

#### **1** Cases, Data & Surveillance

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CASES, DATA & SURVEILLANCE

US Cases & Deaths

Testing	Data	in the	US

Hospitalizations &			
Emergency Dept Visits			

Serology (Antibody) Surveillance

**Estimated COVID-19** Burden

Wastewater Surveillance +

#### Forecasting

Case Forecasts	+
Death Forecasts	+
Hospitalization Forecasts	_

# COVID-19 Forecasts: Hospitalizations

Print

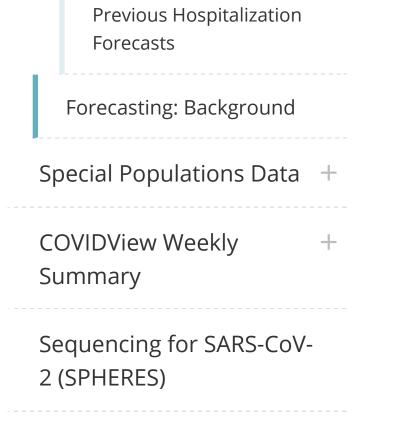
Updated Dec. 22, 2020 Languages

## Interpretation of Forecasts of New Hospitalizations

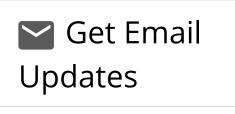
- This week, CDC received forecasts of daily, new reported COVID-19 hospital admissions over the next 4 weeks from 11 modeling groups.
- On the national level, the forecasts estimate that 9,200 to 23,000 new COVID-19 hospital admissions will be reported January 18, 2021.
- Reported hospital use data have recently been made available on HealthData.gov [], with daily new confirmed COVID-19 hospital admissions reported for each state. The forecast graphs presented here now include both the reported data and the forecasts.
- State-level forecasts also show a high degree of variability, which results from multiple factors. Hospital admissions forecasts use different sources of data for COVID-19 cases or deaths, with different limitations, and make different assumptions about social distancing.

#### National Forecasts

**National Forecast** 

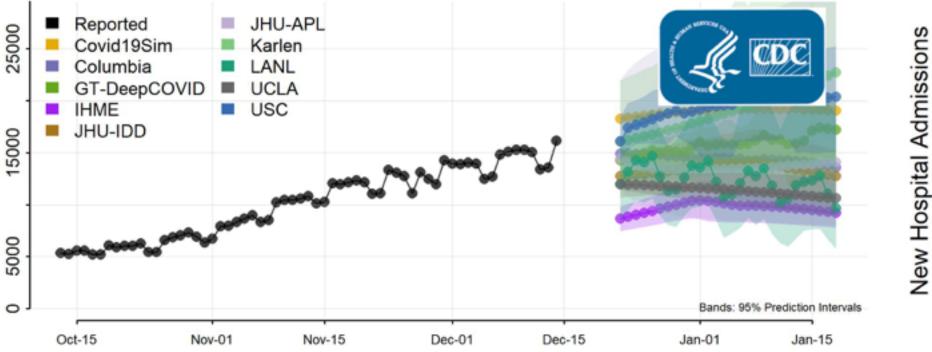


Epidemiology for COVID- + 19



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- The figure shows the number of new confirmed COVID-19 hospital admissions reported nationally in the United States each day from October 13, 2020 to December 14, 2020 and the predicted number of new COVID-19 hospital admissions per day for the next 4 weeks, through January 18, 2021.
- The forecasts make different assumptions about hospitalization rates and levels of social distancing and other interventions and use different methods to estimate the number of new hospital admissions.

Download\_national\_forecast\_data\_ 💵 [CSV – 1 sheet]

#### **State Forecasts**

State-level forecasts show the predicted number of new COVID-19 hospital admissions per day for the next 4 weeks by state. Each state uses a different scale, due to differences in the number of new COVID-19 hospital admissions per day in each state.

Download state forecasts 📙 [PDF – 8 pages] <sup>1</sup>

Download\_all\_forecast\_data\_ 🖾 [CSV – 1 sheet]

Additional forecast data and information on forecast submission are available at the <u>COVID-19</u> Forecast Hub 🗹 .

## **Forecast Assumptions**

The forecasts make different assumptions about social distancing measures and use different methods and data sets to estimate the number of new hospital admissions. Additional individual models details are available here; https://github.com/cdcepi/COVID-19-Forecasts/blob/master/COVID-<u>19\_Forecast\_Model\_Descriptions.md</u>

Social distancing is incorporated into the forecasts in two different ways:

- These modeling groups make assumptions about how levels of social distancing will change in the future:
  - <u>Columbia University</u> [2] (Model: Columbia)
  - Covid-19 Simulator Consortium [] (Model: Covid19Sim)
  - Johns Hopkins University, Infectious Disease Dynamics Lab [] (Model: JHU-IDD)
  - Institute of Health Metrics and Evaluation [] (Model: IHME)
  - University of California, Los Angeles 🗹 (Model: UCLA)
- These modeling groups assume that existing social distancing measures in each jurisdiction will continue through the projected 4-week time period:
  - <u>Georgia Institute of Technology, College of Computing,</u> [] (Model: GT-DeepCOVID)
  - <u>Google and Harvard School of Public Health</u> [] (Model: Google-HSPH)
  - Johns Hopkins University, Applied Physics Lab 🗹 (Model: JHU-APL)
  - Karlen\_Working\_Group 🗹 (Model: Karlen)
  - Los Alamos National Laboratory 🖸 (Model: LANL)
  - <u>University of Southern California</u> [] (Model: USC)

The rate of new hospital admissions is estimated using one of four approaches:

- These modeling groups assume that a certain fraction of infected people will be hospitalized:
  - Colum<u>bia University</u>
  - Covid-19 Simulator Consortium
  - Google and Harvard School of Public Health
  - Johns Hopkins University, Applied Physics Lab
  - Johns Hopkins University, Infectious Disease Dynamics Lab
  - Los Alamos National Laboratory
  - University of California, Los Angeles
  - University of Southern California
- The Georgia Institute of Technology, College of Computing, I uses COVID-19 hospitalization data reported by some jurisdictions to forecast future hospitalizations.
- The Institute of Health Metrics and Evaluation based on numbers of forecasted deaths.
- The <u>Karlen Working Group</u> 🖸 uses the rate of reported infections to estimate the number of new hospitalizations in a given jurisdiction, unless the rates of reported infections and hospitalizations differ. In that case, the rate of reported hospitalizations is used to forecast new hospitalizations.

Additional information on use of HHS reported hospital admissions for COVID-19 forecasts is

available here: https://github.com/reichlab/covid19-forecast-hub/blob/master/dataprocessed/README.md#hospitalizations

<sup>1</sup> The full range of the prediction intervals is not visible for all state plots. Please see the forecast data for the full range of state-specific prediction intervals.

Additional Resources
Previous COVID-19 Forecasts: Hospitalizations
FAQ: <u>COVID-19 Data and Surveillance</u>
<u>CDC COVID Data Tracker</u>
COVID-19 Mathematical Modeling

Last Updated Dec. 22, 2020 Content source: National Center for Immunization and Respiratory Diseases (NCIRD), Division of Viral Diseases

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