

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

## September 23, 2020 Update

### County DHS COVID-19 Predictive Modeling Team:

Roger J. Lewis, MD, PhD;<sup>1</sup> Juliana Tolles, MD, MHS;<sup>1</sup> M. Claire Jarashow, PhD, MPH;<sup>2</sup> Fei Wu, PhD;<sup>3</sup> Joe Marion, PhD;<sup>4</sup> Kert Viele, PhD;<sup>4</sup> Todd Graves, PhD;<sup>4</sup> Henry Shin;<sup>1</sup> Frederic Schoenberg, PhD;<sup>5</sup> Andrea Bertozzi, PhD<sup>5</sup>

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



# Key Findings of the September 23<sup>rd</sup> Update

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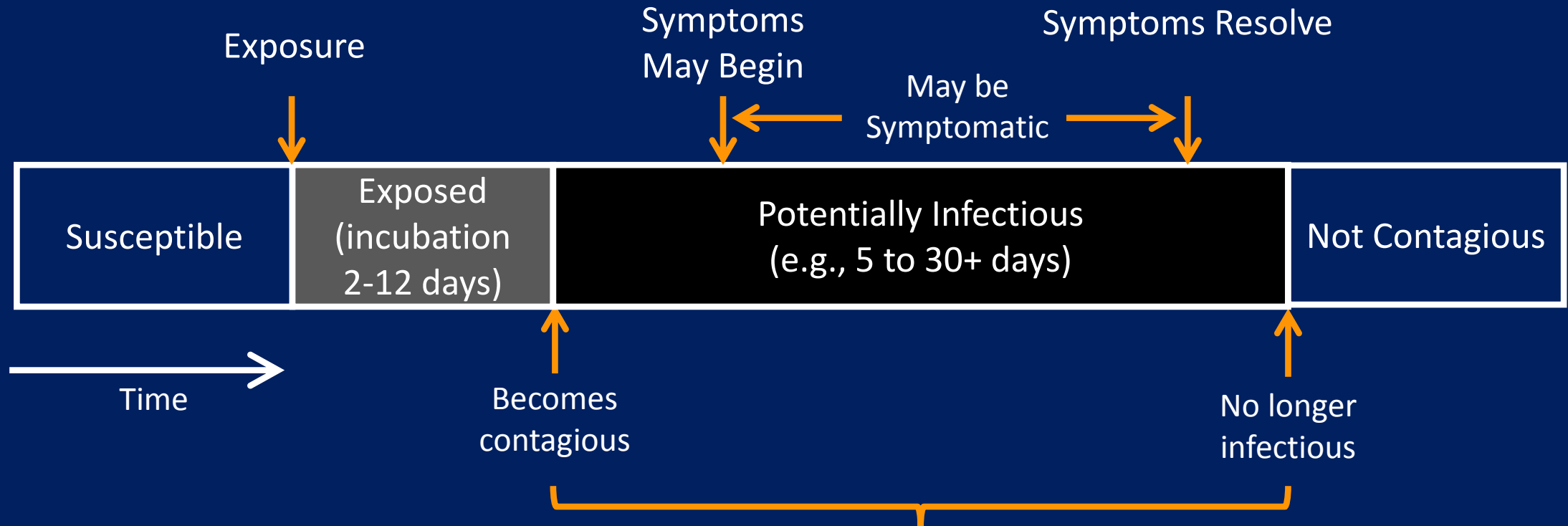
- This update includes data on hospital visits and volume through September 21, 2020.
- The model now considers the current trend in the effective transmission number R when predicting the future trajectory of the epidemic.
- Key findings:
  - The number of new patients with COVID-19 requiring hospitalization each day across Los Angeles County appears to be level or starting to increase.
  - The estimated transmission number (“R”) is now 1.02 with an uncertainty of 0.95 to 1.09. Last week the estimate was 0.95 with an uncertainty of 0.85 to 1.05. If R remains above 1 the number of cases will increase over time.
  - Based on the current estimate for R, the current number of hospital beds, ICU beds, and ventilators in Los Angeles County are likely adequate over the next 4 weeks. However, within the next month it may be necessary to create and staff additional ICU beds to meet demand, as was done in July.
  - The model suggests about 1 in 770 Los Angeles County residents are currently infectious to others and that about 1 in 7 have had COVID-19.

