

# N.C. Diabetes Education Recognition Program: ADA Recognition for a Combined Program at Local Health Departments and Community Health Centers in North Carolina

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**D**iabetes is a chronic disease that affects > 25.8 million Americans.<sup>1</sup> In the United States, the total annual economic cost of diabetes in 2007 was estimated to be \$174 billion.<sup>1</sup>

In North Carolina, > 640,000 adults (9.3%) have been diagnosed with diabetes, and it is estimated that another 232,000 are undiagnosed and 376,000 have prediabetes. Diabetes is the seventh-leading cause of death in North Carolina. The prevalence rates for diabetes include 15.6% in African Americans, 12.4% in American Indians, 8.4% in whites, and 6.1% in Hispanics.<sup>2</sup>

North Carolina's Medicaid program spent \$525 million for diabetes-related medical care and prescription drugs for 127,991 adults from July 2007 to July 2008. The prevalence of diagnosed diabetes was 15.7% in the Medicaid population, which was 64% higher than the prevalence in the state's general adult population.<sup>3</sup> The average expenditure per adult with diabetes within the Medicaid program was \$4,098.<sup>3</sup>

Figure 1<sup>4</sup> illustrates the categories of Medicaid expenditures for people with diabetes, with skilled and intermediate nursing care, physician and other medical services, and hospital services and outpatient clinics accounting for the largest proportion of expenditures.

On average, Medicaid spent \$1,224 for skilled and intermediate nursing care, \$1,192 for physician and other medical services, and \$235 for prescription drugs per person with diabetes during this period.<sup>4</sup>

Appropriate medical care, diabetes self-management education (DSME), and medication must be available to everyone with diabetes to prevent complications. DSME teaches people with diabetes how to manage their disease with medi-

cations, diet, exercise, and stress reduction. DSME is such a crucial part of diabetes care that medical treatment without it is considered inadequate.<sup>5</sup> Yet, the 2008 N.C. Behavioral Risk Factor Surveillance Survey showed that only 45% of adults with diabetes had ever taken a class on how to manage their disease.<sup>6</sup>

Access to diabetes education is part of the challenge. A 2005 survey<sup>2</sup> showed that only 58% of the 85

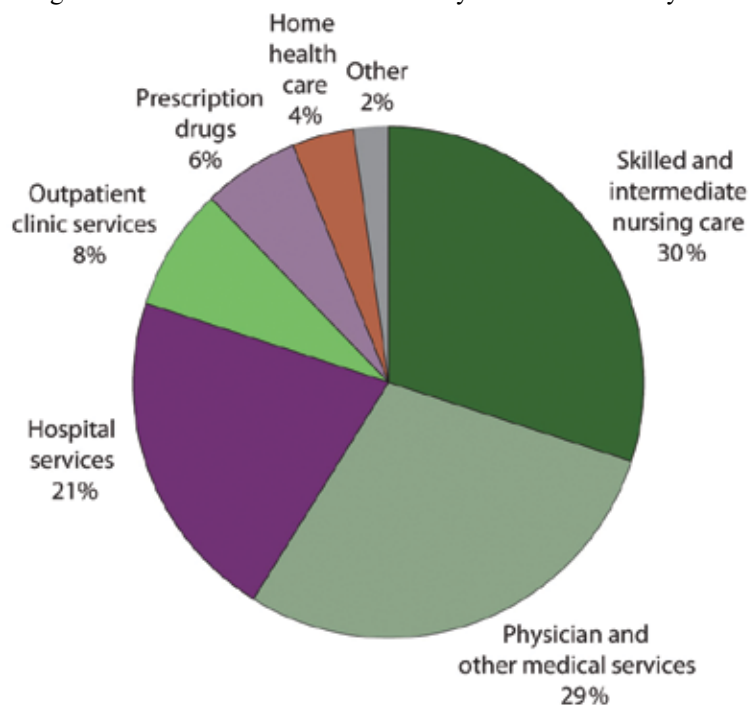


Fig 1. Medicaid expenditures for diabetes by category of service: North Carolina, July 2007 through July 2008, age 18 and older.

local health departments in North Carolina reported the capacity to provide health education services for people with diabetes. Before 2007, only one community health center in the state had a DSME program that was recognized by the American Diabetes Association (ADA).

