

Emergency Room Misuse by Medical Assistance Patients in a Family Practice Residency

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Four hundred individual Emergency Room records were retrospectively reviewed. Demographic data, complaint, diagnosis, and treatment were tabulated and analyzed by computer assistance. Judgment was not made regarding the necessity of physician consultation, but whether an Emergency Room visit was warranted considering the duration of the presenting complaint.

During a time period when 29 percent of the total outpatient visits to the Family Practice Center Model Office were made by recipients of Medical Assistance, the same population accounted for 53 percent of the Emergency Room visits reviewed. Twenty-five percent of the 400 visits were judged to be unnecessary according to the pre-established criteria. Sixty-four percent of the unnecessary visits were by Medical Assistance patients. Of 304 total families represented, 73 were responsible for multiple visits. Thirty-one percent of these visits were unnecessary, whereas 21 percent of the visits made by families with single visits were unnecessary.

In this family practice setting, it is concluded that Medical Assistance patients have a greater tendency toward inappropriate use of the Emergency Room when compared to non-Assistance patients.

There is much discussion in the literature concerning the use of Emergency Rooms for obtaining primary care.¹⁻¹⁸ Caplan documented Emergency Room utilization in a private family practice setting in New York,¹ but no studies documenting Emergency Room use in a family practice residency setting have been done. More importantly, there is very little in the literature addressing abuse or misuse of Emergency Rooms.

Alpert demonstrated that families who had lower incomes and lacked a good physician-patient relationship tended to have greater numbers of nonurgent Emergency Room visits than did those with higher incomes and a firm physician-patient bond.¹⁴ In Perkoff's study at the Barnes Hospital Emergency Room in St. Louis, visits by members of lower socioeconomic groups were more likely to be considered nonurgent and resulted in fewer hospital admissions than the visits by higher socioeconomic group members.¹⁵ Kluge determined that in the Emergency Rooms of Rochester, New York in 1963, only 33 percent of the visits were necessary consultations; the other 67 percent of patient encounters would have been

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Table 1. Categorization of Chief Complaints and Diagnoses

	Chief Complaint Number	Diagnoses Number
Soft Tissue Trauma	102	100
Undiagnosed Signs/Symptoms	67	10
Musculoskeletal	58	51
Digestive	45	33
Respiratory	39	48
Eye, Ear	28	42
Dermatologic	21	16
Genitourinary	12	21
Fractures	6	16
Poisonings/Adverse Drug Effects	5	7
Unspecified	4	3
Psychologic/Psychiatric	3	16
Neurologic	3	4
Pregnancy	3	3
Infectious Disease	2	11
Cardiovascular	2	13
Prophylactic Procedures	0	6

more appropriately made in physicians' offices.⁷

In the present study, the authors hypothesized that in a family practice residency setting, the Medical Assistance segment of their practice was inappropriately using the Emergency Room when compared to the non-Medical Assistance patients in the Model Office population.

Through attempting to prove this hypothesis, the authors hoped to shed new light on the issue of Emergency Room use. This could be informative, both locally and nationally for family physicians and government Medical Assistance agencies. Ultimately, it was hoped the information could be used to improve the quality of patient care and the efficiency of expenditure of Medical Assistance dollars.

Methods

The present study was undertaken in Cedar Rapids, Iowa. The greater Cedar Rapids area includes 150,000 people with two hospitals of 400 and 500 beds. The majority of the patients of the Cedar Rapids Family Practice Residency Program use the Mercy Hospital Emergency Room and are attended by the family practice resident on duty.

The Cedar Rapids Family Practice Residency has 10,781 registered patients, representing 2,375 families. Of these patients, 5,147 are "active patients," ie, have been seen at least once during

the past two years. An average of 1,890 patient visits are made to the Family Practice Center Model Office per month during regular office hours (8:30 AM to 5 PM, Monday through Friday); an average of 205 Family Practice Center patient visits are made to the Emergency Room per month.

