COVID-19 Modeling
November 2, 2021

Presentation available at: dfr.vermont.gov
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Vermont Case Data
Vermont cases have increased 12% over the last 7 days & have decreased 8% over the last 14 days.
Week-over-week testing decreased, with the 7-day average decreasing 6% this week.
Vermont Test Positivity: Delta Wave

Source: VDH—November 2, 2021; created with Datawrapper
Vermont Case Growth Metrics

12% Increase
Over last 7 days

6% Decrease
Over last 7 days

19% Increase
Over last 7 days

Source: VDH—November 2, 2021; created with Datawrapper
The not fully vaccinated case rate has increased 1.4% in the last 7 days.

The fully vaccinated rate has decreased 2.2% during the same period.
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 19%** in the last 7 days.

The fully vaccinated admission rate has **increased 3%** during the same period.

Source: Vermont Dept. of Health and CDC—October 30, 2021
Average Age of Covid-19 Outcomes by Vaccination Status (October)

Infections

- Fully Vaccinated: 48.4
- Not Fully Vaccinated: 26.8

Hospitalizations

- Fully Vaccinated: 70.9
- Not Fully Vaccinated: 54.9

Fatalities

- Fully Vaccinated: 84.4
- Not Fully Vaccinated: 74.6

Source: VDH—Vaccination data from October 1 to 30, 2021; created with Datawrapper
Average Age of Covid-19 Outcomes by Vaccination Status (July-Present)

Source: VDH—Vaccination data from July 1 to October 30, 2021; created with Datawrapper
Vermont had the 19th-highest rate of New COVID-19 cases over the last week.
Vermont had the 2nd-highest rate of COVID-19 testing over the last week.
COVID-19 $R_t$ in Vermont

Source: Covidestim—Covid-19 Nowcasting—November 2, 2021
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.

- Detected Cases
- Estimated True Cases

Source: Covidestim—Covid-19 Nowcasting—November 2, 2021
Age of Infected Vermonters

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

Source: VDH—November 2, 2021
Vermont Covid-19 Case Rates by Age (7-Day Average)

- 0-4
- 5-11
- 12-18
- 19+ [everybody else]
Vermont Case Rate & Vaccination by Age Band

Source: VDH—November 2, 2021
Vermont Case Rate & Vaccination by Age Band

Ages 0-11

Ages 12-15

Source: VDH—November 2, 2021, 2021
Vermont Case Rate By Age (7-Day Average)

Source: VDH—November 2, 2021; created with Datawrapper
Covid-19 case rates still highest in the Kingdom, small drop from last week

Cases also elevated in southwestern 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>28,586</td>
<td>27,201</td>
<td>255</td>
<td>445</td>
<td>685</td>
</tr>
<tr>
<td></td>
<td></td>
<td>95.2%</td>
<td>0.9%</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  
Week 7: **27 cases** out of 3,536 tests  
Week 8: **63 cases** out of 3,668 tests  
Week 9: **65 cases** out of 4,398 tests  
Week 10: **53 cases** out of 4,575 tests

Source: Vermont Higher Education Institutions—October 25, 2021
Vermont Higher Education Cases By Semester

Source: Vermont Higher Education Institutions—November 2, 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>Berlin Health &amp; Rehab</td>
<td>52</td>
</tr>
<tr>
<td>St. Johnsbury Health &amp; Rehab</td>
<td>33</td>
</tr>
<tr>
<td>The Pines at Rutland Center for Nursing &amp; Rehab</td>
<td>18</td>
</tr>
<tr>
<td>Harbor Village Senior Living, South Burlington</td>
<td>17</td>
</tr>
<tr>
<td>Newport Health Care Center</td>
<td>17</td>
</tr>
<tr>
<td>Crescent Manor Nursing Home &amp; Rehab, Bennington</td>
<td>12</td>
</tr>
<tr>
<td>Gill Odd Fellows Home, Ludlow</td>
<td>9</td>
</tr>
<tr>
<td>Helen Porter Rehab and Nursing, Middlebury</td>
<td>8</td>
</tr>
<tr>
<td>Maple Lane Nursing Home, Barton</td>
<td>Not Shown</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>166</strong></td>
</tr>
</tbody>
</table>

Source: Vermont Department of Health—November 2, 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
Vermont Hospitalization Data
Statewide Covid-19 Hospitalizations

75% of hospitalizations among the unvaccinated over the last 7 days

Source: Vermont Department of Health—November 2, 2021
75% of critical care stays among the unvaccinated over last 7 days
New Hospitalizations per 100K Residents, by Age

