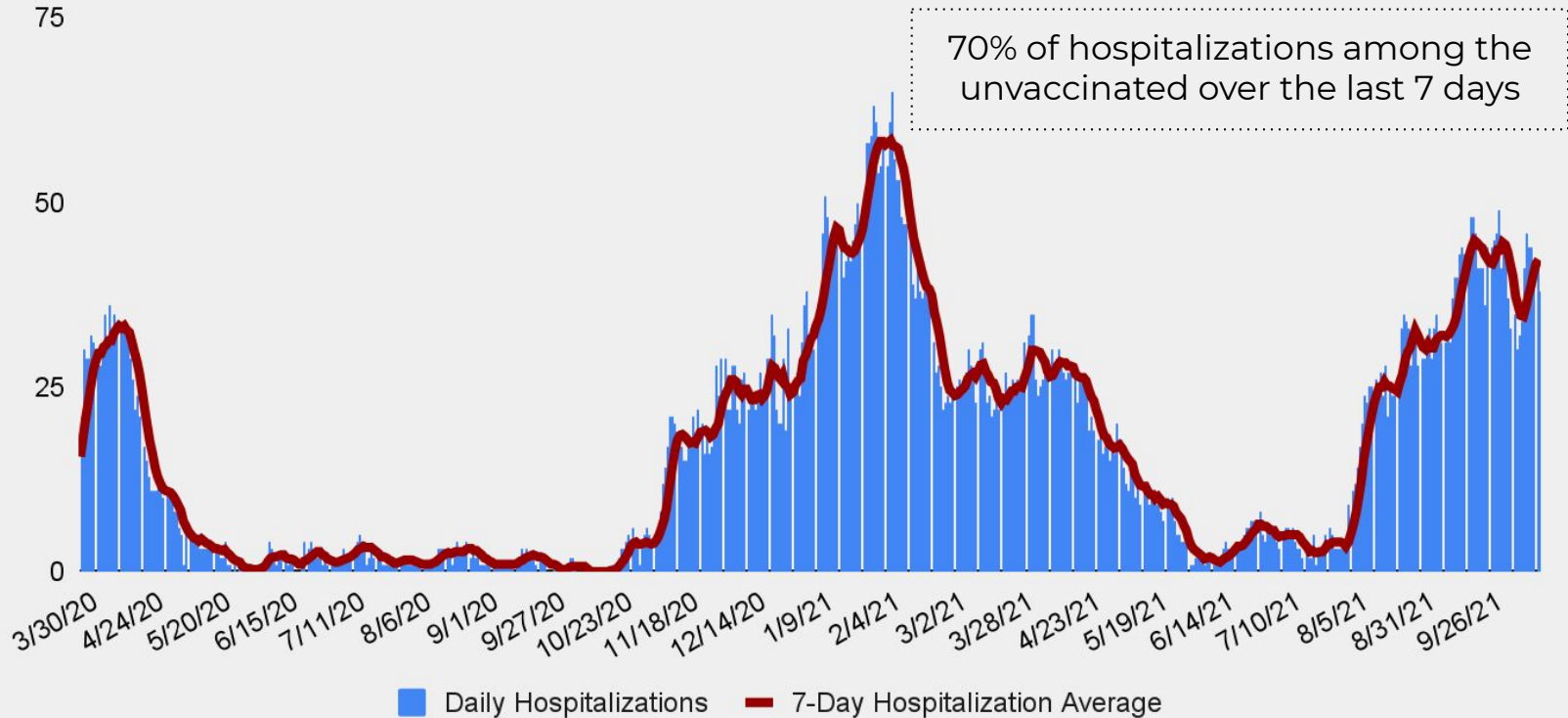
Facility Name	Total COVID-19 Cases
Berlin Health & Rehab	44
St. Johnsbury Health & Rehab	32
Centers for Living & Rehab, <i>Bennington</i>	27
Equinox Terrace, <i>Manchester</i>	22
Long Term Care Facility D	21
Homestead Senior Living, <i>Saint Albans</i>	12
Long Term Care Facility C	6
Rutland Healthcare & Rehab Center	Not Shown
Vernon Hall Assisted Living, <i>Vernon</i>	Not Shown
Total	164

Source: Vermont Department of Health—October 19, 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

Vermont Hospitalization Data

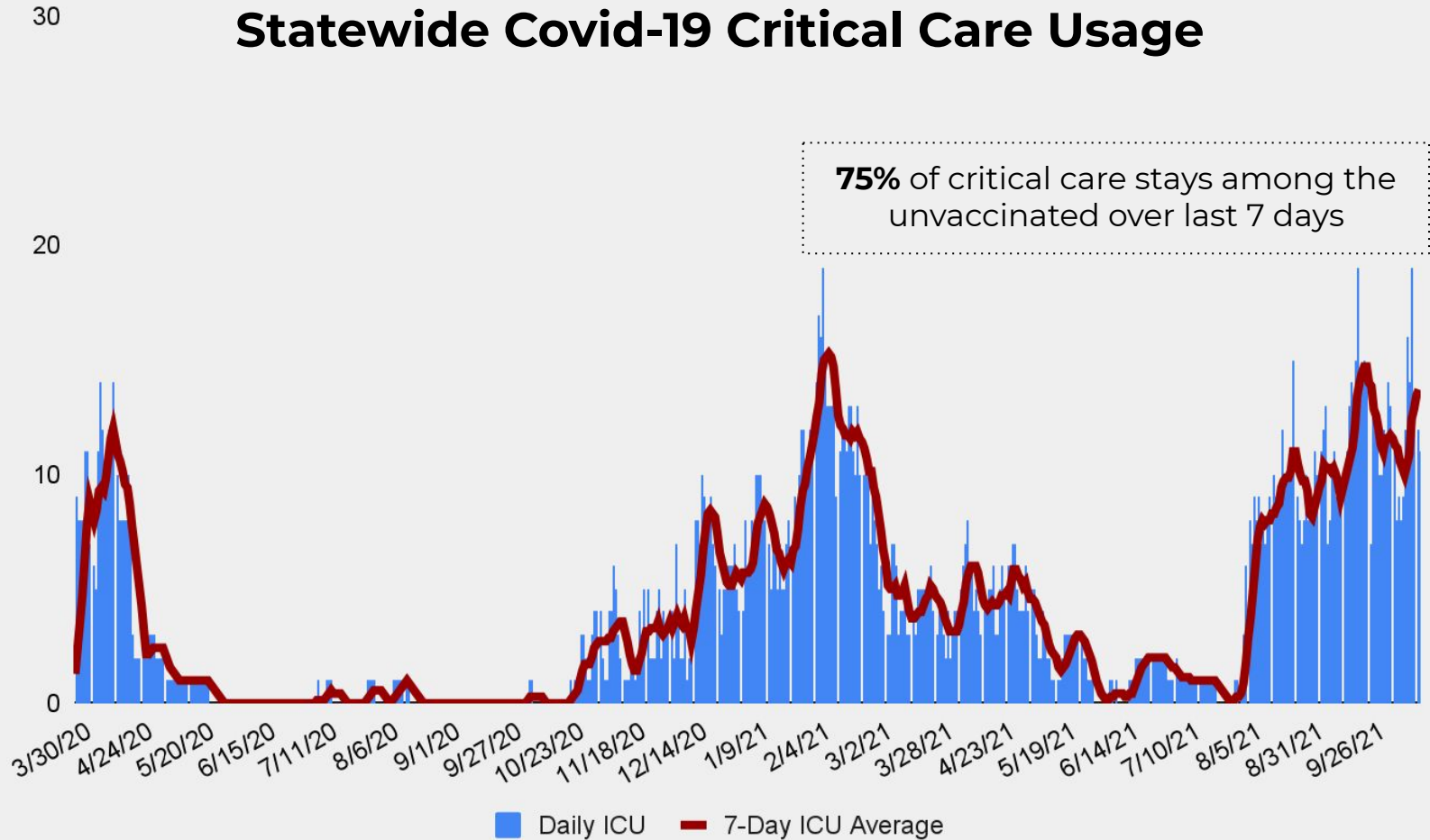
Statewide Covid-19 Hospitalizations

Hospitalization rate increasing, but Vermont is tied for fewest hospitalizations per capita nationally



