Factors Contributing to Failed General Anesthesia Appointments in a Pediatric Dental Residency Program

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Abstract

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Providing comprehensive dental treatment under general anesthesia (GA) is resource intensive, and the cost of failed appointments is substantial. When a patient has complex treatment needs, dental care under GA protects a patients psyche and ensures the health and safety of both the patient and the dental team. The objective of this prospective cohort study was to investigate factors associated with attendance to GA appointments at an outpatient dental surgery center associated with the University of Washington Pediatric Dentistry Residency program. The study sample included all patients under age 21 who were scheduled for comprehensive dental care under GA at the UW Center for Pediatric Dentistry during the period of December 1, 2022 to December 1, 2023. Variables of interest were identified prior to initiation of the study, and data was collected prospectively through direct entry by clinic staff and extraction from the electronic health

record. A total of 543 patients completed GA. 92 cancelled with >72 hours notice, 105 cancelled with <72 hours notice, and 74 failed (no-show) to keep their appointment (12%). There was not a statistically significant association between attendance and gender or language. Patients aged between 6-11 years, with Medicaid insurance, the earliest check-in time (6:30-9:30 AM), and shortest distance travelled to clinic (<20 miles) were less likely to keep appointments. The most frequent reasons for late cancellation or no-show were patient or family illness (53%), fasting violation (4.4%), change in medical status (4.4%), insurance/finances (3%), and transportation issues (1.8%). A high percentage of patients scheduled for GA in this study cancelled with short notice or no-showed for their appointments. Appointment failure was primarily related to anesthesia-related factors such as illness and fasting violation, but logistical issues also impacted attendance.

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I would like to express my sincerest gratitude to my committee chair, Dr. Travis Nelson, for his consistent support and guidance throughout my research. This project would not have been possible without him, and I am honored to have worked beside him. I would also like to the remaining members of my thesis committee: Drs. Ana Lucia Seminario and Jennifer Meyers for all of their encouragement and help, as well as Rata Rokhshad and Callie McCormack for their collaborative effort during data collection and analysis.

Dedications

I would like to dedicate this to my mother, Nazira Ibrahim, for all she has sacrificed and for her immeasurable support. To my sisters for their patience, encouragement, and love. Without you, I would not be the person I am today. Last, but certainly not least, to my co-residents who have become my family, thank you for this remarkable and memorable two-years. I look forward to growing further together in this new chapter.

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I. Introduction:

General anesthesia (GA) is used to provide dental care to pediatric dental patients when basic behavior guidance or other pharmaceutical interventions are not adequate.[1-6] While highly effective, pediatric dental GA requires specialized equipment, dedicated dental and anesthesia providers, and additional scheduling and surgical staff. It is therefore very resource intensive. When caregivers fail to keep appointments, children experience delay in treatment and healthcare facilities experience financial loss. Therefore, determining factors that affect patient attendance to GA visits has the potential to improve patient outcomes and reduce healthcare cost.

Previous studies have investigated demographic and social factors that contribute to GA appointment failure.[1,2] Through retrospective review of the medical record in their hospital-based programs, Mathu-Muju et.al and Emhardt et. al found a correlation between failed appointments and factors such as race, insurance type, scheduled time of surgery, distance traveled, snowfall, and temperature.[1,2] Both groups determined that specific reasons for failure vary among racial and ethnic groups. In particular, African American and Hispanic patients were more likely to face family barriers and were less likely to give adequate notice for unkept appointments. Additionally, Butler et. al found that the most common reason for failed appointments was child illness.[3] They also showed that the likelihood of a failed appointment increased when there was more time elapsed between consultation and surgery.

