General Anesthesia Failure Rate in Pediatric Dental Outpatient Care Center

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Background

- Early Childhood Caries (ECC) is one of the most prevalent diseases that not only affects the oral health of young children, but also their general health.
- When young individuals with extensive tooth decay exhibit lack of cooperation for dental treatment to take place in a conventional dental office setting, advanced methods of behavior management such as general anesthesia may be utilized.
- Dental care under General Anesthesia (DGA) also helps treat children that have severe dental anxiety, children with special healthcare needs, and children who are not candidates for oral sedation.
- General anesthesia appointment failures, not only causes harm to the child by delaying the treatment but at the same time leads to financial burden on the healthcare system because committed resources are being lost.

Hypothesis and Objective

- **Objective:** To determine factors associated with the failure of GA appointments and investigate any associations between seasonal variability and completion of GA.

- **Null Hypothesis:** H01: Unanticipated illnesses is not the most common reason for GA appointment failures.

H02: There is no association between seasonal variability and completion of GA appointments.

Methods

- **Study Type**: Retrospective Cross-Sectional Study (Chart Review)
- **Sampling Method:** Stratified random sampling.
  Total Sample size: 400
  50 samples from each season = 200/year
  Total = 200 x 2 years = 400 samples
- **Inclusion Criteria:**
  ✓ Aged 3-17 years
  ✓ Healthy and/or well controlled mild systemic condition (ASA I, ASA II)
  ✓ Between September 1, 2020 and August 31, 2022
- **Exclusion Criteria:**
  ✓ ASA III category or greater
  ✓ Patients younger than 3 years old or older than 18 years of age
  ✓ Patients whose appointment was cancelled after H&P forms were evaluated by Anesthesiologist
- **Data Collected:**

Table. 1 Dependent and Independent Variables

DEPENDENT	INDEPENDENT
Whether the patient attended the scheduled GA appointment and whether the DGA was completed	Patient's age, gender, race, ethnicity, language, dmft/DMFT, behavior at the initial appointment, time lapse, confirmation, history of failed appointments, seasonal variability and traveling distance

- **Data Analysis:**
  ✓ Univariate analyses: Patient demographics
  ✓ Bivariate analyses: Examine the associations between individual patients who had a completed general anesthesia appointment on the day of service vs. not completed general anesthesia appointment.
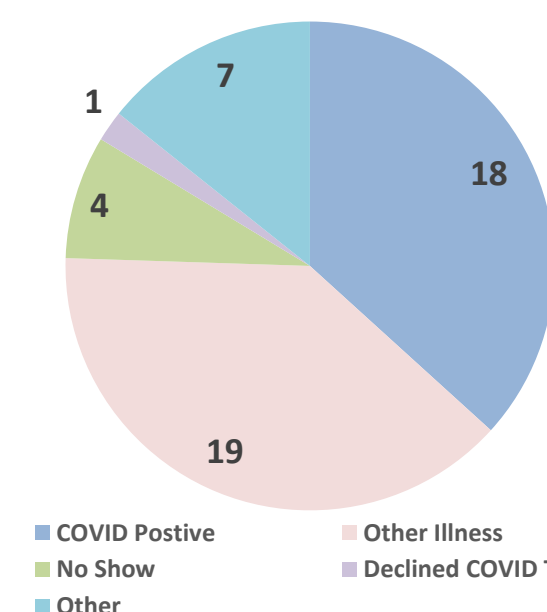
Results

Patient Demographics

❖ **Age:**
- Range**:** 3 - 13 years
- Mean age:6.175 years
- Significance: p = 0.173

❖ **Gender:**
- Male: 227 (56.8%)
- Female: 173(43.3%)
- Significance: p = 0.194

❖ **Language:**
- English: 296 (74.0%)
- Non-English: 104 (26.0%)
- Significance: p = 0.094

❖ **Race:**
- White: 257 (64.3%)
- Black/African American: 55 (13.8%)
- Asian: 16 (4%)
- Declined: 72 (18%)
- Significance: p = 0.407

❖ **Ethnicity:**
- Hispanic or Latino: 180 (45.0%)
- Not Hispanic or Latino: 148 (37.0%)
- Declined: 72 (18.0%)
- Significance: p = 0.638

