

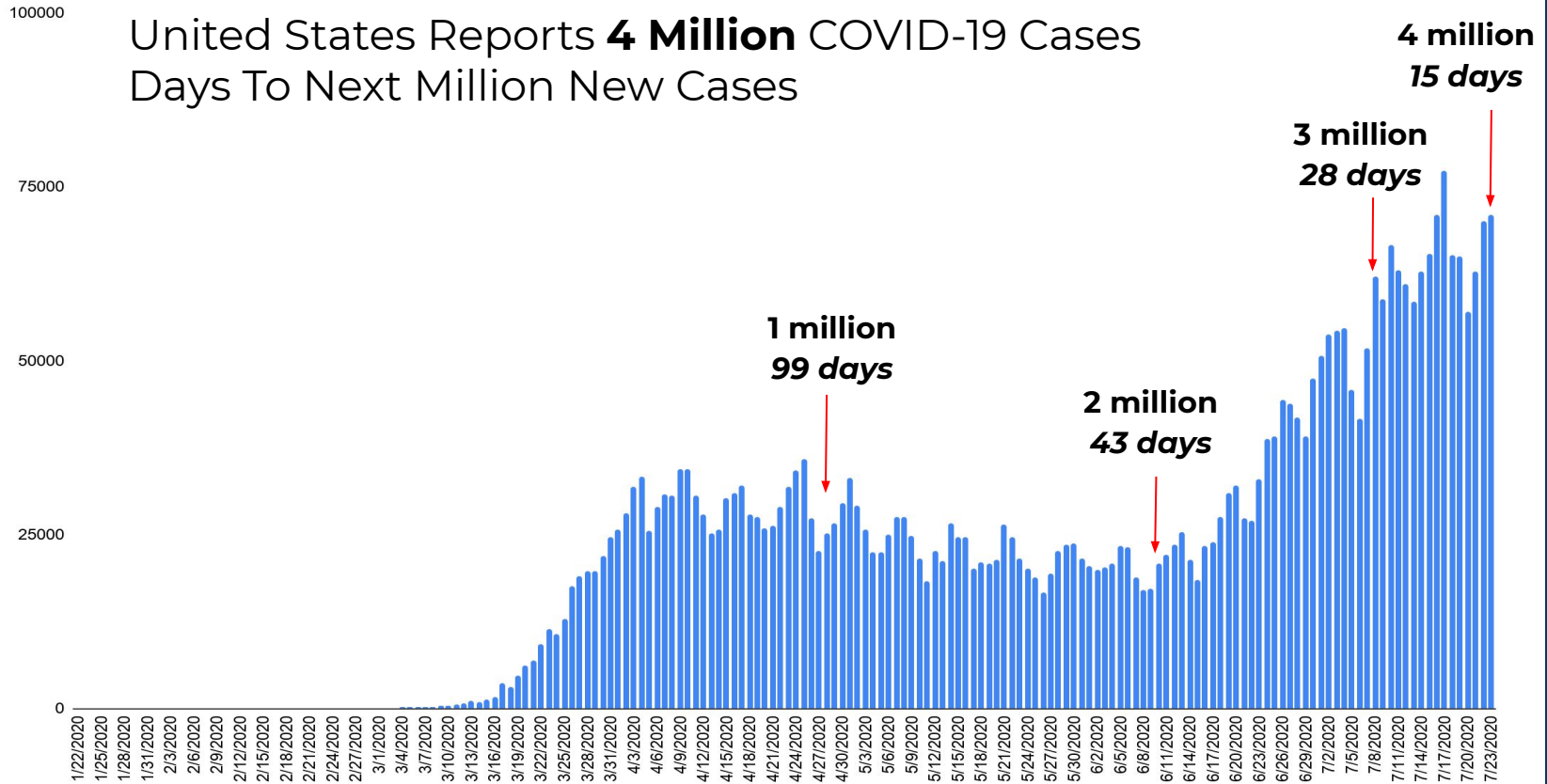
# **COVID-19 Modeling**

## **July 24, 2020**

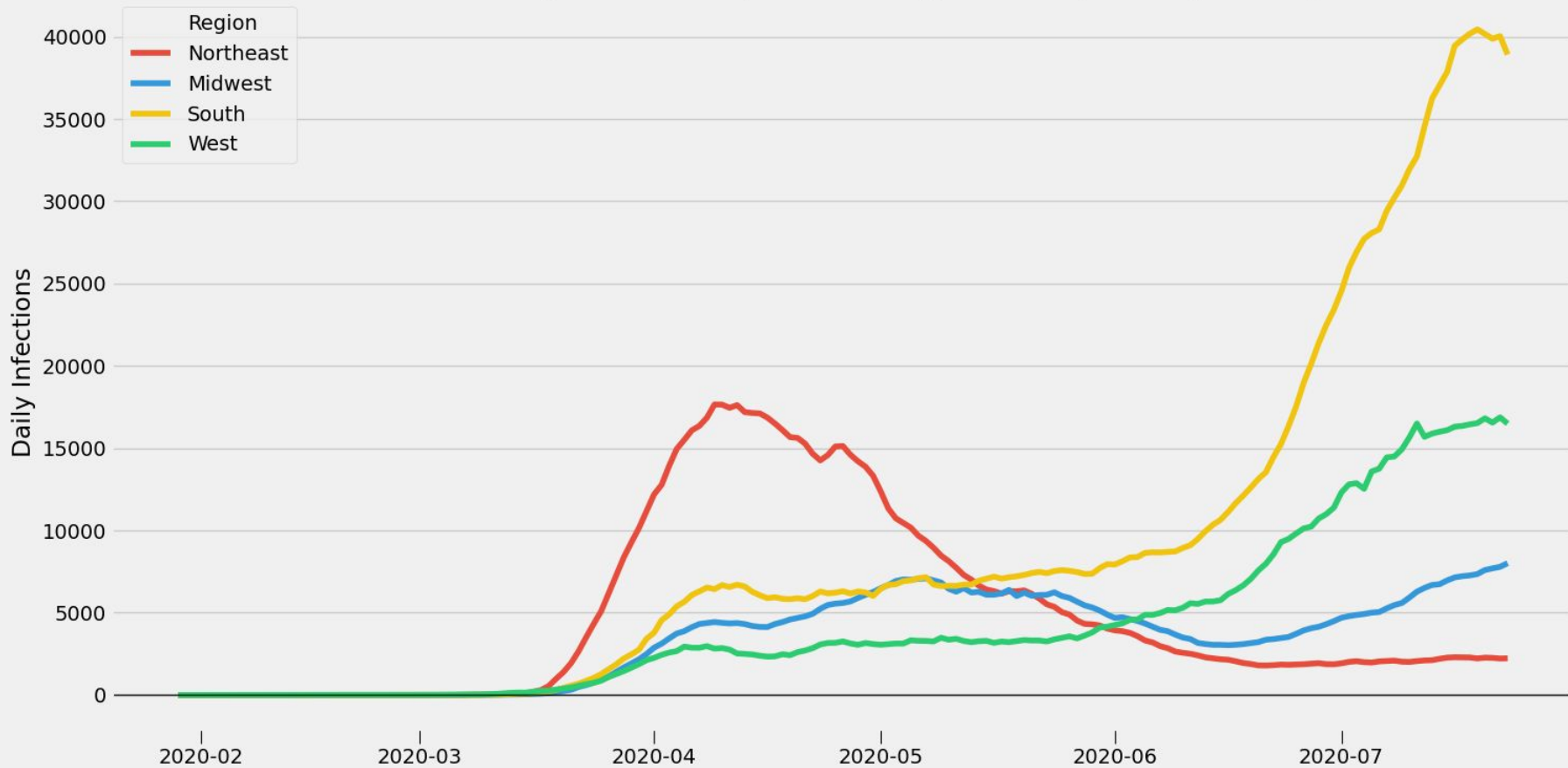
Presentation available at:  
[dfr.vermont.gov](https://dfr.vermont.gov)

