Overview:
National Office of Public Health Genomics

Recognizing the potential of genomic research to improve the public's health, the Centers for Disease Control and Prevention (CDC) established the National Office of Public Health Genomics (NOPHG) in 1997. Today, NOPHG provides national leadership in public health genomics while building partnerships with other federal agencies, public health organizations, professional groups, and the private sector.

Our Vision

To improve population health and prevent disease through the application of genomic information.

Our Mission

To integrate genomics into public health research, policy, and programs.

Our Goals

I. Integrate genomics into public health research
II. Evaluate family history for preventive medicine and public health
III. Translate genomics into public health practice

Translating Genomic Goals Into Action

I. Integrating Genomics Into Public Health Research

CDC and its partners are using epidemiologic and laboratory studies to examine the interactions of genetic, environmental, and behavioral factors and their influence on population health. Integrating genomics into public health investigations—including investigations of infectious disease outbreaks, toxic exposures, and adverse outcomes of interventions (for instance, vaccinations)—is an important challenge. Genomics can provide new insights into population-level variations in the health effects of infections, environmental exposures, and behaviors.

CDC continues to build the foundation for integrating human genomics into public health investigations. For example, in collaboration with the National Institutes of Health (NIH), a CDC-wide team is measuring population genetic variation using stored DNA samples collected during the Third National Health and Nutrition Examination Survey (NHANES III). Establishing the prevalence of gene variants known to interact with specific environmental factors will provide a foundation for developing and assessing the potential impact of environmental interventions.

II. Evaluating Family History for Preventive Medicine and Public Health

Family history information can be used to assess the risk of developing common diseases and to influence help early detection and prevention strategies. A family

history assessment is also the first step toward identifying high-risk families who may benefit from genetic testing.

In 2002, CDC and its partners launched the Family History Public Health Initiative to evaluate the use of family history for assessing risk of common diseases and influencing early detection and prevention strategies. In 2005, CDC developed Family Healthware™, a Web-based tool that collects information about users' health behaviors, screening tests, and family history of six diseases: coronary heart disease, stroke, diabetes, and colorectal, breast, and ovarian cancers. Three research centers are currently conducting a clinical trial of Family Healthware™ to determine whether having a family history risk assessment and receiving personal prevention messages influence patients' health behaviors and use of medical services.

III. Translating Genomics into Public Health Practice

Most of the more than 1,000 genetic tests currently available for clinical testing are used to diagnose relatively rare single-gene disorders, but a growing number have population-based applications and the potential for broad public health impact. In 2004, CDC launched a model project, the Evaluation of Genomic Applications in Practice and Prevention (EGAPP), to develop and evaluate a coordinated, systematic process for assessing genetic tests and other genomic applications in transition from research usage to clinical and public health practice.

In 2001, CDC established Centers for Genomics and Public Health in the schools of public health at major universities. The purpose of the centers is to serve as regional hubs of expertise for integrating genomics into public health practice. In 2003, CDC established cooperative agreements with four state health departments for developing and expanding their capacity to integrate genomic tools and knowledge into their chronic disease programs.

CDC is dedicated to the dissemination of high-quality information about genomics from a public health perspective. The NOPHG Web site plays a major, ongoing role as a clearinghouse for information about translating genomics into public health practice. One important source on the Web site is the Genomics and Health Weekly Update, which features links to current genomics-related news items and scientific publications, events, and training opportunities.

For more information, please visit CDC's National Office of Public Health Genomics website at www.cdc.gov/genomics.