

Diabetes Self-Management Education Pilot Report

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Executive Summary

The *Diabetes Self-Management Education Pilot Report* provides an overview of program design, enrollment and engagement activities, challenges and outcomes of the Texas Medicaid Diabetes Program as part of the Texas Medicaid Wellness Program. This report is required by H.B. 1990, 81st Legislature, Regular Session, 2009.

The Diabetes Self-Management Education (DSME) Pilot, as part of the Medicaid Wellness Program (formerly the Texas Health Management Program) established by H.B. 1990, was a two-year Medicaid demonstration project the Health and Human Services Commission (HHSC) implemented on March 1, 2011, under the administration of McKesson Health Solutions (McKesson). With McKesson, HHSC designed a model using existing American Diabetes Association (ADA)-recognized and American Association of Diabetes Educators (AADE)-certified Diabetes Self Management Education (DSME) sites throughout Texas to deliver face-to-face education to Medicaid clients with diabetes. Eligible clients with fee-for-service or Primary Care Case Management (PCCM) Medicaid coverage were eligible to receive DSME a minimum ten hours in Year 1 with a minimum three hours of medical nutrition therapy, followed by a minimum two hours of diabetes education and two hours of medical nutrition therapy in Year 2. The purpose of the pilot was to measure the progress of program participants enrolled using specific health outcomes for diabetes disease management. Because of statewide transition to Medicaid managed care, the pilot ended after Year 1 on February 29, 2012.

Key Highlights:

- 34 sites recruited; 19 sites agreed to participate; 3 sites actively participated
- 393 clients with diabetes invited to participate; 89 clients with diabetes actively participated
- Clinical outcomes in actively managed population compared with non-managed population:
 - 18.36 percent increase in statin (lipid-lowering agents) claims
 - 7.01 percent increase in cholesterol testing (lipid panel) claims
 - 22.43 percent increase in retinal eye exam claims
 - 4.85 percent increase in urine albumin excretion test claims

Complete data on clinical outcomes is not available due to early termination of the pilot and limited enrollment in Year 1. Although the Texas Medicaid Diabetes Program (diabetes program) was unable to demonstrate statistically significant results, the initial findings were encouraging. Upon claims analysis of the intervention period, several clinical metrics from the managed population—such as urine albumin excretion testing and annual retinal eye exams—were trending upward. Additionally, behavioral and physiological factors most often targeted by diabetes self-management education (self-care and glucose control) were more often met in the managed population during program enrollment. Despite the limited reach of this pilot, a fully executed pilot based on American Diabetes Association and Texas Diabetes Council guidelines could continue to yield positive results, including improved self-care among Medicaid clients with diabetes.

Introduction

Section 531.0319 of the Government Code instructs the Texas Health and Human Services Commission (HHSC) to incorporate a Diabetes Self-Management Training pilot (DSMT pilot) within the Texas Health Management Program (renamed Texas Medicaid Wellness Program). The DSMT pilot, an enhanced benefit for Wellness Program clients diagnosed with diabetes, identified these clients and provided them targeted diabetes self-management training and nutritional counseling.

The following report summarizes the DSMT pilot and its findings.

Background

Diabetes is a considerable and growing problem in the United States and Texas. According to the American Diabetes Association, 25.8 million people in the United States (8.3 percent of the population) have diabetes. Of these, seven million are undiagnosed. Diabetes is associated with significant morbidity and mortality and is the sixth leading cause of death in the United States. It accounted for approximately \$116 billion in direct medical and treatment costs in 2007.¹ According to the 2009 Behavioral Risk Factor Surveillance System, an estimated 1.7 million Texas adults (9.3 percent of this population) are diagnosed with diabetes. Another 440,468 people are thought to have undiagnosed diabetes.²

