

Emergency Room Use by Patients from a Family Practice

Patterns of Illness and Motivation

Clive Caplan, MB, BS
Islip Terrace, New York

Patient visits to hospital Emergency Rooms, often for non-urgent illnesses, have increased phenomenally. Yet, an Emergency Room cannot give satisfactory care for those non-urgent illnesses since its management is fragmented and episodic, the antithesis of family practice. This study of private patients from a family practice explores the total spectrum of illness taken to an Emergency Room over a six-month period and the motivation behind the patients' visits.

Diagnoses were not distributed at random but fell into discrete patterns of illness of epidemiological interest and which suggest possibilities for prevention. Emergency Room visits were made at times of self-perceived crisis when the private physician was considered inaccessible, and the hospital came to mind as a convenient and reliable source.

The family physician should be aware of the special characteristics of his patients who visit Emergency Rooms and alert to the possibility of prevention of traumatic episodes. He should also consider follow-up care on those patients who make Emergency Room visits, with particular reference to exploring those common psycho-social problems which may have loomed large in the motivation for the hospital visit and yet were not recognized or treated at that time.

Introduction

There has been a huge increase in the number of patients visiting hospital Emergency Rooms. These patients demand care for a wide variety of illnesses, often non-urgent, and not the result of accidents.

Emergency Rooms were originally established only for the treatment of trauma, but the new trend in utilization has stimulated hospitals to expand their staff and their facilities to cope with the changing health habits of their communities.

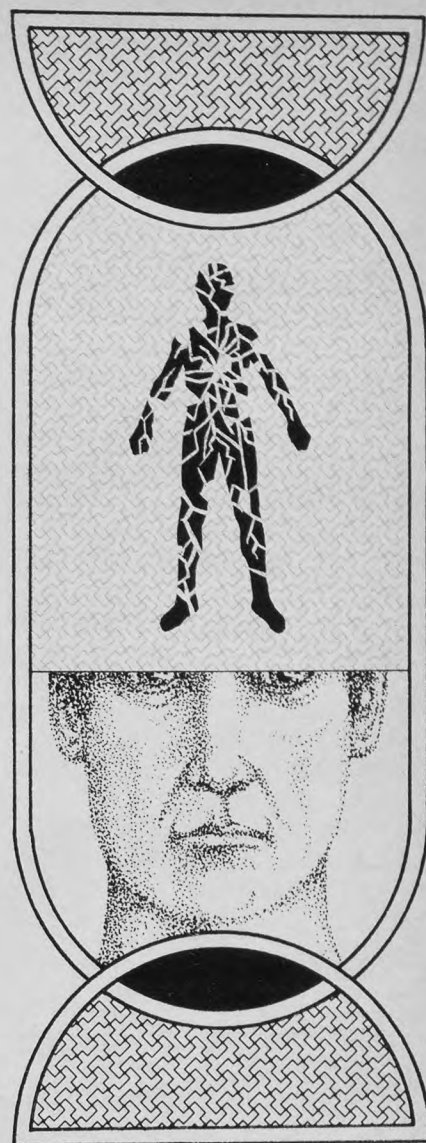
Figure 1 shows the increase in

volume of visits since 1940 to the Emergency Room of Southside Hospital, Bay Shore, New York, a suburban community hospital on the south shore of Long Island.

Emergency Room studies have been published by many investigators¹⁻¹⁰ and the reasons for the rise in volume of visits have been explored in the United States⁵⁻⁹ and in the United Kingdom.^{11,12}

There is evidence for two patterns of Emergency Room use. In big cities, Emergency Rooms provide general medical care to lower income groups who have no private physicians, while smaller town or suburban hospitals serve a more sophisticated population who usually do have private physicians.¹³

In those communities where it is hard to obtain ambulatory care from private physicians because of maldistri-



bution of doctors by geography and/or by specialty,¹⁴ the use of an Emergency Room to obtain general medical care is easy to understand. But why do patients who do have private physicians choose to visit Emergency Rooms, and why so often for non-urgent illness? In published studies, from 36 percent to 65 percent of visits are for objectively non-urgent reasons.

Apparent advantages of Emergency Room care have been listed,⁶ such as convenience, prompt expert care, and complete facilities for diagnosis and treatment. The suggestion has been made that it should be wondered why a patient would go anywhere else!

