Diabetes

For more information about CDC's diabetes program,
visit http://www.cdc.gov/diabetes/index.htm

Arkansas

Improving Diabetes Care and Supporting Program Planning and Policy Changes

Public Health Problem

In Arkansas, an estimated 235,000 adults have diabetes, and about 78,300 of them are unaware that they have the disease. For the past 9 years, the prevalence of diabetes in Arkansas had been at or above the national average of about 6.5%.

Program Example

The Arkansas Diabetes Collaborative includes community health centers and health education centers working together to improve diabetes care and outcomes. Collaborators include the Arkansas Diabetes Prevention and Control Program, the University of Arkansas Medical Sciences, and the Arkansas Foundation for Medical Care. Nine community health centers and seven area health education centers participated in the collaborative through March 2003. Data from the Cardiovascular/Diabetes Electronic Management System were used to track health care issues such as the number of A1c blood glucose tests, dental examinations, foot examinations, influenza and pneumonia vaccinations, and microalbumin tests received by people with diabetes—services that are recommended for people with diabetes to detect problems early and prevent serious complications. The data were then used to improve the health care provided to people with diabetes, to recruit other clinics to participate, and to support program planning and policy changes.

Implications and Impact

Since the collaborative began, significant improvements have been made in several areas of diabetes care and management. From December 2002 through March 2003, the number of diabetes patients seen in the participating community health centers increased from 503 to 767, and the percentage of patients receiving A1c blood glucose tests in the previous year increased from 77% to 83%. Also encouraging were increases in the percentage of diabetes patients receiving dental examinations (from 10% to 13%), eye examinations (from 16% to 18%), influenza vaccinations (from 26% to 40%), and pneumonia vaccinations (from 12% to 16%).

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Florida

Targeting Diabetes in Populations Hardest Hit by the Disease

Public Health Problem

More than 8% of Florida adults have diagnosed diabetes, data from the state's 2001 Behavioral Risk Factor Survey show, compared with about 6.5% of U.S. adults. The complications are disabling and costly. In Florida, about 16 of every 1,000 hospitalizations of people with diabetes resulted in amputation, according to 2000 data from the Agency for Health Care Administration. Moreover, 31 of every 1,000 hospitalizations that resulted in death involved people with diagnosed diabetes. The average age of patients with diabetes complications was 65 years in 2000, an increase of 2 years since 1992. However, African American and Hispanic patients hospitalized for diabetes complications have suffered from death and disability at earlier ages than people in other racial and ethnic groups.

Program Example

The Florida Diabetes Prevention and Control Program educated key decision makers about the need to allocate funds to reduce health disparities related to diabetes. More than $900,000 was allocated to six community-based Closing the Gap projects in fiscal year 2002–2003 to target diabetes in populations disproportionately affected by the disease. The Diabetes Prevention and Control Program provided the projects with guidance, technical assistance, and contract managers. National Diabetes Education Program materials were recommended for use in the community, and use of lay health advisors was the recommended community education strategy. The Florida Diabetes Medical Practice Guidelines were the recognized set of protocols for disease management and patient self-management education. Project staff have worked hard in these six communities to provide education and to raise people's awareness and knowledge about diabetes.

Implications and Impact

Program evaluations show that since the projects began, people's knowledge about diabetes has increased while their average A1c blood glucose levels have declined. For example, the Closing the Gap project in Baker County reported that A1c levels for self-management participants averaged about 9.42% initially but then dropped to an average of 7.96%. Florida has made significant progress toward achieving the goal of increasing by 10% the percentage of people with diabetes who have ever heard of the A1c blood glucose test. In fact, the percentage has increased from 22.6% in 1994–1996 to 24.9% in 2000–2001, state Behavioral Risk Factor Survey data show. During the same period, the percentage of adults with diabetes who had their A1c checked at least once increased from 13.2% to 67.7%. Additionally, only about 7% of adults with diabetes in 2000–2001 indicated that they had never heard of hemoglobin A1c (included as a response option when asking the number of times they had their A1c checked). These data indicate that the Florida Diabetes Prevention and Control Program has exceeded the initial goal for this objective.

