Immediate Breast Reconstruction - Nationwide Trends in Hospital Charges

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Introduction

- We sought to analyze the trends in total hospital charges and length of stay among patients undergoing immediate breast reconstruction – both implant based and autologous.
Methods

- Nationwide Inpatient Sample was queried from 2000 to 2009 using ICD-9 codes to identify patients undergoing mastectomy and immediate reconstruction.\(^1\)
Methods

- This data was analyzed to follow the rates of immediate reconstruction, total hospital charges (in dollars) and length of stay over this time frame.

- Statistical significance was assessed by linear regression and ANOVA using SPSS.
Results

• After applying discharge weights, a total of 782,418 patients underwent mastectomy during the study period, out of which 253,238 (32.3%) underwent immediate reconstruction.

• Rate of immediate reconstruction increased from 26.3% in 2000 to 43.9% in 2009 (p<0.001)
Mastectomy - charges

Mastectomy charges – Comparison 2000 vs 2009
Expected vs actual charges for mastectomy
Autologous reconstruction charges

Autologous Reconstruction - Comparison 2000 vs 2009
Expected vs actual increase in charges autologous - bilateral

Total hospital charges (in dollars)
Expected vs actual increase in charges
autologous - unilateral

![Graph showing the comparison between actual and expected charges for unilateral autologous procedures from 2000 to 2009. The x-axis represents the years from 2000 to 2009, and the y-axis represents the total hospital charges in dollars. The graph indicates a steady increase in charges over the years, with a slight divergence between actual and expected charges.]
Implant-based reconstruction charges

Implant-based reconstruction - Comparison 2000 vs 2009
Expected vs actual charges
Implant based - unilateral

![Graph showing expected vs actual charges for implants, with years 2000 to 2009 on the x-axis and total hospital charges in dollars on the y-axis.]
Expected vs actual charges
Implant based - bilateral

Total hospital charges (in dollars)
• Increase in charges for breast reconstruction procedures are significantly higher than the 3.5% per year rise in Medicare spending from 1992 to 2006\(^2\).

• Adjusting for inflation using the PHCE (Personal Health Care Expenditure) Price Index from the CMS office of actuary allows for healthcare expenditure rise of 141% in this study period\(^3\).
Length of Stay

• The mean length of stay for patients undergoing implant-based reconstruction changed from 2.2 to 2.04 days.

• Mean length of stay for patients undergoing autologous reconstruction changed from 3.86 to 3.06 days.
Conclusions

• The total charges for all immediate breast reconstruction cases have shown a disproportionate increase over the past decade.

• Further studies are needed to identify the factors
Explanations

• Use of ADMs
• Costlier implants
• Increase in microvascular reconstruction
• Increase in complexity of cases
• Increased mark-up of medical devices
References


3. [http://meps.ahrq.gov/about_meps/Price_Index.shtml](http://meps.ahrq.gov/about_meps/Price_Index.shtml)