

# Shared Medical Appointments in a Residency Clinic: An Exploratory Study Among Hispanics With Diabetes

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**Objective:** To assess the feasibility and effectiveness of shared medical appointments (SMAs) among Hispanic patients with diabetes mellitus attending a family medicine residency clinic.

**Study Design:** Exploratory and descriptive study.

**Methods:** Hispanic patients having diabetes with poor glycemic control (glycated hemoglobin level,  $\geq 7\%$ ) attending a family medicine residency clinic were randomized to an SMA group ( $n = 50$ ) or a control group ( $n = 53$ ). The main outcome was glycated hemoglobin level. Secondary outcomes were quality of life and diabetes knowledge.

**Results:** When comparing pre-post measures, there were mean decreases in glycated hemoglobin level of 1.19% for the SMA group ( $P < .01$ ) and 0.67% for the control group ( $P = .02$ ). In the SMA group, quality-of-life and diabetes knowledge scores increased by 5 and 1.5 points, respectively ( $P < .01$ ).

**Conclusions:** Implementing SMAs is feasible and effective among Hispanic patients with diabetes attending a family medicine residency clinic. Health plan managers and policy makers can work with family medicine residents to encourage the use of this model as an alternative approach or in addition to conventional one-on-one interactions with patients.

(*Am J Manag Care.* 2011;17(6):e212-e214)

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Shared medical appointments (SMAs) may be useful in helping patients manage chronic conditions. Most of the current literature on this subject reports on populations other than Hispanics,<sup>1,2</sup> and health research that includes Hispanics does not focus on SMAs.<sup>3-5</sup> Furthermore, SMAs have not been conducted among Hispanics specifically attending a family medicine residency clinic, to our knowledge. The primary objective of this exploratory and descriptive study was to assess the feasibility of implementing SMAs in a family medicine residency clinic. A secondary objective was to compare the clinical effectiveness of SMAs vs regular office visits.

## METHODS

All Hispanic patients having diabetes with a glycated hemoglobin (A1C) level of 7% or higher who attended the family medicine residency clinic between September 2006 and August 2007 were mailed invitation letters to participate in the study. This clinic offers care to underserved and uninsured indigent populations. Referrals were received from all residents, faculty, and clinic staff. Inclusion criteria were Hispanic race/ethnicity, age 18 years or older, and diagnosis of type 2 diabetes mellitus. Exclusion criteria were dementia, current pregnancy, or mothers who were breast-feeding. We assigned participants to an SMA group or a control group using a table of random numbers. Similar to a published study<sup>6</sup> on SMAs, our team consisted of a resident or fellow researcher, faculty member, pharmacist, lead nurse, medical assistant, registration clerk, and social worker. The SMAs were conducted in Spanish every other week.

Patients completed the Diabetes Knowledge Questionnaire<sup>7</sup> and the Diabetes Quality of Life Brief Clinical Inventory.<sup>8</sup> We also collected demographic and clinical information, such as A1C level, immunizations, aspirin use, and foot and ophthalmology examinations. We collected these data among SMA and control patients for 17 months. Descriptive statistics were determined at baseline and follow-up visits for both groups.

## RESULTS

We conducted 36 SMAs, with a mean of 9 patients at each visit. There were 50 patients in the

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**Published as Web Exclusive**  
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## Shared Medical Appointments

SMA group and 53 patients in the control group. Patients in both groups were followed up for a mean of 9.5 months. The SMA and control patients did not differ significantly by demographic, clinical, or other characteristics. When comparing pre-post A1C levels, the SMA patients demonstrated a 1.19% decrease ( $P < .01$ ), while the control patients demonstrated a 0.67% decrease ( $P = .02$ ) (Table).

In the SMA group, pre-post proportions increased for individuals who used aspirin ( $P < .01$ ), provided complete lipid measurement ( $P = .02$ ), obtained pneumococcal polysaccharide vaccination ( $P < .05$ ), and attended eye ( $P < .01$ ), foot ( $P < .01$ ), and annual physical ( $P = .045$ ) examinations. In the control group, statistically significant pre-post decreases were observed in the receipt of flu shots (94% to 90%,  $P = .06$ ) and foot examinations (84% to 61%,  $P = .01$ ). Quality-of-life and diabetes knowledge scores in the SMA group increased by 5 and 1.5 points, respectively ( $P < .01$ ). Finally, patient satisfaction was high among the SMA group, with a median score of 3.67 on a Likert-type scale ranging from 1 to 4 (with 4 being the highest score). Positive comments were obtained, such as the following: “These groups are very good because they teach us how to treat our diabetes; I love this group” and “I thought it was really good; it helped me understand that there are more people like me.”

## DISCUSSION

The findings from our study suggest that offering and implementing SMAs in a family medicine residency clinic is a

### Take-Away Points

Shared medical appointments are effective in improving glycated hemoglobin level in a clinic that is part of a larger medical school and hospital infrastructure. Advantages of shared medical appointments include the following:

- Improved communication among patients and providers
- Development of peer support
- Enhanced provider productivity
- Greater patient satisfaction

feasible and effective approach to managing diabetes among Hispanic patients. To our knowledge, SMAs have not been used among Hispanics; therefore, we were unable to compare our findings with the results of other studies.

