

Patient Attendance at a Major Accident and Emergency Department: Are Public Emergency Services Being Abused?

A A Azhar, FRCSEd, M S Ismail, MBBS, F L Ham, BNSc (Hons), Accident & Emergency Department, Hospital Universiti Kebangsaan Malaysia, Bandar Tun Razak, Jalan Tenteram, Cheras, 56000 Kuala Lumpur

Summary

A total of 37,152 patients attended the Accident & Emergency (A&E) Department of Hospital Universiti Kebangsaan Malaysia (HUKM) from 1st January to 31st December 1998. Attendance during early hours (midnight to 0659 hrs.) constituted only 10.4% (3853 cases) whereas that for three other time periods of 0700 - 1159 hrs., 1200 - 1759hrs., and 1800 - 2359hrs. was 29.4% (10,927 cases), 30.8% (11,448 cases), and 29.4% (10,924 cases) respectively. Two hundred and fifty-one patients were direct admissions from other hospitals into our hospital wards and they attended the A&E department for registration purposes only. Of the remaining 36,901 that were triaged, 196 (0.5%) were resuscitation cases [Triage 1], 3648 (9.9%) were emergency cases [Triage 2], 18,935 (51.3%) were urgent cases [Triage 3], and 14,122 (38.3%) were non-urgent cases [Triage 4].

Despite fluctuations in monthly patient attendance, the proportions of patients according to time of attendance, age group, gender and triage categories remained similar throughout. As majority of patients attended during convenient hours (89.6% from 0700 - 2359hrs.) and a high proportion of patients (38.3%) belonged to the non-urgent Triage 4 category, we feel that public emergency services are possibly being abused.

Key Words: Accident & Emergency Department, Patient attendance, Triage, Emergency services

Introduction

Patients attending the Accident & Emergency (A&E) Department of HUKM undergo a process of triage to determine the urgency of every individual case so that timely attention and treatment can be instituted. The triage system adopted here is based on guidelines laid down as in Table I. Triage process is carried out by staff nurses and medical assistants, trained by doctors in the A&E department.

Materials and Methods

This retrospective study was carried out to determine the details of our A&E patient attendance. In particular, we wanted to look at the proportions of time of attendance and their triage categories. The aim was to get an impression of the use of public emergency services by the community served around this hospital.

Registration database of all A&E registered patients were studied for the period of one year from 1st January to 31st December 1998. Information regarding their age group, sex, time of attendance and triage category was recorded.

Table I
Triage Categorisation System at the Accident & Emergency Department, HUKM

Triage Category	Case	Action	Presentation	Sample Diagnosis
1	Resuscitation	Immediate	Cardiac arrest Respiratory arrest Unconsciousness Severe trauma	Myocardial infarct Multiple trauma Severe head injury Epilepsy
2	Emergency	Within 10 minutes	Severe chest pain Severe dyspnoea Severe pain Major trauma Severe bleeding Hyper-pyrexia	Myocardial infarct Angina Asthma Pulmonary oedema Poisoning Open/displaced fracture Ruptured ectopic pregnancy Penetrating eye injury Meningitis
3	Urgent	Within 60 minutes	Moderate trauma Acute pain Bleeding Irritable child	Appendicitis Epistaxis Gastroenteritis PV bleed
4	Non-urgent	Within 2 hours	Minor condition Old injury	Minor infections Diarrhoea

Results

A total of 37,152 patients were registered at our A&E department for the said period. There were 26,851 (72.3%) patients aged 12 years and above, and 10,301 (27.7%) children below the age of twelve. Males constituted 20,687 (55.7%) while females made up 16,465 (44.3%). Attendance according to time period is as follows: 2400 - 0659hrs.: 3853 (10.4%), 0700 - 1159hrs.: 10,927 (29.4%), 1200 - 1759hrs.: 11,448 (30.8%), and 1800 - 2359 hrs.: 10,924 (29.4%).

