

The eICU Collaborative Research Database: Describing the patients and hospital characteristics

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Background

The eICU Collaborative Research Database (eICU-CRD) is a multi-centre dataset consisting of over 200 000 ICU admissions across the United States. It has provided the foundation for research studies, such as validating critical care illness severity scores, creating prediction tools to evaluate sepsis, and developing algorithms to detect patients at risk of acute kidney injury.

The purpose of the study was to better characterize the patient population and hospital characteristics included in the eICU-CRD, in order to provide better insight into the validity and generalizability of the research studies derived from this dataset.

Methods

We used SAS and R statistical software packages to perform descriptive analysis on the eICU-CRD. Descriptive statistics (mean, proportions, ranges) were used to generate summary tables, and graphical representations were generated to depict the data. The analysis was broken down into smaller projects and delegated to each investigator involved in the project.

Results

The patients in the eICU database were predominantly male (54%), median age of 65, median ICU length of stay of 1.6 days, and a ICU mortality rate of 5.4%. The hospitals were predominantly situated in the Midwest of the United States (32.8%), predominantly non-teaching centres (74.3%), and mostly managed by non-critical care specialties (70%).

Discussion

The eICU-CRD is a widely used database in clinical research. Our study successfully characterized the patient populations, the ICU characteristics, and the hospital attributes that comprised the dataset. The findings of our study suggest that the patients included in the dataset may be less critically ill compared to patients admitted to high-acuity tertiary care centres, and caution should be utilized when extrapolating research findings derived from this dataset.