COVID-19 Modeling
February 1, 2022

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

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overview</td>
<td>Pg. 3</td>
</tr>
<tr>
<td>Vermont Case Data</td>
<td>Pg. 4</td>
</tr>
<tr>
<td>Vermont Hospitalization Data</td>
<td>Pg. 27</td>
</tr>
<tr>
<td>Vermont Fatality Data</td>
<td>Pg. 36</td>
</tr>
<tr>
<td>Vermont Vaccination Data</td>
<td>Pg. 44</td>
</tr>
<tr>
<td>Regional Data</td>
<td>Pg. 50</td>
</tr>
<tr>
<td>National Data</td>
<td>Pg. 59</td>
</tr>
<tr>
<td>Restart Vermont</td>
<td>Pg. 67</td>
</tr>
</tbody>
</table>
Overview

Cases
Cases in Vermont this week plummeted by more than 3,000—a decrease of 40%. In the last two weeks, cases have fallen 56%. Forecasts predict these trends will continue, following similar patterns in states like New York and New Jersey where Omicron peaked earlier than in Vermont. However, cases remain elevated with nearly 700 average new infections reported daily, and Vermont hospitals remain short-staffed with high inpatient counts.

Deaths
January 2022 was tied for the second-deadliest month of the pandemic in Vermont with 62 fatalities. However, as Omicron became dominant and cases soared, the proportion of infections resulting in a fatality dropped to 0.15%—the lowest figure since Fall 2020 when no deaths were reported for three straight months.

The risk from COVID-19, however, is not equal: while the rate of death for those under 70 is less than 1% (and close to zero for younger age groups), the case fatality rate for the oldest Vermonters is over 7%.

Varying Risk
Differences in vaccination status, age, and underlying conditions present a nuanced picture of risk for Vermonters. Across the US, the average weekly chance of a boosted person dying of Covid was about one in a million according to the most recent available CDC data (the chance an average American will die in a car crash is 2.4 per million), but older and unvaccinated Vermonters face increased risk from the virus. For the latter group, state data continues to show the risk of death is ten-fold that of boosted Vermonters.
Vermont Case Data
Vermont is averaging **672 cases** over the last 7 days

The 7-day average has **decreased 40%** over the last 7 days & **decreased 56%** over the last 14 days
Vermont reported 4,797 new COVID-19 cases this week, **3,357 fewer cases** compared to last week.
Vermont New Weekly COVID-19 Cases By Variant

Source: VDH—January 31, 2022; created with Datawrapper; Approximates dates when original virus & variants were dominant in Vermont
37% of all Vermont COVID-19 cases were reported in January 2022

Source: VDH—February 1, 2022; created with Datawrapper
Week-over-week testing fell, with the 7-day average decreasing 21%
Test positivity **decreased 23%** over the last 7 days.
The not fully vaccinated case rate has **decreased 42%** in the last 7 days

The fully vaccinated rate has **decreased 39%** during the same period

Source: VDH & CDC—January 29, 2022; Created with Datawrapper
Over the last 7 days, cases have:

- **Decreased 46%** for ages **0 to 24**
- **Decreased 40%** for ages **25 to 49**
- **Decreased 40%** for ages **50 to 64**
- **Decreased 23%** for ages **65+**
VT COVID-19 Infections per 100K by Age Group

Source: VDH—February 1, 2022; created with Datawrapper
Vermont Covid-19 Case Rates by Age (7-Day Average)

Source: VDH—February 1, 2022; created with Datawrapper
Vermont COVID-19 Cases Compared to Northeast

Cases per 100K on 7-day averages

Sources: State Health Depts.—January 31, 2022
Age of Infected Vermonters

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

Source: VDH—February 1, 2022; created with Datawrapper
Vermont Case Rate & Vaccination by Age Band

- **New Infections per 100K (14-Day Average)**
- **Percent Received First Vaccine Dose**

Source: VDH—February 1, 2022
Vermont had the 14th-lowest rate of new COVID-19 cases over the last week.
Vermont had the highest rate of COVID-19 testing over the last week.
Vermont COVID-19 cases are expected to continue to decline in the coming weeks, consistent with improving case trends in Vermont, the Northeast and the U.S.
Declines in COVID-19 fatalities are expected to lag behind case improvements.
### Active Outbreaks in Long Term Care Facilities (1/2)