Source: Vermont Department of Health—October 18, 2021

Statewide Covid-19 Critical Care Usage

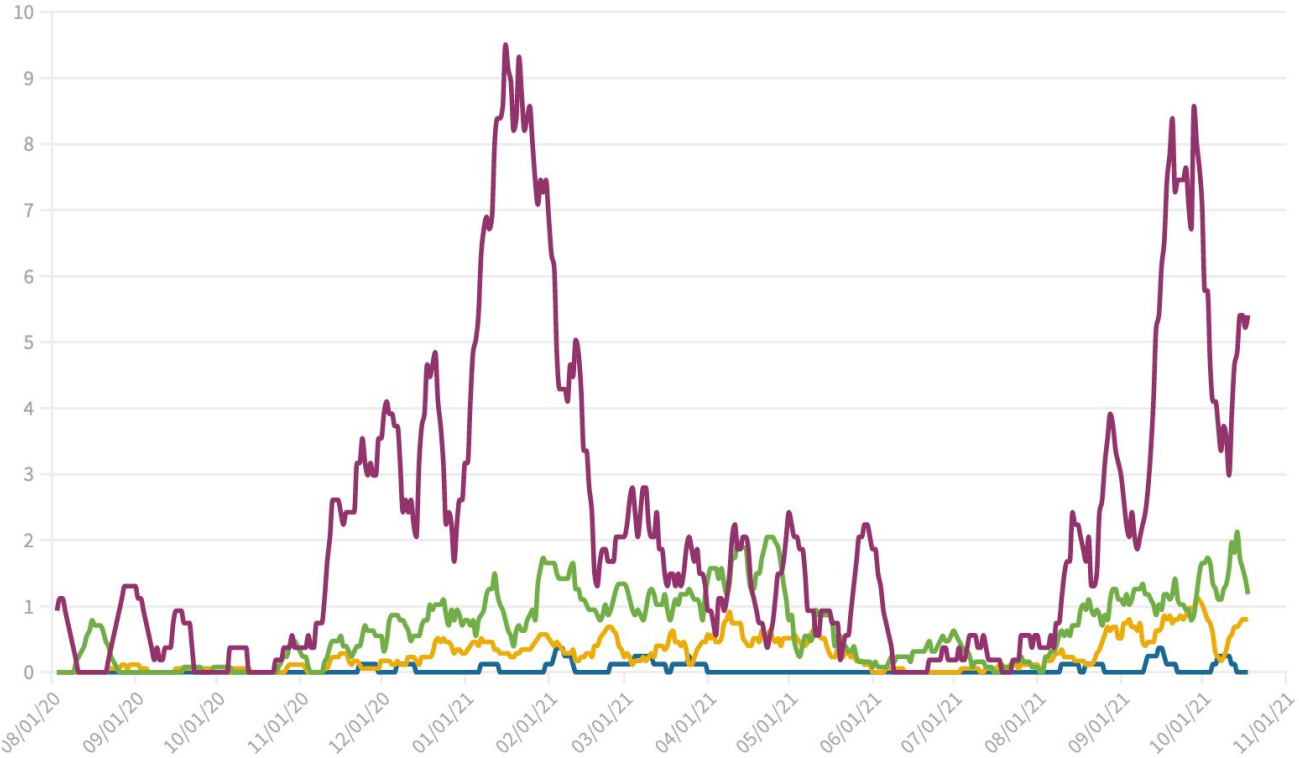


Source: Vermont Department of Health—October 18, 2021

New Hospitalizations per 100,000 Residents, by Age

0-17 years 18-49 years 50-69 years 70+ years

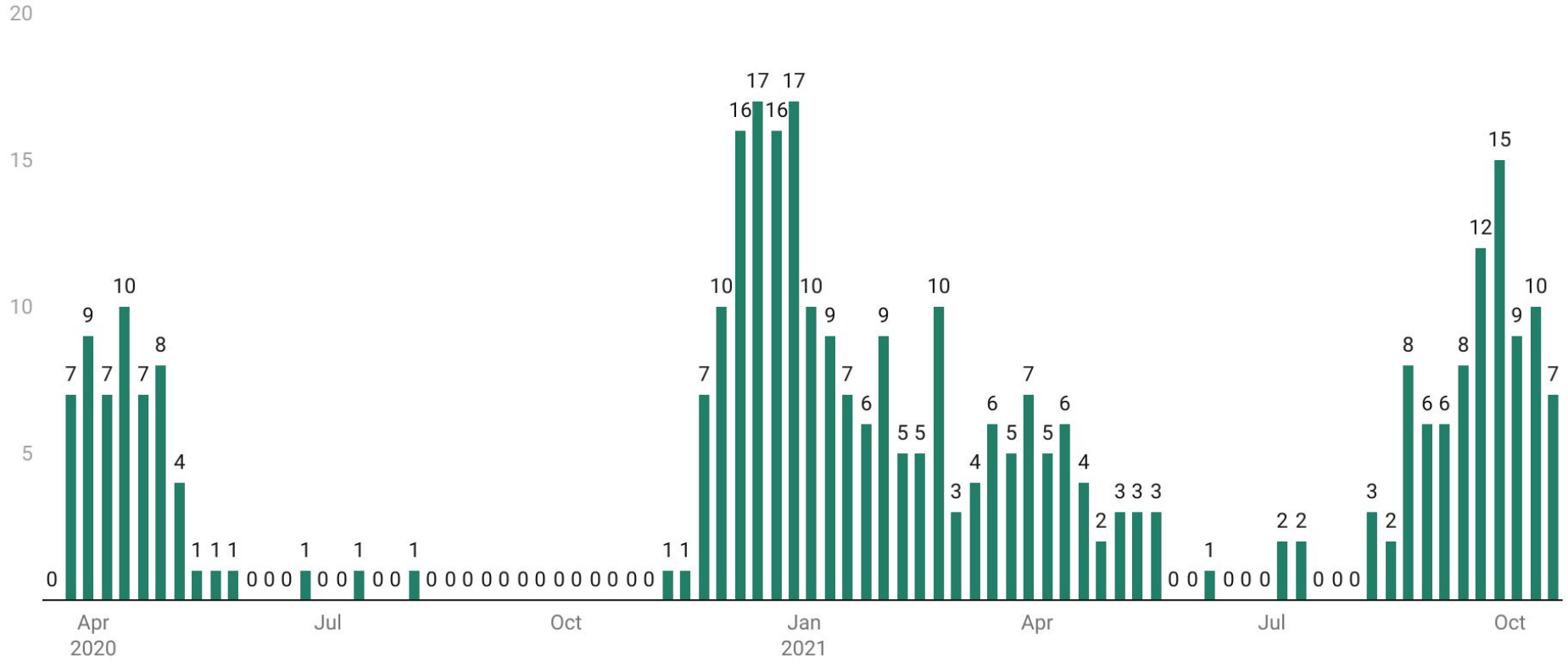
Vermont



New Hospitalizations per 100K

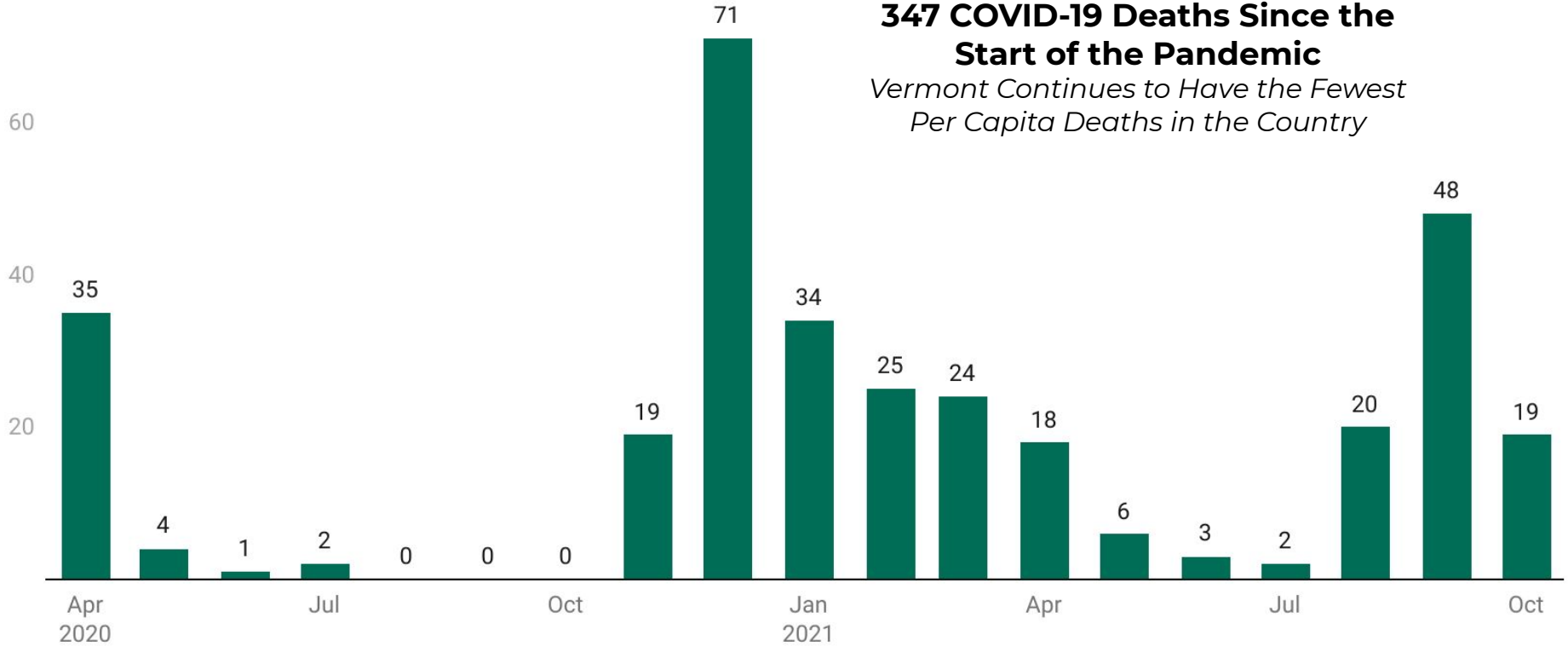
Vermont Fatality Data

Weekly Covid-19 Deaths In Vermont



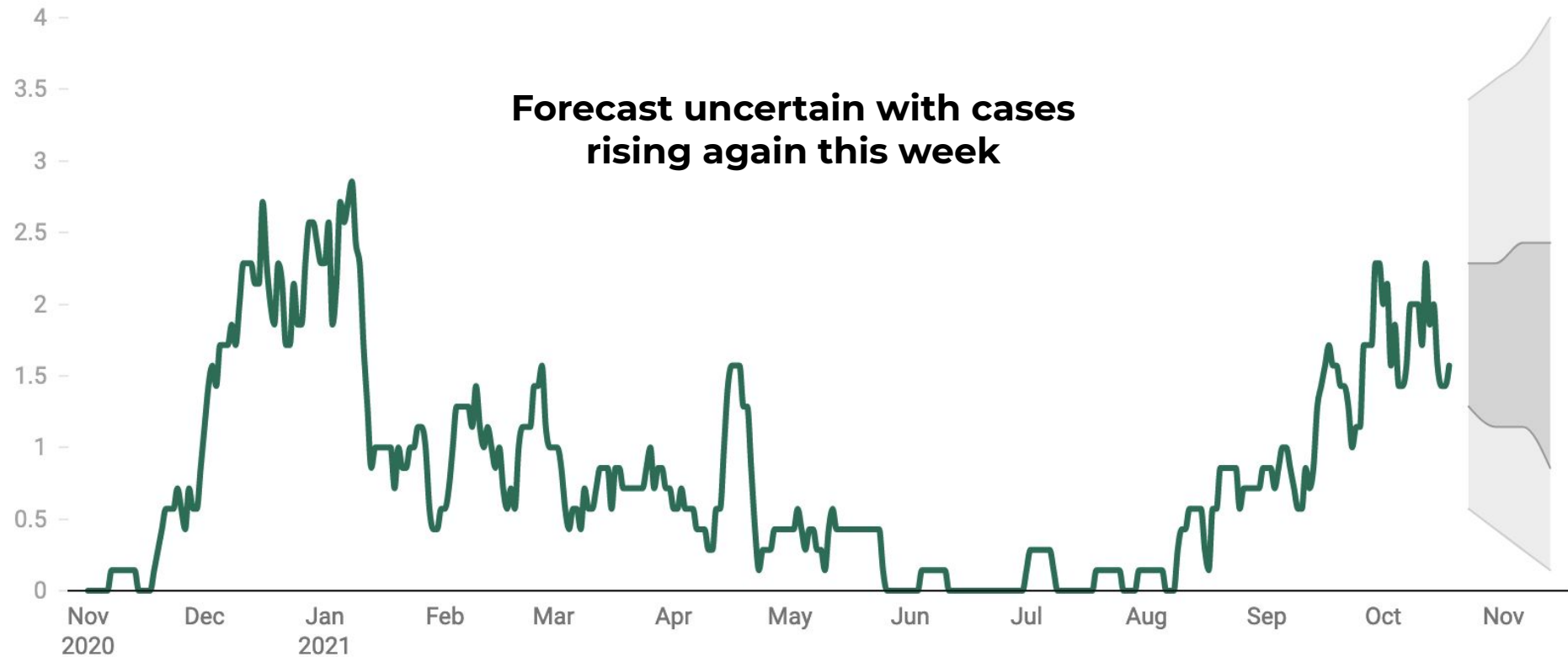
Source: Vermont Department of Health—October 18, 2021 (reporting week ending Tuesday to Monday)

