



RELATIONSHIP BETWEEN THE DURATION OF THE EXAMINATION IN THE EMERGENCY DEPARTMENT AND SOME CHARACTERISTICS OF THE PATIENTS

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ABSTRACT:

Length of stay is perceived as an important indicator of quality of care in Emergency Departments. The increased length of stay in the provision of emergency medical care can contribute to systemic problems in the provision of efficient and high-quality medical care. The aim of the present study was to investigate the relationship between the duration of the examination in the emergency department and some characteristics of the patients.

Material and Methods: A retrospective study of patients admitted to the Emergency Department of St. Marina University Hospital – Varna, Bulgaria, over a 5-year period was conducted. Data were collected from the hospital information system.

Results: 272,390 patients who passed through the emergency department were examined. The increase in the flow of patients from other areas is, on average 3.07 times. The majority of patients are adults from other areas who are self-directed. The average duration of the visit was 45.7 minutes. The average duration of visits increases in the morning and then decreases until midnight, when we observe an approximately 30-minute jump in the average duration. There was a significant difference in the average duration of the visit to the emergency department according to the days of the week, ethnicity, age and sex of the patients, as well as according to the reason for the visit.

Conclusion: Our results show that the average duration of the visit varies considerably according to the time of admission and the day of the week, the volume of patient care, the characteristics of the patient and the characteristics of the hospital. The length of stay correlates directly with the patient’s age, severity of sex, gender and ethnicity.

Keywords: duration of the examination, emergency department, patients

INTRODUCTION

The emergency department is defined as “a highly effective setting for emergency and life-saving care, as well as a major provider of outpatient care in many communities.” Understanding a patient’s journey from the gate to the emergency department exit door - that is, the time a patient spends in the emergency department or the length of stay - is the key to improving patient experiences and emergency services [1].

Patients come to the emergency department with a variety of illnesses and symptoms, and medical professionals are required to provide them with high-quality health care [2]. On the other hand, various factors are influencing the increase in the number of patients, leading to a decrease in hospital beds and emergency medical staff. Thus, the efficiency of care decreases, and the stay in the emergency department increases [3]. In general, the capacity of emergency departments is limited, leading to overcrowding of emergency departments, understaffing, time choking to provide the necessary care and decreasing quality of service. In these cases, the mortality rate increases by 1.34 times [4]. Long ED length of stay increases patient length of stay [5] by reducing the quality of emergency medical services and may be associated with delays in diagnosis and treatment or exposure to unexpected safety-related incidents as well as medical errors leading to difficulties in emergency treatment [6, 7, 8]. In this regard, many countries have introduced regulations that limit the length of stay in emergency departments [9, 10]. These provisions become even more important with the COVID-19 pandemic. This pandemic allowed us to examine the real situation in the emergency department in terms of patient care and its role in the health system [11, 12, 13].

The aim of this study was to investigate the association between the duration of examination in the emergency department and certain patient characteristics.

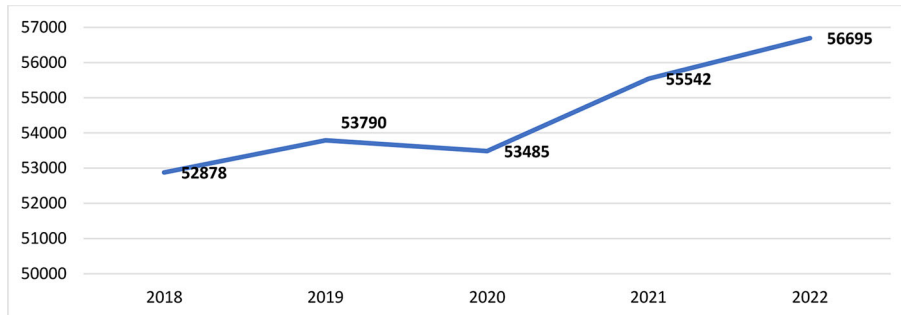
MATERIALS AND METHODS

A retrospective study of patients admitted to the Emergency Department of St. Marina University Hospital – Varna, Bulgaria, over a 5-year period was conducted. Data were collected from the hospital information system.

RESULTS

272 390 patients who passed through the emergency department over a 5-year period (2018-2022) were studied, with an increasing trend in the number of patients who passed (Fig. 1).

Fig. 1. Number of patients passed through the emergency department for the period 2018-2022

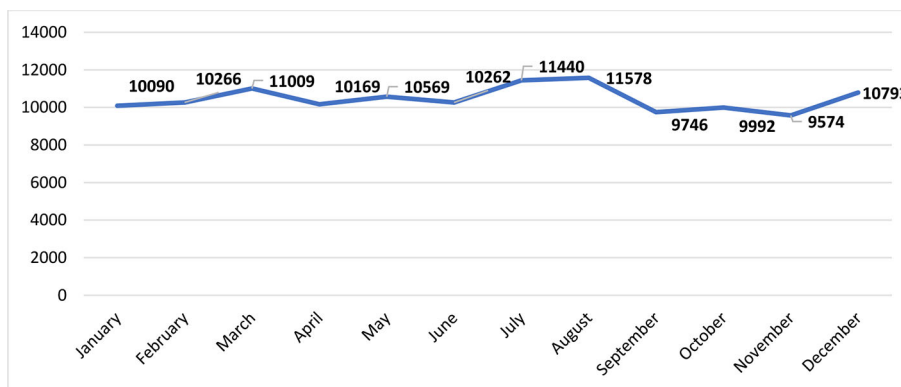


There was an increase in the number of examinations performed in the Emergency Department by 64.88%, with an increase in the Infectious Diseases Room by 47.93%, the Children’s Emergency Room by 48.53%, and the Adult Emergency Room by 76.20%. The increase in patient flow

from other districts is, on average 3.07 times.

