

The Florida Diabetes Master Clinician Program: Facilitating Increased Quality and Significant Cost Savings for Diabetic Patients

Edward Shahady, MD, ABCL, ABFM, FAAFP

Up to 10% of Americans > 20 years of age have type 2 diabetes, and > 20% have the metabolic syndrome.^{1,2} The prevalence of both has increased by 33% during the past decade as a result of an increasingly sedentary lifestyle, the epidemic of obesity, the growth of ethnic groups at risk for the disease, and the aging of the population. The prevalence of the metabolic syndrome increases dramatically with age, and 45% of people > 60 years of age have the syndrome. Type 2 diabetes will develop in many of these individuals.^{1,2}

In the United States, diabetes is the sixth leading cause of death; the leading cause of renal failure (end-stage renal disease), nontraumatic limb amputations, and blindness; and the leading contributor to cardiovascular disease (CVD). CVD accounts for ~ 70% of deaths in adults with diabetes. The complications associated with diabetes lead to excessive suffering, increased use of health care resources, and excessive costs.³⁻⁶

Despite our increased knowledge and understanding of the pathophysiology and management of diabetes, patient

outcomes have not shown a parallel improvement. A large gap exists between our knowledge and our performance.^{7,8} Based on excellent evidence, the American Diabetes Association (ADA) has set the following goals: hemoglobin A_{1c} (A1C) ≤ 7%, LDL cholesterol ≤ 100 mg/dl, and blood pressure ≤ 130/80 mmHg. Nationally, only 48% of patients are able to reach the A1C goal, and only 33% are at the LDL and blood pressure goals. Only 7% are able to reach the goal for all three at the same time.⁹ The 58 Florida practices that participate in the Diabetes Master Clinician Program (DMCP) of the Florida Academy of Family Physicians Foundation (FAFPF) have been able to help patients attain better control of their diabetes than the national averages. The 8,657 patients (27,920 visits) in the 58 practices average 54% goal achievement for A1C, 53% goal achievement for LDL, and 54% goal achievement for blood pressure. Significantly, 19% are achieving all three goals at the same time. Several practices have achieved goals as high as 75% for the individual measures and 44% for all three measures together.

A cost savings of \$1,122 per year can be achieved if a patient is at goal for all three of these diabetes goals. The yearly cost savings for all patients in the DMCP is estimated to be > \$1.4 million. This estimation is based on information obtained from the Bridges to Excellence website,¹⁰ which provides an actuarial evaluation of the estimated per-patient savings for physicians who achieve recognition through the Diabetes Physician Recognition Program. Table 1 provides information about how this estimate was calculated. The number of patients at the published national goal in the DMCP database was subtracted from the number at goal for the Florida project (e.g., A1C 48% × total patients vs. 54% × total patients).

The DMCP was created by the FAFPF in 2003 to address the performance gap that exists in diabetes care. The program started with four practices, and currently 58 practices participate. Each practice team of a clinician and medical assistant (MA) or nurse receives evidence-based training through interactive group seminars, visits to the clinician's office, and educational

Table 1. Yearly Cost Savings for Diabetes Care of 8,657 patients in the DMCP

ADA Quality Indicator	Number of DMCP Patients at Goal Greater Than National Average	Cost Savings Per Patient	Total Cost Savings
A1C	398	\$279.00	\$ 111,042.00
LDL Cholesterol	1,353	\$369.00	\$ 499,257.00
Blood Pressure	1,741	\$474.00	\$ 825,234.00
Total		\$1,122.00	\$1,435,533.00

e-mails during an 8- to 12-month period. Alumni meetings are held yearly. The office manager and other office staff also receive an orientation to the project. Training includes information about current published clinical standards of care, how to enter data into the Internet-based electronic diabetes registry, how to produce and interpret quality assessment reports, and how to conduct group visits.

The program is funded through grants, and there is no charge for participation. A guideline for group visits is provided that includes forms for privacy protection, documentation of the visit, appropriate International

Classification of Diseases and Current Procedural Terminology coding, roles for the MA or nurse and the clinician, suggested curriculum, and information about how to prepare and follow up the group visit.

Group visits are usually 2 hours long, with the first hour conducted by the MA or nurse and the second hour led by the physician. Practices are encouraged to invite their high-risk patients (those who are not at goal for A1C, LDL, or blood pressure) to the group visits. The diabetes registry helps them identify these high-risk patients. A CPT code of 99214 is appropriate for most of these

patients because they are of moderate complexity and high risk.

