Short-term Forecasts: COVID-19 Patient Hospitalizations in Stanislaus County

As COVID-19 (coronavirus) spread across the world, many jurisdictions, including California, have implemented policies and recommendations to slow the spread of the disease, including closing non-essential business operations, asking people to work from home when possible, closing schools, prohibiting group gatherings, maintaining at least a six-foot separation from other people and wearing facial coverings in public. Publicly available platforms (e.g., unacast, cuebiq) provide estimated magnitudes of social distancing in the County, suggesting

1. Approximately 40% reduction in social contacts for the period between March 19 and May 19, 2020
2. Less than 20% reduction in social contacts for the period between May 20, 2020 and on July 13, 2020

Utilizing estimated magnitudes of social distancing as well as non-pharmaceutical interventions (e.g., case isolation/quarantine), data scientists from universities and private sectors have created mathematical/statistical forecasting models to project hospital bed utilization for the next 2 to 4 weeks. These models not only consider the local transmission rate but also incorporate several pieces of epidemiological information, such as when the COVID-19 epidemic started, the amount of social distancing practiced, the percentage of COVID-19 patient being isolated and quarantined and so on. Figure 1 shows short-term forecasts of COVID-19 patient hospitalizations in Stanislaus County, generated by seven different models. Each model’s growth curve is represented by a different color. The black squares show the number of confirmed Stanislaus County COVID-19 patients who were hospitalized in a local hospital on a given day. All models have estimated a significant increase in the past month but projected that the curve would be flatten or there would be a moderate decrease for the next month.

**Figure 1** Estimates and Short-term Projections of COVID-19 Patient Hospitalizations in Stanislaus County, CA

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