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Predicting Pandemics

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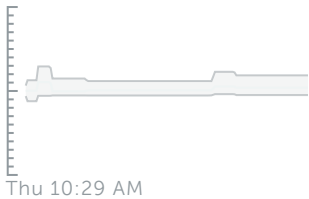
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Number of US COVID deaths if >50% vaccinated?

Created by juancambeiro. Opened on Jan 6, 2021.
Cross-posted on Metaculus.

The FDA has authorized two vaccines to prevent infection by SARS-CoV-2 — the virus that causes COVID-19. The CDC has recommended that the first recipients of the vaccines should be healthcare workers and residents of long-term care facilities.

One goal of a vaccine is herd immunity: inoculating a large enough proportion of susceptible individuals to prevent infections to those who have not been inoculated. Herd immunity depends on many factors, but in large part on the efficacy of the vaccine and the proportion of susceptible individuals who are inoculated. Pfizer has reported their vaccine is potentially 95% efficacious at preventing an infection and Moderna announced a vaccine efficacy of 94.1%. An available vaccine is voluntary and recent reports suggest only about 71% of the population may be willing to be inoculated.

Data sources and more information:

- The COVID-19 ForecastHub
- The CDC's COVIDView website
- Morbidity and Mortality Weekly Reports
- Data on Hospitalizations and Death by Age
- Data on Hospitalizations and Death by Race/Ethnicity
- The National Center for Health Statistics count of deaths
- CDC's US COVID19 Cases and Deaths by State over time
- The Atlantic's COVIDtracking project
- Data from John Hopkins University CSSEE COVID-19 Dataset
- A side-by-side comparison of the Pfizer/BioNTech and Moderna

vaccines

- KFF COVID-19 Vaccine Monitor: December 2020

What will be the cumulative number of deaths due to COVID-19 on 2021-12-31 if greater than or equal to 50% of Americans initiate vaccination (1st dose received) with a COVID-19 vaccine by 2021-03-01?

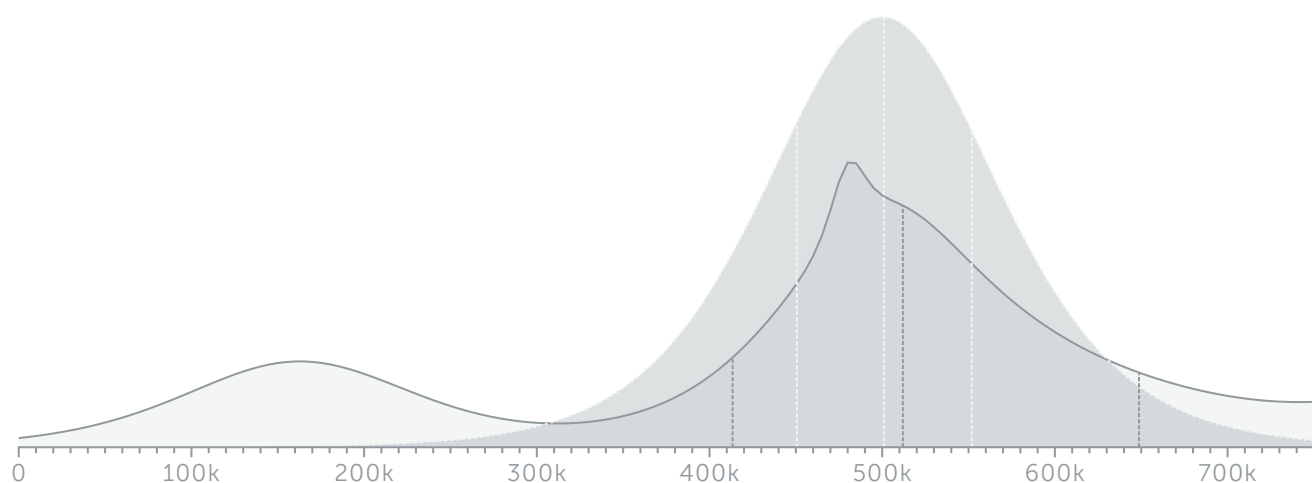
The percent of the population that received a COVID-19 vaccine on or before 2021-03-01 will be computed by dividing the number of individuals who have initiated vaccine (1st dose taken) provided by the CDC COVID data tracker by the current US population which on 2021-01-04 was reported to be 330,782,991 and multiplying this fraction by 100. The CDC COVID data tracker that counts the number of individuals who have initialized vaccination will be accessed when data is available after and as close as possible to 2021-03-01.

To resolve deaths, we will use the cumulative number of deaths due to confirmed COVID-19 as recorded in the Johns Hopkins University (JHU) CSSE Github data repository. This file records the daily number of deaths by county. From this file deaths are summed across all counties and aggregated to week to generate the number of new deaths per week. The report will be accessed one week after 2021-12-31.

Categories: Consensus Forecasting to Improve Public Health

Make a prediction

probability density cumulative probability



[add component](#)

	<u>your prediction</u>	<u>community</u>
lower 25%	...	416k
median	...	514k
upper 75%	...	651k
> 1M	...	2%

[PREDICT](#)

Current points depend on your prediction, the community's prediction, and the result. Your total earned points are averaged over the lifetime of the question, so predict early to get as many points as possible! See the [FAQ](#).

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casens  provided question feedback 3 hours 46 min ago

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seems like it distorts our points system to include the range from 0-350k deaths. not that we can do anything about it now, but oh well

— *edited by casens*

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+1   

Jotto replied 25 min 22 sec ago

[reply](#)

@casens This seems important to me and I just wanted to quadratic-upvote manually.

WilliamKiely provided question feedback 14 hours 44 min ago

[reply](#)

Good Judgment only gives a 10% chance that "enough doses of FDA-approved COVID-19 vaccine(s) to inoculate 100 million people [will] be distributed in the United States" by March 31st, so this question seems very likely (>95%) to resolve ambiguously (since the condition "if greater than or equal to 50% of Americans initiate vaccination (1st dose received) with a COVID-19 vaccine by 2021-03-01" will therefore very unlikely be met).

(The question doesn't explicitly say that it will resolve ambiguously if <50% of people receive their first dose, but I assume that is the case.)

I submitted a forecast anyway, but it's very rough since I think this scenario is so unlikely.

— edited by WilliamKiely

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+4 😊 🔗 ⚠

variouslymistaken replied 4 hours 36 min ago

reply

@WilliamKiely

Agreed. Vaccinating more than 165,000,000 Americans by the end of February would be a truly astounding feat given current progress.

So far, about ~6,000,000 Americans have been vaccinated since mid-December, which leaves more than ~159,000,000 to go in the next seven weeks. In my view, there is no more than a 1% chance that we administer an average of 22,000,000+ vaccines a week for the next seven weeks to hit that number.

I would be thrilled to be wrong and for this question to resolve definitively, but it doesn't seem likely to be a particularly insightful question as framed. EDIT: Except in the case that our predictions are used as some sort of "Imagine if" modeling to encourage faster vaccinations. Which, if so, good luck (seriously)!

— edited by variouslymistaken

+1 😊 🔗 ⚠

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