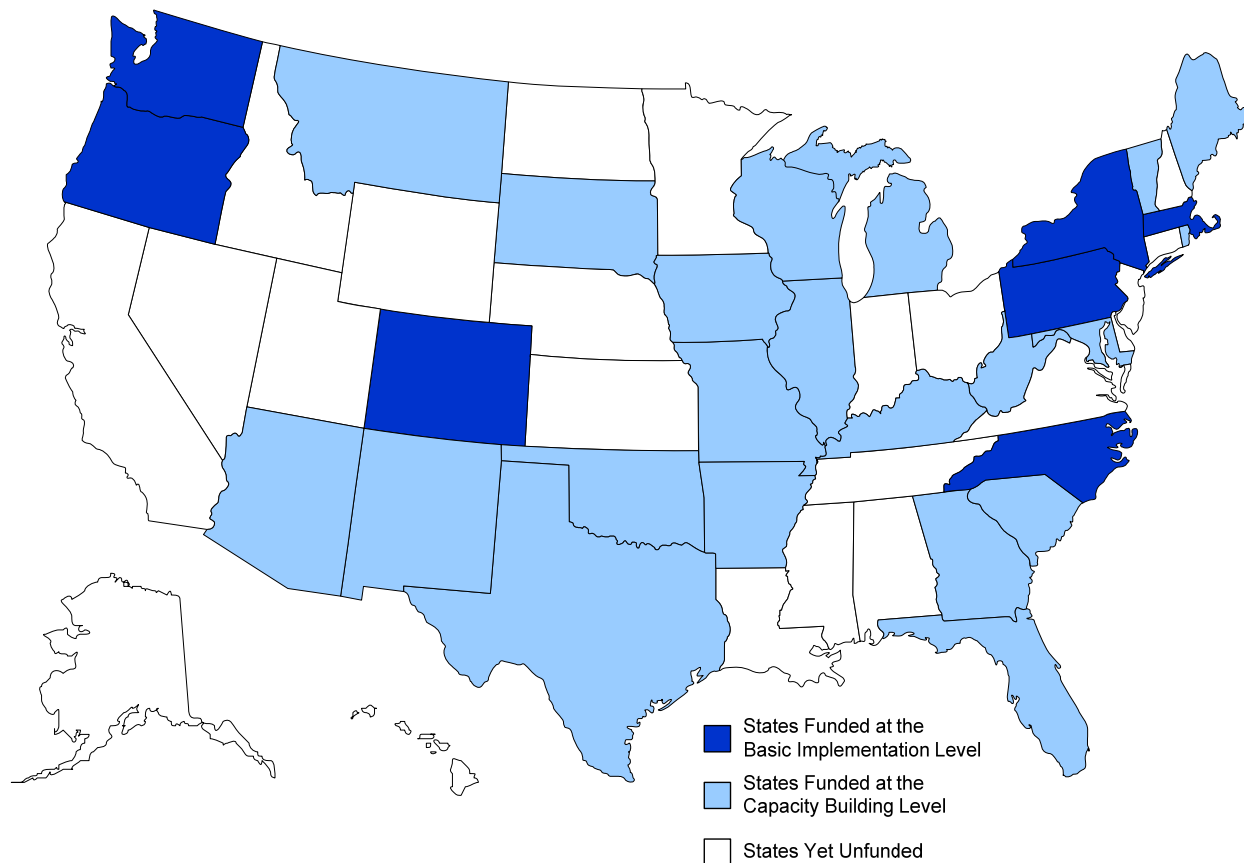


July 2006

## Improving Nutrition, Physical Activity, and Obesity Prevention



### Performance Report of the Nutrition and Physical Activity Program to Prevent Obesity and Other Chronic Diseases: July 1 Through December 31, 2005

Prepared for:

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## Introduction

The Nutrition and Physical Activity Program to Prevent Obesity and Other Chronic Diseases helps states develop and implement science-based nutrition and physical activity interventions. In the near term, the program aims to improve nutrition and physical activity policies and environments for target populations. The program also helps states, communities, organizations, and partners develop and implement efforts that promote healthy weight. In the long term, the program strives to reduce the prevalence of obesity and other chronic diseases in funded states.

States' activities are evaluated based on a set of performance measures in the original Request for Applications (RFA). Specifically, states must provide evidence of:

- Policies, environmental supports, and legislative actions that were initiated (introduced), modified, or enforced (enacted) for the prevention or control of obesity and other chronic diseases.
- Outcomes/impacts of at least one intervention (see Appendix A for the definition of an intervention) that evaluates nutrition and physical activity strategies to prevent or control obesity and other chronic diseases.
- At least one community that implemented a nutrition and physical activity plan for the prevention and control of obesity and other chronic diseases.
- A quality, comprehensive state nutrition and physical activity plan to prevent and control obesity and other chronic diseases; this plan would promote coordination of activities across all relevant state and community programs, in which relevant partners are identified in substantive roles.
- Strategic planning activities at the state level to develop a comprehensive nutrition and physical activity plan to prevent and control obesity and other chronic diseases.