However, while the advantages of an Emergency Room visit may be apparent to the patient, the disadvantages are clear to the physician. An Emergency Room, in fact, is not a good place to obtain ambulatory care.

Dr. Caplan is Associate Professor of Clinical Family Medicine at the State University of New York at Stony Brook. Requests for reprints should be addressed to Dr. Clive Caplan, 111 Carleton Avenue, Islip Terrace, NY 11752.

Patients are seen by unfamiliar doctors who are unaware of their past history and have no access to their records. Family background, conditions of work, and emotional make-up are not usually explored and may not be thought relevant. There is frequently no follow-up. Minor illnesses are over-investigated, and laboratory and radiological studies are used to take the place of clinical judgment.¹⁵ A relatively low quality of care has been shown to be provided at considerable expense.¹⁶

One must conclude that an Emergency Room visit for a non-urgent illness is an inferior way to receive ambulatory care and also a wasteful method of spending scarce health care dollars.

The American Academy of Family Physicians has stated¹⁷ that the family physician should be the doctor of first contact under any but the most clearly emergency situations and that comprehensive health care is best for (and desired by) the majority of Americans who desperately seek personal reference points in an impersonal society. The fragmented and episodic care

offered by an Emergency Room is the antithesis of this ideal.

This present study was suggested by the growing size of the Emergency Room problem, the threat offered to the practice of good primary care thereby, and the lack of information about Emergency Room patients from the private sector of the health care system.

Methods

The study practice is in a middle and low income suburb on the south shore of Long Island. The community uses a single hospital, Southside Hospital, Bay Shore, New York, four miles from the doctor's office. Office hours are held four days and two evenings a week and an appointment system ensures minimal waiting time. An acute illness can always be seen at once. A coverage system with two other family physicians leaves one doctor available at all times and the practice patients are aware of this. No encouragement or advice to visit the Emergency Room is ever given.

When an Emergency Room visit is

made, the hospital asks each patient the name of his usual physician. A copy of this record is then made available to that physician.

Over a six-month period (January to June, 1973) these records of all those patients from the author's practice who visited the Emergency Room were analyzed. Information was thus produced about a group of patients not previously studied, a group with a continuing relationship with a family physician. This continuing relationship was confirmed in all cases by verification with office records.

Information taken from the Emergency Room record included age, sex, reason for visit, medical diagnosis, and any investigations performed.

In one month (May) each patient was contacted by telephone subsequent to the visit, and interviewed about his or her reasons for visiting the Emergency Room.

Results

Volume of Visits

During the first six months of 1973 there were 331 patient visits from the study practice to the Emergency Room, an average of 13 per week. This was seven percent of the number of office visits during the same period.

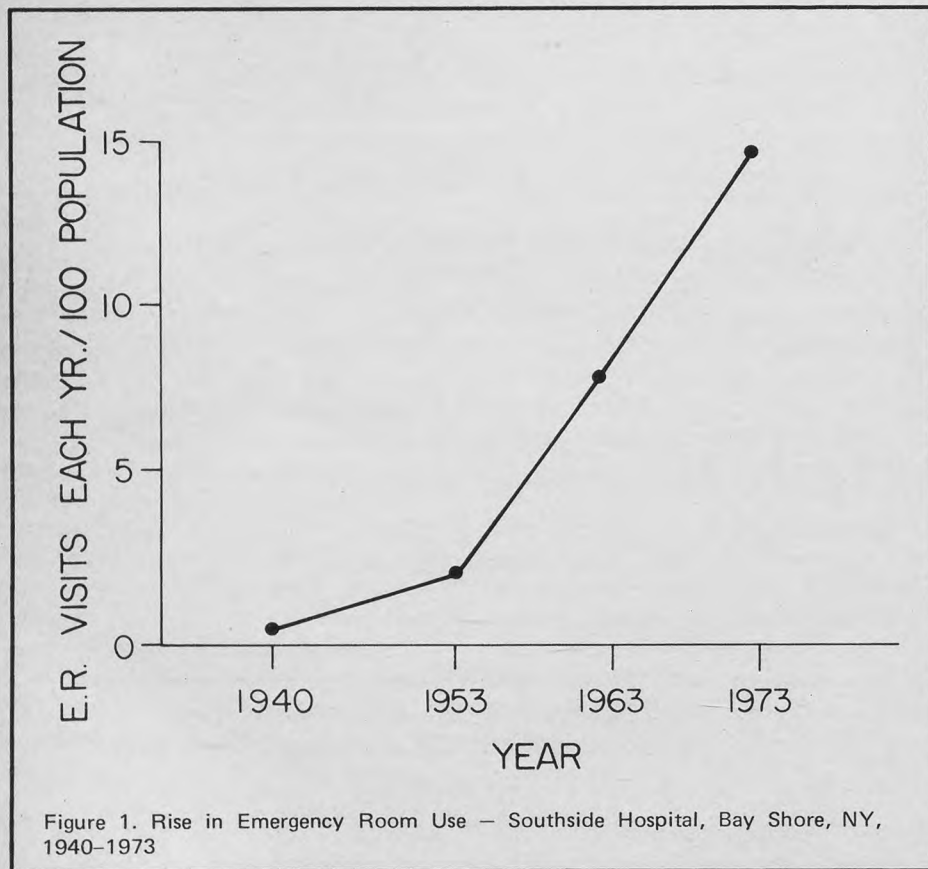
The busiest day for these visits to the Emergency Room was Saturday with 64 visits in the six months; next were Sunday and Monday with 53 and 51, then a steady volume for the rest of the week of 43, 45, 42, and 43 visits.

