

Rapid update: Projected COVID-19 epidemic trends and health system needs for Oregon

Authors: Cliff Kerr¹, Brittany Hagedorn¹, Dina Mistry¹, Daniel Klein¹

Reviewers: Assaf Oron¹, Prashanth Selvaraj¹, Jen Schripsema¹, Roy Burstein¹

¹Institute for Disease Modeling, Bellevue, Washington

Contact: covid@idmod.org

Results as of 2020-03-30, 12:30pm

Note: this update is a companion to the March 23rd report.

Summary

New modeling results calibrated to the latest available Oregon data (up to March 27th) suggest slightly higher numbers of current infections in Oregon than previously estimated, due to an increase in the number of diagnosed cases reported at earlier time points.

However, there is also strong evidence that measures currently in place in Oregon are reducing transmission. Due to the delay between infection and diagnosis, there is considerable uncertainty in the impact of the most recent intervention, the March 23rd “stay-at-home” order. However, the data are consistent with current transmission rates having been reduced by 50-70% compared to baseline.

We stress the need for a continuation of strong social distancing measures to stop the spread of COVID-19. Furthermore, additional measures, including increased testing, early isolation of positives, and contact tracing, will be required to rapidly bring down the number of active infections.

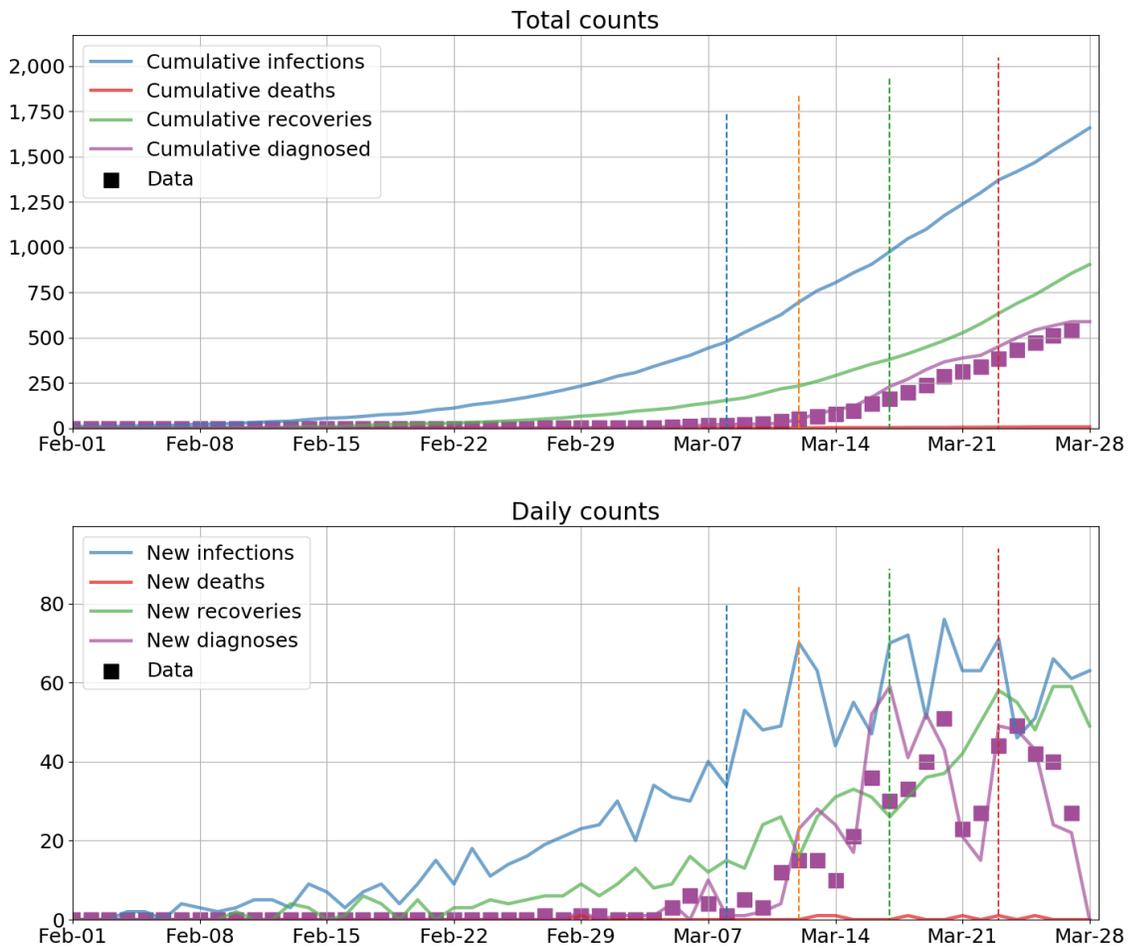


Figure 1: Revised model calibration with the latest case data, showing the timing of different interventions, and approximately 1,750 infections (80% forecast interval: 1,200 to 3,000) by March 28th. Dotted lines correspond to reductions in transmission relative to baseline, from left to right, of 10%, 20%, 35%, and 55%. The impacts of these interventions were estimated by calibrating to numbers of positive diagnoses (dots), deaths, and hospitalizations (not shown).

COVID-19 projections, Oregon

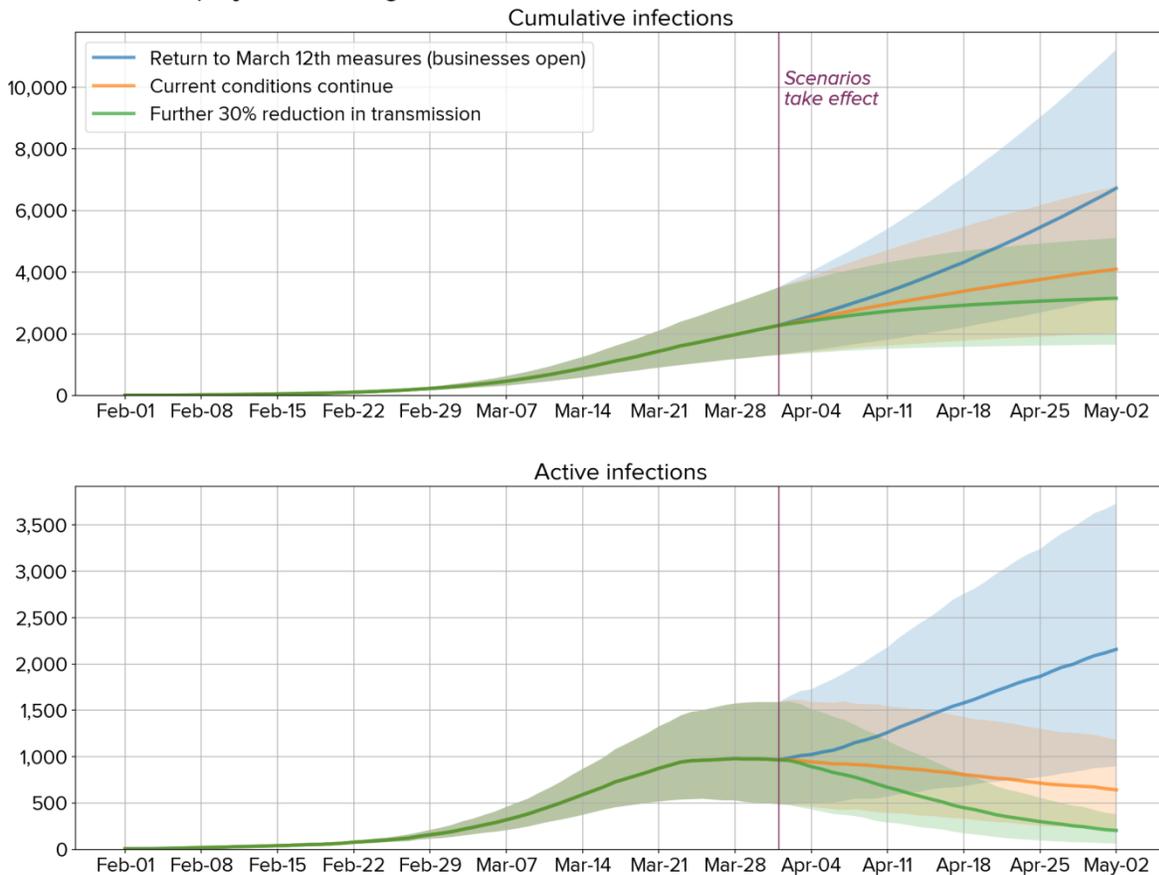


Figure 2: Scenarios projecting estimated epidemic trends with: a return to earlier measures (schools closed but businesses reopen), showing epidemic rebound; a continuation of current measures including the stay-at-home order, with active infections slowly decreasing; and a further reduction in transmission (e.g., improved testing and contact tracing), showing a rapid decrease in new infections.

