

## 8 P.M. TO 8 A.M. HOSPITAL ADMISSIONS TO A GENERAL MEDICAL UNIT

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### SYNOPSIS

**A prospective study was conducted by questionnaire on 100 consecutive patients warded in a general medical unit whose admission times were between 8 p.m. and 8 a.m. daily. Who they were and why they came at these hours were analysed. The role of the GP, OPD Dr and the A and E Dr in the management of such patients is discussed.**

### INTRODUCTION

The Accident and Emergency Department (A and E) at Tan Tock Seng Hospital runs a 24 hour service. Like all other A and E departments, most of the patients are neither, in the eyes of the medical profession, accident nor emergency cases. In 1979, there were 315,461 A and E attendances at the general hospitals in Singapore of which 60% were non-emergency cases. (Straits Times, 14th Jan. 1980). Of these 60%, only 3.2% were referred by general practitioners (GPs) to the hospitals. Government outpatient dispensaries (OPDs) do not open at night; many private clinics do and in view of the low percentage of misuse of the A and E service by the GPs, it is the general feeling that most of the nocturnal hospital admissions to general medical units are unnecessary especially with regard to the time of the night these patients are warded. This prospective study was undertaken to determine the characteristics of patients admitted to a general medical unit between the hours of 8 p.m. and 8 a.m. daily from August 1979 to September 1979.

### MATERIAL AND METHODS

The A and E Department was run by junior medical officers during the study. As these officers do six monthly stints, it was decided to allow them time to get used to their work before starting the study. So after three months' experience (April to July), the study began in August 1979. One hundred consecutive patients from August to September 1979 admitted to the "C" class wards of the Department of Medicine III Tan Tock Seng Hospital between the hours of 8 p.m. and 8 a.m. daily were interviewed the day after their admission. All these patients had to be admitted through the A and E Department. Excluded were patients admitted directly to the intensive care ward.

A questionnaire (see appendix) was filled and analysed. The time of admission was taken as the time recorded on the admission form which means that the patient had actually come to the hospital earlier,

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sometimes by as much as two hours. The dispensary in the hospital closes at 5 p.m. and hence prescriptions if given require the patient to return during office hours to collect the medicine.

**RESULTS**

(i) Demographic characteristics of 100 patients

There were more male than female admissions. By ethnic groups no particular group seemed more prone to be admitted between these hours. There was a greater percentage of female patients (51%) below 40 years than male patients (41.8%). No males over 80 years was admitted. The three most elderly females were warded for chest infection, the sick sinus syndrome and senile dementia with fracture of the right femoral neck respectively. (see Table I).

**TABLE I DEMOGRAPHIC CHARACTERISTICS OF 100 PATIENTS**

Characteristic	Patients No & %	Singapore Population 1976 %
Sex:		
Male	55	51.0
Female	45	49.0
Ethnic Group:		
Chinese	77	76.1
Malay	11	15.1
Indian	9	6.9
Others	3	1.9
Age-Group (Yrs)	Male No & %	Female No & %
Less than 20	5 9.1	7 15.5
20 —	18 32.7	16 35.5
40 —	14 25.5	8 17.8
60 —	18 32.7	11 24.4
80 & above	0 0.0	3 6.8
Total	55 100.0	45 100.0

(ii) Distribution of 100 patients by the time of ward admission

It can be seen that most of the female patients were admitted by midnight (60.0%) compared with the males (47.2%), and by 1 a.m. 73.4% of female and 63.6% of male admissions were in the ward. (see Table II).

**TABLE II DISTRIBUTION OF 100 PATIENTS BY TIME OF WARD ADMISSION**

Time (hours)	Male		Female	
	No	%	No	%
2000 —	4	7.3	9	20.0
2100 —	9	16.3	4	8.9
2200 —	7	12.7	10	22.2
2300 —	6	10.9	4	8.9
2400 —	9	16.4	6	13.4
0100 —	2	3.6	2	4.4
0200 —	10	18.2	4	8.9
0400 —	5	9.1	2	4.4
0600 — 0800	3	5.5	4	8.9
Total	55	100.0	45	100.0

(iii) Distribution of 100 patients by presenting symptomatology

Table III shows the symptomatology that brought these 100 patients to hospital. Abdominal complaints, followed by dyspnoea accounted for 37%.

