

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

July 8, 2020 Update

County DHS COVID-19 Predictive Modeling Team:

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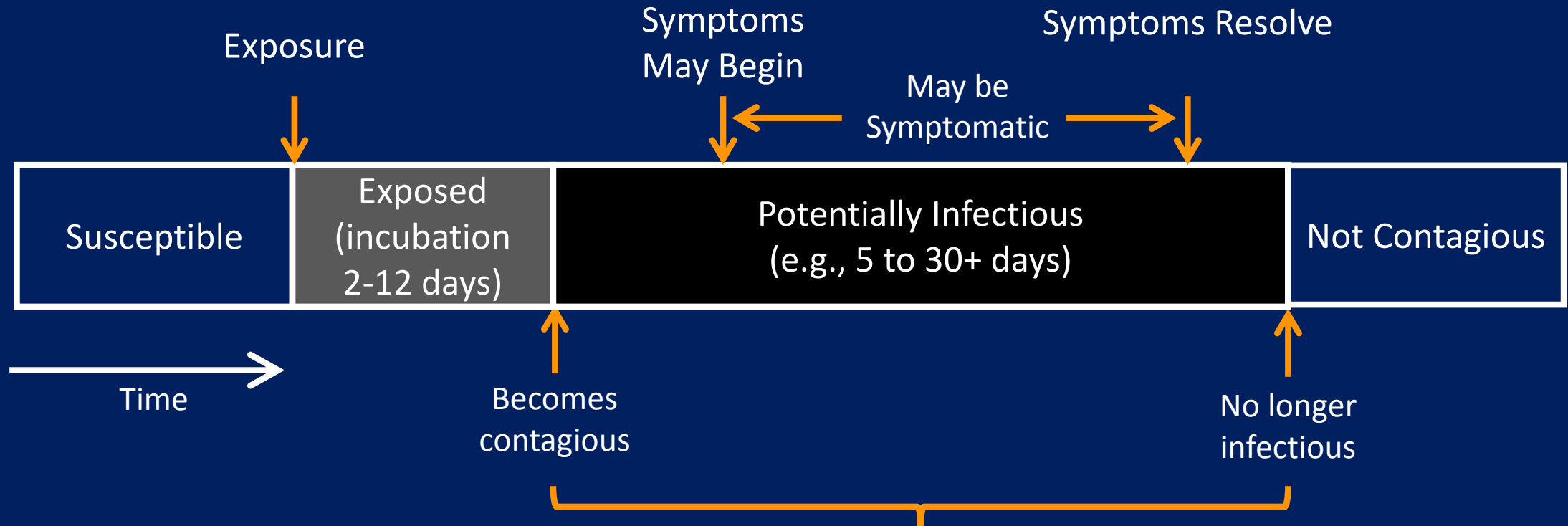
Key Findings of the July 8th Update

- This update includes data on hospital visits and volume through July 6, 2020.
- As before, the model reports the effective transmission number (“R”) with an adjustment for the fraction of the population that is now presumed to be immune to reinfection.
- Key findings:
 - The number of new patients with COVID-19 requiring hospitalization each day across Los Angeles County increased substantially last week and may now be leveling off—though it is too early to be certain—but at higher level than seen in April and May.
 - The pattern in hospital admissions is consistent with a transient increase in transmission during the first three weeks of June, though it is impossible to know if transmission will remain increased to some extent or return to the lower levels seen in April and May. The transmission number (“R”) is now estimated to be 1.01 with an uncertainty of 0.88 to 1.16, so both increases or decreases in daily hospitalizations going forward are possible even with no changes in community behavior.
 - Based on the current estimate for R, the current number of available hospital beds and available ventilators in Los Angeles County are most likely adequate over the next 4 weeks. The number of available, currently staffed ICU beds is more limited and could potentially become inadequate over the next four weeks. If this occurs, hospitals surge plans would need to be activated to accommodate the additional patient demand.
 - The model suggests that about 1 in 270 Los Angeles County residents are currently infected and infectious to others. It also estimates that about 1 in 10 have had COVID-19.

How Many in Los Angeles are Infectious to Others?

