

# Efficacy of Pit-And-Fissure Sealants on Primary Molars

R. Smith DMD<sup>1</sup>, H. Roberts, PhD<sup>2</sup>, C. Koukol DDS<sup>1</sup>, S. Lowman, DDS, MPH<sup>1</sup>  
University of Nebraska Medical Center College of Dentistry/Department of Growth and Development<sup>1</sup>  
Munroe-Meyer Institute/University of Nebraska Medical Center<sup>2</sup>

## Introduction and Purpose

- Dental caries is the most common chronic disease of children in the U.S.
- Previous studies show that pit and fissure caries account for 44% of all carious lesions in primary teeth
- The AAPD advocates further research owing to insufficient data in support of sealants placed on primary teeth. It is our goal to improve the evidence of pit-and-fissure sealants on primary teeth in order to create a standard of care for their use on primary molars.

## Objectives

- Aim #1: To determine the incidence and cumulative prevalence of caries detected on previously sealed primary molars at a hospital-based pediatric dental residency program.
- Aim #2: To explore associations between caries and demographic characteristics of the population that received sealants on primary molars placed at a hospital-based pediatric dental residency program.

## Methods and Data Analysis

The study received Institutional Review Board (IRB) approval # 0826-21-EP

### Type of Study: Retrospective Chart Review

Using Eaglesoft (Version 20.10) a report was generated for Service Code 01351 (Sealant, per tooth)

The report was generated for teeth sealed in 2017 (01/01/2017 – 12/31/2017)

### Participants:

In this 2-year retrospective study, the authors reviewed dental records of 196 children (627 teeth) between 1 to 6 years of age.

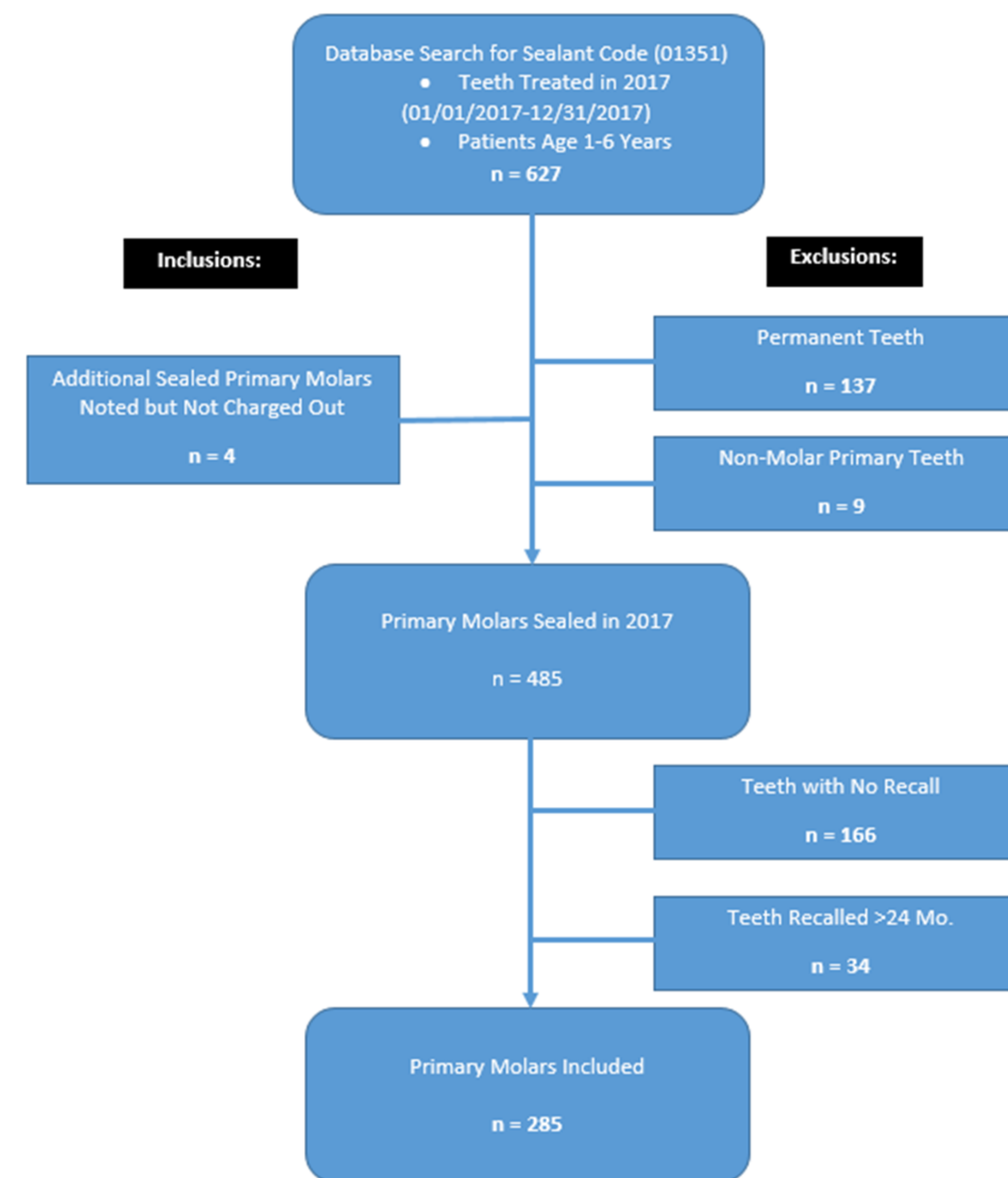
Sealant placement was done either in the operating room under general anesthesia and in the traditional clinic setting

