



# Trends in Prefabricated Zirconia Crown Usage: A Dental Claims Review



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## BACKGROUND/PURPOSE

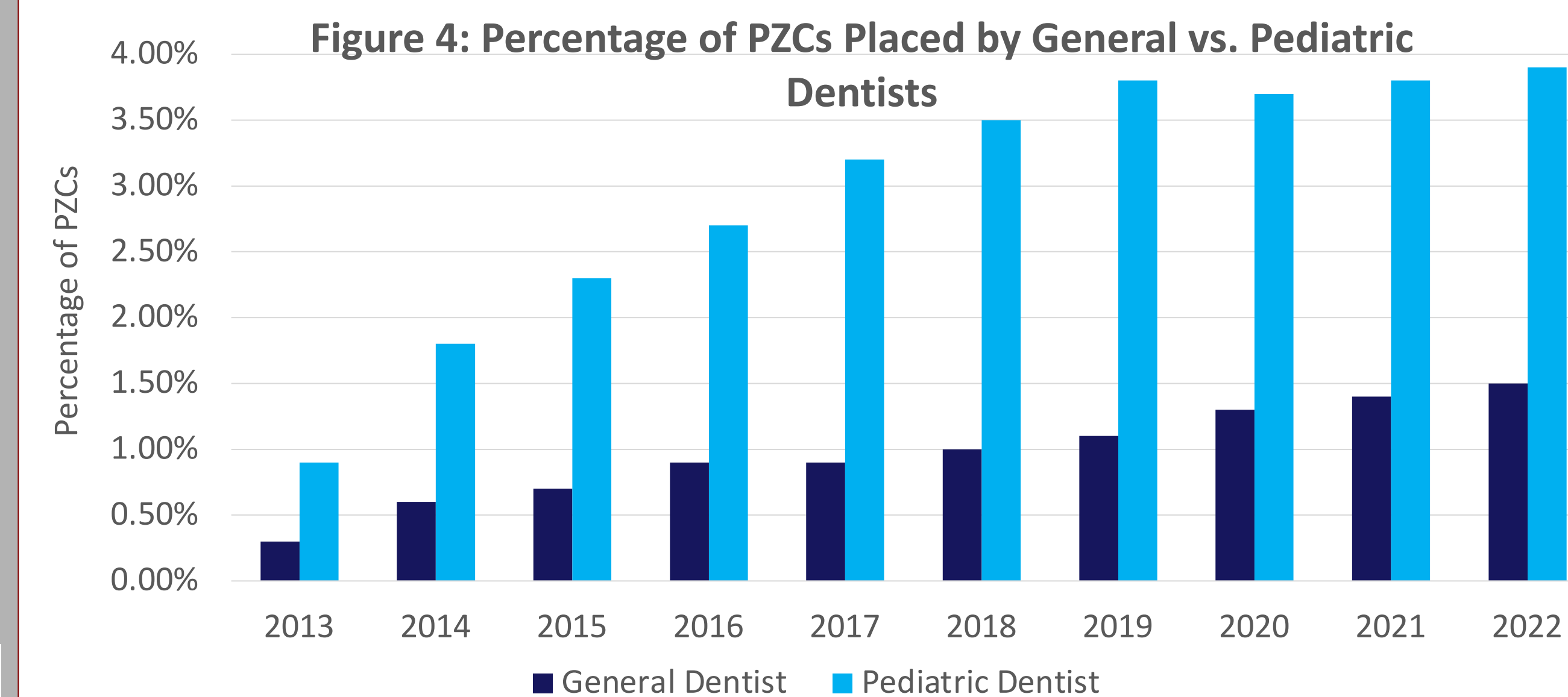
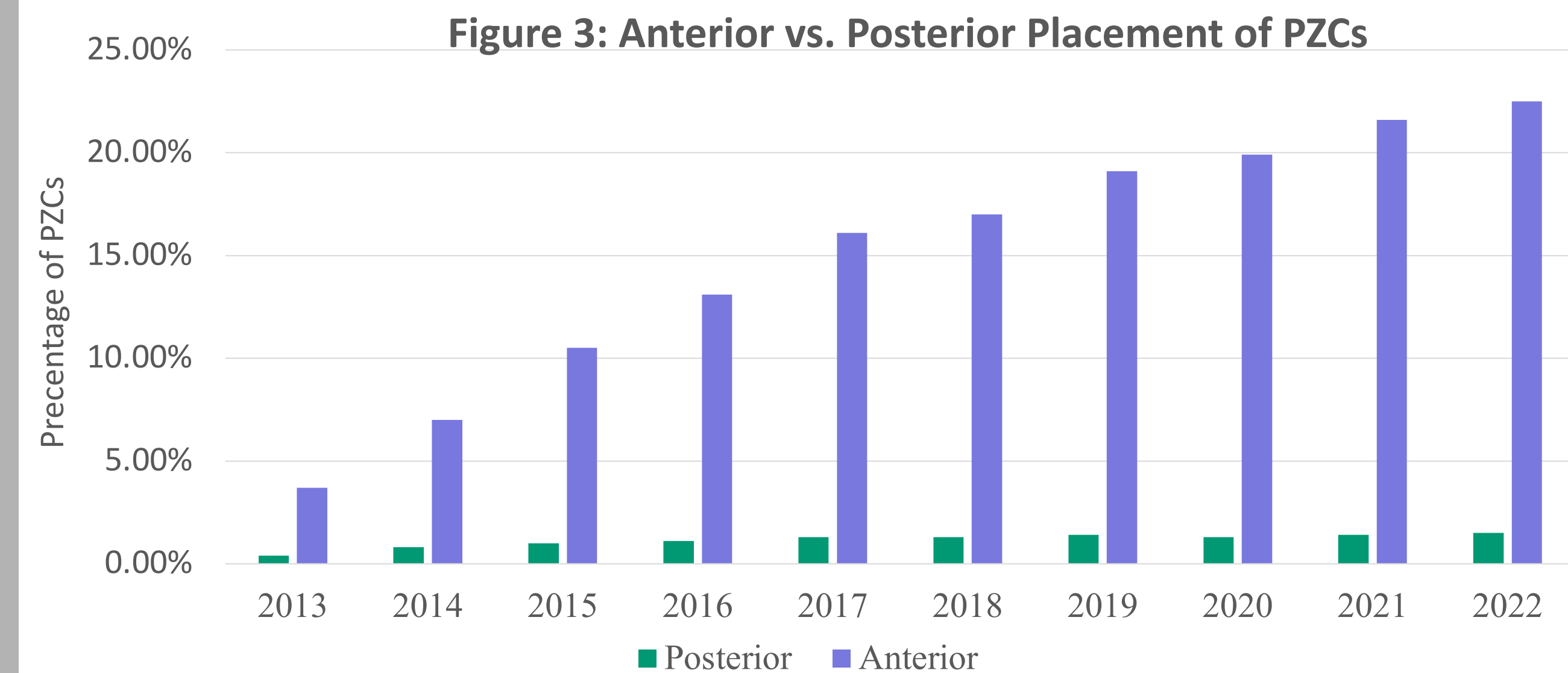
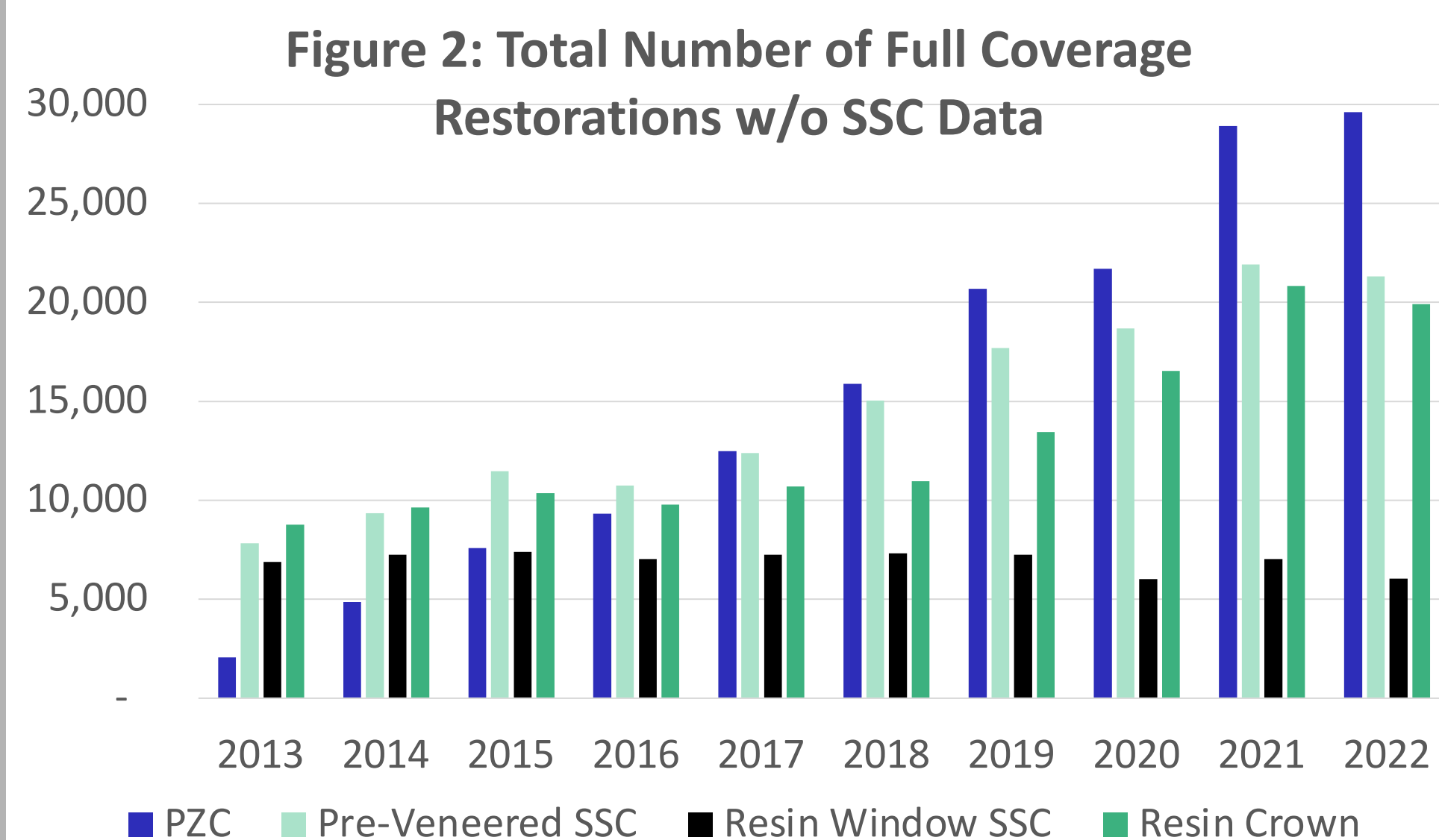
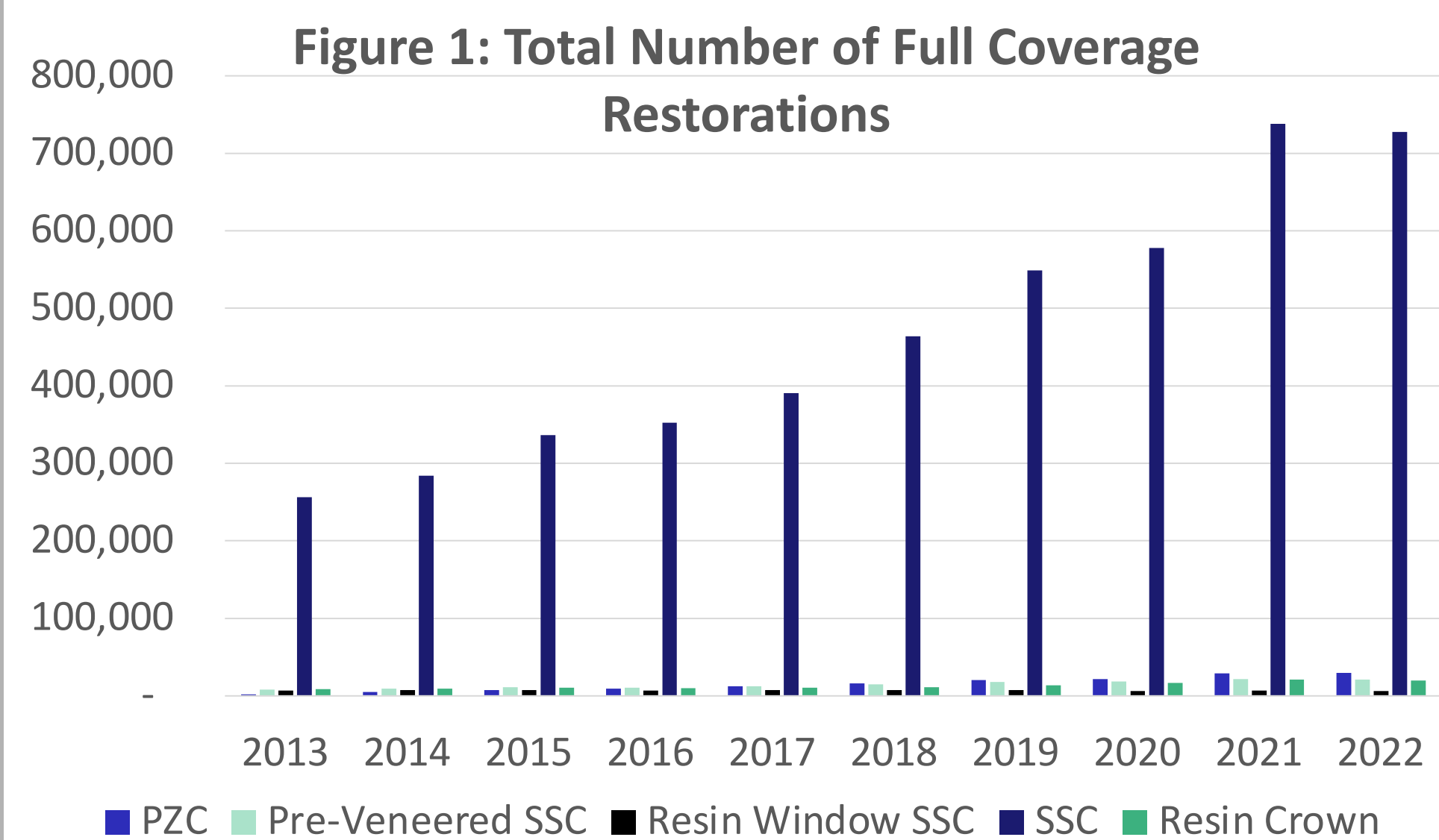
- Prefabricated, full coverage options are typical techniques used to restore large multi-surface caries in the primary dentition.<sup>1</sup>
- **Traditional, full coverage pediatric dental options**
  - Earliest solutions over 70 years old
  - Have esthetic and longevity concerns.<sup>2,3</sup>
- **Prefabricated zirconia crowns (PZC):**
  - Introduced in 2008<sup>4</sup>
  - Granted a Current Dental Terminology (CDT) code, D2929, in January 2013.<sup>4</sup>
- There are limited studies investigating the trends of prefabricated zirconia crowns usage as a full coverage option.
- **Purpose:** To investigate how prefabricated zirconia crowns (PZC) are being used in the United States.