# How Many in Los Angeles are Infectious to Others?

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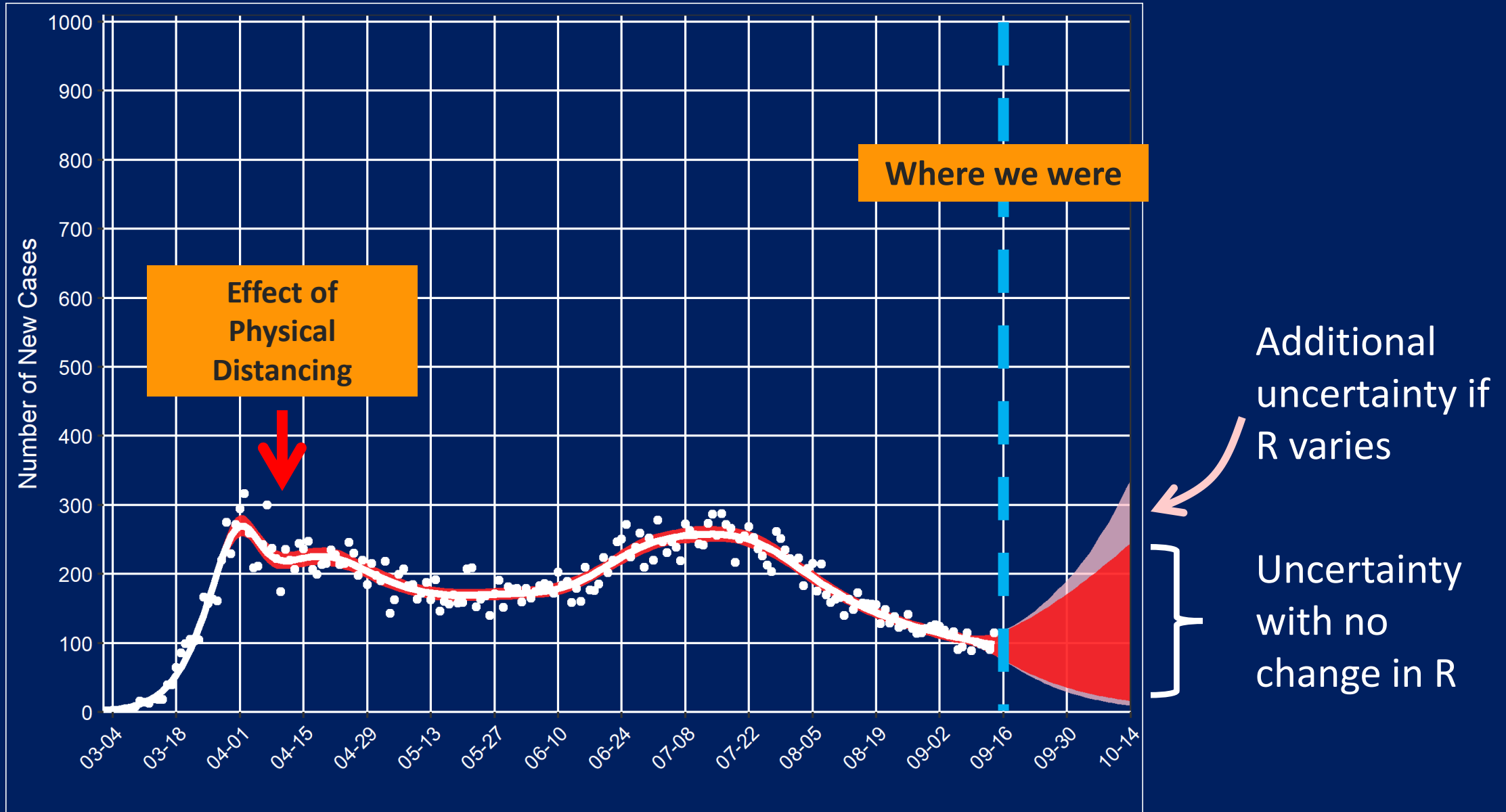
- The DHS team's epidemic model estimates the number of people in Los Angeles County who:
  - Are still **susceptible** to infection if exposed;
  - Have been **exposed** and are incubating, but not infectious;
  - Have COVID-19 and are **infectious** to others, though they may have no symptoms; and
  - Have had COVID-19 and either **recovered** or died, so they are no longer infectious
- The model suggest that about 0.13% (uncertainty of 0.08% to 0.21%) of everyone in Los Angeles County is currently infected and infectious to others.
- This suggests about 1 in 770 (between 1 in 1300 and 1 in 470) Los Angeles County residents are currently infectious to others. Last week this estimate was 1 in 1060.

