

HOSPITAL TOPICS

Survey of Casualty Departments in Greater London

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Introduction

The Joint Working Group of London, which was created in 1967 by the Minister of Health to advise him on the co-ordination of the health services of London as a whole, started by considering the organization of accident and emergency services in Greater London. In April 1968 it issued an interim report dealing largely with the problems created by the temporary closure of hospitals to ambulances bringing emergency cases. The group believed that the acceptance of emergency cases should be the first and overriding duty of any accident-receiving hospital, and that there should be a clear-cut plan for each region—embracing both teaching and non-teaching hospitals—to ensure that continuity of the accident and emergency service is maintained.

Though plans to concentrate accident services in a few hospitals would depend largely on adequate facilities being provided in the district general hospitals, the group thought that in the meantime there was scope for some rationalization, particularly in Central London, of the night and week-end accident services. A study was therefore planned, and all hospitals in Greater London with casualty departments were asked to record the day and time of arrival of all new casualty patients during the week 12 to 19 May 1968. The patient's age, sex, source of referral, type of case, disposal after treatment, and whether brought by ambulance were also recorded, and, in addition, three teaching hospitals (Guy's, the London, and St. Bartholomew's) undertook a separate investigation into the reasons that prompt patients to attend the casualty department.

The inquiry covered 126 hospitals and 33,250 new patient attendances, and, despite the simplification of the inquiry form, the volume of work for the hospital staff involved was considerable.

New casualty attendances in the Greater London area amount to 210 new patients per 1,000 of the resident population, compared with 150 per 1,000 population in the remainder of England and Wales. Since the daytime increase in the population of Greater London is only 4% (as a result of the net movement of the working population), this factor alone could not account for the substantially higher level of demand on accident departments in London. Because of this different pattern of casualty attendances in Greater London not all of the findings of the survey will necessarily apply to other areas. Moreover, though the total number of new patients arriving during the survey week was the normal weekly average, the detailed results of this one-week sample cannot by themselves be taken as a firm basis for planning. Individual hospital groups will show wide variations in the type of casualties seen, and some fluctuation will also occur from week to week. Nevertheless, it is believed that some of the information obtained by this survey will be valuable to those concerned with the organization and planning of accident and emergency services in other areas.

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Results

Day and Time of Arrival

Fig. 1 shows that there is a heavy peak of demand on Monday, followed by a gradual decline during the rest of the working week together with a sharp fall over the week-end.

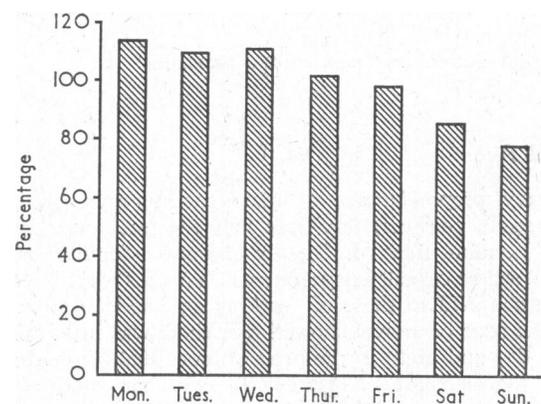


FIG. 1.—Day of arrival. (Daily average=100%.)

This pattern is most definite in the central teaching-hospital area, but the same pattern occurs to a less appreciable extent in the rest of London. In the Outer London hospitals an unexplained peak was found to occur on Wednesday.

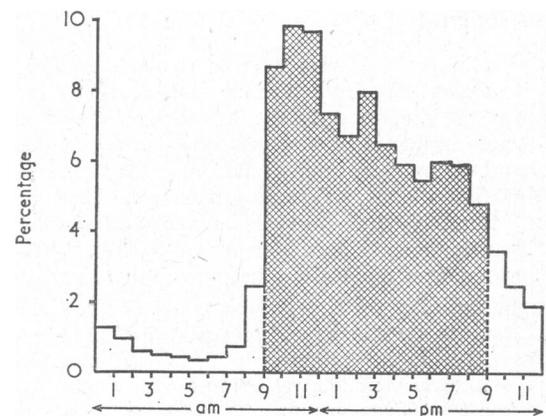


FIG. 2.—Hour of arrival. (Daily total=100%.)

Though the case-load varies from day to day, there is a much greater variation in the number of patients arriving at different hours of the day and night (Fig. 2). This pattern is most pronounced in the Inner London area.