The records of 400 Family Practice Center patient encounters at Mercy Hospital's Emergency Room during the months of March, April, and June 1977 were drawn at random and critically reviewed by the authors. The following parameters were tabulated: (1) Family Practice Center assigned family number, (2) age, (3) sex, (4) race, (5) marital status, (6) resident physician responsible for the ongoing care of the family, (7) employment status of the head of the household (retired or disabled persons were considered unemployed), (8) insurance coverage (five different categories were tabulated: [a] self-pay, [b] private insurance, [c] Blue Cross/Blue Shield, [d] Medicare and [e] Medical Assistance, variously known as Title XIX or Aid to Dependent Children), (9) date, (10) day of week (holidays were designated as a special case), (11) time of visit, (12) chief complaint, (13) diagnosis, (14) disposition (division as to whether follow-up was requested, not requested, or an admission occurred), and (15) necessity of visit. The chief complaint and diag-

Table 2. Necessity of Visits

	Number	Percent
Visit to Emergency Room Necessary	297	74.2
Visit to Emergency Room Unnecessary	102	25.5
Unknown	1	0.2

nosis were coded and organized according to the Cedar Rapids Alpha Code.¹⁹ The authors determined the visits to be justified if the duration of complaint or the onset of symptoms made it necessary that the patient be seen in the Emergency Room rather than in the Family Practice Center during the office hours. A patient who made an unnecessary Emergency Room visit could have been seen more appropriately in the Family Practice Center Model Office by the above criteria. For instance, the visit of a nine-month-old child with a five-hour history of fussiness and temperature of 102 F seen at 3 AM on a Thursday morning would have been considered necessary. If this same child had had the same symptoms for 48 hours with no indication that there was any change in his condition, this would have been considered an unnecessary Emergency Room encounter; the child would have been more appropriately examined during regular office hours. No judgment was made as to whether or not a physician actually needed to be consulted about the problem, in contrast to one previous study in the literature.⁷

The 15 data items for each patient visit were entered into an Imsai 8080 computer. The results were tabulated using a program written in the Palo Alto dialect of the Tiny BASIC language.^{20,21} This program was designed to allow retrieval of individual patient visits grouped according to any number of the 15 parameters. After retrieval of the grouped data, distribution of selected demographic items among the subgroups was analyzed by the chi-square test.

Results

Age/Sex/Race

Divisions were made to correspond to the standard age groups established by "A Glossary for Primary Care."²² Nearly 50 percent of the visits were by patients age 14 years or younger. Another 21 percent fell in the range of 15 to 24 years. Male patients totaled 177 (44 percent), while 223 (56

percent) were visits made by female patients. Of the patients, 91.5 percent were Caucasian which approximates the percentage in the Cedar Rapids population in general.

Marital Status

Forty-one percent of the patients over 17 years of age were married; for every two patients who were single, three had been divorced.

Resident Physician

A computer printout was prepared for each physician to acquaint him with his patients' Emergency Room use during the study months.

Employment Status/Insurance Coverage

The head of the household was employed in 190 patient visits (47.5 percent). That person was unemployed in 210 (52.5 percent) patient visits. More than half of the patient visits to the Emergency Room were covered by Medical Assistance funds. During this same time period, only 29 percent of patient encounters to the Family Practice Center Model Office were by Medical Assistance patients.

Date of Visit/Time of Visit

The Model Office is open 8:30 AM to 5 PM, Monday through Friday. Patients must seek care in the Emergency Room at other times. As expected, Saturday and Sunday were the busiest days in the Emergency Room, with 25.5 percent and 19.2 percent of total visits, respectively. The four-hour period from 1601 to 2000 hours accounted for most Emergency Room encounters, followed by the evening hours of 2001 to 2400.

Chief Complaint and Diagnosis (Table 1)

The three most common areas of presenting complaints, as coded by the Cedar Rapids Alpha

Table 3. Necessity as Related to Multiplicity of Visits

	Number of Families	Unnecessary Visits	Necessary Visits
Multiple Visits Per Family	73	53 (31%)	116 (69%)
Single Visits Per Family	231	49 (21%)	182 (79%)
Totals	304	102	298
	$\chi^2=5.40$	$P<0.025$	

Code,¹⁹ were soft tissue trauma, musculoskeletal problems, and various undiagnosed signs and symptoms. Correspondingly, the three most common final diagnoses were soft tissue trauma, musculoskeletal problems, and respiratory illnesses. This reflects that many nonspecific symptoms were related to the respiratory tract.

