Effects of Medical "Triage" in Hospital Emergency Service

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TWO DECISIVE trends have characterized hospital emergency services in recent years: sharply rising patient loads and disproportionate increases in numbers of nonemergency cases. Visits to emergency rooms throughout the country have risen far out of proportion to increases in clinic attendance or inpatient hospital admissions (*1–9*). At the same time, recent studies of utilization patterns indicate that one-third to one-half of emergency service cases can be classified as nonurgent (*3–8*).

Recent studies at the Yale-New Haven Medical Center have documented these general trends for this institution and are reported elsewhere (*10–13*). Findings to date suggest that a large proportion of persons using the emergency facilities for general health conditions are from the low economic status, urban core segment of the community.

The search for causes of these trends leads directly to the community at large and to involvement with the basic socioeconomic and medical care issues of the day. Two factors appear to be most significant: the inadequacy of general health services for the economically depressed population in the central areas around large urban hospitals and the pattern of solo and specialized private medical practice which limits the physician's ability to satisfy sudden and off-hour service demands. The emergency rooms have provided, thus, a research laboratory of great value, not only as the basis for program planning within the hospital but also as a source of information about the medical care needs of the general community.

The cumulative pressures, both quantitative and qualitative, have placed emergency stations under severe strain. Corrective measures have included expansion of facilities (without modification of the traditional model), restrictive admission policies, and development of alternative treatment facilities elsewhere in the community. As a result of the previous Yale-New Haven studies, however, a new program has been developed to deal directly with the major finding, that of the increasing amount of inappropriate use of this complex and expensive service. The new system is called medical "triage," a French term introduced in military medicine, which referred originally to the sorting of mass casualties for priority of treatment. It was instituted on July 1, 1963, in the emergency service of the affiliated Grace-New Haven Community Hospital.

The Triage Program

The experimental triage program is designed to provide each emergency service patient with brief medical evaluation, decision regarding

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priority of need for care, and assignment to the appropriate service within or outside of the hospital. The objectives are to assist patients with nonurgent conditions to make proper use of regularly available community resources and to protect the "readiness-to-serve" capacity of the emergency station.

Medical, surgical, and pediatric residents with prior emergency service experience are assigned in rotation to this function. Careful orientation is given to each newly assigned triage officer concerning the difference in concept between screening and case management, the special triage procedures, and the available referral resources. An experienced emergency room nurse is also assigned to this service. A specially designed and equipped triage station is located near the admission counter.

All incoming patients are briefly evaluated in this triage station, although seriously ill or incapacitated patients are taken directly to the appropriate treatment area. The triage officer is thus available to initiate emergency measures and to maintain a reasonably orderly flow of patients, as well as to appraise and direct the new arrivals.

Based on the hourly workload analyses previously conducted (*10*), the triage program operates from 10 a.m. to 10 p.m. every day of the week. At other times, a nurse screens patients for direct care by the appropriate on-duty resident (surgery, pediatrics, and so forth). At no time is any patient discharged without a physician's evaluation.

Alternative decisions available to the triage officer include assignment for immediate emergency treatment in the indicated specialty service, transfer to other hospital services, referral for private medical care, appointment to a specific outpatient clinic, referral to a social or welfare agency, or direct discharge after reassurance and, when feasible, simple treatment of minor conditions.

Preliminary analysis of the first year's experience, previously reported (*10*), has indicated a leveling off in the upward trend of total visits, a falling proportion of nonurgent cases, and a general atmosphere of improved operating efficiency. The studies reported here were designed to appraise certain specific effects of triage on patients and staff.

Methodology

Three pilot studies were conducted during 1963, essentially as tests of research methods applied to the emergency room setting. Samples have purposely been kept small, and the findings are considered primarily to be useful guides to more extensive analyses. Data have been collected with respect to disposition of patients, referral to other resources, and reactions of patients and staff to the service innovation. Sources of data for all studies are the emergency service medical records and questionnaire interviews. Standard survey and statistical methods were used, with special consultation provided by colleagues in sociology and biometry. The assistance of Joyce Pearson in data collection and of Carol Solomon in casework interviewing was invaluable.

