



Risk Assessment

Case Study

Case Study: Caries Risk Assessment – Improving Efficacy of a School Based Sealant Program in Massachusetts

This caries risk assessment was a sub-study of the Cambridge Public Health Department's Children's Dental Health Project. A dental caries risk assessment model was created identifying high risk children in 1st grade for sealant application to avoid carious lesions in the first permanent molars by 4th grade.¹ Participants were children in 1st grade in 1997-1998 and in 4th grade in 2000-2001 in public schools in Cambridge MA, a fluoridated city.

The Cambridge Public Health dentist and Harvard School of Dental Medicine 3rd year dental students conducted screening examinations of participants in 1st grade and again in 4th grade. Examiners recorded visually detectable dmfs and DMFS indices. Data on race/ethnicity, gender and language spoken at home were collected. Parents were notified if children had untreated dental disease and follow-up by a dental coordinator was conducted for those requiring immediate attention. A caries risk assessment model was created to identify high risk individuals who would benefit from sealant application. Furthermore a cost analysis was conducted to evaluate the potential cost to benefit ratio of applying sealant using various caries thresholds.

The program was fiscally supported by local and federal agencies, the Cambridge Public Health Department, Centers for Disease Control and Prevention and the Department of Health and Human Services. Furthermore, institutional support was provided by Harvard School of Dental Medicine through the implementation of community based learning incorporated into the pre-



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doctoral curriculum. Additionally, teachers, nurses and administrators provided crucial support for the success of the screening program within each school.

Using a threshold of dmfs +DMFS>0 (any dental caries history) in a simulation of 100 children, the authors found that 69.4% of dental caries in 4th grade could have been prevented and 44.5% of children who would not have developed decay, would have had sealants placed. The authors' cost analysis showed an overall savings of \$4,038.42 in program costs versus applying sealants to all 100 children irrespective of their dental caries risk profile.

More information regarding this caries risk assessment analysis can be obtained by contacting:

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References:

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