The actual number of attendances during the day and night periods at individual hospitals is startling. Out of 120 hospitals in Greater London that receive patients at night (between 2100 and 0900 hours on Mondays to Fridays), only 29 were found to have an average of 10 or more attendances per night, and half the total number of hospitals dealt with fewer than five patients per night. Moreover, during the day (0900–2100 hours) 20 hospitals were attended by fewer than 10 patients (see Table).

Size of Case-load During the 12-hour "Day" and "Night" Periods

No. of New Patients Attending	No. of Hospitals in Each Category					
	Monday to Friday		Saturday		Sunday	
	Average Day	Average Night	Day	Night	Day	Night
100+	3	—	—	—	3	—
80–99	7	—	1	—	—	—
60–79	12	—	11	—	4	—
40–59	20	—	19	—	16	—
30–39	21	1	17	—	15	1
20–29	18	1	18	7	21	3
10–19	25	27	24	27	30	28
5–9	9	32	18	23	18	25
<5	11	58	14	42	7	40
No attendances or closed	—	7	4	27	12	29

* Day = 0900 to 2100 hours. Night = 2100 to 0900 hours.

Sex and Age

A heavy preponderance of male patients was found, for though males comprise less than half the total population of Greater London, they consistently accounted for over 60% of the case-load at casualty departments. This male predominance was not confined to those of working age, and an analysis by sex of the time of arrival showed that there was little variation between day and night in the proportion of males attending the casualty department. Nevertheless, over the week-end the proportion of males attending at night was found to increase, and particularly on Saturday—presumably as the result of Saturday night revelry. At the week-end also a higher proportion of young children (0–9 years) attended in the daytime. Throughout the week the night case-load, compared with that during the daytime, showed a considerable increase in the proportion of attenders in the 15–44 age range.

Source of Referral

Some 18% of patients were referred by their general practitioners, less than 4% resulted from road accidents, and the vast majority (78%) attended for other reasons. The proportion of general-practitioner referrals was similar in both the teaching and the Outer London hospitals, but there was a definite drop in the non-teaching hospitals in the Inner London boroughs. Roughly equal numbers of men and women were referred by their general practitioners; in road accidents and "other" attendances there was a heavy predominance of men.

As might be expected the proportion of traffic cases was found to increase steadily as one moves away from the centre of London. The higher proportion of males involved in road accidents is already well known, as is the fact that the peak occurs in the 15–19 age groups. It is of particular interest, however, to note how, both in the preschool years and after retirement (when both sexes are in the same environment), the number of casualty attendances from road accidents is much the same for both sexes.

It is not known how accurately the casualty attendance figures reflect the number of persons in each age group who are involved in accidents.

Ambulance Transport

Of all new casualty patients 15% arrive by ambulance, and the proportion increases as one moves from the centre of London. Despite the heavy preponderance of male casualty patients the total number of males who arrived by ambulance was only slightly higher than for females, though in the 20–44-year age group the proportion of women was particularly high. Nearly half of all patients (men and women) over 65 years of age were brought by ambulance.

Road accidents accounted for nearly a fifth of all ambulance cases, general-practitioner referrals for a quarter, and "other" cases for over a half. Though the average number of patients conveyed to casualty departments by ambulance at night was only half the daytime number, they formed a much larger proportion of the reduced casualty case-load at night (about one-quarter and one-third for the week night and the Saturday and Sunday night cases respectively). On average non-traumatic conditions accounted for about 40% of the total casualty load, but there was an obvious increase in the non-traumatic element of the casualty case-load as one neared the centre of London (Fig. 3). Head injuries and fractures formed only 10% of new casualty attendances. The overall proportion of trauma shows little difference between the sexes, but a consistently higher proportion of the male case-load is made up of head injuries, lacerations, and eye injuries. A higher proportion of the same case-load had fractures, burns, and poisonings, though this was offset by the smaller number of female attendances. The pattern remains remarkably constant over the week and throughout the 24 hours, though the proportion of lacerations increased on Sundays, possibly as a result of "do-it-yourself" activities.

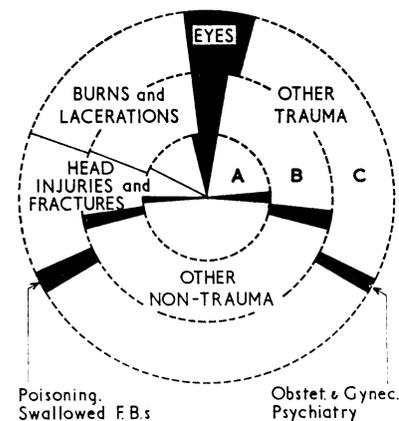


FIG. 3.—Distribution of casualty case-load by type of case. A=Inner London teaching hospitals. B=Inner London non-teaching. C=Outer London hospitals.

