Journal of Dental Science and Medicine

Article Open Access

## Variables

For each patient, the analytic data set contained the following information: unique identi cation number, dates of enrollment and disenrollment, dental insurance payer type information (the maximum amount contractually allowed and that an insurer will pay for the procedure or the amount paid by the insurer).

Children and adolescents aged 6 to 18 who had received root canal therapy on a permanent tooth were included in our study. e rst root canal treatment that was observed on a patient in the cohort for a speci c tooth is referred to as an "initial." e American Dental Association's codes: e endodontic treatment procedures that were up for analysis were identi ed using Current Dental Terminology15 (CDT). Additionally, an adverse event a er initial root canal therapy was identi ed using CDT codes. Nonsurgical endodontic retreatment, surgical endodontic retreatment or apicoectomy, or tooth extraction were all considered adverse events, which indicated that the initial root canal therapy was unsuccessful. e type of provider—individual providers or facilities—was identi ed using provider specialty codes. Individual suppliers included general (nonspecialist) dental specialists and expert dental specialists [5]. Endodontists, who are experts in the treatment of root canals, pediatric dentists, prosthodontists, periodontists, orthodontists, and oral surgeons were examples of dental specialists. For the purposes of the analyses, individual providers were divided into endodontists and other providers. Clinics, centers, and hospitals were the categories of facilities that included provider specialty codes.

## Data analysis

e nal data set included all patients who received initial root canal therapy duringhe study period and had complete payer-type data. At the tooth level, the results of the initial root canal treatment were measured. Patients were excluded from tooth-level analysis if they did not enroll in insurance within one year of receiving treatment or if their treatment records did not include the appropriate tooth number. 2 tests and t-tests were used to compare the characteristics of those included in the sample and those excluded due to missing tooth numbers to ensure external validity.

A er making adjustments for age, sex, tooth type (anterior, premolar, and molar), and provider type, the association between payer type and initial root canal therapy at the individual level was measured

disparate loss of cases may increase the likelihood of selection bias and limit its generalizability to all Massachusetts children and adolescents [9]. For the tooth-level analysis, we considered solutions to the missing tooth number problem, such as assuming that any subsequent adverse event procedure (such as extraction, endodontic retreatment, or apicoectomy) following the initial root canal therapy was a sign of procedural failure. However, tooth extraction was the most common adverse event observed, and the CDT15 code that identi es this procedure does not include tooth type (anterior, premolar, or molar), as is the case with endodontic treatments. As a result, we were unable to use this less conservative analytical approach in the end. ere was an excessive risk that a subsequent, unrelated tooth extraction might be incorrectly associated with the initial root canal therapy without the tooth number. One more element possibly restricting the generalizability of our discoveries is that we have included information from just 1 state, Massachusetts. However, our ndings for public-payer Medicaid and CHIP bene ciaries were comparable to those of a New York-based cohort of pediatric Medicaid recipients. A cohort of privately insured children has not yet been the subject of a comparable study, according to our knowledge. Second, as with all studies utilizing dental claims data, the nonclinical nature of the administrative data and the absence of diagnostic codes in dentistry prevented the initial diagnosis for the treated teeth from being established [10]. Because the endodontic diagnosis is known to be associated with the outcomes of endodontic treatment, this is especially relevant to our research. Despite these limitations, the ndings of our study shed light on the availability of dental care providers and treatment settings, as well as the prevalence of endodontic treatment, for children covered by public or private dental insurance in the Commonwealth of Massachusetts.

## Conclusion

In the state of Massachusetts, there are statistically signi cant di erences in the provision of endodontic treatment and its outcomes between children and adolescents covered by private insurance and those covered by public insurance. ose enrolled in private-payer dental insurance plans had better treatment outcomes, but public-payer bene ciaries were more likely to undergo root canal therapy. is realized disparity may be attributed to di erences in treatment settings, provider types, and payment amounts between public and private insurance.

## Acknowledgement

None

## Con ict of Interest

None

## References

1. Yu SM, Bellamy HA, Kogan MD, Dunbar JL, Schwalberg RH, et al. (2002) Factors that infuence receipt of recommended preventive pediatric health and dental care Pediatrics 110; e73.

2. Yu ZJ, Elyasi M, Amin M (2017) Associations among dental insurance, dental visits, and unmet needs of US children J Am Dent Assoc 148: 92-99.

3. Newacheck PW, Kim SE (2005) A national profle of health care utilization and expenditures for children with special health care needs. Arch Pediatr Adolesc Med 159: 10-7.

4. Eklund SA, Pittman JL, Clark SJ (2003) Michigan Medicaid's Healthy Kids Dental Program: an assessment of the frst 12 months. J Am Dent Assoc 134: 1509-1515.

5. Hom JM, Lee JY, Silverman J, Casamassimo PS (2013)