# National Data

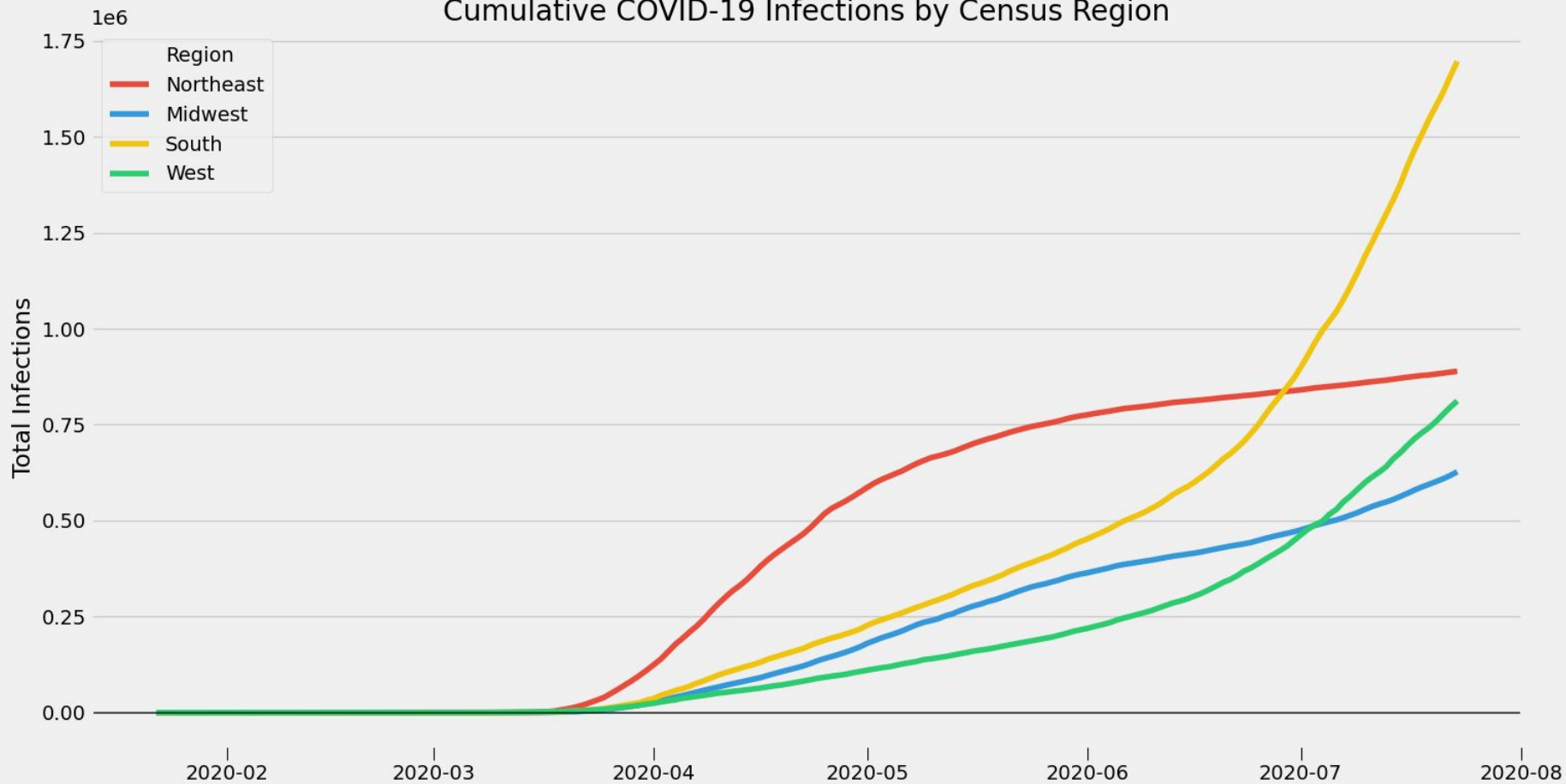
# United States Reports **4 Million** COVID-19 Cases Days To Next Million New Cases



COVID-19 Daily Infections by Census Region (7-Day Moving Average)