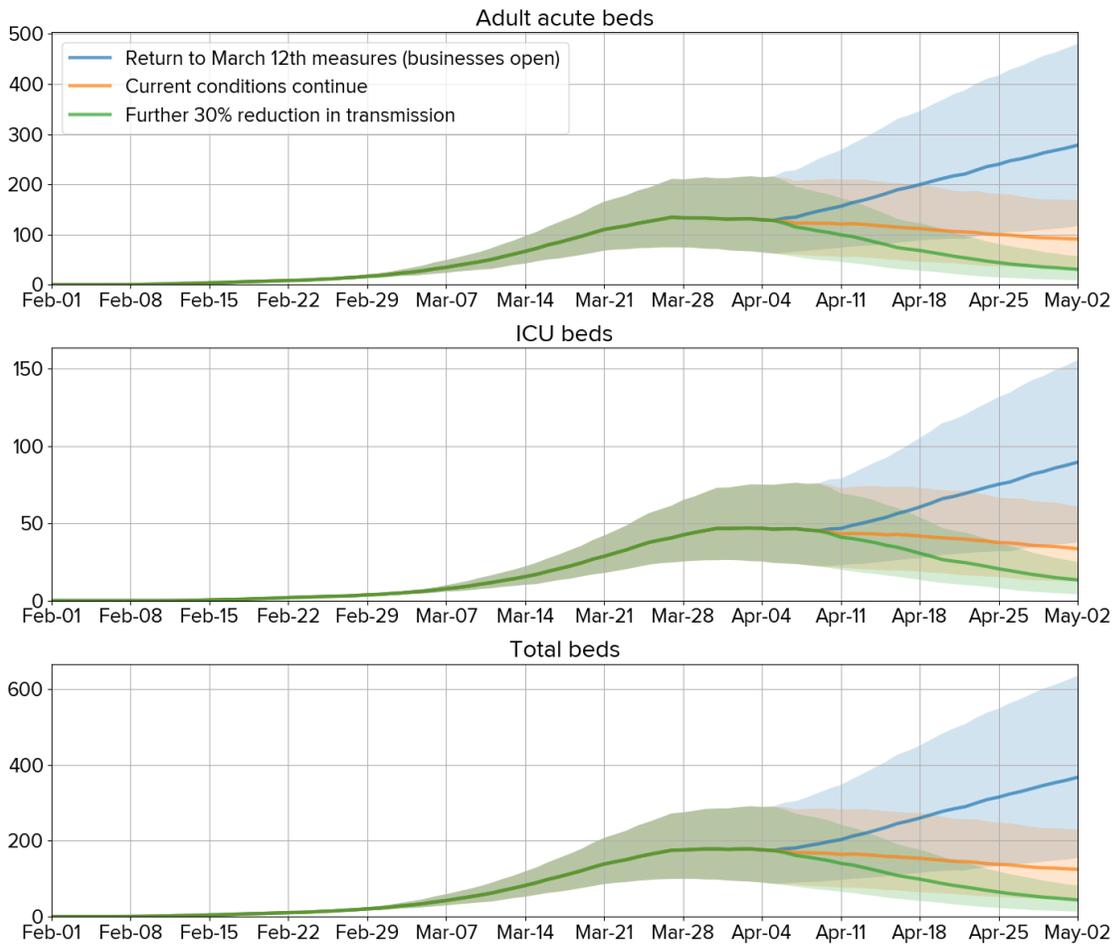


Figure 3: Estimated demand on the health system. Expected demand for hospital beds is predicted to remain relatively constant before decreasing, assuming current or strengthened interventions and continued high compliance.