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Louisiana

Providing Diabetes Self-Management Education and Support Through a Health Care Clinic Serving Homeless People

Public Health Problem

In Louisiana, an estimated 230,691 adults — 7.1% of the state's adult population — had diagnosed diabetes in 2002. Diabetes was the fifth leading cause of death for Louisiana residents in 2001, and diabetes-related medical care in Louisiana exceeded $2 billion in 2000. Diabetes is of special concern for homeless people, who often are transient and lack financial resources and social supports. Because homeless people with diagnosed diabetes often lack access to routine health care and diabetes prevention and control programs, they usually end up in hospital emergency rooms in a crisis that could have been prevented. Education is direly needed for homeless people who have diabetes or prediabetes. Recent research shows that for people with prediabetes, who are at high risk for developing the disease, the onset of diabetes can be prevented or significantly delayed through modest changes in diet, weight, and exercise levels.

Program Example

The Louisiana Diabetes Prevention and Control Program partnered with the City of New Orleans Health Department's Healthcare for the Homeless Clinic to improve the clinic's ability to provide diabetes education to patients. This facility is the only full-service clinic in the area that serves homeless people, free of charge. Project Assist is a diabetes education program developed at the clinic to help patients manage their diabetes and improve their health status and quality of life. To be eligible to attend the sessions, individuals must be enrolled in a diabetes registry that monitors the health of homeless people. They can attend an individual or group session on glycemic control and complications of diabetes, self-monitoring, weight loss and exercise instruction, review of medications, diet instruction, or self-care questions. The program uses audiovisual aids (i.e., instructional pamphlets, personal care cards with a protective pouch, and a place mat with nutrition tips) and referrals to identified community resources. These interventions seek to improve patient compliance with treatment regimens, empower patients to take charge of their diabetes, and promote lifestyle changes. To determine how effective the sessions have been, patients' A1c levels are compared before entering the diabetes registry and after they complete the sessions.

Implications and Impact

By March 2003, the average A1c level for 153 project participants was 8.8%; this represents a 1% decrease for half of the homeless patients on the diabetes registry. In addition, 32% of these patients had at least one A1c check, and 38.6% had at least two A1c checks in the past year, compared with 15.75% and 25.5% in September 2001. Also in March 2003, more participants had had a foot examination and more had had an oral examination in the past year compared with the number in September 2001. By May 2003, 99% of participants had met diabetes management goals compared with 94.1% in September 2001. Project Assist is a successful example of how a state program can promote healthy behaviors and reduce needless disease and economic burden for homeless people with, or at risk for, diabetes.

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Michigan

Establishing a Statewide Diabetes Care Improvement Project to Improve Outcomes for People With Diabetes

Public Health Problem

In Michigan, an estimated 591,000 adults — or 7.6% of the state's adult population — had diagnosed diabetes in 2001. Diabetes was the sixth leading cause of death for Michigan residents in 2002, and diabetes-related medical care costs exceeded $3.4 billion, with 60% of these costs attributed to hospitalization. Another 580,400 Michigan adults aged 40–74 years have prediabetes. These people are at high risk for developing diabetes, but recent research shows that for them, the onset of disease can be prevented or significantly delayed through modest changes in diet, weight, and exercise levels.

Program Example

The Michigan Diabetes Outreach Network includes six regional Diabetes Outreach Networks. The networks have a Diabetes Care Improvement Project and work with more than 150 agencies in the state, including physician offices, community health centers, home care agencies, and state-certified Diabetes Self-Management Education Programs. The networks work with the agencies to ensure that people with diabetes receive care according to current American Diabetes Association clinical practice recommendations. Data are collected at initial visits and follow-up visits to determine whether care has improved.

Implications and Impact

Results from the Michigan Diabetes Outreach Network show that working with health care agencies and providers through a statewide Diabetes Care Improvement Project can improve outcomes for people with diabetes. Trends in follow-up data from 1996–2002 show a significant improvement in the number of people with diabetes who have foot examinations and tests for glycosylated hemoglobin and microalbuminuria at least once a year. The percentage of people with diabetes who had glycosylated hemoglobin tests increased from 14% in 1996 to 80% in 2002; the percentage of those who had foot examinations increased from 58% in 1996 to 77% in 2002; and the percentage of those who had microalbuminuria tests increased from 22% in 2000 to 28% in 2002. Between 1999 and 2002, network patients had declines in their absolute glycosylated hemoglobin values of 1.15% (13% relative reduction). Network patients also have significantly improved their physical activity and nutrition planning.

