

30-Day Mortality Rate of Myocardia Infarction Patients Admitted to CCU

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Task

In this assignment, you are to write a report analyzing the electronic health record (EHR) data MIMIC-III. Your report will demonstrate your knowledge of working with PostgreSQL database, data visualization, and commonly used analytical methods such as logistic regression and neural network. Your report should include at least following parts:

1. An informative title. For example, *30-Day Mortality Rate of Myocardia Infarction Patients Admitted to CCU*.
2. Introduction. Describe the MIMIC-III data set and what research hypothesis/goal you are to address using this data.
3. Data preparation. Create a study cohort from MIMIC-III corresponding to your research hypothesis/goal. See the exemplary code below. Use a CONSORT flow diagram to summarize your steps to create the cohort.
4. Data visualization. Use visualization to summarize the cohort you created.
5. Analytics. Use at least two analytical approaches to address your research hypothesis/goal. For example, we can use (1) logistic regression and (2) neural network to build a predictive model for the 30-day mortality rate of patients admitted into CCU and compare their predictive performance. Summarize your results in graphs.
6. Conclusions.

Introduction

MIMIC-III (Medical Information Mart for Intensive Care III) is a large, freely-available database comprising deidentified health-related data associated with over forty thousand patients who stayed in critical care units of the Beth Israel Deaconess Medical Center between 2001 and 2012.