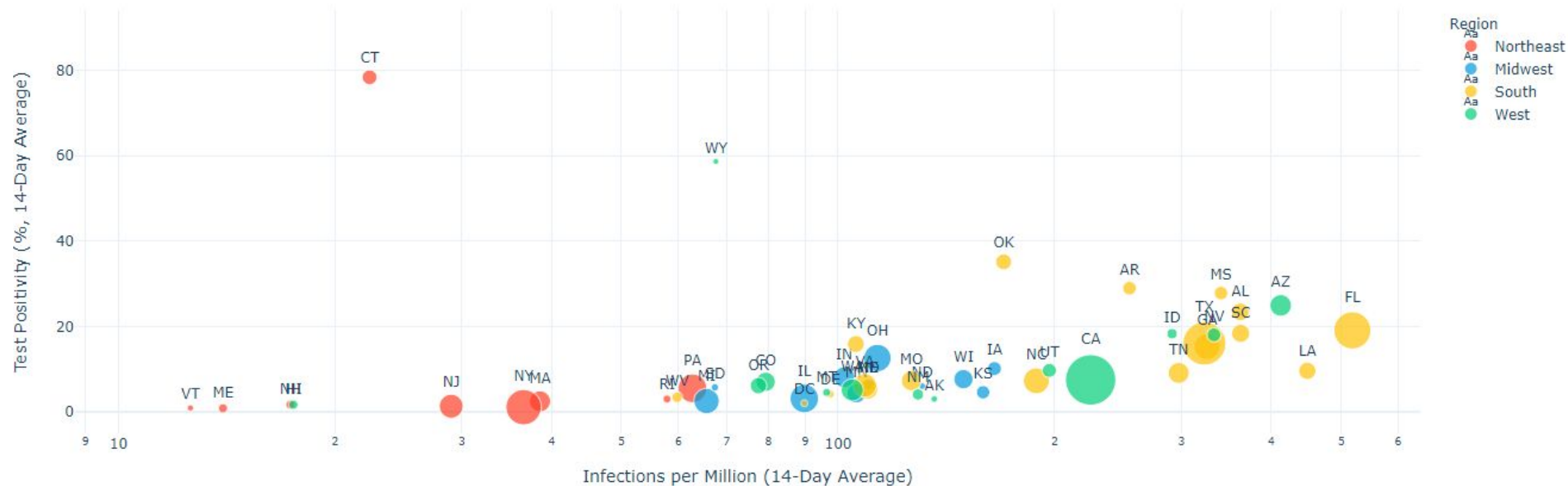


## Cumulative COVID-19 Infections by Census Region

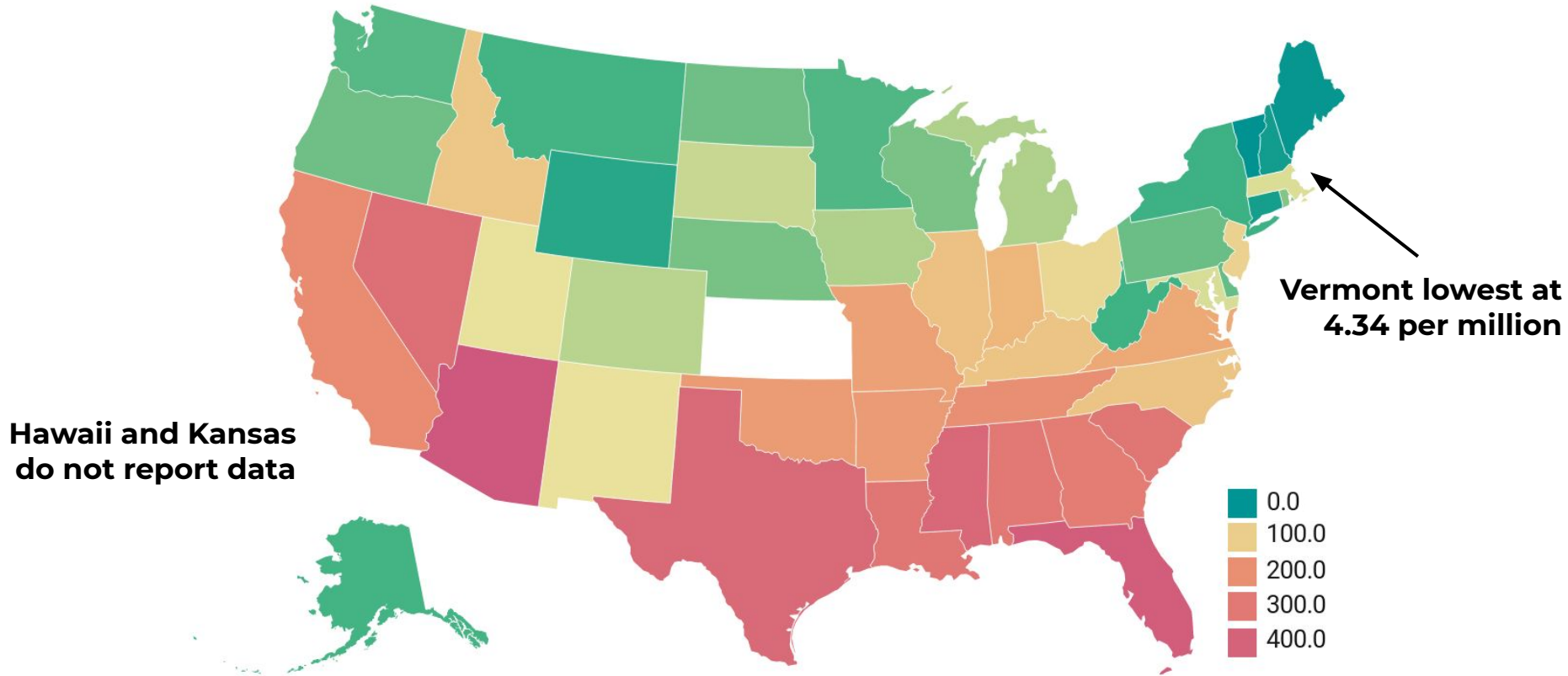


# National Trends

Infections per Million and Percent Positive by Region



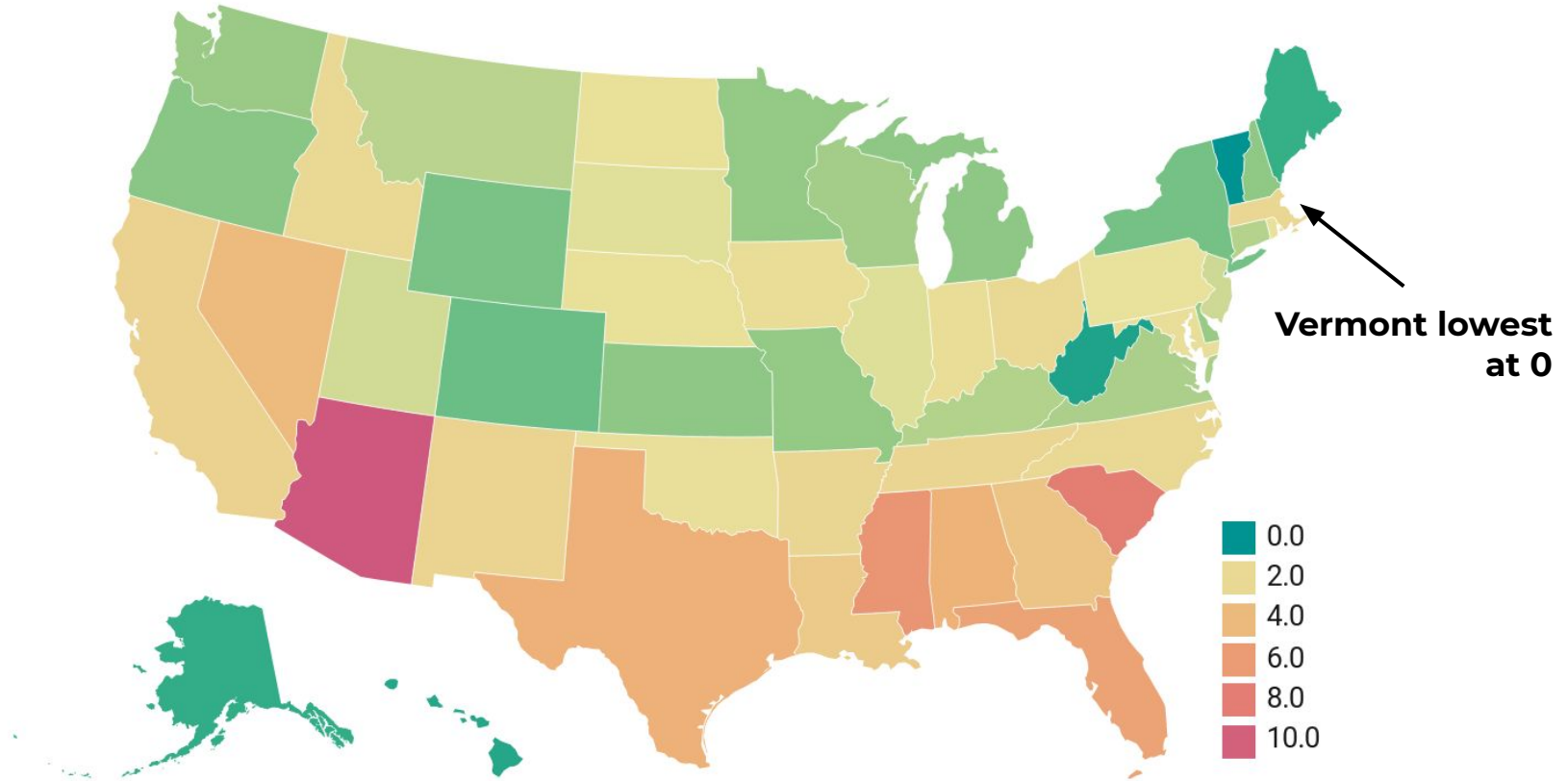
# COVID-19 Hospitalizations per Million (7-Day Avg)



Vermont DFR

Source: COVID Tracking Project • Created with Datawrapper

# COVID-19 Deaths per Million (7-Day Avg)

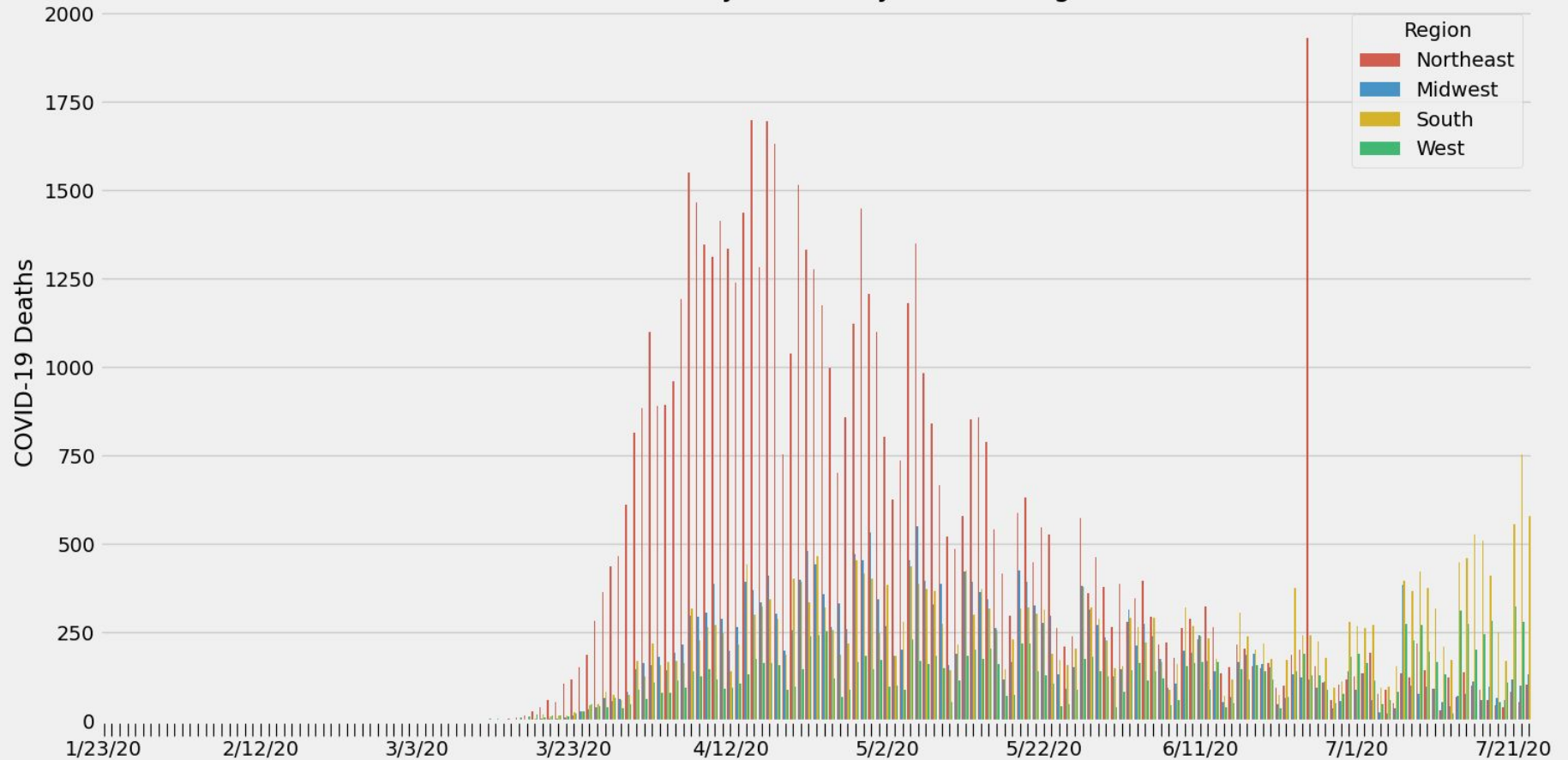


Vermont DFR

Source: COVID Tracking Project • Created with Datawrapper



## COVID-19 Daily Deaths by Census Region

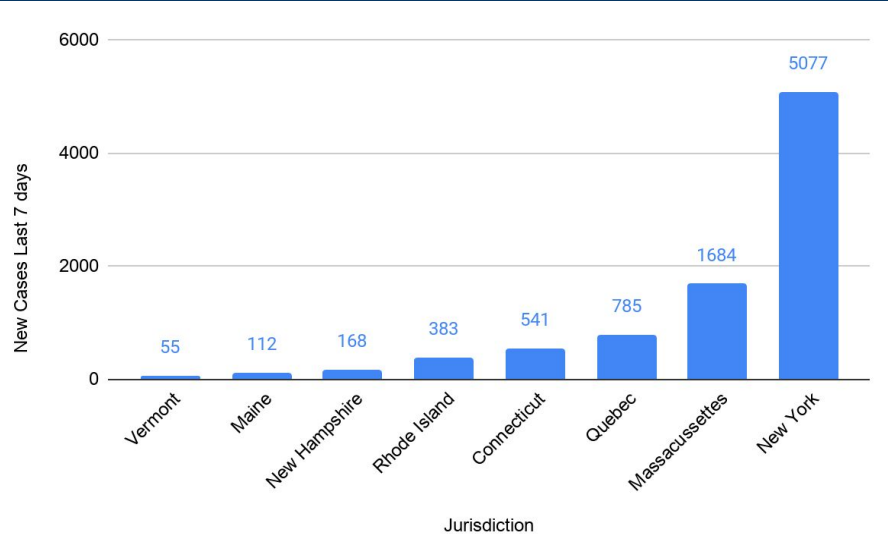


# Regional Data

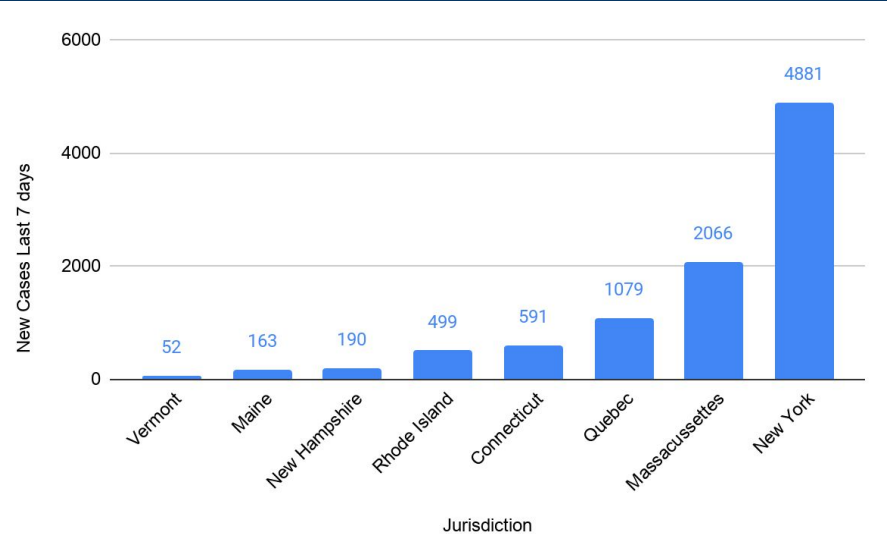
# Regional Monitoring: New Cases Last 7 Days