The volume was no higher on the doctor's day off, or on his weekends off, or when he was away for a week. The availability of the doctor did not affect the frequency of Emergency Room use.

Times of Visits

The patients visited the Emergency Room in a steady flow from 9 AM to 10 PM, with peaks at 4 PM and 8 PM. There were as many patients after 5 PM as before this time.

The totals for the three nursing shifts for six months are: 7 AM to 3 PM, 108 patients, 33 percent; 3 PM to 11 PM, 174 patients, 52 percent; and 11 PM to 7 AM, 49 patients, 15 percent.



Previous investigators^{1,2,9} found day and evening shift volume approximately equal. The large evening volume in this study reflects the time some patients find it convenient to seek medical care, but still represents but three percent of the total demand for ambulatory care from the practice.

Diagnoses

Visits for trauma were 69 percent (see Table 1). Half of the 31 percent of non-trauma visits were for respiratory or digestive disorders and the other half for a miscellany of conditions.

Broad Accident Categories

Sprains, contusions, and fractures were present in 95 of the visits (42 percent of all trauma). Most were school-age children and teenagers. There was a male preponderance in the first decade of 16:6, but not thereafter.

Cutting and piercing injuries totalled 87 (39 percent of all trauma) and 64 patients were sutured. These patients tended to be younger than the blunt trauma group. Ages ranged most often from one to 15. There was again male preponderance which rose to a peak at adolescence. Of 26 lacerations in the ten to 15 age group, 19 were boys.

There were 23 automobile accidents, 13 animal bites, and 6 burns.

Figure 2 shows that non-trauma visits were most concentrated in the younger decades, diminishing slightly after the age of 20, and continuing after age 60 in smaller numbers, but there are no prominent peaks of incidence. Trauma visits, however, have an outstanding peak in the ten to 15 age group, outnumbering threefold non-trauma visits at this age. After the age of 20 there is only a slight preponderance of trauma visits and they become the minority after the age of 60.

Figure 3 shows that most of the high incidence of trauma visits throughout childhood and in adolescence are in the male sex, although female visits also peak at adolescence. Male preponderance in accidents, especially in children, has been recognized by Backett.¹⁸ This group is active and aggressive in exploring an environment full of hazards but judgment in risk-taking is still immature.

Patterns of Injury

The 226 trauma visits were not a chaotic mass of heterogeneous problems. On analysis, clear patterns did emerge of specific vulnerable groups sustaining specific injuries.

In the toddler and preschool child, trauma was usually a boy who fell and sustained a cut about the head. Of 13 children aged three and under who suffered cuts or falls, nine were boys and 11 of the injuries involved scalp or lip lacerations. The energetic explorations of the male toddler do make him injury prone.¹⁹

In school-age children, the pattern of trauma visits to the Emergency Room changes. Boys are still in the majority but they come now for cuts on glass, knives, or other sharp objects. Such incidents were found to peak at age 14; of 19 lacerations from ages 12 to 15, 14 were boys. Lacerations were usually of the upper extremity (60 percent), less often of the lower extremity (30 percent), and occasionally of the head (ten percent).