Of the total of 37,152 patients, 251 were direct admissions referred from other medical clinics and centres. These were patients who only went through registration process at our counters and were not actually triaged. Of the remaining 36,901 patients who were triaged, the category distribution is as follows: Triage 1 (Resuscitation): 196 (0.5%); Triage 2 (Emergency): 3648 (9.9%); Triage 3 (Urgent): 18, 935 (51.3%); and Triage 4 (Non-urgent): 14,122 (38.3%) (Fig.1).

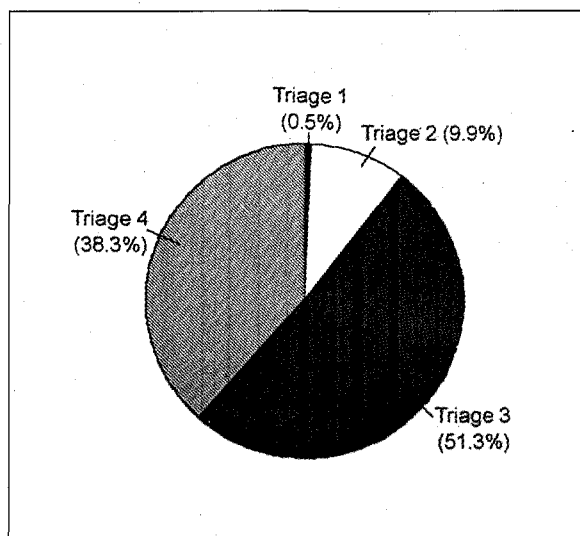


Fig. 1: Total attendance (%) by Triage category.

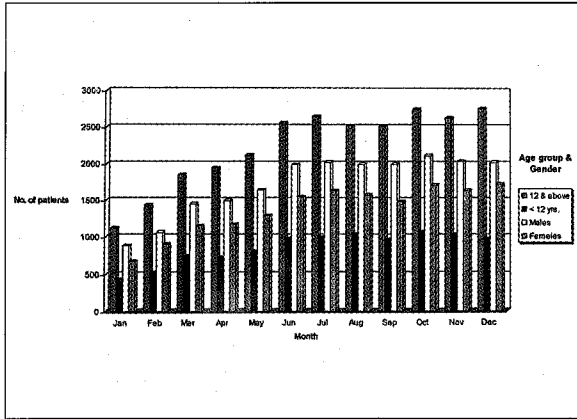


Fig. 2: Monthly patient attendance by age group and gender.

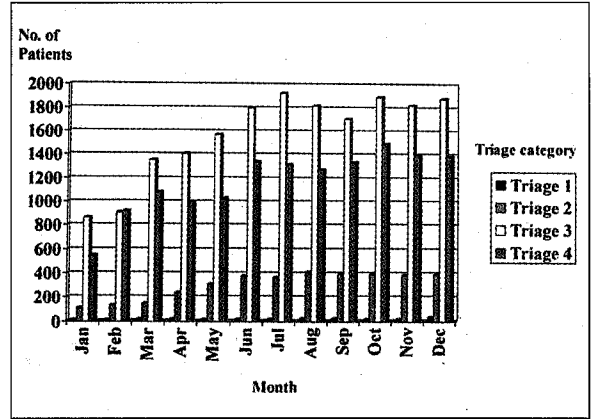


Fig. 4: Monthly patient attendance by triage category.

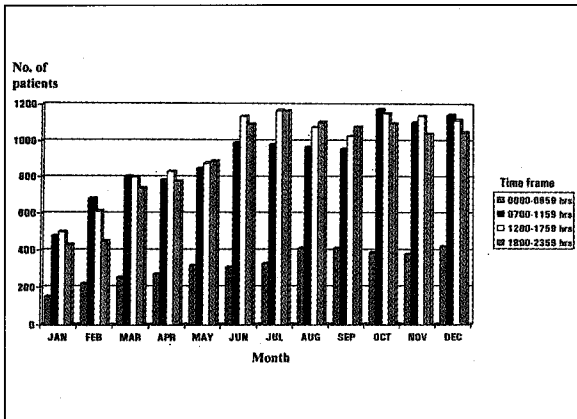


Fig. 3: Monthly patient attendance by time frame.