<table>
<thead>
<tr>
<th>Facility Name</th>
<th>Total COVID-19 Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mountain View Center, Rutland</td>
<td>79</td>
</tr>
<tr>
<td>Bennington Health &amp; Rehab</td>
<td>59</td>
</tr>
<tr>
<td>Mayo Rehab &amp; Continuing Care, Northfield</td>
<td>58</td>
</tr>
<tr>
<td>Queen City Nursing &amp; Rehabilitation, Burlington</td>
<td>57</td>
</tr>
<tr>
<td>Pines Rehab &amp; Health Center, Lyndonville</td>
<td>46</td>
</tr>
<tr>
<td>Elderwood at Burlington</td>
<td>38</td>
</tr>
<tr>
<td>The Residence at Shelburne Bay, Shelburne</td>
<td>30</td>
</tr>
<tr>
<td>Pine Heights at Brattleboro</td>
<td>27</td>
</tr>
<tr>
<td>The Pines at Rutland Center for Nursing &amp; Rehab</td>
<td>25</td>
</tr>
<tr>
<td>Vermont Veterans Home, Bennington</td>
<td>23</td>
</tr>
<tr>
<td>The Village at White River Junction</td>
<td>22</td>
</tr>
<tr>
<td>Wake Robin, Shelburne</td>
<td>14</td>
</tr>
<tr>
<td>Brookdale Fillmore Pond, Bennington</td>
<td>11</td>
</tr>
<tr>
<td>Green Mountain Nursing and Rehab, Colchester</td>
<td>11</td>
</tr>
<tr>
<td>Sterling House at Rockingham, Bellows Falls</td>
<td>8</td>
</tr>
<tr>
<td>Valley Terrace, White River Junction</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total (shown)</strong></td>
<td><strong>515</strong></td>
</tr>
</tbody>
</table>

Source: Vermont Department of Health—January 31, 2022 (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
## Active Outbreaks in Long Term Care Facilities (2/2)

<table>
<thead>
<tr>
<th>Facility Name</th>
<th>Total COVID-19 Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thompson House, Brattleboro</td>
<td>Not Shown</td>
</tr>
<tr>
<td>Our Lady of the Meadows, Richford</td>
<td>Not Shown</td>
</tr>
<tr>
<td>Equinox Terrace, Manchester</td>
<td>Not Shown</td>
</tr>
<tr>
<td>Riverbend Residential Care Home, Chelsea</td>
<td>Not Shown</td>
</tr>
<tr>
<td>Birchwood Terrace Rehab &amp; Healthcare, Burlington</td>
<td>Not Shown</td>
</tr>
</tbody>
</table>

Source: Vermont Department of Health—January 31, 2022 (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
## Spring 2022 Higher Education

<table>
<thead>
<tr>
<th>Metric</th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tests</td>
<td>4,953</td>
<td>10,612</td>
<td>13,043</td>
<td>13,547</td>
</tr>
<tr>
<td>COVID-19 Positives</td>
<td>313</td>
<td>382</td>
<td>303</td>
<td>282</td>
</tr>
<tr>
<td>Percent Positive</td>
<td>6.3%</td>
<td>3.6%</td>
<td>2.3%</td>
<td>2.1%</td>
</tr>
</tbody>
</table>

Source: Vermont Higher Education Institutions—January 31, 2021
Vermont Hospitalization Data
Vermont New COVID-19 Hospital Admissions

10% decrease in the new hospital admission 7-day average over the past week

Source: HHS—January 31, 2022; Created with Datawrapper
Statewide Covid-19 Hospitalizations

5% Decrease in the 7-day hospitalization average over the past week

58% of hospitalizations among the unvaccinated over the last 7 days

Source: VDH—January 31, 2022
Statewide Covid-19 Critical Care Usage

1% decrease in the 7-day ICU average over the past week

56% of critical care stays among the unvaccinated over the last 7 days

Source: VDH—January 31, 2022
Vermonters Hospitalized for Influenza

Reported influenza hospitalizations in Vermont remain low
Vermont Hospital Metrics
(7-Day Averages)

