INTRODUCTION

Background:
• Cleft lip results from impaired embryological fusion of the median nasal and maxillary prominences.1

• Bilateral cleft lip deformities present limited tissue available for reconstruction making it difficult to achieve aesthetic results.

• There is not a currently standardized surgical approach for bilateral cleft lip reparation.2

Aim:
• To analyze the prevalence of staged and single operation approaches to bilateral cleft lip repair, compare the outcomes of each, and propose rationale for the variation in technique seen.

METHODS

Study Design
• This is a retrospective observational cohort study using data obtained from TrilNetX of pediatric subjects aged 0 to 12 months who were found to have either single-staged or staged operation for bilateral cleft repair.

Data Collection
• Data consisted of bilateral cleft lip repairs completed between January 1, 2000 and October 9, 2023.

Statistical Analysis
• Summary statistics of the two groups of interest were completed through Microsoft Excel.

• Linear regression analysis was conducted using GraphPad PRISM Software.

DISCLOSURES
None.

RESULTS

Fig. 1 Change in incidence of single-stage vs staged bilateral cleft lip operations for every year from 2000 to 2023. Single-stage operations increased from six patients in 2000 to 81 in 2022. Staged operations increased from zero patients in 2000 to 14 in 2022.

Fig. 2 Cumulative prevalence of single-stage vs staged bilateral cleft lip operations from 2000 to 2023. 1,136 (91%) patients were billed for a single-stage cleft lip repair and 110 (9%) were billed for a staged bilateral cleft lip repair. Single-stage operations accounted for 98% of repairs between 2000 and 2011.

Fig. 3 Prevalence of single-stage vs. staged bilateral cleft lip operations each year from 2000 to 2023. Single-stage operations decreased from 100% in 2000 to 83% in 2023. Staged operations increased from 0% in 2000 to 17% in 2023

CONCLUSIONS

Increasing Incidence of Surgical Operations
• This may be attributed to the introduction of novel surgical techniques.

• Nasoalveolar molding (NAM) reduces the size of the cleft before surgery, allowing for more esthetic results and decreasing scar tissue production in single-stage operations.3,4

Higher Prevalence of Staged Operations
• This is contrary to the positive effects NAM has on reparation.

• Staged operations may be offered to patients with wider clefts and more prominent premaxillae, where there is higher risk of a dehiscence of a cleft lip repair or necrosis of the prolabial segment.5,6

IMPLICATIONS

• It is possible that NAM may not be as effective in patients presenting a wider cleft and more prominent maxillae.

• Future research may look at anatomical presentation, surgeon preference, or patient outcomes to provide insight on the determination between single-stage and staged operation for bilateral cleft lip repair.

REFERENCES