COVID-19 Modeling
September 22, 2020

Presentation available at: dfr.vermont.gov
200,000+
Projected American COVID-19 deaths by the end of today*

* Based on data from Johns Hopkins University
COVID-19 Deaths per 100K since January 1st

Source: Raw data from Johns Hopkins University—September 21, 2020
COVID-19 Deaths per 100K since May 15th

Source: Raw data from Johns Hopkins University—September 21, 2020
US Average Total Deaths 2015-2019

Mortality typically declines as weather warms

Source: Raw data from Johns Hopkins University—September 21, 2020 (Data from January 4, 2020 to July 18, 2020)
US Actual Deaths 2020

First known COVID infections

Source: Raw data from Johns Hopkins University—September 21, 2020 (Data from January 4, 2020 to July 18, 2020)
US Actual and COVID Deaths 2020

Excess non-COVID deaths
Non-COVID deaths remain higher than expected

Source: Raw data from Johns Hopkins University—September 21, 2020 (Data from January 4, 2020 to July 18, 2020)
National: New Cases Last 30 Days

Source: Raw data from Johns Hopkins University—September 21, 2020
Vermont Summer 2020

- Tests: 188,898*
- Cases: 559
- Test Positivity: 0.30%
- Averaged <2 people in the hospital statewide
- Averaged <1 people in the ICU statewide
- Deaths: 3

Source: Vermont Department of Health (June 21 to September 21); *unique results reported to VDH (note: not a measure of individuals as individuals may be tested more than once over time)
Vermont Weekly Totals

Sources: Vermont Department of Health (week calculated as Tuesday to Monday)
Regional Forecast September 20 to October 10

Source: Columbia University Forecast Model - September 20, 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

**Percent of Emergent Care Visits for COVID-19 like illness and Influenza Diagnosis**

Syndromic Surveillance from 13 of 14 Vermont Hospitals and 2 Urgent Care Centers

Measure currently well below warning flag level
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 - September 21, 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 - September 21, 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%

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*Source: Vermont Department of Health - September 21, 2020*
K-12 & Higher Education Update
Covid-19 Cases in K-12 Public Schools Across Northern New England

**Vermont**
4 Cases
- 1 at Williamstown Middle & High School
  Williamstown, VT
- 1 at Hartford High School
  Hartford, VT
- 2 at Crossett Brook Middle School
  Duxbury, VT

**New Hampshire**
33 Cases
22 Schools

**Maine**
10+ Cases
6 Schools
Cumulative Test Results for Vermont Colleges & Universities as of September 22, 2020

57,135 Tests Administered

43 Positive Tests

0.08% Positivity Rate
## Individual Test Results for Vermont Colleges & Universities as of September 21, 2020

<table>
<thead>
<tr>
<th>College / University</th>
<th>Total Tests</th>
<th>Total Positives</th>
<th>Dashboard / Public Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Middlebury College</td>
<td>5,901</td>
<td>2</td>
<td><a href="https://www.middlebury.edu/office/midd2021/covid-reporting-dashboard">https://www.middlebury.edu/office/midd2021/covid-reporting-dashboard</a></td>
</tr>
<tr>
<td>University of Vermont</td>
<td>31,236</td>
<td>25*</td>
<td><a href="https://www.uvm.edu/returntocampus/uvm-weekly-testing-report">https://www.uvm.edu/returntocampus/uvm-weekly-testing-report</a></td>
</tr>
<tr>
<td>Norwich University</td>
<td>5,745</td>
<td>5</td>
<td><a href="https://www.norwich.edu/news/psa">https://www.norwich.edu/news/psa</a></td>
</tr>
<tr>
<td>Northern Vermont University</td>
<td>2,491</td>
<td>0</td>
<td><a href="https://www.northernvermont.edu/nvu-during-covid-19">https://www.northernvermont.edu/nvu-during-covid-19</a></td>
</tr>
<tr>
<td>Saint Michael's College</td>
<td>2,001</td>
<td>0</td>
<td><a href="https://www.smcvt.edu/return-to-campus/">https://www.smcvt.edu/return-to-campus/</a></td>
</tr>
<tr>
<td>Sterling College</td>
<td>86</td>
<td>0</td>
<td>Does not have a public dashboard at this time</td>
</tr>
<tr>
<td>Bennington College</td>
<td>1,690</td>
<td>3</td>
<td><a href="https://www.bennington.edu/covid-19-updates-and-information">https://www.bennington.edu/covid-19-updates-and-information</a></td>
</tr>
<tr>
<td>Vermont Law School</td>
<td>161</td>
<td>0</td>
<td>Remote learning for Fall 2020 - Some students using campus facilities</td>
</tr>
<tr>
<td>Albany College of Pharmacy</td>
<td>98</td>
<td>0</td>
<td><a href="https://www.acphs.edu/health-safety">https://www.acphs.edu/health-safety</a></td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>57,135</strong></td>
<td><strong>43</strong></td>
<td></td>
</tr>
</tbody>
</table>

Note: Goddard College, Vermont College of Fine Arts, Community College of Vermont

* Reconciling data that could possibility remove up to 6 cases from the UVM count.
Regional Data
Regional Monitoring: New Cases Week Over Week

16.43% Increase in New Confirmed Cases

Positive Cases Sept. 7th to Sept. 14th

- Vermont: 45
- Maine: 207
- New Hampshire: 238
- Rhode Island: 835
- Connecticut: 1530
- Quebec: 1549
- Massachusetts: 2249
- New York: 4908

Total: 11,561

Positive Cases Sept. 14th to Sept. 20th

- Vermont: 25
- Maine: 203
- New Hampshire: 241
- Rhode Island: 773
- Connecticut: 1129
- Massachusetts: 2694
- Quebec: 2866
- New York: 5530

Total: 13,461

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

Fourth straight week in which cases have increased in the Northeast

Travel Map Update
Updated Travel Map

Source: Raw data from Johns Hopkins University—September 21, 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