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## Precision medicine uses data and research advances to yield exciting new possibilities in health care

A concept known as “precision medicine” or “precision health” is ushering in a sea change in health care treatments and delivery. Its benefits are myriad, but they all boil down to offering individualized, targeted, highly tailored approaches to treating people for all kinds of conditions and diseases.

Beyond genetics and race/ethnicity, precision medicine covers a broad swath of environmental factors, including: where one lives, works, plays and eats; the levels and type of stress to which one is exposed, and so much more. When health care professionals, including basic scientists, better understand the unique set of factors that separate one individual from another, they can prescribe the optimal combination of drugs and therapies for *each* of many patients — even though they may all have the exact same disease. Refreshingly, it’s anything *but* a one size fit all approach. Recent advances in science and technology are advancing the progress of this focus of research at a healthy pace.

In 2016, The University of Illinois at Chicago, Northwestern University, the University of Chicago and their affiliated hospitals and clinics were selected to enroll 150,000 Illinoisans in the National Precision Medicine Initiative Cohort Program, known as [All of Us](#), an historic effort to gather data from one million or more people living in the US to accelerate research and improve health. By evaluating individual differences in lifestyle, environment and biology, the NIH-sponsored research will find new ways to advance the capabilities of precision medicine. All of Us will allow health care providers to put positive system improvements into place.

The Illinois consortium received \$4.3 million in fiscal year 2016 and NIH says it plans to devote a total of approximately \$45 million to Illinois over five years, depending on the progress of the project and the availability of NIH funds.

The ramifications of precision (or “personalized”) medicine are many. For instance, “The genes you were born with can be modified by the stressors in your own life,” says [Robert A. Winn](#), Associate Vice Chancellor for Community-Based Practice, Director, UI Health Cancer Center, Professor of Medicine, Division of Pulmonary, Critical Care, Sleep and Allergy, University of Illinois at Chicago College of Medicine.

Karriem Watson, DHSc, MPH, MS, Director of the Office of Community-Engaged Research and Implementation Science ([OCERIS](#)) at the UI Health Cancer Center explains “At UI Health, It’s our responsibility as a health care organization that focuses on the underserved to make sure the scientists who are making new breakthroughs include a focus on communities like ours on the south and west sides of Chicago. They need to consider the particular factors that affect the health of our community members.” For example, the grim reality of Chicago’s sky-high gun violence rate affects well-being in a variety of ways, such as unhealthy levels of stress, anxiety, and even a fear of going outside to exercise.

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