After the age of 20, the spectrum of injury again changed. Lacerations became uncommon. In the 34 trauma visits by patients over the age of 30, only five were lacerations. Most injuries involved straining and twisting, and the incidence of these peaked at the age of 40. At this age, strenuous tasks

are still being undertaken while physical abilities have begun to wane. Also common in adults were simple complaints of skeletal pain in the neck, back, or limbs, often of long duration.

Most of the 12 dog bites in the study period were in schoolchildren, on a weekend, and between 4 PM and 7 PM. Dogs and children become careless and irritable during these hours.

There were six bicycle accidents, all in children from ages seven to 12, just learning to ride well and with exuberance not yet tempered by control and experience.

Diagnosis	Number	Percent
Trauma	226	69
Respiratory tract	31	10
Digestive tract	17	6
Psychoneurosis	12	4
Skin and allergy	8	2
Eye	8	2
Ear	6	2
Genitourinary	6	2
Pregnancy	6	2
Miscellaneous	3	1
Totals	331	100

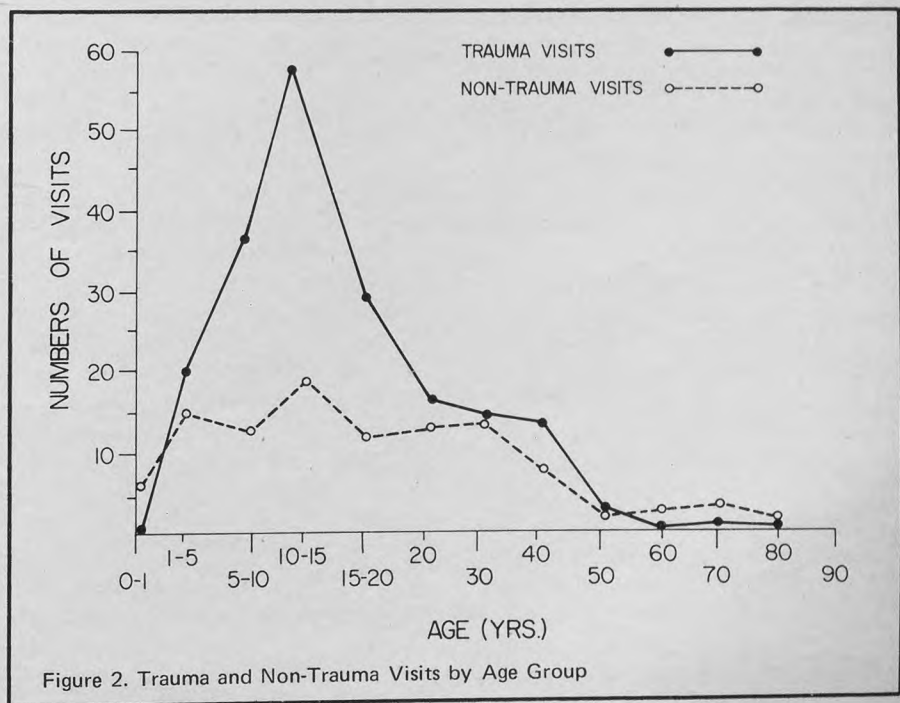


Figure 2. Trauma and Non-Trauma Visits by Age Group

There were 23 patients involved in automobile accidents, 17 of whom were teenagers and young adults (ages 15 to 23). Eleven patients came to the Emergency Room between 4 PM and 6 PM, a well recognized peak time for traffic accidents when roads are crowded and drivers are tired, pre-occupied, or impatient. Six more patients visited between 9 PM and 11 PM.

studies were performed on these 23 patients: 16 spine, nine skull, six shoulder, four knee, and three nose x-rays. All of these x-rays were normal except for two chip fractures of the nasal bones. Two patients were sutured; one was admitted.

The minor nature of the injuries present in this group was as impressive as the over-investigation they received.

Radiological Studies in Trauma

In the 331 Emergency Room patients, radiological studies were performed in 124 (38 percent) of 164 separate areas, to yield 13 positive findings, an eight percent rate of successful case finding (see Table 2).