### Background

The ADA Diabetes Education Recognition Program is based on established standards for diabetes education. These standards include 10 content areas that enable patients with diabetes to make informed decisions about their care and self-management activities. Programs that achieve ADA recognition have met standards of providing education for people with diabetes and are able to seek insurance reimbursement for DSME services.

In May 2007, the head of the N.C. Department of Public Health's Chronic Disease and Injury Section and the Director of the Brunswick County, N.C., Health Department set out to improve care for people with diabetes in the state. Subsequently, in partnership with the head of the N.C. Diabetes Prevention and Control Branch, a division of the Chronic Disease and Injury Section, a plan was devised to create an umbrella program to expand reach while consolidating administrative functions. Under this umbrella organization, the state's 85 local health departments could meet the content requirements needed to achieve ADA recognition and concentrate their efforts on patient care. Staff at the Diabetes Prevention and Control Branch would focus on administrative oversight of the program and ensure overall program compliance with ADA guidelines.

In May 2007, letters were sent to each of the state's 85 health departments. Initially, 18 departments indicated an interest in becoming an

ADA-recognized site, but only five met the minimum staffing requirements of having both a registered nurse (RN) and a registered dietitian (RD). In June 2007, the N.C. Diabetes Education Recognition Program (NCDERP) advisory committee met for the first time to establish goals and objectives for the program. The goals identified were to 1) increase the percentage of patients performing daily foot self-exams (behavioral goal) and 2) increase the percentage of patients having an A1C of  $\leq 7\%$  (outcomes goal).

The National Standards for Diabetes Self-Management Education<sup>7</sup> require each recognized site to identify and collect data on a behavioral goal and an outcome goal. Five local health departments formed the first cohort of sites (Cohort I) and began the required data collection in September 2007. ADA recognition was awarded in May 2008. Meanwhile, recruitment for Cohort II of the program began in January 2008.

Each subsequent year, interested health departments were invited to participate. During the months of January to May, sites expressed their interest in participating and provided information that indicated their ability to meet the ADA recognition requirements. In May of each year, the advisory committee reviewed and approved new applicants. In June, both existing and new sites attended a face-to-face training on the ADA standards of care, ADA diabetes education program standards, approved curriculum, quality improvement, and data collection software.

As of March 2012, 51 local health departments in North Carolina operate under one ADA Recognition Program number and are staffed by local RNs, RDs, and pharmacists.

In June 2008, a sister program was initiated by the N.C.

Community Health Center Association (NCCHCA) for the state's federally qualified health centers. Following the same programmatic timeline as the health department program, sites were added annually. As of January 2012, there were 13 ADA-recognized sites under the NCCHCA umbrella. To maximize resources, trainings, Internet seminars, and other processes were shared between the NCCHCA and the N.C. Diabetes Prevention and Control program.

### Program Implementation

The major challenge of the two umbrella programs was to effectively manage the increasing number of sites with a decreased number of program staff members. Each of the programs was started under separate 3-year grants from the Kate B. Reynolds Charitable Trust Foundation. The grant funding provided operational monies for each of the umbrella organizations and salary support for the administrative-level staff. Specifically, this initial funding provided the Health Department project with four staff members and the Community Health Center project with three staff members through June 2011.

Continued program sustainability at the end of the grant period depended on streamlining processes to maintain compliance with ADA guidelines with limited staffing. At the conclusion of the initial funding period, only the ADA-required program coordinator positions remained—one for the Health Department program and one for the Community Health Center program. The program coordinator for the Health Department program was absorbed into the N.C. Diabetes Prevention and Control Program and devoted full-time to the program. However, since the program coordinator for the Community Health Center program was already

in a funded position at NCCHCA, time devoted to ongoing implementation of the ADA program was limited.

