

## Background

Oral health is profoundly influenced by the conditions in which individuals are born, grow, live, work, and age, as well as by the broader forces and systems that shape the environment of their daily lives (2).

The objective of this study was to investigate social barriers to care (SDOH) -- such as psychological health, developmental conditions, insurance type, and language barriers-- among subjects presenting to the emergency room department of an urban care center for non-traumatic dental emergencies (NTDE).

## Methods

### Study population:

A retrospective chart review was conducted on patients aged **0-21 years** who presented to the Boston Medical Center Pediatric Emergency Department for treatment of Non-Traumatic dental conditions between **January 1st, 2017** and **December 31st, 2021**. A total of **763 samples** were included

### Data Collection and Analysis:

- De-identified data was imported from Epic
- Data inclusive of **age, diagnosis at presentation** (dental abscess/ cellulitis), **presence of behavioural conditions, developmental disabilities, insurance carrier** and use of **interpreter services** at the time of the encounter
- Descriptive statistics were calculated to summarize the study population, with percentages used to report categorical variables. Bivariate associations between social determinants and clinical outcomes were assessed using chi-square ( $\chi^2$ ) tests.
- Multivariate logistic regression models were used to assess independent associations between predictor variables and outcomes. Two separate models were developed for abscess and cellulitis. Predictor variables included behavioral conditions, developmental disability, interpreter need, and public dental insurance. Odds ratios (ORs), 95% confidence intervals (CIs), and p-values were reported. Statistical significance was defined as  $p < 0.05$ .
- Statistical analysis was performed using SPSS.

## References

- Fisher-Owens, S. A., Gansky, S. A., Platt, L. J., Weintraub, J. A., Soobader, M. J., Bramlett, M. D., & Newacheck, P. W. (2007). **Influences on children’s oral health: A conceptual model**. *Pediatrics*, 120(3), e510–e520
- World Health Organization. (2008). **Closing the gap in a generation: Health equity through action on the social determinants of health**. *Final Report of the Commission on Social Determinants of Health*
- Nelson, L. P., Getzin, A., Graham, D., Zhou, J., Wagle, E. M., McQuiston, J., ... & Huntington, N. L. (2011). **Unmet dental needs and barriers to care for children with significant special health care needs**. *Pediatric Dentistry*, 33(1), 29–36

