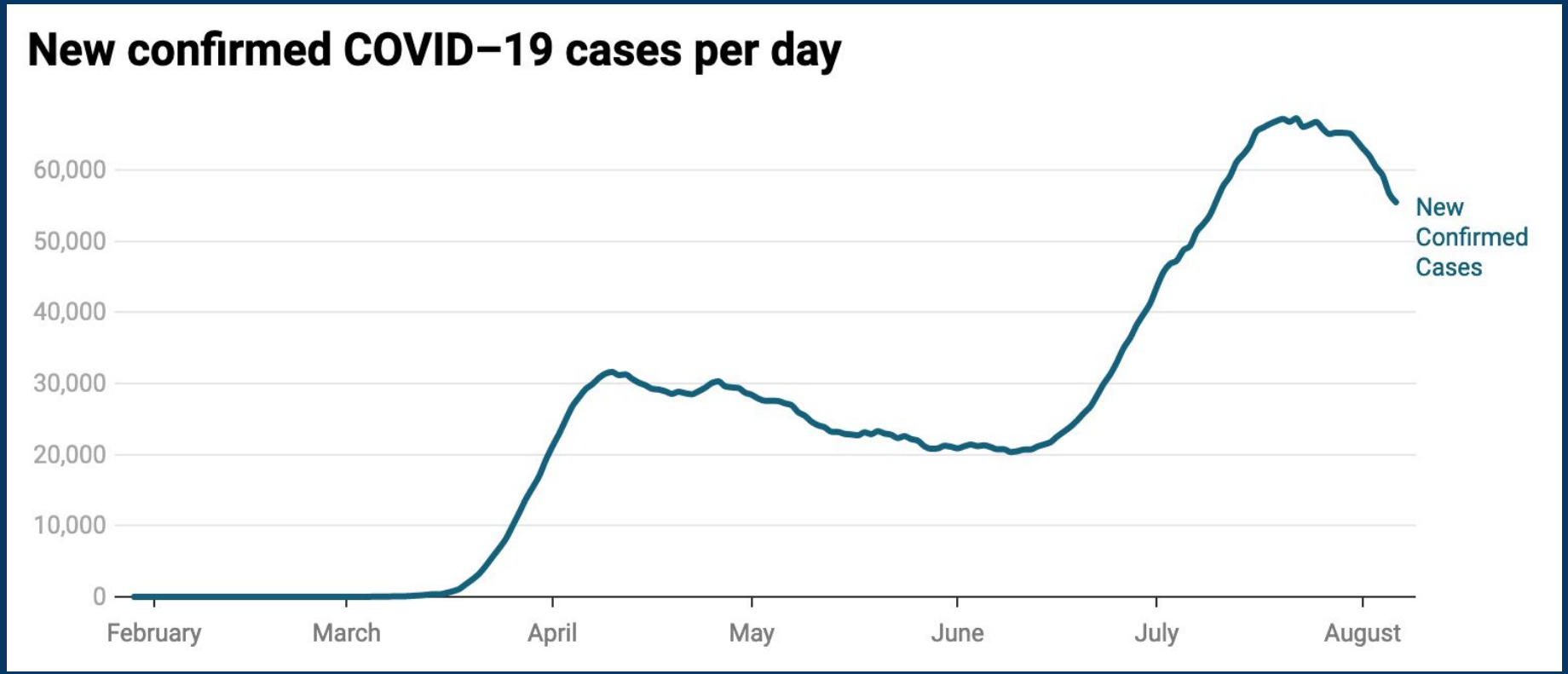
COVID-19 Modeling
August 7, 2020

Presentation available at:
dfr.vermont.gov

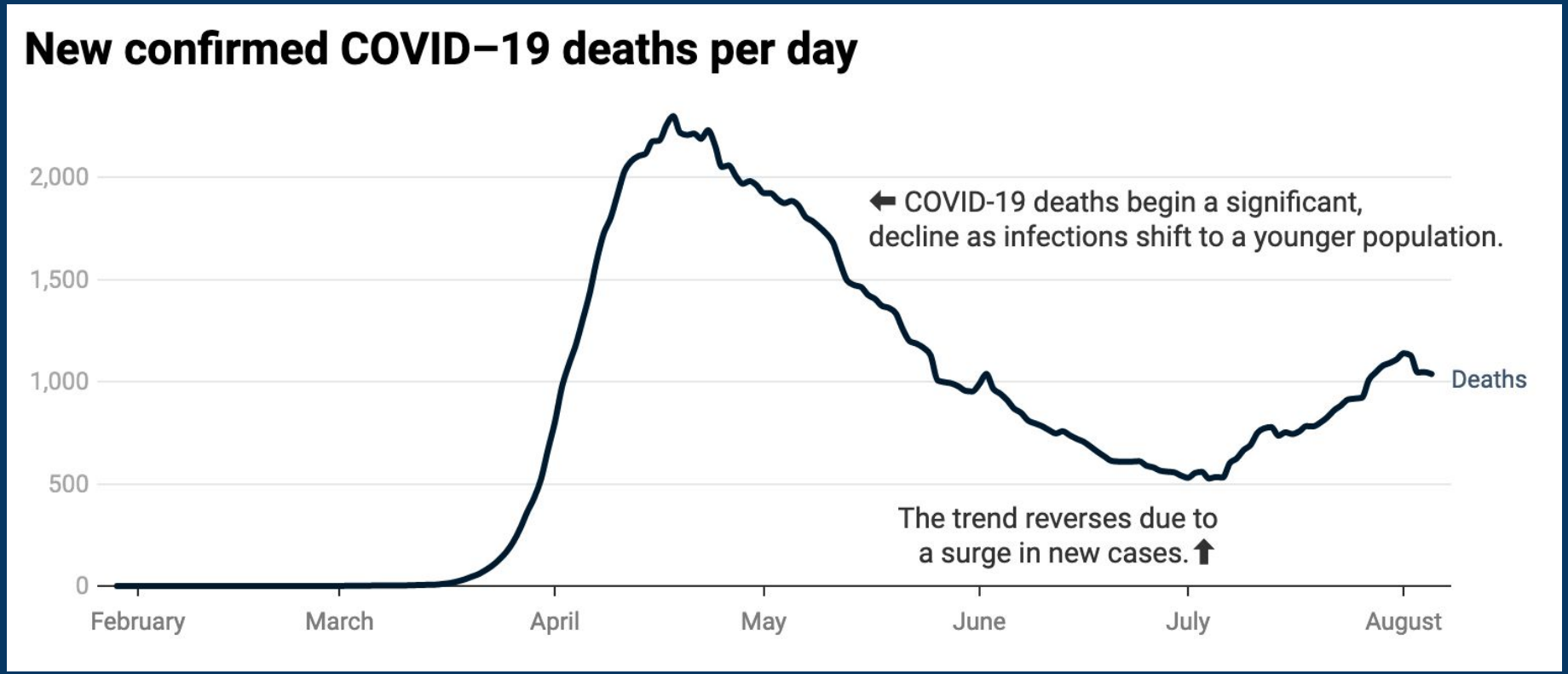
National Data

National Data

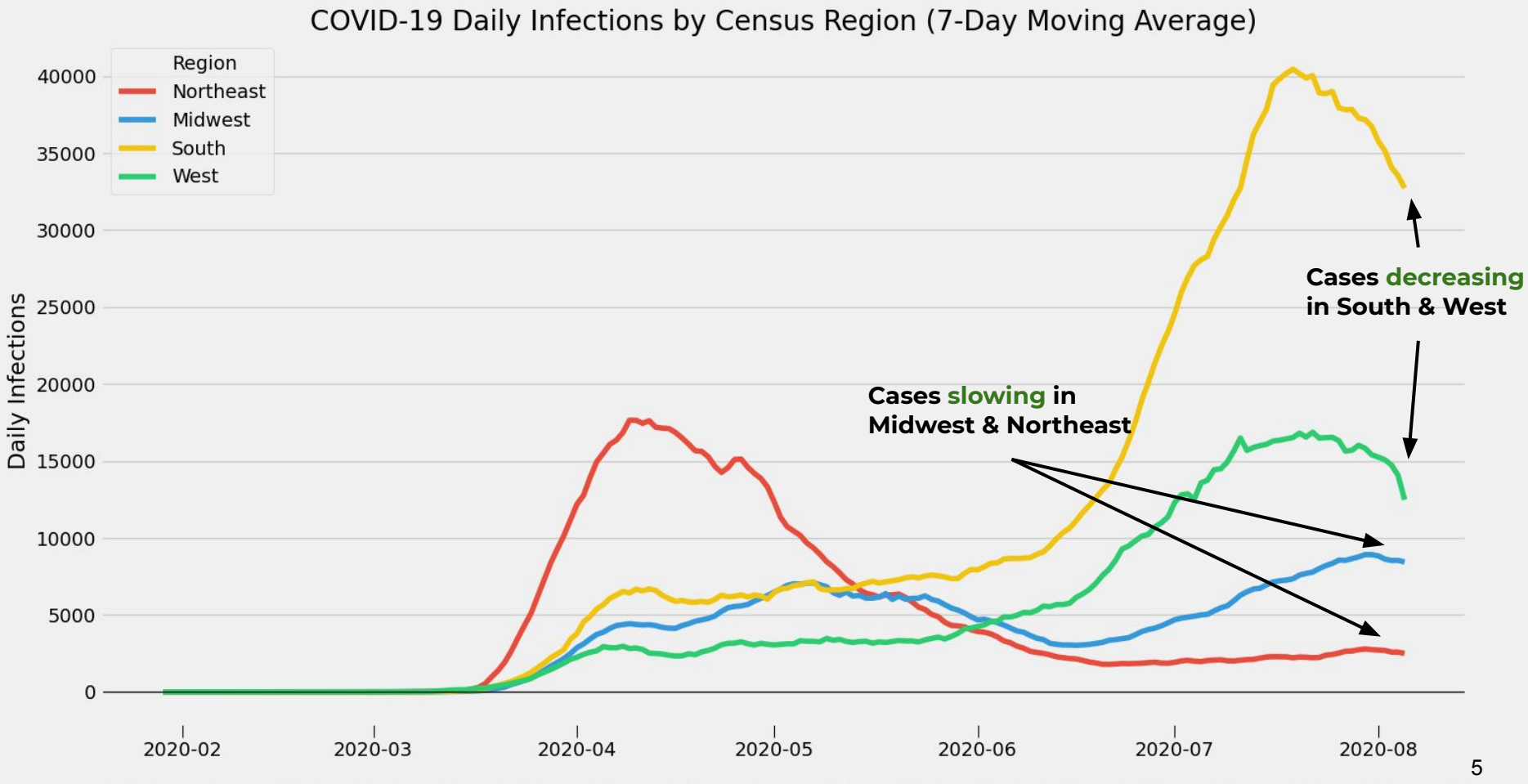


Source: Johns Hopkins University - July 30, 2020

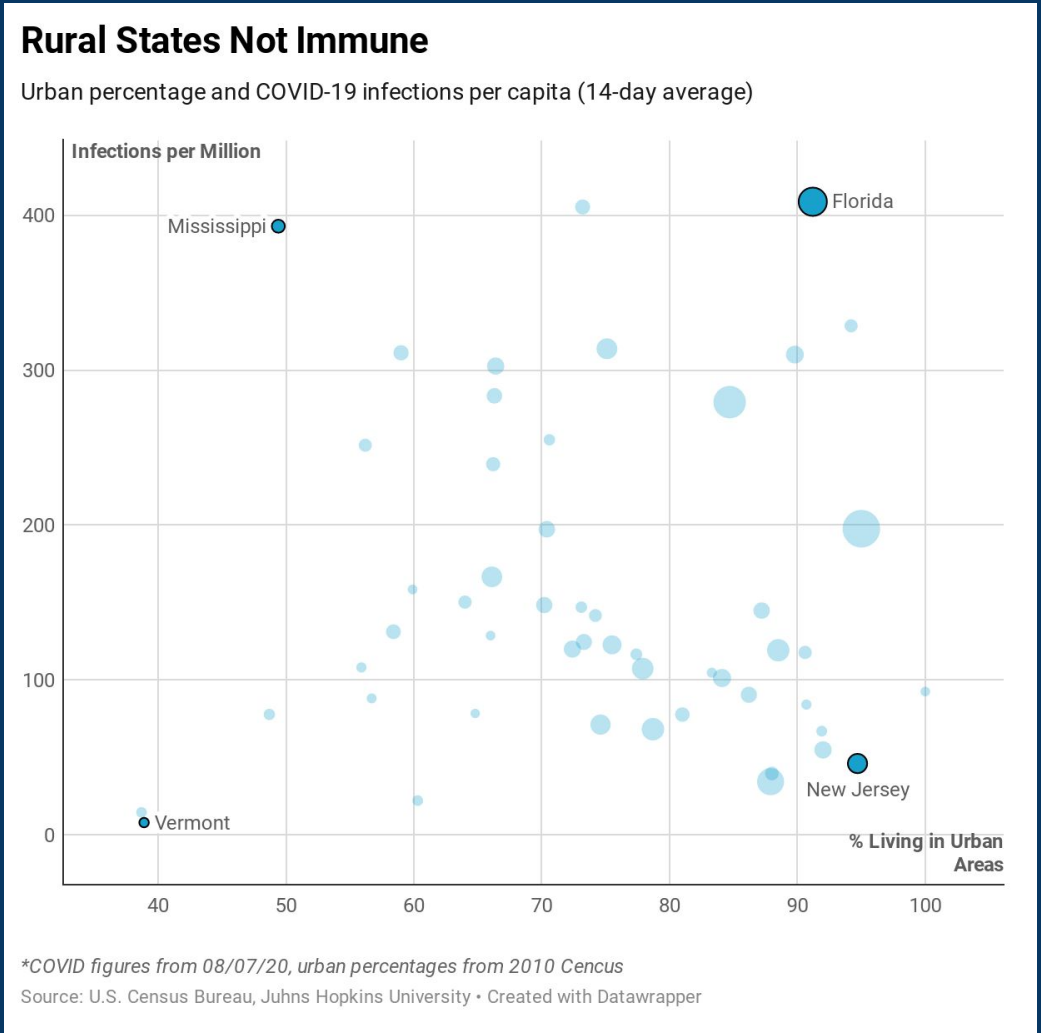
National Data



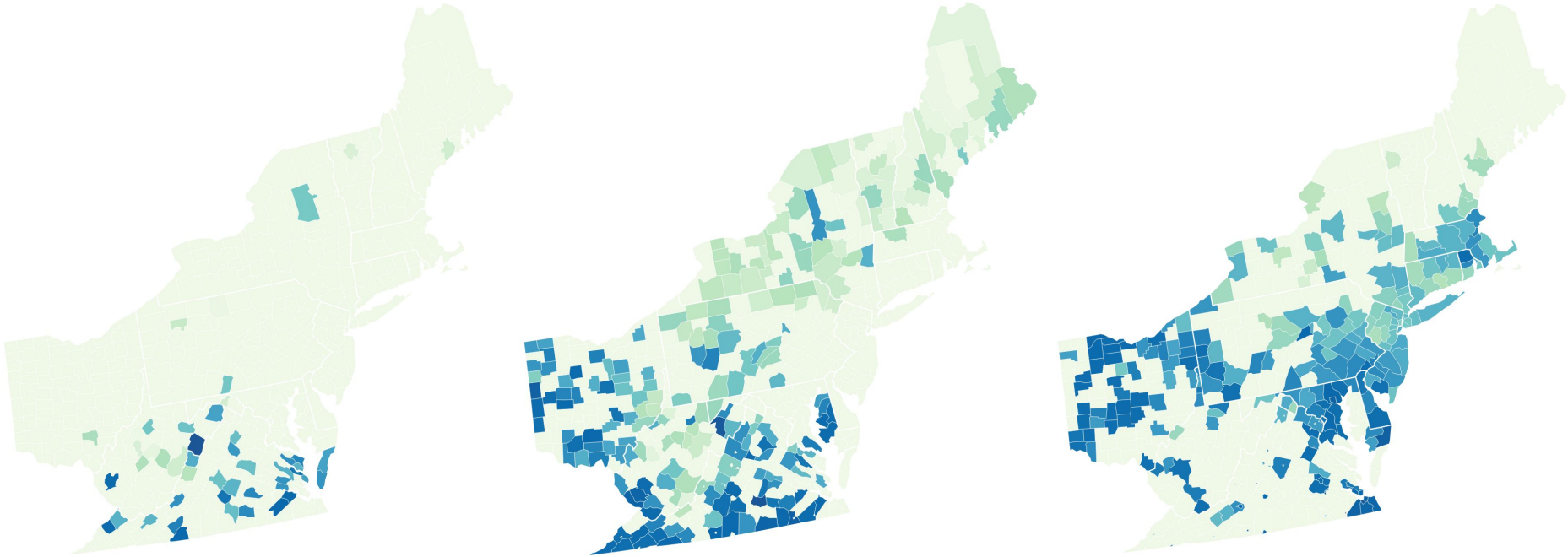
Source: Johns Hopkins University - July 30, 2020


COVID-19 Daily Infections by Census Region (7-Day Moving Average)
Region
Northeast
Midwest
South
West
Daily Infections
40000
35000
30000
25000
20000
15000
10000
5000
0
2020-02
2020-03
2020-04
2020-05
2020-06
2020-07
2020-08
Cases decreasing in South & West
Cases slowing in Midwest & Northeast
Source: Johns Hopkins University
08/07/2020

A DFR analysis of states by the percentage of residents living in an urban or rural area illustrates more rural states are not immune from significant COVID-19 viral spread.