The ADA Standards of Medical Care state diabetes self-management training is an integral component of diabetes management. Multiple studies have shown general-population diabetes self-management training programs can reduce resource utilization among recipients and ultimately improve diabetes outcomes. A 1998 study in the *Journal of Clinical Endocrinology and Metabolism* reported diabetes disease management programs can save up to \$50 per month per patient and reduce hospitalizations by 18 percent.³ According to the Gilmer study, a one percent improvement in HbA1c level from 10 percent to 9 percent was associated with a \$3,000-\$5,000 difference (reduction) in cost over 3 years.⁴

The diabetes program allowed clients with diabetes to participate in targeted diabetes self-management training classes and nutritional counseling at contracted sites. The diabetes program was initiated March 1, 2011, for fee-for-service and Primary Care Case Management Medicaid clients in the Wellness Program to demonstrate the value of diabetes disease management through education and follow-up. HHSC contracted with McKesson to administer the Texas Medicaid Wellness program and the diabetes program for eligible clients.

¹ National Diabetes Fact Sheets: United States 2011. Centers for Disease Control and Prevention Website. Available at: www.cdc.gov/diabetes/pubs/estimates05.htm#prev.

² National Diabetes Fact Sheets: United States 2011. Centers for Disease Control and Prevention Website. Available at: www.cdc.gov/diabetes/pubs/estimates05.htm#prev.

³ Robert J. Rubin, Kimberly A. Dietrich and Anne D. Hawk. Clinical and Economic Impact of Implementing a Comprehensive Diabetes Management Program in Managed Care. *The Journal of Clinical Endocrinology & Metabolism*, August 1998 Vol. 83, No. 8 2635-2642.

⁴ [Gilmer TP](#), [O'Connor PJ](#), [Manning WG](#), [Rush WA](#). The cost to health plans of poor glycemic control. *Diabetes Care* 1997;12:1847-53.

The project identified highly populated areas with fee-for-service or Primary Care Case Management Medicaid clients with diabetes to undergo one-hour initial assessments of individual training needs. This was followed by a year-long program with ten hours of group or individual sessions of diabetes self-management training and three hours of medical nutrition therapy. The year-long services were provided to individuals in existing American Diabetes Association-recognized or American Association of Diabetes Educators-certified education centers across the state.

The Texas Medicaid Diabetes Program offered to enroll clients with diabetes in the Diabetes Self-Management Training (DSMT) pilot. The program offered each pilot-enrolled client ten hours of self-management training from a certified diabetes educator. The program also offered three hours of nutritional counseling with a registered dietician (as available) or the diabetes educator.

The training included a review of the client's medical history, risk factors, health status, resource utilization, knowledge/skill level and barriers to effective diabetes self-management. The program offered self-monitoring blood glucose instruction, diet and exercise education and an insulin treatment plan for insulin-dependent clients; it encouraged and motivated clients to use these skills for self-management. The program also offered holistic co-morbidity education and training to the general wellness program.

When the diabetes self-management training was provided in groups, DSMT pilot clients had the opportunity for direct, face-to-face interaction with diabetes educators. The pilot program offered DSMT clients a sufficient number of individual sessions to meet their cultural and educational needs. The program provided diabetes self-management training in English and Spanish.

The initial design required the program to offer DSMT pilot clients two hours of self-management training with a diabetes educator and two hours of nutrition education with a registered dietician in their second year. This was not exercised given the cancellation of the program after Year 1.

Program Goals

The diabetes program focused on two primary goals. The first was to provide self-management education to clients with diabetes to assist them in self-managing their disease. To achieve this goal, the program provided an evidence-based, best practice, community-centered diabetes self-management behavioral change program to engage clients and direct them toward better diabetes management. Clients learned step-by-step procedures to monitor blood glucose and self-examine feet and skin for diabetes-related circulatory problems. The self-management program emphasized the importance of exercise, healthy food choices and proper cooking habits. Diabetes Education Center directors involved in the program said the one-on-one and group support components were critical to the clients' success.

The second primary goal was to meet the diverse and unique needs of all clients (including adolescents, the elderly and women with gestational diabetes) with Type 1 and Type 2 diabetes. Self-management training encompassed the different forms of the disease with appropriate treatments for each individual.

