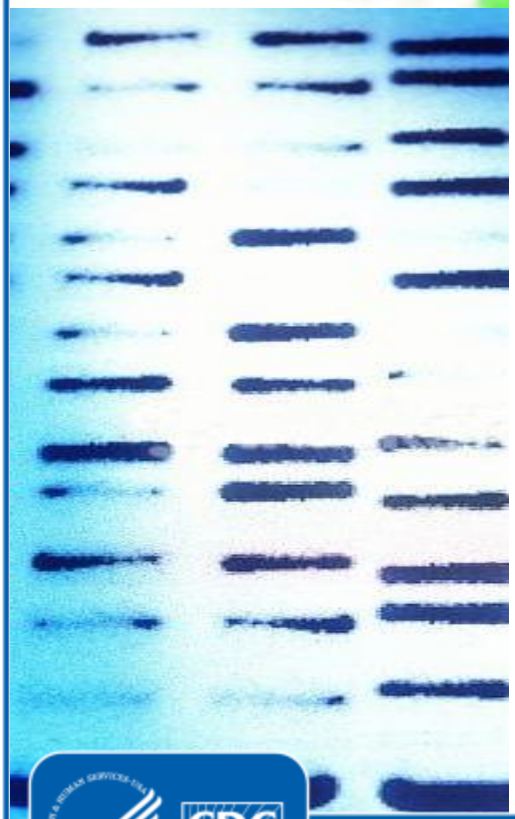
Office of Public Health Genomics



Our Mission

CDC's Office of Public Health Genomics (OPHG) aims to integrate genomics into public health research, policy, and programs, which could improve interventions designed to prevent and control the country's leading chronic, infectious, environmental, and occupational diseases.
OPHG's objectives are to

- Provide public health genomics expertise to the agency and public health partners as relevant to CDC's mission;
- Inform agency leadership and programs about emerging genomic applications anticipated to impact the health of the population and issues relevant to CDC's mission; and
- Facilitate the implementation of genomics with CDC programs, other agencies, and external partners in order to improve population health.

Activity Snapshot

- **Evaluation of Genomic Applications in Practice and Prevention (EGAPP™)**, a systematic, evidence-based process for evaluating genetic tests that are in transition from research to clinical and public health practice
- **Genomics Translation Projects** in state health departments and academic and research institutions that translate evidence-based genomic knowledge and applications into public health education, surveillance, and policy
- **Family History Public Health Initiative** aimed at increasing awareness of the importance of family history as a risk factor for common chronic diseases, and promoting its use in programs aimed at reducing the burden of these diseases in the U.S. population.
- **Genomic Applications in Practice and Prevention Network (GAPPNet™)**, a collaborative initiative that is helping to realize the promise of genomics in healthcare and disease prevention
- **Human Genome Epidemiology Network (HuGENet™)**, a global collaboration that helps translate genetic research on human genetic variation into opportunities for preventive medicine and public health
- **NHANES III Collaborative Genomics Project**, which measures the prevalence of selected genetic variants of public health significance in a representative sample of the U.S. population
- **Influenza Public Health Genomics Initiative**, which investigates the role of population genetic variation in the epidemiology of influenza morbidity and mortality and the effectiveness of public health interventions

Key Genomics Achievements in Public Health Practice

Genetic Testing Recommendations – Since 2005, the independent EGAPP™ Working Group, supported by OPHG, has released six recommendations on the validity and utility of specific genetic tests related to breast cancer, cardiovascular disease, colorectal cancer, deep venous thrombosis, and depression. Recommendations: www.egappreviews.org/recommendations/; CDC summaries: www.cdc.gov/genomics/gtesting/EGAPP/recommend/

Michigan Project on Promoting Cancer Genomics Best Practices Through Surveillance, Education, and Policy – Michigan is conducting surveillance and monitoring, health education, and health insurance policy interventions to promote best practices and decrease morbidity and mortality from hereditary cancers in Michigan, particularly among individuals less than 50 years old (www.michigan.gov/mdch/0,1607,7-132-2942_4911_4916-223425--,00.html).

- Michigan helped to increase coverage of BRCA1/2 testing in six out of 21 Michigan health insurance plans, and made plans consistent with the U.S. Preventive Services Task Force.
- Michigan has also created the first bidirectional reporting system that highlights population-based cancer genomics data for clinical providers. At the end of FY2010, they distributed individualized, facility-specific data reports to 60 of the 179 cancer reporting facilities.

Oregon Project to Establish a Genomics Surveillance Program: Translation of Genomic Applications into Health Practice – Oregon is creating a comprehensive surveillance program to monitor awareness, knowledge, and use of cancer-related genomic tests and family history among health care providers and the public in Oregon, as well as to help determine disparities in access to genetic testing (http://public.health.oregon.gov/diseasesconditions/geneticconditions/pages/genomics_grant.aspx).

- In 2007 and 2008, Oregon's seven cancer genetics clinics saw 1,716 patients. Eighty-three percent were seen for breast or ovarian cancer, 13% were seen for colorectal cancer or endometrial cancer, and 4% were seen for other cancers, such as prostate cancer. Six of the seven clinics were able to abstract genetic testing information (for 892 patients). In these six clinics, 60% of breast and ovarian cancer patients had *BRCA* testing, and 47% of colorectal and endometrial cancer patients had *MMR* testing. Only a small fraction of the estimated 19,500 to 28,500 Oregonians with a *BRCA* or *MMR* mutation, and even a smaller proportion of Oregonians with a family history indicating referral for genetic counseling, are seen by a genetics specialist.

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