COVID-19 Modeling
June 5, 2020

Presentation available at:
dfr.vermont.gov
Outbreaks & Modeling

- Not unexpected, but nearly impossible to predict
- Large jump in Vermont numbers, but context and perspective are important
- Testing and contract tracing rapidly developed — should suppress spread and long-term impact
Vermont Results Continue to Track Low Case Forecasts

Confirmed Cases vs. Projections

Sources: Oliver Wyman (OW) May 12, 2020 Model & Vermont Department of Health
Mobility Data: Reopening Vermont & Warming Weather

Source: Descartes Labs – June 1, 2020
Increased Testing in Vermont

Vermont Daily Tests & 7-Day Test Average

Source: Vermont Department of Health; tests measured as results reported to VDH by day
Vermont’s Doubling Rate: 12 Weeks

Source: Johns Hopkins University
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
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% of open ICU beds

Source: Vermont Department of Health
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
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
RESTART VERMONT

- Regional Data
- Expanding the Map
Regional Monitoring
Previous 7-Day Experience

Positive Cases May 21th to May 28th

- Vermont: 24
- Maine: 312
- New Hampshire: 512
- Rhode Island: 1136
- Quebec: 2449
- Connecticut: 2557
- Massachusetts: 5250
- New York: 10275

Positive Cases May 29th to June 4th

- Vermont: 52
- Maine: 281
- New Hampshire: 509
- Rhode Island: 866
- Connecticut: 1803
- Quebec: 2441
- Massachusetts: 3858
- New York: 9133

Source: Johns Hopkins University & USA FACTS
Regional Monitoring
Previous 7-Day Experience

Deaths May 21th to May 28th

Deaths May 29th to June 4th

Source: Johns Hopkins University & USA FACTS
Regional Monitoring: Drive Time from Vermont

1-Hour Drive
Est. Active Cases: 10,355
Cumulative: 36,419
Deaths: 2,578

Source: Raw data from Johns Hopkins University and ESRI Services (check DFR.Vermont.Gov for dynamic map)
Regional Monitoring: New Case Heat Map

New COVID-19 Infections:
2/20/20–2/27/20

Source: Johns Hopkins University GitHub Repository
Expanding the Map: Leisure Travel Policy
Regional Monitoring: Drive Time from Vermont

Source: Raw data from Johns Hopkins University and ESRI Services (check DFR.Vermont.Gov for dynamic map)
Reopening Vermont: County-level Active Cases

status
- <400 cases per million
- 400-799 cases per million
- 800+ cases per million
- Vermont

Source: Raw data from Johns Hopkins University date June 4, 2020 (dynamic map available at Vermont ACCD site)
Leisure Travel Policy: Step 1

Effective June 8, 2020

- Travelers to and from a Step 1 County will not be subject to the 14-day quarantine
- Travelers must arrive via personal vehicle without stopping
- Travelers required to sign up for daily symptom check reminders with Sara Alert
- Travelers are reminded to safely connect with friends and family
Leisure Travel Policy: Step 1

Total Regional Population vs. Population from a Step 1 County

Source: Raw data from Johns Hopkins University date June 4, 2020 (dynamic map available at Vermont ACCD site)