National Launch of Landmark ‘All of Us’ Study Set for Spring; Portal for Researchers to Follow

Officials with the government’s Precision Medicine Initiative, launched in 2015 under then-President Obama, have been quietly building the infrastructure necessary to enroll a million individuals in a long-term study now called the “All of Us” research program. But expect the program to get a lot noisier in the coming months. Now counting more than 11,000 “full” participants, the program is set to launch its national enrollment campaign this spring.

At this point, however, what exactly will be studied is itself under study. Researchers and others are being invited to submit their ideas, and the program will hold a “research priorities workshop” in March “to identify key research priorities and requirements (such as data types and methods) for future versions of the All of Us protocol.”

Perhaps in the spring of 2019, All of Us will open a portal just for researchers, Eric Dishman, All of Us director, explained at a recent meeting of the program’s advisory panel.

The program is addressing how to “make this data accessible,” Dishman said. “We want to expand who’s able to do biomedical research. While we’re not there yet, all of the work on the researcher portal is happening.”

What Dishman referred to as the “unheralded part of these research programs,” such as building the platform and conducting “data curation and cleaning,” is occurring now, he said.

“You’ll hear a lot more in the future about the researcher portal,” he added at the Jan. 19 meeting held at NIH. Approximately one hour of the meeting was open and webcast. The advisory group also met in closed session, which a program spokeswoman said was necessary to discuss “confidential information about funding and awards.”

All of Us promises to be a unique program for a number of reasons besides the 1 million enrollees, who are referred to not as research subjects but participants.

In addition, the program has its own lingo: people who enroll on their own are called direct volunteers, or DVs; medical systems that are involved both in management and recruitment are known as health provider organizations, or HPOs. Answers to surveys used in the study completed by participants are called participant provided information (PPI).

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The program is especially interested in enrolling people who are underrepresented in biomedical research, called URBs for short. All of Us is currently defining this concept with a white paper expected to be published before the national launch, Dishman said.

**Many Universities Participating**

Enrollment is occurring in 25 states through 18 “community partners,” a number that continues to grow and will keep expanding past the national launch date, Dishman said. All of Us is adding sites in locations that aren’t represented.

A number of universities and institutions are already involved. Mayo Clinic is serving as the depository for blood and urine samples provided by participants.

Vanderbilt University was selected as the primary data and research center; it is working with Broad Institute and Verily Life Sciences, a subsidiary of Alphabet, the parent company of Google.

In addition, data and research center subawards were made to Columbia University Medical Center, Northwestern University Feinberg School of Medicine, and the University of Texas Health Science Center at Houston School of Biomedical Informatics.

**Enrollment Efforts Are Ramping Up**

All of Us began a “closed” enrollment phase last summer, under which participants were invited to join and had to apply their special code to enter the study.

Under the initial study protocol, participants who have given their consent to be part of the study are asked to complete three health surveys, permit access to their electronic health record, have their body measurements taken, and give blood and urine samples.

As the program matures, other surveys now in development will be added.

As of Jan. 18, there were 18,508 participants “who are started somewhere in the process of registering, consenting and starting their survey modules and then over 11,500 who have finished the entire protocol,” Dishman said.

Currently the program is enrolling two to three hundred participants a day, with a goal of 1,200 per day to reach the 1 million target. Officials will conduct a “surge test in a few weeks of 600 enrollees per day,” Dishman said.

The biobank now holds 350,000 “of what we hope will be 34 million vials,” said Dishman, noting that each person’s samples get broken up into multiple tubes [and] stored at multiple locations because you wouldn’t want your freezers to go down in one spot to wipe out this precious resource that people have so kindly donated to us.”

Additionally, “different scientific studies need tubes arranged in different ways for different kinds of research questions,” Dishman said.

No precise date for the national launch has been released. The start has been described only as occurring this spring. Dishman said it will be “grass-roots” and accompanied by “broad-based invitations,” health fairs and similar events. “At that point, we’ll unleash…the formal relationships that we have with both the community partners that we’ve announced” and other supporting organizations, he told the advisory committee.

No date to reach 1 million participants was discussed at the meeting. But NIH Director Francis Collins recently told The Washington Post the goal is to reach that number by 2022 (RRC 1/18/18).

The researcher portal will be next after the national launch, said Dishman.

“We’re trying to really focus on the enrollment launch right now, and [the researcher portal] will be another launch, probably at least six if not 12 months after the national launch. You’ve got to have enough
data into the system to be useful,” and ensure that data flow in a secure way and that other requirements for usability are met, Dishman said.

**Despite Pleas, ‘Disease Cohort’ Isn’t Planned**

According to Dishman, All of Us is not seeking to build a “disease oriented cohort per se, but [is] focusing on those who have a wide range of conditions at [the] start and many people who are healthy, so we can actually see how the absence or presence of health unfolds over time.” The program is also seeking “as rich of a diversity of data,” and researchers will “collect environmental, behavioral, social and clinical data.”