Disposition study. Emergency service records of all patients registered during the 31-day period from May 18 to June 17, 1963 (May 28 omitted) were analyzed with respect to the nature of the disposition of patients following emergency care. This study preceded the institution of the triage program, and was planned to provide a basis for a later comparative analysis of dispositions under the triage system. A total of 3,861 dispositions representing 3,785 patients were distributed according to type: discharged without followup, appointment to clinic, referral to private care, admitted to hospital, referred to other resource, and others. Within each category, referrals were analyzed with respect to specific clinics, agencies, hospitals, and other individual resources.

Problems were essentially those typical of a busy emergency service: incomplete recording, misplaced forms, and cumbersome administrative routines. The major difficulty had to do with missing records, initially totaling some 9 percent of the month's visits. These were ultimately traced to the special routing of records for hospital employees who are referred to the emergency service at times when the regular personnel health clinic is closed. Since disposition procedures for these patients are specialized, these records were excluded from the final study sample.

Study of results of triage. The second study was undertaken to measure the results of the triage process and to investigate the degree to

Table 1. Emergency service dispositions, selected categories, Grace-New Haven Community Hospital, May 18–June 17, 1963 [1]

Category	Number	Percent	Average number per day
All dispositions (after emergency treatment)	[2] 3,861	100.0	124.5
Discharged to home	1,721	44.6	55.5
Referred to clinics	954	24.7	30.8
Referred to private care [3]	512	13.3	16.5
Admitted to hospital	361	9.3	11.6
Referred to other resources [4]	105	2.7	3.4
Followup in emergency service	82	2.1	2.6
Left without completing treatment	61	1.6	2.0
Dead on arrival	19	.5	.6
Unable to determine	46	1.2	1.5

[1] May 28 omitted from study.
[2] Represents 3,785 patients.
[3] Includes private and compensation physicians and dentists.
[4] Includes other hospitals, social agencies, and others.

which patients referred to other sources of care actually received the indicated service. A separate sample, taken some 3 months after the start of the triage procedure, included all emergency service admissions in the period from October 14 to November 13, 1963 (November 10 omitted). Results of triage were analyzed, and careful followup was made of all patients referred to hospital clinics directly by the triage officers. Missed appointment rates were determined, comparisons were made of salient characteristics of those who kept and those who broke clinic appointments, and reasons given for nonattendance were analyzed. Chi square and critical ratio tests of significance were used.

Based on pretests, the decision was made to limit the followup survey solely to clinic referrals, since data on private office appointments proved to be incomplete and the number of other referrals were too small for significant analysis. Demographic, diagnostic, and disposition data were derived from carbon copies of the emergency record form, the intake register, and the medical chart. The distribution of triage dispositions was compared with that described prior to the new program. Daily rosters were maintained of appointments and "no-shows" for all direct triage referrals to hospital clinics.

Letters requesting home visits for interviews were sent to all patients who failed to keep clinic appointments, with telephone followups when necessary. Interviews were conducted by a social worker and a graduate sociology student. Cooperation by patients was surprisingly good. Of the 36 clinic no-shows in this 1-month sample, 27 were interviewed at home, 6 were contacted by telephone, and only 3 could not be reached. Information collected included data on usual source of medical care and attitudes toward hospital services.

Research method difficulties were related primarily to obtaining uniform and complete records from harassed emergency service personnel, the vagaries of the clinic appointment system, and the limitation on sample size when household interviews are included.

Staff attitude survey. A small exercise in analysis of staff response to program innovation was conducted during the summer of 1963, with consultation provided by the department of sociology. The entire professional staff assigned full time to the emergency service (nine residents and nine nurses) were interviewed just before and again 1 month after institution of the triage program. Residents scheduled for future triage assignment, but not on emergency service duty in June 1963, were not included in

Table 2. Emergency service dispositions to resources outside the hospital, Grace-New Haven Community Hospital, May 18–June 17, 1963 [1]

