Removing Barriers to Glycemic Control in Patients with Diabetes
A Phone-Based Intervention

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Introduction

Achievement of diabetes care goals can be difficult; in a survey of academic medical center patients, only 34% had glycated hemoglobin levels of <7% and only 10% met all three cardiovascular risk factor targets (1). Identifying barriers to care in patients with uncontrolled diabetes may provide opportunities for the improvement of care in this population.

Percentage of measured values

Methods

Beginning in May 2008, a diabetes-focused phone-call-based intervention was implemented in an academic medical center internal medicine resident clinic to improve the glycemic control of patients with poorly controlled diabetes (glycated hemoglobin >9%). Patients were identified based on point-of-care testing values during clinic visits for post-visit phone follow up by pharmacists to review patients' medication regimens, blood glucose measurements, and barriers to glycemic control. A chart review was then conducted to determine whether this intervention would lead to increased identification of barriers to diabetes management.

Demographics

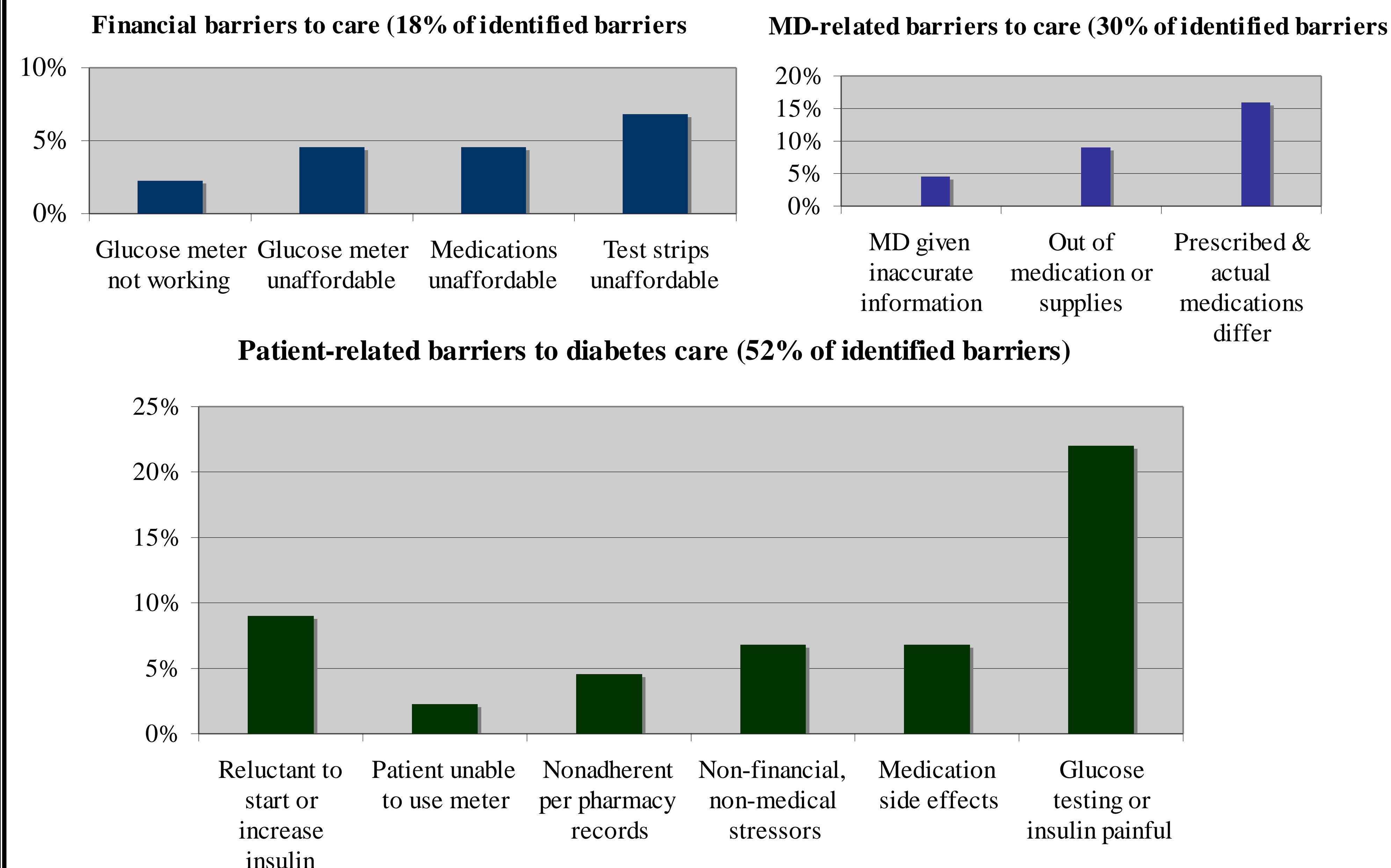
Over the three-month period since program initiation, 159 patients with poorly controlled diabetes were identified by point-of-care testing values and successful phone contact was made in 15% (N=24) of the identified patients.

Age (mean, years)	60.5
Female	65%
Prescribed insulin	71%
Glycated hemoglobin (median)	11%
Number of calls attempted (mean)	1.8
Number of contacts (mean)	1.3

Barriers to Care

Barriers to diabetes care were found in 79% of contacted patients. An average of 1.8 barriers were identified per patient.

The most common barriers were (% of patients):
- disparities between prescribed medications and patient's actual regimen (29%),
- painfulness of insulin injections (21%) ,
- painfulness of glucose testing (21%), and
- inability to afford glucometer or test strips (21%).



Interventions

Modifications to diabetes care were made in 87% of contacted patients as a result of this intervention. An average of 2.3 interventions were made per patient.

The most common interventions were (% of patients):
- education on correct medication dosage and frequency(42%),
- having the patient schedule a follow-up MD appointment (29%),
- increasing frequency of blood glucose testing (25%), and
- recommending additional lab monitoring to MDs (25%).

Discussion

Medication adherence is an important factor in achieving chronic disease care goals. Studies in the area of hypertension have shown that medication nonadherence is common (2), that adherence is strongly related to achievement of blood pressure goals (3), and that even high levels of prior nonadherence have little relationship to providers' decisions to intensify treatment (4).

In patients with uncontrolled diabetes, significant barriers to medication adherence exist. There was a high prevalence of barriers in the sample of patients contacted. Barriers to medication adherence included financial barriers, barriers related to patient knowledge and attitudes, and barriers related to the patient-physician interaction, suggesting impediments to optimal diabetes care at a variety of points in the resident clinic system.

Phone-based follow-up contact provides a promising avenue for identification of these barriers and implementation of interventions. A structured phone interview targeted at barriers to adherence identified an average of 1.8 barriers to adherence per patient contacted and initiated an average of 2.3 interventions, suggesting that this intervention could be effective in improving medication adherence and diabetes outcomes. Our study is limited by the lack of a control group and a lack of data on primary clinical outcomes. Future work to be done includes comparisons of the number of barriers identified via phone contact versus via in-person diabetes education and routine resident physician clinic visits as well as the effect of this intervention on glycated hemoglobin levels, blood pressure, and lipid levels.

"A 42 year old patient with uncontrolled diabetes, hypertension and hyperlipidemia was unable to purchase any medications because she had no insurance. We applied for patient assistance programs through manufacturers, and were able to get free supplies of an ACE inhibitor, statin, and insulin. She now reports taking medications regularly and is motivated and enthusiastic about controlling her disease states."

References

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