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The Nutrition and Physical Activity Program to Prevent Obesity and Other Chronic Diseases: Monitoring Progress in Funded States

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Abstract

To help address the challenges posed by the obesity epidemic in the United States, the U.S. Congress authorized the Centers for Disease Control and Prevention to establish the Nutrition and Physical Activity Program to Prevent Obesity and Other Chronic Diseases. In this article, we summarize the progress of the first 20 states funded by this program. The data presented are based on the information provided by the states in their semiannual progress monitoring reports on program activities from January through June 2004. The states have made progress in developing capacity and infrastructure for their programs, including leveraging financial resources and developing strong partnerships. In addition, they are planning and initiating environmental changes through legislation, and, although less frequently, through policies and other changes such as expanding physical activity opportunities. Collectively, the states are making progress in planning and implementing activities to prevent and control obesity and other chronic diseases.

Introduction

In the past decade, the United States has experienced a dramatic increase in the prevalence of obesity and overweight. According to self-reported weights and heights, all states had obesity rates of less than 20% for adults in 1991 (1). In 2003, the Behavioral Risk Factor Surveillance System revealed that 31 states had adult obesity rates of 20% to 24%, and four states had obesity rates of 25% or greater (1). Rates of overweight among children have also increased at an alarmingly rapid pace. Results from the 1999–2002 National Health and Nutrition Examination Survey (NHANES) showed that more than 10% of children aged between 2 and 5 years were overweight during 1999 through 2002 (2). In addition, approximately 16% of children and adolescents aged 6 to 19 years were overweight (3), which is a 5 percentage point increase in prevalence from 1988 through 1994, when 11% of children and adolescents in this age group were overweight (4).

According to a study of national costs attributed to overweight (body mass index [BMI] = 25–29.9) and obesity (BMI ≥30), the related medical expenses accounted for 9.1% of the total U.S. medical expenditures in 1998 and may have been as high as $78.5 billion (5). The increasing prevalence in obesity among the U.S. population places a financial strain on individual states. For instance, a 2004 study (6) found that total state expenditures on obesity-related medical expenditures were approximately $75 billion, excluding costs related to absenteeism and loss of productivity (Figure 1). The Centers for Disease Control

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and Prevention's (CDC's) Nutrition and Physical Activity Program to Prevent Obesity and Other Chronic Diseases currently funds 3 of the 4 states (75%) that have the highest total obesity costs in the United States and 8 of 11 states (73%) with total obesity costs greater than $2 million. The state-level estimates can help state policy makers determine how best to allocate public health resources to address obesity prevention and control in partnership with public and private stakeholders throughout their states.

Established in 1999, the CDC Nutrition and Physical Activity Program to Prevent Obesity and Other Chronic Diseases was designed to help states prevent obesity and other chronic diseases by addressing two closely related factors — poor nutrition and inadequate physical activity. The program incorporates five evidence-based strategies, including balancing caloric intake and expenditure, increasing physical activity, increasing the consumption of fruits and vegetables, decreasing television-viewing time, and increasing breastfeeding.

States receive funding at two different levels: capacity building and basic implementation. Capacity-building states are expected to gather data, build partnerships, and create statewide health plans, which are critical steps that must be completed before implementing nutrition and physical activity interventions. To receive basic implementation funding, capacity-building states must implement a nutrition and physical activity intervention that addresses at least two levels of the social–ecological model. The social–ecological model is based on the premise that changes in individual behavior will come about through a combination of societal, community, organizational, interpersonal, and individual efforts (7,8). Basic-implementation states have begun to develop new and sustainable interventions, evaluate existing interventions, support additional state and local efforts to prevent obesity and other chronic diseases, or all of these.

In 2004, 20 states received funding by the Nutrition and Physical Activity Program to Prevent Obesity and Other Chronic Diseases: 17 states each received $300,000 to $450,000 for capacity building. Three states each received $800,000 to $1.5 million for basic implementation. In this article, we present an overview of the progress of the 20 states through June 2004. (Currently, there are 28 funded states: 23 capacity-building states and 5 basic-implementation states.)

