

# Projections of Hospital-based Healthcare Demand due to COVID-19 in Los Angeles County

**May 24, 2021 Update**

Los Angeles County DHS COVID-19 Predictive Modeling Team (alphabetical):

Tom Belin, PhD;<sup>1</sup> Andrea Bertozzi, PhD;<sup>1</sup> Nishchal Chaudhary, MS;<sup>2</sup> Todd Graves, PhD;<sup>3</sup>  
Jeffrey Guterman, MD, MS;<sup>4</sup> M. Claire Jarashow, PhD, MPH;<sup>5</sup> Roger J. Lewis, MD, PhD [*Team Lead*];<sup>4</sup>  
Joe Marion, PhD;<sup>3</sup> Frederic Schoenberg, PhD;<sup>1</sup> Megha Shah, MD, MPH, MS;<sup>5</sup>  
Juliana Tolles, MD, MHS;<sup>4</sup> Elizabeth Traub, MPH;<sup>5</sup> Kert Viele, PhD;<sup>3</sup> Fei Wu, PhD<sup>6</sup>

1. University of California, Los Angeles
2. City of Long Beach
3. Berry Consultants, LLC, Austin, TX
4. Los Angeles County, Department of Health Services
5. Los Angeles County, Department of Public Health
6. Los Angeles County, Office of the Chief Information Officer



# Key Findings of the May 24<sup>th</sup> Update

---

- This update includes data on hospitalizations through May 19, 2021.
- The underlying statistical prediction model is unchanged from the last update.
- Key findings:
  - The daily number of newly hospitalized patients with positive tests for COVID-19 across Los Angeles County has continued to gradually decrease.
  - We continue to see patients admitted to hospitals for reasons other than acute COVID-19 illness who have positive COVID-19 PCR tests, often from prior illness that has resolved. These do not reflect recent transmission.
  - Based on recent data, reflecting transmission that occurred in the beginning of May, the estimated transmission number (“R”) at that time was 0.85 with an uncertainty of 0.75 to 0.95. This estimate for R is slightly lower than our prior estimate of 0.90 with an uncertainty of 0.78 to 0.99.
  - We anticipate no shortage of hospital-based resources in the foreseeable future.

