Publication Brief

Prediction of costs and length of stay in coronary artery bypass grafting.

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BACKGROUND

More than 200,000 coronary artery bypass grafting (CABG) operations are performed in the United States annually.

OBJECTIVE

To address questions related to clinical outcomes, costs, and resource use in CABG surgery.

METHOD

- Using multiinstitutional statewide databases, data from 42,839 patients undergoing isolated CABG were combined with cost data.
- Length of stay and costs were analyzed along with the Society of Thoracic Surgeons-Predicted Risk of Mortality (STS-PROM). Data were adjusted for cost-to-charge ratios and inflation.
- Patients were randomly divided into development (60%) and validation (40%) cohorts.
- Regression models were developed to analyze the impact of patient characteristics, comorbidities, and adverse events on postoperative length of stay and total costs.

RESULTS

CABG Costs and Post-operative Length of Stay

Lowest-risk (mean STS-PROM 6%)		Average risk patients		Highest-risk (mean STS-PROM 19%)	
Cost	Post-op Length of stay	Cost	Post-op Length of stay	Cost	Post-op Length of stay
$33,275	**5.4 days**	**$38,847**	**6.9 days**	**$69,122**	**13.8 days**

STS-PROM Score: Society of Thoracic Surgeons Predicted Risk of Mortality Score.

- Compared with adverse events, patient characteristics had little impact on length of stay and costs.

CONCLUSIONS

- The STS-PROM and preoperative regression models are useful for preoperative prediction of costs and length of stay for groups of patients, case-mix adjustment in hospital benchmarking, and pay for performance measures.
- Combined preoperative and postoperative models identify incremental costs and length of stay associated with adverse events and are more suitable for prioritizing quality improvement efforts.

REFERENCES

Osnabrugge RL, Speir AM, Head SJ, Jones PG, Ailawadi G, Fonner CE, Fonner E Jr, Kappetein AP, Rich JB, "Prediction of costs and length of stay in coronary artery bypass grafting," Ann Thorac Surg. 2014; 98(4): 1286-93. (Transonic Reference # 10602AHR)