Predictive Genomics

Powering the future of population and personalized health

ThermoFisher
SCIENTIFIC

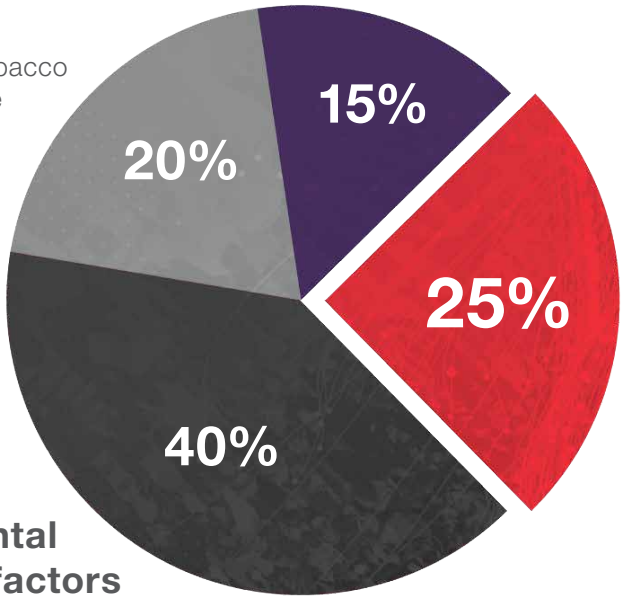
Integrating genomics into health care

Your collaboration journey begins here

Genetics contribute 25% to health outcomes. Today, clinical care explains about 15% of overall health outcomes.

Clinical care
Access to quality medical care

Lifestyle and behavioral choices
Food access and choices, tobacco and alcohol use, and exercise



Genetics
Understanding of biological makeup, including disease susceptibility

Environmental and social factors
Access to education, income, air/water quality, open space, and safety

Measurable factors that contribute to overall health.
Data in chart from McKinsey & Company analysis of data from a range of organizations. "The era of exponential improvement in healthcare?" McKinsey & Company, May 2019, p. 6.

Predictive Genomics is a powerful capability to help predict disease risk and understand drug response in order to improve health outcomes and manage costs.

With the translation of predictive genomics from research to the clinic, health systems are moving from a model of sick care to preventive care. It's a new paradigm in which disease causation is clarified and the right intervention is identified for every individual. An impactful predictive genomics–based health care program requires:

- Population-specific genomic information
- Widely deployed technology for population-scale programs
- Ease of implementation from genomic insights to relevant reports

Genomic data enable researchers to improve health outcomes and manage costs in the following ways:

Stratify populations to identify high-risk individuals

Tailor prescription drugs based on a person's biology

The advantage of partnering with us

We've been a part of the predictive genomics story from the start

UK Biobank

450+ PUBLICATIONS

Over 75% of requests made to UK Biobank are to access the high-quality genomic data generated by our solution—data that are facilitating new discoveries in preventing, diagnosing, and treating serious illnesses.

FinnGen

1,100+ DISEASE RESEARCH ENDPOINTS

The FinnGen study brings together 500,000 samples from the Finnish nationwide network of biobanks that was built with our solution. The study is sparking new national achievements in biomedicine.

MedGenome

~225,000 SOUTH ASIANS TO BE GENOTYPED

Our collaboration with this personalized medicine company has the goal of producing a population-optimized solution that can be used to develop consumer and predictive genomic tests relevant to the South Asian population.

Your population. Your insights. Your impact.

Our deep experience and global reach enable us to design innovative predictive genomics solutions that can help you achieve your desired health care impact.

Predictive genomics enables you to:

Understand genetic disease risk for common diseases and adverse drug effects in your population

Position your health care system to make the move to preventive care with personalized health care plans

Improve health outcomes and reallocate health care spend

Case study

Bringing Predictive Genomics into Taiwan—a nationwide model

GOALS

Taiwan Precision Medicine Initiative (TPMI)

