Evaluation of Periodontal Treatment Needs in a Hospital-Based Pediatric Population

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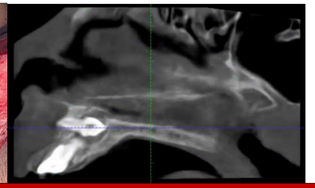
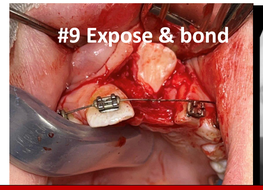
PURPOSE

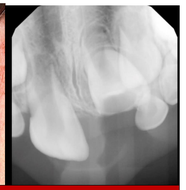
- To **evaluate periodontal and minor oral surgery treatment needs**, procedure trends and care delivery settings among **pediatric patients** seen at a hospital setting

BACKGROUND

- **Pediatric patients** have **periodontal and oral conditions** requiring specialized care, yet data describing the **periodontal needs** in a hospital-based population are **limited**.







METHODS

- **Study design:** Retrospective analysis of periodontal-related encounters from 2015–2024.
- **Inclusion criteria:** All pediatric patients seen at Nationwide Children's Hospital dedicated periodontal clinic sessions (half-day monthly) or operating room (GA) days (~4-9 annually).
- **Variables collected:** Patient demographics, insurance status, procedure type, and treatment setting (clinic vs GA).
- **Statistical analysis:** Descriptive analyses evaluated treatment trends. Logistic regression assessed the association between encounter year and likelihood of invasive procedures.

RESULTS

Diverse patient population seen with majority on Medicaid insurance

Table 1. Patient Characteristics

	N	%
Total	1662	100.00%
Age (in years)		
mean	10.68	
std	4.33	
Gender		
Female	813	48.92%
Male	849	51.08%
Race		
White	683	41.10%
Black	558	33.57%
bi-racial/multi-racial	87	5.23%
Asian	81	4.87%
Other	253	15.22%
Ethnicity		
Latino/Hispanic	292	17.57%
non-Latino/non-Hispanic	1370	82.43%
Plan		
Medicaid	1257	75.63%
Commercial	292	17.57%
Other	113	6.80%

Increasing numbers of pediatric patients treated and periodontal procedures performed over time

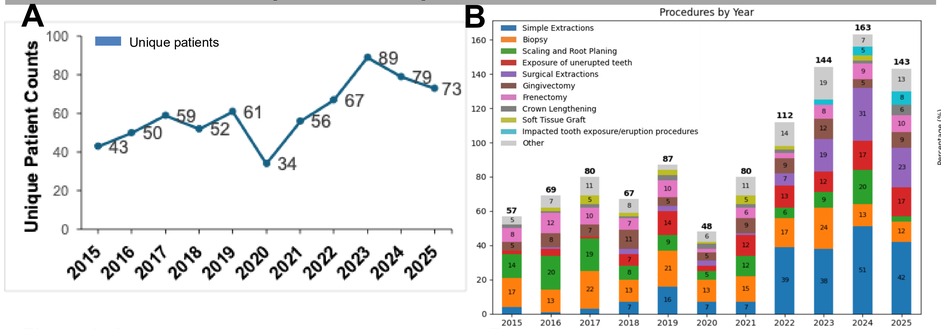


Figure 1. A. Unique pediatric patients treated per year. **B.** Total periodontal procedures per year (clinic + GA), 2015–2025. Stacked bars show top 10 procedures with remaining procedures grouped as "Other."

Rising volume of minimally invasive and invasive procedures over time, with a growing proportion of invasive procedures per year

- **Invasive procedures:** Surgical procedures involving incisions, excisions or bone removal
- Examples: gingivectomy, crown lengthening, exposure/bonding of unerupted teeth, hard tissue biopsies, surgical extractions, impacted tooth extractions.
- **Minimally invasive procedures:** Non-surgical procedures, minimal tissue manipulation, no bone removal
- Examples: scaling and root planing, simple extractions (erupted teeth), soft tissue biopsies, frenectomies.

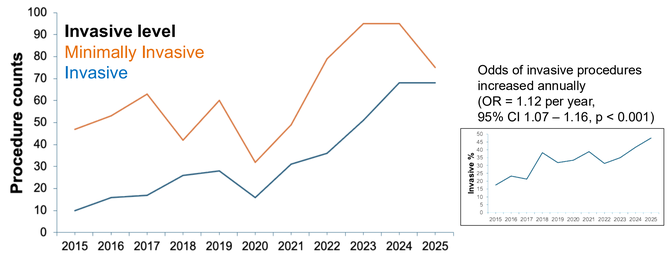


Figure 3. Annual counts of minimally invasive and invasive procedures. Inset shows proportion invasive. Temporal trend assessed using logistic regression. Description of invasive vs. minimally invasive procedures on the left.

Most procedures completed in clinic, while more invasive procedures performed under GA

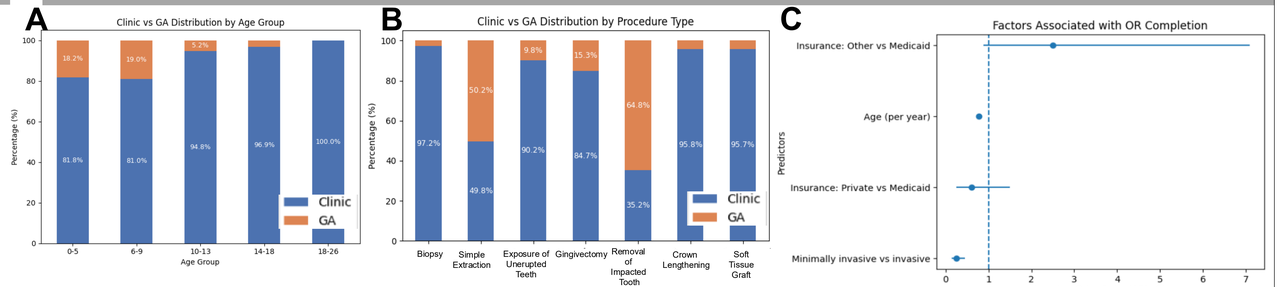


Figure 2. Stacked bars showing treatment setting (clinic vs GA) by **A.** Age group, **B.** Procedure type. **C.** Forest plot of adjusted odds ratio of factors associated with procedure completion in GA vs clinic.

Projected growth in annual patient volume indicates increasing future demand

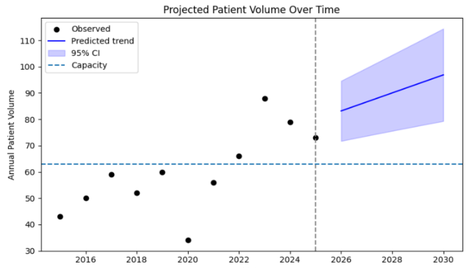


Figure 4. Linear regression model used to model annual patient volume with calendar year as predictor. Capacity based on 1 clinic days per month and 9 OR days. Excluded 2020 (COVID19).

DISCUSSION

- The number of patients seen at NCH increased over time, reflecting growing clinical demand.
- While most procedures remained relatively stable, impacted tooth extractions and exposure/bonding of unerupted teeth demonstrated an increasing trend.
- The proportion of invasive procedures significantly increased over time.
- Modeling of annual patient volume reveals a sustained upward trend in future demand.

CONCLUSIONS

- Pediatric patients demonstrate substantial periodontal and minor oral surgery treatment needs that have increased over time.
- Interdisciplinary care models that integrate periodontists within pediatric dental programs may be an effective strategy to help address these needs while also enhancing resident education.

REFERENCES