## Key Findings of the May 24<sup>th</sup> Update (continued)

---

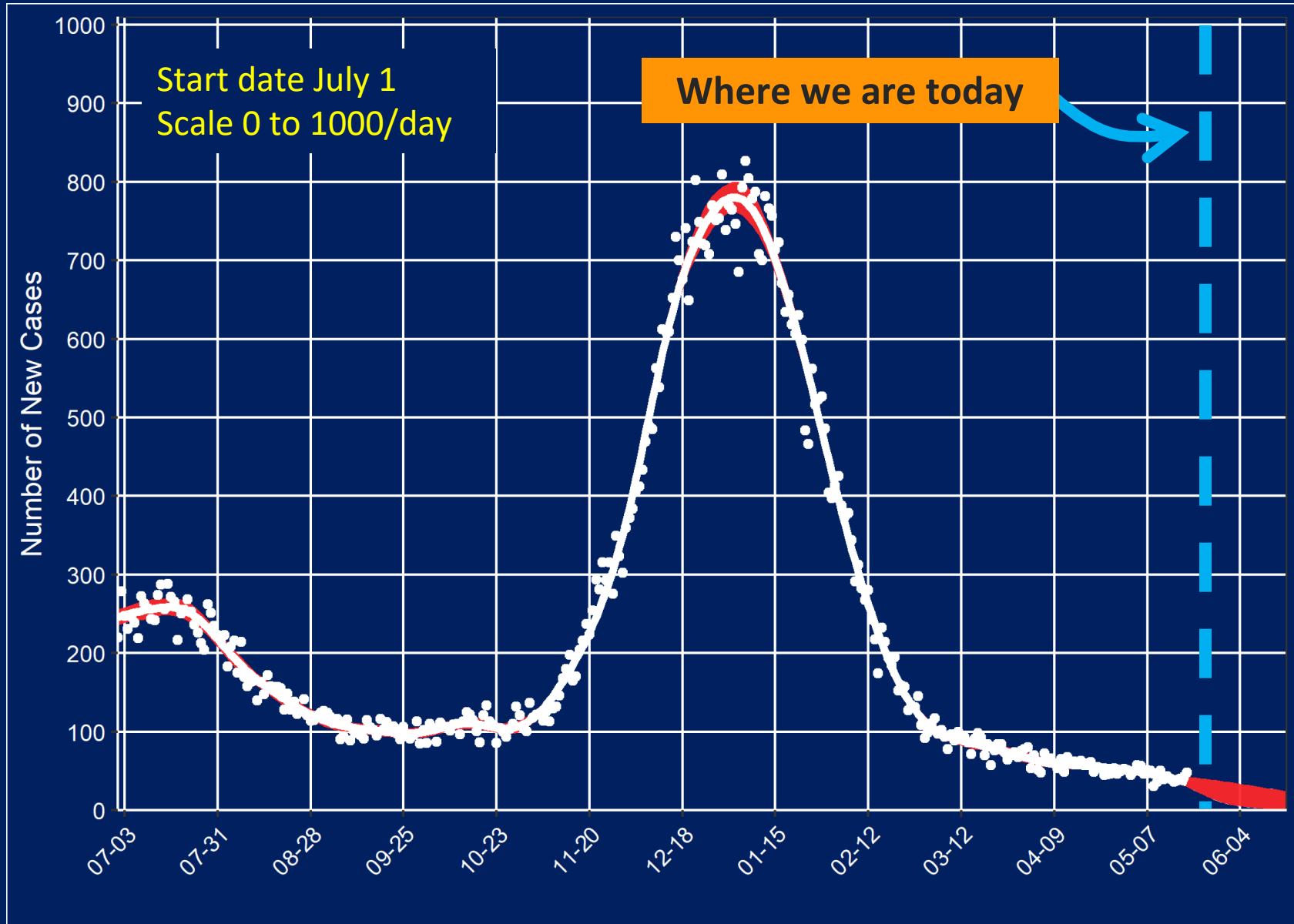
- Because of the low level of community transmission and the expected increase in herd immunity associated with ongoing vaccination, the risk of a future large increase in transmission appears to be low.
- We anticipate this to be the final projection model update.
- The Los Angeles County DHS COVID-19 Predictive Modeling Team would like to express their thanks for the opportunity to support the Los Angeles community's response to the pandemic and for the strong support we have received from a wide variety of public and private partners.

