Preliminary Report on Aggregated Expert Predictions on COVID-19

Compiled by Thomas McAndrew (mcandrew@umass.edu) and Nicholas Reich (nick@umass.edu)

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Executive Summary

We have conducted seven 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 sixth survey, administered on March 30th and 31st, 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. Experts expect the number of reported cases to be between 280K to 500K in the next week. The expected number of deaths in 2020 is between 83K and 1M. The peak months of nation-wide hospitalizations are expected to be April and May. Detailed data on the questions asked and expert consensus distributions are available at https://github.com/tomcm39/COVID19_expert_survey.

Results from Survey 7 (administered March 30-31, 2020)

1. **Experts predict 386,500 total cases (80% uncertainty interval (UI): 280,500-581,500 cases) of COVID-19 will be reported by COVID Tracker on Monday April 5th.**

Predicted number of cases (range)	Predicted probability
0 – 200,000	0.003
200,000 – 300,000	0.158
300,000 – 400,000	0.378
400,000 – 600,000	0.379
600,000 +	0.081

*Numbers do not sum to 1 due to rounding.

2. **The consensus among experts was that COVID-19 hospitalizations over the next six months were most likely to peak in May.**

Month of peak hospitalization	Predicted probability
March	0.033
April	0.272
May	0.300
June	0.189
July	0.106
August	0.099

3. **Experts believe that there are a total of 1,140,000 SARS-CoV-2 infections (80% UI: 353,000-3,827,000) in the US as of March 30th.**

4. **Experts believe COVID-19 will be responsible for 262,500 deaths (approximate 80% UI: 83,500 – 1,009,000) in the US by the end of 2020.** A typical influenza season is estimated by the CDC to cause between 11,000 and 95,000 deaths.

Predicted deaths in the US (range)	Predicted probability*
0 – 100,000	0.154
100,000 – 300,000	0.390
300,000 – 500,000	0.149
500,000 – 1,000,000	0.205
1,000,000 +	0.101

*Numbers do not sum to 1 due to rounding.

5. **Experts believe that in New York state the number of new daily reported cases of COVID-19 will drop below 1,000 on April 30th, 2020 (80% UI: April 14th – May 31st).**
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
Benjamin M. Althouse	Institute for Disease Modeling, University of Washington, New Mexico State University
Andrew Azman	Johns Hopkins University
Dr. Caroline Buckee	Harvard TH Chan School of Public Health
Donald S. Burke, MD	Graduate School of Public Health
Mary Bushman	Harvard T.H. Chan School of Public Health
Lauren A Castro	Los Alamos National Laboratory
Sara Del Valle	Los Alamos National Laboratory
John M. Drake	University of Georgia
Stephen Eubank	University of Virginia
Sebastian Funk	London School of Hygiene & Tropical Medicine
Lauren Gardner	Johns Hopkins University
Dylan George	In-Q-Tel
William P. Hanage	Harvard T. H. Chan School of Public Health
Andreas Handel	University of Georgia
Michael L. Jackson	Kaiser Permanente Washington
Stephen Kissler	Harvard School of Public Health
Justin Lessler	Johns Hopkins Bloomberg School of Public Health
Bryan Lewis	University of Virginia
Marc Lipsitch	Harvard T.H. Chan School of Public Health
Andrew A. Lover	University of Massachusetts- Amherst
Maimuna Majumder	Harvard Medical School
Nicholas Reich	University of Massachusetts at Amherst
Steven Riley	Imperial College
Caitlin Rivers	Johns Hopkins Center for Health Security
Roni Rosenfeld	Carnegie Mellon University
Aaron Rumack	Carnegie Mellon University
Samuel V. Scarpino	Northeastern University
Shaun Truelove	Johns Hopkins Bloomberg School of Public health
Srini Venkatramanan	University of Virginia
Cecile Viboud	Fogarty International Center, NIH