Eligibility and Enrollment

Any Texas Medicaid Wellness Program client with diabetes was eligible to enroll in the DSTM pilot, including clients with Type 1, Type 2 and gestational diabetes. Children and adolescents diagnosed with diabetes were also eligible. Clients with physical disabilities, visual or hearing impairments; clients with low literacy levels or English as a second language; and clients who spoke only Spanish received interventions tailored to their needs. Interventions were also adapted to the various cultural groups in Texas. In accordance with the care management framework established by McKesson in the Wellness Program, any co-morbid condition(s) of a client enrolled in the program were addressed in conjunction with diabetes management. Eligibility criteria included:

1. Clients for the DSMT pilot must meet the same general eligibility criteria as the overall Wellness Program population—a client in fee-for-service or PCCM Medicaid with at least three months of Medicaid eligibility within the previous 12 months was eligible for the Wellness Program.
2. Clients for the DSMT pilot must have diabetes.
3. Clients of any age with any/all types of diabetes are eligible.

Outreach was made to Medicaid fee-for-service and PCCM clients identified with a diagnosis of diabetes using the same outreach approach that McKesson used for clients eligible for the Texas Medicaid Wellness Program. Clients with diabetes or their caregivers could participate in the Diabetes Program Pilot by completing an enrollment encounter with a registered McKesson nurse and agreeing to a referral to a participating site in their area.

Training Site Recruiting Initiatives

To launch the DSMT pilot, McKesson identified 36 ADA-recognized or AADE-certified DSMT centers across the state to target recruitment for program partnership based on member eligibility distribution. These centers provide diabetes self-management training programs consistent with ADA guidelines to patients, families and providers. The centers train patients to manage their disease using a curriculum covering the nine core content areas as described in the education section created by the University of Michigan and adopted by the ADA as “standard” teaching material taught over a 12-month period. Per ADA standards, faculty must include at least one registered nurse, one registered dietician and/or one certified diabetes educator.

Three ADA-Recognized DSMT sites were initially contracted as beta sites. Based on beta site activity, formal presentations were made to 34 DSMT sites seeking to recruit additional partnership sites. DSMT program directors, educators and key hospital administration were included in the presentations to appropriately assess program structure, capacity and commitment. Nineteen sites agreed to participate in the program, and nine sites entered into contract negotiations with McKesson.

During the site recruitment phase, two barriers were identified which impacted McKesson’s ability to partner with identified sites. The first barrier was related to provisions within the Wellness Program prime contract, which required McKesson to enjoin all relevant language from that contract to any subcontracted third parties. Many sites found the robust terms of the HHSC contract to be challenging

for such a relatively small program. As a result, and with the support of HHSC, the McKesson program administration team created a condensed subcontractor agreement to keep the terms manageable for the sites. The second barrier was related to the contract approval processes many of the selected sites had to navigate to see the contract through to execution. Although the program administration team was very active working with risk and legal departments from various sites, the complex subcontract agreement required thorough review from each DSMT site.

As these challenges were addressed, it became evident a majority of the population would be shifting to Medicaid managed care by March 2012. Therefore, in November 2011, HHSC made the decision to terminate the Diabetes Program at the end of program Year 1. While this decision was being made, two additional sites signed contracts. They were informed of the discontinuation and declined to participate in the remaining months. Recruitment activities with potential partner sites ended November 2011.

Figure 1 below describes recruitment activities from March through November, 2011.