Dispositions	Number	Percent
Total	614	100.0
Private physicians [2]	491	80.0
State mental hospital	27	4.4
Private dentists	21	3.4
Visiting Nurse Association	18	2.9
Public health clinic	12	1.9
Veterans Administration hospital	10	1.6
Yale Student Health Service	9	1.5
Police	7	1.1
Commission on Alcoholism	4	.6
Well-baby conference	3	.5
Other	12	1.9

[1] May 28 omitted from study.
[2] Includes referred compensation cases.

the sample. Interviews were structured and pretested, with both open end and closed alternative items. Data were collected in relation to personal information, individual response to triage, perceived response of others, effects on staff function, and effects on patient care. The theoretical design was based on sociological principles of field theory (*14*), role conflict resolution (*15, 16*), and analytic aspects of relationship structures (*17*). Methods of analysis were based on the technique of panel analysis (*18*) and the correlation methods of Guttman (*19*) and Kendall (*20*).

Technical difficulties stemmed mostly from the small numbers of respondents, the brevity of exposure to the innovation, and the complexity of the task of correlating attitude responses.

Findings

Disposition patterns. Distribution of the 1-month sample of 3,861 dispositions, representing 3,785 patients, from the emergency service (before the introduction of the triage program) is summarized in table 1. The daily average of 125 visits led to discharge home without specific followup for 45 percent of the dispositions, clinic appointments for 25 percent, referral to private care for 13 percent, hospitalization for 9 percent, and referral to other resources for 3 percent. The breakdown of referrals to resources outside the hospital (table 2) indicates a wide array of dispositions to various community agencies, but relatively small numbers in all but the private physician category.

Table 3. Emergency service referrals to clinics, Grace-New Haven Community Hospital, May 18–June 17, 1963 [1]

Clinics	Referrals	
	Number	Percent
Total	954	100. 0
Surgery	315	33. 0
Orthopedics	114	12. 0
Medicine	73	7. 7
Pediatrics	60	6. 3
Obstetrics-gynecology	56	5. 9
Ophthalmology	52	5. 5
Dentistry	49	5. 1
Ear-nose-throat	44	4. 6
Psychiatry	27	2. 8
Urology	26	2. 7
Dermatology	23	2. 4
Neurology	18	1. 9
Radiology	9	. 9
Unspecified	48	5. 0
All other clinics [2]	40	4. 2

[1] May 28 omitted from study.
[2] Clinics with 5 or less referrals each.

Table 4. Percentage distribution of emergency service visits compared with a sample of clinic referrals by specialty designation, Grace-New Haven Community Hospital

Specialty [1]	Percentage distribution	
	All visits [2] (N=45,463)	Clinic referrals [3] (N=469)
Total	100. 0	100. 0
Surgical	52. 8	57. 8
Medical	25. 9	18. 2
Pediatric	18. 7	9. 3
Psychiatric	2. 5	2. 8
Other	([4])	[5] 11. 9

[1] Includes subspecialties in each category.
[2] Fiscal year 1961–62.
[3] May 18–June 17, 1963 (excluding May 28).
[4] No other specialties assigned to emergency service on full-time basis.
[5] Includes obstetrics-gynecology (5.9 percent), dentistry (5.1 percent), and radiology (0.9 percent).

The overall disposition pattern compares fairly closely with a 1957 study at Grace-New Haven Hospital (*12*), but includes more direct home discharges and fewer referrals for followup clinic or private office care than has been reported from the Boston Beth Israel Hospital (*5*).

Details of referral rates to individual clinics by specialty designation are presented in table 3. Clinic policy limiting direct assignment of patients to subspecialty services without prior general evaluation accounts for some of the distribution pattern. However, the emphasis on referral to general clinics in surgery, medicine, pediatrics, and so forth is primarily a reflection of the specialty of the service which first treats the patient in the emergency room. This relationship is shown in table 4, although the comparability of the two distributions is not complete.

Statistical checks on the daily and weekly variation of disposition patterns indicated that no significant differences were demonstrable be-

tween weekdays and weekend days ($X^2_{(4)}=7.86$, $P>0.05$), but that there were significant differences from week to week ($X^2_{(12)}=24.19$, $P<0.02>0.01$). The importance of sampling over longer periods of time is recognized.