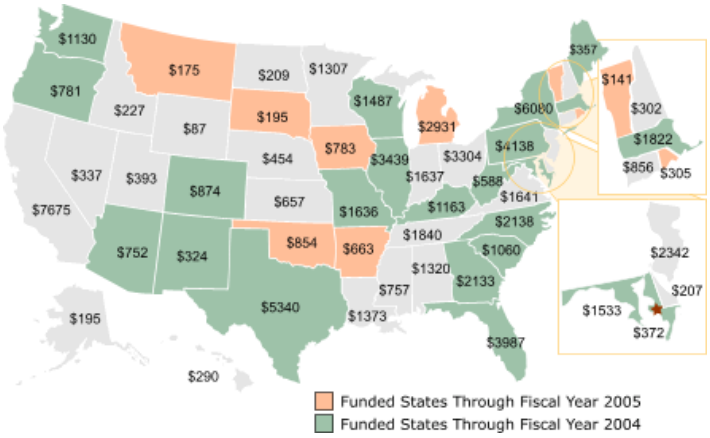

Figure 1. Funded states and state-level estimates of annual medical expenditures attributable to obesity (2003 dollars, in millions). The states funded through 2004 are the 20 states addressed in this article. Source: Adapted from Finkelstein EA et al (5).

States submit semiannual progress reports to the CDC and address their program infrastructure, collaborations, implementation, and evaluation. The Division of Nutrition and Physical Activity uses the reports for program management and program improvement. This article includes information provided by the states in their December 2004 semiannual reports, which included activities from January 1 through June 30, 2004. Because states have received funds for varying lengths of time, their progress varies, with some in the planning stages for statewide obesity prevention and control programs and some implementing the interventions. Ongoing activities could include activities initiated before January 1, 2004.

Findings

The 20 funded states have made progress in three key areas: 1) capacity building, 2) environmental change, and 3) interventions. *Capacity building* includes forging partnerships and leveraging financial resources. *Environmental changes* are environmental modifications that create a health-promoting environment, such as public policies, legislative acts, an increase in access to healthy foods, urban planning, and other efforts. *Interventions* are activities developed by funded states that focus on the program's five evidence-based strategies.

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Capacity building

In the early stages of a program, developing capacity and infrastructure is a fundamental activity. Hiring staff members, gathering data, building partnerships, and creating statewide health plans enable states to marshal broad-based support for their programs.

Developing partnerships

A key aspect of capacity building involves establishing collaborative relationships with partners from state and local governments and the private sector. States have formed numerous partnerships with governmental organizations, health care organizations (e.g., state departments of transportation, local health departments, the American Academy of Family Physicians), volunteer agencies (e.g., the YMCA, the American Heart Association), universities, organizations that address health disparities (e.g., the Indian Health Service), private companies (e.g., Nike), and other types of organizations (e.g., the National Guard). Each state reported that it had many partners, ranging from 17 to 36 partners per state (median = 26). The instructions for the progress monitoring reports specified that states list only the three most important partners for each of several types of partner organizations, so each state may have had more partners than indicated in its reports.

As part of the progress monitoring reports, the states were asked to indicate how each partner had contributed to the state plan or program during the previous 6 months. The answers indicated that every state had partners that participated in planning activities. In addition, most states (18 states, or 90%) had partners that contributed staff time, cosponsored obesity-prevention events (16 states, or 80%), and implemented interventions (14 states, or 70%). (The interventions that were implemented with partners did not necessarily meet the program's operational definition of an intervention. Furthermore, some of the interventions implemented by capacity-building states may not have qualified the state for basic-implementation funding status. For example, the interventions may have been activities in which the partner took the lead role but collaborated with the state program.) Ten (50%) of the states had partners that contributed funds.

Leveraging financial resources

States have been able to leverage additional federal and state program funds to increase the financial resources that support their activities. The majority of states (15, or 75%) have obtained, appropriated, or reallocated funds from outside their cooperative agreements for nutrition and physical activity programs. The states have primarily leveraged funds from state programs (10 states, or 50%) or federal programs other than the CDC (7 states, or 35%). Although less common, some states have leveraged funds from foundation grants (2 states, or 10%) and private businesses (2 states, or 10%).

The amount of funding that states leveraged varied considerably, ranging from no funding to more than $1 million. Five states (25%) had no leveraged funding, four states (20%) had less than $100,000 in leveraged funding, seven states (35%) had $100,000 to $499,000 in leveraged funding, and four states (20%) had $1 million or more in leveraged funding. Funding was acquired for planning and programs (13 states, or 65%), building infrastructure (9 states, or 45%), and evaluation and surveillance activities (8 states, or 40%).

