

# COVID-19 MODELING

May 1, 2020

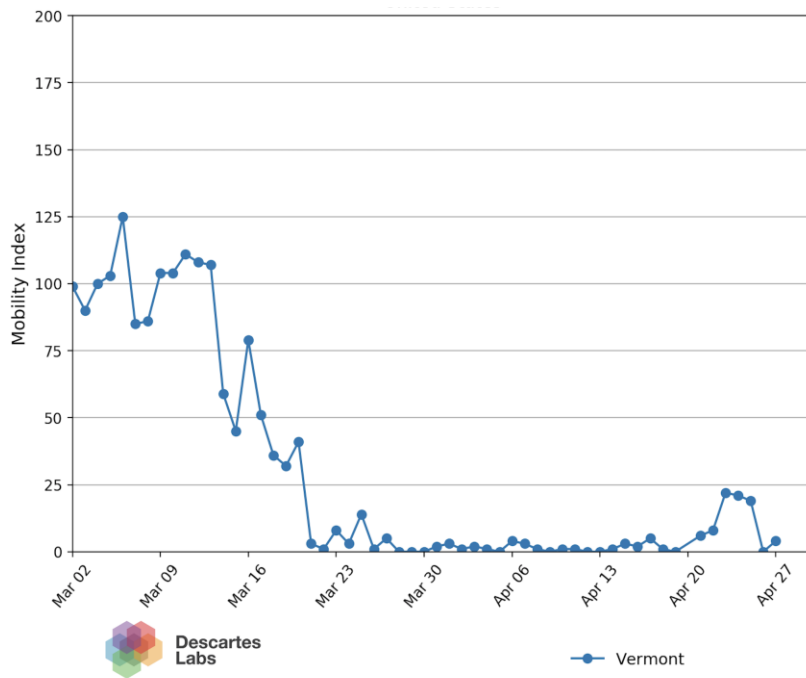
# Overview

## Presentation Updated Through May1, 2020

- **Goal:** Develop multiple forecasting perspectives
  - Oliver Wyman – Helen Leis
  - Columbia University – Professor Jeffrey Shaman, Ph.D.
  - Northeastern University – Professor Alessandro Vespignani, Ph.D.
  - University of Washington – Institute for Health Metrics and Evaluation (IHME)
  - UVM – Larner College of Medicine – Department of Microbiology & Molecular Genetics – Translational Global Infectious Disease Research (TGIR) Group – John Hanley, PhD
- **Forecasting is imprecise:**
  - Focus on the near term: Forecasting is much less predictable the further out you model
  - Focus on ranges rather than specifics: Forecasts are represented as a range of possible outcomes (i.e., likely, best & worst)
  - Consistent refinement: Continually updating with new data and new assumptions
  - Appropriate Perspective: Ultimately forecasts are developed for planning purposes and are not representative of definitive outcomes
- **Ultimate Purpose of Forecasting:**
  - Phase 1: Medical Surge Planning
  - Phase 2: Support Restart Vermont and Monitor Key Trends

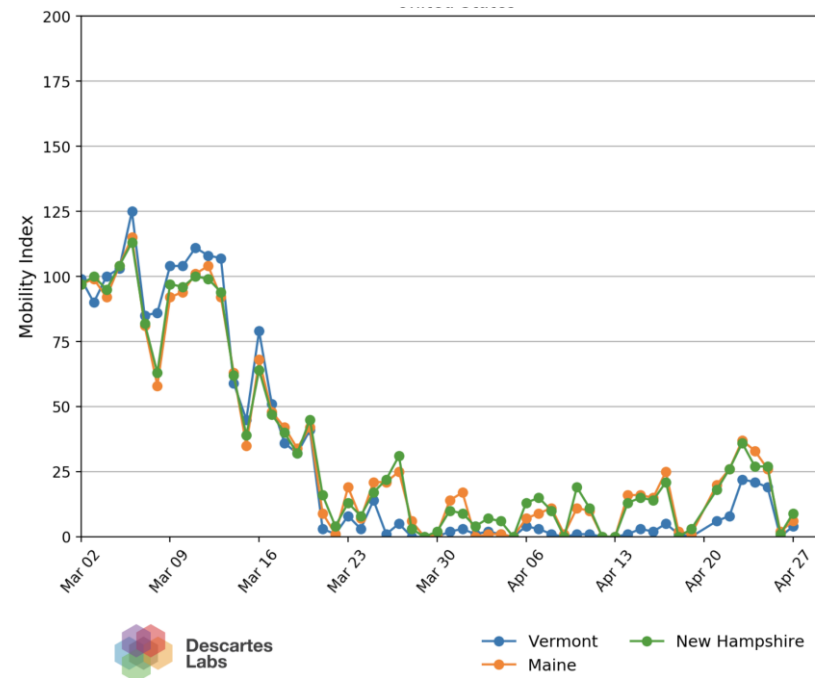
# Positive Trend: Mobility Data Indicates Strong Social Distancing Adherence