The analysis of dispositions was undertaken primarily to provide a comparative basis for later evaluation of effects of the triage program. Preliminary comparison of this pretriage pattern with a later sample of dispositions made directly by the triage officers revealed, as expected, more home discharges and no direct hospital admissions in the triaged-out group. Generally, however, the distributions were surprisingly similar, as indicated in tables 1 and 5 and the following comparison:

Dispositions	*Percent total emergency service* [1]	*Percent triaged out* [2]
Discharged to home	44.6	55.2
Referred to clinics	24.7	25.4
Referred to private care	13.3	14.9
Admitted to hospital	9.3	----
Referred to outside sources	2.7	4.5
Other	5.4	----

[1] Before start of triage system.
[2] 3 months after start of triage.

Results of triage. Table 5 and the chart summarize the experience of the 3,743 emergency service admissions analyzed during a 1-month period after the introduction of the triage system. Since the program operates only from 10 a.m. to 10 p.m., 71 percent of this total (2,662) were actually screened by a triage officer, and 17.6 percent (469) of these were considered nonurgent and referred for followup care or discharged home. This triaged-out group constituted the study sample whose disposition pattern is compared in the text table above with the pretriage distribution.

Of the 469 patients in the nonurgent sample 119, or 25 percent, were referred for followup clinic care. Some of the demographic and social characteristics of this group of patients are shown in table 6. Age and sex distributions are not unusual. However, the proportions of persons in the nonwhite, nonmarried, nonemployed, and public-assistance categories are significantly higher than in the general population. (It is suspected that this pattern is typical of the entire emergency service patient group, and comparable data are now being collected on a substantial sample of all visits.)

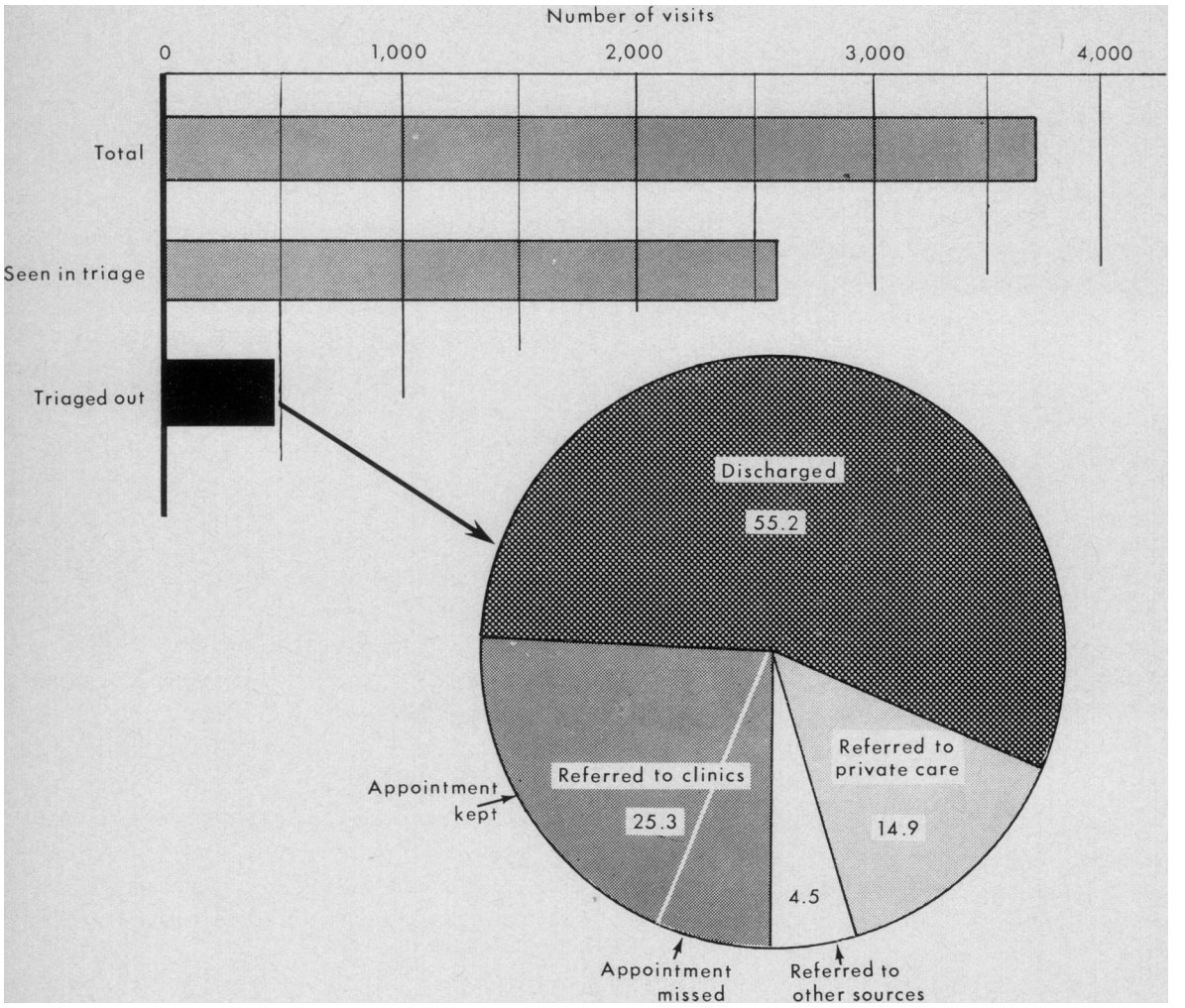
Almost 70 percent of those patients referred to clinics kept their appointments, while some 30 percent did not. When advance cancellations (six patients) and the one scheduling error are subtracted, the net no-show rate becomes 24 percent—a figure almost identical with that consistently reported for all outpatients in our own and many other clinic programs (*21–25*).