# A Patient's Journey | COVID-19

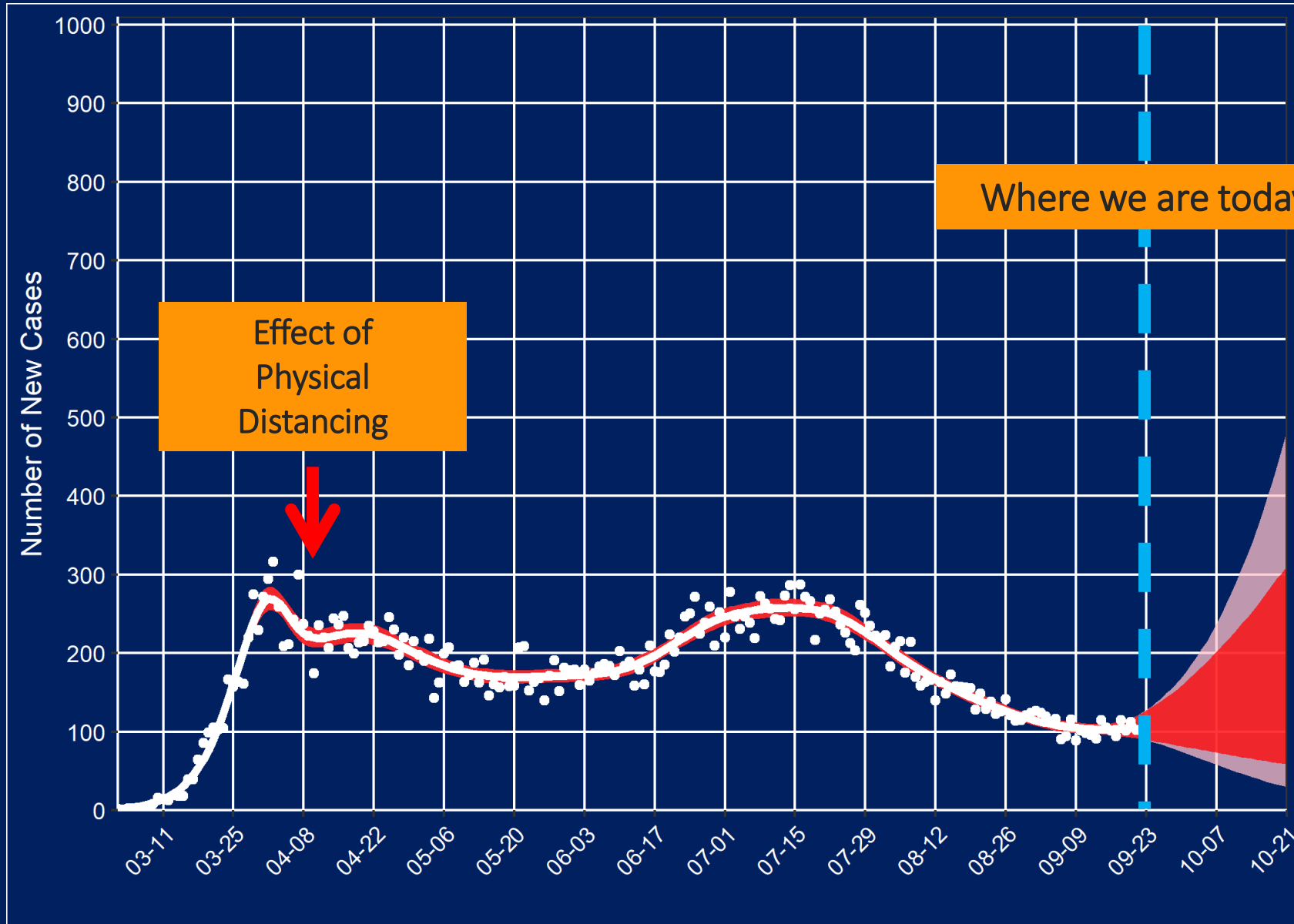


Goal of physical distancing, public use of cloth face coverings, quarantine, isolation and similar actions is to reduce the number of new susceptible people exposed during this time