## METHODS

- Nationwide commercial insurance data (Fluent™).
- **Retrospective cohort design**
- **Inclusion criteria:**
  - Primary teeth that received a full coverage restoration
    - Prefabricated zirconia crown (D2929), SSC (D2930), resin window SSC (D2933), preveneered SSC (D2934), or resin-based composite crown (D2390)
  - Restorations placed:
    - By either general dentist (GD) or pediatric dentist (PD)
    - In the United States
    - Between January 1<sup>st</sup>, 2013 to December 31<sup>st</sup>, 2022
    - Patients 18 years of age and below
- **Claims data collected:**
  - CDT Codes
  - Patient Age
  - Tooth Number
  - Treatment Dates
  - Provider Type (Pediatric or General Dentist)
- **Statistical analysis:**
  - Data was analyzed using Chi-square analysis and multinomial logistic regression.

## RESULTS

- 6.4 million full coverage restoration claims
- 74,000 pulpotomy/pulpectomy claims found to correlate the 6.4 million claims
- ~ 1% of the time a pulpal therapy is completed prior to full coverage restoration placement.
- PZCs were placed more by pediatric dentist and in the anterior region of the mouth
- In 2017 PZCs were the second most placed full coverage pediatric crown



## DISCUSSION/CONCLUSIONS

- Pulpal therapy was not routinely associated with full coverage restorations
- Pediatric dentists place more PZCs (and all other pediatric full coverage crowns) versus general dentists
- PZCs usage has increased every year since 2013 and is now the second most placed pediatric full coverage crown based of the data in this study
- Limitations are:
  - Medicaid insurance claims or self-pay patients not included database
  - Reason for the treatment of choice is not available in the dental claims for analysis

