Introduction

The primary aim of this research project is to calculate the expected death rate of heart surgery patients at 44 different VA hospitals. An expected death rate can account for the health of that hospitals patient population, so hospitals can have a more accurate estimate of the death rate they expect to see based on the health of the patients they typically see. Hospitals with unhealthier patients therefore are not being penalized for higher death rates and can be accurately compared to hospitals with healthier patients. Secondary aims of this project are to investigate the relationship between albumin and death rate, to see if it is a measurement that should be used in prediction of death. As well as the variation around each estimate.

The data used for analysis contains 26520 individuals who had either valve or CABG heart surgery from 44 different veterans’ hospitals. Data from the current six month time period (period 39) was available, as well as data from the past five six month periods. Comorbidities (BMI, ASA score, albumin levels) were recorded for each patient, along with their 30 day mortality.

Methods

The initial dataset contained 26520 individuals. Two people were removed from the study for having a surgery that was not of interest (procedure = 2). Weight was measured in kilograms instead of pounds by hospital 1 through 16 during the 39-month period. These values were converted to pounds and BMI was recalculated for all individuals using the corrected weight values and height. Due to small sample sizes, ASA scores of 1,2, or 3 were collapsed into one group, while ASA scores of 4 and 5 were collapsed into another group.

It is important to note that albumin is missing due to ASA score. Those who were not missing albumin only had an ASA score of 4 or 5. Those who were missing albumin only had ASA scores of 1,2,3, or 4.

Hospital 30 did not have complete cases for period 39.

Results

Conclusions

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Which expected value to use

When calculating actual death rate-use whole population