**8.13% Increase in New Confirmed Cases**

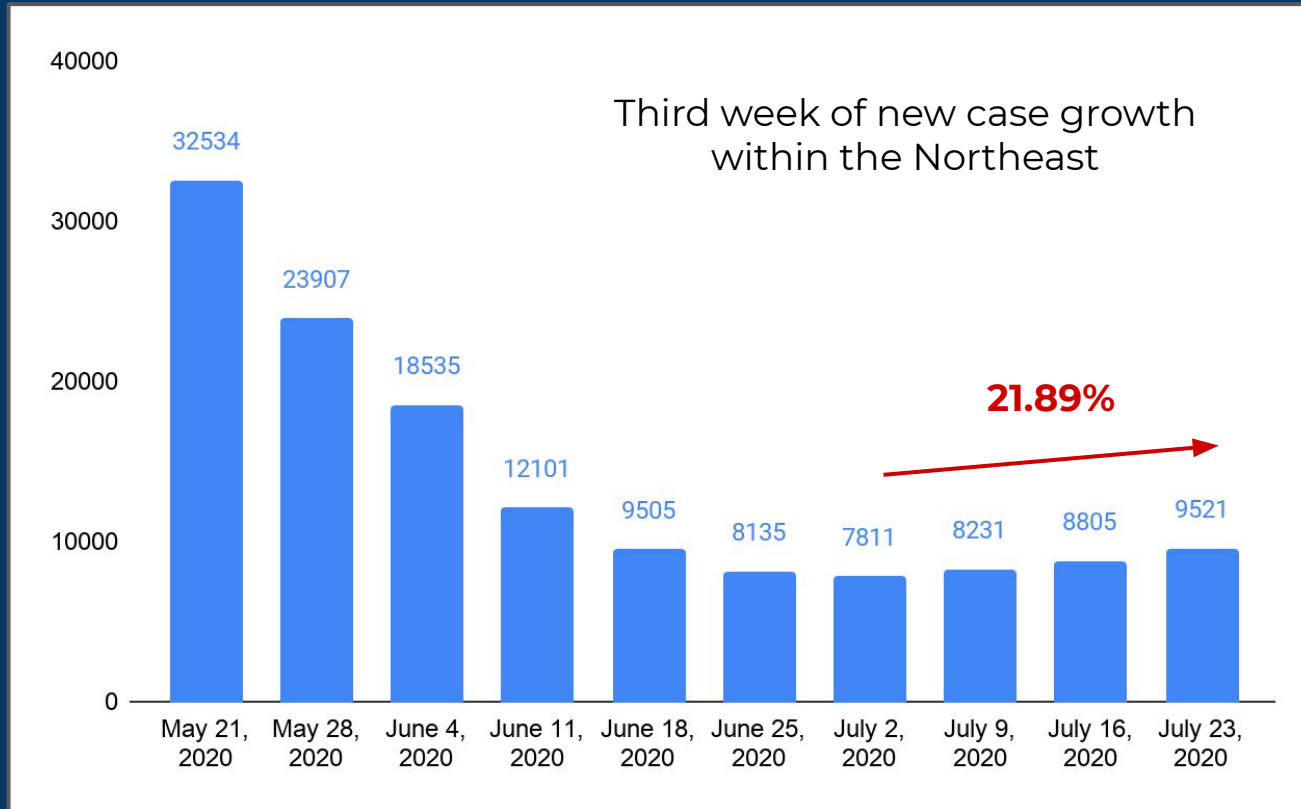
Positive Cases July 9th to July 16th



Positive Cases July 17th to July 23rd

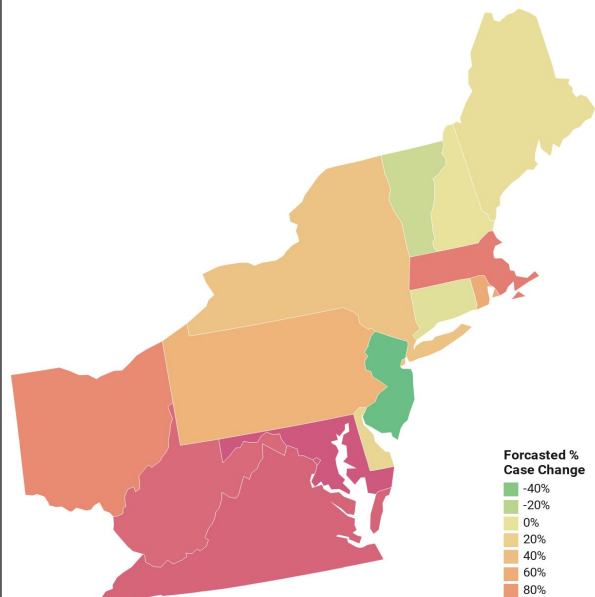


# Regional Monitoring: Week Over Week New Case Growth Since May 21, 2020



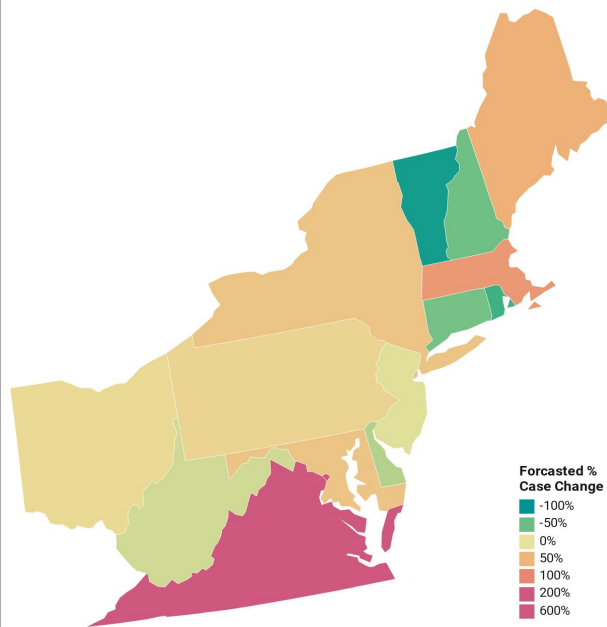
# Modeling Regional Disease Growth

**Oliver Wyman Model**  
July 19, 2020 to August 9, 2020



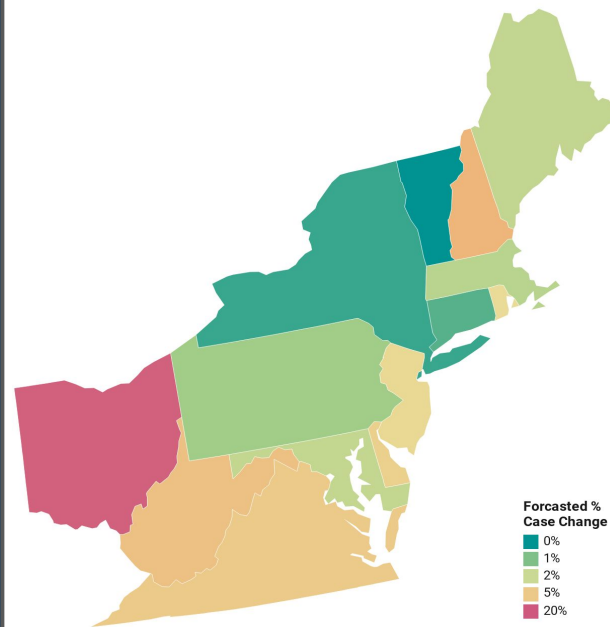
Source: Oliver Wyman • Created with Datawrapper