The aforementioned studies assessed attendance at a hospital venue. Today, dental GA is performed in a variety of venues, including hospitals, surgery centers, and private dental offices. Patient characteristics may vary significantly depending on geographic region and type of surgical venue.[4] The same can be said for the practice type: private practices, institutional settings, and residency training programs may all experience unique challenges. To our

knowledge, previous research on the topic of dental GA failure has all been conducted retrospectively. While these studies have enlarged the body of knowledge on the topic, they are limited to retrospective chart review. Cancellation or no-show due to changes in medical status, caregiver concern over financial estimates, transportation-related issues, and many other barriers may be most effectively assessed through prospective study design.

The purpose of this study was to investigate the factors associated with attendance to general anesthesia appointments among patients at an outpatient dental surgery center associated with the University of Washington (UW) Center for Pediatric Dentistry (CPD). We hypothesized that patients with state insurance, those that travel the furthest to seek care, those scheduled with later check in times, and families that are in need of interpretation would be less likely to keep GA appointments. Findings from this study will inform interventions that reduce barriers to attendance in that treatment setting.

II. Methods:

This prospective study was approved by the UW Institutional Review Board (IRB ID: STUDY00016361). For a twelve-month period from December 1, 2022 to December 1, 2023 all patients age twenty-one and younger scheduled to receive GA at the outpatient dental surgical center at the UW Center of Pediatric Dentistry were eligible for inclusion. Demographic information (including race, gender, sex, age), insurance type, use of an interpreter, caregiver primary language, and zip code were collected through review of the Axium Academic Dental Software system electronic dental records. Specifics of the scheduled appointment were also noted: time elapsed between when appointment was scheduled and actual appointment date, and scheduled case start time. Estimated distance traveled to the clinic was calculated by mapping the patient's home zip code to the clinic's zip code. All personal identifiers were removed from the data file to protect patient confidentiality.

The clinic policy during the study period was to contact the caregiver twice after scheduling the appointment: one week and two days prior to the GA appointment. Appointments were categorized as kept (attended), cancelled within seventy-two business hours, cancelled with more than seventy-two business hours of notice, or failed (if the patient was confirmed but did not arrive for their scheduled appointment). Broken appointments were identified as one of the three categories of unkept appointments: within seventy-two hours, more than seventy-two hours, and failed. The reason for cancellation or failure was noted by administrative staff: patient sick, fasting violation, change in medical status, family member sick, insurance/finances, transportation, weather, unable to contact, failed by clinic (late arrival, showing up on the wrong date, etc.), refusal to sign consent, no-show, and other (no reason given, seeking treatment at another facility, etc.). The number of cancellations or rescheduled visits was also documented for

each patient. Appointment attendance data for all scheduled GA patients was collected daily by the same administrative staff member and audited weekly by the same pediatric dentistry resident. If a patient was appointed within 72 hours to replace a patient who cancelled or failed it was noted in the study log.

Continuous variables were quantified as means ± standard deviations (SD) for subsequent statistical evaluations. For discrete variables, chi-squared tests were used to discern significant relationships. Following data collection, regression analysis was used to determine associations between individual variables and attendance to general anesthesia appointments. Odds ratios (OR) and 95% confidence intervals (CIs) were computed to quantify the strength and precision of the associations between variables. All statistical procedures were executed using SPSS software, version 29.0.2.0, with P values of less than 0.05 designated as the criterion for statistical significance.

III. RESULTS

Between December 1, 2022 to December 1, 2023, a total of 814 patients were scheduled for general anesthesia at the UW CPD. The mean age of our study population was 70.50 months (SD: 3.11). The majority were male (56%), cisgender (99.7%), insured through Medicaid (80%), and did not require an interpreter (72%). When an interpreter was required, the most common languages needed were Spanish (14%), followed by Cantonese (5%), Amharic (2%), and Tigrinya (2%). (Table 1)

Of the 814 patients scheduled, 543 (66.7%) appointments were completed, 92 (11.4%) cancelled with more than 72 hours-notice, 105 (12.8%) cancelled with less than 72 hours-notice, and 74 (9.1%) failed their appointment. Age (*p=0.02)*, type of insurance *(p= 0.001),* check in time for appointment (*p <0.001),* and *g*eographical area of residence (*p<0.001)* had a statistically significant association with failed appointments. (Table 2)