Areas most often x-rayed for trauma were ankle and foot, skull, and spine, of which 71 studies at a cost of \$2,394 produced two ankle fractures, one of which was a "cortical tear."

Skull x-rays have already been shown to be of little value in assessing clinical problems in head trauma^{20,21} and some selectivity in taking ankle x-rays has been suggested,²² but these studies have unfortunately had no impact on Emergency Room practices.

The fractures which did occur were of the clavicle (two), ankle (two), nose (two), and one each of the thumb, metacarpal, radius, acromion, and toe. Only one fracture (an ankle) was

major and required specialized orthopedic care; but seven of the 11 fracture patients were referred for consultant care directly by the Emergency Room staff.

Two out of 21 chest x-rays were interpreted as showing pneumonitis, although this finding may not have altered management significantly.

Patterns of Non-Traumatic Illness

Respiratory Illness: This was the largest group (31) of non-traumatic illness, about one attended per week, which is only a tiny fraction of the volume of respiratory illness seen in the doctor's office. Twenty of these patients were welfare recipients (65 percent), 21 were under the age of ten, and 13 were less than two years old. Diagnoses were coryza, pharyngitis, bronchitis, and asthma. Eleven patients had fever and 12 were given antibiotic injections.

Digestive Tract Disorders: There were 17 patients in this group, eight of whom had different forms of gastroenteritis. The other nine patients had non-diagnostic and minor categories of illness but were very concerned; six of them visited during the night.

Psychoneurosis: Twelve patients had overt emotional upset. Somatic expressions of this included dizziness, shakiness, faintness, difficulty in breathing, and vague pain. Six came at night, two by ambulance.

Chest Pain: Six patients had chest pain, all atypical in nature and associated with high anxiety levels. Usually electrocardiograms and chest x-rays were taken; all were negative.

Admissions: Thirteen patients were admitted (four percent). All but two came from the non-traumatic group of patients. The likelihood of admission increased with age and admitting diagnoses were diverse.

Welfare Recipients

At this time Welfare and Medicaid patients made up seven percent of the population of the community, 14 percent of the practice office visits, and 20 percent of the practice Emergency Room volume. Even though these low income group patients did have a continuing relationship with a family physician, they still used the Emergency Room more often (and for more non-trauma problems) than other patients.

Area	Number of	
	Studies	Abnormal
Ankle & foot	25	2
Skull	24	0
Spine	22	0
Chest	21	2
Finger	14	2
Wrist & hand	12	1
Nose	8	2
Shoulder	8	1
Knee	6	0
Elbow	5	0
Clavicle	2	2
Miscellaneous	13	1
Totals	164	13

