



The Michigan Genomics and Chronic Disease Program

Background

- Genomics is a new term that includes the traditional field of genetics and more. **Genetics** is the study of a single gene and its effects. **Genomics** is the study of all of the genetic material of a person or organism, including the complex interactions among multiple genes as well as between genes and the environment. Rapid scientific advances over the past two decades have led to an appreciation of the important role genomics plays in the etiology of common chronic diseases.
- Genomics holds great promise to better understand the role of genes, environment, and behavior as risk factors for chronic diseases. It also has the potential to transform health promotion/disease prevention activities, reduce health care costs and ultimately improve public health. The current challenge is to identify ways of integrating genomics into chronic disease prevention and management.
- Genomics encompasses a wide range of public health concerns, so there is an intrinsic need for integration with other programs. Within the Department of Community Health, important collaborations include the Laboratory, Chronic Disease Programs, Epidemiology Services, Newborn Screening, Environmental Health, Vital Records, Medicaid, School Health, and others

Our Vision:

Improve chronic disease prevention efforts and health outcomes through the enhanced use of genomics in core public health functions.

Core Function

- To provide assessment, policy development and assurance related to the use of genomics in public health programs.

Genomics and Chronic Disease Prevention Project

- » Five-year, \$1 million agreement with the Centers for Disease Control and Prevention
- » Awarded in 2003 to four states- Michigan, Minnesota, Oregon and Utah
- » Goal is to increase the use of genomics in public health programs

Project Objectives

- Strengthen organizational capacity for implementing population-based assessments by using existing surveillance and data systems
- Enhance leadership capacity for integrating genomics into chronic disease prevention and health promotion programs
- Educate the health workforce, policymakers and public about the role of family history and genetic risk factors in chronic disease
- Expand the use of genomics in core public health activities across chronic disease, epidemiology, laboratory and environmental health
- Coordinate the use and evaluation of targeted risk assessment strategies based on genomic tools

Key Activities

Genomics Leadership:

- » Review chronic disease genomics infrastructure
- » Build a genomics team
- » Facilitate Genomics Work Group
- » Participate on chronic disease advisory committees
- » Facilitate Michigan Cancer Genetics Alliance
- » Explore development of a gene-environment working group

Population-Based Assessment:

- » Examine existing surveillance systems and databases for possible genomics applications including NHANES, BRFSS, Cancer Registry and others
- » Evaluate potential population studies using dried newborn blood spots

Education:

- » Provide genomics training and technical assistance to local health departments and the public health workforce
- » Provide genomics information to policymakers
- » Partner with chronic disease program initiatives to increase the public's genetic literacy

Genomics Tools:

- » Develop and implement population-based primary care chronic disease risk assessment and management guidelines
- » Establish contact with public and private partners developing pharmacogenomics and disease susceptibility risk assessment methods
- » Monitor development of a nationally validated family history tool

Core Public Health Activities:

- » Develop expertise on laboratory and genetic testing issues relevant to public health
- » Identify and address policy issues related to quality assurance and reimbursement for cancer risk assessment
- » Collaborate with the academic Centers for Genomics and Public Health to develop genomic approaches for diabetes control and cardiovascular disease
- » Facilitate new collaborations with investigators at academic institutions

For More Information

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