

The Waiting time at the Children's Emergency Room, University College Hospital, Ibadan

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Summary

Bamgboye EA, Erinoso HO and Ogunlesi AO. The waiting time at the Children's Emergency room, University College Hospital, Ibadan. *Nigerian Journal of Paediatrics* 1992;19(1):9. The waiting time of the 583 children seen at the emergency room of the University College Hospital, Ibadan, during the month of June 1988 showed a lognormal distribution. The mean waiting time was 73.9 minutes with a standard deviation of 5.4 minutes. Children brought during the night shifts had significantly longer waiting time before seeing a doctor than those brought on morning and afternoon shifts ($P < 0.01$). The longest waiting time was recorded among children brought on Saturdays, while the lowest was recorded among those brought on Sundays and Mondays. Parental educational level had no significant relationship with the waiting time even though the shortest waiting time was recorded among children whose parents had more than secondary education. The study revealed some logistic problems in hospital admission system which can be solved by better administrative arrangement.

Introduction

THE University College Hospital (UCH) Ibadan, a tertiary level of health care has long identified itself with the problems of the society by offering primary curative services to the paediatric population. While some children are admitted to the hospital through the general outpatient Department (GOP), the majority of paediatric cases get admission to the hospital

through the Children's Emergency Room (CHER).¹ A recent evaluation exercise of the children's emergency care services at the UCH, showed that some data required to assess their efficiency were lacking.² In particular, there was no information on the timeliness of care. In order to provide such information, the present study assesses the waiting time of patients attending CHER in UCH, Ibadan, in one month.

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Materials and Methods

In an earlier publication, the facilities in the CHER were described.² A 24-hour emergency service is maintained by running three shifts: morning (8am-4pm) afternoon (4pm-10pm) and night (10pm-8am). The record of all cases seen

are kept in a permanent register. Since items of information in that register exclude the patient's arrival time, when seen and the special procedure performed on them, a prospective study was carried out over a one-month period, June

01-30, 1988, to evaluate the timeliness of care. The month chosen in this exercise was arbitrary and variation of services by month is not expected. Also the available fund was enough to sustain the study for one month. However, it is not expected that season of the year will affect waiting time.

An interviewer stayed at the CHER during each of the three shifts, to monitor each patient from time of arrival to time of departure. The interviewer completed a precoded questionnaire on each emergency child care. The time recorded included the demographic characteristics of the children and their parents, time of arrival, time attended to by the doctor, preliminary diagnosis, special procedure and tests, length of stay and outcome of care.

The data collected were later processed on the UCH IBM AT microcomputer, using the systat statistical software to generate frequencies and cross tabulations. The operational definition of waiting time of a patient in this study is the interval in minutes, between the time of arrival of the patient at the emergency room and the time actually seen by the doctor. This was further analyzed by shifts, days of week and outcome of visit. The one way analysis of variance and student t-tests were used where appropriate, to test for statistical significance of the differences in waiting time.

Results

Complete information on waiting time was obtained in 554 (95.0 percent) of the 583 emergency cases seen at the CHER in June 1988. The distribution of waiting time was positively

skewed and was transformed on the natural logarithmic scale. The lognormal distribution gave a mean waiting time of 73.9 minutes and a standard deviation of 5.4 minutes. The median waiting time was 80.5 minutes and the first and third quartiles were 26 minutes and 254 minutes respectively. Tables I and II show the summary indices of the waiting time by some demographic and epidemiologic variables. The waiting times were below average during the morning and afternoon shifts, but significantly above average in the night shifts ($P < 0.01$). An examination of the waiting time by day of the week showed the lowest waiting times on Sundays and Mondays as compared to other days of the week, while the longest waiting time was recorded on a Saturday.

Although children of parents (mother and father) with higher levels of education stayed shorter time at the children's emergency room than those whose parents were not educated, the recorded differences were not statistically significant ($P > 0.05$). Children brought to the emergency room by their fathers also stayed longer than those brought by other persons before seeing the doctor ($P > 0.1$). In fact, the shortest waiting time of less than one minute was recorded for a child brought by other relations rather than their biological parents. Old cases who had visited the emergency room on previous occasions waited longer to see a doctor than the new cases ($P < 0.5$). The modal frequency of doctors present at the emergency room on each shift time was on the average two, but no discernible differences were observed in the waiting time when more or less number of doctors were present. On the average, all children who were admitted into the emergency room stayed longer periods than either those who died or those who were discharged home alive. In fact, those who died stayed for a significantly lower time than the other categories ($P < 0.05$).

