Michigan

Expanding the Knowledge Base for Using Effective Physical Education Curricula

Public Health Problem
Overweight and inactivity are a problem among youth in Michigan. According to the 2007 Youth Risk Behavior Survey, among high school students in the state:
• 12% were obese and 16% were overweight.
• 44% met recommended levels of physical activity.
• 15% did not participate in 60 minutes or more of physical activity any day during the past week.
Increasingly, researchers are learning that regular physical activity is critical to sustained good health.

Program Description
To address this problem, the Michigan Departments of Education and Health have supported the development of the Exemplary Physical Education Curriculum (EPEC) as part of the state's coordinated school health program. EPEC is a K–12 program designed to enhance physical activity knowledge; personal and social skills; motor skills; and physical activity and fitness levels to equip students to be active for life. Over time, increased competence in these skills may lead to improved confidence and fitness levels. EPEC lessons address each of the content standards from the National Association of Sport and Physical Education and the Michigan Physical Education Content Standards.

The Michigan Department of Education, with the support of CDC's Division of Adolescent and School Health, participated in an evaluation of EPEC to measure its effectiveness in improving student attitudes and confidence in physical activity, motor skills, physical activity levels, and fitness among 4th and 5th grade students. The evaluation followed 1,464 students who received
EPEC and who received physical education curricula other than EPEC in 16 Michigan schools from fall 2004 through spring 2006.

Implications and Impact
Evaluation of this curriculum provided valuable data to inform decision makers' ongoing efforts to increase healthy behaviors among Michigan students. Compared with same-grade students receiving alternate physical education curricula, among those exposed to EPEC:
• 4th grade students had greater levels of confidence in their ability to perform motor skills.
• 5th grade students had greater levels of physical activity knowledge.
• 4th grade and 5th grade students demonstrated higher levels of motor skills.
• 4th grade students reported more total minutes of physical activity.
• 4th grade students reported more energy during physical activity.

The Michigan Departments of Education and Health and the Michigan Nutrition Network promote EPEC with an emphasis on addressing disparities in physical activity. For example, one program provides quality nutrition and physical education to Michigan's low income schools. Participating schools receive free EPEC, and additional training and materials. These efforts will reach approximately 90,000 students with valuable lessons and skills development during the 2008–2009 school year. EPEC represents a new generation of curricula focused on learning and performing motor skills through individual and team physical activities. These gains in skills could ultimately enable lifelong fitness.

Colorado and Michigan

Building Capacity to Use GIS for Heart Disease and Stroke Prevention

Public Health Problem

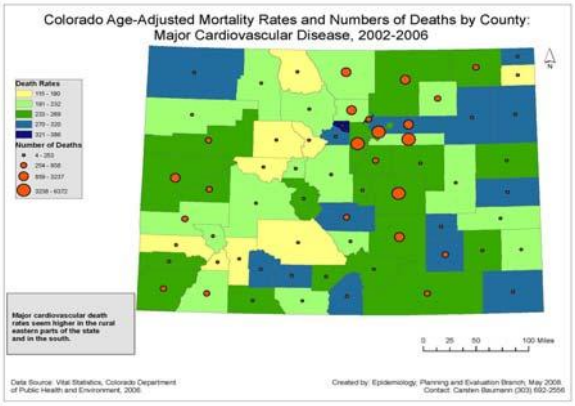
To identify local communities with the greatest burden of heart disease and stroke and develop prevention programs and policies tailored to the cultural, socioeconomic, and physical conditions of those communities.