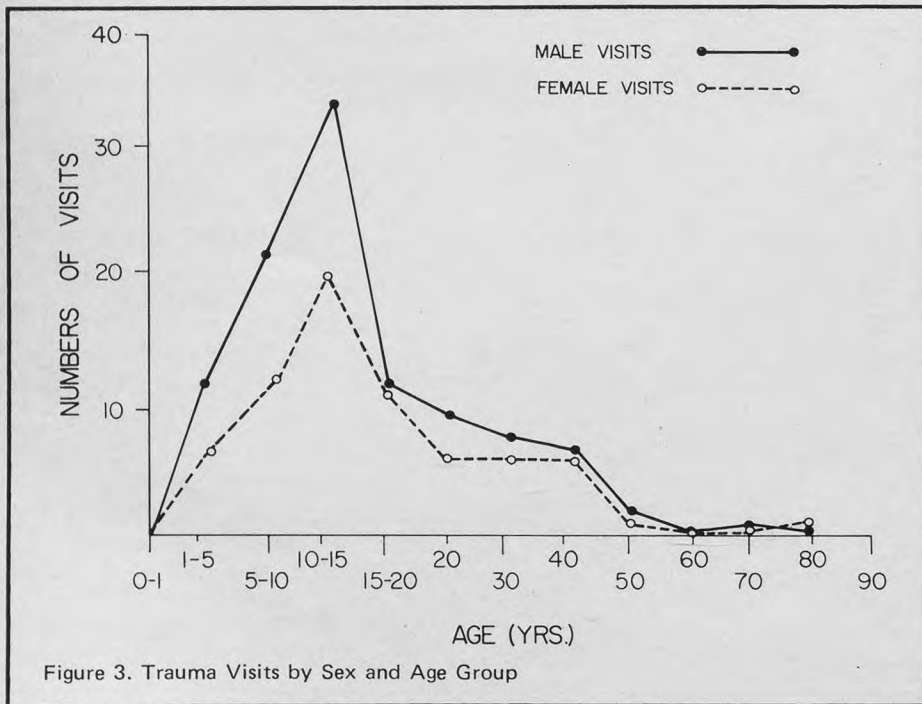


Figure 3. Trauma Visits by Sex and Age Group

Night Visits

There were 48 visits between 11 PM and 7 AM; one third had suffered trauma (daytime — two thirds).

The 12 patients with respiratory tract infections were young children, but only three of them had fever. Parental concern over discomfort or an apparent breathing problem in their child had usually provoked the night visit.

Seven patients had vague abdominal pain or cramps for which no cause was found and five more had atypical pain with no objective findings (on the side of the face, the back and chest, the ear, the back of the neck, and the left elbow).

Three patients were shaky and nervous, two had poison ivy, two had eye irritations, and two had difficult menstruation.

Professional observers would have considered well over half of these night visits unnecessary. However, the night visits in these patients are symptomatic of stress, maladjustment, or conflict in their lives. When anxiety levels in a home environment are high, the onset of worrisome symptoms calls forth a need for "service now" and such families cannot conform to daytime office hours. These psycho-social problems in themselves call for recognition and management.

One can ask if a personal physician should be on call on a 24-hour basis for such patients, ie, patients who find the Emergency Room appropriate for their needs because of alarm, impatience, or convenience.

One can reply that availability of a personal physician for this work (two nights a week) is unrealistic. Such doctors already work long concentrated hours at peak efficiency during the day in order to handle their heavy case loads, a strain which has, in fact, caused many physicians to leave general medicine. The adverse effect of fatigue upon medical performance has been documented.^{23,24} One of the Educational Objectives for Certification in Family Medicine of The College of Family Physicians of Canada states that, "The physician shall organize his practice so that he may fulfill his responsibility to himself and his family."

Some Emergency Room night visits must therefore be accepted as inevitable. In this study they were one percent of the total demand for

ambulatory care in the practice. It should be recognized that any factors in the environment or emotional health of the family which might have precipitated the out-of-hours visit need to be followed up.

Patient Motivation

What reasons are given by patients who have private physicians for visiting Emergency Rooms?

Fifty-three patients during May, 1973, were interviewed. Thirty-six of them had been self-referred and had not attempted to call the doctor (68 percent). The other 17 patients were sent in by third parties — police, school, work, etc.

Of the self-referred patients, 20 said that they had actively selected the hospital, nine because of simple convenience to themselves, seven because they thought they ought to get x-rays. Two patients went because of insurance coverage, one because he was too ill to call the doctor, and one woman went for a second opinion on her case.

The other 16 self-referred patients went for reasons related to their doctor; ten did not think he would have been available, four did not want to inconvenience him and two thought it too late at night to call.

All the patients followed their own impression of the best way to handle their problem.

Discussion

The threat to life and health of infectious disease has dwindled but a new epidemic has appeared, that of accidents.^{25,26} In 1970 there were 10.8 million disabling injuries in the United States with 114,000 deaths.²⁶

This massive health problem has not received the attention due it from government, organized medicine, or the public as a potential disruption of family, school, industry, and community. The study of accidents has not been in the mainstream of medicine.

However, there is some new understanding and, in particular, the non-random nature of accidents has been recognized. Accidents are not inevitable, do not "just happen," and are not "acts of God." Each accident has a distinct cause, a "failure of performance in a certain task by a certain individual."²⁶

Investigation of accidents will uncover specific vulnerable individuals or

specific vulnerable tasks, and such instances would respond to epidemiological control, as has infectious disease.

The pattern of accidents in any community mirrors its life-style and the family physician, who is in a position to observe the total spectrum of accidents befalling his patients, is well placed to study this problem.

This enquiry into Emergency Room utilization has produced information which has crystallized into certain specific themes.