## Vermont



CC BY 4.0 descarteslabs.com/mobility

## Northern New England

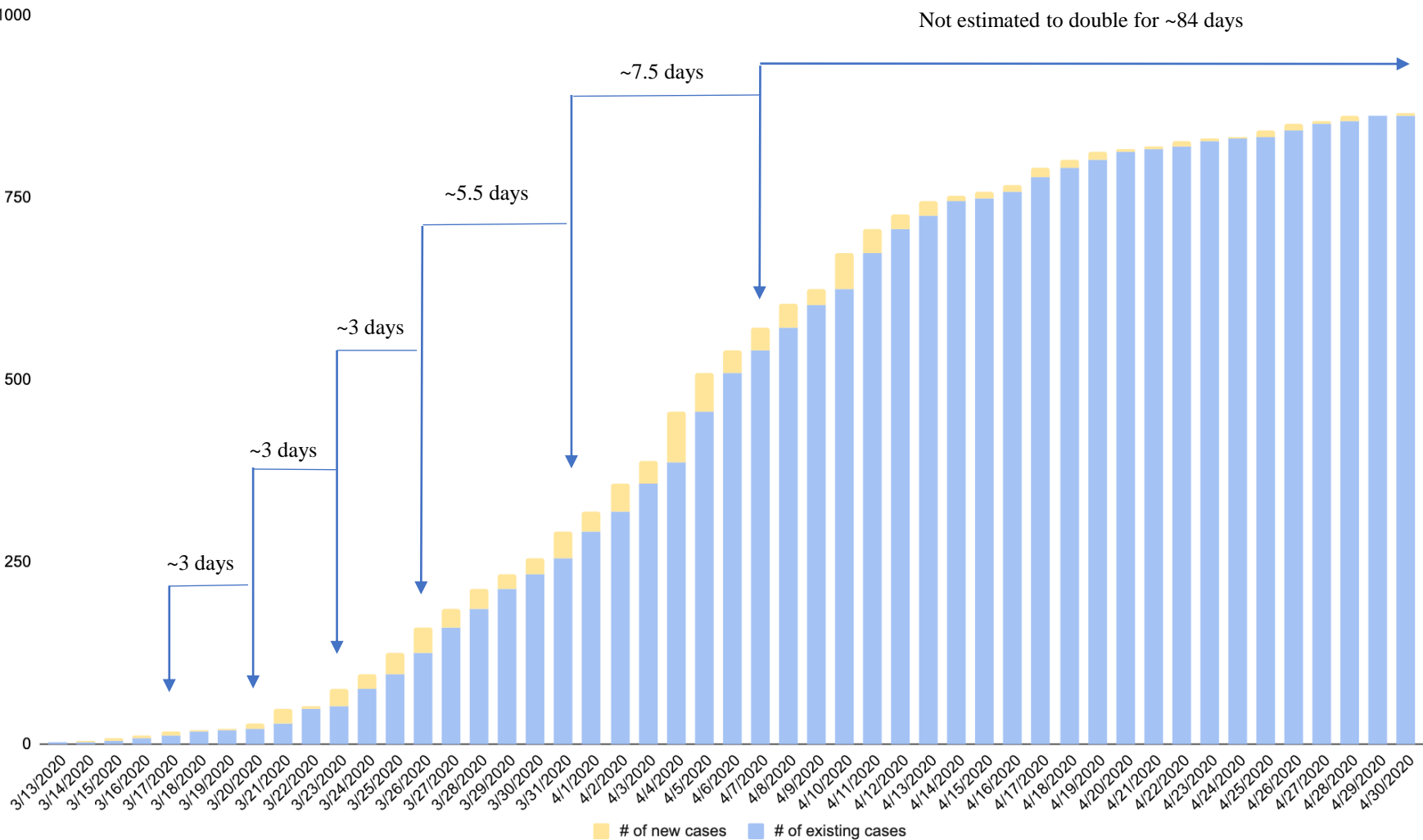


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Source: Descartes Labs – April 27, 2020

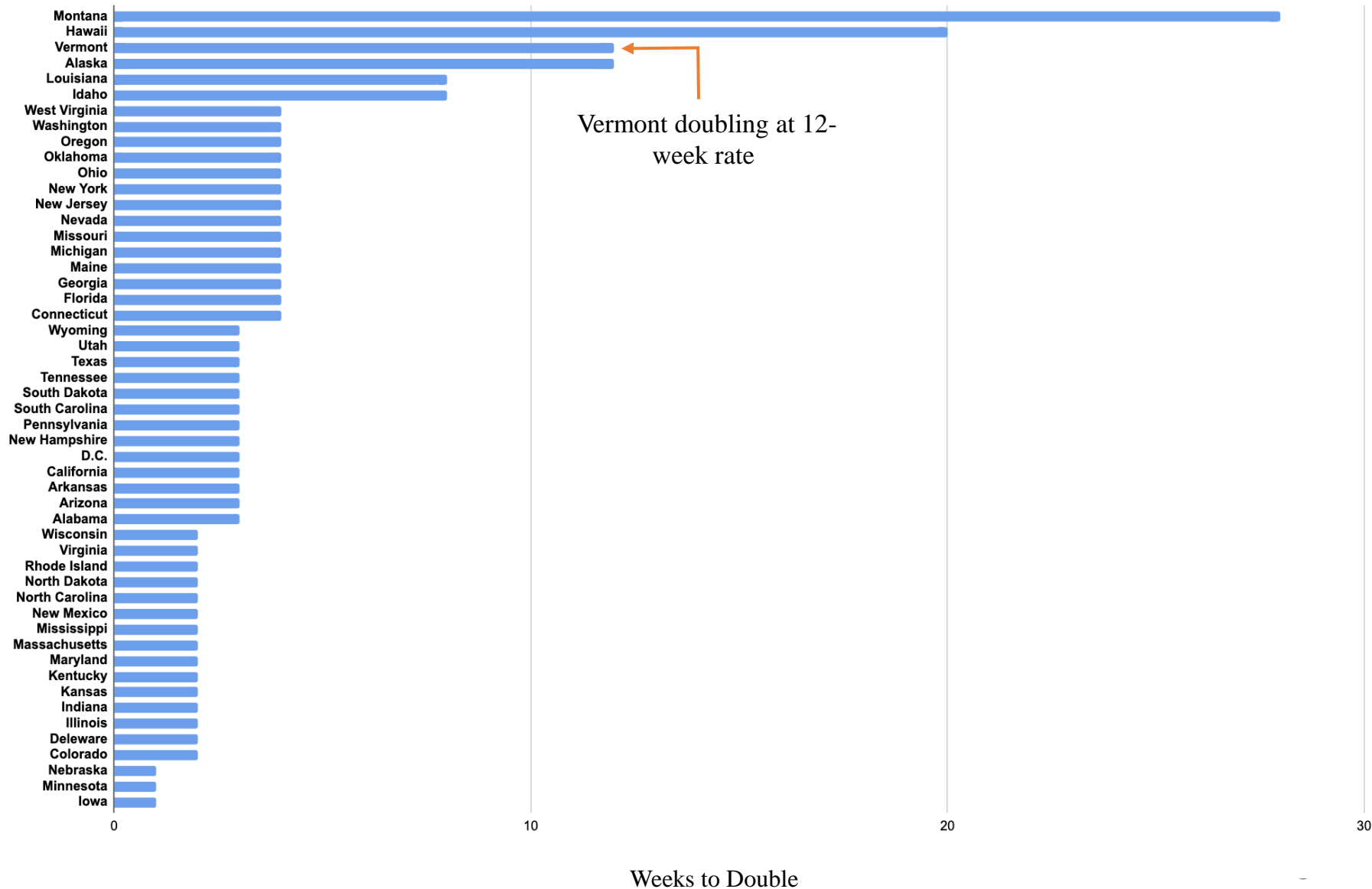
# Vermont: Time Until Confirmed Cases Double