This report shows how funded states are meeting each of these program performance measures; it reflects they provided in their respective Progress Monitoring Reports (PMR) for the July 1—December 31, 2005, reporting period. (See Table 2 in Appendix B for a list of PMR questions.)

## Background

The Nutrition and Physical Activity Program to Prevent Obesity and Other Chronic Diseases (NPAO) is a cooperative agreement between the Centers for Disease Control and Prevention's (CDC's) Division of Nutrition and Physical Activity (DNPA) and the health departments of funded states. The program was established in fiscal year (FY) 1999 to prevent and control obesity and other chronic diseases by helping states develop and implement nutrition and physical activity interventions, particularly through population-based strategies such as policy-level changes, environmental supports, and the social marketing process.

In FY 2003 and FY 2004, some funded states moved to the level of basic implementation. This meant that because they had met the performance measures outlined in the RFA, they could receive additional funding to implement their state-plan strategies. Other states that were newly funded by the Program or had not yet met all the performance measures remained at the capacity-building level. During the reporting period of July 1 through December 31, 2005,

covered in this report, the program funded 28 states, seven at the basic-implementation level and 21 at the capacity-building level. Fifteen states reported having a plan in effect, while 11 have completed a draft of their plan. (Table 1 shows when states were first funded and their current funding levels. Table 3 in Appendix B shows the status of each state's nutrition and physical activity plan.)

**Table 1. States by Year of Initial Funding and Current Level of Funding**

Year of Initial Funding	State	Current Level of Funding		
		Basic Implementation	Capacity Building	
FY 2000	Massachusetts	•		
	North Carolina	•		
	Texas		•	
FY 2001	Colorado	•		
	Florida		•	
	Pennsylvania	•		
	Washington	•		
FY 2003	Arizona		•	
	Georgia		•	
	Illinois		•	
	Kentucky		•	
	Maine		•	
	Maryland		•	
	Missouri		•	
	New Mexico		•	
	New York	•		
	Oregon	•		
	South Carolina		•	
	West Virginia		•	
	Wisconsin		•	
	FY 2004	Arkansas		•
		Michigan		•
Montana			•	
Iowa			•	
Oklahoma			•	
Rhode Island			•	
South Dakota			•	
Vermont			•	

## Approach

Each funded state and its partners use the Social-Ecological Model (Figure 1) to more fully understand the obesity problem in that state. This model serves as a reminder to look at all levels of influence (individual, interpersonal, organizational, community, and societal) that could be addressed to support long-term, healthful lifestyle choices.

**Figure 1. Social-Ecological Model Used by States and Partners to Develop Interventions**



Interventions based on the Social-Ecological Model can:

- Teach skills needed to make individual behavior changes related to nutrition, physical activity, and healthful weight – and provide opportunities to practice these skills.
  - During group interactive nutrition seminars, Massachusetts’ YMCA intervention let participants make their own healthful lunches and snacks under the direction of qualified instructors.
- Create supportive nutritional environments that make healthful food more affordable, attractive, and appetizing, and create supportive physical activity environments that make healthful lifestyle options more accessible, affordable, comfortable, and safe.
  - Kentucky’s Fresh Take Fayette County Middle Schools program gave students the chance to taste new foods and increased their fruit and vegetable choices. In addition, the school cafeteria was redesigned to be a more enjoyable place for students to eat.



- Change rules, regulations, or structures of institutions and organizations.
  - A North Carolina senate bill sets new nutritional standards for schools. Specifically, the bill prohibits vending in elementary schools, bans the sales of sugared, carbonated beverages in middle schools, and limits the amount of sugared, carbonated beverages sold in high schools (no more than half of all drinks). In addition, 75 percent of vended snacks must be 200 calories per serving or fewer.
- Establish community programs to increase physical activity and/or reduce caloric intake through healthful eating habits.
  - The Springfield Walks program is a partnership in Springfield, Massachusetts, that seeks to increase opportunities for physical activity through public education and outreach.

**Washington's Access to Healthy Foods Coalition**

*Formed in 2002, the Access to Healthy Foods Coalition is a statewide group that works to improve the availability of healthful foods for all Washington residents. Members include representatives of business, industry, agriculture, public health, and a variety of other areas. The coalition focuses its efforts on three environments: worksites, point-of-purchase areas (e.g., restaurants and vending machines), and food-assistance programs (e.g., food banks).*



Volunteers pack apples for a Yakima, Washington, food bank.

