

Karamitros G, Catic A, Grant MP, Barbieri S, Jorm L, Perdikis G, Lamarinis GA

1. Department of Plastic Surgery, Vanderbilt University Medical Center, Nashville, TN, USA

2. Division of Plastic and Reconstructive Surgery, R. Adams Cowley Shock Trauma Center, University of Maryland Medical Center, Baltimore, MD, USA

3. Center for Big Data Research in Health, University of New South Wales, Sydney, NSW, Australia

Introduction

- Healthcare systems are increasingly driven by **value-based care and cost containment**
 - Length of stay (LoS)** is a major determinant of cost, complications, and resource utilization
 - Microsurgical breast reconstruction is expanding, yet **efficiency trends remain poorly characterized**
 - Prior studies limited by **small samples and poor generalizability**
- Gap: No large-scale, longitudinal analysis of LoS trends and determinants**

Methods

Design:

- Retrospective cohort, **ACS-NSQIP (2007–2022)**

Population:

- n = 21,777 free flap reconstructions

Outcome:

- Hospital **Length of Stay (LoS)**

Model:

- Multivariable **Poisson regression**
- Backward selection (AIC)
- Results reported as **Incidence Rate Ratios (IRRs)**

Covariates:

- Demographics, comorbidities, labs, operative time, timing

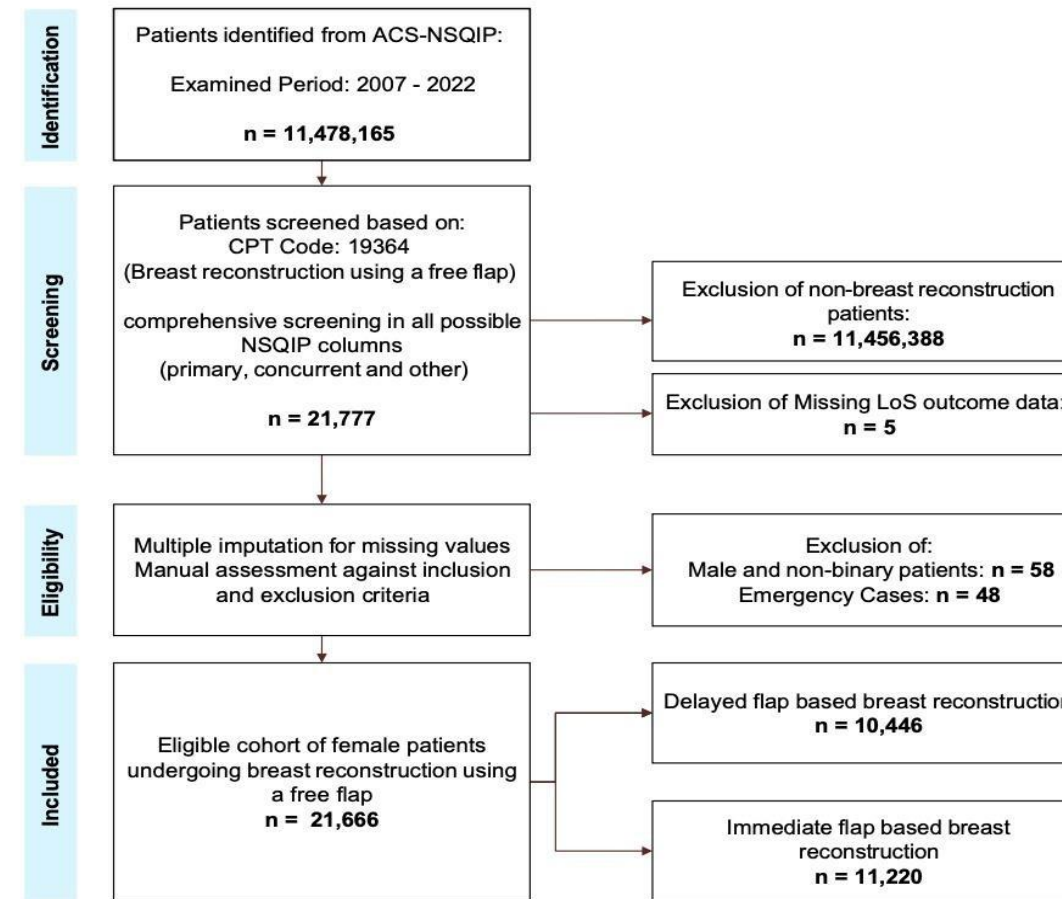
Study Objective:

To evaluate temporal trends and predictors of LoS after free-flap breast reconstruction using national, multi-institutional data (2007–2022).