Source: Vermont Department of Health and Department of Financial Regulation Forecast



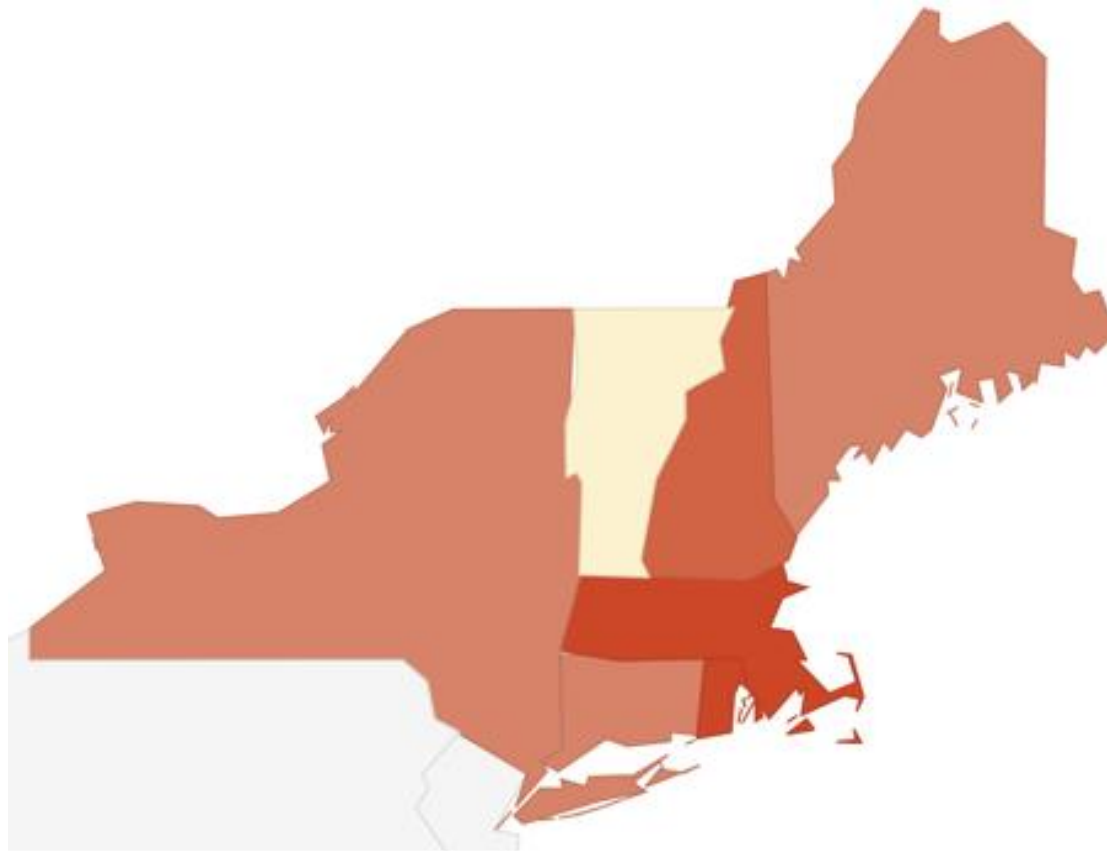
# United States: Time Until Confirmed Cases Double