Active infections in travel region by urbanization



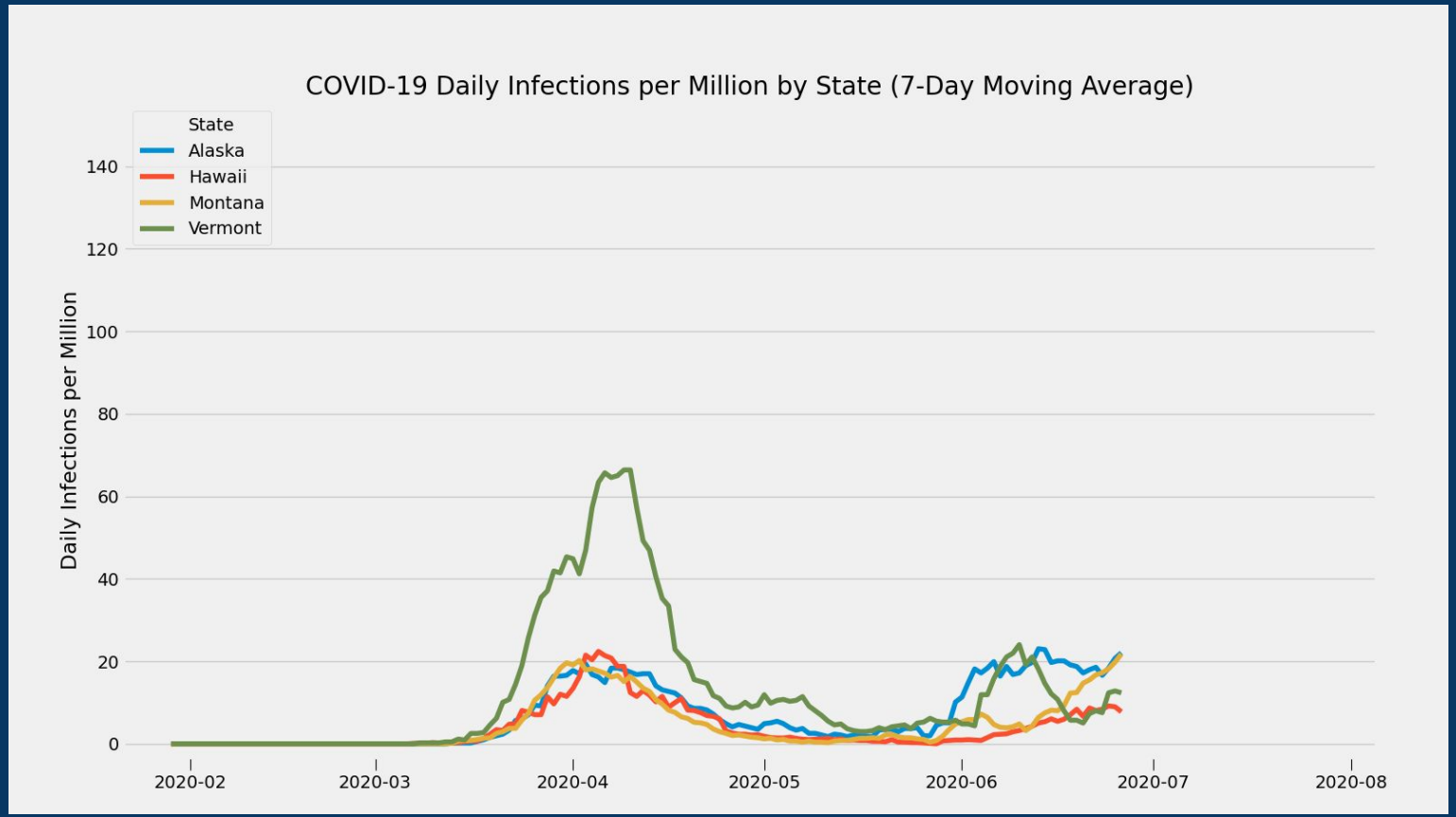
Rural

Mostly Rural

Urban

January to June

First Wave, Low-level Case Growth and Outbreaks/Clusters



Source: Johns Hopkins University date June 25, 2020

Testing Issues in Montana, Hawaii and Alaska

"On July 1, almost 700 people were tested at a community-wide event in Big Sky . . . '[h]ad we known on June 30 that test results would still be pending more than 14 days after the event occured, we would not have moved forward [with the testing event]."

Montana Free Press - July 16, 2020

"In Montana, the Quest delays forced the state to pause its community testing program, which aims to serve as an alert system for how the virus is spreading."

Missoula Current - July 27, 2020

High positive test numbers and village outbreaks signal COVID spread in Interior Alaska

"[T]hey're relying on the state's testing laboratories, which have been backlogged in recent weeks with delays of up to 10 days"

Alaska Public Media - July 28, 2020

Anchorage struggles to keep up with contact tracing and testing as cases surge

Alaska Public Media - July 2, 2020

Hawaii Labs Face Shortage Of COVID-19 Testing Supplies

"[Lab] capacity will shrink from 800 tests per day to 250 tests per day and the laboratory will only conduct high-priority testing locally for the immediate future"

Civil Beat - July 8, 2020

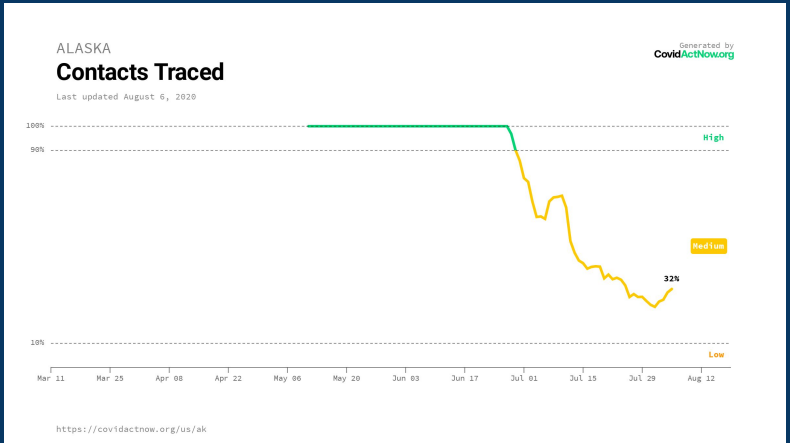
State: Dip in New COVID-19 cases likely due to 'significant' delay in testing results

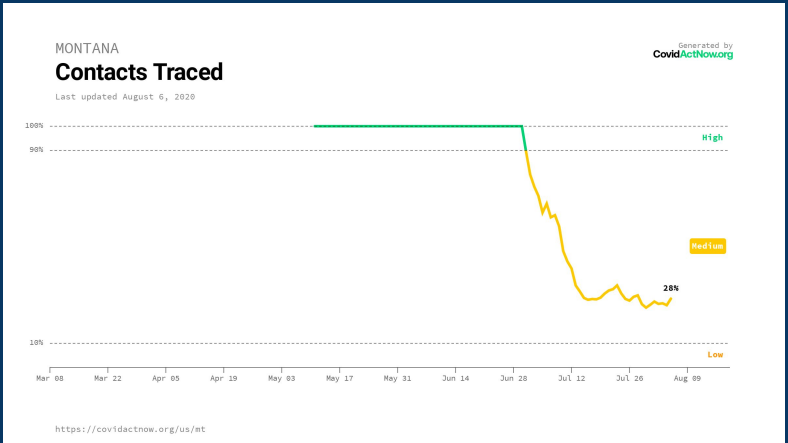
"[G]etting results more quickly could help the state get the upper hand on the virus."

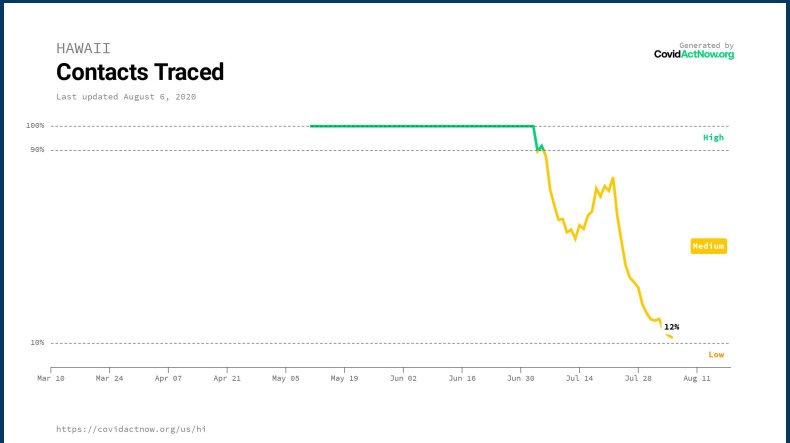
"Until there's a positive result, the state can't conduct contact tracing . . . . [h]ow do you stop a disease unless you get those people in 12 hours - 24 hours at the most?"

