

# Longevity of restorative treatments in pediatric patients: EBD in the era of EHR

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Today at the 45th Annual Meeting & Exhibition of the American Association for Dental Research, researcher Natalia Chalmers, National Institutes of Health National Institute of Dental and Craniofacial Research (NIH/NIDCR), DentaQuest Institute, Bethesda, Md., USA, will present a study titled "Longevity of Restorative Treatments in Pediatric Patients: EBD in the Era of EHR." The AADR Annual Meeting is being held in conjunction with the 40th Annual Meeting of the Canadian Association for Dental Research.

The goal of this retrospective study was to evaluate the longevity of restorations in primary molars, based on dental claims data for children 0-14 years of age. Researchers identified specific factors (patient age at initial treatment, restoration size and restorative material) that significantly associated with restoration survival.

Dental treatment services claims for six consecutive years 2008-2013 were queried for treatments on primary molars. Treatments studied included sealants, amalgam (one- and two- surface) and composite (one-, and two-surface). Survival was calculated using the nonparametric Kaplan-Meier method for one or more groups of either complete or censored data. Log Rank and generalized Wilcoxon Chi-square statistics were used to test for homogeneity of the estimated survival function across groups.

Risk Ratio was calculated with the Cox proportional hazards model. Restorations included in the study were 35,126 resin-based composites

(two-surfaces, D2392); 16,530 resin-based composites (one-surface, D2391); 15,644 amalgam (two-surface D2150); 10,182 sealants (D1351) and 4,801 amalgams (one-surface, D2140). With up to six years of follow-up, the overall failure rates were 8.9 percent for sealants, 13.7 percent for one-surface composite, 14.5 percent for one-surface amalgam, 12.1 percent for two-surface composites and 13.1 percent for two-surface amalgam. Sealants in primary molars have better survival when placed in children under three years of age. One-surface composites have similar longevity to one-surface amalgam. Two-surface composites have similar longevity to two-surface amalgam with the exception of the first upper primary molar.

The results suggest that survival of dental [sealants](#) is related to patient age. Amalgam and composite restorations have similar survival characteristics, with some differences by tooth type. Future research will focus on developing an evidence-based, multifactorial predictive model for survival of restorative treatments in primary molars, incorporating provider, patient and restorations risk factors.

**More information:** This is a summary of oral presentation #0984, "Evidence-Practice Gap for Sealant Application: Results from a Dental PBRN," which will be presented on Friday, March 18, 2016, 11:15 a.m. - 11:30 a.m. at the Los Angeles Convention Center, room #406A.

Provided by International & American Associations for Dental Research

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