# How Many in Los Angeles are Infectious to Others?

---

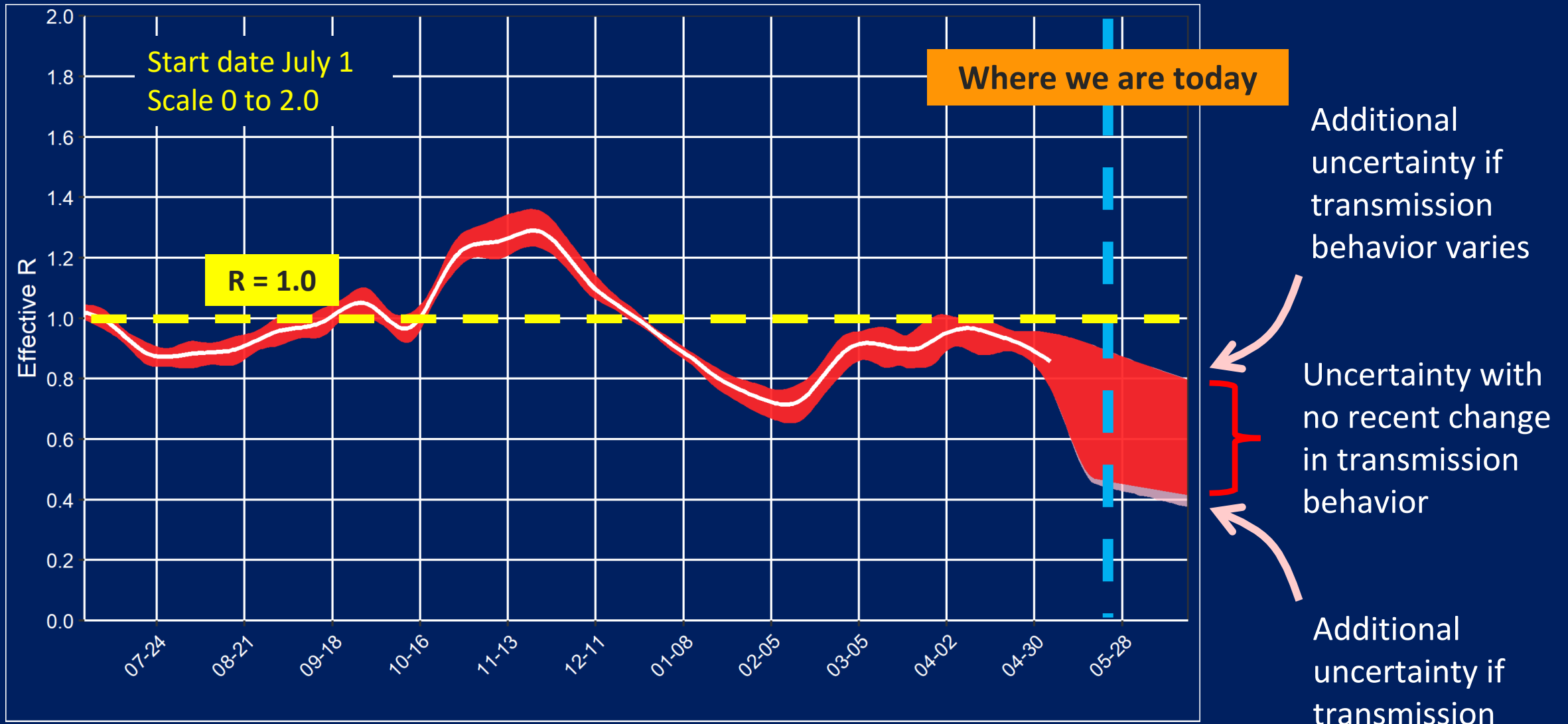
- The DHS team's epidemic model estimates the number of people in Los Angeles County who are **susceptible** to infection with COVID-19, have been **exposed**, are **infectious** to others, and have **recovered** or been vaccinated so they are no longer susceptible.
- The model suggests that about 0.04% (uncertainty of 0.02% to 0.08%) of everyone in Los Angeles County is currently infectious to others.
- This would suggest about 1 in 2600 (between 1 in 5900 and 1 in 1200) Los Angeles County residents are currently infectious to others. Two weeks ago, this estimate was 1 in 1600.
- Approximately 5 in every 8 persons in Los Angeles County is estimated to be protected from COVID-19. Approximately 3 in every 8 persons in Los Angeles County has been infected and approximately another 2 in 8 have acquired protection through vaccination.