Source: Johns Hopkins University



# New England: Time Until Confirmed Cases Double

Source: Johns Hopkins University

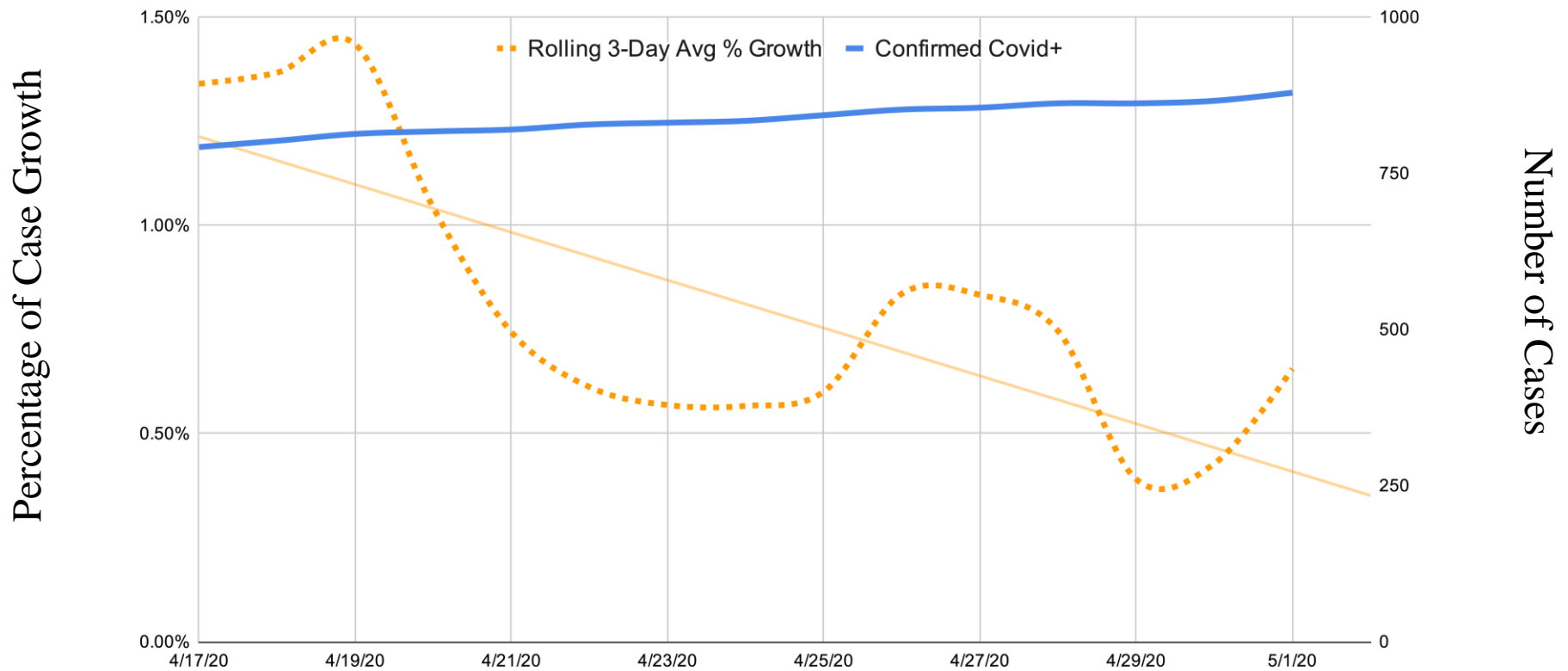


State	Doubling Rate (in weeks)
Vermont	12
Connecticut	4
Maine	4
New Hampshire	3
Massachusetts	2
Rhode Island	2
New York	4

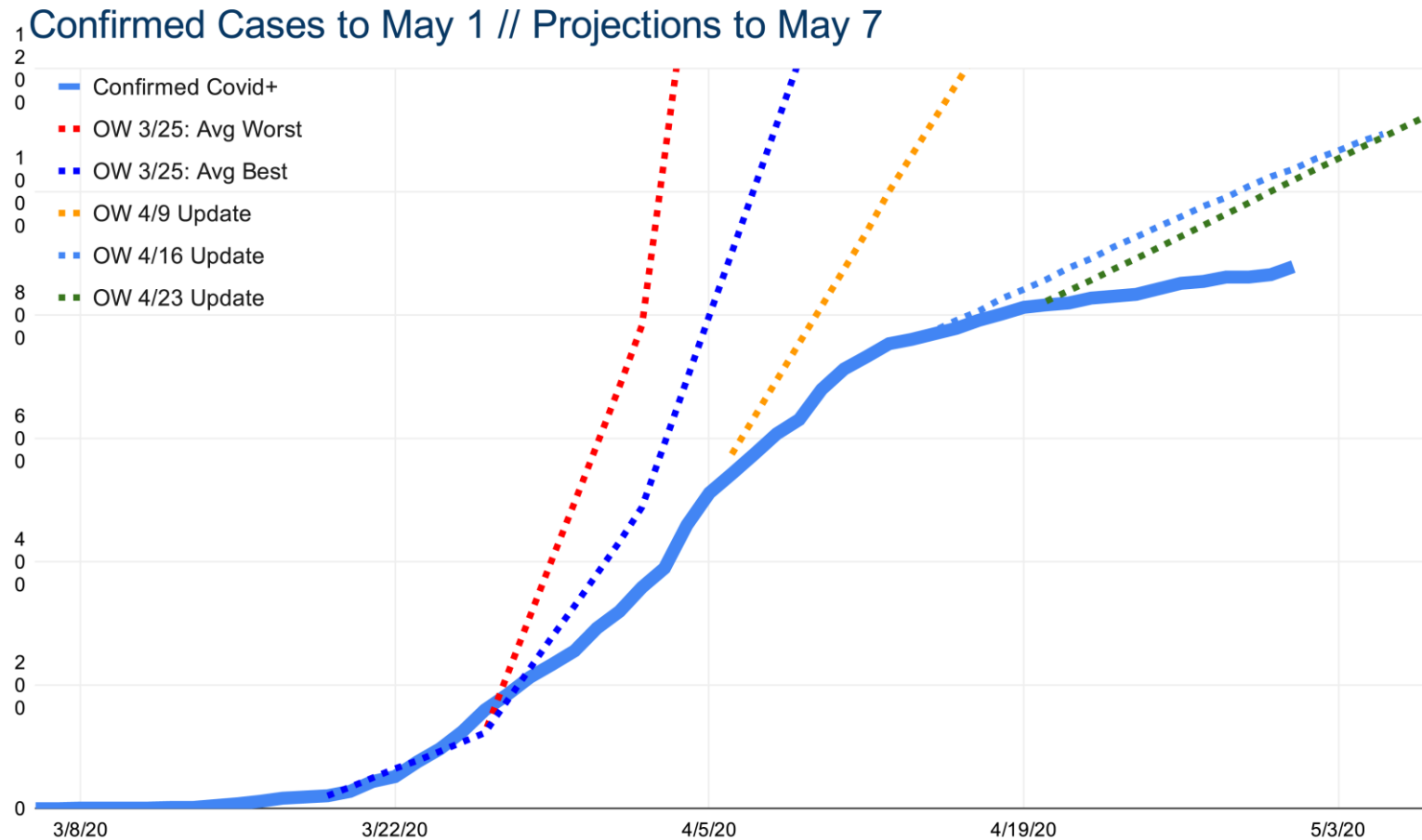
# Vermont's Daily Growth Rate Compared to Total Cases