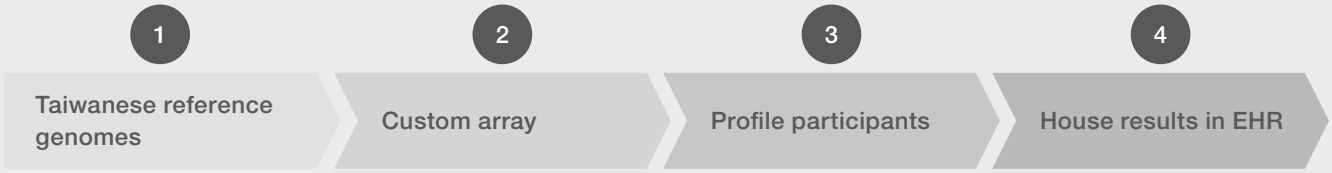
- Test 1 million people (4% of Taiwan's population) by 2022
- Enable early cancer screening for high-risk participants, a pharmacogenomics database for medication efficacy, and lifestyle recommendations
- Aid in reducing costs, increasing life and health spans, and fueling innovative research within the Taiwanese biomedical industry

SOLUTION

The population-specific array developed for the TPMI includes >700,000 SNPs, including relevant variants associated with disease, rare disorders, and pharmacogenomics. It paves the way for making genetic information part of future clinical care throughout Taiwan.

A scalable, repeatable model for precision medicine initiatives

A 4-step integrated process



"If researchers have a big enough pool of people with known genetic profiles and clinical outcomes to compare an individual's genetic profile against, a risk prediction model can be created to help tailor health management."

—Dr. Pui-Yan Kwok

Principal Investigator, Taiwan Precision Medicine Initiative, Director of the Institute of Biomedical Sciences, Academia Sinica, and Professor, Cardiovascular Research Institute, UCSF

Case study

Development of an actionable model for preemptive pharmacogenomics testing

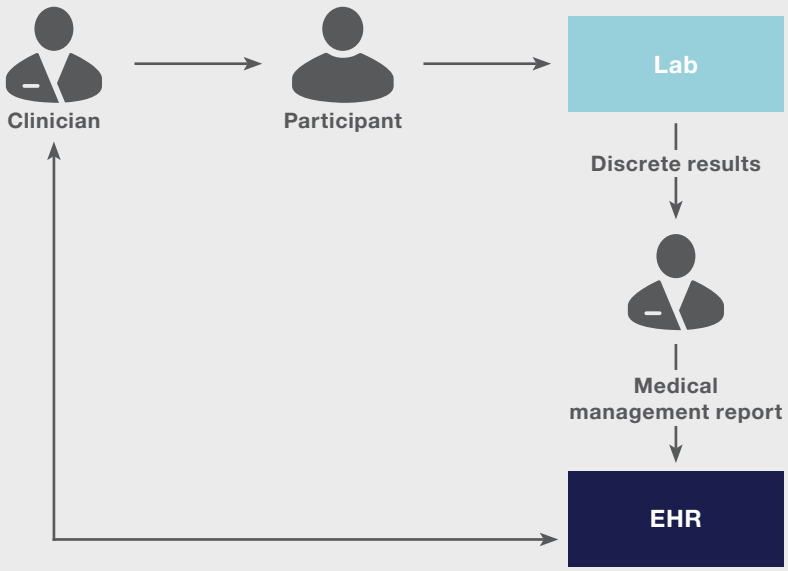
GOALS

University of Pittsburgh (UPitt) Pharmacogenomics Center of Excellence

- Preemptively test >150,000 subjects in a new research study
- Right medication to the right participant at the right dosage, faster, by integrating participants' pharmacogenomics (PGx) profiles in electronic health records (EHR)
- Show the value of true population-scale, preemptive PGx testing by delivering innovation and best practices in the use of genomic data

SOLUTION

The new center is developing state-of-the-art PGx methodologies and analytics. The multigene pharmacogenomics solution used by UPitt offers tremendous efficiency since it includes markers currently in clinical guidelines for utility today as well as those for research purposes.



"Our research has shown genotype-guided care is associated with improved outcomes."

—Philip Empey, PharmD, PhD
Associate Director for Pharmacogenomics, UPitt/UPMC Institute of Precision Medicine; Associate Professor, Department of Pharmacy and Therapeutics, School of Pharmacy

How will you adopt Predictive Genomics?

Discover what we can do for you

Whatever your needs, you'll find that we offer you significant advantages because our technologies are:

Population-optimized: You can optimize our genetic technologies for specific ethnic populations.

Widely deployed: Our domain knowledge was gained through powering many large-scale population health programs.

Easy to use: Relevant data are easy to interpret and report out quickly.

Speak to one of our specialists for a detailed review of what we can offer you.

Find out more at
thermofisher.com/predictive-genomics

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