# Hospital New Patient Projections: From Last Week



# Hospital New Patient Projections



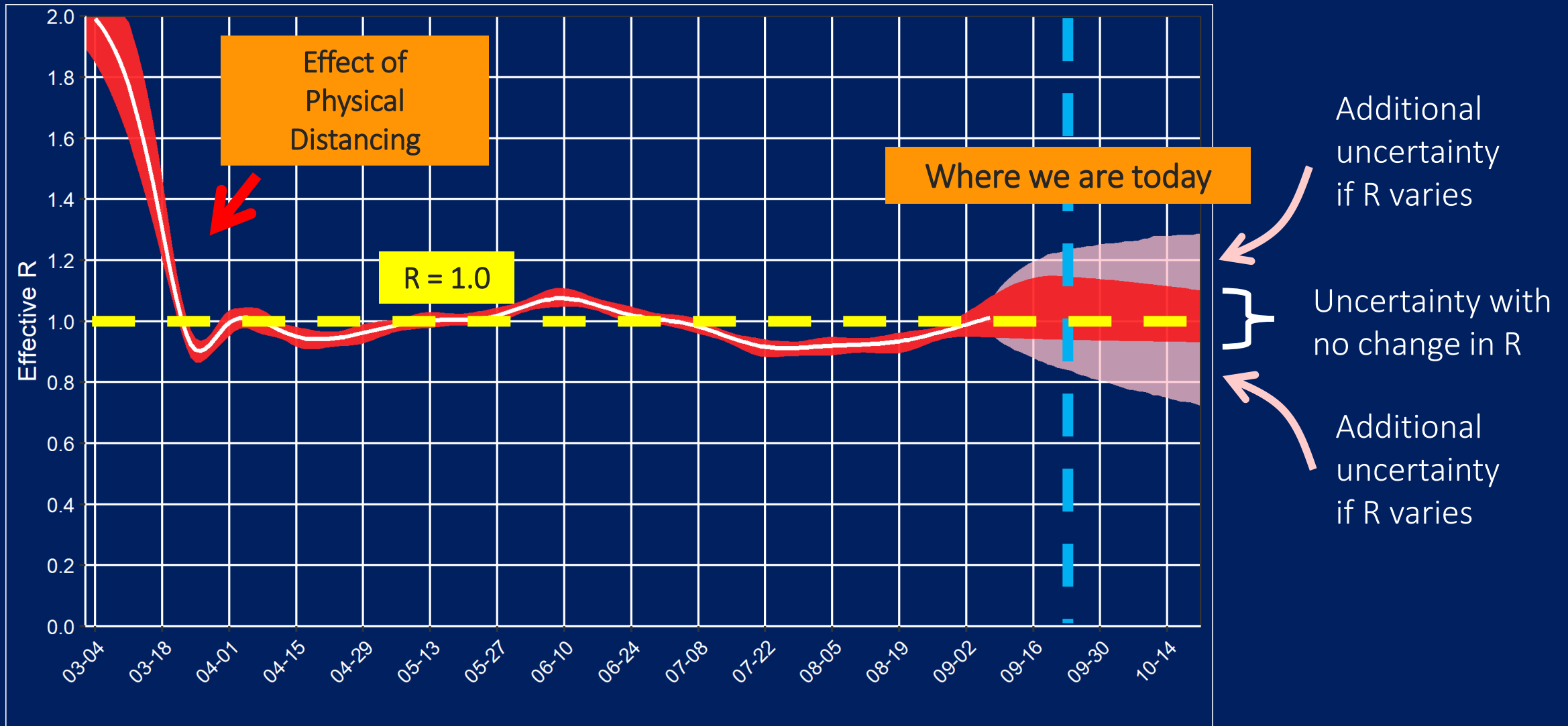
Where we are today

Effect of Physical Distancing

Additional uncertainty if R varies

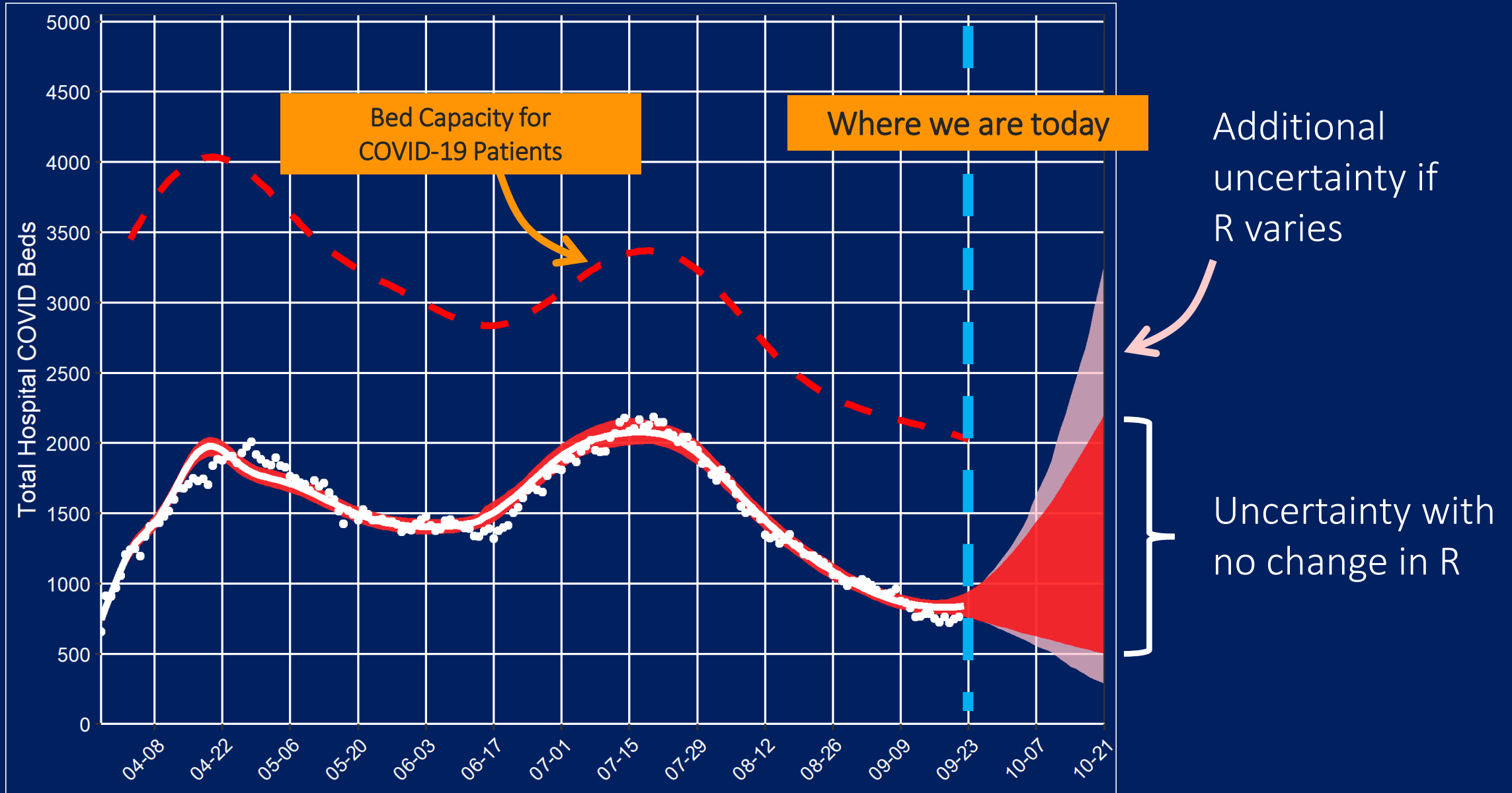
Uncertainty with no change in R

# Effective Transmission Number "R"



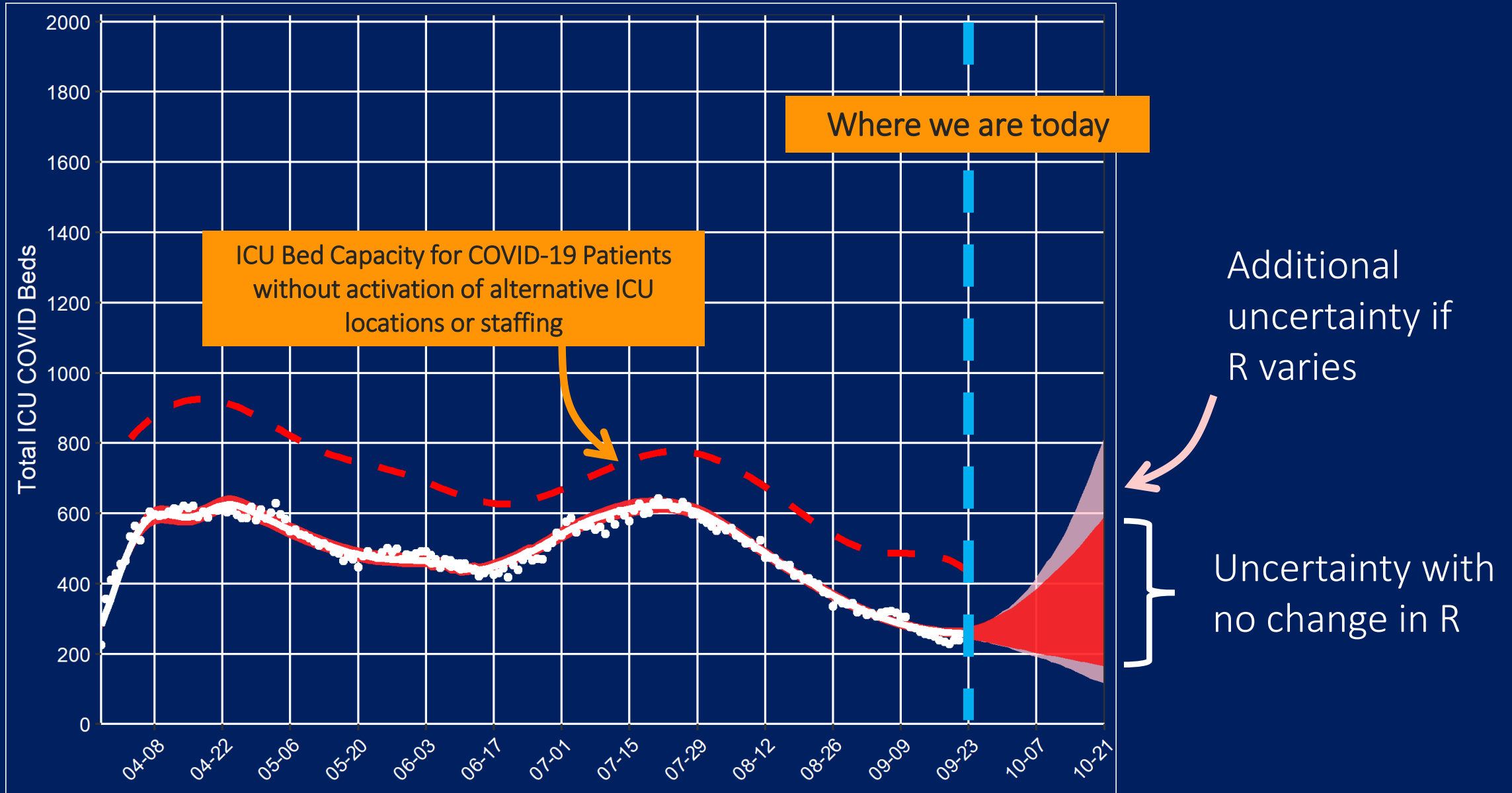
Note: We have adjusted the R that we present to account for the fraction of the population that is presumed to be immune to reinfection. At the beginning of the pandemic, this fraction was essentially zero so this would not have made any difference. But as more people have been infected, and are presumed to have immunity, we are presenting an R that includes this factor.

