

## BACKGROUND

Pediatric dental emergencies commonly present to the ED due to trauma or dental abscesses.

Trauma is usually related to accidents, while abscesses result from untreated caries and infection.

These conditions can cause significant pain and complications. However, ED management is often inconsistent due to limited dental training and a lack of standardized treatment protocols.

## PURPOSE

- To compare the two most common pediatric dental emergencies in the ED, traumatic dental injuries and dental abscesses, with respect to incidence, demographic characteristics, and management patterns.

## METHODS

- Retrospective chart review at Children's Hospital of Michigan of ED visits in 2022–2025
- Included 522 pediatric patients (0–18 years) presented to ED with dental trauma or abscess
- Variables included age, gender, temporal factors, injury type (fractures, luxations, avulsions), treatment (extraction, splint, liner, referral or monitor) and use of sedation
- Descriptive statistics, t-tests, and chi-square analysis ( $p < 0.05$ )

## RESULTS

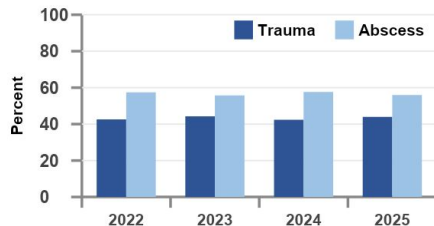
- Among pediatric ED dental visits, 56.7% were for dental abscess; 43.3% were for trauma (**Table 1**)
- Age and gender were not significant predictors of visit type, although males and children aged 6–12 years comprised the largest groups (**Table 1**)

## TABLES & FIGURES

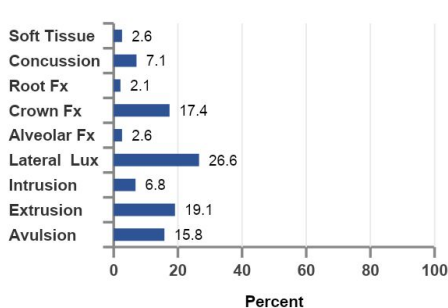
**Table 1. Demographic Characteristics, ( $p > 0.05$ )**

Variable	Trauma	Abscess
Visit Type (%)	43.3	56.7
Age (mean $\pm$ SD)	7.1 $\pm$ 4.3	6.9 $\pm$ 3.3
Age 1–5 yrs (%)	39.4	35.5
Age 6–12 yrs (%)	46.9	56.1
Age 13–18 yrs (%)	13.7	8.4
Male (%)	63	56.4

**Figure 1. Annual Trend: Trauma vs. Abscess ( $p < .001$ )**



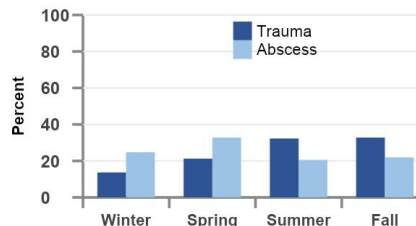
**Figure 3. Distribution of TDI Types**



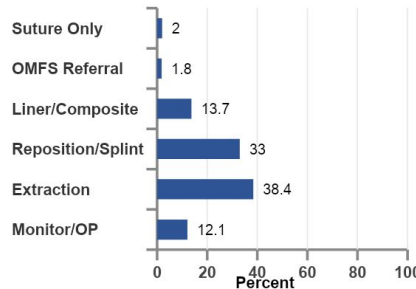
**Table 2. Sedation Type Distribution**

Sedation Type	Percent
IN Versed	8.3
IV Ketamine	79.2
GA (OR add on)	12.5

**Figure 2. Visit Type by Season, ( $p < .0001$ )**



**Figure 4. Trauma Treatment Modalities**



## RESULTS

- Significant seasonal variation ( $p < .0001$ ): trauma peaked in summer/fall, while abscess peaked in spring/winter (**Figure 2**)
- Trauma visits occurred more often on weekends; abscess visits had no consistent temporal pattern
- Most prevalent TDI were lateral luxation, extrusion, crown fracture, and avulsion (**Figure 3**)
- Extraction and repositioning/splinting were the primary TDI treatment modalities (**Figure 4**)
- Mean number teeth affected per TDI was 1.9  $\pm$  0.9
- One-third of trauma cases required sedation, IV ketamine was the most common agent (**Table 2**)

## LIMITATIONS & STRENGTHS

- Limitations:** Single hospital design limits generalizability; chart-based data may introduce bias due to incomplete documentation
- Strengths:** Large sample with multi-year review increases reliability and validity of comparisons

## CONCLUSION

- Pediatric dental ED visits are primarily driven by dental abscesses, while traumatic injuries show distinct seasonal patterns and higher acute management needs**
- Strengthening preventive dental care and targeted injury prevention strategies may reduce ED visits and improve pediatric oral health outcomes.**

## ACKNOWLEDGEMENT

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