The Internet-based diabetes registry is a relational database created in consultation with an information technology expert. Evidence-based quality indicators were obtained from the published guidelines of the ADA,¹¹ National Cholesterol Education Project,¹² and Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure.¹³ These guidelines were used to guide the creation of the database fields. Practices are required to have a high-speed Internet connection and must agree to have an independent research assistant enter all of their patients into the database. Subsequent updating of the database is done by the practices and the research assistants.

The diabetes registry provides excellent reports that enhance care for one-on-one office visits and facilitate population management of all diabetic patients in the participating practices. The typical one-on-one office visit for a diabetic patient takes 15–20 minutes of a physician’s time. Some of that time is spent searching for lab results and other information from past visits. The diabetes registry provides a report (Table 2) that saves physicians up to 5 minutes by organizing all of the pertinent diabetes information for physician review. In addition to saving time, it reduces the frustration and exhaustion that accompanies the hunt for information.

The most valuable report is the patient report card (Table 3). This is given to patients by the MA or nurse. The language that is used to explain the items is intended to empower and educate patients and encourage self-management. If empowered to do so, the MA or nurse can reduce physicians’ time and frustration by reviewing the reports, ordering needed laboratory tests and immunizations, and explaining the importance of items in the report to patients. Some MAs and nurses have been taught how to do the monofilament

Table 2. Report Card Given to Clinician at Each Visit (A Male Patient)

	Goal	October 2007	July 2007	January 2007
Weight (lb)		185	201	201
BMI (kg/m ²)		31	34	34
Waist Size (inches)	< 40	42	44	44
Blood Pressure (mmHg)	< 120/80	135/80	155/88	149/89
Eye Check	Once a year	Done		
Foot Check	Once a year	Done		
A1C (%)	≤ 6	7.0	8.5	7.9
Total Cholesterol (mg/dl)	≤ 135	185	222	222
LDL Cholesterol (mg/dl)	≤ 70	105	145	144
HDL Cholesterol (mg/dl)	≥ 40	44	33	35
Non-HDL Cholesterol (mg/dl)	≤ 100	141	189	187
Triglycerides (mg/dl)	≤ 150	144	188	200
Urine Microalbumin	Once a year	Not done		
Flu Shot	Once a year	Done		
Aspirin	Daily	Yes	No	Yes
Group Visit		Yes	Yes	No
Pneumovax	Once, or twice if first is before age 65	First one given		

exam of the feet. These reports, along with empowered staff, enhance the effectiveness of the one-on-one visit, reduce frustration, save time, and increase patient, staff, and physician satisfaction.

The other reports in the diabetes registry focus on population management. Population management tools aid physicians with identifying patients

who have not returned to the office for periodic diabetes evaluations, as well as those who may have been to the office but have not had the recommended periodic evaluations. Patients may be asked to obtain laboratory tests or go to see an ophthalmologist but fail to do so. Physicians have no way of recognizing this without a registry. Reminder systems are only of value if patients are being seen.

Population management tools facilitate management when patients are not in the office. Unfortunately, electronic health records do not contain disease registries that provide these types of reports.

Reports that place patients in different risk categories aid with developing creative strategies for management. Table 4 shows the number of patients a physician has who have different A1C

Table 3. Report Card Given to Patient at Each Visit

	Goal	October 2007	July 2007	January 2007
Weight (lb)		185	201	201
Blood Pressure (mmHg)	< 120/80	135/80	155/88	149/89
<i>Tests</i>				
A1C (Sugar for 3 months) (%)	≤ 6	7.0	8.5	7.9
LDL Cholesterol (Lousy Cholesterol) (mg/dl)	≤ 70	105	145	144
HDL Cholesterol (Happy Cholesterol) (mg/dl)	≥ 40	44	33	35
Triglycerides (another bad fatty substance) (mg/dl)	≤ 150	144	188	200
<i>Medication</i>				
Aspirin (to prevent heart attacks)	Take daily	Yes	No	Yes
<i>Important Yearly Activities</i>				
Eye Check (to prevent blindness)	Once a year	Done		
Foot Check (for sores and numbness)	Once a year	Not done		
Urine Microalbumin (to check for kidney failure)	Once a year	Not done		
Flu Shot (to prevent pneumonia)	Once a year	Done		
<i>Special Vaccine</i>				
Pneumovax (to prevent a special pneumonia)	One time, or two times if first before age 65	First one given		