While access to the participant’s health record is “fundamental to the program, that’s just the beginning to truly understand the depth of their medical history,” he said. But records are bound to be incomplete for many participants who may have switched providers over time.

While All of Us leaders decide where to place the research focus, they are balancing the interests of many. “We get advocacy groups from every walk of life saying, ‘Hey, over-recruit our disease, over-recruit old people, over-recruit children,’” Dishman recounted. “We can’t please all and we’re going to have to make some strategic, scientific choices” to ensure that the cohort, however diverse, yields data that is “still comparable in a scientific sense” and that enrollment goals are met.

Writing in a blog post on Jan. 11, Collins said possible research topics for All of Us “include risks of disease, factors that promote wellness, and research on human behavior, prevention, exercise, genetics, environmental health effects, health disparities, and more,” and he urged the submission of ideas to the program.

The goal is to get “public and scientific input from everybody from citizen scientists to experts,” Dishman said. He suggested imagining “this whole program was to answer scientific questions in your area of concern.” Then, “walk through from what kind of research questions you would want to ask, down to how would you collect the data to do that.”

The program will be “looking for, across many scientific fields, disease states and health issues [to discover] what are common ingredients that we can continue to bake into our future protocols and platforms,” Dishman said.

Ideas should be submitted by Feb. 23. “We are already getting use cases and input from people,” said Dishman. “We’ll see how many we have at the workshop and then produce a whole lot more at the workshop. This will help us with our strategic planning for the next five, six, seven years, or if not 10 years out.”

The workshop is scheduled for March 21-23.

As recruitment has moved forward, program leaders are analyzing participant feedback to make improvements in All of Us.

They’ve already concluded that enrollment needs to be streamlined. “It has been clear that we need to have a more straightforward way to go through the whole protocol and have people navigate the protocol more easily, as well as understand, in advance, what they are…signing up for,” said Dishman.

Further, officials are working on improvements to the participant portal, building in self-scheduling capacity, for example.

**Working Groups Tackling Tough Issues**

Study officials are also grappling with other issues. All of Us has established a working group or task force to help flesh out many concerns, including the following:

◆ **Successful recruitment strategies.** Currently the data and research centers, as well as a network of federally qualified community health centers, are using a “mix” of methods to interest patients in joining All of Us.

Some are mailing letters; others are approaching patients during appointments and are able to complete the entire enrollment process in one sitting. Dishman said there is a dearth of information in the medical literature about how to attract, and maintain, such a large study cohort.

One of the first somewhat informal studies All of Us is conducting is focused on which such methods do—and don’t—work. The traditional model may call for “six people to enroll one person,” said Dishman. “That doesn’t scale” and would prove too expensive with a study the size of All of Us.

◆ **Return of results to participants.** The program is committed to providing “access to results, including genetic/genomic information, to participants according to their preferences.” But this “is particularly challenging for those participants who are coming into our program not associated with a health provider organization and may have no physician or anybody to sort of help them interpret” findings, Dishman said.

Adding to the difficulty is a nationwide shortage of genetic counselors. Even if only 3% of participants have “potentially pathogenic variants that they and their doctor might want some engagement about, there’s going to be a lot more people still [needing help] just understanding” what results mean, Dishman said.

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said. “We know we’re going to be creating a burden on primary care physicians and others.”

◆ Types and costs of genetic tests. While the ultimate goal is to conduct whole genome sequencing for all of the potentially one million participants, the program is taking a phased approach and first will perform “high-density genotyping,” Brad Ozenberger, data and research center program director, said at the advisory panel meeting.

The direct cost for genotyping arrays is “less than $20 per sample,” compared to approximately $1,000 for whole genome sequencing, the cost of which is expected to decrease over time, he said.

The program hopes to start processing genetic tests by the end of this year, Ozenberger said, and officials are eager “to begin fueling what the researcher[s] can do in terms of associations with our rich phenotype data.”

◆ Enrollment of children and other special populations. As noted earlier, an aim of All of Us is to have a diverse cohort that includes individuals who are underrepresented in research.

Children will not be enrolled until ethical, logistical and other issues are resolved, which may be by the end of this year. Among the issues are how to ensure children enrolled by their parents stay in the study as they age.

All of Us is also working with “American Indian and Alaska Native populations” to recruit them into the study. Prisoners are also expected to be enrolled, although officials gave no specifics about them during the open session of the Jan. 19 meeting.

◆ Inclusion of data from mobile devices. The current protocol doesn’t call for the use of any mobile health data, but that is a long-term goal.

All of Us will conduct a pilot with Fitbit to learn how to collect and integrate the information into the database. All of Us will also explore “phones as data sources,” Dishman said.

[Links]

Link to general All of Us website: https://allofus.nih.gov/

Link to enrollment webpage: https://www.joinallofus.org/.

Link to webcast of committee meeting: https://tinyurl.com/yc5vxxov.

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