Our study had some strengths and limitations that deserve mention. One strength is that this is the first randomized controlled trial to date that evaluates SMAs in an exclusively Hispanic population with diabetes. This is important given the burden of diabetes among Hispanics.<sup>9-14</sup> Another strength is that the SMAs gave patients and the healthcare team an opportunity to interact for extended periods, increasing satisfaction for both groups.

Our study had limitations. First, although there was a reduction in A1C level for both groups, this finding may or may not have long-term clinical significance. Long-term longitudinal studies should be implemented to answer this question. Second, we did not conduct a cost-effectiveness analysis, which will be important for follow-up research. Our focus was on the feasibility and clinical effectiveness of SMAs. Third, based on previous literature,<sup>6</sup> we gathered a team that included a resident or fellow researcher, faculty member, pharmacist, lead nurse, medical assistant, registration clerk, and

■ **Table.** Pre-Post Clinical and Disease Management Indicators for Shared Medical Appointment (SMA) and Control Groups

Variable	SMA Group (n = 50)	Control Group (n = 53)
Glycated hemoglobin level, mean (SD) Δ, %	-1.19 (1.66) <sup>a</sup>	-0.67 (2.00) <sup>a</sup>
Disease Management Indicator	Pre-Post, %	Pre-Post, %
Flu shot	87-100	94-90 <sup>a</sup>
Microalbumin-creatinine ratio	86-84	79-83
Complete lipid measurement	92-100 <sup>a</sup>	94-87
Annual physical examination	96-100 <sup>a</sup>	100-100
Foot examination	68-94 <sup>a</sup>	84-61 <sup>a</sup>
Eye examination	64-92 <sup>a</sup>	67-63
Aspirin use	58-96 <sup>a</sup>	70-68
Low-density lipoprotein cholesterol level <100 mg/dL	65-75	67-63
Pneumococcal polysaccharide vaccination	80-98 <sup>a</sup>	94-94

SI conversion factor: To convert cholesterol level to millimoles per liter, multiply by 0.0259.

<sup>a</sup> $P < .05$  for SMA vs control group pre-post change.

social worker. Future studies should assess whether the SMAs would have been just as feasible and effective with fewer team members. Fourth, the small sample size (approximately 50 patients in each group) is a potential limitation of the study. We may not have had the necessary power to detect a true difference between the SMA and control groups. Fifth, the possibility of a “halo effect” exists, where providers participating in the SMAs could have gained new knowledge and insight that allowed them to better treat patients in the control group. For example, a patient in the control group could have been advised by the pharmacist to ask his or her physician about switching to a different medication because a patient with similar clinical status in the SMA group was recently switched to that medication. While this type of bias may be controlled by blinding, we could not have blinded the team members. However, future studies can better train team members to prevent or reduce the halo effect.

This exploratory and descriptive study demonstrated that SMAs are feasible and effective in improving diabetes management among Hispanics attending a family medicine residency clinic. Future studies should use more rigorous methods, have a longitudinal study design, recruit a larger sample size, assess cost-effectiveness, and test our findings in other residency clinics, such as internal medicine. Furthermore, health plan managers and policy makers can help advocate this effort by encouraging staff, faculty, and residents to consider this option.

#### Acknowledgments

We thank Madelyn Pollock, Amer Shakil, Alison Dobbie, Margaret Shin, Tiffany Barr, and all the participants and patients involved in the study.

**Previous Presentations:** This study was presented at the 2008 Annual Meeting of the North American Primary Care Research Group; November 15-19, 2008; Rio Grande, Puerto Rico; and at the 60th Annual Session & Scientific Assembly of the Texas Academy of Family Physicians; July 15-19, 2009; Arlington, Texas.

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**Funding Source:** This study was supported by the Department of Family and Community Medicine, University of Texas Southwestern Medical School Parkland Family Medicine Clinic; by a Community Action Research Experience project funded by grant D58HP08301 from the Department of Health and Human Services Health Resources and Services Administration; and by a foundation grant from the Texas Academy of Family Physicians.

**Author Disclosures:** Dr Foster reports that she was involved in the manuscript preparation as part of her position as statistician with the Department of Family Medicine at UT Southwestern Medical Center. The other authors

(NG, NEG, FJD, BMF, EJO) report no relationship or financial interest with any entity that would pose a conflict of interest with the subject matter of this article.

**Authorship Information:** Concept and design (NG, BMF); acquisition of data (NG, EJO); analysis and interpretation of data (NG, FJD, BMF, EJO); drafting of the manuscript (NG, FJD); critical revision of the manuscript for important intellectual content (NG, FJD, EJO); statistical analysis (NG, BMF); provision of study materials or patients (NG); obtaining funding (NG); administrative, technical, or logistic support (NG, EJO); and supervision (NG, NEG).

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