



Personalized Medicine

VA's Office of Research & Development is at the forefront of developing safer, more effective treatments based on new knowledge about the role of genes in health and disease. The goal is to provide medical care that is personalized specifically to the genetic makeup of individual veterans. This approach is referred to as personalized medicine. Genomic analysis has already provided tremendous insights into the origins of diseases that affect large numbers of veterans, such as diabetes and cancer. Genomic analysis may also help predict veterans' response to certain drug treatments.

Examples of VA research advances

- **Pharmacogenomics Lab**—VA has established its first Pharmacogenomics Analysis Laboratory, at the Little Rock VA. The lab will run genetic tests for individual veterans to help predict their response to certain drugs. The lab will also work with VA's Cooperative Studies Program, which coordinates clinical trials involving up to thousands of patients at multiple sites. The lab will scan DNA from study participants—with their consent—to determine if certain genetic variations are linked to particular medical conditions.
- **Assessing veterans' attitudes**—To learn about veterans' attitudes toward genomic medicine and explore issues of concern, VA is working with the National Human Genome Research Institute and the Genetics and Public Policy Center at Johns Hopkins University. The joint effort includes surveys and focus groups with veterans recruited through various sources nationwide, including Veterans Service Organizations, VA medical centers, outpatient clinics, and readjustment counseling centers.
- **Genetics of alcoholism**—VA researchers have been working with colleagues to probe which genes may be linked to alcoholism risk and treatment response. Some of these efforts are conducted through the Collaborative Studies on Genetics of Alcoholism initiative of the National Institute on Alcohol Abuse and Alcoholism.

Facts About Personalized Medicine

With the recent completion of the Human Genome Project and other gene-mapping efforts, researchers now have a detailed map of humans' genetic structure. Research is now focused on how to apply this knowledge to medical care, with the goal of customizing patients' care based on their individual genetic make-up. This might involve, for example, predicting a patient's risk for a certain condition, or his response to a particular drug. Researchers have been laying the groundwork for this field by scanning huge batches of DNA—often obtained through research studies—and analyzing which genetic variations are statistically associated with particular diseases or other health characteristics.