Monthly Covid-19 Deaths In Vermont



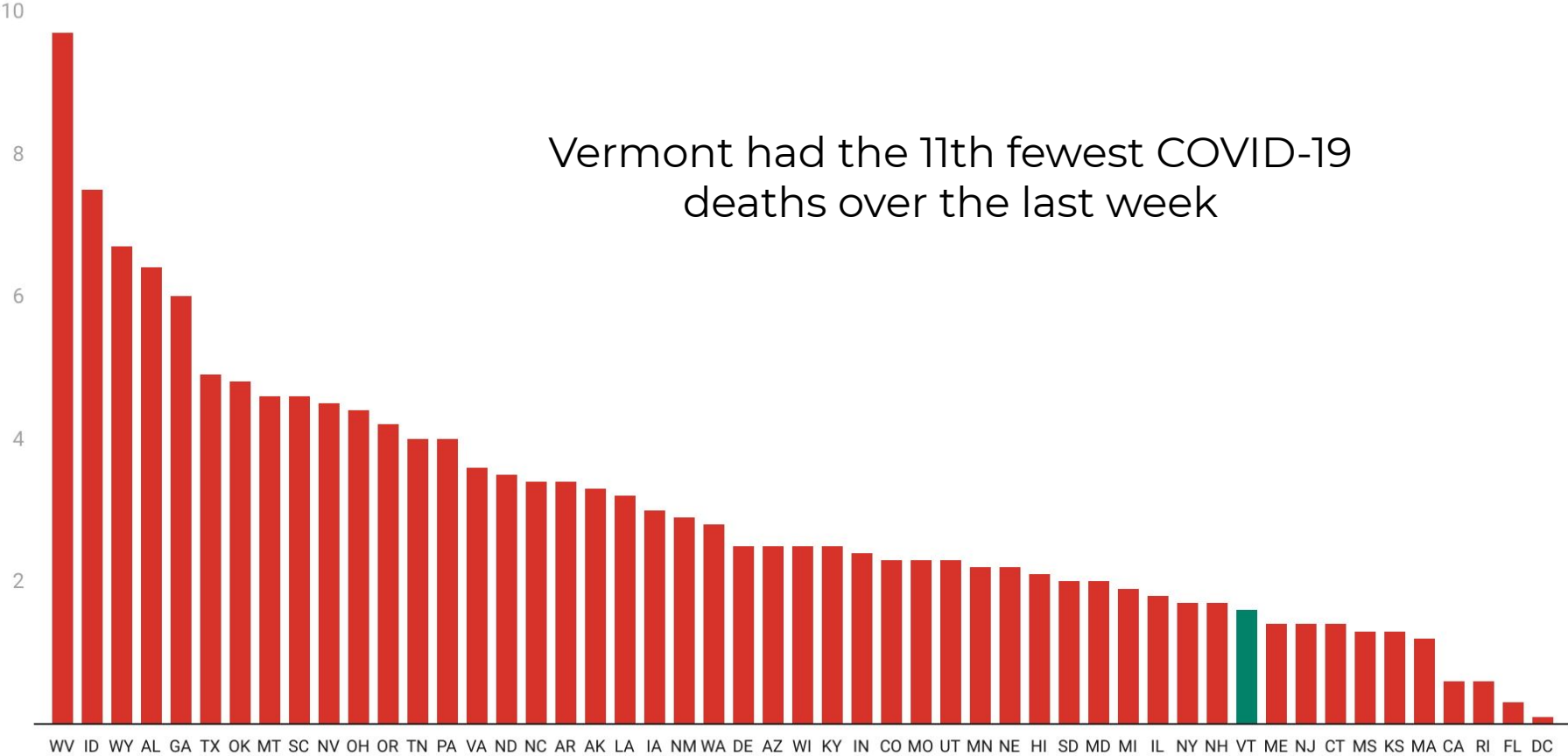
VT COVID-19 Death Confidence Intervals

Calculated as a 7-day mean



Forecast uncertain with cases rising again this week

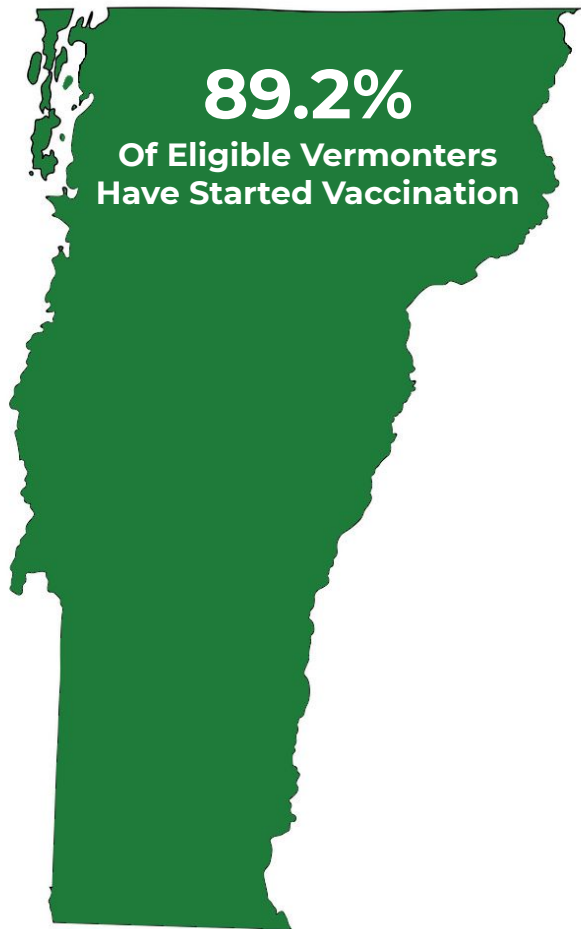
COVID-19 Deaths Per 100K Last 7 Days



Vermont had the 11th fewest COVID-19 deaths over the last week

Source: CDC—October 18, 2021; Created with Datawrapper

Vermont Vaccination Data



Vermont Vaccination

+1,955

Since Last Week

491,492

Vermonters with
at Least 1 Dose

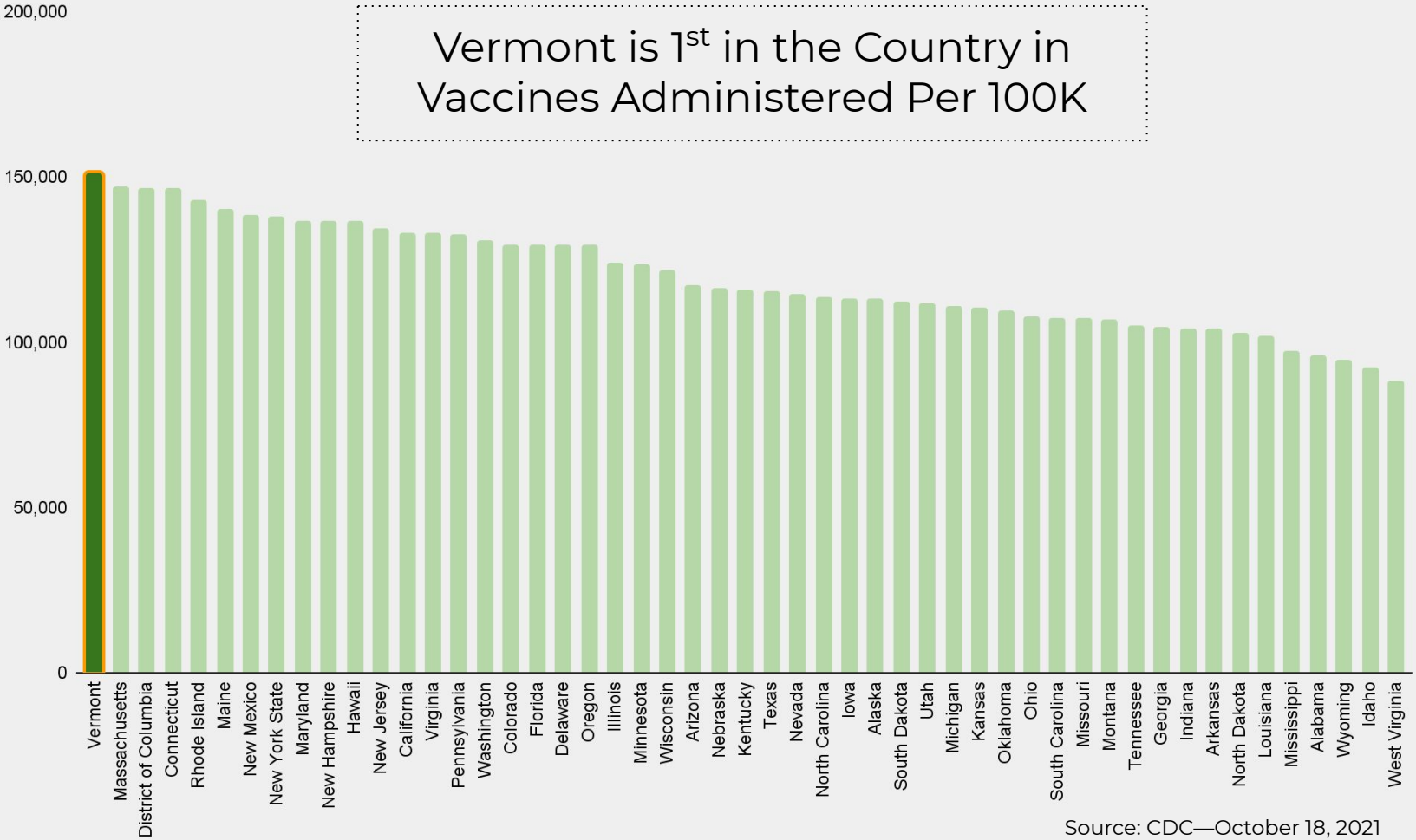
59,458

Eligible Vermonters
still to be vaccinated

Vermont CDC Vaccine Scorecard

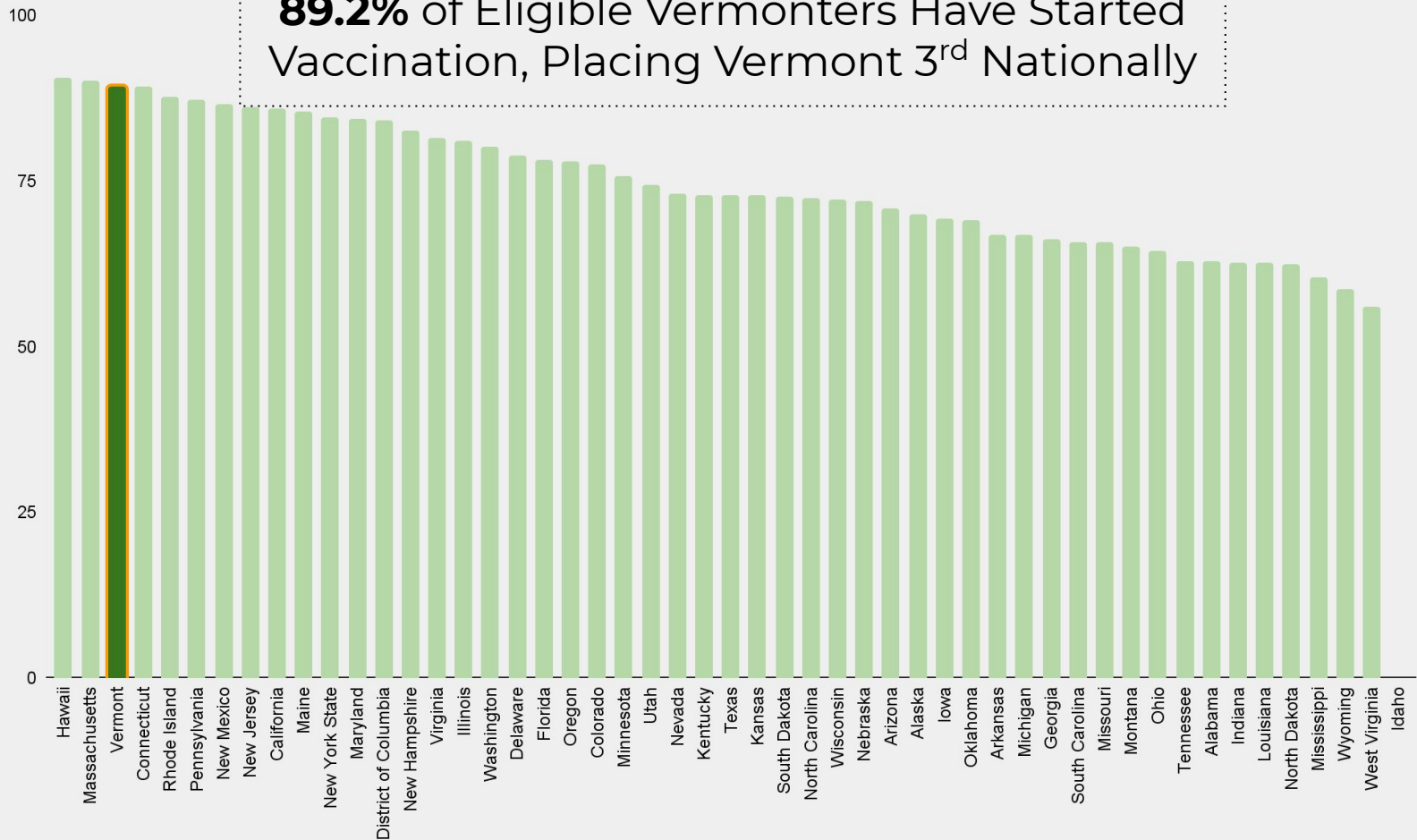
Metric	Figure	State Ranking
Doses Administered per 100K	151,053	1
% At Least 1 Dose (Eligible Population)	89.2%	3 (tied)
% Fully Vaccinated (Eligible Population)	79.9%	2 (tied)
% At Least 1 Dose (Full Population)	78.8%	1
% Fully Vaccinated (Full Population)	70.6%	1
% Fully Vaccinated (65 & Over)	96.4%	1

Vermont is 1st in the Country in Vaccines Administered Per 100K



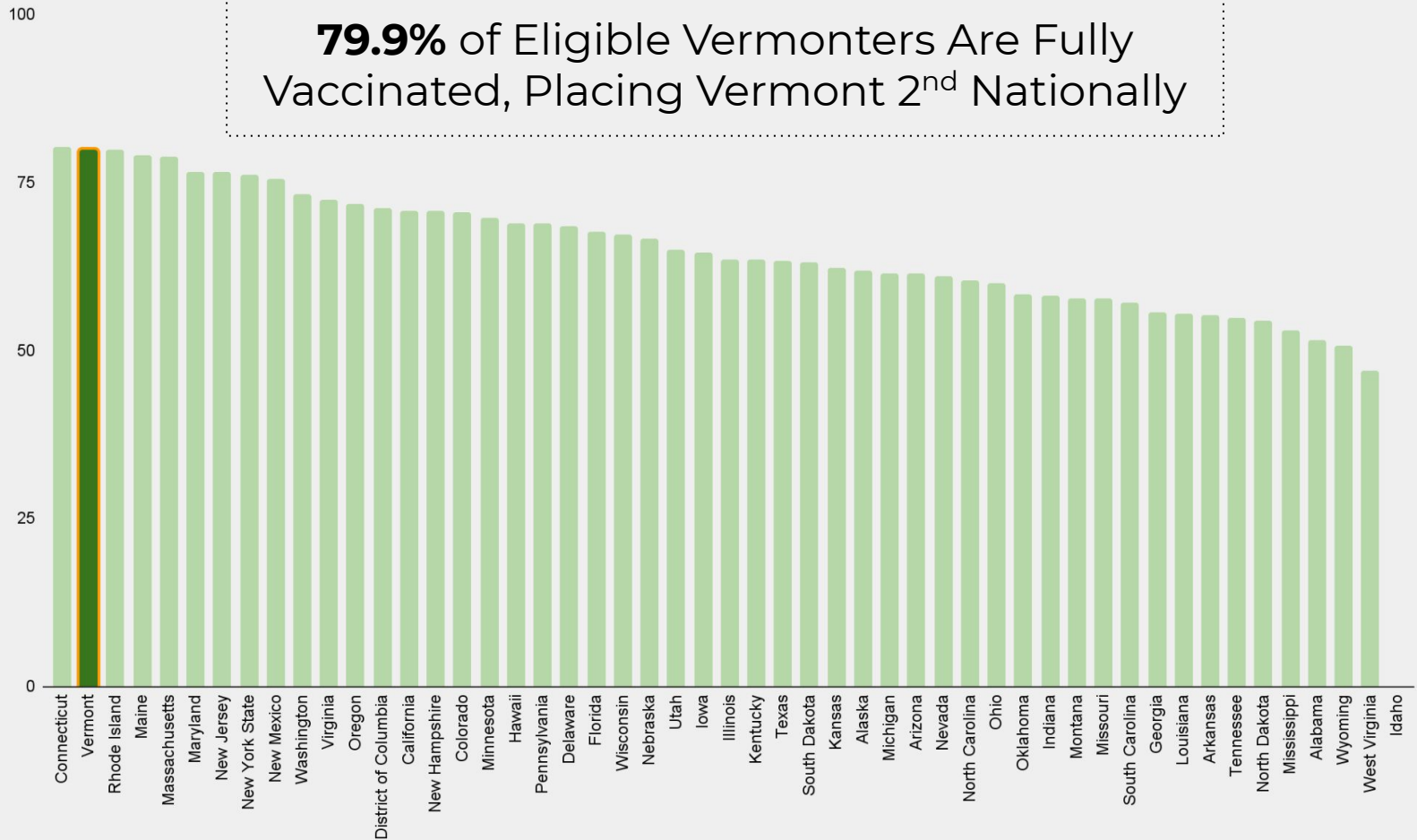
Source: CDC—October 18, 2021

89.2% of Eligible Vermonters Have Started Vaccination, Placing Vermont 3rd Nationally



