Predictors of Emergency Department breaches in patients admitted onto a Medical Admissions Unit

A Smith, D Dolan, O Mahmoud, D Green, J Ritchie, A Trehan

The University of Manchester

The Emergency Assessment Unit, Salford Royal Foundation Trust

Introduction

According to the department of health, there has been a 47% increase in emergency admissions ("admissions that are not planned and happen at short notice because of perceived clinical need") over the past 15 years. The 2012-13 financial year saw the cost of emergency admissions to the NHS rise to £12.5billion; with half of the emergency medicine training post remaining unfilled, it is clear that the pressures on this specialty are not to be overlooked.

Emergency Departments (ED) and Medical Admissions Units (MAU) are also under pressure from national guidelines to prevent patients breaching past 4 hours. Identifying patients in the ED who are most likely to breach may allow for individualised, targeted measures to reduce breach numbers. This study aims to determine the factors that are associated with the likelihood of a patient breaching.

Methods

This was a retrospective analysis of a prospectively collected database of all unique patient events in the Emergency Department and Medical Admissions Unit at Salford Royal Hospital over the 6-month period from August 5th 2013 to February 4th 2014. Patients were refined using specific exclusion criteria, and databases were merged. Following refinement, and categorisation the data was analysed using Chi-Squared and logistic regressions in SPSS. Analysis was performed to look at the relationship between proportion of patients breaching and:

- Triage admission specialty
- Triage priority colour
- Triage ED location

"Busy" versus "non-busy" days in the ED (busy was defined as "when the number of patients admitted in one day exceeds the 75th centile for all patients seen per day over the 6-month period.")

Results

There were 68,927 patient events included in the analyses. A Pearson’s Chi-squared test found statistical significance was found between different triage admission specialties and the probability of breaching (p<0.05; breach percentages per admission specialty: A&E-11.8%; General Medicine-15.4%; Musculoskeletal-14.8%; Surgery-12.8%).

It was found that an increasing severity of Emergency Department triage location was associated with a statistically significant rise in the risk for breaching. Furthermore, an increase in severity of triage colour also corresponds to an increase in the proportion of patient breaches. Furthermore, there was no significant difference between the number of breaches on a “busy” day compared to a “non-busy” day.

Conclusions & recommendations

From the data that was collected during this study, it is clear that recommendations can be given to try to reduce the number of emergency admissions that result in a patient breaching in the emergency department. Certain patients should be given more attention in the emergency department than others due to the fact that statistically significant differences were found between breach probability and triage specialty, ED location and triage colour. One way in which this issue could be resolved would be to develop a scoring system to identify those patients who are more likely to breach, to ensure that they get the necessary attention needed to prevent unnecessary breaches.

Furthermore, certain recorded breaches may be necessary (e.g. if the patient is too unstable to admit), therefore a separate scoring system should be implemented for these patients to ensure that hospitals are not penalised for breaches that cannot be avoided.

Reference