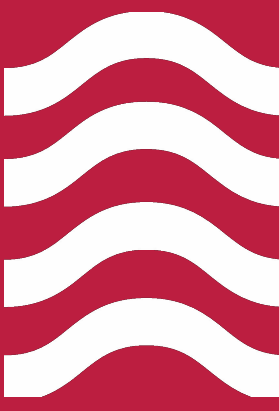




The Economic Impact Of Length Of Stay Variability In DIEP Flap Reconstruction: Insights For Healthcare Optimization

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Introduction

- ❖ Length of Stay (LOS) is a critical factor in hospital management, directly affecting healthcare efficiency and financial importance.
- ❖ LOS protocols can vary significantly for Deep Inferior Epigastric Perforator (DIEP) flap procedures used in breast reconstruction, which can influence costs and reimbursement rates for the hospital.
- ❖ Despite the importance of LOS, limited research specifically examines its financial impact on DIEP flap breast reconstructions.

Objective: To examine the financial implications of LOS for DIEP flap breast reconstruction cases at a single academic hospital. The goal is to identify opportunities for balancing cost efficiency with the delivery of optimal patient care.

Methods

Study Design: Retrospective financial analysis of DIEP flap breast reconstruction procedures from 2021 to 2023 at a single academic hospital.

Inclusion Criteria: Cases with a LOS of 3, 4, or 5 days, as cases outside this range were infrequent.

Data Collected

- **Financial metrics:** charges, costs, and operating margins
- **Specific Cost Components**
- **Payer types:** Payer type (capitated, commercial, Medicaid, and Medicare)

Statistical Analysis

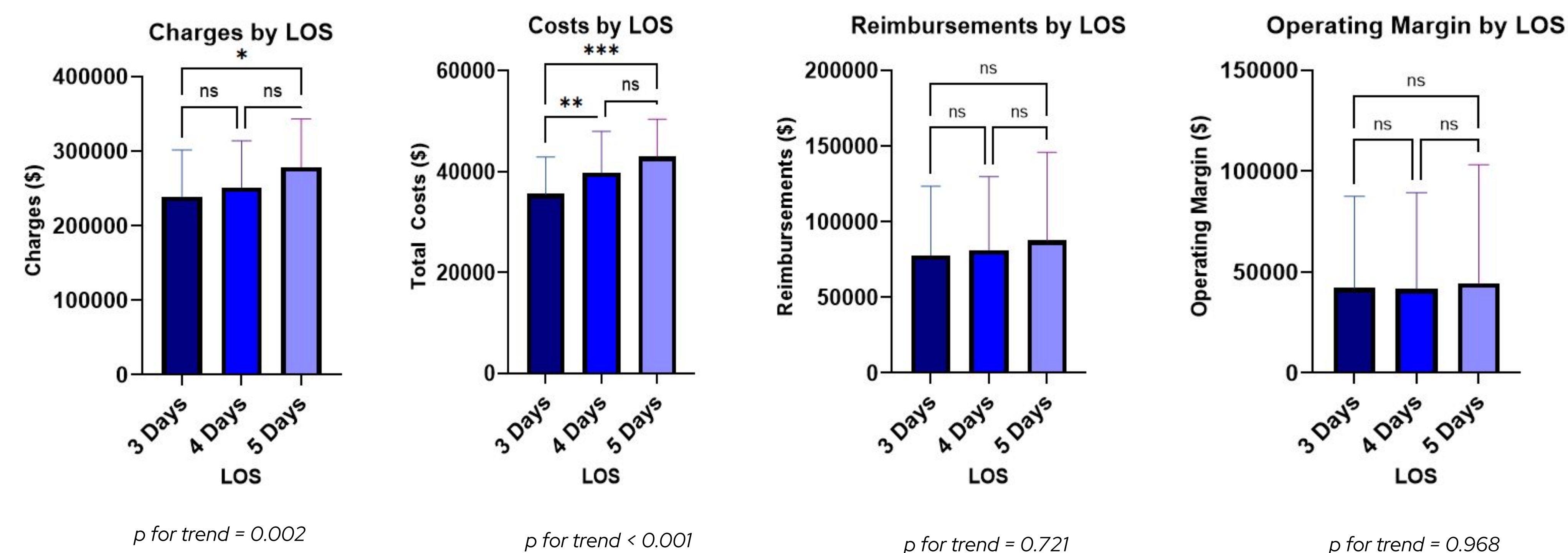
- **Descriptive statistics:** Used to summarize financial metrics by LOS.
- **ANOVA:** Used to compare financial metrics across LOS.

