

The Oral Health of 13-15 Year Old American Indian and Alaska Native Children Compared to the General U.S. Population and Healthy People 2020 Targets

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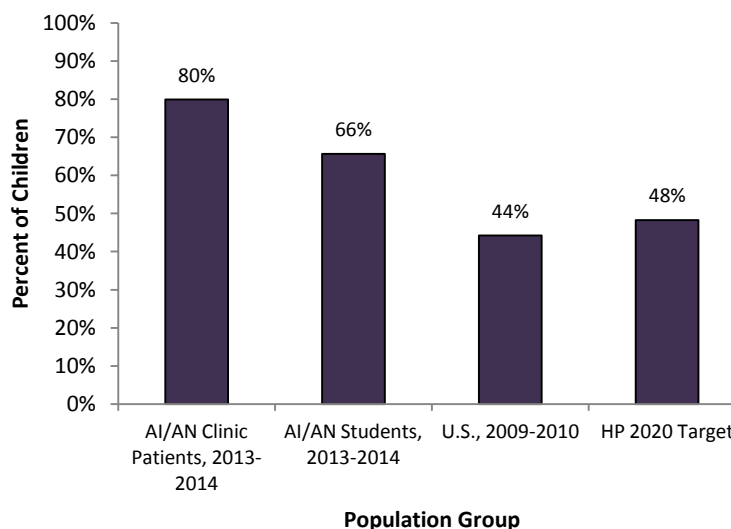
Data from the Indian Health Service Oral Health Survey of AI/AN Adolescents Aged 13-15 Years, 2013-2014

- Eight out of 10 AI/AN dental clinic patients (80%) and two out of 3 AI/AN students (66%) between 13-15 years of age had a history of decay in their permanent teeth, compared to 44% of adolescents in the general U.S. population. The Healthy People (HP) 2020 target is 48%.
- Over half of 13-15 year-old AI/AN dental clinic patients (53%) had untreated decay while 38% of the AI/AN students had untreated decay. This compares to 11% of 13-15 year-olds in the general U.S. population and a HP 2020 target of 15%.
- More than 6 out of 10 AI/AN dental clinic patients and students aged 13-15 years (66% and 62% respectively) had at least one dental sealant on a permanent molar; higher than the prevalence among the general U.S. population and higher than the HP 2020 target (51% and 22% respectively).

Good oral health is important to an adolescent’s social, physical and mental health. Even though tooth decay can be prevented, most American Indian and Alaska Native (AI/AN) adolescents still get cavities. To assess the oral health status of AI/AN adolescents aged 13-15 years, the Indian Health Service (IHS) coordinated a nationwide oral health survey of AI/AN dental clinic patients and AI/AN students in 7th, 8th and 9th grade. A probability sample of IHS Service Units was selected and dental clinics within each service unit were asked to participate. All Service Units screened dental clinic patients while screening students at local schools was voluntary. A total of 2,033 AI/AN dental clinic patients and 1,897 AI/AN students aged 13-15 years were screened. This is the largest number of 13-15 year olds ever screened by IHS and Tribal programs. This data brief presents information on the prevalence of tooth decay in the permanent teeth of AI/AN children 13-15 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

Figure 1. Prevalence of decay experience in the permanent teeth of AI/AN dental clinic patients and students compared to the general U.S. population and the Healthy People 2020 target, 13-15 years of age.



Data Sources: The IHS 2013-2014 Oral Health Survey of AI/AN Adolescents
National Health and Nutrition Examination Survey (NHANES), 2009-2010