Source: Vermont Department of Health

## 14-day Case Growth Rate + Trendline



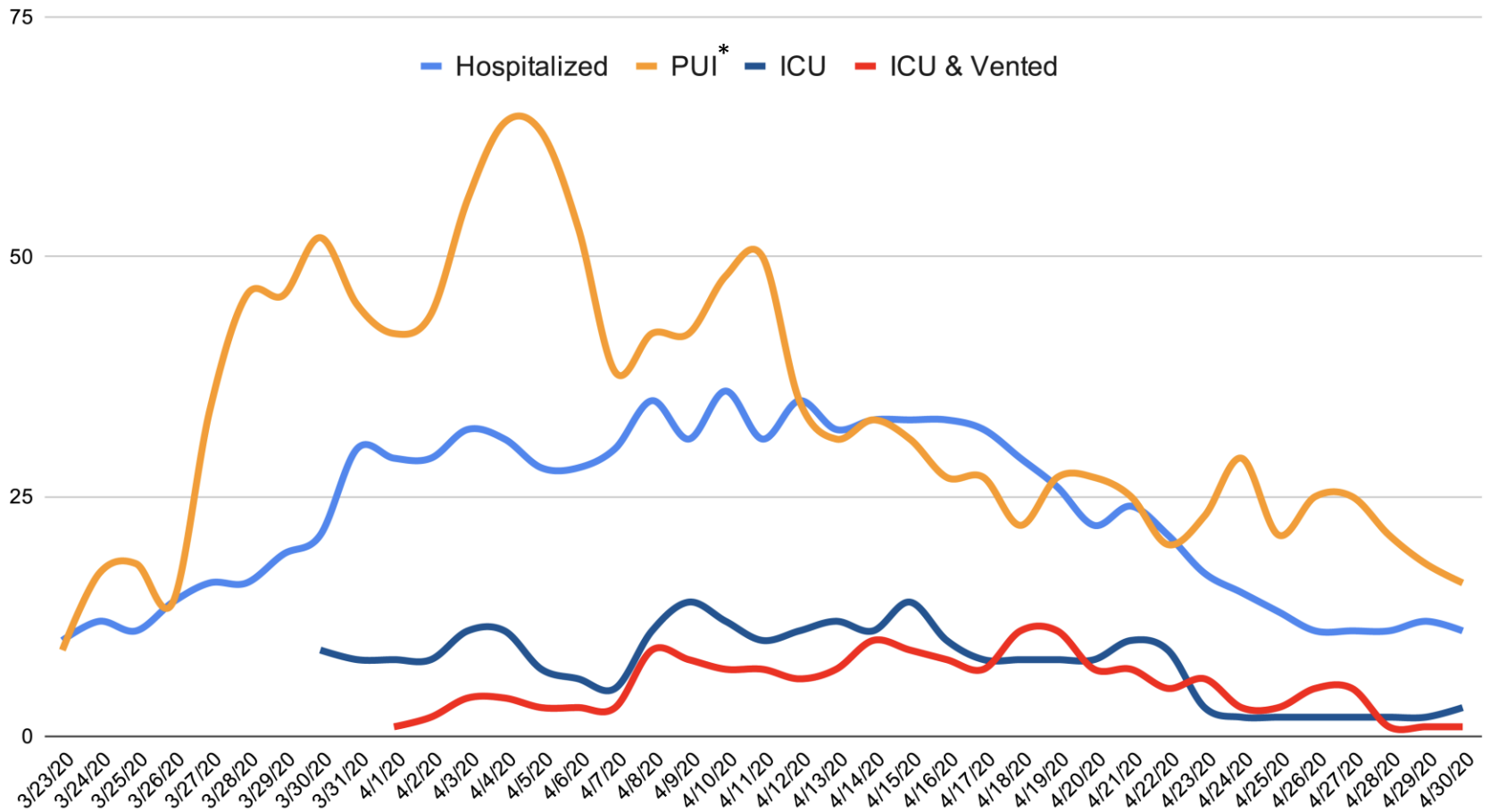
# Positive Trend: Actual Results Are Better Than Forecasts