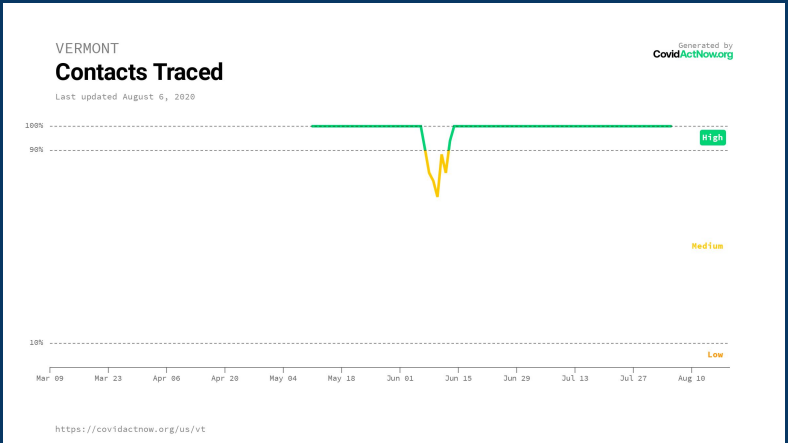
Hawaii News Now - August 1, 2020

Covid Act Now: Contact Tracing Analysis



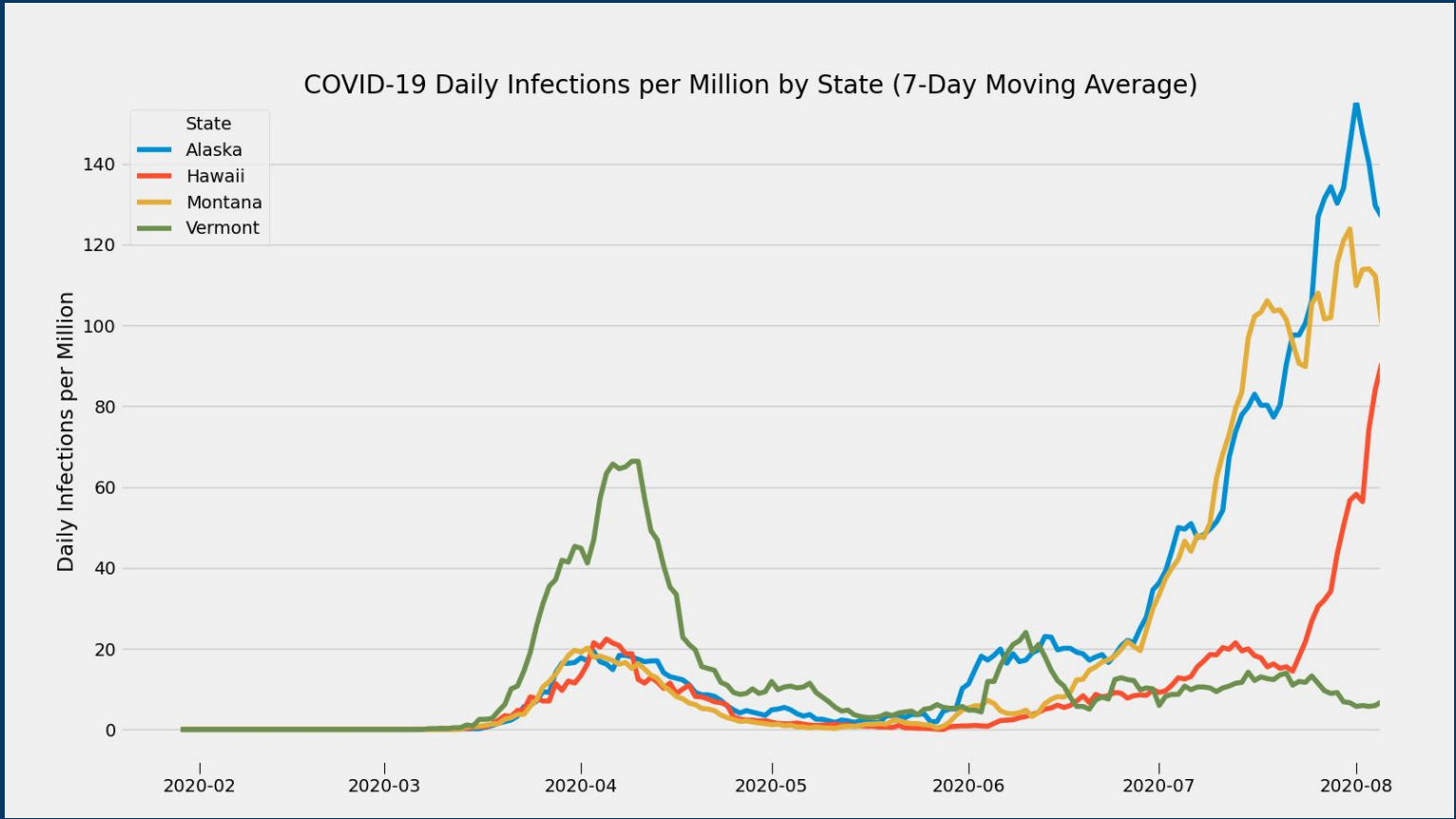






July to August

Slow Test Results, Testing Issues and Trouble Contact Tracing



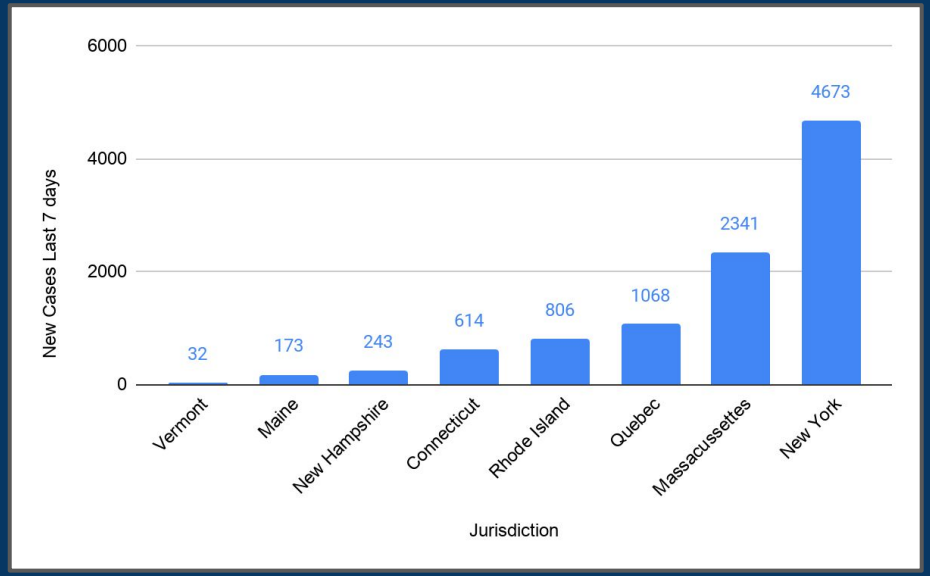
Source: Johns Hopkins University date August 6, 2020

Regional Data

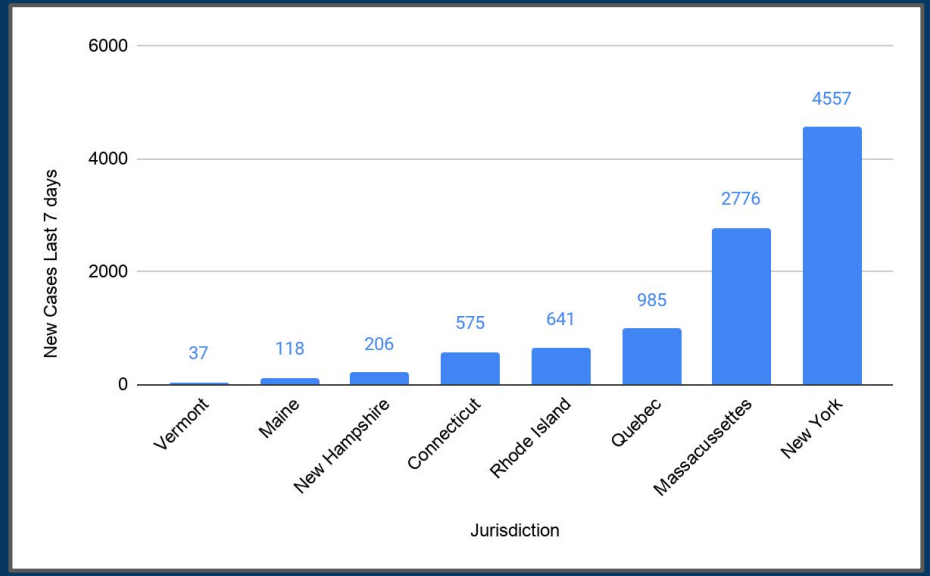
Regional Monitoring: New Cases Week Over Week