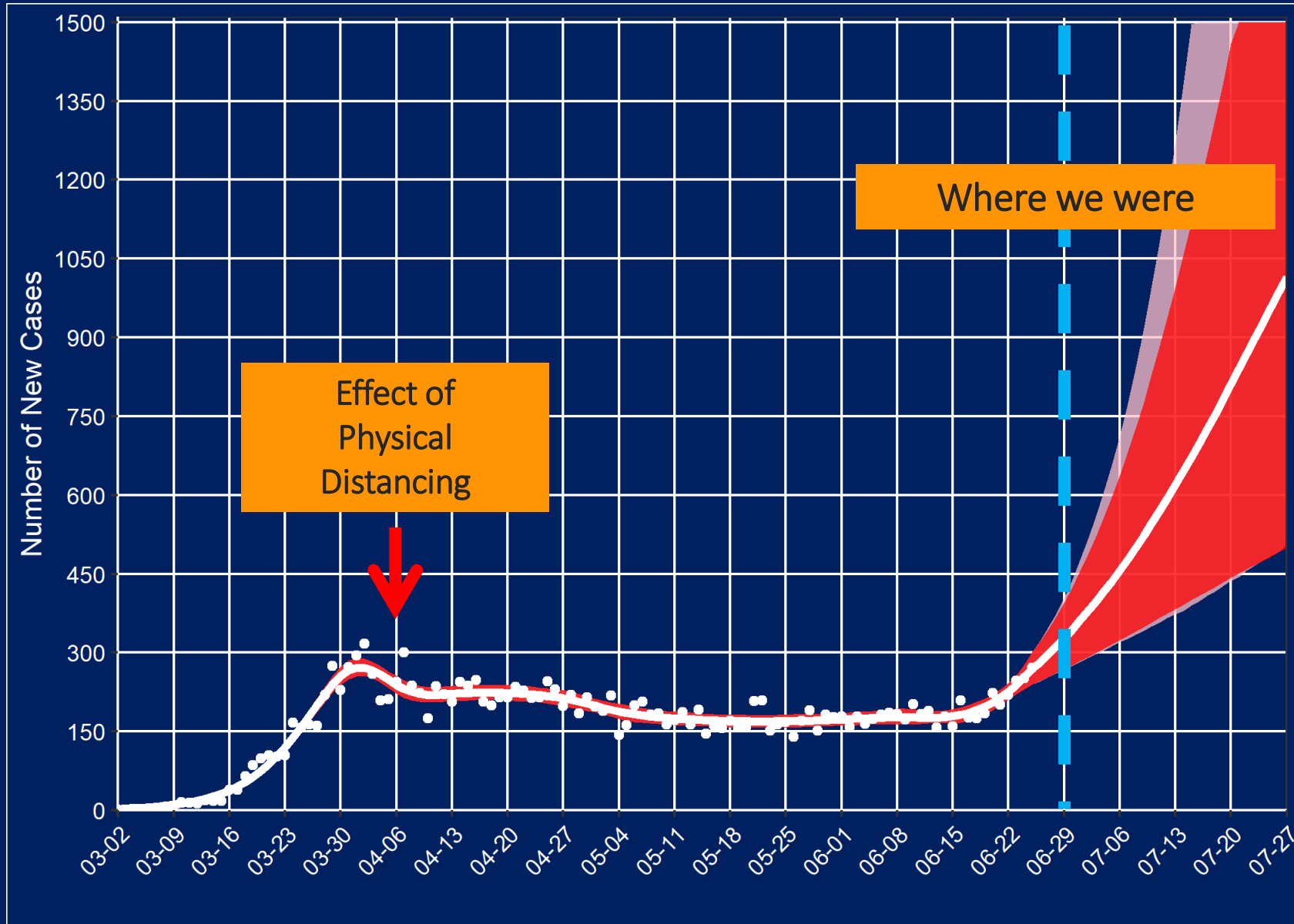
- The DHS team's epidemic model estimates the number of people in Los Angeles County who:
 - Are still **susceptible** to infection if exposed;
 - Have been **exposed** and are incubating, but not infectious;
 - Have COVID-19 and are **infectious** to others, though they may have no symptoms; and
 - Have had COVID-19 and either **recovered** or died, so they are no longer infectious
- The model suggest that about 0.37% (uncertainty of 0.21% to 0.62%) of everyone in Los Angeles County is currently infected and infectious to others. This suggests about 1 in 270 (between 1 in 480 and 1 in 160) Los Angeles County residents are currently infectious to others. Last week this estimate was 1 in 140. The week before it was 1 in 400.
- A typical large busy store is likely to have multiple infectious persons enter and shop every day

