ABSTRACT

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Creator: Aynor Family Practice Diabetes Management Program ©.

Aynor Family Practice Diabetes Management Program: **A Patient Friendly and Staff Efficient Program for Solo Family Physician to Achieve Diabetic Glycemic and Lipid Control without Weight Gain**

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(Abstract)

Context Medication to treat diabetes without adequate dietary change is associated with hypoglycemia, weight gain, and persistent hyperglycemia. Minorities, like African Americans, tend to do worse. Diet is the most important part of diabetes management and the hardest to achieve. The available programs are either too complex to be understood by patients, or too cumbersome for a small physician staff to carry out. Most diabetic patients are treated by primary care family physicians.

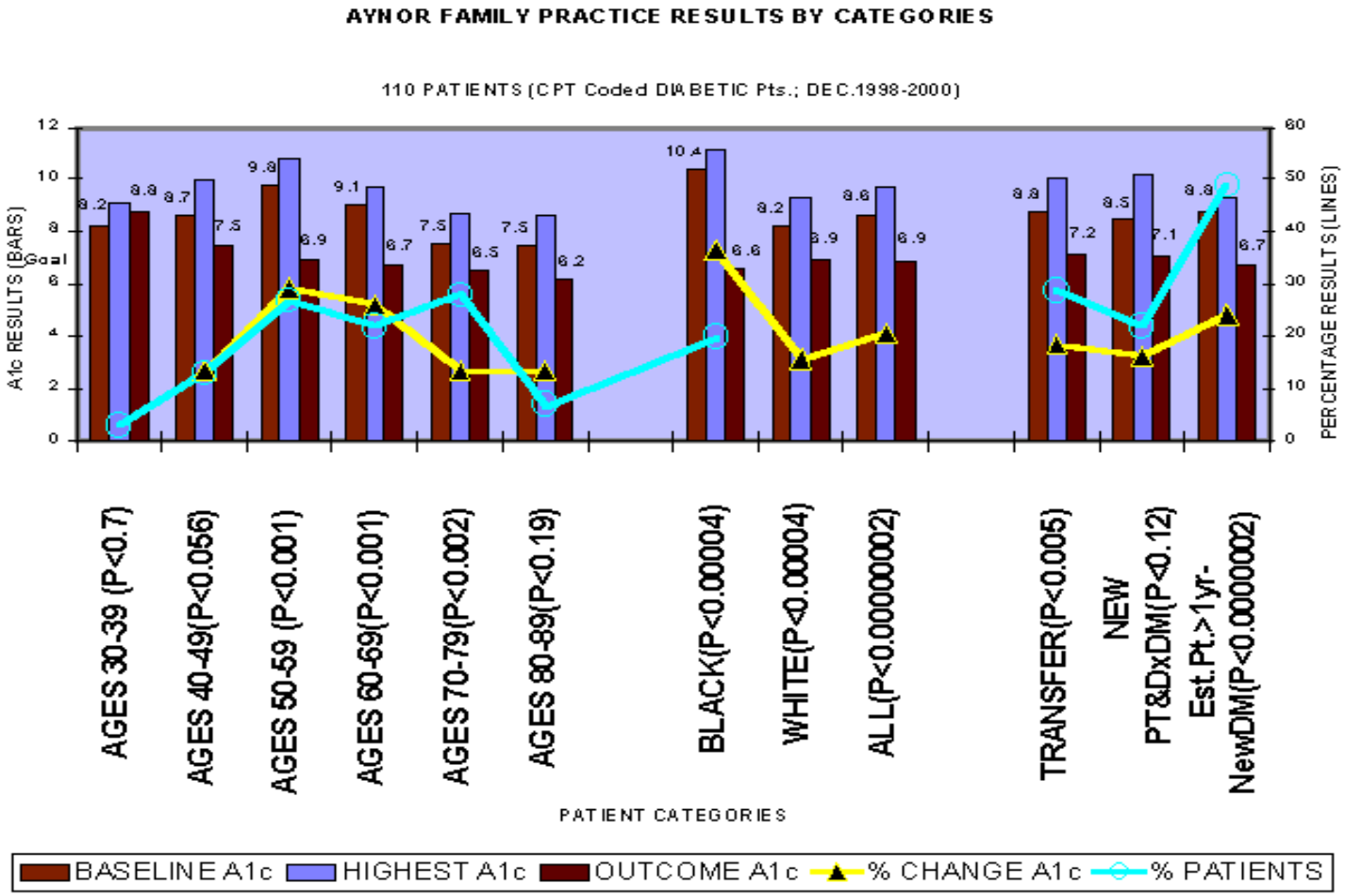
Objective To report a simple, yet successful, patient friendly and staff efficient program for solo family physicians, which can induce dietary changes for diabetic glycemic and lipid control, withoutweight gain.