### Data Analysis:

All data were collected and organized on Microsoft Excel

Calculations were completed with Statistical Package for the Social Sciences (SPSS) software and Microsoft Excel

## Flowchart: Inclusion / Exclusion Criteria

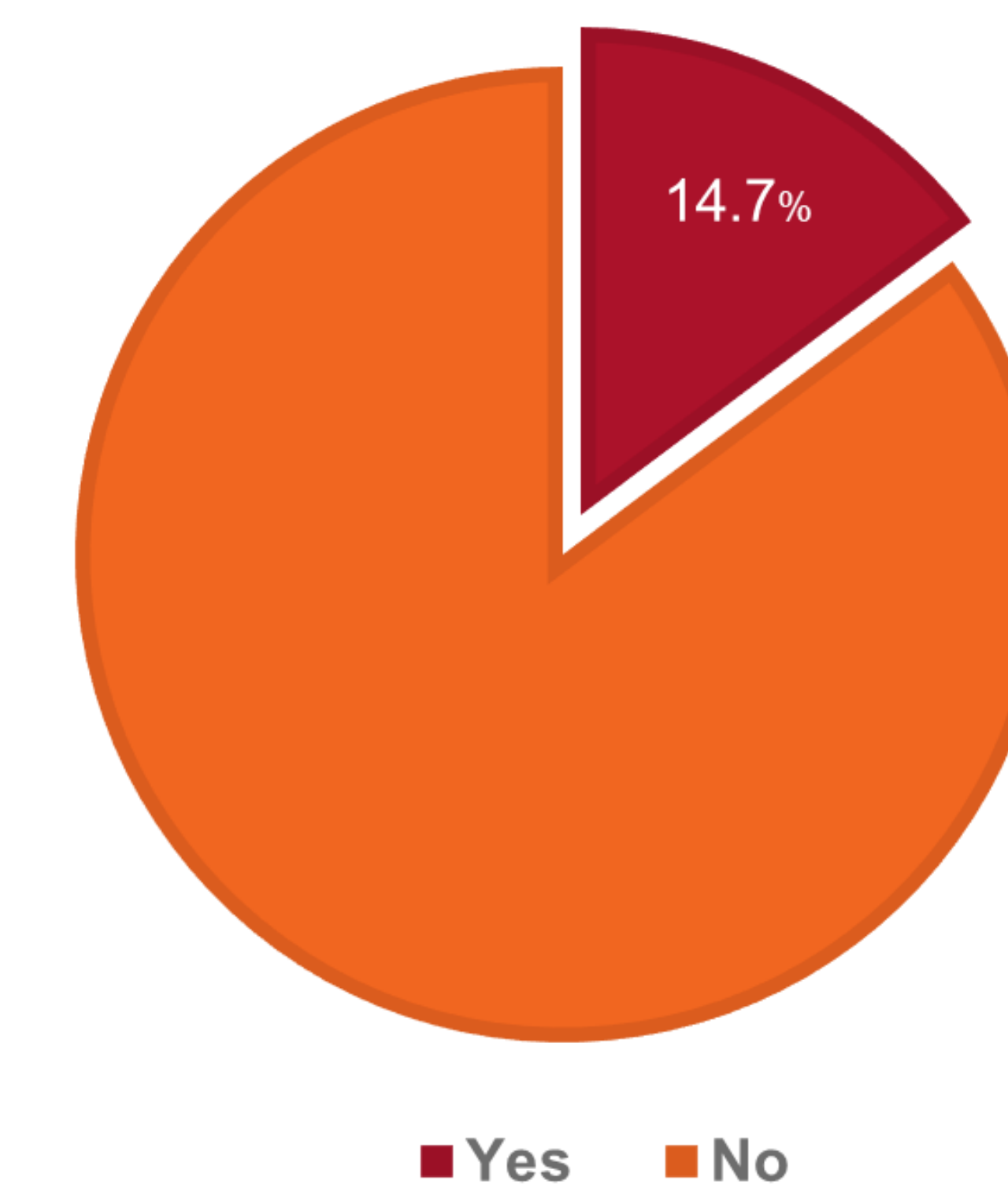


## Characteristics Sample

	Total Teeth (n=285)		Total Teeth (n=285)
<b>Gender</b>		<b>Tooth Number</b>	
Male	99 (34.7%)	A	47 (16.5%)
Female	186 (65.3%)	B	34 (11.9%)
<b>Age (Years)</b>		I	38 (13.3%)
1	2 (0.7%)	J	38 (13.3%)
2	60 (21.1%)	K	29 (10.2%)
3	91 (31.9%)	L	31 (10.9%)
4	89 (31.2%)	S	29 (10.2%)
5	38 (13.3%)	T	39 (13.7%)
6	5 (1.8%)	<b>Sealant Material</b>	
<b>Insurance</b>		Clinpro	225 (78.9%)
Medicaid	235 (82.5%)	Beautifil	53 (18.6%)
Private	37 (13.0%)	Filtek	4 (1.4%)
Uninsured	13 (4.6%)	Unknown	3 (1.1%)