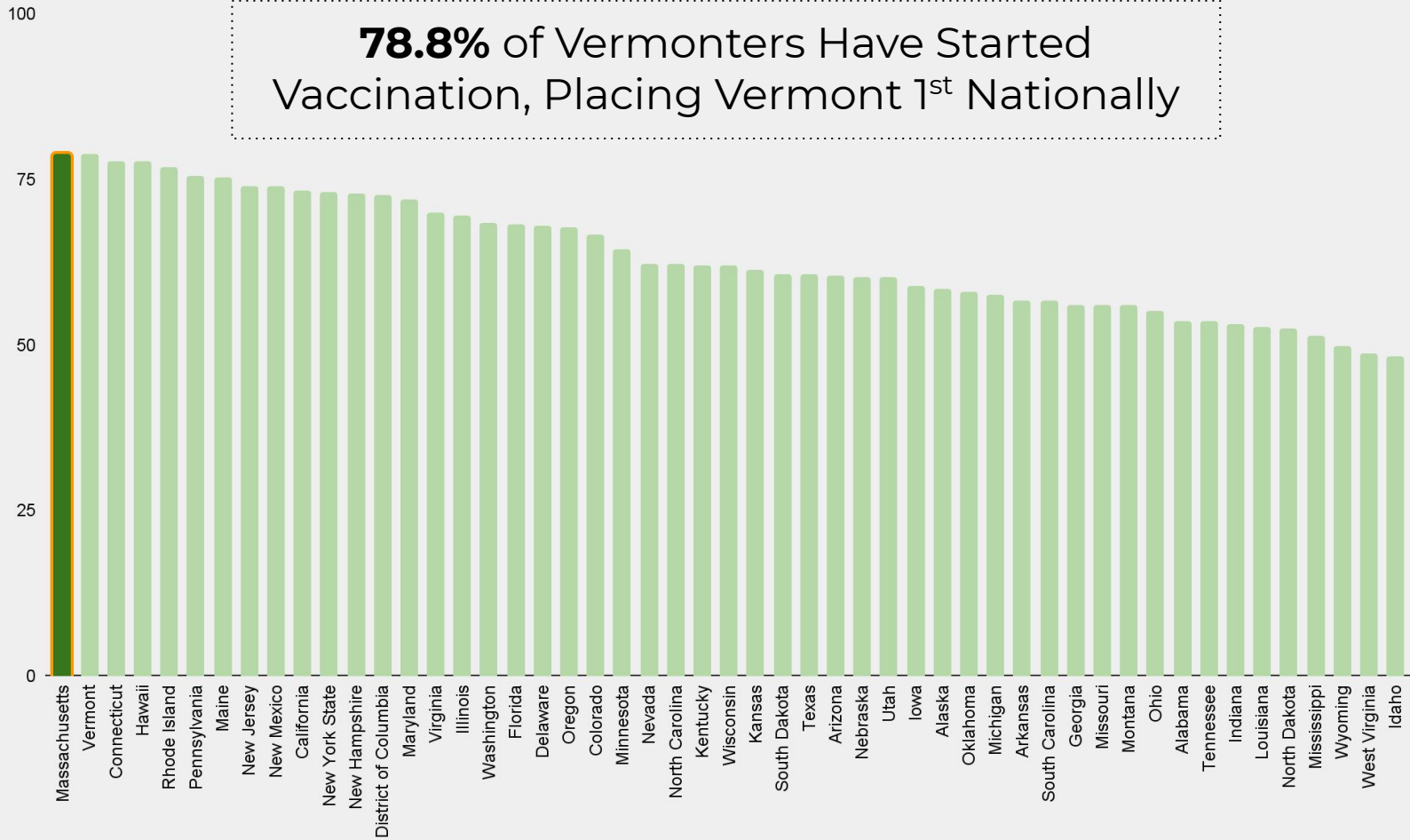
Source: CDC—October 18, 2021

79.9% of Eligible Vermonters Are Fully Vaccinated, Placing Vermont 2nd Nationally



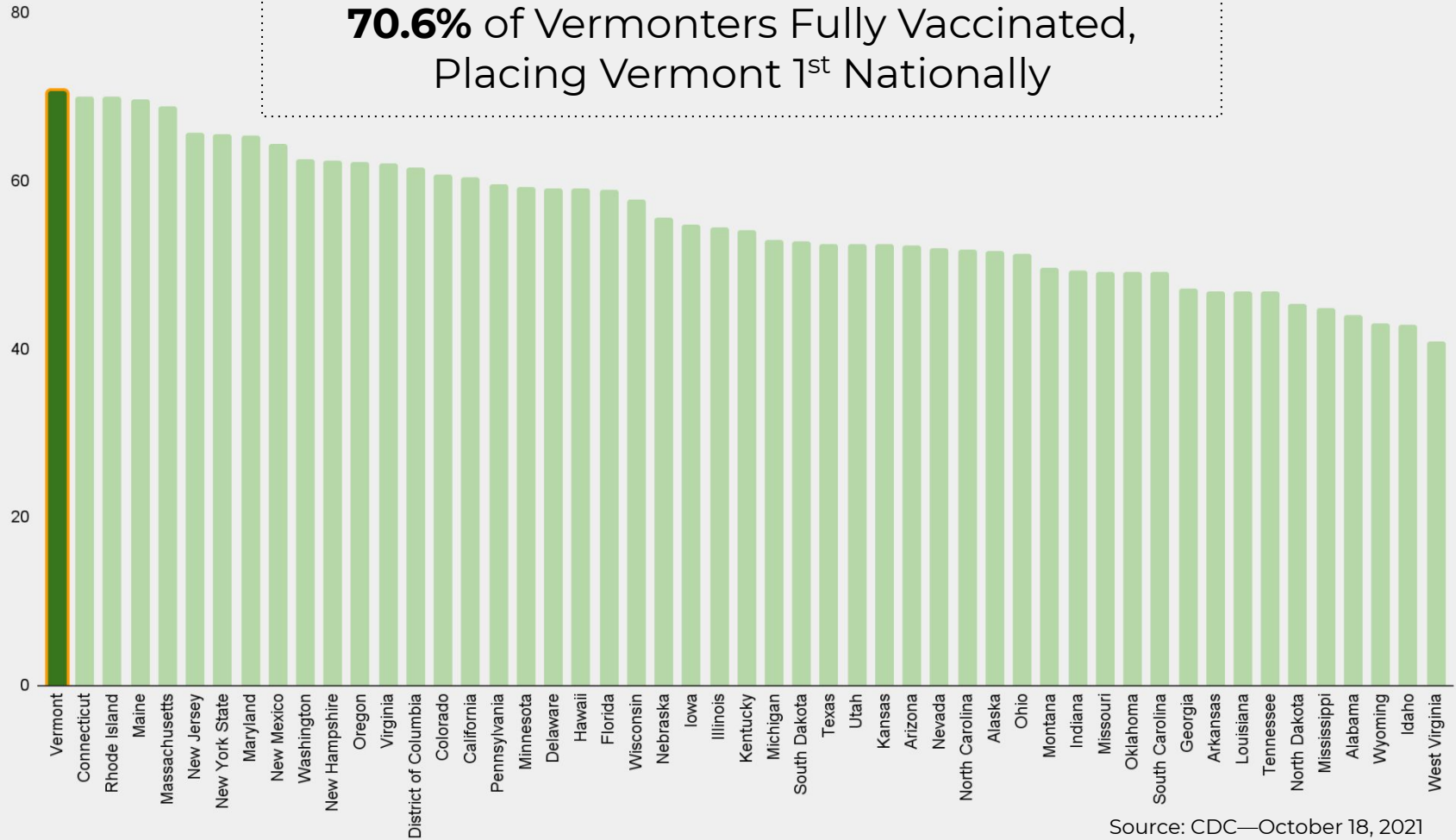
Source: CDC—October 18, 2021

78.8% of Vermonters Have Started Vaccination, Placing Vermont 1st Nationally



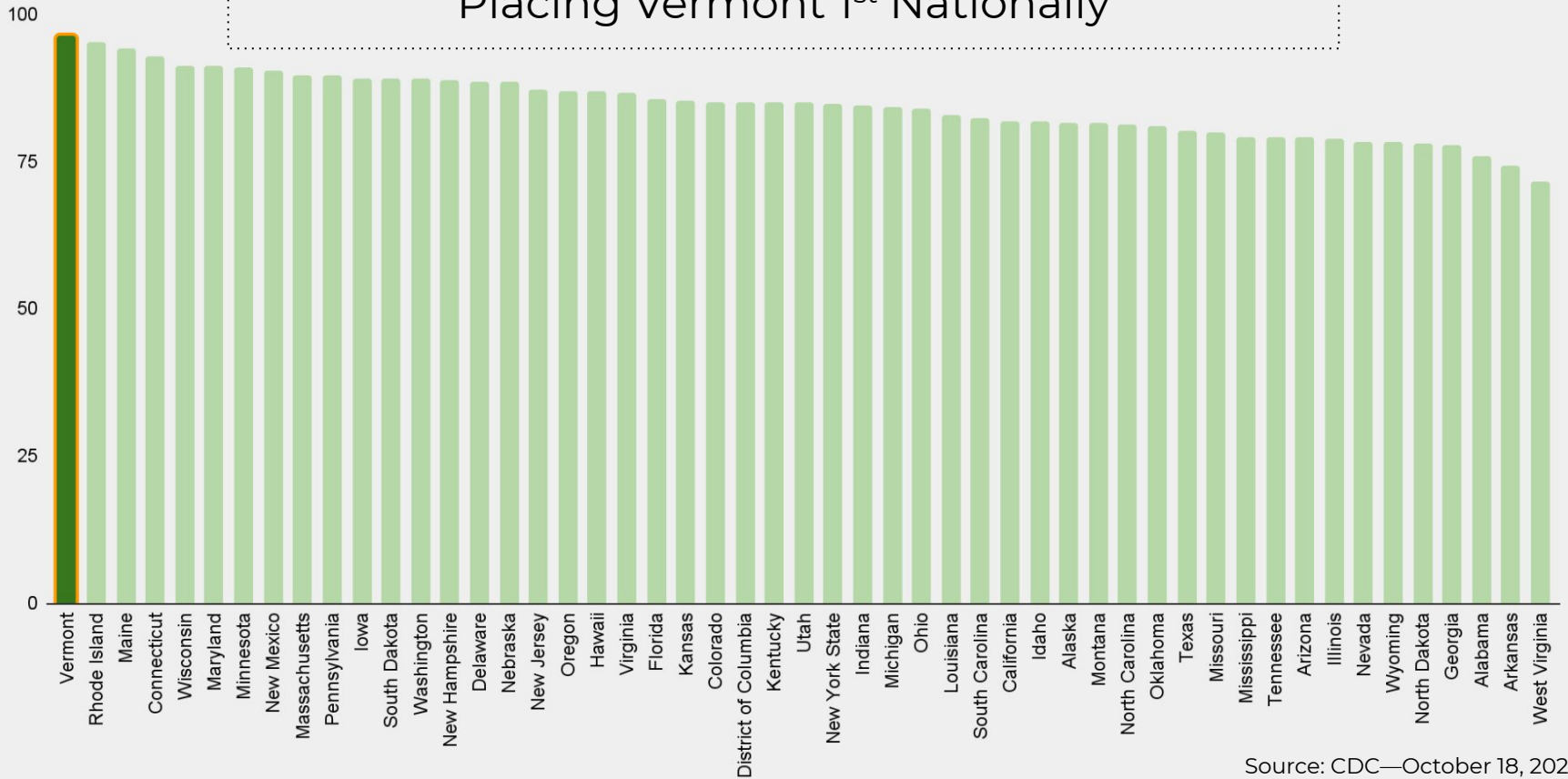
Source: CDC—October 18, 2021

70.6% of Vermonters Fully Vaccinated,
Placing Vermont 1st Nationally



Source: CDC—October 18, 2021

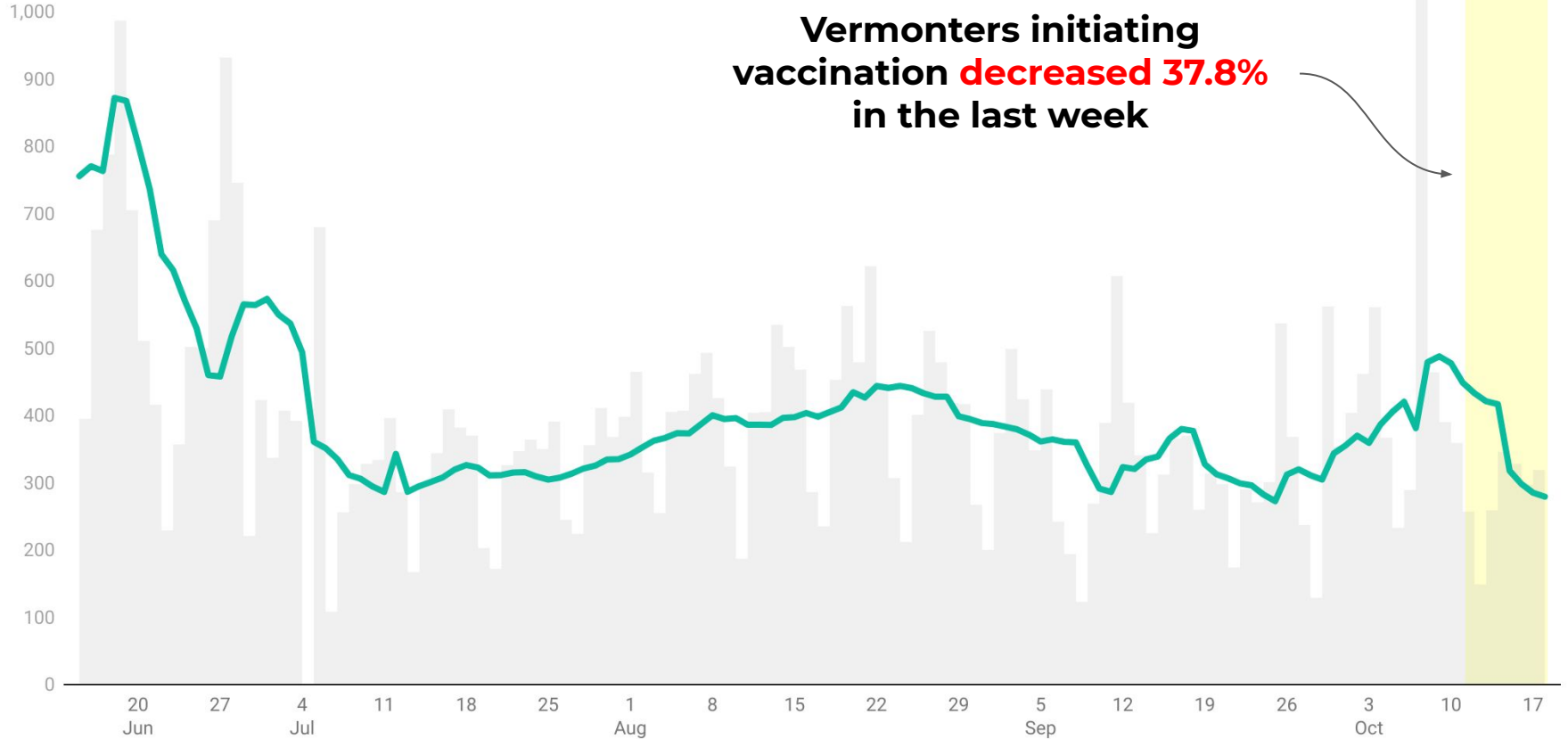
96.4% of 65 & Over Vermonters Fully Vaccinated,
Placing Vermont 1st Nationally