A Patient's Journey | COVID-19



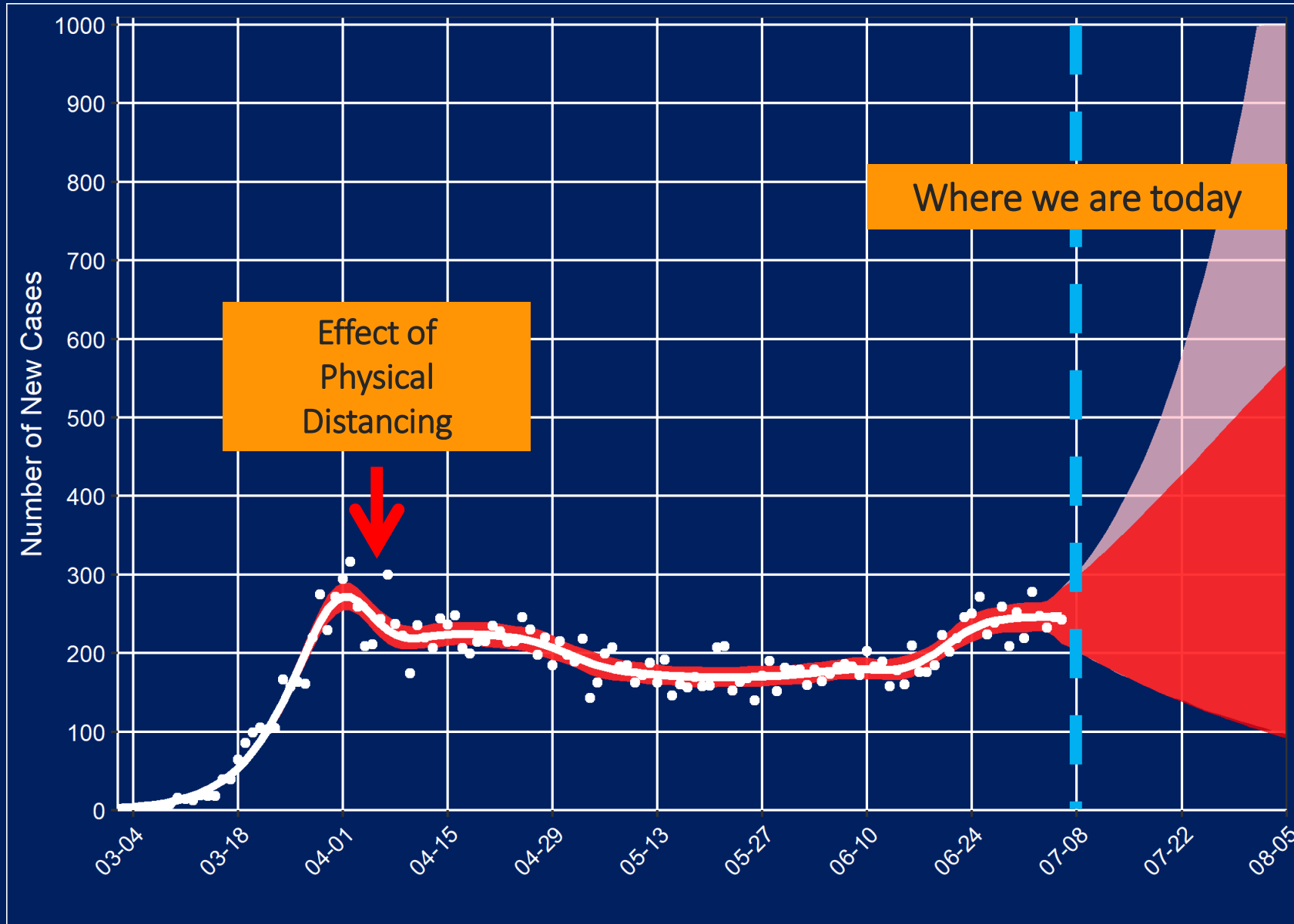
Goal of physical distancing, public use of cloth face coverings, quarantine, isolation and similar actions is to reduce the number of new susceptible people exposed during this time