Table 4. Report to Identify Patients' Average A1C (Also Available for LDL, Non-HDL, and Blood Pressure): Aids Identification of High-Risk Patients

		Dr. Sample's Clinic	
A1C (%)	> 8	< 8 to > 6.5	≤ 6.5
Patients at Each Level (n)	43	133	49

Patient List

Medical Record #	Name	Average A1C (%)	Visits (n)
89493	Jones, Bubba	12.4	2
56473	Charming, Prince	11.3	4
33347	Jones, Mary	11.2	2
12358	Simpson, Bart	11.0	3
12356	Dean, James	10.9	2

Table 5. List of Patients Who Have Not Had a Given Test or Exam in the Past 365 Days (Available for Eye and Foot Exams and Urine Microalbumin Test)

Patient Name	Date Last Done
Charming, Prince	8/2006
Jones, Bubba	12/2005
Kong, King	2/2006
Jones, Mary	1/2006
Simpson, Bart	4/2006
Dean, James	9/2006
Dough, Lotta	11/2005
Pincher, Penny	7/2005

levels. Those patients with levels > 8% are at the greatest risk for complications, and more aggressive management strategies are required. Group visits are one strategy that can be employed. Patients in the high-risk group can be invited to attend group visits. Clinic staff and physicians can also click on patients' names to see when they were last seen in the office; if it has been more than 3 months since the last visit, the patients can be asked to return as soon as possible for a follow-up visit. These reports are also available for LDL cholesterol, non-HDL cholesterol, and blood pressure. All names shown in the

sample reports are not real patients but rather fictitious ones that were entered in the registry for training purposes.

Table 5 aids physicians in recognizing patients who lack documentation for specific yearly tests or immunizations and daily aspirin use. These patients could be contacted and asked to return for this care. Special days can also be arranged to help increase goal achievement. An optometrist may be willing to come to a clinic to conduct eye exams, or a clinic could choose to schedule a flu shot day on a Saturday. The registry

helps providers focus on the patients who are in the most need.

Table 6 permits physicians to compare their practice's ability to achieve the ADA goals for A1C, LDL, and blood pressure. Some practices care for more disadvantaged patients and will not achieve goals as high as others.

Practices are also able to track their performance in achieving goals over time. Table 7 demonstrates changes over time for four practices. All of the practices improved their numbers after they had been in the program for 18 months or longer.

Summary

Diabetes is a complex disease that may be the most difficult of all chronic diseases to manage in primary care settings. The fiscal and psychological burden of diabetes can be significantly reduced if evidence-based goals are achieved for A1C, LDL cholesterol, and blood pressure.

The FAFPF's DMCP has developed tools to help primary care physicians and their patients attain these goals. These tools include an Internet diabetes registry and group visits. The registry produces reports that facilitate population management of patients and make one-on-one office visits more efficient

Table 6. Samples of Various Practices' Average Achievement of ADA Goals on Most Recent Tests Compared to All Practices and National Average

Practice Name	A1C ≤ 7%	LDL ≤ 100 mg/dl	Systolic Blood Pressure ≤ 130 mmHg	All Three Goals at the Same Time
National	48%	33%	33%	7%
All 58 Practices	54%	55%	55%	19%
6	68%	64%	53%	30%
11	44%	46%	52%	14%
20	75%	75%	69%	44%
22	58%	55%	71%	30%
37	66%	56%	74%	33%
48	45%	51%	46%	14%
56	64%	43%	48%	15%

Table 7. Percentage of Four Clinics' Patients Meeting Goals for A1C, LDL Cholesterol, Blood Pressure, and All Three at Once

	A1C	LDL Cholesterol	Blood Pressure	All Three Goals at the Same Time
Clinic 4				
1/06	45%	45%	38%	10%
7/07	57%	55%	49%	18%
Clinic 5				
1/06	51%	46%	36%	9%
7/07	54%	60%	52%	18%
Clinic 20				
1/06	45%	34%	45%	9%
7/07	70%	67%	69%	39%
Clinic 22				
1/06	46%	41%	48%	20%
7/07	59%	49%	74%	29%

and of higher quality. Group visits empower patients to better self-manage their diabetes.

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Edward Shahady, MD, ABCL, ABFM, FAAFP, is director of the Diabetes Master Clinician Program of the Florida Academy of Family Physicians Foundation in Jacksonville.