Monthly patient attendance did show a gradual increase from January to June but there after almost leveled off. However, similar proportions of age group, gender (Fig.2), time of attendance (Fig.3) and triage category (Fig.4) were seen throughout the whole year. It was also noticed that of the 52 Sundays throughout the whole year, 32 (61.5%) of these showed a recurring pattern of lesser attendance from the preceding Saturday, followed by a higher-than-the-Saturday attendance on the subsequent Monday.

Discussion

The Triage Scale adopted at this department has been drawn up from the authors' experiences in local and overseas' A&E departments, and also guided by the National Triage Scale of the Australasian College for Emergency Medicine¹. The 4 categories in our scale divide the patients according to the urgency of their presenting complaint. Triage 1 reflects a resuscitation case of an immediately life-threatening condition that requires immediate attention. Triage 2 is an emergency that is potentially life threatening or has seriously abnormal findings and requires emergent attention. Triage 3 is an urgent but stable case that may wait for up to an hour. Triage 4 is a minor and non-urgent case with normal vital signs, absence of signs and symptoms indicating urgency, and can be adequately managed by a general practitioner (GP). Triage is done by staff nurses or medical assistants, trained by the A&E doctors. A standard chart exists to guide staff in their triaging process (Table I).

This A & E department was opened on 24 July 1997 and for a new department, an average daily attendance of 101.8 patients is encouraging. A continuously increasing monthly attendance from January to June is understandable the fact that facilities were still being expanded and knowledge about this new hospital was being spreaded. Despite fluctuations in total patient

PATIENT ATTENDANCE AT A MAJOR ACCIDENT AND EMERGENCY DEPARTMENT

attendance per month, the proportions per time of attendance, age group, gender and triage categories remained similar throughout. This suggests that the pattern of attendance remained almost the same regardless of the total number. Inferences can therefore be appropriately made with regards to use of our public emergency services.

More than a quarter (27.7%) of attendees were children and hence the continuous accessibility of paediatric services should be a consideration in the provision of emergency services. At our department, the availability of paediatric residents attached to the department round the clock seemed to have been advantageous. No significant changes were observed during school holidays.

Looking at the time periods of attendance, only 10.4 % of patients came between midnight and 0659 hours, and the other almost 90% between 0700 and 2359 hours. This reflects the tendency of patients to attend at convenient times, unless an emergency when the choice of timing does not arise. There was little difference between the proportions in the three other 'convenient' time periods, though frequent influxes of patients have been observed after 2000 hours on weekdays (commonly termed as the 'post-dinner' crowd).

O'Brien *et al* raised the caution when implementing protocols that define and restrict "inappropriate" A&E patient attendance². Whilst agreeing with this, we are of the opinion that an inappropriate visit is one which is a non-emergency, has normal vital signs, no signs indicating urgency, and can also be adequately managed in a GP setting. Of the 36,901 patients that were triaged, Resuscitation cases (Triage 1) accounted for only 0.5% and Emergency cases (Triage 2), 9.9%. A rate of 38.3% for non-urgent cases (Triage 4) is considerably high for an A&E department at a tertiary teaching hospital. Considering the fact that triage 3 cases included ill patients who could also be adequately managed by general practitioners (e.g. gastroenteritis), the actual proportion of "inappropriate" attenders (these plus triage 4 patients) would be higher. Reasons for this rather high rate of inappropriate attenders are multiple: Our hospital charging policy³ clarifies that triage 1 and 2 patients are charged RM10.00 while triage 3 and 4