0.55% Decrease in New Confirmed Cases

Positive Cases July 24th to July 30th

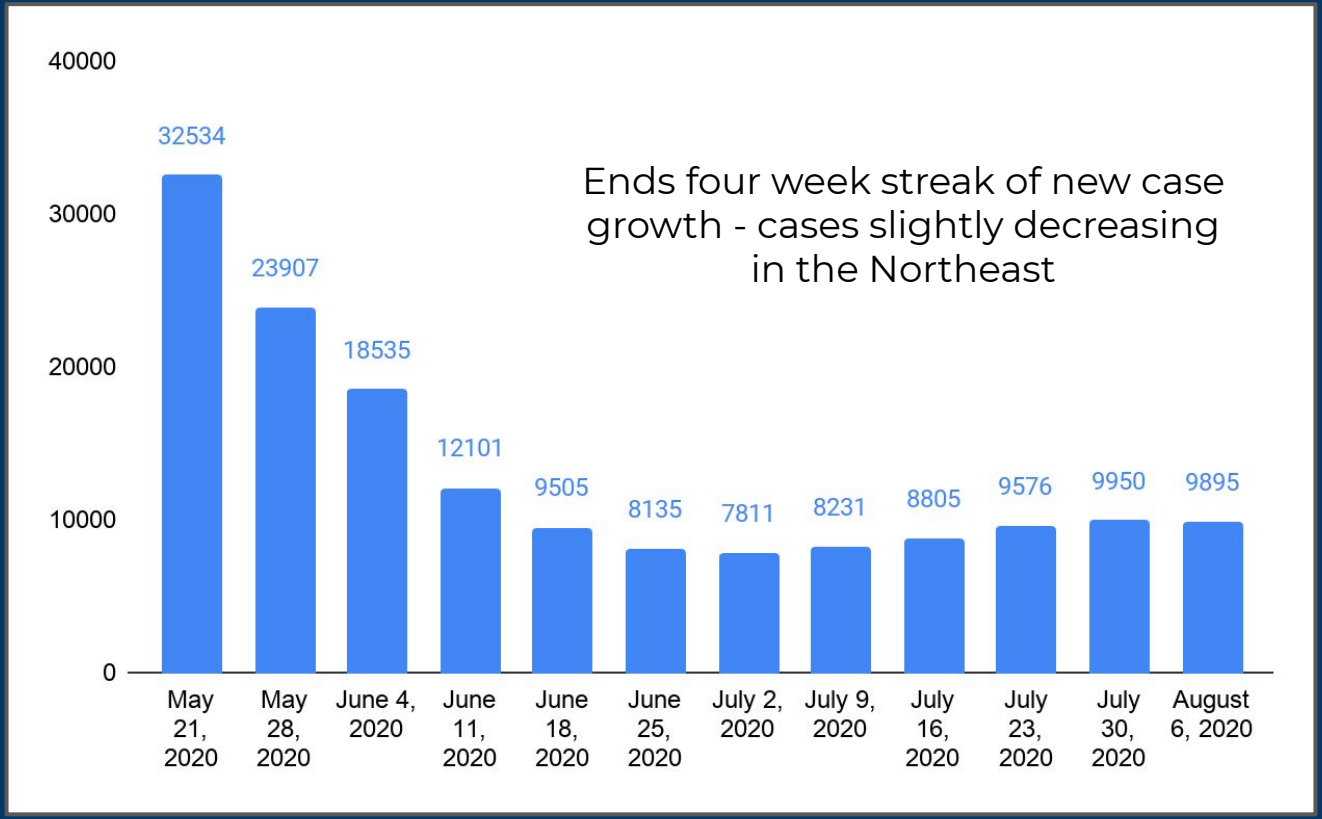


Positive Cases July 31st to August 6th



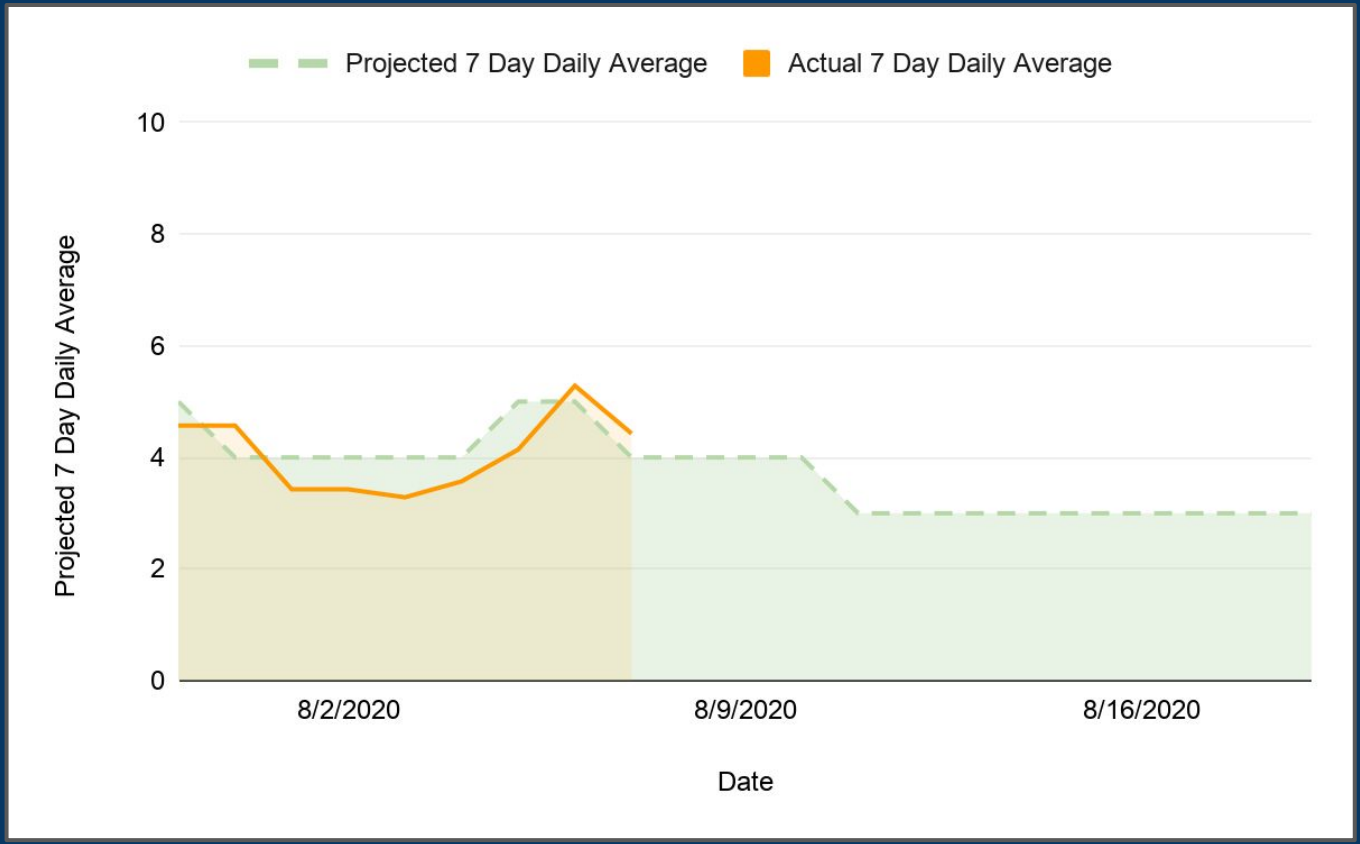
Sources: COVID-19 Tracking Project, New York Time Covid-19 Database & Government of Quebec

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



Sources: COVID-19 Tracking Project, New York Time Covid-19 Database & Government of Quebec