# Positive Trend: Reduction in Hospital Demand

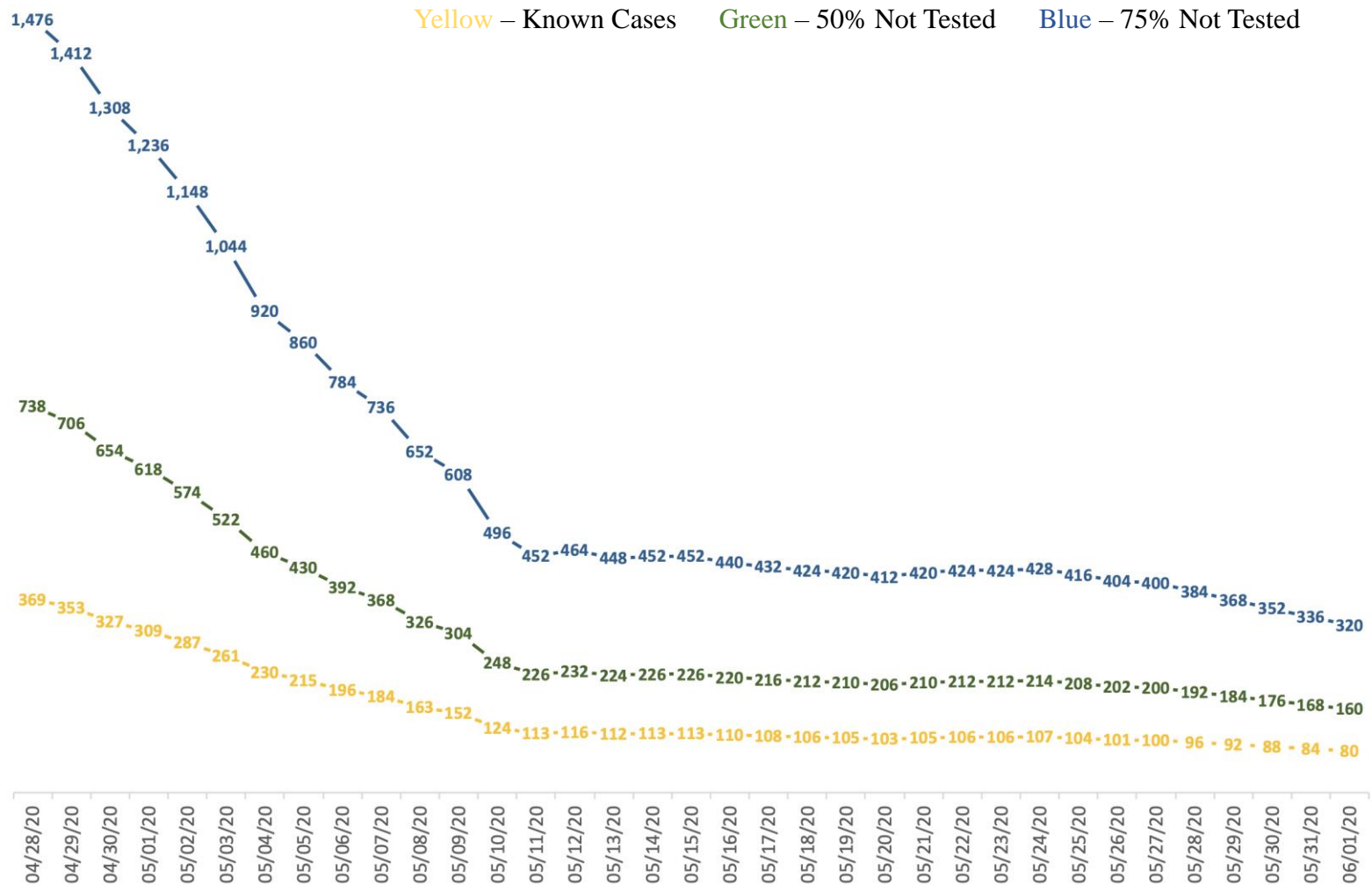
## Hospitalization Metrics since March 23rd