# Hospital New Patient Projections



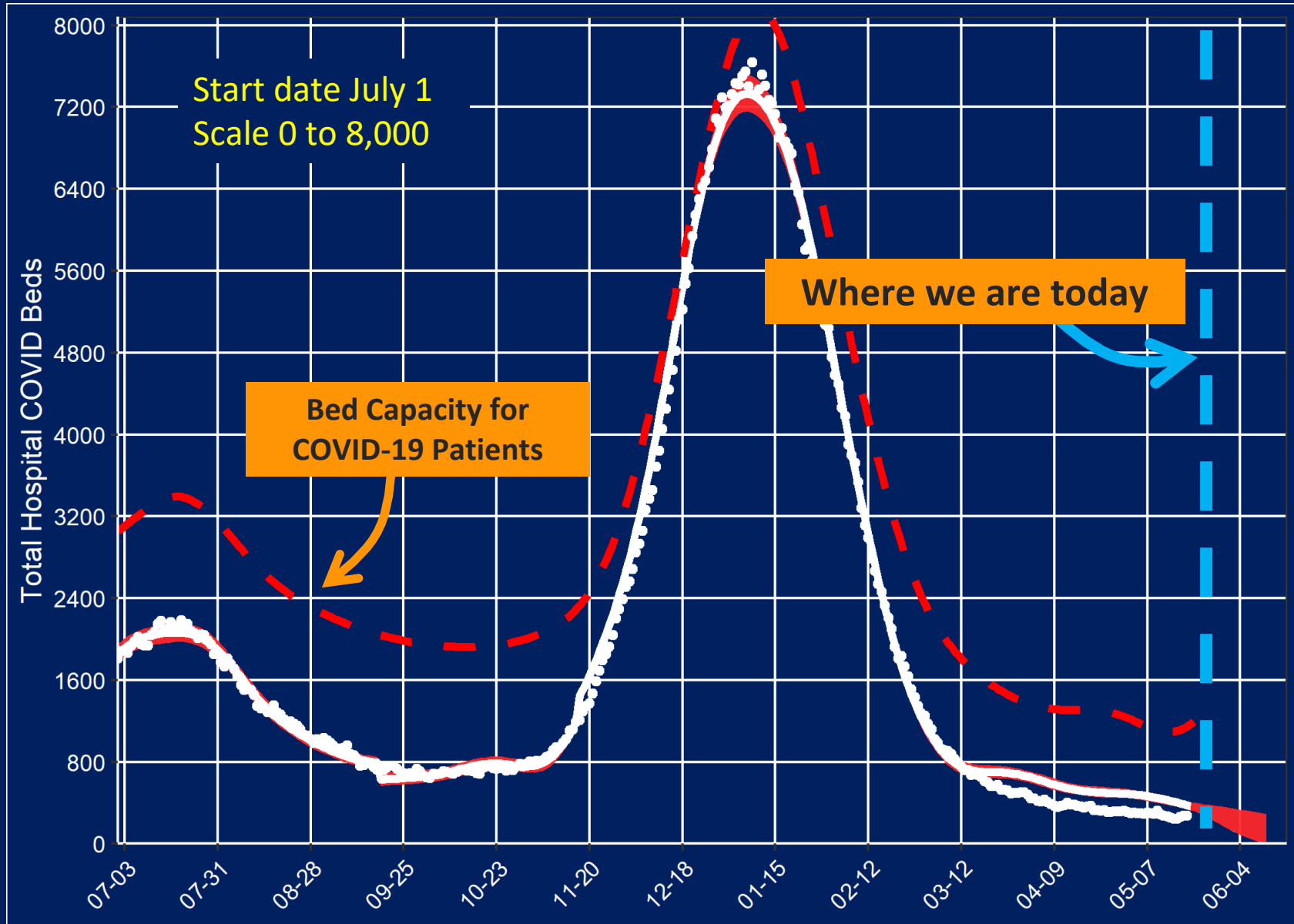
Uncertainty with no recent change in transmission behavior