Vermont Forecast Model



Source: Oliver Wyman Forecast Model - August 6, 2020

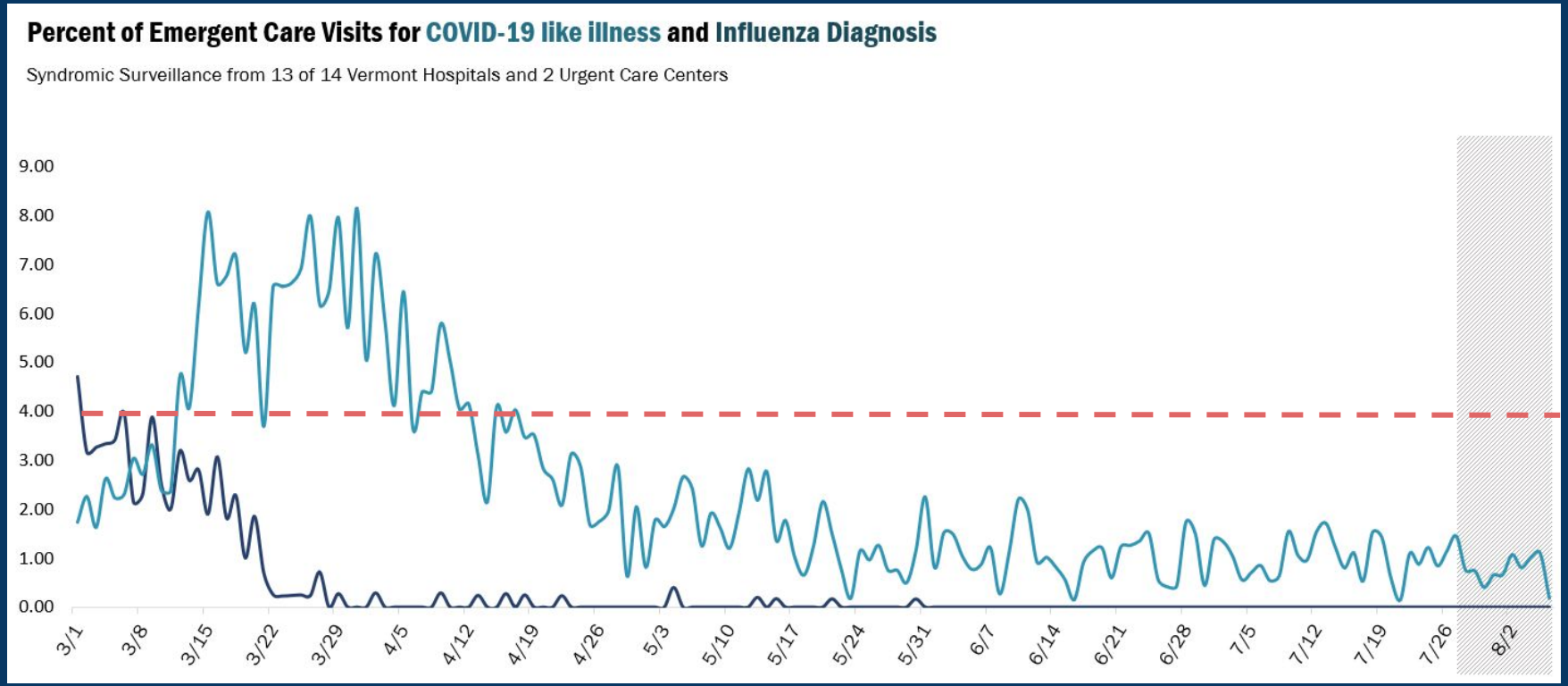
RESTART VERMONT

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

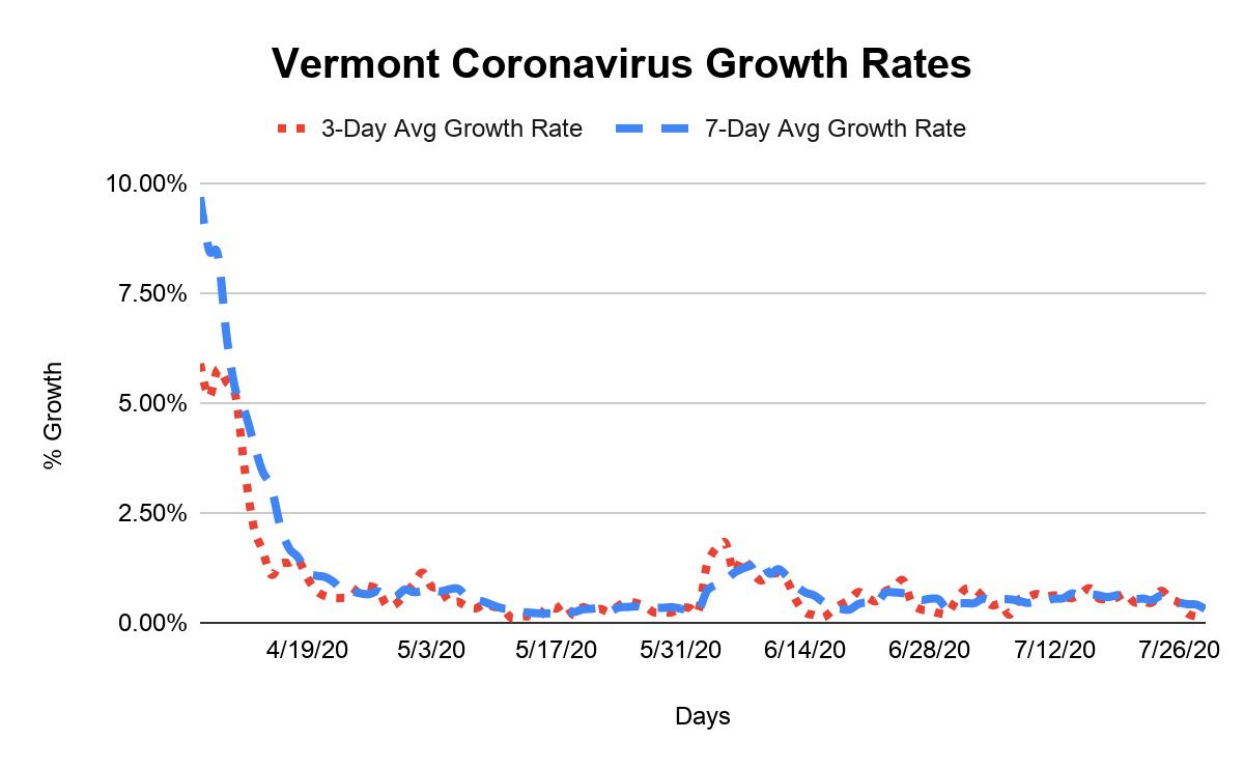
- **Summary:** Percentage of visits with COVID-19 like illness and Influenza diagnosis
- **Warning Flag:** Percentage of visits exceeding 4% for multiple consecutive days



Source: Vermont Department of Health - August 7, 2020

Data Point 2: Viral Growth and Reproductive Rates

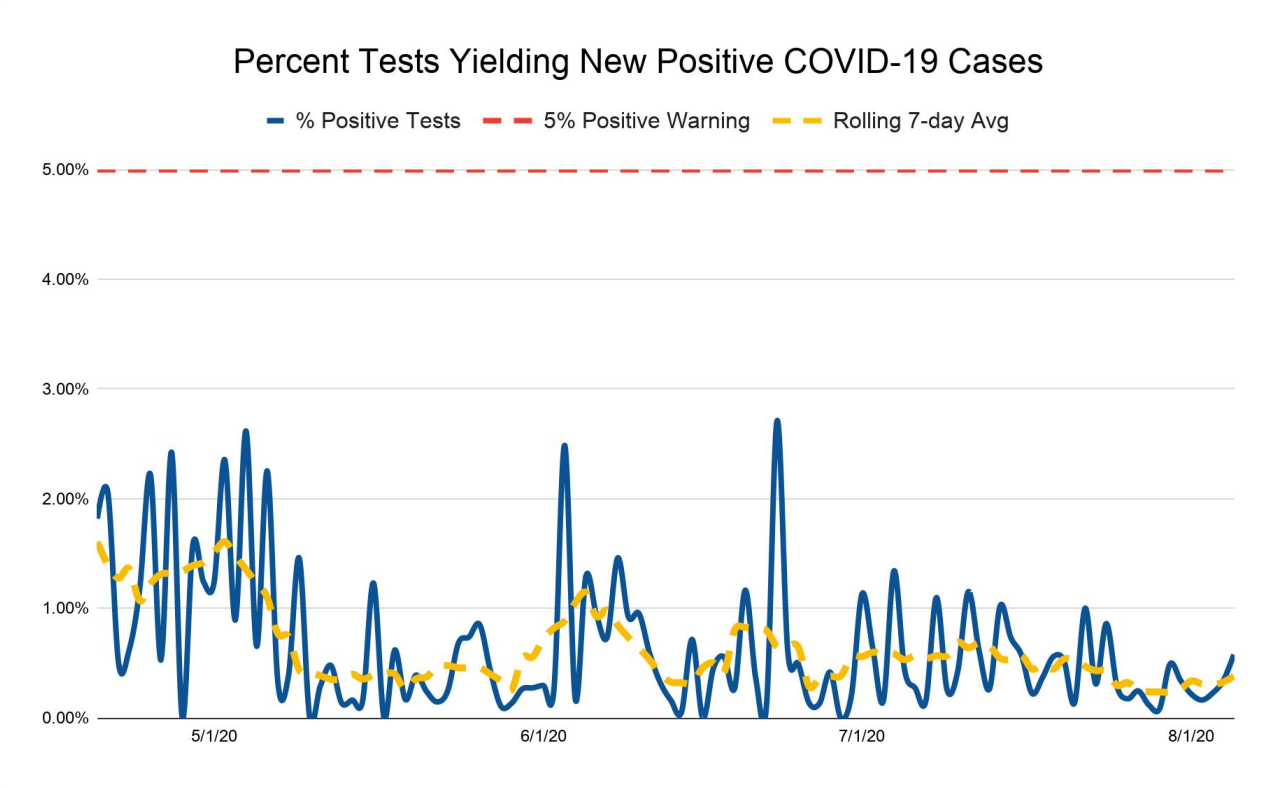
- **Summary:** Case growth measured by daily, 3-day, 7-day, and effective reproductive rate (R_t)
- **Warning Flags:** Sustained viral growth that would lead to <30% of open ICU beds