Source: EMResource

\*PUI stands for person under investigation

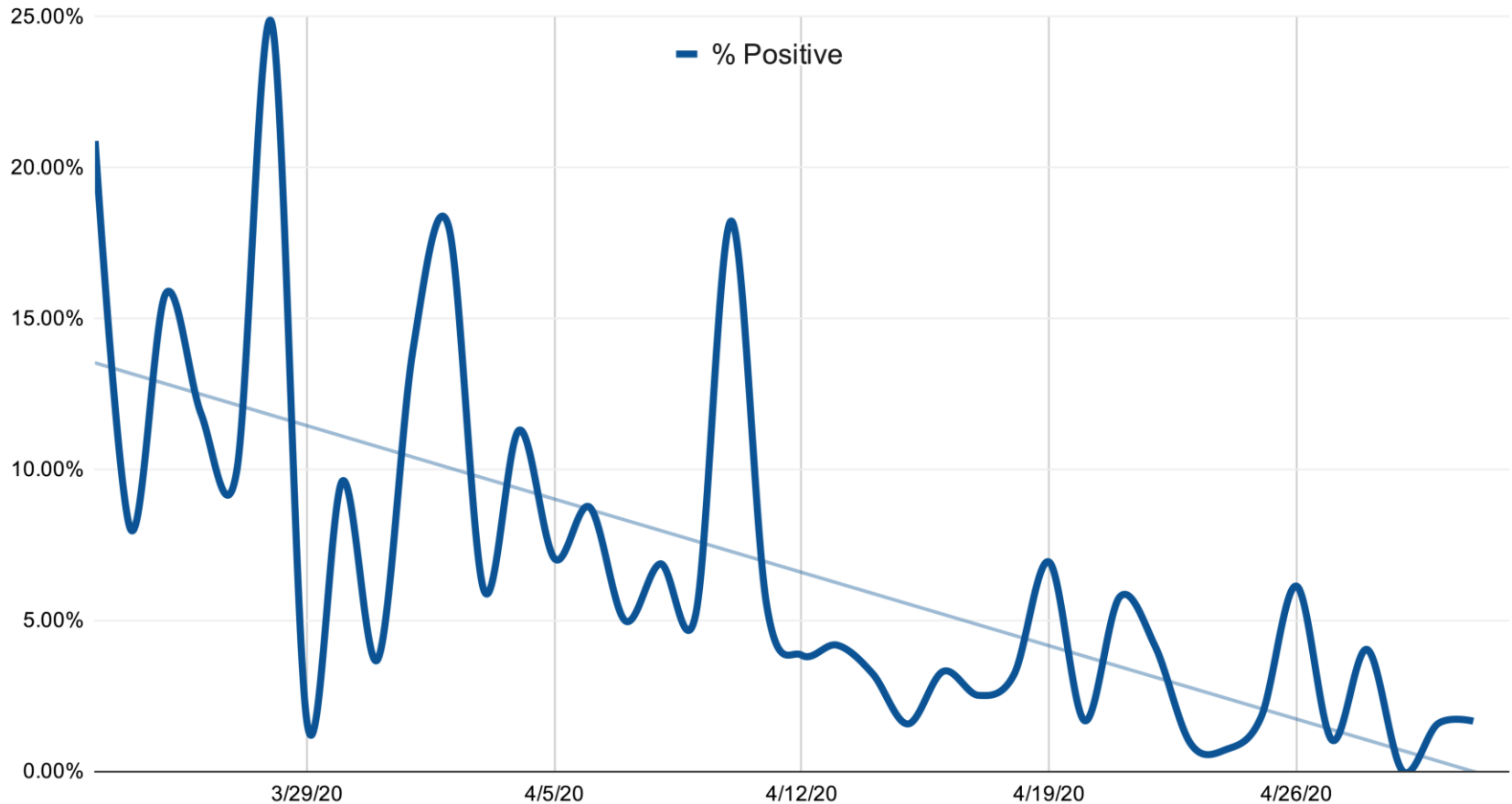
# Positive Trend: Decline in Active Cases in Vermont



Source: Department of Financial Regulation Active Case Scenario Generator – April 30, 2020

