Access to Care for an Ambulatory Cohort Followed by Medical Residents

Marie McDonnell

A sizable proportion of patients at the Division of General Medicine outpatient practice (Associates in Internal Medicine) receive their primary care from physicians in training. Medicine residents, under the direct supervision of licensed (attending) physicians. The remaining patients are primarily followed by attending physicians. The overall goal of this study is to examine the effects, if any, receiving care from residents has on the access to care for our patients.

Several factors could potentially exert a significant influence on the care resident physicians give to their patients. The very nature of a training program implies a more limited experience on the part of the trainee. In addition, continuity is affected by seasonal changes, such as rotations during which the resident is not available to ambulatory patients (e.g. intensive care units), and by the fact that most residents leave the institution at the end of their training. Direct supervision by attending physicians, cross-coverage by other residents, scheduled hand-over of patients at the end of training and an open "walk-in" clinic, were all put in place in order to minimize negative impact on access to care. However, the efficacy of those corrective measures has only been partially evaluated.

This study will evaluate access to care by measuring previously validated quality indicators, visits to the Emergency Department and hospital admissions. Additionally, the study will identify trends in laboratory data that indicate the status of a particular chronic disease, e.g. glycosylated hemogoblin in patients with diabetes. All data evaluated will be obtained from existing electronic medical records, stored in Columbia-Presbyterian's clinical data repository. There will be no direct contact with human subjects. In order to protect the privacy of the patients, names, street addresses, and Social Security numbers will be deleted from the data files at the first step of data collection.

The outcomes of interest will be evaluated to assess differences between residents at different stages of training, and between residents and attending physicians. We expect our findings to be useful in developing policies aimed at optimizing access to care in our practice.

At this time, we have not identified any potential ethical problems related to the performance of this study.

IRB PROTOCOL

A. Study Purpose and Rationale

Small studies of academic clinics have shown that the inevitable rapid turnover of resident physicians every three years has adverse effects on future continuity and patient satisfaction with a new doctor. However, while previous studies have indicated that a lack of continuity in primary care practices contributes to increased emergecy room (E..R.) visits and preventable hospitalizations for "ambulatory sensitive" medical conditions, this effect has not been examined in settings where physicians-in-training provide the majrity of patient care. In addition, it is not clear how the intrinsic design of resident-based primary care clinics affects medical outcomes in patients whose health may be especially affected by access to care, e.g. patients with chronic diseases.

The overall goal of this study is to examine the effects, if any, receiving care from residents in the Division of General Medicine outpatient practice (Associates in Internal Medicine, AIM) has on the access to care for our patients. Several factors could potentially exert a significant influence on the care resident physicians give to their patients. The very nature of a training program implies a more limited experience on the part of the trainee. In addition, continuity is affected by seasonal changes, such as rotations during which the resident is not available to ambulatory patients (e.g. intensive care units), and by the fact that most residents leave the institution at the end of their training. Particular attention will therefore be paid to the transfer of care from third year residents to incoming interns in July.

B. Study Objectives

1. To detect a difference in E.R. visits, urgent-care visits, and walk-in visits between patients followed by
    a) residents vs. attendings in -AIM clinic, and
    b) residents in their 2nd year vs. 3rd year
2. To detect a difference in the preventable hospitalization rate (admissions for congestive heart failure, chronic obstructive pulmonary disease, asthma, diabetes and hypertension), E.R. visit rate, urgent care visit rate between groups defined in a)
3. To detect the differences defined in 1. and 2. between patients who have had 2 or more visits with their primary care doctor within the last 12 months, i. e. continuous care," and patients who have not, i.e. "discontinuous care."

C. Study Design and Statistical Analysis.-

Patients to be included in the study are patients who have been receiving care in the AIM practice since May of the first studied year. They will be identified *through analysis of existing electronic medical records, stored in Columbia-Presbyterian's clinical data repository.

