The Impact of Wait Time on Outcomes in Pediatric Dental Rehabilitation

Jane Conway DMD; Kaitlyn Solano DMD; Rosa Pelaez-Shelton DDS, MDS
School of Dental Medicine, Pediatric Dentistry, UConn Health Center & Connecticut Children's Medical Center

BACKGROUND

Pediatric dental caries remains one of the most common chronic childhood diseases. For many children—particularly those who are very young, have special health-care needs, or present with severe early childhood caries—oral rehabilitation under general anesthesia (GA) provides a safe and effective means to complete necessary dental care in a single visit. However, increasing demand for pediatric dental GA services in academic and hospital-based settings has contributed to significant delays between the initial assessment and the scheduled operative date. The COVID-19 pandemic decreased access as hospitals suspended elective procedures, leading to backlogs of dental cases. Extended wait times may allow dental disease to progress, potentially increasing the complexity of treatment, the risk of pain or infection, and the likelihood of urgent or emergent dental care prior to the planned GA appointment. Despite these concerns, limited evidence exists regarding how delays in accessing GA-based oral rehabilitation affect treatment outcomes in pediatric patients. Understanding this relationship is essential for optimizing scheduling practices, allocating institutional resources, and improving overall patient care.

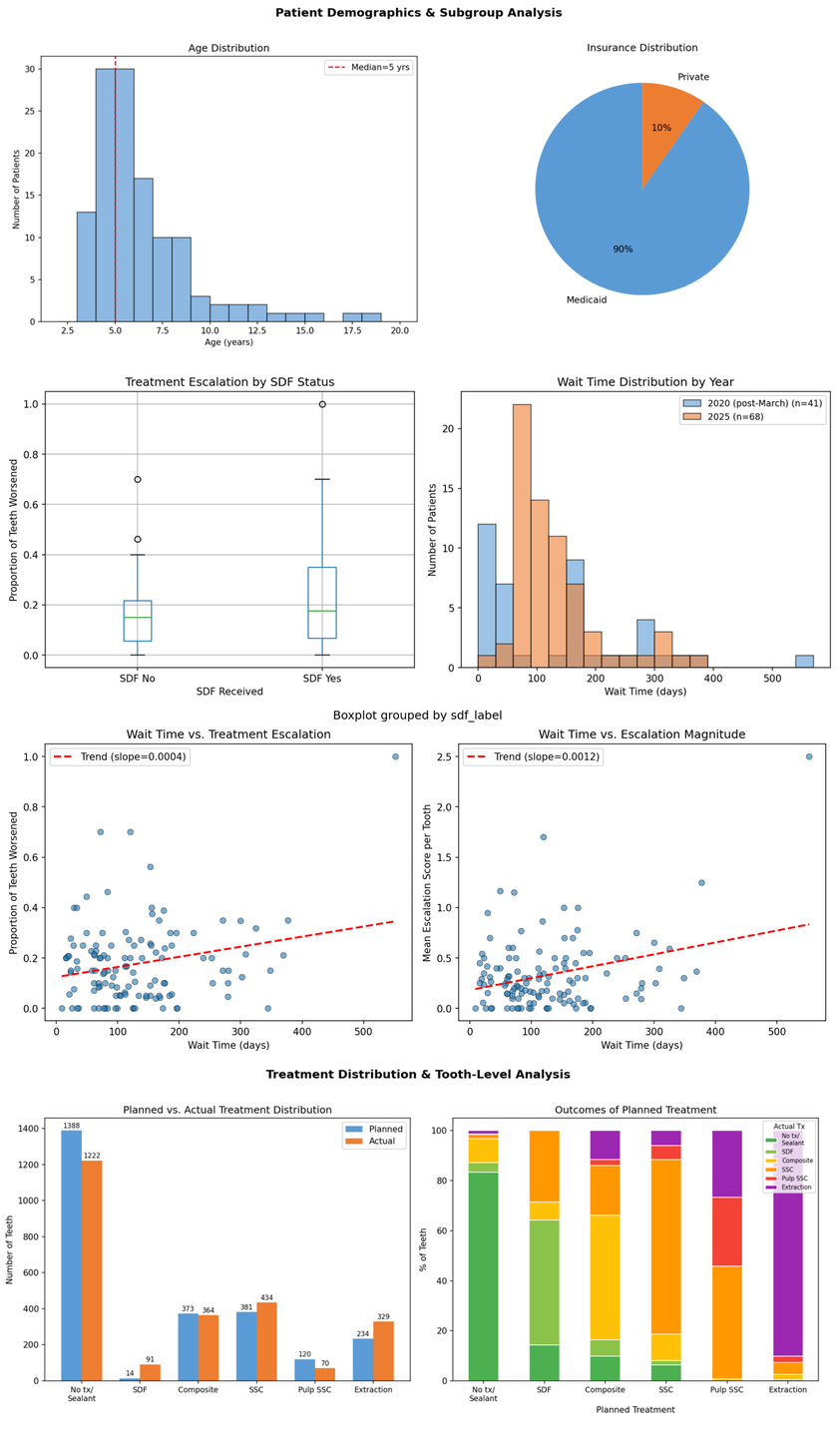
PURPOSE

The aim of this study is to assess the relationship between wait time for oral rehabilitation under general anesthesia and treatment outcomes for pediatric dental patients in an academic institution.

METHODS

Methods: This is a retrospective chart review of pediatric dental patients receiving oral rehabilitation under general anesthesia through the University of Connecticut Pediatric Dental Program. All pediatric dental patients receiving oral rehabilitation under general anesthesia at John Dempsey Hospital from June 2020- December 2020 and January 2025-December 2025 were examined. All patients under 18 years of age with completed charts and documented treatment plans at the time of operating room referral were included; both male and female patients are eligible. OR cases at JDH paused after March 11th 2020 and resumed again June 9, 2020. The study period reflects potential variable surgical wait times due to limited operating room availability during the COVID-19 pandemic. Data extracted included demographic information, planned treatment at time of referral and completed treatment on day of oral rehabilitation under general anesthesia. Data was analyzed with Python using Pearson correlation to assess the association between waitlist duration and changes between planned and actual treatment and descriptive statistics.

RESULTS



DISCUSSION/CONCLUSIONS