1. *It was found that patient visits were not randomly distributed as to age, sex, and diagnosis, but instead fell into discrete patterns of illness.* These patterns include such categories of morbidity as: falling male toddlers, lacerated male adolescents, middle-aged strains, child dog bites on weekend evenings, bicycle accidents in elementary schoolchildren, early evening auto accidents in young adults, respiratory infections in welfare infants, and night visits by anxious adults with atypical somatic pain. These patterns are specific entities just as recognizable as the traditional eponymic syndromes found in clinical medicine. These complexes of ages, etiologies, and social factors form patterns of morbidity which are repeated in doctors' offices and in hospital Emergency Rooms across the country. The disruption of family life produced by this volume of illness, and the disability and expense which results is clear; also clear is the challenge posed in prevention.

The most efficient method of accident control is manipulation of the environment to remove hazards. Attempts to modify defective human behavior by teaching good risk-taking are less effective; however, careful training and experience can reduce numbers of accidents.¹⁸

Mothers of infants beginning to walk, especially boys, can be counselled and given safety literature. Children, from the beginning of school, can be given bicycle safety education and training, and from age ten can be taught skills in using sharp instruments, tools and gadgets, the dangers of glass doors and windows, and the hazards of stepping on penetrating objects.

2. *The deficiencies of an Emergency Room as a provider of ambulatory care have been brought out.*

Patients are not considered as individuals. Satin¹⁰ found that 75 percent of Emergency Room patients had psycho-social or environmental problems, but that only 16 percent were recognized, the rest being concealed by a more traditional diagnostic label. There is extreme pressure to exclude all diagnostic possibilities at the time of the visit, although experienced clinicians know the futility of seeking absolute certainty, and know that the diagnostic process often takes time. The walking patient with a non-urgent illness, therefore, receives incomplete care at high cost.

3. *The motivation behind Emergency Room visits by patients who already have a personal physician who could have been called has been explored.* Factors involved relate to the patients themselves, the doctor, and the hospital.

Patient Related Reasons: Many patient visits have been found by prior investigators to be non-urgent. In this study, these often involved such categories of illness as adult strains and other somatic pains. Night visits, overt psychoneurosis, and low socioeconomic status correlated with non-urgent visits. In fact, the severity and nature of the patient's complaint has been found to be unrelated to the decision to seek medical aid.^{10,27,28} The decision to visit the Emergency Room is the individual's response to the symptom; it is the time when he calls for help and the time when he will accept it. The decision is the result of a crisis. Illness in our tension-ridden and crisis-oriented society often provokes alarm which requires urgent action.

Doctor Related Reasons: Half the self-referred patients in this study did not think their doctor would have been available. Vaughan and Gamester⁷ found that two-thirds of their patients could not, or thought they could not, get care when needed. The institution of "Office Hours by Appointment," a progressive step to cut patient waiting time and crowded reception rooms, has caused some patients to think of their doctors as only part-time providers of health services. If such patients demand immediate attention for an illness or injury, even if slight, or are unwilling to postpone treatment or suffer pain or anxiety until regular treatment hours, then an Emergency Room visit

results.

Hospital Related Reasons: The public believes that in a good hospital optimal care is necessarily given, and is unaware of the deficiencies of hospital care for ambulatory patients. To the patient, the community hospital Emergency Room is a convenient, available health resource. He expects his concern to be resolved there, and it is. Hospitals themselves usually accept the public definition of an emergency; an emergency exists when the patient says it exists. Hospitals enjoy being a center of health activity; they feel an obligation to their community and reflect its needs.

These three interwoven threads in the social fabric of our society — patients unable to cope, doctors of uncertain availability, and eager, ever open, high status hospitals — have produced a tapestry on which is embroidered our present day Emergency Room problem.

Consideration of causes leads to possible remedies. The American Medical Association established a Task Force on Hospital Emergency Department Services and its report²⁹ suggested increasing the numbers of primary care and family physicians and educating the public to seek out their services. They also noted that a combined approach by all providers was needed, and they recommended that the public be educated toward appropriate use of the hospital Emergency Department, and that close surveillance should be maintained over the problem.

Realistically, the Emergency Room problem will remain with us, and the family physician is left to contemplate his own role. This should involve recognition of those specific cohorts of patients who come to require Emergency Room visits, efforts at prevention both in his own practice and through his involvement in community and professional affairs, and follow-up of his own patients who have visited an Emergency Room with awareness of the social or emotional problems which might be involved.

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