COVID-19 Modeling
March 2, 2021

Presentation available at: dfr.vermont.gov
National COVID-19 Hospitalizations Trending Down

30% Decrease in Cases Since January 6, 2021

United States COVID-19 Cases

74% decrease from 1/11 to 2/23

.5% decrease from 2/24 to 3/1

Source: Covid Tracking Project — March 1, 2021
Canadian COVID-19 Cases

- 64% decrease from 1/10 to 2/23
- .8% decrease from 2/24 to 3/1

Source: Canada.CA—March 1, 2021
National COVID-19 Hospitalizations Trending Down

61% Decrease in Hospitalizations Since January 11, 2021

Source: Covid Tracking Project — March 1, 2021
National COVID-19
Deaths Trending Down

43% Decrease in 7-Day Death Rate
Since January 13, 2021

Source: Covid Tracking Project — March 1, 2021
Regional Cases

7.96% Increase in New Cases

New Cases Feb. 16th to Feb 21st

New Cases Feb. 22nd to March 1st

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

Sources: State Health Departments & CTV National News (Quebec) (includes: CT, ME, MA, NH, NY, QC, RI & VT)
Regional Positivity Rate Declining
(7-Day Average)

15.00%
10.00%
5.00%
0.00%

Threshold Recommended by the World Health Organization

10.73%
2.72%

Source: Covid Tracking Project (7-Day Average in CT, ME, MA, NH, NY, RI & VT)—March 1, 2021
Regional Hospitalizations

Source: Covid Tracking Project (7-Day Average in CT, ME, MA, NH, NY, RI & VT)—March 1, 2021
Regional Active Per Capita Case Forecast

Active Cases per Million (DFR Algorithm)

Source: Johns Hopkins University Data & Oliver Wyman Forecast Model—March 1, 2021; assumes current vaccine supply and no variant-specific impact
Vermont COVID-19 Cases
7-Day Average Trending Down

18.5% Decrease the Last Two Weeks

Source: Vermont Department of Health - March 2, 2021
Vermont COVID-19 Cases
Over 75 Years Old
7-Day Average Trending Down

Source: Vermont Department of Health - March 2, 2021
Vermonters Diagnosed with COVID-19 by Week

Source: Vermont Department of Health (week calculated as Tuesday to Monday)
<table>
<thead>
<tr>
<th>Metric</th>
<th>February 1st</th>
<th>March 1st</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case Rates (7-Day Avg)</td>
<td>122.86</td>
<td>96.71</td>
<td>↓ 21%</td>
</tr>
<tr>
<td>Hospitalized (7-Day Avg)</td>
<td>56</td>
<td>30</td>
<td>↓ 46%</td>
</tr>
<tr>
<td>Fatality Rates (7-Day Avg)</td>
<td>1.29</td>
<td>.43</td>
<td>↓ 67%</td>
</tr>
<tr>
<td>Percent Fully Vaccinated</td>
<td>2.9%</td>
<td>9.1%</td>
<td>↑ 214%</td>
</tr>
</tbody>
</table>
Vermont COVID-19 Deaths By Month

Source: Vermont Department of Health—March 1, 2021
Active Cases per Million in Vermont Counties

Source: Johns Hopkins University—DFR Active Case Methodology—March 1, 2021
Elevated viral spread
Estimated Active Cases of COVID-19 in Vermont

Continued decline in active Vermont cases

Source: Johns Hopkins University Data & Oliver Wyman Forecast Model—March 1, 2021
Vermont Forecast

Cases forecasted to continue gradual decline

Source: Johns Hopkins University Data & Oliver Wyman Forecast Model—March 1, 2021; Note: assumes current vaccine supply and no variant-specific impact
Statewide Covid-19 Hospitalizations

Source: Vermont Department of Health—March 1, 2021
Hospital & ICU Capacity Forecasts

Vermont Hospital Forecast

Vermont ICU Forecast

Hospital projections nearing baselines

Source: Oliver Wyman Forecast Model—March 1, 2021; GNYHA Hospital Surge framework
As cases increased in Vermont's communities, cases also increased on Vermont’s campuses.

Source: Vermont Higher Education Institution reporting—March 1, 2021
Covid-19 Cases in K-12 Schools & Colleges Across Northern New England

**New Hampshire**
- K-12: 2,690 (+235)
- Higher Ed: 1,686 (+419)

**Vermont**
- K-12: 657 Cases (+20)
- Higher Ed: 456 (+39)

**Maine**
- 2,240 Cases (+38)
- Higher Ed: 554 (+44)

Source: ME, NH & VT K-12 Dashboards, ME media reports
Active Outbreaks in Long Term Care Facilities

<table>
<thead>
<tr>
<th>Facility Name</th>
<th>Total COVID-19 Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valley Terrace, White River Junction</td>
<td>10</td>
</tr>
<tr>
<td>Long Term Care Facility E</td>
<td>Not Shown</td>
</tr>
</tbody>
</table>

Source: Vermont Department of Health—March 1, 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 or fewer than 5 active cases.
Total & New Doses Administered

COVID-19 Vaccinations in Vermont

Source: Vermont Department of Health — March 1, 2021
At **26.93 doses** administered per 100 residents (1st and 2nd doses), Vermont ranks:

- 2\textsuperscript{nd} in Northeast
- 11\textsuperscript{th} Nationally

Source: CDC—March 1, 2021
Vermont Ranks 9th Nationally
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—March 2, 2021
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% open ICU beds

**Vermont Coronavirus Growth Rate**

- Rolling 3-Day Avg % Growth
- Rolling 7-Day Avg % Growth

Growth rate under 1% for over 7 days

Source: Vermont Department of Health—March 1, 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

Source: Vermont Department of Health—March 1, 2021
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—March 2, 2021
Vermont Testing

7-Day Rolling Test Average

Source: Vermont Department of Health—March 1, 2021; results reported to VDH daily