Source: CDC—October 18, 2021

Vermonters Initiating Vaccination By Day

— New Daily Vaccinations (7-Day Average)

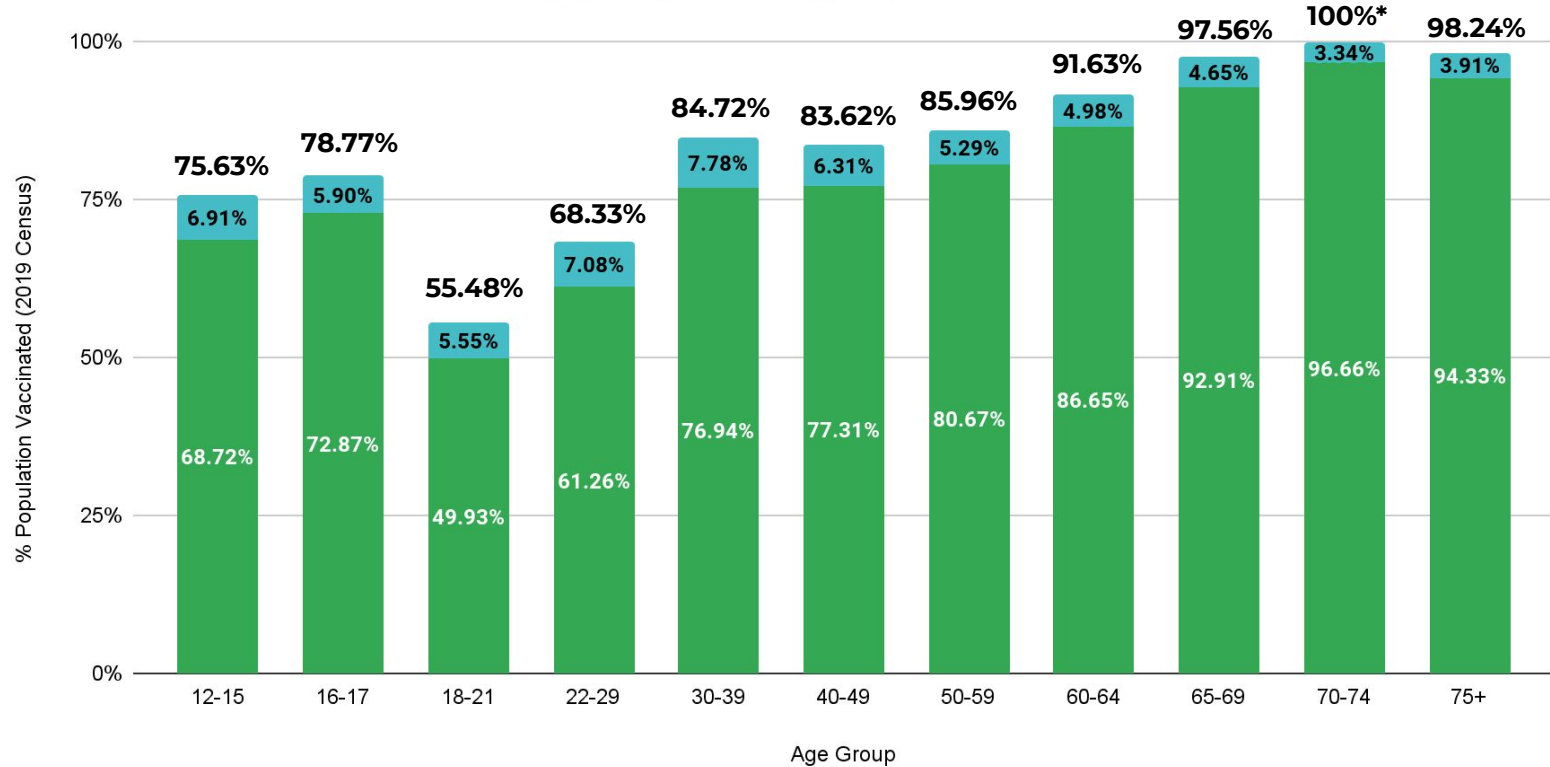


Vermonters initiating vaccination **decreased 37.8%** in the last week

Vermont Vaccination Progress

By Age Band

Partially Vaccinated Fully Vaccinated



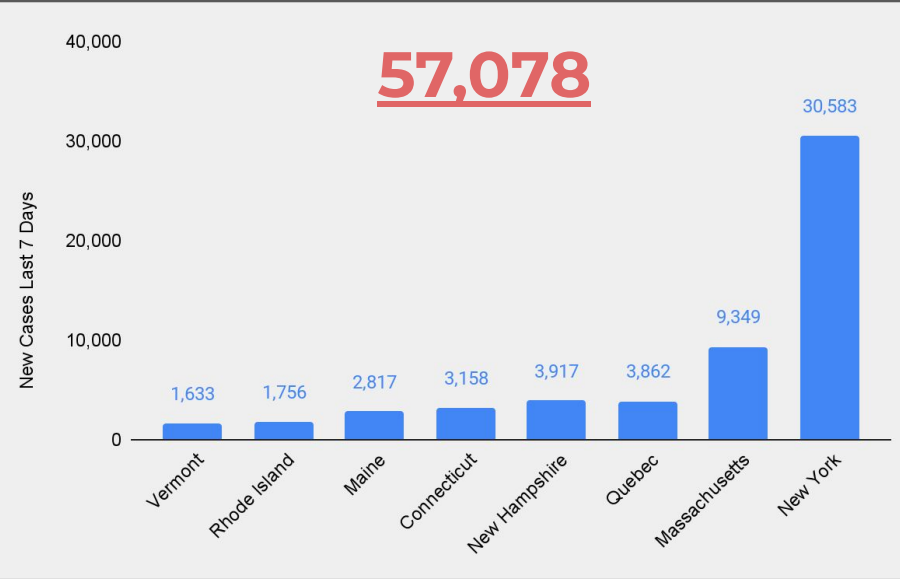
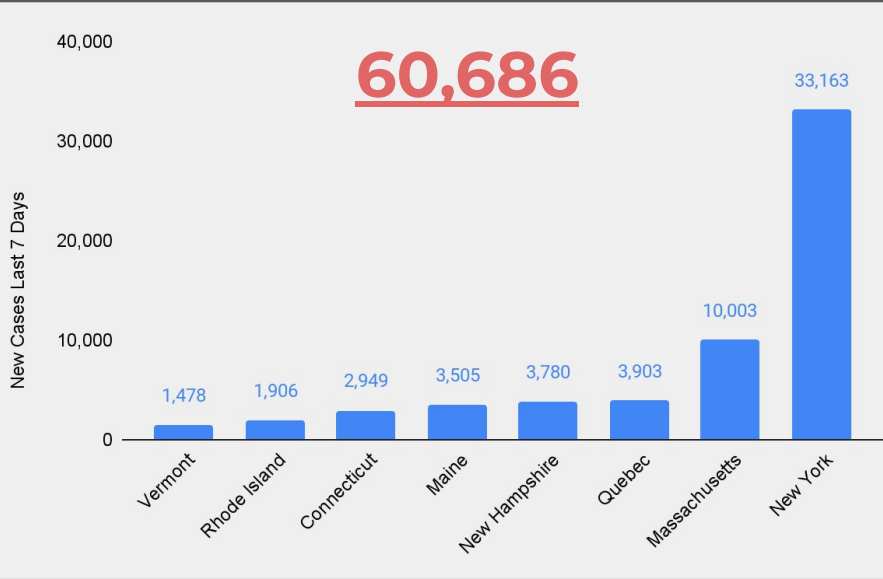
Regional Data

Regional Cases

6.0% Decrease in New Cases

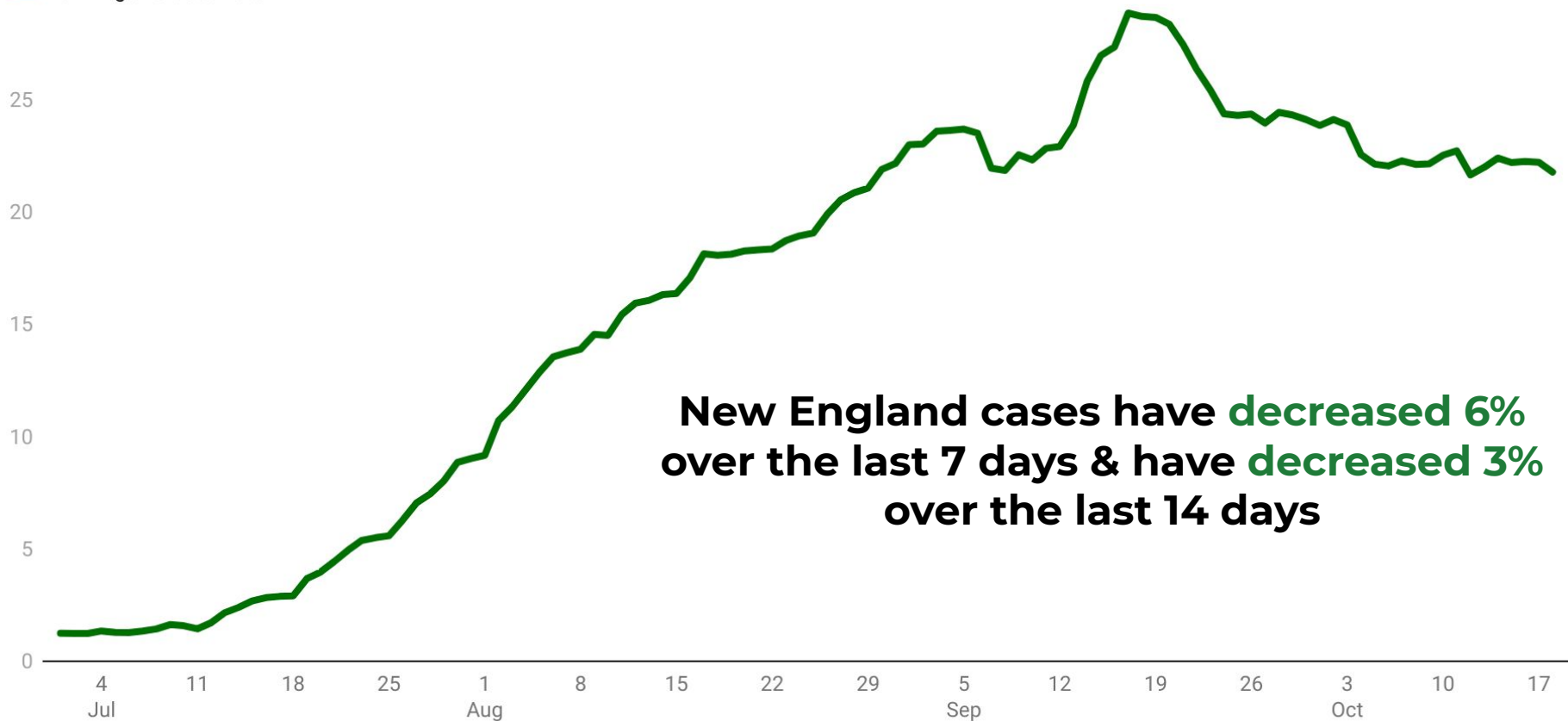
New Cases October 5th to October 11th

New Cases October 12th to October 18th



New England COVID-19 Cases Per 100K (7-Day Average)

