

# Early COVID-19 Pandemic Emergency Department Utilization for Pediatric Dental Emergencies

Daniel Walsh, DMD<sup>1</sup> ; Anne Reeves, DDS, MSD, MPH<sup>2</sup> Bryan Williams, DDS, MSD, MEd<sup>2</sup> Kristen Carlin, MPH<sup>3</sup>, Barbara Sheller, DDS, MSD<sup>2</sup>  
1. University of Washington, School of Dentistry, Department of Pediatric Dentistry 2. Seattle Children's Hospital, Department of Dentistry 3. Seattle Children's Hospital, Biostatistics Epidemiology and Analytics in Research

## Introduction & Purpose

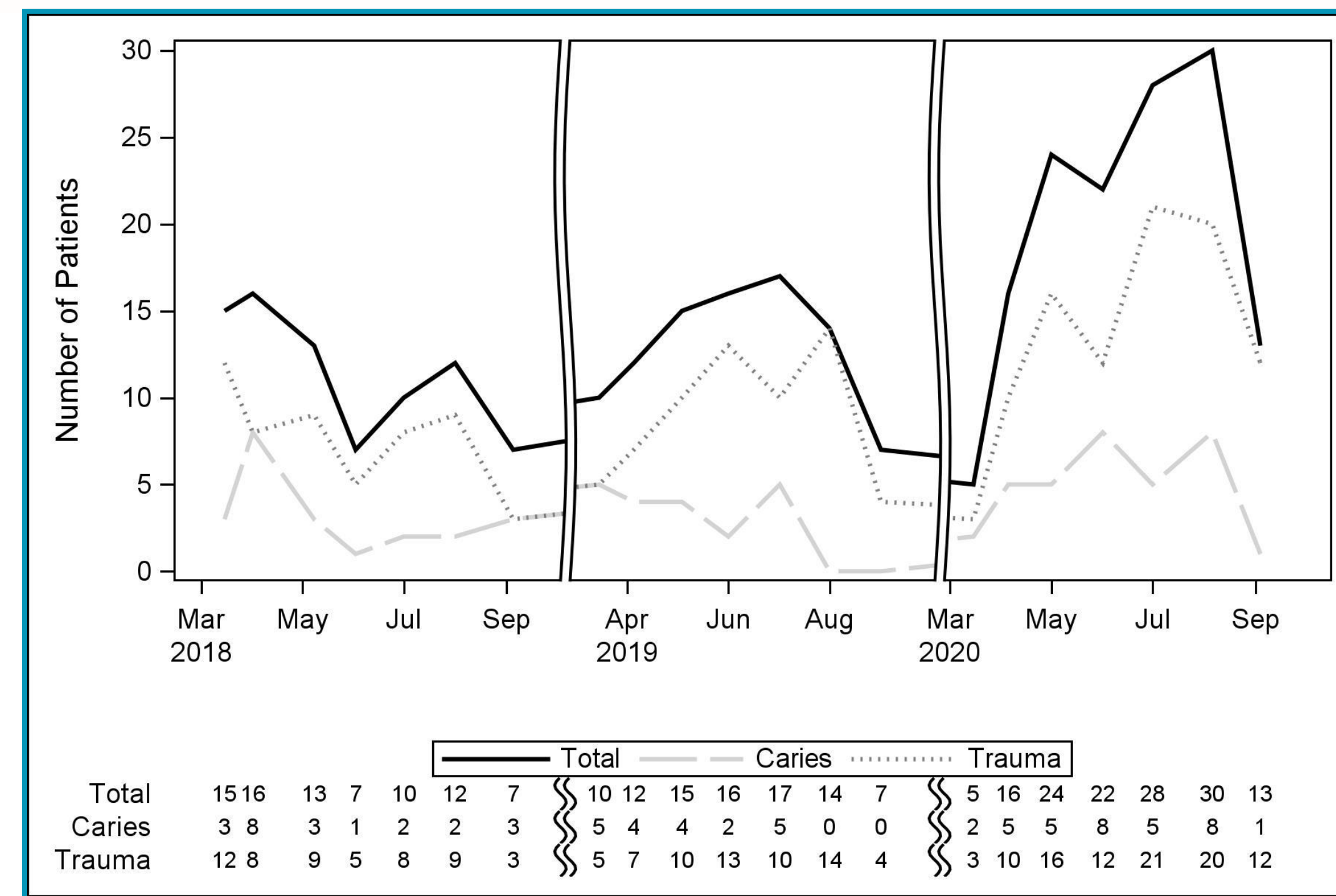
- Early in the COVID-19 pandemic, government-imposed restrictions on dental practices from mid-March to mid-May 2020 significantly curtailed community practice.
- Research focused upon the early pandemic reported substantial declines in emergency department (ED) utilization in areas where COVID-19 rates were higher, with pediatric visits showing the most substantial decrease.<sup>1</sup>
- Though the number of non-dental ED visits decreased, medical resource utilization during visits increased (e.g., laboratory testing, medical radiology, procedures, and medications).<sup>2</sup>
- The purpose was to explore the impact on ED utilization from patients presenting with dental emergencies to a pediatric hospital ED over six months of the pandemic including the periods of dental office closures, restrictions, and reopening.