**IHME Model**  
July 20, 2020 to November 1, 2020



Source: IHME • Created with Datawrapper

**Northeastern Model**  
July 20, 2020 to August 8, 2020



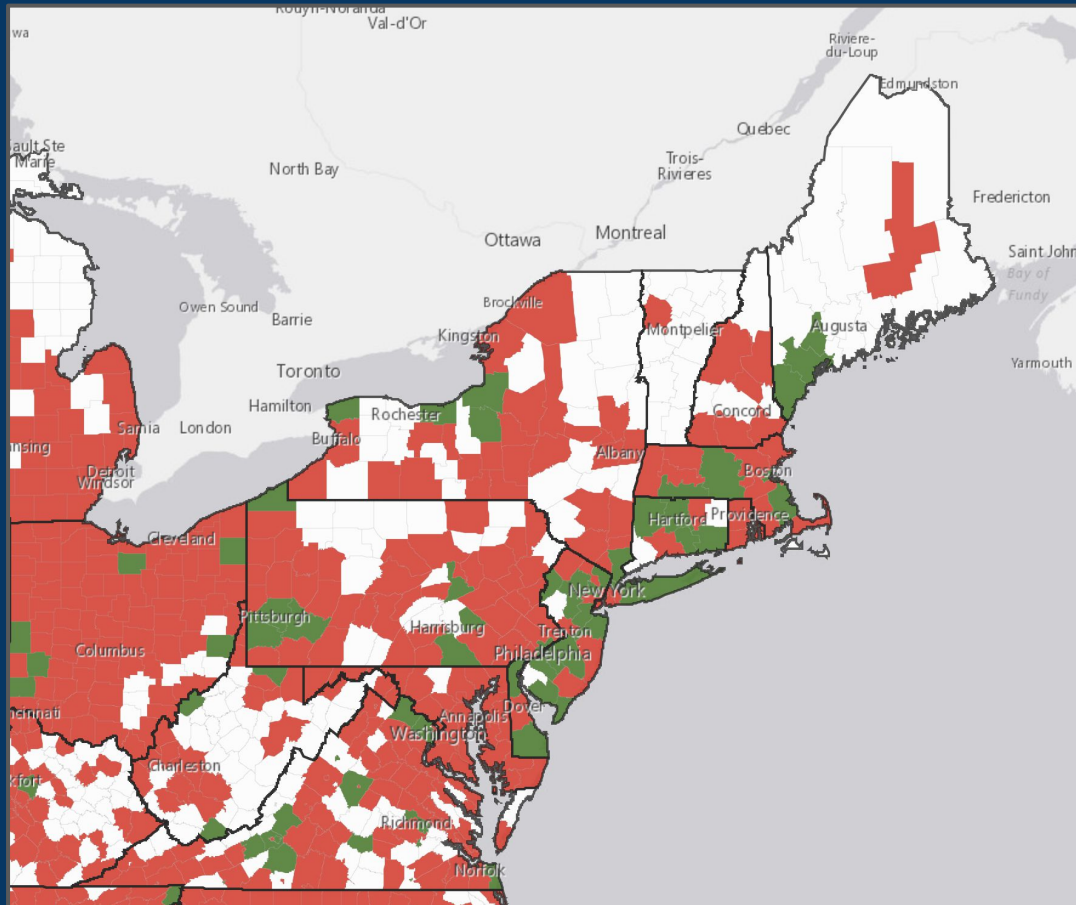
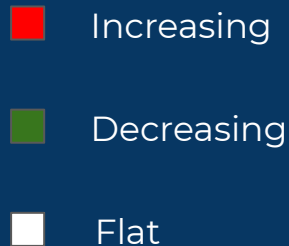
Source: Northeastern University • Created with Datawrapper

# Modeling Regional Disease Growth

**Columbia University**

*Projected Case  
Growth by County*

*July 19, 2020 to  
August 8, 2020*



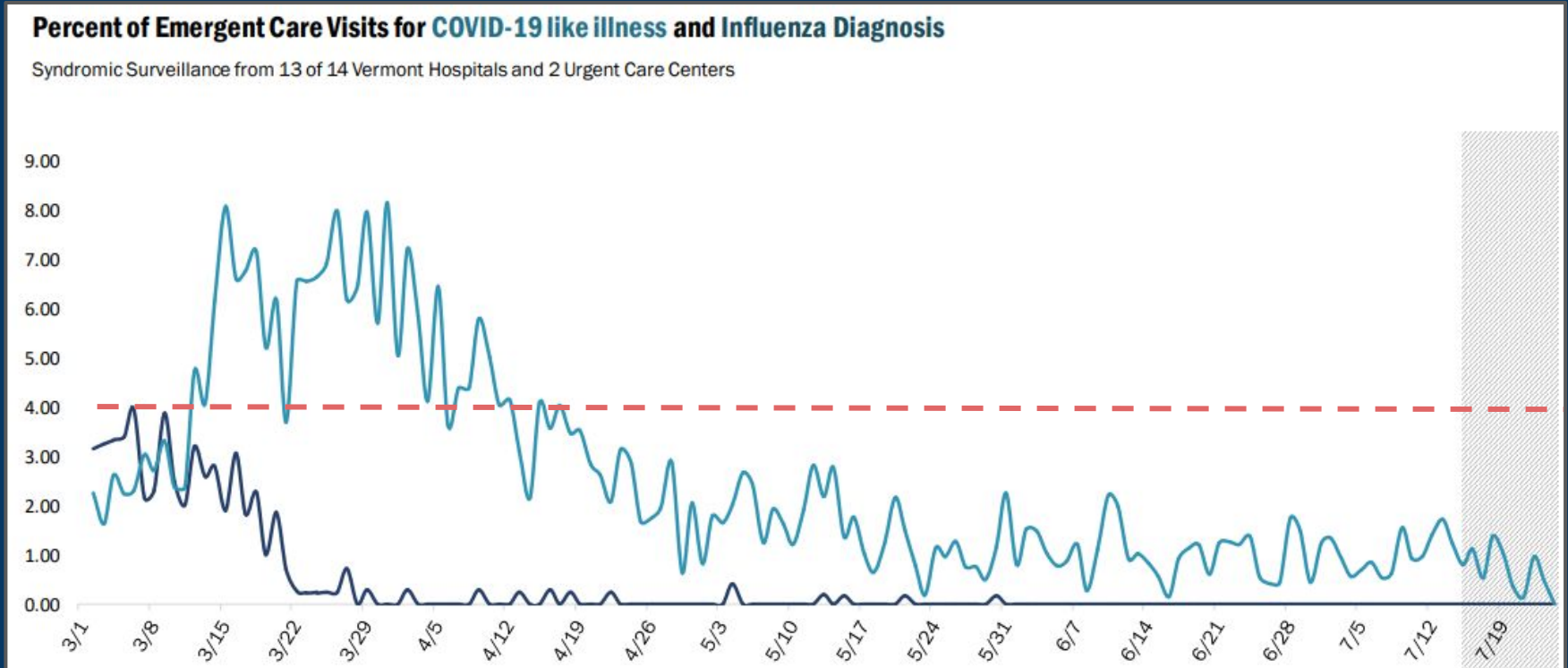
# RESTART VERMONT

## 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

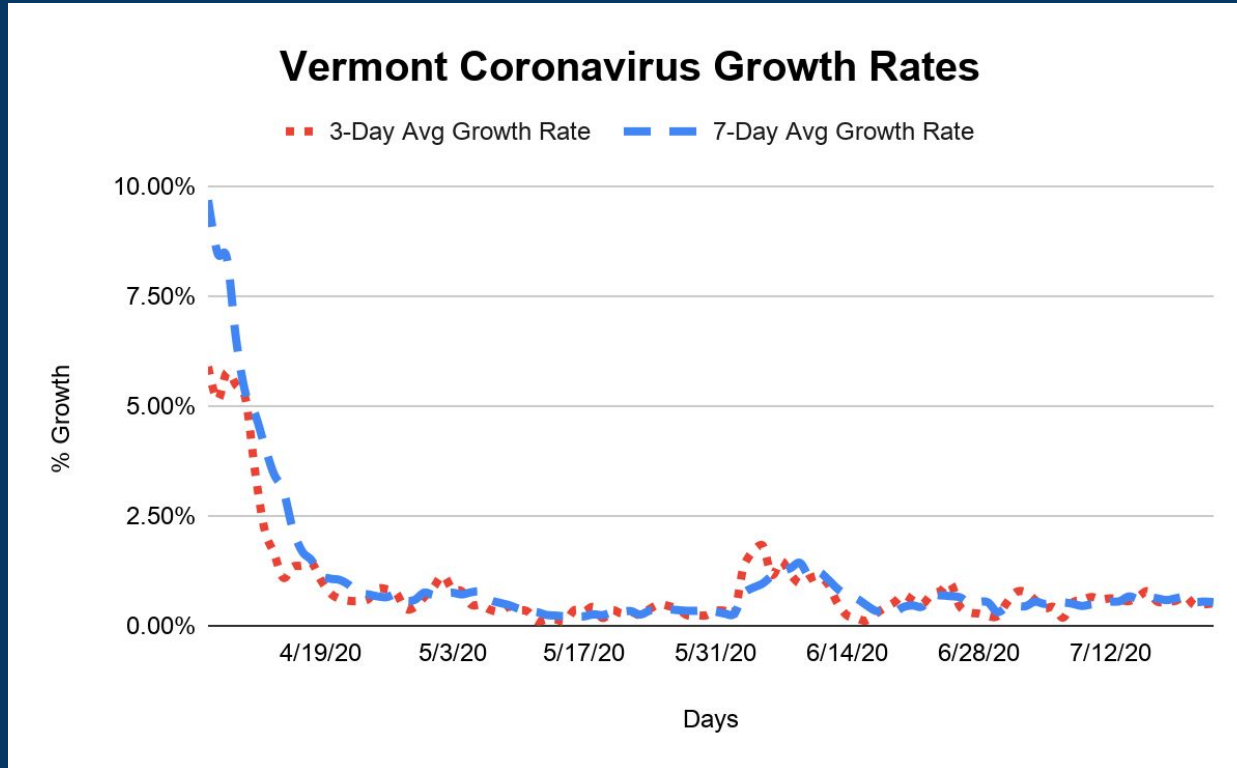
- **Summary:** Percentage of visits with COVID-19 like illness and Influenza diagnosis
- **Warning Flag:** Percentage of visits exceeding 4% for multiple consecutive days