# Predictions of Demand in LA County | Hospital Beds

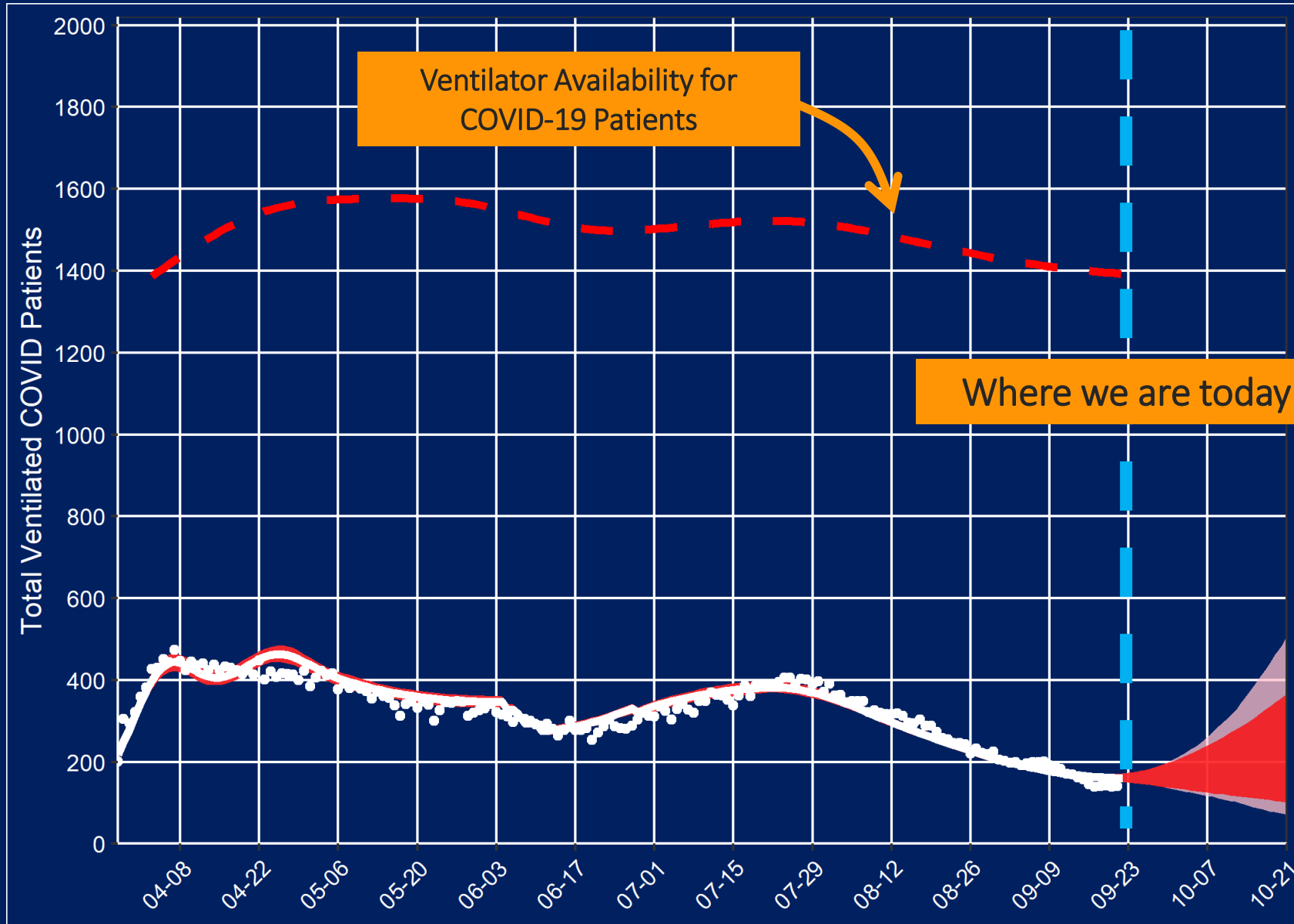




# Predictions of Demand in LA County | ICU Beds



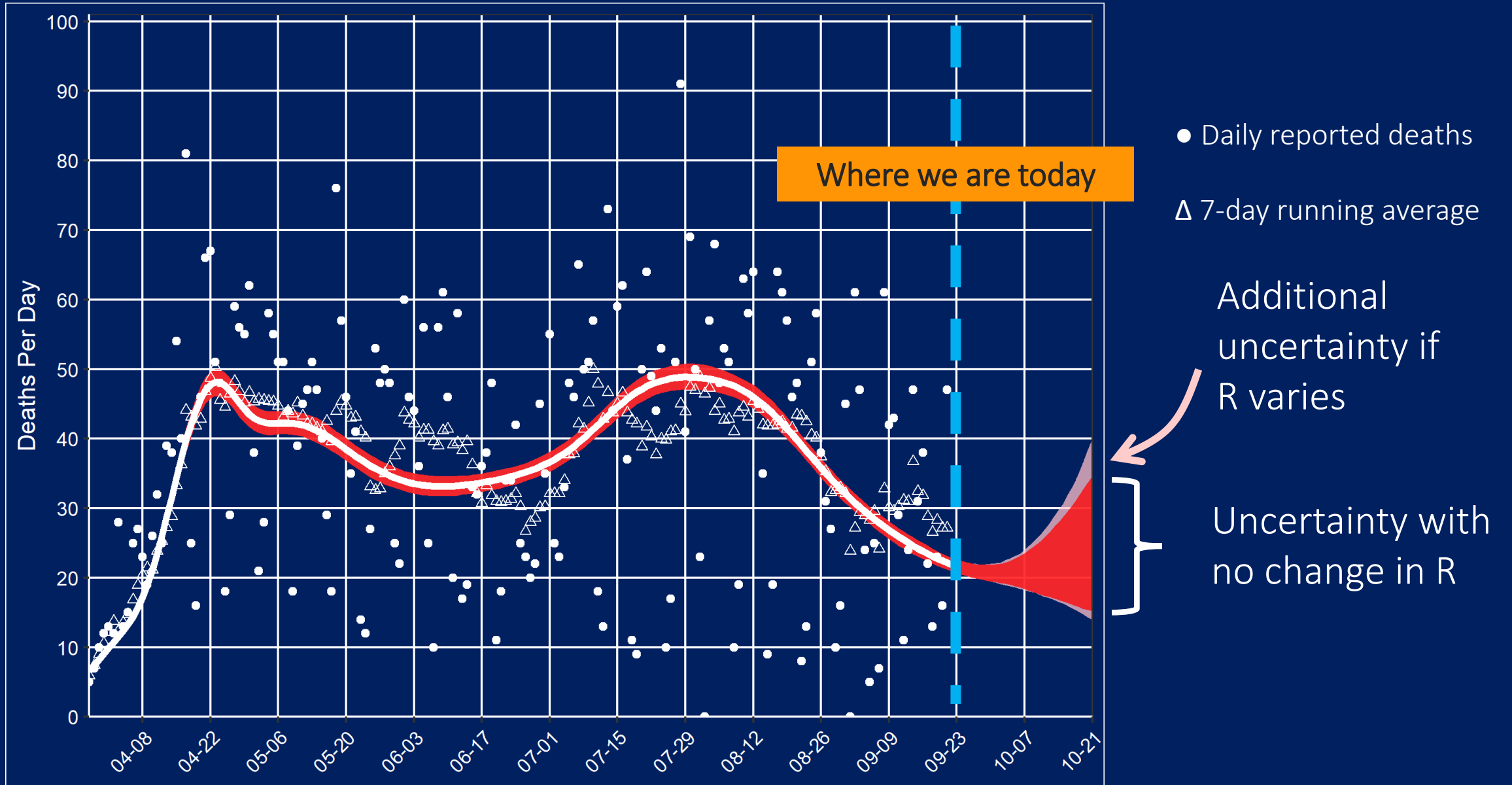
# Predictions of Demand in LA County | Ventilators