Diabetes Program *Recruitment Initiatives*

DSME recruitment initiatives:



Established sites

Good Shepherd Med. Ctr Longview
 Medical Ctr Hosp Odessa
 Knapp Medical Center Weslaco

Newly contracted

Mission Regional Med. Ctr. Mission
 Plaza Wellness Center Gainesville

Target sites



Outreach

McKesson staff conducted all initial outreach through letters and/or telephonic contact to those clients eligible for the DSMT program. Upon agreement to participate, the client was referred to a specific education site that made additional contacts to schedule an assessment and education classes. The DSMT program was staffed with three dedicated, full-time, Texas-based McKesson employees, including one program administrator and two diabetes supporting instructors. Diabetes program staff

counted on the Texas Medicaid Wellness Program staff, which included certified diabetes educators, a dietician, social workers and community health workers.

High- and moderate-risk clients with diabetes were eligible for the DSMT program or the Wellness Program, but could participate (be enrolled and billable) in only one program at a time. Clients below moderate- and high-risk were eligible only for the DSMT program.

Education

The education provided was a diabetes self-management education program that was available for clients of all ages and with all types of diabetes. The curriculum was defined by the National Standards of Diabetes Self-Management Training and was the basis for the education intervention. The curriculum covers the disease process; prevention, detection, and treatment of acute complications; monitoring and use of results; insulin and oral diabetes medications; nutrition, exercise and activity; foot, skin and dental care; and stress, psychosocial adjustment and family and social support.

Clients were eligible for approximately 10 hours of DSMT and 3 hours of Medical Nutrition Therapy (MNT) face-to-face education over a one to twelve month period in individual or group sessions determined by the education site. At the ADA-recognized education center, participating clients were assessed by a registered nurse, registered dietician, or certified diabetes educator to determine appropriate education plans and settings (individual vs. group setting or combination of both). Clients were informed that the education was provided over a year, where clients had access to the education staff and resources during that year and where portions of the curriculum would be revised depending on the client's needs. These clinicians assisted in developing a "care plan" for each client, either designated for individual or group settings or a combination of both. The care plan was shared with the client and treating physician to incorporate into the overall treatment plan for the client. Based on the care plan and with the client's approval, the client was scheduled into the appropriate content area classes at the appropriate dates and location based on client's schedule and applicable transportation needs arranged for client to attend class at the DSMT site.

Training and Education of the Providers

A comprehensive training program was conducted with each of the contracted diabetes education sites regarding program protocol, uniqueness of client population and the data collection tool and data entry process. The Texas Diabetes Council educational materials were made accessible to the sites. The McKesson diabetes supporting instructors worked with the contracted sites to encourage a teaching style/acumen commensurate with the learning style of each client.

Data Collection

Data was entered into a diabetes portal (the portal) developed specifically for this program. The portal is a web-based system that provides tools for diabetes educators to document, track and report their client's health status and educational progress. The portal's design is based on the ADA's recommendations with modifications to meet the contractual and legislative requirements of Texas Medicaid.

After a client agreed to participate in the program and provided consent, the diabetes educator conducted an initial diabetes education evaluation assessing for diabetes-related complications and collected additional demographic information, clinical and quality of life measures and depression symptoms.

Description of Population

Clients from the Texas Enhanced Care Program (the former FFS/PCCM Disease Management Program) were migrated into either the Texas Medicaid Wellness Program or the Diabetes Self-Management Training Program. Clients eligible for the Diabetes Self-Management Training Pilot were those identified with diabetes based on their claims incurred during the prior 24 month period. The condition identification process was performed each month to identify newly eligible clients.

Eligible Population

Post-migration, McKesson identified clients based on data provided by HHSC. All clients claims contained in these files were analyzed using the Chronic Disability and Payment System (CDPS), a public predictive model published by the University of California at San Diego. CDPS uses diagnosis codes to assign a prospective risk score to each member. High- and moderate-risk clients were sent to MEDai, a healthcare analytics company, for further predictive modeling to define the targeted population for the Texas Medicaid Wellness Program (TMWP) and the diabetes program. The high- and moderate-risk clients were offered to participate in either the TMWP or the diabetes program. The low-risk clients with diabetes who did not meet the CDPS threshold received additional outreach, including incentives, and were offered the Diabetes Self-Management Training Pilot as sites became available. Clients could not enroll in the Diabetes Self-Management Training Pilot and the Texas Medicaid Wellness Program simultaneously.