Design, Setting, and Patients 110 diabetic patients at Aynor Family Practice (AFP), a rural solo family practice near Myrtle Beach, SC, participated in the Aynor Family Practice Diabetes Management (AFPDM) program. It consisted of greatly improved outpatient information handouts produced by AFP, individualized goals, 6 daily meals of "eat a little of a lot (variety of foods) rather than a lot of a little" determined by caloric counts for glycemic/weight control, and increased fiber. Mottos, slogans, and mnemonics are used. Fasting initially (<3 days) helped treat glucotoxicity. Charts selected were from patients seen between December 1998 to December 2000. All data prior to July 2001 was retrospectively reviewed for Hgb A1c, weight, and lipid panel (cholesterol, LDL, HDL, triglyceride) before and after treatment using AFPDM. Between Dec. 2001 and Jan. 2002, three 2-hour seminars on the program's methods and goals were given to the general public, outside the practice. Public opinion evaluations were distributed and collected.

Main Outcome Measures Change in Hgb A1c, weight, lipid, and results from public opinion.

Results 110 charts, with basal A1c of 8.5$\pm$3.5% (24 new diabetics), 8.8$\pm$2.5% (53 established patients that became diabetics), 8.8$\pm$2.6% (33 transfer diabetics), were studied. After 3.3-7.6 years of participation, A1c dropped significantly to 6.9$\pm$1.6% ($p<0.001$). There was no significant weight gain (205.3$\pm$48.0 lbs. vs. 204.9$\pm$50.8 lbs., $p>0.5$). Age did not affect outcome. 22 African Americans (basal A1c 10.4$\pm$3.3%) had better outcome (6.6$\pm$1.2%) than 88 Caucasians (8.2$\pm$2.4% to 6.9$\pm$1.7%). HDL went from 40.7 to 45.9 ($P<0.003$), LDL from 133.9 to 110.0 ($P<0.0001$). Less one outlier, triglycerides went from 288 to 198 ($P<0.04$). 70% of respondents from a public survey felt they understood AFPDM patient education much better than expected. 75% had previous diabetic counseling and/or education from other sources.

Conclusions AFPDM program, a practical program for solo family physicians, effectively achieved A1c ADA goal of <7%, lowering LDL to nearly 100 and increasing HDL>45, without weight gain. Improved patient education material and practical behavior modification contributed to this success.



A1c outcome results could be influenced by composition of the practice. The data can be divided by race, age, and onset of diabetes when seen by the practice. The first bar is the baseline A1c and the last is outcome. The tallest bar is the worst A1c recorded. The percentage of change (line with triangles) was calculated by the change in A1c divided by the baseline A1c times 100 (the UKPDS calculated out to be 13% as a point of reference [i]). Every category, but one improved by 15% or more. African Americans (Blacks) and age group 50-59 had the largest percentage of change (the average age in the UKPDS was 54 [i]).

The number of patients in each category was converted into percentages. Category "All" represented 100% of 110 patients. Caucasians (Whites) represented 80% of the practice studied. Percentages above 50% were not graphed out by the line with circles. 2 categories (ages 30-39 and ages 80-89) had less than 10% of the practice population, resulting in data that was not statistically significant. One category (new Pt & Dx DM) had a wide range of outcome data resulting in a higher, not statistically significant, P value. All other outcome data was statistically significant. All categories, but one, showed the same trend. A1c below 7 was the norm for Aynor Family Practice.

Probability (P) was calculated using paired T-test result calculated by software PSI (Poly Software International) plot version 6.5 [ii].

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[i] UK Prospective Diabetes Study Group. Intensive blood-glucose control with sulphonylureas or insulin compared with conventional treatment and risk of complications in patients with type 2 diabetes (UKPDS 33). *Lancet* 1998: 286; 1218-1227.

[ii] Poly Software International, P.O. Box 60, Pearl River, New York, USA 10965.