Hospital New Patient Projections: From Last Week



↑
Uncertainty with
no change in R

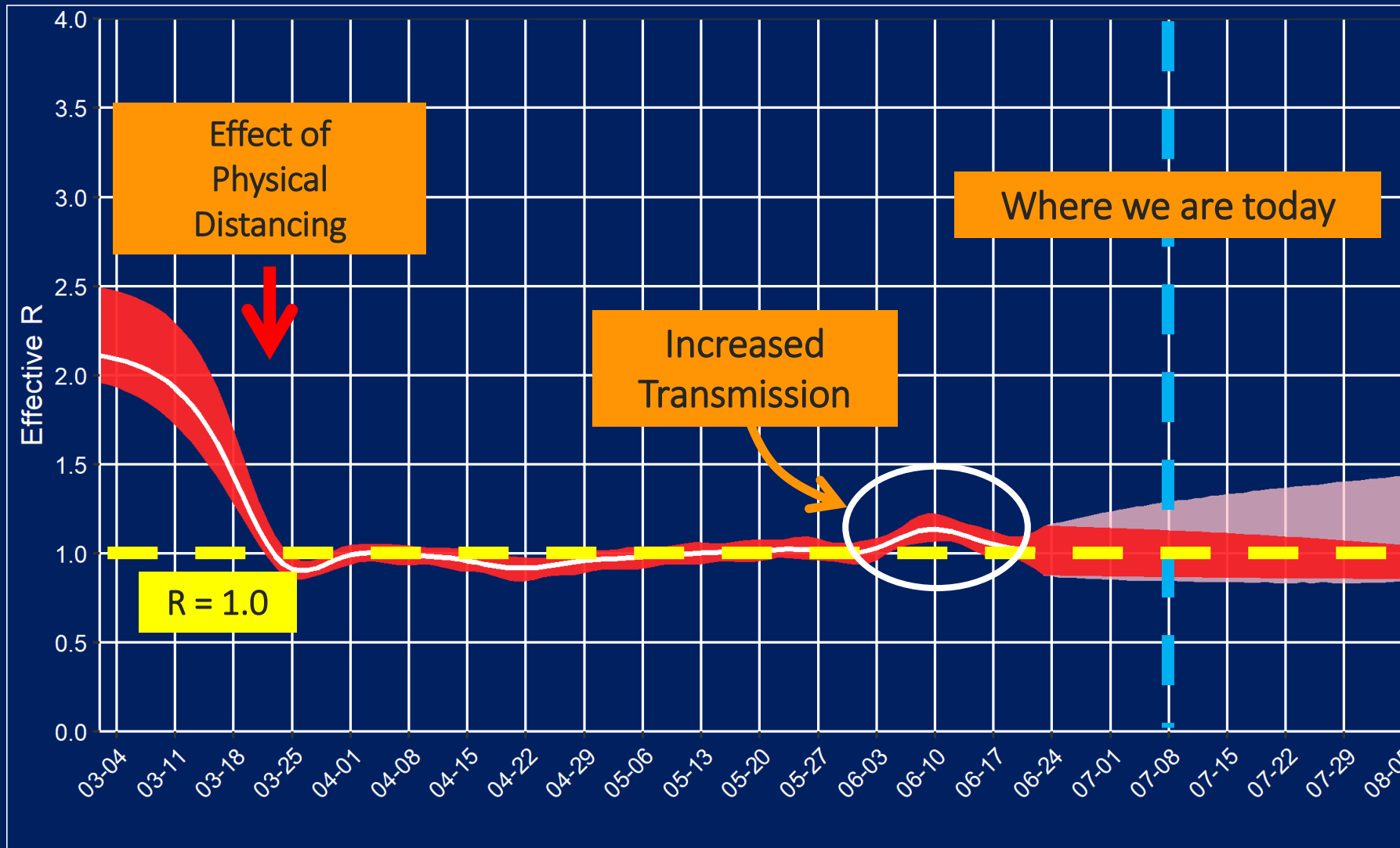
Hospital New Patient Projections



Additional
Uncertainty if R
increases

Uncertainty with
no change in R

Effective Transmission Number "R"

