

# The Effect of Insurance Payer Type on Outcomes and Readmission Rates in Patients Undergoing Breast Reconstruction

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## BACKGROUND:

Implementation of the Affordable Care Act has significantly increased the number of enrollees in federally funded health insurance. Several studies have identified healthcare disparities related to insurance type but are often limited to 30-day outcomes. This study aims to identify potential differences in outcomes between breast reconstruction covered by government (i.e. Medicare, Medicaid) versus non-government payers (i.e. private, uninsured/self-pay) up to 90-days post-operatively.

## METHODS:

Cerner Health Facts database was queried using ICD-9 codes to identify breast reconstructions performed between 2000-2017. Patients were stratified into four insurance categories: Medicare, Medicaid, private, and self-pay/uninsured. Descriptive statistics was calculated for demographic data. Surgical complications and hospital readmissions were estimated using odds ratio (OR) and 95% confidence interval (CI) for each insurance type. Generalized estimating equation (GEE) for logistic regression was used to compare between categories. The analysis was performed comparing groups at 30-days post-operatively as well as 31-90 days.

## RESULTS:

10,153 patients who underwent autologous or tissue expander breast reconstruction were included. Mean age was 50.4 years. Insurance status for the cohort were private (60%), Medicare (11%), Medicaid (7%) and uninsured/self-pay (19%). Medicaid and Medicare patients were more likely to develop infections within 90-days compared to private insurance covered patients (OR 2.24 and 2.26 respectively, **p=0.0004 and p=<0.0001** respectively) and uninsured/self-pay patients (OR 1.64, and 1.66 respectively, **p=0.05 and p=0.02** respectively). Similar trends were observed regarding government versus non-government insured groups in the development of cellulitis (OR 1.69, **p=0.01**) and tissue necrosis (OR 1.84, **p=0.0008**). Patients with government funded insurance were significantly more likely to have any complication within 90-days compared to non-government insured patients (OR 1.48, **p<0.0001**).

Medicaid and Medicare patients were more likely to be readmitted within 30-days following surgery compared to private insured (OR 2.15 and 1.57,  $p < 0.0001$ ) and self-pay/uninsured patients (OR 1.87 and 1.37 respectively,  $p = < 0.0001$  and  $p = 0.005$  respectively). Medicaid patients had a higher readmission rate in the 31-90 day post-operative period compared to private insured (OR 1.93,  $p < 0.0001$ ) and uninsured/self-pay patients (OR 3.00,  $p < 0.0001$ ). Overall, patients with government insurance were more likely to be readmitted within 30-days and between 31-90 days when compared to non-government insured patients (OR 1.72 and 1.87 respectively,  $p < 0.0001$ ).

## **CONCLUSIONS:**

Examining patients undergoing breast reconstruction utilizing a national database, our study revealed numerous outcomes disparities when controlling for payer type. Patients with government-funded insurance are more likely to experience surgical complications and readmission within 30-days as well as up to 90-days postoperatively.