Disposition/Necessity of Visits

Advice to make a return visit to the Family Practice Center was given to 166 (42 percent) patients. A return visit was not deemed necessary for 158 (40 percent) patient encounters. Forty-one people (ten percent) were admitted. In 35 patient visits (eight percent), these directions could not be determined from the Emergency Room record. Overall, 74.2 percent of the visits were judged to be necessary, with 25.5 percent judged unnecessary (Table 2).

Demographic Correlation of Unnecessary Visits

An attempt was made to identify demographic factors that were associated with patients who made unnecessary visits. It was postulated that families who use the Emergency Room frequently might also use it inappropriately. Of the 304 families involved by the study, the 73 families (24 percent) who made more than one visit accounted for 169 visits. Fifty-three of these visits (31.4 percent) were judged unnecessary and accounted for 52 percent of all the unnecessary visits in the study, while the other 76 percent of the families accounted for the other 48 percent of the unnecessary visits. Families who visited the Emergency Room more than once were 3.4 times as likely to

have made an unnecessary visit as were the families that had only one visit. On a per visit basis, each visit by the former group was 1.48 times as likely to be unnecessary as each visit by the latter group. This difference is statistically significant. ($P<0.025$) (Table 3).

Of the other demographic factors tabulated in the study, two that correlated significantly with a proportion of unnecessary visits higher than that in the population as a whole were unemployment of the head of the household ($P<0.05$) and participation in Medical Assistance ($P<0.01$). Since a large fraction of Medical Assistance families also fell in the unemployed group, the authors examined the association of unnecessary visits with unemployment within and without the Medical Assistance population. Considered separately from Medical Assistance participation, employment status showed no significant relationship to proportion of unnecessary visits. This increased incidence of unnecessary visits among the unemployed families could be attributed entirely to those families receiving Medical Assistance.

It was postulated that unmarried adult females (age 18 to 30 years) might have made more unnecessary visits than their married counterparts based on a lack of supportive family members. This was not substantiated by statistical analysis. Similarly, no association was found with racial groups (white or nonwhite).

Discussion

The use of the Emergency Room for unnecessary visits with its episodic management of these problems represents the antithesis of the family practice philosophy as recognized by Caplan and others.^{1,4,5} He identifies typical patterns of

Emergency Room utilization and discusses the motivation behind Emergency Room visits. Caplan further suggests that family physicians identify the cohorts of patients in their individual practices who frequent the Emergency Room.

This study has uniquely documented the inappropriate use of Emergency Room services by Medical Assistance patients as compared to people who carry financial responsibility for their medical care in a specific family practice setting. The authors feel compelled to make this information available to the agencies who administer Medical Assistance funds. In attempting to discover the factors that contribute to inappropriate use of the Emergency Room, statistical associations were found with the number of visits made by a family, but not with race or employment status independent of other factors.

In one sense, this effort has been an attempt to meet Caplan's challenge to evaluate critically the Emergency Room issue on a local level. Certain limitations of the study are recognized by the authors: (a) a larger number of encounters would give more validity to the data, (b) any bias by the reviewers would tend to alter the figures of visit necessity, although the authors all considered each other generally lenient in their interpretation of the criteria for visit necessity, and (c) certain Emergency Room visits may have been prompted by people knowing their insurance might cover an Emergency Room visit but not an office visit.

Conclusions

Many benefits may accrue from reviewing Emergency Room visits made by a family practice residency patient population:

1. Document abuse of Medical Assistance dollars to illustrate for local agencies how their funds are being used.
2. Allow national or regional comparisons to this data, perhaps to improve the Medical Assistance program through more efficient dollar utilization.
3. Identify families needing intensive patient education, behavior modification, and strengthened support mechanisms.
4. Adjust the residency curriculum to implement No. 3.
5. Identify for each resident physician his/her patients who abuse Emergency Room services.

6. Allow peer review with fellow family practice residents as the Emergency Room forms were reviewed.

7. Encourage comparison with unnecessary Emergency Room visits by non-Family Practice Center patients within the study.

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