

Caring

Precision Health/Genomics

Scranton population sequencing – initial project framework

The initial project is based on the SpringBoard Health partner vision. It involves sequencing the DNA of approximately **25,000** of the **76,000** residents in one of north central Pennsylvania's most diverse communities. The program's goals are to develop a large genomic database that can be used to discover new therapeutic treatments for disease, as well as provide clinicians with genetic information about their patients.

This information can then be used to institute increased surveillance and preventive approaches for patients with a genetic risk of conditions, such as cardiovascular disease or breast, ovarian or colon cancer. It also enables early diagnosis and intervention for patients and their family members.

This project has significant potential to create multi-generational improvements in the health of the community. In addition, it enables the SpringBoard Health program to incorporate genomic and family history information into other large data sets, including socioeconomic data and other behavioral and lifestyle factors, to provide population health scientists, clinicians, policymakers and others with a comprehensive view of the community's health.



MyCode® Community Health

Geisinger has a strong start in the biobanking field through its MyCode Community Health initiative and partnership with Regeneron Pharmaceuticals. However, the Scranton project represents the first attempt to directly improve the health of a specific population through genomic mapping. Thus, it requires a comprehensive project framework that will attract the support of partners and the interest of various funders.

To date, the MyCode program has already received DNA sequencing consent from more than **125,000** Geisinger patients, including **3,319** living in Scranton. Efforts are now underway to contact another **13,596** Geisinger residents there. The Geisinger team may also attempt to recruit a further **8,085** people outside of the Geisinger system to reach the **25,000** participant goal. Recruiting from the community will diversify the population and ensure that it mirrors the city's entire population.

These efforts include:

- Partnering with Scranton Primary, a federally qualified health center, and The Wright Center, which provides family medicine to the community, to recruit 6,000 patients
- Recruiting patients from other healthcare practices with electronic health records or records on the Keystone Health Insurance Exchange (KeyHIE)
- Working with community groups to identify interested residents

The project can also target specific demographics. For instance, we may target women between the ages of 30 and 50 for enrollment in order to identify their risk for breast or ovarian cancer.

The MyCode program has had considerable success recruiting patients over the past 20 months. We expect it will take between 18 and 24 months to enroll another **22,000** individuals. Once we identify partners to help in the recruitment process, we will develop a strategy that includes an active presence at community events and in healthcare settings.



Specific needs

New protocols for DNA, data collection

We will need to develop processes so investigators can gain access to the medical records of non-Geisinger participants and determine where these patients will provide samples. Typically, patients provide their samples at a Geisinger facility or during their next regular appointment. A different process will be needed with non-Geisinger participants. This is a topic that should be discussed with the Advisory Board.

Public relations and marketing campaign

A well-developed public relations and marketing campaign is critical to drive awareness and accelerate engagement. Such a campaign will inform the community of the project's aspirational goals and the power of genomic medicine to improve individual and community health, and communicate how they can be a part of such a transformational project. This outreach will include targeted messages regarding enrollment events.

Partnership with Regeneron

We expect Regeneron to continue as a strong partner as we recruit additional Geisinger patients. Regeneron may also be interested in non-Geisinger participants if genomic results can be linked to electronic health records (i.e., if there is a mechanism to link clinical and genomic patient information). However, Regeneron currently does not fund the return of medically actionable results, CLIA validation (clinical validation of a result) or patient education.

Funding needs

We anticipate that returning the results to patients will require the most funding. This is a mandatory part of the project, setting the program apart from similar efforts to map a community's DNA. We expect that about four percent of the 25,000 volunteers will have an actionable result, or about 1,000 individuals. Additional funding will be needed for community engagement about the importance of genomic testing and how it can lead to improved health. Funding will also be required to educate individuals and their primary care physicians about their condition and action that can be taken.

Finally, if additional funding is available, we hope to add comparator cities as part of this initiative.

