Quantifying the incremental cost of complications associated with mitral valve surgery in the United States

Alexander Iribarne, MD, MS, John D. Burgener, MBA, MS, Kimberly Hong, MHSA, Jai Raman, MD, PhD, Shahab Akhter, MD, Rachel Easterwood, BA, Valluvan Jeevanandam, MD, Mark J. Russo, MD, MSc

INTRODUCTION

This study evaluated the impact of post-operative complications on clinical outcomes (e.g. mortality, discharge disposition) and net increase in resource requirements (i.e. hospitalization costs, length of stay) in a national cohort of patients undergoing mitral valve surgery.

ribarne et al. Journal of Thoracic Cardiovascular Surgery. 2012 Apr; 143(4):864-72.

METHODS

- Isolated mitral valve procedure claims between January 1, 2006 and December 31, 2007 were extracted from the Nationwide Inpatient Sample (NIS) using ICD-9 –CM codes.
- Cost and length of stay for eight major post-operative complications were obtained from the NIS database: pneumonia, acute renal failure, septicemia, acute myocardial infarction, stroke, cardiac tamponade, gastrointestinal bleeding, and venous thromboembolism.

RESULTS

- From a total of 6297 cases, 1323 complications occurred in 1089 patients.
- The median cost of hospitalization was found to be \$35,446.
- The 3 most common complications were pneumonia, sepsis and renal failure requiring dialysis. Pneumonia, the most common complication, resulted in the second largest increase in hospital costs (\$29,692) and length of stay (10.2 days).
- The most costly complication was found to be cardiac tamponade, which added an incremental hospitalization cost of \$56,547, and resulted in the largest increase in hospital stay (19.3 additional days).

Findings also indicated a significant association between discharge location (e.g. home, skilled nursing facility, intermediate care facility) and post-operative complications, suggesting that complications have additional long-term economic implications after hospital discharge.

CONCLUSION

- Understanding the impact of complications on patient outcomes and healthcare costs is important for improving the quality of healthcare delivery and reducing costs.
- This study is believed to help support quality improvement initiatives, increase cost-effectiveness and improve patient outcomes by understanding the impact of complications.

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[•] A stepwise multiplicative association was also found between the number of complications and both total hospitalization costs and length of hospital stay.