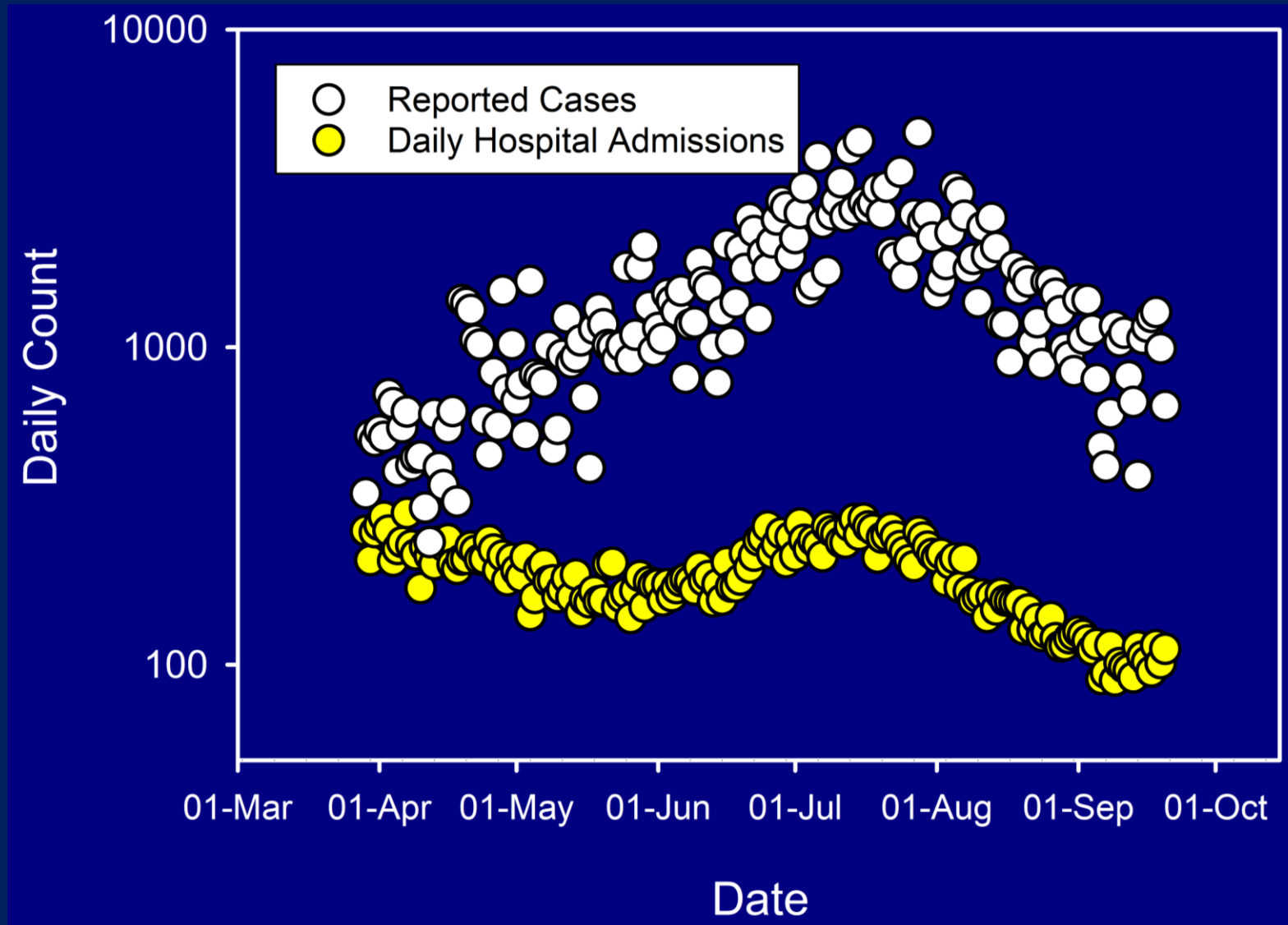
Additional uncertainty if R varies

Uncertainty with no change in R

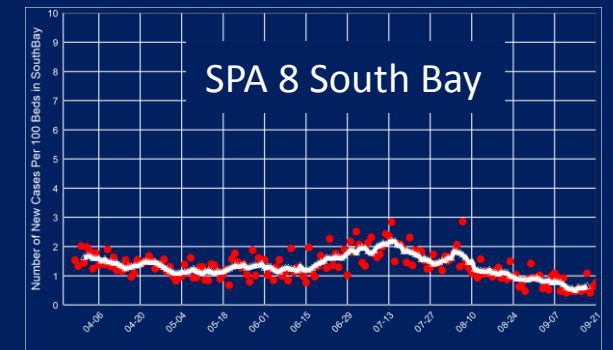
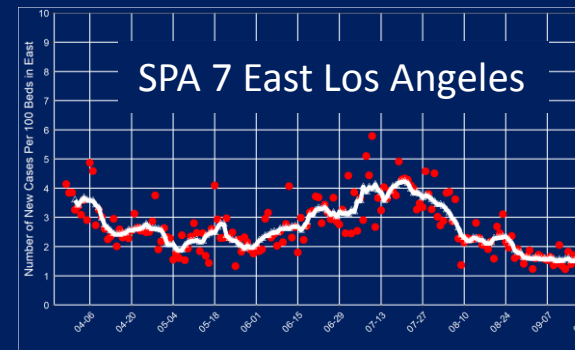
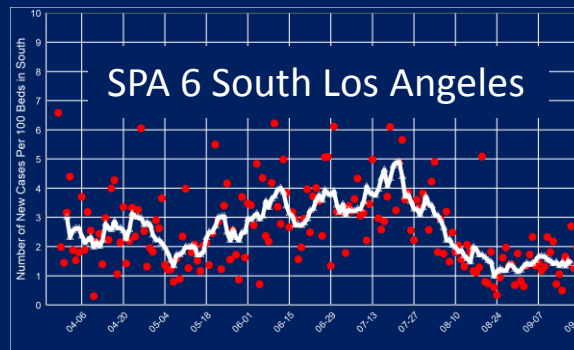
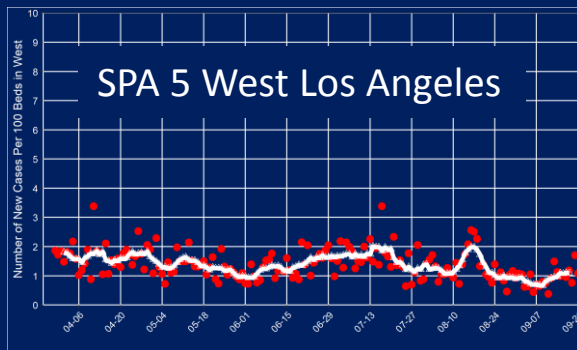
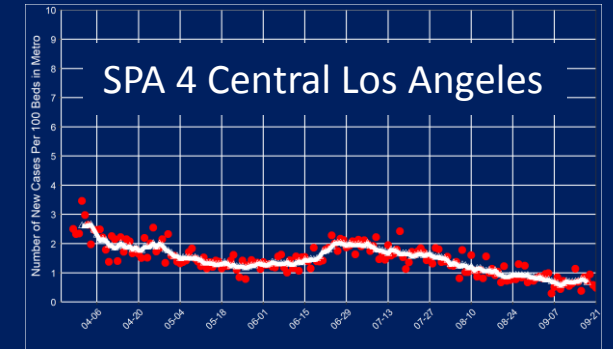
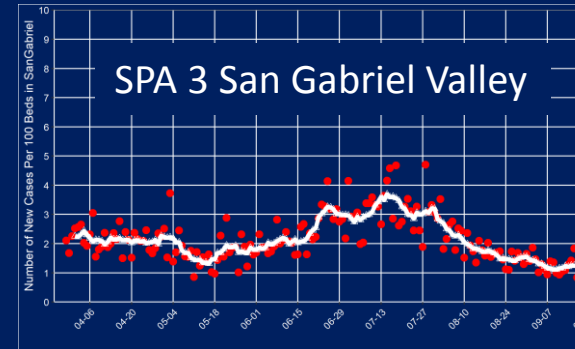
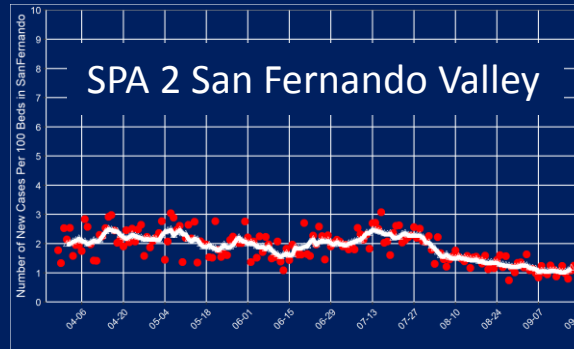
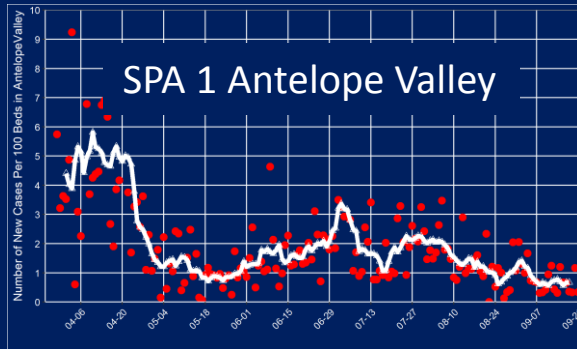
# Predictions of Daily Mortality LA County



