COVID-19 Modeling
October 5, 2021

Presentation available at: dfr.vermont.gov
### Table of Contents

<table>
<thead>
<tr>
<th>Data Type</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vermont Case Data</td>
<td>Pg. 4</td>
</tr>
<tr>
<td>Vermont Hospitalization Data</td>
<td>Pg. 31</td>
</tr>
<tr>
<td>Vermont Fatality Data</td>
<td>Pg. 35</td>
</tr>
<tr>
<td>Vermont Vaccination Data</td>
<td>Pg. 39</td>
</tr>
<tr>
<td>Regional Data</td>
<td>Pg. 50</td>
</tr>
<tr>
<td>National Data</td>
<td>Pg. 53</td>
</tr>
<tr>
<td>Restart Vermont</td>
<td>Pg. 60</td>
</tr>
</tbody>
</table>
Vermont New COVID-19 Cases

Vermont cases have decreased 15% over the last 7 days & have decreased 23% over the last 14 days.

Source: Vermont Dept. of Health—October 4, 2021; created with datawrapper
The not fully vaccinated case rate has **decreased 8%** in the last 7 days.

The fully vaccinated rate has **decreased 22%** during the same period.

Source: Vermont Dept. of Health—October 4, 2021
Vermont COVID-19 Hospitalizations

New Daily Hospital Admissions Per 100K (14-Day Average)

- Not Fully Vaccinated
- Fully Vaccinated

The not fully vaccinated admission rate have **decreased 30%** in the last 7 days.

The fully vaccinated admission rate has **decreased 14%** during the same period.

Source: Vermont Dept. of Health and CDC—October 2, 2021
Delta Wave: Cases Per 100k By State (14-Day Avg.)

Source: CDC—October 4, 2021
Delta Wave: Daily Hospitalizations per 100K By State (14-Day Avg.)

Source: HHS—October 4, 2021
Vermont Test Positivity: Delta Wave

Rolling 7-Day Average

Daily test positivity

Source: VDH—October 4, 2021; created with Datawrapper
Vermont COVID-19 Testing

Vermont’s 7-Day Testing Average Has Remained Stable Over The Last Week Increasing 5%

Source: VDH—October 4, 2021; created with Datawrapper
Vermonters Diagnosed with COVID-19 by Week

Source: Vermont Department of Health (week calculated as Tuesday to Monday)
Estimated vs Detected COVID-19 Cases in Vermont

This figure shows both the number of detected cases (gray) and an estimate of the true number of infections.

Source: Covidestim—Covid-19 Nowcasting—October 4, 2021
U.S. Infections, Hospitalizations, & Deaths
(7-Day Average)

10.2% Decrease
Over last 7 days

10.4% Decrease
Over last 7 days

10.9% Decrease
Over last 7 days

Infections

Hospitalizations
(Current)

Deaths

Source: New York Times—October 4, 2021; created with Datawrapper
Infections, Hospitalizations, & Deaths by Percentage of State Population Vaccinated

- Bottom Third Vaccinated States
- Middle Third Vaccinated States
- Top Third Vaccinated States
- Vermont

Source: Covid Act Now—October 4, 2021; 7-day averages; created with Datawrapper
Age of Infected Vermonters

Median age of COVID positive individuals in VT over the last 14 days.

Source: VDH—October 4, 2021
Vermont Case Rate & Vaccination by Age Band

Source: VDH—October 4, 2021
Vermont Case Rate & Vaccination by Age Band

Source: VDH—October 4, 2021
Vermont Case Rate By Age (7-Day Average)

Cases Among Those 0 to 11
Cases Among Those 12 and Older

Source: VDH—October 4, 2021; created with Datawrapper
Vermont Covid-19 Case Rates by Age (7-Day Average)

Source: VDH—October 4, 2021; created with Datawrapper
Covid-19 case rates **fell in 12 of 14 counties** this week.