Regression analysis across the three major groups revealed associations between cancellation/no-show and study variables. For cancellations >72h, patients with Medicaid insurance were less likely to cancel when compared with the reference group that had dual insurance (OR= 0.47, 95% CI [0.23, 0.94]). In addition, children scheduled to check in between 8:01-9:30 AM (OR= 2.13, 95% CI [1.08, 4.19]) were 2.13 times more likely to cancel >72 h in comparison to patients scheduled to be seen between 6:30-8:00 AM. When analyzing cancellations with <72h notice, patients aged 4-6 years (OR=1.81, 95% CI [0.80, 4.12]), with private insurance (OR=0.16, 95% CI [0.04, 0.63]) and those living between 20-50 miles from the dental surgical center (OR=0.28, 95% CI [0.12, 0.65]) were far less likely to cancel in comparison to their respective reference groups. Lastly, for patients that were a no-show to their GA appointment, check in time scheduled after 1:00 PM lead to considerably higher likelihood

of failing, compared with those scheduled first thing in the morning (OR=2.98, 95% CI [1.18, 7.54]), as did traveling from <50 miles from the clinic (OR=1.85 95% CI [0.23, 15.02], OR = 1.62 95% CI [0.74, 3.58]). With the assumption that there are no confounding factors or bias, the confidence interval for each variable listed shows that the data is representative of the true population of patients seen at outpatient dental surgical center at the UW Center of Pediatric Dentistry. (Table 3)

Data that more specifically describe reasons for cancellation of GA appointments are shown in Table 4. Types of cancellations were split amongst four main categories (anesthesia, logistical, clinic, and other). In the cancellations with >72h notice, patient illness was the most common reason for cancellation of an appointment (anesthesia, 52.6%). Other reasons included seeking treatment elsewhere, rescheduling with no reason given (other, 34.4%), and insurance/finances (logistical, 6.5%). Similarly, for cancellations with <72h notice, 86.68% of appointments were cancelled due to patient illness (anesthesia), 8.57% due to change in medical status (anesthesia), and 3.8% due to a member of the household being ill (logistical). Amongst the patients considered to have failed/no-showed their GA appointment, 40.54% could not be contacted to confirm the appointment, 17.6% were due to miscellaneous reasons, and 16.2% were due to NPO violation the day of the scheduled procedure (Table 4).

Within the data collection period, 10.9% of appointments that cancelled with >72 hours notice and 47.5% of patients that cancelled <72 hours or failed their scheduled GA appointments were not filled with new appointments. The success of replacing an appointment was much higher when there was adequate notice provided. In our analysis, patients that kept their GA appointments had less time elapsed between consultation/scheduled date and service date for GA (16.84 days) than any cancelled or failed appointment (21.13 to 22.16 days).

IV. DISCUSSION

The aim of this study was to improve access to care for patients in need of dental care under GA and minimize cancellations/failures of appointments that lead to financial loss for the clinic. In this one-year prospective study of an outpatient dental surgical center we found that some of the most common reasons for appointment failure were illness (52%) and fasting violations (4.4%). Patient age, type of insurance, geographical area of residence, time elapsed between consultation and GA appointment, and the check in time were all significantly associated with late cancellation or failure. Our findings support our hypothesis that patients with state insurance or later scheduled appointments, were, in fact, less likely to keep their appointments, but patients that traveled far distances to the surgical center and families that required an interpreter did not show a significant association with unkept appointments. These findings may be used to improve processes increasing accessing to oral health care among children and adolescents in need of dental treatment under general anesthesia.

