COVID-19 Modeling
December 29, 2020

Presentation available at: dfr.vermont.gov
Vermonters Diagnosed with COVID-19 by Week

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

28% Decrease Since December 9th

Source: Vermont Department of Health
Vermont COVID-19 Positivity Rate

7 Day Average is Trending Lower

Source: Vermont Department of Health
Vermont COVID-19 Hospitalizations

Medical/Surgical Beds
7 Day Average is Stable

ICU Beds
7 Day Average is Trending Lower

Source: Vermont Department of Health
Vermont COVID-19 Fatalities

52 Deaths in December
Vermont’s Deadliest Month

Source: Vermont Department of Health
# Active Outbreaks in Long Term Care Facilities

<table>
<thead>
<tr>
<th>Facility Name</th>
<th>Total COVID-19 Cases</th>
<th>Change from Prior Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elderwood at Burlington, Burlington</td>
<td>125</td>
<td>+2</td>
</tr>
<tr>
<td>Saint Albans Healthcare &amp; Rehab Center, Saint Albans</td>
<td>87</td>
<td>+2</td>
</tr>
<tr>
<td>Rutland Health &amp; Rehab, Rutland</td>
<td>67</td>
<td>0</td>
</tr>
<tr>
<td>Our Lady of Providence, Winooski</td>
<td>47</td>
<td>+4</td>
</tr>
<tr>
<td>Berlin Health &amp; Rehab, Berlin</td>
<td>34</td>
<td>0</td>
</tr>
<tr>
<td>Craftsbury Community Care Center, Craftsbury</td>
<td>28</td>
<td>+11</td>
</tr>
<tr>
<td>Converse Home Assisted Living, Burlington</td>
<td>15</td>
<td>+1</td>
</tr>
<tr>
<td>The Residence at Shelburne Bay, Shelburne</td>
<td>14</td>
<td>+14 (new)</td>
</tr>
<tr>
<td>Residence at Quarry Hill, South Burlington</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>Holton Home, Brattleboro</td>
<td>8</td>
<td>+2</td>
</tr>
<tr>
<td>Cathedral Square, Burlington</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>513</strong></td>
<td><strong>+36</strong></td>
</tr>
</tbody>
</table>

Source: Vermont Department of Health - December 29, 2020 (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 -- count included in total cases.
Weekly Long Term Care Facility Totals

- 11/24/20: 37
- 12/1/20: 66
- 12/8/20: 117
- 12/15/20: 94
- 12/22/20: 121
- 12/29/20: 36
Vermont Forecast

Forecasted flattening of new cases over next 4 weeks

Source: Johns Hopkins University Data & Oliver Wyman Forecast Model - December 28, 2020
Covid-19 Cases in K-12 Public Schools Across Northern New England

Vermont
265 Cases (+33)
147 Schools (+14)

New Hampshire
1,315 Cases (+130)
370 Schools (+36)

Maine
950 Cases (+11)
201 Schools (+2)

Source: ME, NH & VT K-12 Dashboards and ME media reports
0.58% Decrease in New Confirmed Cases

Positive Cases Dec. 15th to Dec. 21st

- Vermont: 686
- Maine: 2,971
- New Hampshire: 5,289
- Rhode Island: 6,156
- Connecticut: 13,385
- Quebec: 13,558
- Massachusetts: 31,704
- New York: 72,845

Total: 146,594

Positive Cases Dec. 22nd to Dec. 28th

- Vermont: 576
- Maine: 3,044
- New Hampshire: 3,789
- Rhode Island: 5,271
- Connecticut: 13,823
- Quebec: 15,827
- Massachusetts: 27,914
- New York: 75,503

Total: 145,747

Sources: State Health Departments & CTV National News (Quebec)
Northeast Case Growth By Week Since March 16, 2020

2 Weeks of Slightly Decreasing Regional Case Growth

Sources: State Health Departments & CTV National News (Quebec)
Regional Heat Map

Active Cases per Million

0 5,000 75,000

Regional Map as of December 29th

10 Lowest Counties in Region by Active Cases Per Million

1) Grand Isle (VT): 990
2) Cumberland (VA): 1,069
3) Addison (VT): 1,087
4) Washington (VT): 1,178
5) Lamoille (VT): 1,186
6) Orange (VT): 1,567
7) Essex (VT): 1,732
8) Windsor (VT): 1,877
9) Williamsburg (VA): 1,968
10) Caledonia (VT): 1,978

U.S. and Vermont Air Travel
Holiday Travel 2020 & 2019

TSA Screening Nationwide

~58% Reduction

BTV International Airport Passengers

~80% Reduction

Source: US Transportation Safety Administration; Burlington International Airport
Out-of-State Visitors to Vermont

Estimate of visitors uses 7-day average # mobile devices from out of state (3/1/2019 - 12/24/2020)

2019 Christmas, New Years & Ski Travel

Memorial Day
Fourth of July
Labor Day
Indigenous Peoples Day
Thanksgiving

12/28/2020
Chart: State of Vermont • Source: Safegraph • Created with Datawrapper
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—December 29, 2020
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—December 29, 2020
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—December 29, 2020
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—December 29, 2020
Vermont Testing

7-Day Rolling Test Average

Drop following Thanksgiving & campus closures

*Data from UVMHN may be incomplete or delayed

Source: Vermont Department of Health—December 29, 2020; results reported to VDH daily
Vaccine Updates
Number of Americans Receiving Initial Vaccine Dose

Source: Centers for Disease Control and Prevention, Vaccine Tracker
Regional Vaccination Map

% Population Receiving Initial Dose

0.22 - 1.72

- WV 1.72% 12/27/20
- OH 0.45% 12/27/20
- PA 0.57% 12/28/20
- NY 0.46% 12/23/20
- VA 0.49% 12/28/20
- DC 0.64% 12/28/20
- MD 0.49% 12/28/20
- DE 0.67% 12/24/20
- RI 1.13% 12/22/20
- VT 0.70% 12/22/20
- ME 1.28% 12/27/20
- NH 0.28% 12/14/20
- MA 0.52% 12/22/20
- NJ 0.67% 12/28/20
- CT 0.22% 12/21/20

Preliminary and based on publicly available data
Source: Johns Hopkins Vaccine Tracker
Flu vaccinations up 10.6% from same time 2019*

2019 Actual
- 270,275
- 240,955 Year to Date

2020 Goal
- 325,000

2020 Year to Date
- 266,596*

82%* to 2020-2021 goal

*Data from UVMHN may be incomplete or delayed

Source: Vermont Department of Health & ADS; Immunization Registry; Measured from July 1 to December 20, 2019 & 2020