Source: Vermont Department of Health - August 7, 2020

Data Point 3: Percentage of New Positive Tests

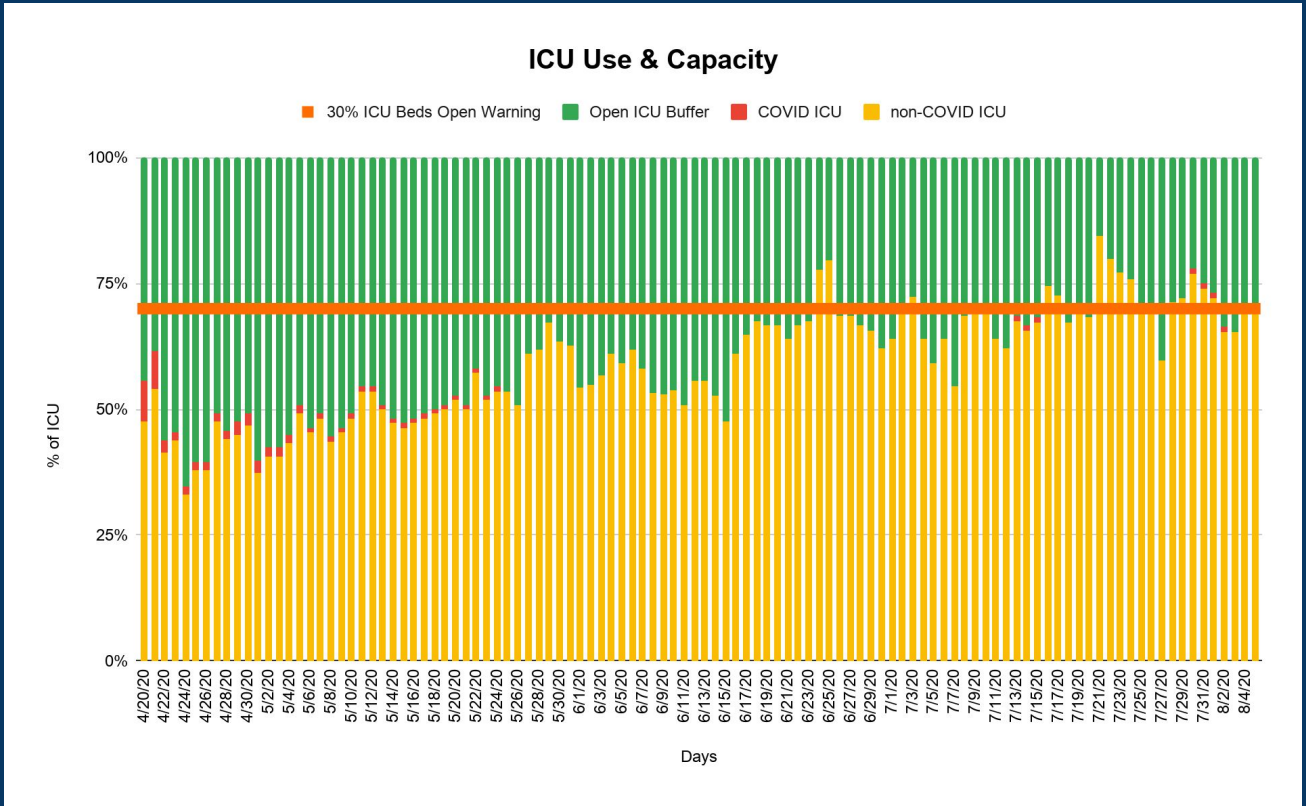
- **Summary:** Percent of tests resulting in a new positive case
- **Warning Flags:** New positives represent >5% of daily results



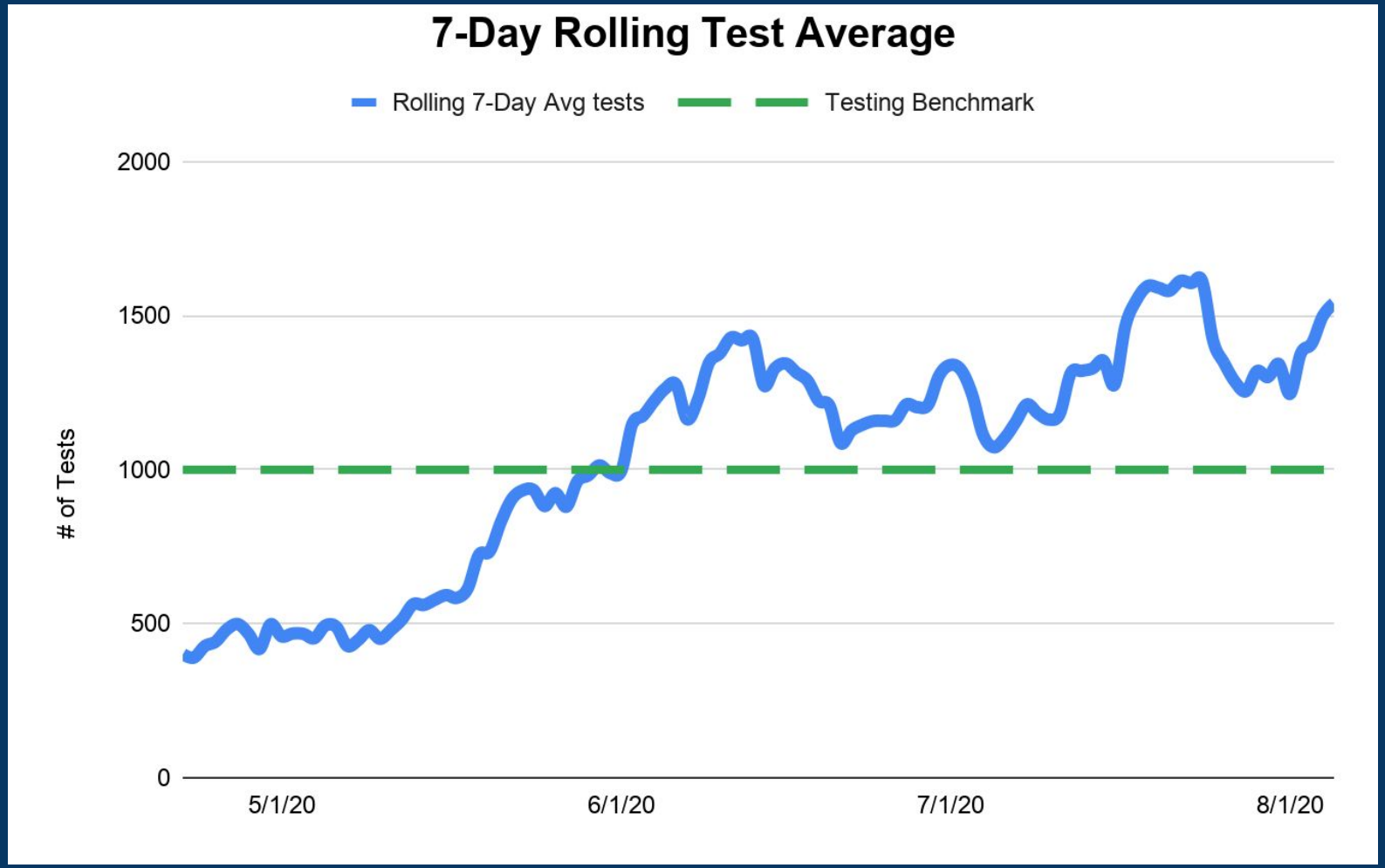
Source: Vermont Department of Health - August 7, 2020

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%



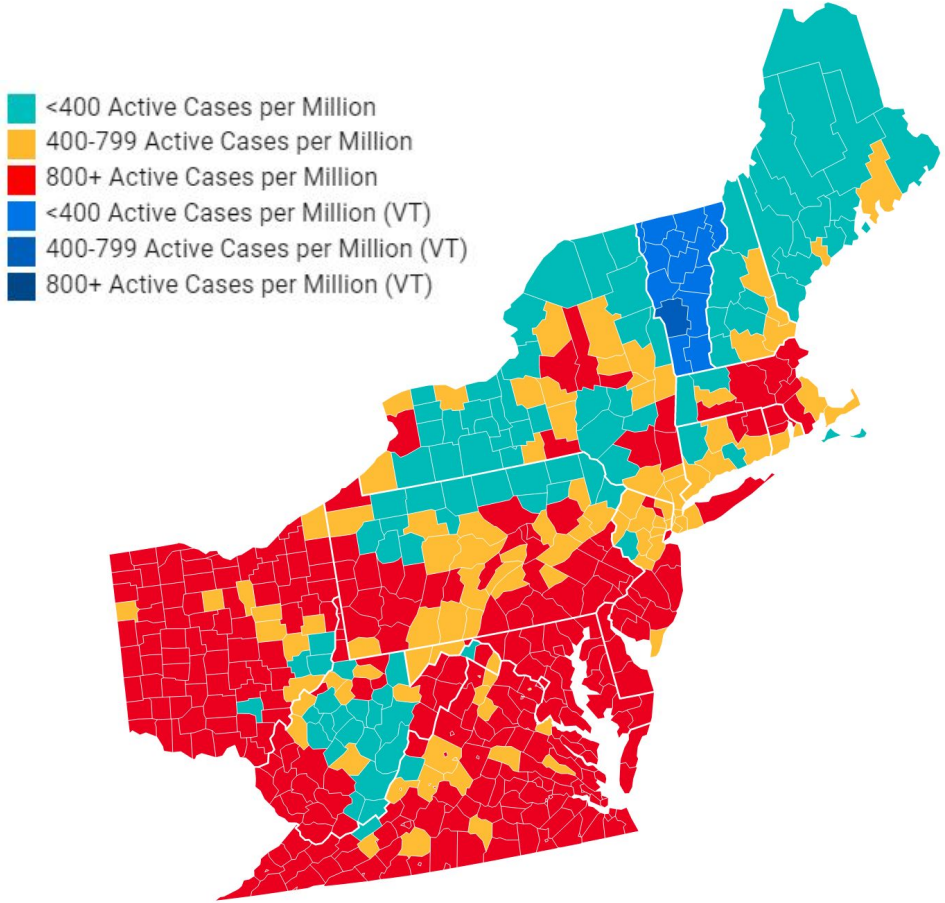
Source: Vermont Department of Health - August 7, 2020



