COVID-19 Modeling
July 27, 2021

Presentation available at: dfr.vermont.gov
Vermont
Case Data
Vermont COVID-19 Cases per 100K (14-Day Average)

Source: Vermont Department of Health—July 26, 2021
Vermont COVID-19 Cases per 100K (14-Day Average)

- Statewide Average
- Among Not Fully Vaccinated
- Among Fully Vaccinated

Source: Vermont Department of Health—July 26, 2021; “fully vaccinated” defined as 14 days following final dose
Vermont COVID-19 Cases per 100K (14-Day Average)

April 1st
14-Day Average: 2.6
Fully Vaccinated: ~127,000
Case Rate: 2.09

July 26th
14-Day Average: 5.3
Fully Vaccinated: ~420,000
Case Rate: 1.24

Source: Vermont Department of Health—July 26, 2021; “fully vaccinated” defined as 14 days following final dose
Infections, Hospitalizations, & Deaths by Percentage of State Population Vaccinated

Source: Covid Act Now—July 27, 2021; Measures last 14 days; 16 states <40%, 17 states 40-60%, 20 states 60%+ vaccination

Infections per 100K

Hospitalizations per 100K

Deaths per 100K
Infections, Hospitalizations, & Deaths by Percentage of State Population Vaccinated

Source: Covid Act Now—July 27, 2021; Measures last 14 days; 16 states <40%, 17 states 40-60%, 20 states 60%+ vaccination
Vermonters Diagnosed with COVID-19 by Week

Source: Vermont Department of Health (week calculated as Tuesday to Monday)
Age of Infected Vermonters

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

Source: VDH—July 27, 2021
Vermont Cases by Age Band

14-day Averages

- 0 to 9
- 10 to 19
- 20 to 29
- 30 to 39
- 40 to 49
- 50 to 59
- 60 to 69
- 70+

Source: VDH—July 26, 2021
Vermont Case Rate & Vaccination by Age Band

Source: VDH—July 20, 2021
Covid-19 case rates **rose** this past week

Case rates rose in all but 3 counties this week
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).
New forecast continues to predict low case counts over the next two weeks.
VT Weekly COVID-19 Infections Forecast

Calculated as a 7-day sum. Gray bands represent 50% and 95% confidence intervals. Since projections are only released once a week, the actual number may appear to over or undershoot the forecast.

Source: Centers for Disease Control and Prevention—July 26, 2021
Vermont Hospitalization Data
Statewide Covid-19 Hospitalizations

Rates starting to slow this week as hospitalizations remain low & fewest per capita nationally
Vermont Fatality Data
Vermont Covid-19 Deaths by Week

Source: Vermont Department of Health—July 27, 2021 (week ending)
Vermont Covid-19 Deaths by Month

Source: Vermont Department of Health—July 27, 2021; deaths attributed to month in which death occurred rather than reported
Vermont COVID-19 Deaths by Month

Vermont is predicting 3 or fewer deaths in July

Source: Vermont Department of Health—July 27, 2021
VT Weekly COVID-19 Deaths Forecast

Calculated as a 7-day sum. Gray bands represent 50% and 95% confidence intervals. Since projections are only released once a week, the actual number may appear to over or undershoot the forecast.

Source: Centers for Disease Control and Prevention—July 26, 2021
Vermont Vaccination Data
Vermont Vaccination

83.6% Of Eligible Vermonters Have Started Vaccination

+2,153 Since Last Week

460,682 Vermonters with at Least 1 Dose

90,268 Eligible Vermonters still to be vaccinated

Source: CDC—July 26, 2021 (with DFR reconciliation)
## 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>136,645</td>
<td>1</td>
</tr>
<tr>
<td>% At Least 1 Dose (Eligible)</td>
<td>83.6%</td>
<td>1</td>
</tr>
<tr>
<td>% Fully Vaccinated (Eligible Population)</td>
<td>74.7%</td>
<td>1</td>
</tr>
<tr>
<td>% At Least 1 Dose (Full Population)</td>
<td>73.9%</td>
<td>1</td>
</tr>
<tr>
<td>% Fully Vaccinated (Full Population)</td>
<td>65.9%</td>
<td>1</td>
</tr>
<tr>
<td>Doses Administered 65+ per 100K</td>
<td>200,532</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: CDC—July 26, 2021 (with DFR reconciliation)
Vermont is 1st in the Country on Vaccines Administered Per 100K

Source: CDC—July 26, 2021 (with DFR reconciliation)
83.6% of Eligible Vermonters Have Started Vaccination, Placing Vermont 1st Nationally

