



Coronavirus Disease 2019 (COVID-19)

COVID-19 Forecasts for the United States

Why Forecasting COVID-19 Deaths in the US is Critical

CDC is responding to a [pandemic](#) of coronavirus disease 2019 (COVID-19) caused by a novel [coronavirus](#), SARS-CoV-2, that is [spreading](#) from person to person. The federal government is working closely with state, tribal, local, and territorial health departments, and other public health partners, to [respond](#) to this situation. Forecasts of deaths will help inform public health decision-making by projecting the likely impact in coming weeks.

What the Forecasts Aim to Predict

Forecasts based on the use of statistical or mathematical models (subsequently referred to as “models”) aim to predict changes in national and state level cumulative reported COVID-19 deaths for the next four weeks. Forecasting teams predict numbers of deaths using different types of data (e.g., COVID-19 data, demographic data, mobility data), methods (see below), and estimates for the impacts of interventions (e.g. social distancing, use of face coverings).

Working to Bring Together Forecasts for COVID-19 Deaths in the U.S.

CDC works with partners to bring together weekly forecasts for COVID-19 deaths in one place. These forecasts have been developed independently and shared publicly. It is important to bring these forecasts together to help understand how they compare with each other and how much uncertainty there is about what may happen in the upcoming four weeks.

[Columbia University](#)

Model names: CU 20% contact reduction, CU 30% contact reduction, CU 40% contact reduction

Intervention assumptions

These models are based on assumptions of reducing the number of contacts per case. Three different adaptive scenarios of contact reduction are projected: 20%, 30%, and 40% contact reduction in US counties with at least 10 cases. Additional reductions are implemented with additional new cases, and all social distancing interventions remain in place until the end of the projection.

Methods

Metapopulation SEIR model

[Institute for Health Metrics and Evaluation](#)

Model name: IHME

Intervention assumptions

This model assumes social distancing stays in place until the pandemic, in its current phase, reaches the point when COVID-19 deaths are less than 0.3 per million people. Based on these latest projections, IHME expects social distancing measures to be in place through the end of May.

Methods

Non-linear mixed effects curve-fitting

[Los Alamos National Laboratory](#)

Model name: LANL

Intervention assumptions

Currently implemented interventions and the corresponding reductions in transmission will continue to be upheld in the future, resulting in an overall decrease in the growth rate of COVID-19. Over the course of the forecast, the model assumes that the growth will decrease over time.

Methods

Statistical dynamical growth model accounting for population susceptibility

[Northeastern](#)

Model name: MOBS (Laboratory for the Modeling of Biological + Socio-technical Systems)

Intervention assumptions

The projections assume that social distancing policies in place at the date of calibration are extended for the future weeks.

Methods

Metapopulation, age-structured SLIR model

Additional Resources:

[COVID-19 Forecast](#)