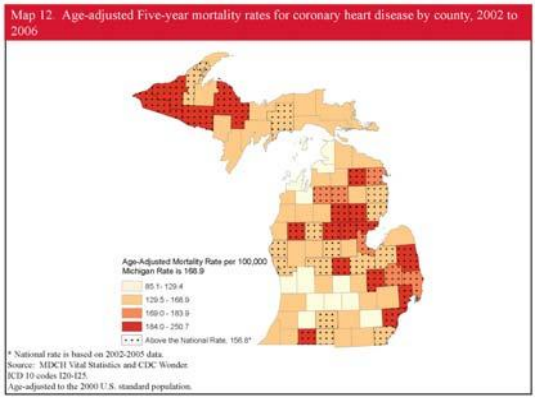
Geographic Information Systems (GIS)

In Colorado and Michigan, state health department staff participated in intensive, hands-on GIS training collaboratively provided by the Centers for Disease Control and Prevention (CDC), National Association of Chronic Disease Directors, and Duke University. The comprehensive training included an initial needs assessment for each state, expert GIS training from analysts at Duke University, numerous case studies and exercises, and ongoing technical support/assistance. The training was also designed to enhance integration across CDC-funded state programs for chronic disease prevention. In addition to staff from the state heart disease and stroke prevention programs, the participants included staff members from the state cancer, tobacco control, diabetes, maternal and child health, nutrition and physical activity, and injury programs.

Implications and Impact

Staff members from health departments in both states have mastered the ability to examine the geographic disparities in heart disease and stroke among their local communities. With this highly valuable skill, they have developed customized maps that have been used to directly address the priorities of the state health departments, enhance the functioning of partnerships (both externally and internally), bring new partners to the table, and inform policies and programs tailored to the specific needs of communities with heavy burdens of heart disease and stroke.





Michigan

Building Healthy Communities Project

Public Health Problem
In Michigan, rates of chronic disease, such as obesity, are higher than the national averages. In 2007, 36.2% of the Michigan adult population was considered overweight and an additional 28.4% were obese. This means that only 35.4% of the Michigan adult population had a BMI under 25. In 2007, only 21.3% of Michigan residents reported having consumed at least 5 servings of fruits and vegetables a day. For physical activity, 49.4% of Michigan's adult population was estimated not to have met the weekly physical activity requirements of 30 minutes of physical activity for five or more days each week or 20 minutes of vigorous activity three or more days each week.

Intervention
Michigan's Building Healthy Communities Project is a program designed to improve the environment and change policies to make it easier for residents to be healthy. The project expanded from an initial state-funded competitive grant to seven local public health departments to a wider partnership that now includes 16 local public health departments. Local health departments were funded, staff was trained and technical assistance was provided to plan and implement evidence-based policy and environmental changes to support physical activity and healthy eating.

During the planning period, local health departments formed coalitions in their communities, completed policy and environmental assessments to determine needs, and created a 3-year plan for creating more opportunities for their residents to engage in healthful eating, physical activity, and tobacco-free lifestyles. Communities assessed their needs utilizing assessment tools found at www.mihealthtools.org that included the Healthy Communities Checklist, the Promoting Active Communities (PAC) Assessment, the Nutritional Environmental Assessment Tool (NEAT), and Smoke-Free Community Assessment Tool (SFCAT). Multidisciplinary coalitions were formed from new and existing local partners representing transportation, farmers, residents, public officials, zoning and planning, city engineers, law enforcement, YMCA, hospitals, universities, non-profit organizations, and news media outlets. Multiple evidence-based strategies and promising practices were implemented in communities to support physical activity and healthy eating.

Implications and Impact
Overall, the Building Healthy Communities Project achieved significant success in creating and enhancing places for Michigan citizens to enjoy healthy lifestyles. Examples of these changes are establishing farmers markets, building walking and biking trails and health promotion and education. This project helped local coalitions leverage close to a million and a half dollars in additional funding to support their work. Joining state and private funding streams has led to a more comprehensive community project. Examples of policy and built-environment changes for the project include:

- 11 trails covering 58.6 miles were created or enhanced with benches, lighting, and signage.
- 7 parks were enhanced with amenities such as new equipment, benches, and lighting.
- 14,000 walking maps were provided to residents.