Vermont Hospital Beds Available Since July 1, 2021

- 54 beds available on February 1, 2022

Vermont ICU Beds Available Since July 1, 2021

- 27 ICU beds available on February 1, 2022

Source: VDH—February 1, 2022; created with Datawrapper
Hospitalizations continue to be more common among older Vermonters.
COVID-19 Hospitalizations By Vaccination Status Per 100K

Measured Among Vermont’s 18 & Over Population Over the Last 6 Weeks

Those 18+ & **not fully vaccinated** were nearly **10x more** likely to be hospitalized from COVID-19 over the last 6 weeks compared to those **fully vaccinated & boosted**.

Source: VDH & CDC—January 29, 2022; Created with Datawrapper
Vermont had the 2nd-fewest COVID-19 hospital admissions per capita over the last week.
Vermont Fatality Data
Monthly Covid-19 Deaths In Vermont

542 COVID-19 deaths since the start of the pandemic

Source: VDH—February 1, 2022; created with Datawrapper; deaths attributed to month in which death occurred rather than reported
Monthly Covid-19 Fatality Rates

Source: VDH—January 31, 2022; created with Datawrapper
The number of fatal COVID-19 cases is considerably higher among older Vermonters.

Source: VDH—January 31, 2022; created with Datawrapper
This trend continues even after the widespread availability of COVID-19 vaccines.

Source: VDH—January 31, 2022; created with Datawrapper
COVID-19 Deaths By Vaccination Status Per 100K

Measured Among Vermont’s 18 & Over Population Over the Last 6 Weeks

Those 18+ & **not fully vaccinated** were **10x more** likely to die from COVID-19 over the last 6 weeks compared to those **fully vaccinated & boosted**

- **Not Fully Vaccinated**: 46.8 Deaths per 100K
- **Fully Vaccinated But Not Boosted**: 12.1 Deaths per 100K
- **Fully Vaccinated & Boosted**: 4.7 Deaths per 100K

Source: VDH & CDC—February 1, 2022; Created with Datawrapper
Vermont had the 5th-fewest COVID-19 deaths per capita over the last week.
Vermont Vaccination Data
# 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>212,307</td>
<td>1</td>
</tr>
<tr>
<td>% At Least 1 Dose (5+ Population)</td>
<td>95%+</td>
<td>1 (tied)</td>
</tr>
<tr>
<td>% Fully Vaccinated (5+ Population)</td>
<td>83.3%</td>
<td>1 (tied)</td>
</tr>
<tr>
<td>% At Least 1 Dose (Full Population)</td>
<td>92.1%</td>
<td>5</td>
</tr>
<tr>
<td>% Fully Vaccinated (Full Population)</td>
<td>79.4%</td>
<td>1</td>
</tr>
<tr>
<td>% Fully Vaccinated (65 &amp; Over)</td>
<td>95%+</td>
<td>1 (tied)</td>
</tr>
</tbody>
</table>

Source: CDC—January 31, 2022—New Hampshire excluded due to unreliable data
Vermont leads the nation in the percentage of 5 to 11 year olds starting vaccination:

62.3% w/ 1 Dose & 52.2% Fully Vaccinated

Source: CDC—January 31, 2022; Created with Datawrapper
Vermont Vaccination Progress
By Age Band

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Partially Vaccinated</th>
<th>Fully Vaccinated</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-11</td>
<td>7.46%</td>
<td>51.94%</td>
</tr>
<tr>
<td>12-15</td>
<td>6.31%</td>
<td>68.23%</td>
</tr>
<tr>
<td>16-17</td>
<td>74.55%</td>
<td>80.17%</td>
</tr>
<tr>
<td>18-21</td>
<td>6.57%</td>
<td>73.60%</td>
</tr>
<tr>
<td>22-29</td>
<td>7.09%</td>
<td>52.42%</td>
</tr>
<tr>
<td>30-39</td>
<td>10.07%</td>
<td>65.95%</td>
</tr>
<tr>
<td>40-49</td>
<td>9.08%</td>
<td>91.75%</td>
</tr>
<tr>
<td>50-59</td>
<td>6.54%</td>
<td>89.09%</td>
</tr>
<tr>
<td>60-64</td>
<td>5.11%</td>
<td>87.86%</td>
</tr>
<tr>
<td>65-69</td>
<td>4.60%</td>
<td>94.88%</td>
</tr>
<tr>
<td>70-74</td>
<td>4.01%</td>
<td>94.81%</td>
</tr>
<tr>
<td>75+</td>
<td>&gt;99%*</td>
<td>98.73%</td>
</tr>
<tr>
<td></td>
<td>3.50%</td>
<td>94.81%</td>
</tr>
</tbody>
</table>

