My Healthy Maryland biobank will use health data from 250,000 state volunteers to help prevent, treat diseases

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Researchers at the University of Maryland School of Medicine have begun collecting broad health information from 250,000 volunteers

around the state in an effort to uncover better ways of treating and preventing all kinds of diseases.

The ambitious effort would collect not only genetic information, but also medical, environmental and lifestyle data for a so-called biobank that researchers could use to spot patterns in the population and better understand what ails us.

Eventually, scientists, drug companies, geneticists and others could use findings to develop interventions for groups of people and tailor care for individuals, an idea known as precision or individualized medicine.

Some of that already happens, as increasing use of genetic testing allows doctors to know, for example, who is predisposed by their genes to breast or some other kinds of cancers.

"This is an opportunity for the diverse Maryland community to team up with researchers to better understand how our biology, lifestyle and local environment affect our health," said Toni Pollin, a study co-leader and associate professor of medicine in the medical school. "We also expect it will help us accelerate our understanding of how individuals and their health care providers can use information about genetic variation to predict, prevent, detect and treat disease."

The project is called My Healthy Maryland and is a collaboration among the school of medicine, the University of Maryland Medical Center and the 13-hospital University of Maryland Medical System.

The biobank is being developed and run independently but follows development of other state-level banks and a national bank launched by the National Institutes of Health in 2018 called All of Us. That bank aims to enroll a million people and has signed up several hundred thousand participants.

Last month, the national biobank made data from nearly 20,000 people with COVID-19 available to researchers studying prevention, progression of the disease and so-called long COVID, when people suffer new or continuing symptoms for a prolonged period after the initial infection. The bank also is offering 57,600 responses to a survey of social determinants of health, such as how people access food, their level of safety and their experiences with health care discrimination.

The size of the bank is what will help researchers, officials said at the time.

"The combination of data in the All of Us dataset—provided by participants from a wide range of communities and backgrounds—offers researchers an unprecedented resource to study how different aspects of our lives influence health outcomes," said Dr. Josh Denny, CEO of the All of Us Research Program, in a statement.

In some cases, the participants at the national and state level have their whole genome sequenced, giving researchers a complete genetic blueprint for someone's body. Sequencing everyone remains prohibitively expensive, researchers say.

Data included for everyone in the Maryland biobank will come from saliva samples, medical records and surveys about how people live.

Researchers hope to learn risk factors for specific diseases and determine what treatments work best for people of different backgrounds and which ones may not work at all. Along the way, participants will get feedback on findings that affect them and have the chance to enroll in clinical studies that match their conditions.

Pollin said Maryland's bank will focus on underserved groups in the state so researchers can address numerous long-standing health disparities that

lead to more illnesses and earlier deaths in certain people.

Researchers cite Maryland's diversity: A third of residents are African American, more than 10% are Hispanic and 6% are Asian. One in seven people were born outside the United States, with the most people coming from El Salvador, India, China and Nigeria. Residents also live in cities, suburban counties, and rural and coastal areas. Each area has different environmental conditions and even dietary habits.

All the potential uses of the biobank aren't yet known, Pollin said; genetics is a rapidly growing field. She hopes to tap the bank for her long-running research into diabetes.

"We hope to better understand some things as complicated as diabetes and cancers, where there is often a complex intersection of genes and lifestyle," she said. "We need a lot of people to see patterns."

The researchers are working with the digital health research company Vibrent Health to host the study on its platform. It will gather information from participant surveys, biosamples, electronic health records, wearable technology and other sources. All of the health information will be stored anonymously.

"We are dedicated to working with research institutions like UMSOM to make digital health research accessible to people from diverse communities who have been historically underrepresented in biomedical research," Vibrent Health CEO Praduman "PJ" Jain said in a statement.

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