

CASE STUDY



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30-day Unknown Status in the STS Adult Cardiac Surgery Registry

Background: Risk-adjusted operative mortality (OpMort) is the most important quality metric in cardiac surgery for determining the STS Composite Score for star ratings. Accurate 30 day (30d) status is required to determine STS OpMort. The goal of this study is to determine the effect of unknown or missing 30d status on risk-adjusted OpMort in a regional STS Adult Cardiac Surgery Database (ACSD) cooperative and demonstrate the ability to correct these deficiencies by matching with an administrative database.

Methods: STS ACSD data were submitted by 27 hospitals from 5 hospital systems to the Texas Quality Initiative (TQI), a regional quality collaborative. TQI data were matched with a regional hospital claims database to resolve unknown 30d status. Risk-adjusted OpMort O/E was determined before and after matching to determine the effect of unknown status on OpMort O/E.

Results: TQI found an excessive (22%) unknown 30d status for STS isolated CABG cases. Matching the TQI data to the administrative claims database reduced the unknowns to 6.9%. The STS process of imputing unknown 30d status as alive underestimates true OpMort O/E (1.27 before vs. 1.31 after match) while excluding unknowns overestimates OpMort O/E (1.58 before vs. 1.39 after match) for isolated CABG.

Conclusions: Both the current STS algorithm of imputing unknown 30d status as alive and a strategy of excluding cases with unknown 30d status result in erroneous calculation of OpMort and OpMort O/E. However, external validation by matching with an administrative database can improve the accuracy of clinical databases such as the STS ACSD.

For more information, please visit the publication below.

W. Steves Ring M.D., James R. Edgerton M.D., Morley Herbert Ph.D., Syma Prince R.N., Cathy Knoff R.N., Kristin M. Jenkins J.D., Michael E. Jessen M.D., Baron L. Hamman M.D. Impact of Accurate STS 30-Day Status on Operative Mortality: Wanted Dead or Alive, Not Unknown. *Annals of Thoracic Surgery*. In press.