Table 5. Emergency service triage study, summary data, selected categories, Grace-New Haven Community Hospital, October 14–November 13, 1963 [1]

Categories	Total number	Average number per day	Percent of triage total	Percent triaged out [2]	Percent of clinic referrals
Total admissions to emergency service	3,743	125.0	----	----	----
Total seen in triage	2,662	88.7	100.0	----	----
Assigned for emergency treatment	1,193	73.1	82.4	----	----
Triaged out [2]	469	15.6	17.6	100.0	----
Discharged to home	259	8.6	9.7	55.2	----
Referred to private care	70	2.3	2.6	14.9	----
Referred to other resources [3]	21	.7	.8	4.5	----
Referred to clinics	119	4.0	4.5	25.4	100.0
Appointment kept	83	2.8	----	----	69.7
Appointment missed	36	1.2	----	----	30.3

[1] November 10 omitted from study.
[2] Discharged directly or referred for care outside of emergency service.
[3] Other resources: other hospital, community agency, and others.

Dispositions of emergency service patients during a 1-month period after introduction of triage system, Grace-New Haven Community Hospital



Comparison of the characteristics of patients who do and do not keep clinic appointments revealed a number of differences (table 6). Significantly greater than expected numbers of persons in the middle age ranges and in the married and employed categories are found in the no-show column, in contrast to the high proportions of appointment keepers who are at both ends of the age scale, are unmarried, and unemployed. The no-show group also contained larger than expected numbers of the private-payment categories, but this association failed to show significance on statistical testing. Sex and color differences were unremarkable. (Test of significance was the chi square, $P<0.05$).

Table 7 summarizes the reasons given in subsequent interviews with those who failed to keep their clinic appointments. Most were related to personal factors such as improvement in symptoms, other distractions, use of alternative medical resources, financial or transportation problems, and lack of baby sitters. An important one-fifth of the missed appointments were due to errors in hospital procedures or records. Again, the pattern of responses was similar to that reported in other studies (*21–25*).