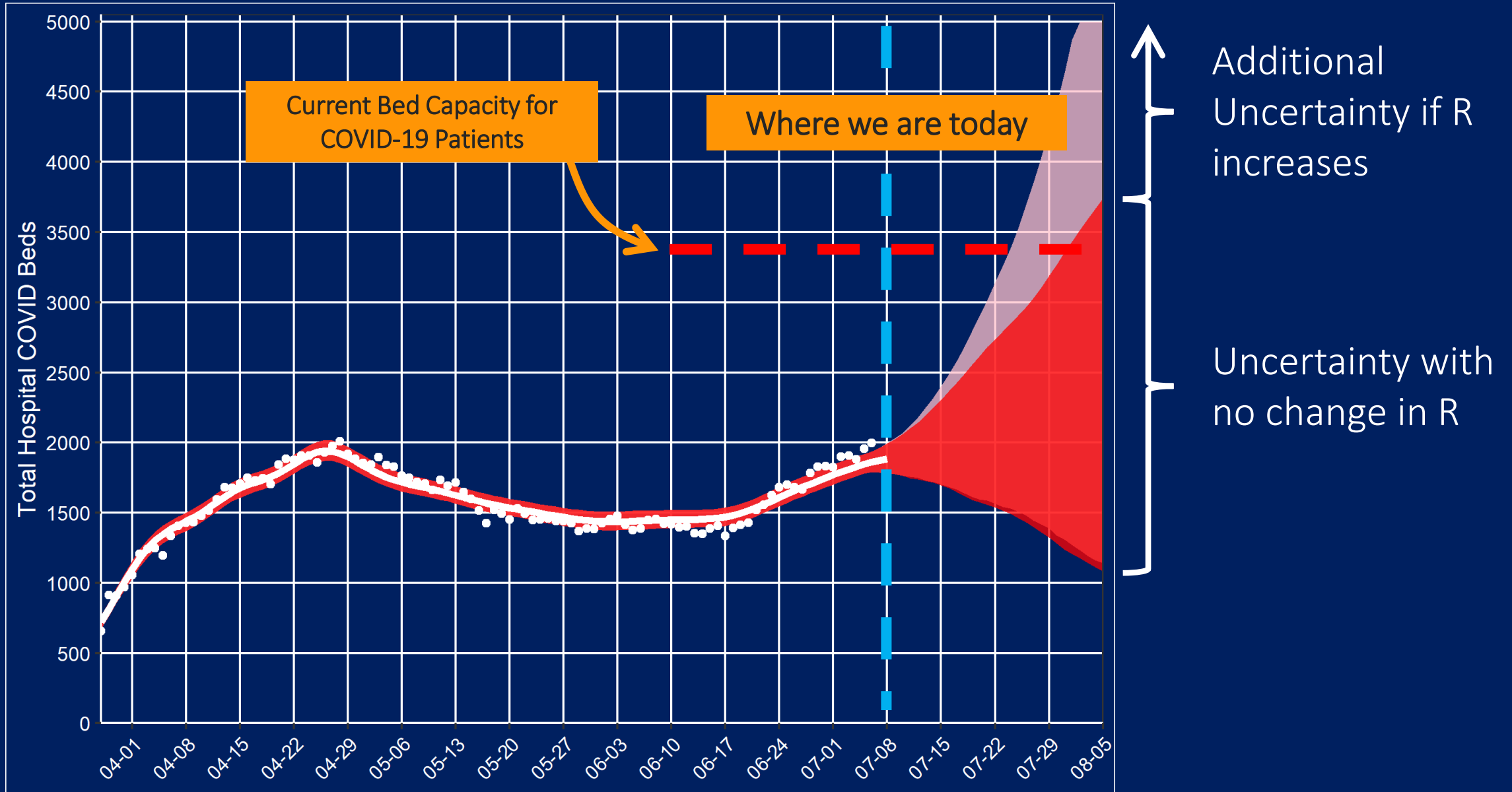


Additional uncertainty if R increases further

Uncertainty with no change in 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 essential 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.

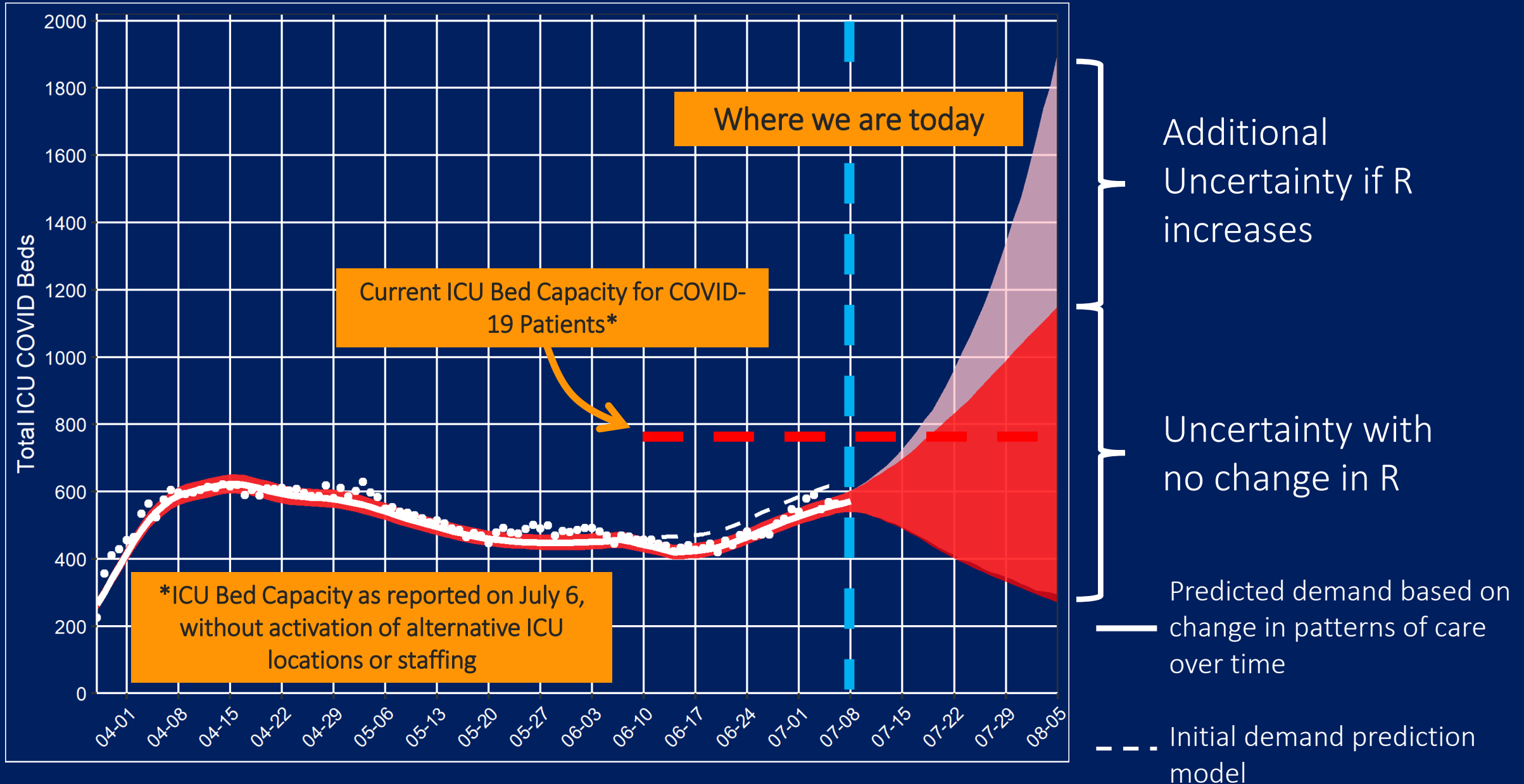
Predictions of Demand in LA County | Hospital Beds