Environmental changes

One hallmark of the program has been the states' effectiveness in stimulating changes to physical and social environments to make them more conducive to health promotion. In the progress monitoring report, states were asked to describe the policies, legislative acts, or environmental changes that they initiated, modified, or planned as a result of the state planning process during the previous 6 months. They were instructed not to report the same environmental change in more than one of the categories. Twelve states described a policy, a legislative change, or an environmental change.

Policies

Policies for promoting public health change involve organizational statements or general rules designed to facilitate healthy lifestyle choices. In other words, health promotion policies are an attempt to produce healthy behaviors that are likely to be sustained. Most states are in the initial stages of developing and implementing policies that support environmental changes related to nutrition and physical activity. As shown in

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Figure 2, six states (30%) reported initiating policies related to nutrition and physical activity in the previous 6 months. Policies that promote nutrition and physical activity in schools were the most commonly reported and planned policy changes.

Legislative acts

Legislative acts are strategies that involve creating laws supporting the health-promoting behavior of individuals, organizations, or both. Almost half of the states (45%) reported initiating, modifying, or enforcing legislative acts related to nutrition and physical activity in the previous 6 months. Several legislative acts focused on improving nutrition and increasing physical activity in schools. For example, seven states (35%) reported legislation that would set standards for foods available and sold in schools, eliminate soft drinks from school vending machines, or require school districts to incorporate daily physical activity into their curricula. Other legislation focused on research, establishing new programs within state departments of health to study obesity-related issues, and providing insurance coverage for health services to improve nutrition and prevent obesity.

Other environmental changes

Other environmental changes are interventions that alter or control the legal, social, economic, and physical environment related to nutrition and physical activity. Examples include Rails-to-Trails programs, closing a dangerous street near a school, and zoning and planning for parks and other recreation areas. Three states (15%) reported initiating other environmental changes in the previous 6 months. Environmental changes primarily focused on improving access to physical activity opportunities and healthy foods through new walking trails, community gardens, changes to the school cafeteria menu, and changes in school vending machine options.

Interventions

The program considers health promotion interventions to be a series of activities designed to change or influence existing behaviors or practices related to obesity, nutrition, and physical activity. As part of the progress monitoring report, the states were asked how many interventions they had in place at the time of the report. The states were instructed to include pilot projects, interventions with funds from the Nutrition and Physical Activity Program to Prevent Obesity and Other Chronic Diseases, and interventions based on the program's concepts. The states indicated that they were in various stages of developing and implementing interventions to prevent obesity and other chronic diseases, perhaps reflecting the varying periods of time over which the 20 states included in this article were funded. (Although all 20 states received funding by July 2003, some initially received funds through a previous cooperative agreement and continued to be funded.) Eleven of the 20 states (55%) reported having interventions in place in the past 6 months.

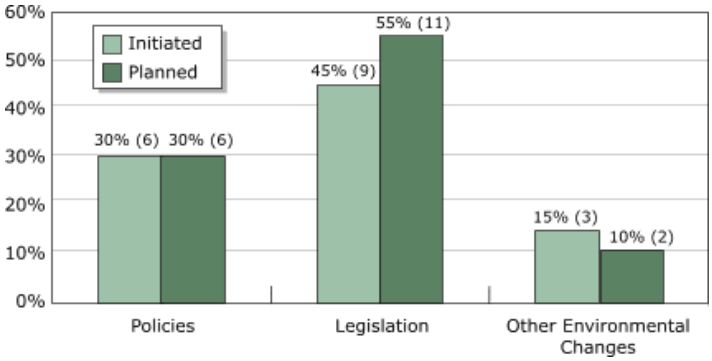

Figure 2. Percentage of states reporting environmental changes through policies, legislation, and other methods. Data are based on December 2004 progress reports from the 20 state programs and reflect environmental changes that were initiated and planned between January and June 2004. *Other environmental changes* are strategies other than policies and legislation, such as urban planning, that alter or control the legal, social, economic, and physical environment affecting nutrition and physical activity.

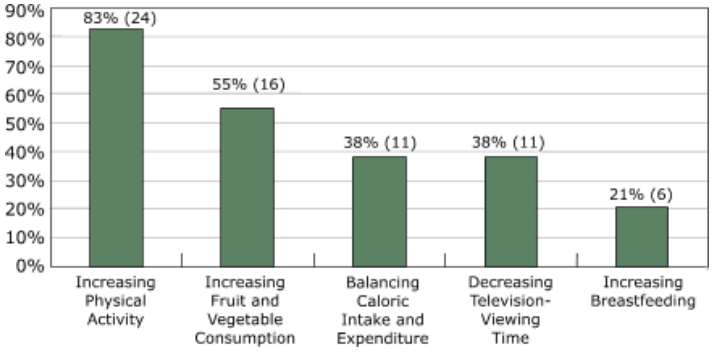

Figure 3. Percentage of interventions incorporating key evidence-based strategies. Percentages were calculated based on 29 active interventions from January through June 2004. Because some interventions incorporated multiple strategies, totals across all columns exceed 100%.