The majority of unkept appointments occurred with children ages 6-11 years old (51.6%). Due to challenges with fasting, in the study clinic the youngest patients were generally given the earliest appointments. Prolonged NPO times for older patients are suspected to partially account for cancellations/failures of GA appointments with later check in times. Some solutions may include starting the surgical day at an earlier time, working the with anesthesia team to ensure NPO time is kept at no more than 6 hours for a light meal or nonhuman milk, and educating the family to plan ahead for the proposed fasting times.[10]

Most patients within the study population did not require an interpreter (72%), but it is important to recognize that language barriers continue to be a major obstacle, particularly for recent immigrants. For that reason, a great deal of attention must be paid to preferred language

and need for interpretation for all GA patients. In many settings, the duty of securing an interpreter may be the responsibility of clinical administrative staff. However, in some locations social workers or dental care advocates have been shown to effectively work with families to convey messages and assist with securing excellent interpretation services.[5] Utilization of staff members in this way has the potential to increase access to care for children and their families and reduce cancellation and no-show appointments.

As indicated in the results, there were many statistically significant findings associated with failed visits. The location of family residence and distance traveled to the surgical center was found to be significantly associated with appointment failure (*$p<0.001$,* Table 2*)*. The majority of patients that did not uphold their dental GA appointment had less than 20 miles to commute, whereas patients that had more than 50 miles of travel had the least number of broken appointments. This likely is a result of needing to plan ahead of time, make appropriate arrangements prior, and committing to appointment slot with a prearranged plan for the families with longer travel times. The time elapsed between when the GA appointment was scheduled and actual service day was also evaluated. Preceding studies found that prolonged wait times were associated with failed appointments. However, due to short appointment wait times within the study clinic's outpatient surgery center, this ideally would have been minimized for our study population.[3] Patients that kept their GA appointments did have less elapsed time between consultation/scheduled date and service date for GA, but the finding was within a six-day difference (16.84 days vs 22.16 days). This is perhaps due to acute dental needs, lack of parental scheduling conflicts, and commitment to the procedure. These figures likely included some outliers, those that had particularly short wait times (last minute add-ons) and those that had to schedule far in advance. This was a significant finding from a personnel/scheduling standpoint

and has implications for clinics like the Center of Pediatric Dentistry that see high percentages of patients who need treatment under GA.

Many studies have identified relationships between variables of interest and failed appointments, some of which are highlighted in Table 4. Individuals with low incomes are more likely to be Medicaid recipients and less likely to seek healthcare.[8,9] Cross-sectional surveys have shown that there is a significant relationship between low parental health literacy and socioeconomic status.[7] Health literacy may therefore be a valuable aspect of GA appointments to assess. Low health literacy may lead to hesitancy in seeking care under GA due to parental lack of understanding of the consequences of delaying care, poor valuation of primary dentition, or fear of the advanced behavior management technique. De Buhr et. al found that "strengthening the health knowledge and competencies of parents may contribute to improved child outcomes particularly in the areas of nutrition, exercise, and dental health."[7] To improve parent understanding, at the consultation appointment families should be presented with a tentative treatment plan, which includes expected dental care (e.g. extraction, pulp therapy, etc.) and details about the general anesthesia process (e.g. mask induction, intubation, etc.). At that point, parents should be given the opportunity to ask questions about their concerns. This interaction is crucial in setting the GA appointment up for success.

A significant majority of this study population had Medicaid insurance. When analyzing the significance of insurance, Mathu-Muju found that self-paying patients were more likely to fail when compared to patients with private or state insurance.[1] In contrast, other studies have found higher rates of broken appointments with Medicaid patients.[6] In the failed appointment group of patients in this study, 86% had Medicaid insurance and 14% had private insurance. High anesthesia fees were the most reported reason for cancellation for patients with private

insurance. Because high out of pocket costs may discourage families from seeking care, it may be prudent to complete financial counseling with families and/or connect them with resources (e.g social work, financial assistance) to decrease financial barriers to care well in advance of the GA visit.

