

The Oral Health of 6-9 Year Old American Indian and Alaska Native Children Compared to the General U.S. Population and Healthy People 2020 Targets

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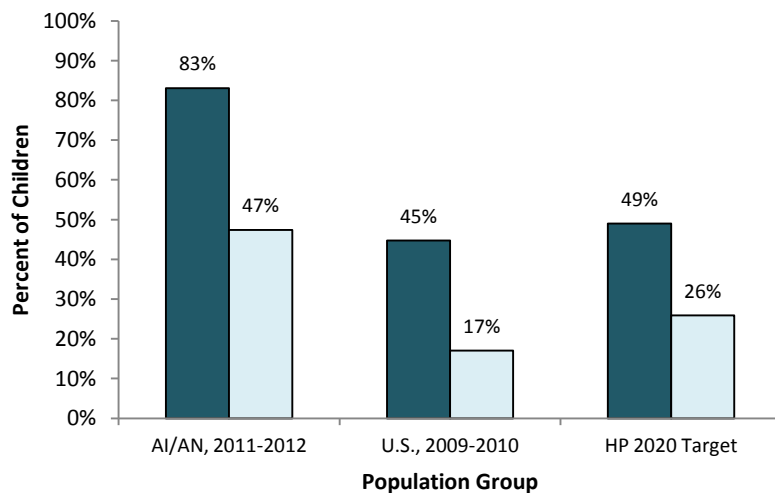
Data from the Indian Health Service Oral Health Survey of AI/AN Elementary School Children, 2011-2012

- Eight out of 10 (83%) AI/AN children between 6-9 years of age had a history of decay in their primary or permanent teeth, compared to 45% of children in the general U.S. population. The Healthy People (HP) 2020 target is 49%.
- Almost half of 6-9 year-old AI/AN children (47%) had untreated decay. This compares to 17% of 6-9 year-old children in the general U.S. population and a HP 2020 target of 26%.
- More than 4 out of 10 AI/AN children (42%) had at least one dental sealant on a permanent tooth; higher than the prevalence among the general U.S. population and higher than the HP 2020 target (32% and 28% respectively).

Good oral health is important to a child’s social, physical and mental development. Even though tooth decay can be prevented, most American Indian and Alaska Native (AI/AN) children still get cavities. To assess the current oral health status of AI/AN elementary school children, the Indian Health Service (IHS) coordinated a nationwide oral health survey of AI/AN children in kindergarten, first, second and third grade. A total of 15,611 AI/AN children were screened at 186 schools in 19 states during the 2011-2012 school year, of which 12,511 were 6-9 years of age. This is the largest number of 6-9 year olds ever screened by IHS and Tribal programs. The sampling frame for the survey consisted of all schools with Bureau of Indian Education (BIE) oversight as well as public and private schools where a large portion of the students are AI/AN. This data brief presents information on the prevalence of tooth decay in the primary and permanent teeth of AI/AN children 6-9 years of age compared to the general U.S. population and the targets for Healthy People 2020. It also describes the prevalence of dental sealants, a plastic-like coating applied to the chewing surfaces of children’s teeth to prevent tooth decay.

Prevalence of decay experience and untreated decay.

Figure 1. Prevalence of decay experience and untreated tooth decay in the primary and permanent teeth of AI/AN children compared to the general U.S. population and the Healthy People 2020 target, 6-9 years of age



■ Decay Experience □ Untreated Decay

Sources: The IHS 2011-2012 Oral Health Survey of AI/AN Elementary School Children
National Health and Nutrition Examination Survey (NHANES), 2009-2010



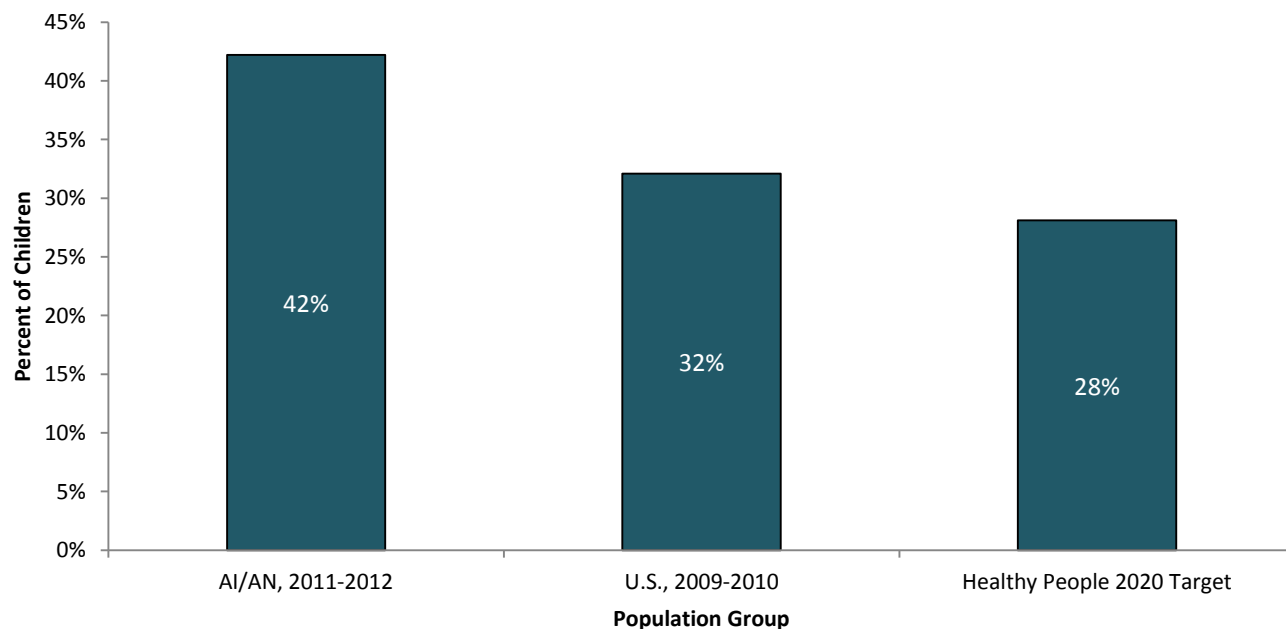
Decay experience means that a child has had tooth decay in the primary (baby) and/or permanent (adult) teeth in his or her lifetime. Decay experience can be past (fillings, crowns, or teeth that have been extracted because of decay) or present (untreated tooth decay or cavities). In 2011-2012, almost all (83%) of the AI/AN children between 6-9 years of age attending BIE or public and private schools where a large portion of the students are AI/AN had decay experience; compared to 45% of the general U.S. population of the same age (NHANES, 2009-2010). The Healthy People 2020 target for decay experience in 6-9 year olds is 49%.