Results

Cohort information

- ❖ A total of 202 DIEP flap reconstruction procedures were analyzed over the 3 year period
- ❖ **LOS distribution:** 65 cases with a 3-day stay, 117 cases with a 4-day stay, and 20 cases with a 5-day stay

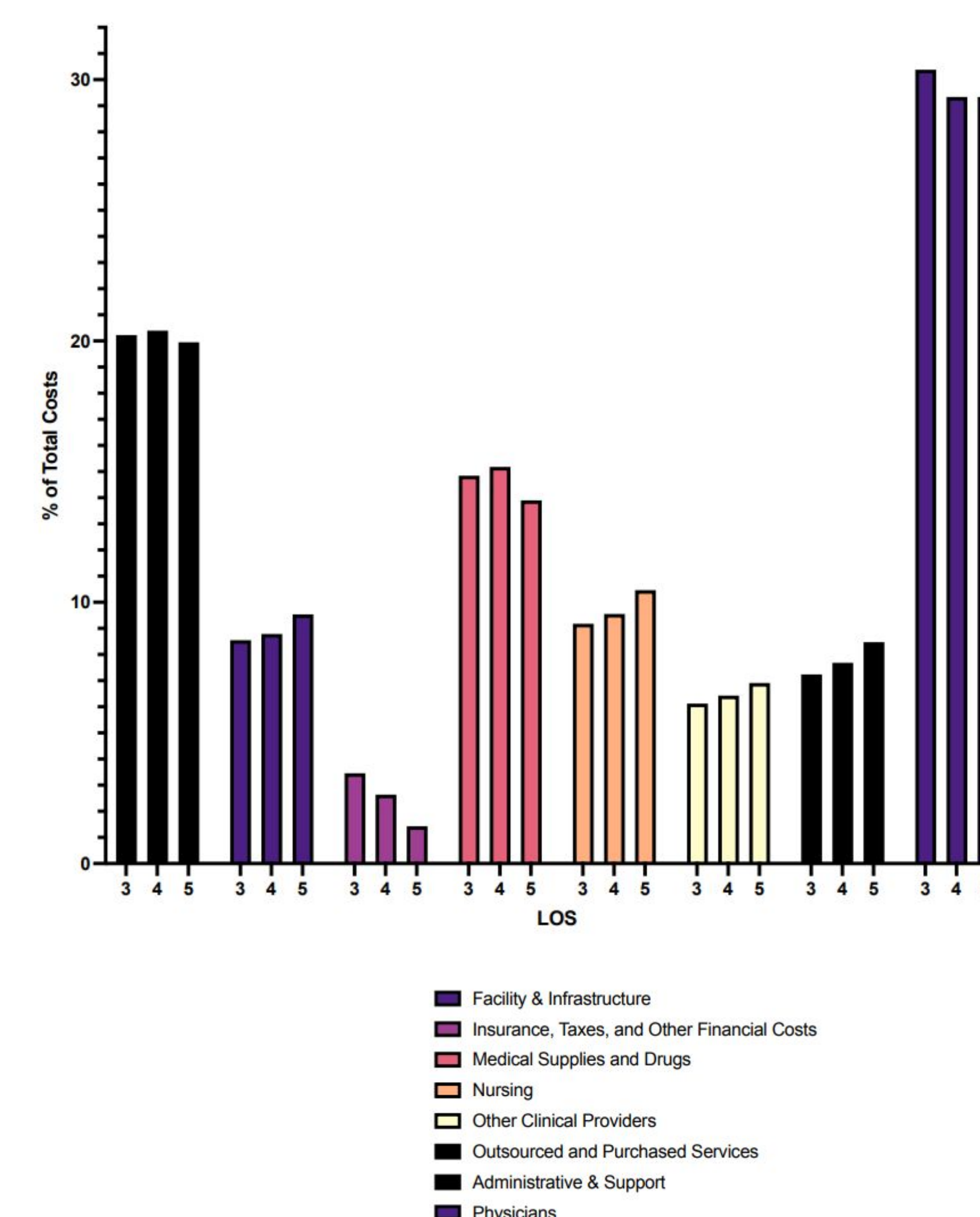
Figure 1: Mean Charges, Costs, Reimbursements, and Operating Margin by LOS



Other Financial Considerations

- ❖ **Physician fees** accounted for ~30% of total costs across all LOS
- ❖ **Nursing and other personnel** significantly contributed towards total cost (~18% each day)
- ❖ **Costs per day** did not differ by payer p = 0.393
- ❖ Margins for **Medicare patients** were significantly lower—approximately \$451 per day vs. ~\$9.4k-\$12.0k per day.
- ❖ **Potential cost savings:** Logistic regression estimates approximate **\$633,981 would be saved** over the study period if LOS was reduced to 3 days for all patients
- ❖ Under these assumptions, national estimates suggest a **total savings of ~\$227 million from 2016 to 2019** for DIEP flap procedures alone.

Figure 2: Cost Components by LOS



Conclusions

- ❖ Extended LOS in DIEP flap reconstruction lead to higher charges and reimbursements **but do not significantly change operating margins**
- ❖ **Personnel is the main driver of costs** regardless of the LOS
- ❖ Reducing LOS to 3 days could have **saved an estimated \$633,981 over the study period**, highlighting an area for cost containment.
- ❖ Optimizing LOS and discharge protocols may help **balance financial sustainability with high quality-patient care**, offering actionable insights for hospital administrators

Future Directions

- ❖ Conduct a prospective study to analyze the effects of reduced LOS in DIEP flap reconstruction on patient outcomes
- ❖ Implement streamlined discharge protocols for DIEP flap reconstruction, aiming to **safely reduce LOS without compromising patient outcomes**
- ❖ Apply the LOS-cost analysis model to other complex reconstructive surgeries to evaluate whether a reduced LOS model can be applied