# Hospital Admissions are a Varying Fraction of New Cases



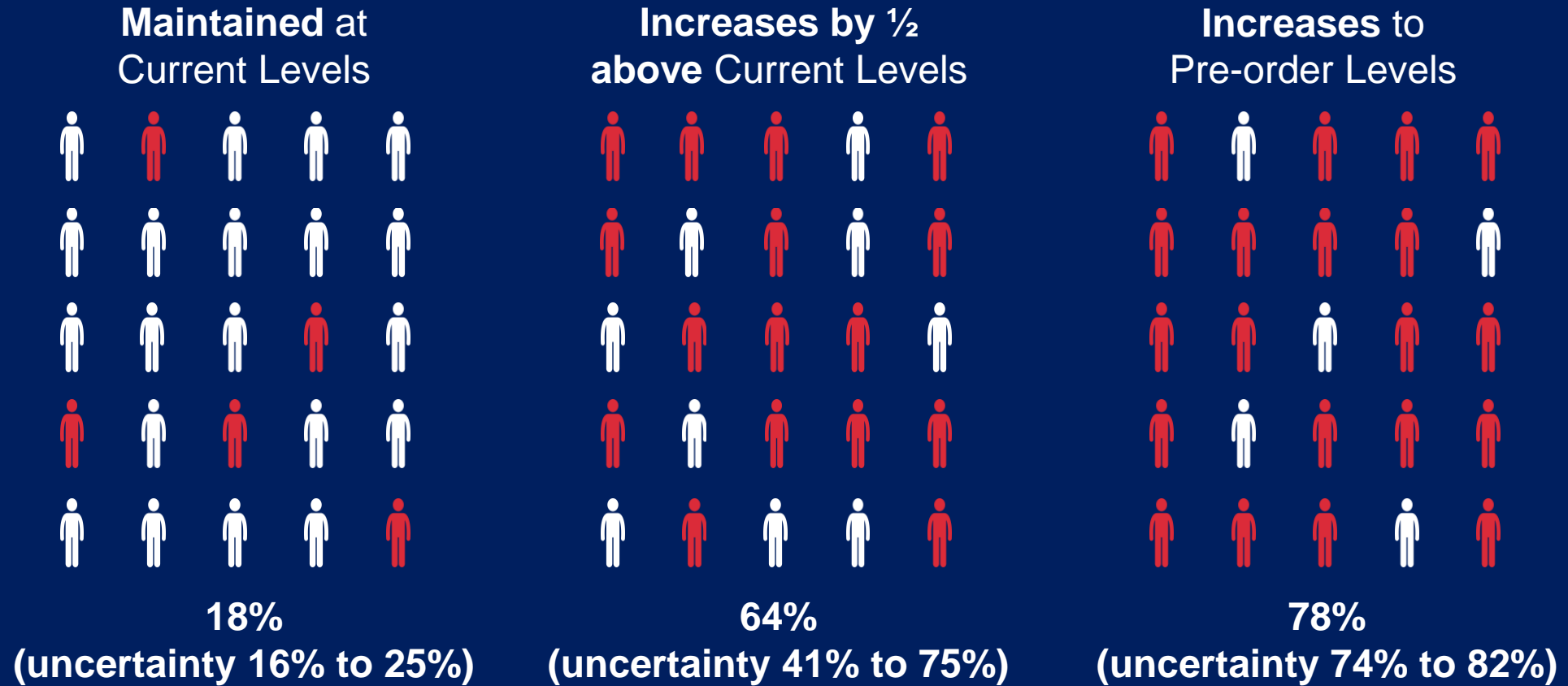
# Daily New COVID-19 Hospitalizations by Service Planning Areas (SPAs), per 100 Hospital Beds



- The transmission of COVID-19 in Los Angeles County is changing over time, with different patterns in different geographic areas
- More detailed geographical analysis is required to identify specific communities needing additional support in identifying cases and limiting spread

# Effect of Behaviors to Control Transmission

If transmission....



... of LA County residents will have been infected by December 1, 2020 \*

*\*(This includes adults and children)*