Between June–December 2020 and January–December 2025, a total of 41 and 68 patients, respectively, underwent oral rehabilitation under general anesthesia at John Dempsey Hospital. The patient population was predominantly publicly insured, with Medicaid accounting for 90% of cases and private insurance representing 10%, highlighting the disproportionate burden of severe early childhood caries among underserved populations. Mean wait times remained relatively unchanged over the study periods (135.2 days in 2020 vs. 129.5 days in 2025). The mean age at treatment was 5.9 years (range: 3–18 years), consistent with a young, high-risk population requiring advanced behavior management. Importantly, increased wait time was significantly associated with more severe treatment outcomes. Pearson correlation analysis demonstrated a positive correlation between wait time and escalation in treatment severity ($r = 0.238$, $p = 0.007$), suggesting that delays in care may contribute to worsening disease and increased need for extractions. Teeth originally planned for extraction were ultimately extracted in the majority of cases (90.2%). Among teeth planned for pulpotomy and stainless steel crown (SSC), 45.5% resulted in SSC without pulpotomy, 27.7% resulted in SSC with pulpotomy, and 26.1% resulted in extraction. This trend may reflect disease progression during prolonged wait times, as well as evolving clinical guidelines emphasizing selective caries removal and IPT[2]. Overall, these findings underscore the clinical impact of prolonged wait times for pediatric dental rehabilitation under general anesthesia and highlight the need for improved access to timely care to prevent disease progression and reduce treatment morbidity.

LIMITATIONS/ FUTURE DIRECTIONS

This study has several important limitations. Behavioral challenges in pediatric patients often limits the ability to obtain comprehensive clinical and radiographic examination at initial visit, which may reduce the accuracy of preoperative treatment planning. As a result, discrepancies between planned and definitive treatment may reflect errors in initial assessment rather than disease progression. Additionally, variability in provider assessment at initial evaluation and day of surgery contribute to differences in treatment decisions. The retrospective design limits control over potential confounders. Future directions could focus on standardizing diagnostic and treatment planning protocols. This is an ongoing study and will include all OR cases from 2020-2025, allowing for a larger sample size.

REFERENCES

1. American Academy of Pediatric Dentistry. Policy on hospitalization and operating room access for oral care of infants, children, adolescents, and Individuals with special health care needs. The Reference Manual of Pediatric Dentistry. Chicago, Ill.: American Academy of Pediatric Dentistry; 2024:173-5.
2. Coll JA, Dhar V, Chen CY, et al. Use of vital pulp therapies in primary teeth 2024. Pediatr Dent 2024;46(1):13-26.