

EVALUATION OF ACCESS, A PRIMARY CARE PROGRAM FOR INDIGENT PATIENTS: INPATIENT AND EMERGENCY ROOM UTILIZATION

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ABSTRACT: We analyzed the impact of a program that provides indigent patients with free primary care on inpatient admissions, emergency room (ER) visits, and resulting charges in 91 patients before and after admittance into the program.

There was a decrease in ER visits after enrolling in the program (1.89 versus 0.83 visits per year; $p < 0.0001$). This difference translated into mean ER charges of \$1174 vs. \$717 ($p = 0.0007$), and a decrease in charges of \$41,587 per year. The charges for the program (outpatient visits and laboratory) were \$23,141. Entry into the program had no effect on inpatient admissions, which averaged 0.07 admissions per year both before and after admission to the program.

Indigent patients enrolled in a complimentary primary care program had significantly decreased per-year ER utilization rates and charges. The program had no effect on inpatient admissions. By conservative estimate, the program decreased ER charges by approximately \$18,000 per year secondary to decreased ER utilization.

KEY WORDS: indigent care; utilization; emergency services; disease management.

INTRODUCTION

The Eastside Community Practice (ECP) is a primary care practice composed of an interdisciplinary team of health professionals serving the medically underserved population of Gainesville, Florida. The clinic is a

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This research was sponsored by the North Florida and Suwannee River Area Health Education Centers and was a project of the 2001 Community Health Scholars Program. We would like to acknowledge the assistance of Mary Ann Burg, Jennifer McCarthy, and the staff of the Eastside Community Practice.

component of Shands HealthCare, an integrated health care delivery system that includes a university hospital as well as a community-based county hospital; both these institutions provide the majority of emergency room visits for the city of Gainesville. Beginning in March 1999, a program entitled Accessing Community Care through Eastside Social Services (ACCESS) began to provide primary care services and basic lab work to uninsured ECP patients not eligible for state, federal, or local medical assistance. When these patients visit a hospital ER or clinic for their health care, the institution usually absorbs the cost of their care or tries to bill government programs. The purpose of ACCESS was to serve as an innovative chronic disease management system designed to improve patient outcomes, and reduce inappropriate ER and inpatient hospital utilization.

In order to be eligible for ACCESS, patients must have one or more of five identified chronic conditions (hypertension, diabetes, asthma, congestive heart failure, and chronic obstructive pulmonary disease), and must live in one of three zip codes that have been identified as low-income areas. They cannot be eligible for Medicaid or Medicare and many are transiently uninsured without outside assistance. A social worker analyzes the eligibility of the patient and provides information and education about the ACCESS program. Once admitted into the program, any primary care visit is covered even if it is not related to one of the five chronic conditions. ECP currently allows 25 percent of total daily patient visits to be devoted to indigent care; 20 percent of this volume represents ACCESS patients, and 5 percent represents indigent patients not eligible for ACCESS. Additionally, ACCESS patients who cannot obtain medications from other sources are enrolled in a medication assistance program.

This retrospective cohort study was designed to assess the impact of regular access to primary health care on ER visits and inpatient hospitalizations. Our hypothesis was that patients admitted to the program would decrease their ER visits, inpatient admissions, and subsequent charges.

METHODS

After IRB approval, the charts of all patients admitted to the ACCESS program since its inception in March 1999 were reviewed. A centrally based system for data collection provides record of patient visits at the clinic, any emergency room visits, as well as inpatient admissions at the two hospitals that would be accessible to the ACCESS patients.

Of 140 patients admitted into ACCESS, 49 (35 percent) never returned to the clinic for subsequent care; 31 of these patients, however,

continued using ER resources and were selected as a secondary comparison population. The remaining 91 subjects qualified for our study; all had at least one medical visit covered by the ACCESS program after March 1999. Data concerning these patients was collected from the institutional database, and included the number of ACCESS, emergency room and inpatient visits, diagnostic codes for each visit, and total charges (both physician's fees and hospital charges) for each visit. The patients' records included visits three years prior to their ACCESS intake date and up until June 30, 2001. Any patient visit that was covered by insurance prior to or after being in the ACCESS program was excluded, which allowed for a comparison of ACCESS charges directly with hospital charges.

Several criteria were utilized to determine the inclusion of individual visits. For ER visits, we excluded those visits needing emergent care that could not be attended to in a primary care setting, because one would not expect these visits to be significantly altered by the provision of primary care. Specifically, the following diagnoses were excluded: any motor vehicle accident, trauma, contusions, fractures, sprains, chest pain, toxic effects of drugs, and rape. The data included all other ER visits. For inpatient visits, we only included hospitalizations that included a DRG code for one of the five chronic conditions. Inpatient admissions not related to the five chronic conditions were excluded since they are not directly related to the ACCESS program, and possibly could not have been prevented.