Source: Vermont Dept. of Health—January 31, 2022; *based on 2019 census estimates; state data may differ from CDC reporting; VDH data cleaning January 13-14, 2022.
# Vermont CDC Booster Scorecard

<table>
<thead>
<tr>
<th>Metric</th>
<th>Figure</th>
<th>State Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of Fully Vaccinated w/ booster dose</td>
<td>57.0%</td>
<td>1</td>
</tr>
<tr>
<td>% of Fully vaccinated 18+ w/ booster doses</td>
<td>61.2%</td>
<td>1</td>
</tr>
<tr>
<td>% of Fully vaccinated 50+ w/ booster doses</td>
<td>70.6%</td>
<td>2</td>
</tr>
<tr>
<td>% of Fully vaccinated 65+ w/ booster doses</td>
<td>77.6%</td>
<td>3</td>
</tr>
</tbody>
</table>

Source: CDC—January 31, 2021
Vermont: Booster Shots Administered By Week

Source: CDC—January 31, 2022; created with Datawrapper
Regional Data
Northeast Regional Cases

44.4% Decrease in New Cases

New Cases January 18th to January 24th

New Cases January 25th to January 31st

Sources: State Health Dept. & CTV National News (Quebec)
Weekly Northeast Regional Cases

163,641 fewer cases this week compared to last
New England COVID-19 Cases

New England cases **decreased 44%** over last 7 days & **decreased 54%** over last 14 days

Sources: State Health Depts.—January 31, 2022 (includes: CT, ME, MA, NH, RI & VT)
New England COVID-19 Case Trends

7-Day Average Cases Per 100K

Cases continuing to decline across New England

Sources: State Health Depts.—January 31, 2022 (includes: CT, ME, MA, NH, RI & VT)
In areas hit early, Omicron fueled rapid case increases and decreases, although cases remain elevated.
Metro-Boston COVID-19 wastewater detection has decreased **over 85%** since Omicron peak.

Source: Massachusetts Water Resources Authority—January 28, 2022
New England hospitalizations decreased 20% over last 7 days & decreased 29% over last 14 days.
Hospitalizations decreasing in Connecticut, Massachusetts & Rhode Island; stable in New Hampshire, Maine & Vermont
National Data
U.S. Infections, Hospitalizations, & Deaths

Infections
(7-Day Average)

Hospitalizations
(7-Day Average)

Deaths
(7-Day Average)

36% Decrease
Over last 7 days

10% Decrease
Over last 7 days

9% Increase
Over last 7 days

Source: New York Times—February 1, 2022; 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

Infections per 100K
Hospitalizations per 100K (Current)
Deaths per 100K

Source: Covid Act Now—February 1, 2022; 7-day averages; created with Datawrapper
Daily COVID-19 Cases 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—February 1, 2022; 7-day averages; created with Datawrapper
National COVID-19 cases are expected to see improvement in the coming weeks. Case declines will likely vary by geography based on timing of Omicron peak.
US COVID-19 Death Confidence Intervals

Calculated as a 7-day mean. Inner and outer bands represent 50% and 95% confidence intervals, respectively.
International Cases Omicron Wave

Cases per million on 7-day average

- United Kingdom
- Canada
- South Africa

Source: Our World In Data—February 1, 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
5. Testing Volume
Test Positivity

Source: Vermont Department of Health; 7-day positivity calculated as positive tests last seven days/tests last seven days
Vermont Testing

7-Day Rolling Average

# of Tests

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