

Global COVID-19 Symptom Survey. A Facebook partnership

JPSM/MPSM Seminar October 7, 2020



FACEBOOK UNIVERSITY OF MARYLAND Carnegie Mellon University

Responding to the Need for Syndromic Surveillance

Syndromic surveillance enables policymakers and public health systems to make decisions before diagnosis data are available, especially in low resource areas with limited testing capabilities.

Facebook can reach large segments of the target population daily with the technical infrastructure to provide bias correction. And, the speed and scale of the symptom surveys allow them to act as early warning systems.

Agenda

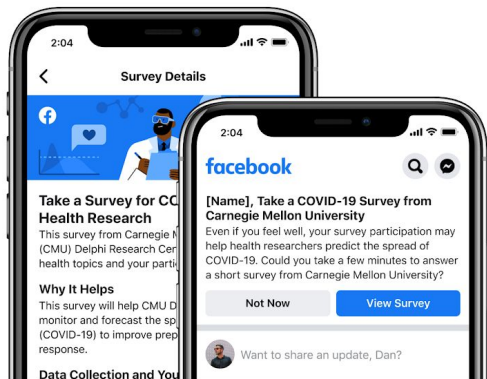
1. Project Structure
2. Survey Instrument and Weights
3. Early Insights
4. Reflections on Data Collection Challenges
5. Data Access

A man wearing a tan baseball cap, a grey respirator mask, and a black t-shirt with a 'DressRight' logo is loading cardboard boxes onto the back of a dark-colored pickup truck. The truck has '4x4' written on its tailgate. Several boxes are already on the truck, with '3M' printed in large black letters on the sides of the front row. The worker is placing a box on top of another. In the background, there is a light-colored building with a sign that partially reads 'HART & GRIFFIN' and a clear sky.

Project Structure

Project Overview

1 Who's Taking the Survey



Facebook invites a new, random sample of users to participate each day.

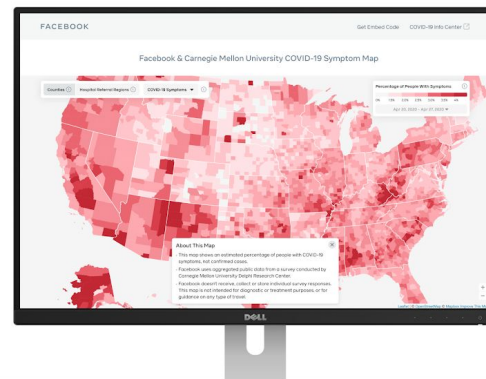
2 How the Survey Works



Users are sent to the survey hosted by UMD or CMU using Qualtrics.

Facebook does not receive responses, but does calculate weights to correct for non-response bias and sampling frame coverage bias using internal Facebook data for 115 countries or territories.

3 Using the Survey Data



Using the aggregated data, Facebook created a map visualization to help policymakers and public health systems make decisions.

The non-aggregate data are available to eligible academic and nonprofit researchers by request.

An aerial photograph of a densely populated hillside. The houses are built on a steep slope, with many featuring bright colors like green, blue, and orange. The surrounding area is covered in lush green vegetation. A semi-transparent dark blue banner is overlaid across the middle of the image, containing the title text.

Survey Instrument and Weights

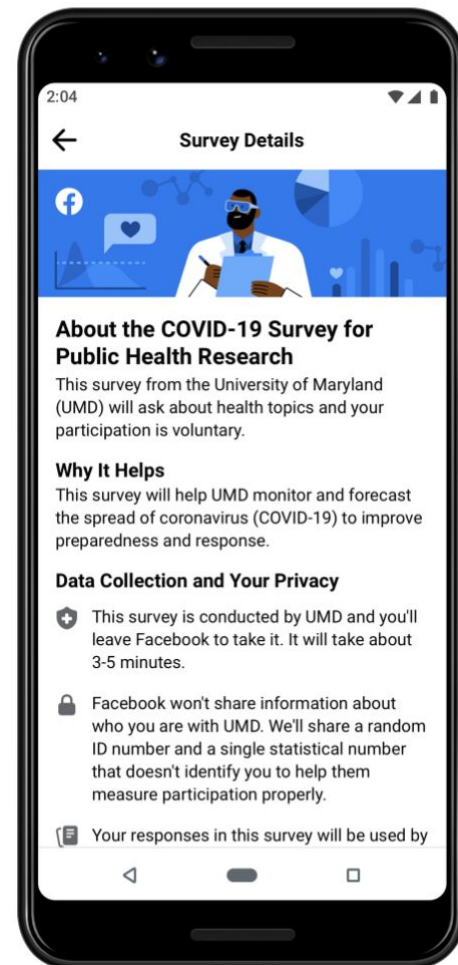
UMD Global Survey Instrument

Available in 50+ languages

Survey Instrument has 5

Sections:

- Consent
- Health symptoms
- Contacts with others
- Mental health and economic security
- Demographic characteristics

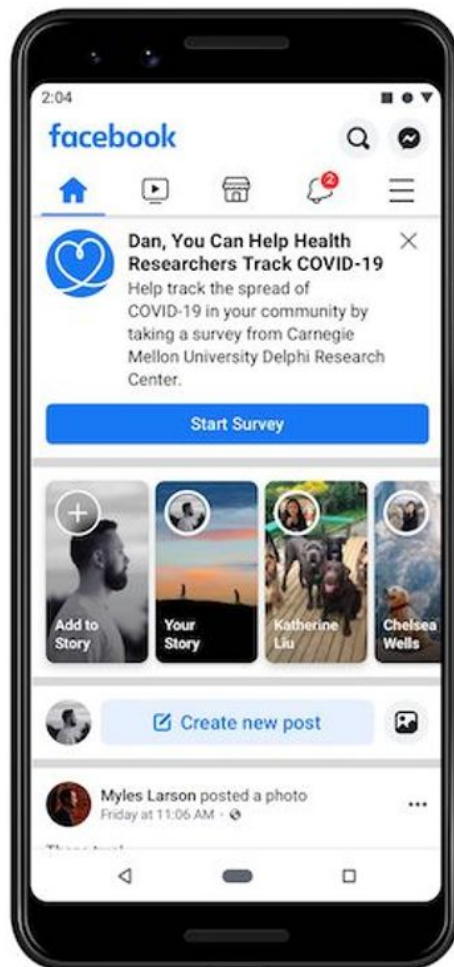


CMU US Survey Instrument

Available in 6 languages

Survey Instrument has 5 Sections:

- Consent
- Household symptoms
- Personal symptoms
- Contacts with others and other risk factors
- Demographic characteristics



20.3 million

Completed the UMD global survey launched in 200+ countries or territories, including 114 for which we provide weights

10.6 million

Completed the CMU survey launched in the United States

Note: sample size as of 9/7

Adjusting for Sample Bias

Facebook calculates analytic weights to correct for random sampling, non-response, and coverage errors. This ensures that the sample more accurately reflects the characteristics of the target population represented.

Survey weights are available for 115 countries but may be revised as Facebook and partners assess sample coverage.

The weight value does not identify the survey respondent.

