

Introduction

In 2020, health professions, including dentistry, were challenged due to coronavirus disease 2019 (COVID-19).¹ Dental offices were mandated to stop providing routine care to reduce the spread of the virus. This resulted in an increase in patients visiting hospitals and emergency rooms for their dental pain. The pandemic also increased strain on the healthcare system. Limitations for patient beds at hospitals, possible aerosol spread, the need for stringent PPE usage and deep-cleaning after every patient all needed to be considered during this time.² The purpose of this study was to examine emergency dental visits from March through June 2020 at the One Brooklyn Health Brookdale Hospital Emergency Room and Pediatric Dental Clinic and compare it to the previous year. Patients’ chief complaints, diagnosis, and outcomes from emergency visits were compared between the two years. Prompt diagnosis and emergency treatment provided immediate comfort for patients with pain, infection, or dental trauma. However, follow-up care for these patients is critical and was challenging during the public health crisis when providers were temporarily mandated to stop providing comprehensive care to limit the spread of COVID-19.

Methods

This was a retrospective cohort study of pediatric emergency patients that visited the One Brooklyn Health Brookdale Hospital Pediatric Dental Clinic during the months of March through June of 2019 and 2020. This research was approved by the Institutional Review Board of One Brooklyn Health. A comprehensive chart review was done for the time periods studied and visits were selected for inclusion in the study by identifying emergency visits, walk-in visits, or referrals from the emergency department. Information about the emergency visits was obtained from Dentrrix electronic health records (EHR). A total of 275 visits met the inclusion criteria for the study. Once the necessary information was gathered from the EHR, the data was de-identified. Demographic information (age, sex), the emergency procedure (if any) performed, whether antibiotics were prescribed, and whether a necessary follow-up procedure was later rendered was recorded. Emergency procedures were grouped into the following categories: restorations, pulp therapy (including indirect pulp capping, pulpotomy, pulpectomy, etc.), surgical management (including extractions and incision and drainage), splinting, and suture placement or removal. The collected data was analyzed by a statistician. Frequencies were reported and the Chi-Square test was used to evaluate the statistical significance of the differences between cohorts. The p- value was set at 0.05.

Results

The total number of emergency patients seen in 2019 (n=202) was greater than the total number seen in 2020 (n=73), which is consistent with the public health guidelines in place during the 2020 time period studied. Within the cohorts, a greater percentage of patients in the 2020 cohort received an emergency procedure at the emergency visit (34.7%) versus the 2019 cohort (21.5%). This difference was statistically significant (P=0.038). However, significantly fewer patients received follow-up procedures from the 2020 cohort (33.3%) than the 2019 cohort (49%). This is likely due to patients being cautious of the COVID-19 exposure and not wanting to visit the hospital again during the public health emergency, as well as limitations on aerosol-generating procedures during the 2020 time period. Additionally, it was unclear at the time how COVID-19 affects children, leading to additional fear and uncertainty by parents of pediatric patients. Statistically significant results are reported in Figures 1,2 and 3. A higher percentage of patients seen in 2020 were prescribed antibiotics at the emergency appointment (16.7%) than in 2019 (8.5%), however, the difference was not statistically significant. Among the emergency procedures provided in both the 2019 and 2020 cohorts, the most frequent category was surgical management (including extractions and incision and drainage). The breakdown of of emergency procedures in both cohorts is shown in the Table 1.

