Innovative Approaches to Reduce Diabetes Costs

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According to the American Diabetes Association, the cost of treating diabetes in North Carolina was approximately $5.3 billion in 2006. Reigning in diabetes-related costs requires collaboration between third-party payers, health care professionals, and people with diabetes. This article reviews innovative policy changes that affect all 3 groups and are intended to improve diabetes-associated care and costs.

In 2010, North Carolina had the 13th highest diabetes prevalence in the United States among adults. The diabetes prevalence in the state has more than doubled between 1995 and 2009, from 4.5% to 9.6% [1]. Diabetes has a substantial burden in North Carolina, not only in terms of lives lost but also with regard to health care costs. The total cost of diabetes in the state during 2006 was $5.3 billion, based on excess medical costs ($3.6 billion) and lost productivity ($1.7 billion) [2].

Without effective interventions and collaborations, North Carolina is predicted to be a diabetes "hot spot" in 2025, with diabetes-related costs soaring to >$17 billion [3]. Since diabetes costs and diabetes care are intertwined, reductions in costs will result in better care, and improved care will yield decreased costs. This article reviews lifestyle-based interventions, summarizes initiatives undertaken by insurers and health care professionals, and recommends policies to prevent, control, and reduce the costs of diabetes.

Lifestyle Interventions

Primary prevention. In 2007, the annual costs associated with type 2 diabetes in the United States were estimated to be $159.5 billion [4]. According to the National Institutes of Health, 90%-95% of people with diabetes have type 2 diabetes [5]. The Diabetes Prevention Program showed that lifestyle changes such as modest weight loss (ie, a decrease of 5%-7% from baseline weight), changes in eating habits, and increased physical activity could delay or prevent diabetes [6]. The program tested intensive lifestyle changes, daily doses of a diabetes drug (metformin), and a placebo. The lifestyle group had the lowest frequency of conversion from prediabetes to type 2 diabetes. However, the Diabetes Prevention Program was expensive. Each participant received intense lifestyle coaching from highly qualified instructors, professional help with exercise, and incentives, such as pedometers, water bottles, and exercise shoes. The average cost per participant for the lifestyle change was $3,540 over 3 years. While the cost of this type of program decreases over time and is ultimately less expensive than the cost of managing diabetes-related complications, it is still excessive. The challenge for public health professionals has been to replicate the results in a less expensive manner.

In North Carolina, the Wake Forest School of Medicine (WFSM) has developed a lifestyle weight loss program for diabetes prevention that has substantially lower costs than the Diabetes Prevention Program. This is achieved by delivering the program through community health workers, as opposed to health care staff, and to groups, rather than to individuals. There are plans to roll out the WFSM lifestyle program in several North Carolina counties in early 2012. Adoption of this or similar lifestyle programs has the potential to prevent nearly 100,000 cases of diabetes in North Carolina over the next 10 years, according to analyses of 2010 US Census data and 2009 Behavioral and Risk Factor Surveillance Survey data (North Carolina State Center for Health Statistics, unpublished data, 2011).

Self-management education. In 1986, the American Diabetes Association (ADA) established a national diabetes education recognition program to ensure quality education for people with diabetes. This voluntary process ensures that approved education programs have met the national standards for diabetes self-management education [7]. Since the establishment of this process, diabetes self-management education has been shown to reduce diabetes costs, particularly in people with poor glycemic control, defined as a hemoglobin A_{1c} level of ≥10% [8]. Lower starting values are associated with a lower reduction in costs; generally, among participants who receive self-management education, cost savings of $400-$4,000 can be expected for each 1 percentage point drop in hemoglobin A_{1c} level [8]. North Carolina is one of many states that require third-party reimbursement for self-management education from Medicare, Medicaid, and private insurance. This is a benefit that faces sporadic

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threats by proposed legislation that could permit employers that operate in multiple states to offer health plan benefits that are not necessarily subject to regulations of the North Carolina Department of Insurance, which could mean higher deductibles and reduced coverage for North Carolinians with diabetes.

Approximately one-third of American Diabetes Association–sponsored programs that offer diabetes self-management education in North Carolina are affiliated with the state's Diabetes Education Recognition Program. This is an innovative partnership involving the North Carolina Division of Public Health and 39 local health departments. Local health departments provide the education, and the Division of Public Health provides administrative coordination, training, and technical assistance to the local health departments. A recent program evaluation showed that hemoglobin A_{1c} levels decreased among individuals who received education from participating health departments (E. Preston-Roedder, University of North Carolina–Chapel Hill, unpublished data, 2011).

A national model for diabetes self-management education and care originated in North Carolina. The Asheville Project was initiated in 1996 by the city of Asheville, which is self-insured, to manage the health care costs of its employees. Employees with diabetes received self-management education at a nearby hospital, assistance from their local pharmacists in monitoring their condition, and a waiver of copays for diabetes medications and supplies. Medication adherence was a key component of this project, which yielded long-term glycemic and lipid control, cost shifts from health care professional– and hospital-associated services to pharmacological services, decreases in employee sick days, and increases in productivity. The project resulted in annual savings of nearly $18,000 for the city [8]. Such results are encouraging and have been replicated by other self-insured companies and the North Carolina cities of Rocky Mount and Fayetteville.

Weight-management programs. Weight management is an important component to controlling diabetes, and exercise has been shown to be a strong predictor of successful weight control [9]. Generally, adults with diabetes who participate in ≥150 minutes of structured physical activity each week are able to achieve better control of their diabetes, as evidence by lower hemoglobin A_{1c} levels [9].