**TABLE III DISTRIBUTION OF 100 PATIENTS BY SYMPTOMATOLOGY**

Symptom	Male (No)	Female (No)	Total (No & %)
Abdominal pain/diarrhoea	9	10	19
Dyspnoea/asthma	12	6	18
Drugs/alcohol/poisons	8	4	12
Chest pains/palpitations	6	6	12
Giddiness/stroke/syncope	6	6	12
Fever/infection	7	3	10
Hemoptysis/hematemesis	1	3	4
Insect bites	0	2	2
Social problem	0	2	2
Others	6	3	9
Total	45	55	100

(iv) The duration of symptoms in 100 patients before hospitalisation

From Table IV, it is seen that 51.1% of the female patients and 47.2% of the male patients sought medical attention within six hours of symptom onset. 34.6% males and 24.4% females had more than 24 hours of symptoms before being admitted and 38.8% males and 33.3% females were warded after 12 hours of symptoms.

**TABLE IV DURATION OF SYMPTOMS BEFORE HOSPITALISATION**

Symptom Duration (hours)	Male		Female	
	No	%	No	%
0 —	18	32.7)	14	31.1)
3 —	8	14.5)	9	20.0)
6 —	8	14.5)	7	15.6)
12 — 24	2	3.7	4	8.9)
Above 24 to 1 week	13	23.6)	9	20.0)
Above 1 week	6	11.0)	2	4.4)
Total	55	100.0	45	100.0

(v) Patients who consulted the primary health care physician before coming to the A and E Department (see Table V)

Of the total cases admitted after 12 hours of symptoms, (i.e. 21 males and 15 females), seven males and ten females had consulted a GP or an OPD Dr for the same illness. The actual number directed by them to come to A and E was not known. The majority of patients with symptoms less than 12 hours (30 out of 34 males and 27 out of 30 females) used the A and E doctors as their first line of medical consultation. Thirteen of 45 (28.9%) females in contrast with 11 of 55 (20.0%) males sought the primary health care physician first.

**TABLE V PATIENTS CONSULTING PRIMARY CARE PHYSICIAN BEFORE A & E DOCTOR FOR SAME ILLNESS**

Duration of Symptoms (hours)	Seen GP/OPD Doctor					
	Male (No)			Female (No)		
	Yes	No	Total	Yes	No	Total
0 —	4	30	34	3	27	30
12 & beyond	7	14	21	10	5	15
Total	11	44	55	13	32	45

(vi) Unnecessary admissions and patients' reactions to them (Table VI)

Fifteen of 55 male (27.3%) and 19 of 45 (42.2%) female admissions were deemed unnecessary by the senior doctors in retrospect. These patients' reactions, if they were not admitted, were analysed. Sixteen females and 11 males were satisfied with the A and E service if sent home after consultation. Three females and 4 males were dissatisfied if sent home. Of the 3 dissatisfied females, their dissatisfaction was because medicine if supplied had to be collected during office hours as the pharmacy was closed. None demanded admission. All 3 were 60

years old and above. Two of the 4 males were dissatisfied for a similar reason but the remaining 2 demanded admission. They had come to hospital to be warded and would be dissatisfied if sent home. One had gastroenteritis and the other peptic ulcer. All the four males were below 30 years old.

Out of the 100 patients, two females and six males had come for admission and would have got angry if turned away. In the view of the senior doctors, admission for both these females but only four of the males was considered necessary. However, the time of night at which they came to hospital was considered inappropriate.

**TABLE VI UNNECESSARY ADMISSIONS & PATIENTS' REACTION IF SENT HOME**

Sex	Dissatisfied (No)	Satisfied (No.)	Total
Male	4	11	15
Female	3	16	19
Total	7	27	34

(vii) Why patients come to the A and E Department between 8 p.m. and 8 a.m.

From Table VII, 49% of patients had symptoms of less than 6 hours' duration. Of the 24 females, three had consulted their GPs and were referred to hospital. Their diagnoses were cerebral haemorrhage (she died), acute confusional state with senile dementia and ischaemic heart disease. All 25 males came straight to hospital bypassing the GP or OPD Dr.

Twenty five per cent conceded that their symptoms were such that they could have come to hospital earlier or later and not come during these hours. Nineteen of these were males. Eight per cent wanted to come earlier but had transport difficulties — 6 were females, 3 in their fourth decade and 3 over sixty years of age. Some patients gave more than one reason but the predominant reason was taken.

**TABLE VII PATIENTS' REASONS FOR COMING TO THE A & E DEPARTMENT BETWEEN 8 P.M. & 8 A.M.**

Reason	Male (No)	Female (No)	Total (No & %)
Onset of symptoms less than 6 hours	25	24	49
Could have come earlier or waited till later	19	6	25
Added &/or worsening symptoms	8	9	17
Transport difficulty; awaiting relatives' return	2	6	8
Not free to come earlier	1	0	1
Total	55	45	100

**DISCUSSION**

In summary, the findings are:—

There were more male than female admissions to the general medical wards between 8 p.m. and 8 a.m. but by 1 a.m., the majority were already warded. There were three females but no males over 80 years old.

