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The Possibility Growth of Public Health Genetics

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Since the beginning of the Human Genome Project, there has been a strong belief by scientists and the public that at some point in the future, we will all sequence our genomes into general health care. In 1999, Francis Collins expressed a medical opinion in 2010 in the case of a 23-year-old man who introduced himself to his healthcare provider as part of a medical examination and underwent genetic testing. Diseases, developing a personal prevention and diagnostic program. Chromatin immunoprecipitation (ChIP) tests examine histone mutations and genomic DNA sequences bound to specific regulatory proteins. In ChIP, protein-DNA complexes are linked to in vivo, are immune, purified, and amplified for genetic targeting and developer of known targets or to identify new target sequences. In a microarray-based, ChIP-on-Chip, DNA immunoprecipitated DNA is labeled and packaged in high-resolution microarrays.

However, the complexity of science and the cost of technology, the need for major clinical studies and demographics, and the vast majority of ethical, legal, and social issues (ELSI) have prevented this prediction from becoming a reality. However, steady advances in science and technology, clinical and demographic studies on clinical validity and genetic usefulness, as well as numerous researches on ELSI, have helped us to approach this vision. So much so that the new vision of the National Human Genome Research Institute (NHGRI) 2020 for improving health beyond genomics includes a bold prediction of 2030: genomic has become as common as whole blood count.

In the United States, the vision presented above is now being fulfilled in many health systems and population-based research on biobanks and research programs for learning health programs, such as the Geisinger Health System and the Nevada Genome Project.5 However, by 2020, almost all of the applications used in genomics in general clinical care occur in diagnostic settings, particularly in rare genetic diagnoses, rare birth tests, and cancer genomics to guide cancer treatment. In addition, there is limited data on the use of testing and its impact on public health.

Recognizing the emerging role of genomics as a lifelong assessment tool, 2013 Evans et al. called for a scientific investigation into the use of genomics in adults in the same way as in infants.9 The authors have called for the improvement of the relationship between genomics and community health communities in order to better identify individuals with high-risk genetic diseases.

Finally, additional efforts are needed to include public health programs, professional communities, and health care organizations in discussions about DNA-based human testing. The two ACMG documents provide a good starting point for awareness and integration of this rapidly changing working environment.

Conflict of Interest

The authors declared no potential conflicts of interest for the research, authorship, and/or publication of this article.

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