Results

Figure 1: Number of Emergency Dental Visits

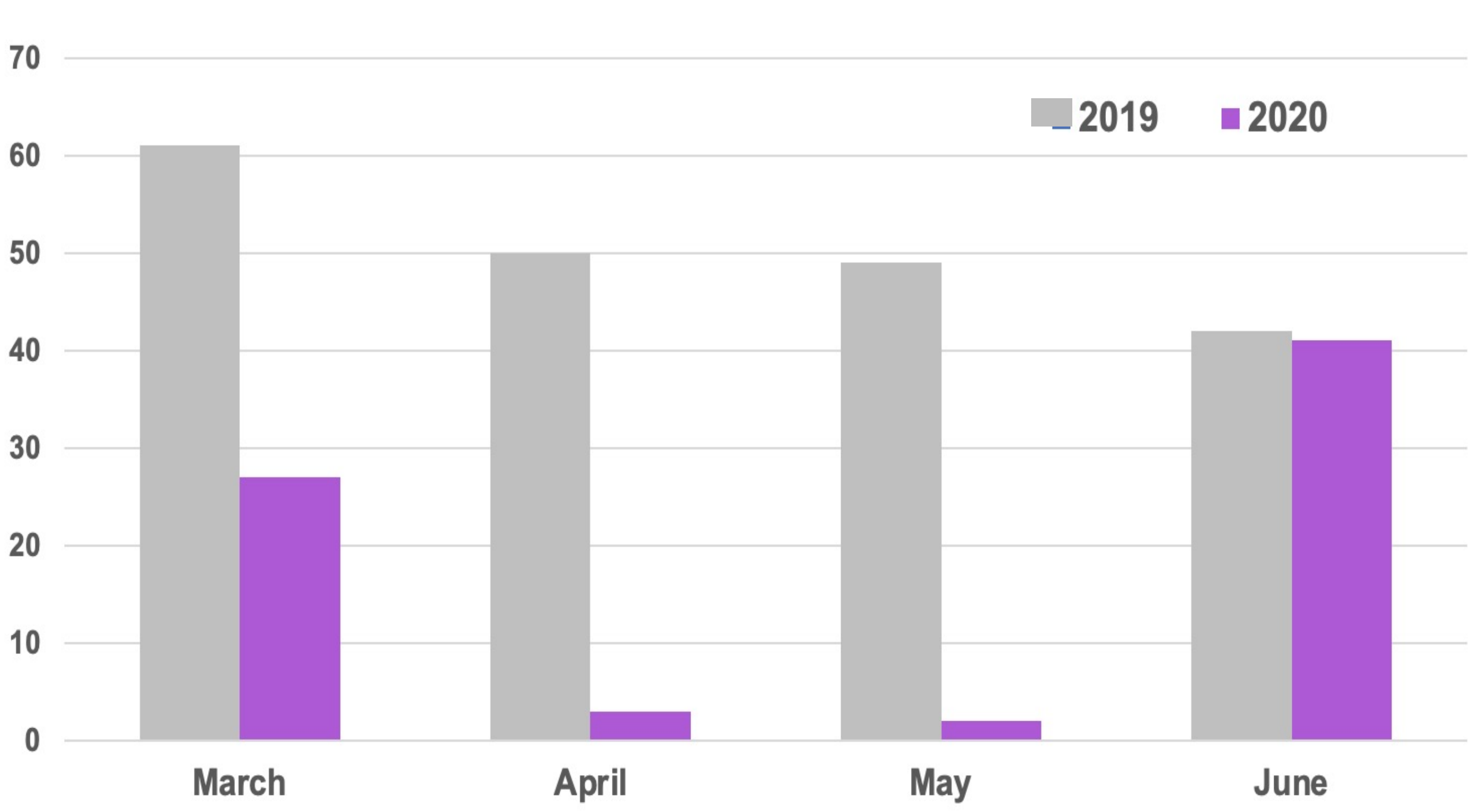


Figure 2: Procedure Completed at Emergency Visit

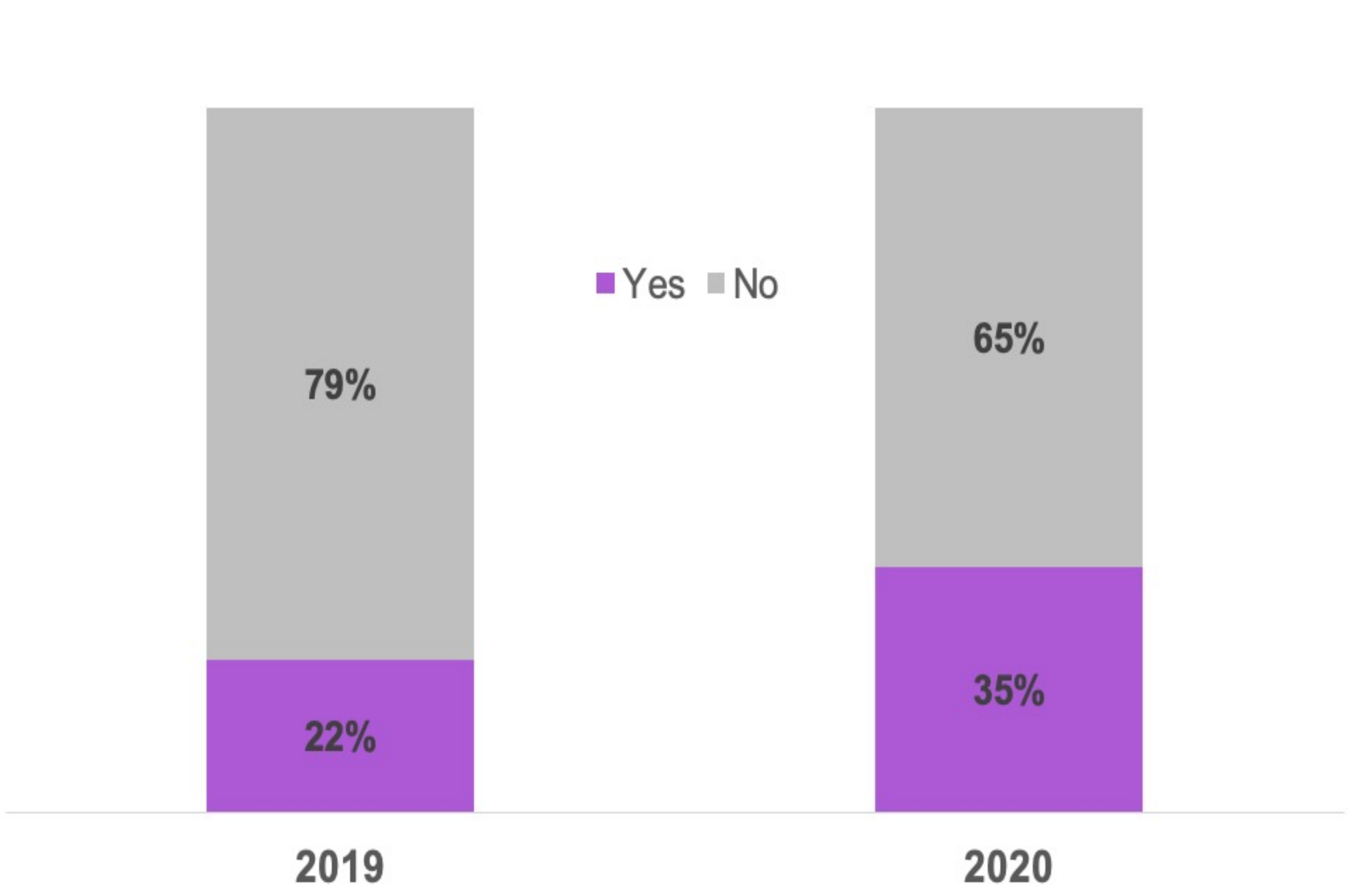


Figure 3: Follow-up Procedure Completed

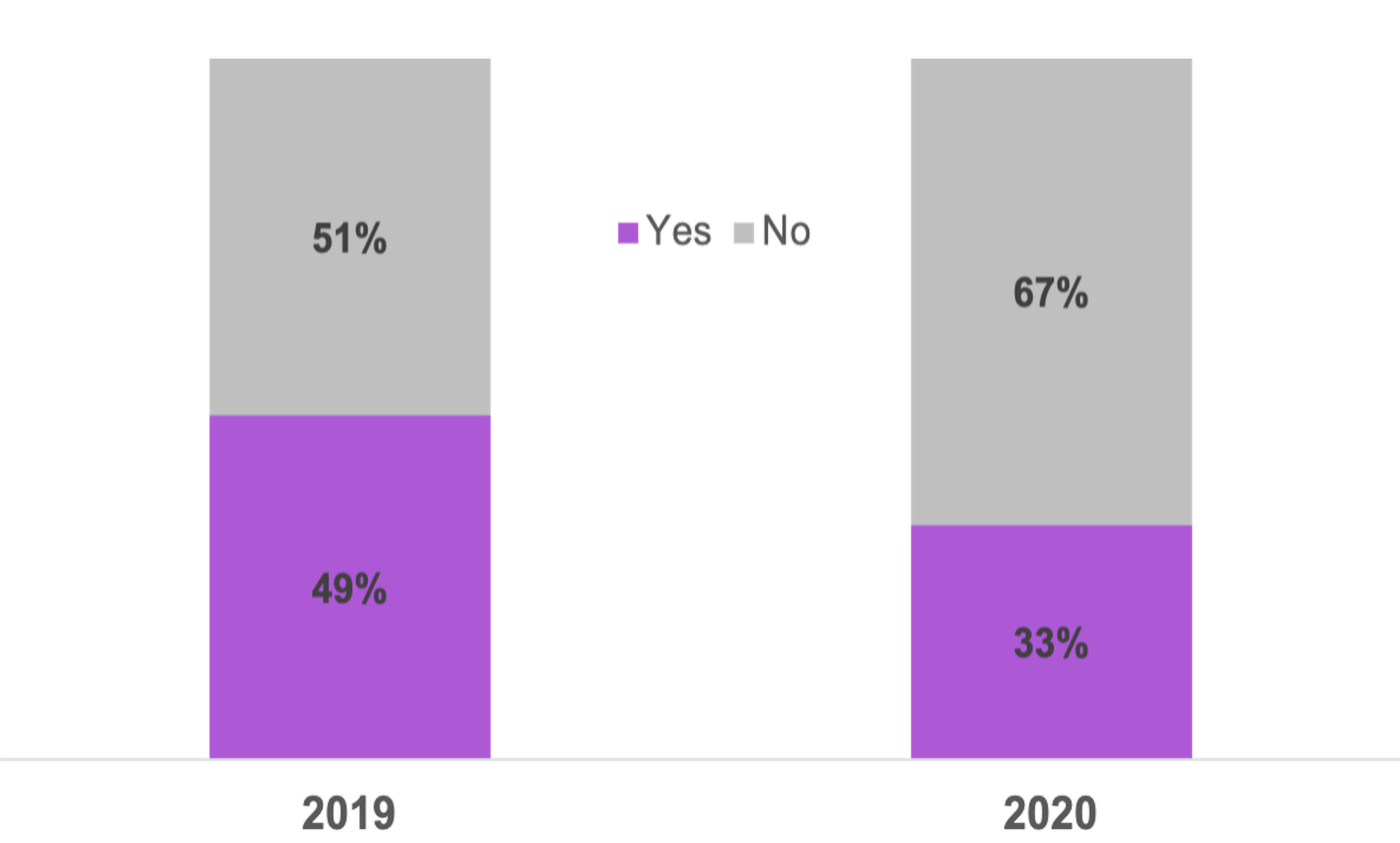


Table 1

	Cohort 2019 (N=43)	Cohort 2020 (N=25)
Restoration	13 (30.2%)	3 (12.0%)
Pulp Therapy	7 (16.3%)	5 (20.0%)
Surgical Management	20 (46.5%)	14 (56.0%)
Splints	2 (4.7%)	2 (8.0%)
Suture Placement/Removal	1 (2.3%)	1 (4.0%)

Discussion & Conclusion

This study showed a significant impact on emergency pediatric dental care in 2020 correlated with the COVID-19 pandemic. In 2019, the number of emergency patients seen in the clinic per month was consistent from March through June. In March 2020, there were about half of the number of emergency patients as were seen in March 2019. On March 16, 2020, the American Dental Association issued a statement urging dentists to postpone elective dental procedures and focus on emergency care to alleviate the burden of dental emergencies