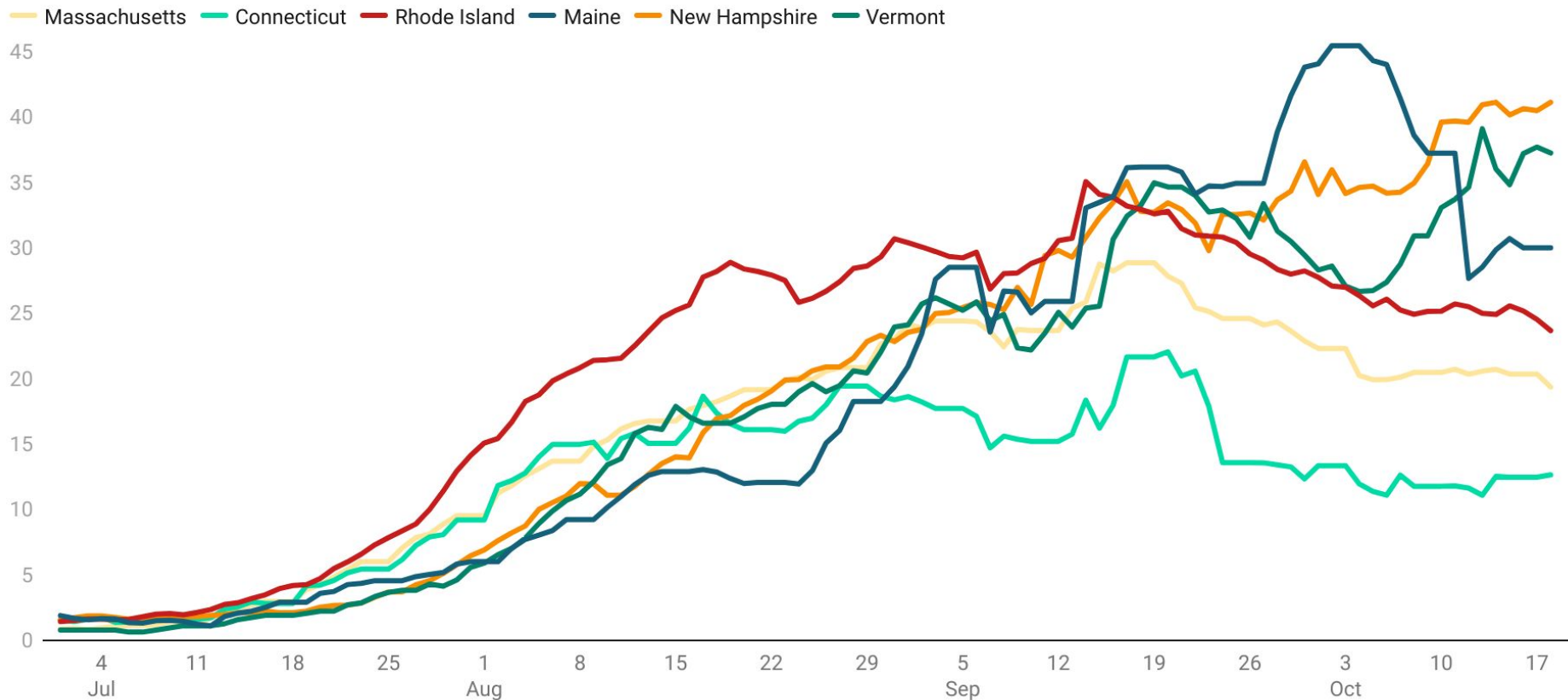
— New England Case Rate



New England cases have decreased 6% over the last 7 days & have decreased 3% over the last 14 days

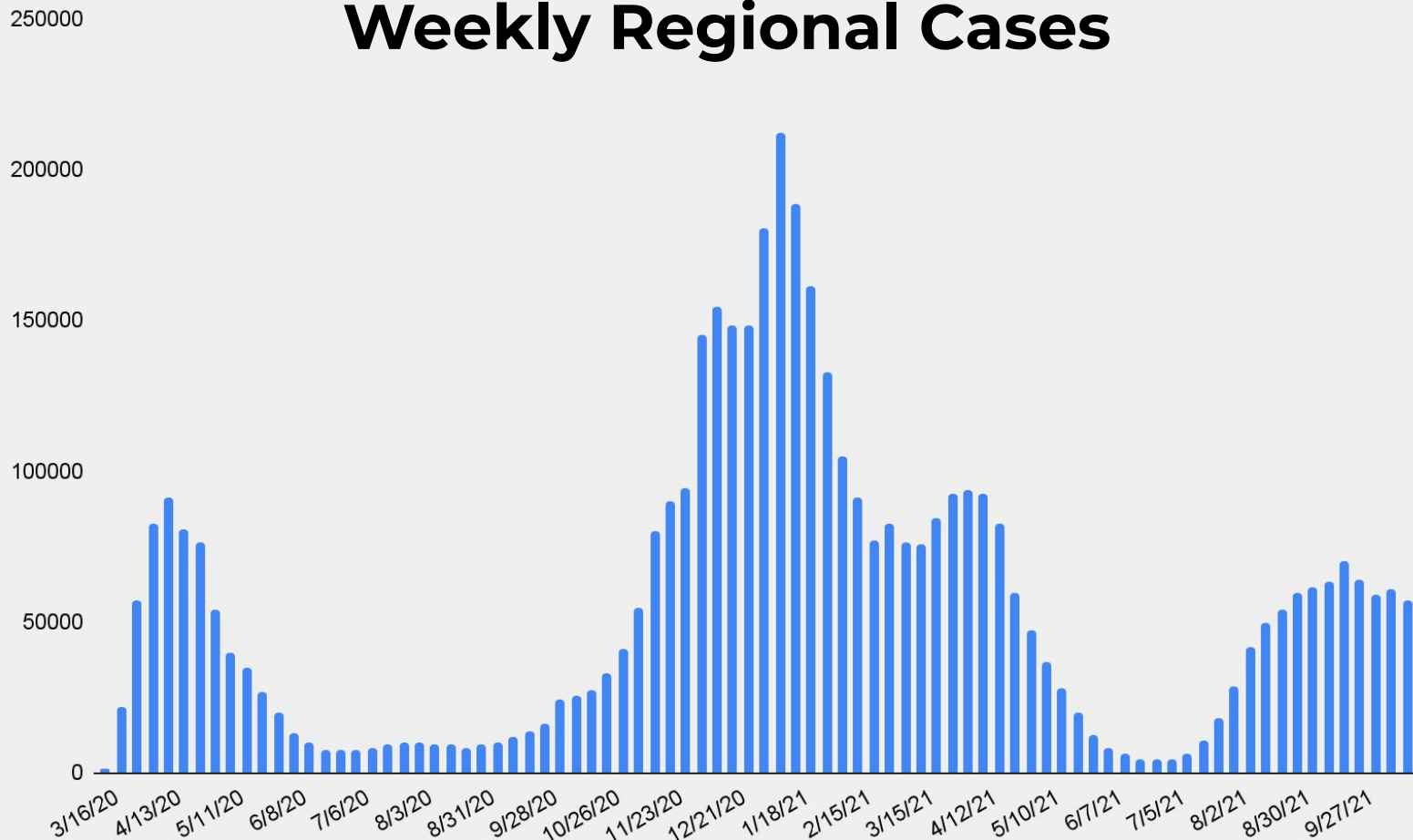
New England COVID-19 Case Trends

7-Day Average Cases Per 100K



Sources: State Health Depts.—October 18, 2021 (includes: CT, ME, MA, NH, RI & VT - and adjusted for Indigenous Peoples' Day Weekend)

Weekly Regional Cases

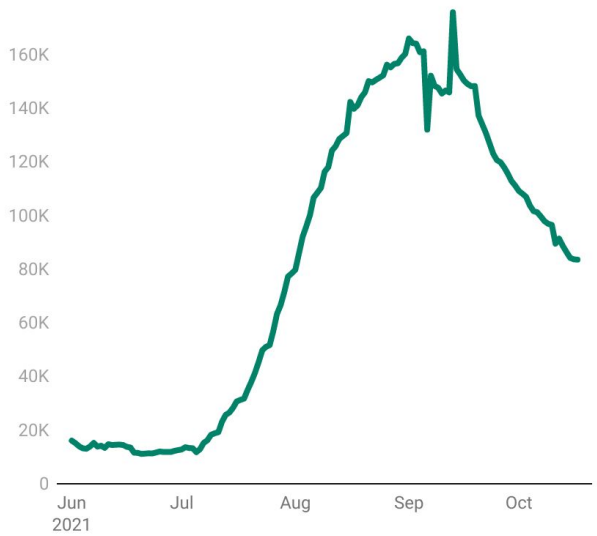


Sources: State Health Depts.—October 18, 2021 (includes: CT, ME, MA, NH, RI & VT - and adjusted for Indigenous Peoples' Day Weekend)

National Data

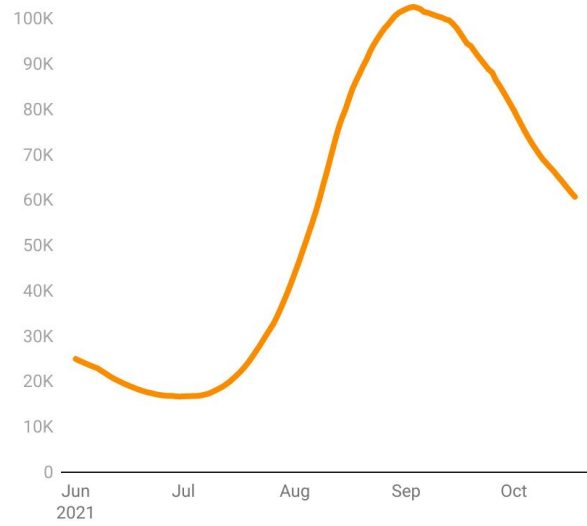
U.S. Infections, Hospitalizations, & Deaths (7-Day Average)

13.4% Decrease
Over last 7 days



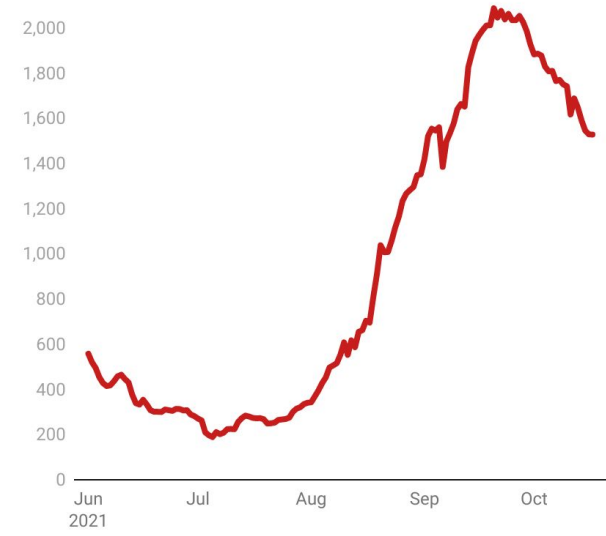
Infections

9.8% Decrease
Over last 7 days



Hospitalizations
(Current)

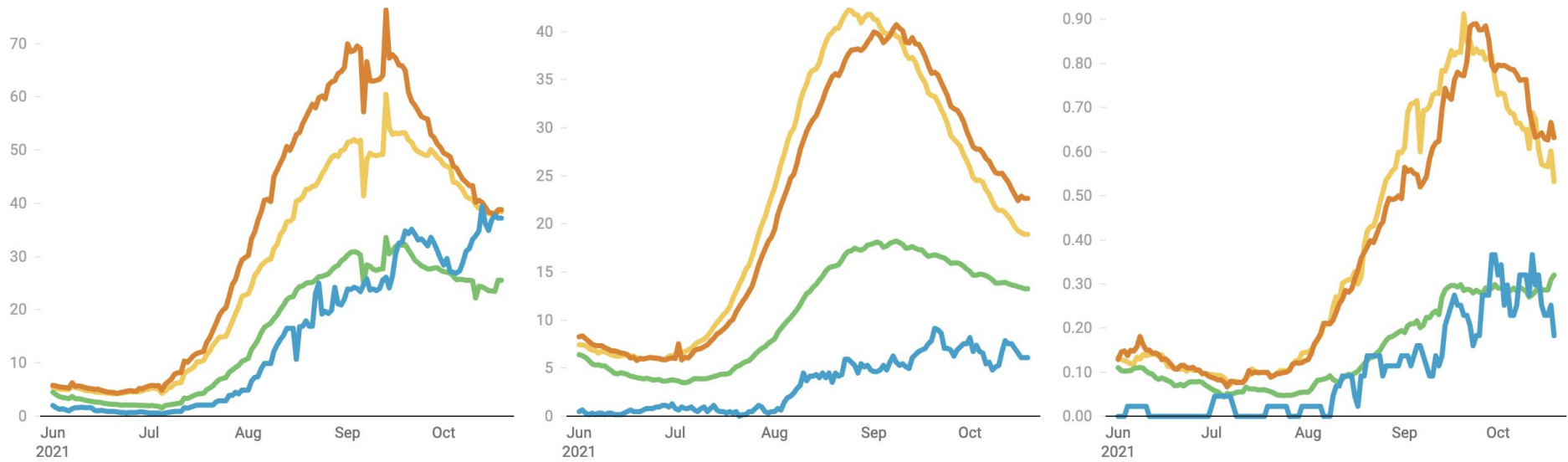
12.3% Decrease
Over last 7 days



Deaths

Infections, Hospitalizations, & Deaths by Percentage of State Population Vaccinated

Bottom Third Vaccinated States Middle Third Vaccinated States Top Third Vaccinated States Vermont