# Effective Transmission Number "R"



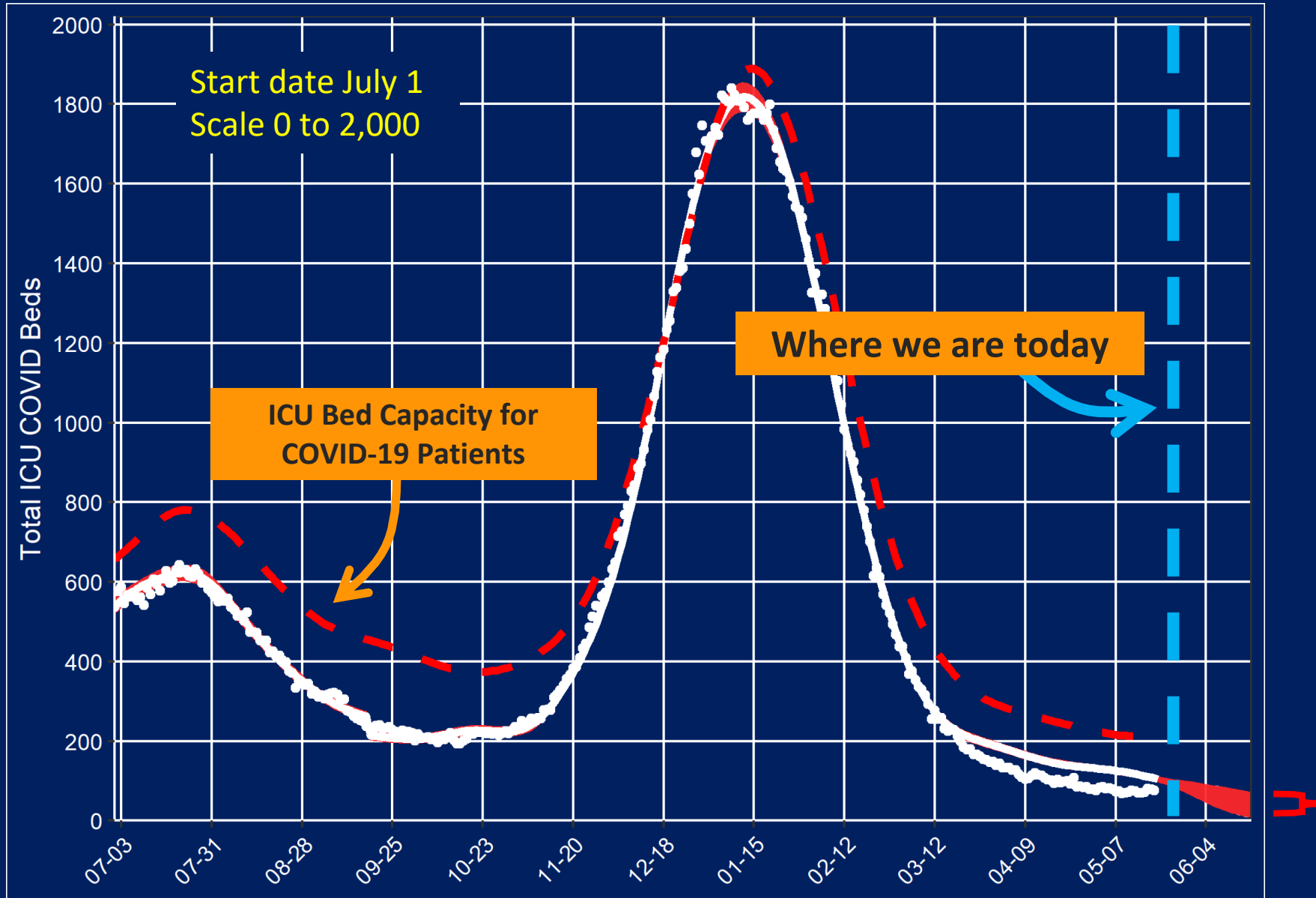
Note: The effective transmission number R is reduced by the partial herd immunity due to persons who have either experienced and recovered from COVID-19 or have been immunized.