The pediatric dentist and anesthesiologist mutually share the responsibility of assessing a patient for fitness to be treated under general anesthesia. Children are often more susceptible to upper respiratory infections than adults, and they may be more likely to fail pre-operative fasting. Accordingly, in this study many patients were not able to keep their appointment due to anesthesia concerns including patient illness, fasting violation, and changes in medical status. The majority of those cancelled had upper respiratory symptoms prior to, or on the day of, their scheduled surgery date. Tait et. al conducted a study evaluating adverse outcomes of children that undergo procedures with current or recent URI's (within 4 weeks). Although the findings suggested that children are still able to undergo procedures without a significant increase in "adverse anesthetic outcomes," it is prudent to reschedule patients for elective dental surgery in the event of recent URI.[11] In this study, scheduling staff were able to fill 90% of appointments when provided with >72 hrs notice. However, when given less advance notice that rate dropped to approximately 50%. Similarly, the vast majority of late notice cancellations were due to patient illness. Therefore, emphasis should be placed on educating caregivers about criteria for cancellation due to URI early-on when scheduling and repeatedly during the confirmation process. This will allow sufficient time to fill vacancies and improve the rate of GA completion.

In this study 21.4% of patients scheduled cancelled with short notice or no-showed for their appointments. This high rate of cancellation/no-show allowed us ample opportunities to investigate specific factors associated with cancellation and failure, but it required significant

work by scheduling staff to keep the schedule full. In this study nearly 1 in 3 appointments ultimately were filled by another patient, and 44% of all scheduled patients were not seen at their first scheduled visit. The patients that cancelled with short notice or failed their appointments also had an average history of 1.4 times that they rescheduled or broke a GA appointment. The high rate of failure in patients with a history of failed or rescheduled appointments may make them high priority for supportive social services (e.g. language, transportation, insurance assistance) as well as a factor to consider when selecting appointment day and time. For example, these patients may be good candidates to fill appointments vacated by others who cancel with late notice. Asking patients during the scheduling process if they are available on short notice to fill cancelled slots and have an earlier surgery may also be a prudent practice.

As mentioned previously, even though data was conducted prospectively there were likely many factors that may not have been accounted for in the results. This may have changed the representation of the study population and presents interpretation challenges. The clinic in this study is an example of a combined hospital and university residency program with a very diverse patient population. It serves a very wide spectrum of patients, many of which travel from far ends of the state and region to seek care. This limits the generalizability of the findings to other settings. However, while the features of this program are unique, some of the lessons learned may be applicable to other training programs or similar care venues. Ultimately, these findings may help improve the efficiency of dental GA in the outpatient surgical setting and increase access to care.

V. CONCLUSIONS

Based on the study's results, the following conclusions can be made:

1. Appointment failure was primarily related to illness and fasting violation.
2. The time elapsed between consultation and GA appointment was higher for broken appointments than for kept appointments.
3. Age, time of check in for GA appointment, type of insurance, and geographical area of residence were significant associated with failed appointments.

VI. TABLES

Table 1. Characteristics of study population

Variables	N(%)
All Scheduled Patients	814
Sex	
Male	459 (56%)
Female	353 (44%)
Gender	
Cisgender	812 (99.7%)
Transgender/Genderfluid	2 (0.3%)
Insurance	
Medicaid	648 (80%)
Private	109 (13%)
Dual Insurance	55 (7%)
Interpreter	
Yes	226 (28%)
No	588 (72%)
Interpreter Language	
Spanish	111 (14%)
Cantonese	40 (5%)
Amharic	17 (2%)
Tigrinya	17 (2%)
Mandarin	12 (1%)
Vietnamese	7 (<1%)
Arabic	6 (<1%)
Ukrainian	2 (<1%)
Dari	1 (<1%)
Oromo	1 (<1%)
Nepali	1 (<1%)
Tagalog	1 (<1%)
Somali	1 (<1%)
Russian	1 (<1%)
Pashto	1 (<1%)
Age (months)	Mean±SD
	70.50±3.11
0-5 years	107
6-11 years	163
>12 years	3

