As COVID-19 (coronavirus) spread across the world, many jurisdictions, including California, have implemented policies and recommendations to increase social distancing, including closing non-essential business operations, asking people to work from home when possible, closing schools, prohibiting group gatherings and maintaining at least a six-foot separation from other people. These measures were instituted with the hope of “flattening the curve,” or slowing the spread of this disease, so that hospitals are not overwhelmed by a large number of patients seeking care all at once (which could mean an insufficient number of hospital beds, medical staff, and ventilators for those who need them). Publicly available platforms (e.g., unaast, cuebiq) provide estimated magnitudes of social distancing in the County, suggesting that less 20% reduction in social contacts has occurred since the local reopening occurred on May 20, 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 or 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. It is important to note that the variance of these models indicates how difficult it is to predict the course of this disease’s spread; but this week, all models, except UCLA model, project a significant increase for the next month.

Note: This graph is based on the data available as of July 7, 2020. Please note that there is considerable uncertainty in the estimates of each epidemiologic model at this time, driven by the uncertainties in key aspects of the virus and lack of data regarding the prevalence of infection.