Abdominal complaints and breathlessness were the two main reasons for the admissions accounting for 37% of the 100 patients.

51.5% female and 47.2% male patients admitted sought hospitalisation within six hours of symptoms starting, while 15 (33.3%) female and 21 (38.3%) male patients waited more than 12 hours.

Thirty six out of the 100 patients had symptoms longer than 12 hours, and of these, 10 females and 7 males consulted the GP or OPD Dr for the same illness initially.

42.2% female and 27.3% male admissions were considered unnecessary. Of these 34 patients, seven would have been dissatisfied if sent home without admission.

Forty nine per cent gave the short duration of symptoms (six hours or less) as their reason for coming straight to the A and E Department and only three were referred by their GPs. Twenty five per cent (19 male and 6 female patients) felt they could have avoided coming at these times.

**CUTTING DOWN THE WORKLOAD — THE PUBLIC'S PART**

Not all GP clinics are open at night. The A and E Dr is therefore the most convenient source of medical attention if a person feels he needs to see a doctor at such a time. Of the 100 patients admitted, 64 had symptoms shorter than 12 hours and 36 for a longer period. Of these 36 who could have seen a GP or OPD Dr, 17 did so and 19 did not. Thus, at first glance, 19% used the A and E Dr as his first line of medical consultation. Seventeen per cent did not and 64% were self-judged medical emergencies. So at best 81% did not appear to abuse the A and E Department. (I have assumed that all 64 developed symptoms after the private clinics have closed but this is evidently not so.) No extrapolation of this percentage onto the crowd at the A and E Department is possible. Of the 100 warded, 25 conceded they need not have come to hospital during these hours but nevertheless came and as a result overcrowded the A and E Department and overworked the duty staff there and in the wards. Seventy five felt they had to come during these hours, and so with this reason taken into account, at best, 75% of those warded did not appear to abuse the A and E Department.

After a more thorough assessment in the wards and in retrospect, 34 patients need not have been admitted at all. So from the unit's point of view only 66 patients justified their admission, that is, the patients had symptoms or illnesses that required hospitalisation. This by no means justified their admission during the hours under consideration. The number that could have come during office hours or after seeing the GP or OPD Dr and be admitted via the specialist outpatient clinics rather than the A and E Department is difficult to determine. Thus the nightly workload could be reduced by at least a third.

It thus appears that many of the admissions during these hours through the A and E Department are not necessary. Maybe all 66 patients (at the most generous

estimate) required hospital care but not all these 66 needed to come at the time they came, bypassing the GP or the OPD Dr in the process. Sixty per cent of attendances at the A and E Departments are non-emergency. In Britain, the proportion of inappropriate attendances at various A and E Departments is variable but the highest figure quoted is 60% at a small hospital where the local GP service was not considered good and most of the inappropriate attendances were self-referrals. (BMJ, 1979). In Singapore where 60% of A and E attendances are non-emergency, it is the common impression that the A and E Department is being used more and more as a convenient "back door" to the hospital and the primary health care doctors are being increasingly bypassed, despite there being more GP clinics and more OPDs. The role of the A and E Department must be re-emphasized.

**THE ROLE OF THE A AND E DEPARTMENT, BUT IN REALITY . . . . .**

The main functions of the A and E Department are making an accurate diagnosis or assessment, giving immediate treatment and arranging for further care if necessary — all of which may require the utmost speed. Mainly junior medical officers man the A and E Department; being junior, such skill may be inadequate and with large attendances and little time to be spent per patient, it is no wonder that a fair number will have to be admitted because with limited time for proper assessment it is prudent to play safe. To discharge a patient entails more time, work and responsibility. To direct the patient to come for follow-up the next day at a medical outpatient clinic means more paper work than admitting the patient. What more if relatives or the patient put pressure for admission. Seven per cent would be dissatisfied if they were sent home instead of being admitted.

Reassurance is a legitimate function of medical practice as the patient cannot be expected to always judge what is serious or an emergency. To reassure takes time and patience. Patients who come to the A and E Department after office hours must be made to realise that only a skeleton staff of relatively junior doctors are on duty. If attendances are overwhelming, the true emergency cases will be lost in a crowd of non-emergencies. Delay to the latter could prove fatal. That 42.7% female and 27.3% male admissions were unnecessary show the added workload that could be avoided. Yet 7% felt they had to be warded no matter what. It is from potentially dissatisfied patients like these that complaints against the hospital are likely to arise and if the A and E medical officer realises that such is the attitude of the patient or his relatives, then, despite the doctor's clinical judgement to the contrary, the patient would very likely be admitted.