Michigan (continued)

- 129 community fitness classes were conducted.
- 5 new farmers market locations opened. All markets have ability to process Electronic Benefits Transfer transactions for food stamp recipients.
- 7 new school and community gardens were created.
- 5,000 Senior Project FRESH coupon books were distributed to low-income seniors to redeem for fresh fruits and vegetables.

To continue to build the capacity of local public health departments to be leaders of healthy change in their communities, the Michigan Nutrition, Physical Activity and Obesity Program will play a pivotal role in the expansion of this project in fiscal year 2008/2009 through funding, training and technical assistance to up to 25 of the state's 45 local public health departments.

Genomics

Michigan

Michigan Department of Community Health (MDCH)

Public Health Issue
State health departments have the legal mandate for newborn screening, which involves the collection of blood samples from all babies born in the state and testing these samples for a variety of rare disorders. Each state maintains policies for protecting and storing the residual blood samples.

Over 160 biomarkers and compounds have been measured in residual blood samples, such as genetic material (DNA), proteins (the gene products), infectious agents (e.g., viruses), and harmful metals (e.g., lead). These samples provide an important resource that can be used in epidemiology studies, for example, to measure the frequency of genetic variations in a population or to understand how genes interact with environmental exposures.

Program Example
Since 1965, blood samples have been collected from almost every newborn in Michigan as part of their newborn screening program. Currently, the Michigan state public health laboratory screens newborns for 49 rare disorders; in addition, hospitals screen all newborns for hearing loss. In the early 1980s, the lab began to store all residual newborn screening samples for 21½ years based on a ruling by the state Attorney General's office. Based on a 1999 recommendation by the Governor's Commission on Genetic Privacy and Progress, the state legislature amended the public health code in 2000 to allow use of the blood specimens for medical research during the retention period as long as the research is conducted in a manner that preserves confidentiality and human subject protections. In early 2009, lab policy was revised to store all samples indefinitely unless parents (or legal guardians) request that their baby's sample: 1) be destroyed after screening is completed, or 2) not be used for any research. There are currently over three million samples in storage.

The genomics program in the Michigan Department of Community Health, in collaboration with many partners and stakeholders, is developing a biobank of residual blood samples for use in public health and medical research. Key partners include the major state research universities and the Van Andel Institute.

The University of Michigan (UM) Center for Public Health and Community Genomics (CPHCG) and Michigan State University (MSU) Center for Ethics and Humanities in the Life Sciences have provided important support and consultation in developing and implementing a plan for community engagement to inform the public and assess support for a population-based biorepository. During 2008, approaches to community assessment and engagement included a series of four questions on the Behavioral Risk Factor Survey about public support for different types of research using dried blood spots; a deliberative jury process with in-depth examination of relevant issues; a full-day discussion session with MSU students; development of a FAQ booklet and PowerPoint presentation for use in informational sessions; a series of 10 focus groups reaching various vulnerable populations and different geographic areas of the state; as well as several presentations to a variety of professional groups. An informational webpage with online survey was prepared and will be available in the Spring of 2009 for all Michigan citizens over age 18 to share their opinions on the biobank.

The genomics program also worked closely with the state laboratory director, Wayne State University, and a steering committee on development of a business plan that outlines a mission and vision, timeline, possible governance structure, steps toward implementation and funding

Michigan (continued)

needs related to establishing a biobank. Program staff members were also involved in working with the department's institutional review board (IRB) to identify needed policies for ensuring human subjects protection; to begin designing a process for parental consent for storage of future specimens; and to develop methods for incorporating public input in the identification of research priorities through establishment of a Community Values Advisory Board.

Implications and Impact

Since Michigan first began newborn screening for Phenylketonuria (PKU), more than five million infants have been screened, and over 4,150 babies have been identified with disorders for which there are effective treatments. The state newborn screening program has saved lives and improved the quality of life for Michigan's children and their families. With rapid scientific advances in technology, it is now possible to use residual samples for additional public health purposes. The creation of a permanent biobank of residual blood samples is an important first step in establishing public health infrastructure to support new research and public health practices that will contribute to improving future health outcomes for Michigan residents.