STAT

23andMe study to recruit sickest Covid-19 patients in bid to unravel role of genetics in disease

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As researchers probe DNA in search of clues about why some Covid-19 patients get so much sicker than others, they're coming to a clear realization: It's essential that they enroll as many patients as possible with cases so severe they were hospitalized.

On Wednesday, consumer genetics giant 23andMe bowed to that reality. It plans to solicit help from hospitals to expand a massive study it launched last month so that it can recruit more people — up to 10,000 new participants — who have been hospitalized with Covid-19. The idea is to mine their data to try to identify genetic differences that may help explain why some infected patients wind up on ventilators while others don't even get a cough.

23andMe's study had previously only been open to its existing customers who've opted in to participate in the company's research. In the study's first five weeks, more than 400,000 of those customers — including more than 6,000 who have tested positive for Covid-19 — took an online survey with questions about their symptoms, the experiences of their family members, and whether they work in health care. That information will be linked with the genetic data that 23andMe already has on file.

The company didn't provide data on how many of the people who've already enrolled in its study have been hospitalized for Covid-19. But for this and other genetic studies to yield meaningful insight, it's clear that it will need many more of these severe patients.

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"Those individuals are generally going to be the hardest individuals for us to identify within our normal approach to doing research, so we're hoping that by expanding this study we're giving more people the opportunity to participate in scientific research," said Adam Auton, a principal scientist at 23andMe leading the Covid-19 study.

GWA studies, short for genome-wide association studies, typically seek to mine the genetic data of hundreds of thousands of people or more for correlations. While more than 4 million people worldwide have tested positive for Covid-19 to date, it's no easy task for researchers to get their hands on genetic data for even a tiny fraction of those people — or a representative sample of the even smaller slice of patients who were sick enough to be hospitalized.

"In terms of the challenges in trying to make a successful study, scale is the primary challenge that I think we and other groups will face," Auton said.

23andMe's big competitor in the consumer genetics market, Ancestry, last month launched its own research study probing the genetics of Covid-19. Ancestry last week said that more than 250,000 of its customers had

participated in the study in its first two weeks. A spokesperson for the company declined to comment on how many of those participants have tested positive for Covid-19 and how many have been hospitalized with the disease.

Recruiting enough patients for a Covid-19 study could be especially challenging for consumer genetics companies, which don't have access to the same information that hospitals doing similar research have on hand.

"I applaud the consumer groups that are turning some of their resources to working on this, and everything will be valuable," said Robert Green, a medical geneticist and physician at Harvard and Brigham and Women's Hospital who advises several companies in the space. "But clearly when you're not attached to a health care center, you're going to have a different cadre of people, than if you are truly tied in to the electronic health record."

Green is part of a team at Mass General Brigham, the Boston hospital network formerly known as Partners HealthCare, that's building a biobank of genetic and other data in search of clues about the biology of Covid-19. That program is one of more than 150 research programs worldwide that make up the Covid-19 Host Genetics Initiative, a project from an international consortium of genetics researchers.

That work doesn't yet have anywhere near the number of patients that is ideal for a GWAS study. But it does give researchers relatively easy access to data from people hospitalized with Covid-19.

"The more numbers you get, the more questions you can ask," Green said. "Is there a genetic predisposition for not only who's more severe, but once you get on a respirator, who gets off faster? Is there a predisposition for who's more tuned to renal failure?"

This is not the first time 23andMe has looked beyond its existing customer base for a research study. It's previously done so for studies on depression and bipolar disease, lupus, inflammatory bowel disease, and Parkinson's disease.

The new arm of the company's Covid-19 study will be limited to people who are not already 23andMe customers. The company is in the process of

reaching out to hospitals to ask for their help to recruit those participants; it will also try to recruit them through the media and referrals from its customers.

New participants will be mailed a spit kit so they can send 23andMe a sample of their genetic material, which the company can then analyze. They'll also be asked to fill out the same survey about their symptoms and family members that 23andMe's customers who participated in the research were asked to complete.

23andMe doesn't have a target enrollment number across the arms of its study, nor does it have a set timeline for keeping enrollment open, though it expects to continue signing up participants through the summer, Auton said. While the company hope to enroll as many people as possible, it may be a good thing if it falls short: "If we aren't able to collect enough people who have been affected by Covid, in some ways that's good news: The pandemic has been brought under control," Auton said.

23andMe plans to publish the results of the study in the hopes that it will yield insights for the rest of the scientific community, Auton said.

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