## Methods

- Retrospective electronic health record review of patients presenting to the ED from March-September in 2018, 2019, and 2020.
- Analysis included patient volume, presentation time, demographics, emergency type and acuity, and treatment(s) provided in the ED.
- Poisson regression was used to compare the number of patient visits between 2018, 2019, and 2020. Descriptive statistics determined that 2018 and 2019 patients could be combined into a single control group.
- We compared study to control patients for: all visits; trauma visits; and caries visits.

## Results

Total Patient Visits by Year and Emergency Type



- 171 patients in 2018 and 2019 comprised the control group.
- 138 study patients in 2020.
- Emergency type was consistent between the study and control periods: trauma 68%, caries 25%, other 7%.

### Study Patients with Trauma:

- Increased utilization of medical diagnostic radiology (study 19.15%, controls 2.56%,  $p < 0.001$ ), lab tests (study 14.89%, controls 0.85%,  $P < 0.001$ ), procedures completed by medical team (study 20.21%, controls 8.55%,  $p = 0.014$ ), use of ketamine for procedural sedation (study 28.57%, controls 8.16%,  $p = 0.014$ ).

### Study Patients with Caries:

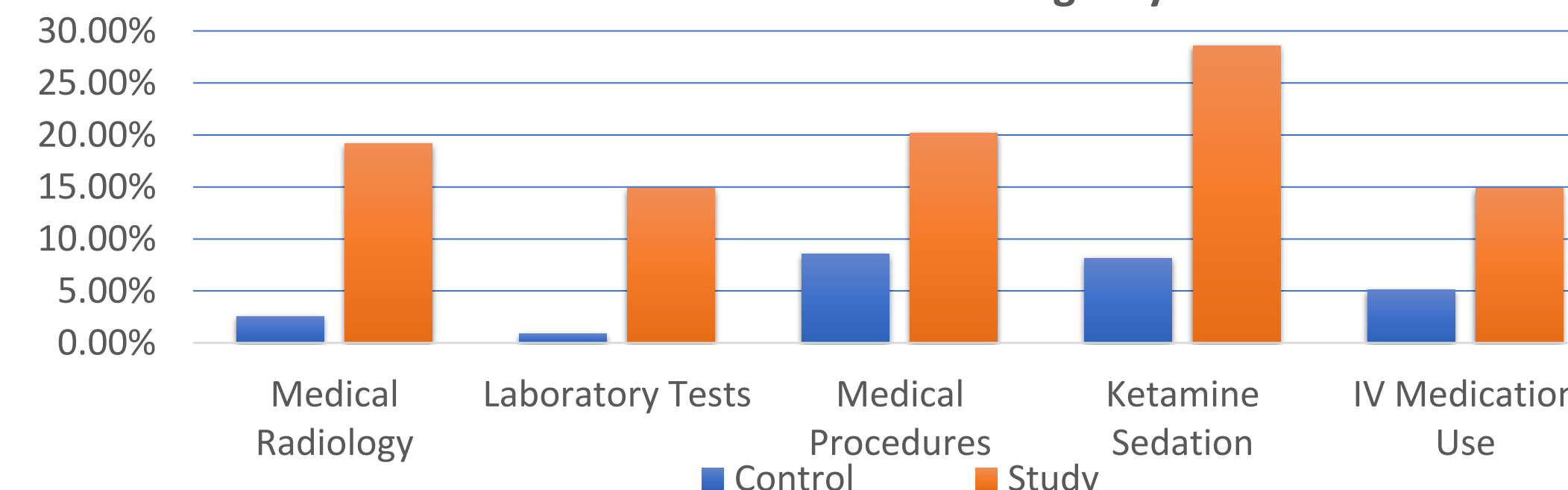
- More patients were children of color: study 69.7%, controls 36.84% ( $p = 0.006$ ).
- More came after hours: study 85.29%, controls 64.29% ( $p = 0.039$ ).
- Fewer patients sought care at another venue first ( $p < 0.001$ ).
- More children had procedural sedation: study 85.3%, controls 50% ( $p = 0.001$ ).
- More children had extractions: study 88.24%, controls 54.76% ( $p = 0.002$ ).