GA Appointment Completion:
- 49 patient (12%) GA was not completed
- 351 patient (88%) GA was completed

Fig. 1 Reasons for Failed GA Appointments

- COVID Positive
- No Show
- Other
- Other Illness
- Declined COVID Test

Table. 2 Seasonal Variability

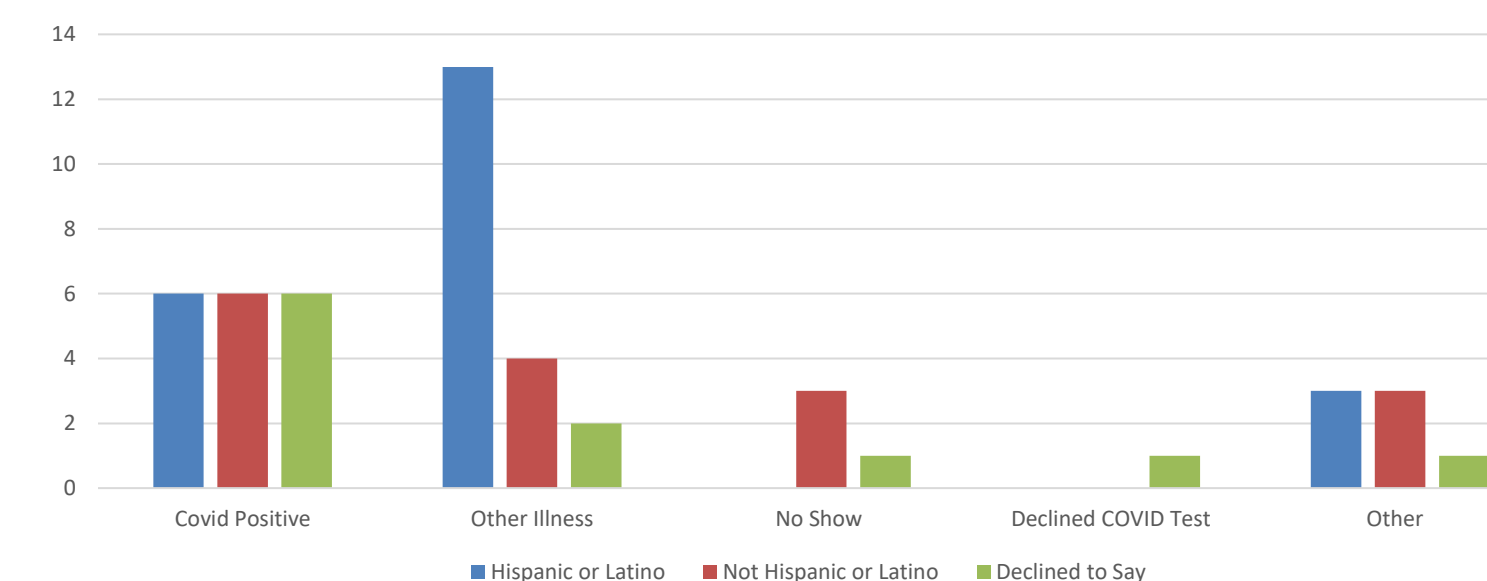|	GA NOT Completed	GA Completed	Significance
SEASON			*p = 0.045*
Fall	6	94	
Winter	19	89	
Spring	11	87	
Summer	13	81	
TOTAL	49	351	

Fig. 2 Ethnicity and Illness

- Hispanic or Latino
- Not Hispanic or Latino
- Declined to Say

Table. 3 Other Variables

Variable	Significance
Previously failed dental appointments	p = 0.305
Appointment Confirmation	*p = 0.004*
Distance travelled to clinic	p = 0.558
Time lapsed between appointments	*p <0.001*

Conclusions

- Data showed - no significant impact of race, ethnicity, behavior, language spoken, distance traveled, or previously failed appointments on GA completion (p > .05).
- Most failed GA cases were due to either illnesses (39%) or COVID-19 (37%) and the Hispanic population showed the highest rates of GA appointment failures (45%).
- The highest rate of GA appointment failure was in the winter compared to other seasons (p = 0.045).
- Associations with GA completion: appointment confirmation, shorter time lapse between appointments.