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Missouri

Establishing Electronic Registries to Monitor Indicators of Health Behaviors

Public Health Problem

In Missouri, where nearly 400,000 adults have diagnosed diabetes, African Americans are more likely than others to be affected by this disease. One of every 14 adults in the overall population has diagnosed diabetes compared with 1 of every 10 African American adults, according to data from the 2002 Behavioral Risk Factor Survey. Improved health care is needed to decrease health disparities and prevent devastating diabetes complications for at-risk, medically underserved, and racially and ethnically diverse populations. Studies have shown that complications such as blindness, kidney failure, and amputations can be prevented or delayed by programs that help people with diabetes to improve nutrition, increase physical activity, improve blood glucose control, and have better access to preventive care, such as eye and foot examinations.

Program Example

Initially, the Missouri Diabetes Prevention and Control Program collaborated with five Federally Qualified Health Centers (FQHCs) and one National Health Service Corps site that participated in the Bureau of Primary Health Care's National Diabetes Collaborative. Currently, seven health centers participate in the collaborative. The centers formed teams of diabetes-related health-care specialists in clinics. Each center established an initial "population of focus" registry of patients with diabetes. Additional provider and site registries were added as the year progressed. The electronic registries were used to monitor indicators of health behaviors, health status, and services received. The Missouri Diabetes Prevention and Control Program provided the FQHCs with financial support, a local learning session, technical assistance on registry development, maintenance, health system redesign, monthly review of reports, and evaluation skills. The state diabetes program also evaluated aggregate data from the combined diabetes registries of the six health centers participating in the Midwest Cluster of the National Diabetes Collaborative. Preliminary results indicate that from June 2000 to May 2003, the health centers significantly improved 12 of 16 diabetes-related care measures, including increases in the prevalence of at least 2 A1c tests at least 3 months apart (15%), dilated-eye examinations (190%), foot examinations (47%), influenza vaccinations (76%), and setting of self-management goals (37%).

Implications and Impact

Participation in the National Diabetes Collaborative, patient monitoring with a diabetes registry, and the formation of teams of health care specialists have improved the level of diabetes-related care and services. Future efforts will focus on maintaining these improvements and extending the collaborative's activities to other health care sites.

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Establishing a Community Coalition to Prevent Diabetes in East Harlem by Educating and Empowering Residents to Improve Their Nutrition

Public Health Problem

In New York, East Harlem's residents, who are 50% Latino and 40% African American, are faced with limited resources and a disproportionate burden of chronic diseases, such as diabetes. Compared with people in New York City, East Harlem residents have the highest prevalence of obesity, and nearly double the prevalence of diabetes (14.9%) vs. New York City overall (7.9%). One effective way to treat and prevent diabetes and related complications is to consume foods containing carbohydrates from whole grains, fruits, vegetables, and low-fat milk.

Program Example

The New York State Diabetes Prevention and Control Program funds a community coalition for diabetes prevention in East Harlem (1 of 13 regional coalitions statewide). The Community Advances in Nutrition for Diabetes through Education and Empowerment coalition, with leadership from the Mt. Sinai School of Medicine, includes community-based organizations, advocates, health care providers, and researchers. One of the coalition's foremost community-based participatory research projects has been the completion of a food availability survey of local grocery stores and "bodegas" (small Hispanic grocery stores) to document the availability and cost of foods recommended for people with diabetes in East Harlem compared with the more affluent neighboring Upper East Side neighboring community.

Implications and Impact

Survey results indicate a lack of basic low-fat, high-fiber, low-carbohydrate, and low-calorie food items in East Harlem (18% of survey foods available) compared with the Upper East Side (58% of survey foods available). The disparities in food availability could be a barrier to diabetes self-management. Data from this community-based participatory research will help clinicians and community leaders educate their constituents and capitalize on local assets to devise strategies that improve food availability. Future activities include plans to evaluate whether differences in food availability are due to supply or demand and how availability correlates with food consumption and diabetes control.

Contact Information

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