- Establish policies and standards in local and state government that support healthful eating and physical activity at the community level.
  - The Wisconsin Medical Society encourages all physicians in the state to help patients maintain or achieve a healthy body weight by using the body mass index (BMI) for adults and BMI-for-age for children (ages 2-20) to assess overweight and obesity. For adults with BMIs less than 35, assessment should also include tape measurement of waist circumference.

## Policies and Legislative Acts Affecting Nutrition and Physical Activity

This performance measure requires states to provide evidence of nutrition and physical activity policies, legislative acts, and/or environmental supports at the state or community level that were initiated (introduced), modified, or enforced (enacted) for the prevention and control of obesity and other chronic diseases. This section discusses policies and legislative acts, and the next section will address environmental supports.

Policies affecting nutrition and physical activity are laws, regulations, formal/informal rules and understandings that are adopted collectively to guide individual and collective behavior, making healthful choices easier and more likely to be sustained. Legislative acts affecting nutrition and physical activity can be defined as formal legal actions taken by local or state governments to support the health-promoting behavior of individuals and/or organizations. There were 61 policies and legislative acts across 20 states during the reporting period of July 1 through December 31, 2005 (See Table 4 in Appendix B for a complete list, with descriptions).

Policies and legislative acts targeting schools were most common; 36 were reported across 17 states. A large number (69%) involved nutrition—e.g., establishing statewide standards in schools, restricting access to unhealthful foods by removing vending machines or limiting portion sizes in vending products, and regulating the types of food sold at school sporting events and through school fund raisers. Other school nutrition policies and legislative acts included not using food as a reward and increasing the availability of drinking water.

Sixty-nine percent of reported policies and legislative acts involved physical activity alone or in addition to nutrition—this is why the percentages indicated for nutrition and physical activity policies and legislative acts will not add up to 100 percent—including more opportunities for physical activity as well as standards for the number of days per week and the number of minutes per period of physical education. Other physical activity policies or legislative acts involved providing safe routes to school and encouraging students to walk or ride their bikes to school.

Four states reported five community-based policies and legislative acts. They included encouraging physical activity and healthful nutrition policy and environmental changes at the local level, providing guidelines for treating adult obesity in clinical settings, integrating the 5-2-1 message into community settings, and allowing mothers to breastfeed their children in any location, public or private, where they are authorized to be.

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### *Examples\* of new or modified school policies:*

- *Establishing nutritional standards*
  - *Removing vending machines*
  - *Paying attention to portion size*
  - *Increasing the availability of drinking water*
  - *Promoting walking to school*
  - *No longer using food as a reward*
  - *Regulating food during school activities*
- 

*\*See Table 4 in Appendix B for details*

Nine policies and legislative acts across six states involved worksites. These included encouraging physical activity through fitness programs, addressing staff wellness needs, providing worksite wellness training, developing breastfeeding-friendly working environments, providing for healthful foods during work-related meetings, and providing tax incentives to employers who promote employee fitness.

Fourteen policies and legislative acts across eight states involved statewide policies, including the creation of obesity prevention programs; supporting, permitting, and protecting breastfeeding mothers from discrimination in public places; revising state bicycle and pedestrian policies; and encouraging physicians to inspire and support patients who want to adopt healthful lifestyles.

---

*Examples\* of new or modified worksite policies:*

- *Breastfeeding friendly policies*
  - *Fitness challenge*
  - *Addressing staff wellness needs*
  - *Providing healthful foods during meetings*
  - *Worksite wellness training*
  - *Peer physical activity program*
- 

## **Environmental Changes Affecting Nutrition and Physical Activity**

Environmental changes involve altering or controlling the legal, social, economic, and physical environment. Thirty-three environmental changes across 12 states were reported for July 1–December 31, 2005 (See Table 5 in Appendix B for a complete list, with descriptions).

Seventy percent of environmental changes were aimed at physical activity. A large portion of these included developing trails and sidewalks to make walking and biking safer and more accessible. For example, the Arkansas River Trails project is creating 24 miles of trails that will link to a 225-mile wilderness trail as well as a pedestrian bridge across a nearby river. States also reported environmental changes such as building areas for sports. A new softball field at a middle school in Jefferson County, Florida, for example, will provide a place for the girl's softball team to practice as well as for physical education classes; in addition, community members will be able to use the field after school hours.