Infections per 100K

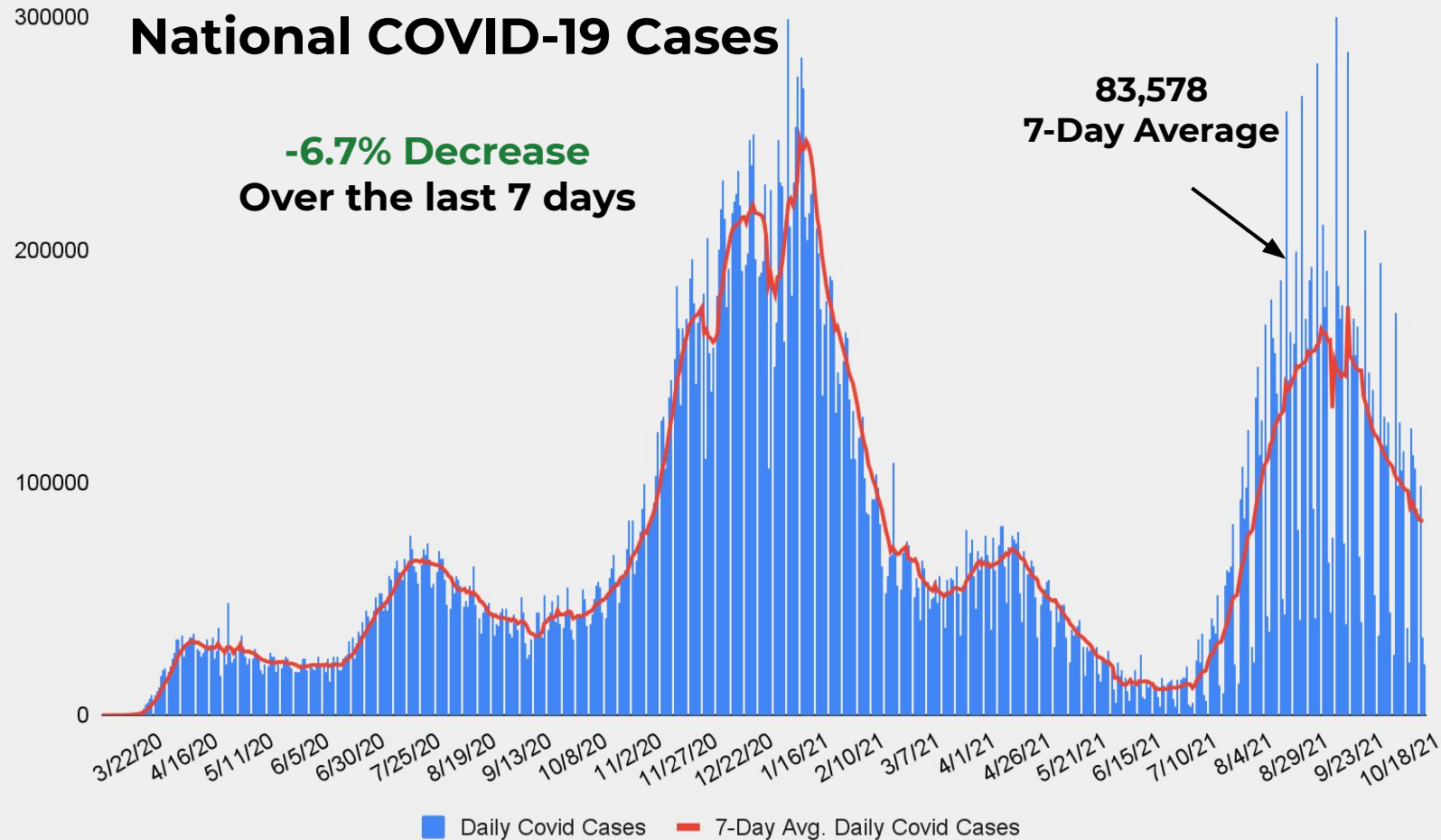
Hospitalizations per 100K
(Current)

Deaths per 100K

National COVID-19 Cases

**-6.7% Decrease
Over the last 7 days**

**83,578
7-Day Average**

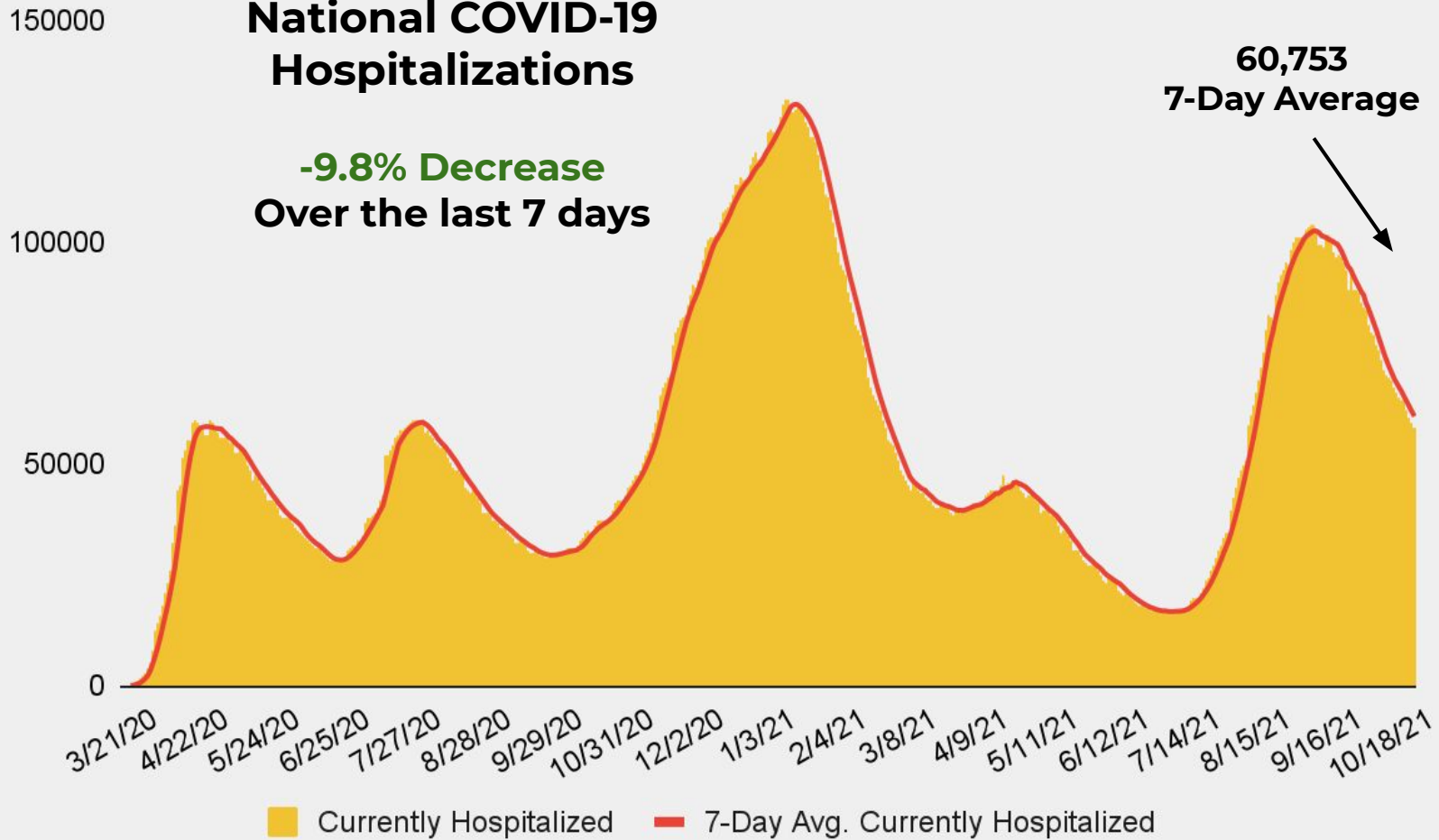


Source: Covid Tracking Project; NYT & CDC—October 18, 2021

National COVID-19 Hospitalizations

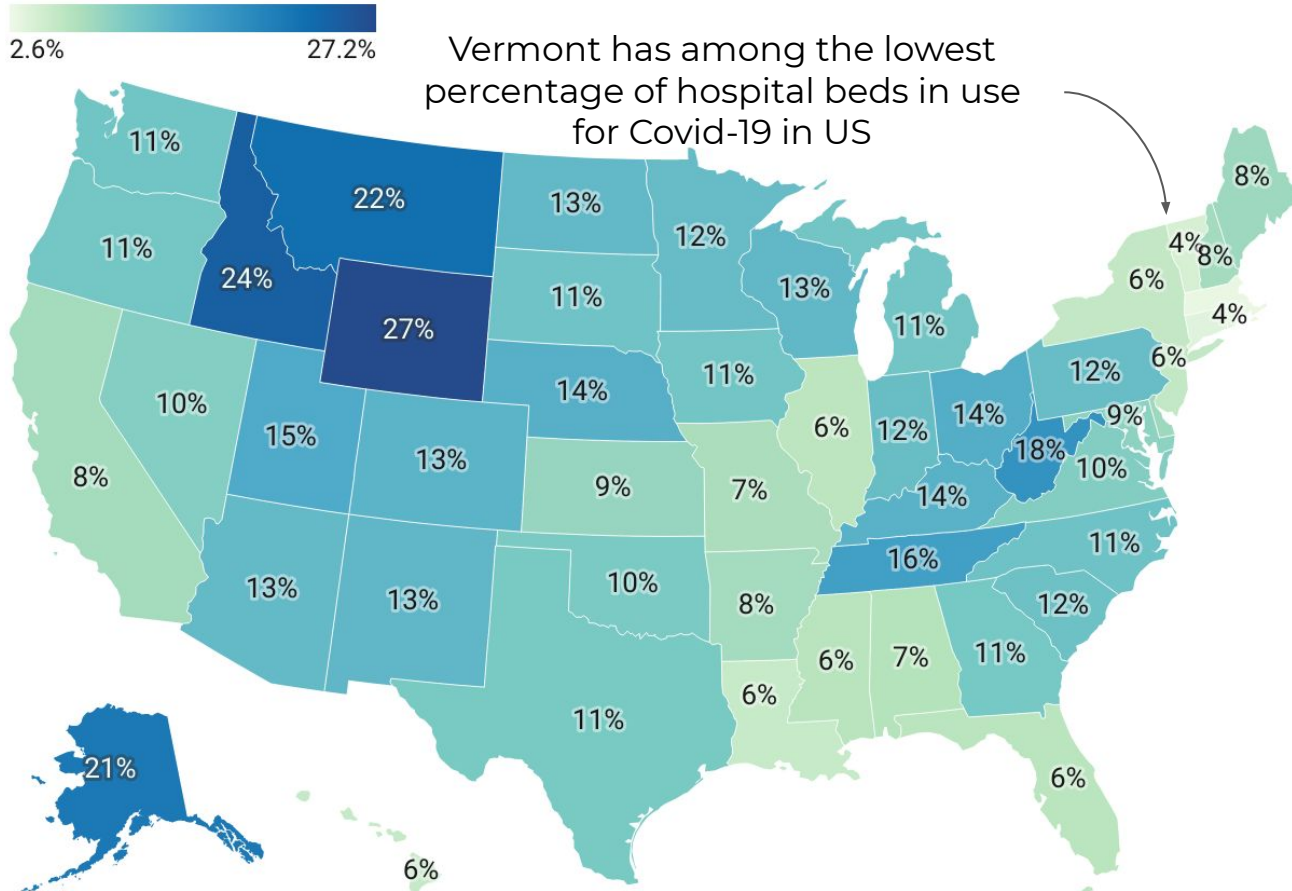
**-9.8% Decrease
Over the last 7 days**

**60,753
7-Day Average**



Source: Covid Tracking Project; NYT & CDC—October 18, 2021

Percent of All Hospital Beds Used for COVID-19



National COVID-19 Deaths

6000

-13.4% Decrease
Over the last 7 days

1,528
7-Day Average

4000

2000

0

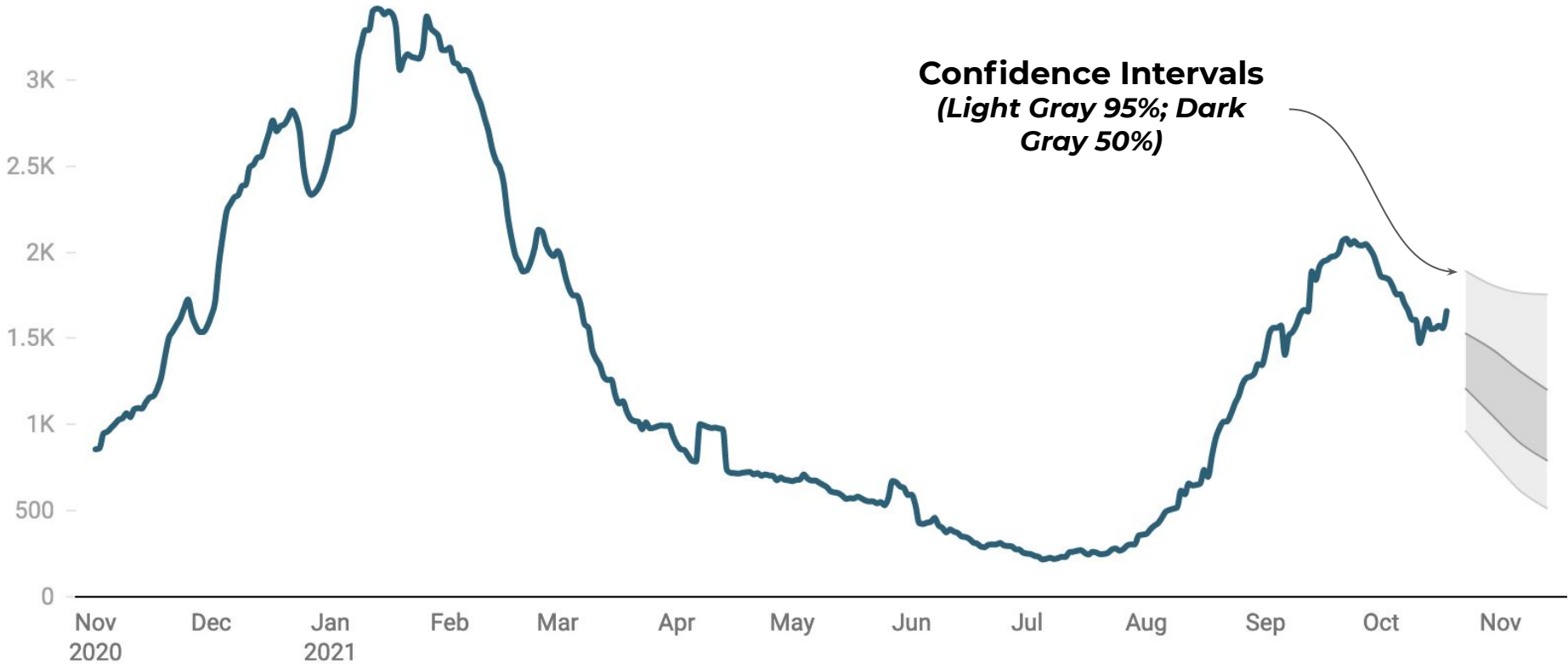
3/3/20 3/25/20 4/16/20 5/8/20 5/30/20 6/21/20 7/13/20 8/4/20 8/26/20 9/17/20 10/9/20 10/31/20 11/22/20 12/14/20 1/5/21 1/27/21 2/18/21 3/12/21 4/3/21 4/25/21 5/17/21 6/8/21 6/30/21 7/22/21 8/13/21 9/4/21 9/26/21 10/18/21