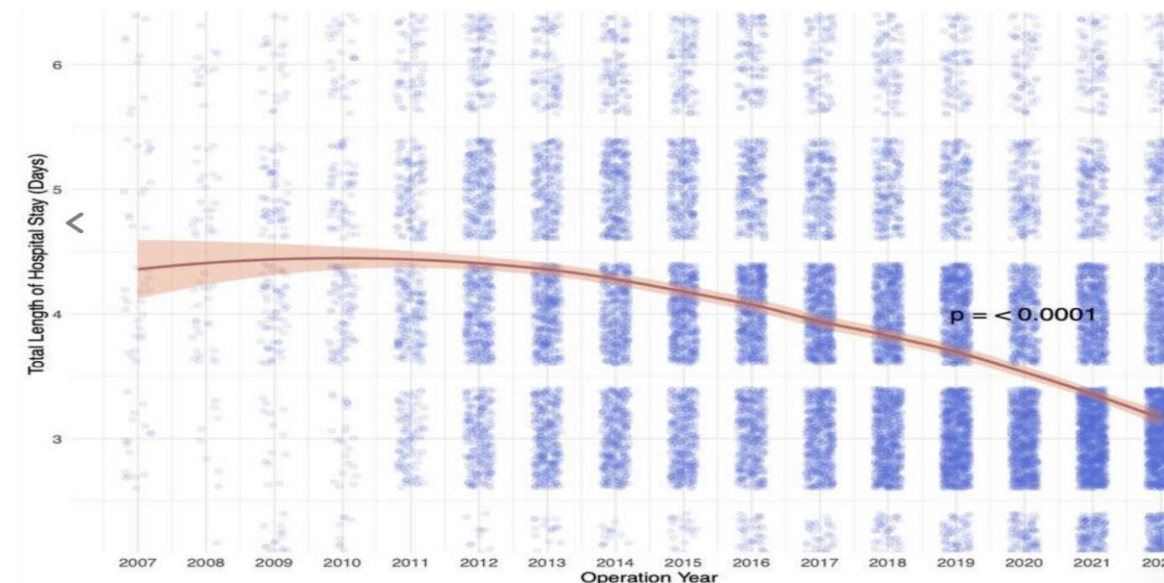
Conclusions

- LoS has decreased **>30% nationally** over 16 years
- Improvements reflect **advances in technique and perioperative care**
- Operative time and comorbidities** remain dominant predictors
- Findings support **risk stratification and efficiency-driven care pathways**

Results



National cohort of 21,666 patients after exclusions and imputation.



- Optimize:
 - operative efficiency**
 - ERAS pathways**
 - preoperative risk modification**

Temporal Trend

Mean LoS decreased:

4.64 → 3.19 days

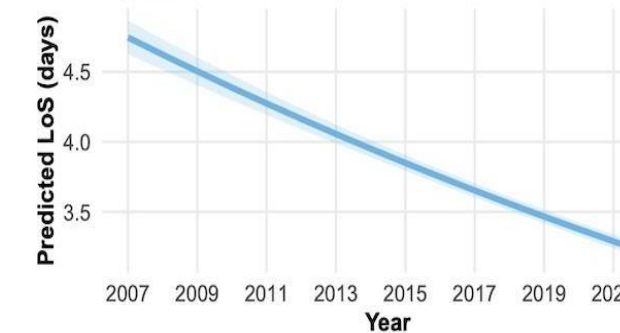
–31.25% reduction

Annual decline:

–2.6% per year (IRR 0.974)

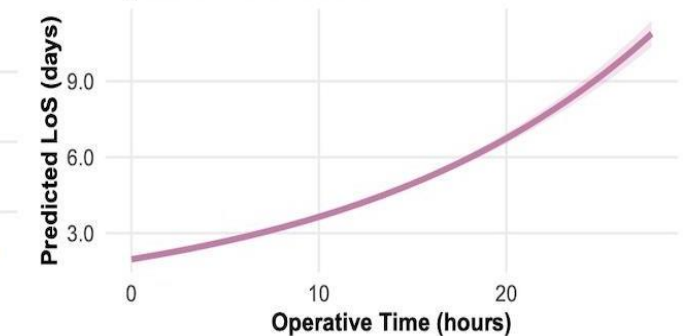
Temporal Trend in LoS

Adjusted for all other variables



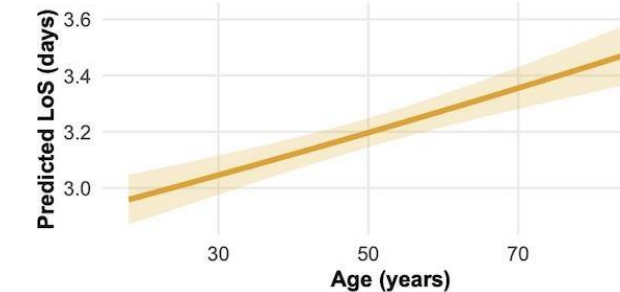
Effect of Operative Time on LoS

Adjusted for all other variables



Effect of Age on LoS

Adjusted for all other variables



Effect of BMI on LoS

Adjusted for all other variables



Limitations

- Observational design → no causality
- No institutional-level data
- Limited procedural granularity
- Residual confounding

Acknowledgments



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