

How Do Emergency Department Throughput Times Effect Patient Outcomes?

Posted on October 9, 2018

Introduction

As they say, the Slower you go, the sicker you become. ED swarming has been a substantial problem for the United States for a long time now. Hospitals are facing an increase in demand for emergency services, but there are fewer resources available. This leads to poor patient flow and lengthened hospital stay in the ED. ED crowding is a major health issue that directly affects the apprehensions of patients. This research is geared toward the administration and staff of the emergency department, how the overcrowding of the emergency department creates problems for staff and patients, and how it decreases the overall efficiency of hospital staff. In this study, we will investigate emergency department throughput times in correlation with reported length of stay (LOS) and mortality rates to discover the relationship between throughput times and mortality rates. While you were waiting in the emergency department, did you die a little? Well, obviously, we hope not, but increased emergency throughput times could be linked to increased mortality rates and increased length of stay (LOS) (Derlet, 2000; Derlet, 2001).

Discussion

Method

This particular study is geared toward the emergency department administration, physicians, nursing staff, and emergency department staff. This study will use inferential statistics to display a relationship between throughput times and how (LOS) and mortality rates correspond. The study location was a small community, for-profit hospital. This hospital has a 39-bed ED and has a yearly survey of 53,000 patient visits. All data will be collected from the facility's "Pulse" EHR.

The Inclusion Criteria of this study include Hospital admissions from the emergency department from the data period January 2015 to January 2018. The Exclusion Criteria include Behavioral health admissions (throughput times will be excluded but will be included in the emergency department census), Surgical holds (will count for department census only), and Infusion patients (will count for department census only).

All information collected from the patient EHR, such as ED disposition, hospital LOS, in-hospital mortality, hospital census, and bed availability, will be considered. The times that are documented

per patient are all input electronically by the emergency department staff, including admission time to the ED, bed assignment, and on-floor arrival time.

For the purpose of Data Analysis, Descriptive and inferential statistics were used to analyze the association between throughput times of the ED and LOS, elevation of acuity, and mortality. This study was conducted with a 95% confidence interval. The data was collected over the span of 3 years in order to prevent type 1 errors. To avoid type two errors, a large sample was collected, including data from 89,437 patients. All data were collected from the hospital EHR. All statistical data were produced from the same.

Investigations of hospital executives have described congestion in EDs in hospitals in nearly every state, and 91% of hospital executives report that excess numbers of people in EDs are a major problem in hospitals. This issue has advanced due to numerous factors in the earlier 20 years, including the termination of a large number of EDs and downsizing in the capacity of hospitals. Studies have determined the huge effect of crowding in hospital EDs, which would eventually result in interruptions in dealing with patients and providing them with appropriate medicine. The study showed that patients were admitted to hospitals with pneumonia from January 2003 to April 2005 in a single Emergency Department. The major conclusion we learned is that the delay was almost greater than 4 hours to provide antibiotics for patients in the Emergency Department. 8 Emergency Department swarming methods were introduced for the first time. Bootstrapping and regression were adopted to examine the overall impact of the Emergency department. Foreseen probabilities were also measured to find out the enormous influence of Emergency Department swarming on the likelihood of late or even no antibiotics at all. During this study, the primary conclusion came out to be inpatient mortality, while secondary consequences included many factors such as hospital costs and total length of stay (Lynn, 1991).

Conclusion

Emergency department swarming has become a potential hindrance to getting appropriate emergency [care in the United States](#). In spite of extensive acknowledgment of the problem, the research and policy needed to understand and address Emergency department crowding are just beginning to unfold. It's about people realizing that extraordinary crowding in the emergency department would badly affect the patients, it would decrease the efficiency of staff, and create a sense of disturbance for everyone involved. Times of extraordinary swarming in EDs of hospitals were associated with amplified inpatient mortality and growth in length of stay (LOS), as well as on costs for admitted patients. Emergency Department swarming is also linked to delays and a lack of medicine for patients in the Emergency Department (Asplin et al., 2003; Sun et al., 2013; Olshaker & Rathlev, 2006).

References

Derlet, R.W., Richards, J.R. Overcrowding in the nation's emergency departments: complex causes and disturbing effects. *Ann Emerg Med.* 2000;35:63-68.

Lynn, S.G., Kellerman, A.L. Critical decision making: managing the emergency department in an overcrowded hospital. *Ann Emerg Med.* 1991;20:287-292.

Derlet, R., Richards, J., Kravitz, R. Frequent overcrowding in U.S. emergency departments. *Acad Emerg Med.* 2001;8:151-155.

Asplin, B., Magid, D., Rhodes, K., Solberg, L., Lurie, N., & Camargo, C. (2003). A conceptual model of emergency department crowding. *Annals Of Emergency Medicine.*

Sun, B., Hsia, R., Weiss, R., Zingmond, D., Liang, L., & Han, W. et al. (2013). Effect of Emergency Department Crowding on Outcomes of Admitted Patients. *Annals Of Emergency Medicine.*

Olshaker, J., & Rathlev, N. (2006). Emergency Department overcrowding and ambulance diversion: The impact and potential solutions of extended boarding of admitted patients in the Emergency Department. *The Journal Of Emergency Medicine.*