SilverSneakers is a program that helps older adults get recommended levels of physical activity and provides social support. In North Carolina, SilverSneakers is covered by many major insurance carriers. This program provides a membership to participating fitness centers and many related benefits, including access to a trained program advisor to help the client get started in the program, customized classes for older adults, health education seminars, and online support to help with weight loss, smoking cessation, and stress reduction. In a 2-year study, people with diabetes who participated in the program lowered their total health care costs by >$1,000 [10].

Eat Smart, Move More, Weigh Less is an adult weight-management program that is delivered through the North Carolina Cooperative Extension and the Division of Public Health. The program was offered in 48 counties from January 2008 through June 2009. This evidence-based curriculum consists of 15 hours of instruction on physical activity, mindful eating, reducing television time, and other healthy living concepts. Participants lost an average of 8.4 pounds, and most reported increased self-confidence in their ability to consume a healthful diet [11]. In the fall of 2011, 4 North Carolina counties began piloting this program for people with and at risk for diabetes. Evaluation results will drive the decision about whether to expand the pilot.

Insurer and Health Professional Initiatives

Insurers. In North Carolina, there are many successful policy options being implemented by insurance providers. For example, the State Health Plan for Teachers and State Employees instituted a pharmacy copay for diabetes test strips a few years ago to lower costs for members who choose to use their pharmacy benefit to purchase strips. Test strips under the pharmacy benefit are no longer subject to deductibles, which is an important change as some people must undergo testing ≥4 times per day. Additionally, the State Health Plan provides 100% coverage for 6 nutrition-related visits during each benefit year for members with diabetes, as well as comprehensive health coaching services for members with chronic conditions, including diabetes. Another insurer, United Healthcare, announced a diabetes plan, in 2009, that provides health care saving of approximately $500 per year to members with diagnosed diabetes and prediabetes who comply with evidence-based guidelines. Finally, in 2011, Blue Cross and Blue Shield of North Carolina began reimbursing registered dieticians separately for diabetes self-management education and nutrition advice. As a result, policy holders with diabetes can receive 10 hours of diabetes self-management education and 6 hours of nutrition advice from registered dieticians annually.

Health professionals. Most people with diabetes are seen by primary care professionals [12]. Improving the quality of health care delivery could reduce diabetes hospitalization costs exponentially. Many of the costs related to diabetes are associated with expensive long-term care and hospitalizations resulting from kidney failure, heart attack, lower-limb amputation, and blindness. The majority of these costs are preventable with proper diabetes care [13]. The National Committee for Quality Assurance rewards practices that follow diabetes care guidelines by acknowledging their efforts publicly, through the Diabetes Recognition Program; in the future, this recognition may translate into higher reimbursement levels. In North Carolina, practices can receive education about the National Committee for Quality Assurance programs and any available incentive programs through the North Carolina Area Health Education Centers (AHEC) pro-

gram. The North Carolina AHEC provides practice-related support services to >900 practices, to assist with training and coaching on the use of technology to deliver evidence-based care to people with diabetes and other chronic conditions [14].

Policy Recommendations

North Carolina is making strides to address the prevalence of diabetes and related risk factors, and this article closes with a review of several recommendations to improve cost savings with respect to access to care, treatment, and prevention.

Of fundamental importance is the recommendation to eliminate health disparities. In North Carolina, as in the United States, the prevalence of diabetes is higher among ethnic minorities than among whites. In 2008, the prevalence of diabetes among persons enrolled in North Carolina Medicaid was 15.7%, a relative increase of 42% from the prevalence of 9.1% observed in the general population [15]. It is notable that the prevalence among African American enrollees was even higher, at 17.5%. The reasons for these differences ranged from delayed disease identification, which results in more complications sooner after diagnosis, to a lack of funds to pay for medications and supplies. Interventions addressing social determinants of health are difficult to execute and require commitments from multiple nontraditional public health partners. Yet the possibility of great savings warrants further consideration by the Division of Public Health and its multiple partners in diabetes prevention and control. In 2009, the State Center for Health Statistics released a report asserting that the state's Medicaid system could save >$100 million each year by eliminating racial and economic disparities in the care of people with diabetes [15].

A second recommendation is to implement lifestyle interventions to prevent diabetes. In 2010, as part of the Affordable Care Act, Congress passed legislation authorizing the Centers for Disease Control and Prevention (CDC) to manage the National Diabetes Prevention Program. In April 2010, Dr. Ann Albright (director, Division of Diabetes Translation, CDC) rolled out a national model for reimbursable care. Select YMCAs provide lifestyle coaching and physical activity training, reimbursed by United HealthCare, to people who have diagnosed prediabetes and multiple risk factors for the disease. The legislation also includes a provision for recognizing evidence-based diabetes prevention programs. Programs like the one at the WFSM will be eligible to apply for recognition. Third-party reimbursement for diabetes prevention would ensure that such programs are sustainable and would likely help lower the diabetes incidence.

Additional recommendations include expanding the Diabetes Education Recognition Program to more local health departments, increasing reimbursement to health care professionals who achieve recognition from the National Committee for Quality Assurance Diabetes Recognition Program, adoption of medication adherence programs like that of the Asheville Project, and appropriations to evaluate programs such as the Eat Smart, Move More, Weigh Less diabetes pilot.

Conclusion

Decreasing diabetes-related costs is a challenge. Many of the solutions presented here are innovative in nature, but some of them have not been subjected to rigorous economic analysis. There is a cost to decreasing costs. However, as Warren Buffet noted, "Cost is what you pay, [and] value is what you get." Because findings from programs for which evidence is available suggest that increasing the scope of and access to diabetes care may yield value (ie, savings) over the long term, continued investment in such programs appears to be warranted. NCMJ

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