from hospital emergency departments. This began the shutdown that was in effect for the next 2.5 months. During April and May 2020, there was a stay-at-home order in place, and only 5 pediatric emergency patients presented to the clinic. On June 1, NY Governor Andrew Cuomo allowed dentists to resume practicing comprehensive care. In turn, June 2020 showed a sharp increase in patient volume to (41), nearly reaching the June 2019 level (42). A greater percentage of patients received a procedure at the emergency visit in 2020 than in 2019 (Figure 2), but unfortunately fewer patients returned for follow-up care (Figure 3). It was hypothesized that more antibiotics were prescribed in the 2020 cohort due to the need to defer certain definitive procedures. The results did show that a higher percentage of the 2020 patients were prescribed antibiotics at the emergency appointment than the 2019 patients, however that difference was not statistically significant. This was possibly due to the small sample size of the 2020 cohort. From the data collected, the most frequent emergency procedure category was surgical management, including extractions and incision and drainage. This is consistent with odontogenic infection being a common dental emergency, and the overall effort to reduce aerosol-generating procedures.³ Limitations of the study include a small sample size in the 2020 cohort due to the shutdown during these months. Additionally, only one pre-pandemic year (2019) was used as a control group, and the data was collected from a single hospital-based pediatric dental clinic. Future studies could include other clinics from varying geographic locations and practice types. Based on the results of this study, the following conclusions can be drawn:
1) The COVID-19 shutdown adversely impacted pediatric patients' dental care.
2) Patients both presented less frequently to the dental clinic for emergencies and followed up less for necessary definitive treatment in the 2020 time period than before the pandemic.

References

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