Analysis was made of nine factors which might have been expected to affect the keeping or breaking of appointments: (*a*) patient's complaint, (*b*) physician's diagnostic impression, (*c*) distance from residence to hospital, (*d*) day of week of emergency service visit, (*e*) time of

Table 6. Selected characteristics and appointment status of patients referred to clinics by triage officers

Patient characteristics	Total number	Appointment status			
		Kept appointment		Appointment not kept	
		Number	Percent	Number	Percent
Total patients	119	83	69.8	36	30.2
Age:					
Under 15	16	15	93.7	1	6.3
15–34	59	39	66.1	20	33.9
35–64	33	19	57.6	14	42.4
65 and over	11	10	90.9	1	9.1
Sex:					
Male	57	40	70.2	17	29.8
Female	62	43	69.3	19	30.7
Color:					
White	64	47	73.4	17	26.6
Nonwhite	55	36	65.4	19	34.6
Marital status:					
Married	52	29	55.8	23	44.2
Other	67	54	80.6	13	19.4
Employment status:					
Employed	43	23	53.5	20	46.5
Other	76	60	78.9	16	21.1
Payment status:					
Public assistance	27	22	81.5	5	18.5
Private payment	92	61	66.3	31	33.7

day of emergency service visit, (*f*) speciality of clinic, (*g*) time lapse between emergency service visit and date of clinic appointment, (*h*) patient's attitude toward hospital, and (*i*) source of usual medical care. The results were quite unrewarding; none of these factors showed a significant or consistent correlation.

The household interviews with those who failed to keep clinic appointments also provided useful information regarding the attitudes of patients toward the emergency service. Reactions were generally positive, with some obvious reluctance to express criticism of the hospital to one of its own representatives. Some reported regular use of both hospital and private physician services. Few expressed adverse reactions to the triage procedure itself. The size of these samples was considered too small, however, for the presentation of statistical tabulations.

Staff attitudes. Interviews in some depth with the nine residents and nine nurses assigned to the emergency service at the time of the study, conducted just before and 1 month after the institution of the triage system, indicated general acceptance of the innovation, with physicians more definite than nurses. A four-item index formed the basis for this analysis of overall acceptance: agreement with the need for triage, positive indication of its effectiveness, impression that stated objectives were being accomplished, and expression of personal satisfaction. These items, forming a quasi-Guttman scale with a coefficient of reproducibility of 0.889, were used as the measure of acceptance of triage (*19*). (It is recognized that the Guttman method is useful primarily in larger samples, but in this case no other respondents were available. Each individual item in the composite index correlated highly, reinforcing confidence in the observation made.)

Table 8 summarizes the effects of a series of selected factors on response to the innovation of triage by the 18 staff members interviewed. The variables were chosen on the basis of Levy's concept of "relationship structures," as adapted to the emergency service setting (*17*). Strong factors appeared to be those of source of basic training, influence of the hospital administration, expectation of effect upon one's own job,

Table 7. Reasons given by patients for missed clinic appointments after referral by triage officers

Reasons for missed appointments	Number of patients	Percent
Total missed appointments	[1] 36	100.0
Patient factors	25	69.4
Patient felt better	6	
Emotional problems	4	
Use of other resources	4	
Could not afford work time loss	3	
Patient too ill	2	
Could not afford transportation cost	2	
No one to care for children	2	
Patient out of town	1	
Self-care	1	
Hospital factors	8	22.2
Failure to receive appointment	5	
Confusion in appointment arrangements	3	
No response from patient	3	8.3

[1] 30 no-shows; 6 cancellations.

and clarity of personal role perception. Weak factors included current professional status, attitude toward nonurgent patients, expectation of patient reactions, peer group influences, and specific knowledge of program detail.

The attitudes of the professional respondents expressed after exposure to the new system were generally similar to those reported before the innovation, indicating the importance of "predisposition" as an influencing factor. Again, a four-item index similar to that constructed for the "acceptance" measurement was used, forming a quasi-Guttman scale with a coefficient of reproducibility of 0.861. Some 78 percent of those highly predisposed to acceptance strongly favored the program afterwards, in contrast to 44 percent of such later approval among the initial low acceptors.

The association between selected variables and staff attitudes measured before and after the introduction of triage is shown in table 9. Positive association is seen between the factors of predisposition and later personal satisfaction with triage. Perceptions of actual improvement in emergency service function, effect on own job, and effect on patient care are all also positively interrelated.