Table I

The waiting time of emergency patients at the UCH in June 1988 by important epidemiologic variables

Epidemiologic variable	Summary Indices of Waiting time (minutes)				
	Mean	S D	Number of Patients	F-Test	P-Value
1. Shift					
a. Morning	71.0	5.0	329		
b. Afternoon	43.0	4.3	121	16.07	0.0001
c. Night	151.3	7.2	94	(2,538)	
2. Day of week					
a. Monday	58.1	5.4	86		
b. Tuesday	102.8	5.5	71		
c. Wednesday	76.0	4.4	66		
d. Thursday	64.5	4.6	91	1.822	0.093
e. Friday	66.4	6.9	97	(6,542)	
f. Saturday	108.0	5.0	79		
g. Sunday	57.9	4.9	61		
3. Type of patient					
a. New	70.5	6.0	179	4.81	0.01
b. Old	73.0	5.0	365	(542)	

Table II

The waiting time of emergency patients at the UCH in June 1988 by important demographic variables

Epidemiologic variable	Summary Indices of Waiting time (minutes)				
	Mean	S D	Number of Patients	F-Test	P-Value
1. Mother's Education					
a. None	69.2	4.8	118		
b. Primary	86.9	5.1	157		
c. Secondary	70.4	5.6	120	1.121	0.346
d. Post Secondary	66.4	5.6	110	(4,526)	
e. University	45.4	7.6	29		
2. Father's Education					
a. None	78.6	4.4	42		
b. Primary	78.3	5.4	155		
c. Secondary	84.8	5.1	131	1.471	0.210
d. Post Secondary	61.0	5.4	-	4,517	
e. University	51.7	6.6	81		
3. Informant					
a. Mother	72.0	5.1	454		
b. Father	87.8	5.5	46	0.598	0.550
c. Other Relations	64.1	7.0	48	(2,545)	

Discussion

Despite the arrangement that an interviewer was present at the emergency room during the one month in which the present study took place, it was surprising to have missed out information on waiting time in about five percent of the cases.³ A plausible explanation is that some patients might have returned home without seeing a doctor. Under this circumstance, it appears some cases brought to the emergency room

might not really have been emergency cases, while some patients might go to other hospital centres following a long waiting period. That the waiting time was lower in afternoon shifts can be attributed to the fact that it takes time for the patient load to build up significantly in the hot hours of the day. Another reason is that working mothers usually like to report first at home before coming to the hospital, making the patient load lighter in the early hours of the afternoon shift. On the other hand, the longer waiting

period at night may be due to poor facilities available at this time to arrive at the clinic or certain needs like drugs might have to be purchased at dawn by the patients.

The low frequency of patients on Sundays may explain the shorter waiting time observed on those days. Thus, differences in waiting time between the different days of the week (though not statistically significant $P > 0.1$) may be related to clinic attendance. In particular, the longest waiting time recorded on Tuesdays may be partly attributed to the relatively larger number of patients referred to the Emergency Room from the anaemia clinic which holds on that day. Large numbers of patients are usually seen in that clinic compared to other clinics and a higher proportion of these patients usually require emergency care. Another possible explanation for prolonged waiting time on Tuesdays is the fact that on these days, there are no general consultation clinics at the children's outpatient department, hence all very sick patients converge in the Emergency room. In a similar way, patient load is lighter on Monday mornings, since most sick children are brought to the Monday general clinic for children's outpatients.

The significantly higher waiting time of children brought by their fathers may be related to fathers being less likely to dramatize illness to the same extent that mothers would. Furthermore, the finding that children brought by relations stayed for the shortest periods might suggest the seriousness of such cases compared with others. Also the educated parents (especially of mothers) are likely to come with true severe cases than the others and are more likely to communicate better with the staff at the emergency room,⁴ hence the apparent shorter waiting times of cases whose parents have at least a secondary education.

It is surprising that differences in waiting time were not significantly related to the number of doctors on duty. Because one would have expected that when more doctors are on duty

more patients would be seen at every point in time thereby drastically reducing the waiting time. Maybe when more than the usual number of doctors were on duty, the frequency of patients also increased. The finding that more deaths and admissions were recorded among the new cases might also suggest that the new cases could be more severe. It could also mean that more people are aware of UCH for such emergency services, since the utilization of a health service is known to be facilitated not only by the level of disease in the community but the awareness of the community of such service.⁵

In conclusion, the findings of the present study have in no small measure exposed the logistic problems of the hospital system at the CHER in UCH. This can be solved by better administrative arrangement. It is recognized that observations made during a period of one month may not be valid for the other months of the year. However, the fact remains that the waiting time of patients recorded in the present study appears to be unduly too long when compared to an average of 49 minutes in a similar hospital.⁶ Therefore, the following suggestions could lead to an improvement. There is a need to increase the number of doctors and nurses covering the emergency centre. This will increase the rate at which patients are seen and also improve the quality of care given.

The emergency centre should be made to operate like one by ensuring that it receives only emergency cases. Routine and cold cases that come and wait for a long time will give a false impression about the quality of care at the centre. Therefore, a doctor should examine all patients as they come to the centre to determine their emergency status.

All new doctors and nurses working at this centre should be given formal orientation by other experienced colleagues for them to know the working mechanism of the centre. This will also reduce the waiting time of patients especially the severely ill ones.

Evaluation being an integral part of the health care delivery system should be a continuous process.⁷ Therefore, a large hospital like the UCH should embark on this kind of self assessment periodically to ensure the maintenance of a good quality of care.⁸

Acknowledgements

The authors are grateful to the Health Service Research Unit of the University College Hospital, Ibadan, for providing the financial support for this study. They also thank members of staff of the Department of Paediatrics, particularly those working directly at the CHER. We are grateful to Professor W I Aderele for his constructive advice and criticism in the preparation of this manuscript. Finally, we thank Mr E O Abu for his secretarial assistance.

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