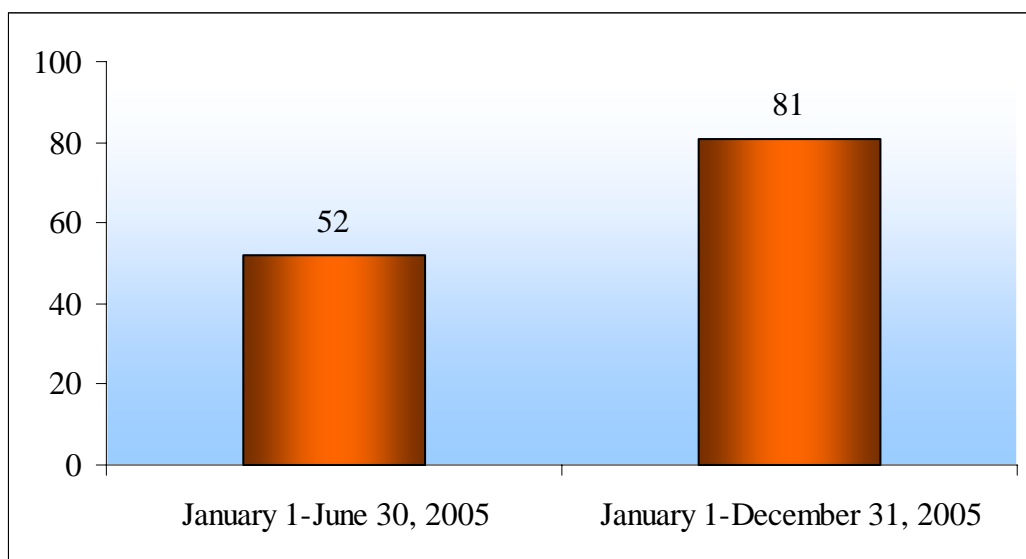
Environmental changes aimed at nutrition included changing a school breakfast and lunch program to include more locally grown foods, replacing soda vending machines with water/sports drink machines, developing community gardens, and implementing local farmers' markets. For example, the Ingham County (Michigan) Health Department developed a farmers' market and community garden that accepts food stamps.

## Interventions

This performance measure requires states to show how at least one community has implemented a nutrition and physical activity plan for the prevention and control of obesity and other chronic diseases (see Appendix A for a detailed definition of an intervention). Results in this area are promising. A majority of states have implemented multiple nutrition and physical activity interventions aimed at preventing and controlling obesity and other chronic diseases in a variety of settings and through societal-level change.

Eighty-one interventions were reported over 21 states, a dramatic increase over previous reporting periods; from January 1 through June 30, 2005, 52 interventions across 16 states were reported. (See Table 6 in Appendix B for a complete list of state interventions, with descriptions.)

**Figure 2. Number of Interventions Reported by 28 States over Time**



## Multilevel, Multicomponent Interventions

Multilevel, multicomponent interventions involve more than one level of the Social-Ecological Model (see Figure 1) as well as more than one key Program strategy. During the reporting period, 20 funded states (Arkansas, Colorado, Florida, Georgia, Iowa, Maine, Massachusetts, Michigan, Missouri, Montana, New York, North Carolina, Oregon, Pennsylvania, South Carolina, South Dakota, Texas, Washington, West Virginia, and Wisconsin) reported a total of 44 multilevel, multicomponent .

One example is Pennsylvania's Keystone Healthy Zone (KHZ) Schools Campaign, which recognizes schools that create environments promoting healthful nutrition and physical activity. The KHZ Campaign incorporates all levels of the Social-Ecological Model as well as the key strategies of: increasing physical activity and fruit and vegetable consumption, promoting caloric balance, and reducing TV viewing. Specific activities during the reporting period included:

- Awarding 100 KHZ mini-grants,

*Based on information summarizing activities from July 1 to December 31, 2005.*

*This report is also available at <http://www.cdc.gov/obesity>.*

- Conducting School Wellness Policies and School Health Councils Training, and
- Holding two KHZ promotional Enter the Zone events: Walk to School Day, and the Great PA Apple Crunch.

More than half the funded states have implemented interventions that involve more than one key strategy as well as more than one level of the Social-Ecological Model, a good indication that these states are developing and implementing broad-based interventions. A large proportion of these interventions focus on increasing physical activity and fruit and vegetable consumption as ways to balance caloric intake and expenditure. The following summarizes how the 44 multilevel, multicomponent interventions addressed the Social-Ecological Model and what key strategies they used.

