COVID-19 Modeling
March 9, 2021

Presentation available at:
dfr.vermont.gov
Source: Vermont Department of Health (week calculated as Tuesday to Monday)
Small increase in active cases last week
Daily Covid Infections in Vermont (7-Day Average)

- Including Newport Prison Outbreak
- Not Including Newport Prison Outbreak

Cases are rising in Vermont even without the effect of the Newport prison outbreak.
Infections per 100K in VT Age Groups (14-Day Average)

- **First Vaccinations Begin**
- **Second Doses Begin**
- **Vaccination open to all 75+**
- **Vaccination open to all 70+**

- 27% below 70
- 70% 70 and Above
# 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, <em>White River Junction</em></td>
<td>9</td>
</tr>
<tr>
<td>Vermont Veterans Home (2)</td>
<td>Not Shown</td>
</tr>
</tbody>
</table>

Source: Vermont Department of Health—March 8, 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 Vaccination Progress

By Age Band

% Completed  % Started

Source: Vermont Dept. of Health—March 9, 2021
Statewide Covid-19 Hospitalizations

Source: Vermont Department of Health—March 8, 2021
March Fatality Rates Expected to Decline

Likelihood of COVID-19 Deaths Largely Dependant on:

Active Cases & Outbreaks in LTCFs
1/13: 71 LTCF Cases (prior 3 weeks) & 12 Outbreaks
3/9: 5 LTCF Cases (prior 3 weeks) & 2 Outbreaks

Active Cases Among Most Vulnerable by Age
1/13: 305 Cases Among 70+ (prior 3 weeks)
3/9: 107 Cases Among 70+ (prior 3 weeks)

Individuals in ICU
1/13: 7-Day Average: 8.4 (Trending Up)
3/9: 7-Day Average: 5.7 (Trending Down)

Individuals Requiring Ventilation
1/13: 7-Day Average: 1 (Trending Up)
3/9: 7-Day Average: 2.1 (Trending Down)
Vermont Covid-19 Deaths Expected to Decrease in March

- March: 16 deaths
- April: 35 deaths
- May: 4 deaths
- June: 1 death
- July: 2 deaths
- August: 0 deaths
- September: 0 deaths
- October: 0 deaths
- November: 19 deaths
- December: 71 deaths
- January: 34 deaths
- February: 25 deaths
- March: 4 deaths

Note: 7 to 15 Deaths
As cases increased in Vermont's communities, cases also increased on Vermont's campuses.
Covid-19 Cases in K-12 Schools & Colleges Across Northern New England

**Vermont**

K-12: 701 Cases (+44)
Higher Ed: 496 (+40)

**New Hampshire**

K-12: 2,861 (+171)
Higher Ed: 1,944 (+258)

**Maine**

2,531 Cases (+291)
Higher Ed: 554 (+24)

Source: ME, NH & VT K-12 Dashboards, ME media reports
Orleans County correctional outbreak
Vermont Forecast

Orleans outbreak

Expected case decline

Source: Johns Hopkins University Data & Oliver Wyman Forecast Model—March 8, 2021; Note: assumes current vaccine supply and no variant-specific impact
Hospital & ICU Capacity Forecasts

Vermont Hospital Forecast
- Med-Surg Beds + Covid
- Current Total Med-Surg Capacity
- Elevated Med-Surg Level
- Med-Surg Beds baseline occupancy

Vermont ICU Forecast
- ICU bed baseline occupancy
- ICU beds baseline + COVID
- Elevated ICU bed level
- Total current ICU capacity

Hospital projections nearing baselines

Source: Oliver Wyman Forecast Model—March 8, 2021; GNYHA Hospital Surge framework
## Likelihood of Receiving a COVID-19 Vaccine

<table>
<thead>
<tr>
<th>State</th>
<th>Will definitely get a vaccine</th>
<th>Will probably get a vaccine</th>
<th>Will probably not get a vaccine</th>
<th>Will definitely not get a vaccine</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vermont</td>
<td>69.9%</td>
<td>14.0%</td>
<td>9.7%</td>
<td>6.4%</td>
<td></td>
</tr>
<tr>
<td>Massachusetts</td>
<td>69.6%</td>
<td>19.6%</td>
<td>6.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Hampshire</td>
<td>67.1%</td>
<td>13.7%</td>
<td>12.2%</td>
<td>7.0%</td>
<td></td>
</tr>
<tr>
<td>Connecticut</td>
<td>64.2%</td>
<td>21.4%</td>
<td>7.9%</td>
<td>6.5%</td>
<td></td>
</tr>
<tr>
<td>Rhode Island</td>
<td>62.9%</td>
<td>20.6%</td>
<td>9.1%</td>
<td>7.3%</td>
<td></td>
</tr>
<tr>
<td>New York</td>
<td>58.5%</td>
<td>25.5%</td>
<td>8.9%</td>
<td>6.5%</td>
<td></td>
</tr>
<tr>
<td>Maine</td>
<td>57.7%</td>
<td>19.8%</td>
<td>10.6%</td>
<td>11.5%</td>
<td></td>
</tr>
<tr>
<td>United States</td>
<td>54.3%</td>
<td>22.8%</td>
<td>12.8%</td>
<td>9.9%</td>
<td></td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau Household Pulse Survey - February 3-15, 2021
Percentage of adults who have not received a COVID-19 vaccine but definitely will once available

Vermonters reporting highest vaccination enthusiasm in US

Source: U.S. Census Bureau Household Pulse Survey - February 3-15, 2021
COVID-19 Vaccinations in Vermont

Total & New Doses Administered

Source: Vermont Department of Health — March 8, 2021
Regional Vaccination Map

At **31.85 doses** administered per 100 residents (1st and 2nd doses), Vermont ranks:

- 3rd in Northeast
- 13th Nationally

Source: CDC—March 9, 2021
Percentage Population Fully Vaccinated

Vermont Ranks 11th Nationally

Source: CDC—March 8, 2021
Regional Cases

7.97% Decrease in New Cases

New Cases Feb. 22nd to March 1st

82,818

New Cases March 2nd to March 8th

76,218

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)

Source: Covid Tracking Project (7-Day Average in CT, ME, MA, NH, NY, RI & VT)—March 8, 2021
Regional Hospitalizations

Trending Down

Source: Covid Tracking Project (7-Day Average in CT, ME, MA, NH, NY, RI & VT)—March 8, 2021
National COVID-19 Cases

15% Decrease
Over the Last 10 Days

77% Decrease
Since January 11th

Source: CDC—March 8, 2021
National COVID-19 Hospitalizations Trending Down

15% Decrease Over the Last 10 Days

77% Decrease Since January 11th

Source: Covid Tracking Project & CDC—March 8, 2021
National COVID-19 Deaths Trending Down

14% Decrease Over the Last 10 Days

50% Decrease Since January 13th

Source: Covid Tracking Project & CDC—March 8, 2021
Confirmed Cases of B.1.1.7 Variant - U.S.

Source: CDC - March 7, 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—March 9, 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**

Source: Vermont Department of Health—March 9, 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 9, 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 9, 2021
Vermont Testing

7-Day Rolling Test Average

Source: Vermont Department of Health—March 9, 2021; results reported to VDH daily