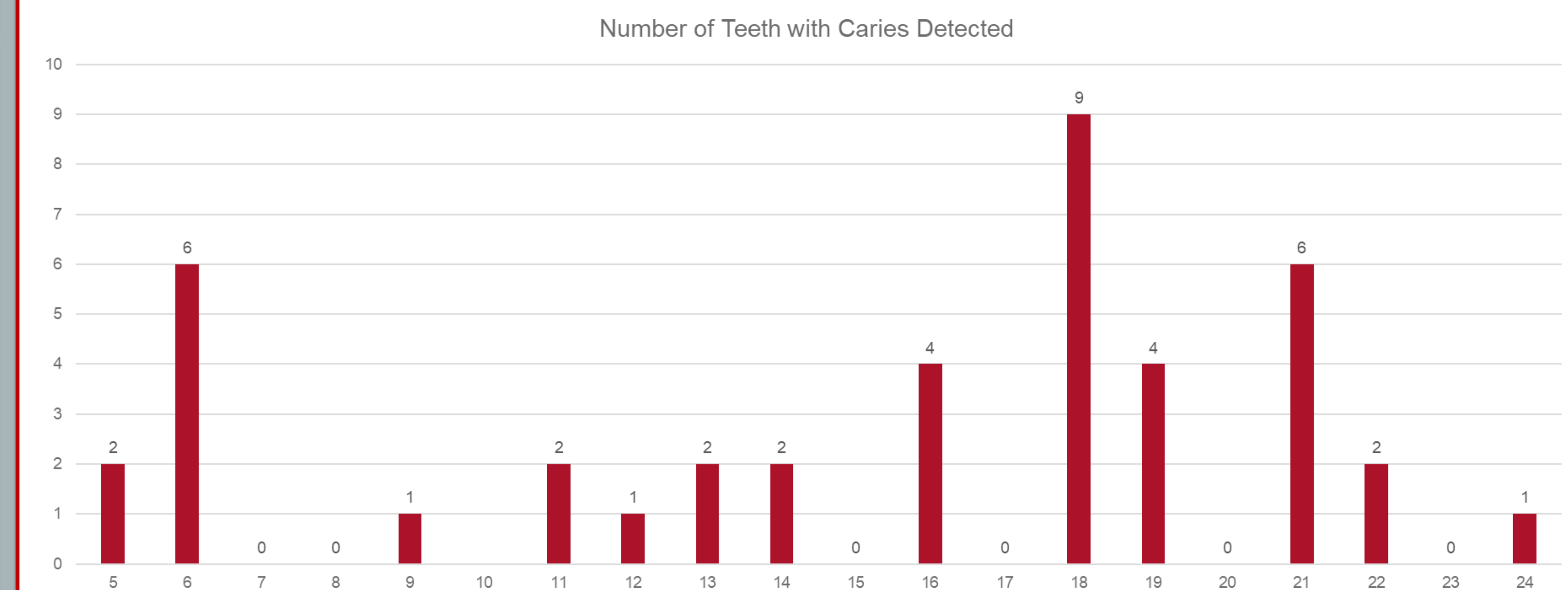
## Results

Occlusal Caries Detected  
(% of included primary molars)



- Out of 285 Included primary molars:
  - Occlusal Caries detected within 24 months
    - Yes:** 42 (14.7%) Teeth
    - No:** 243 (85.3%) Teeth
  - Treatment Setting:
    - OR:** 231 (81.1%) Teeth
    - Clinic:** 54 (18.9%) Teeth
  - Sealant Material
    - Clinpro:** 225 (78.9%) Teeth
    - Beautifil:** 53 (18.6%) Teeth

## Results and Discussion



- Out of 90 patients evaluated, 18 (20%) presented with occlusal caries within 24 months from sealant placement
- Out of 285 primary molars which received pit-and-fissure sealants, 42 teeth (14.7%) were observed to have occlusal caries within 24 months from sealant placement
- Pit-and-fissure sealants were effective in preventing occlusal caries in 85.3% of primary molars evaluated in this study
- No significant difference was found between caries detected and gender or tooth number
- Next Steps; additional analysis to examine correlations between caries by treatment setting (OR vs Clinic), Age, Material, Insurance Status

## Conclusions

- Placement of pit and fissure sealants reduces the percentage of incipient noncavitated carious lesions on primary molars
- Based on these findings, insurance companies should continue to reimburse for the use of pit-and-fissure-sealants on primary molars
- Limitations; This study did not have a comparison group. This author believes a split-mouth study would be a more effective study design. However, it does raise ethical issues to withhold potentially beneficial treatment

## Select References

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