Source: Vermont Department of Health - August 6, 2020 ; tests measured as results reported to VDH by day

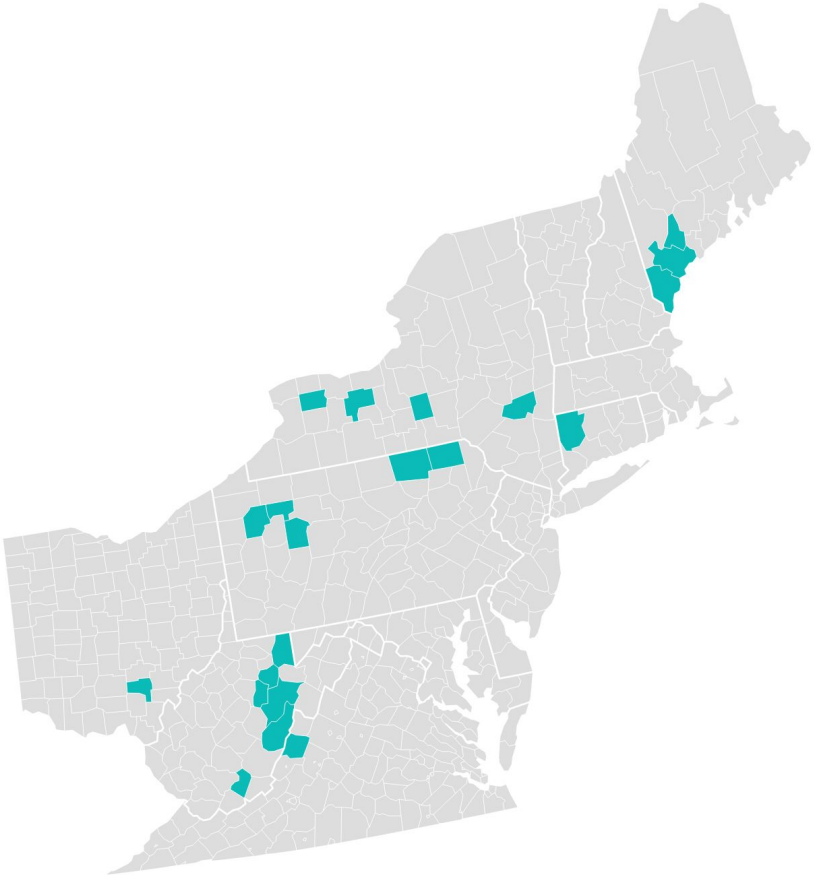
Travel Map Update

Updated Travel Map

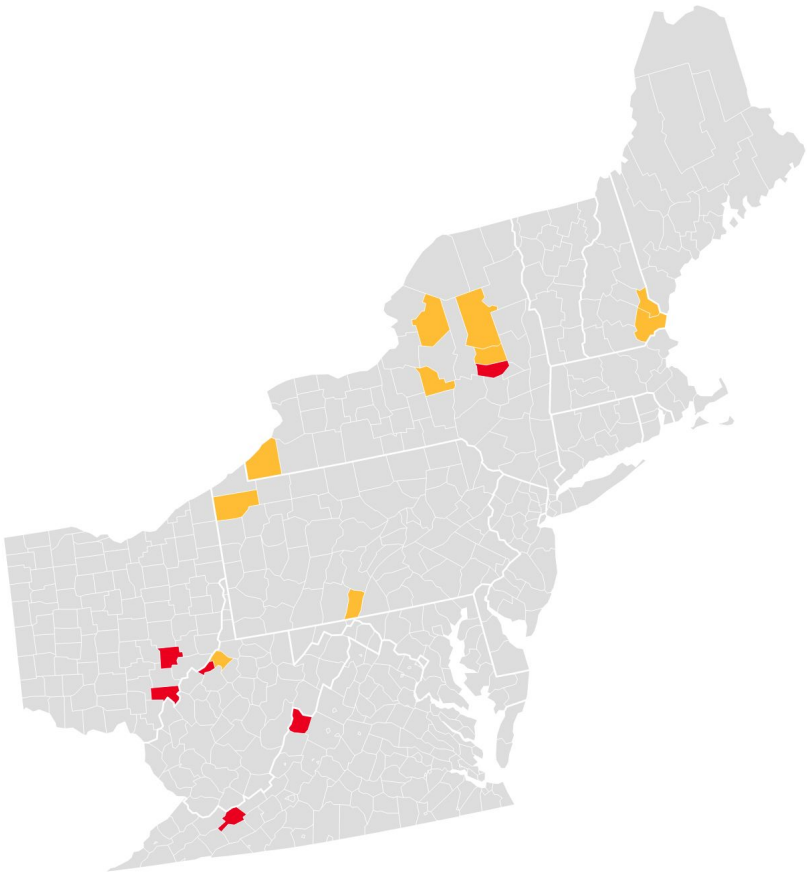
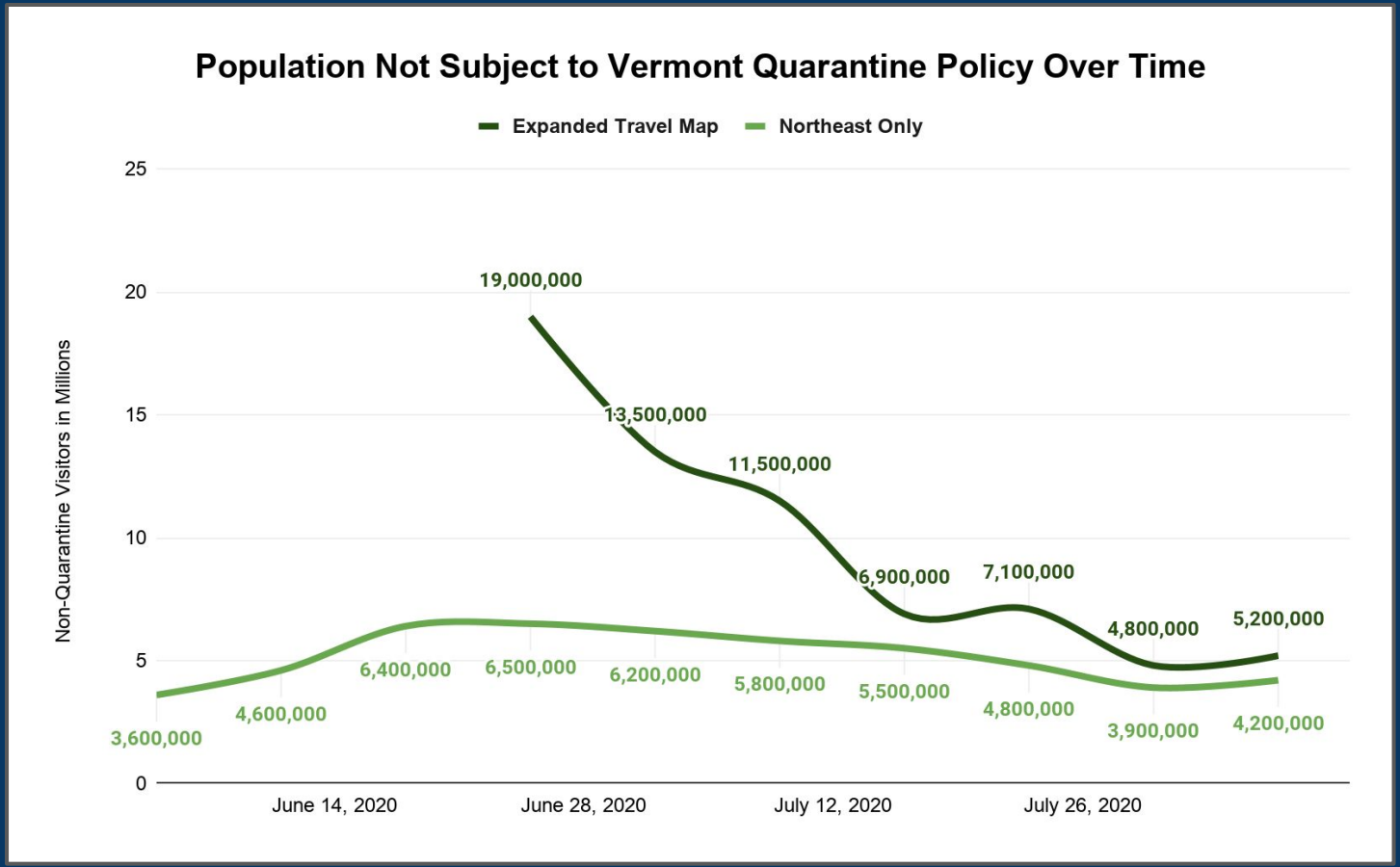


Source: Raw data from Johns Hopkins University—August 7, 2020 (dynamic map available at Vermont ACCD site)

Improving: Moving from Yellow or Red to Green



Worsening: Moving to Yellow or Red



Updated Travel Map