COVID-19 Modeling
April 27, 2021

Presentation available at: dfr.vermont.gov
COVID Infections per 100K in Vermont (7-Day Average)

Cases are down 61% in April

Source: Vermont Department of Health—April 27, 2021
Vermont Covid-19
Case Rates Declining Again in Spring

82%  
APRIL 2020  
(decrease in 7-day Average)

61%  
APRIL 2021  
(decrease in 7-day Average)

Source: Vermont Department of Health—April 27, 2021
Weekly Higher Education Cases in Vermont

Source: Vermont Higher Education Institution Reporting—April 26, 2021
Vermont Weekly COVID-19 Infections Forecast

Calculated as a 7-day sum. Gray bands represent 50% and 95% confidence intervals. Since projections are only released once a week, the actual number may appear to over or undershoot the forecast.
College Cases Equalled ~10% of all Vermont Cases

Source: Vermont Higher Education Institution Reporting—April 26, 2021
Vermont Forward
Progress to Goal

Vaccine Status Tracker
Currently: 51.1%*

Percent with 1+ Doses

Source: CDC—April 26, 2021; ranges represent 1+ dose for all Vermonters; *using 2020 census data - CDC lists Vermont at 52.7%
Age of Infected Vermonters
Median age of COVID positive individuals in VT over the last 14 days.
Vermonters Diagnosed with COVID-19 by Week

Source: Vermont Department of Health (week calculated as Tuesday to Monday)
Source: Johns Hopkins University Data & Oliver Wyman Model—April 26, 2021
Active Cases per Million

Cases are down in Northeast Kingdom, but northern NH and western ME have seen explosive case growth.
### Vermont CDC Vaccine Scorecard

<table>
<thead>
<tr>
<th>Metric</th>
<th>Figure</th>
<th>State Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doses Administered per 100K</td>
<td>86,142</td>
<td>2</td>
</tr>
<tr>
<td>% Population Started</td>
<td>52.7%</td>
<td>4</td>
</tr>
<tr>
<td>% Fully Vaccinated</td>
<td>35.6%</td>
<td>4</td>
</tr>
<tr>
<td>% 65+ One Dose</td>
<td>94.6%</td>
<td>2</td>
</tr>
<tr>
<td>% 65+ Fully Vaccinated</td>
<td>82.8%</td>
<td>1</td>
</tr>
</tbody>
</table>
Vermont Vaccination Progress
By Age Band

Source: Vermont Dept. of Health—April 27, 2021; excludes those vaccinated through federal entities; uses 2019 Census data.
Vaccine Administration per 100K

Vermont Ranks 2\textsuperscript{nd} Nationally

Source: CDC—April 26, 2021
35.6% of Vermonters are Fully Vaccinated
Placing Vermont 4th Nationally
Vermont has 94.6% of its 65+ Population Partially or Fully Vaccinated

Source: CDC—April 26, 2021; *New Hampshire data reporting anomalies
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>EastView at Middlebury Residential Care Home, <em>Middlebury</em></td>
<td>Not Shown</td>
</tr>
<tr>
<td>Valley Vista, <em>Vergennes</em></td>
<td>Not Shown</td>
</tr>
<tr>
<td>Birchwood Terrace Rehab and Healthcare, <em>Burlington</em></td>
<td>Not Shown</td>
</tr>
</tbody>
</table>

Source: Vermont Department of Health—*Last updated April 26, 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.
Vermont Covid-19 case rates last week fell in every county except Lamoille.

Cases fell 48% in Orleans County.
Essex saw large declines.
Cases were flat in Windsor County.
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).
Statewide Covid-19 Hospitalizations

7.02% Decrease
(Last 7 Days)

9.79% Decrease
(Last 14 Days)

Source: Vermont Department of Health—April 26, 2021
Vermont Covid-19 Deaths by Week
April 2021 deaths were predicted to fall between 10 and 20—Vermont has had 14 deaths so far this month.
Vermont Weekly COVID-19 Deaths Forecast

Calculated as a 7-day sum. Gray bands represent 50% and 95% confidence intervals. Since projections are only released once a week, the actual number may appear to over or undershoot the forecast.
National COVID-19 Cases

-12.96%
Over the Last 7 Days

Source: Covid Tracking Project; NYT & CDC—April 26, 2021
US Weekly COVID-19 Infections Forecast

Calculated as a 7-day sum. Gray bands represent 50% and 95% confidence intervals. Since projections are only released once a week, the actual number may appear to over or undershoot the forecast.
National COVID-19 Hospitalizations

+1.8%
Over the Last 7 Days

Source: Covid Tracking Project; NYT & CDC—April 26, 2021
National COVID-19 Deaths

-5.68%
Over the Last 7 Days

Source: Covid Tracking Project; NYT & CDC—April 26, 2021
US Weekly COVID-19 Deaths Forecast

Calculated as a 7-day sum. Gray bands represent 50% and 95% confidence intervals. Since projections are only released once a week, the actual number may appear to over or undershoot the forecast.
Regional Cases

-27.9% in New Cases

New Cases April 13th to April 19th

82,455

New Cases April 20th to April 26th

59,469

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)
Covid-19 Cases in K-12 Schools & Colleges Across Northern New England

**Vermont**
- K-12: 1,250 (+17)
- Higher Ed: 1,096 (+52)

**New Hampshire**
- K-12: 5,107 (+282)
- Higher Ed: 3,142 (+110)

**Maine**
- K-12: 3,866 (+290)
- Higher Ed: 1,151 (+60)

Source: ME, NH & VT K-12 Dashboards; K-12 cases from the full school year; Higher Ed. cases from the Spring Semester.
Regional Hospitalizations

Trending Down
-7.42%
Over 7 Days

Source: Covid Tracking Project (7-Day Average in CT, ME, MA, NH, NY, RI & VT)—April 24, 2021
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—April 27, 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

Source: Vermont Department of Health—April 27, 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—April 27, 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—April 27, 2021
Vermont Testing

7-Day Rolling Test Average

Source: Vermont Department of Health—April 27, 2021; results reported to VDH daily