



## Defense Health Agency (DHA) Clinical Communities Speaker Series

### CCSS Jun 2021: Exploring Evidence-Based Practice in Modern Medicine Primary Care

#### S04: Personalizing Care using Genomics – Opportunities and Challenges

##### Resource List

Genomics and family health history play a role in many diseases such as cancer and heart disease. These diseases are partly the result of how your genes interact with your behaviors, such as your diet and physical activity, the environment, and other social factors. For more information on genomics and precision health, search Centers for Disease Control and Prevention's (CDC) [Public health genomics and precision health knowledge base](#) (2021) for continuously updated information on specific diseases and health topics.

Recent studies have highlighted the imperatives of including diverse and under-represented individuals in human genomics research and the striking gaps in attaining that inclusion. With its multi-decade experience in supporting research and policy efforts in human genomics, the National Human Genome Research Institute is committed to establishing foundational approaches to study the role of genomic variation in health and disease that include diverse populations. Large-scale efforts to understand biology and health have yielded key scientific findings, lessons and recommendations on how to increase diversity in genomic research studies and the genomic research workforce. The authors in the study, [Prioritizing diversity in human genomics research](#) (2017) noted the increased attention to diversity will increase the accuracy, utility, and acceptability of using genomic information for clinical care.

Genomic medicine has the potential to launch the world into a new era of personalized medical care. Veteran Affairs (VA) researchers are working to develop personalized treatments based on patients' genes and other individual factors. A Genomic Medicine Program Advisory Committee, which advises the Secretary of Veterans Affairs, lays the groundwork for the VA Research Genomic Medicine Program. Members include leaders in the public and private sectors and academia in the fields of genetic research and medical genetics; genomic technology; health information technology; and health care delivery, policy, and program administration. The committee also includes a Veterans Service Organization representative. Visit the [VA's Office of Research & Development- Genomics](#) (2021) page to read more about the past accomplishments and current Genomics research.

In celebration of the 20th anniversary of Nature Reviews Genetics, twelve leading researchers reflected within the article, [The road ahead in genetics and genomics](#) (2020) on the key challenges and opportunities faced by the field of genetics and genomics. Keeping their particular research area in mind, the authors reviewed the current state and emphasized the work that remains to be done over the next few years so that, ultimately, the benefits of genetic and genomic research can be felt by everyone.

Human population genetics has entered a new era of public interest, of controversy, and of ethical problems. Population genetics raises novel ethical problems because both the individuals and the populations being studied are, in effect, "subjects" of the research. Those populations are collectively subject to possible benefits and harms from the research and have interests, somewhat different from those of the individuals that must be considered from both ethical and practical standpoints. The article, [Informed consent and other ethical issues in human population genetics](#) (2017) outlined vexing issues, including special problems caused by researchers' commercial interests, confidentiality, control over research uses and materials, and return of information to the population.



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