# Positive Trend: Percent of Confirmed Positive Tests

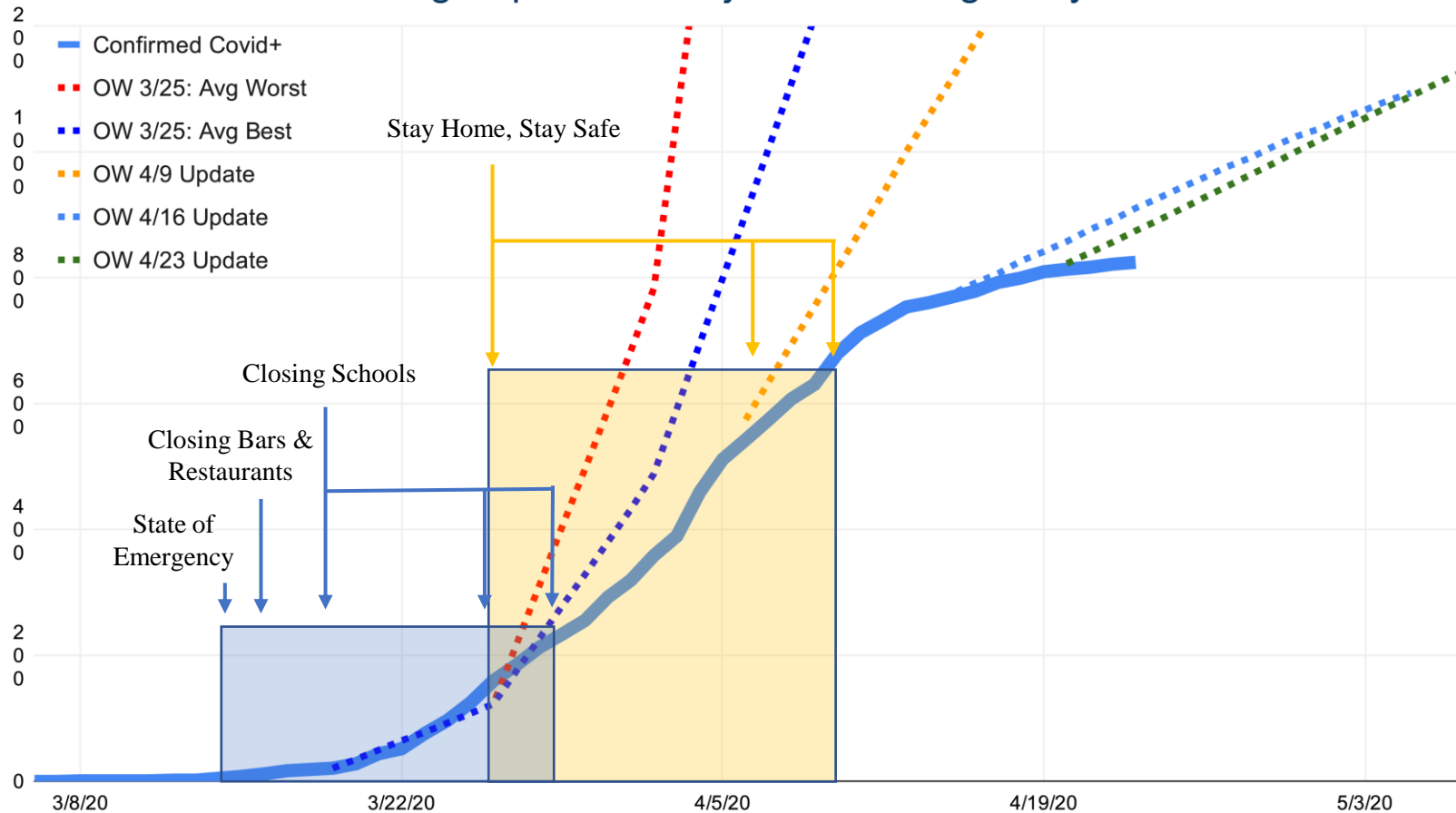
## Percent Positive since March 23rd



# Social Distancing Timing & Effect

10 to 14-day delay

Confirmed Cases through April 22 // Projections through May 7

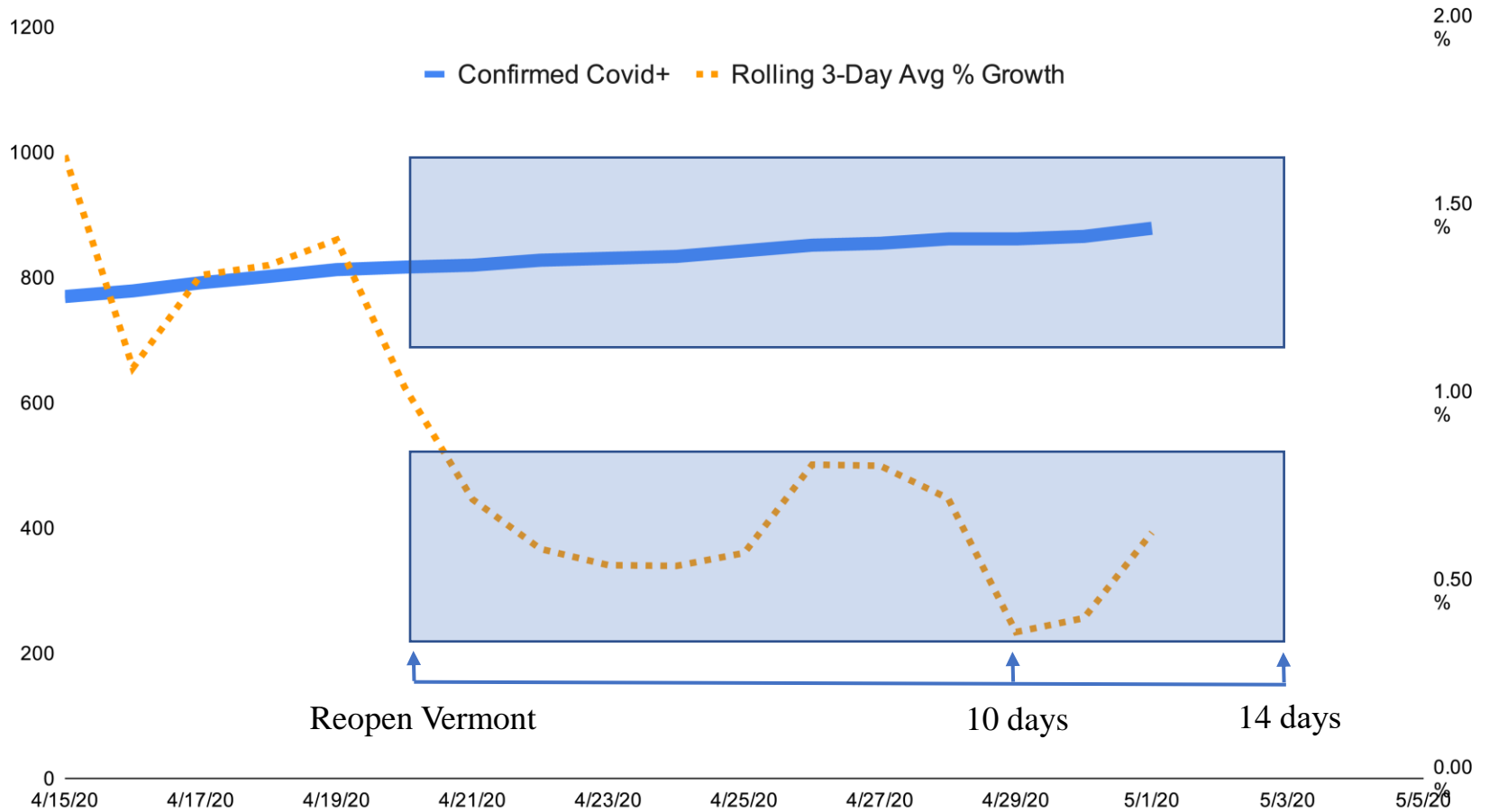


Source: Oliver Wyman (OW) April 22, 2020 Model

# Social Distancing Timing & Effect

10 to 14-day delay

## Case Growth Post-Restart



Source: Vermont Department of Health