Because the number of visits and charges were not normally distributed due to several high utilizers, statistical analysis was performed on the data using the Wilcoxon Signed-Rank test for paired data and $p < 0.05$ was considered significant. Comparisons were made between patients' number of inpatient and ER visits and total charges prior to and after admittance into the ACCESS program. Because the period of time of enrollment varied for each patient, all data were presented in an annualized fashion (i.e., visits or charges per year).

RESULTS

The 91 patients meeting entry criteria were three-fourths African-American and predominantly female; demographic characteristics and the reason for admission into the program are shown in Table 1. Participants averaged 172 total ER visits per year prior to entry (mean 1.89, median 1.0) and 76 visits per year after entry into the program (mean 0.8; median 0, $p < 0.0001$). The total charges for ER visits were \$106,896 per year prior

TABLE 1

Description of ACCESS Patients (N = 91)

	<i>N (%)</i>
Female	57 (62)
Race	
African-American	70 (76)
Caucasian	20 (22)
Other	1 (.01)
Age (mean)	53.5
Reason for admission to ACCESS*	
Diabetes	25 (27)
Hypertension	60 (66)
Asthma	20 (22)
Chronic Lung Disease	2 (2.2)
Congestive Heart Failure	2 (2.2)

* Total greater than 100% because of multiple diagnoses in some patients.

to the program (mean \$1174, median \$661), and \$65,247 per year after the program (mean \$717; median 0, $p = 0.007$). The decrease in ER charges for patients prior to and after admission to the program totals \$41,587. Of the 49 patients excluded from the study because they had not returned to the ACCESS program, we had follow-up data on 31 individuals. These non-participating patients had similar numbers of pre-ACCESS ER visits were similar as the participating patients ($p = 0.65$), and remained at that baseline rate after their one ACCESS intake visit ($p = 1.0$), unlike the decrease noted in the participating patients.

Analysis of the inpatient admissions and charges revealed little effect of the program. There were a total of 7 admissions per year both before and after entry into the program. The charges were likewise very similar, with total inpatient billings before the program of \$58,788 and after the program \$59,293 ($p = .9$).

There were 486 ACCESS outpatient visits over the two years of the program's existence; charges for these visits would total \$46,282 (average charge per visit \$95). Annualized, the charges were \$23,141. Subtracted from the savings provided by the decreased ER utilization, the ACCESS program resulted in decreased charges of \$18,446.

DISCUSSION

We found an association between participating in the ACCESS program and a decrease in ER utilization and charges. However, there was no association between inpatient visits or billings and participation. It is important to consider whether the noted decrease in ER visits was actually secondary to the program. Data collected from 31 participants who were admitted to the program but never returned demonstrates no change in their number of ER visits, suggesting the value of the ACCESS program to those that stayed in the program. Limitations of the study include a relatively small sample size, and the fact that the program has been in place only a short time; the first patient was enrolled two years before the analysis, and many patients were followed for relatively short time periods. It is possible that with longer follow-up, health status could improve more dramatically and increase the cost savings. Additionally, although cost data were available for inpatient and emergency room visits, such data was not available for clinic visits; thus, charges were used instead of costs for comparison purposes. We do not believe that there are significant differences in the cost/charges ratio between outpatient and inpatient visits; thus, these data represent a relative difference that would be similar to cost data.

The significant expenditures of providing primary care services in the emergency setting are a drain on the health care system, and the implementation of alternative services have been seen as a probable source of cost-savings.¹ Individuals who use emergency department visits for nonurgent pediatric problems are more likely to be single parents, to have Medicaid, and to have been taken to the ER themselves as children; however, many already have continuity care physicians.²

Efforts to curb the inappropriate use of emergency services have been evaluated. Okin et al.³ instituted a case management intervention. There was a significant decrease in ER visits, ER costs, and inpatient costs; 54 percent of the initially indigent patients received Medicaid. They calculated a cost saving of \$1.44 for each \$1.00 invested in the program. In a retrospective cohort study, Powers⁴ evaluated the impact of required Medicaid managed care on ER utilization and found a significant decrease in low-acuity visits after managed care was instituted. Even with these improvements, however, weekend and evening utilization decreased less than daytime utilization. Nykamp and Ruggles⁵ provided free medical care and pharmaceuticals to a group of indigent patients who had been admitted to their hospital. In comparison to a historical control population, a decrease in both outpatient and inpatient admissions was found.

In spite of these efforts, providing non-emergent care to the medically underserved remains a significant issue to health care systems. There is evidence that changing patient behavior is unlikely⁶ and new approaches to this population may require restructuring of outpatient clinics with regard to access (transportation, time of operation) and financial support. Our program has demonstrated a clear decrease in ER utilization and charges for the participants, both when compared with these measures prior to entry into the program, and with a non-participating control group. While our program did not demonstrate a decrease in inpatient admissions, we hypothesize that with a longer period of intervention, improvement in health status may result in these desired outcomes.

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