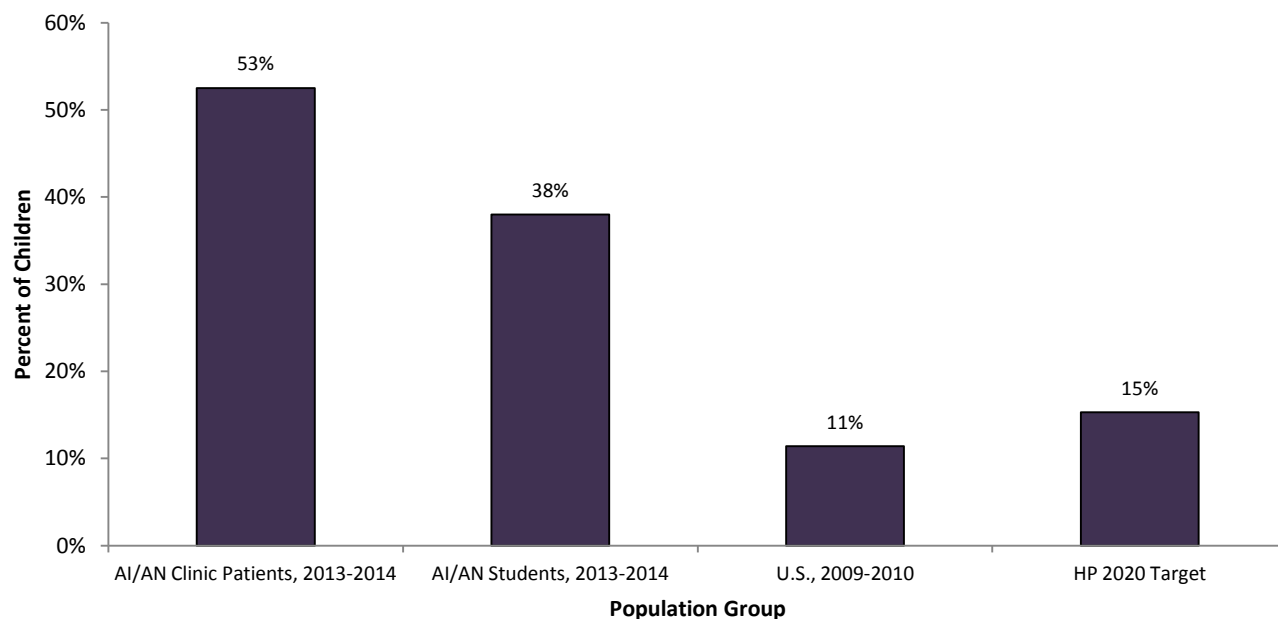


Decay experience means that a child has had tooth decay in their permanent (adult) teeth in his or her lifetime. Decay experience can be past (fillings, crowns, or teeth that have been extracted because of decay) or present (untreated tooth decay or cavities). In 2013-2014, almost all of the AI/AN dental clinic patients (80%) between 13-15 years of age had decay experience while two out of three AI/AN students (66%) had decay experience; compared to 44% of the general U.S. population of the same age (NHANES, 2009-2010). The Healthy People 2020 target for decay experience in 13-15 year olds is 48%.

Prevalence of untreated decay

Left untreated, tooth decay can have serious consequences, including needless pain and suffering, difficulty chewing, difficulty speaking, low self-esteem, and lost days in school. Over half of 13-15 year-old AI/AN dental clinic patients (53%) had untreated decay while 38% of the 13-15 year old AI/AN students had untreated decay. This compares to 11% of 13-15 year-old children in the general U.S. population (NHANES, 2009-2010) and a Healthy People 2020 target of 15%.

Figure 2. Prevalence of untreated decay in the permanent teeth of AI/AN dental clinic patients and students compared to the general U.S. population and the Healthy People 2020 target, 13-15 years of age.