# Predictions of Hospital Bed Demand



Uncertainty with no recent change in transmission behavior

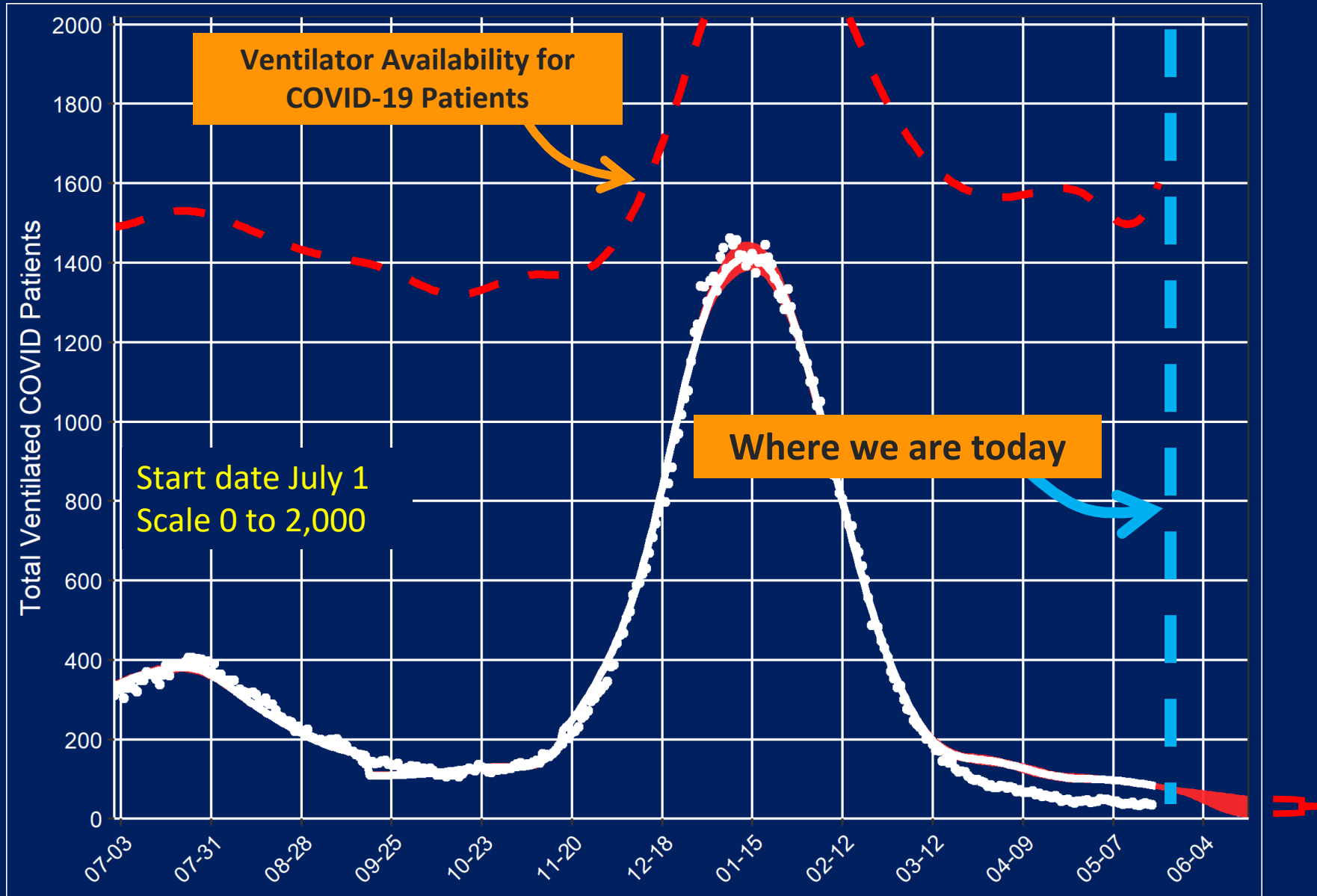
# Predictions of ICU Bed Demand



Uncertainty with no recent change in transmission behavior

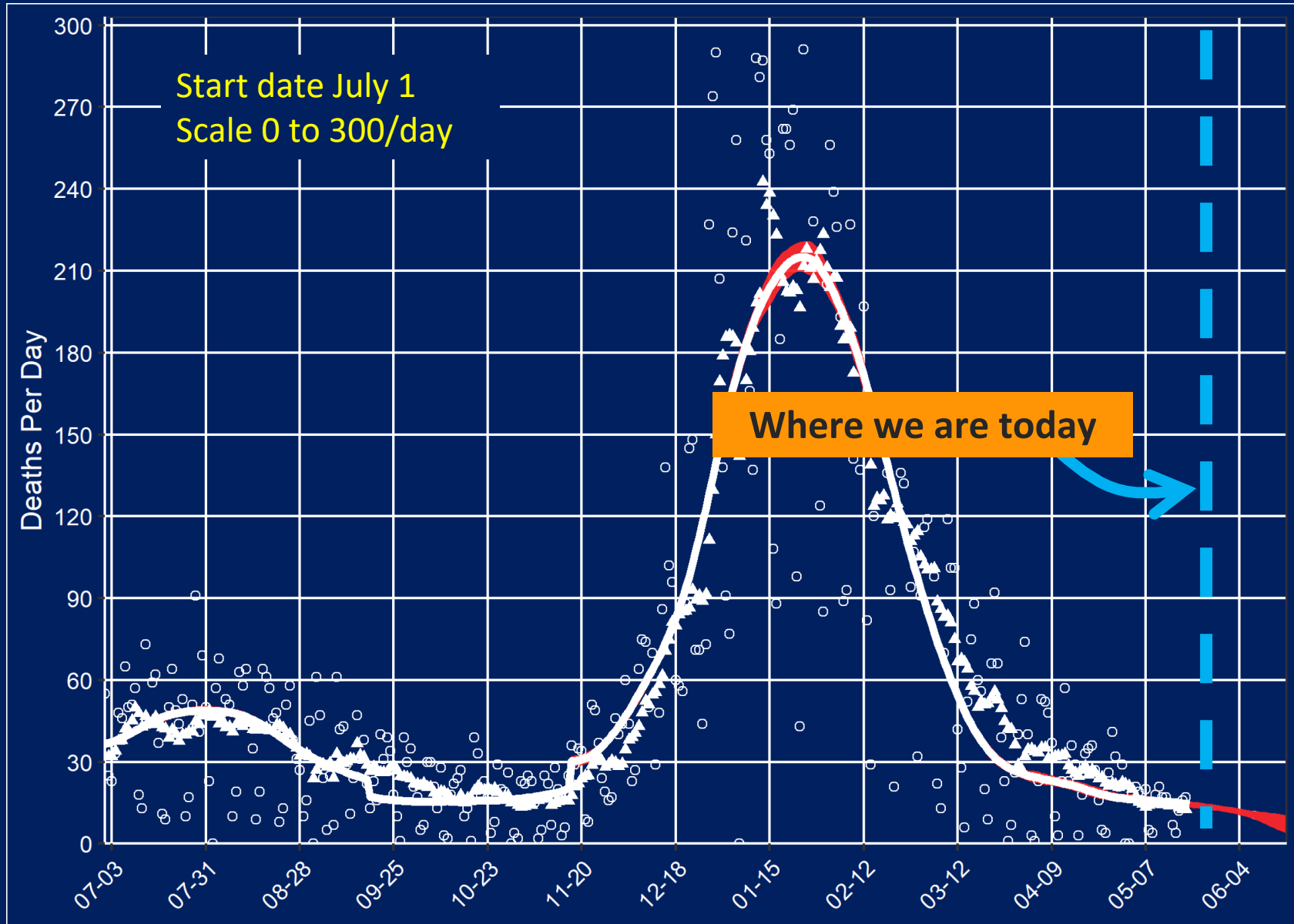


# Predictions of Ventilator Demand



Uncertainty with no recent change in transmission behavior

# Predictions of Daily Mortality



- Daily reported deaths
- ▲ 7-day running average

Uncertainty with no recent change in transmission behavior