There was a steady trend of increasing patient flow in all months, which was mainly due to the COVID-19 epidemic (Fig. 2).

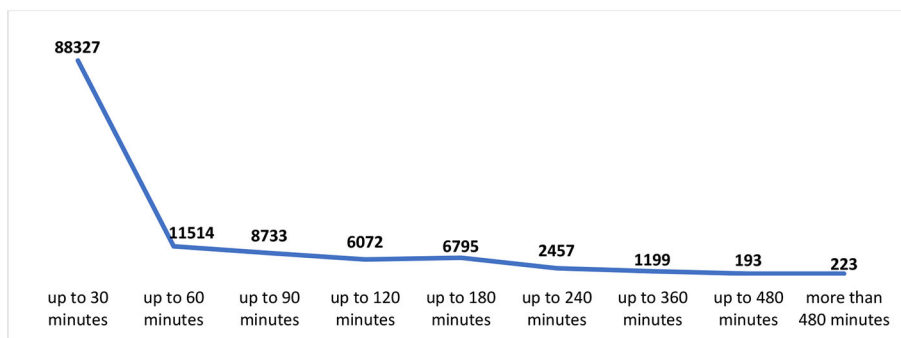
Fig. 2. Number of patients passed through the emergency department for the period 2018-2022 by month



The average visit duration was 45.7 minutes, increasing in the morning hours, then decreasing until midnight,

at which point we observed an approximately 30-minute spike in average duration (Fig. 3).

Fig. 3. Number of patients passed according to duration of examination



There was a significant difference in the average length of visit to the emergency department according to the days of the week, ethnicity, age and gender of the patients, and the reason for the visit. Patients over 65, those

of female sex, ethnic minorities, the uninsured, those with cardiovascular disease, and those with malignancies had the highest visit duration.

DISCUSSION

A study by Qureshi found that the use of the emergency department by non-emergency patients increased the range of admissions from 50% to more than 70%, resulting in overcrowding and decreased time to care for emergency patients and life-threatening cases [14].

Patients who left the emergency department within 5 hours by implementing the emergency department length of stay management system for critically ill patients and achieving the system's goal, in-hospital deaths, total funding period, and in-hospital mortality within 30 days decreased, and normal discharge increased. Our result is in line with previous studies suggesting that longer length of stay in the emergency department leads to increased 30-day mortality [15]. In a recent local study, Baek et al. [16] reported that the mortality of patients with a length of stay within 6 hours was 0.6 times higher than that of patients who stayed longer than 6 hours in the emergency department, indicating that rapid hospitalization of critically ill patients may be negative in terms of mortality. Han et al. [17] reported a low chance of death in patients with more than 6 hours of emergency time. This differs from the current study as a result of analyzing attendance rather than overall treatment effectiveness, which focuses only on time meeting the long-stay index for patients.

The results of our study show that the overall length of hospital stays for critically ill patients who met the system's goal for an emergency department stay decreased by about 4.5 days compared with those who did not. This result is consistent with the previous study [5], as emergency department length of stay corresponds to longer overall hospital stay.

Chang et al. found a strong association between long lengths of stay in emergency patients and low patient satisfaction in patients who left without being seen by a physician [18]. Furthermore, LLOS in ED has a negative effect on hospital length of stay. A study by Chong et al. showed that those who stayed in the emergency department for a long

time were more likely to stay in the inpatient ward longer than those with other admission problems [19].

To balance the effectiveness of emergency department management and appropriate medical treatment for patients attending the emergency department, our national emergency medicine quality assessment added an element aimed at limiting the length of stay for seriously ill patients in the emergency department. However, this may increase mortality rates due to excessive efforts to provide shorter emergency department lengths of stay [16, 17], depending on the illness, and may only induce more rapid hospitalization rather than hospitalization after appropriate treatment and review. A previous study stated that evaluation only in terms of time is incomplete and that evaluating only the length of stay is too limited as an indicator to assess the quality of emergency care [20]. However, the current evaluation of urgent care facilities requires a short stay for emergency patients. The results of this study confirmed that there is a positive patient outcome when the emergency department length of the stay management system is implemented, and the overall length of stay in the emergency department is reduced. Therefore, if a specific, well-designed emergency care system cannot be provided at the hospital level, an emergency medical assessment based on time spent in the emergency department may result in rapid hospitalization without appropriate treatment and review. Detailed objectives of the emergency department length of stay management system need to be developed, modifying the system to reduce the time it takes for patients to be admitted to the department after review and referral for hospitalization.

CONCLUSION

Our results show that the average length of visit varies significantly by the time of admission and day of the week, the volume of patient care, patient characteristics, and hospital characteristics.

Length of stay correlated positively with patient age, severity of illness, gender, and ethnicity.

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