



Evaluating Family History for Preventive Medicine and Public Health

Family history is known to be a risk factor for many chronic diseases—including coronary heart disease, cancer, and diabetes—but its use in preventive medicine has been de-emphasized compared with modifiable risk factors such as smoking and diet. Although clinicians are trained to collect family histories, they often fail to do so because of lack of time, inadequate reimbursement, and a lack of skill in interpreting family history information. According to the Healthstyles 2004 survey, 96% of Americans believe that knowing their family history is important to their health, yet only 33% have ever tried to gather and organize their family health history.

Most common diseases result from the interactions of multiple genes with multiple environmental factors in complex patterns that, despite progress in sequencing the human genome, are unlikely to be understood fully in the near future. In the meantime, a person's family health history can be used as a low-cost, low-tech “genomic tool” with which to capture the interactions of genetic, environmental, and behavioral factors in determining that person's disease risk. Recognizing the importance of family history for disease prevention and health promotion, the National Office of Public Health Genomics (NOPHG) at the Centers for Disease Control and Prevention (CDC) began CDC's Family History Public Health Initiative in 2002.

Family History Public Health Initiative

The purpose of the Family History Public Health Initiative is to evaluate the use of family history in assessing people's risk for common diseases and in developing more effective early detection and prevention strategies. At the center of this effort is a new Web-based family history tool for determining a person's risk for common chronic diseases, and research activities to assess the validity and utility of using family health history as a public health strategy. The initiative also includes collaborative campaigns to increase public awareness about the importance of family health history and to improve and facilitate the use of family history information by health professionals.

Tool Development—Family Healthware™

Family Healthware™ is a Web-based tool that can be used to assess a person's familial risk for six diseases (coronary heart disease, stroke, diabetes, and colorectal, breast, and ovarian cancer). It provides users with a “prevention plan” containing personalized recommendations for lifestyle changes and screening. The tool collects data on:

- Users' health behaviors (e.g., smoking and exercise);
- Users' screening tests (e.g., blood cholesterol and mammography); and
- The disease history of users' first- and second-degree relatives.

One set of algorithms in the software analyzes users' family history data and assesses their familial risk for each of the six diseases. A second set of algorithms uses the data on familial risk, health behaviors, and screening results to generate personalized



prevention messages. Family Healthware™ was developed by a multi-disciplinary team with expertise in clinical genetics, behavioral science, health communication, preventive medicine, and epidemiology, with support from a major commercial communications firm and a software development company.

Research and Evaluation

Family Healthware™ is currently being evaluated by three academic centers using a network of primary care practices to determine if personalized prevention messages tailored to familial risk will motivate people at risk to change lifestyle or screening behaviors. The study began enrolling patients in December 2005, and data collection is expected to be completed by the fall of 2007.

To help fill gaps in our understanding of the role that family history plays in disease occurrence and prevention, researchers are also analyzing data from past and ongoing population-based studies of chronic diseases, including the National Health and Nutrition Examination Survey (NHANES) and the National Health Interview Survey (NHIS).

Public Awareness Campaigns and Provider Education Programs

CDC is working with its public health partners, including states and professional organizations, to promote the use of family health history for disease prevention. Major activities have included the following:

- CDC collaborated with the U.S. Surgeon General and other HHS agencies on the Surgeon General's Family History Initiative, which is a national campaign that marked Thanksgiving as National Family History Day. This initiative also included the development of a Web-based tool called "My Family Health Portrait" — a simplified version of CDC's Family Healthware™. The tool is available free to the public at <http://www.hhs.gov/familyhistory/>.
- CDC delivered packets of family history resource materials to chronic disease and genetics experts in health departments of every U.S. state and territory. These materials were designed to assist local health departments in their efforts to educate people about the importance of collecting their family health history.
- CDC developed a family history Web site for the public that includes fact sheets, presentations, case studies, news articles, relevant links, and other resources. The Web address is <http://www.cdc.gov/genomics/public/famhistMain.htm>.
- CDC collaborated with the American Association of Family Physicians (AAFP) to develop Web-based modules on family history for the Annual Clinical Focus (ACF) on Genomics. These modules, for which physicians can receive Continuing Medical Education (CME) credits, are available at <http://www.aafp.org/online/en/home/clinical/acf/genomics/acfgenomics.html>.

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