Discussion

Methodology. Within obvious limits, the hospital emergency department provides a unique laboratory for the study of medical care prob-

Table 8. Effect of selected factors on response to triage by members of emergency service professional staff, Grace-New Haven Community Hospital

Factors[1]	Total number	Staff response[2]			
		High acceptance		Low acceptance	
		Number	Percent	Number	Percent
Predisposition:					
High acceptance	9	7	78	2	22
Low acceptance	9	4	44	5	56
Professional affiliation:					
Resident physician	9	5	56	4	44
Nurse	9	6	67	3	33
Source of basic training:					
Yale	7	6	86	1	14
Other	11	5	45	6	55
Patient orientation:					
Personal	10	7	70	3	30
Impersonal	8	4	50	4	50
Expected patient reaction:					
Negative	6	3	50	3	50
Positive	12	8	67	4	33
Influence of administration (relative to own group):					
High	9	7	78	2	22
Low	9	4	44	5	56
Peer group discussion:					
Much	10	6	60	4	40
Little	8	5	63	3	37
Expected effect on own job:					
Favorable	12	9	75	3	25
Unfavorable	6	2	33	4	66
Role specificity:					
Well defined	9	4	44	5	56
Moderately well defined	9	7	78	2	22
Specific knowledge (about triage):					
Yes	11	6	54	5	46
No	7	5	71	2	29
Total	18	11	61	7	39

[1] First interview, before triage.
[2] Second interview, 1 month after start of triage.

Table 9. Comparison of the association of selected factors with staff attitudes toward triage, measured before and after the innovation

Factors	Association [1]	
	Predisposition [2]	Actual [3]
Predisposition		+0. 63
Professional affiliation	+0. 11	−. 23
Source of basic training	+. 63	+. 76
Patient orientation	+. 43	+. 40
Expected patient reaction	+. 48	−. 33
Influence of administration (relative to own group)	+. 60	+. 63
Peer group discussion	−. 43	−. 05
Expected effect on own job	+1. 00	+. 72
Role specificity	−. 11	−. 63
Specific knowledge	−. 22	−. 35

[1] Measure of association is Kendall's "Q" (reference 20).
[2] First interview, prior to triage.
[3] Second interview, 1 month after start of triage.

lems of both the medical center and the "outside" community. The standard research methods used in these studies (analysis of medical records, interview questionnaire, and statistical correlation) are generally satisfactory for application to the emergency setting as far as factors such as disposition, referral, and attitudes are concerned. Further studies now underway at the Yale-New Haven Medical Center are directed toward relating such factors as the socioeconomic status of patients, usual patterns of medical care, and urgency ratings of incoming cases.

Much more information from larger samples is necessary, however, before full understanding is gained of the role of the emergency service in the overall pattern of community medical care. Research methods will need to become more refined and sophisticated, more clinical data must be used, and studies must encompass other health resources in the community if the full value of this laboratory is to be realized.

The technical problems related to research in the emergency setting are often formidable, as might be expected in such a hectic and crisis-oriented environment. Accuracy and completeness of recordkeeping are often sacrificed to the pressing requirements of patient care. Special research procedures are not easily explained to the large numbers of personnel assigned to the three round-the-clock shifts. Proper sampling techniques require data collection at all hours and during all days of the week. Time available for contacts with patients and staff is limited, and movement of both groups to and from various other hospital departments is constant. Finally, definitive diagnostic and therapeutic information is generally not available from emergency room medical notes.

Final evaluation of the new triage program must await measurement of long-range changes in total patient load, proportion of urgent and nonurgent cases, adequacy of outside referral resources, and satisfaction of community and hospital staff. Such analyses are underway, and will be reported when available. Meanwhile, the results of the projects presented here do permit preliminary appraisal of the triage innovation.

Findings. The breakdown of dispositions before the triage plan had been established revealed that almost half of all patients were returned home without further followup after treatment in the emergency service. This suggests the relatively minor nature of many of the conditions presented. The fact that almost twice as many referrals were to clinics as to private care is probably due both to the low economic status of many of these patients and also to the referral bias of medical center house staff. That few of the many other health agencies in this community were used regularly reflects the lack of useful knowledge and effective communication that so often exists in complex urban areas. As might have been expected, the pattern of clinic referrals tended to mirror the distribution of patients by specialty service within the emergency station.