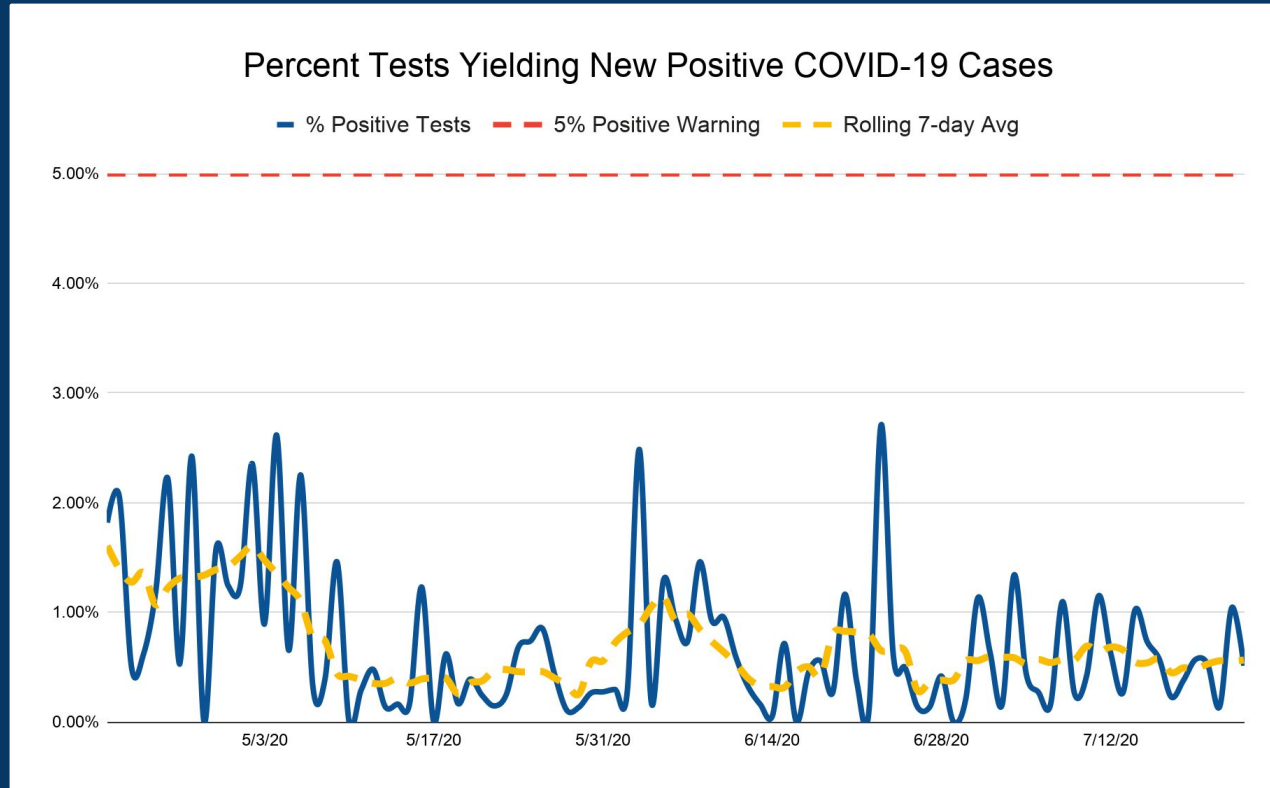
## Data Point 2: Viral Growth and Reproductive Rates

- **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% of open ICU beds



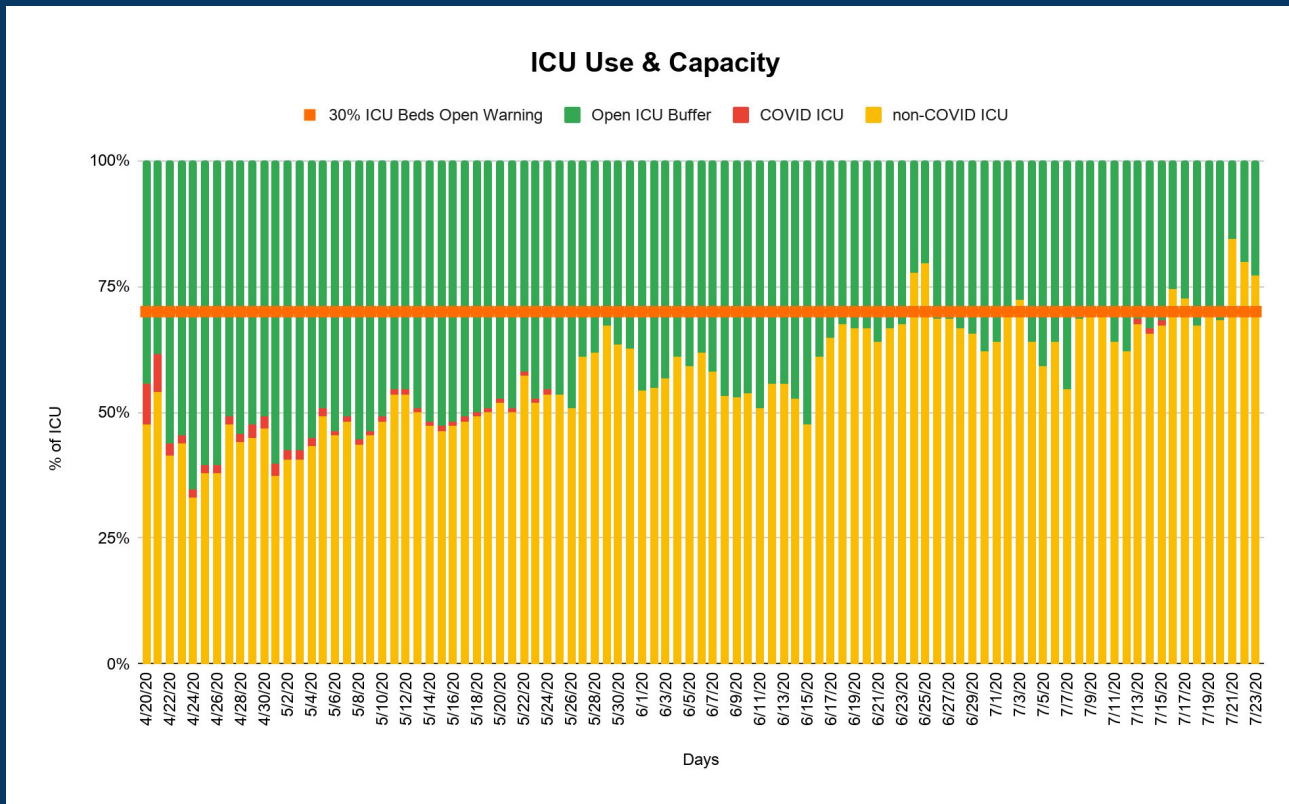
## Data Point 3: Percentage of New Positive Tests

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



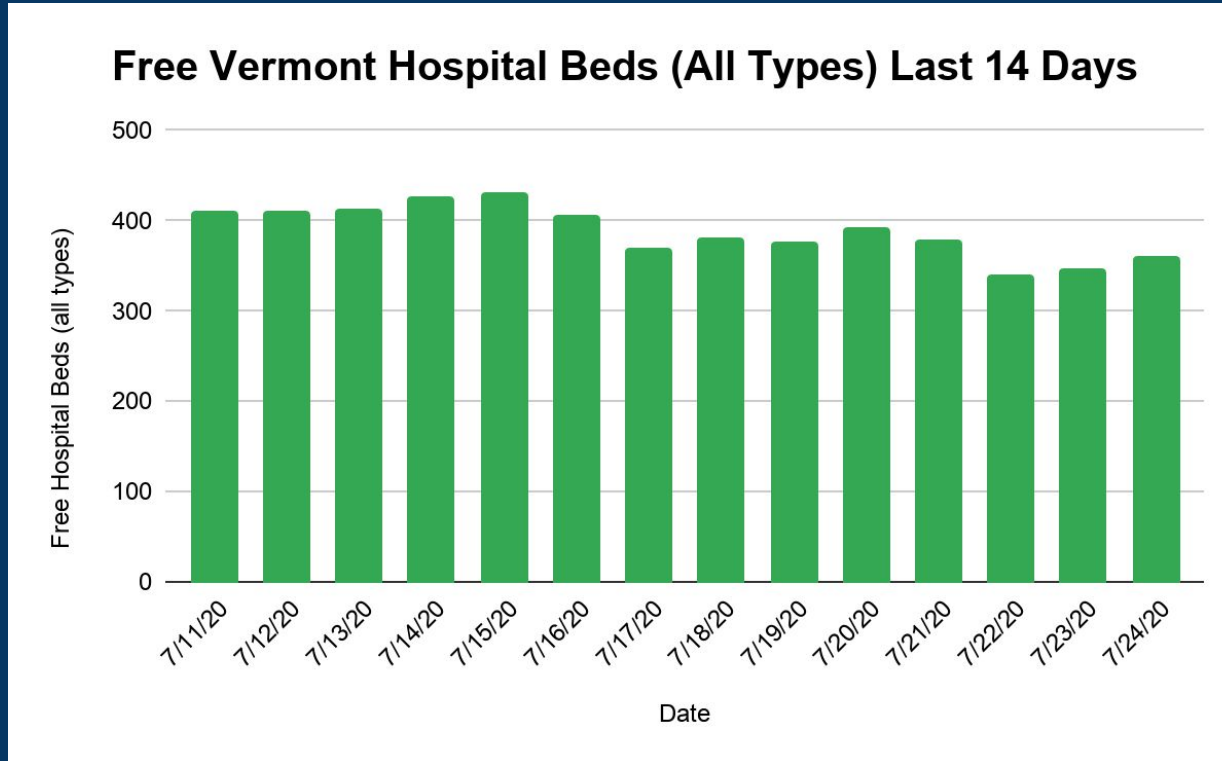
# Data Point 4: Hospital & Critical Care Beds