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Strategies

As mentioned previously, the CDC's Division of Nutrition and Physical Activity identified five strategies that states can use to focus their program interventions. Increased physical activity was the most frequently used strategy, followed by increasing fruit and vegetable consumption (Figure 3). Promoting caloric balance, decreasing television-viewing time, and increasing breastfeeding were used less frequently. Most interventions (17 of 29 interventions, or 59%) incorporated multiple strategies.

Settings

The most frequently reported intervention setting was the school setting (12 of 29 interventions, or 41%), and the second most frequently reported intervention setting was the community (7 interventions, or 24%). Childcare centers (6 interventions, or 21%) and worksites (4 interventions, or 14%) were also popular settings. A few interventions took place in a family setting (3 interventions, or 10%) and in health care or hospital settings (2 interventions, or 7%). Eleven interventions (38%) involved settings such as youth programs, early childhood education programs, a recreation center, and a religious setting. These settings reflect the target populations; the majority of states focused their interventions on children.

Implications

Infrastructure

The funded states have numerous partners planning, donating staff time, implementing interventions, and cosponsoring events; half of the states have partners contributing money. The majority of the states have obtained, appropriated, or reallocated funds from outside their cooperative agreements for nutrition and physical activity programs, primarily from state and federal programs, with leveraged funding amounts ranging from no funding to more than $1 million. The majority of states leveraged money for planning and programs.

Environmental changes

The funded states are implementing environmental changes, most frequently through legislation. Polices and other environmental changes such as urban planning are also being used, although less frequently.

Interventions

More than half of the states reported having interventions in place from January through June 2004. The most frequently used strategies for an intervention were increased physical activity and increased fruit and vegetable consumption. The most frequently reported settings were school systems and communities.

Conclusion

The states funded by the Nutrition and Physical Activity Program to Prevent Obesity and Other Chronic Diseases have made progress in establishing the infrastructure needed for health promotion. More than half of the states have begun implementing interventions using evidence-based strategies in various settings. Environmental modifications have the potential for creating sustainable change, so states' efforts in implementing polices and other environmental changes are particularly encouraging. The initial accomplishments of the state programs indicate that states can promote environmental and policy changes to address the challenges of obesity and other chronic diseases.

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References

1. Centers for Disease Control and Prevention. Behavioral Risk Factor Surveillance System (BRFSS). Overweight and obesity: obesity trends: U.S. obesity trends 1985-2004 [Internet]. Atlanta (GA): Centers for Disease Control and Prevention. Available from: URL: http://www.cdc.gov/nccdphp/dnpa/obesity/trend/maps/index.htm.
2. Hedley AA, Ogden CL, Johnson CL, Carroll MD, Curtin LR, Flegal KM. Prevalence of overweight and obesity among US children, adolescents, and adults, 1999-2002. JAMA 2004;291:2847-50.
3. U.S. Department of Health and Human Services. National Health and Nutrition Examination Survey 1999–2002 (NHANES). Hyattsville (MD): U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics; 2002.
4. U.S. Department of Health and Human Services. National Health and Nutrition Examination Survey 1988-1994 (NHANES). Hyattsville (MD): U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics; 1994.
5. Finkelstein EA, Fiebelkorn IC, Wang G. National medical spending attributable to overweight and obesity: How much, and who's paying? Health Aff 2003;W3:219–26.
6. Finkelstein EA, Fiebelkorn IC, Wang G. State-level estimates of annual medical expenditures attributable to obesity. Obes Res 2004;12(1):18-24.
7. Gregson J, Foerster SB, Orr R, Jones L, Benedict J, Clarke B, et al. System, environmental, and policy changes: using the social-ecological model as a framework for evaluating nutrition education and social marketing programs with low-income audiences. J Nutr Educ 2001;33 Suppl 1:S4-15.
8. McLeroy KR, Bibeau D, Steckler A, Glanz K. An ecological perspective on health promotion programs. Health Educ Q 1988;15:351-77.

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