## Results

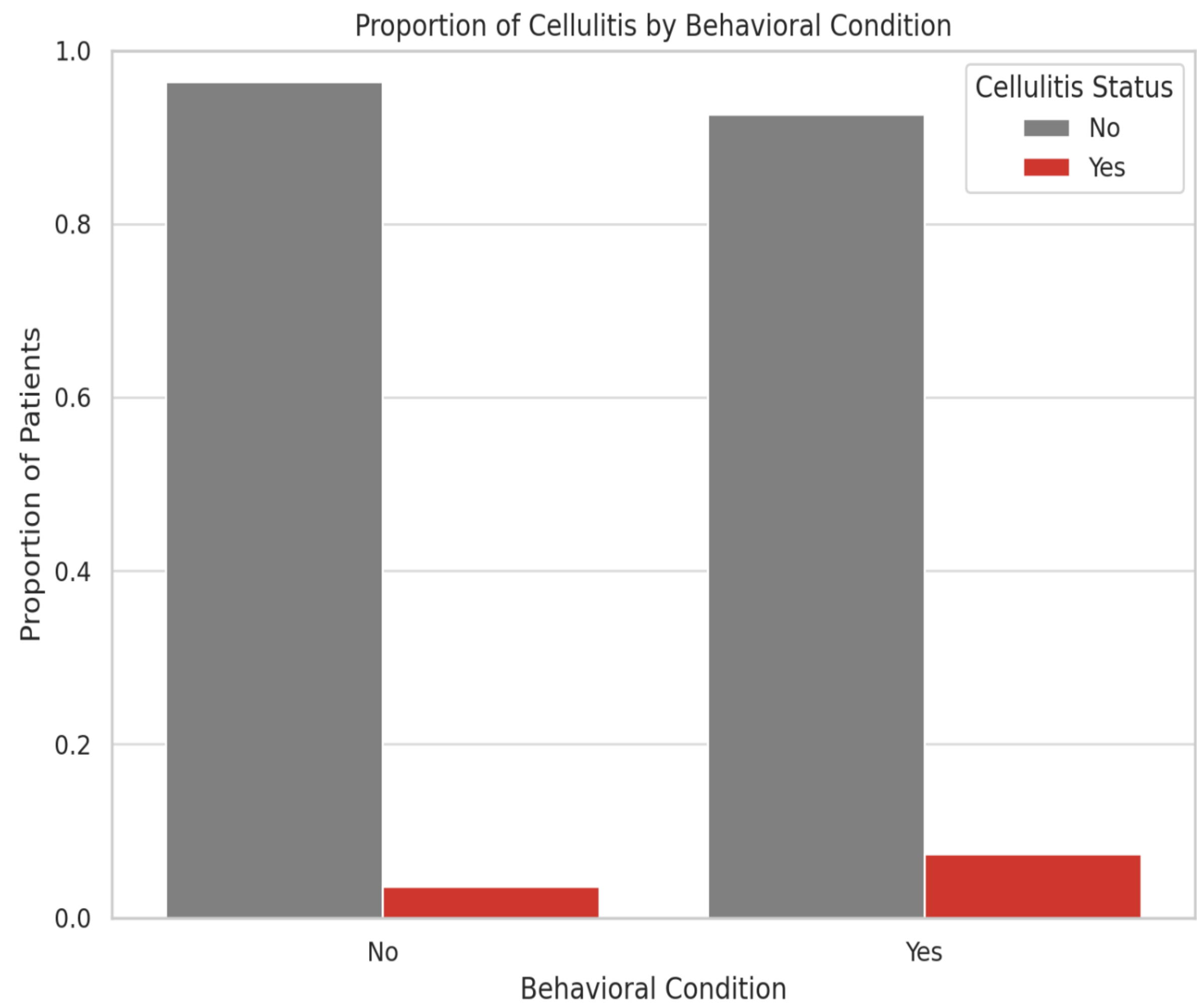
Of **977** a total of **763** patients met inclusion criteria

Chi Squared Analysis			
Significant associations were identified in the following:			
Association	X² Value	p-Value	Significant?
Behavioural Conditions x Cellulitis	6.62	0.037	Yes
Developmental Disability x Abscess	9.09	0.011	Yes
Developmental Disability x Public Insurance	11.27	0.0008	Yes
Public Insurance x Abscess	11.60	0.003	Yes

Significant Predictors of Cellulitis in Logistic Regression Model					
Outcome	Predictor Variable	Odds Ratio	p-Value	Interpretation	Significant?
Cellulitis	Behavioural Conditions	2.42	0.013	Increased odds of cellulitis	Yes

## Conclusions

- Key findings of this study revealed **meaningful relationships between SDOH and** clinical presentations
- Social factors such as insurance status, disability status, behavioural health conditions played a critical role in shaping pediatric oral health outcomes
- This data highlights the importance of **integrated care delivery models** that address both clinical needs and social context



**Table 1:** Proportion-based bar chart demonstrating the **percentage of patients with cellulitis** in each behavioral condition group

## Discussion

### **Public Insurance (PI) and socioeconomic disparities:**

- Nearly 4/5 patients presenting for NTDE had PI
- PI linked to higher rates of developmental disability and dental abscess, suggesting that children may face systemic barriers to early intervention and routine care

### **Behavioural and Developmental Health Conditions:**

- Children with Behavioural conditions were more likely to present with severe infections such as cellulitis, reflecting challenges in care coordination, communication, or tolerance to routine dental procedures
- Children with developmental disabilities may bace additional barriers in accessing preventative care