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Title: Outlier Identification and Quality of Care in Hospital Admissions: A Subspecialty-Level Analysis

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ABSTRACT

INTRODUCTION

Outliers are patients whose clinical characteristics or resource utilization are significantly different from the norm in their respective clinical subspecialty. These outliers on lengths of stay (LOS) have an impact on the quality of care of patients and financial implications to the hospital management. Short-stay outliers (SSO) could mean sub-optimal care with risk of re-admission while long-stay outliers (LSO) require more resources and expose the patients to more adverse events such as hospital-acquired infection.

MATERIALS AND METHODS

The length of stay of all admissions for various subspecialties was sought. Outliers for each subspecialty were determined by using the definition of SSO and LSO. An SSO is defined as patients staying less than 1/3 of the median length of stay while an LSO is defined as staying more than 1/3 of the median length of stay of each subspecialty.

CONCLUSION

The analysis of the length of stay of hospital admission to determine outliers is important to properly plan clinical care for better patient outcomes and anticipate resource utilization for appropriate hospital budgeting.

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RESULTS AND DISCUSSIONS

Outliers were observed in 5566 (13%) of the 42,000 patients admitted in 2020 of which 44% and 56% of those were classified as short-stay and long-stay outliers, respectively. Majority of the cases identified as SSO were prepartum illnesses, while most cases for the LSO were cardiac catheterisation, vaginal birth, uncomplicated pneumonia and pertussis with an average LOS of 31 days. Outliers were observed among the patients who were older, had more severe illnesses, and required more intensive care services than the non-outlier patients. They were also more likely to develop adverse occurrences during hospitalisation. The majority of the cases identified as SSO and LSO were those admitted to the Medical department followed by the Paediatric department.

SUMMARY

The average length of stay for patients with a specific diagnosis is usually common within each subspecialty. The diagnosis-related groups (DRG) classification enables the identification of outliers who may need special or additional clinical care with subsequent use of more resources. The outlier analysis can guide healthcare practitioners to plan better clinical care for patients with unique characteristics. Performing such analysis provides better patient outcome and allow the hospital to estimate utilised resources and make appropriate budgeting

Keywords: DRG, outliers, evidence-based, healthcare delivery, university hospital

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