The large number of sites across the state and the reduction in staffing created many logistical challenges, especially with regard to new and annual site visits. North Carolina is a large state, spanning more than 580 miles between its western and eastern borders. Additionally, ongoing oversight of program performance, data collection, and quality activities across the large number of sites posed numerous communication challenges.

In light of the staffing reductions and geographical realities, the solution had to be both efficient and multifaceted. First, a 0.25 full-time equivalent contract position called regional consultant (RC) was created. The role of the RC includes performing site visits, managing monthly data reports and Plan-Do-Study-Act (PDSA) quality-improvement activities, and coordinating staff retention at each site.

The state was divided into five regions incorporating both the health departments and the community health centers. Three RCs were identified from staff at the most experienced DSME programs; the two existing program coordinators were designated as RCs for the other two regions.

Once this structure was determined, communication systems were needed. The use of a shared, Web-based virtual workspace (Hotmail "Skydrive") allows a common virtual site through which to store files, collect and store data, and share resources.

To streamline communication, we created a single, shared e-mail account that all RCs can access. Participating health departments and community health centers send

monthly reports, PDSAs, personnel education, and licensure documentation to this e-mail account. This allows other personnel e-mail accounts to stay free of excess messages and allows the RCs to access ADA program information at times set aside for this contracted work. Skydrive also provides access to a spreadsheet for tracking data and handling other responsibilities. These tools allow the program coordinators to view information and data on their specific health departments or community health centers at any time.

Each month, the RCs conduct an Internet seminar before the larger monthly Internet seminar meeting for all of the sites. This ensures continuity with regard to site communications, facilitates information sharing, and ensures consistency of approach when dealing with sites requiring assistance.

Compliance with the National Standards for Diabetes Self-Management Education requires that all site educators maintain current professional licensure and have 20 diabetes-related continuing education unit (CEU) hours each year.<sup>7</sup> To ensure timely updating and management of the required documentation from each of the sites, an administrative assistant is given temporary access to the Skydrive files and e-mail account. Missing documents are sought, and paper files are maintained. This individual periodically checks in with the primary contact at each site to be sure that the correct educators are listed and that all documentation is current and complete. Use of Skydrive ensures that everyone is always looking at the current version of such documentation.

In light of resource constraints and limited time, many staff members at the local sites were challenged to complete their required

CEU hours. To help meet this need, the Diabetes Prevention and Control Program funded a series of four 2-hour Internet seminars shown during 8 months. These were provided during the regularly scheduled time slot of the monthly conference call. This allowed the educators to come for a regularly scheduled meeting and receive program information and earn CEU hours.

Effective methods to collect and report program data were also required. In June 2011, ADA released an Internet-based software system called Chronicle.<sup>8</sup> This program was implemented by all sites, and data dating back to December 2010 was entered. In February 2012, an updated version of Chronicle became available, which has allowed us to incorporate all data from program inception in 2007 for longitudinal tracking and reporting.

### Program Outcomes

The intent of the combined Health Department and Community Health Center diabetes education program is to demonstrate behavior changes that will have a positive impact on the health of program participants. The NCDERP identified patient foot exams as the behavior-change measure and A1C as the outcome measure to determine the effectiveness of the program. The behavior-change goal was defined as 75% of participants reporting that they were checking their feet daily. The outcome measure was defined as 75% of participants having an A1C  $\leq$  7.0%.

A1C is an estimate of glucose control over a 3-month period. Maintaining A1C levels as close as possible to the normal range results in considerable reduction in long-term health complications for people with type 1 and type 2 diabetes. According to the U.K. Prospective Diabetes Study,<sup>9</sup> every percentage-point decrease in A1C (e.g., from

8.0 to 7.0%) can reduce the risk of microvascular complications (eye, kidney, and nerve diseases) by 37%.