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

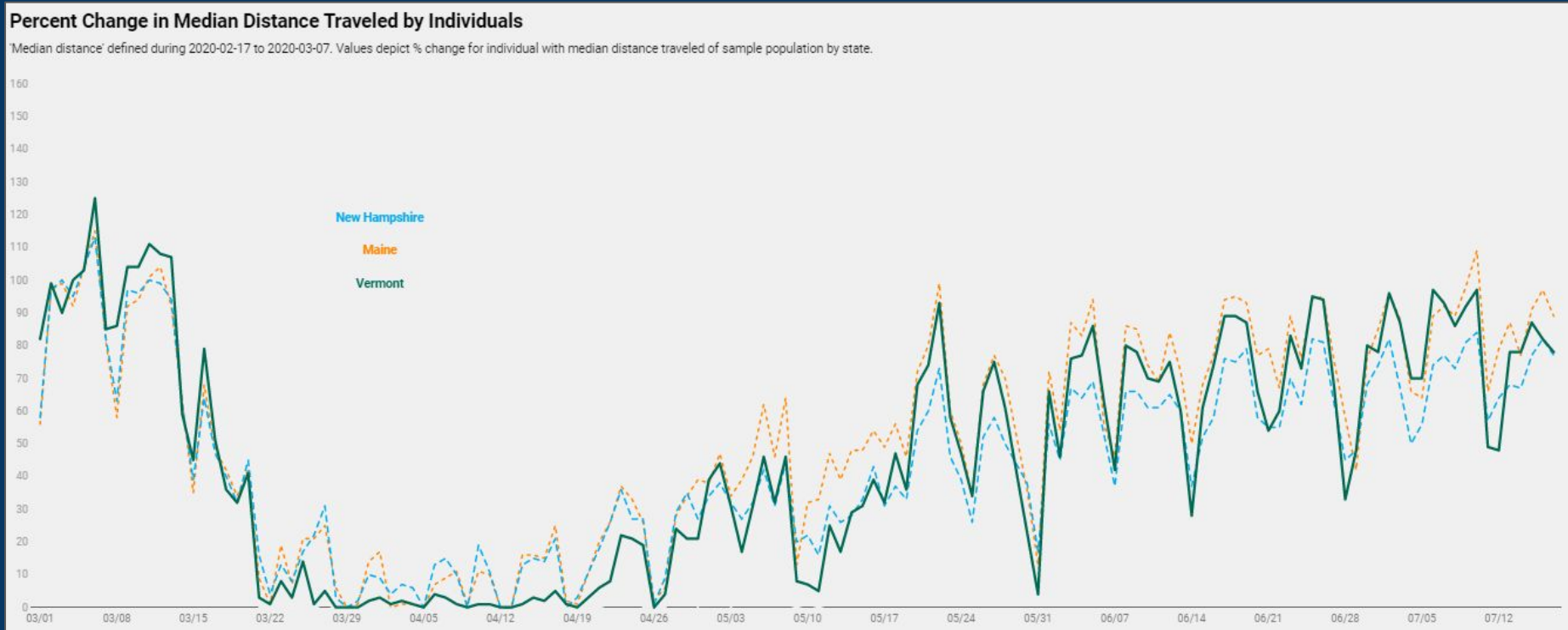


## Data Point 4: Hospital & Critical Care Beds

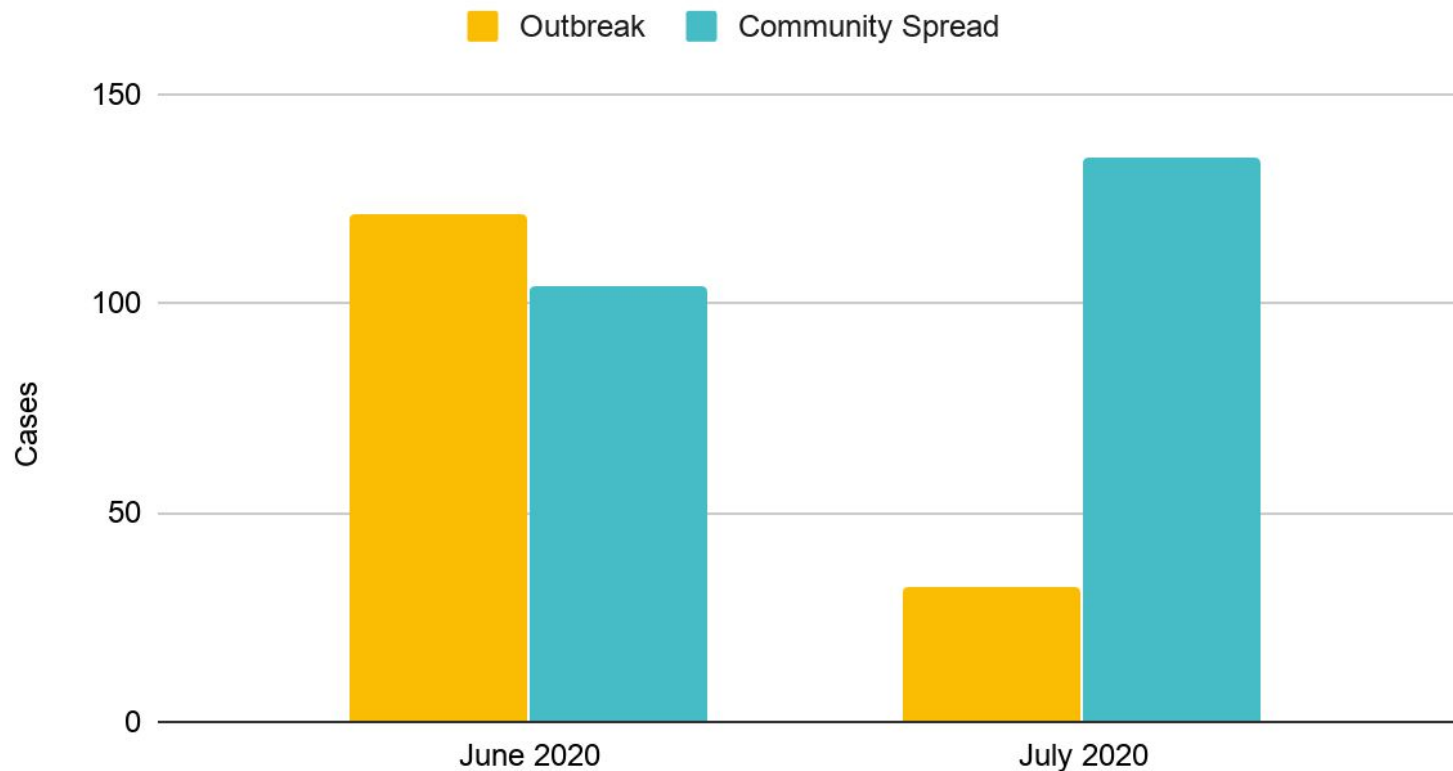
- **Summary:** Number of occupied and unoccupied medical surgical and ICU beds
- **Warning Flags:** Reduction in ICU open beds to less than 30%



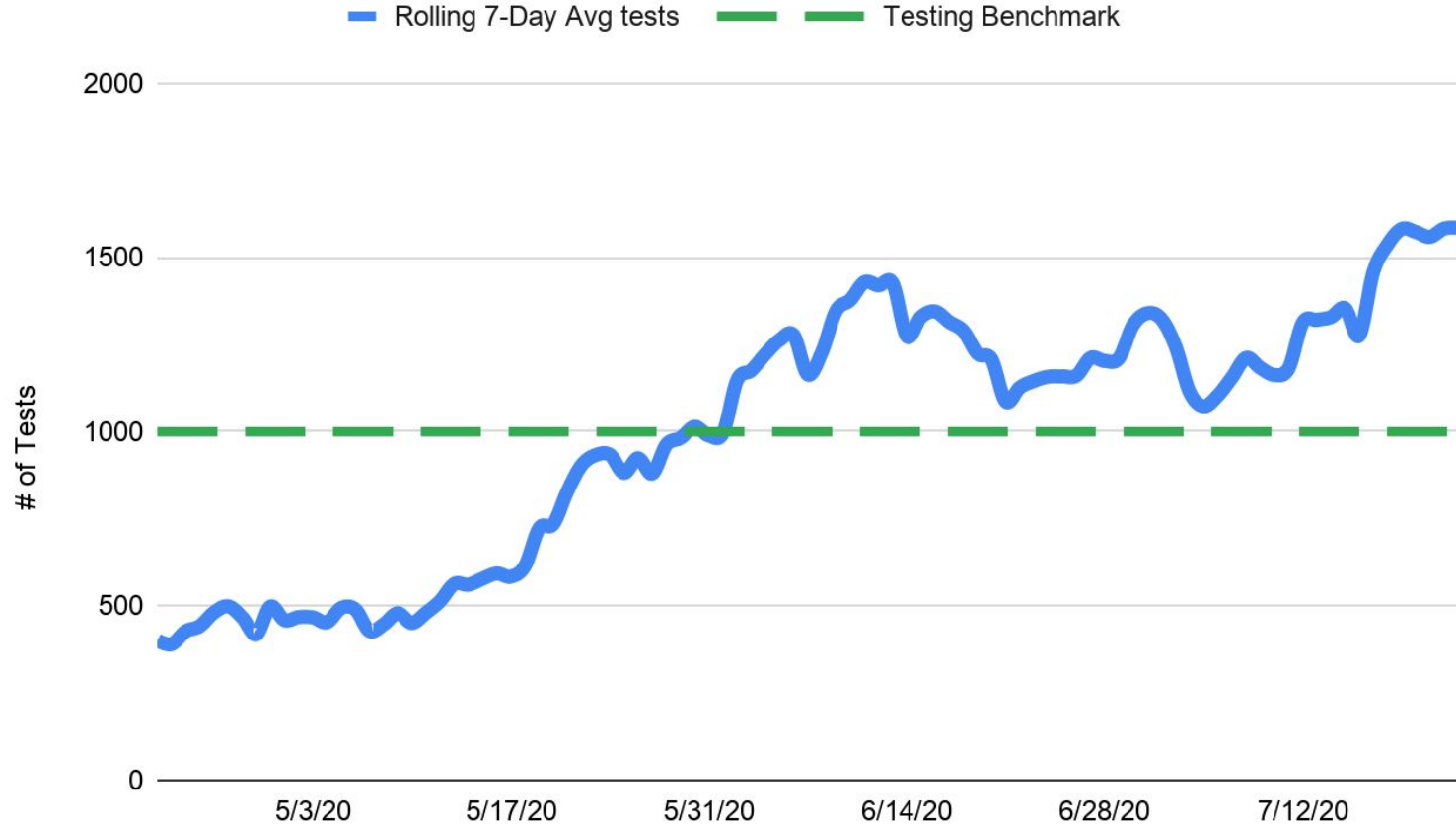
# Mobility Data: Small Weekly Increases in Movement