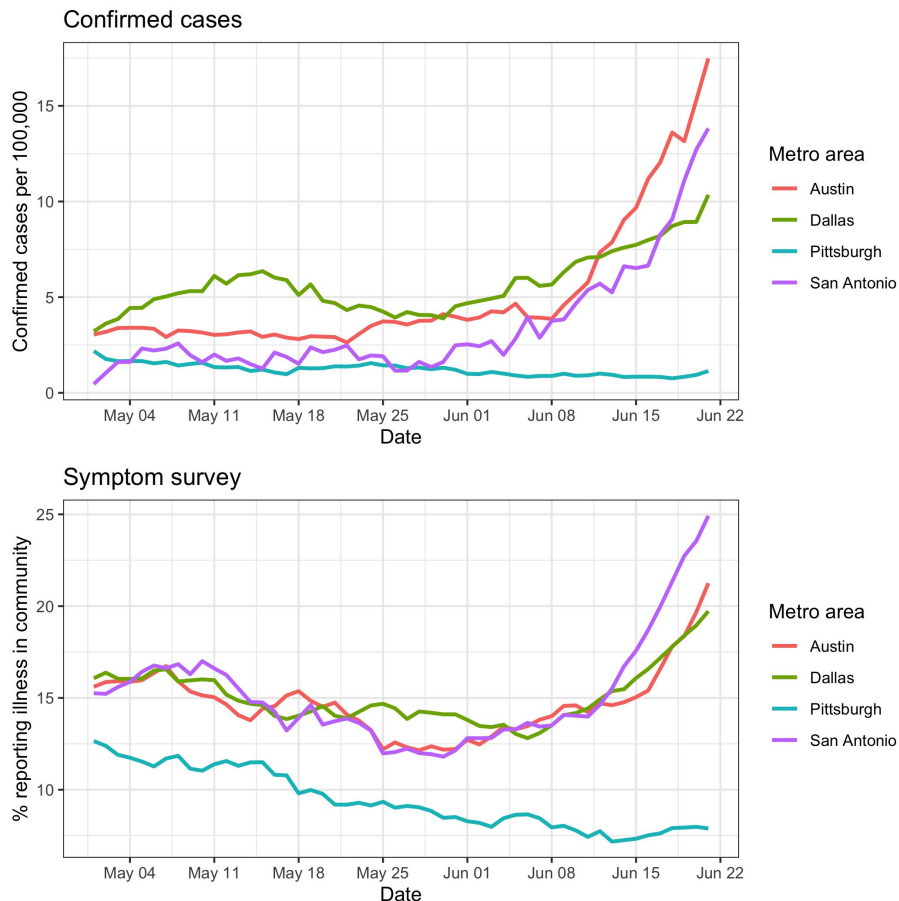


Early Insights

Early Insights for Forecasting

CMU Delphi Research Center is developing short term hospitalization forecasts in the US and deepening its partnerships with public health agencies.

The symptom survey also shows noticeable correlation with confirmed case numbers, though the correlation varies across geographies.



Early Research Insights

15 institutions are working with the non-aggregate data from at least one of the surveys.

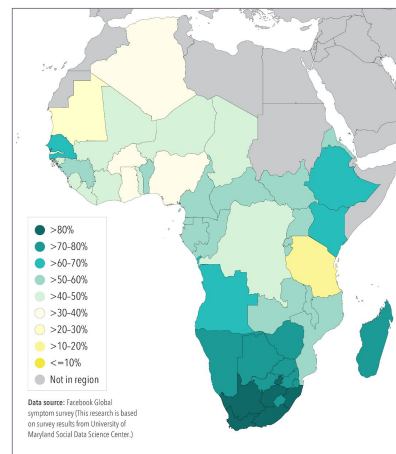
[IHME](#) is mapping the prevalence of regular mask wearing, using the global Symptom Survey in conjunction with data from Premise.

COVID-19

Mask use in WHO regions

African Region (AFRO)

Percent of people who say they always wear a mask when in public, July 14



Universal (95%) mask use
could save around
42,000 lives*

- In the AFRO region, universal mask use could save around 42,000 lives from COVID-19 by November 1, 2020.
- Mandating mask use has huge economic benefits and helps keep businesses open as long as possible.
- Mask use in the AFRO region was 49%, which was the fourth-highest among the six WHO regions.

Mask use ranges from:

23% to 86%

Mauritania Western Cape,
South Africa

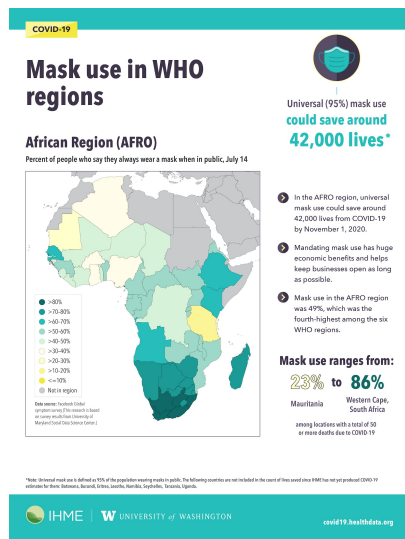
among locations with a total of 50
or more deaths due to COVID-19

*Note: Universal mask use is defined as 95% of the population wearing masks in public. The following countries are not included in the count of lives saved since IHME has not yet produced COVID-19 estimates for them: Botswana, Burundi, Eritrea, Lesotho, Namibia, Seychelles, Tanzania, Uganda.

Early Research Insights

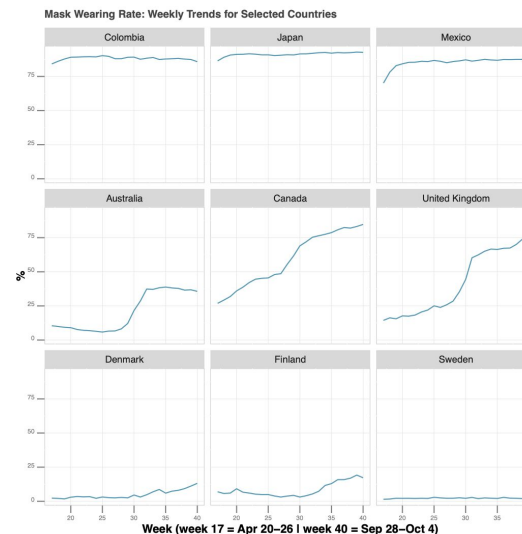
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[IHME](#) is mapping the prevalence of regular mask wearing, using the global Symptom Survey in conjunction with data from Premise.



[SoDa](#) has produced an interactive dashboard of mask-wearing behavior.

From April 2020 to present, we asked, “In the last 7 days, how often did you wear a mask when in public?”



