

**University of Massachusetts Amherst**

---

**From the Selected Works of Thomas McAndrew**

---

Spring March 18, 2020

# COVID19-Expert Forecast- Survey5-20200316.pdf

Thomas McAndrew, *University of Massachusetts Amherst*



Available at: <https://works.bepress.com/mcandrew/2/>

## Preliminary Report on Aggregated Expert Predictions on COVID-19

Compiled by Thomas McAndrew ([mcandrew@umass.edu](mailto:mcandrew@umass.edu)) and Nicholas Reich ([nick@umass.edu](mailto:nick@umass.edu))

March 18, 2020

### Executive Summary

We have conducted five weekly surveys that asked a group of infectious disease modeling researchers to assess their collective expert opinion on the trajectory of the COVID-19 outbreak in the US. The following page provides a brief summary of the results from the fourth survey, administered on March 16<sup>th</sup> and 17<sup>th</sup>, 2020. Participants are modeling experts and researchers who have spent a substantial amount of time in their professional career designing, building, and/or interpreting models to explain and understand infectious disease dynamics and/or the associated policy implications in human populations. In summary, experts expect (i) the number of COVID19 cases to continue to rise, (ii) that a second wave of infections will occur in the fall, and (iii) that COVID infections could cause 200K deaths in the US by the end of 2020.

### Results from Survey 5 (administered March 16-17, 2020)

1. **Experts predict a three-fold rise in reported cases in the US over the next week. They predict 10,567 total cases (80% uncertainty interval: 7,061-24,180 cases) of COVID-19 will be reported by [COVID Tracker](#) on Monday March 23<sup>rd</sup>.**

Predicted number of cases (range)	Predicted probability
0 – 7,500	0.13
7,500 – 10,000	0.29
10,000 – 12,500	0.24
12,500 – 15,000	0.10
15,000 – 17,500	0.05
17,500 – 20,000	0.04
20,000 +	0.15

2. **The average probability that experts assigned to a “second wave” of COVID occurring in the fall months (Aug.-Dec.) of 2020 was 73%.**
3. **Experts anticipate 19 US states will report more than 100 cases of COVID-19 within one week (80% uncertainty interval: 10-36 states).**
4. **Experts believe that only 12% (80% uncertainty interval: 4-34%) of all SARS-CoV-2 infections (symptomatic and asymptomatic) in the US were reported by [COVID Tracker](#) as of Sunday, March 15<sup>th</sup>. This implies that as of the beginning of this week there were between 10,329 and 87,800 undiagnosed infections of SARS-CoV-2 in the US.**
5. **Experts believe COVID-19 will be responsible for around 195,000 deaths (approximate 80% uncertainty interval: 19,000-1,200,000) in the US by the end of 2020.** As a comparison, a typical influenza season is estimated by the CDC to cause between 11,000 and 95,000 deaths in a typical influenza season.

Predicted deaths in the US (range)	Predicted probability*
0 – 100,000	0.36
100,000 – 300,000	0.25
300,000 – 500,000	0.12
500,000 – 1,000,000	0.13
1,000,000 – 1,500,000	0.07
1,500,000 +	0.06

\*Numbers do not sum to 1 due to rounding.

6. **The above results include answers from 18 experts.** Experts who have participated in the survey twice are listed in the table below. The names of those who participated this week are in bold.

Expert name	Affiliation
<b>Benjamin M Althouse</b>	Institute for Disease Modeling, University of Washington, New Mexico State University
Dr. Caroline Buckee	Harvard TH Chan School of Public Health
<b>Donald S. Burke, MD</b>	Graduate School of Public Health University of Pittsburgh
<b>Mary Bushman</b>	Harvard T.H. Chan School of Public Health
<b>Lauren A Castro</b>	Los Alamos National Laboratory
Sara Del Valle	Los Alamos National Laboratory
<b>John M. Drake</b>	University of Georgia
<b>Stephen Eubank</b>	University of Virginia
<b>Lauren Gardner</b>	Johns Hopkins University
Dylan George	In-Q-Tel
<b>William P. Hanage</b>	Harvard T. H. Chan School of Public Health
<b>Andreas Handel</b>	University of Georgia
<b>Michael L. Jackson</b>	Kaiser Permanente Washington
<b>Stephen Kissler</b>	Harvard School of Public Health
Justin Lessler	Johns Hopkins Bloomberg School of Public Health
<b>Bryan Lewis</b>	University of Virginia
Marc Lipsitch	Harvard T.H. Chan School of Public Health
<b>Andrew A. Lover</b>	University of Massachusetts- Amherst
Steven Riley	Imperial College
<b>Caitlin Rivers</b>	Johns Hopkins Center for Health Security
Roni Rosenfeld	Carnegie Mellon University
<b>Samuel V. Scarpino</b>	Northeastern University
<b>Shaun Truelove</b>	Johns Hopkins Bloomberg School of Public health
<b>Srini Venkatramanan</b>	University of Virginia
Cecile Viboud	Fogarty International Center, NIH