2025 Critical Care Congress - Abstract and Case Report Submission Confirmation

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Submission Format
Abstract Submission

Submission Category:
Epidemiology - Outcomes

Submission Status:
Complete

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1894063

Submission Title:
Differences in Documentation Practices Across the Intensive Care Units in US – A Cluster Analysis

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Abstract Content

INTRODUCTION

Documentation in electronic health records facilitates communication between healthcare professionals. Previous studies have shown an association between documentation practices and patient outcomes. In this study, we leveraged SCCM Datathon resources to explore the variations in documentation among patients with differing patient-level and hospital-level features.

METHODS

Patients ≥ 18 years were included in the study. The eICU-Collaborative Research Database was queried to identify eligible patients and de-identified data including patient demographics (age, gender and race-ethnicity), severity of illness, ICU type and hospital characteristics were extracted. We used frequency of nursing documentation of Physical Exam (PE count) as a surrogate marker for documentation practices. Physical exam was divided into 10 paths based on the body system (PE path). Hospital characteristics included type (academic or non-academic), size and region (Midwest, West, Northeast and South). Cluster analysis was performed based on PE count and path, using Kmeans. Clusters were compared with respect to patient-level, ICU-level and hospital-level characteristics as well as ICU mortality. Data munging was performed in Google BigQuery and analyzed using Python. GPT-4 was used for code and writing assistance.

RESULTS

A total of 146,031 distinct ICU stays were analyzed. Mean (± SD) age of the cohort was 63 (± 17), with male (54%) and Caucasian (77%) preponderance. Most of the patients were from non-teaching hospitals (73%), Med-Surg ICUs (55%) and Midwest region (37%). Kmeans clustering divided the cohort into 5 clusters. Clusters differed significantly with respect to region, patient demographics and hospital characteristics. Furthermore, ICU mortality varied between clusters, with high mortality in clusters 3 & 4 (11.6% & 11.5%), the low mortality in cluster 2 (5%). The multivariate logistic regression continued to show significant association between clusters and ICU mortality after adjusting for other covariates.

CONCLUSIONS

In this large multi-center cohort study, we found 5 distinct clusters based on PE count and path. Significant differences were noted between clusters with respect patient-level and hospital-level characteristics with potential impact on ICU outcomes.

Categories

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1. **General Classification**

   Clinical

2. **Patient Type**

   Adult

3. **Category**

   Epidemiology - Outcomes

4. **Category Alternate 1**
5. **Category Alternate 2**
6. **Keywords**

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