Patients belonging to three groups will be compared:

1) patients of third year residents
2) patients of second year residents
3) patients of AIM attending physicians

The study will examine retrospective data from the years 1999 and 2000. Outcomes to be measured include rates of hospital admissions, emergency visits, urgent care visits and unscheduled "walk-in" visits in each group. In addition to the rates of these episodes, we will identify the ICD-9 codes entered into the electronic medical record in order to characterize the patient events. Additional outcomes may include results from laboratory studies obtained through patients' own physicians independent of the study. These outcomes will be extracted from existing data covering a period of at least 16 months.

In order to calculate an appropriate sample size to detect about a 20% difference in outcomes between groups, and with a power of 80%, we utilized results from two previously published studies, one

of which studied a population at CPMC similar to the AIM population (1,2). We will realistically be able to include approximately 3,000 patients for each group, which will allow a comparison of the combined outcome of E.R.visit rates and urgent-care visit rates between all three groups. For the outcome of preventable hospitalization rate, we will compare group 1 +2 as a "case" group with group 3, the "control" group.

A number of variables will be identified for each patient in order to identify their role in the outcome using a multivariate logisitic regression. These will include age, gender, insurance type and level of continuity with his/her provider. This last variable will be defined as "continuous care," i.e. the patient has seen the same provider at least two times in the past 12 months, or "discontinuous care," i.e. the patient has not seen one same provider two times in the past 12 months.

There will be no direct contact with human subjects. Patients in all three arms will be matched by age, gender and zip code.

D. Study Procedure

All data to be analyzed are existing data, and will not require additional studies/procedures to be performed on patients.

E. Study Drugs/Devices

There are no drugs/medicines/devices that will be used or tested on any patients.

F. Study Questionnaires

The study does not involve the distribution or use of questionnaires.

G. Study subjects

T he AIM clinic population in general comprises adults of ages greater than 18 years with a large proportion of patients from ethnic minority groups.

Patients of 3rd year residents who stayed on in academic positions after graduation will be excluded as will patients of 2nd year residents who left the institution after their second year. Subjects are not excluded based or ethnicity age, gender, or race.

Patients who are identified to have a chronic disease may be categorized for subgroup analysis. For example, a subgroup of patients with Diabetes Mellitus will. be identified based on criteria used in the IDEAtel study currently in progress. These criteria include ICD-9 codes and glycosylated hemoglobin values obtained previously and present in the electronic medical record. Other examples of chronic diseases which may be used for subgroup analysis include asthma, hypertension, chronic obstructive pulmonary disease, and congestive heart failure.

H. Recruitment of subjects

Subjects will be identified by their documented visits to the AIM clinic areas, including AIM West and AIM East locations. The study does not involve the active participation of any patients or of their physicians.

I. Confidentiality of study data

All I data evaluated will be obtained from existing electronic medical records, stored in Columbia-Presbyterian's clinical data repository. There will be no direct contact with human subjects. In order to protect the privacy of the patients, names, street addresses, and Social Security numbers will- be

deleted from the data files at the first step of data collection and assigned a study ID number. Data files will be kept at a secure place, with access only for study personnel. Publications and any data-sharing outside of -'PNIC will not contain any personal identifiers.

J. Potential conflict of interest

There are no foreseeable conflicts of interest.

K. Location of study

The study site is the Department of -Medicine, located on Presbyterian Hospital floor 9

L. Potential risks

There are no foreseeable risks to the patients included in the study

M. Potential benefits

The study will not directly benefit any of the patients included in the study. However, indirect benefits include possible future improvements in the AIM clinic system resulting directly from the results of this study,

N. Alternative therapies

This study does not involve any form of therapy

O. Compensation to subjects

No compensation will- be provided.

P. Costs to subjects

There will be no costs to subjects.

Q. Minors as subjects

Ml patients in the study will be adults, of ages greater than 18 years

R. Radiation/radioactive substances

There will be no direct contact between any person or substance and study patients.

References

1. Culler, et al. Factors related to potentially preventable hospitalizations among the elderly. Medical Care. 1998. 36:6
2 Mundinger, K et al. Primary care outcomes in patients treated by nurse practitioners or physicians. JAMA. 2000. 283:1