Northeast Kingdom continues to see the highest case rates in Vermont.
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).
## Fall 2021 Higher Education Restart

<table>
<thead>
<tr>
<th>Higher Education Institutions Reporting</th>
<th>Enrollment</th>
<th>Students Fully Vaccinated</th>
<th>Students Not Fully Vaccinated (No Exemption Granted)</th>
<th>Students with Unknown Vaccine Status</th>
<th>Students Granted Vaccine Mandate Exemption</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 of 16</td>
<td>28,560</td>
<td>27,141</td>
<td>277</td>
<td>455</td>
<td>687</td>
</tr>
<tr>
<td></td>
<td></td>
<td>95.0%</td>
<td>1.0%</td>
<td>1.6%</td>
<td>2.4%</td>
</tr>
</tbody>
</table>

**Week 1:** 37 cases out of 12,623 tests  
**Week 2:** 36 cases out of 7,434 tests  
**Week 3:** 43 cases out of 3,053 tests  
**Week 4:** 65 cases out of 6,497 tests  
**Week 5:** 36 cases out of 4,878 tests  
**Week 6:** 19 cases out of 4,516 tests

Source: Vermont Higher Education Institutions—October 4, 2021
Vermont Higher Education Cases By Semester

- Fall 2020
- Spring 2021
- Fall 2021

<table>
<thead>
<tr>
<th>Week</th>
<th>Fall 2020</th>
<th>Spring 2021</th>
<th>Fall 2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>118</td>
<td>37</td>
<td>36</td>
</tr>
<tr>
<td>Week 2</td>
<td>65</td>
<td>36</td>
<td>36</td>
</tr>
<tr>
<td>Week 3</td>
<td>91</td>
<td>43</td>
<td>61</td>
</tr>
<tr>
<td>Week 4</td>
<td>43</td>
<td>61</td>
<td>65</td>
</tr>
<tr>
<td>Week 5</td>
<td>84</td>
<td>36</td>
<td>36</td>
</tr>
<tr>
<td>Week 6</td>
<td>30</td>
<td>36</td>
<td>19</td>
</tr>
</tbody>
</table>

Source: Vermont Higher Education Institutions—October 4, 2021—Created with Datawrapper
### 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>Green Mountain Nursing and Rehab, Colchester</td>
<td>41</td>
</tr>
<tr>
<td>Vernon Green Nursing Home, Vernon</td>
<td>30</td>
</tr>
<tr>
<td>Centers for Living and Rehab, Bennington</td>
<td>25</td>
</tr>
<tr>
<td>Mansfield Place, Essex</td>
<td>20</td>
</tr>
<tr>
<td>Equinox Terrace, Manchester</td>
<td>19</td>
</tr>
<tr>
<td>Vernon Hall Assisted Living, Vernon</td>
<td>13</td>
</tr>
<tr>
<td>St. Joseph Kervick Residence, Rutland</td>
<td>8</td>
</tr>
<tr>
<td>Long Term Care Facility A</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>163</strong></td>
</tr>
</tbody>
</table>

Source: Vermont Department of Health—October 4, 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.*
VT COVID-19 Infections Confidence Intervals

Calculated as a 7-day mean

Confidence Intervals
(Light Gray 50%; Dark Gray 95%)

Source: Centers for Disease Control and Prevention—October 4, 2021; created with Datawrapper
Vermont Hospitalization Data
Statewide Covid-19 Hospitalizations

Hospitalization rate decreasing, and Vermont continues to have fewest hospitalizations per capita nationally

69% of all recent hospitalizations among the unvaccinated over the last 7 days

Source: Vermont Department of Health—October 4, 2021
Statewide Covid-19 Critical Care Usage

100% of all recent critical care stays among the unvaccinated over last 7 days

Source: Vermont Department of Health—October 4, 2021
New Hospitalizations per 100,000 Residents, by Age

Source: US Dept. of Health & Human Services; 7-day average—October 4, 2021
Vermont Fatality Data
Weekly Covid-19 Deaths In Vermont

Source: Vermont Department of Health—October 4, 2021 (reporting week ending Tuesday to Monday)
Monthly Covid-19 Deaths In Vermont

Source: Vermont Department of Health—October 5, 2021; deaths attributed to month in which death occurred rather than reported
Vermont COVID-19 Deaths by Month

Estimating 15 to 25 COVID-19 deaths in October

Source: Vermont Department of Health—October 5, 2021; DFR Forecast
Vermont Vaccination Data
Vermont Vaccination