Data Collection Challenges

Challenges of Syndromic Surveillance at Scale

There are numerous challenges to a global daily tracking survey, which requires broad support and coordination across partners as well as with the survey platform itself.

For example, pretesting is difficult due to translation needs, changes to sampling pipelines, and the wide variety of device types used to complete the survey across contexts.

A person with grey hair, wearing a white face mask and a blue denim jacket, is seen from the back, looking into a shop window. The window is filled with various items for sale, including a large display of stamps and a '2-EURO-ALBUM' featuring various Euro coins. The scene is set in a brightly lit shop with wooden frames and glass panes.

Data Access

Publicly Available, Aggregate Data

Global Survey Data:

<https://covidmap.umd.edu/api.html>

US Survey Data:

<https://cmu-delphi.github.io/delphi-epidata/api/covidcast.html>

Non-Aggregate Data for Research

Researchers from academic and non-profit institutions can request access.

Signed Data Use Agreements are required.

Central portal for project documentation and data access requests is on Facebook's Data for Good website: dataforgood.fb.com.

Other Complimentary Data Sources Through Data for Good

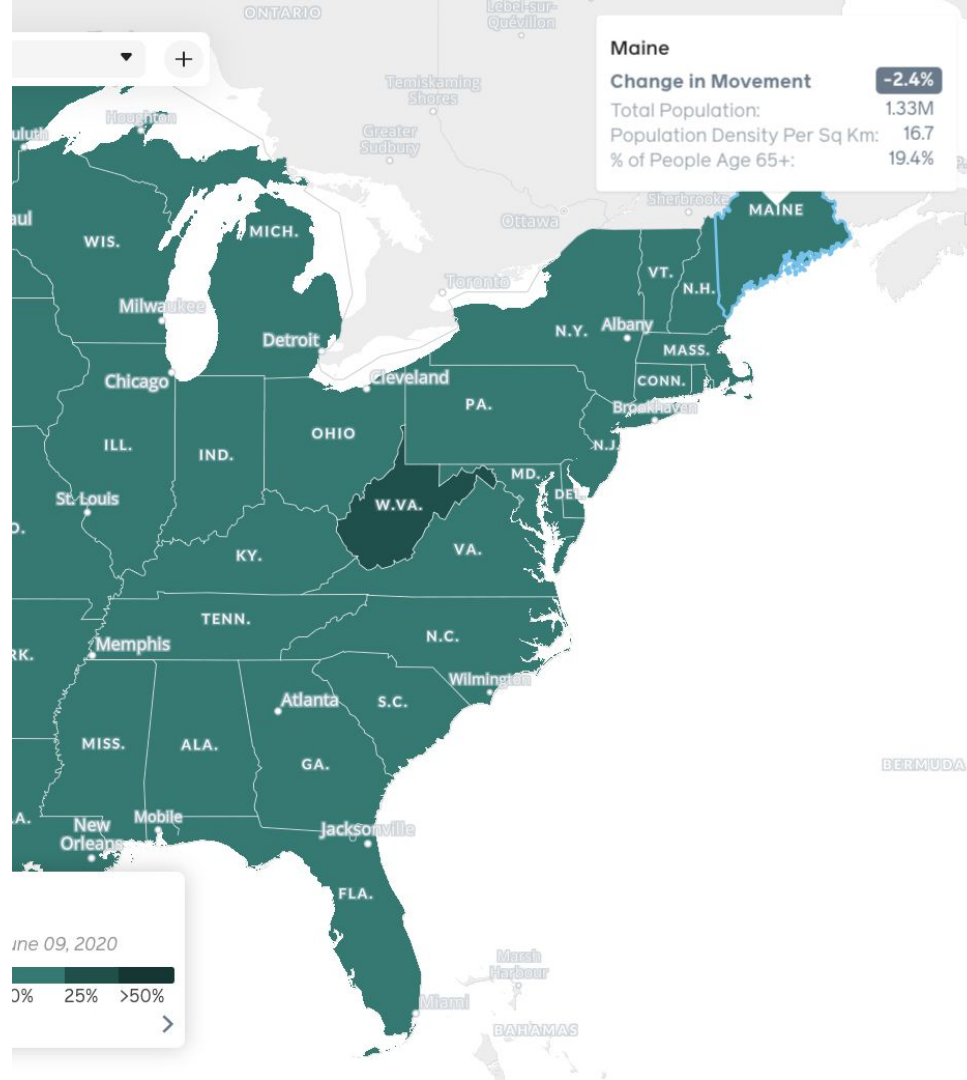
Population Density Maps

Social Connectedness Index

Movement Range Maps

More information on Facebook's Data for Good website: dataforgood.fb.com.

COVID-19 Symptom Data Challenge: symptomchallenge.org/.



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Questions?

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