### Program Results

Since 2007, the combined program has seen 5,164 patients. The mean age of this group is 54 years; 22.3% are > 65 years of age, 45.6% are 45–64 years of age, 23.4% are 19–44 years of age, and 2.4% are ≤ 18 years of age. The majority of the patients (75.1%) have type 2 diabetes, followed by gestational diabetes (7%), prediabetes (3%), and type 1 diabetes (2.8%); 5.9% have an unspecified diabetes type. Access to insurance coverage varies; 32.7% have Medicaid, 30.4% have Medicare, 25.3% are covered by private insurers, and 29% are uninsured.

Progressive improvement has been observed over time for both the behavior change and outcome measures. As of February 2012, the current rate of patients checking their feet daily is 66.6%, compared to 65.6% in December 2011 and 60% in December 2010. For the A1C outcome measure, current average pre- and post-program levels were 8.04 and 7.03%, respectively. In December 2011, a similar pattern was seen, with average pre- and post-program A1C levels of 7.98 and 7.0%, respectively. Of the patients who have ever completed the program, 65.3% have a post-program A1C ≤ 7%.

Starting 1 June 2010, all participating local health departments began to measure blood pressure for each program participant. The NCDERP has added a third program goal that 75% of participants who complete the program will have a post-program blood pressure ≤ 130/80 mmHg. In December 2011, 49% of participants met the blood pressure goal; currently, 66% are meeting this goal.

In March 2012, an additional analysis was performed to determine

program effectiveness. The target population for this analysis included adult patients who 1) were enrolled in NCDERP between 2007 and 2010, 2) have type 2 diabetes, and 3) have both baseline and post-program A1C measurements. Based on a review of various participant data sheets, 310 participants met all of these criteria. Analysis of their records indicated that NCDERP generates \$1.21 in medical care cost-avoidance benefits for every \$1 spent on this intervention, representing a 21% return on investment.<sup>10</sup>

### Summary: Sustainability of NCDERP

There have been many challenges in the years since this initiative started. The primary issue was, and still is, securing funding for the RC positions. Although monies have been set aside in the N.C. Diabetes Prevention and Control Program budget, state budgetary issues are always a concern.

At the inception of the NCDERP, there were seven dedicated program staff members covering eight sites of both health departments and community health centers. As of February 2012, there are > 80 sites and only two program coordinators. The program created the RC model to handle this shift. Three RCs were identified, and both program coordinators serve as an RC. Working ~ 4–6 hours per week, the RCs make site visits and handle some of the administrative burden for the program coordinators. A centralized virtual storage area was created to streamline document storage and data collection and enhance communication among the RCs.

To sustain the program with limited staffing, it was evident that the two program coordinators needed to develop sound communication skills. Equally as important was recognizing which types of information needed to be communicated verbally and which needed to be

communicated electronically (in writing) and who needed access to the information.

The result of this project is a more streamlined set of processes for obtaining information, documenting that information, and communicating any strengths or weaknesses present in any of the program sites. Most of the problems related to communication and documentation were amenable to modern technology. RCs and program coordinators have been able to meet via Internet seminar, which has allowed us to look at current spreadsheets, review site visits, and teach each other how to use the Chronicle system to track patients. This has been helpful because it gave us the ability to share information, answer educator questions, and ensure that we are giving consistent messages to site staff.

One of the biggest barriers was the lack of centralized documentation of the patient education experience. From December 2010 to June 2011, all information was kept on a spreadsheet and reported monthly via e-mail. In June 2011, ADA released its Chronicle system, allowing the sites to enter into the system all patients seen from that point forward. Another benefit of Chronicle is that it has no costs or subscription fees, eliminating the \$4-per-patient fee the sites paid for our previous data system. In addition, Chronicle is backed up by ADA, reducing the chance of a prolonged system crash.

ADA recognition programs ensure consistent, high-quality DSME for all patients, regardless of their ability to pay. NCDERP has increased access to diabetes education for patients who otherwise might have had no access because of costs, transportation, or other barriers. It is well documented that improved diabetes self-management skills decrease the incidence of com-

lications and improve quality of life for people with diabetes.

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