patients, RM20.00. However, the policy also provides fee exemptions for civil servants, staff of armed forces, infants, school children, pensioners and the disabled. We have been unable to identify the proportion of such non-paying patients within different triage categories. Even for those who have to pay, the fee is rather nominal the fact that private GP clinics charge similar amounts, if not higher, with blood tests, x-rays and medications included. Furthermore, the impression of attending a major teaching hospital somewhat gives a sense of satisfaction on the higher standards of care, especially when their management involves specialists' treatment. Moreover, in the local area, there are only 2 clinics available: one, a government-run outpatients clinic and the other, a private general practitioner's. At this hospital too, there are no general outpatient clinics. What exist are specialists' clinics that only cater for patients on appointment basis rather than walk-in patients. The latter would be advised to 'make an appointment' and when they demand to see a doctor immediately, they would be directed to the A&E department. This problem has been noted to be common with patients from outside the Klang Valley referred by GPs for specialists' consultation. The hassle of repeated long distance travelling might be too much for many patients to undertake.

Being a public hospital, we have a policy of "do not reject patients" even if they attend inappropriately with non-emergency conditions or cold cases. Furthermore, experience dealing with our current society reflects the demanding nature of our public with regards to immediate medical care.

Another interesting finding is that 32/52 (61.5%) Sundays in the year had a recurrent pattern of lesser attendance from the preceding Saturday, followed by a higher (than the Saturday's) attendance on the subsequent Monday (termed, the "Sunday Dip" phenomenon). A possible reason is that being a weekend, city dwellers would prefer to spend their off-day-of-the-week for family and social activities. This is supported by the much higher attendance on the subsequent Monday.

Our findings suggest that public emergency services are possibly being abused. To our knowledge, no reported

studies have calculated the economics of this possible 'abuse'. Nevertheless, wastage in terms of cost can be reduced if such inappropriate attendance can be diverted to cheaper general outpatient services. Derlet *et al* found that a subset of non-emergency patients can be prospectively identified and triaged out of the A&E department without significant adverse outcomes, provided there is community support for follow-up care⁴. Furthermore, primary care management by general practitioners seems to have benefits in terms of resource utilisation by way of reduced rates of investigations, prescriptions, and referrals to specialists⁵.

Our experience in this A&E department of a tertiary teaching hospital suggests that public emergency services are possibly being abused. Steps should, and are being taken to improve the situation in order to achieve a more cost-effective provision of medical emergency services. These include setting up of a general outpatient clinic within the vicinity of the hospital so that non-emergency cases can be referred there. Public education must also be undertaken in the form of leaflets, explanatory posters or public messages through the media, to educate the public on what constitutes an

emergency and how not to abuse the services. A strategy tried in University of Malaya Hospital in Kuala Lumpur and various hospitals in Singapore and elsewhere, showed positive response in increasing the fees for non-emergency cases. This has certainly some limitations because of the difficulties in demarcating between some emergency and non-emergency cases based on clinical triage alone. With a high proportion of non-paying patients exempted from the fees, this strategy too may not be highly effective. Furthermore, a proposal for any fee hike in a government institution and during the current bad economic situation will most probably be unacceptable.

Acknowledgements

The authors wish to thank Professor Dato' Dr Khalid Abdul Kadir, Director of Hospital Universiti Kebangsaan Malaysia for his support. Also to all staff at the A&E department for their assistance in making data available for this study. A word of thanks is also dedicated to Encik Kamarulzaman Othman for assisting in the production of graphic illustrations.

References

1. Australasian College for Emergency Medicine. A National Triage Scale for Australian Emergency Departments (Policy Paper), 1993.
2. O'Brien GM, Shapiro MJ, Woolard RW, O'Sullivan PS, Stein MD. "Inappropriate" emergency department use: a comparison of three methodologies for identification. *Acad Emerg Med* 1996; 3(3): 252-7.
3. Buku Polisi Caj, Hospital Universiti Kebangsaan Malaysia, 1997.
4. Derlet RW, Kinser D, Ray L, Hamilton B, McKenzie J. Prospective identification and triage of non-emergency patients out of an emergency department: a 5-year study. *Ann Emerg Med* 1995; 25(2): 251-23.
5. Dale J, Green J, Reid F, Glucksman E, Higgs R. Primary care in the accident & emergency department: II. Comparison of general practitioners and hospital doctors. *BMJ* 1995; 311: 427-30.