Source: US Dept. of Health & Human Services; 7-day average—November 1, 2021
Vermont ranks 29th on COVID-19 new hospital admissions in the country over the last week.
Vermont Fatality Data
Monthly Covid-19 Deaths In Vermont

369 COVID-19 Deaths Since the Start of the Pandemic

Source: Vermont Department of Health—November 2, 2021; deaths attributed to month in which death occurred rather than reported
VT COVID-19 Death Confidence Intervals

Calculated as a 7-day mean

Source: CDC—November 2, 2021
Vermont had the 8th-fewest COVID-19 deaths per capita over the last week.
Vermont Vaccination Data
Vermont CDC Vaccine Scorecard

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<th>Metric</th>
<th>Figure</th>
<th>State Ranking</th>
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<tr>
<td>Doses Administered per 100K</td>
<td>157,976</td>
<td>1</td>
</tr>
<tr>
<td>% At Least 1 Dose (Eligible Population)</td>
<td>90.4%</td>
<td>4 (tied)</td>
</tr>
<tr>
<td>% Fully Vaccinated (Eligible Population)</td>
<td>80.8%</td>
<td>3</td>
</tr>
<tr>
<td>% At Least 1 Dose (Full Population)</td>
<td>79.9%</td>
<td>2</td>
</tr>
<tr>
<td>% Fully Vaccinated (Full Population)</td>
<td>71.3%</td>
<td>1</td>
</tr>
<tr>
<td>% Fully Vaccinated (65 &amp; Over)</td>
<td>97.4%</td>
<td>1</td>
</tr>
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</table>

Source: CDC—November 2, 2021
Vermont is 1st in the Country in Vaccines Administered Per 100K

Source: CDC—November 2, 2021
90.4% of Eligible Vermonters Have Started Vaccination, Placing Vermont 4th Nationally

Source: CDC—November 2, 2021
80.8% of Eligible Vermonters Are Fully Vaccinated, Placing Vermont 3rd Nationally

Source: CDC—November 2, 2021
79.9% of Vermonters Have Started Vaccination, Placing Vermont 2nd Nationally

Source: CDC—November 2, 2021
71.3% of Vermonters Fully Vaccinated, Placing Vermont 1st Nationally

Source: CDC—November 2, 2021
97.4% of 65 & Over Vermonters Fully Vaccinated, Placing Vermont 1st Nationally

Source: CDC—November 2, 2021
Vermont Vaccination Progress
By Age Band

Source: Vermont Dept. of Health—November 2, 2021; *based on 2019 census estimates; state data may differ from CDC reporting
Regional Data
Regional Cases

0.1% Increase in New Cases

New Cases October 19th to October 25th

- Rhode Island: 1,381
- Vermont: 1,499
- New Hampshire: 3,392
- Connecticut: 2,855
- Quebec: 2,866
- Maine: 3,248
- Massachusetts: 9,742
- New York: 25,630

Total: 50,523

New Cases October 26th to November 1st

- Vermont: 1,428
- Rhode Island: 1,476
- Connecticut: 2,290
- New Hampshire: 3,146
- Maine: 3,295
- Quebec: 9,186
- Massachusetts: 3,462
- New York: 26,308

Total: 50,591

Sources: State Health Dept. & CTV National News (Quebec)
New England COVID-19 New Case Metrics
(All Calculated on 7-Day Averages)

Sources: State Health Depts.—November 1, 2021 (includes: CT, ME, MA, NH, RI & VT)
New England COVID-19 cases have decreased 5% over the last 7 days & have decreased 6% over the last 14 days.
New England COVID-19 Case Trends
7-Day Average Cases Per 100K

Sources: State Health Depts.—November 1, 2021 (includes: CT, ME, MA, NH, RI & VT)
Northern vs. Southern New England Case Rate Per 100K

Sources: State Health Depts.—November 1, 2021 (Northern NE includes: ME, NH, RI & VT & Southern NE includes: CT, MA & RI)
Weekly Regional Cases

Sources: State Health Depts.—October 25, 2021 (includes: CT, ME, MA, NH, RI & VT - note NH reporting incomplete data)
National Data
U.S. Infections, Hospitalizations, & Deaths
(7-Day Average)

0.4% Increase
Over last 7 days

9.3% Decrease
Over last 7 days

9.2% Decrease
Over last 7 days

Source: New York Times—November 1, 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—November 2, 2021; 7-day averages; created with Datawrapper
Daily COVID-19 Infections per Million in US Regions

Calculated as a 7-day moving average. Definitions of North, Midwest, South, and West taken from the U.S. Census bureau.

Source: JHU—November 2, 2021; 7-day averages; created with Datawrapper
VT COVID-19 Death Confidence Intervals

Calculated as a 7-day mean

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

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