- Levels of the Social-Ecological Model addressed by these interventions:
  - Societal, 16 interventions
  - Community, 27 interventions
  - Organizational, 38 interventions
  - Interpersonal, 32 interventions
  - Individual, 41 interventions
- Key strategies addressed by these interventions:
  - Physical activity, 37 interventions
  - Fruit and vegetable consumption, 40 interventions
  - Breastfeeding, 9 interventions
  - Sweetened beverage, 11 interventions
  - Portion size, 18 interventions
  - TV viewing, 15 interventions

### **Washington Active Bodies Active Minds**

*Washington Active Bodies Active Minds (WAABAM) provides online resources that professionals and families can use to help limit screen time and encourage physical activity for preschool children. WAABAM presents several field-tested television reduction materials, including Healthy Habits, a collection of resources promoting active and healthy habits for children and families, developed in collaboration with the state WIC program; ClickIt!, a television reduction kit for early childhood educators; and Making the Healthy Choice the Easy Choice, a manual to train childcare providers to develop screen-time policies and encourage families to do the same.*

Reducing TV viewing to help prevent and control obesity and other chronic diseases is an important strategy. Of the 44 multilevel, multicomponent interventions, 15 use this strategy. Six of the seven basic implementation states (Colorado, Massachusetts, New York, North Carolina, Oregon, and Pennsylvania) as well as three capacity-building states (Florida, Missouri, and South Dakota) include this as part of a multilevel, multicomponent intervention.

## Nutrition Interventions and Early Outcomes

Sixty of the 81 interventions included in this reporting period had a nutrition component. Fifteen resulted in a policy change, 22 resulted in an environmental change, and 42 involved other promising strategies (increasing fruit and vegetable consumption for weight management, reducing sweetened beverages, and increasing attention to portion size.)

The Agency for Healthcare Research and Quality (AHRQ) determined that the following intervention characteristics are beneficial for nutrition interventions that target individual behavior change: interactive activities with food (delivery of the intervention is provided through individual participation with food), social support (interpersonal relationships are used to help individuals adopt or maintain good dietary behaviors), and goal setting (individuals determine dietary, nutrition, and/or weight goals and, if applicable, monitor their progress and goal attainment). Of 26 interventions targeting individual behavior change, 21 involved interactive activities with food. One example is Iowa's Fit for Life Intervention, which gave students the chance to taste fruit and vegetables through the Pick a Better Snack and Act curriculum. (Table 7 in Appendix B, describes how each of these 21 interventions incorporated activities with food.)

### **Kentucky's VERB Summer Scorecard**

*In Lexington, Kentucky, the local Tweens Nutrition and Fitness Coalition, led by the Lexington-Fayette County Health Department, used elements of CDC's national VERB media campaign to create the VERB Summer Scorecard. This community-based prevention marketing program works with businesses, faith-based groups, and public organizations to encourage physical activity among children ages 9-13 through free or reduced-price activities – e.g., free dances at libraries, swimming at public pools, black-light volleyball at the YMCA, and two-for-one roller skating. The scorecard is the ticket into these events. Now in its third year, the VERB Scorecard program is being implemented in Lexington as well as 10 other cities in Kentucky. Summer Scorecard programs will also operate in 2006 in several communities in Florida, Nebraska, and Colorado. In addition, the Tweens Coalition in Lexington has partnered with the local YMCA to offer a nearly year-round program for 6<sup>th</sup> graders that includes monthly physical activity events.*



Children participate in a VERB Summer Scorecard event in Lexington, Kentucky.

## Physical Activity Interventions

Sixty-five (80%) of the 81 interventions in this reporting period had a physical activity component. States are asked to incorporate any of the CDC recommended strategies in *Increasing Physical Activity: A Report on Recommendations of the Task Force on Community Preventive Services*. These strategies include:

- Community-wide campaigns
- Individually adapted health behavior change programs

- School-based physical activity
- Social support interventions in community settings
- Creation of or enhanced access to places for physical activity combined with informational outreach activities
- Point-of-decision prompts
- Community-scale urban design and land use policies and practices

Forty-six interventions used one or more of these strategies. For example, West Virginia's Mannington Main Street Trail Project involved the creation of or enhanced access to places for physical activity, combined with informational outreach activities as well as street-scale urban design and land-use policies and practices.

## Reach and Adoption

Reach is one dimension of the RE-AIM framework, developed by Glasgow, Vogt, and Boles (1999), for evaluating the public health impact of health promotion interventions. Reach refers to the “percentage and risk characteristics of persons who receive or are affected by” an intervention (Glasgow et al., 1999, p. 1323), and can be defined as the absolute number, proportion, and representativeness of individuals willing to participate in a given intervention. Adoption, on the other hand, refers to “proportion and representativeness of settings that adopt a given policy or program” (Glasgow et al., 1999, p. 1323). Funded states' interventions have been adopted across many different settings and are reaching a large and diverse population. Below is a summary of the type and number of settings adopted, and the number of individuals reached. (See Table 8 in Appendix B for complete information.)