88.3% Of Eligible Vermonters Have Started Vaccination

486,396 Vermonters with at Least 1 Dose

88.3% Of Eligible Vermonters Have Started Vaccination

+2,708 Since Last Week

64,554 Eligible Vermonters still to be vaccinated

Source: CDC—October 4, 2021
## 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>145,386</td>
<td>1</td>
</tr>
<tr>
<td>% At Least 1 Dose (Eligible Population)</td>
<td>88.3%</td>
<td>3</td>
</tr>
<tr>
<td>% Fully Vaccinated (Eligible Population)</td>
<td>79.3%</td>
<td>2</td>
</tr>
<tr>
<td>% At Least 1 Dose (Full Population)</td>
<td>78.0%</td>
<td>1</td>
</tr>
<tr>
<td>% Fully Vaccinated (Full Population)</td>
<td>69.7%</td>
<td>1</td>
</tr>
<tr>
<td>% Fully Vaccinated (65 &amp; Over)</td>
<td>95.6%</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: CDC—October 4, 2021
Vermont is 1st in the Country in Vaccines Administered Per 100K

Source: CDC—October 4, 2021
88.3% of Eligible Vermonters Have Started Vaccination, Placing Vermont 3rd Nationally

Source: CDC—October 4, 2021
79.3% of Eligible Vermonters Are Fully Vaccinated, Placing Vermont 2nd Nationally

Source: CDC—October 4, 2021
78.0% of Vermonters Have Started Vaccination, Placing Vermont 1st Nationally
69.7% of Vermonters Fully Vaccinated, Placing Vermont 1st Nationally

Source: CDC—October 4, 2021
95.6% of 65 & Over Vermonters Fully Vaccinated, Placing Vermont 1st Nationally

Source: CDC—October 4, 2021
Vermonters initiating vaccination increased 24.3% in the last week.
Vermont Vaccination Progress

By Age Band

- Partially Vaccinated
- Fully Vaccinated

Source: Vermont Dept. of Health—October 4, 2021; *based on 2019 census estimates; state data may differ from CDC reporting
Regional Data
Regional Cases

8.8% Decrease in New Cases

New Cases September 21st to September 27th

64,259

New Cases September 28th to October 4th

58,618

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

Sources: State Health Departments & CTV National News (Quebec) (includes: CT, ME, MA, NH, NY, QC, RI & VT)
National Data
National COVID-19 Cases

-10.2% Decrease
Over the last 7 days

103,785
7-Day Average

Source: Covid Tracking Project; NYT & CDC—October 4, 2021
US COVID-19 Infections Confidence Intervals

Calculated as a 7-day mean

Source: Centers for Disease Control and Prevention—October 4, 2021; created with datawrapper
National COVID-19 Hospitalizations

-10.4% Decrease
Over the last 7 days

75,268 7-Day Average

Source: Covid Tracking Project; NYT & CDC—October 4, 2021
Vermont has among the lowest percentage of hospital beds in use for Covid-19 in US

Source: HHS—October 4, 2021
National COVID-19 Deaths

-10.9% Decrease
Over the last 7 days

1,829
7-Day Average

Source: Covid Tracking Project; NYT & CDC—October 4, 2021
US COVID-19 Deaths Confidence Intervals

Calculated as a 7-day mean

Confidence Intervals
(Light Gray 50%; Dark Gray 95%)

Source: Centers for Disease Control and Prevention—October 4, 2021; created with datawrapper
RESTART VERMONT

Reopening Metrics

1. Syndromic Surveillance *retired*
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

Vermont Department of Health no longer updating syndromic surveillance on a weekly basis.
Viral Growth & Reproductive Rates

Vermont Coronavirus Growth Rate

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

Source: Vermont Department of Health
Percentage of New Positive Tests

Percent Tests Yielding New Positive COVID-19 Cases

- % Positive Tests
- 5% Positive Warning
- Rolling 7-day Avg

Source: Vermont Department of Health
Hospital & Critical Care Beds

ICU Use & Capacity

Source: Vermont Department of Health
Vermont Testing

7-Day Rolling Test Average

Source: Vermont Department of Health; results reported to VDH daily