

governmental schools, and at 04:00-11:59 pm in contrast to midnight to 07:59 am. Results of the present study indicated the random nature of demand for emergency admission which affects use of bed stock. A prospective study of these admissions on daily basis is needed.

Keywords: emergency unit, Poisson distribution ICU, admission, attendance.

INTRODUCTION

The care of children of a community is probably the most important and certainly the most rewarding field. It gives the opportunity of laying the foundations of good adult health in the broadest sense, with the aim of promoting the maximum potential for each individual in terms of physical and mental health and the possibility of preventing further handicap and ill health. Therefore, children should be given the best possible health care available to overcome the medical problems they might face as a result of getting ill or injured. Children aged 6-18 years are given special consideration as they form a big sector of the population (about 17%).⁽¹⁾ This sector is easily reached through schools as, by law, children are compelled to attend schools and spend about half of their action day for a period of 8 to 10 years.

Emergency unit is by definition, a health care facility for patients suffering pain or life threatening due to medical problems.⁽²⁾ Providers of health care used three categories to describe requirements for emergency care: non-urgent, urgent and emergent. Those with non-urgent conditions do not require resources of an emergency service; referral for routine medical care may or may not be needed, where the disorder is non-acute or minor in severity and few of them require hospital admission. Urgent conditions require medical attention within the period of few hours; where the disorder is acute but not necessarily severe and some of them will require hospital admission. Emergent

conditions require immediate medical attention, where the disorder is acute and possibly threatening to life or function and many of those patients require hospital admission or intensive care.⁽³⁾

Admissions to units like emergency and intensive care units (ICU) are random, independent and by their nature cases have to be attended and treated as they arise. The hospital cannot schedule the arrival of cases that require these services nor the possibility to tolerate the risk of turning the patient away.⁽⁴⁾ Thus, planning the facilities required in order to accommodate arrivals or demand for services that are random or stochastic is specially difficult. In these cases, reasonably accurate predictions of maximum and minimum use are required rather than the average demand.⁽⁴⁾

One of the facilities of any hospital is the number of beds required to cope with the workload which is of a prime importance for hospital management because of its direct implication for manpower requirement as well as for the costs. In considering the number of beds required for emergency unit, it was reported that, it is affected by patient length of stay distribution and the random patterns in which patients arrive.⁽⁵⁾ It has been reported that emergency beds occupancy on any specific day of the week follow the Poisson distribution.⁽⁵⁻⁸⁾

This study aimed at investigating the best probability distribution fitting non-elective emergency admissions to Sporting Students' Hospital in Alexandria and to study the factors affecting the daily numbers of emergency admissions.