- Community-wide: 24 interventions across 11 states (Florida, Iowa, Kentucky, Massachusetts, Missouri, North Carolina, Pennsylvania, South Dakota, Texas, Washington, West Virginia) were adopted by 154 communities, reaching 4,372,213 people.
- Schools/Youth Programs: 15 interventions across 12 states (Colorado, Florida, Iowa, Kentucky, Maine, Massachusetts, New York, North Carolina, Pennsylvania, South Carolina, West Virginia, Wisconsin) were adopted by 3,431 schools/youth programs, reaching 804,811 people.
- Worksites: 15 interventions across 11 states (Arkansas, Colorado, Florida, Georgia, Missouri, North Carolina, Oregon, Pennsylvania, South Dakota, Texas, Washington) were adopted by 483 worksites, reaching 36,329 people.
- Families: One intervention in New York was adopted by 150 settings.
- Clinical settings (e.g., hospitals, health facilities, WIC agencies): Seven interventions across five states (Colorado, Massachusetts, South Dakota, Texas, Washington) were adopted by 55 clinical settings, reaching 3,484 people.
- Places of worship: Three interventions across three states (Florida, Michigan, North Carolina) were adopted by 148 places of worship, reaching 331 people.

- Childcare Centers/Preschools: 10 interventions across seven states (Colorado, Florida, New York, North Carolina, Pennsylvania, South Carolina, Washington) were adopted by approximately 405 childcare centers/preschools, reaching 31,610 people.

## Intervention Outcomes

One program performance measure requires states to provide evidence of outcomes or impacts from at least one intervention that evaluates nutrition and physical activity strategies to prevent and control obesity and other chronic diseases. Overall, state efforts in this area are promising.

In general, outcome measures refer to the results, impacts, or effects of an intervention. For purposes of this report, distal outcomes involve changes in BMI and BMI-for-age; proximal outcomes involve changes in policy, the environment, and behavior, which can provide early evidence of intervention effects.

- BMI changes typically involve improvement in the BMI of adults.
- BMI-for-age changes refer to improvement in BMI for children (in accordance with CDC growth charts).
- Policy and legislative changes involve the initiation (introduction), modification, or enforcement (enactment) of policies, legislative acts, local ordinances (e.g., formal legal actions taken by a local government), or standards (e.g., changes made by non-legislators).
- Environmental changes result from interventions that alter or control the legal, social, economic, and physical environment related to nutrition and physical activity.
- Behavior changes simply involve alterations in target behaviors (e.g., physical activity, fruits and vegetable consumption, TV viewing) among a target population.

### **South Dakota's Use of PedNSS**

*CDC's Pediatric Nutrition Surveillance System (PedNSS) was designed to monitor the nutritional status of low-income infants, children, and women in federally funded maternal and child health programs. But since the 1998-1999 school year, the South Dakota departments of health and education have also used PedNSS to analyze the height and weight (BMI for age) of children and adolescents from a growing number of schools that volunteer to participate. (In 2004-2005, data were collected from more than a quarter of South Dakota's students.) First, anthropometry-trained schools collect the data and submit it to the state; schools in need are provided with scales, measuring boards, and anthropometry training. South Dakota then sends the data to CDC for analysis and later publishes the results in an annual report that identifies trends in overweight and obesity among different ages, ethnicities, and regions of the state. The state also sends each participating school and school district an individually tailored report on their student bodies.*

It is important to note that BMI and BMI-for-age changes, as well as behavior changes, tend to be directly related to a particular intervention, whereas policy changes attributable to the state program may or may not be direct results of only one intervention. Environmental changes may be part of or result from an intervention.



## Behavioral Intervention Outcomes

Although states are implementing many interventions, outcome data is not yet available. Many of the states are early in the intervention process, collecting formative and baseline data, and identifying outcome indicators. Outcome indicators have been identified for 16 interventions across 10 states, an increase from the previous reporting period, in which nine interventions across six states had outcome indicators identified. (Table 9 in Appendix B shows indicators for this reporting period.) For interventions with no outcomes identified yet, the types of behaviors they target can indicate the outcomes to be expected.

States were asked which of the following behaviors each of their interventions specifically addresses: increased breastfeeding, increased fruit and vegetable consumption, promotion of caloric balance, increased physical activity, and reduced TV viewing. (Table 10 in Appendix B shows the types of behaviors targeted by interventions for this reporting period.) A large proportion of interventions aim to increase physical activity (69%) and fruit and vegetable consumption (65%). About half (49%) focus on promoting caloric balance and less than one quarter aim to reduce TV-viewing time (22%). Increased breastfeeding is targeted by 15 percent of interventions reported.