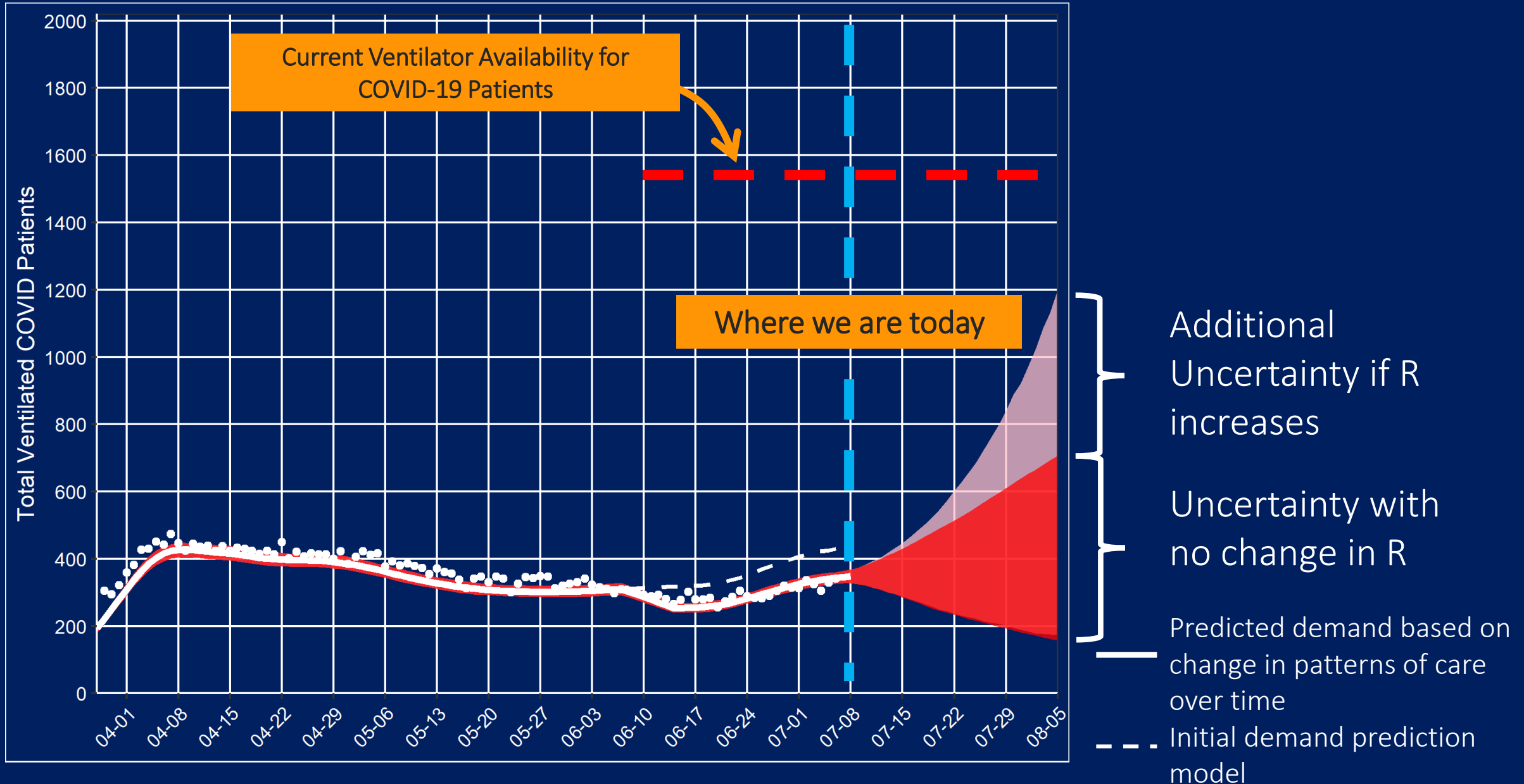
Changes in the Epidemic and Medical Care

