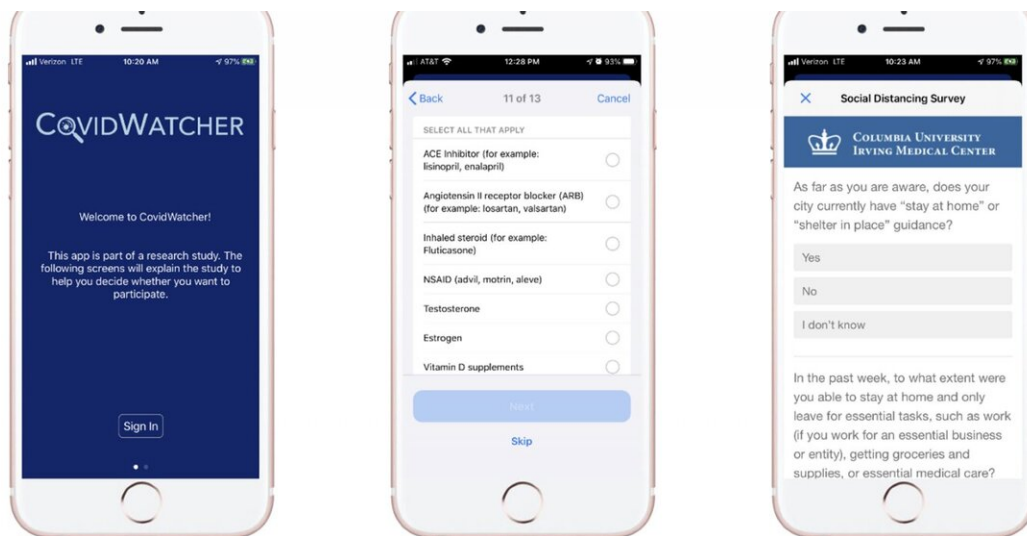# CovidWatcher app from Columbia University tracks coronavirus hot spots in NYC

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Credit: Columbia University Irving Medical Center

Researchers from Columbia University have launched CovidWatcher, an app that surveys users about their exposure to the new coronavirus, symptoms, access to medical care, and impact on daily life. The data will be used to track the spread of the coronavirus in New York City, giving citizens real-time information about hot spots and enabling health care officials to deploy resources where needed most.

The app takes a citizen-science approach to filling in some critical gaps in our knowledge of COVID-19 including:

- At what point do mild cases start to become more severe?
- Do specific medications like ibuprofen and estrogen therapy prolong or protect against symptoms?
- How do other medical conditions affect the progression of symptoms?

"We know that certain groups, like the elderly and those with preexisting conditions, are at greater risk, but we don't know much about those with mild symptoms who are self-isolating at home," says infectious disease physician Jason Zucker, MD, a co-leader of the project. "The app will allow us to zoom in on these populations so we can figure out how to better serve them going forward."

The data collected through the app will help guide decisions about how to organize the city's response during the pandemic:

- What are the obstacles to social distancing that New Yorkers experience?
- Which neighborhoods are becoming the next hot spots?
- When the first wave of the pandemic subsides, what are the patterns of recurrence of symptoms throughout the city?
- How is the pandemic affecting the emotional well-being of New Yorkers?

"We're asking the citizens of New York City to become scientists and join our team by using the app to report their symptoms, daily activities, and concerns. In return, we will give them insights about the impact of the pandemic on the city," says Noémie Elhadad, Ph.D., biomedical informatics expert at Columbia University Irving Medical Center and project leader.

CovidWatcher differs from other [coronavirus](link) apps and trackers because it encourages them to update their status daily or weekly, providing critical information as the pandemic continues to evolve. The app also includes surveys on concerns about education, access to resources, transportation, and [mental health](link).

The app asks users to provide information about their *location, symptoms, and other top concerns. For users with certain fitness devices, the app can capture users' steps, [heart rate](link), and body temperature.

CovidWatcher offers web-based surveys for those who do not have the app. Surveys are anonymous and offered in multiple languages.

Data collected by CovidWatcher will be used to construct interactive visualizations in real time, mapped onto census tracts in New York City and accessed via the CovidWatcher [website](link). Infectious disease experts at Columbia University Irving Medical Center and public health officials can use the visualizations to monitor trends and plan accordingly.

Ester Fuchs, urban and social policy expert at Columbia University School of International and Public Affairs and co-investigator on the project, is working with community organizations that represent the city's high-risk and underserved populations to ensure that the data are reliable and inclusive. This will enable city officials, policy makers, and medical centers to better coordinate their response during and immediately after the pandemic.

*The app employs several measures to protect user privacy, including a geofence that provides a rough estimate of the user's location and determines if a person is within 200 meters of their home location or has traveled outside the 200-meter perimeter.

  More information: [covidwatcher.dbmi.columbia.edu/](link)

Provided by Columbia University Irving Medical Center