**Health and Fitness by Age 5** is an environmental-change intervention in four Head Start childcare centers that together serve approximately 160 children in Arbor Hill, a primarily African American inner-city neighborhood in Albany, New York. The program aims to increase school-day physical activity and decrease television viewing at home among low-income preschoolers – a group at high risk for overweight and associated behaviors. The program also works to include families and childcare staff in these efforts. Head Start teachers have implemented the Sports, Play and Active Recreation for Kids Early Childhood (SPARK EC) curriculum, an important part of which is a 20-piece gross motor play equipment set and a six-piece CD package that teachers use to guide their lessons. The intervention also includes the seven-week Fit 5 Kids Reduction of TV Viewing preschool curriculum, which concluded with the National TV-Turnoff Week in late April 2006. Health and Fitness by Age 5 will complete its second year in June 2006.

## Policy Intervention Outcomes

States were asked to report on policies that involved breastfeeding at work as well as those resulting from nutrition interventions that did not target individual behavior change. Two states reported policies for women who work, which resulted from four breastfeeding interventions. Ten states reported a total of 12 policies that resulted from nutrition interventions. (See Table 11 in Appendix B for complete information.)

## Environmental Change Intervention Outcomes

States were also asked to report on two types of environmental changes resulting from physical activity interventions: community-scale urban design and land use, and street-scale urban design and land use. Four interventions across three states resulted in both community-scale and street-scale environmental changes. States were also asked to report on the creation or modification of the physical environment resulting from nutrition interventions that do not target individual behavior change. Twenty-one environmental changes across 12 states resulted from these interventions. (See Table 12 in Appendix B for complete information.)

## Coordination and Inclusion of Relevant Partners

Collective action among all sectors of society is necessary to reverse the epidemic of obesity. Thus, another program performance measure requires states to show that they have a quality, comprehensive nutrition and physical activity plan to prevent and control obesity and other chronic diseases that promotes coordination of activities across all relevant state and community programs, in which relevant partners are identified in substantive roles. States have been quite successful in coordinating and including relevant partnerships with a variety of important organizations.

### Types and Contributions of Critical Partners

Each state was asked to provide its three most important partners in the areas of health care; private-sector business; organizations focusing on health disparities; and universities, medical schools, or schools of public health. They were also asked to indicate how each of these partners contributed to the state plan or program within the last six months. The following is a summary of those responses.

#### *Health Care Partners*

All but one state indicated partnerships with a variety of health care organizations, including regional and/or national medical, nurses, and pediatric associations; coalitions and foundations; health insurance companies; and local medical centers, clinics, and hospitals. For example, Colorado has partnered with the Colorado Community Health Network, the Colorado Academy of Family Physicians, and the Colorado Medical Society. Rhode Island has partnered with Hasbro Children's Hospital, United Health Care of New England, and the American Academy of Pediatrics. Overall, state health care partners have contributed to state efforts in the following ways:

- Participated in planning (93%)
- Assisted in implementing an intervention (35%)
- Cosponsored event (28%)
- Provided monetary support (19%)

#### *Private-Sector Business Partners*

Twenty-six states reported national and/or local private-sector business partners. For example, Arkansas has partnered with Gerber, Eli Lilly and Company, and Pfizer. Pennsylvania has partnered with Kegel's Produce, Giant Foods, and Kellogg's. Kentucky has partnered with MSE and Associates, Yum! Brands Incorporated, and UAW Ford Health Initiative. Overall, state private-sector business partners have contributed to state efforts in the following ways:

- Participated in planning (82%)
- Assisted in implementing an intervention (46%)
- Cosponsored event (35%)
- Provided monetary support (18%)

### *Organizations Focusing on Health Disparities*

All 28 states reported partnering with organizations that focus on health disparities. For example, Florida has partnered with the Center for Haitian Studies, the Florida Department of Elder Affairs, and the state Office of Minority Health. Oklahoma has partnered with the Latino Community Development Agency, the Oklahoma Native American REACH 2010 project, and the OKC Area Inter-Tribal Health Board. Oregon has partnered with the African American Health Coalition, Seniors and People with Disabilities, and Women, Infants and Children (WIC). Overall, organizations focusing on health disparities contributed to state efforts in the following ways:

- Participated in planning (94%)
- Assisted in implementing an intervention (38%)
- Cosponsored event (25%)
- Provided monetary support (8%)

### *Universities, Medical Schools, or Schools of Public Health Partners*

All 28 states reported partnerships with universities, medical schools, and/or schools of public health. For example, Maryland has partnered with the Johns Hopkins Bloomberg School of Public Health, the University of Maryland School of Public Health, and Morgan State University. Pennsylvania has partnered with Pennsylvania State University, the University of Pennsylvania, and the University of Pittsburgh. Washington has partnered with the University of Washington, Washington State University, and Seattle Pacific University. Overall, these universities, medical schools, or schools of public health contributed to state efforts in the following ways:

- Participated in planning (96%)
- Assisted in implementing an intervention (45%)
- Cosponsored event (26%)
- Provided monetary support (8%)

### **Champion Partners**

States were asked to provide information on champion partner organizations that have helped their obesity prevention and control programs. A majority of states reported partnering with one or more of these organizations. One such partner was the University of Michigan Health System's Program for Multicultural Health, which has helped the state plan culturally sensitive nutrition and physical activity interventions. Another champion is the Missouri Child Care Division, which helped Missouri develop and test an environment and policy assessment tool for childcare centers. The Oregon Public Employee Benefits Board provided assistance and resources for Oregon's Healthy Worksites intervention, offering health-risk appraisals and health screenings to employees in participating state agencies.

## Evidence of Strategic Planning Activities

The final program performance measure requires states to provide evidence of strategic planning activities to develop a quality, comprehensive state nutrition and physical activity plan to prevent and control obesity and other chronic diseases. Overall, as states have developed their plans, they have creatively assessed existing obesity prevention and control efforts, gaps in service and opportunities for additional service, and barriers to service.

### Development of State Plans

As part of the cooperative agreement, states were required to develop a nutrition and physical activity plan to prevent and control obesity and other chronic diseases. Two of the three states that received initial funding in FY 2000 have state plans completed and in effect. Three of the four states initially funded in FY 2001 and more than half initially funded in FY 2003 have state plans that are complete and in effect. A majority of states initially funded in FY 2004 are still working on their state plan drafts; two have completed plans in effect. (See Table 3 in Appendix B for information on each state's plan.)

As they develop their plans, states need to reduce potential overlap with other programs aimed at preventing and controlling obesity. They also need to be aware of potential service gaps, opportunities for additional service, and potential barriers to service. Many states have used partnerships to assess existing efforts. An Iowa State University health promotion class helped state program planners by developing a database of existing nutrition and physical activity opportunities in the state. Other states have used web-based surveys or telephone interviews to capture existing efforts. Maryland conducted an online survey to gather baseline data on healthful eating and physical activity interventions underway across the state. Other states have held forums and meetings. West Virginia invited stakeholders from the Department of Education, the Division of Tobacco Prevention, the Physical Activity and Nutrition Program, and others to participate in roundtable discussions on current obesity prevention and control efforts. (Table 13 in Appendix B describes how all states assessed existing obesity prevention and control efforts.)

Many states reported that potential gaps were identified during forums, focus groups, and meetings with current and potential partners. For instance, Vermont conducted focus groups with consumers to identify needs and gaps in nutrition education. Some states are relying on other surveillance systems to identify gaps. Rhode Island looked at previous STEPS strategic planning process documentation that identified gaps in services and opportunities for additional services at local, community, and school levels in three of RI's core cities. Other states have used surveys to collect information on potential gaps. For example, Montana surveyed hospitals on breastfeeding policies and practices. (Table 14 in Appendix B shows how all states determined potential gaps in service and/or opportunities for additional service.)

Many states have met with stakeholders to assess potential barriers to service. For instance, Illinois met with a variety of organizations, including the Department of Human Services WIC, the Seniors Farmer's Market Nutrition Program, the Consortium to Lower Obesity in Chicago Children, to discuss using the Greater Chicago Food Depository's "ProduceMobile" as a statewide model. Elsewhere, Montana identified key informants interviewed on American Indian reservations had helped identify this barrier to service: Frequently, parents do not participate in classes or other events that offer information on the nutrition and physical activity

needs of children. In response, Montana organized conference calls and follow-up telephone interviews with stakeholders to propose and consider solutions. (Table 15 in Appendix B shows how states assessed potential barriers to service.)

## References

- Agency for Healthcare Research and Quality. *Efficacy of Interventions To Modify Dietary Behavior Related to Cancer Risk*. Summary, Evidence Report/Technology Assessment: Number 25. AHRQ Publication No. 01-E028, November 2000. Rockville, MD.  
<http://www.ahrq.gov/clinic/epcsums/dietsumm.htm>
- Centers for Disease Control and Prevention. *Increasing Physical Activity: A Report on Recommendations of the Task Force on Community Preventive Services*. *Morbidity and Mortality Weekly Reports* 2001, 50(RR-18): 1-16, 2001.  
<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5018a1.htm>
- Glasgow, R. E., Vogt, T. M., & Boles, S. M. (1999). Evaluating the public health impact of health promotion interventions: the RE-AIM framework. *American Journal of Public Health*, 89, 1322-1327.