Table 2: Analysis of unkept appointments by variables of interest

Variables	Kept Appointments	Unkept appointments			P value
		Cancelled With >72 Hours Notice	Cancelled With <72 Hours Notice	Failed Appointments (No-show/No-call)	
Total number	543	92	105	74	
Age (months)	75±28	70±22	68±20	69±24	0.0234
Sex					
Male	308 (57%)	52 (57%)	60 (57%)	39 (52%)	0.332
Female	233 (43%)	40 (43%)	45 (43%)	35 (48%)	
Insurance					
Medicaid	431 (79%)	69 (75%)	84 (80%)	64 (86%)	0.0004
Private	71 (13%)	19 (21%)	11 (10%)	8 (14%)	
Dual Insurance	41 (7%)	4 (4%)	10 (10%)	0	
Start Time (Check in time)					
6:30-8:00 AM	162 (30%)	24 (26%)	31 (29%)	16 (22%)	0.00001
8:01-9:30 AM	139 (25%)	37 (40%)	21 (20%)	13 (18%)	
9:31-11:00 AM	106 (20%)	10 (11%)	25 (24%)	14 (19%)	
11:01 AM-1:00 PM	91 (16%)	17 (18%)	17 (16%)	18 (24%)	
After 1:00 PM	45 (9%)	4 (5%)	11 (11%)	13 (17%)	
Distance traveled					
<20 miles	404 (74%)	74 (80%)	75 (71%)	64 (86%)	0.00001
20-50 miles	111 (20%)	15 (16%)	19 (18%)	9 (12%)	
50+ miles	28 (6%)	3 (4%)	11 (11%)	1 (2%)	
Interpreter					
Yes	137 (25%)	23 (25%)	39 (43%)	21 (28%)	0.057
No	406 (75%)	69 (75%)	66 (57%)	53 (72%)	
Interpreter Language					
Spanish	72 (13%)	15 (16%)	12 (11%)	12 (16%)	0.475
Cantonese	26	4	8	2	-
Amharic	10	1	3	3	-
Tigrinya	11	1	4	1	-
Mandarin	8	1	2	1	

Vietnamese	5	1	1	0	
Dari	1	0	0	0	
Arabic	3	0	1	2	
Ukrainian	0	0	2	0	
Oromo	0	0	2	0	
Nepali	0	0	1	0	
Tagalog	0	0	1	0	
Somali	0	0	1	0	
Russian	0	0	0	0	
Pashto	1	0	0	0	

Table 3 – Regression analysis results (dummy variables are interpreted through odds ratio, standard errors in parentheses, the variable of interests stated in bold).

	Cancelled With >72 Hours Notice		Cancelled With <72 Hours Notice		No-show	
	OR	95% CI	OR	95% CI	OR	95% CI
Age						
≤ 3 years	1.05	[0.41, 2.68]	1.28	[0.48, 3.39]	0.76	[0.30, 1.94]
4-6 years	0.97	[0.44, 2.13]	1.81	[0.80, 4.12]	0.55	[0.25, 1.21]
≥ 7 years	Ref		Ref		Ref	
Sex						
Male	0.95	[0.57, 1.58]	0.91	[0.56, 1.49]	1.18	[0.69, 2.02]
Female	Ref		Ref		Ref	
Insurance						
Medicaid	0.47	[0.23, 0.94]	1.55	[0.73, 3.29]	1.57	[0.68, 3.61]
Private	2.50	[0.67, 9.38]	0.16	[0.04, 0.63]	3.73	[0.42, 32.81]
Dual Insurance	Ref		Ref		Ref	
Check in time						
6:30-8:00 AM	Ref		Ref		Ref	
8:01-9:30 AM	2.13	[1.08, 4.19]	0.54	[0.27, 1.08]	0.77	[0.34, 1.75]
9:31-11:00 AM	0.50	[0.21, 1.18]	1.34	[0.65, 2.79]	1.38	[0.60, 3.16]
11:01 AM- 1:00 PM	0.95	[0.44, 2.03]	0.63	[0.30, 1.32]	1.82	[0.82, 4.04]
After 1:00 PM	0.33	[0.10, 1.05]	0.83	[0.34, 2.04]	2.98	[1.18, 7.54]
Distance traveled						
<20 miles	0.99	[0.50, 1.98]	0.69	[0.35, 1.33]	1.62	[0.74, 3.58]
20-50 miles	1.01	[0.28, 3.65]	0.28	[0.12, 0.65]	1.85	[0.23, 15.02]
50+ miles (Ref)						
Interpreter						
Yes	0.66	[0.38, 1.16]	1.64	[0.97, 2.77]	0.86	[0.48, 1.55]
No	Ref		Ref		Ref	