## Vermont Case Growth: Outbreak vs. Community Spread



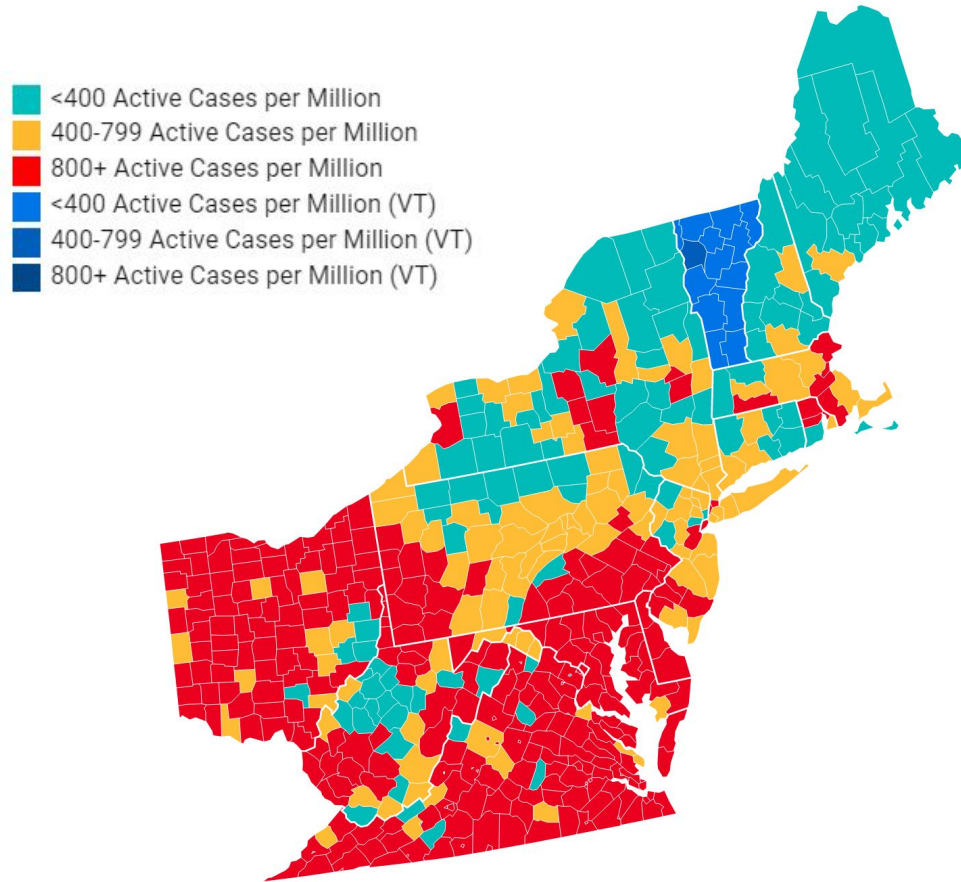
## 7-Day Rolling Test Average



# Travel Policy Update

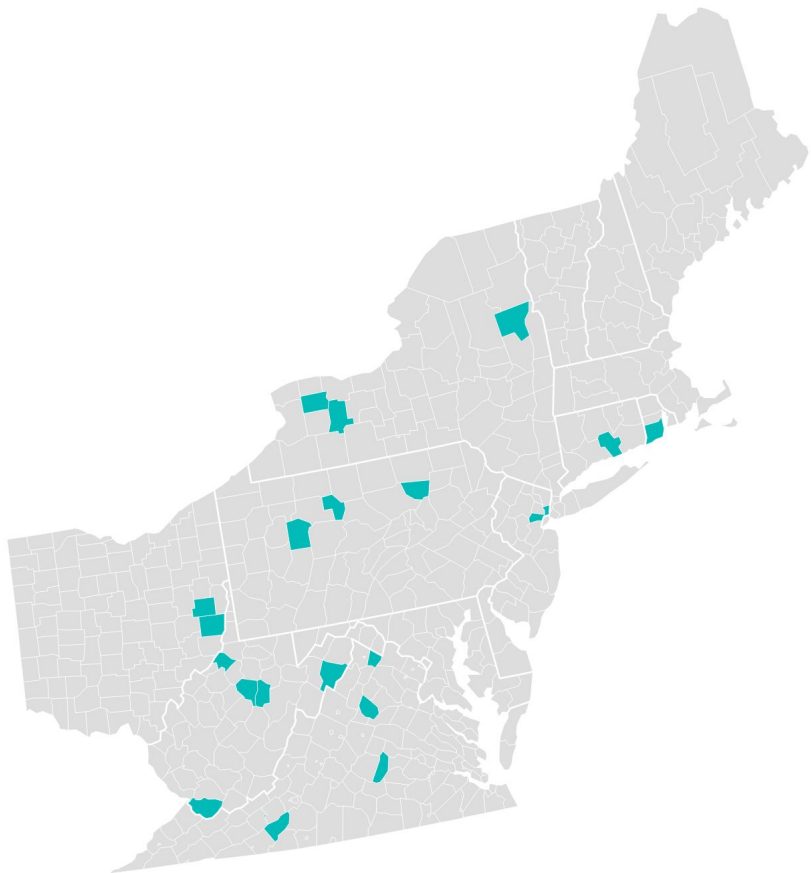


# Updated Travel Map

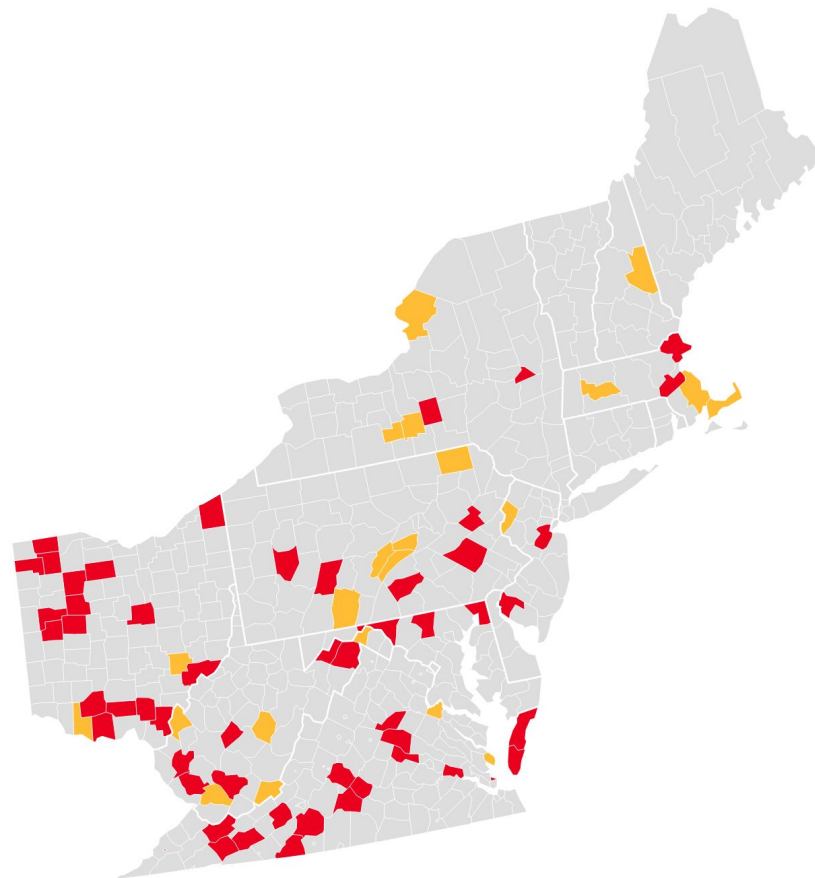


Source: Raw data from Johns Hopkins University—July 24, 2020 (dynamic map available at Vermont ACCD site)

**Improving:** Moving from Yellow or Red to Green



**Worsening:** Moving to Yellow or Red



# Updated Travel Map

## Population Not Subject to Vermont's Quarantine Policy Over Time