Thus there are patients who come and demand hospital admission. They will be admitted if for none other reason than to curb complaints against the A and E doctor. Then there are those (25%) who for no apparent rhyme or reason come to the A and E Department at such hours and get hospitalised. No doubt they have genuine complaints and suffer from ill health needing admission, but the point is why come at this time and strain further the hospital services which are manned only by a skeleton staff? These patients could have come during office hours

when all the staff, including the consultants are available. Another group came because of minor sickness yet were admitted because of social pressures or because, needing follow-up, the harassed A and E doctor finds it easier, more convenient and faster to admit than go through the rigmarole of referring them to the OPDs. This way the crowd vanishes faster as more are shunted into the wards. A vicious circle is therefore created because by clearing the crowds faster, more are attracted to the A and E Department as waiting time decreases but wards become overcrowded, duty staff overburdened and the ward doctors (who do not do shift work like their A and E counterparts) become overworked that their competence is likely to fall. Who suffers? Patients of course, especially those who are desperately ill and are the true medical emergencies.

The sooner the public is made aware of these prevailing circumstances the better for all. It is only through better education of the public that A and E attendances can be decreased. For the above reasons, it is obvious that the higher the A and E attendances, the greater the absolute number of ward admissions. Emphasis today is on minimising the increasing cost of health care and outpatient treatment is less costly than hospital care. All patients should seek the primary health care doctor before coming to the A and E Department unless it is truly a medical emergency. The Straits Times editorial of 19th January 1980 reported a rise of 11.5% in A and E attendances between 1977 and 1979 and it is still rising. Moreover 60% of them are non-emergency cases. Further the reasons given were that most of these non-emergency cases came after office hours when outpatient clinics had closed and most private practitioners would not attend to any but their regular patients. This is supported by the fact that of only about half the patients in this study who had symptoms shorter than six hours, only three of them had seen their GPs before coming to hospital.

#### UTILISATION OF THE PRIMARY HEALTH CARE DOCTOR.

For the group as a whole, females were more likely to have seen the GP or OPD Dr before coming to the A and E Department and the longer the period of symptoms, the more likely she was to have done so in contrast to the male patient. Both sexes who were admitted had chiefly abdominal complaints but surprisingly, there were more males with problems of drugs and alcohol ingestion. Dyspnoea as expected was more prominent in the male patients in view of this hospital being also a chest hospital with many suffering from tuberculosis and chronic obstructive lung disease. It would not be unreasonable to expect those with longer than 12 hours symptoms to go and see the primary health care doctor first. In this subgroup, there were 15 females and 21 males. Yet only two-thirds the females and one-third the males saw their GP or OPD Dr. Perhaps the females were more free during the day to see these doctors than the males. For those conceding that they could have come between 8 a.m. and 8 p.m. there were 19 males and 6 females, showing that if they wanted to, more males could make themselves free during the day if they felt they had to see the doctor.

#### CONCLUSION

This study does not show why people come to the A and E Department during the hours 8 p.m. to 8 a.m. Liao in the New Nation of 18th January 1980 stated that 65% of the cases seen at these departments were non-trauma cases who came after office hours and in her on-the-spot interviews and observations, she concluded that during the day, people with minor ailments still go to the A and E Department for treatment although the number is less. However this study concerned those who, in the clinical judgement of the A and E doctor, merited admission and presumably were more ill than those sent home. The policy at the A and E Department is to see all who present themselves no matter what time they come. The A and E Department is manned mainly by junior doctors; being junior, they would be prudent to err on the safe side, thus the larger the A and E crowd, the more patients would be admitted only to further overburden duty medical and paramedical staff. The solution seems to rest on two factors. The first is the provision of more GPs or OPD doctors for consultation after office hours, say up to 10 p.m. The other is to educate the public that with the present set-up of the A and E Department and the hospital services, where only a skeleton junior staff runs the various wards after office hours, each non-emergency case seen and admitted will only detract attention from those who are real emergencies.

#### APPENDIX

Name	NRIC No.		
Age	Sex	Race	Time of Admission
Reason for coming to the A and E Department/complaint			
Duration of symptoms before admission			
Whether GP or OPD Dr visited for same illness			
If patient was not warded, will he be dissatisfied? YES/NO			
If NO, but medicine not fully supplied, will he be angry? YES/NO			
Reason for coming to hospital at night.			
(i) symptoms just begun (within 6 hours)			
(ii) transport difficulty/awaiting relatives return			
(iii) no particular reason; could have come earlier or waited till the next day.			
(iv) worsening or/and added symptoms			
(v) not free to come in the day			

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