Source: CDC—July 26, 2021 (with DFR reconciliation)
74.7% of Eligible Vermonters Are Fully Vaccinated, Placing Vermont 1st Nationally

Source: CDC—July 26, 2021 (with DFR reconciliation)
73.9% of Vermonters Have Started Vaccination, Placing Vermont 1\textsuperscript{st} Nationally

Source: CDC—July 26, 2021 (with DFR reconciliation)
65.9% of Vermonters Fully Vaccinated, Placing Vermont 1st Nationally

Source: CDC—July 26, 2021 (with DFR reconciliation)
Vermont is 1st in the Country on Vaccines Administered Per 100K For Those 65 & Over

Source: CDC—July 26, 2021 (with DFR reconciliation)
US Census Region Case Rate & Vaccination

Source: Covid Act Now—July 27, 2021
US Census Region Deaths & Vaccination

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

### Northeast
- **Deaths per 100K**
- **Date Range**: Feb. 1, Mar. 1, Apr. 1, May 1, June 1, July 1

### South
- **Deaths per 100K**
- **Percent Vaccinated**
- **Date Range**: Feb. 1, Mar. 1, Apr. 1, May 1, June 1, July 1

### Midwest
- **Deaths per 100K**
- **Date Range**: Feb. 1, Mar. 1, Apr. 1, May 1, June 1, July 1

### West
- **Deaths per 100K**
- **Percent Vaccinated**
- **Date Range**: Feb. 1, Mar. 1, Apr. 1, May 1, June 1, July 1

Source: Covid Act Now—July 27, 2021
New First Doses per 100K (14-Day average)
Vermonters Initiating Vaccination by Day (First Dose)

No reporting July 4th
Regional Data
Regional Cases

69.3% Increase in New Cases

New Cases July 13th to July 19th

10,844

New Cases July 20th to July 26th

18,363
Weekly Regional Cases

New cases are:
- **Down 80%** over last 17 weeks
- **Up 186%** over last 4 weeks

Sources: State Health Departments & CTV National News (Quebec) (includes: CT, ME, MA, NH, NY, QC, RI & VT)
Regional Hospitalizations

Trending Down
+25.9% Increase
Over last 7 days

Source: Covid Act Now (7-Day Average in CT, ME, MA, NH, NY, RI & VT)—July 24, 2021
Regional Deaths

Trending Down
+18.5% Increase
Over last 7 days

Source: CDC (7-Day Average in CT, ME, MA, NH, NY, RI & VT)—July 25, 2021
National Data
National COVID-19 Cases

+48.3% Increase
Over the last 7-days

51,939
7-Day Average

Source: Covid Tracking Project; NYT & CDC—July 26, 2021
Beginning of Delta Spread
June 22

Source: Johns Hopkins University
Delta Spread
One Week Ago—July 20

Active Cases per Million

Source: Johns Hopkins University
Active Cases per Million

Source: Johns Hopkins University—July 27, 2021

Delta Spread
Today—July 27

[Map of the United States showing active cases per million]
US Weekly COVID-19 Infections Forecast

Calculated as a 7-day sum. Gray bands represent 50% and 95% confidence intervals. Since projections are only released once a week, the actual number may appear to over or undershoot the forecast.
National COVID-19 Hospitalizations

+26.9% Increase
Over the last 7-days

28,249
7-Day Average

Source: Covid Tracking Project; NYT & CDC—July 26, 2021
National COVID-19 Deaths

+0.4% Increase
Over the last 7-days

Source: Covid Tracking Project; NYT & CDC—July 26, 2021
US Weekly COVID-19 Deaths Forecast

Calculated as a 7-day sum. Gray bands represent 50% and 95% confidence intervals. Since projections are only released once a week, the actual number may appear to over or undershoot the forecast.

Source: Centers for Disease Control and Prevention—July 26, 2021
Daily new confirmed COVID-19 cases per million people

Shown is the rolling 7-day average. The number of confirmed cases is lower than the number of actual cases; the main reason for that is limited testing.
Canadian Covid-19 Trends
Canadian COVID Trends

% With At Least 1 Dose: **71.0%**

% Fully Vaccinated: **65.1%**

7-Day Case Rate: **Up 29.7%**

7-Day Hospital Rate: **Down 15.3%**

7-Day Fatality Rate: **Down 26.1%**

Sources: CTV National News & Our World in Data—July 27, 2021
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.
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—July 27, 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—July 27, 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—July 27, 2021
Vermont Testing

7-Day Rolling Test Average

Source: Vermont Department of Health—July 27, 2021; results reported to VDH daily