The finding that the distribution of dispositions made directly by the triage officers so closely resembled that previously shown for all post-treatment patients was a distinct surprise. Both patterns are characterized by the large proportion of home discharges and clinic referrals. The implication can be drawn that the system of initial screening and appropriate referral does expedite matters for these two large categories of patients. Complete demonstra-

tion of the impact of triage on the pattern of disposition of patients must, however, await the comparison between overall "before-and-after" samples.

The second study, analysis of results of triage, indicated that, on the average, only about 18 percent of patients screened by the triage officer are directly triaged out; that is, discharged home or referred for other care without definitive treatment. This is in contrast to the 40 percent of patients estimated in previous studies not to be in need of emergency services. The disparity is most likely due to the reluctance of the house staff to release patients with questionable conditions and to the conservative triage policy established during this first year. Nonetheless, the reduction of about one-fifth in the number of patients requiring treatment in the emergency areas and the expediting of consultations and diagnostic procedures by the triage officer have all contributed to increased efficiency within the emergency station.

The validity of the triage concept rests, in part, on the assurance that patients referred out without definitive treatment do receive the followup attention they need. The analysis of clinic appointment keeping was reassuring on this score, indicating that the no-show experience is at least comparable to that generally noted in outpatient departments. Appointment keeping is apparently more difficult for working adults than for nonemployed persons in the younger and older age groups. Imperfect hospital procedures themselves account for many of the missed visits. The anticipated effect on appointment breaking of such factors as distance from the hospital and lapse of time before the scheduled service could not be demonstrated in this sample. An important impression gained by the interviewers is that indigent patients, especially those of minority group status with limited outlets for health needs, hesitate to voice criticism of hospital services even when they are not satisfactory.

The study of staff attitudes toward the triage innovation indicated general acceptance by residents and nurses assigned to regular emergency service duty, but unfortunately could not include assessment of the reaction of the triage officers themselves. (These officers have tended to approve the effects on patient care, but to be critical of the assignment as too limited in training value. This attitude, however, has tended to soften as experience with the program accumulates.)

The factors which emerge as most important in the shaping of staff reactions are the perceived effect on one's own job, the influence of the administration, and the source of basic training. Generally, prior attitudes were not markedly altered during the first month's experience, and staff members were able to distinguish fairly well between effects on their own roles and effects on patient care.

Finally, the studies have suggested that the source of the current strain in hospital emergency service is to be found in the general community, specifically in its unmet needs for coordinated and flexible medical care for all sections of the population (*26*). It appears increasingly clear that the always-open emergency room door is the major medical care resource for a growing segment of the indigent "urban core" population, and it is the primary safety valve for the self-supporting members of the community who find difficulty in obtaining private care on sudden demand. These impressions have led to more extensive studies, now underway, of the determinants of use of emergency facilities for both urgent and nonurgent conditions by various socioeconomic groups in the community.

Summary and Conclusions

The twin trends of rising patient load and the increasing proportion of nonurgent conditions have strained the resources of hospital emergency services. Important causes, among many others, are the reliance of the lower economic groups on this source for general medical care and the use of emergency facilities by all segments of the community as a substitute for unavailable private care.

In the effort to adapt its program to these changes, a new screening and referral procedure termed medical "triage" was instituted at the Grace-New Haven Community Hospital. Continuous evaluation of its impact and of additional service needs has been undertaken, with initially encouraging results.

Specific studies of disposition patterns, clinic referrals, and staff attitudes toward the innovation are reported. Primary emphasis has been on the methodology of research in the emergency room setting. Findings indicate that the triage process does not appreciably alter the distribution of dispositions, that appointments made for clinic referrals are kept by the expected proportion of patients, and that staff reactions are essentially positive and cooperative.

Although improved emergency services are essential in all hospitals, ultimate solutions must be found in more adequate programs of medical care for the community.

The emergency service provides a valuable window for the observation of current trends in medical care and a most useful laboratory for the study of social aspects of medicine.

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