Left untreated, tooth decay can have serious consequences, including needless pain and suffering, difficulty chewing (which compromises children’s nutrition and can slow their development), difficulty speaking and lost days in school. Almost half of 6-9 year-old AI/AN children (47%) had untreated decay. This compares to 17% of 6-9 year-old children in the general U.S. population of the same age (NHANES, 2009-2010) and a Healthy People 2020 target of 26%.

Prevalence of dental sealants.

Dental sealants are thin plastic coatings that are applied to the grooves on the chewing surfaces of the back teeth to protect them from tooth decay. Most tooth decay in children occurs on these surfaces. Sealants protect the chewing surfaces from tooth decay by keeping germs and food particles out of these grooves. About 42% of AI/AN children 6-9 years of age had at least one dental sealant; compared to 32% of the general U.S. population of the same age (NHANES, 2009-2010). The Healthy People 2020 target for dental sealants in 6-9 year olds is 28%.

Figure 2. Prevalence of dental sealants in the permanent teeth of AI/AN children compared to the general U.S. population and the Healthy People 2020 target, 6-9 years of age



Sources: The IHS 2011-2012 Oral Health Survey of AI/AN Elementary School Children
National Health and Nutrition Examination Survey (NHANES), 2009-2010

Data source and methods.

In 2010, the IHS implemented an oral health surveillance system that to date has collected oral health status data for preschool and elementary school children. This data brief is based on data from the 2011-2012 IHS oral health surveillance survey of AI/AN children in kindergarten, first, second and third grade (K-3rd). Data from the National Center for Education Statistics (www.nces.ed.gov) were used to develop the sampling frame for the survey. All schools overseen by the Bureau of Indian Education (BIE) plus public and private schools where at least 50% of the enrolled children were AI/AN ($\geq 40\%$ for schools in the California and Oklahoma City Areas) were included in the sampling frame; representing approximately 34% of all AI/AN children in BIE, public and private schools. The sampling frame was stratified by IHS Area and schools were sorted within each Area based on type (BIE, public, private) and/or state. A total of 241 schools in 21 states were selected of which 186 in 19 states participated (school participation rate=76%, school and child participation rate=54%).

The following information was collected for each child: grade, age, sex, tooth specific caries and sealant status plus treatment urgency. We used the *Basic Screening Survey* clinical indicator definitions and data collection protocols.¹ Race was recorded as AI/AN or other. Only children classified as AI/AN were included in the analyses.

Examiners included dentists, dental hygienists and dental therapists employed by IHS or tribal programs. Examiners were required to view an examiner training webinar; no formal calibration was undertaken and examiner reliability was not assessed. Screenings were completed in schools using dental mirrors and an external light source. Examiners collected data using paper forms which were mailed to a central location. All statistical analyses were performed with SAS software (Version 9.3; SAS Institute Inc., Cary, NC). Sample weights were used to produce population estimates based on selection probabilities. It should be noted that the survey design was based on grade rather than age, therefore, children between 6-9 years of age in the participating schools were not screened if they were in grades other than K-3rd. Because 9 year olds may be in 4th grade, the survey underrepresented 9 year old children.

Definitions.

Untreated decay: Describes dental cavities or tooth decay that have not received appropriate treatment.

Decay experience: Refers to having untreated decay or a dental filling, crown, or other type of restorative dental material. Also includes teeth that were extracted because of tooth decay.

Dental sealants: Describes plastic-like coatings applied to the chewing surfaces of back teeth. The applied sealant resin bonds into the grooves of teeth to form a protective physical barrier.

About the authors.

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¹ Association of State and Territorial Dental Directors. Basic screening surveys: an approach to monitoring community oral health. (WWW document). URL: <http://www.astdd.org/basic-screening-survey-tool/> (accessed on August 1, 2011).

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Data tables.

Table 1. Number and percent of 6-9 year old AI/AN children screened by selected characteristics, 2011-2012

	Number	Percent
Age		
6 years	3,586	28.7
7 years	3,703	29.6
8 years	3,562	28.5
9 years	1,660	13.3
Sex		
Female	6,175	49.4
Male	6,200	49.6
Unknown	136	1.1

Table 2. Prevalence of decay experience and untreated tooth decay in the primary and permanent teeth and prevalence of dental sealants on permanent teeth among AI/AN children aged 6-9 years, 2011-2012

	Percent	95% Confidence Interval	
Decay experience (%)	83.1	81.0	85.1
Untreated decay (%)	47.4	43.4	51.4
Dental sealants on permanent teeth (%)	42.1	36.7	47.5

Suggested citation.

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