Challenges Identified

1. During the site recruitment phase, the comprehensive contract requirements were identified. These challenged the number of sites participating and the timeliness of executing contracts with the sites. The program administration team created a condensed sub-contractor contract and received approval from HHSC to use the shortened version.
2. Another challenge to the program success was the barriers faced by the DSMT site staff to escalate the contract through the hospital system for timely review and signature. The program team collaborated with McKesson's risk and legal departments to work with the sites to negotiate contractual partnership requirements.
3. The shortage of ADA-recognized DSME sites in the Rio Grande Valley, where high rates of diabetes exist, was identified during the site recruitment phase. McKesson found former ADA-recognized or AADE-certified DSME sites were unable to sustain the program due to low or no reimbursement.
4. During the first eight months of the program (March through October, 2011), McKesson did not receive the majority of medical and pharmacy claims. During January and February 2012 McKesson

was unable to receive complete, accurate eligibility and claims files due to the transition to managed care. McKesson and HHSC worked collaboratively to address these issues.

Data Results

Definitions

Managed Clients

Clients diagnosed with diabetes who agreed to participate in the DSMT Pilot. These clients were enrolled in the program and attended at least one face- to-face educational encounter of diabetes self management training.

Referred Clients

Clients diagnosed with diabetes and identified for participation in the DSMT Pilot, but who did not participate in self management training due to loss of eligibility, lack of adherence, and other challenges.

Data with dates of service between March 2011 through December 2011, with pay dates through March 31, 2012, was available for 89 managed clients and 304 referred clients. Demographic data and clinical results were collected for both the referred and managed client populations. Additionally, information for inpatient and emergency department utilization was collected. However, given the limited claims availability and member participation; the results are not meaningful. The demographic and clinical metric results were compared to each other and are presented in Figure 2 below:

	Referred Clients	Managed Clients
Number of Clients	304	89
Male	26.97%	21.35%
Female	73.03%	78.65%
Age: 0-19 years	13.16%	7.87%
Age: 20-49 years	40.79%	46.07%
Age: > than or = 50	46.05%	46.06%
Aspirin/Antiplatelets	5.69%	2.78%
Statin (Lipid Lowering Agents)	51.63%	61.11%
ACE/ARB Inhibitor	62.60%	62.50%
HbA1c Test	78.46%	80.56%
Cholesterol (Lipid Panel)	73.98%	79.17%
Retinal Eye Exam	48.78%	59.72%
Urine Albumin Excretion Test	76.83%	80.56%
Influenza Vaccine	19.51%	22.22%
Pneumococcal Vaccine	8.94%	13.89%

Quality of Life

Quality of life was also measured using the SF-12v2. Quality Metric’s SF-12v2 Health Survey is a generic, multipurpose, short-form (SF) survey used to measure functional health and well-being from a

patient's point of view.⁵ It is widely used and has been internationally validated. The SF-12v2 survey instrument, which is designed for use among adults age 18 and older, has 12 questions that measure eight health concepts:

- General health
- Physical functioning
- Role physical
- Bodily pain
- Vitality
- Social functioning
- Mental health
- Role emotional

The eight measures listed above are terms used by QualityMetric in the SF survey and its supporting documentation. The "role physical" and "role emotional" scales measure limitations in a person's daily life (functional health and well-being), as a result of their physical health problems and any mental/emotional issues. In addition to these eight single-item measures, SF-12v2 survey data can also be used to generate Mental Health Composite Scores and Physical Health Composite Scores (MCS and PCS). The summary scores can be compared to published U.S. population norms.⁶

On a daily basis, McKesson identified the Texas Medicaid beneficiaries age 18 and older who had enrolled in the diabetes program. This sampling approach was used to capture a snapshot of beneficiaries' baseline SF-12v2 health status prior to their participation in the diabetes program.