*The canceled With >72 Hours Notice group were patients who canceled their GA appointments more than 72 hours from the actual date; Canceled With <72 Hours Notice group were patients who canceled their GA appointments less than 72 hours from the actual date; and no-show group were patients who did not show up in their actual date of GA appointment.

Table 4: Distribution of explanation for cancelled and failed general anesthesia appointments

Appointment Category	Explanation	Cancelled With >72 Hours Notice	Cancelled With <72 Hours Notice	Failed Appointments (No-show/No-call)	Percentage among broken appointments
Anesthesia					
Patient sick	Patient has symptoms of Upper Respiratory infection (Covid, cough, runny nose, fever, etc)	49 (52.6%)	91 (86.68%)	2 (2.7%)	52%
Fasting violation	Patient violated NPO (had food or drink while be instructed not to)	0 (0%)	0 (0%)	12 (16.2%)	4.4%
Medical	Change in medical status, exacerbation of asthma, unknown or positive hx of malignant hyperthermia	4 (4.3%)	9 (8.57%)	0 (0%)	4.8%
Logistical					
Family member sick	Family member symptomatic (Covid, cough, runny nose, fever, etc)	0 (0%)	4 (3.8%)	0 (0%)	1.5%
Insurance/Finances	Out of pocket costs or anesthesia fees too high, loss of insurance	6 (6.5%)	0 (0%)	3 (4.05%)	3.3%

	coverage, etc.				
Transportation	Patient unable to keep appointment due to transportation issues (pre-arranged transportation issues, unable to find transportation that does not include public transportation, traffic, uncommunicated transportation needs)	1 (1.1%)	0 (0%)	4 (5.4%)	1.8%
Weather	Patient cancelled appointment due to significant weather (i.e. heavy rain, snow, wind, extreme heat, etc.)	1 (1.1%)	0 (0%)	0 (0%)	0.4%
Clinic					
Unable to contact	Surgical center staff unable to contact family to confirm appointment-cancelled by clinic.	0 (0%)	0 (0%)	30 (40.54%)	11.1%
Failed by Clinic	Clinic failed appointment (i.e. patient arrived late, showed up on wrong appt day, etc)	0 (0%)	0 (0%)	2 (2.7%)	0.7%
Consent	Patient or family did	0 (0%)	0 (0%)	3 (4.05%)	1.1%

	not consent to treatment				
Other					
No-show	Patient did not show for scheduled appointment (reasons often unknown)	0 (0%)	0 (0%)	5 (6.76%)	1.9%
Other	Appointment cancelled due to miscellaneous reasons not listed above. (i.e. cancelled or rescheduled with no reason given, sought treatment elsewhere, parent unable to find care for other children, has another appointment, provider out sick, etc)	32 (34.4%)	1 (0.95%)	13 (17.6%)	17%
Total Percentage Per Category		11.4%	12.8%	9.1%	

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