Disposal

Of the casualty patients 30% were discharged on their first attendance, 46% were asked to return to the casualty department, 9% were referred to a consultant clinic, and 15% were admitted. This pattern was reasonably constant throughout London, except that the teaching hospitals had slightly fewer admissions and return visits but a more frequent rate of referral to consultant clinics. The proportion of men and women discharged on their first attendance was identical, but in all specialties other than ophthalmology a higher proportion of the women were admitted, the total number of female admissions being only slightly lower than the figure for males.

The proportion of patients who were dead or dying on arrival in the casualty department was small and confined largely to patients over middle age. One-sixth of the children of preschool age attending the casualty department were

admitted, but this admission rate was halved by the time they reached 14 years of age. From then on the likelihood of admission was found to increase steadily with age until one patient in three over the age of 65 was admitted. The proportion of adults referred to consultant clinics also increased with age.

Only about half of those admitted were brought by ambulance. One in four of all general-practitioner referrals and road traffic cases were admitted, but only one in nine of other patients.

Though non-traumatic conditions comprise only one-third of the total casualty load (Fig. 3), they account for more than half the admissions through the casualty department. Because proportionately more patients arrive by ambulance at night it is not surprising that more of them should be admitted at night (23%) than during the day (13%). A similar difference occurs at the teaching hospitals, and hence it appears unlikely that this difference results from inexperienced house-officers on duty at night.

Discussion

It is unlikely that any emergency service can be organized in an economic manner. Nevertheless, the maintenance of a night casualty service by 60 London hospitals to deal with an average of fewer than five patients a night must involve a wasteful deployment of trained personnel whose services could be used to better advantage. Moreover, in those hospitals where the case-load is light are there enough staff to ensure that the patient is always treated both promptly and adequately? Public clamour to retain a local casualty service is well known, but, provided patients are not required to travel an unreasonable distance, there would seem to be an overwhelming case for concentrating casualty work (particularly at night) in fewer departments.

It is important that a first-class service should be provided by those departments that remain open, so that when considering the closure of any department the amount of work that can be done by one casualty officer and supporting staff must be borne in mind. Clearly from this survey departments cannot be closed without carefully examining the effect that this will have on the hospital admissions in the area and on the beds needed in individual specialties. The high proportion of medical admissions through the casualty department is of particular importance, and a radical reallocation of beds and reorganization of work among the hospitals of the area may well be necessary and must be anticipated.

In Greater London head injuries and fractures were responsible for only one-tenth of new casualty attendances during the week surveyed, and one-third of the casualty case-load was non-traumatic. Similarly, non-traumatic conditions accounted for half of all cases admitted from the casualty departments, and only one-tenth went to orthopaedic wards. In fact, more than twice this number went to general surgical wards, and hence other specialties, as well as orthopaedics, should properly accept a prominent role in the organization, management, and design of accident and emergency units.

The variation in the number of new patients who attended the casualty departments on different days of the week and at different hours of the day appears to follow a definite pattern. A simple count of new patients over a few weeks would establish whether a predictable pattern of new attendances exists at individual hospitals. Where this is so it would be possible to arrange return visits to the mutual advantage of the patients and the hospital.

The high proportion of patients who were not referred by their general practitioner and who attended for reasons other than road accidents is relevant to future plans. With the development of a comprehensive health service the need and desirability for the continuance of "casualty" departments have been questioned. Nevertheless, casualty attendances continue to rise, and there may well be a continuing need for a service of this kind, particularly in Central London, where there is a large "floating" population as well as many workers, students, and visitors away from home. Many local residents also turn to the casualty department when their general practitioner is not available, and, outside normal hours, some prefer to attend casualty rather than trouble their general practitioner. If this element of the work of London casualty departments is to continue it is all the more important that their work should be organized to provide the most efficient service for those who attend.

The need to explain the reasons why rationalization of the casualty service, necessitating closures in some cases, is required cannot be overdone if the necessary and vital co-operation—not only of the public but of hospital staffs as well—is to be secured.

We wish to record our appreciation of all the work and effort by the hospital and other staff participating in the survey. We also wish to thank the Joint Working Group for the opportunity of using the survey material and recording our views thereon.