- The COVID-19 epidemic in Los Angeles County is affecting a younger population, on average, than before
- We have learned that, for some patients with COVID-19, it is possible to care for them effectively without placing them in the ICU or using mechanical ventilation
- Because of these changes, there has been a slight decrease in the utilization of ICU beds and ventilators relative to the number of patients requiring hospital admission for COVID-19
- This change is now shown as a new projection for the number of ICU beds and ventilators that we expect to be required in the future
 - The new projection for ICU bed utilization is a 10% decrease from what would have been expected early in the epidemic with the same number of hospital admissions
 - The new projection for ventilator utilization is a 20% decrease from what would have been expected early in the epidemic with the same number of hospital admissions
 - These adjustments will continue to be reevaluated in the weeks ahead

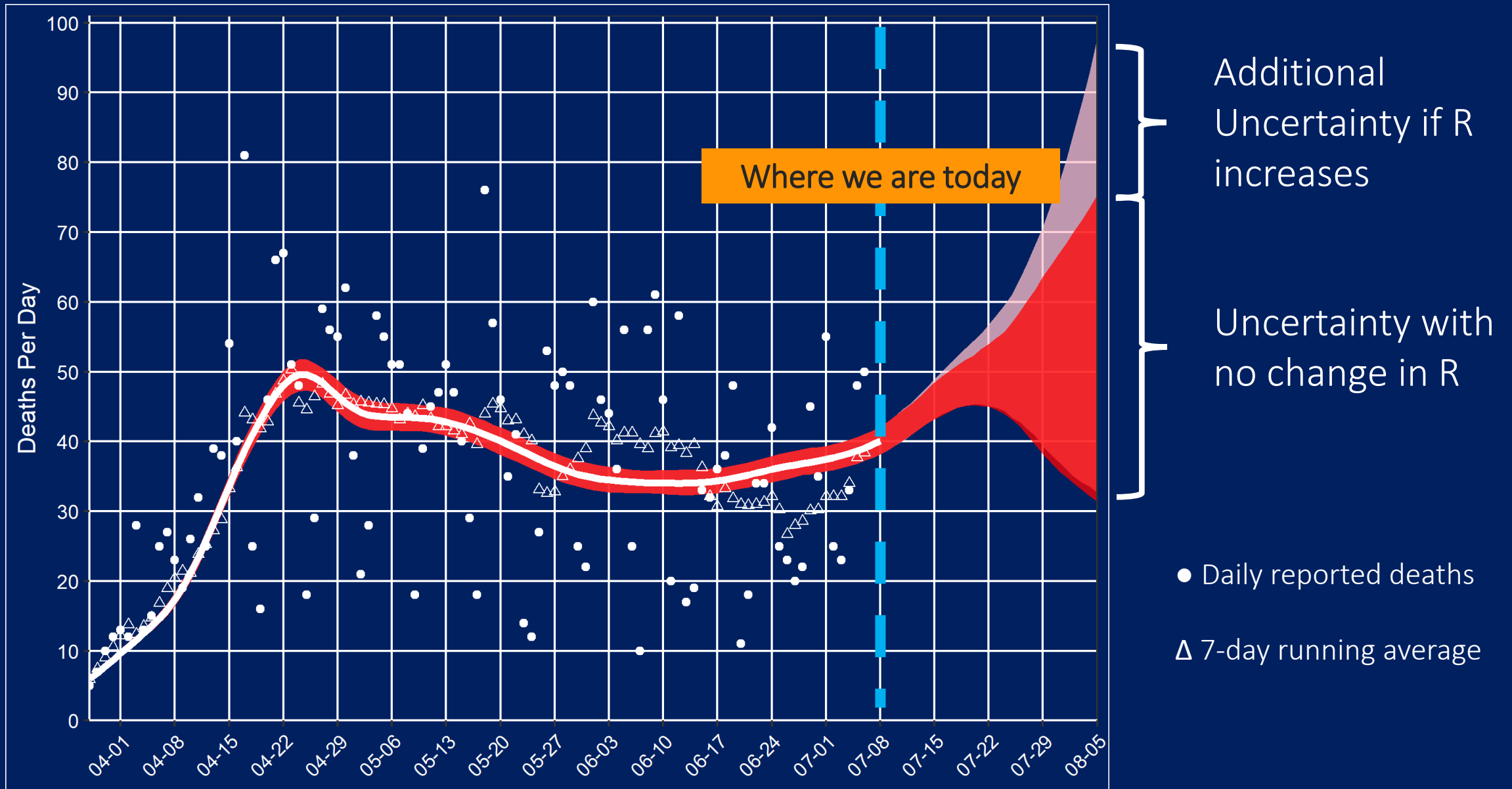
Predictions of Demand in LA County | ICU Beds