Response Rate

A total of 81 adult diabetes program participants age 18 and over were deemed eligible for participation in the initial quality of life survey. Of the 81 candidates, a total of 35 completed the SF-12v2 survey process. This constitutes a 43 percent response rate, which exceeds the targeted response rate of 40 percent.

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McKesson contracted with an independent market research firm, CareCall, to conduct SF-12v2 surveys with the identified candidates. CareCall made up to six attempts to contact each candidate to administer the survey telephonically. To reach as many candidates as possible, CareCall attempted survey calls at different times of day and on different days of the week. Also, CareCall employed bilingual staff to administer surveys to Spanish-speaking candidates.

⁵ National Diabetes Fact Sheets: United States 2011. Centers for Disease Control and Prevention Website. Available at: www.cdc.gov/diabetes/pubs/estimates05.htm#prev.

⁶ National Diabetes Fact Sheets: United States 2011. Centers for Disease Control and Prevention Website. Available at: www.cdc.gov/diabetes/pubs/estimates05.htm#prev.

Baseline SF-12v2 Results

The SF-12v2 scoring process resulted in both a Physical Composite Score PCS and a Mental Composite Score MCS. Both the PCS and MCS can be compared to the national norm: a mean score of 50 and a standard deviation of 10. The baseline SF-12v2 survey responses from the diabetes program participants were combined, weighted, and scored using Quality Metric's Health Outcomes Scoring Software (version 4.0). This process produced summary results that can be compared to published norms for the general U.S. population. Results above or below the published norms are considered to be above or below average, respectively.

Based on all baseline SF-12v2 surveys collected from diabetes program participants during Program Period 1, the adult population's mean Physical Component and Mental Component scores are:

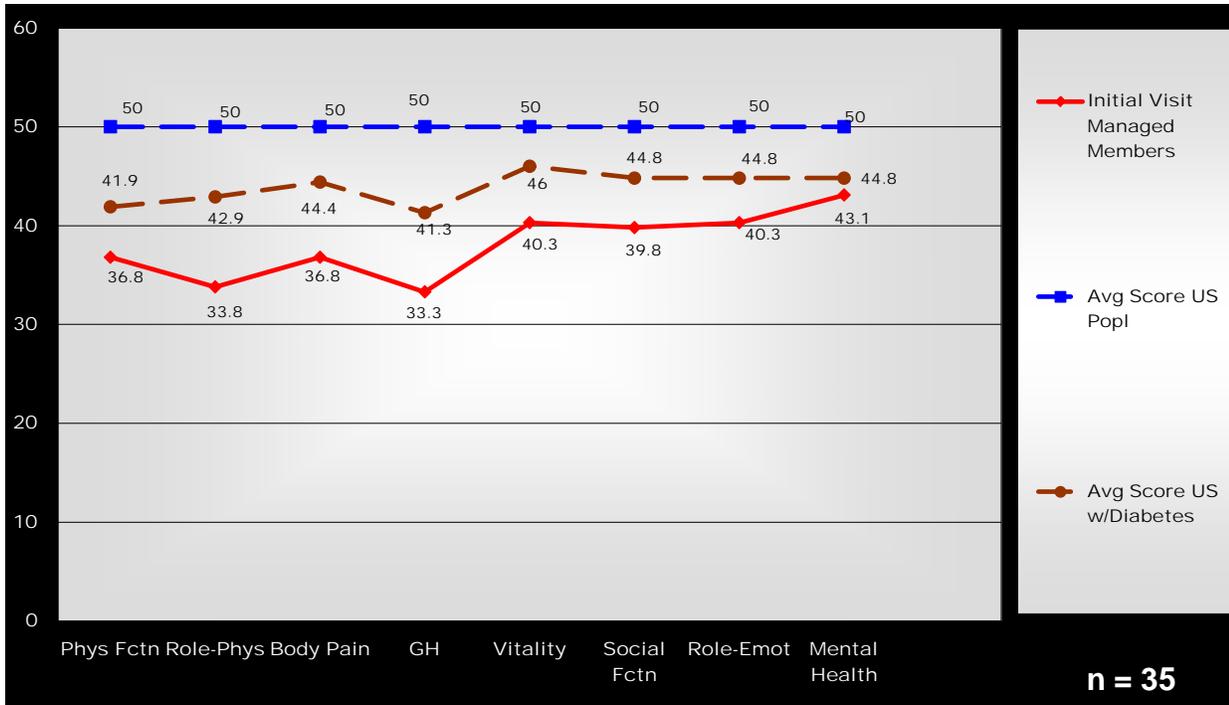
- PCS: 33.4
- MCS: 43.8

These scores are substantially lower than the general U.S. population norm (50), indicating below-average health status. These scores are also lower than the norms for the U.S. population with diabetes:

- PCS: 41.52
- MCS: 47.28

Clients scored substantially below other diabetes populations in each of the eight domains in quality of life survey. This is not unexpected in a population with chronic health conditions. Figure 3 below represents the average score in the U.S. population, the managed clients in the Diabetes Self Management Pilot, and the U.S. diabetes population.

Average SF-12® Scores



Due to early program termination, there was no opportunity to administer SF-12 survey at follow-up for comparison in subsequent program years, therefore only baseline values are reported.

Conclusion

HHSC contracted with McKesson to administer a Diabetes Self-Management Training Program pilot as part of the Texas Medicaid Wellness Program. The diabetes program was an enhanced benefit that allowed clients with diabetes the option to participate in targeted self-management training classes and nutritional counseling at contracted diabetes self-management training sites. In November 2011, HHSC made the decision to terminate the Diabetes Program effective March 1, 2012, because of the statewide transition to managed care.

During the site recruitment phase of the Diabetes Program, McKesson and HHSC identified two issues that created barriers to site participation in the program and the timeliness of contracting with sites: (1) the comprehensive contract requirements, and (2) the difficulty experienced by diabetes sites staff in escalating the contract through the hospital system for timely review and signature. Another challenge in implementing the diabetes program was low program enrollment; locating a site close to the geographic area where the client resided was a barrier. The low volume of clients in the program made drawing statistically significant results challenging.

Although the diabetes program was unable to demonstrate statistically significant results, the initial findings were generally positive. Upon claims analysis of the intervention period, several clinical metrics from the managed population such as urine albumin excretion testing and annual retinal eye exams were trending upward. In addition, behavioral and physiological factors most often targeted by diabetes self-management education (i.e. self-care and glucose control) were improved in the managed population in the program. Furthermore, anecdotal reports from participant sites showed that in addition to assimilating the core principles of education outlined by the National Guidelines on Diabetes Self Management Education (DSME), clients benefited from nutritional counseling and improved communication and coordination between participant sites, clients, and the client's primary care provider.

Diabetes self-management education is recognized as the ongoing process of providing the knowledge, skill, and ability necessary for patients with diabetes to self-care. DSME incorporates the needs, goals, and life experiences of the person with diabetes and is guided by evidence-based standards. With informed decision-making, self-care behaviors, problem-solving and active collaboration with the health care team, patients can improve clinical outcomes, health status and quality of life. Despite the limited reach of this pilot, DSME, in accordance with American Diabetes Association guidelines and those adopted by the Texas Diabetes Council, have demonstrated positive outcomes in people with diabetes and may yield positive results, including improved self-care, among Texas Medicaid clients with diabetes.^{7, 8}

⁷ Norris SL, Engelgau MM, Narayanan KMV: Effectiveness of self-management training in type 2 diabetes: a systematic review of randomized controlled trials. *Diabetes Care* 24:561–587, 2001

⁸ Norris SL, Lau J, Smith SJ, Schmid CH, Engelgau MM: Self-management education for adults with type 2 diabetes: a meta-analysis on the effect on glycemic control. *Diabetes Care* 25:1159–1171, 2002