■ Daily Deaths ■ 7-Day Avg. Daily Deaths

Source: Covid Tracking Project; NYT & CDC—October 18, 2021 (excludes historic Arkansas data added 10/11/2021)

US COVID-19 Death Confidence Intervals

Calculated as a 7-day mean



Source: Centers for Disease Control and Prevention—October 11, 2021; created with datawrapper

RESTART VERMONT

Reopening Metrics

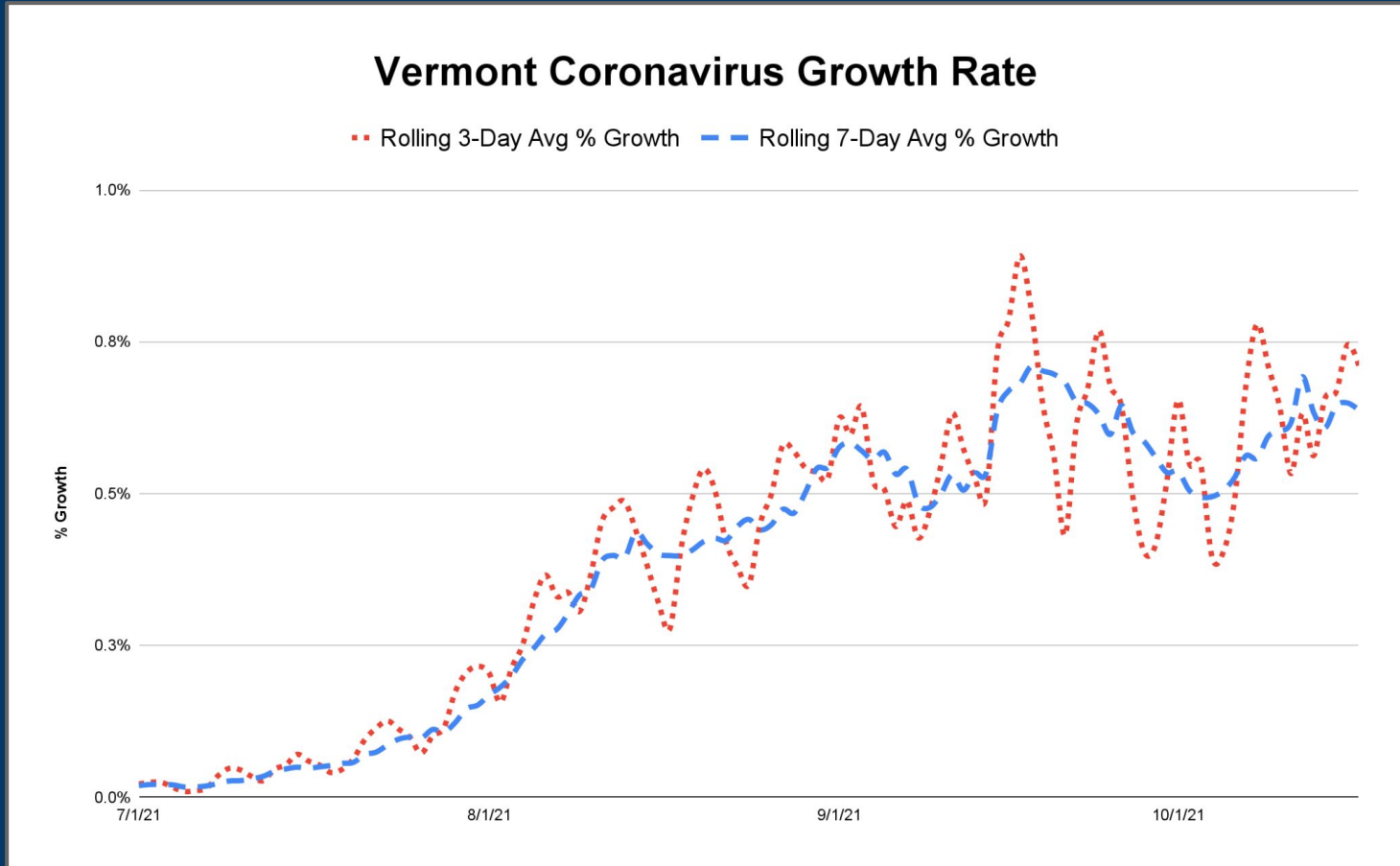
1. Syndromic Surveillance (*retired*)
2. Viral Growth & Reproductive Rates
3. Percentage of New Positive Tests
4. Hospital & Critical Care Bed Capacity

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

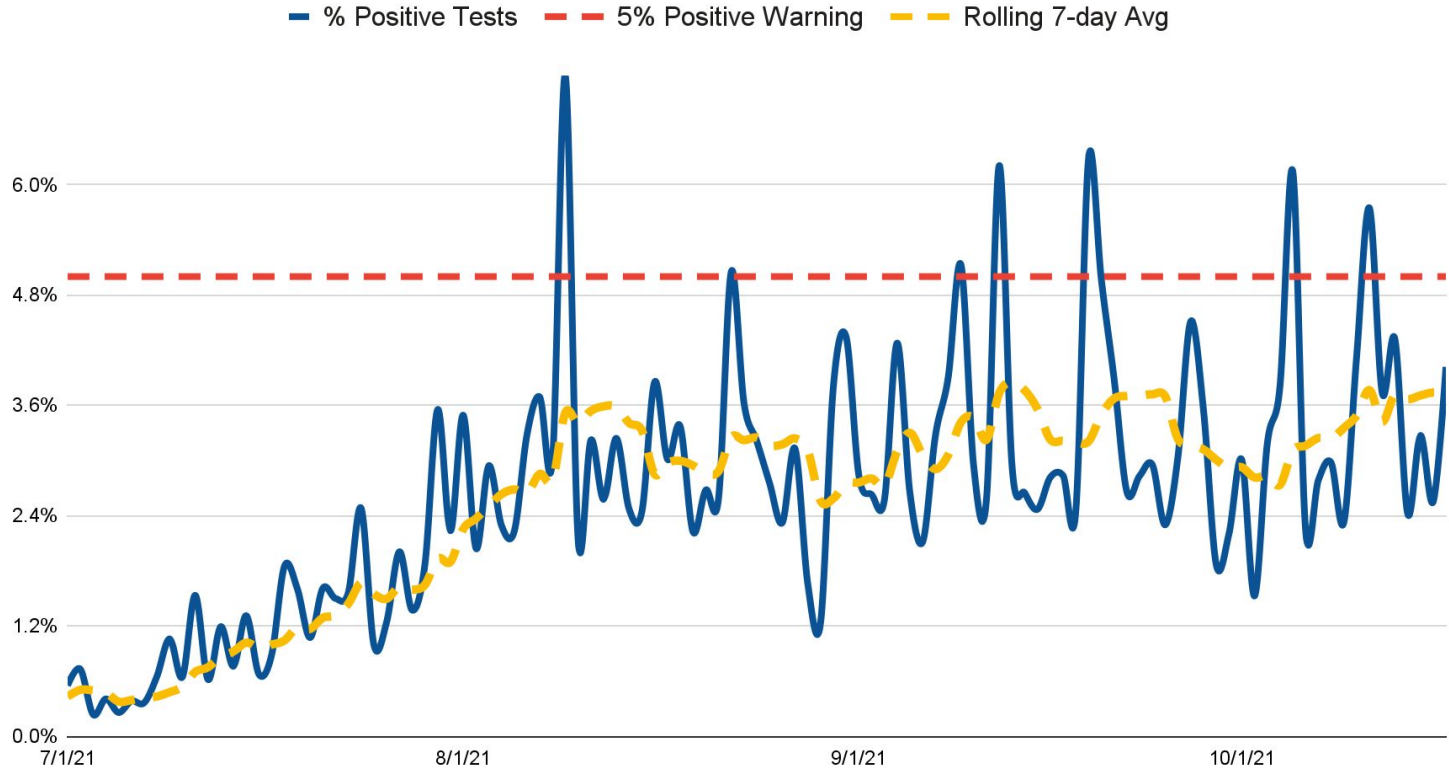
Vermont Department of Health no longer updating syndromic surveillance on a weekly basis.

Viral Growth & Reproductive Rates

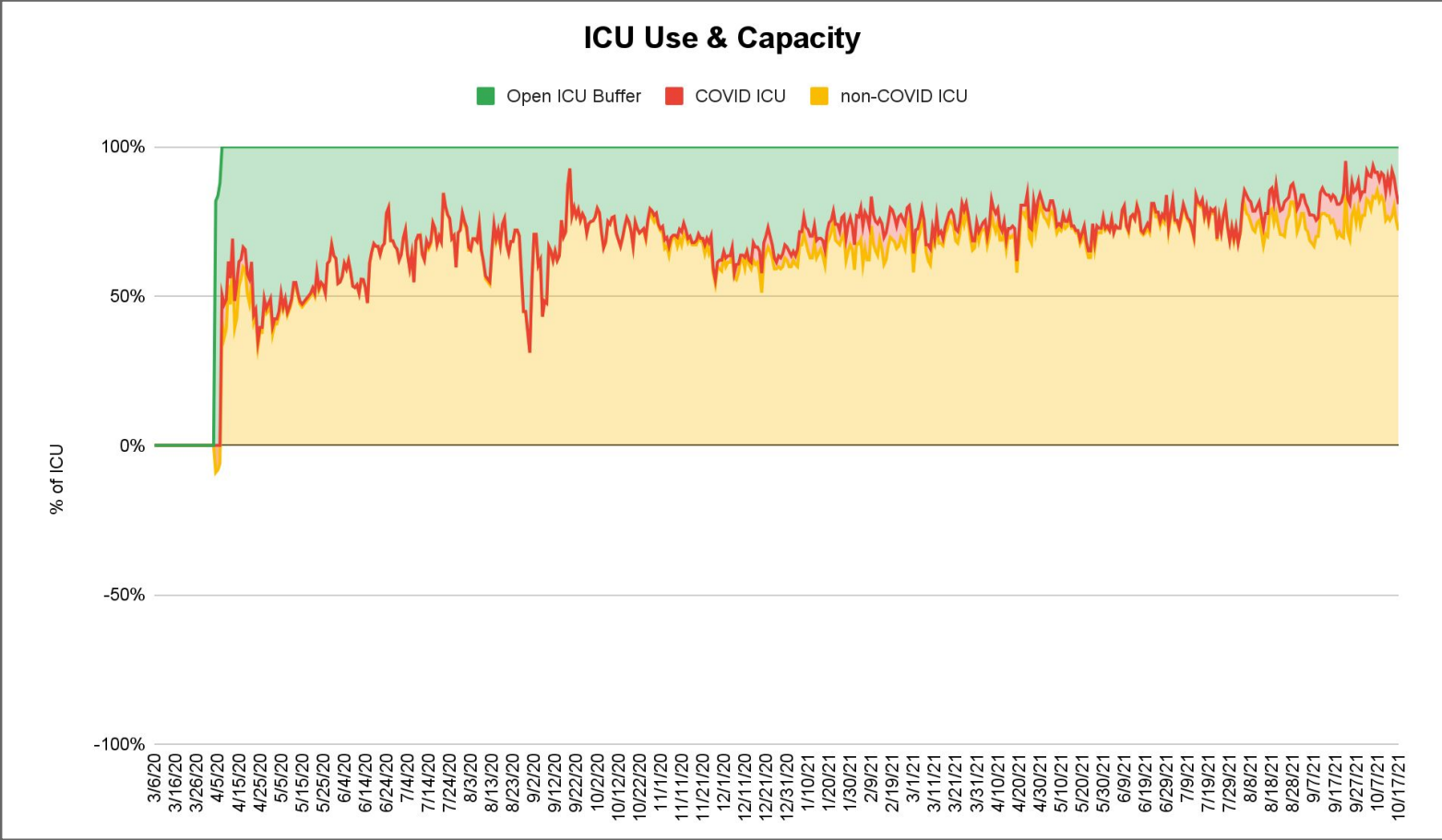


Percentage of New Positive Tests

Percent Tests Yielding New Positive COVID-19 Cases



Hospital & Critical Care Beds



Source: Vermont Department of Health

Vermont Testing