Predictions of Demand in LA County | Ventilators

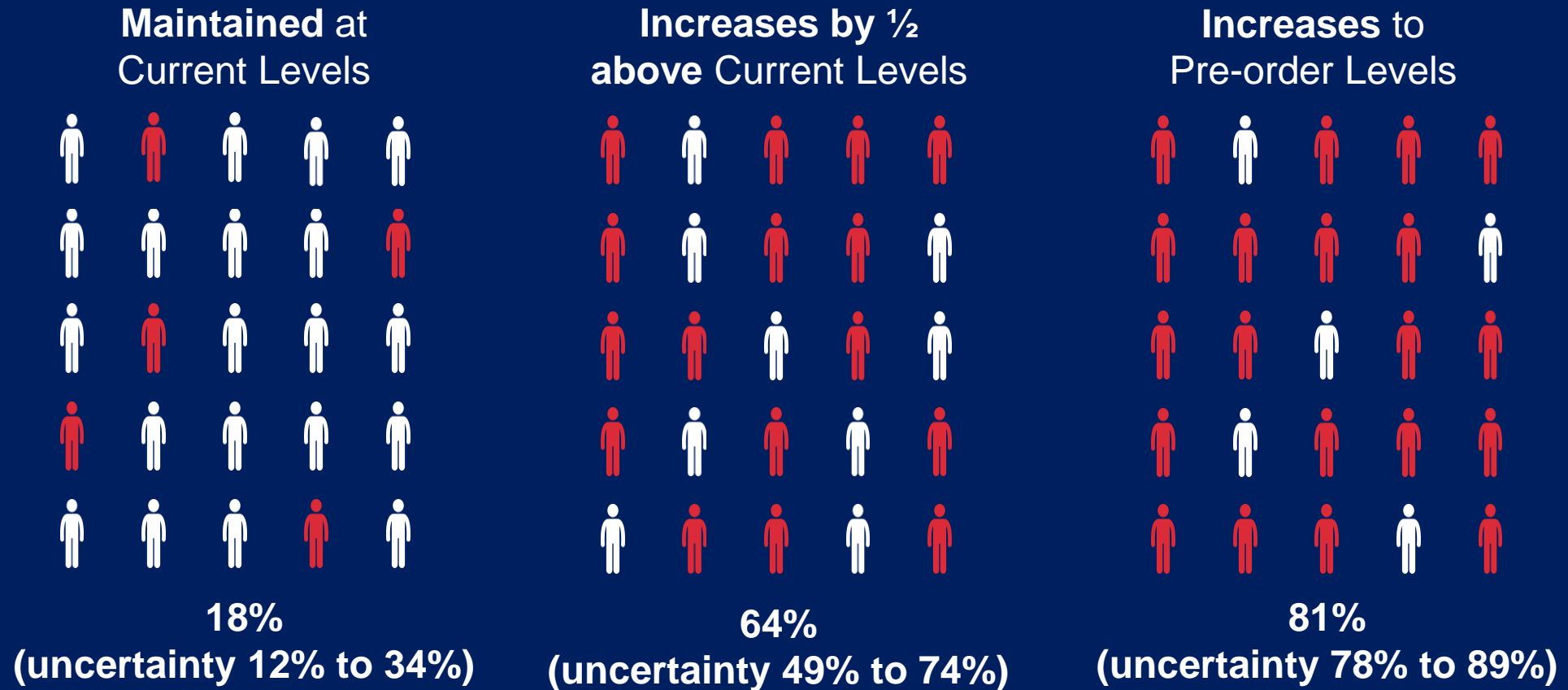


Predictions of Daily Mortality LA County



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)*