Patient Characteristics

	2018-2019		2020		p-Value
	n	%	n	%	
Type of Emergency					
Trauma	117	68.42	94	68.12	0.997*
Caries	42	24.56	34	24.64	
Other	12	7.02	10	7.25	
Age	171		138		0.164*
Mean	6.98		6.35		
SD	4.19		3.61		
Range	0.00-19.77		0.85-15.41		
Gender					
Male	105	61.4	80	57.97	0.541*
Female	66	38.6	58	42.03	
Race/Ethnicity					
White	98	62.42	68	52.31	0.084*
Person of Color	59	37.58	62	47.69	
Payor					
DSHS	85	49.71	63	45.65	0.668*
Private	81	47.37	69	50	
No Coverage	5	2.92	6	4.35	
Day & Time In					
8am-5pm Monday-Friday	26	15.2	15	10.87	0.264*
Off-Hours (Evening, Weekends, Holidays)	145	84.8	123	89.13	
Total Venues Before ED					0.106**
Median	0		0		
IQR	1		1		
Range	0-4		0-3		
Hours in ED	171		138		0.11**
Mean	4.09		4.37		
SD	1.5		1.49		
Range	0.80-10.10		1.40-9.60		
Dental Home					
CPD/OBCC/SCH	18	10.53	21	15.22	0.157*
Community Clinic	11	6.43	14	10.14	
Private Practice	116	67.84	74	53.62	
No current dentist	15	8.77	16	11.59	
First visit ever	11	6.43	13	9.42	

\*chi-squared \*\*t-test \*\*\*Wilcoxon rank sums

Medical Services Rendered to Emergency Dental Patients



## Conclusions

- ED dental patient volume increased during the early pandemic compared to identical time periods in the two years prior to the pandemic.
- Trauma patients received more medical/dental services in the study group, suggesting more severe trauma presentation and/or more definitive care rendered.
- More patients with caries came directly to the ED and more received sedation and extractions compared to identical time periods prior to the pandemic.
- The ED served as a safety net for patients experiencing dental emergencies during the early pandemic period of dental office restrictions. Data in this study suggest that certain disadvantaged groups may have been disproportionately affected by government mandated dental practice restrictions.

## References

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- Seattle Children's Hospital IRB #00006192

## Acknowledgements

- Dr. Bryan Williams Endowment for Pediatric Dental Medicine, Seattle Children's Hospital
- Seattle Children's Research Institute Research Integration Hub Core Services Support Fund Award ID *CR00006192*
- University of Washington School of Dentistry, Department of Pediatric Dentistry