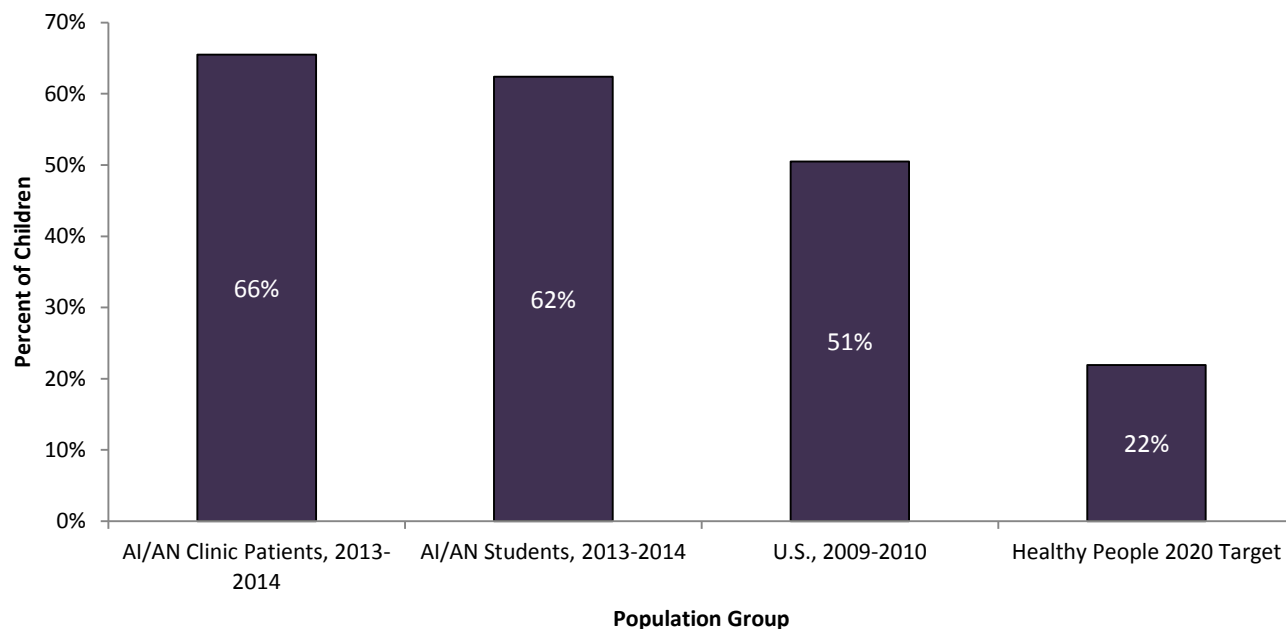


Data Sources: The IHS 2013-2014 Oral Health Survey of AI/AN Adolescents
National Health and Nutrition Examination Survey (NHANES), 2009-2010

Prevalence of dental sealants.

Dental sealants are thin plastic coatings that are applied to the grooves on the chewing surfaces of the back teeth (molars) 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 66% of AI/AN dental clinic patients and 62% of AI/AN students aged 13-15 years had at least one dental sealant on a permanent molar; compared to 51% of the general U.S. population of the same age (NHANES, 2009-2010). The Healthy People 2020 target for dental sealants 13-15 year olds is 22%.

Figure 3. Prevalence of dental sealants in the permanent molars of AI/AN children compared to the general U.S. population and the Healthy People 2020 target, 13-15 years of age



Data Sources: The IHS 2013-2014 Oral Health Survey of AI/AN Adolescents
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 children, elementary school children and adolescents. This data brief is based on data from the 2013-2014 IHS oral health surveillance survey of AI/AN adolescents aged 13-15 years. The sampling frame for the survey consisted of all IHS service units. The sampling frame was stratified by Area, and service units were sorted within each Area based on operational status (Tribal or IHS) and/or state. A systematic probability proportional to size sampling scheme was used to select 55 service units. The selected service units were asked to screen all 13-15 year olds presenting at the dental clinic between August 2013 and February 2014. Service units were given the option to also screen students in 7th, 8th and 9th grade. For a variety of reasons, not all service units participated. Dental clinic patients were screened at 46 service units while 31 service units screened students in 7th-9th grade.

The following information was collected for each child: 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, not AI/AN or unknown. Only children classified as AI/AN were included in the analyses.

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 July 15, 2013).

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. 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. Only adolescents presenting at a Tribal/IHS dental clinic and adolescents attending a school near a Tribal/IHS dental clinic were screened. Because of this the survey is not representative of all AI/AN adolescents.

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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Data tables.

Table 1. Number and percent of 13-15 year old AI/AN adolescents screened by screening site and selected characteristics (unweighted), 2013-2014

Characteristic	Dental Clinic Patients		Students	
	Number	Percent	Number	Percent
Age				
13 years	775	38.1	880	46.4
14 years	609	30.0	661	34.8
15 years	649	31.9	356	18.8
Sex				
Female	1,061	52.2	908	47.9
Male	943	46.4	952	50.2
Unknown	29	1.4	37	1.9

Table 2. Prevalence of decay experience and untreated tooth decay in the permanent teeth and prevalence of dental sealants on permanent molars among AI/AN *dental clinic patients* aged 13-15 years, 2011-2012

	Percent	95% Confidence Interval	
Decay experience (%)	79.9	76.0	83.7
Untreated decay (%)	52.5	46.3	58.7
Dental sealants on permanent molars (%)	65.5	61.6	69.3

Table 3. Prevalence of decay experience and untreated tooth decay in the permanent teeth and prevalence of dental sealants on permanent molars among AI/AN *students* aged 13-15 years, 2011-2012

	Percent	95% Confidence Interval	
Decay experience (%)	65.6	58.0	73.1
Untreated decay (%)	38.1	28.7	47.5
Dental sealants on permanent molars (%)	62.4	50.5	74.4

Table 4. Prevalence of decay experience and untreated tooth decay in the permanent teeth and prevalence of dental sealants on permanent molars among AI/AN *dental clinic patients* aged 13-15 years by Area, 2013-2014

IHS Area	Number Screened	Decay Experience			Untreated Decay			Dental Sealants		
		Percent	95% CI		Percent	95% CI		Percent	95% CI	
Alaska	26	86.1	81.1	91.1	56.1	38.4	73.8	76.7	65.9	87.4
Albuquerque	203	73.9	63.0	84.7	54.7	44.0	65.4	71.9	55.0	88.7
Bemidji	237	82.3	73.0	91.5	52.5	40.1	65.0	61.0	44.3	77.6
Billings	85	86.8	75.9	97.7	66.7	43.5	90.0	44.3	26.3	62.4
California	326	77.3	67.8	86.7	47.8	38.6	57.1	63.5	50.2	76.8
Great Plains	147	77.2	53.4	100.0	46.6	16.7	76.5	61.2	50.7	71.8
Nashville	275	81.8	79.7	84.0	40.5	26.3	54.8	81.6	73.7	89.6
Navajo	234	77.0	73.7	80.3	51.7	39.5	63.8	77.4	71.9	83.0
Oklahoma City	72	76.2	74.2	78.3	50.6	46.3	54.9	61.0	59.9	62.2
Phoenix/Tucson*	248	87.8	80.9	94.7	66.2	50.1	82.4	52.5	40.0	65.1
Portland	180	77.4	65.8	89.0	36.5	11.3	61.7	72.6	61.4	83.8
IHS Total	2,033	79.9	76.0	83.7	52.5	46.3	58.7	65.5	61.6	69.3

* For this survey, the Phoenix and Tucson Areas were combined

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Table 5. Prevalence of decay experience and untreated tooth decay in the permanent teeth and prevalence of dental sealants on permanent molars among AI/AN *students* aged 13-15 years by IHS Area, 2013-2014

IHS Area	Number Screened	Decay Experience			Untreated Decay			Dental Sealants		
		Percent	95% CI		Percent	95% CI		Percent	95% CI	
Alaska	163	74.4	61.2	87.6	48.2	37.0	59.3	86.8	73.1	100.0
Albuquerque	200	72.9	65.7	80.1	32.9	24.3	41.5	85.0	82.4	87.5
Bemidji	149	81.6	64.9	98.3	51.5	29.1	73.9	66.7	53.9	79.5
Billings	463	70.7	67.8	73.7	47.8	42.3	53.3	75.0	55.5	94.5
California	4	NR	NR	NR	NR	NR	NR	NR	NR	NR
Great Plains	277	75.2	69.1	81.3	46.8	36.1	57.4	80.6	75.3	85.9
Nashville	131	72.0	64.2	79.8	53.0	35.9	70.1	74.8	68.7	80.8
Navajo	69	60.1	41.5	78.7	12.9	0.0	31.1	83.3	66.6	100.0
Oklahoma City	187	51.9	34.7	69.1	18.1	1.7	34.5	24.3	0.2	48.4
Phoenix/Tucson*	157	87.1	74.5	99.8	78.4	63.7	93.2	63.0	35.6	90.5
Portland	97	70.3	62.3	78.4	56.4	51.8	61.0	81.5	72.6	90.4
IHS Total	1,897	65.6	58.0	73.1	38.1	28.7	47.5	62.4	50.5	74.4

* For this survey, the Phoenix and Tucson Areas were combined

NR: Not reportable

Suggested citation.

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